CKD

New Products

Electric actuator

Slider	EBS-M/G Series
Rod with built-in guide	EBR-M/G Series
Controller	ECR Series
Controller	ECG Series

New options and wider possibilities

ROBODEX *Pulse*

CKD Corporation

CC-1422AA 5

Ever-evolving electric components for ever- evolving facilities from CKD

Slider

EBS-M/G Series

Rod with built-in guide

EBR-M/G Series

Controller

ECG Series

Controller

ECR Series

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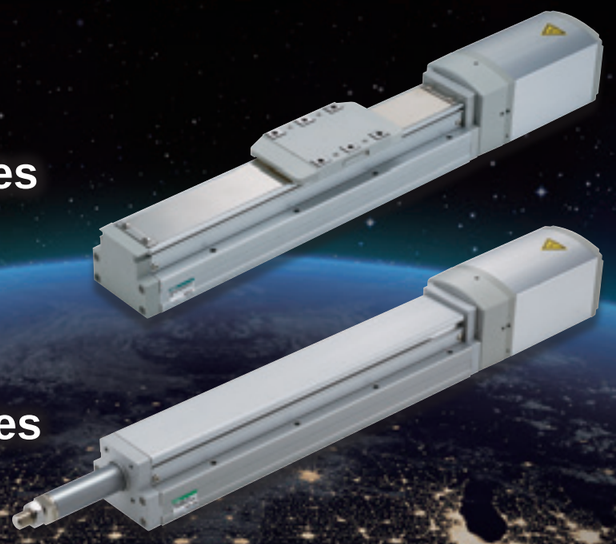
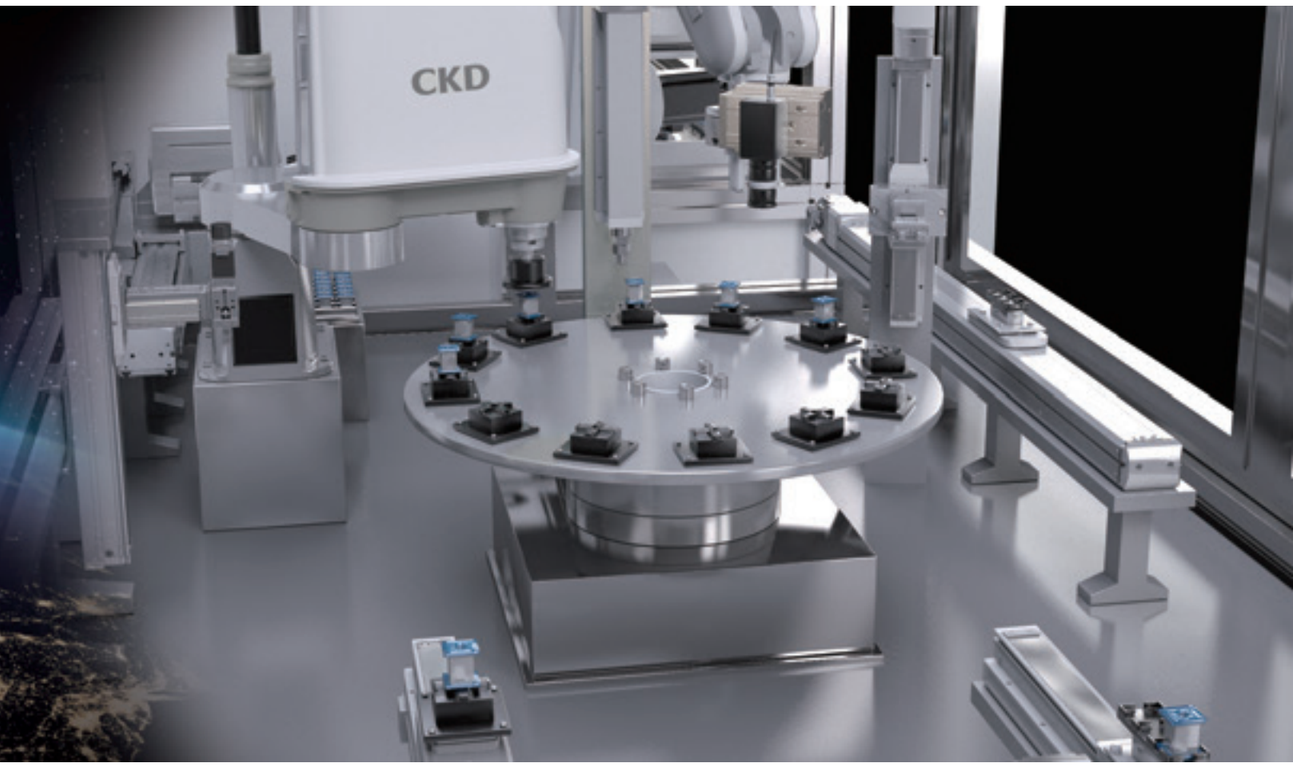
Slider

EBS-M/G Series

Rod with built-in guide

EBR-M/G Series



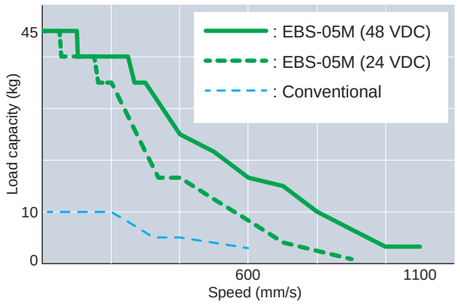


Reduced size

Significantly improved basic performance

Our new controller provides performance beyond that of conventional products. The 48 VDC power supply provides even further improved performance. This enables compact-bodied products to cope with heavy loads, requiring less installation space.

*48 VDC is only compatible with ECR.



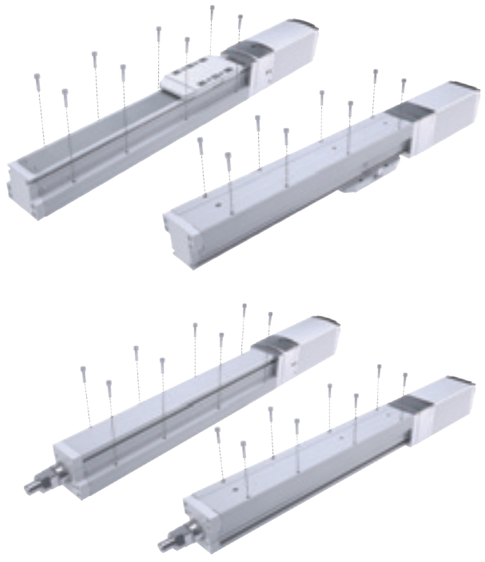
- Max. load capacity: 10kg ➡ 45kg (horizontal)
- Max. speed: 600mm/s ➡ 1100mm/s (horizontal)

*Comparison with □42 size

Reduced installation time

Mounting holes provided on top and bottom of product

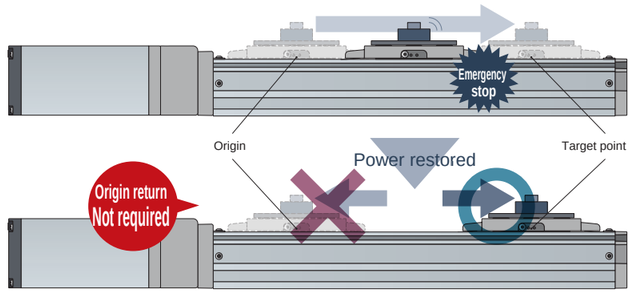
The product structure allows direct installation from the top or bottom, without disassembly. This significantly reduces work time, especially when installing from the top.



Shorter equipment stop times

Battery-less absolute encoders can be selected

The absolute encoder retains present position information without the use of a battery. The system does not need to return to origin when the power is turned ON, and there is no need to install an origin sensor. This allows quick recovery from an emergency stop or power outage. Because it uses no battery, there is no need to replace the encoder battery.



Expanded selection

Also supports motorless specifications (servo motors/stepper motors)

Each model uses a common body and can also be driven at the same size using a servo motor.
This provides even greater control for your preferred motor.

[Servo motor compatible manufacturer]

- Mitsubishi Electric Corporation
- Delta Electronics Co., Ltd.
- Sanyo Denki Co., Ltd.
- YASKAWA Electric Corporation
- Keyence Corporation
- Panasonic Corporation
- OMRON Corporation
- Fuji Electric Co., Ltd.
- FANUC CORPORATION
- DENSO WAVE Incorporated
- Bosch Rexroth AG
- Rockwell Automation, Inc.
- SIEMENS AG

[Manufacturers supporting stepper motors]

- Oriental Motor Co., Ltd.
- MinebeaMitsumi Inc.
- Dyadic Systems Co., Ltd.

*Refer to separate catalog CB-055A.

Slider

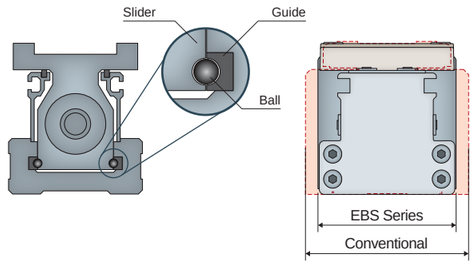
EBS-M/G Series

High speed transport

Smaller equipment footprint

Compact body with high rigidity

An outer rail is used for the guide which supports loads. The wide guide is integrated with the body to keep the system compact yet provide high rigidity.



		Conventional product	EBS-05
Body width		64 mm	54 mm
Static allowable moment	MP	25.7 N·m	103 N·m
	MY	25.7 N·m	103 N·m
	MR	58 N·m	144 N·m

Easy maintenance

Equipped with a grease lubrication port

The product comes equipped with a lubrication port on both sides to allow direct lubrication from the exterior. Both the guide and ball screw can be maintained simply by lubricating from a single location, without disassembling the body.

Rod with built-in guide

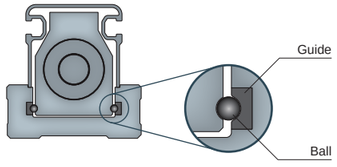
EBR-M/G Series

For press fitting and hoisting

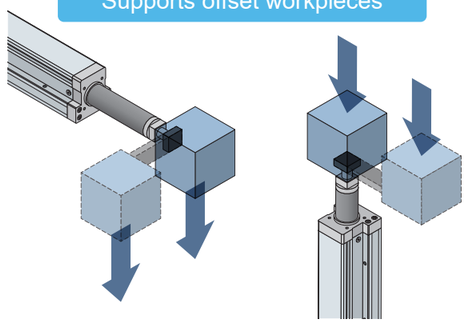
Reduces need for additional guides

Rod with built-in guide

Contains the same guide as the EBS Slider. Provides a strong structure even for offset workpieces. It also provides a long stroke even greater than that of conventional products.



Supports offset workpieces

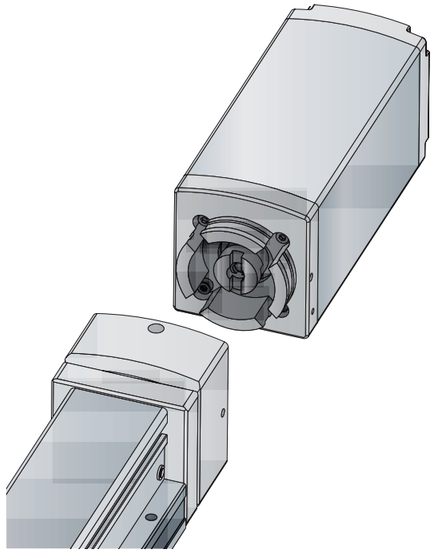


Simple maintenance

Replaceable motor unit

The motor unit can be removed. If something goes wrong, the issue can be resolved by simply replacing the motor.

*EBS-M, EBR-M and ECR are only supported.



CKD YouTube channel
Simple manual video for dedicated software "S-Tools" available
Please check via iPad or smartphone.

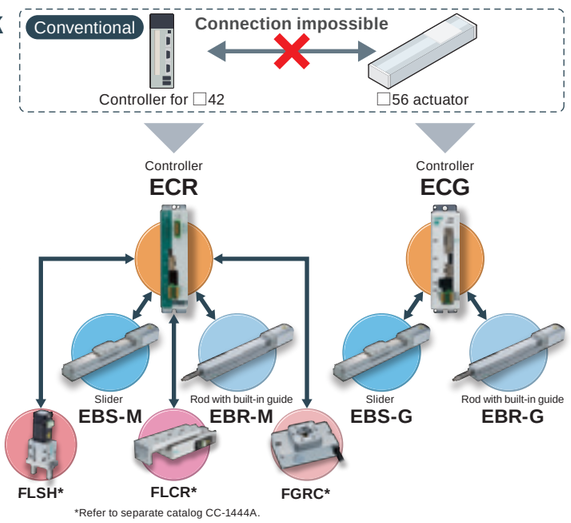
*Depending on your smartphone environment, it may not be displayed correctly.

Reduced initial work hours and stock

Original functions available for a variety of motor sizes

The same controller operates with actuators of different sizes and models. Equipped with an automatic recognition function that reads actuator information, for less work during initial setting. Further, with a common controller, work hours for selection and ordering, as well as inventory can be reduced.

* Compatible with 5 models of ECR and 2 models of ECG.

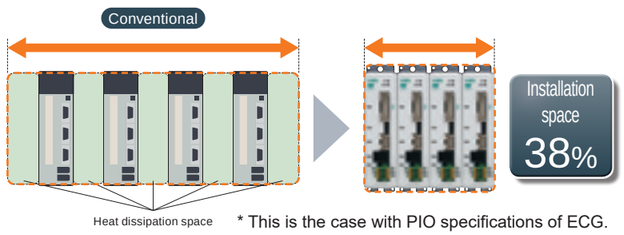


*Refer to separate catalog CC-1444A.

Reduced controller footprint

Compact, allowing adjacent installation

The optimized design eliminates the need for heat dissipation space at the sides. This allows controllers to be installed next to one another.

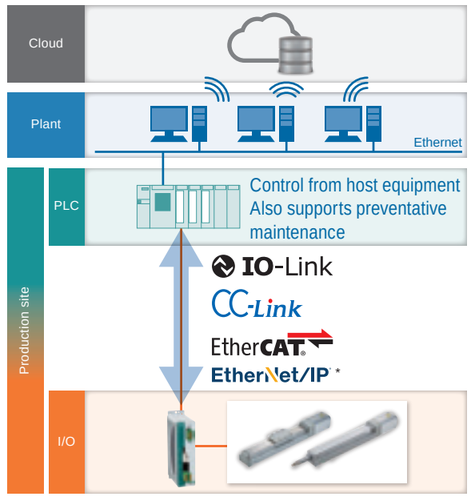


* This is the case with PIO specifications of ECG.

Supports IoT

Compatible with all types of networks

Our product is compatible with all types of industrial networks. This allows control from host equipment over Ethernet, and also enables preventative maintenance.



* Only ECR supported.

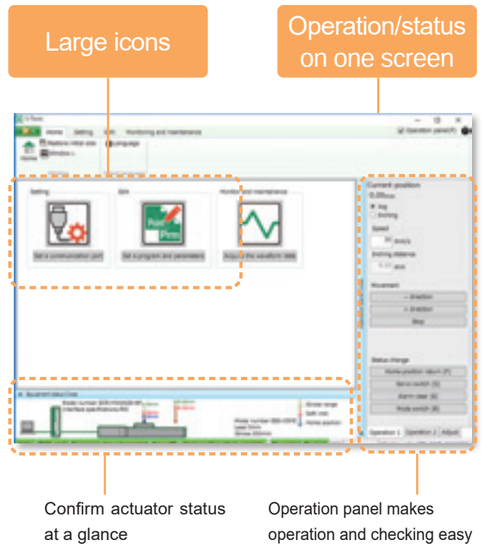
Abundant wiring configurations

Supports a wide range of line, star and ring wiring for EtherNet/IP. Select as needed for your application.

Reduces adjustment time

Easy setup with "S-Tools" software

Inherits the operational feel of the popular AX-Tools software for ABSODEX. S-Tools can be downloaded from our website.

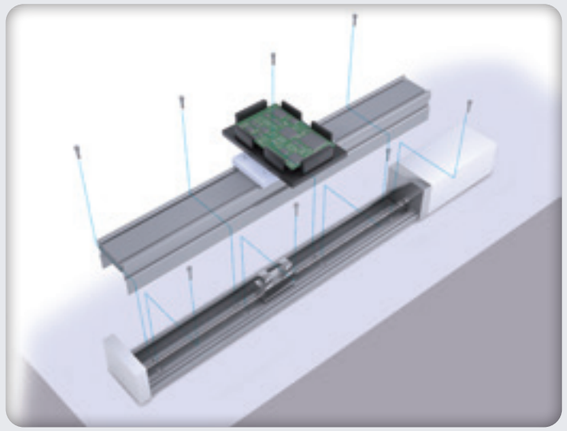


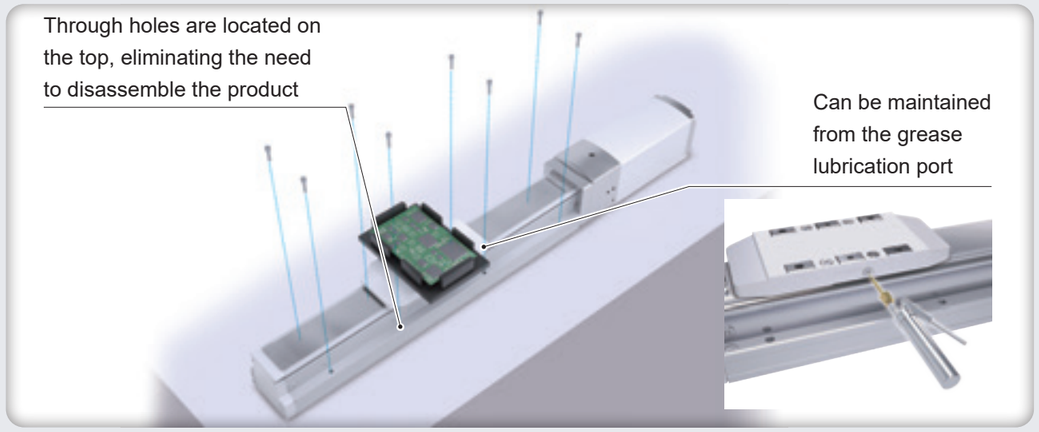
Application examples

Use as transporter for electronic parts

Conventional issues

- When installing the body, product disassembly is required to use the through holes.
- Product disassembly is required for grease lubrication.

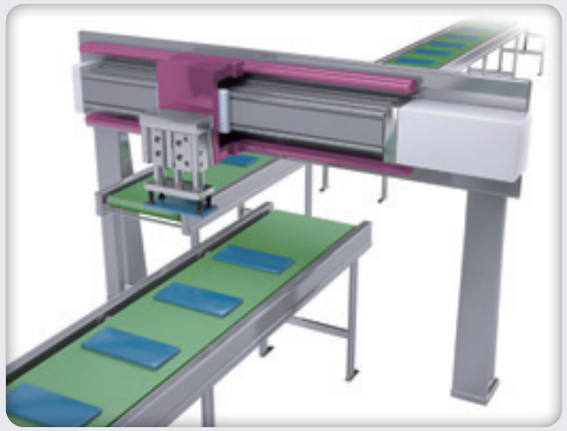


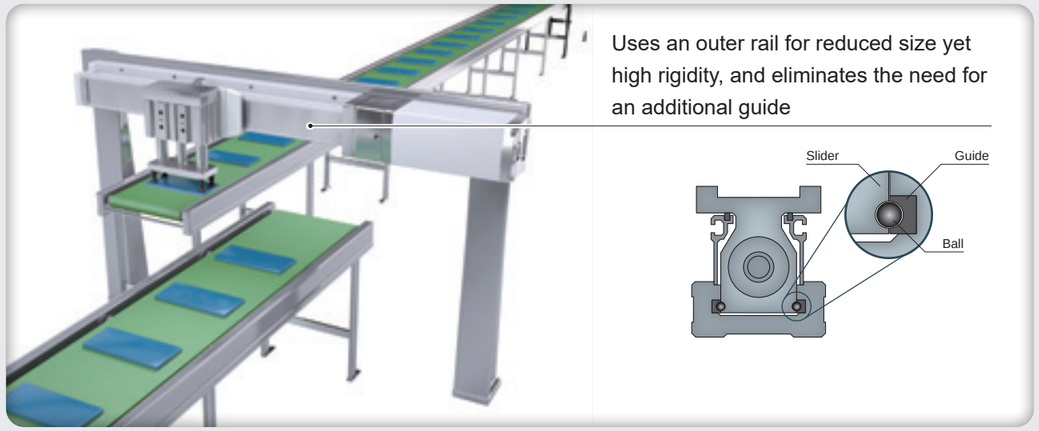


Use as transporter between processes

Conventional issues

- Uses an additional guide to reduce MR moment and MY moment.

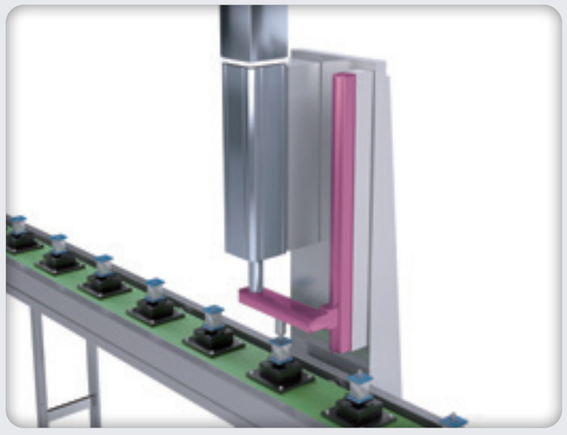


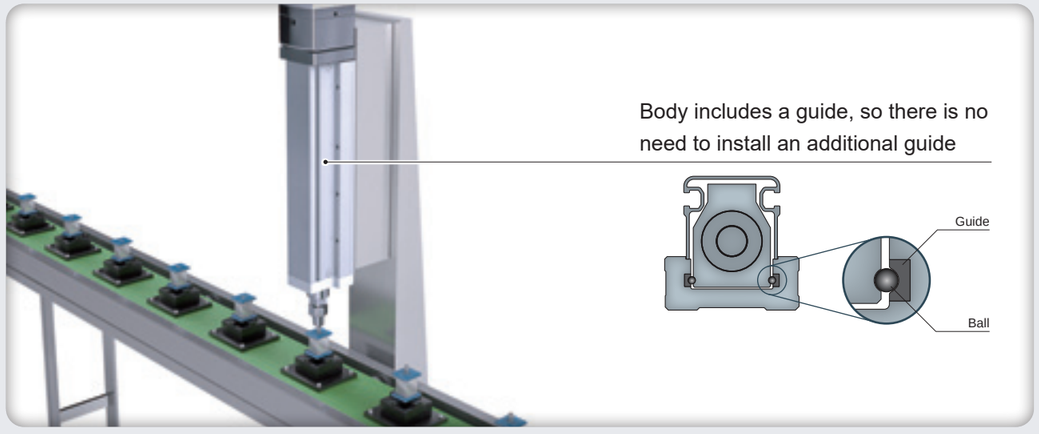


Use as press fitting equipment for electric appliances

Conventional issues

- Rod actuator requires an additional guide.



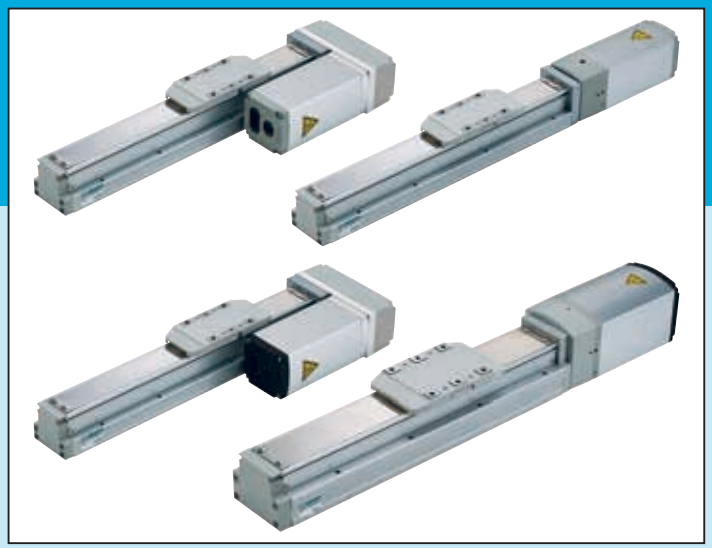


CKD

Electric actuator
Motor specifications

EBS-M/G

Slider



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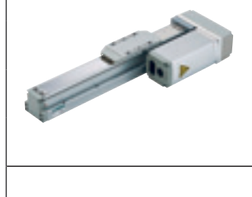
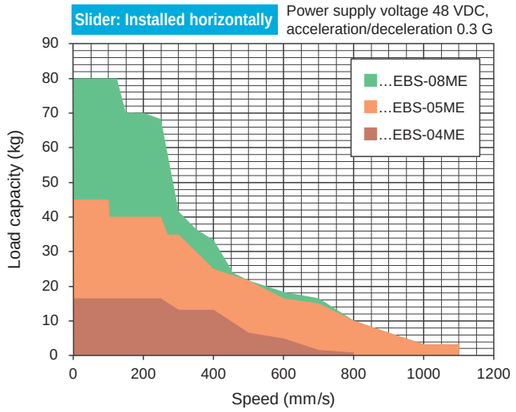
Series variation

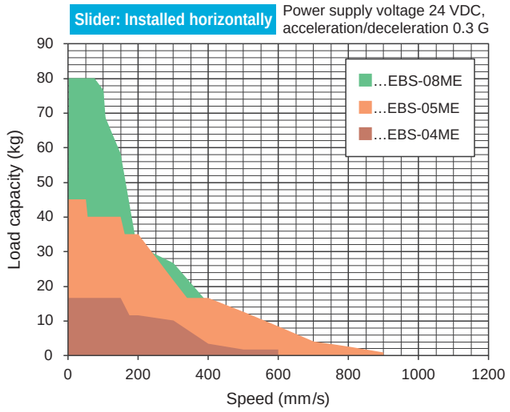
Controller	Actuator model No.		Motor size	Motor mounting direction	Body width (mm)	Screw lead (mm)	Max. load capacity (kg) Horizontal	Max. load capacity (kg) Vertical	Max. pressing force (N)	Stroke (mm) and max. speed (mm/s)	Page
ECR Series		EBS-04ME-06	□35	Straight	44	6	16.6	8.3	177	400 mm/s	6
		EBS-04ME-12				12	13.3	3.3	89	800	
		EBS-04MR/D/L-06		Left/Right/Bottom		6	16.6	8.3	177	400	10
		EBS-04MR/D/L-12				12	13.3	3.3	89	700	
		EBS-05ME-02	□42	Straight	54	2	45	24	385	130 / 120 / 105 / 95 / 80 / 70	16
		EBS-05ME-05				5	40	16.6	250	300 / 270 / 235 / 200 / 185	
		EBS-05ME-10				10	35	8.3	121	700 / 625 / 540 / 475 / 415 / 370	
		EBS-05ME-20				20	16.6	4.5	44	1100 / 1080 / 950 / 830 / 740	
		EBS-05MR/D/L-02		Left/Right/Bottom		2	45	24	385	130 / 120 / 105 / 95 / 80 / 70	20
		EBS-05MR/D/L-05				5	40	16.6	250	300 / 270 / 235 / 200 / 185	
		EBS-05MR/D/L-10				10	35	8.3	121	600 / 540 / 475 / 415 / 370	
		EBS-05MR/D/L-20				20	16.6	4.5	44	1100 / 1080 / 950 / 830 / 740	
		EBS-08ME-05	□56	Straight	82	5	80	40	970	250 / 220 / 200 / 180 / 135 / 120 / 110 / 100	26
		EBS-08ME-10				10	70	18.3	477	550 / 510 / 450 / 410 / 370 / 270 / 240 / 225 / 200	
		EBS-08ME-20				20	43.3	10	250	1100 / 1000 / 910 / 820 / 740 / 540 / 490 / 450 / 410	
		EBS-08MR/D/L-05		Left/Right/Bottom		5	80	40	970	225 / 220 / 200 / 180 / 135 / 120 / 110 / 100	30
		EBS-08MR/D/L-10				10	70	18.3	477	550 / 510 / 450 / 410 / 370 / 270 / 240 / 225 / 200	
		EBS-08MR/D/L-20				20	43.3	8.3	250	1000 / 910 / 820 / 740 / 540 / 490 / 450 / 410	

* This data is at power supply voltage 48 VDC and acceleration/deceleration 0.3 G.
* The load capacity when wall mounted is the same as for horizontal installation.

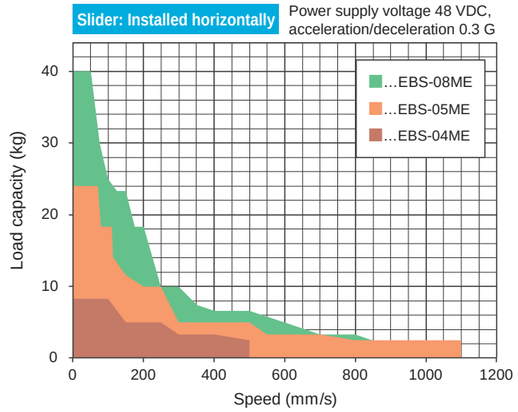
Slider: Installed horizontally Power supply voltage 48 VDC, acceleration/deceleration 0.3 G



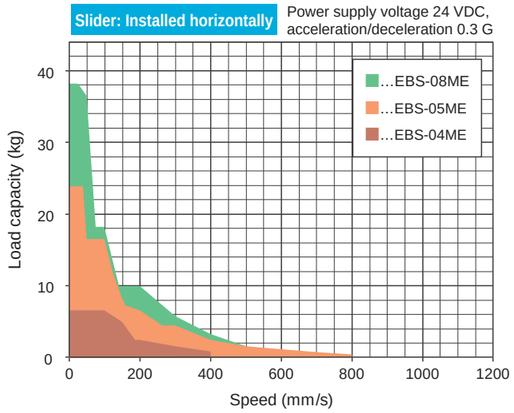
Slider: Installed horizontally Power supply voltage 24 VDC, acceleration/deceleration 0.3 G



Slider: Installed horizontally Power supply voltage 48 VDC, acceleration/deceleration 0.3 G



Slider: Installed horizontally Power supply voltage 24 VDC, acceleration/deceleration 0.3 G



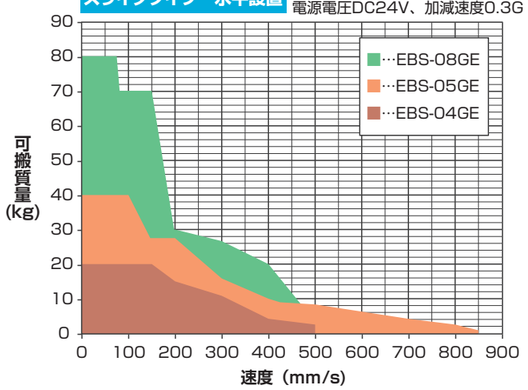
EBS-G Series

Series variation

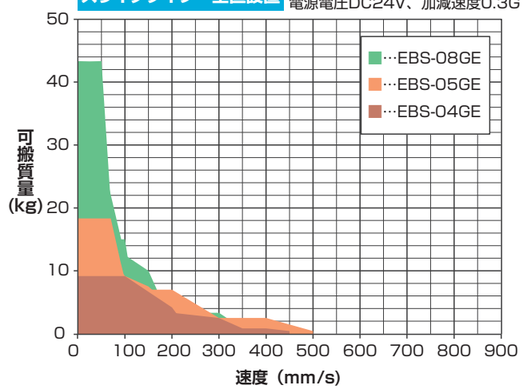
Controller	Actuator model No.		Motor size	Motor mounting direction	Body width (mm)	Screw lead (mm)	Max. load capacity (kg) Horizontal	Max. load capacity (kg) Vertical	Max. pressing force (N)	Stroke (mm) and max. speed (mm/s)	Page
ECG Series		EBS-04GE-06	□35	Straight	44	6	20.0	9.2	155	320 mm/s	6
		EBS-04GE-12				12	15.0	3.3	77	500	
		EBS-04GR/D/L-06		Left/Right/Bottom		6	20.0	9.2	155	250	10
		EBS-04GR/D/L-12				12	11.7	3.3	77	400	
		EBS-05GE-02	□42	Straight	54	2	45.0	18.3	550	120 / 105 / 95 / 80 / 70	16
		EBS-05GE-05				5	40.0	14.0	220	290 / 270 / 235 / 200 / 185	
		EBS-05GE-10				10	27.5	7.0	110	500 / 475 / 415 / 370	
		EBS-05GE-20				20	18.3	2.5	55	850 / 830 / 740	
		EBS-05GR/D/L-02		Left/Right/Bottom		2	45.0	18.3	550	100 / 95 / 80 / 70	20
		EBS-05GR/D/L-05				5	40.0	10.0	220	250 / 235 / 200 / 185	
		EBS-05GR/D/L-10				10	27.5	3.3	110	400 / 370	
		EBS-05GR/D/L-20				20	18.3	0.8	55	700	
		EBS-08GE-05	□56	Straight	82	5	80.0	43.3	965	150 / 135 / 120 / 110 / 100	26
		EBS-08GE-10				10	70.0	28.3	482	250 / 240 / 225 / 200	
		EBS-08GE-20				20	30.0	3.3	241	500 / 490 / 450 / 410	
		EBS-08GR/D/L-05		Left/Right/Bottom		5	80.0	33.3	965	125 / 120 / 110 / 100	30
		EBS-08GR/D/L-10				10	70.0	18.3	482	250 / 240 / 225 / 200	
		EBS-08GR/D/L-20				20	30.0	3.3	241	400	

* This data is at power supply voltage 24 VDC and acceleration/deceleration 0.3 G.
* The load capacity when wall mounted is the same as for horizontal installation.

スライダタイプ　水平設置 電源電圧DC24V、加減速度0.3G



スライダタイプ　垂直設置 電源電圧DC24V、加減速度0.3G



Electric actuator Slider

EBS-04*E

Straight motor mounting

□35 stepper motor

How to order

EBS - 04 M E - 06 0300 N A N - C S03

(A) (B) (C) (D) (E) (F) (G) (H)

(A) Body size

04	Body width 44 mm

(B) Applicable controller *1

M	ECR
G	ECG

(C) Motor mounting direction

E	Straight mounting

(D) Screw lead

06	6 mm
12	12 mm

(E) Stroke length

0050 to 0500	50 mm (In 50 mm increments) 500 mm

(F) Brake *2

N	None
B	Yes

(G) Encoder *1

A	Battery-less absolute encoder (for ECR)
B	Battery-less absolute encoder (for ECG)
C	Incremental encoder (for ECG)

(H) Relay cable *3

N00	None
S01	Fixing cable 1 m
S03	Fixing cable 3 m
S05	Fixing cable 5 m
S10	Fixing cable 10 m
R01	Movable cable 1 m
R03	Movable cable 3 m
R05	Movable cable 5 m
R10	Movable cable 10 m

*1 Select the controller from page 93 or page 105.
Select encoder "A" when an ECR controller is selected and "B" or "C" when an ECG controller is selected.
*2 Select "Yes" for vertical use.
*3 Refer to page 103 for ECR and page 116 for ECG relay cable dimensions.

Product subject to the EAR (EAR99)

Specifications

[EBS-04M (applicable controller ECR)]

Motor		□35 stepper motor	
Encoder type		Battery-less absolute encoder	
Drive method		Ball screw ø10	
Stroke length	mm	50 to 500	
Thread lead	mm	6	12
Max. load capacity *1*2	kg Horizontal	16.6 (16.6)	13.3 (11.6)
	kg Vertical	8.3 (6.6)	3.3 (2.5)
Operation speed range*3*4	mm/s	7 to 400 (200)	15 to 800 (600)
Maximum pressing force	N	177	89
Press operation speed range	mm/s	5 to 25	5 to 30
Repeatability	mm	±0.01	
Lost motion	mm	0.1 or less	
Static allowable moment	N·m	MP:62 MY:62 MR:92	
Motor power supply voltage		24 VDC ±10% or 48 VDC ±10%	
Brake	Model, power supply voltage	Non-excitation operation, 24 VDC ±10%	
	Power consumption W	7	
	Holding force N	126	63

*1 The values in ( ) are at 24 VDC.
*2 Load capacity varies according to acceleration/deceleration and speed. Refer to page 42 for details.
*3 The maximum speed values in ( ) are at 24 VDC.
*4 The maximum speed may decrease depending on the conditions.

[EBS-04G (applicable controller ECG)]

Motor		□35 stepper motor	
Encoder type		Battery-less absolute encoder Incremental encoder	
Drive method		Ball screw ø10	
Stroke length	mm	50 to 500	
Thread lead	mm	6	12
Max. load capacity *1	kg Horizontal	20.0	15.0
	kg Vertical	9.2	3.3
Operation speed range*2	mm/s	7 to 320	15 to 500
Maximum pressing force	N	155	77
Press operation speed range	mm/s	5 to 20	5 to 20
Repeatability	mm	±0.01	
Lost motion	mm	0.1 or less	
Static allowable moment	N·m	MP:62 MY:62 MR:92	
Motor power supply voltage		24 VDC ±10%	
Brake	Model, power supply voltage	Non-excitation operation, 24 VDC ±10%	
	Power consumption W	6.1	
	Holding force N	140	70

*1 Load capacity varies according to acceleration/deceleration and speed. Refer to page 44 for details.
*2 The maximum speed may decrease depending on the conditions.

[Common specifications]

Insulation resistance	10MΩ, 500 VDC
Withstand voltage	500 VAC for 1 minute
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
Degree of protection	IP40

* The operating ambient temperature of EBS-**G is 10°C to 40°C.

Stroke and max. speed

[EBS-04M (applicable controller ECR)]

(mm/s)

Thread lead	Power supply voltage	Stroke length 50 to 500
6	48 VDC	400
	24 VDC	200
12	48 VDC	800
	24 VDC	600

[EBS-04G (applicable controller ECG)]

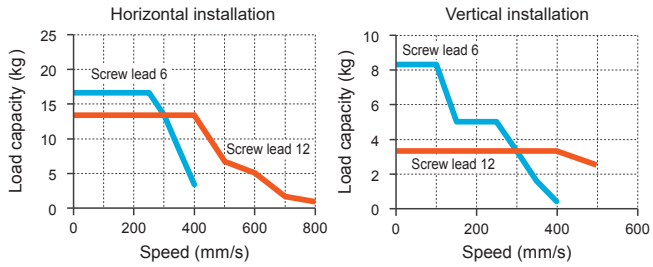
(mm/s)

Thread lead	Power supply voltage	Stroke length 50 to 500
6	24 VDC	320
12	24 VDC	500

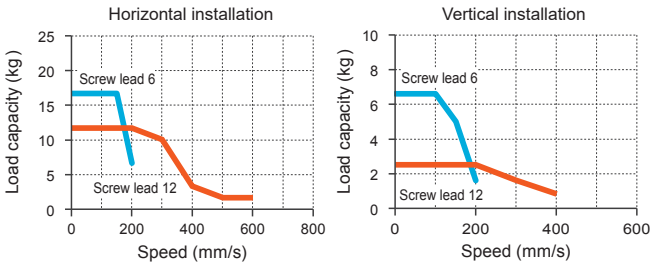
Speed and load capacity

[EBS-04M (applicable controller ECR)]

· At 48 VDC

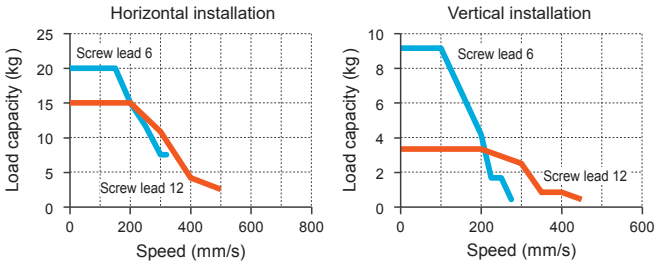


· At 24 VDC



[EBS-04G (applicable controller ECG)]

· At 24 VDC



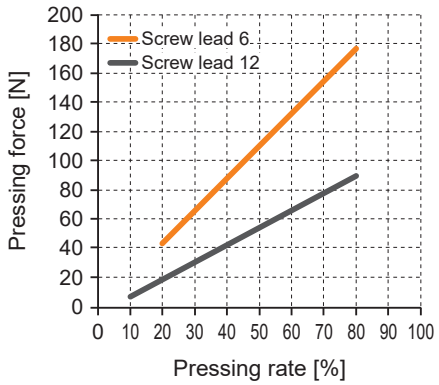
* Incorrectly applying a 48 VDC power supply could result in damage.

* At acceleration of 0.3 G.

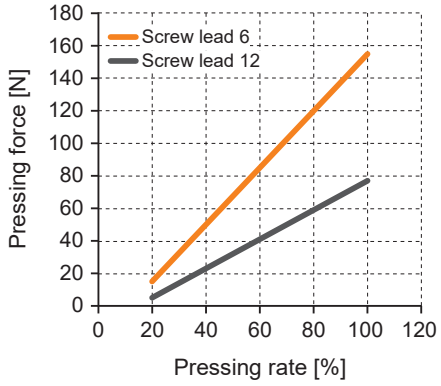
* Confirm each of the pages listed below for details.
ECR: Page 42
ECG: Page 44

Pressing force

[EBS-04M (applicable controller ECR)]



[EBS-04G (applicable controller ECG)]



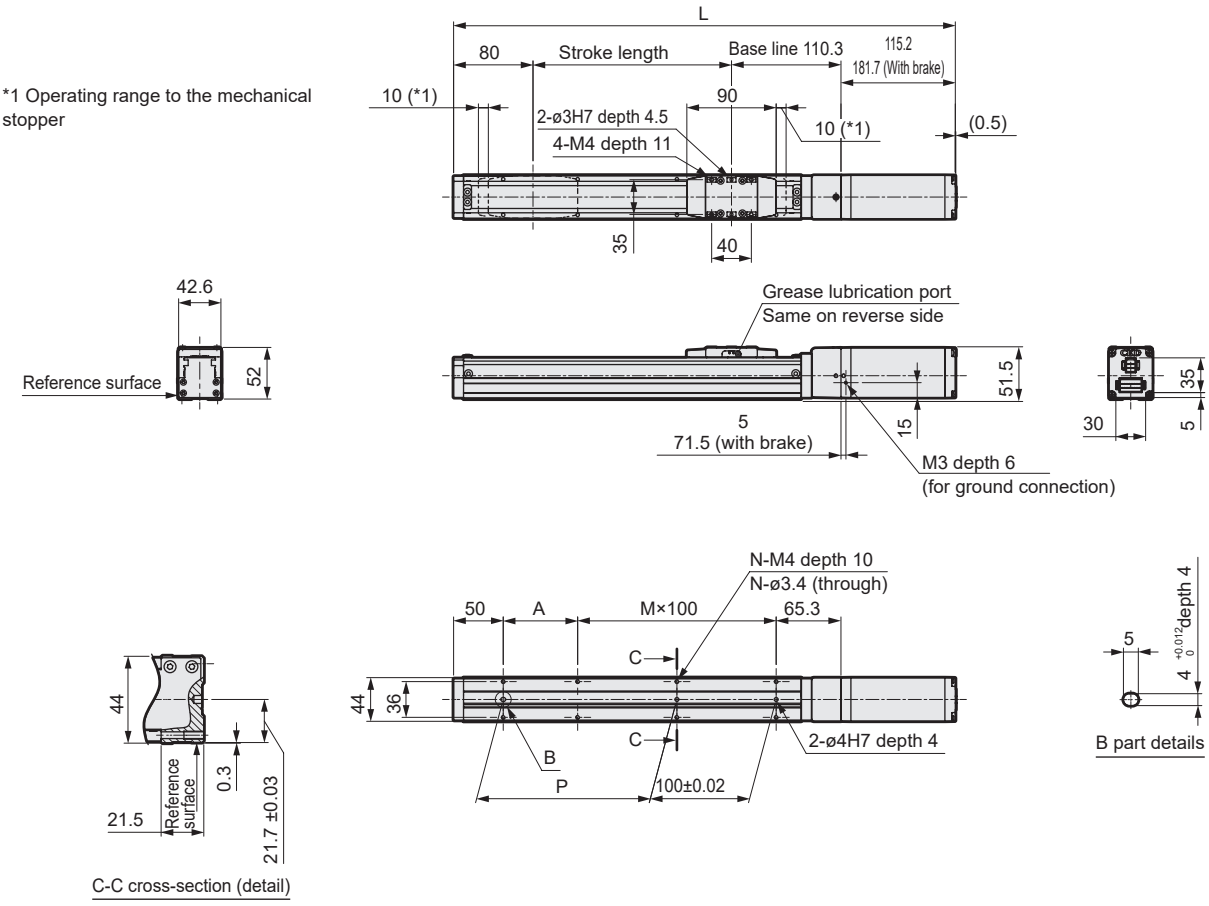
* The above pressing force is a reference value. Variation may occur according to conditions such as pressing speed.

EBS-04*E

Dimensions: Straight motor mounting

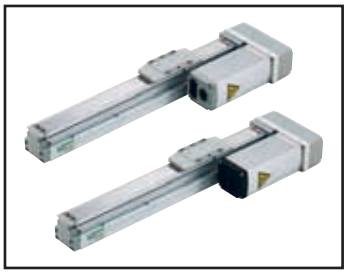
● EBS-04*E

*1 Operating range to the mechanical stopper



Stroke code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500
Stroke length (mm)		50	100	150	200	250	300	350	400	450	500
L	Without brake	355.5	405.5	455.5	505.5	555.5	605.5	655.5	705.5	755.5	805.5
	With brake	422	472	522	572	622	672	722	772	822	872
A		25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5
N		6	6	8	8	10	10	12	12	14	14
P		25	75	125	175	225	275	325	375	425	475
Weight (kg)	Without brake	1.5	1.6	1.8	1.9	2.0	2.2	2.3	2.4	2.6	2.7
	With brake	2.0	2.1	2.3	2.4	2.5	2.7	2.8	2.9	3.1	3.2

Notes



Electric actuator Slider

EBS-04**

Motor side mounting (left, right, bottom)

□35 stepper motor

How to order

EBS - 04 M R - 06 0300 N A N - C S03

(A) (B) (C) (D) (E) (F) (G) (H)

(A) Body size

04	Body width 44 mm

(B) Applicable controller *1

M	ECR
G	ECG

(C) Motor mounting direction *2

R	Right mounting
D	Bottom mounting
L	Left mounting

(D) Screw lead

06	6 mm
12	12 mm

(E) Stroke length *2

0050 to 0500	50 mm (In 50 mm increments) 500 mm

(F) Brake *3

N	None
B	Yes

(G) Encoder *1

A	Battery-less absolute encoder (for ECR)
B	Battery-less absolute encoder (for ECG)
C	Incremental encoder (for ECG)

(H) Relay cable *4

N00	None
S01	Fixing cable 1 m
S03	Fixing cable 3 m
S05	Fixing cable 5 m
S10	Fixing cable 10 m
R01	Movable cable 1 m
R03	Movable cable 3 m
R05	Movable cable 5 m
R10	Movable cable 10 m

*1 Select the controller from page 93 or page 105.
Select encoder "A" when an ECR controller is selected and "B" or "C" when an ECG controller is selected.
*2 If "D" is selected for the motor mounting direction, select a stroke length from "0250 (250 mm)" to "0500 (500 mm)".
*3 Select "Yes" for vertical use.
*4 Refer to page 103 for ECR and page 116 for ECG relay cable dimensions.

Product subject to the EAR (EAR99)

Specifications

[EBS-04M (applicable controller ECR)]

Motor		□35 stepper motor	
Encoder type		Battery-less absolute encoder	
Drive method		Ball screw ø10	
Stroke length	mm	50 to 500	
Thread lead	mm	6	12
Max. load capacity *1*2	kg Horizontal	16.6 (16.6)	13.3 (11.6)
	kg Vertical	8.3 (6.6)	3.3 (2.5)
Operation speed range*3*4	mm/s	7 to 400 (200)	15 to 700 (500)
Maximum pressing force	N	177	89
Press operation speed range	mm/s	5 to 25	5 to 30
Repeatability	mm	±0.01	
Lost motion	mm	0.1 or less	
Static allowable moment	N·m	MP: 62, MY: 62, MR: 92	
Motor power supply voltage		24 VDC ±10% or 48 VDC ±10%	
Brake	Model, power supply voltage	Non-excitation operation, 24 VDC ±10%	
	Power consumption W	7	
	Holding force N	126	63

*1 The values in ( ) are at 24 VDC.
*2 Load capacity varies according to acceleration/deceleration and speed.
Refer to page 42 for details.
*3 The maximum speed values in ( ) are at 24 VDC.
*4 The maximum speed may decrease depending on the conditions.

[EBS-04G (applicable controller ECG)]

Motor		□35 stepper motor	
Encoder type		Battery-less absolute encoder Incremental encoder	
Drive method		Ball screw ø10	
Stroke length	mm	50 to 500	
Thread lead	mm	6	12
Max. load capacity *1	kg Horizontal	20.0	11.7
	kg Vertical	9.2	3.3
Operation speed range*2	mm/s	7 to 250	15 to 400
Maximum pressing force	N	155	77
Press operation speed range	mm/s	5 to 20	5 to 20
Repeatability	mm	±0.01	
Lost motion	mm	0.1 or less	
Static allowable moment	N·m	MP: 62, MY: 62, MR: 92	
Motor power supply voltage		24 VDC ±10%	
Brake	Model, power supply voltage	Non-excitation operation, 24 VDC ±10%	
	Power consumption W	6.1	
	Holding force N	140	70

*1 Load capacity varies according to acceleration/deceleration and speed.
Refer to page 44 for details.
*2 The maximum speed may decrease depending on the conditions.

[Common specifications]

Insulation resistance	10MΩ, 500 VDC
Withstand voltage	500 VAC for 1 minute
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
Degree of protection	IP40

* The operating ambient temperature of EBS-**G is 10°C to 40°C.

Stroke and max. speed

[EBS-04M (applicable controller ECR)]

(mm/s)

Thread lead	Power supply voltage	Stroke length 50 to 500
6	48 VDC	400
	24 VDC	200
12	48 VDC	700
	24 VDC	500

[EBS-04G (applicable controller ECG)]

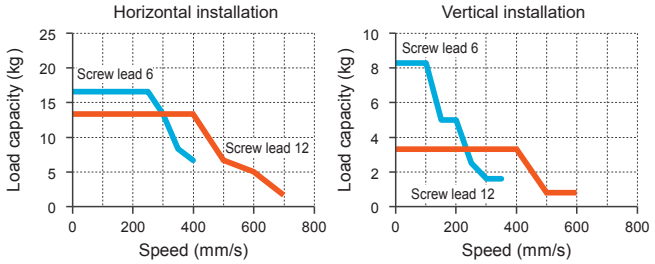
(mm/s)

Thread lead	Power supply voltage	Stroke length 50 to 500
6	24 VDC	250
12	24 VDC	400

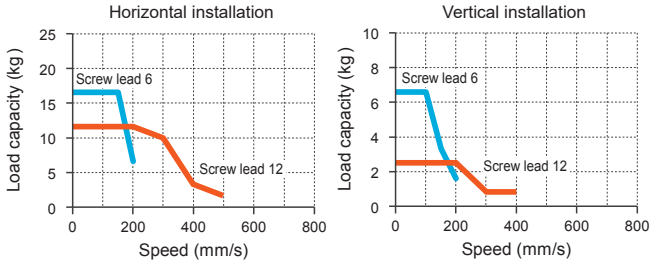
Speed and load capacity

[EBS-04M (applicable controller ECR)]

· At 48 VDC

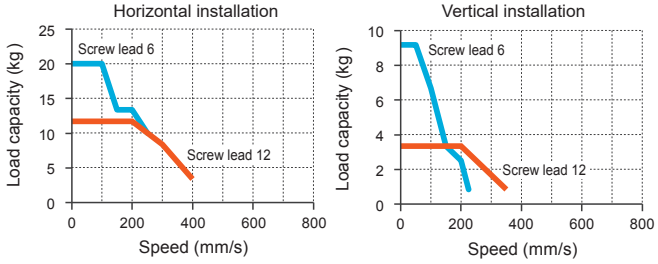


· At 24 VDC



[EBS-04G (applicable controller ECG)]

· At 24 VDC



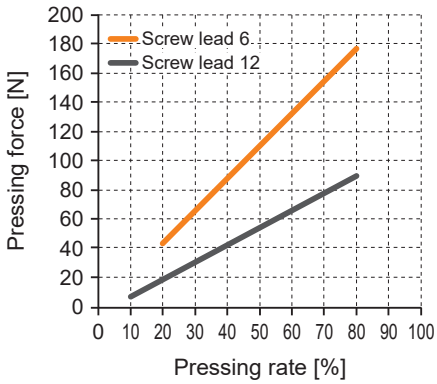
* Incorrectly applying a 48 VDC power supply could result in damage.

* At acceleration of 0.3 G.

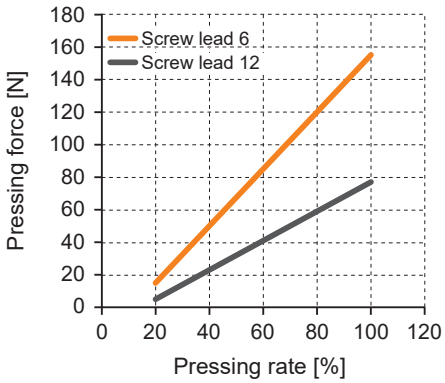
* Confirm each of the pages listed below for details.
ECR: Page 42
ECG: Page 44

Pressing force

[EBS-04M (applicable controller ECR)]



[EBS-04G (applicable controller ECG)]

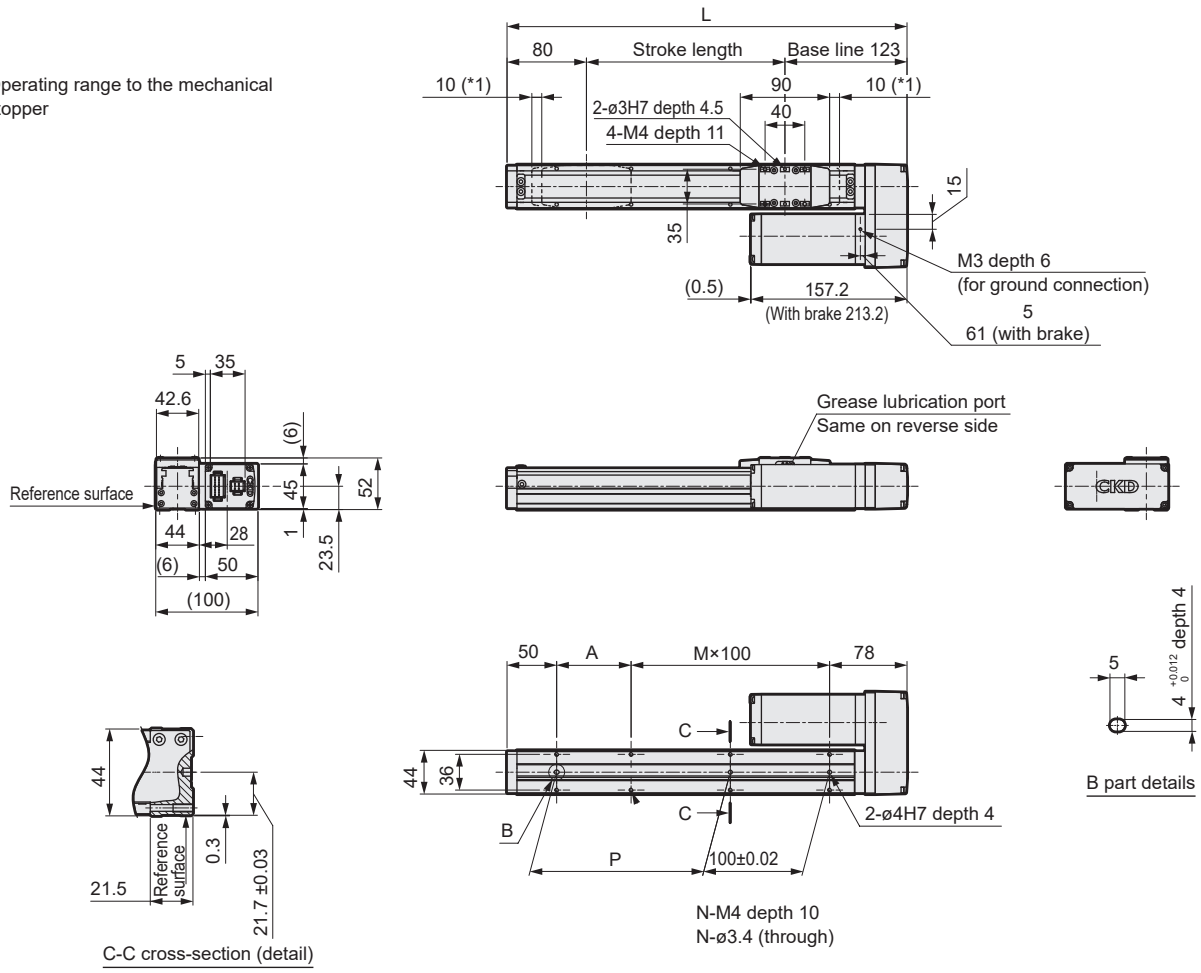


* The above pressing force is a reference value. Variation may occur according to conditions such as pressing speed.

