IAI
Quality and Innovation

ELECYLINDER®
Compact Type

EC-CRP/CGD/CTC

www.intelligentactuator.com

Slim electric actuator

Compact Type Elecylinder

New

Total length

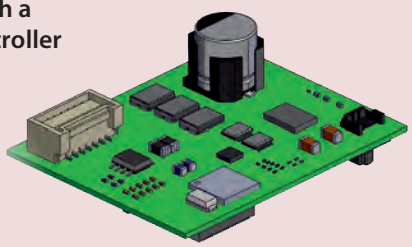
59.5mm

(EC-CRP3 30mm stroke)

Built into the body!

Controller

Equipped with a compact controller circuit board that fits into the body



Servo motor/encoder

Dedicated design features a powerful 24VAC hollow servo motor.
Position detection uses a hollow magnetic encoder with excellent environmental resistance!

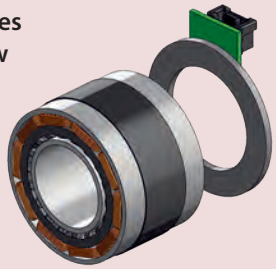


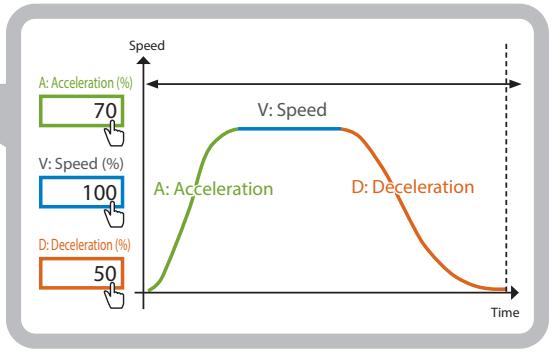
*Image is for illustrative purposes only.

ELECYLINDER is simple!

Wireless Teaching Controller makes connection easy and operation simple

Wireless Teaching Controller

ELECYLINDER® operating conditions



⬅ AVD control

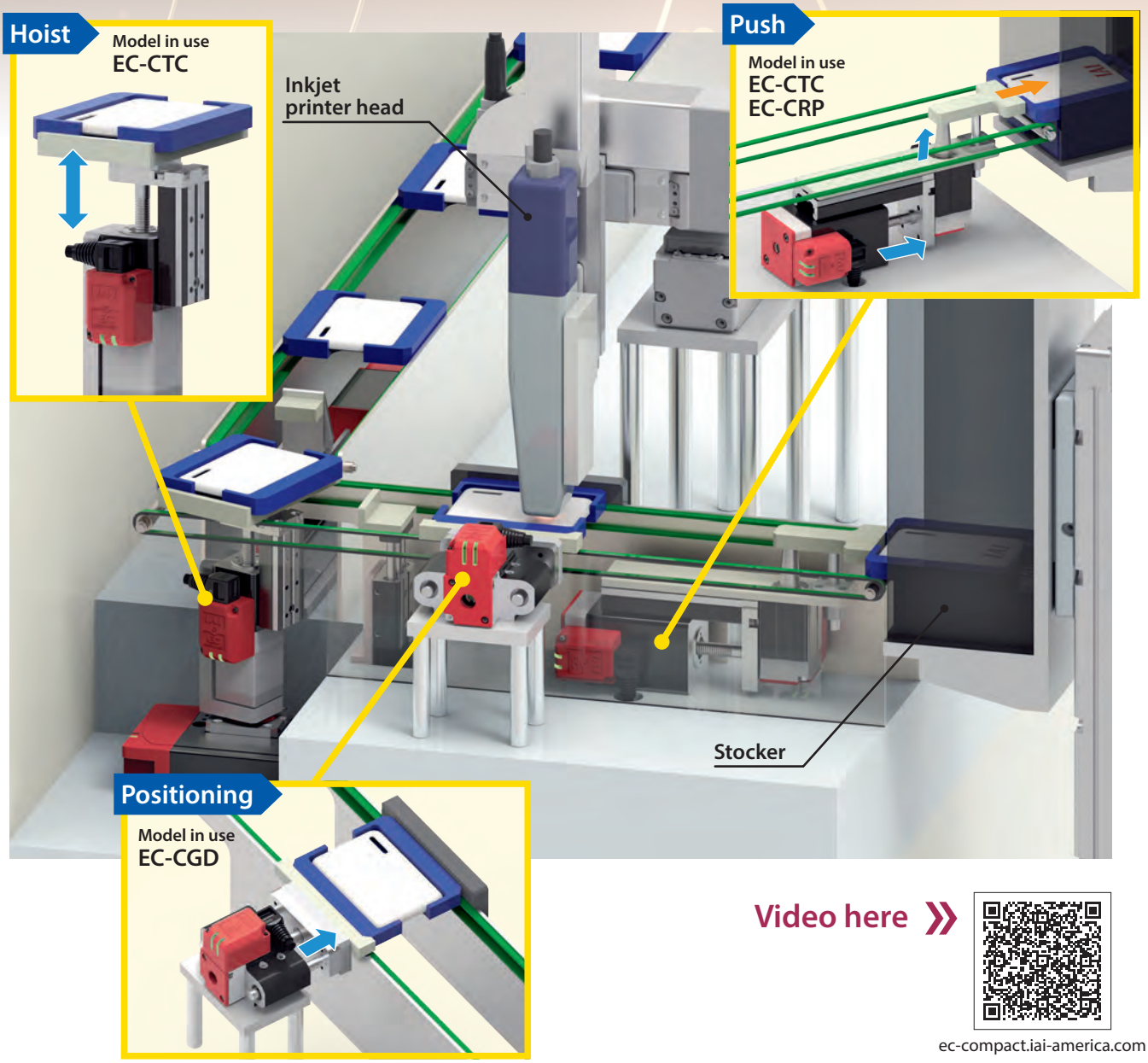
Acceleration (A), speed (V), and deceleration (D) can be set individually to enable motion with no impact

Helps reduce cycle time!

Saves space, handling various kinds of motion!

[Printing process for cover part]

An inkjet printer head is used to print text on the cover parts conveyed from the previous process; once printing is complete, parts are transferred to the stocker.



Video here

ec-compact.iai-america.com

Variations

Select from
3 types
to suit the application

Rod without guide
EC-CRP

Rod with double guide
EC-CGD

Compact table
EC-CTC

Model Specification Items

ELECYLINDER®

EC – [Type] [Lead] – [Stroke] – [Actuator cable length] – [Power·I/O cable length] – ([Options])

Series | Type | Lead | Stroke | Actuator cable length | Power·I/O cable length | Options

CRP3	Slim rod type without guide Body width 36mm
CRP5	Slim rod type without guide Body width 52mm
CGD3	Slim rod type with double guide Body width 84mm
CGD5	Slim rod type with double guide Body width 110mm
CTC3	Slim compact table type Body width 36mm
CTC5	Slim compact table type Body width 52mm

[Lead screw (for 30mm)]

L	Lead 2mm
M	Lead 4mm

[Lead screw (for 50mm)]

L	Lead 4mm
M	Lead 8mm

30	30mm
50	50mm

1	1m
~	~
10	10m

(every 1m)

(Note) When connecting via the interface box, 9m is the maximum.

0	Without cable Terminal block connector supplied when "ACR" has not been selected*
1 ~ 9	1m ~ 9m Standard connector cable supplied
S1 ~ S9	1m ~ 9m Cable with 4-way connector supplied

(every 1m)

*: When selecting RCON-EC connection specification (ACR), select "0." Power·I/O cable is not included.
(S): Cable with 4-way connector
(Note) Make sure that the total length along with the actuator cable is 10m or less.

Left blank	NPN specification (connection via interface box), no options
ACR	RCON-EC connection specification*1
B	With brake
GT2	Table right mount *2
GT3	Table bottom mount *2
GT4	Table left mount *2
NFA	Tip female thread specification *3
NM	Non-motor end specification *4
PN	PNP specification (connection via interface box)*1
SRC	Spiral cover specification
TMD2	Split motor and controller power supply specification (connection via interface box)*1
TSM	3-surface mounting specification *3
WL	Wireless communication specification (connection via interface box)*5
WL2	Wireless axis operation specification (connection via interface box)*5

*1 If "ACR" is selected, "PN" and "TMD2" options cannot be selected (I/O for the "ACR" option is NPN only; compatible with split motor and controller power supply as standard).

*2 Available only with CTC3/CTC5; please be sure to select a code.

*3 Available only for CRP3/CRP5.

*4 Available only for CTC3/CTC5.

*5 Selectable when RCON-EC connection specification "ACR" has not been selected (for wireless communication, purchase an interface box and cable separately).

Specification Tables

Rod

Type	Type	Lead		Stroke (mm) and max speed (mm/s) *Length of band = Stroke; *Numbers in band = Maximum speed by stroke		Max. push force (N)	Max. payload (kg)		Reference Page
		Model	mm	30	50		Horizontal	Vertical	
Rod without guide	CRP3	M-	4	200		34.2	2	0.5	P7
		L-	2	100		63.7	4	1.25	
	CRP5	M-	8	200		71.5	8	4.5	P11
		L-	4	100		148.7	16	7	
Rod with double guide	CGD3	M-	4	200		34.2	2	0.5	P15
		L-	2	100		63.7	4	1.25	
	CGD5	M-	8	200		71.5	8	4.5	P19
		L-	4	100		148.7	16	7	

Table

Type	Type	Lead		Stroke (mm) and max speed (mm/s) *Length of band = Stroke; *Numbers in band = Maximum speed by stroke		Max. push force (N)	Max. payload (kg)		Reference Page
		Model	mm	30	50		Horizontal	Vertical	
Compact table	CTC3	M-	4	200		34.2	2	0.5	P23
		L-	2	100		63.7	4	1.25	
	CTC5	M-	8	200		71.5	8	4.5	P27
		L-	4	100		148.7	8	7	

Automatic Servo OFF Function

The automatic servo OFF function can be set with the PC teaching software (IA-OS) or teaching pendant (TB-02/03).
When the automatic servo OFF function is set, the servo will turn OFF automatically after positioning complete, after stopping, or after a certain amount of time (lag time).
The servo automatically turns ON when the next movement command is input, executing positioning operation.
Power consumption can be reduced, because there is no holding current when stopped.

Mounting Orientation

Actuator mounting orientation

Series	Type	Mounting orientation: Horizontal table mount	Vertical mount (*1)	Horizontal side mount	Horizontal ceiling mount
EC	CRP	○	○	○	○
	CGD				
	CTC				

*1 When vertically mounted with the movable parts facing down, use an external stopper or select the option with brake in order to prevent the parts from exceeding the stroke and moving as far as the mechanical end.

Item	Type		
	CRP (*1)	CGD	CTC
Flatness required for body installation surface/workpiece mounting surface	0.05mm/m or below		
Coaxiality required for tip bracket mounting hole and body mounting hole	ϕ0.05mm or less	-	
Parallelism required for guide bracket and body mounting surface or plate	0.02mm or less	-	

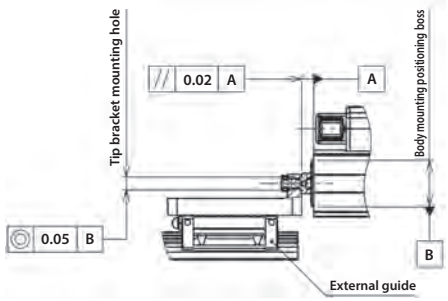
(Note) When values above are not followed, the sliding resistance will increase and may cause a malfunction.
*1 Refer to "Notes on Use with Guides" for details.

Notes on Use with Guides (CRP type only)

The CRP feed screw does not have a rotation stop mechanism. A rotation stop mechanism such as an external guide must be installed.

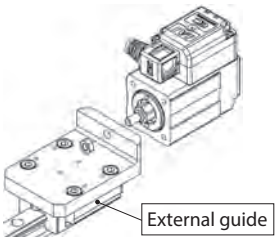
[Notes on use with external guides]

When using an external guide, parallel misalignment (in the horizontal and vertical planes) between the actuator and the external guide could result in a malfunction, premature wear, or premature damage to the actuator.
When mounting a guide, align the center of the actuator parallel to the guide. Following adjustment, make sure that the sliding resistance is constant over the entire stroke.
Sliding resistance can be confirmed by checking that the value for current shown by the electrical current monitor function on the controller is at the specified value.



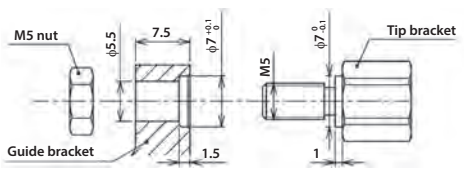
● **Method for securing to external guide**

"Rigid fixing" is recommended for the external guide fixing method. Rod types without a guide cannot bear the rotational force of the rod, so the rotation direction of the rod must be restricted.
A "floating joint" does not restrict rotation of the rod. This causes ball screw misalignment, which can result in premature damage to the actuator.

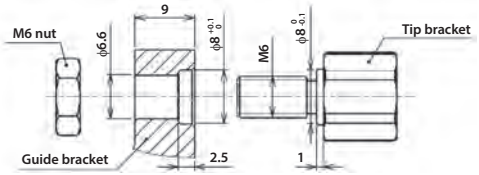


[Guide bracket dimensional example]

(CRP3)



(CRP5)

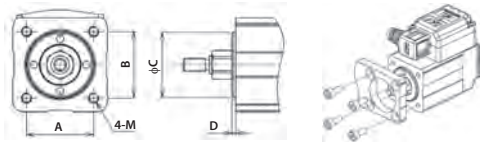


Mounting Method

Mount according to the mounting method for the applicable type.

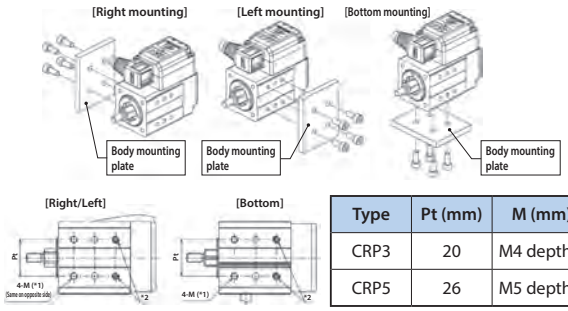
Rod type without guide (CRP3/CRP5)

● **When using frame end screw holes**



Type	A (mm)	B (mm)	C (mm)	D (mm)	M (mm)
CRP3	25.5	25.5	ϕ25 h7	1.5	M4 depth 6
CRP5	40	40	ϕ28 h7	1.5	M5 depth 10

● **When using frame 3-surface (right, left, bottom) screw holes (*3-surface mounting option)**



Type	Pt (mm)	M (mm)
CRP3	20	M4 depth 5
CRP5	26	M5 depth 8

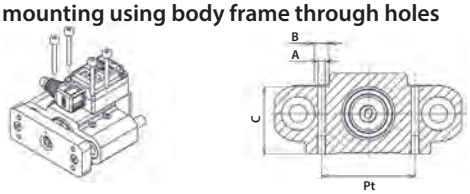
*1. Do not use screws longer than the screw hole depth. The screw hole is a through hole, so it may cause interference or damage internally.