Dimensions: Motor right-side mounting

● EBS-04*R

*1 Operating range to the mechanical stopper

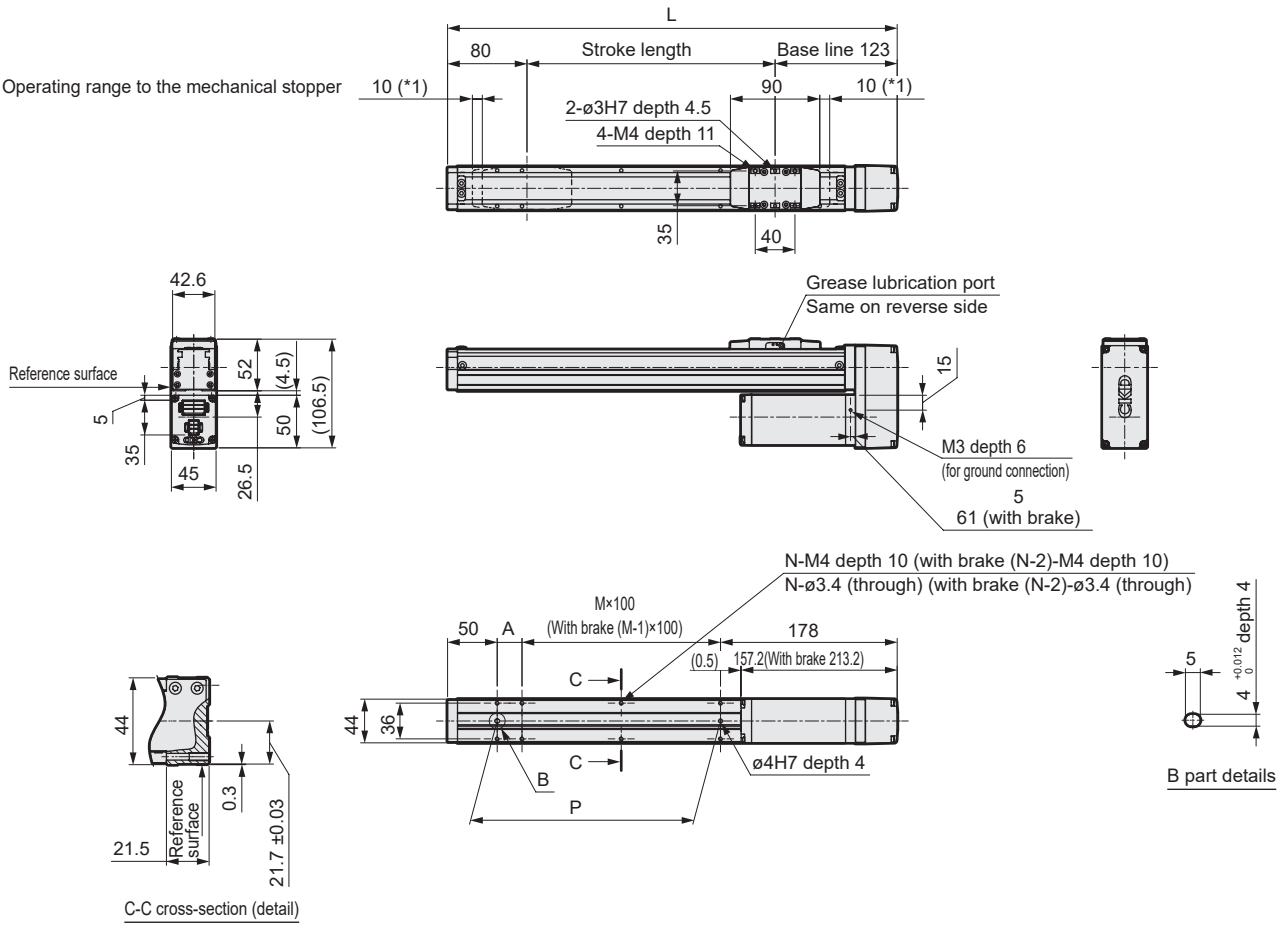


Stroke code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500
Stroke length (mm)		50	100	150	200	250	300	350	400	450	500
L		253	303	353	403	453	503	553	603	653	703
A		25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5
N		6	6	8	8	10	10	12	12	14	14
P		25	75	125	175	225	275	325	375	425	475
Weight (kg)	Without brake	1.7	1.9	2.0	2.2	2.4	2.6	2.7	2.9	3.1	3.3
	With brake	2.2	2.4	2.5	2.7	2.9	3.1	3.2	3.4	3.6	3.8

Dimensions: Motor bottom mounting

● EBS-04*D

*1 Operating range to the mechanical stopper



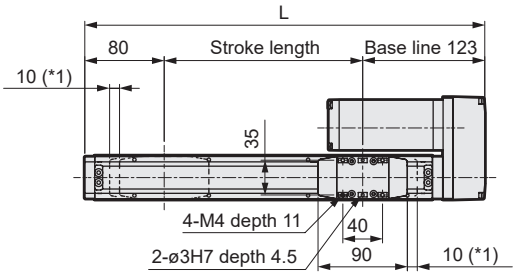
Stroke code		0250	0300	0350	0400	0450	0500
Stroke length (mm)		250	300	350	400	450	500
L		453	503	553	603	653	703
A		25	75	25	75	25	75
M		2	2	3	3	4	4
N		8	8	10	10	12	12
P		225	275	325	375	425	475
Weight (kg)	Without brake	2.4	2.6	2.7	2.9	3.1	3.3
	With brake	2.9	3.1	3.2	3.4	3.6	3.8

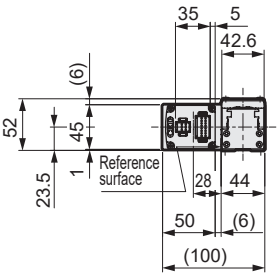
EBS-04**

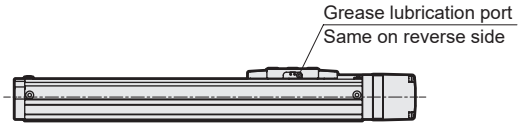
Dimensions: Motor left-side mounting

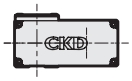
● EBS-04*L

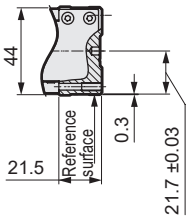
*1 Operating range to the mechanical stopper



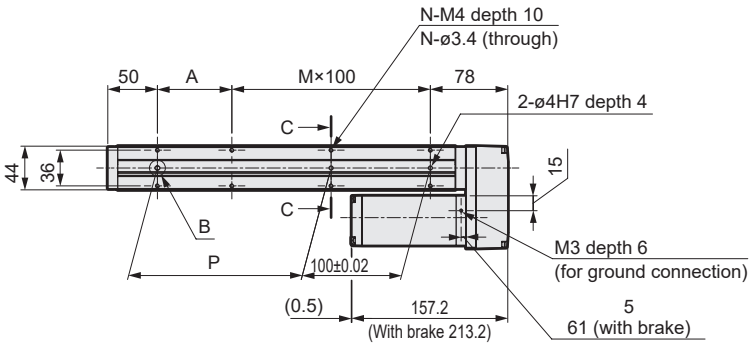


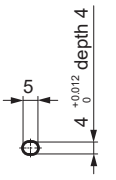






C-C cross-section (detail)

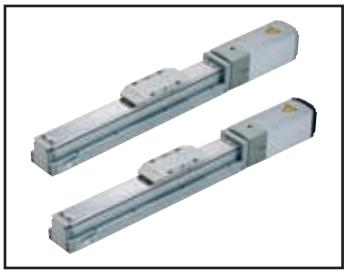




B part details

Stroke code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500
Stroke length (mm)		50	100	150	200	250	300	350	400	450	500
L		253	303	353	403	453	503	553	603	653	703
A		25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5
N		6	6	8	8	10	10	12	12	14	14
P		25	75	125	175	225	275	325	375	425	475
Weight (kg)	Without brake	1.7	1.9	2.0	2.2	2.4	2.6	2.7	2.9	3.1	3.3
	With brake	2.2	2.4	2.5	2.7	2.9	3.1	3.2	3.4	3.6	3.8

Notes



Electric actuator Slider

EBS-05*E

Straight motor mounting

□42 Stepper motor

How to order

EBS - 05 M E - 05 0300 N A N - C S03

Ⓐ 05

Ⓑ M

Ⓒ E

Ⓓ 05

Ⓔ 0300

Ⓕ N

Ⓖ A

Ⓗ S03

Ⓐ Body size

05	Body width 54mm

Ⓑ Applicable controller *1

M	ECR
G	ECG

Ⓒ Motor mounting direction

E	Straight mounting

Ⓓ Screw lead

02	2 mm
05	5 mm
10	10 mm
20	20 mm

Ⓔ Stroke length

0050 to 0800	50 mm (In 50 mm increments) 800 mm

Ⓕ Brake *2

N	None
B	Yes

Ⓖ Encoder *1

A	Battery-less absolute encoder (for ECR)
B	Battery-less absolute encoder (for ECG)
C	Incremental encoder (For ECG)

Ⓗ Relay cable *3

N00	None
S01	Fixing cable 1 m
S03	Fixing cable 3 m
S05	Fixing cable 5 m
S10	Fixing cable 10 m
R01	Movable cable 1 m
R03	Movable cable 3 m
R05	Movable cable 5 m
R10	Movable cable 10 m

*1 Select the controller from pages 93 and 105.
Select encoder "A" when an ECR controller is selected and "B" or "C" when an ECG controller is selected.
*2 Select "Yes" for vertical use.
*3 For Dimensions of the relay cable, refer to page 103 for ECR and page 116 for ECG.

EAR-compliant product (EAR99-embedded product)

Specifications

[EBS-05M (applicable controller ECR)]

Motor		□42 Stepper motor			
Encoder type		Battery-less absolute encoder			
Drive method		Ball screw ø12			
Stroke length	mm	50 to 800			
Thread lead	mm	2	5	10	20
Max. load capacity *1 *2	kg Horizontal	45 (45)	40 (40)	35 (35)	16.6 (16.6)
	Vertical	24 (24)	16.6 (16.6)	8.3 (8.3)	4.5 (4.5)
Operation speed range *3 *4	mm/s	2 to 130	6 to 300 (250)	12 to 700 (600)	25 to 1100 (900)
Maximum pressing force	N	385	250	121	44
Press operation speed range	mm/s	5 to 25	5 to 25	5 to 30	5 to 30
Repeatability	mm	±0.01			
Lost motion	mm	0.1 or less			
Static allowable moment	N·m	MP:103 MY:103 MR:144			
Motor power supply voltage		24 VDC ±10% or 48 VDC ±10%			
Brake	Model, power supply voltage	Non-excitation operation, 24 VDC ±10%			
	Power consumption W	7			
	Holding force N	471	188	94	47

*1 The values in ( ) are at 24 VDC.
*2 Load capacity varies according to acceleration/deceleration and speed. Refer to page 42 for details.
*3 The maximum speed values in ( ) are at 24 VDC.
*4 The maximum speed may decrease depending on the conditions.

[EBS-05G (applicable controller ECG)]

Motor		□42 Stepper motor			
Encoder type		Battery-less absolute encoder/incremental encoder			
Drive method		Ball screw ø12			
Stroke length	mm	50 to 800			
Thread lead	mm	2	5	10	20
Max. load capacity *1	kg Horizontal	45.0	40.0	27.5	18.3
	Vertical	18.3	14.0	7.0	2.5
Operation speed range*2	mm/s	2 to 120	6 to 290	12 to 500	25 to 850
Maximum pressing force	N	550	220	110	55
Press operation speed range	mm/s	5 to 20	5 to 20	5 to 20	5 to 20
Repeatability	mm	±0.01			
Lost motion	mm	0.1 or less			
Static allowable moment	N·m	MP:103 MY:103 MR:144			
Motor power supply voltage		24 VDC ±10%			
Brake	Model, power supply voltage	Non-excitation operation, 24 VDC ±10%			
	Power consumption W	6.1			
	Holding force N	420	168	84	42

*1 Load capacity varies according to acceleration/deceleration and speed. Refer to page 44 for details.
*2 The maximum speed may decrease depending on the conditions.

[Common specifications]

Insulation resistance	10MΩ, 500 VDC
Withstand voltage	500 VAC for 1 minute
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
Degree of protection	IP40

* The operating ambient temperature of EBS-**G is 10°C to 40°C.

Stroke and max. speed

[EBS-05M (applicable controller ECR)]

(mm/s)

Thread lead	Power supply voltage	Stroke length						
		50 to 500	550	600	650	700	750	800
2	48 VDC	130	120	120	105	95	80	70
	24 VDC	70	70	70	70	70	70	70
5	48 VDC	300	300	300	270	235	200	185
	24 VDC	250	250	250	250	235	200	185
10	48 VDC	700	625	625	540	475	415	370
	24 VDC	600	600	600	540	475	415	370
20	48 VDC	1100	1100	1100	1080	950	830	740
	24 VDC	900	900	900	900	900	830	740

[EBS-05G (applicable controller ECG)]

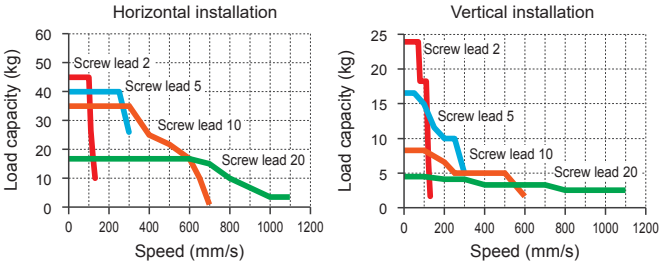
(mm/s)

Thread lead	Power supply voltage	Stroke length				
		50 to 600	650	700	750	800
2	24 VDC	120	105	95	80	70
5	24 VDC	290	270	235	200	185
10	24 VDC	500	500	475	415	370
20	24 VDC	850	850	850	850	740

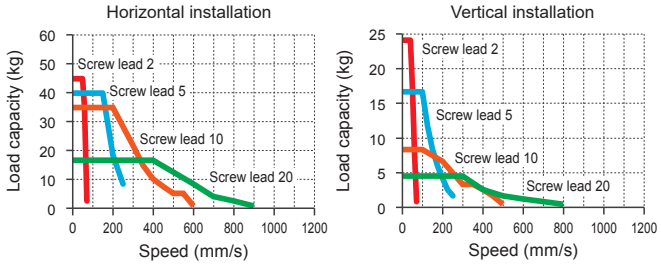
Speed and load capacity

[EBS-05M (applicable controller ECR)]

· At 48 VDC

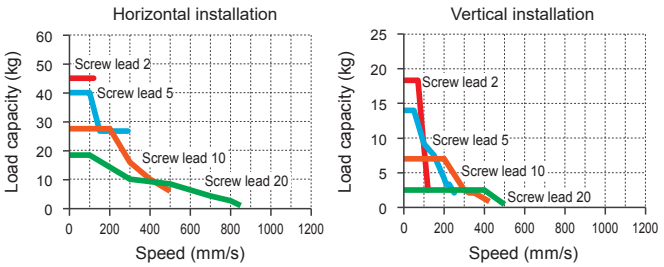


· At 24 VDC



[EBS-05G (applicable controller ECG)]

· At 24 VDC



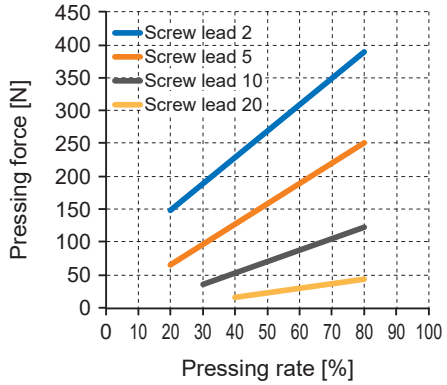
* Incorrectly applying a 48 VDC power supply could result in damage.

* At acceleration of 0.3 G.

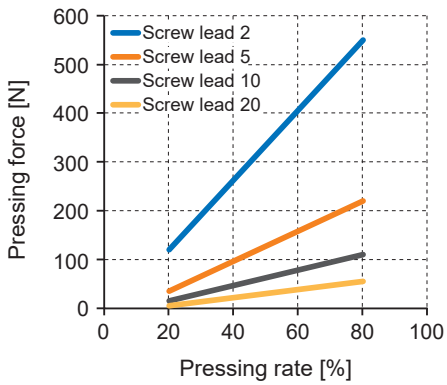
* Confirm each of the pages listed below for details.
ECR: Page 42
ECG: Page 44

Pressing force

[EBS-05M (applicable controller ECR)]



[EBS-05G (applicable controller ECG)]



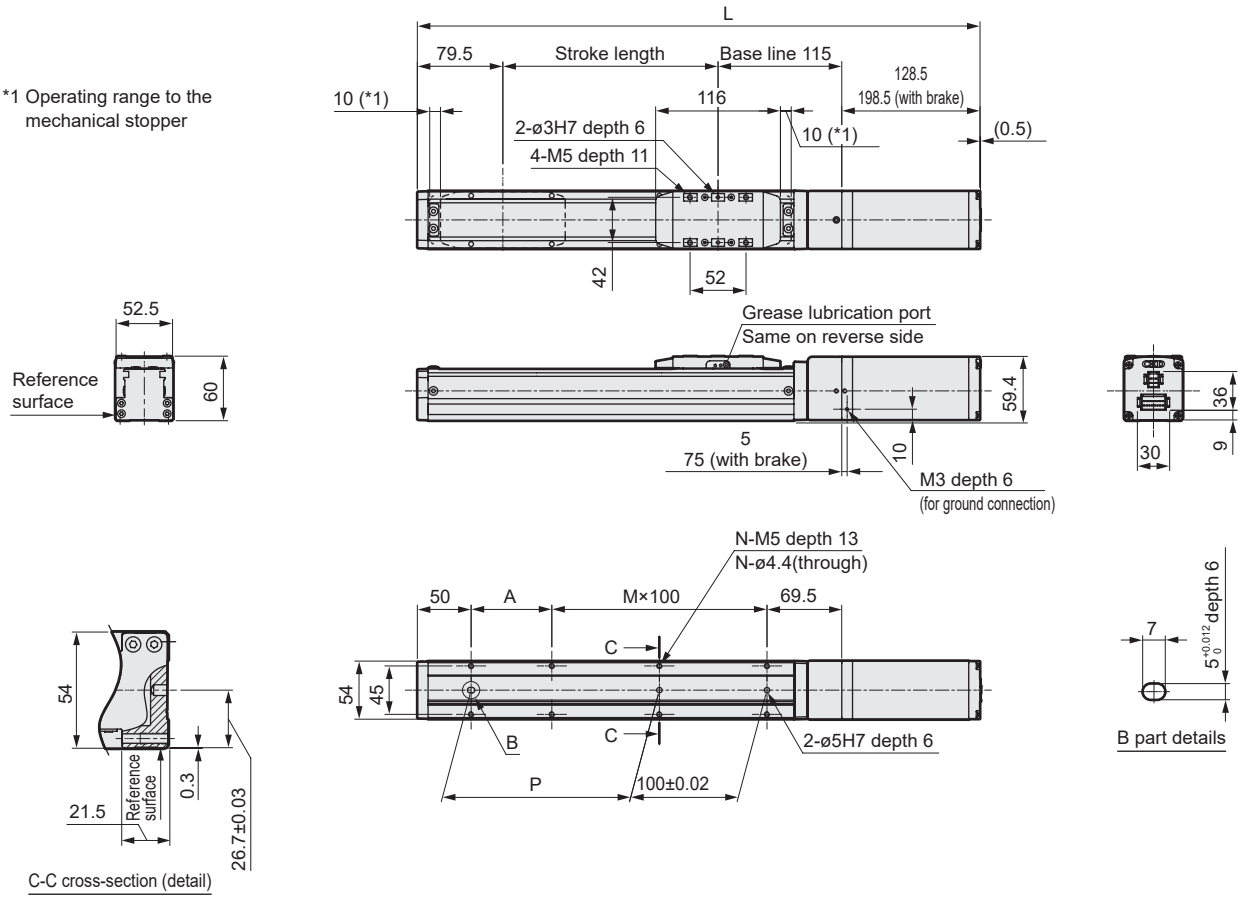
* The above pressing force is a reference value. Variation may occur according to conditions such as pressing speed.

EBS-05* E

Dimensions: Straight motor mounting

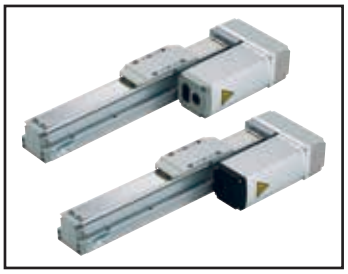
● EBS-05*E

*1 Operating range to the mechanical stopper



Stroke code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800
Stroke length (mm)		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	Without brake	373	423	473	523	573	623	673	723	773	823	873	923	973	1023	1073	1123
	With brake	443	493	543	593	643	693	743	793	843	893	943	993	1043	1093	1143	1193
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
Weight (kg)	Without brake	2.8	2.9	3.1	3.2	3.4	3.5	3.7	3.8	4.0	4.1	4.2	4.4	4.5	4.7	4.8	5.0
	With brake	3.5	3.6	3.8	3.9	4.1	4.2	4.4	4.5	4.7	4.8	4.9	5.1	5.2	5.4	5.5	5.7

Notes



Electric actuator Slider

EBS-05**

Motor side mounting (left, right, bottom)

□42 Stepper motor

How to order

EBS - 05 (A) M (B) R (C) - 05 (D) 0300 (E) N (F) A (G) N - C (H) S03

(A) Body size

05	Body width 54 mm

(B) Applicable controller *1

M	ECR
G	ECG

(C) Motor mounting direction *2

R	Right mounting
D	Bottom mounting
L	Left mounting

(D) Screw lead

02	2 mm
05	5 mm
10	10 mm
20	20 mm

(E) Stroke length *2

0050 to 0800	50 mm (In 50 mm increments) 800 mm

(F) Brake *3

N	None
B	Yes

(G) Encoder *1

A	Battery-less absolute encoder (for ECR)
B	Battery-less absolute encoder (for ECG)
C	Incremental encoder (for ECG)

(H) Relay cable *4

N00	None
S01	Fixing cable 1 m
S03	Fixing cable 3 m
S05	Fixing cable 5 m
S10	Fixing cable 10 m
R01	Movable cable 1 m
R03	Movable cable 3 m
R05	Movable cable 5 m
R10	Movable cable 10 m

*1 Select the controller from page 93 or page 105.
Select encoder "A" when an ECR controller is selected and "B" or "C" when an ECG controller is selected.
*2 If "D" is selected for the motor mounting direction, select a stroke length from "0250 (250 mm)" to "0800 (800 mm)".
*3 Select "Yes" for vertical use.
*4 Refer to page 103 for ECR and page 116 for ECG relay cable dimensions.

Product subject to the EAR (EAR99)

Specifications

[EBS-05M (applicable controller ECR)]

Motor		□42 Stepper motor			
Encoder type		Battery-less absolute encoder			
Drive method		Ball screw ø12			
Stroke length	mm	50 to 800			
Thread lead	mm	2	5	10	20
Max. load capacity *1 *2	kg Horizontal	45 (45)	40 (40)	35 (35)	16.6 (16.6)
	kg Vertical	24 (24)	16.6 (16.6)	8.3 (8.3)	4.5 (4.5)
Operation speed range *3 *4	mm/s	2 to 130 (70)	6 to 300 (250)	12 to 600 (500)	25 to 1100 (900)
Maximum pressing force	N	385	250	121	44
Press operation speed range	mm/s	5 to 25	5 to 25	5 to 30	5 to 30
Repeatability	mm	±0.01			
Lost motion	mm	0.1 or less			
Static allowable moment	N·m	MP: 103, MY: 103, MR: 144			
Motor power supply voltage		24 VDC ±10% or 48 VDC ±10%			
Brake	Model, power supply voltage	Non-excitation operation, 24 VDC ±10%			
	Power consumption W	7			
	Holding force N	471	188	94	47

*1 The values in ( ) are at 24 VDC.
*2 Load capacity varies according to acceleration/deceleration and speed.
Refer to page 42 for details.
*3 The maximum speed values in ( ) are at 24 VDC.
*4 The maximum speed may decrease depending on the conditions.

[EBS-05G (applicable controller ECG)]

Motor		□42 Stepper motor			
Encoder type		Battery-less absolute encoder/ incremental encoder			
Drive method		Ball screw ø12			
Stroke length	mm	50 to 800			
Thread lead	mm	2	5	10	20
Max. load capacity *1	kg Horizontal	45.0	40.0	27.5	18.3
	kg Vertical	18.3	10.0	3.3	0.8
Operation speed range*2	mm/s	2 to 100	6 to 250	12 to 400	25 to 700
Maximum pressing force	N	550	220	110	55
Press operation speed range	mm/s	5 to 20	5 to 20	5 to 20	5 to 20
Repeatability	mm	±0.01			
Lost motion	mm	0.1 or less			
Static allowable moment	N·m	MP: 103, MY: 103, MR: 144			
Motor power supply voltage		24 VDC ±10%			
Brake	Model, power supply voltage	Non-excitation operation, 24 VDC ±10%			
	Power consumption W	6.1			
	Holding force N	420	168	84	42

*1 Load capacity varies according to acceleration/deceleration and speed.
Refer to page 44 for details.
*2 The maximum speed may decrease depending on the conditions.

[Common specifications]

Insulation resistance	10MΩ, 500 VDC
Withstand voltage	500 VAC for 1 minute
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
Degree of protection	IP40

*The operating ambient temperature of EBS-**G is 10°C to 40°C.

Stroke and max. speed

[EBS-05M (applicable controller ECR)]

(mm/s)

Thread lead	Power supply voltage	Stroke length						
		50 to 500	550	600	650	700	750	800
2	48 VDC	130	120	120	105	95	80	70
	24 VDC	70	70	70	70	70	70	70
5	48 VDC	300	300	300	270	235	200	185
	24 VDC	250	250	250	250	235	200	185
10	48 VDC	600	600	600	540	475	415	370
	24 VDC	500	500	500	500	475	415	370
20	48 VDC	1100	1100	1100	1080	950	830	740
	24 VDC	900	900	900	900	900	830	740

[EBS-05G (applicable controller ECG)]

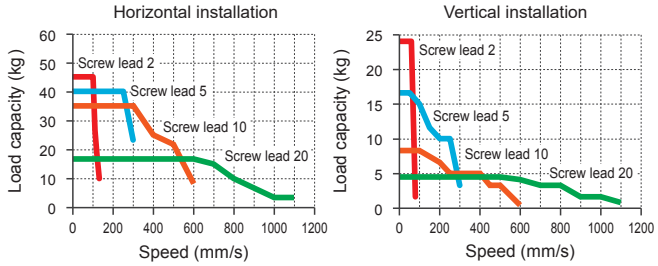
(mm/s)

Thread lead	Power supply voltage	Stroke length			
		50 to 650	700	750	800
2	24 VDC	100	95	80	70
5	24 VDC	250	235	200	185
10	24 VDC	400	400	400	370
20	24 VDC	700	700	700	700

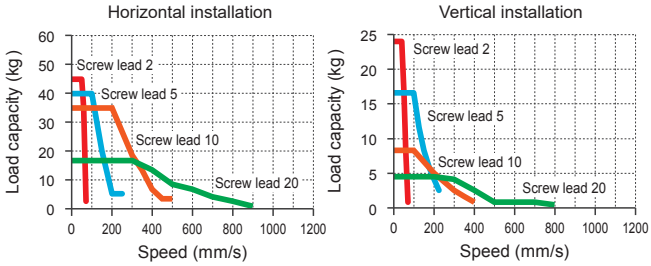
Speed and load capacity

[EBS-05M (applicable controller ECR)]

· At 48 VDC

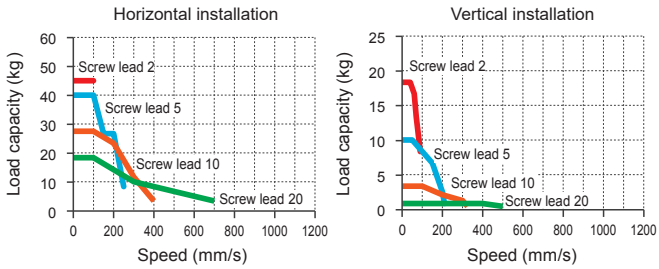


· At 24 VDC



[EBS-05G (applicable controller ECG)]

· At 24 VDC



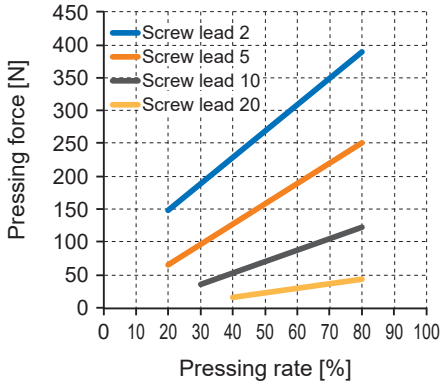
* Incorrectly applying a 48 VDC power supply could result in damage.

* At acceleration of 0.3 G.

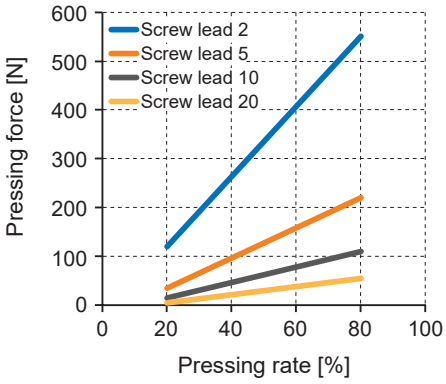
* Confirm each of the pages listed below for details.
ECR: Page 42
ECG: Page 44

Pressing force

[EBS-05M (applicable controller ECR)]



[EBS-05G (applicable controller ECG)]



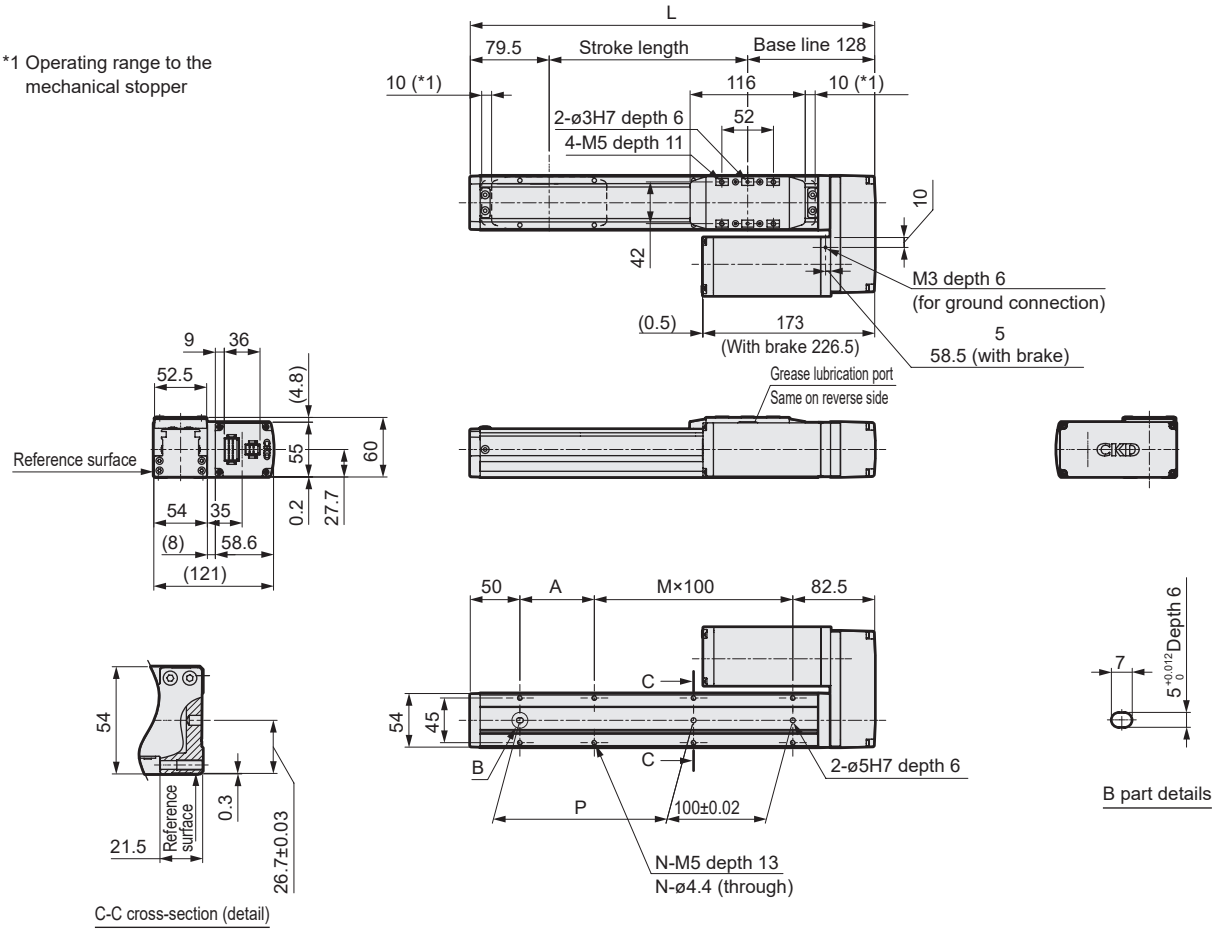
* The above pressing force is a reference value. Variation may occur according to conditions such as pressing speed.

EBS-05**

Dimensions: Motor right-side mounting

● EBS-05*R

*1 Operating range to the mechanical stopper

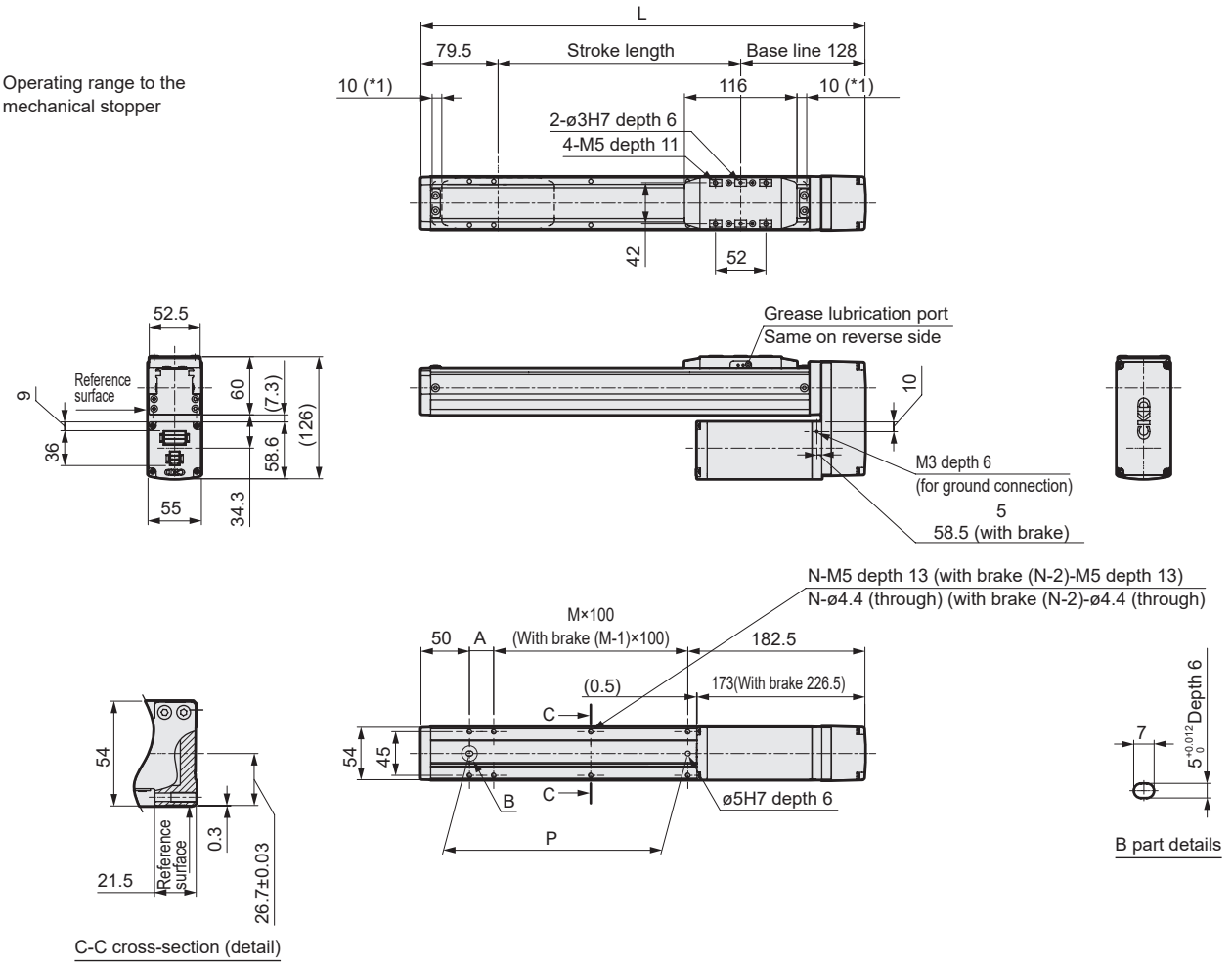


Stroke code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800
Stroke length (mm)		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L		257.5	307.5	357.5	407.5	457.5	507.5	557.5	607.5	657.5	707.5	757.5	807.5	857.5	907.5	957.5	1007.5
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
Weight (kg)	Without brake	2.7	2.8	3.0	3.1	3.4	3.5	3.6	3.8	3.9	4.0	4.2	4.3	4.5	4.6	4.7	5.1
	With brake	3.4	3.5	3.7	3.8	4.1	4.2	4.3	4.5	4.6	4.7	4.9	5.0	5.2	5.3	5.4	5.8

Dimensions: Motor bottom mounting

● EBS-05*D

*1 Operating range to the mechanical stopper



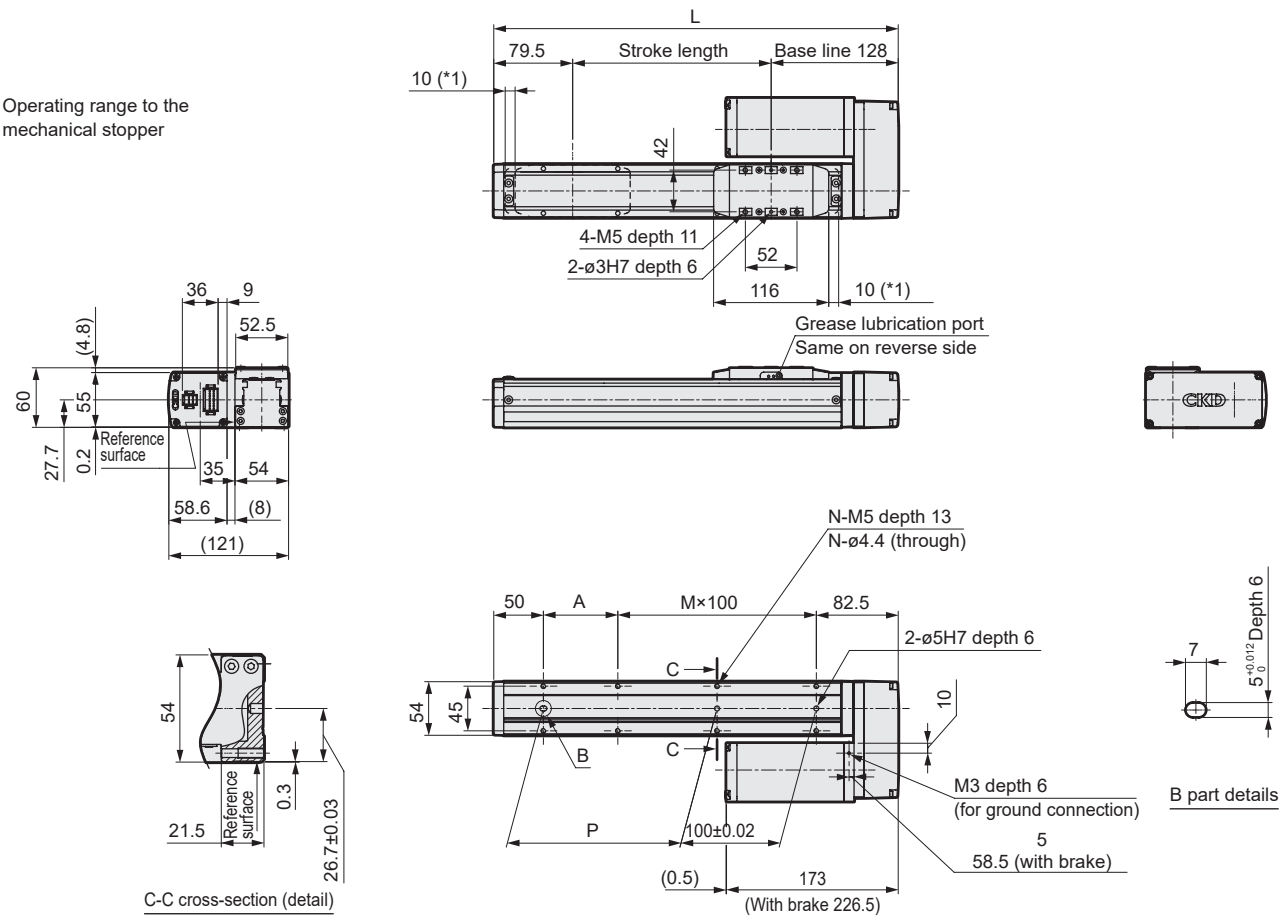
Stroke code		0250	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800
Stroke length (mm)		250	300	350	400	450	500	550	600	650	700	750	800
L		457.5	507.5	557.5	607.5	657.5	707.5	757.5	807.5	857.5	907.5	957.5	1007.5
A		25	75	25	75	25	75	25	75	25	75	25	75
M		2	2	3	3	4	4	5	5	6	6	7	7
N		8	8	10	10	12	12	14	14	16	16	18	18
P		225	275	325	375	425	475	525	575	625	675	725	775
Weight (kg)	Without brake	3.4	3.5	3.6	3.8	3.9	4.0	4.2	4.3	4.5	4.6	4.7	5.1
	With brake	4.1	4.2	4.3	4.5	4.6	4.7	4.9	5.0	5.2	5.3	5.4	5.8

EBS-05**

Dimensions: Motor left-side mounting

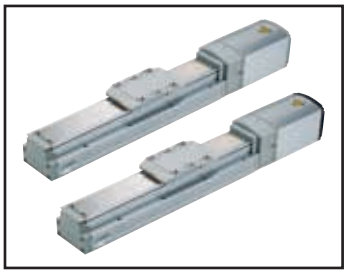
● EBS-05*L

*1 Operating range to the mechanical stopper



Stroke code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800
Stroke length (mm)		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L		257.5	307.5	357.5	407.5	457.5	507.5	557.5	607.5	657.5	707.5	757.5	807.5	857.5	907.5	957.5	1007.5
A		25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P		25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
Weight (kg)	Without brake	2.7	2.8	3.0	3.1	3.4	3.5	3.6	3.8	3.9	4.0	4.2	4.3	4.5	4.6	4.7	5.1
	With brake	3.4	3.5	3.7	3.8	4.1	4.2	4.3	4.5	4.6	4.7	4.9	5.0	5.2	5.3	5.4	5.8

Notes



Electric actuator Slider

EBS-08*E

Straight motor mounting

□56 Stepper motor

How to order

EBS - 08 M E - 05 0300 N A N - C S03

(A) (B) (C) (D) (E) (F) (G) (H)

(A) Body size

08	Body width 82 mm

(B) Applicable controller *1

M	ECR
G	ECG

(C) Motor mounting direction

E	Straight mounting

(D) Screw lead

05	5 mm
10	10 mm
20	20 mm

(E) Stroke length

0050 to 1100	50 mm (In 50 mm increments) 1100 mm

(F) Brake *2

N	None
B	Yes

(G) Encoder *1

A	Battery-less absolute encoder (for ECR)
B	Battery-less absolute encoder (for ECG)
C	Incremental encoder (for ECG)

(H) Relay cable *3

N00	None
S01	Fixing cable 1 m
S03	Fixing cable 3 m
S05	Fixing cable 5 m
S10	Fixing cable 10 m
R01	Movable cable 1 m
R03	Movable cable 3 m
R05	Movable cable 5 m
R10	Movable cable 10 m

*1 Select the controller from page 93 or page 105.
Select encoder "A" when an ECR controller is selected and "B" or "C" when an ECG controller is selected.
*2 Select "Yes" for vertical use.
*3 Refer to page 103 for ECR and page 116 for ECG relay cable dimensions.

Product subject to the EAR (EAR99)

Specifications

[EBS-08M (applicable controller ECR)]

Motor		□56 Stepper motor		
Encoder type		Battery-less absolute encoder		
Drive method		Ball screw ø16		
Stroke length	mm	50 to 1100		
Thread lead	mm	5	10	20
Max. load capacity *1 *2	kg Horizontal	80 (80)	70 (70)	43.3 (43.3)
	kg Vertical	40 (38.3)	18.3 (18.3)	10 (10)
Operation speed range *3 *4	mm/s	6 to 250 (150)	12 to 550 (300)	25 to 1100 (600)
Maximum pressing force	N	970	477	250
Press operation speed range	mm/s	5 to 25	5 to 30	5 to 30
Repeatability	mm	±0.01		
Lost motion	mm	0.1 or less		
Static allowable moment	N·m	MP: 203, MY: 203, MR: 336		
Motor power supply voltage		24 VDC ±10% or 48 VDC ±10%		
Brake	Model, power supply voltage	Non-excitation operation, 24 VDC ±10%		
	Power consumption W	8		
	Holding force N	754	377	188

*1 The values in ( ) are at 24 VDC.
*2 Load capacity varies according to acceleration/deceleration and speed. Refer to page 42 for details.
*3 The maximum speed values in ( ) are at 24 VDC.
*4 The maximum speed may decrease depending on the conditions.

[EBS-08G (applicable controller ECG)]

Motor		□56 Stepper motor		
Encoder type		Battery-less absolute encoder Incremental encoder		
Drive method		Ball screw ø16		
Stroke length	mm	50 to 1100		
Thread lead	mm	5	10	20
Max. load capacity *1	kg Horizontal	80.0	70.0	30.0
	kg Vertical	43.3	28.3	3.3
Operation speed range *2	mm/s	6 to 150	12 to 250	25 to 500
Maximum pressing force	N	965	482	241
Press operation speed range	mm/s	5 to 20	5 to 20	5 to 20
Repeatability	mm	±0.01		
Lost motion	mm	0.1 or less		
Static allowable moment	N·m	MP: 203, MY: 203, MR: 336		
Motor power supply voltage		24 VDC ±10%		
Brake	Model, power supply voltage	Non-excitation operation, 24 VDC ±10%		
	Power consumption W	7.2		
	Holding force N	768	384	192

*1 Load capacity varies according to acceleration/deceleration and speed. Refer to page 44 for details.
*2 The maximum speed may decrease depending on the conditions.

[Common specifications]

Insulation resistance	10MΩ, 500 VDC
Withstand voltage	500 VAC for 1 minute
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
Degree of protection	IP40

* The operating ambient temperature of EBS-**G is 10°C to 40°C.

Stroke and max. speed

[EBS-08M (applicable controller ECR)]

(mm/s)

Thread lead	Power supply voltage	Stroke length										
		50 to 600	650	700	750	800	850	900	950	1000	1050	1100
5	48 VDC	250	250	250	250	220	200	180	135	120	110	100
	24 VDC	150	150	150	150	150	150	150	135	120	110	100
10	48 VDC	550	550	550	510	450	410	370	270	240	225	200
	24 VDC	300	300	300	300	300	300	300	270	240	225	200
20	48 VDC	1100	1000	1000	1000	910	820	740	540	490	450	410
	24 VDC	600	600	600	600	600	600	600	540	490	450	410

[EBS-08G (applicable controller ECG)]

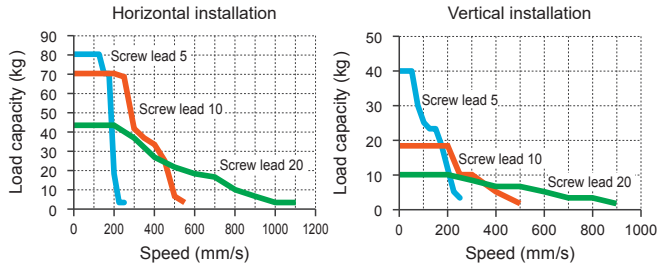
(mm/s)

Thread lead	Power supply voltage	Stroke length				
		50 to 900	950	1000	1050	1100
5	24 VDC	150	135	120	110	100
10	24 VDC	250	250	240	225	200
20	24 VDC	500	500	490	450	410

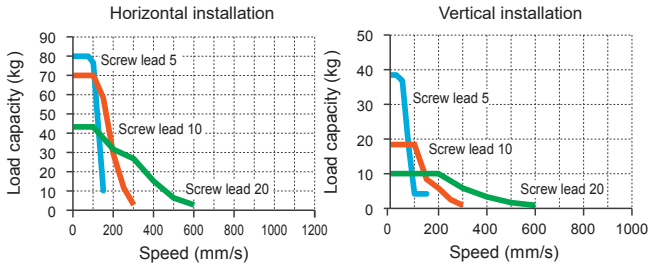
Speed and load capacity

[EBS-08M (applicable controller ECR)]

· At 48 VDC

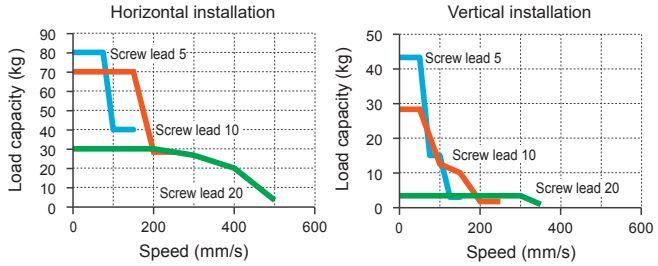


· At 24 VDC



[EBS-08G (applicable controller ECG)]

· At 24 VDC



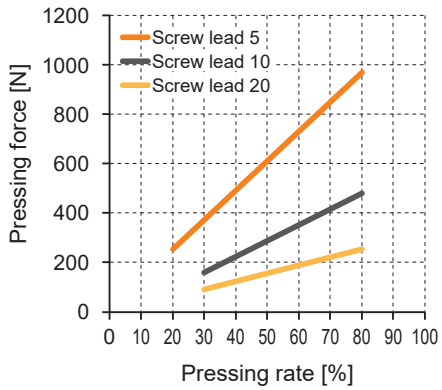
* Incorrectly applying a 48 VDC power supply could result in damage.

* At acceleration of 0.3 G.

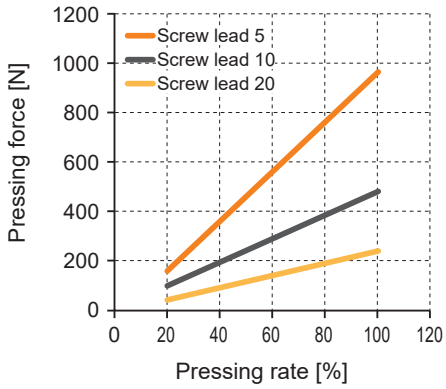
* Confirm each of the pages listed below for details.
ECR: Page 42
ECG: Page 44

Pressing force

[EBS-08M (applicable controller ECR)]



[EBS-08G (applicable controller ECG)]



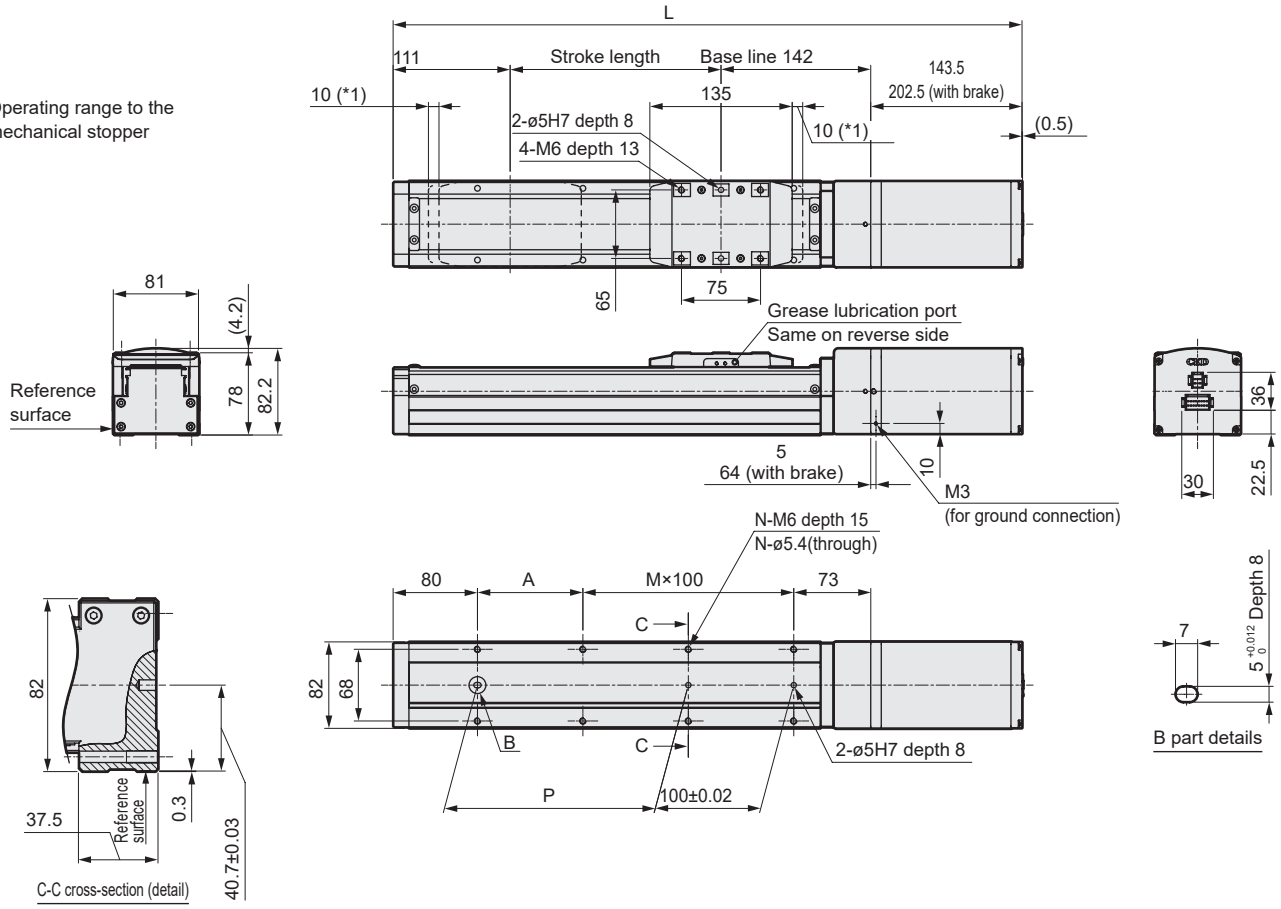
* The above pressing force is a reference value. Variation may occur according to conditions such as pressing speed.

EBS-08*E

Dimensions: Straight motor mounting

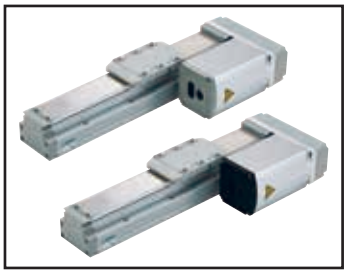
● EBS-08*E

*1 Operating range to the mechanical stopper



Stroke code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800	0850	0900	0950	1000	1050	1100
Stroke length (mm)		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
L	Without brake	446.5	496.5	546.5	596.5	646.5	696.5	746.5	796.5	846.5	896.5	946.5	996.5	1046.5	1096.5	1146.5	1196.5	1246.5	1296.5	1346.5	1396.5	1446.5	1496.5
	With brake	505.5	555.5	605.5	655.5	705.5	755.5	805.5	855.5	905.5	955.5	1005.5	1055.5	1105.5	1155.5	1205.5	1255.5	1305.5	1355.5	1405.5	1455.5	1505.5	1555.5
A		50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
Weight (kg)	Without brake	6.7	7.0	7.3	7.6	8.0	8.3	8.6	9.0	9.3	9.6	9.9	10.3	10.6	10.9	11.2	11.6	11.9	12.2	12.6	12.9	13.2	13.5
	With brake	8.0	8.3	8.6	8.9	9.3	9.6	9.9	10.3	10.6	10.9	11.2	11.6	11.9	12.2	12.5	12.9	13.2	13.5	13.9	14.2	14.5	14.8

Notes



Electric actuator Slider

EBS-08**

Motor side mounting (left, right, bottom)

□56 Stepper motor

How to order

EBS - 08 M R - 05 0300 N A N - C S03

(A) (B) (C) (D) (E) (F) (G) (H)

(A) Body size

08	Body width 82 mm

(B) Applicable controller *1

M	ECR
G	ECG

(C) Motor mounting direction *2

R	Right mounting
D	Bottom mounting
L	Left mounting

(D) Screw lead

05	5 mm
10	10 mm
20	20 mm

(E) Stroke length *2

0050 to 1100	50 mm (In 50 mm increments) 1100 mm

(F) Brake *3

N	None
B	Yes

(G) Encoder *1

A	Battery-less absolute encoder (for ECR)
B	Battery-less absolute encoder (for ECG)
C	Incremental encoder (for ECG)

(H) Relay cable *4

N00	None
S01	Fixing cable 1 m
S03	Fixing cable 3 m
S05	Fixing cable 5 m
S10	Fixing cable 10 m
R01	Movable cable 1 m
R03	Movable cable 3 m
R05	Movable cable 5 m
R10	Movable cable 10 m

*1 Select the controller from page 93 or page 105.
Select encoder "A" when an ECR controller is selected and "B" or "C" when an ECG controller is selected.
*2 If "D" is selected for the motor mounting direction, select a stroke length from "0250 (250 mm)" to "1100 (1100 mm)".
*3 Select "Yes" for vertical use.
*4 Refer to page 103 for ECR and page 116 for ECG relay cable dimensions.

Product subject to the EAR (EAR99)

Specifications

[EBS-08M (applicable controller ECR)]

Motor		□56 Stepper motor		
Encoder type		Battery-less absolute encoder		
Drive method		Ball screw ø16		
Stroke length	mm	50 to 1100		
Thread lead	mm	5	10	20
Max. load capacity *1 *2	kg Horizontal	80 (80)	70 (70)	43.3 (43.3)
	kg Vertical	40 (36.6)	18.3 (16.6)	8.3 (8.3)
Operation speed range *3 *4	mm/s	6 to 225 (100)	12 to 550 (300)	25 to 1000 (500)
Maximum pressing force	N	970	477	250
Press operation speed range	mm/s	5 to 25	5 to 30	5 to 30
Repeatability	mm	±0.01		
Lost motion	mm	0.1 or less		
Static allowable moment	N·m	MP: 203, MY: 203, MR: 336		
Motor power supply voltage		24 VDC ±10% or 48 VDC ±10%		
Brake	Model, power supply voltage	Non-excitation operation, 24 VDC ±10%		
	Power consumption W	8		
	Holding force N	754	377	188

*1 The values in ( ) are at 24 VDC.
*2 Load capacity varies according to acceleration/deceleration and speed. Refer to page 42 for details.
*3 The maximum speed values in ( ) are at 24 VDC.
*4 The maximum speed may decrease depending on the conditions.