*2. CRP5 has set screws mounted to prevent foreign matter contamination. Remove the set screws when using these holes.

(Be sure to use the screw holes where set screws have been removed, in order to prevent the ingress of foreign matter.)

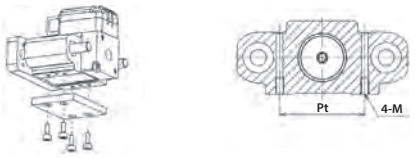
Rod type with double guide (CGD3/CGD5)

● **For mounting using body frame through holes**



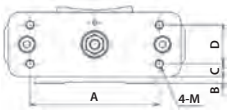
Type	Bolt size	Pt (mm)	A (mm)	B (mm)	C (mm)
CGD3	M3	42	ϕ3.3	ϕ6.5	30
CGD5	M4	50	ϕ4.3	ϕ8.0	38

● **For mounting using body frame bottom screw holes**



Type	Pt (mm)	M (mm)
CGD3	42	M4 depth 8
CGD5	50	M5 depth 10

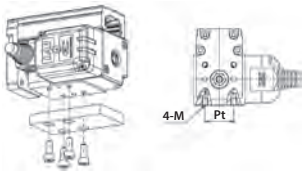
● **For mounting to front plate**



Type	A (mm)	B (mm)	C (mm)	D (mm)	M (mm)
CGD3	60	3	6	18	M4 depth 10
CGD5	80	6	5	30	M5 depth 12

Compact table type (CTC3/CTC5)

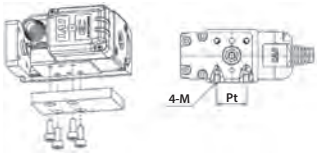
● **When using body frame bottom mounting holes**



Type	Pt (mm)	M (mm)
CTC3	20	M4 depth 5
CTC5	26	M5 depth 8

*Do not use screws longer than the screw hole depth.
The screw hole is a through hole, so it may cause interference or damage internally.

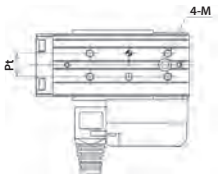
● **When using body frame side mounting holes**



Type	Pt (mm)	M (mm)
CTC3	20	M4 depth 5
CTC5	26	M5 depth 8

*Do not use screws longer than the screw hole depth.
The screw hole is a through hole, so it may cause interference or damage internally.

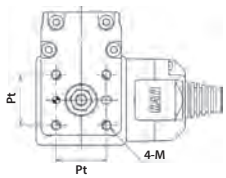
● **For mounting to table**



Type	Pt (mm)	M (mm)
CTC3	12	M4 depth 5
CTC5	20	M4 depth 6

*Do not use screws longer than the screw hole depth.
The screw hole is a through hole, so it may cause interference or damage internally.

● **For mounting to front plate**



Type	Pt (mm)	M (mm)
CTC3	20	M4 depth 8.5
CTC5	26	M5 depth 11

*Do not use screws longer than the screw hole depth.
The screw hole is a through hole, so it may cause interference or damage internally.

EC-CRP3

Slim | Coupled Motor | Body Width 40 mm | 24V AC Servo Motor | Lead Screw

Model Specification Items

EC	-	CRP3		-		-		-		-	
Series	-	Type	Lead	-	Stroke	-	Actuator cable length	-	Power · I/O cable length	-	Options
			M 4mm L 2mm		30 30mm 50 50mm		Refer to actuator cable length below		Refer to power · I/O cable length below		Refer to Options below.

CE RoHS 10

Horizontal | Vertical | Side | Ceiling

Stroke

Stroke (mm)	EC-CRP3	
	RCON-EC connection specification (Note 1)	NPN/PNP specification (Note 2)
30	✓	✓
50	✓	✓

(Note 1) Be sure to select "ACR" as the option.
(Note 2) Interface box and conversion cable are included.

Options * Please check the Options reference pages to confirm each option.

Name	Option code	Reference page
RCON-EC connection specification (Note 3) (Note 4)	**ACR**	31
Brake	**B**	31
Tip female thread specification	**NFA**	31
PNP specification (Note 3)	**PN**	31
Spiral cover specification	**SRC**	32
Split motor and controller power supply specification (Note 3)	**TMD2**	32
3-surface mounting specification	**TSM**	32
Wireless communication specification (Note 4)	**WL**	32
Wireless axis operation specification (Note 4)	**WL2**	32

(Note 3) If the RCON-EC connection specification (ACR) is selected, the PNP specification (PN) and split motor and controller power supply specification (TMD2) cannot be selected. Additionally, interface box and conversion cable are not included.
(Note 4) If the RCON-EC connection specification (ACR) is selected, the wireless communication specification (WL) and wireless axis operation specification (WL2) cannot be selected. For wireless communication with RCON-EC connection (WL), purchase the separately sold optional interface box, conversion cable, and power · I/O cable. Refer to P. 37 for details. Please contact our sales department for the wireless axis operation specification (WL2).

Options sold separately

Name	Model	Reference page
Interface box conversion cable	CB-CVN-BJ002	41
RCON-EC connection specification Power · I/O cable (standard connector cable)	CB-REC-PWBIO□□□-RB	41
RCON-EC connection specification Power · I/O cable (4-way connector cable)	CB-REC2-PWBIO□□□-RB	41
RCON-EC connection specification Split motor and controller power supply Interface box (wireless specification)	ECW-CVNWL-CB-ACR	41

(Note) The power · I/O cable is a robot cable.
Indicate the cable length in □□□. (for example, 010 = 1m)

Selection Notes

(1) The feed screw has no rotation stop mechanism. Add a rotation stop mechanism such as a guide to the tip of the feed screw when in use. (If there is no rotation stop, the feed screw will rotate instead of traveling back and forth.) Additionally, do not use floating joints when connecting the rotation stop mechanism to the rod. Refer to P. 5 for more information on the mounting method and conditions.
(2) Do not apply radial load or load moment to the linear movement parts (tip bracket, screw shaft).
(3) Do not perform screw shaft reciprocating motion without an external guide. Pulling and pushing the linear motion parts to perform reciprocating motion without a guide will apply eccentric load to the screw shaft, causing it to bend or damaging the internal mechanism.
(4) "Main Specifications" displays the payload's maximum value. Refer to "Table of Payload by Speed/Acceleration" for more details.
(5) The value of the horizontal payload assumes that there is an external guide.
(6) If performing a push-motion operation, refer to the "Correlation Diagram between Push Force and Current Limit." The push forces listed are only reference values.
(7) Please be cautious with the mounting orientation. Refer to P. 5 for details.

Actuator cable length

Cable code	Cable length
1 ~ 5	1 ~ 5m
6 ~ 10	6 ~ 10m (Note 5)

(Note 5) When connecting via the interface box, 9m is the maximum available.
(Note) Make sure that the total length along with the power · I/O cable is 10m or less.
(Note) Robot cable.

Power · I/O cable length

Standard connector cable

Cable code	Cable length	User wiring specification (flying leads)
		CB-EC-PWBIO□□□-RB supplied
0	Without cable	✓ (Note 6)
1 ~ 3	1 ~ 3m	✓
4 ~ 5	4 ~ 5m	✓
6 ~ 9	6 ~ 9m	✓

(Note 6) Only terminal block connector is included. Refer to P. 40 for details.
(Note) Robot cable.

4-way connector cable

Cable code	Cable length	User wiring specification (flying leads)
		CB-EC2-PWBIO□□□-RB supplied
S1 ~ S3	1 ~ 3m	✓
S4 ~ S5	4 ~ 5m	✓
S6 ~ S9	6 ~ 9m	✓

(Note) Robot cable.

Main Specifications

Item			Description	
Lead		Lead screw (mm)	4	2
Horizontal	Payload	Max. payload (kg)	2	4
	Speed / acceleration/ deceleration	Max. speed (mm/s)	200	100
		Max. acceleration/deceleration (G)	0.4	0.1
Vertical	Payload	Max. payload (kg)	0.5	1.25
	Speed / acceleration/ deceleration	Max. speed (mm/s)	200	100
		Max. acceleration/deceleration (G)	0.4	0.1
Push		Max. push force (N)	34.2	63.7
		Max. push speed (mm/s)	20	20
Brake		Brake specification	Non-excitation actuating solenoid brake	
		Brake holding force (kgf)	0.5	1.25
Stroke		Min. stroke (mm)	30	30
		Max. stroke (mm)	50	50
		Stroke pitch (mm)	20	20

Item	Description
Drive system	Lead screw ϕ4mm, rolled C10
Positioning repeatability	±0.05mm
Lost motion	- (notation not available due to 2-point positioning function)
Rod non-rotation precision	-
Operation life (Note 7)	Horizontal: 10 million reciprocating motion cycles (50 ST operation distance 1,000km), vertical: 5 million reciprocating motion cycles
Ambient operating temperature, humidity	0 ~ 40°C, 10 ~ 85%RH or less (no condensation)
Ingress protection	IP20
Vibration & shock resistance	4.9m/s^2
Overseas standards	CE marking, RoHS directive
Motor type	AC servo motor (ϕ30) (Power capacity: Max. 2.8A)
Encoder type	Incremental
Number of encoder pulses	16384 pulse/rev

(Note 7) Operation life varies according to operating, mounting, and lubrication conditions.

Table of Payload by Speed/Acceleration

The unit for payload is kg.

Lead 4

Orientation	Horizontal	Vertical
Speed	Acceleration (G)	
(mm/s)	0.4	0.4
0	2	0.5
200	2	0.5

Lead 2

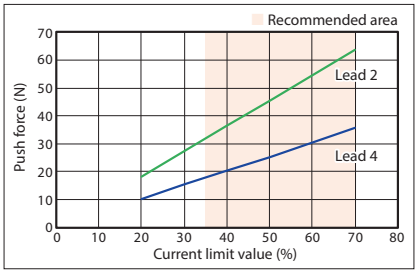
Orientation	Horizontal	Vertical
Speed	Acceleration (G)	
(mm/s)	0.1	0.1
0	4	1.25
100	4	1.25

Stroke and Max. Speed

Lead (mm)	30 (mm)	50 (mm)
4	200	
2	100	

(Unit: mm/s)

Correlation Diagram between Push Force and Current Limit

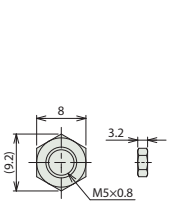


Dimensions

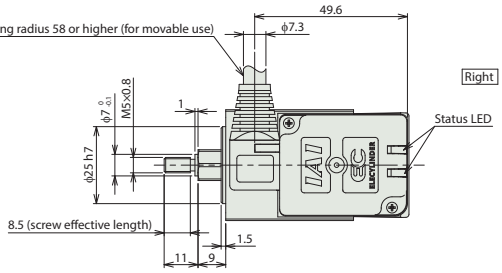
CAD drawings can be downloaded from our website.
www.intelligentactuator.com

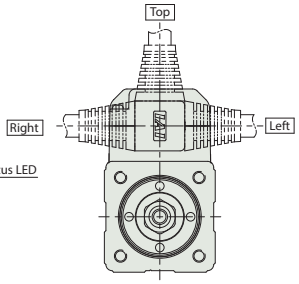
(Note) When the rod is returning to its home position, be mindful of possible interference from nearby objects, as it will travel until it reaches the M.E.
(Note) Fix the cable so that its base does not move.
The cable can be disconnected and replaced. (Connected with connector inside cable box)
The cable exit direction can be changed by changing the cable box direction.
(Note) As this product's feed screw has no rotation stopper or guide, add them externally before use.
(Note) Leave extra space depending on cable exit direction to account for allowable actuator cable bending radius of 58mm.

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

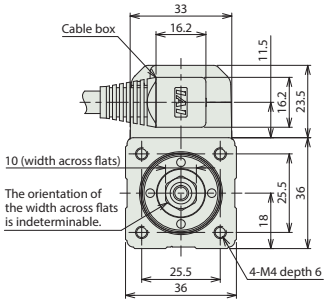


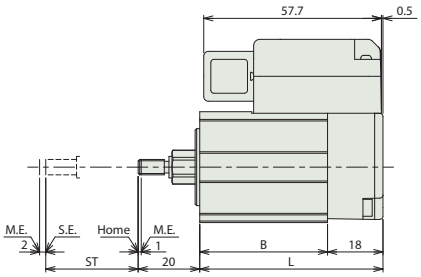
Supplied hex nut

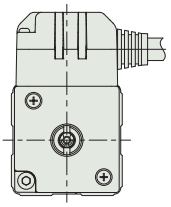


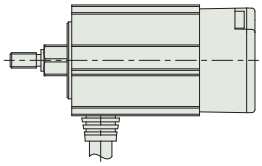


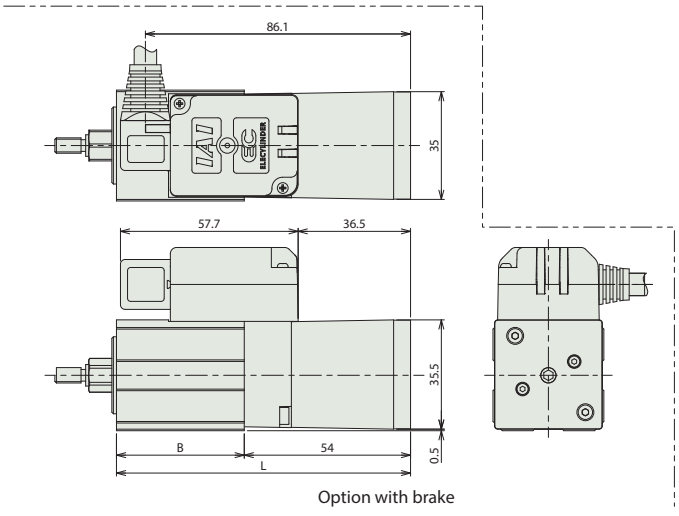
Cable exit direction (rotation)





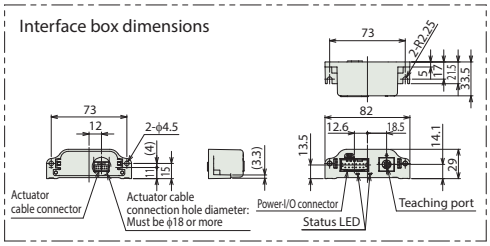






Option with brake

Interface box dimensions



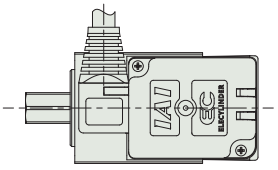
Dimensions by Stroke

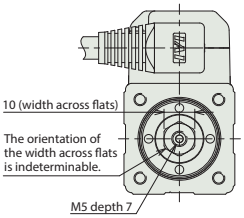
Stroke		30	50
L	Without brake	59.5	79.5
	With brake	95.5	115.5
B		41.5	61.5

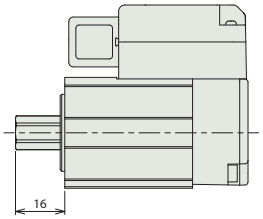
Mass by Stroke

Stroke		30	50
Mass (kg)	Without brake	0.26	0.31
	With brake	0.38	0.43

■ Tip female thread specification (option)

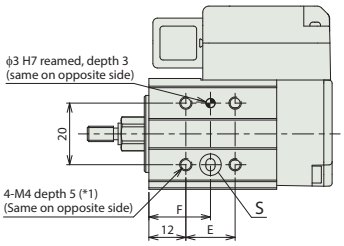


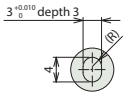




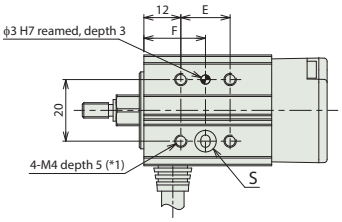
■ 3-surface mounting specification (option)

*1 Set the screw depth at or below the noted dimensions.





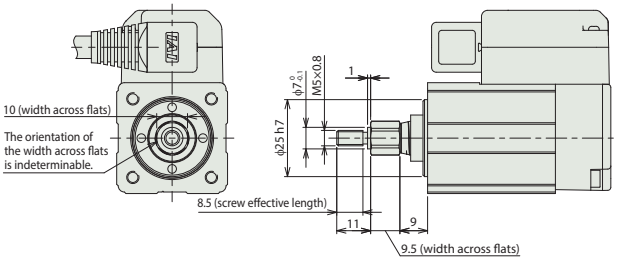
Detailed view of S
Frame oblong hole details

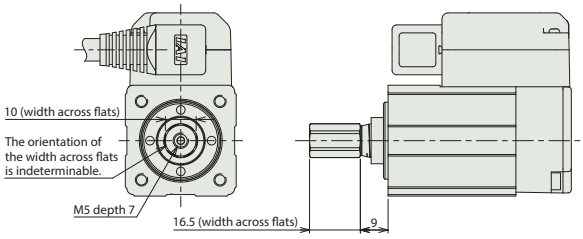


■ Dimensions by Stroke

Stroke	30	50
E	16	36
F	20	30

■ Spiral cover specification (option)





(Tip female thread specification)

■ Applicable Controllers

(Note) EC Series products are equipped with a built-in controller. Refer to P. 38 for details on built-in controllers.

EC-CRP5

Slim | Coupled Motor | Body Width 50 mm | 24V AC Servo Motor | Lead Screw

Model Specification Items

EC	-	CRP5		-		-		-		-	
Series	-	Type	Lead	-	Stroke	-	Actuator cable length	-	Power · I/O cable length	-	Options
			M 8mm L 4mm		30 30mm 50 50mm		Refer to actuator cable length below		Refer to power · I/O cable length below		Refer to Options below.

CE RoHS 10

Horizontal | Vertical | Side | Ceiling

Stroke

Stroke (mm)	EC-CRP5	
	RCON-EC connection specification (Note 1)	NPN/PNP specification (Note 2)
30	✓	✓
50	✓	✓

(Note 1) Be sure to select "ACR" as the option.
(Note 2) Interface box and conversion cable are included.

Options * Please check the Options reference pages to confirm each option.

Name	Option code	Reference page
RCON-EC connection specification (Note 3) (Note 4)	**ACR**	31
Brake	**B**	31
Tip female thread specification	**NFA**	31
PNP specification (Note 3)	**PN**	31
Spiral cover specification	**SRC**	32
Split motor and controller power supply specification (Note 3)	**TMD2**	32
3-surface mounting specification	**TSM**	32
Wireless communication specification (Note 4)	**WL**	32
Wireless axis operation specification (Note 4)	**WL2**	32

(Note 3) If the RCON-EC connection specification (ACR) is selected, the PNP specification (PN) and split motor and controller power supply specification (TMD2) cannot be selected. Also, interface box and conversion cable are not included.
(Note 4) If the RCON-EC connection specification (ACR) is selected, the wireless communication specification (WL) and wireless axis operation specification (WL2) cannot be selected. For wireless communication with RCON-EC connection (WL), purchase the separately sold optional interface box, conversion cable, and power · I/O cable. Refer to P. 37 for details. Please contact our sales department for the wireless axis operation specification (WL2).

Options sold separately

Name	Model	Reference page
Interface box conversion cable	CB-CVN-BJ002	41
RCON-EC connection specification Power · I/O cable (standard connector cable)	CB-REC-PWBIO□□□-RB	41
RCON-EC connection specification Power · I/O cable (4-way connector cable)	CB-REC2-PWBIO□□□-RB	41
RCON-EC connection specification Split motor and controller power supply Interface box (wireless specification)	ECW-CVNWL-CB-ACR	41

(Note) The power · I/O cable is a robot cable.
Indicate the cable length in □□□. (for example, 010 = 1m)

Selection Notes

(1) The feed screw has no rotation stop mechanism. Add a rotation stop mechanism such as a guide to the tip of the feed screw when in use. (If there is no rotation stop, the feed screw will rotate instead of traveling back and forth.) Also, do not use floating joints when connecting the rotation stop mechanism to the rod. Refer to P. 5 for more information on the mounting method and conditions.
(2) Do not apply radial load or load moment to the linear movement parts (tip bracket, screw shaft).
(3) Do not perform screw shaft reciprocating motion without an external guide. Pulling and pushing the linear motion parts to perform reciprocating motion without a guide will apply eccentric load to the screw shaft, causing it to bend or damaging the internal mechanism.
(4) "Main Specifications" displays the payload's maximum value. Refer to "Table of Payload by Speed/Acceleration" for more details.
(5) The value of the horizontal payload assumes that there is an external guide.
(6) If performing a push-motion operation, refer to the "Correlation Diagram between Push Force and Current Limit." The push forces listed are only reference values.
(7) Pay close attention to the mounting orientation. Refer to P. 5 for details.

Actuator cable length

Cable code	Cable length
1 ~ 5	1 ~ 5m
6 ~ 10	6 ~ 10m (Note 5)

(Note 5) When connecting via the interface box, 9m is the maximum available.
(Note) Make sure that the total length along with the power · I/O cable is 10m or less.
(Note) Robot cable.

Power · I/O cable length

Standard connector cable

Cable code	Cable length	User wiring specification (flying leads)
		CB-EC-PWBIO□□□-RB supplied
0	Without cable	✓ (Note 6)
1 ~ 3	1 ~ 3m	✓
4 ~ 5	4 ~ 5m	✓
6 ~ 9	6 ~ 9m	✓

(Note 6) Only terminal block connector is included. Refer to P. 40 for details.
(Note) Robot cable.

4-way connector cable

Cable code	Cable length	User wiring specification (flying leads)
		CB-EC2-PWBIO□□□-RB supplied
S1 ~ S3	1 ~ 3m	✓
S4 ~ S5	4 ~ 5m	✓
S6 ~ S9	6 ~ 9m	✓

(Note) Robot cable.

Main Specifications

Item			Description	
Lead		Lead screw (mm)	8	4
Horizontal	Payload	Max. payload (kg)	8	16
	Speed / acceleration/ deceleration	Max. speed (mm/s)	200	100
		Max. acceleration/deceleration (G)	0.4	0.1
Vertical	Payload	Max. payload (kg)	4.5	7
	Speed / acceleration/ deceleration	Max. speed (mm/s)	200	100
		Max. acceleration/deceleration (G)	0.4	0.1
Push		Max. push force (N)	71.5	148.7
		Max. push speed (mm/s)	20	20
Brake		Brake specification	Non-excitation actuating solenoid brake	
		Brake holding force (kgf)	4.5	7
Stroke		Min. stroke (mm)	30	30
		Max. stroke (mm)	50	50
		Stroke pitch (mm)	20	20

Item	Description
Drive system	Lead screw ϕ6mm, rolled C10
Positioning repeatability	±0.05mm
Lost motion	- (notation not available due to 2-point positioning function)
Rod non-rotation precision	-
Operation life (Note 7)	Horizontal: 10 million reciprocating motion cycles (50 ST operation distance 1,000km), vertical: 5 million reciprocating motion cycles
Ambient operating temperature, humidity	0 ~ 40°C, 10 ~ 85%RH or less (no condensation)
Ingress protection	IP20
Vibration & shock resistance	4.9m/s^2
Overseas standards	CE marking, RoHS directive
Motor type	AC servo motor (ϕ42) (Power capacity: Max. 3.6A)
Encoder type	Incremental
Number of encoder pulses	16384 pulse/rev

(Note 7) Operation life varies according to operating, mounting, and lubrication conditions.

Table of Payload by Speed/Acceleration

The unit for payload is kg.

Lead 8

Orientation	Horizontal	Vertical
Speed	Acceleration (G)	
(mm/s)	0.4	0.4
0	8	4.5
200	8	4.5

Lead 4

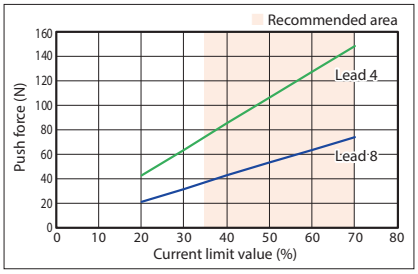
Orientation	Horizontal	Vertical
Speed	Acceleration (G)	
(mm/s)	0.1	0.1
0	16	7
100	16	7

Stroke and Max. Speed

Lead (mm)	30 (mm)	50 (mm)
8	200	
4	100	

(Unit: mm/s)

Correlation Diagram between Push Force and Current Limit

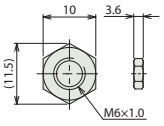


Dimensions

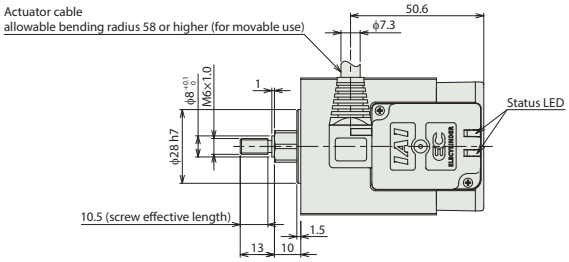
CAD drawings can be downloaded from our website.
www.intelligentactuator.com

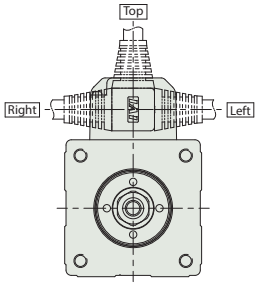
(Note) When the rod is returning to its home position, be mindful of possible interference from nearby objects, as it will travel until it reaches the M.E.
(Note) Fix the cable so that its base does not move.
The cable can be disconnected and replaced. (Connected with connector inside cable box)
The cable exit direction can be changed by changing the cable box direction.
(Note) As this product's feed screw has no rotation stopper or guide, add them externally before use.
(Note) Leave extra space depending on cable exit direction to account for allowable actuator cable bending radius of 58mm.

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

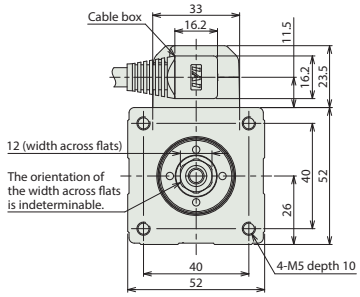


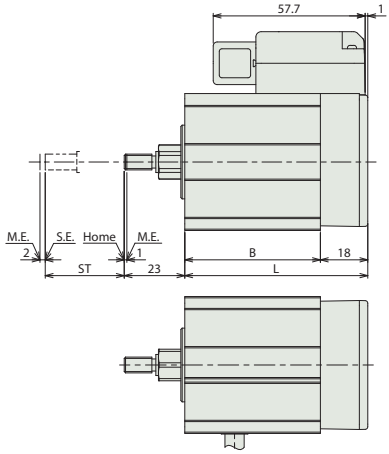
Supplied hex nut

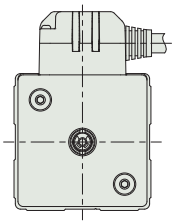


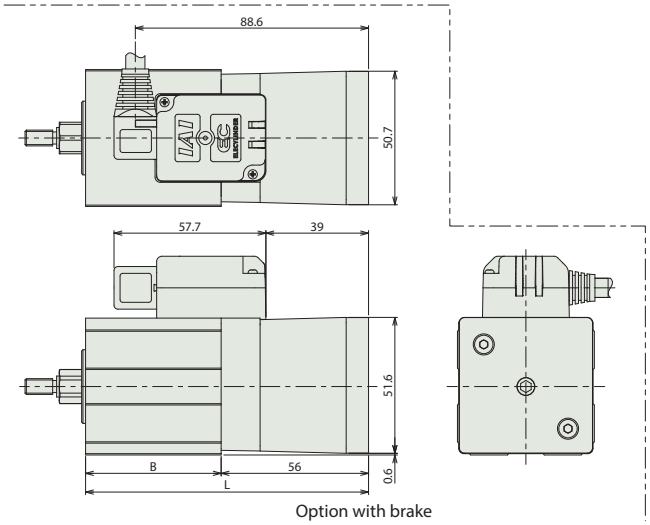


Cable exit direction (rotation)

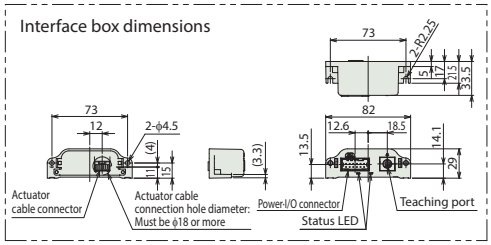








Option with brake



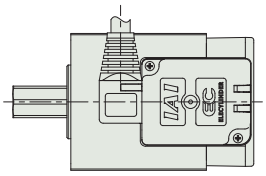
Dimensions by Stroke

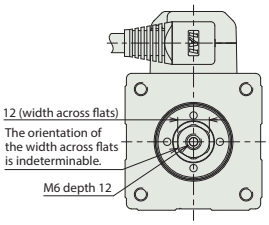
Stroke		30	50
L	Without brake	69.5	89.5
	With brake	107.5	127.5
B		51.5	71.5

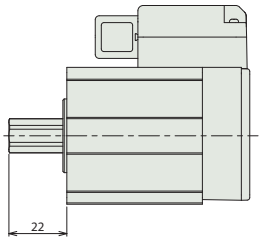
Mass by Stroke

Stroke		30	50
Mass (kg)	Without brake	0.55	0.67
	With brake	0.80	0.93

■ Tip female thread specification (option)

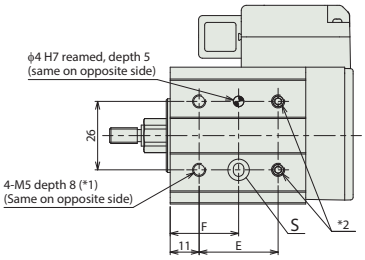


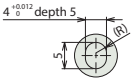




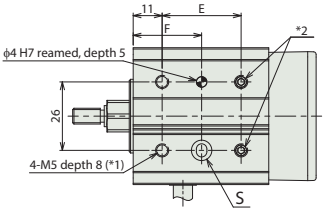
■ 3-surface mounting specification (option)

*1 Set the screw depth at or below the noted dimensions.
*2 Set screws are mounted. Remove the set screws when using these holes.