[EBS-08G (applicable controller ECG)]

Motor		□56 Stepper motor		
Encoder type		Battery-less absolute encoder Incremental encoder		
Drive method		Ball screw ø16		
Stroke length	mm	50 to 1100		
Thread lead	mm	5	10	20
Max. load capacity *1	kg Horizontal	80.0	70.0	30.0
	kg Vertical	33.3	18.3	3.3
Operation speed range *2	mm/s	6 to 125	12 to 250	25 to 400
Maximum pressing force	N	965	482	241
Press operation speed range	mm/s	5 to 20	5 to 20	5 to 20
Repeatability	mm	±0.01		
Lost motion	mm	0.1 or less		
Static allowable moment	N·m	MP: 203, MY: 203, MR: 336		
Motor power supply voltage		24 VDC ±10%		
Brake	Model, power supply voltage	Non-excitation operation, 24 VDC ±10%		
	Power consumption W	7.2		
	Holding force N	768	384	192

*1 Load capacity varies according to acceleration/deceleration and speed. Refer to page 44 for details.
*2 The maximum speed may decrease depending on the conditions.

[Common specifications]

Insulation resistance	10MΩ, 500 VDC
Withstand voltage	500 VAC for 1 minute
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
Degree of protection	IP40

* The operating ambient temperature of EBS-**G is 10°C to 40°C.

Stroke and max. speed

[EBS-08M (applicable controller ECR)]

(mm/s)

Thread lead	Power supply voltage	Stroke length								
		50 to 700	750	800	850	900	950	1000	1050	1100
5	48 VDC	225	225	220	200	180	135	120	110	100
	24 VDC	100	100	100	100	100	100	100	100	100
10	48 VDC	550	510	450	410	370	270	240	225	200
	24 VDC	300	300	300	300	300	270	240	225	200
20	48 VDC	1000	1000	910	820	740	540	490	450	410
	24 VDC	500	500	500	500	500	500	490	450	410

[EBS-08G (applicable controller ECG)]

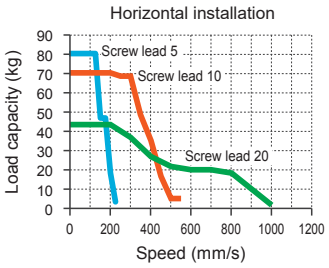
(mm/s)

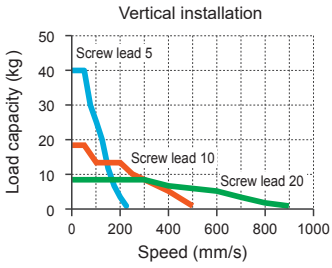
Thread lead	Power supply voltage	Stroke length			
		50 to 600	1000	1050	1100
5	24 VDC	125	120	110	100
10	24 VDC	250	240	225	200
20	24 VDC	400	400	400	400

Speed and load capacity

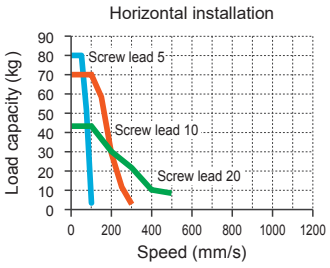
[EBS-08M (applicable controller ECR)]

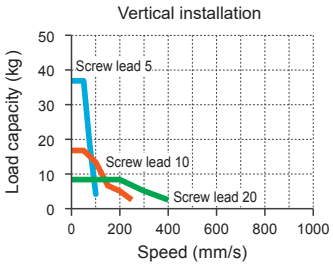
· At 48 VDC





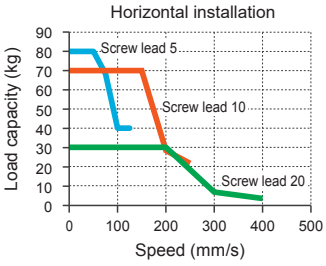
· At 24 VDC

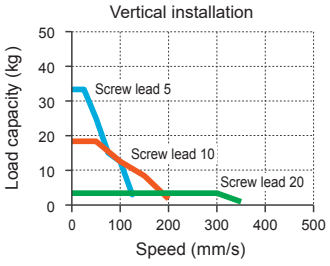




[EBS-08G (applicable controller ECG)]

· At 24 VDC





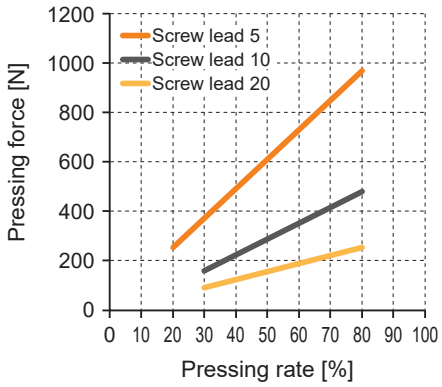
* Incorrectly applying a 48 VDC power supply could result in damage.

* At acceleration of 0.3 G.

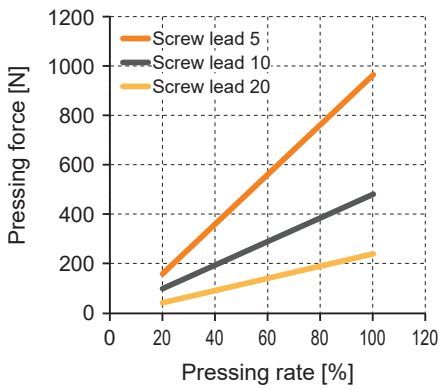
* Confirm each of the pages listed below for details.
ECR: Page 42
ECG: Page 44

Pressing force

[EBS-08M (applicable controller ECR)]



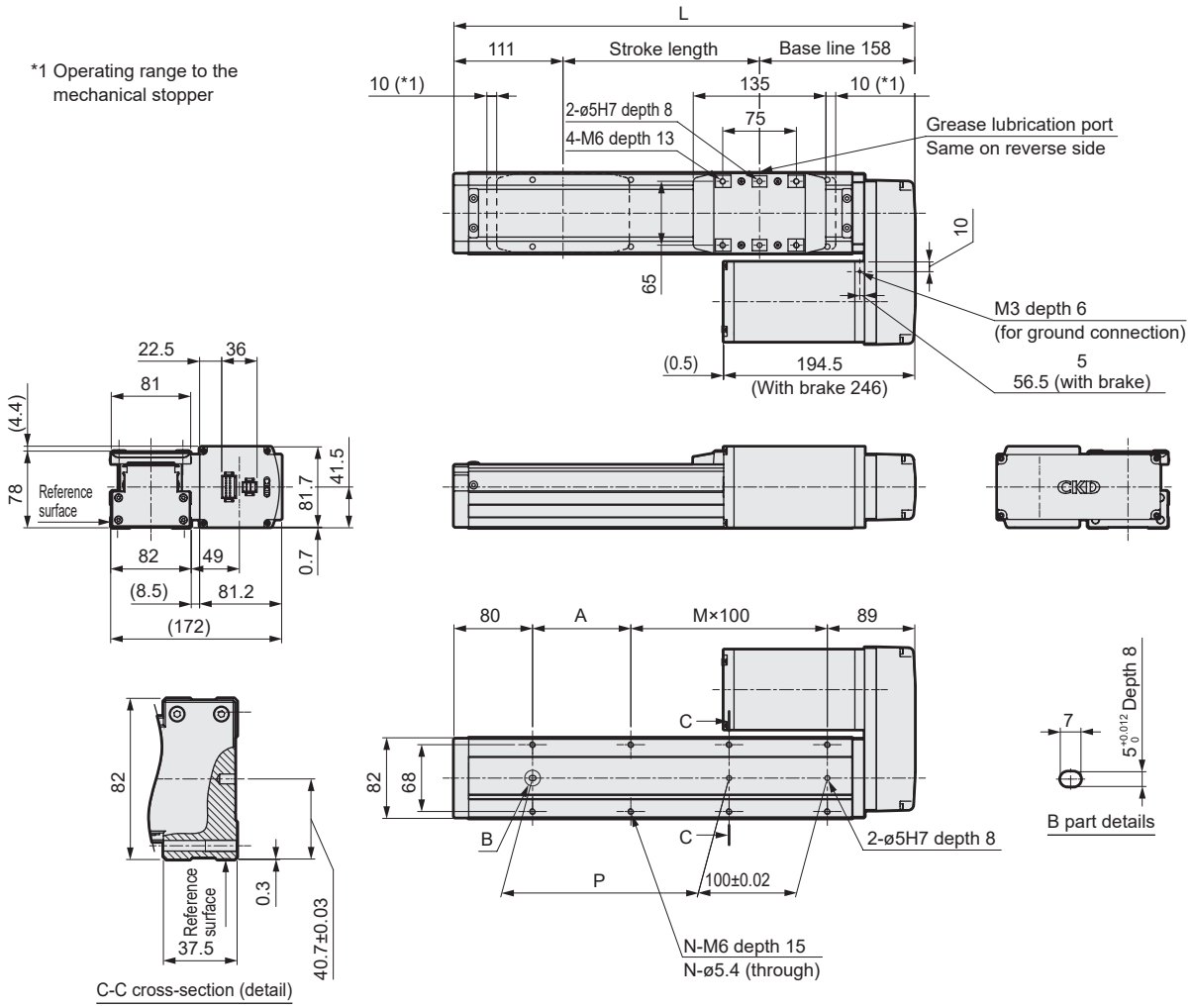
[EBS-08G (applicable controller ECG)]



* The above pressing force is a reference value. Variation may occur according to conditions such as pressing speed.

Dimensions: Motor right-side mounting

● EBS-08*R



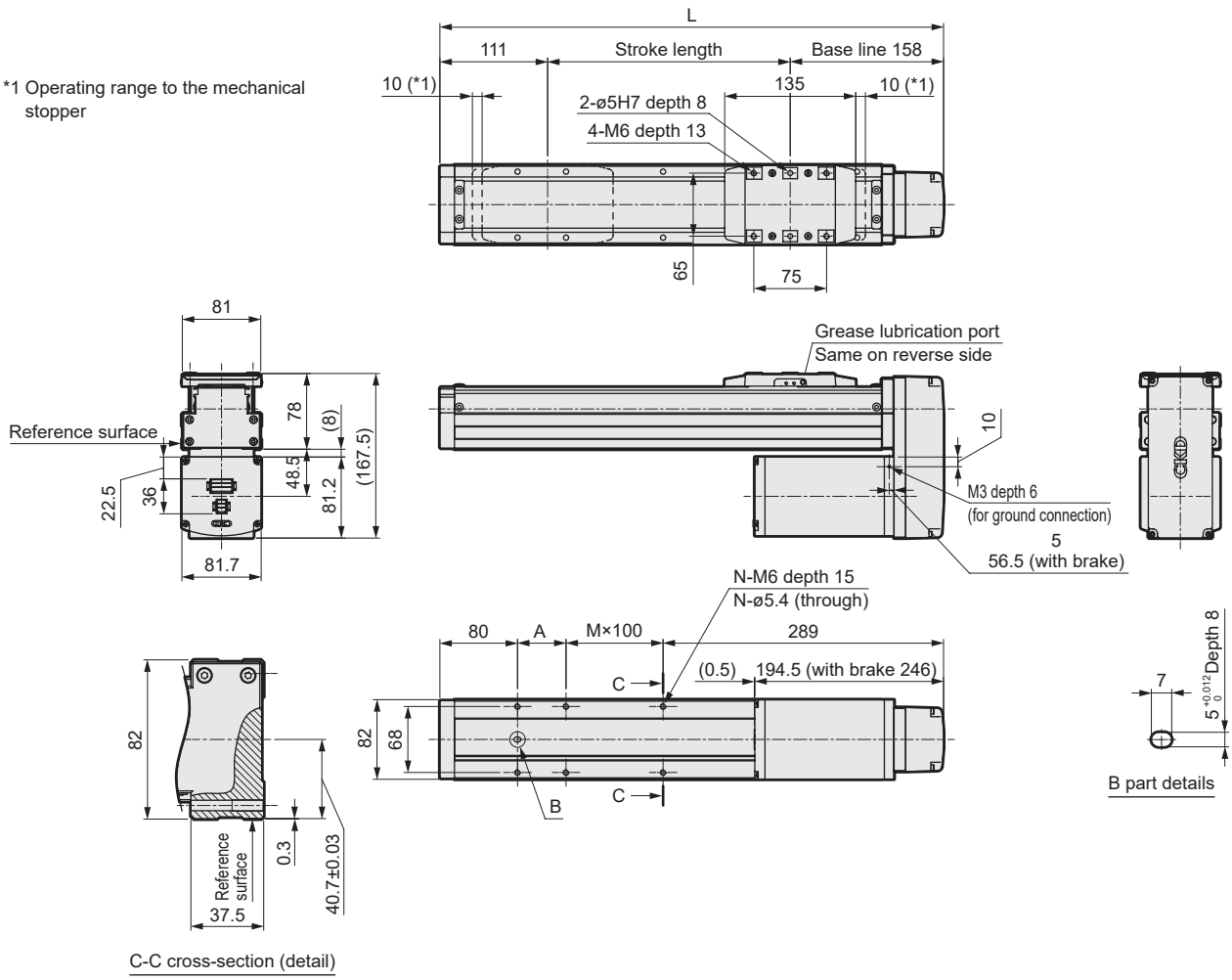
Stroke code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800
Stroke length (mm)		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L		319	369	419	469	519	569	619	669	719	769	819	869	919	969	1019	1069
A		50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Weight (kg)	Without brake	5.7	6.1	6.5	6.8	7.2	7.5	7.8	8.2	8.5	8.8	9.2	9.5	9.9	10.2	10.5	10.8
	With brake	7.0	7.4	7.8	8.1	8.5	8.8	9.1	9.5	9.8	10.1	10.5	10.8	11.2	11.5	11.8	12.1

Stroke code		0850	0900	0950	1000	1050	1100
Stroke length (mm)		850	900	950	1000	1050	1100
L		1119	1169	1219	1269	1319	1369
A		50	100	50	100	50	100
M		9	9	10	10	11	11
N		22	22	24	24	26	26
P		850	900	950	1000	1050	1100
Weight (kg)	Without brake	11.2	11.4	11.8	12.1	12.5	12.9
	With brake	12.5	12.7	13.1	13.4	13.8	14.2

Dimensions: Motor bottom mounting

● EBS-08*D

*1 Operating range to the mechanical stopper



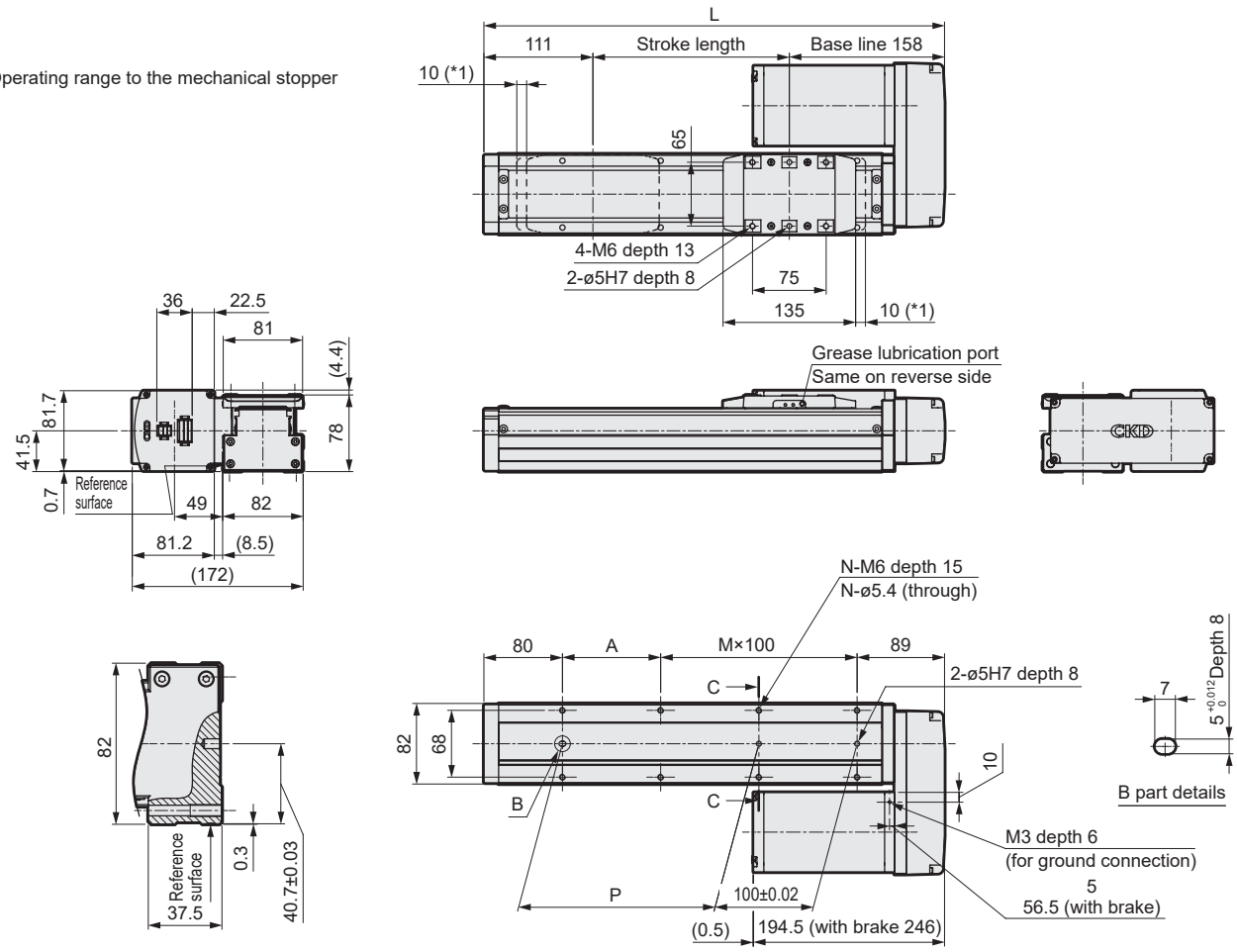
Stroke code		0250	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800	0850	0900	0950	1000
Stroke length (mm)		250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
L		519	569	619	669	719	769	819	869	919	969	1019	1069	1119	1169	1219	1269
A		50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
Weight (kg)	Without brake	7.2	7.5	7.8	8.2	8.5	8.8	9.2	9.5	9.9	10.2	10.5	10.8	11.2	11.4	11.8	12.1
	With brake	8.5	8.8	9.1	9.5	9.8	10.1	10.5	10.8	11.2	11.5	11.8	12.1	12.5	12.7	13.1	13.4

Stroke code		1050	1100
Stroke length (mm)		1050	1100
L		1319	1369
A		50	100
M		9	9
N		22	22
Weight (kg)	Without brake	12.5	12.9
	With brake	13.8	14.2

Dimensions: Motor left-side mounting

● EBS-08*L

*1 Operating range to the mechanical stopper



Stroke code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800
Stroke length (mm)		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L		319	369	419	469	519	569	619	669	719	769	819	869	919	969	1019	1069
A		50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Weight (kg)	Without brake	5.7	6.1	6.5	6.8	7.2	7.5	7.8	8.2	8.5	8.8	9.2	9.5	9.9	10.2	10.5	10.8
	With brake	7.0	7.4	7.8	8.1	8.5	8.8	9.1	9.5	9.8	10.1	10.5	10.8	11.2	11.5	11.8	12.1

Stroke code		0850	0900	0950	1000	1050	1100
Stroke length (mm)		850	900	950	1000	1050	1100
L		1119	1169	1219	1269	1319	1369
A		50	100	50	100	50	100
M		9	9	10	10	11	11
N		22	22	24	24	26	26
P		850	900	950	1000	1050	1100
Weight (kg)	Without brake	11.2	11.4	11.8	12.1	12.5	12.9
	With brake	12.5	12.7	13.1	13.4	13.8	14.2

Notes

Model selection

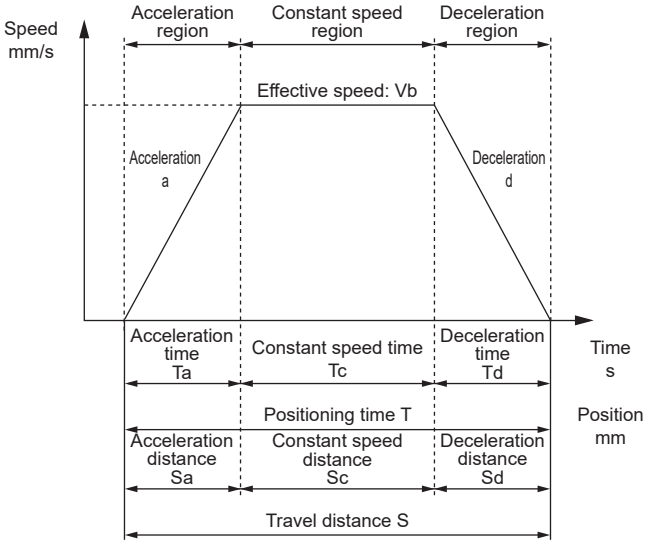
STEP1 Confirming load capacity

Load capacity varies with mounting orientation, screw lead, transport speed, acceleration/deceleration and power supply voltage.
Refer to the Series Variation (pages 2 to 5), the specification table for each model and the Table of Load Capacity by Speed and Acceleration/Deceleration to select the size and screw lead.

STEP2 Confirming positioning time

Calculate the positioning time with the selected product according to the following example and confirm that the required tact is achievable.

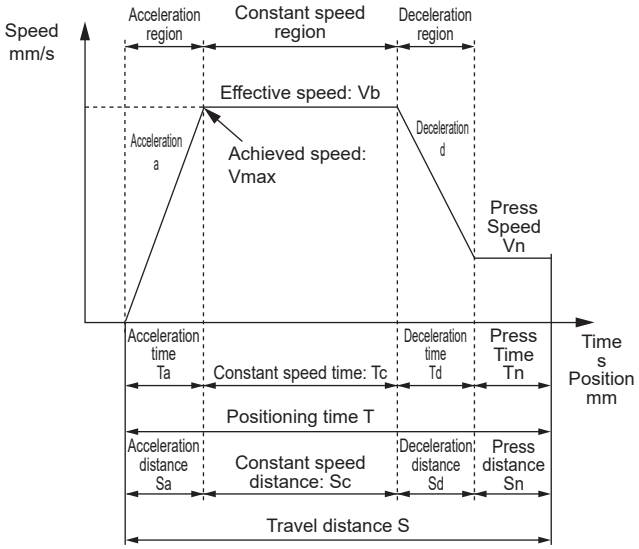
Positioning time for general transport operation



	Description	Code	Unit	Remarks
Set value	Set speed	V	mm/s	
	Set acceleration	a	mm/s^2	
	Set deceleration	d	mm/s^2	
	Travel distance	S	mm	
Calculated value	Achieved speed	Vmax	mm/s	$= \{2\times a\times d\times S/(a+d)\}^{1/2}$
	Effective speed	Vb	mm/s	Smaller of V and Vmax
	Acceleration time	Ta	s	=Vb/a
	Deceleration time	Td	s	=Vb/d
	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 that exceed the specifications.
* Depending on the deceleration speed and stroke, the trapezoidal velocity waveform may not form (the set speed may not be reached).
  In this case, select the effective speed (Vb) from the set speed (V) and the achieved speed (Vmax), whichever is smaller.
* Acceleration/deceleration varies depending on the product and the working conditions. Refer to pages 42 to 45 for details.
* While settling time depends on working conditions, it may take 0.2 seconds or so.
* 1G ≈ 9.8 m/s^2.

Positioning time for pressing operation



	Description	Code	Unit	Remarks
Set value	Set speed	V	mm/s	
	Set acceleration	a	mm/s^2	
	Set deceleration	d	mm/s^2	
	Travel distance	S	mm	
	Pressing speed	Vn	mm/s	
	Pressing distance	Sn	mm	
Calculated value	Achieved speed	Vmax	mm/s	$=\{2\times a\times d\times (S-Sn+Vn^2/2/d)/(a+d)\}^{1/2}$
	Effective speed	Vb	mm/s	The lesser value of V and Vmax
	Acceleration time	Ta	s	=Vb/a
	Deceleration time	Td	s	=(Vb-Vn)/d
	Constant speed time	Tc	s	=Sc/Vb
	Pressing time	Tn	s	=Sn/Vn
	Acceleration distance	Sa	mm	$=(a\times Ta^2)/2$
	Deceleration distance	Sd	mm	=((Vb+Vn)×Td)/2
	Constant speed distance	Sc	mm	=S-(Sa+Sd+Sn)
	Positioning time	T	s	=Ta+Tc+Td+Tn

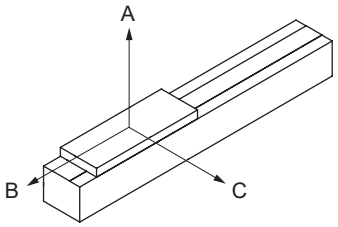
* Do not use at speeds that exceed the specifications.
* Pressing speed varies depending on the product.
* Depending on the deceleration speed and stroke, the trapezoidal velocity waveform may not form (the set speed may not be reached).
  In this case, select the effective speed (Vb) from the set speed (V) and the achieved speed (Vmax), whichever is smaller.
* Acceleration/deceleration varies depending on the product and the working conditions. Refer to pages 42 to 45 for details.
* While settling time depends on working conditions, it may take 0.2 seconds or so.
* 1G ≈ 9.8 m/s^2.

STEP3 Confirming static allowable load and moment

Make sure that the load overhang length during operation is within the allowable range (pages 38 to 40). Contact your CKD Sales representative for selection details.

Allowable overhang length (EBS Series)

[When installed horizontally]



[Allowable overhang length]

●EBS-04*

Motor mounting	Acceleration/ deceleration speed G	Thread lead	Weight kg	Overhang mm A	B	C
Straight / side / bottom	0.3	6	6	800	135	190
			11	595	70	95
			16	375	40	60
		12	4	800	190	255
			9	490	80	105
			13	320	50	65
	1.0	6	5	800	230	330
			10	590	110	160
			16	350	60	90
		12	3	710	260	320
			5	400	150	180
			8	230	90	105

●EBS-05*

Motor mounting	Acceleration/ deceleration speed G	Thread lead	Weight kg	Overhang mm A	B	C
Straight / side / bottom	0.3	2	15	1000	105	145
			30	815	45	65
			45	520	25	35
		5	13	820	95	125
			27	350	40	50
			40	210	20	30
		10	12	765	100	130
			23	355	45	60
			35	210	25	35
		20	5	1000	235	285
			11	520	100	120
			16	330	65	75
	1.0	5	13	760	120	170
			27	340	50	70
			40	210	30	45
		10	6	1000	235	310
			11	540	120	160
			16	220	70	85
		20	3	1000	440	555
			7	590	180	225
			10	400	125	150

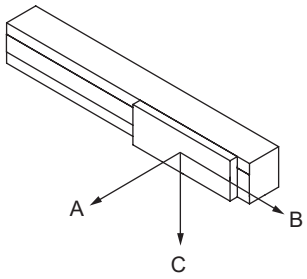
●EBS-08*

Motor mounting	Acceleration/ deceleration speed G	Thread lead	Weight kg	Overhang mm A	B	C
Straight / side / bottom	0.3	5	25	1000	185	305
			50	1000	85	140
			80	740	45	75
		10	25	1000	165	260
			45	875	85	135
			70	525	50	75
		20	14	1000	305	490
			29	1000	140	220
			43	920	90	140
	1.0	5	27	1000	195	325
			53	560	90	150
			80	350	55	90
		10	23	1000	230	385
			47	630	105	175
			70	410	65	110
		20	6	1000	665	970
			12	1000	325	465
			18	700	210	300

* Values are when the actuator operating life is 5,000km. (Screw lead = 2 mm is the value when the operating life is 1,000km.)
* The overhang direction is for a single-direction load.
* Dimensions A, B, and C are measured from the center of the table top.
* EBS-M Series stroke length: 350mm at max. speed under max. load capacity.
* Values may vary according to motor mounting direction and power supply voltage.
* For acceleration/deceleration and load capacity, refer to the Table of Load Capacity by Speed and Acceleration/Deceleration (pages 42 to 45).

Allowable overhang length (EBS Series)

[When wall-mounted]



[Allowable overhang length]

●EBS-04*

Motor mounting	Acceleration/ deceleration speed G	Thread lead	Weight kg	Overhang mm A	B	C
Straight / side / bottom	0.3	6	6	150	105	800
			11	60	40	490
			16	20	15	240
		12	4	220	165	800
			9	70	50	390
			13	30	25	210
	1.0	6	5	290	200	800
			10	120	80	600
			16	50	35	360
		12	3	290	230	680
			5	150	120	370
			8	75	60	200

●EBS-05*

Motor mounting	Acceleration/ deceleration speed G	Thread lead	Weight kg	Overhang mm A	B	C
Straight / side/ bottom	0.3	2	10	175	125	1000
			20	55	40	1000
			30	15	10	560
		5	7	205	150	1000
			13	80	60	685
			20	30	20	335
		10	7	195	145	1000
			13	75	55	575
			20	25	20	265
		20	5	245	200	1000
			11	80	65	400
			16	35	25	200
	1.0	2	7	280	200	1000
			13	120	90	770
			20	50	40	490
		5	6	270	200	995
			11	115	85	495
			16	60	40	290
		10	3	520	405	1000
			7	185	145	555
			10	110	90	360
		20	3	520	405	1000
			7	185	145	555
			10	110	90	360

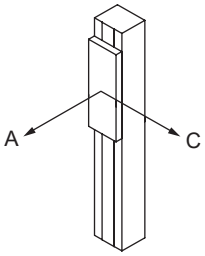
●EBS-08*

Motor mounting	Acceleration/ deceleration speed G	Thread lead	Weight kg	Overhang mm A	B	C
Straight / side/ bottom	0.3	5	25	250	155	1000
			50	85	50	1000
			70	40	20	680
		10	25	210	130	1000
			45	85	50	745
			70	25	15	345
		20	15	350	220	1000
			30	140	90	810
			43	90	55	790
	1.0	5	27	270	165	1000
			53	100	60	1000
			80	40	25	370
		10	23	330	200	1000
			47	125	75	660
			70	55	35	430
		20	6	920	630	1000
			12	425	290	1000
			18	260	180	660

* Values are when the actuator operating life is 5,000km. (Screw lead = 2 mm is the value when the operating life is 1,000km.)
* The overhang direction is for a single-direction load.
* Dimensions A, B, and C are measured from the center of the table top.
* EBS-M Series stroke length: 350mm at max. speed under max. load capacity.
* Values may vary according to motor mounting direction and power supply voltage.
* For acceleration/deceleration and load capacity, refer to the Table of Load Capacity by Speed and Acceleration/Deceleration (pages 42 to 45).

Allowable overhang length (EBS Series)

[When installed vertically]



[Allowable overhang length]

●EBS-04*

Motor mounting	Acceleration/ deceleration speed G	Thread lead	Weight kg	Overhang mm A	Overhang mm C
Straight / side/ bottom	0.3	6	3	315	315
			5	175	175
			8	90	90
		12	1	755	725
			2	355	340
			3	225	215
	0.5	6	3	315	315
			5	175	170
			8	90	90
		12	1	790	770
			2	375	365
			3	235	235

●EBS-05*

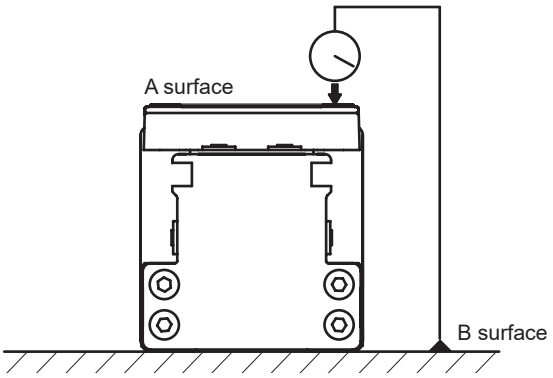
Motor mounting	Acceleration/ deceleration speed G	Thread lead	Weight kg	Overhang mm A	Overhang mm C
Straight / side/ bottom	0.3	2	8	175	175
			16	65	65
			24	25	25
		5	6	265	265
			11	120	120
			16	70	70
		10	3	525	525
			5	295	295
			8	170	170
		20	2	815	810
			3	525	525
			4.5	340	340
	0.5	2	8	185	185
			16	65	65
			24	30	30
		5	6	265	265
			11	120	120
			16	70	70
		10	3	525	525
			5	295	295
			8	170	170
		20	2	815	810
			3	525	525
			4.5	340	340

●EBS-08*

Motor mounting	Acceleration/ deceleration speed G	Thread lead	Weight kg	Overhang mm A	Overhang mm C
Straight / side/ bottom	0.3	5	15	325	325
			25	175	175
			40	90	90
		10	6	690	680
			12	315	315
			18	195	195
		20	3	1000	1000
			7	580	575
			10	390	390
	0.5	5	12	420	420
			23	195	195
			35	110	110
		10	6	900	900
			12	420	420
			18	235	235
		20	3	1000	1000
			5	835	825
			8	500	500

* Values are when the actuator operating life is 5,000km. (Screw lead = 2 mm is the value when the operating life is 1,000km.)
* The overhang direction is for a single-direction load.
* Dimensions A, B, and C are measured from the center of the table top.
* EBS-M Series stroke length: 350mm at max. speed under max. load capacity.
* Values may vary according to motor mounting direction and power supply voltage.
* For acceleration/deceleration and load capacity, refer to the Table of Load Capacity by Speed and Acceleration/Deceleration (pages 42 to 45).

Slider parallelism * Reference value

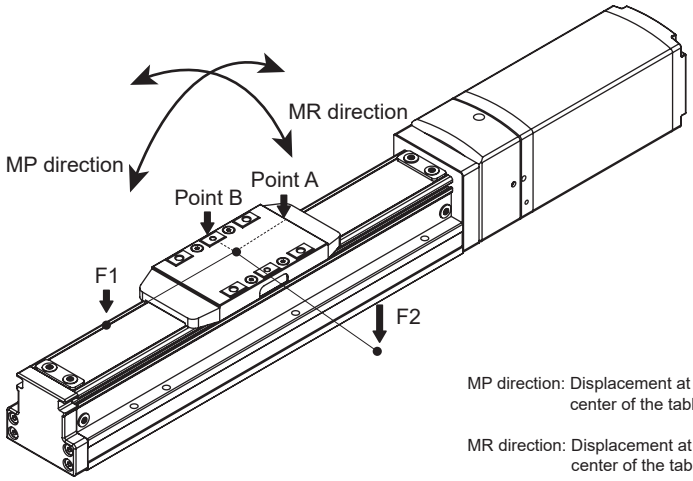


(mm)

	Parallelism
	A surface against B surface
EBS-04 Series	0.03
EBS-05 Series	
EBS-08 Series	

*1. Parallelism with the product fixed to a surface plate.

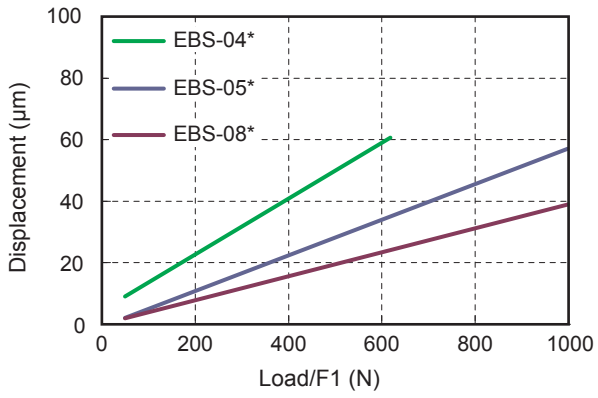
Table deflection * Reference value



MP direction: Displacement at the table end (Point A) when load (F1) is applied to a position 100 mm from the center of the table

MR direction: Displacement at the table end (Point B) when load (F2) is applied to a position 100 mm from the center of the table

Displacement in MP direction



Displacement in MR direction

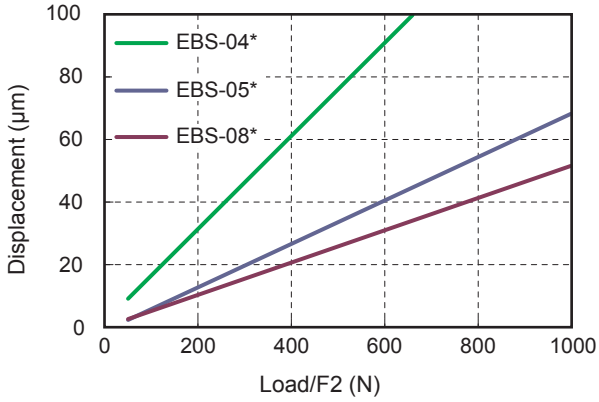


Table of Load Capacity by Speed and Acceleration/Deceleration

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The table below lists the maximum load capacity during acceleration/deceleration and the maximum speed at which operation is possible. Refer to the model that satisfies the required operation conditions.

[When installed horizontally]

■ EBS-04M

Screw lead 6 (kg)

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	0.7	1.0	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5	0.7	1.0
0	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6
50	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6
100	16.6	16.6	16.6	15.0	16.6	16.6	16.6	16.6
150	16.6	16.6	16.6	10.0	16.6	16.6	16.6	13.3
200	16.6	16.6	16.6	1.6	16.6	16.6	16.6	8.3
250	16.6	16.6	8.3	1.6	16.6	16.6	8.3	1.6
300	13.3	6.6	1.6		13.3	6.6	1.6	
350	8.3	0.8			8.3	0.8		
400	3.3				6.6			

Screw lead 12

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	0.7	1.0	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5	0.7	1.0
0	13.3	13.3	11.6	8.3	13.3	13.3	11.6	8.3
100	13.3	13.3	11.6	8.3	13.3	13.3	11.6	8.3
200	13.3	13.3	11.6	8.3	13.3	13.3	11.6	8.3
300	13.3	13.3	11.6	8.3	13.3	13.3	11.6	8.3
400	13.3	13.3	10	8.3	13.3	13.3	10	8.3
500	6.6	6.6	5	3.3	6.6	6.6	5	3.3
600	5.0	2.5	2.5	2.5	5.0	2.5	2.5	2.5
700	1.6	1.6	1.6	0.8	1.6	1.6	1.6	0.8
800	0.8							

■ EBS-05M

Screw lead 2

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	0.7	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5G	0.7
0	45.0	45.0	45.0	45.0	45.0	45.0
50	45.0	45.0	45.0	45.0	45.0	45.0
60	45.0	45.0	13.3	45.0	26.6	13.3
70	45.0	20.0	13.3	45.0		13.3
80	45.0			45.0		
100	45.0			45.0		
110	26.6			26.6		
120	18.3			18.3		
130	10.0			10.0		

■ EBS-05M

Screw lead 5

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	0.7	1.0	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5	0.7	1.0
0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
50	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
100	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
150	40.0	35.0	35.0	35.0	40.0	31.6	23.3	18.3
200	40.0	28.3	18.3	18.3	40.0	23.3	15.0	8.3
250	40.0	20.0	11.6	10.0	40.0	16.6	8.3	8.3
300	26.6	15.0	6.6		23.3	6.6		

Screw lead 10

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	0.7	1.0	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5	0.7	1.0
0	35.0	35.0	31.6	16.6	35.0	35.0	31.6	16.6
50	35.0	35.0	31.6	16.6	35.0	35.0	31.6	16.6
100	35.0	35.0	31.6	16.6	35.0	35.0	30.0	16.6
200	35.0	35.0	30.0	16.6	35.0	35.0	25.0	16.6
250	35.0	31.6	26.6	10.0	35.0	26.6	20.0	10.0
300	35.0	23.3	18.3	8.3	35.0	20.0	15.0	8.3
400	25.0	20.0	11.6	8.3	25.0	15.0	8.3	6.6
500	21.6	15.0	10.0	5.0	21.6	11.6	6.6	1.6
600	16.6	11.6	6.6		8.3	3.3	1.6	
650	10.0	6.6	3.3					
700	0.8							

Screw lead 20

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	0.7	1.0	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5	0.7	1.0
0	16.6	16.6	16.6	10.0	16.6	16.6	13.3	10.0
100	16.6	16.6	16.6	10.0	16.6	16.6	13.3	10.0
200	16.6	16.6	16.6	10.0	16.6	16.6	13.3	8.3
300	16.6	16.6	16.6	10.0	16.6	16.6	13.3	8.3
400	16.6	16.6	15.0	6.6	16.6	16.6	11.6	6.6
500	16.6	16.6	13.3	3.3	16.6	16.6	10.0	3.3
600	16.6	16.6	10.0	3.3	16.6	13.3	8.3	3.3
700	15.0	11.6	8.3	3.3	15.0	8.3	6.6	3.3
800	10.0	10.0	6.6	1.6	10.0	8.3	5.0	1.6
900	6.6	6.6	5.0	1.6	6.6	6.6	5.0	1.6
1000	3.3	3.3	3.3		3.3	3.3	3.3	1.6
1100	3.3	3.3	3.3		3.3	3.3	1.6	

■ EBS-08M

Screw lead 5

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	0.7	1.0	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5	0.7	1.0
0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
25	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
50	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
60	80.0	80.0	80.0	38.3	80.0	80.0	80.0	38.3
70	80.0	80.0	80.0	21.6	80.0	80.0	80.0	21.6
75	80.0	80.0	80.0	15.0	80.0	80.0	80.0	15.0
80	80.0	80.0	80.0	6.6	80.0	80.0	80.0	6.6
100	80.0	80.0	80.0	6.6	80.0	76.0	55.0	
125	80.0	58.3	46.6	6.6	80.0	35.0	18.0	
150	70.0	35.0	20.0	3.3	46.6	33.3		
175	70.0	16.6			46.6	3.3		
200	18.3	5.0			18.3			
225	3.3				3.3			
250	3.3							

Screw lead 10

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	0.7	1.0	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5	0.7	1.0
0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
50	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
100	70.0	70.0	70.0	51.6	70.0	70.0	70.0	70.0
150	70.0	70.0	51.6	51.6	70.0	70.0	51.6	43.3
200	70.0	62.5	38.3	18.3	70.0	46.6	38.3	18.3
250	68.3	41.6	21.6	5.0	68.3	26.6	18.3	4.1
300	41.6	26.6	15.0		68.3	16.6	8.3	
350	36.6	20.0	5.8		48.3	13.3	5.0	
400	33.3	10.0	1.6		35.0	10.0	1.6	
450	25.0	6.6			16.6	6.6		
500	6.6	0.8			5.0	0.8		
550	3.3				5.0			

Screw lead 20

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	0.7	1.0	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5	0.7	1.0
0	43.3	33.3	30.0	18.3	43.3	33.3	26.6	18.3
200	43.3	33.3	30.0	18.3	43.3	33.3	26.6	18.3
300	36.6	33.3	26.6	18.3	36.6	33.3	26.6	18.3
400	26.6	23.3	16.6	8.3	26.6	21.6	15.0	8.3
500	21.6	20.0	11.6	3.3	21.6	16.6	8.3	3.3
600	18.3	16.6	10.0	1.6	20.0	11.6	5.0	1.6
700	16.6	15.0	8.3	0.8	20.0	10.0	5.0	0.8
800	10.0	10.0	8.3		18.3	8.3	3.3	
900	6.6	6.6	5.0		10.0	3.3	0.8	
1000	3.3	3.3	1.6		1.6			
1100	3.3	3.3	0.8					

[When installed vertically]

■ EBS-04M

Screw lead 6

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5
0	8.3	8.3	8.3	8.3
100	8.3	8.3	8.3	8.3
150	5.0	6.6	5.0	5.0
200	5.0	5.0	5.0	5.0
250	5.0	3.3	2.5	1.6
300	3.3	1.6	1.6	0.4
350	1.6	0.4	1.6	0.4
400	0.4			

Screw lead 12

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5
0	3.3	3.3	3.3	3.3
100	3.3	3.3	3.3	3.3
200	3.3	3.3	3.3	3.3
300	3.3	3.3	3.3	3.3
400	3.3	2.5	3.3	2.5
500	2.5	1.6	0.8	0.4
600			0.8	0.4

■ EBS-05M

Screw lead 2

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5
0	24.0	24.0	24.0	24.0
50	24.0	24.0	24.0	24.0
60	24.0	18.3	24.0	18.3
70	24.0	13.3	11.6	8.3
80	18.3	6.6	1.6	
90	18.3	6.6		
100	18.3	6.6		
110	18.3			
120	6.6			
130	1.6			

Screw lead 5

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5
0	16.6	16.6	16.6	16.6
50	16.6	16.6	16.6	16.6
100	15.0	15.0	15.0	15.0
150	11.6	11.6	11.6	11.6
200	10.0	10.0	10.0	10.0
250	10.0	5.0	10.0	5.0
300	5.0	3.3	3.3	3.3

Screw lead 10

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5
0	8.3	8.3	8.3	8.3
100	8.3	8.3	8.3	8.3
200	6.6	6.6	6.6	6.6
250	5.0	5.0	5.0	5.0
300	5.0	5.0	5.0	5.0
400	5.0	3.3	5.0	3.3
450	5.0	3.3	3.3	3.3
500	5.0		3.3	
600	1.6		0.4	

■ EBS-05M

Screw lead 20

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5
0	4.5	4.5	4.5	4.5
100	4.5	4.5	4.5	4.5
200	4.1	4.1	4.5	4.5
300	4.1	4.1	4.5	4.5
400	3.3	3.3	4.5	4.5
500	3.3	3.3	4.5	4.1
600	3.3	3.3	4.1	3.3
700	3.3	2.9	3.3	2.9
800	2.5	2.0	3.3	2.0
900	2.5	2.0	1.6	2.0
1000	2.5	2.0	1.6	1.6
1100	2.5	2.0	0.8	0.8

■ EBS-08M

Screw lead 5

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5
0	40.0	35.0	40.0	35.0
50	40.0	35.0	40.0	35.0
75	30.0	31.6	30.0	31.6
100	25.0	25.0	25.0	25.0
125	23.3	25.0	20.0	18.3
150	23.3	11.6	11.6	6.6
175	18.3	5.0	6.6	0.8
200	11.6		3.3	
225	5.0		0.8	
250	3.3			

Screw lead 10

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5
0	18.3	18.3	18.3	18.3
50	18.3	18.3	18.3	18.3
100	18.3	18.3	13.3	13.3
200	18.3	11.6	13.3	11.6
250	10.0	10.0	10.0	10.0
300	10.0	10.0	8.3	8.3
400	5.0	1.6	5.0	1.6
500	1.6	1.6	0.8	

Screw lead 20

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5
0	10.0	8.3	8.3	8.3
200	10.0	8.3	8.3	8.3
300	8.3	6.6	8.3	6.6
400	6.6	5.0	6.6	5.0
500	6.6	5.0	5.8	4.1
600	5.0	3.3	5.0	3.3
700	3.3	3.3	3.3	2.5
800	3.3	1.6	1.6	0.8
900	1.6	1.6	0.8	

Table of Load Capacity by Speed and Acceleration/Deceleration

24 VDC

* At 24 VDC, operation is possible up to 0.7 G when horizontally installed and 0.3 G when vertically installed.
Contact CKD for details.

[When installed horizontally]

■ EBS-04M

Screw lead 6 (kg)

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	Straight 0.7	Left/Right/Bottom 0.3	Left/Right/Bottom 0.7
0	16.6	16.6	16.6	16.6
50	16.6	16.6	16.6	16.6
100	16.6	16.6	16.6	16.6
150	16.6	4.1	16.6	4.1
200	6.6		6.6	
250			5.0	

Screw lead 12

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	Straight 0.7	Left/Right/Bottom 0.3	Left/Right/Bottom 0.7
0	11.6	11.6	11.6	11.6
100	11.6	11.6	11.6	11.6
200	11.6	11.6	11.6	10.0
300	10.0	5.0	10.0	3.3
400	3.3	1.6	3.3	
500	1.6	0.8	1.6	
600	1.6			

■ EBS-05M

Screw lead 2

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	Straight 0.7	Left/Right/Bottom 0.3	Left/Right/Bottom 0.7
0	45.0	45.0	45.0	45.0
25	45.0	45.0	45.0	45.0
40	45.0	45.0	45.0	45.0
50	45.0		45.0	
60	35.0		35.0	
70	2.5		2.5	

Screw lead 5

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	Straight 0.7	Left/Right/Bottom 0.3	Left/Right/Bottom 0.7
0	40.0	40.0	40.0	40.0
50	40.0	40.0	40.0	40.0
100	40.0	23.3	40.0	23.3
150	40.0	6.6	20.0	
200	18.3		5.0	
250	8.3		5.0	

Screw lead 10

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	Straight 0.7	Left/Right/Bottom 0.3	Left/Right/Bottom 0.7
0	35.0	31.6	35.0	33.3
100	35.0	31.6	35.0	26.6
200	35.0	23.3	35.0	10.0
300	21.6	7.5	18.3	0.8
350	15.0	1.6	13.3	
400	10.0		6.6	
450	7.5		3.3	
500	5.0		3.3	
550	5.0			
600	0.8			

Screw lead 20

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	Straight 0.7	Left/Right/Bottom 0.3	Left/Right/Bottom 0.7
0	16.6	16.6	16.6	11.6
100	16.6	16.6	16.6	11.6
200	16.6	16.6	16.6	11.6
300	16.6	11.6	16.6	6.6
400	16.6	8.3	13.3	3.3
500	12.5	5.0	8.3	1.6
600	8.3	2.5	6.6	0.8
700	4.1	0.8	4.1	
800	2.5		2.5	
900	0.8		0.8	

■ EBS-08M

Screw lead 5

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	Straight 0.7	Left/Right/Bottom 0.3	Left/Right/Bottom 0.7
0	80.0	80.0	80.0	80.0
25	80.0	80.0	80.0	80.0
50	80.0	80.0	80.0	80.0
75	80.0	18.3	51.6	1.6
100	76.6		3.3	
125	43.3			
150	10.0			

Screw lead 10

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	Straight 0.7	Left/Right/Bottom 0.3	Left/Right/Bottom 0.7
0	70.0	70.0	70.0	70.0
50	70.0	70.0	70.0	70.0
100	70.0	50.0	70.0	40.0
150	58.3	15.0	58.3	13.3
200	29.1		29.1	
250	11.6		11.6	
300	2.5		2.5	

Screw lead 20

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	Straight 0.7	Left/Right/Bottom 0.3	Left/Right/Bottom 0.7
0	43.3	26.6	43.3	26.6
100	43.3	26.6	43.3	26.6
200	31.6	21.6	30.0	21.6
300	26.6	6.6	21.6	10.0
400	15.0	3.3	10.0	3.3
500	6.2	1.6	8.3	
600	2.5			

[When installed vertically]

■ EBS-04M

Screw lead 6

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	Left/Right/Bottom 0.3
0	6.6	6.6
50	6.6	6.6
100	6.6	6.6
150	5.0	3.3
200	1.6	1.6

Screw lead 12

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	Left/Right/Bottom 0.3
0	2.5	2.5
100	2.5	2.5
200	2.5	2.5
300	1.6	0.8
400	0.8	0.8

■ EBS-05M

Screw lead 2

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	Left/Right/Bottom 0.3
0	24.0	24.0
10	24.0	24.0
20	24.0	24.0
30	24.0	24.0
40	24.0	24.0
50	16.6	16.6
60	8.3	8.3
70	0.8	0.8

Screw lead 5

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	Left/Right/Bottom 0.3
0	16.6	16.6
50	16.6	16.6
75	16.6	16.6
100	16.6	16.6
125	11.6	11.6
150	8.3	8.3
175	5.8	5.8
200	4.1	4.1
225	2.5	2.5
250	1.6	

Screw lead 10

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	Left/Right/Bottom 0.3
0	8.3	8.3
100	8.3	8.3
200	6.6	5.0
300	3.3	2.5
350	3.3	1.6
400	2.5	0.8
450	1.6	
500	0.4	

Screw lead 20

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	Left/Right/Bottom 0.3
0	4.5	4.5
100	4.5	4.5
200	4.5	4.5
300	4.5	4.1
400	2.5	2.5
500	1.6	0.8
600	1.2	0.8
700	0.8	0.8
800	0.4	0.4

■ EBS-08M

Screw lead 5

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	Left/Right/Bottom 0.3
0	38.3	36.6
25	38.3	36.6
50	36.6	36.6
75	18.3	18.3
100	4.1	4.1
125	4.1	
150	4.1	

Screw lead 10

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	Left/Right/Bottom 0.3
0	18.3	16.6
50	18.3	16.6
100	18.3	13.3
150	8.3	6.6
200	5.8	5.0
250	2.5	2.5
300	0.8	

Screw lead 20

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	Left/Right/Bottom 0.3
0	10.0	8.3
100	10.0	8.3
200	10.0	8.3
300	5.8	5.0
400	3.3	2.5
500	1.6	
600	0.8	

Table of Load Capacity by Speed and Acceleration/Deceleration

24 VDC

The table below lists the maximum load capacity during acceleration/deceleration and the maximum speed at which operation is possible. Refer to the model that satisfies the required operation conditions.

[When installed horizontally]

■ EBS-04G

Screw lead 6

(kg)

Speed (mm/s)	Straight		Left/Right/Bottom	
	Acceleration/deceleration (G)			
	0.3	0.7	0.3	0.7
0	20.0	20.0	20.0	20.0
50	20.0	20.0	20.0	20.0
100	20.0	20.0	20.0	20.0
150	20.0	12.5	13.3	11.7
200	15.0	12.5	13.3	10.0
250	11.7	11.7	10.0	8.3
300	7.5	7.5		
320	7.5	7.5		

Screw lead 12

Speed (mm/s)	Straight		Left/Right/Bottom	
	Acceleration/deceleration (G)			
	0.3	0.7	0.3	0.7
0	15.0	15.0	11.7	10.0
100	15.0	15.0	11.7	10.0
200	15.0	10.8	11.7	10.0
300	10.8	8.3	8.3	8.3
400	4.2	4.2	3.3	3.3
500	2.5	2.5		

■ EBS-05G

Screw lead 2

Speed (mm/s)	Straight		Left/Right/Bottom	
	Acceleration/deceleration (G)			
	0.3	0.7	0.3	0.7
0	45.0	45.0	45.0	45.0
25	45.0	45.0	45.0	45.0
50	45.0	45.0	45.0	45.0
70	45.0	45.0	45.0	45.0
90	45.0	45.0	45.0	45.0
100	45.0	45.0	45.0	45.0
120	45.0	45.0		

Screw lead 5

Speed (mm/s)	Straight		Left/Right/Bottom	
	Acceleration/deceleration (G)			
	0.3	0.7	0.3	0.7
0	40.0	40.0	40.0	40.0
50	40.0	40.0	40.0	40.0
100	40.0	40.0	40.0	40.0
150	26.7	26.7	26.7	26.7
200	26.7	26.7	26.7	26.7
250	26.7	26.7	8.3	8.3
290	26.7	15.8		

Screw lead 10

Speed (mm/s)	Straight		Left/Right/Bottom	
	Acceleration/deceleration (G)			
	0.3	0.7	0.3	0.7
0	27.5	27.5	27.5	27.5
100	27.5	27.5	27.5	27.5
200	27.5	27.5	23.3	20.0
300	15.8	12.5	11.7	11.7
400	10.0	9.2	3.3	3.3
500	5.8	2.5		

Screw lead 20

Speed (mm/s)	Straight		Left/Right/Bottom	
	Acceleration/deceleration (G)			
	0.3	0.7	0.3	0.7
0	18.3	8.3	18.3	7.5
100	18.3	8.3	18.3	7.5
300	10.0	6.7	10.0	5.0
500	8.3	5.0	6.7	4.2
700	4.2	2.5	3.3	1.7
800	2.5	1.7		
850	0.8	0.4		

■ EBS-08G

Screw lead 5

Speed (mm/s)	Straight		Left/Right/Bottom	
	Acceleration/deceleration (G)			
	0.3	0.7	0.3	0.7
0	80.0	80.0	80.0	80.0
25	80.0	80.0	80.0	80.0
50	80.0	80.0	80.0	80.0
75	80.0	80.0	68.3	68.3
100	40.0	40.0	40.0	40.0
125	40.0	40.0	40.0	40.0
150	40.0	35.0		

Screw lead 10

Speed (mm/s)	Straight		Left/Right/Bottom	
	Acceleration/deceleration (G)			
	0.3	0.7	0.3	0.7
0	70.0	70.0	70.0	70.0
50	70.0	70.0	70.0	70.0
100	70.0	70.0	70.0	70.0
150	70.0	70.0	70.0	30.0
200	28.3	17.5	28.3	17.5
250	28.3	17.5	21.7	17.5

Screw lead 20

Speed (mm/s)	Straight		Left/Right/Bottom	
	Acceleration/deceleration (G)			
	0.3	0.7	0.3	0.7
0	30.0	26.7	30.0	26.7
100	30.0	26.7	30.0	26.7
200	30.0	18.3	30.0	18.3
300	26.7	18.3	6.7	6.7
400	20.0	11.7	3.3	3.3
500	3.3			

Table of Load Capacity by Speed and Acceleration/Deceleration

24 VDC

The table below lists the maximum load capacity during acceleration/deceleration and the maximum speed at which operation is possible. Refer to the model that satisfies the required operation conditions.