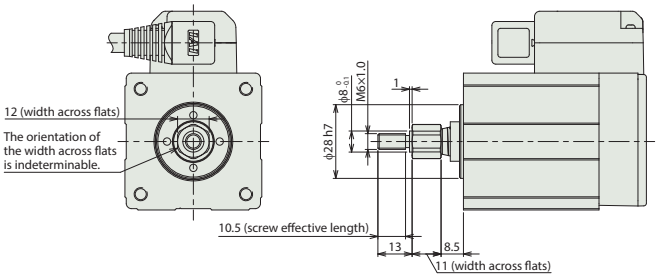
Detailed view of S
Detail of frame oblong hole

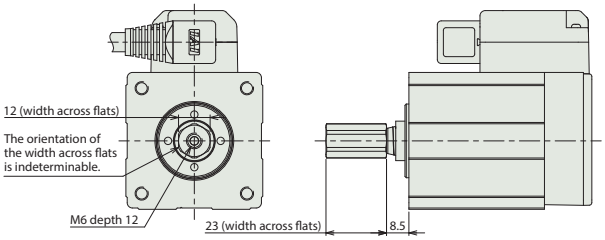


■ Dimensions by Stroke

Stroke	30	50
E	30	50
F	26	36

■ Spiral cover specification (option)





(Tip female thread specification)

Applicable Controllers

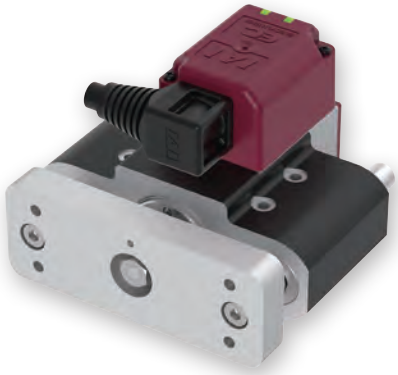
(Note) EC Series products are equipped with a built-in controller. Refer to P. 38 for details on built-in controllers.

EC-CGD3

Slim | Coupled Motor | Body Width 80 mm | 24V AC Servo Motor | Lead Screw

Model Specification Items

EC	-	CGD3		-		-		-		-	
Series	-	Type	Lead	-	Stroke	-	Actuator cable length	-	Power · I/O cable length	-	Options
			M 4mm L 2mm		30 30mm 50 50mm		Refer to actuator cable length below		Refer to power · I/O cable length below		Refer to Options below.



CE RoHS 10

Horizontal | Vertical | Side | Ceiling

Stroke

Stroke (mm)	EC-CGD3	
	RCON-EC connection specification (Note 1)	NPN/PNP specification (Note 2)
30	✓	✓
50	✓	✓

(Note 1) Be sure to select "ACR" as the option.
(Note 2) Interface box and conversion cable are included.

Options * Please check the Options reference pages to confirm each option.

Name	Option code	Reference page
RCON-EC connection specification (Note 3) (Note 4)	**ACR**	31
Brake	**B**	31
PNP specification (Note 3)	**PN**	31
Spiral cover specification	**SRC**	32
Split motor and controller power supply specification (Note 3)	**TMD2**	32
Wireless communication specification (Note 4)	**WL**	32
Wireless axis operation specification (Note 4)	**WL2**	32

(Note 3) If the RCON-EC connection specification (ACR) is selected, the PNP specification (PN) and split motor and controller power supply specification (TMD2) cannot be selected. Also, interface box and conversion cable are not included.
(Note 4) If the RCON-EC connection specification (ACR) is selected, the wireless communication specification (WL) and wireless axis operation specification (WL2) cannot be selected. For wireless communication with RCON-EC connection (WL), purchase the separately sold optional interface box, conversion cable, and power · I/O cable. Refer to P. 37 for details. Please contact our sales department for the wireless axis operation specification (WL2).

Options sold separately

Name	Model	Reference page
Interface box conversion cable	CB-CVN-BJ002	41
RCON-EC connection specification Power · I/O cable (standard connector cable)	CB-REC-PWBIO□□□-RB	41
RCON-EC connection specification Power · I/O cable (4-way connector cable)	CB-REC2-PWBIO□□□-RB	41
RCON-EC connection specification Split motor and controller power supply Interface box (wireless specification)	ECW-CVNWL-CB-ACR	41

(Note) The power · I/O cable is a robot cable.
Indicate the cable length in □□□. (for example, 010 = 1m)

Selection Notes

(1) "Main Specifications" displays the payload's maximum value.
(2) Horizontal payload is the value when also using a guide so that radial and moment loads are not applied to the rod. If no guide is installed, refer to "Radial Load and Operation Life."
(3) If performing a push-motion operation, refer to the "Correlation Diagram between Push Force and Current Limit." The push forces listed are only reference values. Refer to P. 35 for applicable notes.

Actuator cable length

Cable code	Cable length
1 ~ 5	1 ~ 5m
6 ~ 10	6 ~ 10m (Note 5)

(Note 5) When connecting via the interface box, 9m is the maximum available.
(Note) Make sure that the total length along with the power · I/O cable is 10m or less.
(Note) Robot cable.

Power · I/O cable length

Standard connector cable

Cable code	Cable length	User wiring specification (flying leads)
		CB-EC-PWBIO□□□-RB supplied
0	Without cable	✓ (Note 6)
1 ~ 3	1 ~ 3m	✓
4 ~ 5	4 ~ 5m	✓
6 ~ 9	6 ~ 9m	✓

(Note 6) Only terminal block connector is included. Refer to P. 40 for details.
(Note) Robot cable.

4-way connector cable

Cable code	Cable length	User wiring specification (flying leads)
		CB-EC2-PWBIO□□□-RB supplied
S1 ~ S3	1 ~ 3m	✓
S4 ~ S5	4 ~ 5m	✓
S6 ~ S9	6 ~ 9m	✓

(Note) Robot cable.

Main Specifications

Item			Description	
Lead		Lead screw (mm)	4	2
Horizontal	Payload	Max. payload (kg)	2	4
	Speed / acceleration/ deceleration	Max. speed (mm/s)	200	100
		Max. acceleration/deceleration (G)	0.4	0.1
Vertical	Payload	Max. payload (kg)	0.5	1.25
	Speed / acceleration/ deceleration	Max. speed (mm/s)	200	100
		Max. acceleration/deceleration (G)	0.4	0.1
Push		Max. push force (N)	34.2	63.7
		Max. push speed (mm/s)	20	20
Brake		Brake specification	Non-excitation actuating solenoid brake	
		Brake holding force (kgf)	0.5	1.25
Stroke		Min. stroke (mm)	30	30
		Max. stroke (mm)	50	50
		Stroke pitch (mm)	20	20

Item	Description
Drive system	Lead screw ϕ4mm, rolled C10
Positioning repeatability	±0.05mm
Lost motion	- (notation not available due to 2-point positioning function)
Rod non-rotation precision	-
Guide rod	Linear motion infinite circulating type
Operation life (Note 7)	Horizontal: 10 million reciprocating motion cycles (50 ST operation distance 1,000km), vertical: 5 million reciprocating motion cycles
Ambient operating temperature, humidity	0 ~ 40°C, 10 ~ 85%RH or less (no condensation)
Ingress protection	IP20
Vibration & shock resistance	4.9m/s^2
Overseas standards	CE marking, RoHS directive
Motor type	AC servo motor (ϕ30) (Power capacity: Max. 2.8A)
Encoder type	Incremental
Number of encoder pulses	16384 pulse/rev

(Note 7) Operation life varies according to operating, mounting, and lubrication conditions.

Table of Payload by Speed/Acceleration

The unit for payload is kg.

Lead 4

Orientation	Horizontal	Vertical
Speed	Acceleration (G)	
(mm/s)	0.4	0.4
0	2	0.5
200	2	0.5

Lead 2

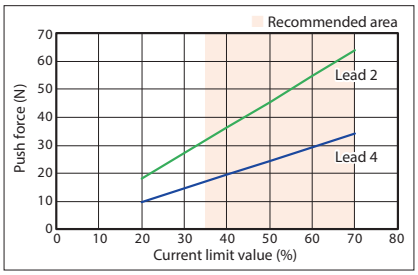
Orientation	Horizontal	Vertical
Speed	Acceleration (G)	
(mm/s)	0.1	0.1
0	4	1.25
100	4	1.25

Stroke and Max. Speed

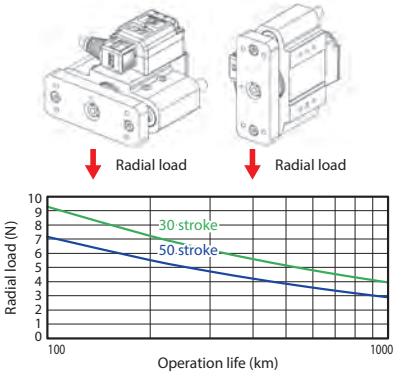
Lead (mm)	30 (mm)	50 (mm)
4	200	
2	100	

(Unit: mm/s)

Correlation Diagram between Push Force and Current Limit

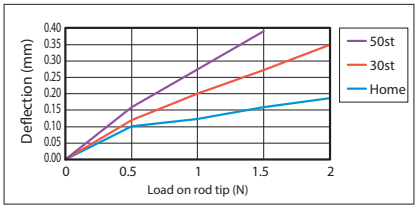


Radial Load and Operation Life

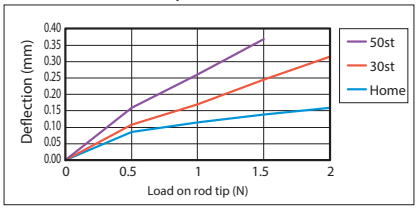


Rod Tip Deflection (Reference Values)

Guide side-oriented



Guide vertically oriented

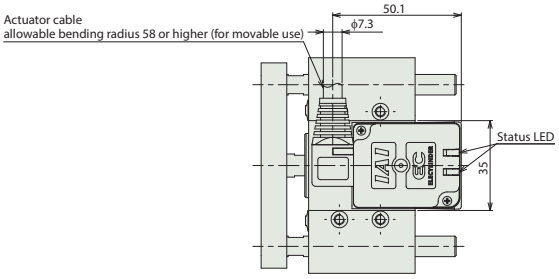


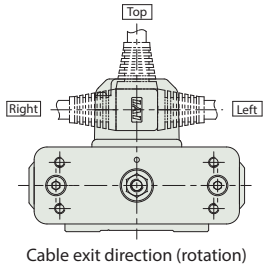
Dimensions

CAD drawings can be downloaded from our website.
www.intelligentactuator.com

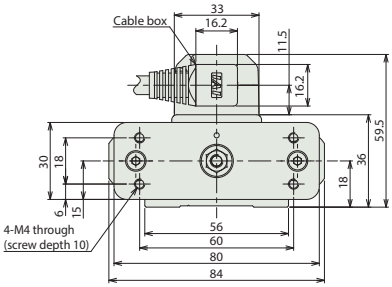
(Note) When the rod is returning to its home position, be mindful of possible interference from nearby objects, as it will travel until it reaches the M.E.
(Note) Fix the cable so that its base does not move.
The cable can be disconnected and replaced. (Connected with connector inside cable box)
The cable exit direction can be changed by changing the cable box direction.
(Note) Leave extra space depending on cable exit direction to account for allowable actuator cable bending radius of 58mm.