[When installed vertically]

■ EBS-04G

(kg)

Screw lead 6

Speed (mm/s)	Straight	Left/Right/Bottom
	Acceleration/deceleration (G)	
	0.3	0.3
0	9.2	9.2
50	9.2	9.2
100	9.2	6.7
150	6.7	3.3
200	4.2	2.5
225	1.7	0.8
250	1.7	
275	0.4	

Screw lead 12

Speed (mm/s)	Straight	Left/Right/Bottom
	Acceleration/deceleration (G)	
	0.3	0.3
0	3.3	3.3
100	3.3	3.3
200	3.3	3.3
300	2.5	1.7
350	0.8	0.8
400	0.8	
450	0.4	

■ EBS-05G

Screw lead 2

Speed (mm/s)	Straight	Left/Right/Bottom
	Acceleration/deceleration (G)	
	0.3	0.3
0	18.3	18.3
20	18.3	18.3
40	18.3	18.3
60	18.3	16.7
70	18.3	13.3
90	11.7	8.3
120	2.5	

Screw lead 5

Speed (mm/s)	Straight	Left/Right/Bottom
	Acceleration/deceleration (G)	
	0.3	0.3
0	14.0	10.0
50	14.0	10.0
100	9.2	8.3
150	7.5	6.7
200	4.2	2.5
210	3.3	0.8
225	3.3	
250	2.1	
290		

Screw lead 10

Speed (mm/s)	Straight	Left/Right/Bottom
	Acceleration/deceleration (G)	
	0.3	0.3
0	7.0	3.3
100	7.0	3.3
200	7.0	2.1
300	2.5	1.3
325	2.1	0.4
350	2.1	
400	1.3	
425	0.8	

Screw lead 20

Speed (mm/s)	Straight	Left/Right/Bottom
	Acceleration/deceleration (G)	
	0.3	0.3
0	2.5	0.8
200	2.5	0.8
400	2.5	0.8
500	0.4	0.4

■ EBS-08G

Screw lead 5

Speed (mm/s)	Straight	Left/Right/Bottom
	Acceleration/deceleration (G)	
	0.3	0.3
0	43.3	33.3
25	43.3	33.3
50	43.3	25.0
75	15.0	15.0
100	15.0	12.5
125	2.9	2.9
150	2.9	

Screw lead 10

Speed (mm/s)	Straight	Left/Right/Bottom
	Acceleration/deceleration (G)	
	0.3	0.3
0	28.3	18.3
50	28.3	18.3
100	12.5	12.5
150	10.0	8.3
200	1.7	1.7
250	1.7	

Screw lead 20

Speed (mm/s)	Straight	Left/Right/Bottom
	Acceleration/deceleration (G)	
	0.3	0.3
0	3.3	3.3
100	3.3	3.3
200	3.3	3.3
300	3.3	3.3
350	0.8	0.8

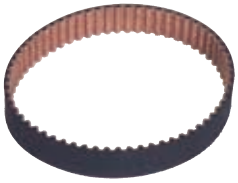
Maintenance parts

Maintenance parts (motor unit)

* Motor unit replacement is applicable only with ECR. ECG units are excluded.

	Model No. 	Compatibility	
Without brake	EBS-04ME-MOTORUNIT-N	EBS-04ME	Without brake
	EBS-04MR-MOTORUNIT-N	EBS-04MR/D/L	
	EBS-05ME-MOTORUNIT-N	EBS-05ME	
	EBS-05MR-MOTORUNIT-N	EBS-05MR/D/L	
	EBS-08ME-MOTORUNIT-N	EBS-08ME	
	EBS-08MR-MOTORUNIT-N	EBS-08MR/D/L	
With brake	EBS-04ME-MOTORUNIT-B	EBS-04ME	With brake
	EBS-04MR-MOTORUNIT-B	EBS-04MR/D/L	
	EBS-05ME-MOTORUNIT-B	EBS-05ME	
	EBS-05MR-MOTORUNIT-B	EBS-05MR/D/L	
	EBS-08ME-MOTORUNIT-B	EBS-08ME	
	EBS-08MR-MOTORUNIT-B	EBS-08MR/D/L	

Maintenance parts / motor mounting direction: For right/left/downward mounting (timing belt)

Model No. 	Compatibility
EBS-04MR-BELT	EBS-04* R/D/L
EBS-05MR-BELT	EBS-05* R/D/L
EBS-08MR-BELT	EBS-08* R/D/L

Maintenance parts (grease nozzle)

Model No. 	Compatibility
EBS-NOZZLE	All models

Maintenance parts (steel belt)

Model No. 	Compatibility
EBS-04-STEELBELT (4-digit stroke code)	EBS-04 (applicable stroke product)
EBS-05-STEELBELT (4-digit stroke code)	EBS-05 (applicable stroke product)
EBS-08-STEELBELT (4-digit stroke code)	EBS-08 (applicable stroke product)

Electric actuator
Motor specifications

EBR-M/G

Rod with built-in guide

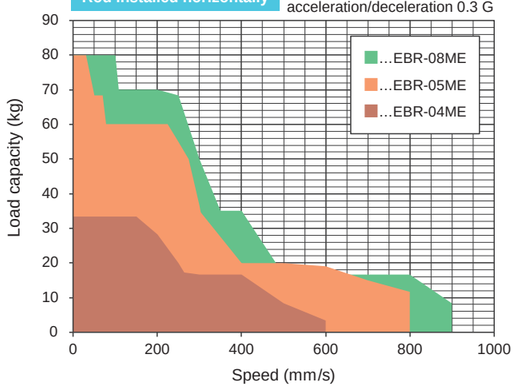
CONTENTS

Series variation

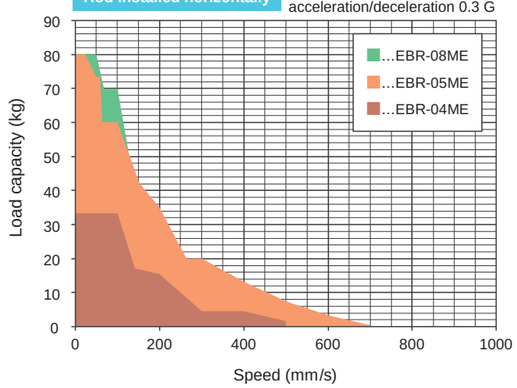
Controller	Actuator model No.		Motor size	Motor mounting direction	Body width (mm)	Screw lead (mm)	Max. load capacity (kg) Horizontal	Max. load capacity (kg) Vertical	Max. Pressing force (N)	Stroke (mm) and max. speed (mm/s)	Page
		EBR-04ME-06	□35	Straight	44	6	33.3	10	131	350 mm/s (50 mm – 250 mm), 300 (300 mm), 250 (350 mm – 800 mm)	52
		EBR-04ME-12				12	18.3	5	69	600 (50 mm – 250 mm), 490 (300 mm – 800 mm)	
		EBR-04MR/D/L-06		Left/Right/Bottom		6	33.3	9.1	131	350 (50 mm – 250 mm), 300 (300 mm), 250 (350 mm – 800 mm)	56
		EBR-04MR/D/L-12				12	18.3	5	69	600 (50 mm – 250 mm), 490 (300 mm – 800 mm)	
		EBR-05ME-02	□42	Straight	54	2	80	24	397	130 (50 mm – 250 mm), 85 (300 mm – 800 mm)	62
		EBR-05ME-05				5	60	16.6	193	330 (50 mm – 250 mm), 210 (300 mm – 800 mm)	
		EBR-05ME-10				10	50	10	94	600 (50 mm – 250 mm), 420 (300 mm – 800 mm)	
		EBR-05ME-20				20	20	4.1	33	800 (50 mm – 800 mm)	
		EBR-05MR/D/L-02		Left/Right/Bottom		2	80	24	397	120 (50 mm – 250 mm), 85 (300 mm – 800 mm)	66
		EBR-05MR/D/L-05				5	60	16.6	193	330 (50 mm – 250 mm), 210 (300 mm – 800 mm)	
		EBR-05MR/D/L-10				10	36.6	8.3	94	500 (50 mm – 250 mm), 420 (300 mm – 800 mm)	
		EBR-05MR/D/L-20				20	18.3	4.1	33	800 (50 mm – 800 mm)	
ECR Series		EBR-08ME-05	□56	Straight	82	5	80	38.3	1050	225 (50 mm – 250 mm), 200 (300 mm – 800 mm)	72
		EBR-08ME-10				10	70	18.3	468	450 (50 mm – 250 mm), 400 (300 mm – 800 mm)	
		EBR-08ME-20				20	35	11.6	213	900 (50 mm – 250 mm), 600 (300 mm – 800 mm)	
		EBR-08MR/D/L-05		Left/Right/Bottom		5	80	38.3	1050	225 (50 mm – 250 mm), 200 (300 mm – 800 mm)	76
		EBR-08MR/D/L-10				10	70	18.3	468	450 (50 mm – 250 mm), 400 (300 mm – 800 mm)	
		EBR-08MR/D/L-20				20	35	8.3	213	700 (50 mm – 250 mm), 600 (300 mm – 800 mm)	

* This data is at power supply voltage 48 VDC and acceleration/deceleration 0.3 G.
* The load capacity when wall mounted is the same as for horizontal installation.

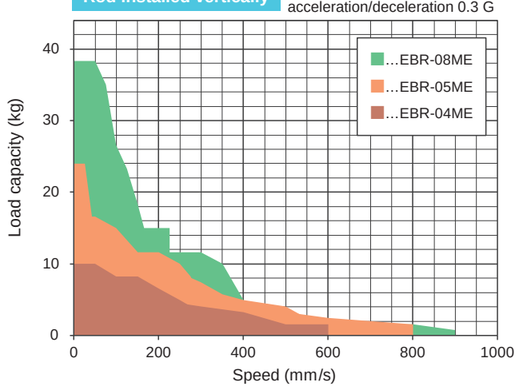
Rod installed horizontally Power supply voltage 48 VDC, acceleration/deceleration 0.3 G



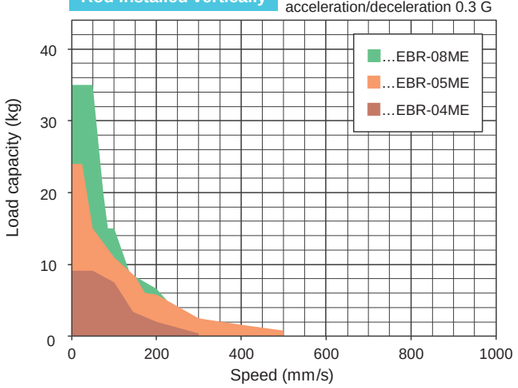
Rod installed horizontally Power supply voltage 24 VDC, acceleration/deceleration 0.3 G



Rod installed vertically Power supply voltage 48 VDC, acceleration/deceleration 0.3 G



Rod installed vertically Power supply voltage 24 VDC, acceleration/deceleration 0.3 G

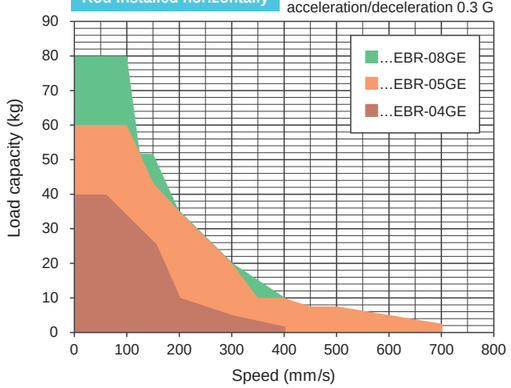


Series variation

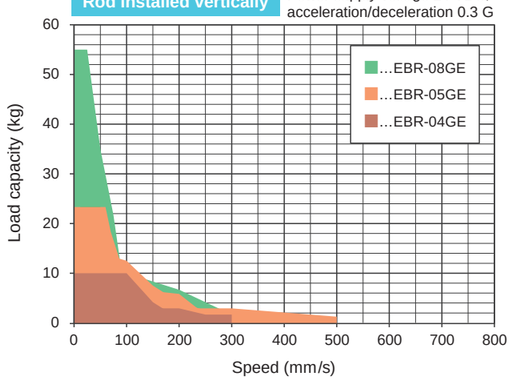
Controller	Actuator model No.		Motor size	Motor mounting direction	Body width (mm)	Screw lead (mm)	Max. load capacity (kg) Horizontal	Max. load capacity (kg) Vertical	Max. Pressing force (N)	Stroke (mm) and max. speed (mm/s) 50 mm	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	Page
		EBR-04GE-06	□35	Straight	44	6	40.0	10.0	155	200 mm/s															52
		EBR-04GE-12				12	12.5	2.9	77	400															
		EBR-04GR/D/L-06		Left/Right/ Bottom		6	40.0	8.3	155	200															56
		EBR-04GR/D/L-12				12	12.5	2.9	77	350															
		EBR-05GE-02	□42	Straight	54	2	80.0	23.3	550	90					85										62
		EBR-05GE-05				5	60.0	14.0	220	300					210										
		EBR-05GE-10				10	41.7	7.0	110	500					420										
		EBR-05GE-20				20	11.7	2.9	55	700															
		EBR-05GR/D/L-02		Left/Right/Bottom		2	80.0	23.3	550	90					85										66
		EBR-05GR/D/L-05				5	60.0	14.0	220	250					210										
		EBR-05GR/D/L-10				10	38.3	6.7	110	400															
		EBR-05GR/D/L-20				20	11.7	1.7	55	600															
ECG Series		EBR-08GE-05	□56	Straight	82	5	80.0	55.0	965	125															72
		EBR-08GE-10				10	70.0	23.3	482	300															
		EBR-08GE-20				20	35.0	10.0	241	500															
		EBR-08GR/D/L-05		Left/Right/ Bottom		5	80.0	55.0	965	125															76
		EBR-08GR/D/L-10				10	70.0	20.0	482	250															
		EBR-08GR/D/L-20				20	35.0	8.3	241	400															

* This data is at power supply voltage 24 VDC and acceleration/deceleration 0.3 G.
* The load capacity when wall mounted is the same as for horizontal installation.

Rod installed horizontally Power supply voltage 24 VDC, acceleration/deceleration 0.3 G



Rod installed vertically Power supply voltage 24 VDC, acceleration/deceleration 0.3 G



Electric actuator Rod with built-in guide

EBR-04*E

Straight motor mounting

□35 stepper motor

How to order

EBR - 04 M E - 00 - 06 0300 N A N - C S03

(A) (B) (C) (D) (E) (F) (G) (H) (I)

(A) Body size

04	Body width 44 mm

(B) Applicable controller *1

M	ECR
G	ECG

(C) Motor mounting direction

E	Straight mounting

(D) Mounting

00	Basic
FA	Rod side flange

(E) Screw lead

06	6 mm
12	12 mm

(F) Stroke

0050 to 0400	50 mm (In 50 mm increments) 400 mm

(G) Brake *2

N	None
B	Yes

(H) encoder *1

A	Battery-less absolute encoder (for ECR)
B	Battery-less absolute encoder (for ECG)
C	Incremental encoder (for ECG)

(I) Relay cable *3

N00	None
S01	Fixing cable 1 m
S03	Fixing cable 3 m
S05	Fixing cable 5 m
S10	Fixing cable 10 m
R01	Movable cable 1 m
R03	Movable cable 3 m
R05	Movable cable 5 m
R10	Movable cable 10 m

*1 Select the controller from page 93 or page 105.
Select encoder "A" when an ECR controller is selected and "B" or "C" when an ECG controller is selected.
*2 Select "Yes" for vertical use.
*3 Refer to page 103 for ECR and page 116 for ECG relay cable dimensions.

Product subject to the EAR (EAR99)

Specifications

[EBR-04M (applicable controller ECR)]

Motor		□35 stepper motor	
Encoder type		Battery-less absolute encoder	
Drive method		Ball screw ø10	
Stroke length	mm	50 to 400	
Screw lead	mm	6	12
Max. load capacity *1 *2	kg Horizontal	33.3 (33.3)	18.3 (18.3)
	kg Vertical	10 (9.1)	5 (4.5)
Operation speed range*3*4	mm/s	7 to 350 (250)	15 to 600 (500)
Maximum pressing force	N	131	69
Press operation speed range	mm/s	5 to 20	5 to 30
Repeatability	mm	±0.01	
Lost motion	mm	0.1 or less	
Motor power supply voltage		24 VDC ±10% or 48 VDC ±10%	
Brake	Model, power supply voltage	Non-excitation operation, 24 VDC ±10%	
	Power consumption W	7	
	Holding force N	126	63

*1 The values in ( ) are at 24 VDC.
*2 Load capacity varies according to acceleration/deceleration and speed.
Refer to page 88 for details.
*3 The maximum speed values in ( ) are at 24 VDC.
*4 The maximum speed may decrease depending on the conditions.

[EBR-04G (applicable controller ECG)]

Motor		□35 stepper motor	
Encoder type		Battery-less absolute encoder Incremental encoder	
Drive method		Ball screw ø10	
Stroke length	mm	50 to 400	
Screw lead	mm	6	12
Max. load capacity *1	kg Horizontal	40.0	12.5
	kg Vertical	10.0	2.9
Operation speed range*2	mm/s	7 to 200	15 to 400
Maximum pressing force	N	155	77
Press operation speed range	mm/s	5 to 20	5 to 20
Repeatability	mm	±0.01	
Lost motion	mm	0.1 or less	
Motor power supply voltage		24 VDC ±10%	
Brake	Model, power supply voltage	Non-excitation operation, 24 VDC ±10%	
	Power consumption W	6.1	
	Holding force N	140	70

*1 Load capacity varies according to acceleration/deceleration and speed.
Refer to page 90 for details.
*2 The maximum speed may decrease depending on the conditions.

[Common specifications]

Insulation resistance	10MΩ, 500 VDC
Withstand voltage	500 VAC for 1 minute
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
Degree of protection	IP40

*The operating ambient temperature of EBR-**G is 10°C to 40°C.

Stroke and max. speed

[EBR-04M (applicable controller ECR)]

(mm/s)

Screw lead	Power supply voltage	Stroke length				
		50 to 200	250	300	350	400
6	48 VDC	350	300	250	250	250
	24 VDC	250	250	250	250	250
12	48 VDC	600	600	490	490	490
	24 VDC	500	500	490	490	490

[EBR-04G (applicable controller ECG)]

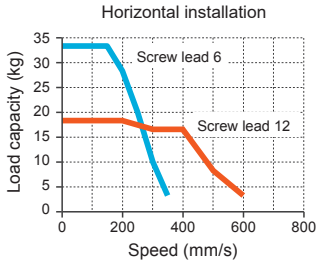
(mm/s)

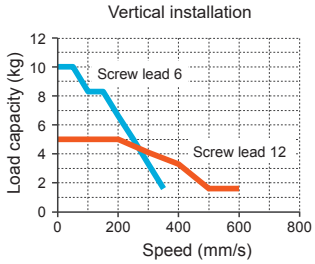
Screw lead	Power supply voltage	Stroke length
		50 to 400
6	24 VDC	200
12	24 VDC	400

Speed and load capacity

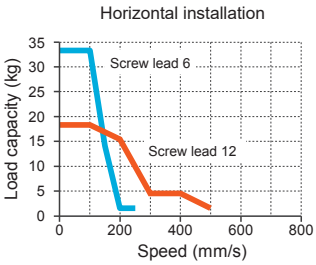
[EBR-04M (applicable controller ECR)]

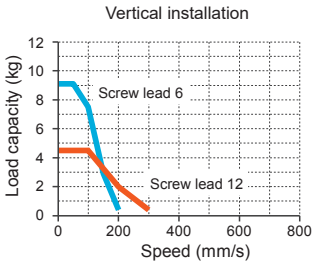
· At 48 VDC





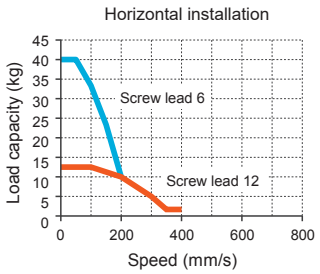
· At 24 VDC

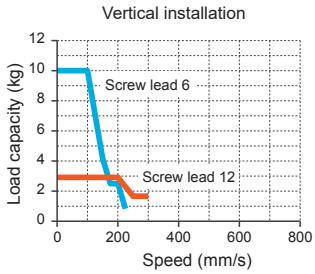




[EBR-04G (applicable controller ECG)]

· At 24 VDC





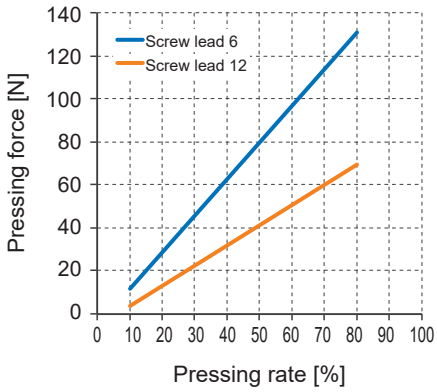
* Incorrectly applying a 48 VDC power supply could result in damage.

* At acceleration of 0.3 G.

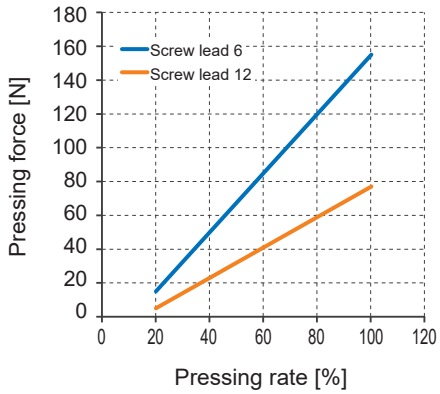
* Confirm each of the pages listed below for details.
ECR: Page 88
ECG: Page 90

Pressing force

[EBR-04M (applicable controller ECR)]



[EBR-04G (applicable controller ECG)]



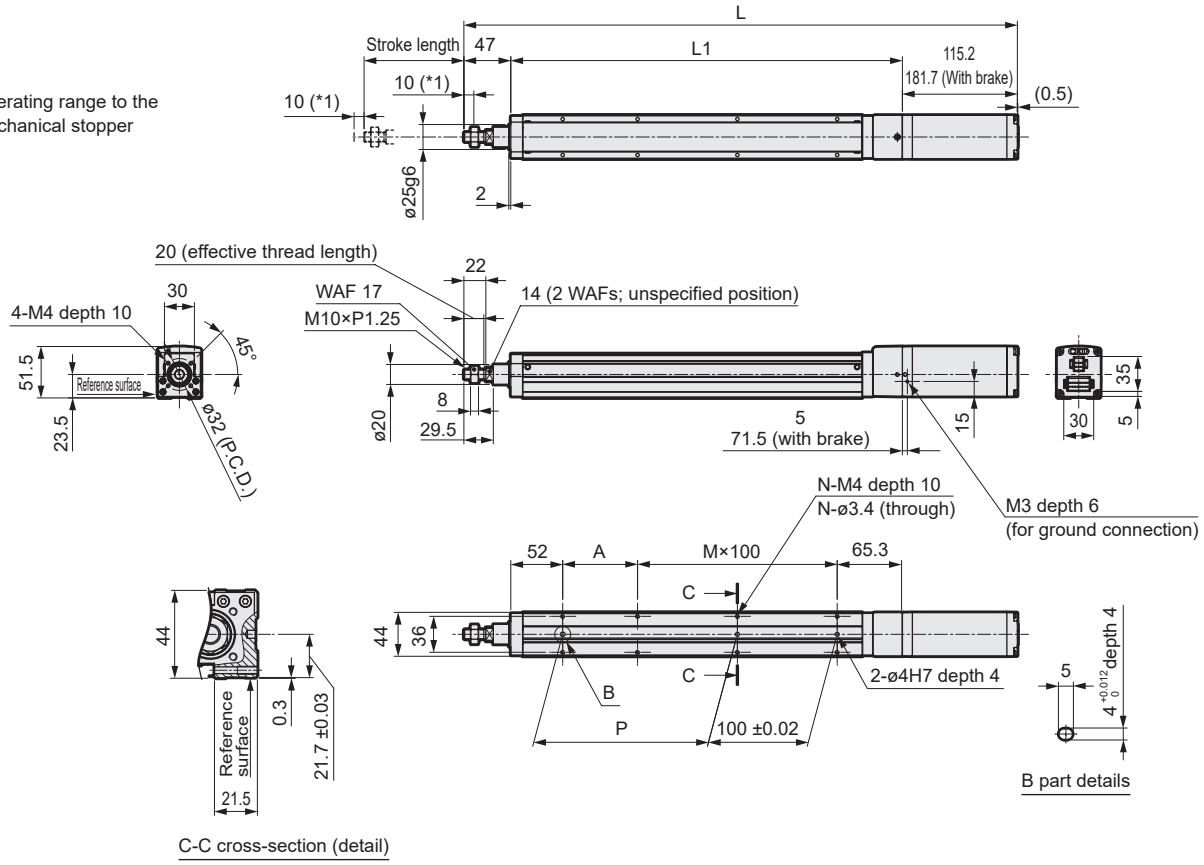
* The above pressing force is a reference value. Variation may occur according to conditions such as pressing speed.

EBR-04*E

Dimensions: Straight motor mounting

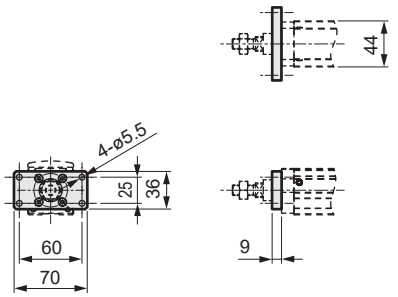
● EBR-04*E

*1 Operating range to the mechanical stopper



Stroke code		0050	0100	0150	0200	0250	0300	0350	0400
Stroke length (mm)		50	100	150	200	250	300	350	400
L	Without brake	404.5	454.5	504.5	554.5	604.5	654.5	704.5	754.5
	With brake	471	521	571	621	671	721	771	821
L1		242.3	292.3	342.3	392.3	442.3	492.3	542.3	592.3
A		25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4
N		6	6	8	8	10	10	12	12
P		25	75	125	175	225	275	325	375
Weight (kg)	Without brake	1.6	1.8	1.9	2.1	2.2	2.4	2.5	2.7
	With brake	2.1	2.3	2.4	2.6	2.7	2.9	3.0	3.2

■ EBR-04*E-FA



Notes

Electric actuator Rod with built-in guide

EBR-04**

Motor side mounting (left, right, bottom)

□35 stepper motor

How to order

EBR - 04 M R - 00 - 06 0300 N A N - C S03

(A) (B) (C) (D) (E) (F) (G) (H) (I)

(A) Body size

04	Body width 44 mm

(B) Applicable controller *1

M	ECR
G	ECG

(C) Motor mounting direction *2

R	Right mounting
D	Bottom mounting
L	Left mounting

(D) Mounting

00	Basic
FA	Rod side flange

(E) Screw lead

06	6 mm
12	12 mm

(F) Stroke *2

0050 to 0400	50 mm (In 50 mm increments) 400 mm

(G) Brake *3

N	None
B	Yes

(H) Encoder

A	Battery-less absolute encoder (for ECR)
B	Battery-less absolute encoder (for ECG)
C	Incremental encoder (for ECG)

(I) Relay cable *4

N00	None
S01	Fixing cable 1 m
S03	Fixing cable 3 m
S05	Fixing cable 5 m
S10	Fixing cable 10 m
R01	Movable cable 1 m
R03	Movable cable 3 m
R05	Movable cable 5 m
R10	Movable cable 10 m

*1 Select the controller from page 93 or page 105.
Select encoder "A" when an ECR controller is selected and "B" or "C" when an ECG controller is selected.
*2 If "D" is selected for the motor mounting direction, select a stroke length from "0250 (250 mm)" to "0400 (400 mm)".
*3 Select "Yes" for vertical use.
*4 Refer to page 103 for ECR and page 116 for ECG relay cable dimensions.

Product subject to the EAR (EAR99)

Specifications

[EBR-04M (applicable controller ECR)]

Motor		□35 stepper motor	
Encoder type		Battery-less absolute encoder	
Drive method		Ball screw ø10	
Stroke length	mm	50 to 400	
Screw lead	mm	6	12
Max. load capacity *1 *2	kg Horizontal	33.3 (33.3)	18.3 (18.3)
	kg Vertical	9.1 (9.1)	5 (4.5)
Operation speed range *3*4	mm/s	7 to 350 (200)	15 to 600 (400)
Maximum pressing force	N	131	69
Press operation speed range	mm/s	5 to 20	5 to 30
Repeatability	mm	±0.01	
Lost motion	mm	0.1 or less	
Motor power supply voltage		24 VDC ±10% or 48 VDC ±10%	
Brake	Model, power supply voltage	Non-excitation operation, 24 VDC ±10%	
	Power consumption W	7	
	Holding force N	126	63

*1 The values in ( ) are at 24 VDC.
*2 Load capacity varies according to acceleration/deceleration and speed.
Refer to page 88 for details.
*3 The maximum speed values in ( ) are at 24 VDC.
*4 The maximum speed may decrease depending on the conditions.

[EBR-04G (applicable controller ECG)]

Motor		□35 stepper motor	
Encoder type		Battery-less absolute encoder Incremental encoder	
Drive method		Ball screw ø10	
Stroke length	mm	50 to 400	
Screw lead	mm	6	12
Max. load capacity *1	kg Horizontal	40.0	12.5
	kg Vertical	8.3	2.9
Operation speed range *2	mm/s	7 to 200	15 to 350
Maximum pressing force	N	155	77
Press operation speed range	mm/s	5 to 20	5 to 20
Repeatability	mm	±0.01	
Lost motion	mm	0.1 or less	
Motor power supply voltage		24 VDC ±10%	
Brake	Model, power supply voltage	Non-excitation operation, 24 VDC ±10%	
	Power consumption W	6.1	
	Holding force N	140	70

*1 Load capacity varies according to acceleration/deceleration and speed.
Refer to page 90 for details.
*2 The maximum speed may decrease depending on the conditions.

[Common specifications]

Insulation resistance	10MΩ, 500 VDC
Withstand voltage	500 VAC for 1 minute
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
Degree of protection	IP40

* The operating ambient temperature of EBR-**G is 10°C to 40°C.

Stroke and max. speed

[EBR-04M (applicable controller ECR)]

(mm/s)

Screw lead	Power supply voltage	Stroke length				
		50 to 200	250	300	350	400
6	48 VDC	350	300	250	250	250
	24 VDC	200	200	200	200	200
12	48 VDC	600	600	490	490	490
	24 VDC	400	400	400	400	400

[EBR-04G (applicable controller ECG)]

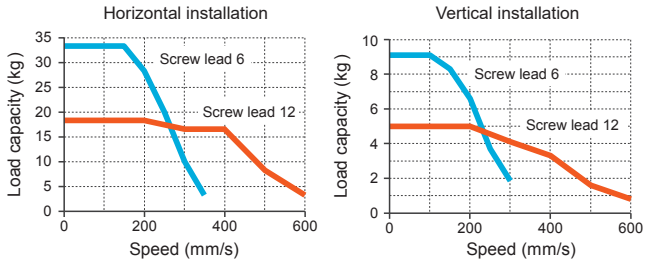
(mm/s)

Screw lead	Power supply voltage	Stroke length
		50 to 400
6	24 VDC	200
12	24 VDC	350

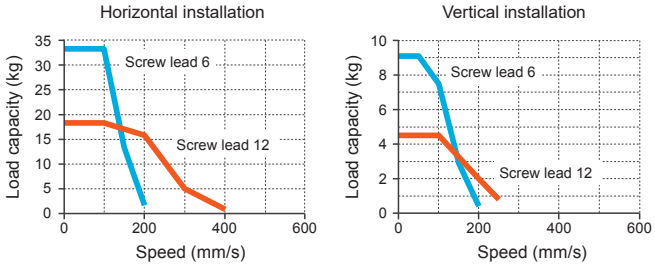
Speed and load capacity

[EBR-04M (applicable controller ECR)]

· At 48 VDC

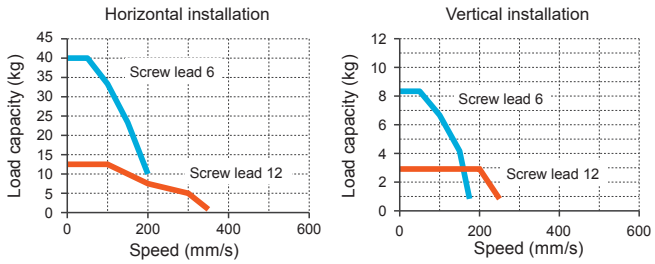


· At 24 VDC



[EBR-04G (applicable controller ECG)]

· At 24 VDC



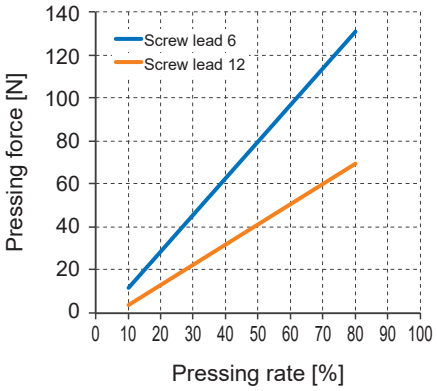
* Incorrectly applying a 48 VDC power supply could result in damage.

* At acceleration of 0.3 G.

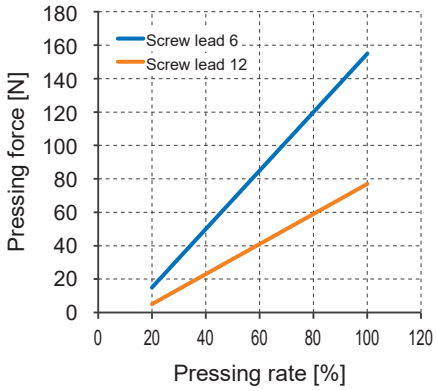
* Confirm each of the pages listed below for details.
ECR: Page 88
ECG: Page 90

Pressing force

[EBR-04M (applicable controller ECR)]



[EBR-04G (applicable controller ECG)]

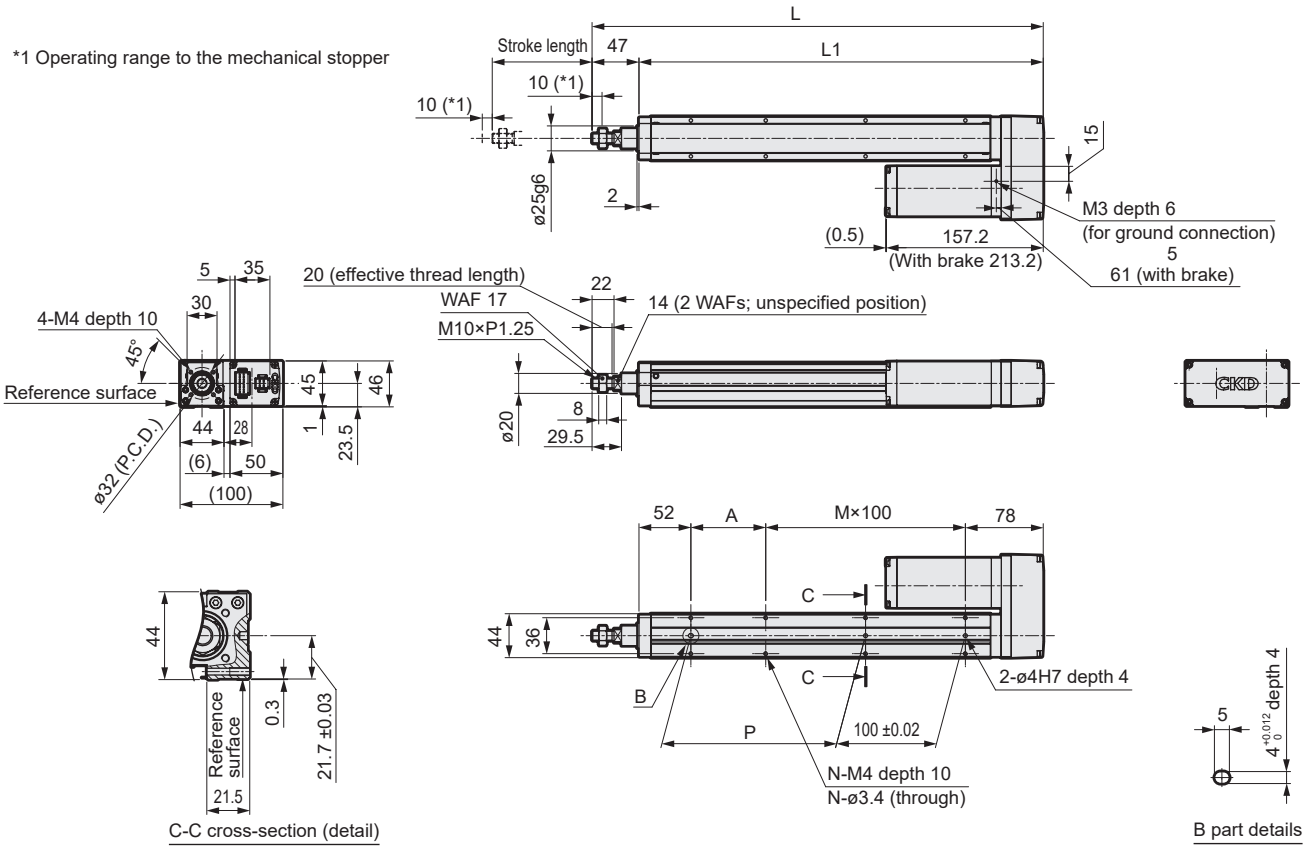


* The above pressing force is a reference value. Variation may occur according to conditions such as pressing speed.

Dimensions: Motor right-side mounting

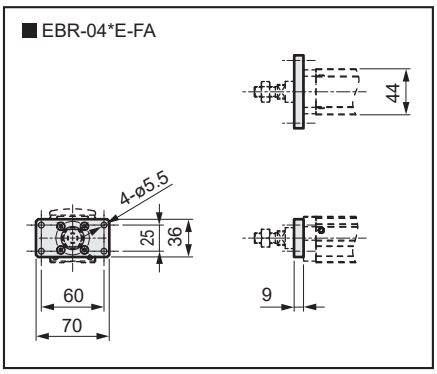
● EBR-04*R

*1 Operating range to the mechanical stopper



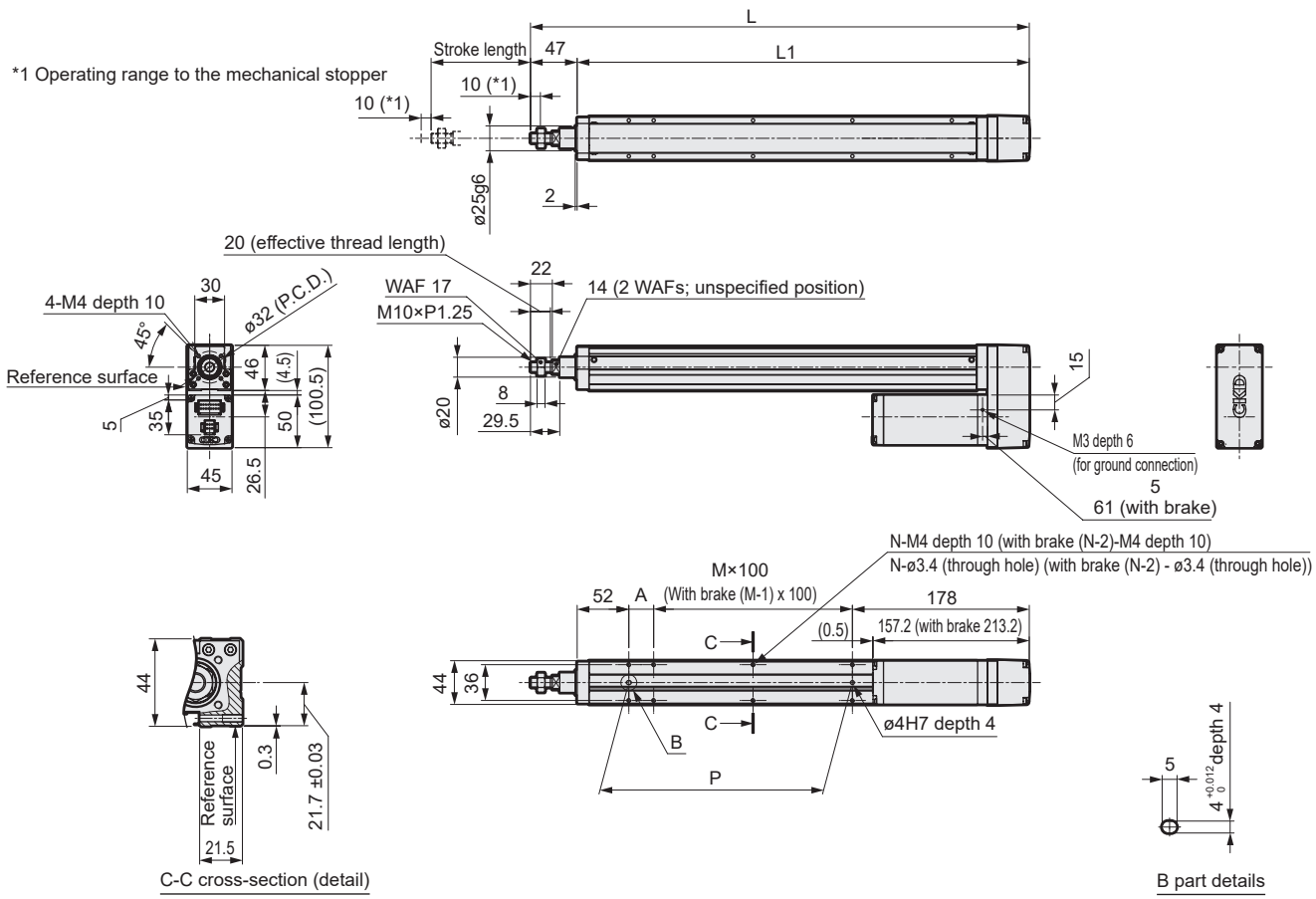
Stroke code		0050	0100	0150	0200	0250	0300	0350	0400
Stroke length (mm)		50	100	150	200	250	300	350	400
L		302	352	402	452	502	552	602	652
L1		255	305	355	405	455	505	555	605
A		25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4
N		6	6	8	8	10	10	12	12
P		25	75	125	175	225	275	325	375
Weight (kg)	Without brake	1.6	1.8	1.9	2.1	2.3	2.5	2.6	2.8
	With brake	2.1	2.3	2.4	2.6	2.8	3.0	3.1	3.3

■ EBR-04*E-FA



Dimensions: Motor bottom mounting

● EBR-04*D

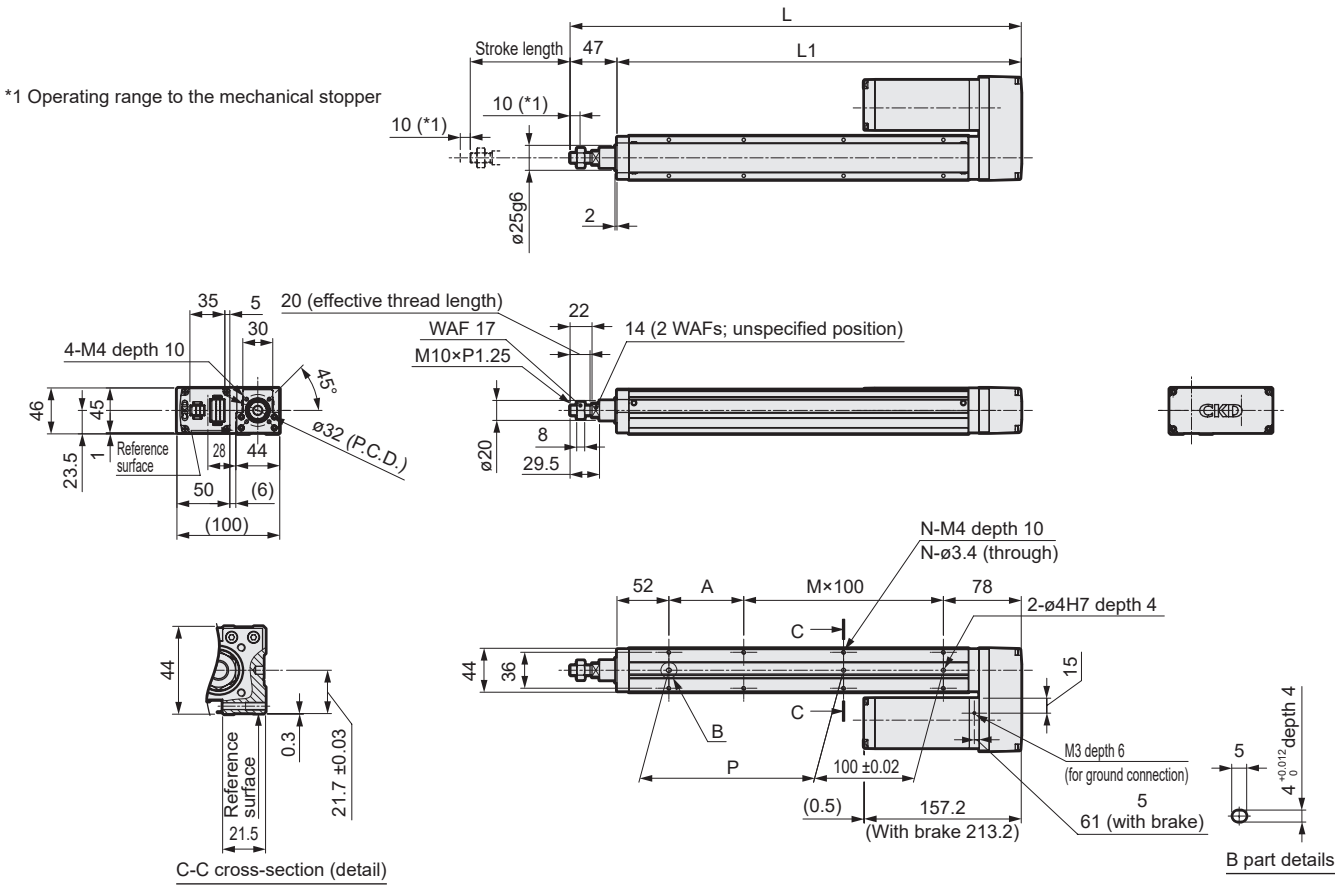


Stroke code		0250	0300	0350	0400
Stroke length (mm)		250	300	350	400
L		502	552	602	652
L1		455	505	555	605
A		25	75	25	75
M		2	2	3	3
N		8	8	10	10
P		225	275	325	375
Weight (kg)	Without brake	2.3	2.5	2.6	2.8
	With brake	2.8	3.0	3.1	3.3

Dimensions: Motor left-side mounting

● EBR-04*L

*1 Operating range to the mechanical stopper



Stroke code		0050	0100	0150	0200	0250	0300	0350	0400
Stroke length (mm)		50	100	150	200	250	300	350	400
L		302	352	402	452	502	552	602	652
L1		255	305	355	405	455	505	555	605
A		25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4
N		6	6	8	8	10	10	12	12
P		25	75	125	175	225	275	325	375
Weight (kg)	Without brake	1.6	1.8	1.9	2.1	2.3	2.5	2.6	2.8
	With brake	2.1	2.3	2.4	2.6	2.8	3.0	3.1	3.3

Notes

Electric actuator Rod with built-in guide

EBR-05*E

Straight motor mounting

□42 Stepper motor

How to order

EBR - 05 M E - 00 - 05 0300 N A N - C S03

Ⓐ Body size

05	Body width 54 mm

Ⓑ Applicable controller *1

M	ECR
G	ECG

Ⓒ Motor mounting direction

E	Straight mounting

Ⓓ Mounting

00	Basic
FA	Rod side flange

Ⓔ Screw lead

02	2 mm
05	5 mm
10	10 mm
20	20 mm

Ⓕ Stroke

0050 to 0400	50 mm (In 50 mm increments) 400 mm

Ⓖ Brake *2

N	None
B	Yes

Ⓗ encoder *1

A	Battery-less absolute encoder (for ECR)
B	Battery-less absolute encoder (for ECG)
C	Incremental encoder (for ECG)

Ⓘ Relay cable *3

N00	None
S01	Fixing cable 1 m
S03	Fixing cable 3 m
S05	Fixing cable 5 m
S10	Fixing cable 10 m
R01	Movable cable 1 m
R03	Movable cable 3 m
R05	Movable cable 5 m
R10	Movable cable 10 m

*1 Select the controller from page 93 or page 105.
Select encoder "A" when an ECR controller is selected and "B" or "C" when an ECG controller is selected.
*2 Select "Yes" for vertical use.
*3 Refer to page 103 for ECR and page 116 for ECG relay cable dimensions.

Product subject to the EAR (EAR99)

Specifications

[EBR-05M (applicable controller ECR)]

Motor		□42 Stepper motor			
Encoder type		Battery-less absolute encoder			
Drive method		Ball screw ø12			
Stroke length	mm	50 to 400			
Screw lead	mm	2	5	10	20
Max. load capacity *1 *2 kg	Horizontal	80 (80)	60 (60)	50 (50)	20 (20)
	Vertical	24 (24)	16.6 (15)	10 (6.6)	4.1 (4.1)
Operation speed range *3 *4	mm/s	2 to 130 (80)	6 to 330 (275)	12 to 600 (500)	25 to 800 (700)
Maximum pressing force	N	397	193	94	33
Press operation speed range	mm/s	5 to 20	5 to 20	5 to 30	5 to 30
Repeatability	mm	±0.01			
Lost motion	mm	0.1 or less			
Motor power supply voltage		24 VDC ±10% or 48 VDC ±10%			
Brake	Model, power supply voltage	Non-excitation operation, 24 VDC ±10%			
	Power consumption W	7			
	Holding force N	471	188	94	47

*1 The values in ( ) are at 24 VDC.
*2 Load capacity varies according to acceleration/deceleration and speed.
Refer to page 88 for details.
*3 The maximum speed values in ( ) are at 24 VDC.
*4 The maximum speed may decrease depending on the conditions.

[EBR-05G (applicable controller ECG)]

Motor		□42 Stepper motor			
Encoder type		Battery-less absolute encoder Incremental encoder			
Drive method		Ball screw ø12			
Stroke length	mm	50 to 400			
Screw lead	mm	2	5	10	20
Max. load capacity *1 kg	Horizontal	80.0	60.0	41.7	11.7
	Vertical	23.3	14.0	7.0	2.9
Operation speed range *2	mm/s	2 to 90	6 to 300	12 to 500	25 to 700
Maximum pressing force	N	550	220	110	55
Press operation speed range	mm/s	5 to 20	5 to 20	5 to 20	5 to 20
Repeatability	mm	±0.01			
Lost motion	mm	0.1 or less			
Motor power supply voltage		24 VDC ±10%			
Brake	Model, power supply voltage	Non-excitation operation, 24 VDC ±10%			
	Power consumption W	6.1			
	Holding force N	420	168	84	42

*1 Load capacity varies according to acceleration/deceleration and speed.
Refer to page 90 for details.
*2 The maximum speed may decrease depending on the conditions.

[Common specifications]

Insulation resistance	10MΩ, 500 VDC
Withstand voltage	500 VAC for 1 minute
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
Degree of protection	IP40

*The operating ambient temperature of EBR-**G is 10°C to 40°C.

Stroke and max. speed

[EBR-05M (applicable controller ECR)]

(mm/s)

Thread lead	Power supply voltage	Stroke length			
		50 to 250	300	350	400
2	48 VDC	130	85	85	85
	24 VDC	80	80	80	80
5	48 VDC	330	210	210	210
	24 VDC	275	210	210	210
10	48 VDC	600	420	420	420
	24 VDC	500	420	420	420
20	48 VDC	800	800	800	800
	24 VDC	700	700	700	700

[EBR-05G (applicable controller ECG)]

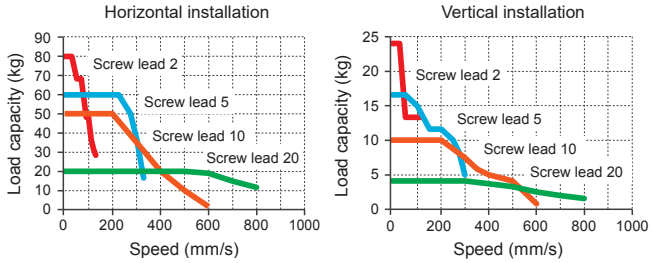
(mm/s)

Thread lead	Power supply voltage	Stroke length			
		50 to 250	300	350	400
2	24 VDC	90	85	85	85
5	24 VDC	300	210	210	210
10	24 VDC	500	420	420	420
20	24 VDC	700	700	700	700

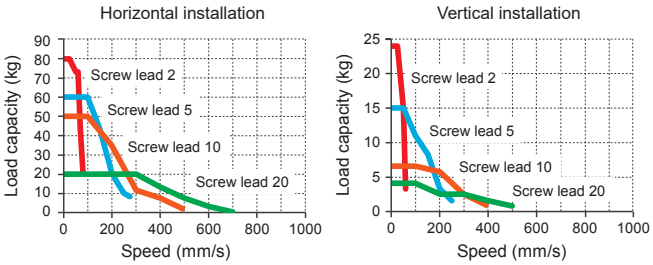
Speed and load capacity

[EBR-05M (applicable controller ECR)]

· At 48 VDC

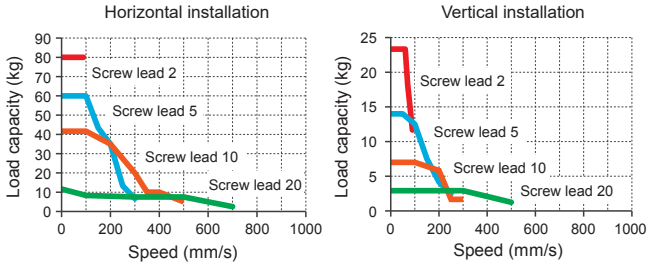


· At 24 VDC



[EBR-05G (applicable controller ECG)]

· At 24 VDC



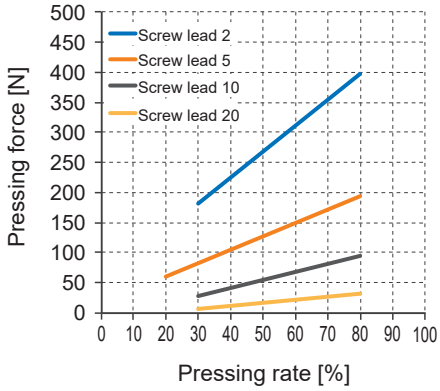
* Incorrectly applying a 48 VDC power supply could result in damage.

* At acceleration of 0.3 G.

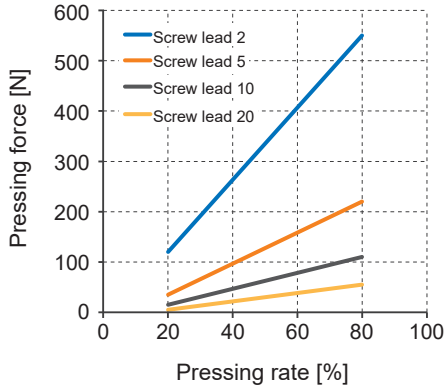
* Confirm each of the pages listed below for details.
ECR: Page 88
ECG: Page 90

Pressing force

[EBR-05M (applicable controller ECR)]



[EBR-05G (applicable controller ECG)]

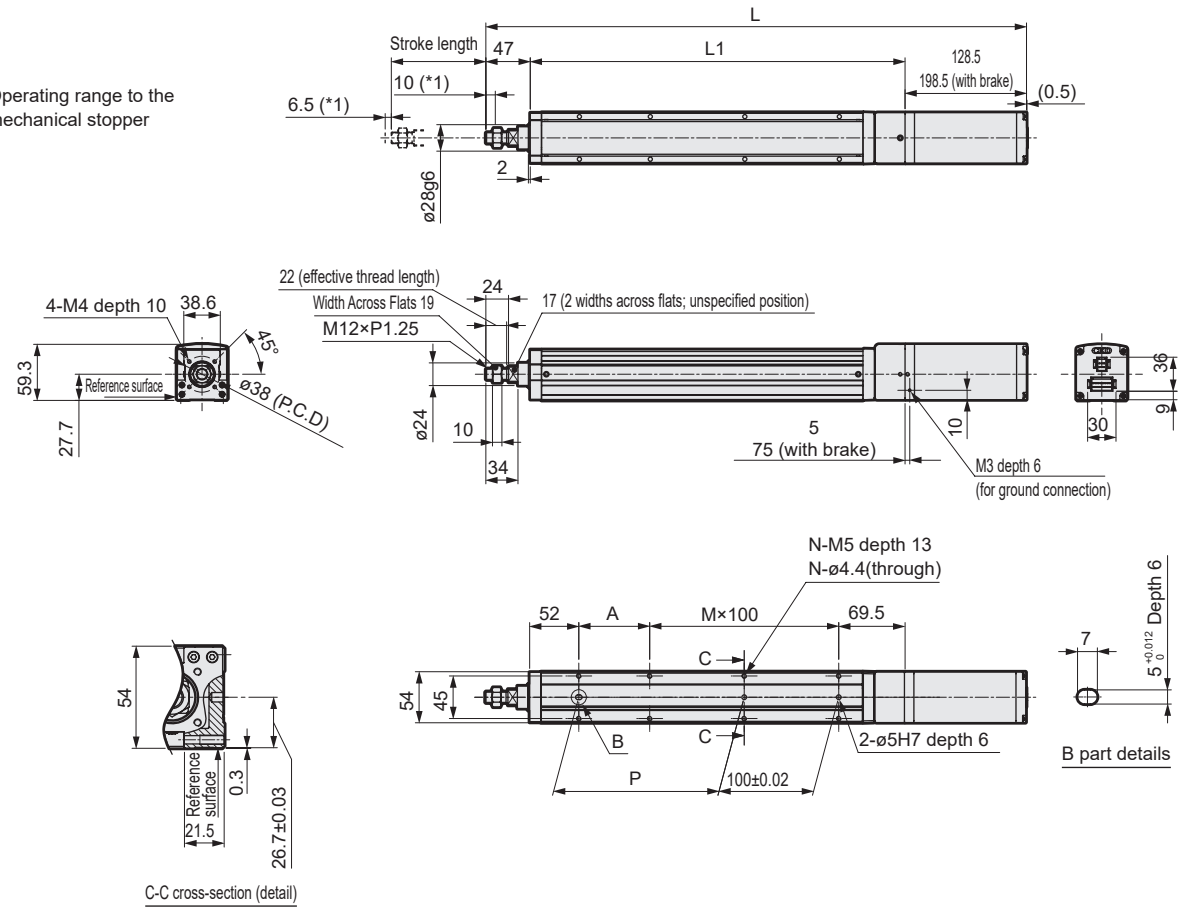


* The above pressing force is a reference value. Variation may occur according to conditions such as pressing speed.