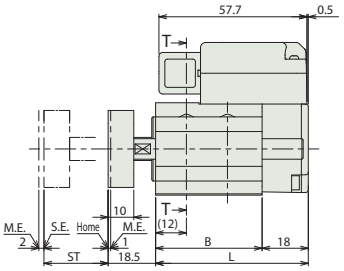
ST: Stroke
M.E: Mechanical end
S.E: Stroke end

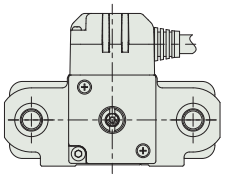


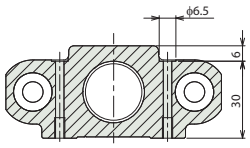


Cable exit direction (rotation)

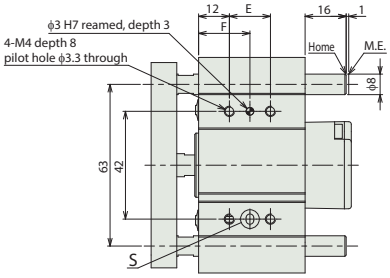


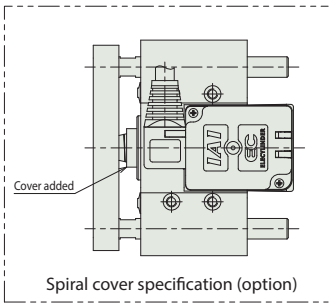




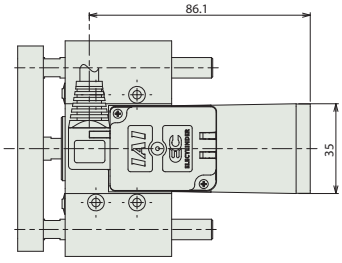


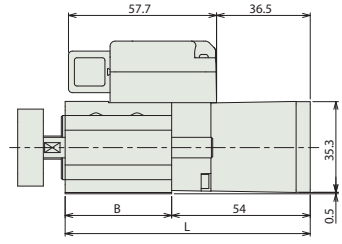
Cross section T-T
Details of frame mounting counterbored holes

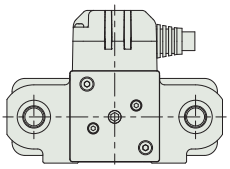


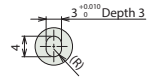


Spiral cover specification (option)



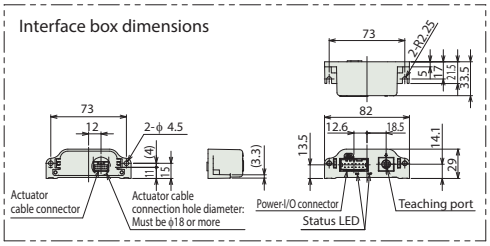






Detailed view of S
Detail of frame oblong hole

Option with brake



Dimensions by Stroke

Stroke		30	50
L	Without brake	59.5	79.5
	With brake	95.5	115.5
B		41.5	61.5
E		16	36
F		20	30

Mass by Stroke

Stroke		30	50
Mass (kg)	Without brake	0.60	0.72
	With brake	0.72	0.84

Applicable Controllers

(Note) EC Series products are equipped with a built-in controller. Refer to P. 38 for details on built-in controllers.

EC-CGD5

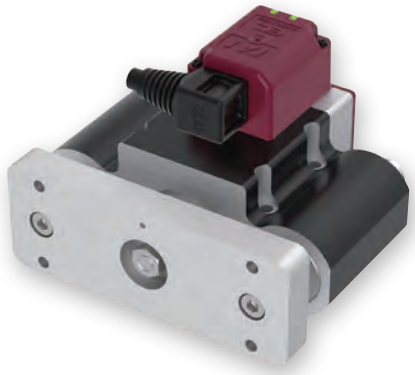
Slim | Coupled Motor | Body Width 110 mm | 24V AC Servo Motor | Lead Screw

Model Specification Items

EC	-	CGD5		-		-		-		-	
Series	-	Type	Lead	-	Stroke	-	Actuator cable length	-	Power · I/O cable length	-	Options
			M 8mm L 4mm		30 30mm 50 50mm		Refer to actuator cable length below		Refer to power · I/O cable length below		Refer to Options below.

CE RoHS 10

Horizontal | Vertical | Side | Ceiling



Stroke

Stroke (mm)	EC-CGD5	
	RCON-EC connection specification (Note 1)	NPN/PNP specification (Note 2)
30	✓	✓
50	✓	✓

(Note 1) Be sure to select "ACR" as the option.
(Note 2) Interface box and conversion cable are included.

Options * Please check the Options reference pages to confirm each option.

Name	Option code	Reference page
RCON-EC connection specification (Note 3) (Note 4)	**ACR**	31
Brake	**B**	31
PNP specification (Note 3)	**PN**	31
Spiral cover specification	**SRC**	32
Split motor and controller power supply specification (Note 3)	**TMD2**	32
Wireless communication specification (Note 4)	**WL**	32
Wireless axis operation specification (Note 4)	**WL2**	32

(Note 3) If the RCON-EC connection specification (ACR) is selected, the PNP specification (PN) and split motor and controller power supply specification (TMD2) cannot be selected. Also, interface box and conversion cable are not included.
(Note 4) If the RCON-EC connection specification (ACR) is selected, the wireless communication specification (WL) and wireless axis operation specification (WL2) cannot be selected. For wireless communication with RCON-EC connection (WL), purchase the separately sold optional interface box, conversion cable, and power · I/O cable. Refer to P. 37 for details. Please contact our sales department for the wireless axis operation specification (WL2).

Options sold separately

Name	Model	Reference page
Interface box conversion cable	CB-CVN-BJ002	41
RCON-EC connection specification Power · I/O cable (standard connector cable)	CB-REC-PWBIO□□□-RB	41
RCON-EC connection specification Power · I/O cable (4-way connector cable)	CB-REC2-PWBIO□□□-RB	41
RCON-EC connection specification Split motor and controller power supply Interface box (wireless specification)	ECW-CVNWL-CB-ACR	41

(Note) The power · I/O cable is a robot cable.
Indicate the cable length in □□□. (for example, 010 = 1m)

Selection Notes

(1) "Main Specifications" displays the payload's maximum value.
(2) Horizontal payload is the value when also using a guide so that radial and moment loads are not applied to the rod. If not installing a guide, refer to "Radial Load and Operation Life."
(3) If performing a push-motion operation, refer to the "Correlation Diagram between Push Force and Current Limit." The push forces listed are only reference values. Refer to P. 35 for applicable notes.

Actuator cable length

Cable code	Cable length
1 ~ 5	1 ~ 5m
6 ~ 10	6 ~ 10m (Note 5)

(Note 5) When connecting via the interface box, 9m is the maximum available.
(Note) Make sure that the total length along with the power · I/O cable is 10m or less.
(Note) Robot cable.

Power · I/O cable length

Standard connector cable

Cable code	Cable length	User wiring specification (flying leads)
		CB-EC-PWBIO□□□-RB supplied
0	Without cable	✓ (Note 6)
1 ~ 3	1 ~ 3m	✓
4 ~ 5	4 ~ 5m	✓
6 ~ 9	6 ~ 9m	✓

(Note 6) Only terminal block connector is included. Refer to P. 40 for details.
(Note) Robot cable.

4-way connector cable

Cable code	Cable length	User wiring specification (flying leads)
		CB-EC2-PWBIO□□□-RB supplied
S1 ~ S3	1 ~ 3m	✓
S4 ~ S5	4 ~ 5m	✓
S6 ~ S9	6 ~ 9m	✓

(Note) Robot cable.

Main Specifications

Item			Description	
Lead		Lead screw (mm)	8	4
Horizontal	Payload	Max. payload (kg)	8	16
	Speed / acceleration/ deceleration	Max. speed (mm/s)	200	100
		Max. acceleration/deceleration (G)	0.4	0.1
Vertical	Payload	Max. payload (kg)	4.5	7
	Speed / acceleration/ deceleration	Max. speed (mm/s)	200	100
		Max. acceleration/deceleration (G)	0.4	0.1
Push		Max. push force (N)	71.5	148.7
		Max. push speed (mm/s)	20	20
Brake		Brake specification	Non-excitation actuating solenoid brake	
		Brake holding force (kgf)	4.5	7
Stroke		Min. stroke (mm)	30	30
		Max. stroke (mm)	50	50
		Stroke pitch (mm)	20	20

Item	Description
Drive system	Lead screw ϕ6mm, rolled C10
Positioning repeatability	±0.05mm
Lost motion	- (notation not available due to 2-point positioning function)
Rod non-rotation precision	-
Guide rod	Linear motion infinite circulating type
Operation life (Note 7)	Horizontal: 10 million reciprocating motion cycles (50 ST operation distance 1,000km), vertical: 5 million reciprocating motion cycles
Ambient operating temperature, humidity	0 ~ 40°C, 10 ~ 85%RH or less (no condensation)
Ingress protection	IP20
Vibration & shock resistance	4.9m/s^2
Overseas standards	CE marking, RoHS directive
Motor type	AC servo motor (ϕ42) (Power capacity: Max. 3.6A)
Encoder type	Incremental
Number of encoder pulses	16384 pulse/rev

(Note 7) Operation life varies according to operating, mounting, and lubrication conditions.

Table of Payload by Speed/Acceleration

The unit for payload is kg.

Lead 8

Orientation	Horizontal	Vertical
Speed	Acceleration (G)	
(mm/s)	0.4	0.4
0	8	4.5
200	8	4.5

Lead 4

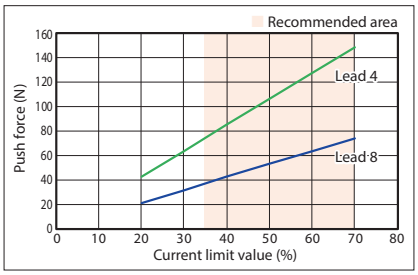
Orientation	Horizontal	Vertical
Speed	Acceleration (G)	
(mm/s)	0.1	0.1
0	16	7
100	16	7

Stroke and Max. Speed

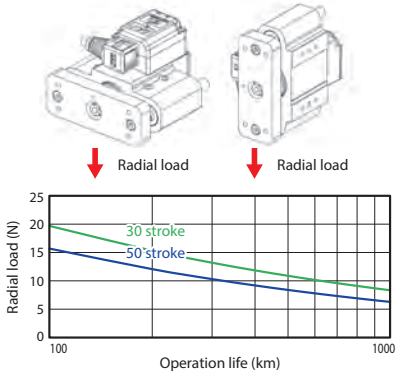
Lead (mm)	30 (mm)	50 (mm)
8	200	
4	100	

(Unit: mm/s)

Correlation Diagram between Push Force and Current Limit

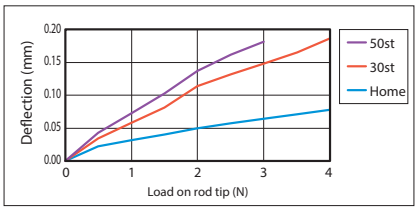


Radial Load and Operation Life

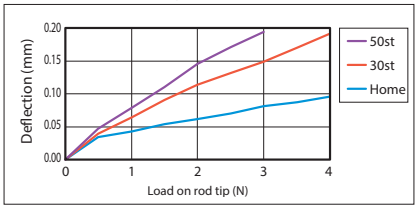


Rod Tip Deflection (Reference Values)

Guide side-oriented



Guide vertically oriented

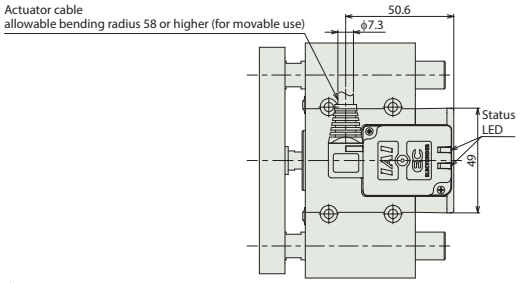


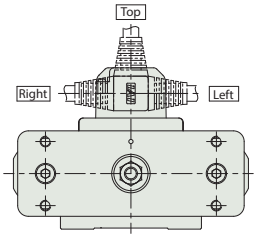
Dimensions

CAD drawings can be downloaded from our website.
www.intelligentactuator.com

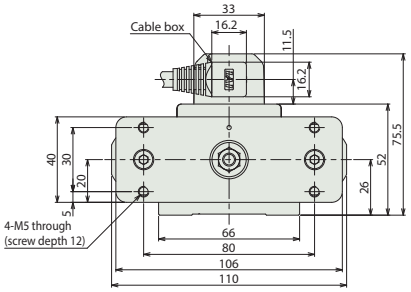
(Note) When the rod is returning to its home position, be mindful of possible interference from nearby objects, as it will travel until it reaches the M.E.
(Note) Fix the cable so that its base does not move.
The cable can be disconnected and replaced. (Connected with connector inside cable box)
The cable exit direction can be changed by changing the cable box direction.
(Note) Leave extra space depending on cable exit direction to account for allowable actuator cable bending radius of 58mm.

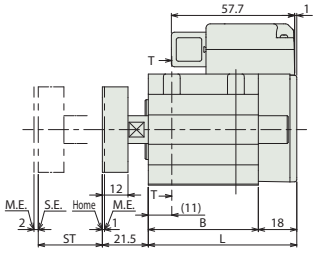
ST: Stroke
M.E: Mechanical end
S.E: Stroke end

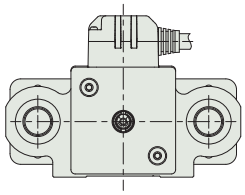


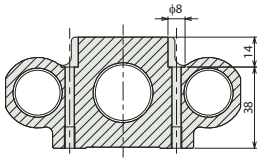


Cable exit direction (rotation)

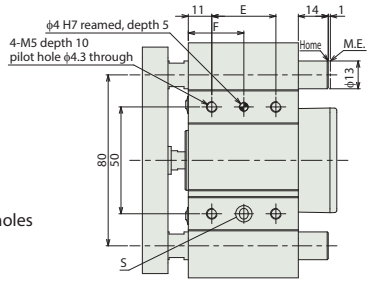


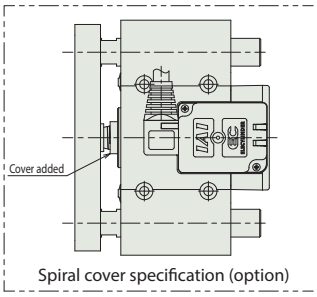






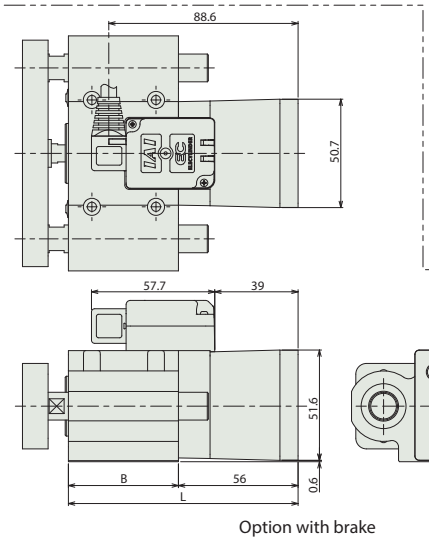
Cross section T-T
Details of frame mounting counterbored holes



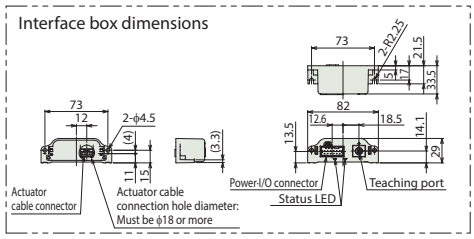


Spiral cover specification (option)

Detailed view of S
Detail of frame oblong hole



Option with brake



Dimensions by Stroke

Stroke		30	50
L	Without brake	69.5	89.5
	With brake	107.5	127.5
B		51.5	71.5
E		30	50
F		26	36

Mass by Stroke

Stroke		30	50
Mass (kg)	Without brake	1.15	1.38
	With brake	1.41	1.64

Applicable Controllers

(Note) EC Series products are equipped with a built-in controller. Refer to P. 38 for details on built-in controllers.

EC-CTC3

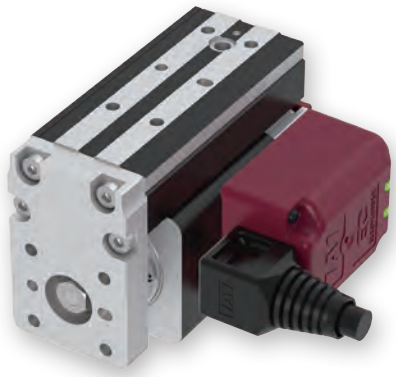
Slim | Coupled Motor | Body Width 40 mm | 24V AC Servo Motor | Lead Screw

Model Specification Items

EC	-	CTC3		-		-		-		-	
Series	-	Type	Lead	-	Stroke	-	Actuator cable length	-	Power · I/O cable length	-	Options
			M 4mm L 2mm		30 30mm 50 50mm		Refer to actuator cable length below		Refer to power · I/O cable length below		Refer to Options below.

CE RoHS 10

Horizontal | Vertical | Side | Ceiling



(Note) The photo above shows table left mounting (GT4).

Stroke

Stroke (mm)	EC-CTC3	
	RCON-EC connection specification (Note 1)	NPN/PNP specification (Note 2)
30	✓	✓
50	✓	✓

(Note 1) Be sure to select "ACR" as the option.
(Note 2) Interface box and conversion cable are included.

Options * Please check the Options reference pages to confirm each option.

Name	Option code	Reference page
RCON-EC connection specification (Note 3) (Note 5)	**ACR**	31
Brake	**B**	31
Table right mount (Note 4)	**GT2**	31
Table bottom mount (Note 4)	**GT3**	31
Table left mount (Note 4)	**GT4**	31
Non-motor end specification	**NM**	31
PNP specification (Note 3)	**PN**	31
Spiral cover specification	**SRC**	32
Split motor and controller power supply specification (Note 3)	**TMD2**	32
Wireless communication specification (Note 5)	**WL**	32
Wireless axis operation specification (Note 5)	**WL2**	32

(Note 3) If the RCON-EC connection specification (ACR) is selected, the PNP specification (PN) and split motor and controller power supply specification (TMD2) cannot be selected. Additionally, interface box and conversion cable are not included.
(Note 4) Be sure to fill in one of the symbols for the Option field in the Model Specification Items.
(Note 5) If the RCON-EC connection specification (ACR) is selected, the wireless communication specification (WL) and wireless axis operation specification (WL2) cannot be selected. For wireless communication with RCON-EC connection (WL), purchase the separately sold optional interface box, conversion cable, and power · I/O cable. Refer to P. 37 for details. Please contact our sales department for the wireless axis operation specification (WL2).

Options sold separately

Name	Model	Reference page
Interface box conversion cable	CB-CVN-BJ002	41
RCON-EC connection specification Power · I/O cable (standard connector cable)	CB-REC-PWBIO□□□-RB	41
RCON-EC connection specification Power · I/O cable (4-way connector cable)	CB-REC2-PWBIO□□□-RB	41
RCON-EC connection specification Split motor and controller power supply Interface box (wireless specification)	ECW-CVNWL-CB-ACR	41

(Note) The power · I/O cable is a robot cable.
Indicate the cable length in □□□. (for example, 010 = 1m)

Selection Notes

(1) "Main Specifications" displays the payload's maximum value. Refer to "Table of Payload by Speed/Acceleration" for more details.
(2) If performing a push-motion operation, refer to the "Correlation Diagram between Push Force and Current Limit." The push forces listed are only reference values. Refer to P. 35 for applicable notes.
(3) Be sure to select an option code for the table mounting direction from the option price list.
(4) The reference values of the overhang load length are 50mm or less in the table tip direction and 90mm or less in the table top and side directions. Refer to the explanation on P. 36 for the overhang load length.

Actuator cable length

Cable code	Cable length
1 ~ 5	1 ~ 5m
6 ~ 10	6 ~ 10m (Note 6)

(Note 6) When connecting via the interface box, 9m is the maximum available.
(Note) Make sure that the total length along with the power · I/O cable is 10m or less.
(Note) Robot cable.

Power · I/O cable length

Standard connector cable

Cable code	Cable length	User wiring specification (flying leads)
		CB-EC-PWBIO□□□-RB supplied
0	Without cable	✓ (Note 7)
1 ~ 3	1 ~ 3m	✓
4 ~ 5	4 ~ 5m	✓
6 ~ 9	6 ~ 9m	✓

(Note 7) Only terminal block connector is included. Refer to P. 40 for details.
(Note) Robot cable.

4-way connector cable

Cable code	Cable length	User wiring specification (flying leads)
		CB-EC2-PWBIO□□□-RB supplied
S1 ~ S3	1 ~ 3m	✓
S4 ~ S5	4 ~ 5m	✓
S6 ~ S9	6 ~ 9m	✓

(Note) Robot cable.

Main Specifications

Item			Description	
Lead		Lead screw (mm)	4	2
Horizontal	Payload	Max. payload (kg)	2	4
	Speed / acceleration/ deceleration	Max. speed (mm/s)	200	100
		Max. acceleration/deceleration (G)	0.4	0.1
Vertical	Payload	Max. payload (kg)	0.5	1.25
	Speed / acceleration/ deceleration	Max. speed (mm/s)	200	100
		Max. acceleration/deceleration (G)	0.4	0.1
Push		Max. push force (N)	34.2	63.7
		Max. push speed (mm/s)	20	20
Brake		Brake specification	Non-excitation actuating solenoid brake	
		Brake holding force (kgf)	0.5	1.25
Stroke		Min. stroke (mm)	30	30
		Max. stroke (mm)	50	50
		Stroke pitch (mm)	20	20

Item	Description
Drive system	Lead screw ϕ4mm, rolled C10
Positioning repeatability	±0.05mm
Lost motion	- (notation not available due to 2-point positioning function)
Allowable static moment	Ma: 5.8N·m
	Mb: 5.8N·m
	Mc: 15.3N·m
Allowable dynamic moment (Note 8)	Ma: 3.2N·m
	Mb: 3.2N·m
	Mc: 8.4N·m
Operation life	Horizontal: 10 million reciprocating motion cycles (50 ST operation distance 1,000km), vertical: 5 million reciprocating motion cycles
Ambient operating temperature, humidity	0 ~ 40°C, 10 ~ 85%RH or less (no condensation)
Ingress protection	-
Vibration & shock resistance	4.9m/s^2
Overseas standards	CE marking, RoHS directive
Motor type	AC servo motor (ϕ30) (Power capacity: Max. 2.8A)
Encoder type	Incremental
Number of encoder pulses	16384 pulse/rev

(Note 8) Based on the standard rated operation life of 1,000km. Operation life varies according to operating and mounting conditions. Please contact IAI for more details on operational life.

Table type moment direction

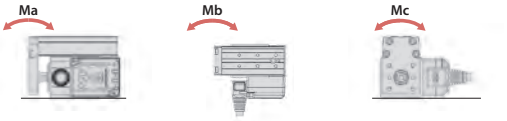


Table of Payload by Speed/Acceleration

The unit for payload is kg.

Lead 4

Orientation	Horizontal	Vertical
Speed	Acceleration (G)	
(mm/s)	0.4	0.4
0	2	0.5
200	2	0.5

Lead 2

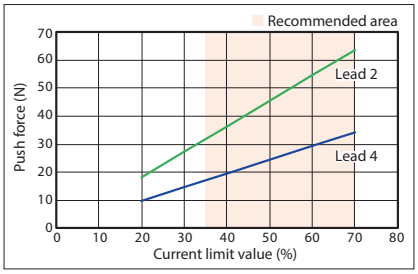
Orientation	Horizontal	Vertical
Speed	Acceleration (G)	
(mm/s)	0.1	0.1
0	4	1.25
100	4	1.25

Stroke and Max. Speed

Lead (mm)	30 (mm)	50 (mm)
4	200	
2	100	

(Unit: mm/s)

Correlation Diagram between Push Force and Current Limit

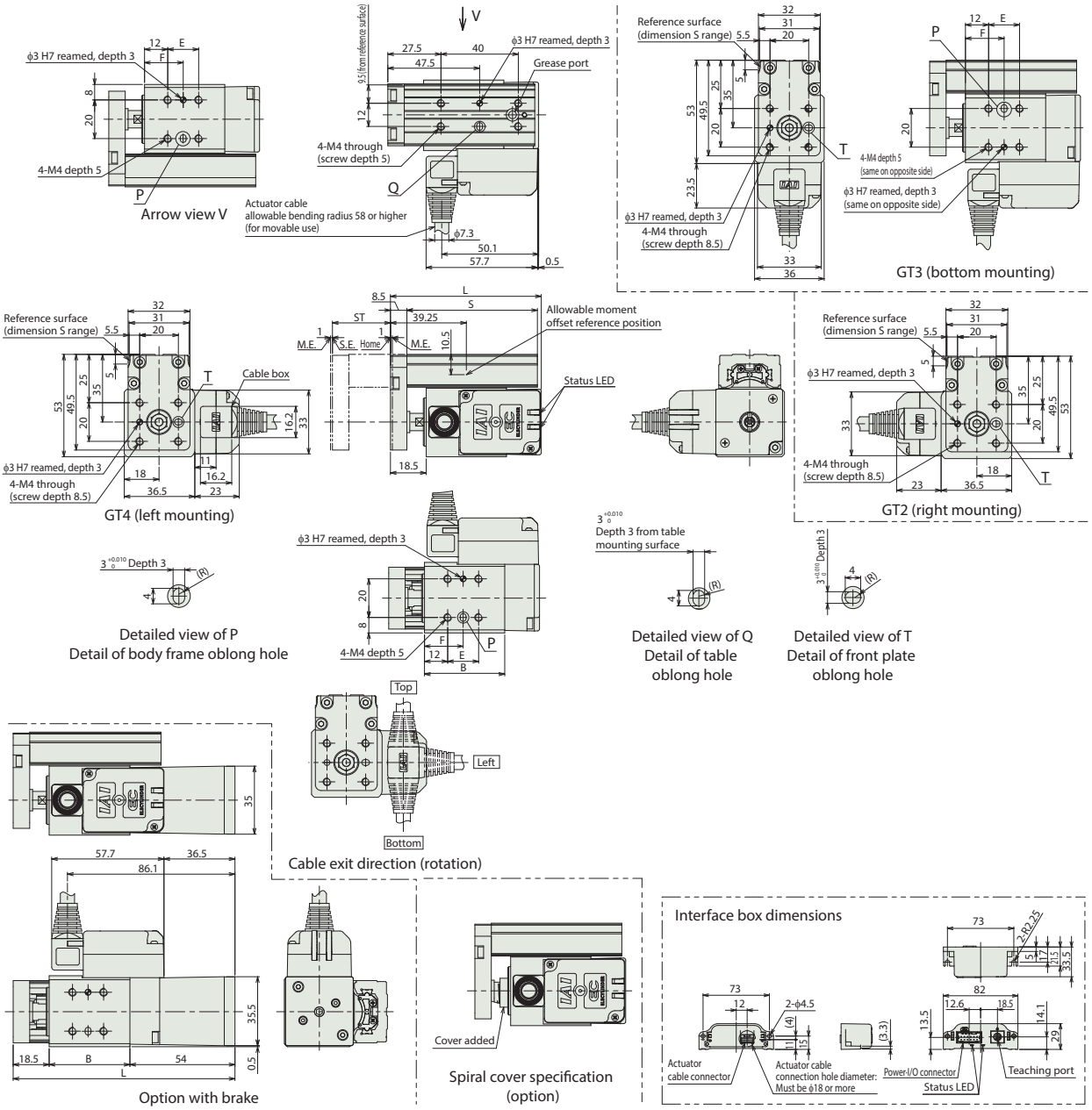


Dimensions

CAD drawings can be downloaded from our website.
www.intelligentactuator.com

(Note) When the table is returning to its home position, be careful of interference from surrounding objects, as it will travel until it reaches the M.E.
(Note) Fix the cable so that its base does not move.
The cable can be disconnected and replaced. (Connected with connector inside cable box)
The cable exit direction can be changed by changing the cable box direction.
(Note) Leave extra space depending on cable exit direction to account for allowable actuator cable bending radius of 58mm.

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



Dimensions by Stroke

Stroke		30	50
L	Without brake	78	98
	With brake	114	134
S		67.5	87.5
B		41.5	61.5
E		16	36
F		20	31.5

Mass by Stroke

Stroke		30	50
Mass (kg)	Without brake	0.47	0.54
	With brake	0.59	0.66

Applicable Controllers

(Note) EC Series products are equipped with a built-in controller. Refer to P. 38 for details on built-in controllers.

EC-CTC3

EC-CTC5

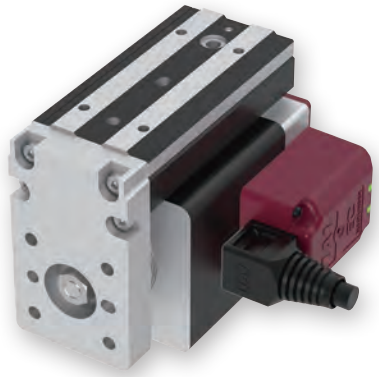
Slim | Coupled Motor | Body Width 50 mm | 24V AC Servo Motor | Lead Screw

Model Specification Items

EC	-	CTC5		-		-		-		-	
Series	-	Type	Lead	-	Stroke	-	Actuator cable length	-	Power · I/O cable length	-	Options
			M 8mm L 4mm		30 30mm 50 50mm		Refer to actuator cable length below		Refer to power · I/O cable length below		Refer to Options below.

CE RoHS 10

Horizontal | Vertical | Side | Ceiling



(Note) The photo above shows table left mounting (GT4).

Stroke

Stroke (mm)	EC-CTC5	
	RCON-EC connection specification (Note 1)	NPN/PNP specification (Note 2)
30	✓	✓
50	✓	✓

(Note 1) Be sure to select "ACR" as the option.
(Note 2) Interface box and conversion cable are included in the price.

Options * Please check the Options reference pages to confirm each option.