Dimensions

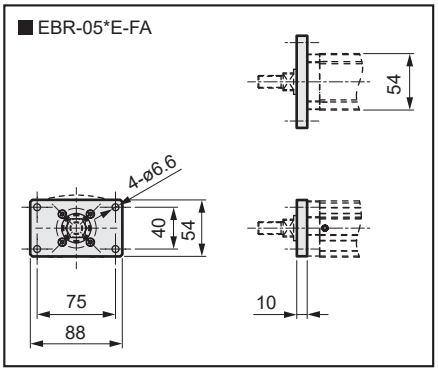
● EBR-05*E

*1 Operating range to the mechanical stopper



Stroke code		0050	0100	0150	0200	0250	0300	0350	0400
Stroke length (mm)		50	100	150	200	250	300	350	400
L	Without brake	422	472	522	572	622	672	722	772
	With brake	492	542	592	642	692	742	792	842
L1		246.5	296.5	346.5	396.5	446.5	496.5	546.5	596.5
A		25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4
N		6	6	8	8	10	10	12	12
P		25	75	125	175	225	275	325	375
Weight (kg)	Without brake	2.5	2.7	2.9	3.1	3.3	3.5	3.7	3.8
	With brake	3.3	3.5	3.7	3.9	4.1	4.3	4.5	4.6

■ EBR-05*E-FA



Notes

Electric actuator Rod with built-in guide

EBR-05**

Motor side mounting (left, right, bottom)

□42 Stepper motor

How to order

EBR - 05 M R - 00 - 05 0300 N A N - C S03

(A) (B) (C) (D) (E) (F) (G) (H) (I)

(A) Body size

05	Body width 54 mm

(B) Applicable controller *1

M	ECR
G	ECG

(C) Motor mounting direction *2

R	Right mounting
D	Bottom mounting
L	Left mounting

(D) Mounting

00	Basic
FA	Rod side flange

(E) Screw lead

02	2 mm
05	5 mm
10	10 mm
20	20 mm

(F) Stroke *2

0050 to 0400	50 mm (In 50 mm increments) 400 mm

(G) Brake *3

N	None
B	Yes

(H) encoder *1

A	Battery-less absolute encoder (for ECR)
B	Battery-less absolute encoder (for ECG)
C	Incremental encoder (for ECG)

(I) Relay cable *4

N00	None
S01	Fixing cable 1 m
S03	Fixing cable 3 m
S05	Fixing cable 5 m
S10	Fixing cable 10 m
R01	Movable cable 1 m
R03	Movable cable 3 m
R05	Movable cable 5 m
R10	Movable cable 10 m

*1 Select the controller from page 93 or page 105.
Select encoder "A" when an ECR controller is selected and "B" or "C" when an ECG controller is selected.
*2 If "D" is selected for the motor mounting direction, select a stroke length from "0250 (250 mm)" to "0400 (400 mm)".
*3 Select "Yes" for vertical use.
*4 Refer to page 103 for ECR and page 116 for ECG relay cable dimensions.

Product subject to the EAR (EAR99)

Specifications

[EBR-05M (applicable controller ECR)]

Motor		□42 Stepper motor			
Encoder type		Battery-less absolute encoder			
Drive method		Ball screw ø12			
Stroke length	mm	50 to 400			
Screw lead	mm	2	5	10	20
Max. load capacity *1 *2	kg Horizontal	80 (80)	60 (60)	36.6 (36.6)	18.3 (18.3)
	Vertical	24 (24)	16.6 (15)	8.3 (6.6)	4.1 (4.1)
Operation speed range *3 *4	mm/s	2 to 120 (80)	6 to 330 (250)	12 to 500 (400)	25 to 800 (700)
Maximum pressing force	N	397	193	94	33
Press operation speed range	mm/s	5 to 20	5 to 20	5 to 30	5 to 30
Repeatability	mm	±0.01			
Lost motion	mm	0.1 or less			
Motor power supply voltage		24 VDC ±10% or 48 VDC ±10%			
Brake	Model, power supply voltage	Non-excitation operation, 24 VDC ±10%			
	Power consumption W	7			
	Holding force N	471	188	94	47

*1 The values in ( ) are at 24 VDC.
*2 Load capacity varies according to acceleration/deceleration and speed.
Refer to page 88 for details.
*3 The maximum speed values in ( ) are at 24 VDC.
*4 The maximum speed may decrease depending on the conditions.

[EBR-05G (applicable controller ECG)]

Motor		□42 Stepper motor			
Encoder type		Battery-less absolute encoder Incremental encoder			
Drive method		Ball screw ø12			
Stroke length	mm	50 to 400			
Screw lead	mm	2	5	10	20
Max. load capacity *1	kg Horizontal	80.0	60.0	38.3	11.7
	Vertical	23.3	14.0	6.7	1.7
Operation speed range *2	mm/s	2 to 90	6 to 250	12 to 400	25 to 600
Maximum pressing force	N	550	220	110	55
Press operation speed range	mm/s	5 to 20	5 to 20	5 to 20	5 to 20
Repeatability	mm	±0.01			
Lost motion	mm	0.1 or less			
Motor power supply voltage		24 VDC ±10%			
Brake	Model, power supply voltage	Non-excitation operation, 24 VDC ±10%			
	Power consumption W	6.1			
	Holding force N	420	168	84	42

*1 Load capacity varies according to acceleration/deceleration and speed.
Refer to page 90 for details.
*2 The maximum speed may decrease depending on the conditions.

[Common specifications]

Insulation resistance	10MΩ, 500 VDC
Withstand voltage	500 VAC for 1 minute
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
Degree of protection	IP40

*The operating ambient temperature of EBR-**G is 10°C to 40°C.

Stroke and max. speed

[EBR-05M (applicable controller ECR)]

(mm/s)

Thread lead	Power supply voltage	Stroke length			
		50 to 250	300	350	400
2	48 VDC	120	85	85	85
	24 VDC	80	80	80	80
5	48 VDC	330	210	210	210
	24 VDC	250	210	210	210
10	48 VDC	500	420	420	420
	24 VDC	400	400	400	400
20	48 VDC	800	800	800	800
	24 VDC	700	700	700	700

[EBR-05G (applicable controller ECG)]

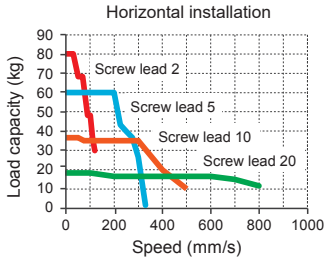
(mm/s)

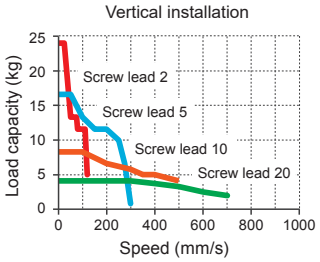
Thread lead	Power supply voltage	Stroke length			
		50 to 250	300	350	400
2	24 VDC	90	85	85	85
5	24 VDC	250	210	210	210
10	24 VDC	400	400	400	400
20	24 VDC	600	600	600	600

Speed and load capacity

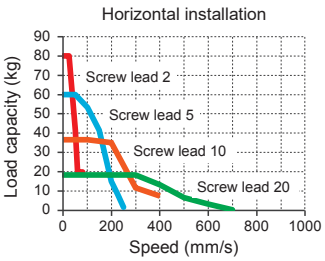
[EBR-05M (applicable controller ECR)]

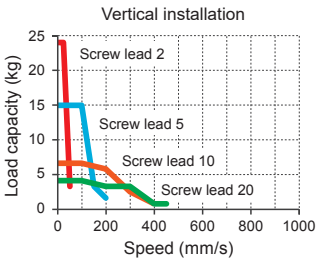
· At 48 VDC





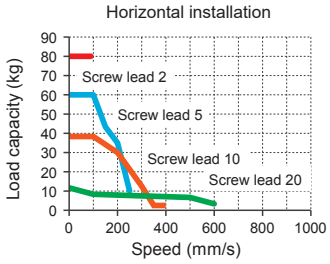
· At 24 VDC

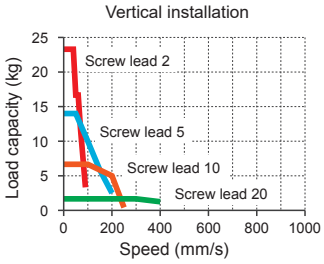




[EBR-05G (applicable controller ECG)]

· At 24 VDC





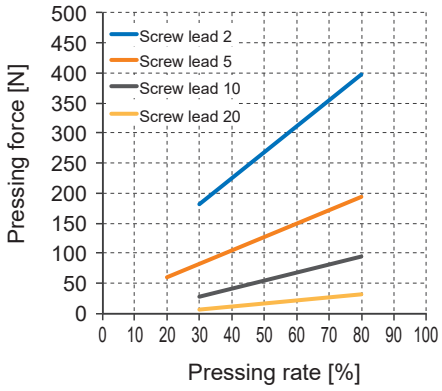
* Incorrectly applying a 48 VDC power supply could result in damage.

* At acceleration of 0.3 G.

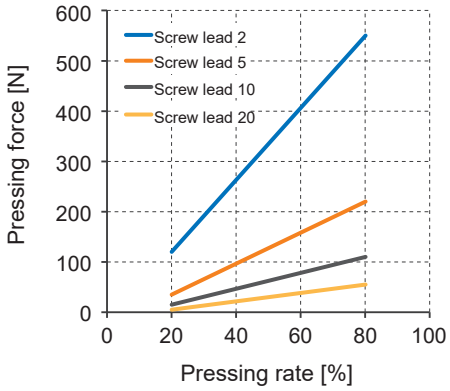
* Confirm each of the pages listed below for details.
ECR: Page 88
ECG: Page 90

Pressing force

[EBR-05M (applicable controller ECR)]



[EBR-05G (applicable controller ECG)]

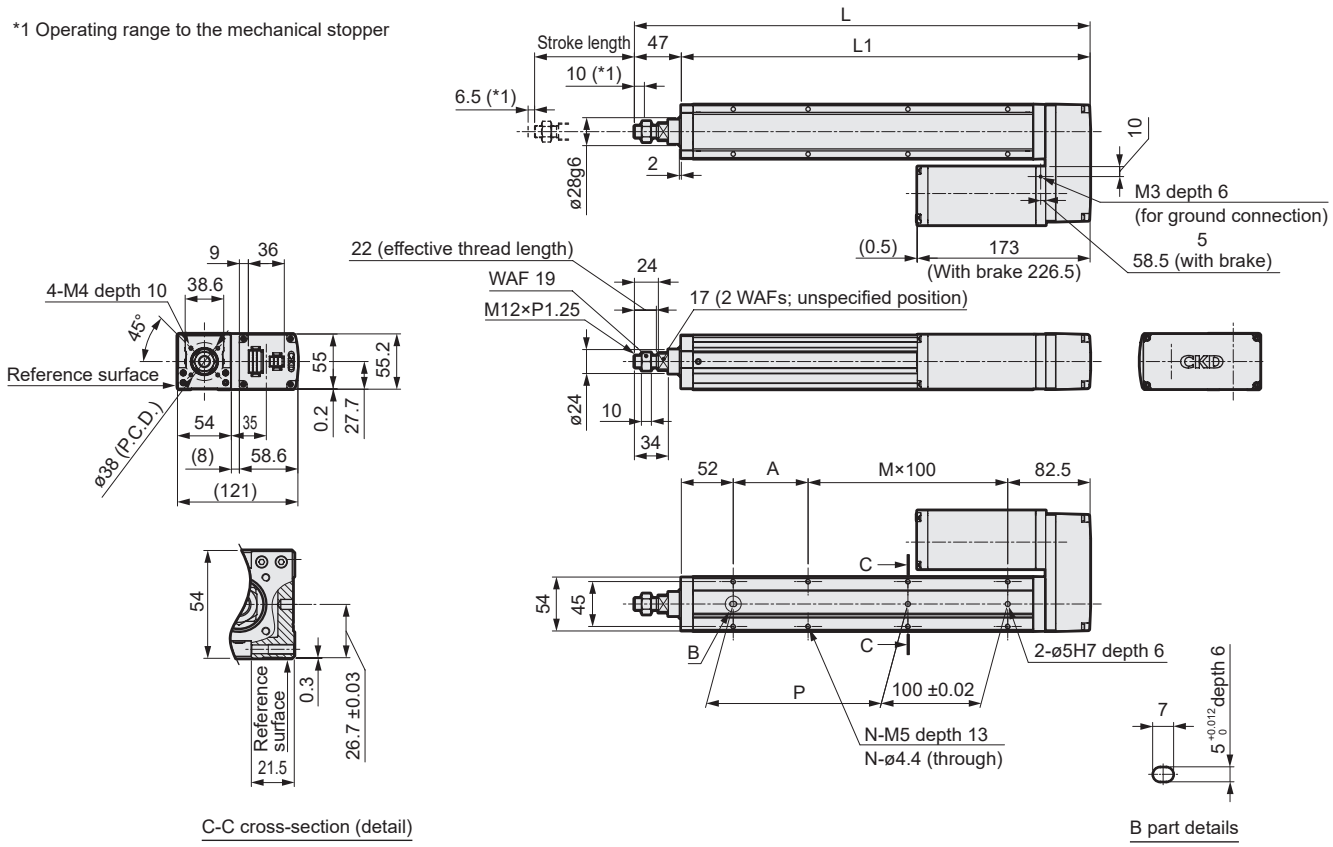


* The above pressing force is a reference value. Variation may occur according to conditions such as pressing speed.

Dimensions: Motor right-side mounting

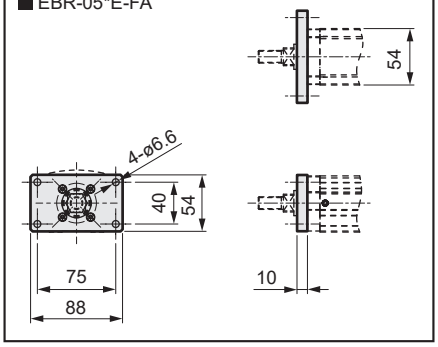
● EBR-05*R

*1 Operating range to the mechanical stopper



Stroke code		0050	0100	0150	0200	0250	0300	0350	0400
Stroke length (mm)		50	100	150	200	250	300	350	400
L		306.5	356.5	406.5	456.5	506.5	556.5	606.5	656.5
L1		259.5	309.5	359.5	409.5	459.5	509.5	559.5	609.5
A		25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4
N		6	6	8	8	10	10	12	12
P		25	75	125	175	225	275	325	375
Weight (kg)	Without brake	2.4	2.5	2.6	2.8	3.1	3.2	3.2	3.5
	With brake	3.5	3.6	3.7	3.9	4.2	4.3	4.3	4.6

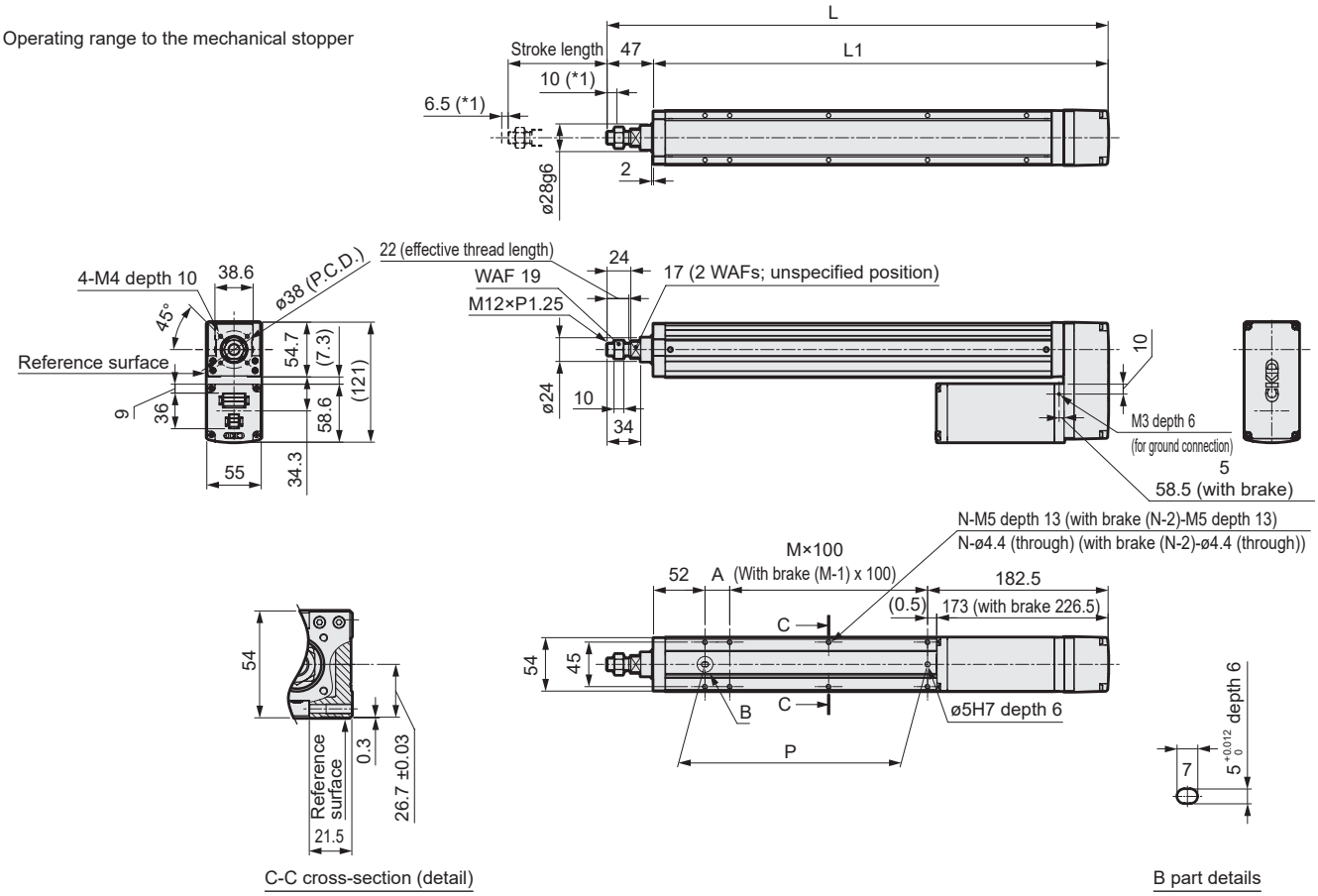
■ EBR-05*E-FA



Dimensions: Motor bottom mounting

● EBR-05*D

*1 Operating range to the mechanical stopper

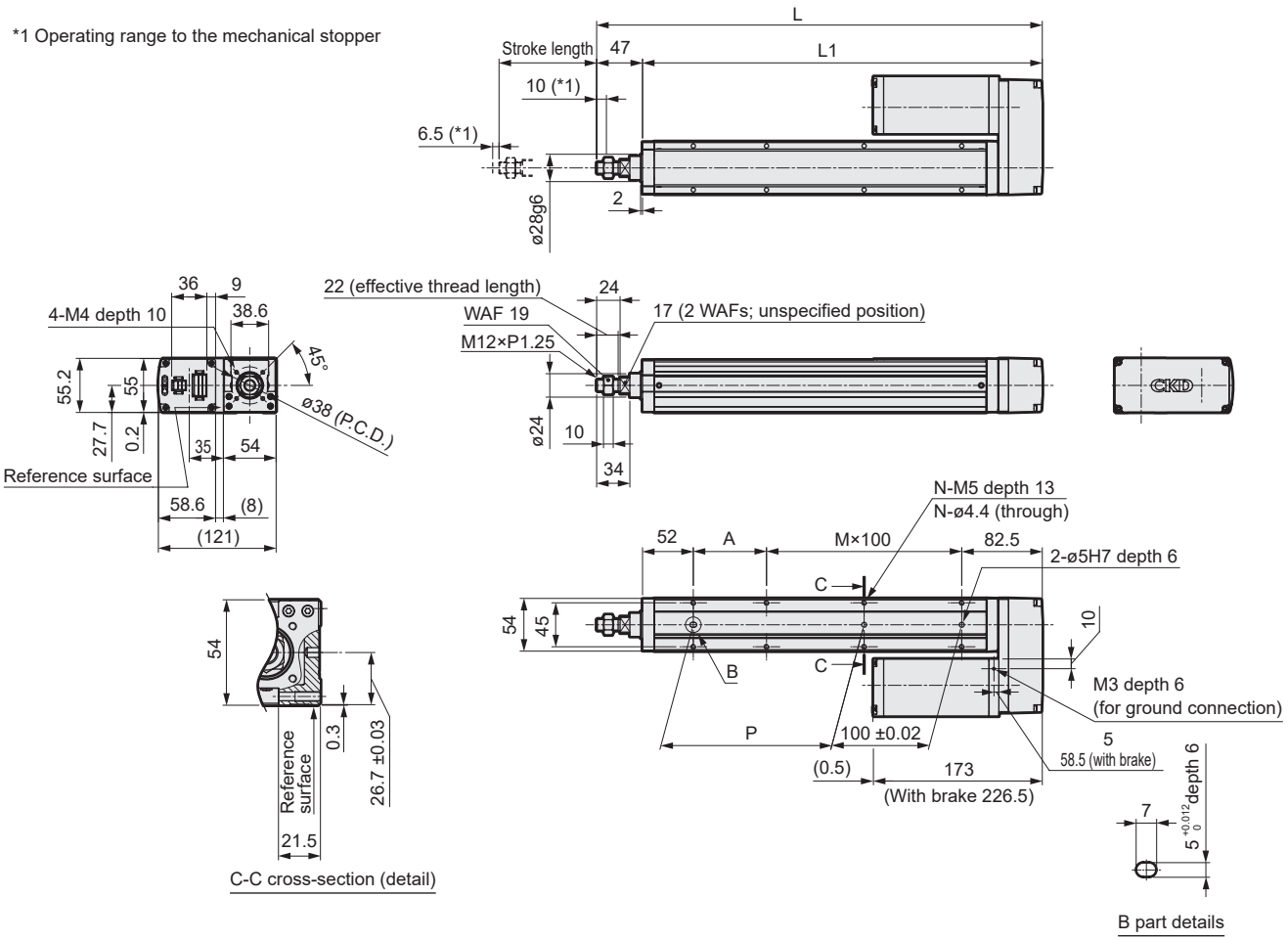


Stroke code		0250	0300	0350	0400
Stroke length (mm)		250	300	350	400
L		506.5	556.5	606.5	656.5
L1		459.5	509.5	559.5	609.5
A		25	75	25	75
M		2	2	3	3
N		8	8	10	10
P		225	275	325	375
Weight (kg)	Without brake	3.1	3.2	3.2	3.5
	With brake	4.2	4.3	4.3	4.6

Dimensions: Motor left-side mounting

● EBR-05*L

*1 Operating range to the mechanical stopper



Stroke code		0050	0100	0150	0200	0250	0300	0350	0400
Stroke length (mm)		50	100	150	200	250	300	350	400
L		306.5	356.5	406.5	456.5	506.5	556.5	606.5	656.5
L1		259.5	309.5	359.5	409.5	459.5	509.5	559.5	609.5
A		25	75	25	75	25	75	25	75
M		1	1	2	2	3	3	4	4
N		6	6	8	8	10	10	12	12
P		25	75	125	175	225	275	325	375
Weight (kg)	Without brake	2.4	2.5	2.6	2.8	3.1	3.2	3.2	3.5
	With brake	3.5	3.6	3.7	3.9	4.2	4.3	4.3	4.6

Notes

Electric actuator Rod with built-in guide

EBR-08*E

Straight motor mounting

□56 Stepper motor

How to order

EBR - 08 M E - 00 - 05 0300 N A N - C S03

(A) (B) (C) (D) (E) (F) (G) (H) (I)

(A) Body size

08	Body width 82 mm

(B) Applicable controller *1

M	ECR
G	ECG

(C) Motor mounting direction

E	Straight mounting

(D) Mounting

00	Basic
FA	Rod side flange

(E) Screw lead

05	5 mm
10	10 mm
20	20 mm

(F) Stroke

0050 to 0700	50 mm (In 50 mm increments) 700 mm

(G) Brake *2

N	None
B	Yes

(H) encoder *1

A	Battery-less absolute encoder (for ECR)
B	Battery-less absolute encoder (for ECG)
C	Incremental encoder (for ECG)

(I) Relay cable *3

N00	None
S01	Fixing cable 1 m
S03	Fixing cable 3 m
S05	Fixing cable 5 m
S10	Fixing cable 10 m
R01	Movable cable 1 m
R03	Movable cable 3 m
R05	Movable cable 5 m
R10	Movable cable 10 m

*1 Select the controller from page 93 or page 105.
Select encoder "A" when an ECR controller is selected and "B" or "C" when an ECG controller is selected.
*2 Select "Yes" for vertical use.
*3 Refer to page 103 for ECR and page 116 for ECG relay cable dimensions.

Product subject to the EAR (EAR99)

Specifications

[EBR-08M (applicable controller ECR)]

Motor		□56 Stepper motor		
Encoder type		Battery-less absolute encoder		
Drive method		Ball screw ø16		
Stroke length	mm	50 to 700		
Screw lead	mm	5	10	20
Max. load capacity *1 *2	kg Horizontal	80 (80)	70 (70)	35 (23.3)
	Vertical	38.3 (35)	18.3 (15)	11.6 (10)
Operation speed range *3 *4	mm/s	6 to 225 (150)	12 to 450 (300)	25 to 900 (500)
Maximum pressing force	N	1050	468	213
Press operation speed range	mm/s	5 to 30	5 to 30	5 to 30
Repeatability	mm	±0.01		
Lost motion	mm	0.1 or less		
Motor power supply voltage		24 VDC ±10% or 48 VDC ±10%		
Brake	Model, power supply voltage	Non-excitation operation, 24 VDC ±10%		
	Power consumption W	8		
	Holding force N	754	377	188

*1 The values in ( ) are at 24 VDC.
*2 Load capacity varies according to acceleration/deceleration and speed.
Refer to page 88 for details.
*3 The maximum speed values in ( ) are at 24 VDC.
*4 The maximum speed may decrease depending on the conditions.

[EBR-08G (applicable controller ECG)]

Motor		□56 Stepper motor		
Encoder type		Battery-less absolute encoder Incremental encoder		
Drive method		Ball screw ø16		
Stroke length	mm	50 to 700		
Screw lead	mm	5	10	20
Max. load capacity *1	kg Horizontal	80.0	70.0	35.0
	Vertical	55.0	23.3	10.0
Operation speed range *2	mm/s	6 to 125	12 to 300	25 to 500
Maximum pressing force	N	965	482	241
Press operation speed range	mm/s	5 to 20	5 to 20	5 to 20
Repeatability	mm	±0.01		
Lost motion	mm	0.1 or less		
Motor power supply voltage		24 VDC ±10%		
Brake	Model, power supply voltage	Non-excitation operation, 24 VDC ±10%		
	Power consumption W	7.2		
	Holding force N	768	384	192

*1 Load capacity varies according to acceleration/deceleration and speed.
Refer to page 90 for details.
*2 The maximum speed may decrease depending on the conditions.

[Common specifications]

Insulation resistance	10MΩ, 500 VDC
Withstand voltage	500 VAC for 1 minute
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
Degree of protection	IP40

*The operating ambient temperature of EBR-**G is 10°C to 40°C.

Stroke and max. speed

[EBR-08M (applicable controller ECR)]

(mm/s)

Thread lead	Power supply voltage	Stroke length										
		50 to 200	250	300	350	400	450	500	550	600	650	700
5	48 VDC	225	225	225	200	200	200	200	200	200	200	200
	24 VDC	150	150	150	150	150	150	150	150	150	150	150
10	48 VDC	450	450	450	400	400	400	400	400	400	400	400
	24 VDC	300	300	300	300	300	300	300	300	300	300	300
20	48 VDC	900	600	600	600	600	600	600	600	600	600	600
	24 VDC	500	500	500	500	500	500	500	500	500	500	500

[EBR-08G (applicable controller ECG)]

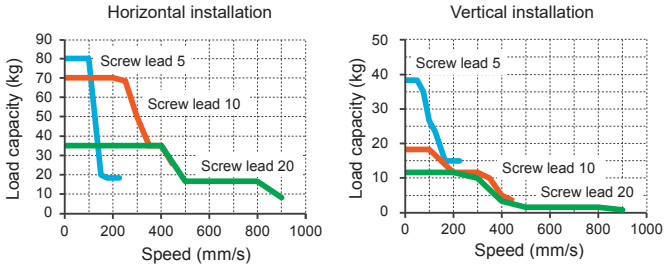
(mm/s)

Thread lead	Power supply voltage	Stroke length
		50 to 700
5	24 VDC	125
10	24 VDC	300
20	24 VDC	500

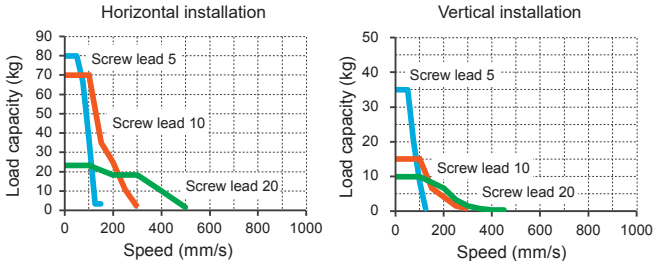
Speed and load capacity

[EBR-08M (applicable controller ECR)]

· At 48 VDC

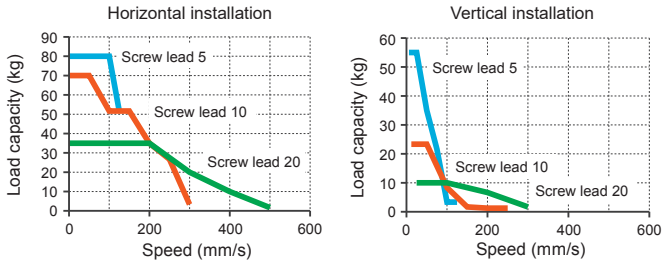


· At 24 VDC



[EBR-08G (applicable controller ECG)]

· At 24 VDC



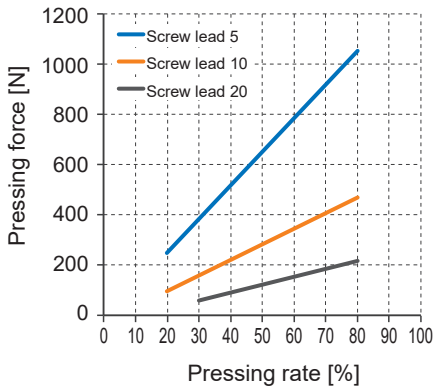
* Incorrectly applying a 48 VDC power supply could result in damage.

* At acceleration of 0.3 G.

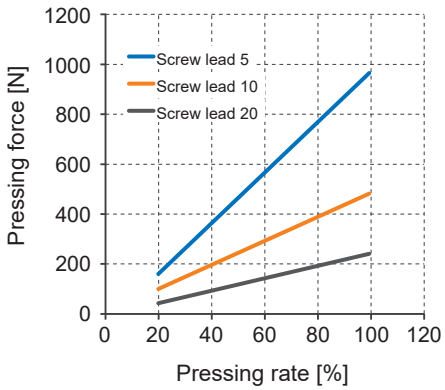
* Confirm each of the pages listed below for details.
ECR: Page 88
ECG: Page 90

Pressing force

[EBR-08M (applicable controller ECR)]



[EBR-08G (applicable controller ECG)]

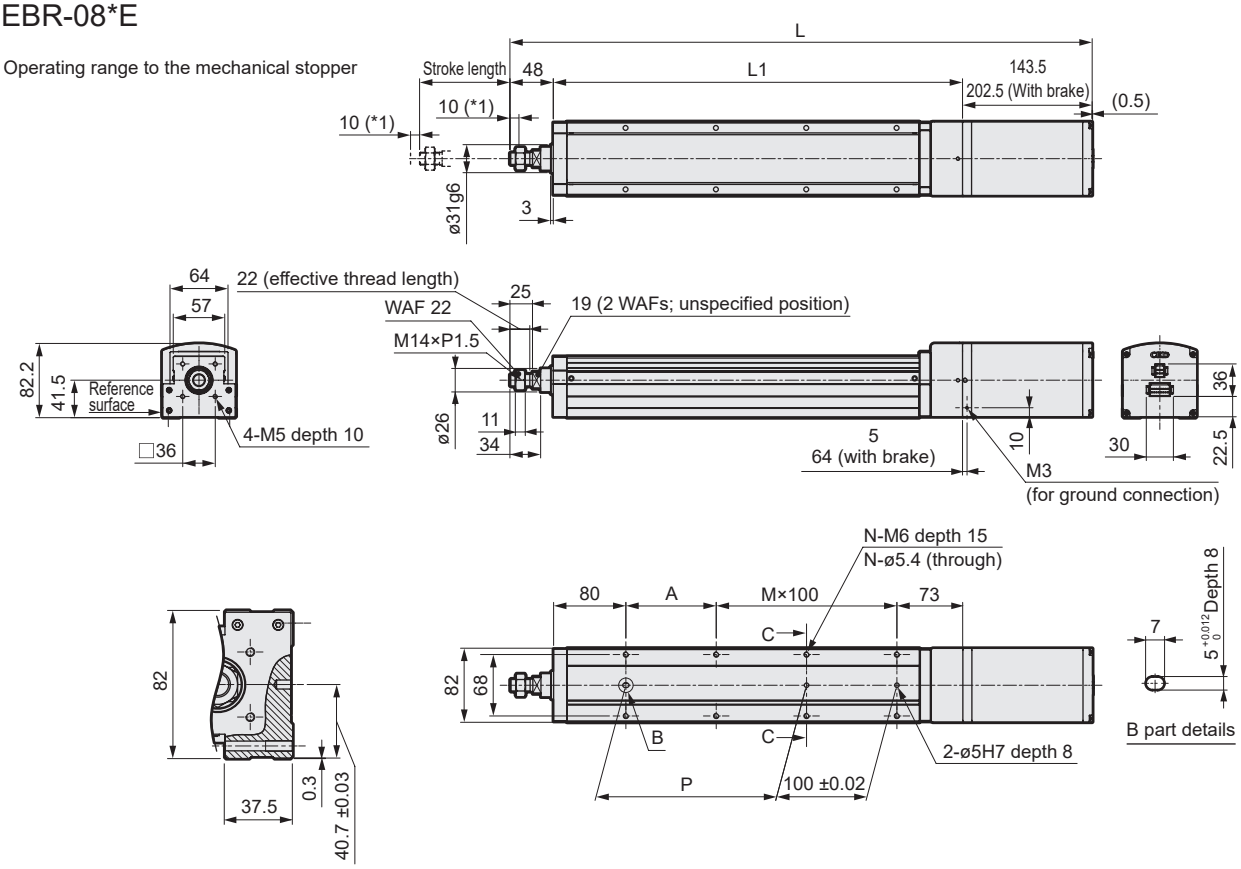


* The above pressing force is a reference value. Variation may occur according to conditions such as pressing speed.

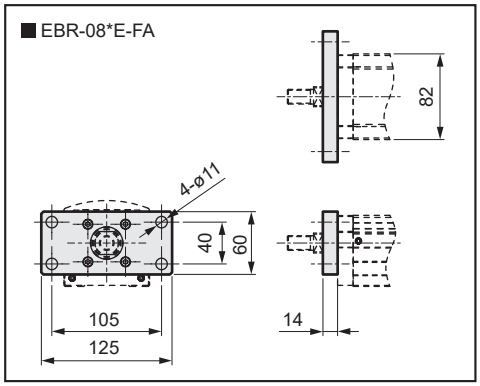
Dimensions

EBR-08*E

*1 Operating range to the mechanical stopper



■ EBR-08*E-FA



Stroke code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500	0550	0600	0650	0700
Stroke length (mm)		50	100	150	200	250	300	350	400	450	500	550	600	650	700
L	Without brake	494.5	544.5	594.5	644.5	694.5	744.5	794.5	844.5	894.5	944.5	994.5	1044.5	1094.5	1144.5
	With brake	553.5	603.5	653.5	703.5	753.5	803.5	853.5	903.5	953.5	1003.5	1053.5	1103.5	1153.5	1203.5
L1		303	353	403	453	503	553	603	653	703	753	803	853	903	953
A		50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700
Weight (kg)	Without brake	6.2	6.6	7.0	7.3	7.7	8.1	8.5	8.8	9.2	9.6	9.9	10.3	10.7	11.0
	With brake	7.5	7.9	8.3	8.6	9.0	9.4	9.8	10.1	10.5	10.9	11.2	11.6	12.0	12.3

Notes

Electric actuator Rod with built-in guide

EBR-08**

Motor side mounting (left, right, bottom)

□56 Stepper motor

How to order

EBR - 08 M R - 00 - 05 0300 N A N - C S03

(A) (B) (C) (D) (E) (F) (G) (H) (I)

(A) Body size	
08	Body width 82 mm

(B) Applicable controller *1	
M	ECR
G	ECG

(C) Motor mounting direction *2	
R	Right mounting
D	Bottom mounting
L	Left mounting

(D) Mounting	
00	Basic
FA	Rod side flange

(E) Screw lead	
05	5 mm
10	10 mm
20	20 mm

(F) Stroke *2	
0050 to 0700	50 mm (In 50 mm increments) 700 mm

(G) Brake *3	
N	None
B	Yes

(H) encoder *1	
A	Battery-less absolute encoder (for ECR)
B	Battery-less absolute encoder (for ECG)
C	Incremental encoder (for ECG)

(I) Relay cable *4	
N00	None
S01	Fixing cable 1 m
S03	Fixing cable 3 m
S05	Fixing cable 5 m
S10	Fixing cable 10 m
R01	Movable cable 1 m
R03	Movable cable 3 m
R05	Movable cable 5 m
R10	Movable cable 10 m

*1 Select the controller from page 93 or page 105.
Select encoder "A" when an ECR controller is selected and "B" or "C" when an ECG controller is selected.
*2 If "D" is selected for the motor mounting direction, select a stroke length from "0250 (250 mm)" to "0700 (700 mm)".
*3 Select "Yes" for vertical use.
*4 Refer to page 103 for ECR and page 116 for ECG relay cable dimensions.

Product subject to the EAR (EAR99)

Specifications

[EBR-08M (applicable controller ECR)]

Motor		□56 Stepper motor		
Encoder type		Battery-less absolute encoder		
Drive method		Ball screw ø16		
Stroke length	mm	50 to 700		
Screw lead	mm	5	10	20
Max. load capacity *1 *2	kg Horizontal	80 (80)	70 (70)	35 (23.3)
	kg Vertical	38.3 (35)	18.3 (15)	8.3 (8.3)
Operation speed range *3 *4	mm/s	6 to 225 (100)	12 to 450 (300)	25 to 700 (500)
Maximum pressing force	N	1050	468	213
Press operation speed range	mm/s	5 to 30	5 to 30	5 to 30
Repeatability	mm	±0.01		
Lost motion	mm	0.1 or less		
Motor power supply voltage		24 VDC ±10% or 48 VDC ±10%		
Brake	Model, power supply voltage	Non-excitation operation, 24 VDC ±10%		
	Power consumption W	8		
	Holding force N	754	377	188

*1 The values in ( ) are at 24 VDC.
*2 Load capacity varies according to acceleration/deceleration and speed.
Refer to page 88 for details.
*3 The maximum speed values in ( ) are at 24 VDC.
*4 The maximum speed may decrease depending on the conditions.

[EBR-08G (applicable controller ECG)]

Motor		□56 Stepper motor		
Encoder type		Battery-less absolute encoder Incremental encoder		
Drive method		Ball screw ø16		
Stroke length	mm	50 to 700		
Screw lead	mm	5	10	20
Max. load capacity *1	kg Horizontal	80.0	70.0	35.0
	kg Vertical	55.0	20.0	8.3
Operation speed range *2	mm/s	6 to 125	12 to 250	25 to 400
Maximum pressing force	N	965	482	241
Press operation speed range	mm/s	5 to 20	5 to 20	5 to 20
Repeatability	mm	±0.01		
Lost motion	mm	0.1 or less		
Motor power supply voltage		24 VDC ±10%		
Brake	Model, power supply voltage	Non-excitation operation, 24 VDC ±10%		
	Power consumption W	7.2		
	Holding force N	768	384	192

*1 Load capacity varies according to acceleration/deceleration and speed.
Refer to page 90 for details.
*2 The maximum speed may decrease depending on the conditions.

[Common specifications]

Insulation resistance	10MΩ, 500 VDC
Withstand voltage	500 VAC for 1 minute
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
Degree of protection	IP40

*The operating ambient temperature for the EBR-**G is 10°C to 40°C.

Stroke and max. speed

[EBR-08M (applicable controller ECR)]

(mm/s)

Thread lead	Power supply voltage	Stroke length										
		50 to 200	250	300	350	400	450	500	550	600	650	700
5	48 VDC	225	225	225	200	200	200	200	200	200	200	200
	24 VDC	100	100	100	100	100	100	100	100	100	100	100
10	48 VDC	450	450	450	400	400	400	400	400	400	400	400
	24 VDC	300	300	300	300	300	300	300	300	300	300	300
20	48 VDC	700	600	600	600	600	600	600	600	600	600	600
	24 VDC	500	500	500	500	500	500	500	500	500	500	500

[EBR-08G (applicable controller ECG)]

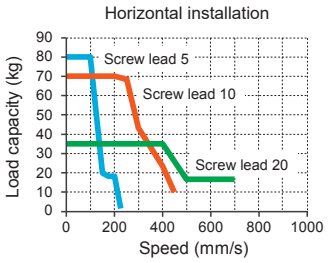
(mm/s)

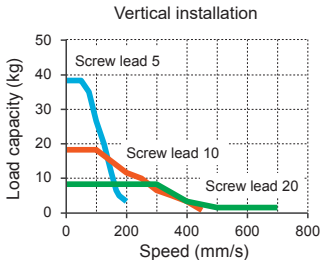
Thread lead	Power supply voltage	Stroke length
		50 to 700
5	24 VDC	125
10	24 VDC	250
20	24 VDC	400

Speed and load capacity

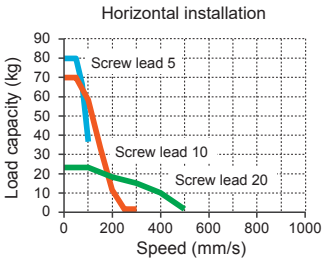
[EBR-08M (applicable controller ECR)]

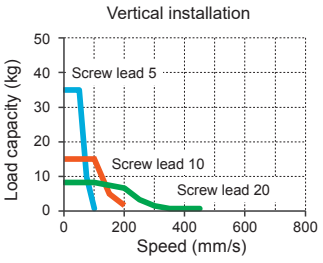
· At 48 VDC





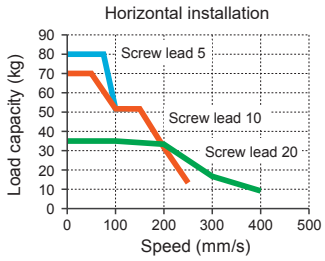
· At 24 VDC

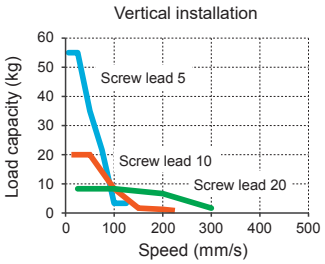




[EBR-08G (applicable controller ECG)]

· At 24 VDC





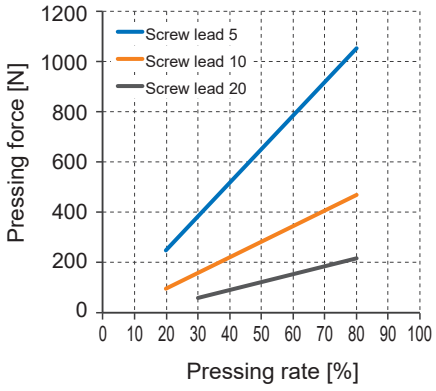
* Incorrectly applying a 48 VDC power supply could result in damage.

* At acceleration of 0.3 G.

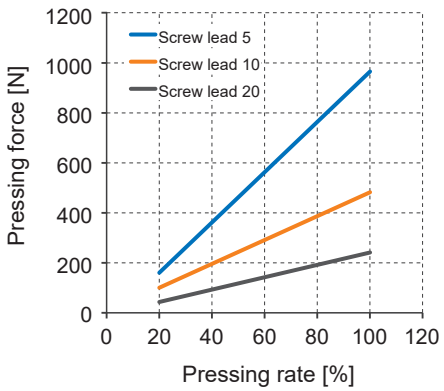
* Confirm each of the pages listed below for details.
ECR: Page 88
ECG: Page 90

Pressing force

[EBR-08M (applicable controller ECR)]



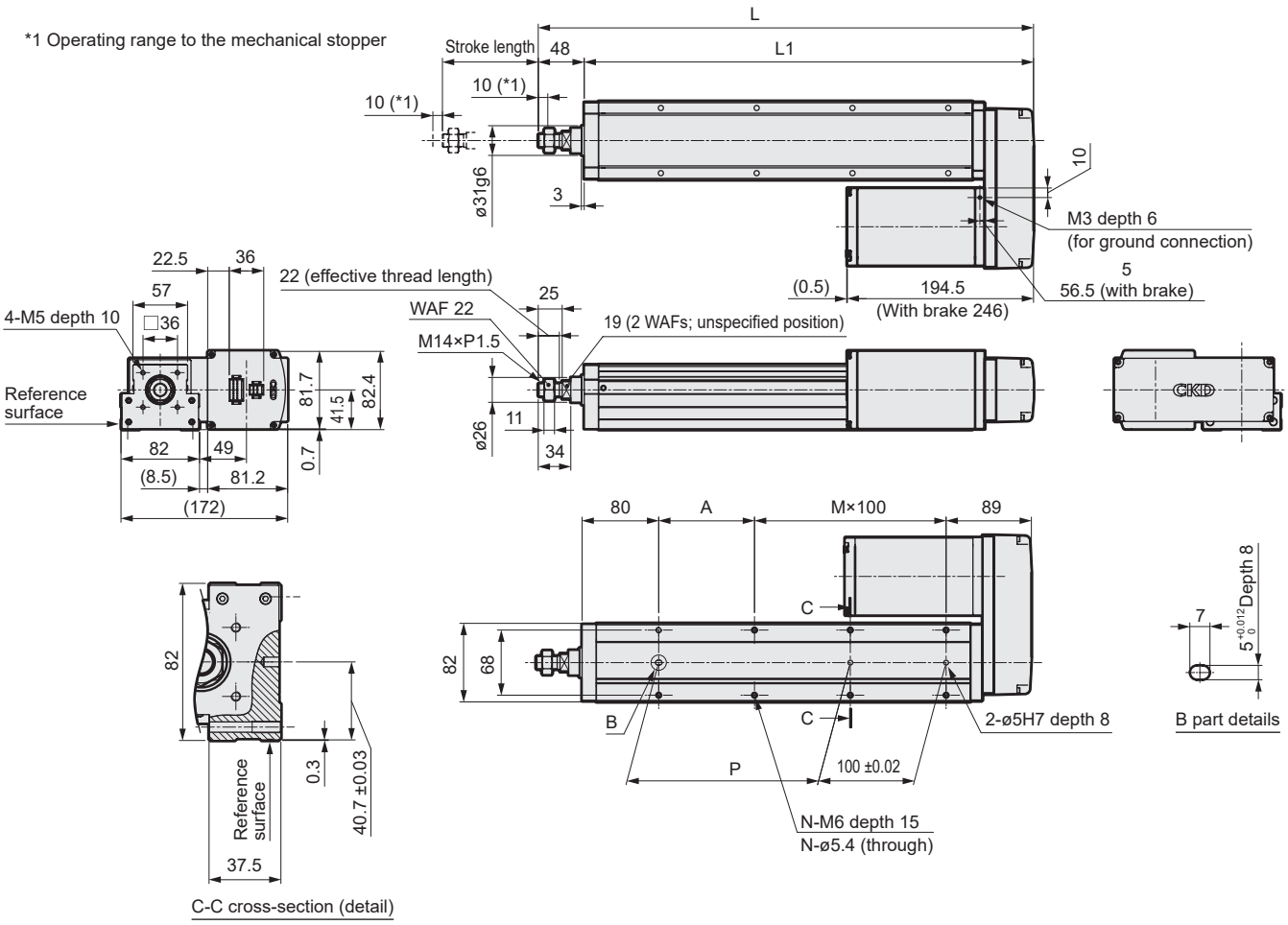
[EBR-08G (applicable controller ECG)]

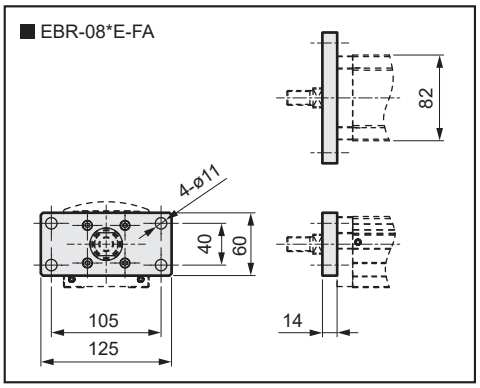


* The above pressing force is a reference value. Variation may occur according to conditions such as pressing speed.

Dimensions: Motor right-side mounting

● EBR-08*R



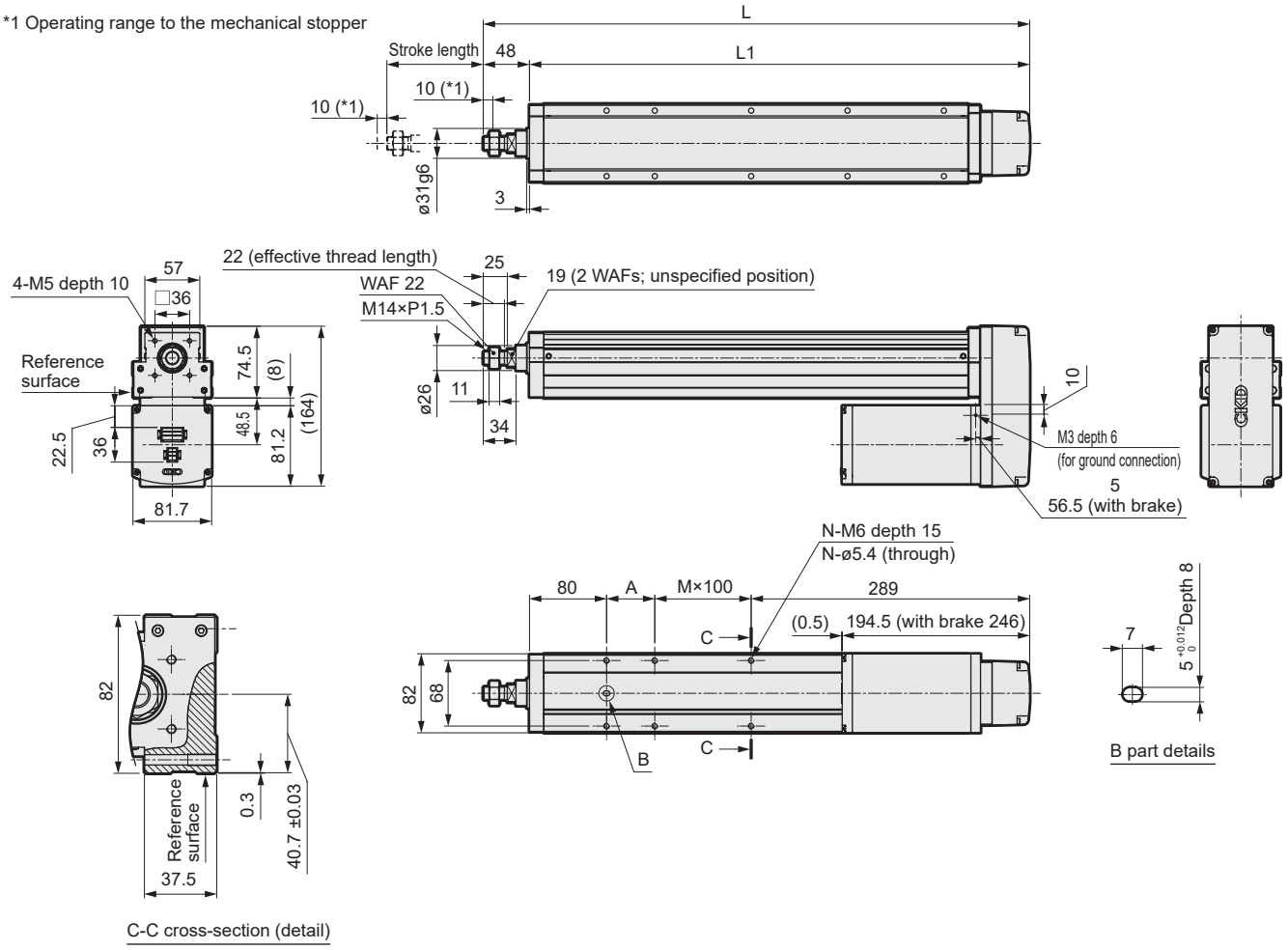


Stroke code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500	0550	0600	0650	0700
Stroke length (mm)		50	100	150	200	250	300	350	400	450	500	550	600	650	700
L		367	417	467	517	567	617	667	717	767	817	867	917	967	1017
L1		319	369	419	469	519	569	619	669	719	769	819	869	919	969
A		50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700
Weight (kg)	Without brake	5.9	6.3	6.7	7.0	7.3	7.7	8.0	8.3	8.6	8.9	9.4	9.7	10.1	10.4
	With brake	7.2	7.6	8.0	8.3	8.6	9.0	9.3	9.6	9.9	10.2	10.7	11.0	11.4	11.7

Dimensions: Motor bottom mounting

● EBR-08*D

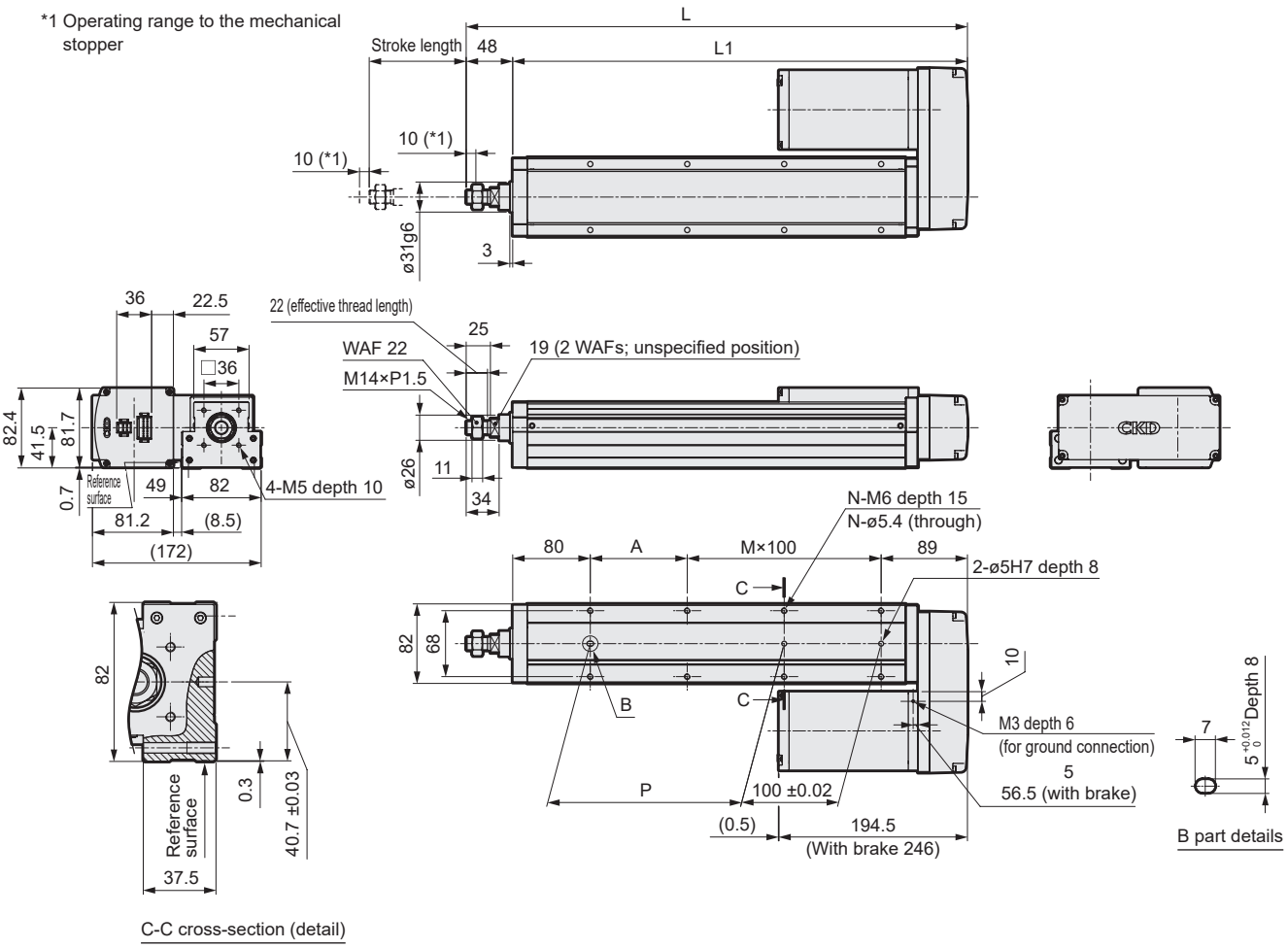
*1 Operating range to the mechanical stopper



Stroke code		0250	0300	0350	0400	0450	0500	0550	0600	0650	0700
Stroke length (mm)		250	300	350	400	450	500	550	600	650	700
L		567	617	667	717	767	817	867	917	967	1017
L1		519	569	619	669	719	769	819	869	919	969
A		50	100	50	100	50	100	50	100	50	100
M		1	1	2	2	3	3	4	4	5	5
N		6	6	8	8	10	10	12	12	14	14
Weight (kg)	Without brake	7.3	7.7	8.0	8.3	8.6	8.9	9.4	9.7	10.1	10.4
	With brake	8.6	9.0	9.3	9.6	9.9	10.2	10.7	11.0	11.4	11.7

Dimensions: Motor left-side mounting

● EBR-08*L



Stroke code		0050	0100	0150	0200	0250	0300	0350	0400	0450	0500	0550	0600	0650	0700
Stroke length (mm)		50	100	150	200	250	300	350	400	450	500	550	600	650	700
L		367	417	467	517	567	617	667	717	767	817	867	917	967	1017
L1		319	369	419	469	519	569	619	669	719	769	819	869	919	969
A		50	100	50	100	50	100	50	100	50	100	50	100	50	100
M		1	1	2	2	3	3	4	4	5	5	6	6	7	7
N		6	6	8	8	10	10	12	12	14	14	16	16	18	18
P		50	100	150	200	250	300	350	400	450	500	550	600	650	700
Weight (kg)	Without brake	5.9	6.3	6.7	7.0	7.3	7.7	8.0	8.3	8.6	8.9	9.4	9.7	10.1	10.4
	With brake	7.2	7.6	8.0	8.3	8.6	9.0	9.3	9.6	9.9	10.2	10.7	11.0	11.4	11.7

Notes

Model selection

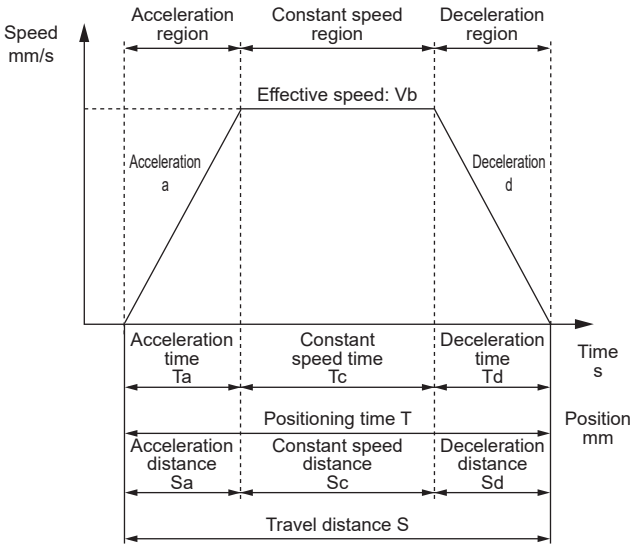
STEP1 Confirming load capacity

Load capacity varies with mounting orientation, screw lead, transport speed, acceleration/deceleration and power supply voltage.
Refer to the Series Variation (pages 48 to 51), the specification table for each model and the Table of Load Capacity by Speed and Acceleration/Deceleration to select the size and screw lead.