Name	Option code	Reference page
RCON-EC connection specification (Note 3) (Note 5)	**ACR**	31
Brake	**B**	31
Table right mount (Note 4)	**GT2**	31
Table bottom mount (Note 4)	**GT3**	31
Table left mount (Note 4)	**GT4**	31
Non-motor end specification	**NM**	31
PNP specification (Note 3)	**PN**	31
Spiral cover specification	**SRC**	32
Split motor and controller power supply specification (Note 3)	**TMD2**	32
Wireless communication specification (Note 5)	**WL**	32
Wireless axis operation specification (Note 5)	**WL2**	32

(Note 3) If the RCON-EC connection specification (ACR) is selected, the PNP specification (PN) and split motor and controller power supply specification (TMD2) cannot be selected. Also, interface box and conversion cable are not included.
(Note 4) Be sure to fill in one of the symbols for the Option field in the Model Specification Items.
(Note 5) If the RCON-EC connection specification (ACR) is selected, the wireless communication specification (WL) and wireless axis operation specification (WL2) cannot be selected. For wireless communication with RCON-EC connection (WL), purchase the separately sold optional interface box, conversion cable, and power · I/O cable. Refer to P. 37 for details. Please contact our sales department for the wireless axis operation specification (WL2).

Options sold separately

Name	Model	Reference page
Interface box conversion cable	CB-CVN-BJ002	41
RCON-EC connection specification Power · I/O cable (standard connector cable)	CB-REC-PWBIO□□□-RB	41
RCON-EC connection specification Power · I/O cable (4-way connector cable)	CB-REC2-PWBIO□□□-RB	41
RCON-EC connection specification Split motor and controller power supply Interface box (wireless specification)	ECW-CVNWL-CB-ACR	41

(Note) The power · I/O cable is a robot cable.
Indicate the cable length in □□□. (for example, 010 = 1m)

Selection Notes

(1) "Main Specifications" displays the payload's maximum value. Refer to "Table of Payload by Speed/Acceleration" for more details.
(2) If performing a push-motion operation, refer to the "Correlation Diagram between Push Force and Current Limit." The push forces listed are only reference values. Refer to P. 35 for applicable notes.
(3) Be sure to select an option code for the table mounting direction from the option price list.
(4) The reference values of the overhang load length are 130mm or less in the table tip direction, 100mm or less in the table top direction, and 120mm or less in the table side direction. Refer to the explanation on P. 36 for the overhang load length.

Actuator cable length

Cable code	Cable length
1 ~ 5	1 ~ 5m
6 ~ 10	6 ~ 10m (Note 6)

(Note 6) When connecting via the interface box, 9m is the maximum length available.
(Note) Make sure that the total length along with the power · I/O cable is 10m or less.
(Note) Robot cable.

Power · I/O cable length

Standard connector cable

Cable code	Cable length	User wiring specification (flying leads)
		CB-EC-PWBIO□□□-RB supplied
0	Without cable	✓ (Note 7)
1 ~ 3	1 ~ 3m	✓
4 ~ 5	4 ~ 5m	✓
6 ~ 9	6 ~ 9m	✓

(Note 7) Only terminal block connector is included. Refer to P. 40 for details.
(Note) Robot cable.

4-way connector cable

Cable code	Cable length	User wiring specification (flying leads)
		CB-EC2-PWBIO□□□-RB supplied
S1 ~ S3	1 ~ 3m	✓
S4 ~ S5	4 ~ 5m	✓
S6 ~ S9	6 ~ 9m	✓

(Note) Robot cable.

Main Specifications

Item			Description	
Lead		Lead screw (mm)	8	4
Horizontal	Payload	Max. payload (kg)	8	8
	Speed / acceleration/ deceleration	Max. speed (mm/s)	200	100
		Max. acceleration/deceleration (G)	0.4	0.1
Vertical	Payload	Max. payload (kg)	4.5	7
	Speed / acceleration/ deceleration	Max. speed (mm/s)	200	100
		Max. acceleration/deceleration (G)	0.4	0.1
Push		Max. push force (N)	71.5	148.7
		Max. push speed (mm/s)	20	20
Brake		Brake specification	Non-excitation actuating solenoid brake	
		Brake holding force (kgf)	4.5	7
Stroke		Min. stroke (mm)	30	30
		Max. stroke (mm)	50	50
		Stroke pitch (mm)	20	20

Item	Description
Drive system	Lead screw ϕ6mm, rolled C10
Positioning repeatability	±0.05mm
Lost motion	- (notation not available due to 2-point positioning function)
Allowable static moment	Ma: 7.9N·m
	Mb: 11.3N·m
	Mc: 23.3N·m
Allowable dynamic moment (Note 8)	Ma: 4.0N·m
	Mb: 5.7N·m
	Mc: 11.8N·m
Operation life	Horizontal: 10 million reciprocating motion cycles (50 ST operation distance 1,000km), vertical: 5 million reciprocating motion cycles
Ambient operating temperature, humidity	0 ~ 40°C, 10 ~ 85%RH or less (no condensation)
Ingress protection	-
Vibration & shock resistance	4.9m/s^2
Overseas standards	CE marking, RoHS directive
Motor type	AC servo motor (ϕ42) (Power capacity: Max. 3.6A)
Encoder type	Incremental
Number of encoder pulses	16384 pulse/rev

(Note 8) Based on the standard rated operation life of 1,000km. Operation life varies according to operating and mounting conditions. Please contact IAI for more details on operational life.

Table type moment direction

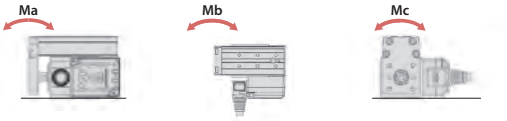


Table of Payload by Speed/Acceleration

The unit for payload is kg.

Lead 8

Orientation	Horizontal	Vertical
Speed	Acceleration (G)	
(mm/s)	0.4	0.4
0	8	4.5
200	8	4.5

Lead 4

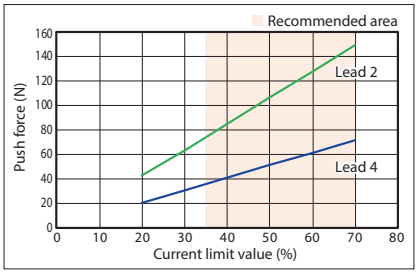
Orientation	Horizontal	Vertical
Speed	Acceleration (G)	
(mm/s)	0.1	0.1
0	8	7
100	8	7

Stroke and Max. Speed

Lead (mm)	30 (mm)	50 (mm)
8	200	
4	100	

(Unit: mm/s)

Correlation Diagram between Push Force and Current Limit

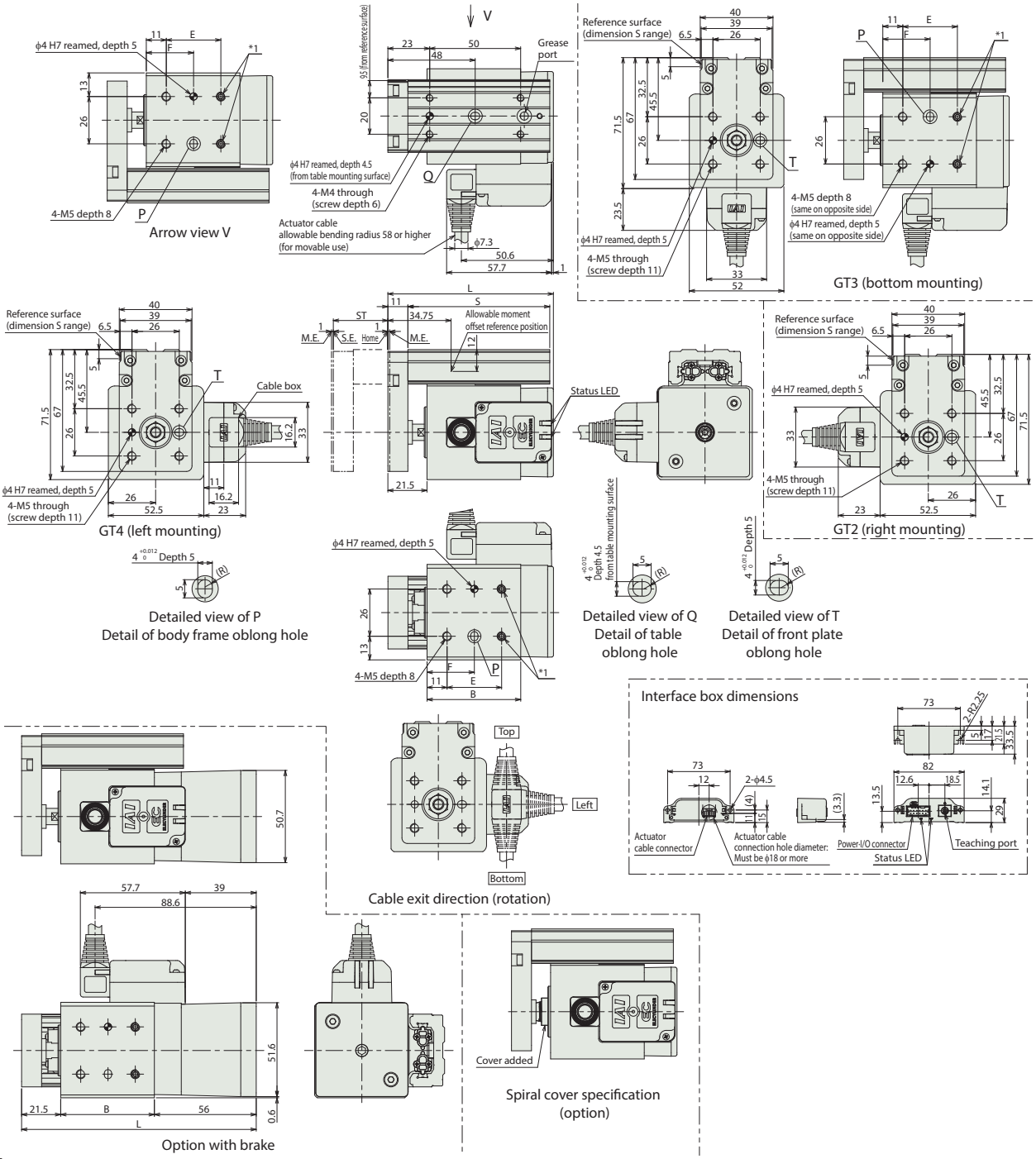


Dimensions

CAD drawings can be downloaded from our website.
www.intelligentactuator.com

*1 Set screws are mounted. Remove the set screws when using these holes.
(Note) When the table is returning to its home position, be careful of interference from surrounding objects, as it will travel until it reaches the M.E.
(Note) Fix the cable so that its base does not move.
The cable can be disconnected and replaced. (Connected with connector inside cable box)
The cable exit direction can be changed by changing the cable box direction.
(Note) Leave extra space depending on cable exit direction to account for allowable actuator cable bending radius of 58mm.

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



Dimensions by Stroke

Stroke		30	50
L	Without brake	91	111
	With brake	129	149
S		78	98
B		51.5	71.5
E		30	50
F		26	36

Mass by Stroke

Stroke		30	50
Mass (kg)	Without brake	0.83	0.98
	With brake	1.09	1.24

Applicable Controllers

(Note) EC Series products are equipped with a built-in controller. Refer to P. 38 for details on built-in controllers.

Options

RCON-EC connection specification
*Cannot be selected with the TMD2 and PN options (the ACR option includes the split motor and controller power supply specification)

Model **ACR** Applicable models **All models**

Description This option should be selected to connect over an R-unit to a field network.
*If this option is selected, the power supply must be a split motor and controller power supply and the input/output specification must be NPN. Therefore, it cannot be selected with the TMD2 or PN options.

Brake

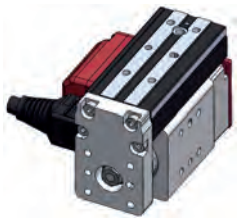
Model **B** Applicable models **All models**

Description This mechanism stops the rod and table from moving when the power or servo is turned off. This option is required when mounting the actuator vertically.

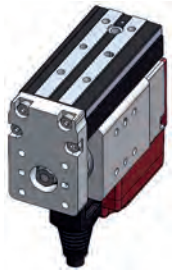
Table mounting direction

Model **GT2/GT3/GT4** Applicable models **CTC**

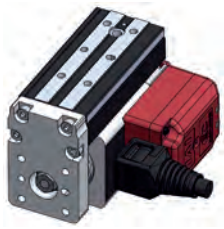
Description Select the table position. Be sure to enter a code in the model number.



GT2
Table right mount



GT3
Table bottom mount



GT4
Table left mount

Tip female thread specification

Model **NFA** Applicable models **CRP**

Description This option changes the screw used for one-bolt mounting of jigs, etc., on the rod tip from male to female. (shipped assembled)
Customers cannot change the screws after shipping. Refer to the product page for dimensions.

Non-motor end specification

Model **NM** Applicable models **CTC**

Description The home position is normally set to the motor side. This option is for setting the home position on the other side in order to accommodate variations in equipment layout, etc.

PNP specification *Cannot be ordered simultaneously with the ACR option, which is NPN specification.

Model **PN** Applicable models **All models**

Description EC Series products provide NPN specification input/output for connecting external devices as standard.
Specifying this option changes input/output to the PNP specification.

Spiral cover specification

Model **SRC** Applicable models **All models**

Description In order to prevent foreign matter from adhering to the grease or lead screw and grease from spattering, this option has a cover mounted on the movable parts.
(Note 1) For CRP3/CRP5, the individual model below cannot be mounted on the shaft without this option, even if ordered.
When purchased with this option, part replacement mounting is possible.

Individual model number: RCA2-SPC-50
(Individual mass: 0.005kg/Material: Stainless steel)

Split motor and controller power supply specification

*Cannot be selected with the ACR option (the RCON-EC connection specification is a split motor and controller power supply specification)

Model **TMD2** Applicable models **All models**

Description This option includes an actuator operation stop input. Select this option to allow shutting down the actuator drive power only. Refer to P. 40 for more information on wiring.

3-surface mounting specification

Model **TSM** Applicable models **CRP**

Description With this option, mounting is possible from bottom, left, or right. Refer to the product page for dimensions.