STEP2 Confirming positioning time

Calculate the positioning time with the selected product according to the following example and confirm that the required tact is achievable.

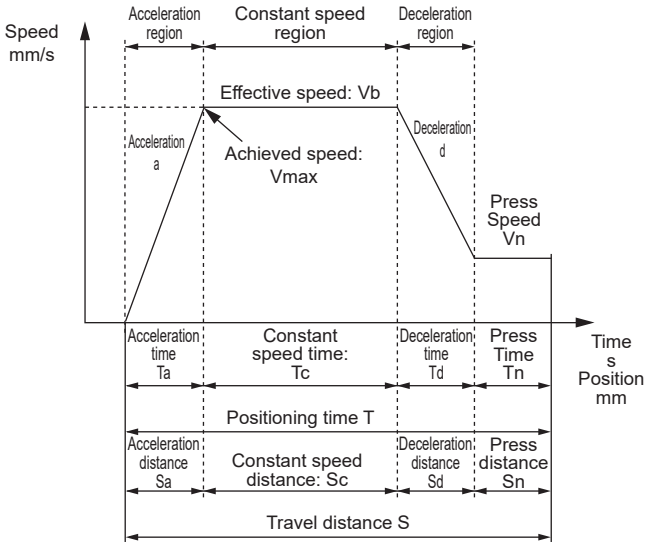
Positioning time for general transport operation



	Description	Code	Unit	Remarks
Set value	Set speed	V	mm/s	
	Set acceleration	a	mm/s^2	
	Set deceleration	d	mm/s^2	
	Travel distance	S	mm	
Calculated value	Achieved speed	Vmax	mm/s	$= \{2\times a\times d\times S/(a+d)\}^{1/2}$
	Effective speed	Vb	mm/s	Smaller of V and Vmax
	Acceleration time	Ta	s	=Vb/a
	Deceleration time	Td	s	=Vb/d
	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 that exceed the specifications.
* Depending on the deceleration speed and stroke, the trapezoidal velocity waveform may not form (the set speed may not be reached).
  In this case, select the effective speed (Vb) from the set speed (V) and the achieved speed (Vmax), whichever is smaller.
* Acceleration/deceleration varies depending on the product and the working conditions. Refer to pages 88 to 91 for details.
* While settling time depends on working conditions, it may take 0.2 seconds or so.
* 1 G ≈ 9.8 m/s^2.

Positioning time for pressing operation



	Description	Code	Unit	Remarks
Set value	Set speed	V	mm/s	
	Set acceleration	a	mm/s^2	
	Set deceleration	d	mm/s^2	
	Travel distance	S	mm	
	Pressing speed	Vn	mm/s	
	Pressing distance	Sn	mm	
Calculated value	Achieved speed	Vmax	mm/s	$=\{2\times a\times d\times (S-Sn+Vn^2/2/d)/(a+d)\}^{1/2}$
	Effective speed	Vb	mm/s	The lesser value of V and Vmax
	Acceleration time	Ta	s	=Vb/a
	Deceleration time	Td	s	=(Vb-Vn)/d
	Constant speed time	Tc	s	=Sc/Vb
	Pressing time	Tn	s	=Sn/Vn
	Acceleration distance	Sa	mm	$=(a\times Ta^2)/2$
	Deceleration distance	Sd	mm	$=((Vb+Vn)\times Td)/2$
	Constant speed distance	Sc	mm	=S-(Sa+Sd+Sn)
	Positioning time	T	s	=Ta+Tc+Td+Tn

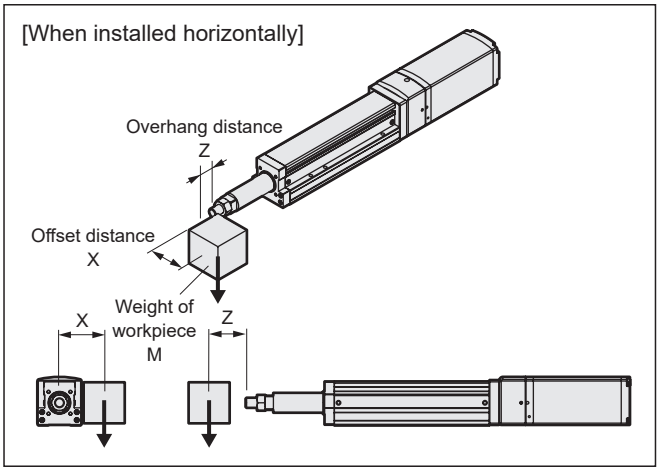
* Do not use at speeds that exceed the specifications.
* Pressing speed varies depending on the product.
* Depending on the deceleration speed and stroke, the trapezoidal velocity waveform may not form (the set speed may not be reached).
  In this case, select the effective speed (Vb) from the set speed (V) and the achieved speed (Vmax), whichever is smaller.
* Acceleration/deceleration varies depending on the product and the working conditions. Refer to pages 88 to 91 for details.
* While settling time depends on working conditions, it may take 0.2 seconds or so.
* 1 G ≈ 9.8 m/s^2.

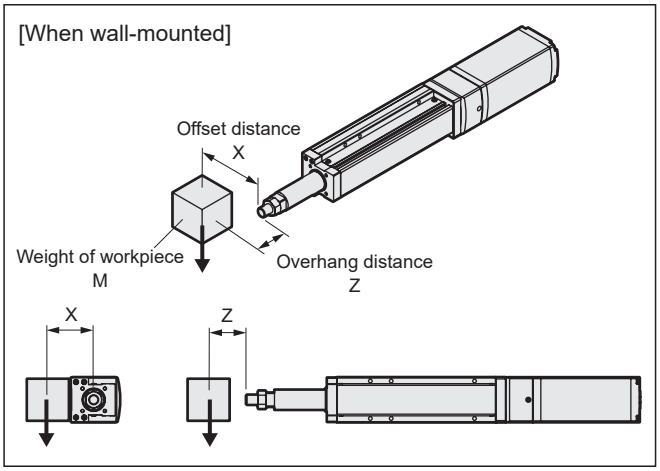
STEP3 Confirming allowable load weight (Rod with built-in guide EBR Series)

Confirm that the load weight during operation is within the allowable range (pages 84 to 85).
If the allowable load weight is exceeded, increase the size or use an external guide in conjunction.

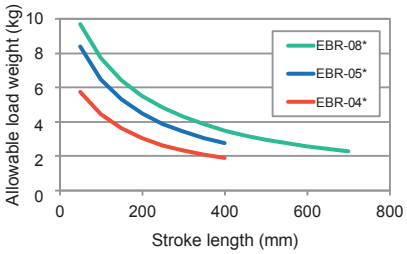
Allowable load weight *Reference value

[When installed horizontally or wall-mounted]

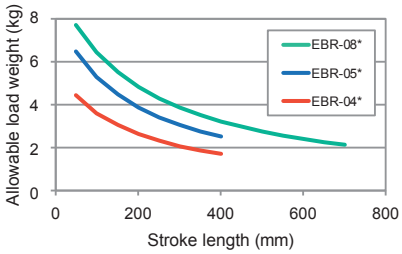




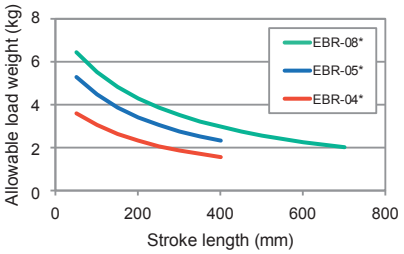
[Offset (X) 0 / Overhang distance (Z) 0 mm]



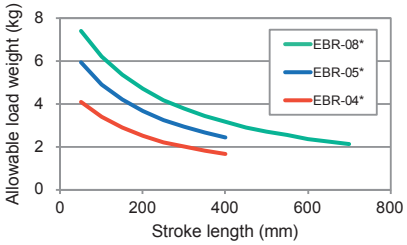
[Offset (X) 0 / Overhang distance (Z) 50 mm]



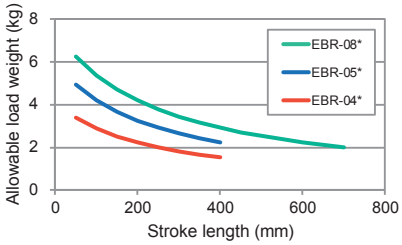
[Offset (X) 0 / Overhang distance (Z) 100 mm]



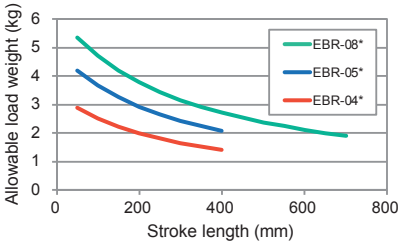
[Offset (X) 100 mm / Overhang distance (Z) 0 mm]



[Offset (X) 100 / Overhang distance (Z) 50 mm]



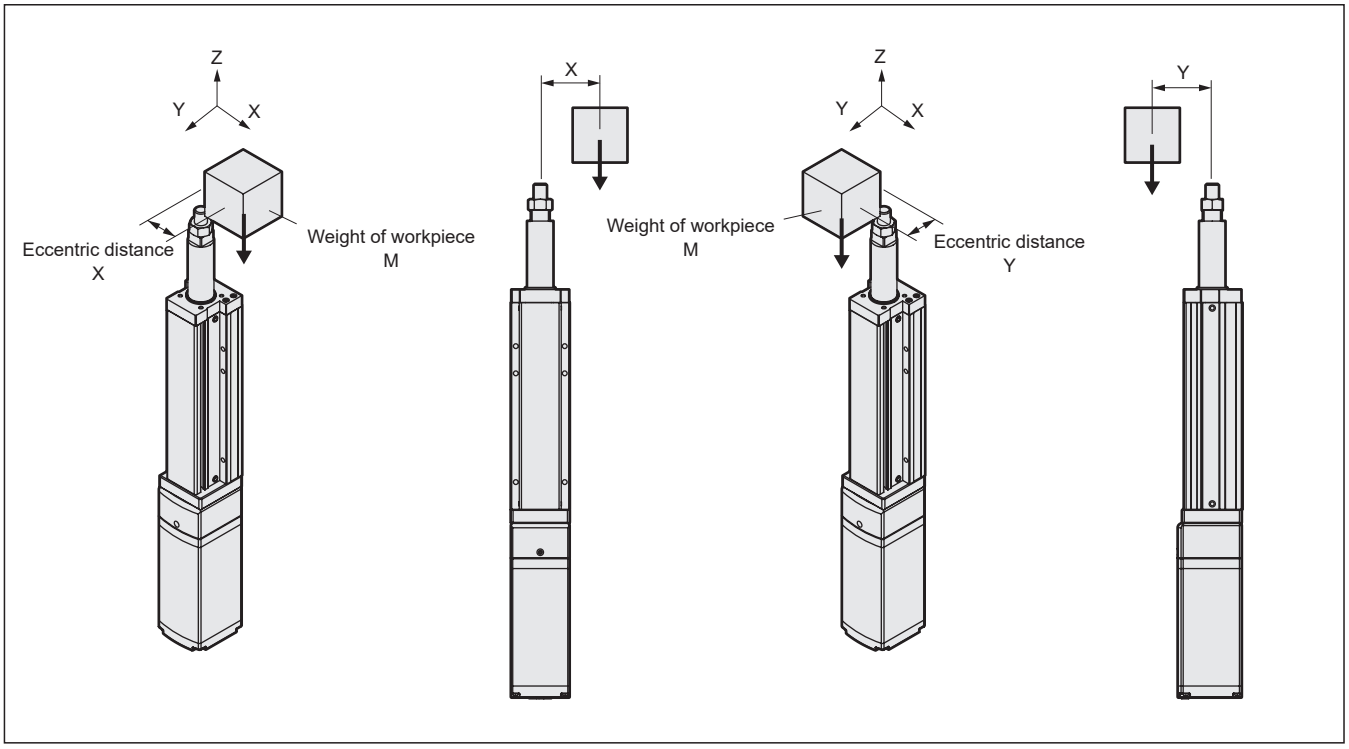
[Offset (X) 100 / Overhang distance (Z) 100 mm]

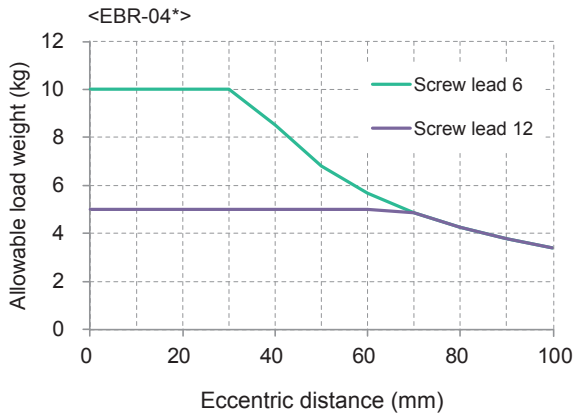


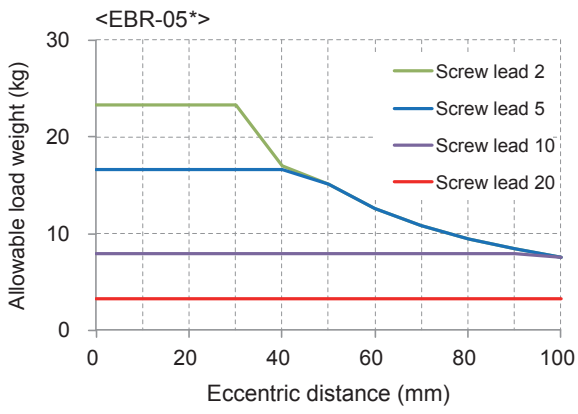
* Values are when the actuator operating life is 5,000 km. (Acceleration/deceleration 0.5 G, speed 300 mm/s)
The screw lead = 2 mm is the value when the operating life is 1,000 km.

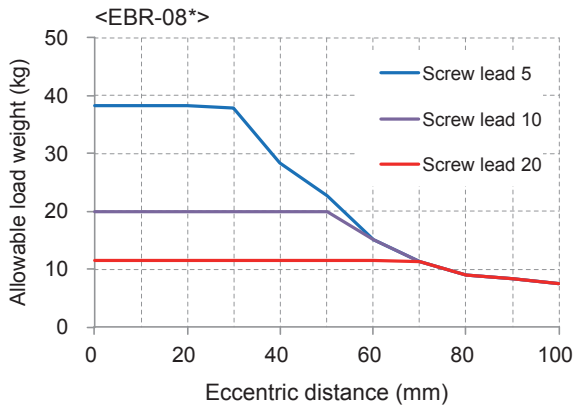
Allowable load weight *Reference value

[When installed vertically]



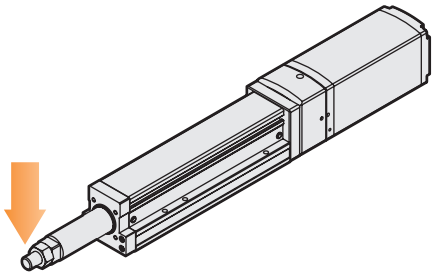




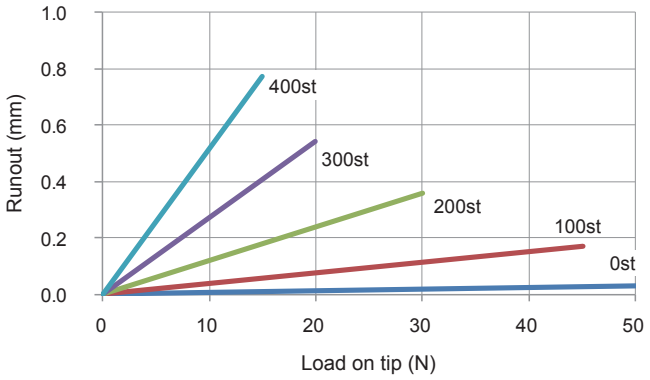


* Acceleration/deceleration: 0.5 G

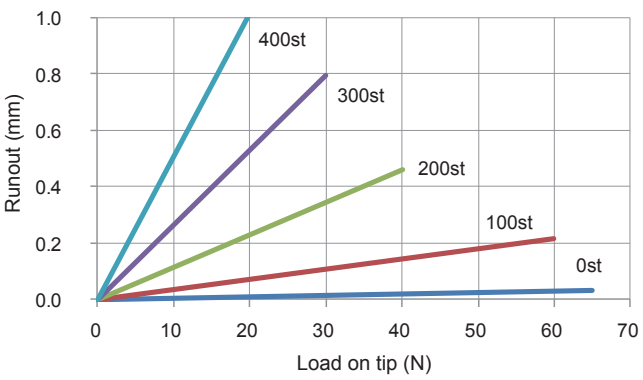
Rod end runout *Reference value



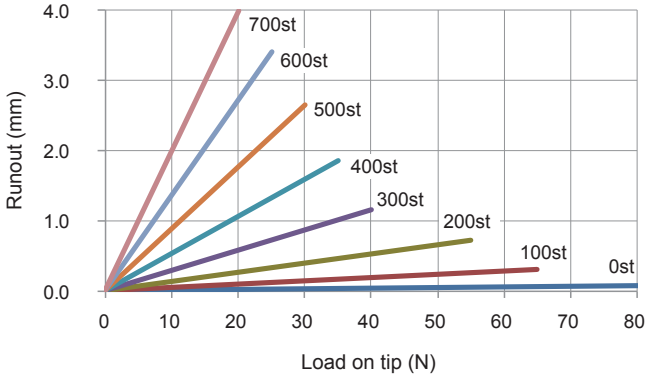
[EBR-04*]



[EBR-05*]



[EBR-08*]



Notes

Table of Load Capacity by Speed and Acceleration/Deceleration

48 VDC

The table below lists the maximum load capacity during acceleration/deceleration and the maximum speed at which operation is possible. Refer to the model that satisfies the required operation conditions.

[When installed horizontally]

■ EBR-04M

Screw lead 6 (kg)

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	0.7	1.0	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5	0.7	1.0
0	33.3	33.3	33.3	33.3	33.3	33.3	33.3	28.3
50	33.3	33.3	33.3	33.3	33.3	33.3	33.3	28.3
100	33.3	33.3	28.3	28.3	33.3	33.3	28.3	28.3
150	33.3	28.3	18.3	16.6	33.3	28.3	18.3	15.0
200	28.3	10.0	8.3	6.6	28.3	10.0	8.3	6.6
250	20.0	8.3	8.3	6.6	20.0	8.3	8.3	6.6
300	10.0	3.3			10.0	3.3		
350	3.3				3.3			

Screw lead 12

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	0.7	1.0	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5	0.7	1.0
0	18.3	18.3	13.3	10.0	18.3	11.6	11.6	10.0
100	18.3	18.3	13.3	10.0	18.3	11.6	11.6	10.0
200	18.3	15.8	11.6	8.3	18.3	11.6	11.6	8.3
300	16.6	13.3	9.1	8.3	16.6	11.6	9.1	6.6
400	16.6	9.1	8.3	6.6	16.6	11.6	8.3	5.0
500	8.3	8.3	5.0	5.0	8.3	6.6	3.3	3.3
600	3.3	3.3	3.3	3.3	3.3	1.6	1.6	

■ EBR-05M

Screw lead 2

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5
0	80.0	80.0	80.0	80.0
30	80.0	80.0	80.0	80.0
50	68.3	68.3	68.3	68.3
70	68.3	60.0	68.3	60.0
90	48.3	23.3	48.3	23.3
100	48.3	13.3	48.3	21.6
110	36.6		36.6	
120	31.6		30.0	
130	28.3			

■ EBR-05M

Screw lead 5

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	0.7	1.0	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5	0.7	1.0
0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0
50	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0
100	60.0	55.0	55.0	55.0	60.0	53.3	50.0	43.3
150	60.0	40.0	38.3	38.3	60.0	36.6	26.6	23.3
200	60.0	38.3	35.0	21.6	60.0	31.6	16.6	13.3
225	60.0	35.0	18.3	10.0	43.3	30.0	10.0	3.3
250	55.0	33.3	18.3	10.0	40.0	20.0	10.0	3.3
275	50.0	21.6	11.6	1.6	36.6	18.3	6.6	
300	36.6	18.3	8.3	1.6	26.6	8.3	3.3	
330	16.6	6.6	1.6		1.6	1.6		

Screw lead 10

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	0.7	1.0	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5	0.7	1.0
0	50.0	38.3	38.3	35.0	36.6	36.6	33.3	26.6
50	50.0	38.3	38.3	35.0	36.6	36.6	33.3	26.6
75	50.0	38.3	31.6	23.3	35.0	35.0	31.6	23.3
100	50.0	35.0	28.3	21.6	35.0	35.0	28.3	21.6
200	50.0	33.3	23.3	20.0	35.0	20.0	15.0	15.0
300	35.0	23.3	21.6	18.3	35.0	20.0	15.0	10.0
400	20.0	18.3	12.5	11.6	20.0	16.6	11.6	5.0
500	10.0	10.0	10.0	5.0	10.0	10.0	8.3	1.6
600	1.6	1.6	1.6	1.6				

Screw lead 20

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	0.7	1.0	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5	0.7	1.0
0	20.0	18.3	18.3	15.0	18.3	11.6	10.0	8.3
100	20.0	18.3	18.3	15.0	18.3	11.6	10.0	8.3
200	20.0	18.3	13.3	13.3	16.6	11.6	10.0	8.3
300	20.0	18.3	11.6	11.6	16.6	11.6	10.0	8.3
400	20.0	18.3	10.0	10.0	16.6	11.6	10.0	8.3
500	20.0	16.6	10.0	8.3	16.6	11.6	10.0	5.8
600	19.1	13.3	10.0	5.8	16.6	11.6	8.3	1.6
700	15.0	10.0	6.6	3.3	15.0	10.0	6.6	1.6
800	11.6	6.6	1.6	1.6	11.6	6.6	1.6	0.8

■ EBR-08M

Screw lead 5

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	0.7	1.0	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5	0.7	1.0
0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
50	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
75	80.0	80.0	80.0	51.6	80.0	80.0	80.0	51.6
100	80.0	80.0	80.0	20.0	80.0	68.3	68.3	20.0
125	50.0	31.6	23.3	20.0	50.0	26.6	18.3	6.6
150	20.0	20	8.3	3.3	20.0	15.0		
175	18.3	8.3			18.3			
200	18.3				18.3			
225	18.3				1.6			

Screw lead 10

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	0.7	1.0	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5	0.7	1.0
0	70.0	70.0	70.0	68.3	70.0	70.0	70.0	60.0
100	70.0	70.0	70.0	68.3	70.0	70.0	70.0	60.0
150	70.0	70.0	70.0	50.0	70.0	70.0	61.6	46.6
200	70.0	43.3	31.6	23.3	70.0	40.0	26.6	23.3
250	68.3	31.6	21.6	10.0	68.3	23.3	18.3	10.0
300	50.0	28.3	18.3	10.0	43.3	18.3	11.6	
350	35.0	25.0	15.0	1.6	33.3	15.0	8.3	
400	35.0	21.6	11.6		23.3	11.6	3.3	
450	25.0	18.3	6.6		10.0			

Screw lead 20

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	0.7	1.0	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5	0.7	1.0
0	35.0	35.0	28.3	26.6	35.0	23.3	23.3	23.3
100	35.0	35.0	28.3	26.6	35.0	23.3	23.3	23.3
200	35.0	35.0	26.6	26.6	35.0	23.3	23.3	23.3
300	35.0	35.0	23.3	16.6	35.0	23.3	18.3	16.6
400	35.0	26.6	20.0	11.6	35.0	23.3	18.3	11.6
500	16.6	16.6	13.3	5.0	16.6	16.6	11.6	5.0
600	16.6	16.6	10.0	3.3	16.6	13.3	8.3	1.6
700	16.6	13.3	8.3	3.3	16.6	11.6	5.0	0.8
800	16.6	10.0	8.3	1.6				
900	8.3	8.3	5.0					

[When installed vertically]

■ EBR-04M

Screw lead 6

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5
0	10.0	8.3	9.1	8.3
50	10.0	8.3	9.1	8.3
100	8.3	8.3	9.1	8.3
150	8.3	6.6	8.3	5.8
200	6.6	5.0	6.6	4.1
250	5.0	3.3	3.7	2.0
300	3.3	1.6	2.0	0.8
350	1.6			

Screw lead 12

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5
0	5.0	4.1	5.0	4.1
100	5.0	4.1	5.0	4.1
200	5.0	4.1	5.0	4.1
300	4.1	3.3	4.1	3.3
400	3.3	3.3	3.3	3.3
500	1.6	2.5	1.6	1.6
600	1.6	0.8	0.8	0.4

■ EBR-05M

Screw lead 2

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5
0	24.0	23.3	24.0	23.3
25	24.0	23.3	24.0	23.3
50	23.3	23.3	23.3	23.3
60	18.3	18.3	18.3	18.3
70	15.0	15.0	15.0	15.0
75	13.3	8.3	13.3	8.3
80	13.3	8.3	11.6	8.3
90	13.3	0.8	11.6	0.8
100	13.3		11.6	
110	13.3		11.6	
120	13.3		5.0	

Screw lead 5

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5
0	16.6	16.6	16.6	16.6
50	16.6	16.6	16.6	16.6
100	15.0	13.3	13.3	13.3
150	11.6	11.6	11.6	11.6
200	11.6	8.3	11.6	8.3
250	10.0	6.6	10.0	5.0
275	8.3	3.3	6.6	0.8
300	5.0	3.3	0.8	0.8

Screw lead 10

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5
0	10.0	7.9	8.3	7.9
100	10.0	7.9	8.3	7.9
200	10.0	7.5	6.6	7.5
300	7.5	5.4	5.8	5.4
350	5.8	3.7	5.0	3.7
400	5.0	3.7	5.0	3.7
500	4.1	2.5	4.1	2.5
600	0.8	0.4		

■ EBR-05M

Screw lead 20

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5
0	4.1	3.3	4.1	3.3
100	4.1	3.3	4.1	3.3
200	4.1	3.3	4.1	3.3
300	4.1	2.5	4.1	2.5
400	3.7	2.5	3.7	2.5
500	3.3	1.6	3.3	1.6
600	2.5	1.6	2.5	1.6
700	2.0	1.6	2.0	1.6
800	1.6	0.8		

■ EBR-08M

Screw lead 5

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5
0	38.3	38.3	38.3	38.3
50	38.3	38.3	38.3	38.3
75	35.0	35.0	35.0	35.0
100	26.6	26.6	26.6	26.6
125	23.3	26.6	20.0	20.0
150	18.3	21.6	11.6	11.6
165	15.0	16.6	6.6	5.0
175	15.0	16.6	5.0	5.0
200	15.0	16.6	3.3	3.3
225	15.0	11.6		

Screw lead 10

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5
0	18.3	20.0	18.3	18.3
100	18.3	20.0	18.3	18.3
150	15.0	15.0	15.0	15.0
200	11.6	11.6	11.6	11.6
250	11.6	11.6	10.0	8.3
300	11.6	11.6	6.6	5.0
350	10.0	10.0	5.0	3.3
400	5.0	5.0	3.3	1.6
450	3.3	3.3	0.8	0.8

Screw lead 20

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5
0	11.6	11.6	8.3	8.3
100	11.6	11.6	8.3	8.3
200	11.6	10.0	8.3	8.3
300	10.0	8.3	8.3	8.3
400	3.3	2.5	3.3	2.5
500	1.6	1.6	1.6	1.6
600	1.6	1.6	1.6	1.6
700	1.6	1.6	1.6	1.6
800	1.6	1.6		
900	0.8	0.8		

Table of Load Capacity by Speed and Acceleration/Deceleration

24 VDC

* At 24 VDC, operation is possible up to 0.7 G when horizontally installed and 0.3 G when vertically installed.
Contact CKD for details.

[When installed horizontally]

■ EBR-04M

(kg)

Screw lead 6

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.7	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.7
0	33.3	26.6	33.3	26.6
50	33.3	26.6	33.3	26.6
100	33.3	15.8	33.3	15.8
150	14.1	1.6	13.3	1.6
200	1.6		1.6	
250	1.6			

Screw lead 12

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.7	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.7
0	18.3	6.6	18.3	6.6
100	18.3	6.6	18.3	6.6
200	15.4	6.6	15.8	6.6
300	4.5	1.6	5.0	1.6
400	4.5	0.8	0.8	
500	1.6			

■ EBR-05M

Screw lead 2

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.5	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.5
0	80.0	80.0	80.0	80.0
25	80.0	80.0	80.0	80.0
50	73.3	46.6	41.6	41.6
60	73.3	10.0	20.0	10.0
70	43.3		20.0	
80	20.0		20.0	

Screw lead 5

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.7	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.7
0	60.0	60.0	60.0	60.0
50	60.0	60.0	60.0	60.0
100	60.0	20.0	53.3	20.0
150	43.3	5.0	41.6	5.0
200	20.8		15.0	
225	15.0		8.3	
250	10.0		1.6	
275	8.3			

Screw lead 10

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.7	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.7
0	50.0	26.6	36.6	26.6
50	50.0	26.6	36.6	26.6
100	50.0	16.6	36.6	8.3
200	35.0	11.6	35.0	5.0
300	11.6	3.3	11.6	3.3
400	7.5	1.6	7.5	
500	1.6			

Screw lead 20

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.7	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.7
0	20.0	18.3	18.3	10.0
50	20.0	18.3	18.3	10.0
100	20.0	15.8	18.3	10.0
200	20.0	13.3	18.3	10.0
300	20.0	10.0	18.3	10.0
400	13.3	5.0	13.3	5.0
500	7.5	1.6	6.6	1.6
600	3.3		3.3	
700	0.4		0.4	

■ EBR-08M

Screw lead 5

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.7	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.7
0	80.0	80.0	80.0	80.0
25	80.0	80.0	80.0	80.0
50	80.0	80.0	80.0	80.0
75	66.6	66.6	66.6	21.6
100	36.6	3.3	36.6	
125	3.3			
150	3.3			

Screw lead 10

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.7	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.7
0	70.0	70.0	70.0	70.0
50	70.0	70.0	70.0	70.0
100	70.0	33.3	58.3	33.3
150	35.0	5.0	33.3	5.0
200	25.0		11.6	
250	10.8		1.6	
300	1.6		1.6	

Screw lead 20

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	0.7	Left/Right/Bottom Acceleration/deceleration (G) 0.3	0.7
0	23.3	23.3	23.3	18.3
100	23.3	23.3	23.3	18.3
200	18.3	16.6	18.3	8.3
300	18.3	10.0	15.0	5.0
400	10.0	5.0	10.0	1.6
500	1.6	1.6	1.6	

[When installed vertically]

■ EBR-04M

Screw lead 6

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	Left/Right/Bottom Acceleration/deceleration (G) 0.3
0	9.1	9.1
50	9.1	9.1
100	7.5	7.5
150	2.9	2.9
200	0.4	0.4

Screw lead 12

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	Left/Right/Bottom Acceleration/deceleration (G) 0.3
0	4.5	4.5
100	4.5	4.5
200	2.0	2.0
250	0.4	0.8
300	0.4	

■ EBR-05M

Screw lead 2

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	Left/Right/Bottom Acceleration/deceleration (G) 0.3
0	24.0	24.0
25	24.0	24.0
50	15.0	3.3
60	3.3	

Screw lead 5

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	Left/Right/Bottom Acceleration/deceleration (G) 0.3
0	15.0	15.0
50	15.0	15.0
100	11.0	15.0
150	8.3	3.3
200	3.3	1.6
250	1.6	

Screw lead 10

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	Left/Right/Bottom Acceleration/deceleration (G) 0.3
0	6.6	6.6
100	6.6	6.6
200	5.8	5.8
300	2.5	2.5
400	0.8	0.8

Screw lead 20

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	Left/Right/Bottom Acceleration/deceleration (G) 0.3
0	4.1	4.1
100	4.1	4.1
200	2.5	3.3
300	2.5	3.3
400	1.6	0.8
450	0.8	0.8
500	0.8	

■ EBR-08M

Screw lead 5

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	Left/Right/Bottom Acceleration/deceleration (G) 0.3
0	35.0	35.0
25	35.0	35.0
50	35.0	35.0
75	20.0	10.0
100	8.3	0.8
125	0.8	

Screw lead 10

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	Left/Right/Bottom Acceleration/deceleration (G) 0.3
0	15.0	15.0
50	15.0	15.0
100	15.0	15.0
150	6.6	5.0
200	4.1	1.6
250	1.6	
300	0.8	

Screw lead 20

Speed (mm/s)	Straight Acceleration/deceleration (G) 0.3	Left/Right/Bottom Acceleration/deceleration (G) 0.3
0	10.0	8.3
100	10.0	8.3
200	6.6	6.6
250	3.3	3.3
300	1.6	1.6
350	0.8	0.8
400	0.4	0.8
450	0.4	0.8

Table of Load Capacity by Speed and Acceleration/Deceleration

24 VDC

The table below lists the maximum load capacity during acceleration/deceleration and the maximum speed at which operation is possible. Refer to the model that satisfies the required operation conditions.

[When installed horizontally]

■ EBR-04G

Screw lead 6 (kg)

Speed (mm/s)	Straight		Left/Right/Bottom	
	Acceleration/deceleration (G)			
	0.3	0.7	0.3	0.7
0	40.0	40.0	40.0	35.0
50	40.0	40.0	40.0	35.0
100	33.3	25.8	33.3	25.8
150	23.3	17.5	23.3	17.5
200	10.0	8.3	10.0	8.3

Screw lead 12

Speed (mm/s)	Straight		Left/Right/Bottom	
	Acceleration/deceleration (G)			
	0.3	0.7	0.3	0.7
0	12.5	6.7	12.5	6.7
100	12.5	6.7	12.5	6.7
200	10.0	6.7	7.5	5.0
300	5.0	2.5	5.0	2.5
350	1.7	1.3	0.8	0.8
400	1.7	1.3		

■ EBR-05G

Screw lead 2

Speed (mm/s)	Straight		Left/Right/Bottom	
	Acceleration/deceleration (G)			
	0.3	0.7	0.3	0.7
0	80.0	80.0	80.0	80.0
25	80.0	80.0	80.0	80.0
50	80.0	80.0	80.0	80.0
70	80.0	80.0	80.0	80.0
80	80.0	80.0	80.0	80.0
90	80.0	80.0	80.0	80.0

Screw lead 5

Speed (mm/s)	Straight		Left/Right/Bottom	
	Acceleration/deceleration (G)			
	0.3	0.7	0.3	0.7
0	60.0	60.0	60.0	60.0
50	60.0	60.0	60.0	60.0
100	60.0	53.3	60.0	43.3
150	43.3	35.0	43.3	26.7
200	35.0	20.0	35.0	18.3
250	13.3	8.3	10.0	7.5
275	10.0	6.7		
300	6.7	6.7		

Screw lead 10

Speed (mm/s)	Straight		Left/Right/Bottom	
	Acceleration/deceleration (G)			
	0.3	0.7	0.3	0.7
0	41.7	20.0	38.3	20.0
100	41.7	20.0	38.3	20.0
200	35.0	20.0	30.0	14.2
300	20.0	8.3	12.5	6.7
350	10.0	5.0	2.5	0.8
400	10.0	5.0	2.5	
500	5.0	1.7		

Screw lead 20

Speed (mm/s)	Straight		Left/Right/Bottom	
	Acceleration/deceleration (G)			
	0.3	0.7	0.3	0.7
0	11.7	11.7	11.7	5.8
100	8.3	8.3	8.3	5.8
300	7.5	5.8	7.5	5.8
500	7.5	3.3	6.7	3.3
600	5.0	1.7	3.3	1.7
700	2.5	0.8		

■ EBR-08G

Screw lead 5

Speed (mm/s)	Straight		Left/Right/Bottom	
	Acceleration/deceleration (G)			
	0.3	0.7	0.3	0.7
0	80.0	80.0	80.0	80.0
25	80.0	80.0	80.0	80.0
50	80.0	80.0	80.0	80.0
75	80.0	80.0	80.0	80.0
100	80.0	51.7	51.7	43.3
125	51.7	43.3	51.7	43.3

Screw lead 10

Speed (mm/s)	Straight		Left/Right/Bottom	
	Acceleration/deceleration (G)			
	0.3	0.7	0.3	0.7
0	70.0	70.0	70.0	70.0
50	70.0	70.0	70.0	70.0
100	51.7	35.0	51.7	35.0
150	51.7	26.7	51.7	26.7
200	35.0	26.7	31.7	18.3
250	26.7	3.3	13.3	3.3
300	3.3			

Screw lead 20

Speed (mm/s)	Straight		Left/Right/Bottom	
	Acceleration/deceleration (G)			
	0.3	0.7	0.3	0.7
0	35.0	26.7	35.0	21.7
100	35.0	26.7	35.0	21.7
200	35.0	18.3	33.3	18.3
300	20.0	10.0	16.7	9.2
400	10.0	1.7	9.2	1.7
500	1.7			

Table of Load Capacity by Speed and Acceleration/Deceleration

24 VDC

The table below lists the maximum load capacity during acceleration/deceleration and the maximum speed at which operation is possible. Refer to the model that satisfies the required operation conditions.

[When installed vertically]

■ EBR-04G

Screw lead 6

Speed (mm/s)	Straight	Left/Right/Bottom
	Acceleration/deceleration (G)	
	0.3	0.3
0	10.0	8.3
50	10.0	8.3
100	10.0	6.7
150	4.2	4.2
175	2.5	0.8
200	2.5	
225	0.8	

Screw lead 12

Speed (mm/s)	Straight	Left/Right/Bottom
	Acceleration/deceleration (G)	
	0.3	0.3
0	2.9	2.9
100	2.9	2.9
200	2.9	2.9
250	1.7	0.8
300	1.7	

■ EBR-05G

Screw lead 2

Speed (mm/s)	Straight	Left/Right/Bottom
	Acceleration/deceleration (G)	
	0.3	0.3
0	23.3	23.3
20	23.3	23.3
25	23.3	23.3
40	23.3	23.3
50	23.3	16.7
60	23.3	16.7
70	18.3	11.7
90	11.7	3.3

Screw lead 5

Speed (mm/s)	Straight	Left/Right/Bottom
	Acceleration/deceleration (G)	
	0.3	0.3
0	14.0	14.0
50	14.0	14.0
100	12.5	10.0
150	7.5	5.8
200	4.2	2.5
250	2.5	

Screw lead 10

Speed (mm/s)	Straight	Left/Right/Bottom
	Acceleration/deceleration (G)	
	0.3	0.3
0	7.0	6.7
100	7.0	6.7
200	5.8	5.0
250	1.7	0.4
300	1.7	

Screw lead 20

Speed (mm/s)	Straight	Left/Right/Bottom
	Acceleration/deceleration (G)	
	0.3	0.3
0	2.9	1.7
100	2.9	1.7
300	2.9	1.7
400	2.1	1.3
500	1.3	

■ EBR-08G

Screw lead 5

Speed (mm/s)	Straight	Left/Right/Bottom
	Acceleration/deceleration (G)	
	0.3	0.3
6	55.0	55.0
25	55.0	55.0
50	35.0	35.0
75	21.7	21.7
100	3.3	3.3
125	3.3	3.3

Screw lead 10

Speed (mm/s)	Straight	Left/Right/Bottom
	Acceleration/deceleration (G)	
	0.3	0.3
12	23.3	20.0
50	23.3	20.0
100	8.3	8.3
150	1.7	1.7
200	1.3	1.3
225	1.3	0.8
250	1.3	

Screw lead 20

Speed (mm/s)	Straight	Left/Right/Bottom
	Acceleration/deceleration (G)	
	0.3	0.3
25	10.0	8.3
100	10.0	8.3
200	6.7	6.7
300	1.7	1.7

Maintenance parts

Maintenance parts (motor unit)

* Motor unit replacement is applicable only with ECR. ECG units are excluded.

	Model No. 	Compatibility	
Without brake	EBS-04ME-MOTORUNIT-N	EBR-04ME	Without brake
	EBS-04MR-MOTORUNIT-N	EBR-04MR/D/L	
	EBS-05ME-MOTORUNIT-N	EBR-05ME	
	EBS-05MR-MOTORUNIT-N	EBR-05MR/D/L	
	EBS-08ME-MOTORUNIT-N	EBR-08ME	
	EBS-08MR-MOTORUNIT-N	EBR-08MR/D/L	
With brake	EBS-04ME-MOTORUNIT-B	EBR-04ME	With brake
	EBS-04MR-MOTORUNIT-B	EBR-04MR/D/L	
	EBS-05ME-MOTORUNIT-B	EBR-05ME	
	EBS-05MR-MOTORUNIT-B	EBR-05MR/D/L	
	EBS-08ME-MOTORUNIT-B	EBR-08ME	
	EBS-08MR-MOTORUNIT-B	EBR-08MR/D/L	

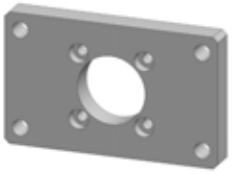
Maintenance parts / motor mounting direction: For right/left/downward mounting (timing belt)

Model No. 	Compatibility
EBS-04MR-BELT	EBR-04*R/D/L
EBS-05MR-BELT	EBR-05*R/D/L
EBS-08MR-BELT	EBR-08*R/D/L

Maintenance parts (grease nozzle)

Model No. 	Compatibility
EBS-NOZZLE	All models

Maintenance parts (flange)

Model No. 	Compatibility
EBR-04-FA	EBR-04*
EBR-05-FA	EBR-05*
EBR-08-FA	EBR-08*

ECR

Controller

CONTENTS

Controller

ECR Series

Controller for EBS-M, EBR-M, FLSH, FLCR, FGRC

How to order

ECR-MNNN3B - NP A 02

(A) (B) (C)

(A) Interface specifications	
NP	Parallel I/O (NPN and PNP common)
LK	IO-Link
CL	CC-Link
EC	EtherCAT

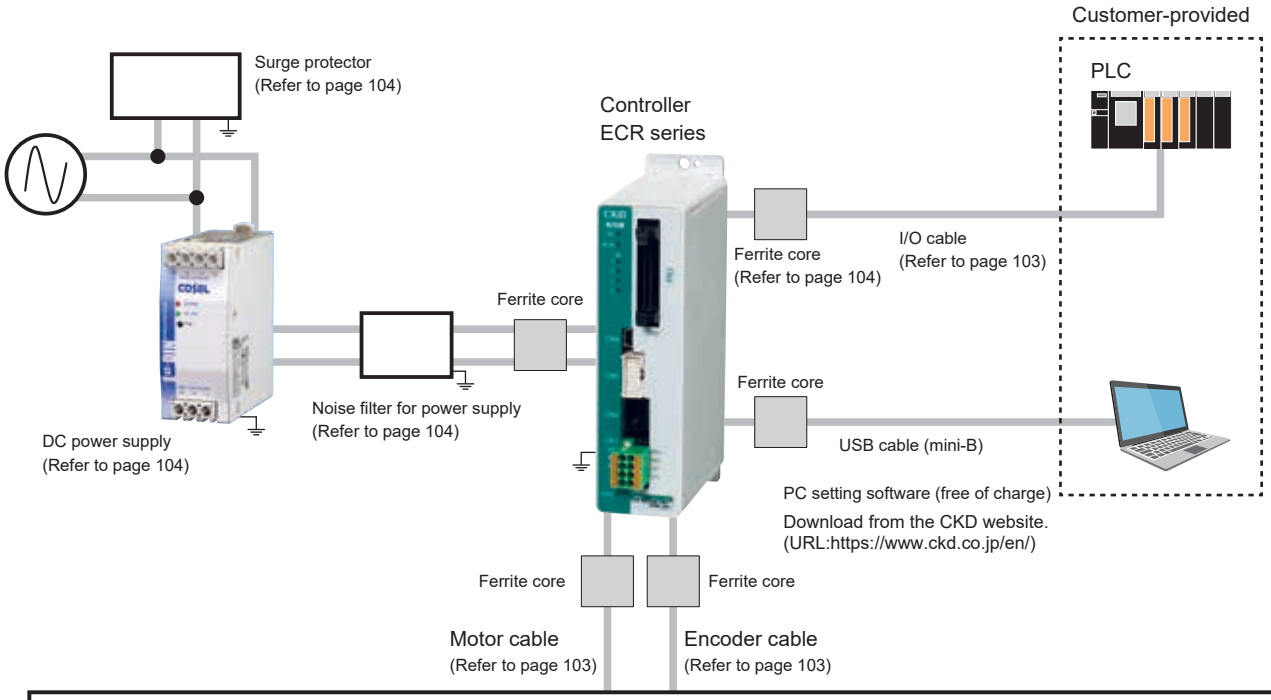
(B) Mounting method	
A	Standard mount
D	DIN rail mount

(C) IO cable length *1	
00	None
02	2 m
03	3 m
05	5 m
10	10 m

*1 Select "None" when selecting interface specifications other than "Parallel I/O".

Product subject to the EAR (EAR99)

System configuration



Connectable actuators

EBS-M Series
(Page 1)

EBR-M Series
(Page 47)

FLSH Series
(Catalog No. CC-1444A)

FLCR Series
(Catalog No. CC-1444A)

FGRC Series
(Catalog No. CC-1444A)

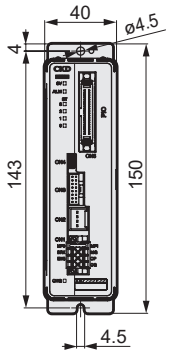
* Refer to the Instruction Manual for details on installing and wiring noise filters, surge protectors, and ferrite cores.

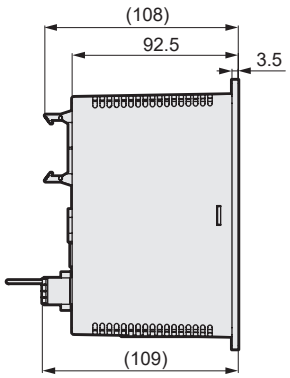
General specifications

Item		Description						
Applicable actuators		EBS-M/EBR-M			FLSH/FLCR/FGRC			
Applicable motor sizes		□35	□42	□56	□20	□25	□25L	□35
Settings tool		PC setting software (S-Tools) Connection cable: USB cable (mini-B)						
External interface	Parallel I/O specification	24 VDC ±10%, input/output max. 16 points, cable length max. 10 m						
	Field network specification	IO-Link, CC-Link, EtherCAT						
Display lamp		Servo ON/OFF LED, alarm status LED Status LED, communication status LED (according to each interface specification)						
Power supply voltage	Control power	24 VDC ±10% or 48 VDC ±10%						
	Power supply	24 VDC ±10% or 48 VDC ±10%						
Current consumption	Control power	0.6 A or less						
	Power supply	2.8 A or less	3.7 A or less	6.1 A or less	1.1 A or less	2.1 A or less	3.2 A or less	3.0 A or less
Motor section max. instantaneous current		4.0 A or less	5.2 A or less	8.6 A or less	1.5 A or less	3.0 A or less	4.5 A or less	4.2 A or less
Brake current consumption		0.4 A or less						
Insulation resistance		10 MΩ and over at 500 VDC						
Withstand voltage		500 VAC for 1 minute						
Operating ambient temperature		0 to 40 °C (no freezing)						
Operating ambient humidity		35 to 80% RH (no condensation)						
Storage ambient temperature		-10 to 50 °C (no freezing)						
Storage ambient humidity		35 to 80% RH (no condensation)						
Working atmosphere		No corrosive gas, explosive gas, or dust						
Degree of protection		IP20						
Weight		Approx. 400 g (standard mount) Approx. 430 g (DIN rail mount)						

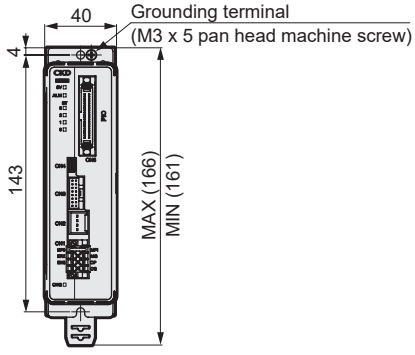
Dimensions

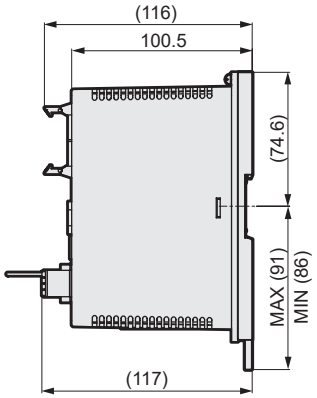
● Standard mount (ECR-MNNN3B-□A□)





● DIN rail mount (ECR-MNNN3B-□D□)



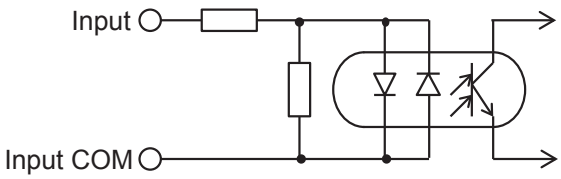


Parallel I/O (PIO) input/output circuit

Input specification

Item	ECR-MNNN3B-NP□□
No. of inputs	16 points
Input voltage	24 VDC ±10%
Input current	3.7 mA/1 point
ON voltage	19 V or higher
OFF current	0.2 mA or less

Input circuit

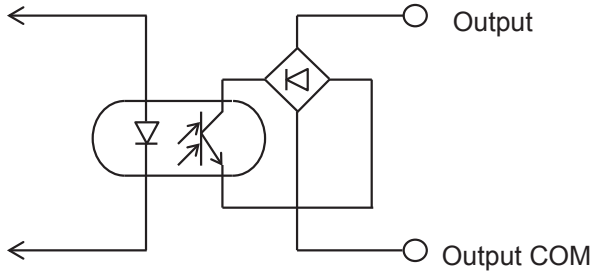


The input is not polarized.
(The input COM can be used with either + or -)

Output specifications

Item	ECR-MNNN3B-NP□□
No. of I/O points	16 points
Load voltage	24 VDC ±10%
Load current	20 mA or less/1 point
Internal voltage drop	3 V or less
Leakage current	0.1 mA or less
Output short-circuit protection circuit	Yes
Connecting load	PLC, etc.

Output circuit



The output is not polarized.
(The output COM can be used with either + or -)

Parallel I/O (PIO) operation mode

Controllers offer nine operation modes.
Use the PC setting software to set the appropriate operation mode. The initial setting is 64-point mode.

Operation mode	Positioning point count	Overview
64-point mode	64 points	· Travel output · Point zone output: 1 point · Zone output: 2 points
128-point mode	128 points	· Travel output · Selectable output: 2 points (point zone, zone 1, zone 2, travel)
256-point mode	256 points	· Selectable output: 2 points (point zone, zone 1, zone 2, travel)
512-point mode	512 points	· Selectable output: 1 point (point zone, zone 1, zone 2, travel)
Teaching 64-point mode	64 points	· JOG (INCH) travel start input · Travel output · Selectable output: 2 points (point zone, zone 1, zone 2, travel)
Simple 7-point mode	7 points	· Travel output · Zone output: 2 points
Solenoid mode Double 2-position type	2 points	· SW output: 2 points · Point zone output: 1 point · Travel output · Zone output: 2 points
Solenoid mode Double 3-position type	2 points	· SW output: 2 points · Point zone output: 1 point · Travel output · Zone output: 2 points
Solenoid mode Single type	2 points	· SW output: 2 points · Point zone output: 1 point · Travel output · Zone output: 2 points

Parallel I/O (PIO) signal name list

Input signal

Abbreviation	Name	Abbreviation	Name
PST	Point travel start	JIM	JOG/INCH (-) travel start
PSB*	Point number selection bit*	JIP	JOG/INCH (+) travel start
OST	Origin return start	INCH	INCH selection
SVON	Servo ON	P*ST	Point number * travel start
ALMRST	Alarm reset	V1ST	Solenoid valve travel instruction 1
STOP	Stop	V2ST	Solenoid valve travel instruction 2
PAUSE	Pause	VST	Solenoid valve travel instruction
WRST	Write start		
TEACH	Teaching selection		

Output signal

Abbreviation	Name	Abbreviation	Name
PEND	Point travel complete	ALM	Alarm
PCB*	Point number confirmation bit *	WARN	Warning
ACB*	Alarm confirmation bit *	READY	Operation preparation complete
PZONE	Point zone	WREND	Write complete
MOVE	Moving	TEACHS	Teaching status
ZONE1	Zone 1	P*END	Point number * travel complete
ZONE2	Zone 2	SW1	Switch 1
OEND	Origin return complete	SW2	Switch 2
SONS	Servo ON state		

Parallel I/O (PIO) operation mode and signal assignment

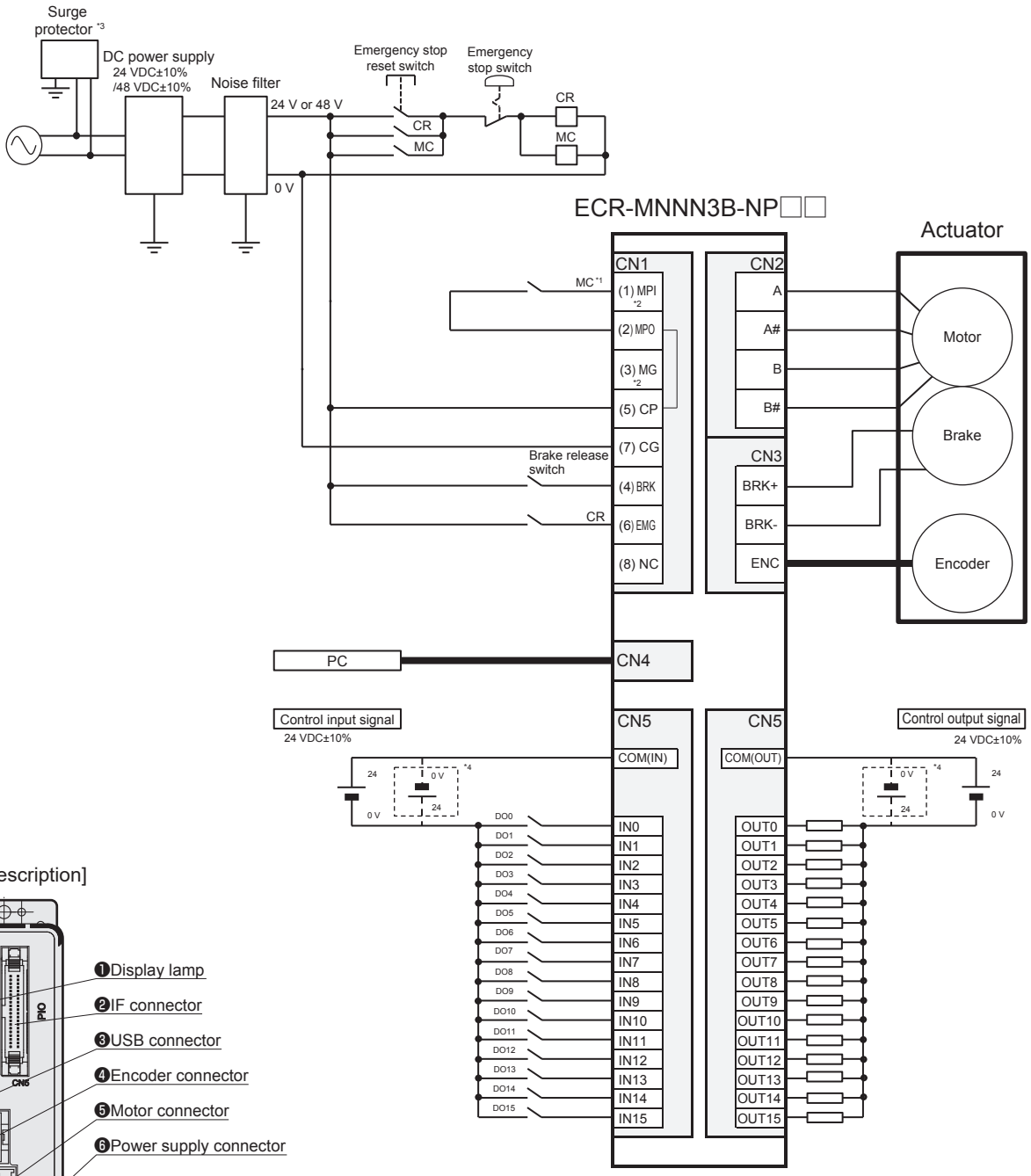
The following figure shows signal assignments in each operation mode.

Operation mode		64 points Mode	128 points Mode	256 points Mode	512 points Mode	Teaching 64-point mode	Simple 7-point mode	Solenoid mode Double 2-position type	Solenoid mode Double 3-position type	Solenoid mode Single type
Positioning point count		64	128	256	512	64	7	2	2	2
Input	IN0	PSB0	PSB0	PSB0	PSB0	PSB0	P1ST	V1ST	V1ST	-
	IN1	PSB1	PSB1	PSB1	PSB1	PSB1	P2ST	V2ST	V2ST	VST
	IN2	PSB2	PSB2	PSB2	PSB2	PSB2	P3ST	-	-	-
	IN3	PSB3	PSB3	PSB3	PSB3	PSB3	P4ST	-	-	-
	IN4	PSB4	PSB4	PSB4	PSB4	PSB4	P5ST	-	-	-
	IN5	PSB5	PSB5	PSB5	PSB5	PSB5	P6ST	-	-	-
	IN6	-	PSB6	PSB6	PSB6	TEACH	P7ST	-	-	-
	IN7	-	-	PSB7	PSB7	JIM	-	-	-	-
	IN8	-	-	-	PSB8	JIP	-	-	-	-
	IN9	-	-	-	-	INCH	-	-	-	-
	IN10	PST	PST	PST	PST	PST/ WRST	-	-	-	-
	IN11	OST	OST	OST	OST	OST	OST	OST	OST	OST
	IN12	SVON	SVON	SVON	SVON	SVON	SVON	SVON	SVON	SVON
	IN13	ALMRST	ALMRST	ALMRST	ALMRST	ALMRST	ALMRST	ALMRST	ALMRST	ALMRST
	IN14	STOP#	STOP#	STOP#	STOP#	STOP#	STOP#	-	-	-
	IN15	PAUSE#	PAUSE#	PAUSE#	PAUSE#	PAUSE#	PAUSE#	-	-	-
Output	OUT0	PCB0/ ACB0	PCB0/ ACB0	PCB0/ ACB0	PCB0/ ACB0	PCB0/ ACB0	P1END	P1END	P1END	P1END
	OUT1	PCB1/ ACB1	PCB1/ ACB1	PCB1/ ACB1	PCB1/ ACB1	PCB1/ ACB1	P2END	P2END	P2END	P2END
	OUT2	PCB2/ ACB2	PCB2/ ACB2	PCB2/ ACB2	PCB2/ ACB2	PCB2/ ACB2	P3END	-	-	-
	OUT3	PCB3/ ACB3	PCB3/ ACB3	PCB3/ ACB3	PCB3/ ACB3	PCB3/ ACB3	P4END	-	-	-
	OUT4	PCB4	PCB4	PCB4	PCB4	PCB4	P5END	SW1	SW1	SW1
	OUT5	PCB5	PCB5	PCB5	PCB5	PCB5	P6END	SW2	SW2	SW2
	OUT6	PZONE	PCB6	PCB6	PCB6	TEACHS	P7END	-	-	-
	OUT7	MOVE	MOVE	PCB7	PCB7	MOVE	MOVE	MOVE	MOVE	MOVE
	OUT8	ZONE1	PZONE/ ZONE1/ ZONE2/ MOVE	PZONE/ ZONE1/ ZONE2/ MOVE	PCB8	PZONE/ ZONE1/ ZONE2/ MOVE	ZONE1	ZONE1	ZONE1	ZONE1
	OUT9	ZONE2	PZONE/ ZONE1/ ZONE2/ MOVE	PZONE/ ZONE1/ ZONE2/ MOVE	PZONE/ ZONE1/ ZONE2/ MOVE	PZONE/ ZONE1/ ZONE2/ MOVE	ZONE2	ZONE2	ZONE2	ZONE2
	OUT10	PEND	PEND	PEND	PEND	PEND/ WREND	PZONE	PZONE	PZONE	PZONE
	OUT11	OEND	OEND	OEND	OEND	OEND	OEND	OEND	OEND	OEND
	OUT12	SONS	SONS	SONS	SONS	SONS	SONS	SONS	SONS	SONS
	OUT13	ALM#	ALM#	ALM#	ALM#	ALM#	ALM#	ALM#	ALM#	ALM#
	OUT14	WARN#	WARN#	WARN#	WARN#	WARN#	WARN#	WARN#	WARN#	WARN#
	OUT15	READY	READY	READY	READY	READY	READY	READY	READY	READY

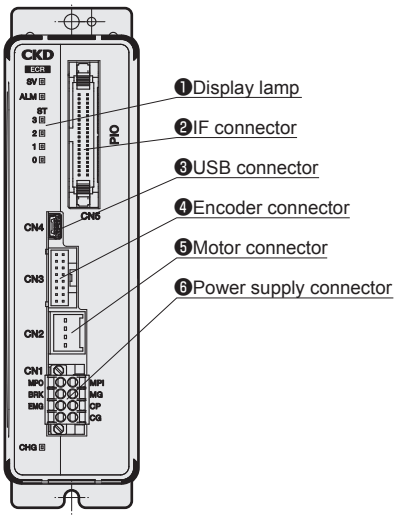
* The pound sign (#) indicates a negative logic signal.

Parallel I/O connection diagram (ECR-MNNN3B-NP**)

[PIO]



[Panel description]



*1 For safety category support, connect the contact of an electromagnetic switch or other device between the MPI and MPO terminals when motor drive power must be shut OFF.
(Connected with jumper wires at shipment.)
*2 The MPI and MG terminals can be used to isolate the motor power supply and control power supply.
*3 A surge protector is required to comply with the CE marking.
*4 This can be used even if the polarity is reversed.

● Accessories

Part name	Manufacturer model	Manufacturer
Power supply connector	DFMC1, 5/4-STF-3, 5	PHOENIX CONTACT

Description of field network operation modes

Operation mode	Overview
PIO mode (PIO)	Point operation can be used and signal assignment of inputs and outputs can be changed in the operation mode (PIO) in the same manner as with the parallel I/O specification. However, you cannot select a direct-value operation that sets the operating conditions for operation directly from the PLC. Reading and writing of parameters does not work and the monitoring function cannot be used. Refer to the table below for details.
Simple direct value mode (SDP)	Switching the direct travel selection signal enables a target position to be arbitrarily be set by the PLC or 512 point operation. The selected direct travel operation method can then be used. Reading and writing of parameters does not work and the monitoring function can be used. Refer to the table below for details.
Full direct value mode (FDP)	Switching the direct travel selection signal enables operating conditions to be arbitrarily be set by the PLC or 512 point operation. The selected direct travel operation method can then be used. Reading and writing of parameters does not work and the monitoring function can be used. Refer to the table below for details.

Operation mode		PIO	SDP	FDP
Parameter read/write		Not available	Available	Available
Direct value travel selection*1		Selection not possible	1	1
Positioning point count		512	Unlimited	Unlimited
Direct value travel item*2	Target position	-	OK	OK
	Positioning width	-	-	OK
	Speed	-	-	OK
	Acceleration	-	-	OK
	Deceleration	-	-	OK
	Pressing rate	-	-	OK
	Pressing distance	-	-	OK
	Pressing speed	-	-	OK
	Position specification method	-	-	OK
	Operation mode	-	-	OK
	Stop method	-	-	OK
	Acceleration/ deceleration method	-	-	OK
Monitor item*3	Position	-	OK	OK
	Speed	-	△	▲
	Current	-	△	▲
	Alarm	-	△	▲

*1: When the direct value travel selection is 0, it operates with the value set by the point data. This enables up to 512 positioning points.
*2: OK indicates items operated with the value set by the PLC. - indicates operation with the value set by the point data.
*3: OK indicates an item that can be monitored on all networks at all times. - indicates items that cannot be monitored.
△ indicates an item that can be selected from △ and monitored 1 at a time with IO-Link or CC-Link, but simultaneously for EtherCAT.
▲ indicates and item that can be selected from ▲ and monitored 1 at a time for IO-Link, but simultaneously for CC-Link or EtherCAT.

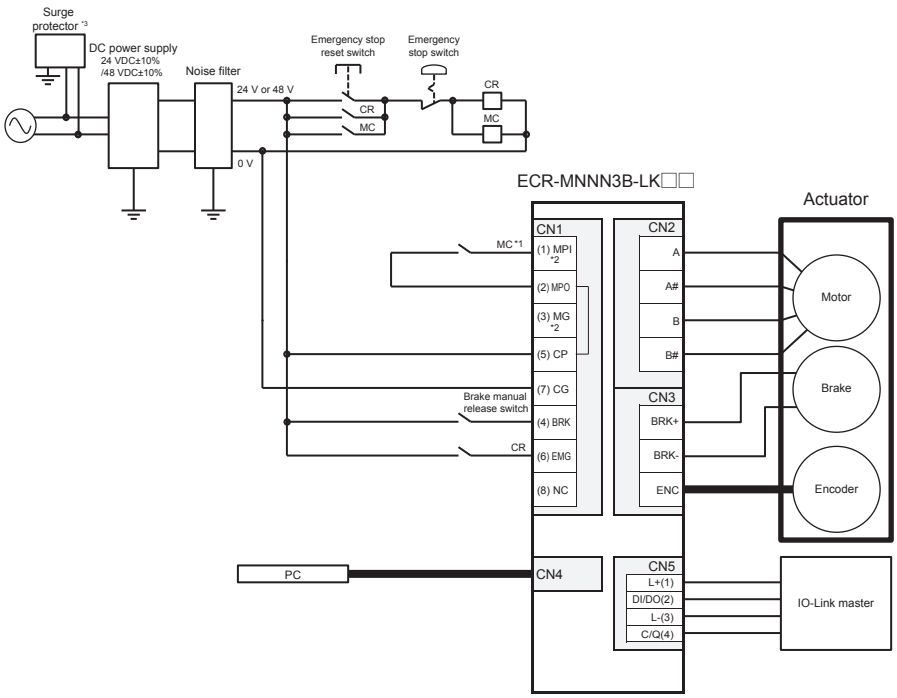
IO-Link specifications and connection diagram (ECR-MNNN3B-LK**)

[Communication specifications]

Item	Specifications
Communication protocol Version	V1.1
Transmission bit rate	COM3 (230.4kbps)
Port	Class A
Process data length (Input) PD (in) data length	PIO mode: 2 bytes
	Simple direct value mode: 9 bytes
	Full direct value mode: 9 bytes
Process data length (Output) PD (out) data length	PIO mode: 2 bytes
	Simple direct value mode: 7 bytes
	Full direct value mode: 22 bytes
Minimum cycle Time	PIO mode: 1 ms
	Simple direct value mode: 2 ms
	Full direct value mode: 2.5 ms
Monitor function	Position, speed, current, alarm

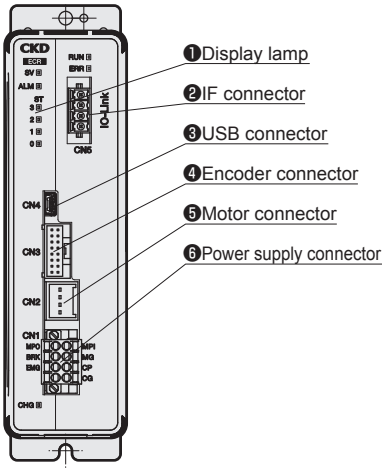
* Items that can be monitored change depending on the mode. Refer to page 99 for details.

[IO-Link]



*1 For safety category support, connect the contact of an electromagnetic switch or other device between the MPI and MPO terminals when motor drive power must be shut OFF. (Connected with jumper wires at shipment.)
*2 The MPI and MG terminals can be used to isolate the motor power supply and control power supply.
*3 A surge protector is required to comply with the CE marking.

[Panel description]



Cyclic data from master

PD (out)	bit	Full direct value mode Signal name
0	7	Pause#
	6	Stop#
	5	Alarm reset
	4	Servo ON
	3	Origin return start
	2	Point travel start
	1	-
	0	Point number selection bit 8
1	7 to 0	Point number selection bit 7 to 0
2	7	-
	6	-
	5 to 4	Rotation direction
	3 to 1	Monitor number
	0	Direct value travel selection
3 to 6	7 to 0	Position
7 to 8	7 to 0	Positioning width
9 to 10	7 to 0	Speed
11	7 to 0	Acceleration
12	7 to 0	Deceleration
13	7 to 0	Pressing rate
14	7 to 0	Pressing speed
15 to 18	7 to 0	Pressing distance
19 to 20	7 to 0	Gain magnification
21	7	Position specification method
	6 to 5	Operation mode
	4 to 3	Acceleration/deceleration method
	2 to 0	Stop method

Cyclic data from controller

PD (in)	bit	Full direct value mode Signal name
0	7	Operation preparation complete
	6	Warning#
	5	Alarm#
	4	Servo ON state
	3	Origin return complete
	2	Point travel complete
	1	-
	0	Point number confirmation bit 8
1	7 to 0	Point number confirmation bit 7 to 0
2	7 to 5	-
	4	Zone 2
	3	Zone 1
	2	Moving
	1	Point zone
	0	Direct travel status
3 to 6	7 to 0	Position (monitor value)
7 to 8	7 to 0	Monitor value

* Refer to the Instruction Manual for details of other operation modes.
* The pound sign (#) indicates a negative logic signal.

● Accessories

Part name	Manufacturer model	Manufacturer
Power supply connector	DFMC1, 5/4-STF-3, 5	PHOENIX CONTACT
IO-Link connector	FMC1, 5/4-ST-3, 5-RF	PHOENIX CONTACT

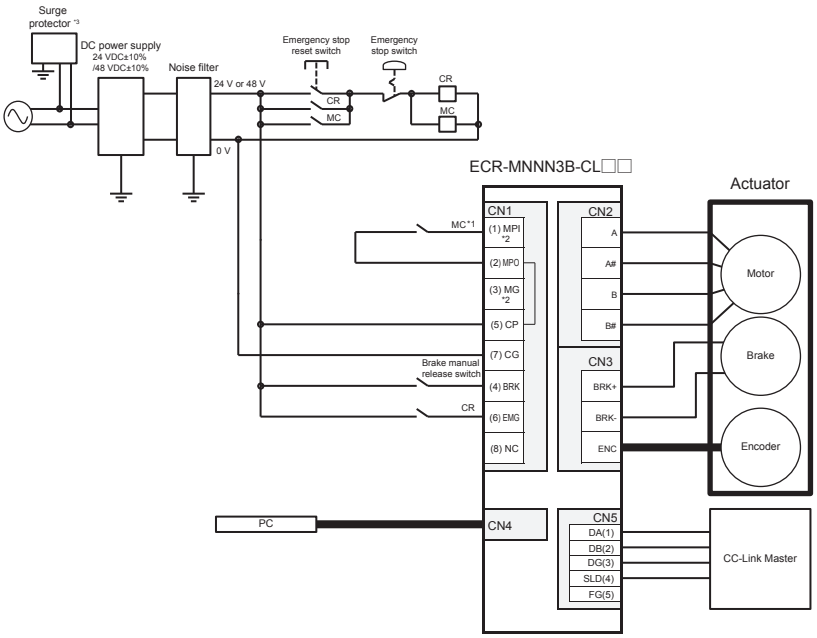
CC-Link specifications and connection diagram (ECR-MNNN3B-CL**)

[Communication specifications]

Item	Specifications
CC-Link Version	Ver. 1.10
Station	Remote device station
Remote station No.	1 to 64 (set by parameter setting)
Operation mode Number of occupied stations	PIO mode (1 station occupied)
	Simple direct value mode (2 stations occupied)
	Full direct value mode (4 stations occupied)
Remote input No. of I/O points	PIO mode: 32 points each
	Simple direct value mode: 64 points each
	Full direct value mode: 128 points each
Remote Register input/ output	PIO mode: 4 words each
	Simple direct value mode: 8 words each
	Full direct value mode: 16 words each
Communication speed	10M/5M/2.5M/625k/156kbps (Selected by parameter setting)
Connection cable	CC-Link Ver. 1.10. compliant cable (3 core twisted pair cable with shield)
Number of connected units	42 max. when only remote device stations are connected
Monitor function	Position, speed, current, alarm

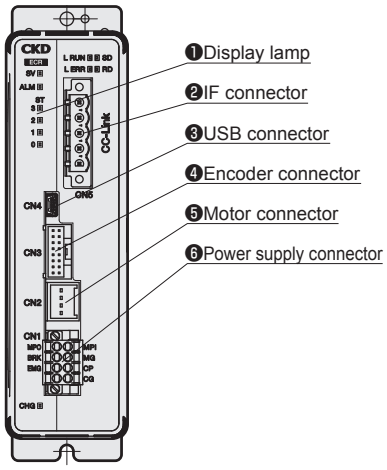
* Items that can be monitored change depending on the mode.
Refer to page 99 for details.

[CC-Link]



*1 For safety category support, connect the contact of an electromagnetic switch or other device between the MPI and MPO terminals when motor drive power must be shut OFF. (Connected with jumper wires at shipment.)
*2 The MPI and MG terminals can be used to isolate the motor power supply and control power supply.
*3 A surge protector is required to comply with the CE marking.

[Panel description]



Cyclic data from master

Device No.	Full direct value mode
	Signal name
RYn0 to RYnF	PIO input signal (Conforms to parallel I/O signal assignment)
RY (n+1) 0 to RY (n+1) 3	-
RY (n+1) 4	Data request
RY (n+1) 5	Data R/W selection
RY (n+1) 6 to RY (n+1) B	-
RY (n+1) C	Monitor request
RY (n+1) D	-
RY (n+1) E	
RY (n+1) F	Direct value travel selection
RY (n+2) 0 to RY (n+7) 9	-
RY (n+7) A	Error reset request flag
RY (n+7) B to RY (n+7) F	-

* Refer to the Instruction Manual for details of other operation modes.

Cyclic data from controller

Device No.	Full direct value mode
	Signal name
RXn0 to RXnF	PIO output signal (Conforms to parallel I/O signal assignment)
RX (n+1) 0 to RX (n+1) 3	Data response
RX (n+1) 4	Data complete
RX (n+1) 5	Data write status
RX (n+1) 6	-
RX (n+1) 7	
RX (n+1) 8 to RX (n+1) B	Monitor response
RX (n+1) C	Monitor complete
RX (n+1) D	-
RX (n+1) E	
RX (n+1) F	Direct value travel status
RX (n+2) 0	Point zone
RX (n+2) 1	Moving
RX (n+2) 2	Zone 1
RX (n+2) 3	Zone 2
RX (n+2) 4 to RX (n+7) 9	-
RX (n+7) A	Error status flag
RX (n+7) B	Remote ready flag
RX (n+7) C to RX (n+7) F	-

● Accessories

Part name	Manufacturer model	Manufacturer
Power supply connector	DFMC1, 5/4-STF-3, 5	PHOENIX CONTACT
CC-Link connector	MSTB2, 5/5-STF-5, 08ABGYAU	PHOENIX CONTACT

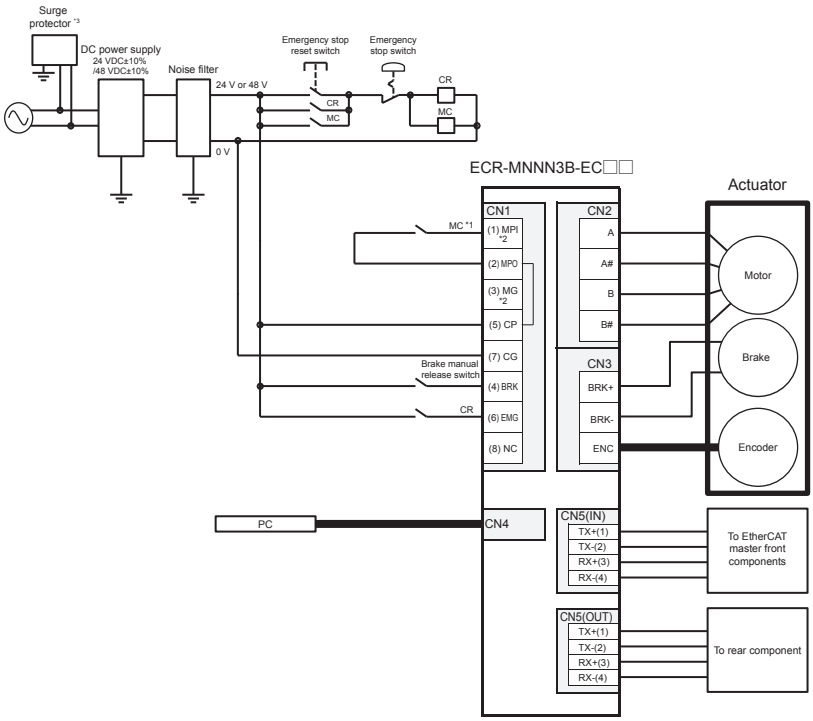
EtherCAT specifications and connection diagram (ECR-MNNN3B-EC**)

[Communication specifications]

Item	Specifications
Communication speed	100Mbps (fast Ethernet, full duplex)
Process data	Variable PDO mapping
Max. PDO data length	RxPDO: 64 bytes/TxPDO: 64 bytes
Station alias	0 to 65535 (set by parameters)
Connection cable	EtherCAT compliant cable (CAT5e or higher twisted pair cable (double shield with aluminum tape and braid) is recommended.)
Node address	Automatic indexing the master
Monitor function	Position, speed, current, alarm

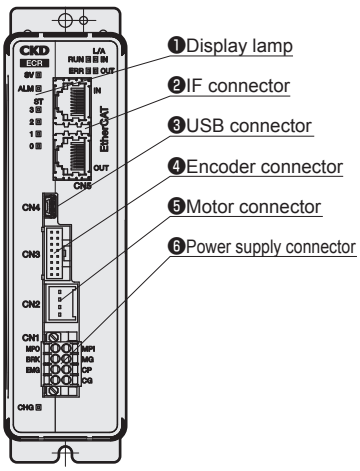
* Items that can be monitored change depending on the mode.
Refer to page 99 for details.

[EtherCAT]



*1 For safety category support, connect the contact of an electromagnetic switch or other device between the MPI and MPO terminals when motor drive power must be shut OFF. (Connected with jumper wires at shipment.)
*2 The MPI and MG terminals can be used to isolate the motor power supply and control power supply.
*3 A surge protector is required to comply with the CE marking.

[Panel description]



Process data from master

Index	Sub Index	bit	Full direct value mode Signal name
0x2001	0x01	0 to 15	PIO input signal (Conforms to parallel I/O signal assignment)
		16 to 31	-
	0x02	0 to 3	-
		4	Data request
		5	Data R/W selection
		6 to 11	-
		12	Monitor request
		13	-
		14	-
		15	Direct value travel selection
		16 to 31	-

* Refer to the Instruction Manual for details of other operation modes.

Process data from controller

Index	Sub Index	bit	Full direct value mode Signal name
0x2005	0x01	0 to 15	PIO output signal (Conforms to parallel I/O signal assignment)
		16 to 31	-
	0x02	0 to 3	Data response
		4	Data complete
		5	Data write status
		6	-
		7	-
		8 to 11	Monitor response
		12	Monitor complete
		13	-
		14	-
		15	Direct value travel status
		16	Point zone
		17	Moving
		18	Zone 1
		19	Zone 2
		20 to 31	-

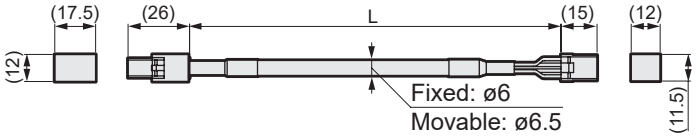
● Accessories

Part name	Manufacturer model	Manufacturer
Power supply connector	DFMC1, 5/4-STF-3, 5	PHOENIX CONTACT

Relay cable

Motor cable (fixed/movable)

* Can be selected with actuator model



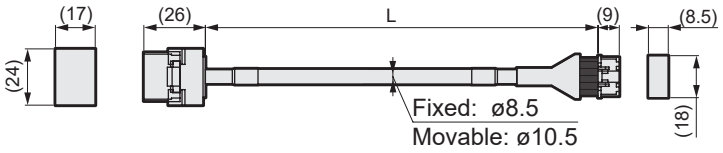
EA-CBLM1 - S 01

Ⓐ Cable type	
S	Fixed cable
R	Movable cable

Ⓑ Cable length	
01	1 m
03	3 m
05	5 m
10	10 m

Encoder cable (fixed/movable)

* Can be selected with actuator model



EA-CBLE1 - S 01

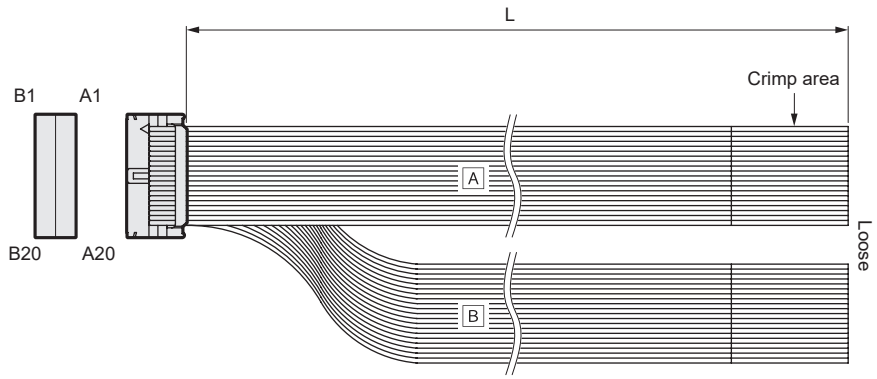
Ⓐ Cable type	
S	Fixed cable
R	Movable cable

Ⓑ Cable length	
01	1 m
03	3 m
05	5 m
10	10 m

I/O cable

I/O cable

* Parallel I/O specification controller model can be selected



EA-CBLNP1 - 02

Ⓐ Cable length	
02	2 m
03	3 m
05	5 m
10	10 m

Related parts model No. table

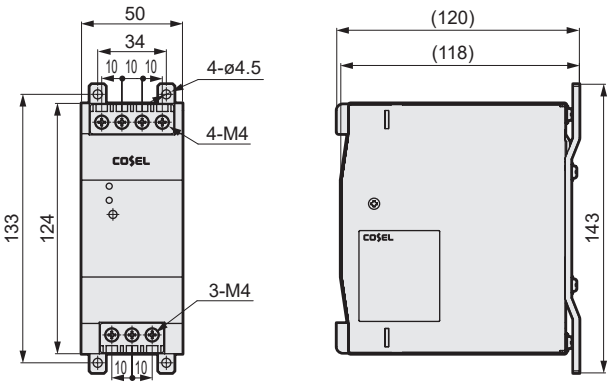
● DC power supply

Item \ Model No.		EA-PWR-KHNA240F-24-N2 (screw mounted) EA-PWR-KHNA240F-24 (DIN rail mounted)	EA-PWR-KHNA480F-48-N2 (screw mounted) EA-PWR-KHNA480F-48 (DIN rail mounted)
Manufacturer		COSEL Co., Ltd.	
Manufacturer Model No.	Mounting screw	KHNA240F-24-N2	KHNA480F-48-N2
	DIN rail mount	KHNA240F-24	KHNA480F-48
Input voltage		85 to 264 VAC 1ø or 88 to 370 VDC	85 to 264 VAC 1ø or 88 to 350 VDC
Output	Power	240 W	480 W
	Voltage/current	24 V 10 A	48 V 10 A
	Variable voltage range	22.5 to 28.5 V	45.0 to 55.2 V
Included functions	Overcurrent protection	Operating at 101% min of peak current	
	Overvoltage protection	30.0 to 36.0 V	57.6 to 67.2 V
	Remote control	Available	
	Remote sensing	-	
	Others	DC_OK display, ALARM display	
Operating temperature/humidity		-25 to +70 °C, 20 to 90% RH (no condensation), startup possible at -40 °C *	
Applicable standards	Safety standards AC input	AC input: Certified UL60950-1, C-UL (CSA60950-1), EN60950-1	
		UL508, ANSI / ISA12.12.01, and ATEX; Electrical Appliances and Material Safety Act compliant *	
	Safety standards DC input	Certified UL60950-1, C-UL (CSA60950-1), EN60950-1	
	Noise terminal voltage	Compliant with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B	
	Harmonic current	Compliant with IEC61000-3-2 (class A) *	
Structure	Dimensions (W x H x D)	50×124×117 mm	70×124×117mm
	Weight	900 g max	1,200 g max
	Cooling method	Natural air cooling	

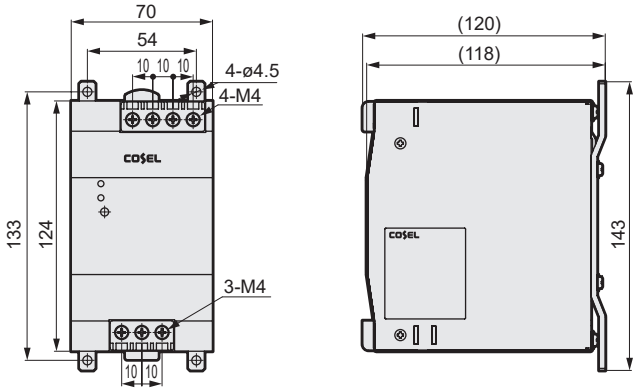
* Refer to the manufacturer's website for details.
* CE and ROHS certification has been obtained under the manufacturer's model number.

Part names and dimensions

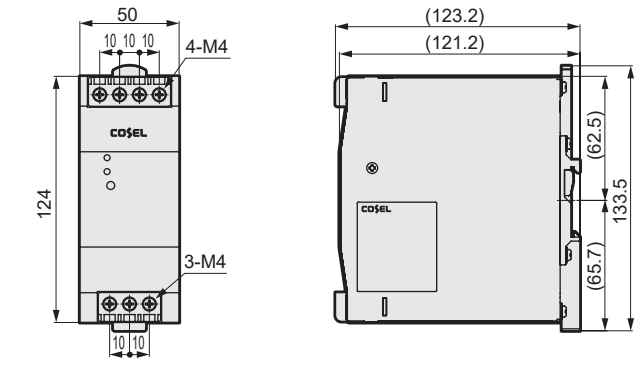
● EA-PWR-KHNA240F-24-N2 (24 V screw mounted)



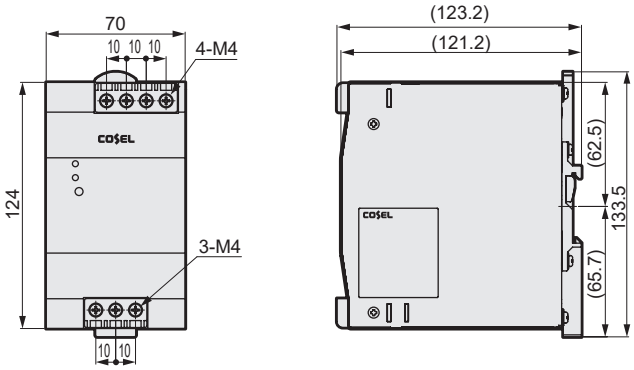
● EA-PWR-KHNA480F-48-N2 (48 V screw mounted)



● EA-PWR-KHNA240F-24 (24 V DIN rail mounted)



● EA-PWR-KHNA480F-48 (48 V DIN rail mounted)



● Other parts

Part name	Model No.
Noise filter for power supply (single phase, 15 A)	AX-NSF-NF2015A-OD
Ferrite core set (7 pieces/set)	EA-NSF-FC01-SET

* Refer to the instruction manual for the ferrite core to be used.

ECG-A

Controller

CONTENTS

Controller

ECG-A Series

Controller for EBS-G, EBR-G

How to order

ECG-ANNN30 - NP A 02

Ⓐ Interface specifications

NP	Parallel I/O (NPN and PNP common)
LK	IO-Link
CL	CC-Link
EC	EtherCAT
EN	EtherNet/IP

Ⓑ Mounting method

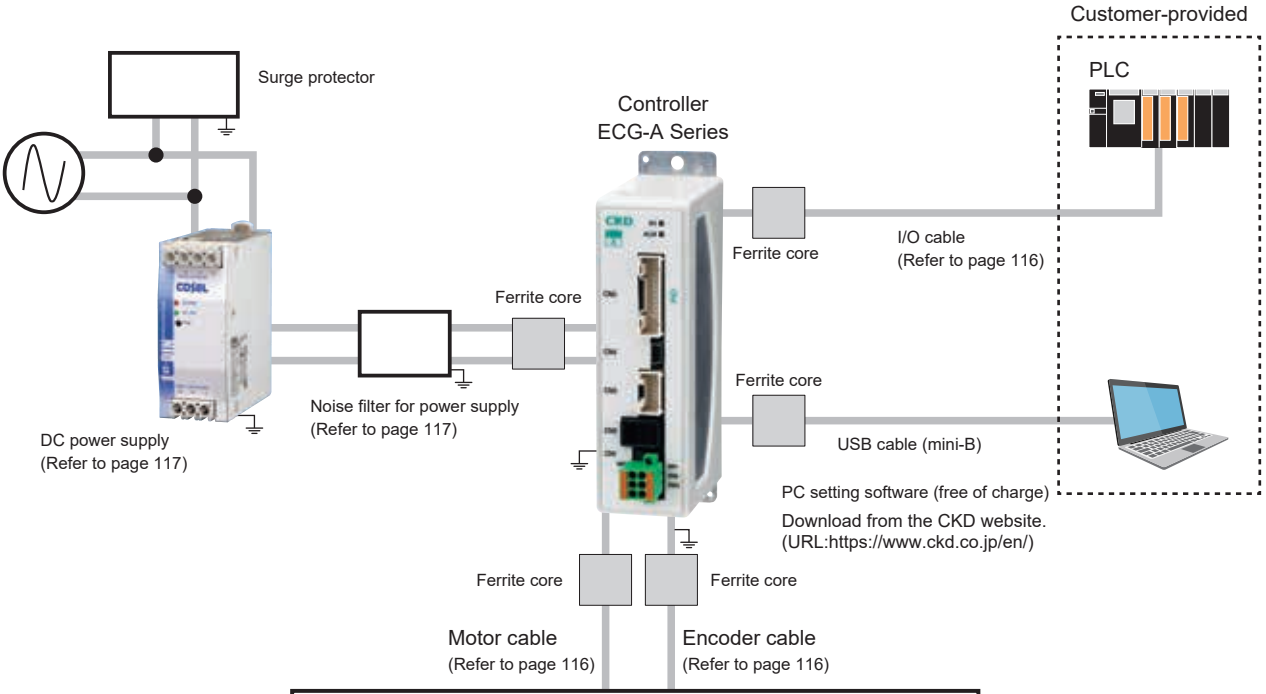
A	Standard mount
D	DIN rail mount

Ⓒ IO cable length *1

00	None
02	2 m
03	3 m
05	5 m
10	10 m

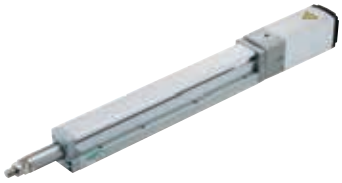
*1 Select "None" when selecting interface specifications other than "Parallel I/O".

System configuration



Connectable actuators

EBS-G Series
(Page 1)



EBR-G Series
(Page 47)

* Refer to the Instruction Manual for details on installing and wiring noise filters, surge protectors, and ferrite cores.

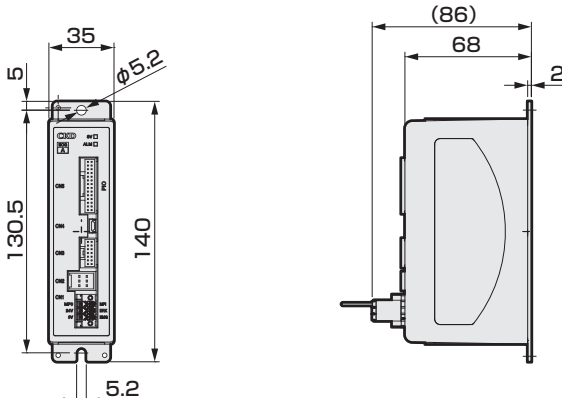
General specifications

Item		Description		
Applicable actuators		EBS-G/EBR-G		
Applicable motor sizes		□35	□42	□56
Settings tool		PC setting software (S-Tools) Connection cable: USB cable (mini-B)		
External interface	Parallel I/O specification	24 VDC ±10%, input/output max. 13 points, cable length max. 10 m		
	Field network specification	IO-Link, CC-Link, EtherCAT, EtherNet/IP		
Display lamp		SV lamp, alarm lamp Communication status lamp (according to each interface specification)		
Power supply voltage	Control power	24 VDC ±10%		
	Power supply	24 VDC ±10%		
Current consumption	Control power	0.4 A or less		
	Power supply	1.7 A or less	1.9 A or less	2.8 A or less
Motor section max. instantaneous current		2.4 A or less	2.7 A or less	4.0 A or less
Brake current consumption		0.4 A or less		
Insulation resistance		10 MΩ and over at 500 VDC		
Withstand voltage		500 VAC for 1 minute		
Operating ambient temperature		0 to 40°C (no freezing)		
Operating ambient humidity		35 to 80% RH (no condensation)		
Storage ambient temperature		-10 to 50°C (no freezing)		
Storage ambient humidity		35 to 80% RH (no condensation)		
Working atmosphere		No corrosive gas, explosive gas, or dust		
Degree of protection		IP20		
Weight	Parallel I/O specification	Approx. 180 g (standard mount), approx. 210 g (DIN rail mount)		
	Field network specification	Approx. 310 g (standard mount), approx. 340 g (DIN rail mount)		

Dimensions

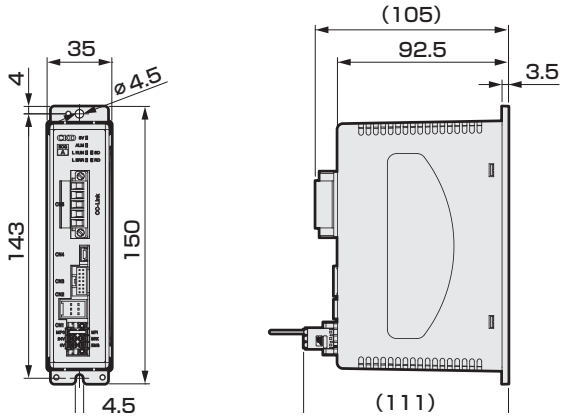
● Standard mount

ECG-ANNN30-NPA□□ (Parallel I/O specification)



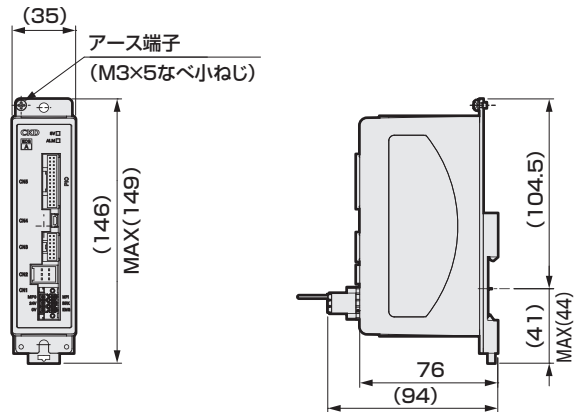
ECG-ANNN30-□□A□□ (Others)

*This figure shows the dimensions for CC-Link specifications. The dimensions are the same for other interface specifications, except the connector part.



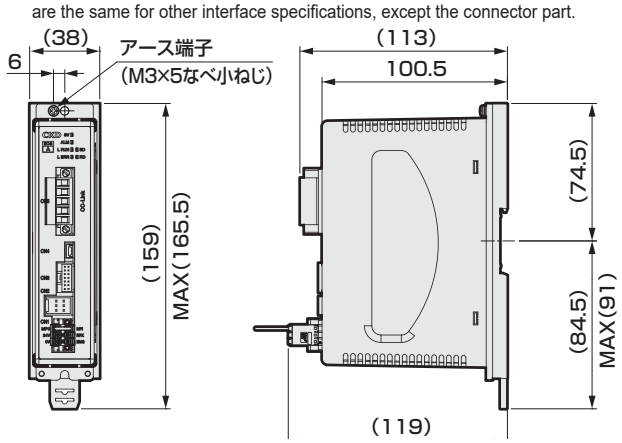
● DIN rail mount

ECG-ANNN30-NPD□□ (Parallel I/O specification)



ECG-ANNN30-□□D□□ (Others)

*This figure shows the dimensions for CC-Link specifications. The dimensions are the same for other interface specifications, except the connector part.

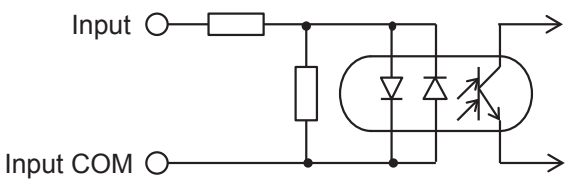


Parallel I/O (PIO) input/output circuit

Input specification

Item	ECG-ANNN30-NP□□
No. of inputs	13 points
Input voltage	24 VDC ±10%
Input current	4 mA/point
Input voltage when ON	19 V or higher
Input current when OFF	0.2 mA or less

Input circuit

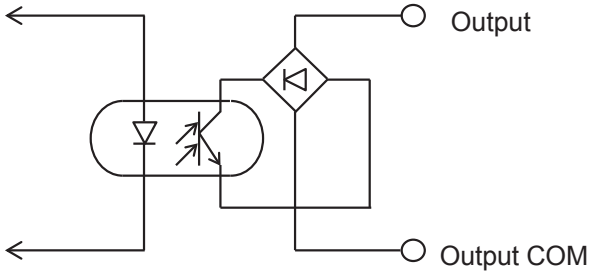


The input is not polarized.
(The input COM can be used with either + or -)

Output specifications

Item	ECG-ANNN30-NP□□
No. of output points	13 points
Load voltage	24 VDC ±10%
Load current	20 mA or less/point
Internal voltage drop when ON	3 V or less
Leakage current when OFF	0.1 mA or less
Output short-circuit protection circuit	Yes
Connecting load	PLC, etc.

Output circuit



The output is not polarized.
(The output COM can be used with either + or -)

Parallel I/O (PIO) operation mode

The controller offers five operation modes.
Use the PC setting software to set the appropriate operation mode. The initial setting is 64-point mode.

Operation mode	Positioning numbers	Overview
64-point mode	64 points	• JOG travel start input • Selectable output: 2 points (Point zone, zone 1, zone 2, travel, warning, soft limit over, soft limit over (-), soft limit over (+)
Simple 7-point mode	7 points	• JOG travel start input • Selectable output: 2 points (Point zone, zone 1, zone 2, travel, warning, soft limit over, soft limit over (-), soft limit over (+)
Solenoid valve mode double 2-position	2 points	• SW output: 2 points • Selectable output: 2 points (Point zone, zone 1, zone 2, travel, warning, soft limit over, soft limit over (-), soft limit over (+)
Solenoid valve mode double 3-position	2 points	• SW output: 2 points • Selectable output: 2 points (Point zone, zone 1, zone 2, travel, warning, soft limit over, soft limit over (-), soft limit over (+)
Solenoid valve mode single	2 points	• SW output: 2 points • Selectable output: 2 points (Point zone, zone 1, zone 2, travel, warning, soft limit over, soft limit over (-), soft limit over (+)

Parallel I/O (PIO) signal name list

Input signal

Abbreviation	Name	Abbreviation	Name
PST	Point travel start	JOGM	JOG (-) travel start
PSB*	Point number selection bit*	JOGP	JOG (+) travel start
OST	Origin return start	P*ST	Point number * travel start
SVON	Servo ON	V1ST	Solenoid valve travel instruction 1
ALMRST	Alarm reset	V2ST	Solenoid valve travel instruction 2
STOP	Stop	VST	Solenoid valve travel instruction

Output signal

Abbreviation	Name	Abbreviation	Name
PEND	Point travel complete	SONS	Servo ON state
PCB*	Point number confirmation bit *	ALM	Alarm
ACB*	Alarm confirmation bit *	WARN	Warning
PZONE	Point zone	READY	Operation preparation complete
MOVE	Moving	P*END	Point number * travel complete
ZONE1	Zone 1	SW1	Switch 1
ZONE2	Zone 2	SW2	Switch 2
OEND	Origin return complete	SLMT	Soft limit exceeded
SLMTM	Soft limit over (-)	SLMTP	Soft limit over (+)

Parallel I/O (PIO) operation mode and signal assignment

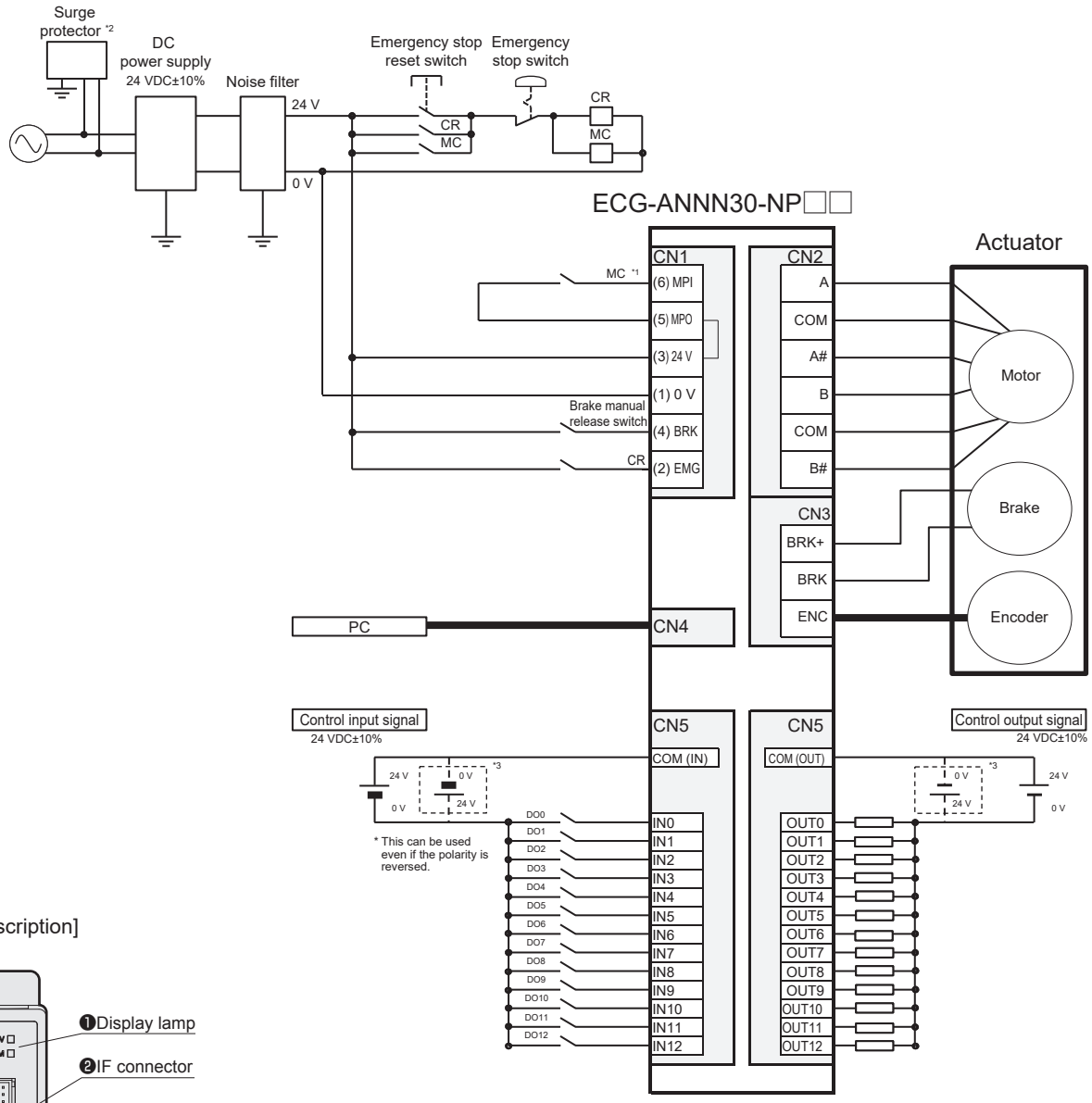
The following figure shows signal assignments in each operation mode.

Operation mode		64-point mode	Simple 7-point mode	Solenoid mode Double 2-position	Solenoid mode Double 3-position	Solenoid mode Single type
Positioning numbers		64	7	2	2	2
Input	IN0	PSB0	P1ST	V1ST	V1ST	-
	IN1	PSB1	P2ST	V2ST	V2ST	VST
	IN2	PSB2	P3ST	-	-	-
	IN3	PSB3	P4ST	-	-	-
	IN4	PSB4	P5ST	-	-	-
	IN5	PSB5	P6ST	-	-	-
	IN6	PST	P7ST	-	-	-
	IN7	JOGM	JOGM	-	-	-
	IN8	JOGP	JOGP	-	-	-
	IN9	OST	OST	OST	OST	OST
	IN10	SVON	SVON	SVON	SVON	SVON
	IN11	ALMRST	ALMRST	ALMRST	ALMRST	ALMRST
	IN12	STOP#	STOP#	-	-	-
Output	OUT0	PCB0/ ACB0	P1END	P1END	P1END	P1END
	OUT1	PCB1/ ACB1	P2END	P2END	P2END	P2END
	OUT2	PCB2/ ACB2	P3END	-	-	-
	OUT3	PCB3/ ACB3	P4END	-	-	-
	OUT4	PCB4	P5END	SW1	SW1	SW1
	OUT5	PCB5	P6END	SW2	SW2	SW2
	OUT6	PEND	P7END	-	-	-
	OUT7	PZONE/ ZONE1/ ZONE2/ MOVE/ WARN# SLMT/ SLMTM/ SLMTP	PZONE/ ZONE1/ ZONE2/ MOVE/ WARN# SLMT/ SLMTM/ SLMTP	PZONE/ ZONE1/ ZONE2/ MOVE/ WARN# SLMT/ SLMTM/ SLMTP	PZONE/ ZONE1/ ZONE2/ MOVE/ WARN# SLMT/ SLMTM/ SLMTP	PZONE/ ZONE1/ ZONE2/ MOVE/ WARN# SLMT/ SLMTM/ SLMTP
	OUT8	PZONE/ ZONE1/ ZONE2/ MOVE/ WARN# SLMT/ SLMTM/ SLMTP	PZONE/ ZONE1/ ZONE2/ MOVE/ WARN# SLMT/ SLMTM/ SLMTP	PZONE/ ZONE1/ ZONE2/ MOVE/ WARN# SLMT/ SLMTM/ SLMTP	PZONE/ ZONE1/ ZONE2/ MOVE/ WARN# SLMT/ SLMTM/ SLMTP	PZONE/ ZONE1/ ZONE2/ MOVE/ WARN# SLMT/ SLMTM/ SLMTP
	OUT9	OEND	OEND	OEND	OEND	OEND
	OUT10	SONS	SONS	SONS	SONS	SONS
	OUT11	ALM#	ALM#	ALM#	ALM#	ALM#
	OUT12	READY	READY	READY	READY	READY

*The pound sign (#) indicates a negative logic signal.

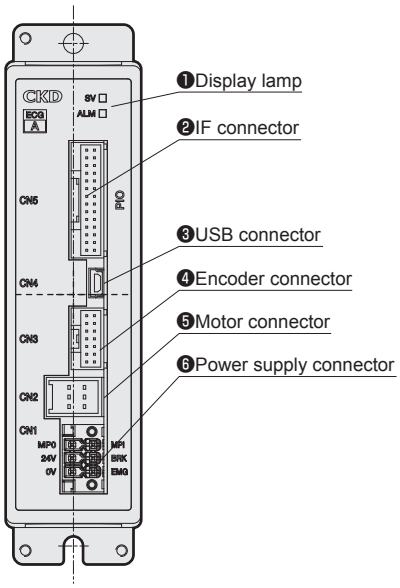
Parallel I/O connection diagram (ECG-ANNN30-NP**)

[PIO]



*1 For safety category support, connect the contact of an electromagnetic switch or other device between the MPI and MPO terminals when motor drive power must be shut OFF. (Connected with jumper wires at shipment.)
*2 A surge protector is required to comply with the CE marking.
*3 This can be used even if the polarity is reversed.

[Panel description]



● Accessories

Part name	Manufacturer model	Manufacturer
Power supply connector	DFMC1, 5/3-STF-3, 5	PHOENIX CONTACT

Description of field network operation modes

Operation mode	Overview
PIO mode (PIO)	Point operation can be used and signal assignment of inputs and outputs can be changed in the operation mode (PIO) in the same manner as with the parallel I/O specification. However, you cannot select a direct-value operation that sets the operating conditions for operation directly from the PLC. Reading and writing of parameters do work, but the monitoring function cannot be used. Refer to the table below for details.
Half simple direct value mode (HSDP)	This mode is selectable only with the CC-Link specification controller. Switching the direct travel selection signal enables a target position to be arbitrarily be set by the PLC or 64 point operation. The selected direct travel operation method can then be used. The monitoring function can be used with restrictions. Reading and writing of parameters does not work. Refer to the table below for details.
Simple direct value mode (SDP)	Switching the direct travel selection signal enables a target position to be arbitrarily be set by the PLC or 64 point operation. The selected direct travel operation method can then be used. Reading and writing of parameters do work and the monitoring function can be used. Refer to the table below for details.
Half direct value mode (HDP)	This mode is selectable only with the CC-Link specification controller. Switching the direct travel selection signal enables operating conditions to be arbitrarily be set by a PLC (with restrictions) or 64 point operation. The selected direct travel operation method can then be used. The monitoring function can be used. Reading and writing of parameters does not work. Refer to the table below for details.
Full direct value mode (FDP)	Switching the direct travel selection signal enables operating conditions to be arbitrarily be set by the PLC or 64 point operation. The selected direct travel operation method can then be used. Reading and writing of parameters do work and the monitoring function can be used. Refer to the table below for details.

Operation mode		PIO	HSDP	SDP	HDP	FDP
Parameter read/write		Available	Not available	Available	Not available	Available
Direct value travel selection *1		Selection not possible	1	1	1	1
Positioning point count		64	Unlimited	Unlimited	Unlimited	Unlimited
Direct value travel item *2	Target position	-	○	○	○	○
	Positioning width	-	-	-	○	○
	Speed	-	-	-	○	○
	Acceleration	-	-	-	●	○
	Deceleration	-	-	-	●	○
	Pressing rate	-	-	-	○	○
	Pressing distance	-	-	-	○	○
	Pressing speed	-	-	-	-	○
	Position specification method	-	-	-	○	○
	Operation mode	-	-	-	○	○
	Stop method	-	-	-	○	○
	Acceleration/ deceleration method	-	-	-	○	○
Monitor item *3	Position	-	○	○	○	○
	Speed	-	○	▲	○	○
	Current	-	○	▲	○	○
	Alarm	-	-	▲	○	○

*1: When the direct value travel selection is 0, it operates with the value set by the point data. This enables up to 64 positioning points.
*2: ○ indicates items operated with the value set by the PLC.
- indicates operation with the value set by the point data.
● indicates items operated with the value set by the PLC, but only the same values can be set.
*3: ○ indicates items that can be monitored.
- indicates items that cannot be monitored.
Use ▲ to select only 1 item to be monitored.
▲ indicates items can be monitored when selected as monitor values (one at a time for CC-Link and IO-Link, three values at a time for others).

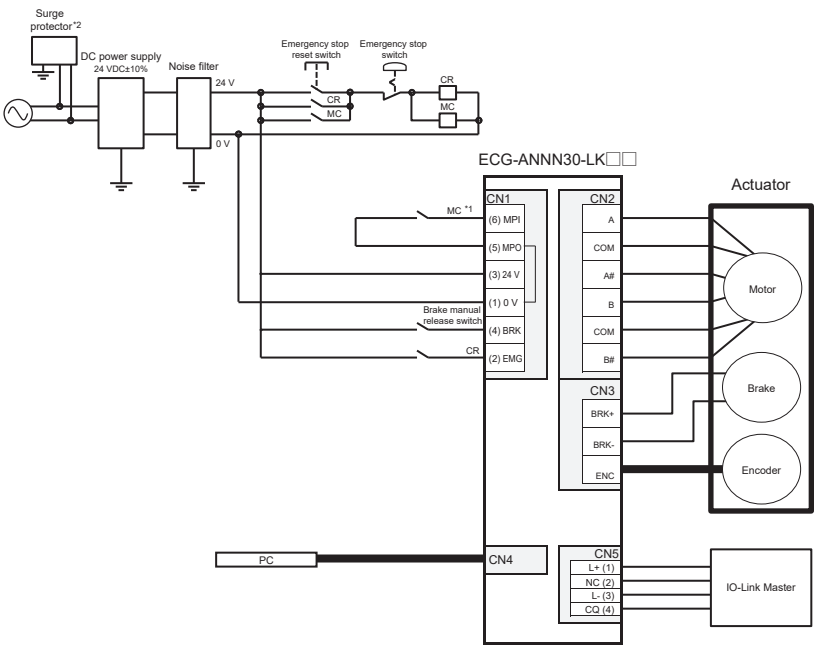
IO-Link specifications and connection diagram (ECG-ANNN30-LK**)

[Communication specifications]

Item	Specifications
Communication protocol version	V1.1
Transmission bit rate	COM3(230.4kbps)
Port	Class A
Process data length (input) PD (in) data length	PIO mode: 2 bytes
	Simple direct value mode: 9 bytes
	Full direct value mode: 12 bytes
Process data length (output) PD (out) data length	PIO mode: 2 bytes
	Simple direct value mode: 7 bytes
	Full direct value mode: 22 bytes
Minimum cycle time	PIO mode: 1 ms
	Simple direct value mode: 1.5 ms
	Full direct value mode: 2.5 ms
Monitor function	Position, speed, current, alarm

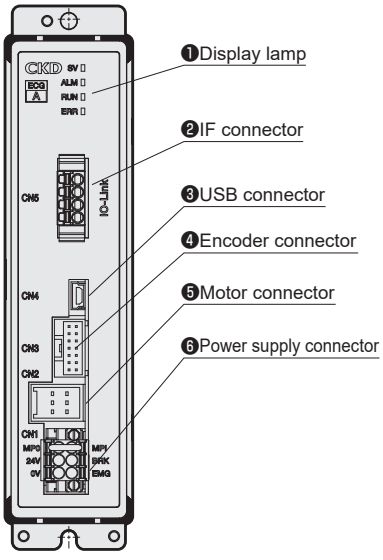
* The available monitoring Items depend on the operation mode.
Refer to page 111 for details.

[IO-Link]



*1 If the motor drive source must be shut off for safety category compatibility, connect a contact such as an electromagnetic switch between the MPI and MPO terminals. (Connected with jumper wires at shipment.)
*2 A surge protector is required to comply with the CE marking.

[Panel description]



Cyclic data from master

PD (out)	bit	Full direct value mode Signal name
0	7	Pause#
	6	Stop#
	5	Alarm reset
	4	Servo ON
	3	Origin return start
	2	Point travel start
	1	JOG/INCH (+) travel start
	0	JOG/INCH(-)Travel start
1	7	INCH selection
	6	-
	5 to 0	Point number selection bit 5 to 0
2	7 to 4	-
	3 to 1	Rotation direction (direct value travel)
	0	Direct value travel selection
3 to 6	7 to 0	Position (direct value travel)
7 to 8	7 to 0	Positioning width (direct value travel)
9 to 10	7 to 0	Speed (direct value travel)
11	7 to 0	Acceleration (direct value travel)
12	7 to 0	Deceleration (direct value travel)
13	7 to 0	Pressing rate(Direct value travel)
14	7 to 0	Pressing speed (direct value travel)
15 to 18	7 to 0	Pressing distance (direct value travel)
19 to 20	7 to 0	Gain magnification (direct value travel)
21	7	Position specification method (direct value travel)
	6 to 5	Operation method (direct value travel)
	4 to 3	Acceleration/deceleration method (direct value travel)
	2 to 0	Stop method (direct value travel)

Cyclic data from controller

PD (in)	bit	Full direct value mode Signal name
0	7	Operation preparation complete
	6	Warning#
	5	Alarm#
	4	Servo ON state
	3	Origin return complete
	2	Point travel complete
	1 to 0	-
1	7 to 6	-
	5 to 0	Point number confirmation bit 5 to 0
2	7	Soft limit over (+)
	6	Soft limit over (-)
	5	Soft limit exceeded
	4	Zone 2
	3	Zone 1
	2	Moving
	1	Point zone
	0	Direct travel status
3 to 6	7 to 0	Position (monitor value)
7 to 8	7 to 0	Speed (monitor value)
9	7 to 0	Current (monitor value)
10 to 11	7 to 0	Alarm (monitor value)

* Refer to the instruction manual for other operation modes.
* "#" indicates a negative logic signal.

Accessories

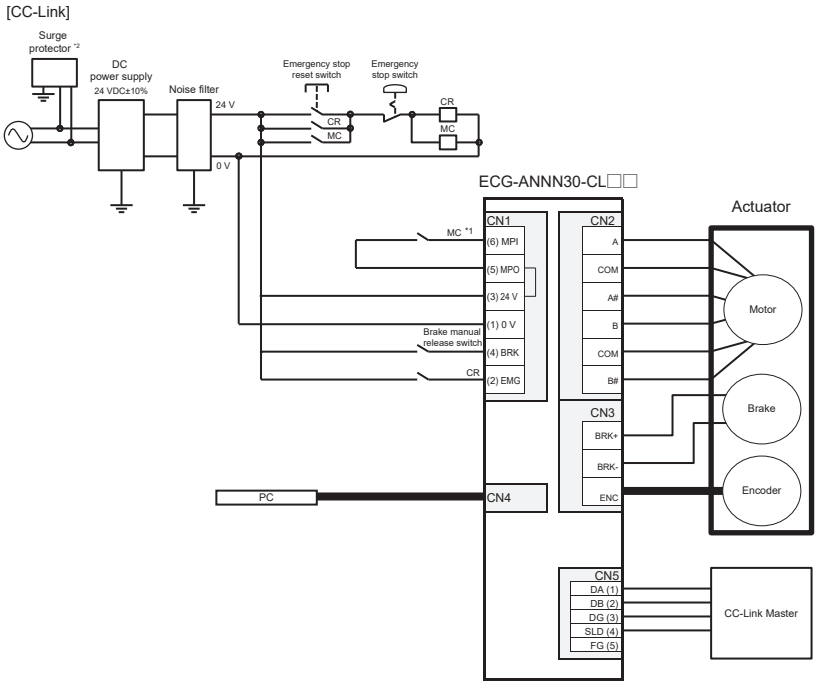
Part name	Manufacturer model	Manufacturer
Power supply connector	DFMC 1,5/3-STF-3,5	PHOENIX CONTACT
IO-Link connector	FMC1,5/4-ST-3,5-RF	PHOENIX CONTACT

CC-Link specifications and connection diagram (ECG-ANNN30-CL**)

[Communication specifications]

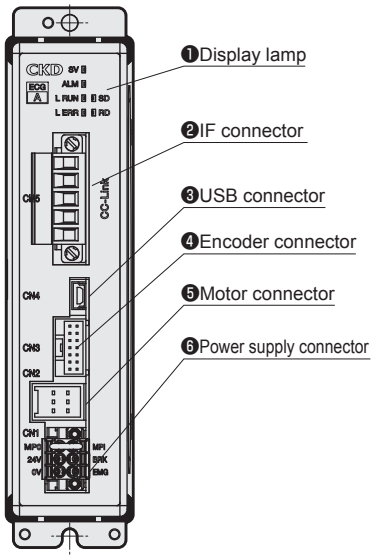
Item	Specifications
CC-Link Version	Ver. 1.10
Station	Remote device station
Remote station No.	1 to 64 (set by parameter setting)
Operation mode Number of occupied stations	PIO mode (1 station occupied)
	Half simple direct value mode (1 stations occupied)
	Simple direct value mode (2 stations occupied)
	Half direct value mode (2 stations occupied)
	Full direct value mode (4 stations occupied)
Remote I/O points	32 points x number of occupied stations
Remote Register input/output	4 words x number of occupied stations
Communication speed	10M/5M/2.5M/625k/156kbps (Selected by parameter setting)
Connection cable	CC-Link Ver. 1.10. compliant cable (3 core twisted pair cable with shield)
Number of connected units	42 max. when only remote device stations are connected
Monitor function	Position, speed, current, alarm

* Items that can be monitored change depending on the operating mode. Refer to page 111 for details.



*1 For safety category support, connect the contact of an electromagnetic switch or other device between the MPI and MPO terminals when motor drive power must be shut OFF. (Connected with jumper wires at shipment.)
*2 A surge protector is required to comply with the CE marking.

[Panel description]



Cyclic data from master

Device No.	Half simple direct value mode Signal name
RYn0	Point number selection bit 0
RYn1	Point number selection bit 1
RYn2	Point number selection bit 2
RYn3	Point number selection bit 3
RYn4	Point number selection bit 4
RYn5	Point number selection bit 5
RYn6	Direct value travel selection
RYn7	JOG/INCH (-) travel start
RYn8	JOG/INCH (+) travel start
RYn9	INCH selection
RYnA	Point travel start
RYnB	Origin return start
RYnC	Servo ON
RYnD	Alarm reset
RYnE	Stop#
RYnF	Pause#
RY (n+1) 0 to RY (n+1) F	Vacant

Cyclic data from controller

Device No.	Half simple direct value mode Signal name
RXn0	Point number confirmation bit 0
RXn1	Point number confirmation bit 1
RXn2	Point number confirmation bit 2
RXn3	Point number confirmation bit 3
RXn4	Point number confirmation bit 4
RXn5	Point number confirmation bit 5
RXn6	Direct value travel status
RXn7	Selectable output 1
RXn8	Selectable output 2
RXn9	-
RXnA	Point travel complete
RXnB	Origin return complete
RXnC	Servo ON state
RXnD	Alarm#
RXnE	Warning#
RXnF	Operation preparation complete
RX (n+1) 0 to RX (n+1) F	Vacant

Device No.	Half simple direct value mode Signal name
RWw0	Position (direct value travel)
RWw1	
RWw2	-
RWw3	-

Device No.	Half simple direct value mode Signal name
RWr0	Position (monitor value)
RWr1	
RWr2	Speed (monitor value)
RWr3	Current (monitor value)

* Refer to the Instruction Manual for details of other operation modes.
* The pound sign (#) indicates a negative logic signal.

● Accessories

Part name	Manufacturer model	Manufacturer
Power supply connector	DFMC1, 5/3-STF-3, 5	PHOENIX CONTACT
CC-Link connector	MSTB2, 5/5-STF-5, 08ABGYAU	PHOENIX CONTACT

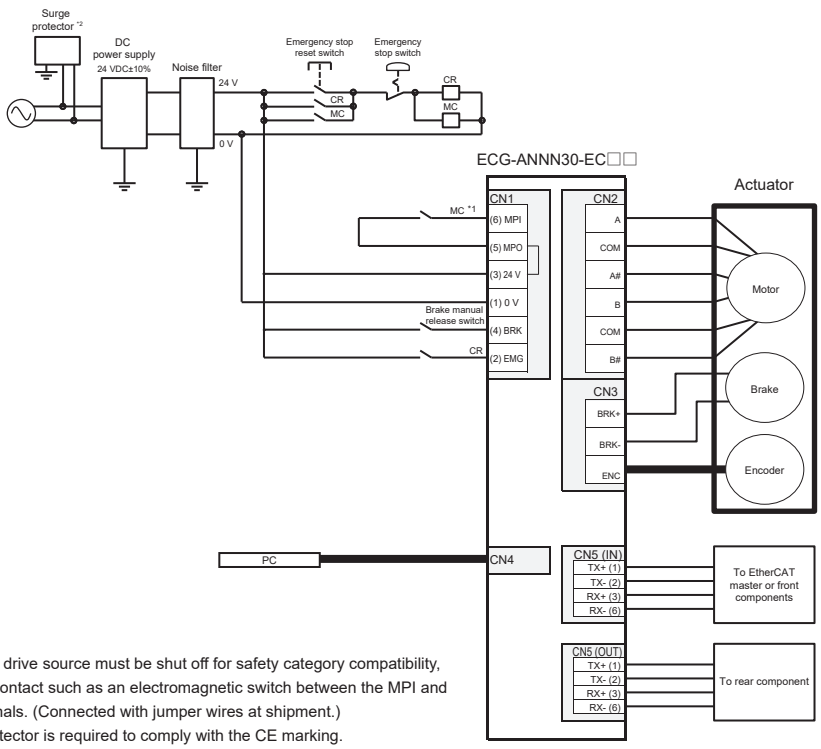
EtherCAT specifications and connection diagram (ECG-ANNN30-EC**)

[Communication specifications]

Item	Specifications
Communication speed	100Mbps (fast Ethernet, full duplex)
Process data	Variable PDO mapping
Max. PDO Data length	RxPDO:64 bytes/ TxPDO:64 bytes
Station Alias	0 - 65535 (Set by a parameter)
Connection cable	EtherCAT compliant cable (Twisted pair cable of CAT5e or higher (Double shield with aluminum tape and braid) is recommended.)
Node address	Automatic allocation by master
Monitor function	Position, speed, current, alarm

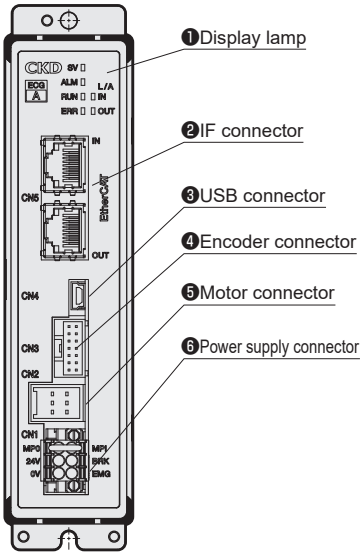
* The available monitoring Items depend on the operation mode. Refer to page 111 for details.

[EtherCAT]



*1 If the motor drive source must be shut off for safety category compatibility, connect a contact such as an electromagnetic switch between the MPI and MPO terminals. (Connected with jumper wires at shipment.)
*2 A surge protector is required to comply with the CE marking.

[Panel description]



Cyclic data from master

Index	Sub Index	bit	Full direct value mode Signal name
0 x 2001	0x01	0 to 5	Point number selection bit 0 to 5
		6	-
		7	JOG/INCH (-) travel start
		8	JOG/INCH (+) travel start
		9	INCH selection
		10	Point travel start
		11	Origin return start
		12	Servo ON
		13	Alarm reset
		14	Stop#
		15	Pause#
		16 to 31	-
	0x02	0 to 3	-
		4	Data request
		5	Data R/W selection
		6 to 11	-
		12	Monitor request
		13 to 14	-
		15	Direct value travel selection
		16 to 31	-
0 x 2003	0x01	0 to 31	Position (direct value travel)
	0x02	0 to 31	Positioning width (direct value travel)
	0x03	0 to 31	Speed (direct value travel)
	0x04	0 to 31	Acceleration (direct value travel)
	0x05	0 to 31	Deceleration (direct value travel)
	0x06	0 to 31	Pressing ratio (direct value travel)
	0x07	0 to 31	Pressing speed (direct value travel)
	0x08	0 to 31	Pressing distance (direct value travel)
	0x09	0 to 31	Mode (direct value travel)
	0x0A	0 to 31	Gain magnification (direct value travel)
	0x0B	0 to 31	Writing data
	0x0C	0 to 31	Data number
	0x0D	0 to 31	Monitor number 1
	0x0E	0 to 31	Monitor number 2

Cyclic data from controller

Index	Sub Index	bit	Full direct value mode Signal name
0 x 2005	0x01	0 to 5	Point number confirmation bit 0 to 5
		6 to 9	-
		10	Point travel complete
		11	Origin return complete
		12	Servo ON state
		13	Alarm#
		14	Warning#
		15	Operation preparation complete
		16 to 31	-
	0x02	0 to 3	Data response
		4	Data complete
		5	Data write status
		6 to 7	-
		8 to 11	Monitor response
		12	Monitor complete
		13 to 14	-
		15	Direct value travel status
		16	Point zone
		17	Moving
		18	Zone 1
		19	Zone 2
		20	Soft limit exceeded
		21	Soft limit over (-)
		22	Soft limit over (+)
		23 to 31	-
0x 2007	0x01	0 to 31	Position (monitor value)
	0x02	0 to 31	Speed (monitor value)
	0x03	0 to 31	Current (monitor value)
	0x04	0 to 31	-
	0x05	0 to 31	Alarm (monitor value)
	0x06 to 0x0A	0 to 31	-
	0x0B	0 to 31	Read data
	0x0C	0 to 31	Data (alarm)
	0x0D	0 to 31	Monitor value 1
	0x0E	0 to 31	Monitor value 2

* Refer to the instruction manual for other operation modes.
* "#" indicates a negative logic signal.

Accessories

Part name	Manufacturer model	Manufacturer
Power supply connector	DFMC 1,5/3-STF-3,5	PHOENIX CONTACT

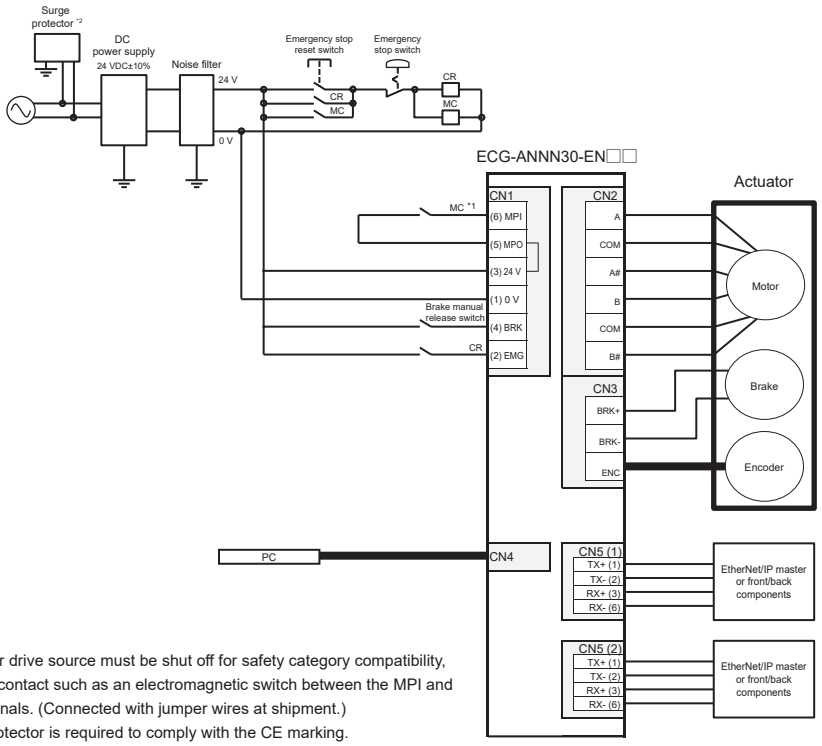
EtherNet/IP specifications and connection diagram (ECG-ANNN30-EN**)

[Communication specifications]

Item	Specifications
Communication protocol	EtherNet/IP
Communication speed	Automatic setting (100Mbps/10Mbps, full duplex/ half duplex)
Occupied bytes	Input: 64 bytes/Output: 64 bytes
IP address	Setting with parameters (0.0.0.0 to 255.255.255.255) Via DHCP server (arbitrary address)
RPI (Packet interval)	4ms to 10000ms
Connection cable	EtherNet/IP compliant cable (Twisted pair cable of CAT5e or higher (Double shield with aluminum tape and braid) is recommended.)
Monitor function	Position, speed, current, alarm

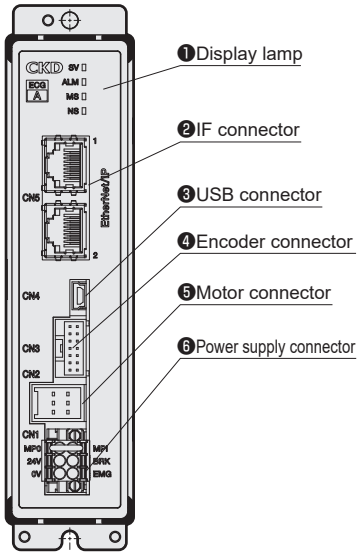
* The available monitoring Items depend on the operation mode. Refer to page 111 for details.

[EtherNet/IP]



*1 If the motor drive source must be shut off for safety category compatibility, connect a contact such as an electromagnetic switch between the MPI and MPO terminals. (Connected with jumper wires at shipment.)
*2 A surge protector is required to comply with the CE marking.

[Panel description]



Cyclic data from master

Byte	bit	Full direct value mode Signal name
0	0 to 5	Point number selection bit 0 to 5
	6	-
	7	JOG/INCH (-) travel start
1	0	JOG/INCH (+) travel start
	1	INCH selection
	2	Point travel start
	3	Origin return start
	4	Servo ON
	5	Alarm reset
	6	Stop#
	7	Pause#
2 to 3	0 to 7	-
4	0 to 3	-
	4	Data request
	5	Data R/W selection
	6 to 7	-
5	0 to 3	-
	4	Monitor request
	5 to 6	-
	7	Direct value travel selection
6 to 7	0 to 7	-
8 to 11	0 to 7	Position (direct value travel)
12 to 15	0 to 7	Positioning width (direct value travel)
16 to 19	0 to 7	Speed (direct value travel)
20 to 23	0 to 7	Acceleration (direct value travel)
24 to 27	0 to 7	Deceleration (direct value travel)
28 to 31	0 to 7	Pressing ratio (direct value travel)
32 to 35	0 to 7	Pressing speed (direct value travel)
36 to 39	0 to 7	Pressing distance (direct value travel)
40 to 43	0 to 7	Mode (direct value travel)
44 to 47	0 to 7	Gain magnification (direct value travel)
48 to 51	0 to 7	Writing data
52 to 55	0 to 7	Data number
56 to 59	0 to 7	Monitor number 1
60 to 63	0 to 7	Monitor number 2

Cyclic data from controller

Byte	bit	Full direct value mode Signal name
0	0 to 5	Point number confirmation bit 0 to 5
	6 to 7	-
1	0 to 1	-
	2	Point travel complete
	3	Origin return complete
	4	Servo ON state
	5	Alarm#
	6	Warning#
	7	Operation preparation complete
2 to 3	0 to 7	-
4	0 to 3	Data response
	4	Data complete
	5	Data write status
	6 to 7	-
5	0 to 3	Monitor response
	4	Monitor complete
	5 to 6	-
	7	Direct value travel status
6	0	Point zone
	1	Moving
	2	Zone 1
	3	Zone 2
	4	Soft limit exceeded
	5	Soft limit over (-)
	6	Soft limit over (+)
	7	-
7	0 to 7	-
8 to 11	0 to 7	Position (monitor value)
12 to 15	0 to 7	Speed (monitor value)
16 to 19	0 to 7	Current (monitor value)
20 to 23	0 to 7	-
24 to 27	0 to 7	Alarm (monitor value)
28 to 47	0 to 7	-
48 to 51	0 to 7	Read data
52 to 55	0 to 7	Data (alarm)
56 to 59	0 to 7	Monitor value 1
60 to 63	0 to 7	Monitor value 2

* Refer to the instruction manual for other operation modes.
* "#" indicates a negative logic signal.

Accessories

Part name	Manufacturer model	Manufacturer
Power supply connector	DFMC 1,5/3-STF-3,5	PHOENIX CONTACT

Relay cable

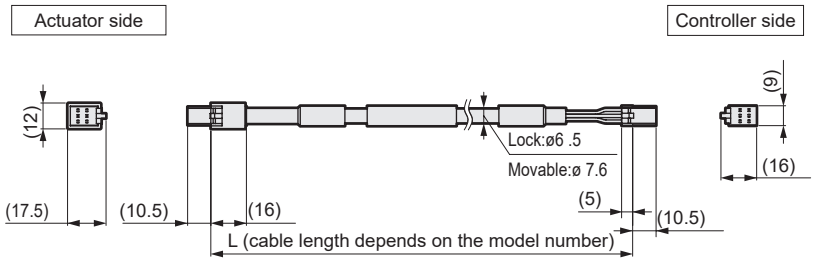
● Motor cable (fixed/movable)

* An actuator type is also available.

EA-CBLM4 - S 01

Ⓐ Cable type	
S	Fixed cable
R	Movable cable

Ⓑ Cable length	
01	1m
03	3m
05	5m
10	10m



* Use with a total cable bending radius of 51mm or more.

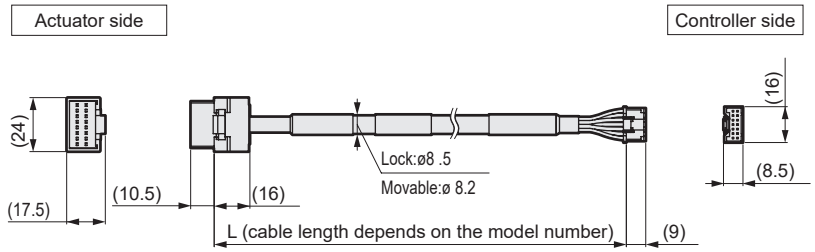
● Encoder cable (fixed/movable)

* An actuator type is also available.

EA-CBLE4 - S 01

Ⓐ Cable type	
S	Fixed cable
R	Movable cable

Ⓑ Cable length	
01	1m
03	3m
05	5m
10	10m



* Use with a total cable bending radius of 51mm or more.

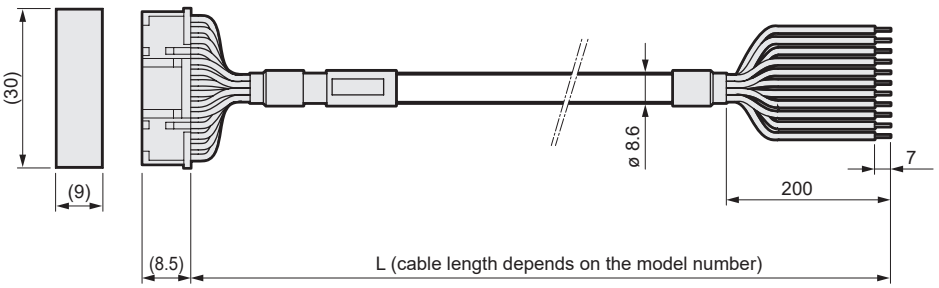
I/O cable

● I/O cable

* Parallel I/O specification controller also available

EA-CBLNP2 - 02

Ⓐ Cable length	
02	2m
03	3m
05	5m
10	10m



Related parts model No. table

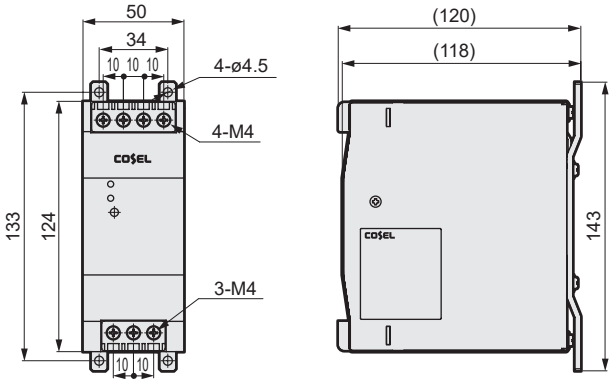
● DC power supply

Item			Model No.: EA-PWR-KHNA240F-24-N2 (screw mounted) EA-PWR-KHNA240F-24 (DIN rail mounted)
Manufacturer			COSEL Co., Ltd.
Manufacturer Model No.	Mounting screw		KHNA240F-24-N2
	DIN rail mount		KHNA240F-24
Input voltage			85 to 264 VAC 1ø or 88 to 370 VDC
Output	Power		240 W
	Voltage/current		24 V 10 A
	Variable voltage range		22.5 to 28.5 V
Included functions	Overcurrent protection		Operating at 101% min of peak current
	Overvoltage protection		30.0 to 36.0 V
	Remote control		Available
	Remote sensing		-
	Others		DC_OK display, ALARM display
Operating temperature/humidity			-25 to +70 °C, 20 to 90% RH (no condensation), startup possible at -40 °C *
Applicable standards	Safety standards	AC input	AC input: Certified UL60950-1, C-UL (CSA60950-1), EN60950-1
			UL508, ANSI / ISA12.12.01, and ATEX; Electrical Appliances and Material Safety Act compliant *
		DC input	Certified UL60950-1, C-UL (CSA60950-1), EN60950-1
	Noise terminal voltage		Compliant with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B
	Harmonic current		Compliant with IEC61000-3-2 (class A) *
Structure	Dimensions (W x H x D)		50×124×117 mm
	Weight		900 g max
	Cooling method		Natural air cooling

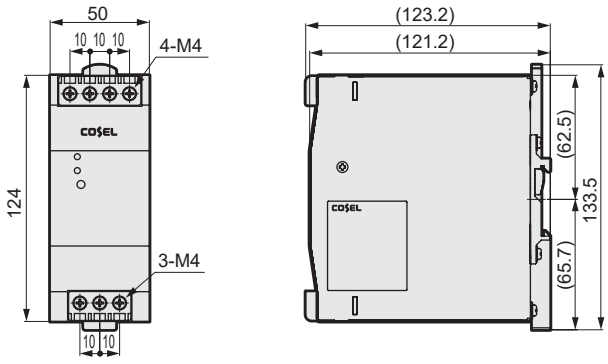
* Refer to the manufacturer's website for details.
* CE and ROHS certification has been obtained under the manufacturer's model number.

Part names and dimensions

● EA-PWR-KHNA240F-24-N2 (24 V screw mounted)



● EA-PWR-KHNA240F-24 (24 V DIN rail mounted)



● Other parts

Part name	Model No.
Noise filter for power supply (single phase, 15 A)	AX-NSF-NF2015A-OD

* Refer to the Instruction Manual for details on the ferrite core to be used.

Safety Precautions

Always read this section before use.

When designing equipment using electric actuators, the manufacturer is obligated to ensure that the safety of the mechanism and the electrically controlled system are secured.
It is important to select, use, handle and maintain CKD products appropriately to ensure their safe usage.
Observe warnings and precautions to ensure device safety.
Check that device safety is ensured and a safe device is manufactured.

WARNING

1 This product is designed and manufactured as a general industrial machine part.
It must be handled by an operator having sufficient knowledge and experience in handling.

2 Use the product within specifications range.

This product must be used within its stated specifications. It must not be modified or machined additionally.
This product is intended for use as a device or part for general-purpose industrial machinery. It is not intended for use outdoors (except for outdoor type) or for use under the following conditions or environment.
(Note that this product can be used under the following conditions only when CKD is consulted prior to use and the customer consents to CKD product specifications. The customer must provide safety measures to avoid risks in the event of problems.)

❶ Use for special applications which require the safety, including nuclear energy, railways, aircrafts, marine vessels, vehicles, medicinal devices, devices or applications coming into contact with beverages or foodstuffs, amusement devices, emergency operations (cutoff circuits, opening etc.) circuits, press machines, brake circuits, or safety devices or applications.

❷ Use for applications where life or assets could be adversely affected and special safety measures are required.

3 Observe organization standards and regulations, etc. related to the safety of device design.

4 Never remove devices before confirming safety.

❶ Inspect and service on the machine and devices after confirming safety of the entire system related to this product.

❷ Note that there may be hot or charged sections even after operation is stopped.

❸ When inspecting or maintaining device, be sure to shut down the power supply of the equipment and the relevant power supply, using caution to avoid electric shock.

5 Observe instruction manual and precautions attached the product surely to prevent accidents.

❶ The product could operate unexpectedly during teaching operation or trial operation. Be especially careful not to touch the actuator. If operating the product from a position where the shaft body cannot be seen, be sure to first confirm that the safety is secured even if the actuator moves.

6 Observe precautions to prevent electric shock.

❶ Do not touch the heat sink, cement friction, or motor inside the controller.
These will heat up, and could cause burns. Wait an appropriate amount of time prior to performing inspections or other tasks.
A high voltage is applied until the electrical load stored in the internal capacitors is discharged after the power is turned OFF.
Do not touch for around three minutes after the power OFF.

❷ Make sure to turn the switch on the controller power supply source OFF, before maintenances and inspections.
There is a danger of high voltage electric shocks.

❸ Do not attach or remove connector, while the power is on. Otherwise, this may cause malfunction, failure, or electric shock.

7 Install an overcurrent protector.

The wiring to the driver should be in accordance with JIS B 9960-1:2019 (IEC 60204-1:2016) Safety of Machinery - Electrical Equipment of Machines - Part 1: General Requirements. Install an overcurrent protector (a circuit breaker or circuit protector for wiring) on the main power, control power, and I/O power.

(Reference: JIS B 9960-1 7.2.1 General description)
If there is a possibility the circuit current may exceed the rated value of the component or the allowable current of the conductor, an overcurrent protection must be provided. The details of the ratings or set values to be selected shall be provided in 7.2.10.

8 Observe precautions below to prevent accidents.

■ The precautions are ranked as "DANGER", "WARNING" and "CAUTION" in this section.

DANGER: When a dangerous situation may occur if handling is mistaken leading to fatal or serious injuries, and when there is a high degree of emergency to a warning.

WARNING: When a dangerous situation may occur if handling is mistaken leading to fatal or serious injuries.

CAUTION: When a dangerous situation may occur if handling is mistaken leading to minor injuries or physical damage.

Note that some items described as "CAUTION" may lead to serious results depending on the situation.
Every item provides important information and must be observed.

Warranty

1 Warranty period

The product specified herein is warranted for one (1) year from the date of delivery to the location specified by the customer.

2 Warranty coverage

If the product specified herein fails for reasons attributable to CKD within the warranty period specified above, CKD will promptly provide a replacement for the faulty product or a part thereof or repair the faulty product at one of CKD's facilities free of charge.

However, following failures are excluded from this warranty:

1) Failure caused by handling or use of the product under conditions and in environments not conforming to those stated in the catalog, the Specifications, or the Instruction Manual.
2) Failure caused by use of the product exceeding its durability (cycles, distance, time, etc.) or caused by consumable parts.
3) Failure not caused by the product.
4) Failure caused by use not intended for the product.
5) Failure caused by modifications/alterations or repairs not carried out by CKD.
6) Failure caused by reasons unforeseen at the level of technology available at the time of delivery.
7) Failure caused by acts of nature and disasters beyond control of CKD.

The warranty stated herein covers only the delivered product itself. Any loss or damage induced by failure of the delivered product is excluded from this warranty.

Note: For details on the durability and consumable parts, contact your nearest CKD sales office.

3 Compatibility confirmation

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

4 Range of service

The delivered product price does not include engineer dispatch service fees. Separate fees will be charged in the following cases.

(1) Instruction of installation and adjustment, and presence on test operation
(2) Maintenance and inspection, adjustment, and repair
(3) Technical instructions and technical education (operation, program, wiring method, safety education, etc.)

Precautions for export

Products and related technologies in this catalog
Those of the products and related technologies in this catalog which are subject to US Export Administration Regulations
(EAR) are marked on the product page as "Product subject to the EAR (EAR99) or (EAR99 and 3A991)".
For export or provision of products or related technologies subject to EAR regulations, we request that the US Export Administration Regulations (EAR) be observed appropriately.

Safety Precautions

Be sure to read this section before use.

Common precautions: Electric actuator EBS/EBR Series/Controller ECR/ECG

Design/selection

1. Common

⚠DANGER

- Do not use in places where dangerous goods such as ignitable substances, inflammable substances or explosives are present.
  There is a possibility of ignition, combustion or explosion.
- Ensure that the product is free of water droplets and oil droplets.
  Failure to do so may lead to fire or malfunction.
- When mounting the product, be sure to hold and fix it (including workpieces) securely.
  Falling, dropping, abnormal operation, etc., of the product may cause injury. As a rule, fix the product using all mounting holes.
- Use a DC stabilized power supply (48 VDC ± 10% or 24 VDC ±10%) for the ECR Series motor and control power supplies.
  Connecting directly to the AC power supply may cause fire, explosion, damage, etc.
- Use a DC stabilized power supply (24 VDC ±10%) for the input/output circuit power supplies and ECG Series motor and control power supplies.
  Connecting directly to the AC power supply may cause fire, explosion, damage, etc.
- Only 24 VDC power supplies can be used for the ECG Series.
  Accidentally using a 48 VDC power supply may damage the controller.

⚠WARNING

Use the product in the range of conditions specified for the product.

- Provide a safety fence to prevent entry to the movable range of the electric actuator.
  In addition, install the emergency stop button switch as a device in a location which is easy to operate in an emergency situation.
  For the emergency stop button, use a structure and wiring that will prevent automatic restoration or inadvertent restoration by personnel.
- An emergency stop may take several seconds, depending on the travel speed and load.
- 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.
  There is a risk of electric leakage or fire accidents in places exposed to rainwater or where there is high humidity (humidity of 80% or more, condensation). Oil drops and oil mist are also strictly prohibited. Use in such an environment could lead to damage or operation failure.
- Make sure that the product is D type grounded (ground resistance of 100 Ω or less).
  Electric shock or malfunction may occur if there is electric leakage.
- When installing the actuator in a direction other than horizontal, select the type with brake.
  If the motor is not equipped with a brake, the movable parts may fall off at servo OFF (including emergency stops and alarms) or power OFF, which may result in injury or damage to the workpiece.
- The brakes are not sufficient to completely retain the actuator in all situations. Be sure to achieve a balanced state or install a mechanical lock mechanism where safety must be guaranteed, such as when performing maintenance in an application where the slider moves with an unbalanced load or when stopping the machine for a long period of time.
- When vertically installing the actuator, do everything possible to keep the motor on top.
  While normal operation with the motor on the bottom will not be problematic, if the motor is stopped for a long time, the grease may separate and flow into the motor, very occasionally leading to malfunctions.
- 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 ambient temperature: 0°C to 40°C (for EBS-G, EBR-G: 10°C to 40°C), operating ambient humidity: 35% to 80%) Otherwise, abnormal stopping or decreased product service life may result. Ventilate in locations where heat may build up.
- Do not use this product in a location where the ambient temperature could suddenly change and cause dew to condense.
- Install in a location free from direct sunlight, dust, and corrosive gas/explosive gas/inflammable gas/combustibles, and away from heat sources. Chemical resistance of this product has not been taken into account. Failure to comply may lead to damage, explosion, or combustion.
- Use and store in locations free from strong electromagnetic waves, ultraviolet rays, or radiation.
  Otherwise, malfunction or damage may result.
- Take possibility of power source failure into consideration.
  Take measures to prevent bodily injury or machine damage even in the event of a power failure.

■ Consider the operation status when restarting after emergency or abnormal stops.
Design the system so that bodily injury or equipment damage will not occur when restarting. In addition, the electric actuator must be reset to the start position, design a safe control device. Consider the possibility of power failure of the mounted motor. Take measures to prevent bodily injury or machine damage even in the event of a power 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 and rod could collide with the stroke end.

■ Indicate the maintenance conditions in the device's instruction manual.
The product's functionality may drop too low to maintain an appropriate safety level depending on usage conditions, working environment and maintenance status. With correct maintenance, the product functions can be used to the fullest.

■ The product is manufactured in conformity with the related standards. Do not disassemble or modify the product.

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

■ Set up the wiring so as not to apply inductive noise.
Avoid locations where large currents or strong magnetic fields are generated. Do not use the same wiring (with multi-conductor cables) as any large motor power lines other than that of this product. Do not use the same wiring as inverter power supplies used for robots, etc. Apply a frame ground for the power supply and insert the filter to the output part.

■ Do not use this product in an environment where strong magnetic fields are generated.
This could cause improper operation.

■ Be sure to separate the power supply of the output of this product and the power supply of inductive loads that generate surges, such as solenoid valves and relays.
If the power supply is shared, surge current may flow into the output and cause damage. If a separate power supply cannot be used, connect the surge absorber directly to all inductive loads in parallel.

■ Select a power supply which provides ample capacity based on the number of installed products. Malfunction may occur if there is no excess capacity.
[For ECR Series]
(□ 35... 4.0A/block, □42 … 5.2A/block,
□ 56 …8.6A/base)
[For ECG Series]
(□ 35...2.4A/base, □42 …2.7A/base,
□ 56 …4.0A/base)

■ For UL compliance, use a Class2 power supply unit conforming to UL1310 for the combination DC power supply.

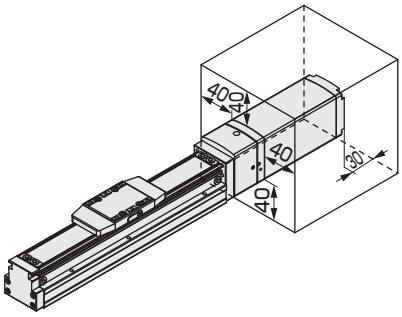
■ A fixed cable cannot be used in applications where it is repeatedly bent. Use a movable cable in places where it is repeatedly bent.

■ Fix the fixed cable so that it does not easily move. Use fixed cables with a bending radius of 51mm or more and movable cables with a bending radius of 51mm or more.
Because the bending radius does not apply to bending of the connector part, we recommend fixing near the connector.

■ The origin position is recognized when the power supply is turned ON. If an external stopper or holding mechanism (brake, etc.) is attached, an unintended position may be recognized as the origin position. Be careful with the layout of the external stopper, etc., so that the origin can be properly detected after the power supply is turned ON.

■ When using the EBS-G or EBR-G Series, do not apply a magnetic field with magnetic flux of 0.7mT or more to the surface of the motor.
This may cause damage or malfunction of the product.

■ When using multiple EBS-G or EBR-G Series units, separate the motors by at least the distance shown in the figure below.
Installing them close together may result in malfunction.

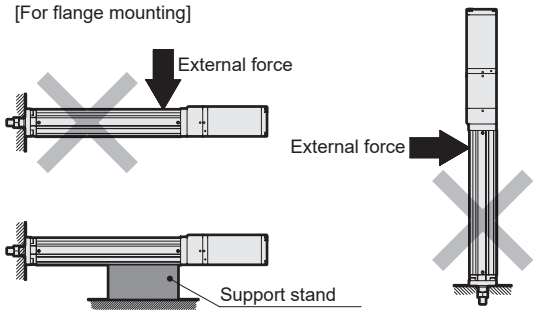


2.EBS Series

■ Check that there is no interference between the workpiece to be mounted on the slider and the motor part.
Some motors are larger than the slider mounting surface height.
(EBS-08*E, EBS-08*R, EBS-08*L)

3.EBR Series

■ Do not apply external force to the body when mounting the flange (option). External force may lead to malfunction or part damage.
Install a support stand when front-mounting horizontally. Vibration caused by operation conditions or the installation area could damage the actuator body. If the body will be subject to external force use the mounting holes on its base to fix the body in place. Avoid fixing the flange mounting hole only.



Mounting, installation and adjustment

1. Common

⚠ DANGER

- Do not enter the operating range of the product while the product is operable.
  The product may suddenly move and may result in injuries.
- The wiring should be in accordance with JIS B 9960-1: 2019 Safety of Machinery - Electrical Equipment of Machines - Part 1: General Requirements. Install an overcurrent protector (a circuit protector or a shutoff mechanism for wiring) for the primary side of the power supply.
- Do not operate the unit with wet hands.
  It may lead to electric shock.
- Fingers and other extremities may be snagged between the motor and slider sections of the EBS Series (slider) during origin return. Please be careful.
- When connecting a computer, do not ground its frame ground (FG).
  When using the controller with positive grounding, connecting the controller and peripheral equipment to the PC with a USB cable risks short-circuiting the DC power supply.

⚠ WARNING

- Precision parts are built in, so laying the product on its side or applying vibration or impact during transportation are strictly prohibited.
  This may cause damage to the parts.
- For preliminary installation, place horizontally.
- Do not step onto the packaging or place objects on it.
- Avoid condensation, freezing, etc., and maintain ambient temperatures of -10 to 50°C and ambient humidity of 35 to 80% RH when transporting and carrying.
  Failure to do so may cause damage to the product.
- Mount the product on incombustible materials. Direct attachment or mounting to or near flammable materials may cause fire.
  There is a risk of burns.
- Do not step onto the product or place objects on it.
  This may result in falling, knocking the product over, injury due to falling, product damage and/or malfunctions due therein, etc.
- Take measures to prevent bodily injury or machine damage even in the event of a power breakdown.
  There is a risk of unexpected accidents.
- If the product generates abnormal heat, smoke or odor, turn OFF the power immediately.
  Otherwise, product may result in damage or fire.
- Stop operation immediately when abnormal noise or major vibration occurs.
  Otherwise, product damage or abnormal operation may result.
- Wire the product securely while confirming with this catalog and the instruction manual and ensuring that there is no miswiring or loose connectors. Check wiring insulation.
  Due to contact with other circuits, ground faults and insulation failure between terminals, overcurrent may flow into the product and damage it. This could lead to malfunction or fire.
- Be sure to insulate unused wires.
  This may cause malfunction, failure, or electric shock.
- Do not damage the cable, snag it, apply excessive stress to it, or place heavy objects on it.
  Otherwise, poor conduction or electric shock may occur.
- Be sure to perform a safety check of the device's operating range before supplying power to the product. If the product LEDs do not light up when the power supply is turned on, immediately turn the power OFF.
  Inadvertently supplying power can cause electric shock or injury.
- Before restarting a machine or device, check that measures are taken so that parts do not come off.
- Check that the servo is turned OFF when manually moving the movable parts of the product.
- The movable parts of the equipment may move unexpectedly when the actuator servo is turned OFF. When turning the servo OFF, take steps to prevent danger and operate the equipment with full attention to safety.
- Before operating the actuator, check that it will operate safely.

⚠ CAUTION

- Regarding installing, setting up, and/or adjusting the actuator, read through the instruction manual and operate correctly.
- When installing the product, be sure to secure space for maintenance work.
  Otherwise, it may not be possible to conduct inspection and maintenance, leading to stoppage or damage of the device or injury during operation.
- Do not hold the product's movable parts or cables during transportation and installation.
  This may lead to injury or disconnection.
- When carrying the product, support it from the bottom.
- When transporting and mounting the product, ensure operator safety by supporting the product with a lift or other supporting tools, or working in pairs or more.

■ Do not install in places where large vibration or impact is transmitted.
This may cause malfunction.

■ Do not operate the movable parts of the product with external force or sudden deceleration.
This may lead to malfunction or damage due to regenerative current.

■ When returning to origin, excluding pressing operation, do not hit the mechanical stopper, etc.
The feed screw could be damaged or malfunction.

■ Durability varies with transported load and environment. The transport load, etc., should be at a setting well within the margin.

■ Do not apply external force to the actuator during origin return. There is a possibility of misrecognition of the origin.

■ Make sure that no vibration/impact is applied to the movable parts.

■ Install such that no torsion or bending force is applied to the product.

■ When performing electric welding on the equipment to which the product is mounted, remove all F.G. (frame ground) wire connections to the product.
F.G.If electric welding is performed with the connection attached, the product may be damaged by welding current, excessively high voltage during welding, or surge voltage.

■ Do not disassemble or modify the product.
This may cause injury, accident, malfunction or failure.

■ Do not bend the fixing cable repeatedly.
If the cable needs to be repeatedly bent, use a movable cable.

■ Fix the fixed cable so that it does not easily move. Use fixed cables with a bending radius of 51mm or more and movable cables with a bending radius of 51mm or more.
Because the bending radius does not apply to bending of the connector part, we recommend fixing near the connector.

■ Avoid use in locations exposed to ultraviolet rays or with atmospheres of corrosive gas or salt.
Otherwise, degradation of performance, abnormal operation or deterioration in strength due to rust may result.

■ Make sure to use the dedicated cable for connecting between the actuator and controller.
Mistakenly connecting another component may cause malfunction or failure.

■ Before adjusting the gain, secure the actuator body to the machine and securely mount jigs and other components as well.

2. EBS/EBR Series

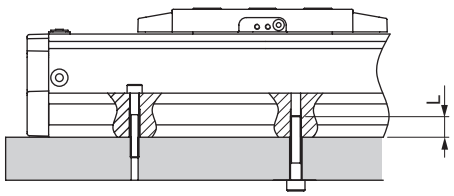
⚠CAUTION

■ Do not apply excessive moment to the slider when using the EBS Series (slider).
This may cause damage or malfunction of the product.

■ Make the flatness of the installation surface 0.05mm/200mm or less.

■ For the EBS Series (slider), ensure that the flatness of the workpiece side attached to the slider is 0.02mm or less, and do not apply torsion or bending force to the product.
This may cause damage or malfunction of the product.

■ Tighten the body mounting screws with the appropriate torque.



(A) (B)

Item	(A) Mounting from top		(B) Mounting from bottom		
	Usage Bolt	Tightening torque (N·m)	Usage Bolt	Tightening torque (N·m)	Min. screw insertion depth L (mm)
EBS-04 EBR-04	M 3 x 0.5	0.63	M 4 x 0.7	1.5	6
EBS-05 EBR-05	M 4 x 0.7	1.5	M 5 x 0.8	3	7.5
EBS-08 EBR-08	M 5 x 0.8	3	M 6 x 1	5.2	9

■ When using an external guide, check that it operates smoothly in all positions of the product stroke before installation.

3. Controller ECR/ECG

⚠CAUTION

■ When wiring, do not apply excessive force to the connectors.

■ Do not push hard on the controller case.

■ Use a cable within 10 m to connect the IF connector.

Use/maintenance

1. Common

⚠DANGER

- Do not operate the unit with wet hands.
  This may cause electric shock.

⚠WARNING

- Wiring work and inspection should be done by a specialized technician.
- When performing maintenance, inspection and repair, stop the power supply to this product.
  Caution people in the vicinity that a third party should not turn ON the power inadvertently.
- Do not attach or detach wiring or connectors with the power supply ON.
  This may cause malfunction, failure, or electric shock.
- For wiring work and inspection, check the voltage with a tester after more than 5 minutes have elapsed since turning OFF the power.
  Failure to do so may cause electric shock.
- Mount the product before wiring.
  Failure to do so may cause electric shock.
- Make sure that the diameter of the electrical wire used for the power cable can tolerate up to 8.6 A of current (up to 4.0 A for ECG Series).
  Otherwise, heat generation or damage during operation may occur.
- Do not connect the product's communication connector to other devices.
  Doing so may cause failure or damage.
- Turn OFF the power supply in the event of a power failure. When the power is restored, the product may move unexpectedly and cause accidents.
- Perform a safety check of the device's operating range before supplying power to the product.
  Inadvertently supplying power can cause electric shock or injury.
- Do not enter the operating range while the product is operable.
  The product may move unexpectedly and cause injury.
- Do not touch the product with hands or body during operation or immediately after stopping.
  This may cause burns.
- Do not step onto the product or place objects on it.
  This may result in falling, knocking the product over, injury due to falling, product damage, malfunctions due thereto, etc.
- Take measures to prevent bodily injury or machine damage even in the event of a power failure.
  There is a risk of unexpected accidents.
- Before operating from a position where the actuator cannot be seen, confirm that it can be safely operated.
- Check that the servo is turned OFF when manually moving the movable parts of the product.
- If there is a problem with the timing belt, stop operation immediately and replace the timing belt. Breakage of the timing belt in vertical use is particularly dangerous, so be sure to replace it in a timely manner.
  Check for wear and tear on the teeth or sides, vertically split teeth, cracked or softened reverse, partial disconnection or the like of the timing belt.
- If the product generates abnormal heat, smoke or odor, turn OFF the power immediately.
  Otherwise, product damage or fire may result.
- Stop operation immediately when abnormal noise or major vibration occurs.
  Otherwise, product damage or abnormal operation may result.

⚠CAUTION

- Do not put fingers or objects into the opening of the product.
  This may cause product damage or injury.
- Do not dent or damage the movable parts.
  Otherwise, malfunction will occur.
- Do not turn OFF the servo with gravity or inertia applied.
  The product may continue to operate or fall at servo OFF. Be sure to turn OFF the servo in a balanced state without gravity or inertia applied, or confirm safety before proceeding.
- Do not issue a stop command while the product is accelerating or decelerating.
  Doing so may result in a dangerous change in speed (acceleration).
- When operation involves vibration, change the set speed so that vibration does not occur.
- Vibration may occur even within the operation speed range depending on the working conditions.

■ Deflection or displacement of the steel belt is more likely to occur if slider products are mounted on the wall or ceiling. Continued use in this state may cause trouble, such as breakage of the steel belt. Be sure to conduct daily inspections and adjust the steel belt if there is deflection or displacement.

■ Do not disassemble or modify the product.
This may cause injury, accident, malfunction or failure.

■ Ensure proper operation through periodic inspections (2 to 3 times per year).
Refer to the instruction manual for details.

■ The grease lubrication interval is normally 100 km as a guideline.
However, situations may differ depending on working conditions, so determining a lubrication interval based on the initial inspection is recommended. Refer to the instruction manual for details.

■ Be sure to wear protective eyewear when lubricating.
If grease scatters and enters the eye, it may cause inflammation.

■ When disposing of the product, comply with laws pertaining to waste treatment and cleaning. Consign it to a specialized waste disposal company for processing.

■ The circuit board inside the product has capacitors connected between the circuits and the metal body to prevent damage due to static electricity. Avoid withstand voltage and insulation resistance tests on equipment with this product installed. If tests are done, the product will be damaged. If necessary for the equipment, remove the product before doing the test.

■ When replacing the motor unit with ECR series units, follow the procedure and be sure to adjust the origin.
If the origin is not adjusted, the unit may move outside the stroke range and collide with the internal mechanical stopper, causing damage.

■ If removing the timing belt, follow the procedure and be sure to adjust the origin.
If the origin is not adjusted, the unit may move outside the stroke range and collide with the internal mechanical stopper, causing damage

■ If the actuator and controller combination is changed, be sure to confirm the programs and parameters prior to operation.
Otherwise, there is a risk of unexpected accidents.

■ Do not operate the moving table or rod for several seconds after the power is turned ON, as the actuator position is confirmed when the power is turned ON.
The position may not be appropriately confirmed, leading to unexpected operation.

2. Controller ECR/ECG

⚠CAUTION

■ Frequently turning the power ON/OFF can cause damage to the elements inside the controller.
Repeatedly energizing and shutting OFF the power can shorten the life of capacitors and other components.
In addition, if there is no more than a 1-second interval between the power being cut OFF and the power being turned ON again, the product may be damaged by the surge voltage.

■ Do not operate in excess of the maximum load capacity.
The elements inside the controller may overheat and be damaged.

■ When clamping during pressing operation, set the position about 5 mm greater than the target stop position.
Otherwise, clamping force may not be generated, depending on the stop position.

■ The relationships between pressing force and pressing rate described in this catalog are merely guidelines. Fluctuation in motor torque, etc., may cause errors even at the same set values.

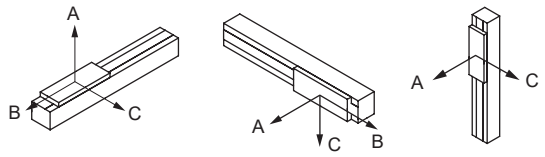
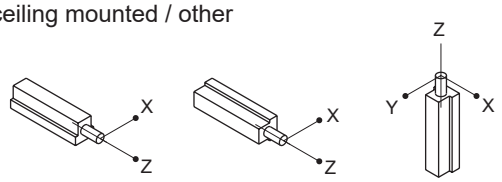
EBS/EBR Model Selection Check Sheet → **CKD** (Contact)

Fill in the form and send to the nearest CKD Sales Office. We will respond with the model selection results.

Customer:

Company		Department	
Name		E-mail	
TEL		FAX	

Selecting conditions:

Desired model	(EBS/EBR)-		
Basic specifications	Max. stroke length:	mm, ball screw lead:	mm
Operating conditions	Travel stroke:	mm, travel time:	s
	Set speed:	mm/s	
	Set acceleration/deceleration:	mm/s^2 (set acceleration/deceleration time:	s)
	Repeatability: ±	mm	
Load conditions	Slider	Rod	
	Load weight: kg		
	Mounting orientation: Horizontal / wall mounted / vertical / ceiling mounted / other 	Mounting orientation: Horizontal / wall mounted / vertical / ceiling mounted / other 	
	Distance from slider and rod center to the center of gravity of load		
	Direction A: mm Direction B: mm Direction C: mm	Direction X: mm Direction Y: mm Direction Z: mm	
	Pressing load: No / Yes (N) Operating / Stopped Direction of the force applied to slider center ( )		
Working environment	Ambient temperature: °C, ambient humidity: %		
	Atmosphere:		
Interface specifications	Parallel I/O / IO-Link / CC-Link / EtherCAT / EtherNet/IP		
Remarks			

Related products

Electric actuator FLSH/FLCR/FGRC Series

Catalog No. CC-1444A

■ 2-Finger Gripper FLSH Series
For soft handling of multi-model workpieces

■ Table FLCR Series
For short-stroke workpiece transport and positioning

■ Rotary FGRC Series
For indexing operation and workpiece inversion

■ Controller ECR Series
“One controller” that connects to any actuator

■ Controller ECG Series
Simple inventory management, simple design, simple configuration "New controller"

Electric Actuator Motorless General Catalog

Catalog No. CB-055A

Wide-ranging lineup of motorless electric actuators

■ Slider

For high speed transport	EBS-L Series
For high load transport	ETS/ECS Series
Long stroke transport	ETV/ECV Series
For fast tact transport	EKS-L Series

■ Rod

For press fitting and hoisting EBR-L Series

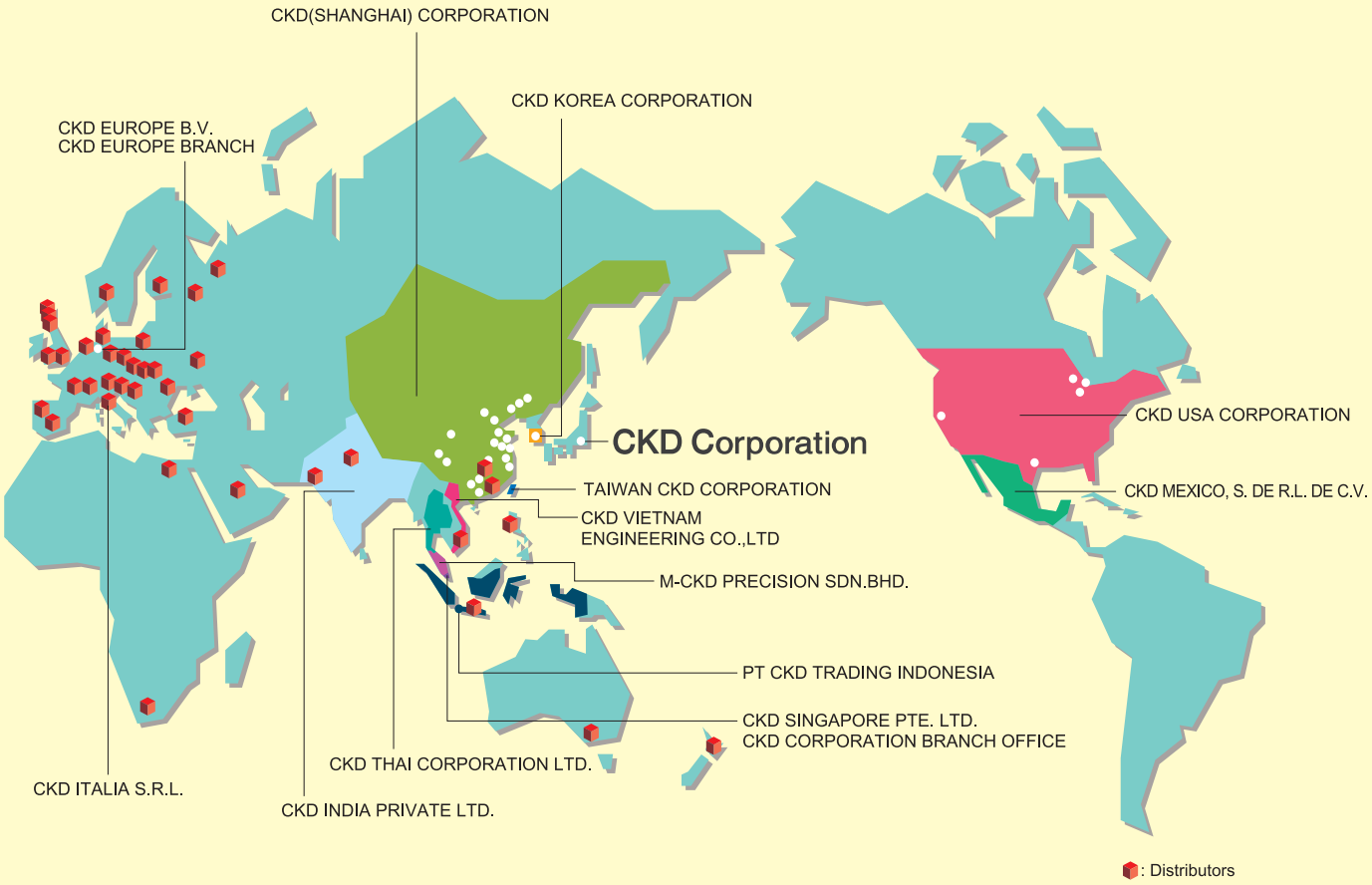
■ ABSODEX
AX1000/2000/4000TS, TH
AX6000MU Series

The Direct Drive Actuator, which strives for ease of use
From palm-sized to large torques. Conveyance, positioning, and simple construction of various devices

■ τ DISC Series
The Direct Drive Servo Motor, which boasts high performance
A diverse lineup to meet various requirements such as high precision, high speed and speed stability. Achieves one level higher performance.

NIKKI DENSO

WORLD-NETWORK



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Revision details
Controller ECG-A specifications change, cable change

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2025.5