Wireless communication specification

Model **WL** Applicable models **All models**

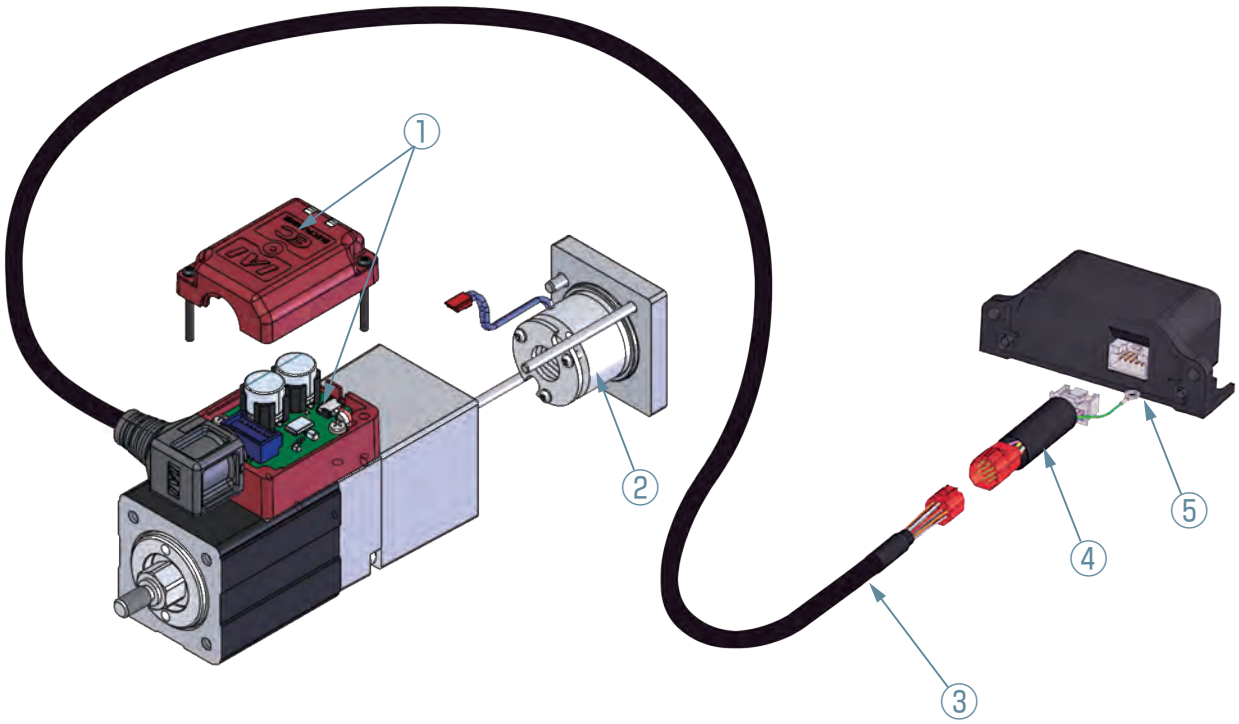
Description This option enables support for wireless communication. Specifying this option enables wireless communication with the TB-03 teaching pendant and Wireless Teaching Controller. The start point, end point, and AVD can be adjusted via wireless communication.

Wireless axis operation specification

Model **WL2** Applicable models **All models**

Description Specifying WL2 allows for the product to operate wirelessly as with WL (start point, end point, and AVD adjustment), and to also perform axis travel operation tests (forward end/backward end movement, jog, and inching). However, this function is not meant to perform automatic operation. Please contact IAI for precautions on axis operations using a wireless connection. (Note) Customers cannot change WL to WL2, or WL2 to WL. Please contact IAI for this.

CRP3/CRP5
CGD3/CGD5
CTC3/CTC5



(1) Controller cover assembly
(2) Brake unit
(3) Actuator cable assembly
(4) Interface box conversion cable
(5) Interface box

Maintenance Part Model List

The numbers in the table correspond to the numbers in the schematics.
(Note) Mounting screws are not included with maintenance parts. Please contact our sales department before making any modifications.

(1) Controller cover assembly

Type	Wireless specification	Model
CRP3/CGD3/CTC3 CRP5/CGD5/CTC5	No/WL	CCA-EC-C35
	WL2	CCA-EC-C35WL2

(2) Brake unit

Type	Model
CRP3/CGD3/CTC3	EC-BKU-C3
CRP5/CGD5/CTC5	EC-BKU-C5

(3) Actuator cable assembly

Type	Model
CRP3/CGD3/CTC3 CRP5/CGD5/CTC5	CB-EC-C35-MPA○○○-AS

*○○○ indicates cable length
Max. 10m (max. 9m when passing through interface box)

(4) Interface box conversion cable

Type	Model
CRP3/CGD3/CTC3 CRP5/CGD5/CTC5	CB-CVN-BJ002

(5)-1 Interface box

Type	Wireless	I/O	Model
CRP3/CGD3/CTC3 CRP5/CGD5/CTC5	No	NPN	ECW-CVN-CB
		PNP	ECW-CVP-CB
	WL/WL2	NPN	ECW-CVNWL-CB
		PNP	ECW-CVPWL-CB

(5)-2 Split motor and controller power supply interface box

Type	Wireless	I/O	Model
CRP3/CGD3/CTC3 CRP5/CGD5/CTC5	No	NPN	ECW-CVN-CB-TMD2
		PNP	ECW-CVP-CB-TMD2
	WL/WL2	NPN	ECW-CVNWL-CB-TMD2
		PNP	ECW-CVPWL-CB-TMD2

(5)-3 RCON-EC connection specification split motor and controller power supply interface box

Type	Wireless	I/O	Model
CRP3/CGD3/CTC3 CRP5/CGD5/CTC5	WL/WL2	NPN REC	ECW-CVNWL-CB-ACR

Push-Motion Operation

Push-motion operation is a function that keeps the rod or table pushed up against the workpiece, as with an air cylinder.
Please check the usage instructions and precautions below prior to use.

The relationship between push force and current limit value is shown in the example below.
*The push force value is calculated from motor torque and mechanical efficiency. The push speed is 20mm/s.

[Push force adjustment]

·The push force during push-motion operation can be adjusted by changing the current limit value of the controller.

· Check the push force for the applicable model in the "Correlation Diagram between Push Force and Current Limit" on the product specification page, and select a model that matches your conditions.

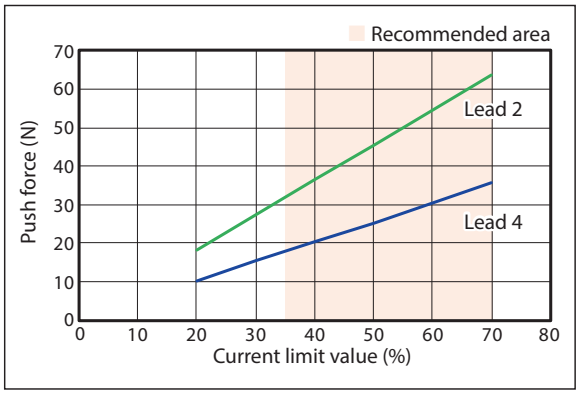
[Lead selection method]

·Select a lead with the desired push force in the recommended current limit value range (the colored area in the graph).

Lead 4 would be appropriate for the EC-CRP3 type shown in the figure to the right if a push force of 20N is desired. Selecting lead 2 would limit the adjustment range.

(Example)

Correlation Diagram between Push Force and Current Limit

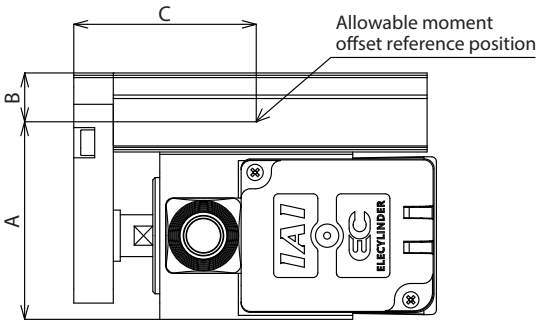


Caution

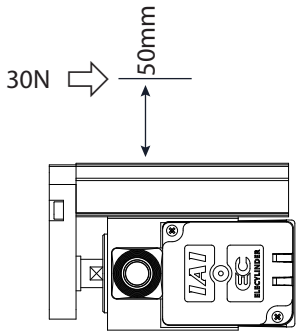
·The "Correlation Diagrams between Push Force and Current Limit" show lower push force for each current limit value.
·Individual differences in the motor and variations in machine operation may cause the push force lower limit to be 40% higher, even if the current limit value is the same. This is especially true when the current limit value is 30% or lower, and the push force lower limit could be exceeded by 40% or more.

Notes on use of table type actuators for push-motion operation

When performing a push-motion operation using a table type actuator, be sure to limit the push current so that the reactive moment caused by the push force does not exceed the allowable dynamic moment (Ma, Mb) listed in the catalog. Refer to the figures below, which show the working point of the guide moment, for help with calculating the moment. When doing so, take the offset amount of the push force working point into consideration. Note that if excessive force which exceeds the allowable dynamic moment is applied, it may damage the guide and shorten the actuator's operational life. Keep this in mind and select a push current that is safely within its limits.



Type	Dimensions		
	A (mm)	B (mm)	C (mm)
CTC3	42.5	10.5	39.25
CTC5	59.5	12	34.75



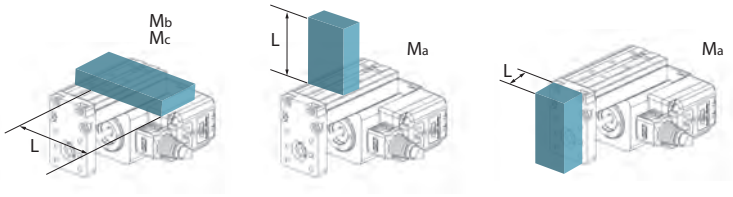
Calculation example:

When a 30N pushing operation is performed with the EC-CTC3 type at the position shown in the figure at right,
the moment applied to the guide is
Ma = (10.5 + 50)×30 = 1815 (N·mm)
= 1.815 (N·m).

The allowable dynamic moment for EC-CTC3 is Ma = 3.2 (N·m), which is acceptable as 3.2 > 1.815.
If pushing would cause Mb moment, calculate likewise from the overhang and ensure that it is within range of the allowable dynamic moment.

Overhang Load Length

This is the approximate offset at which the actuator can operate smoothly even when the workpiece or bracket is offset from the table.
Vibration or other factors could cause failure if the approximate length is greatly exceeded. Use the product within the guideline length.



List of Possible Connections for the ELECYLINDER and Teaching Tools

■ For ELECYLINDER Alone

○: Connection/operation possible

Teaching tool			Connection/ operation Y/N	Priority level (simultaneous connection)
Wired connection	TB-02/03		○	1
	Wired Teaching Controller (TBD-1)		○	1
Wireless connection	TB-03		○ *1 *2	2
	Wireless Teaching Controller (TBD-1WL)		○ *1 *2	2

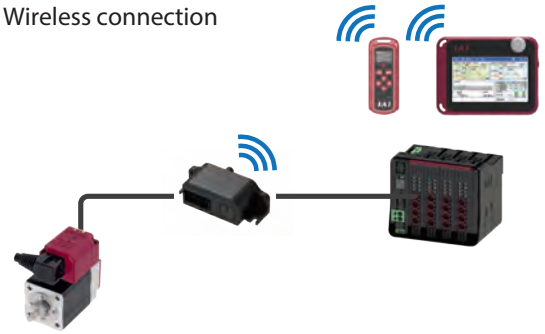
*1 Connectable only when the ELECYLINDER is wireless specification (options include "WL" or "WL2")
*2 Test run is possible when connecting to WL2 specification, but not with WL specification

■ For ELECYLINDER Connected to REC/RCON/RSEL (RCON-EC-4 connection)

Connection pattern

Ⓐ: Master unit SIO connection

Ⓑ: Wireless connection



*ELECYLINDER body SIO connection requires an interface box

○: Connection/operation possible △: Connection possible/partial operation possible ×: Connection not possible

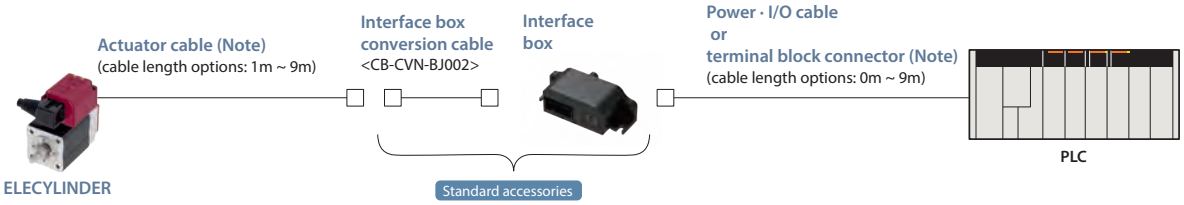
Teaching tool			Connection pattern	Auto (operating on automatic)		Manual	
				Connection/operation Y/N	Priority level (simultaneous connection)	Connection/operation Y/N	Priority level (simultaneous connection)
Wired connection	TB-02/03		Ⓐ	△ *3	1	○	1
Wireless connection	TB-03		Ⓑ	△ *1 *3	2	○ *1 *2	2
	Wireless Teaching Controller (TBD-1WL)		Ⓑ	△ *1 *4	2	○ *1 *2	2

*1 Connectable only when the ELECYLINDER is wireless specification (options include "WL" or "WL2")
*2 Test run is possible when connecting to WL2 specification, but not with WL specification
*3 Monitoring only (operation not possible)
*4 Speed and acceleration/deceleration can be set and operated; position editing and test run are not possible

Connection Method

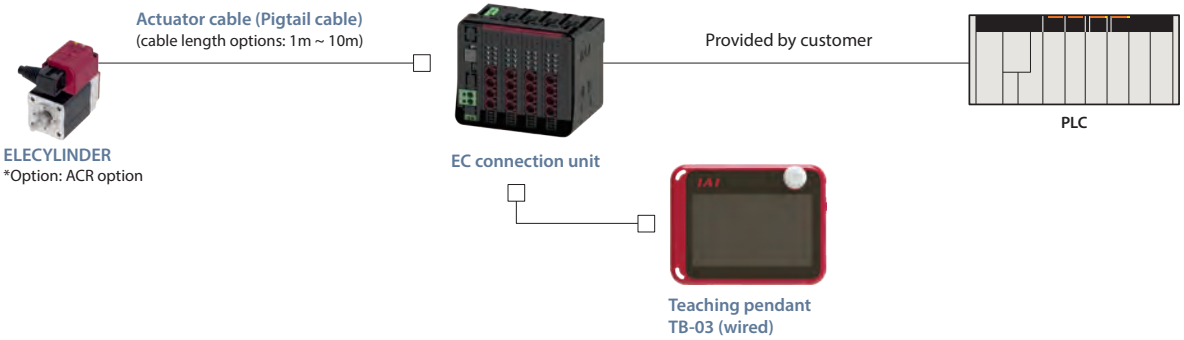
When connecting the ELECYLINDER to a PLC, there are three possible connection methods.

1. Direct connection to PLC (NPN/PNP specification)



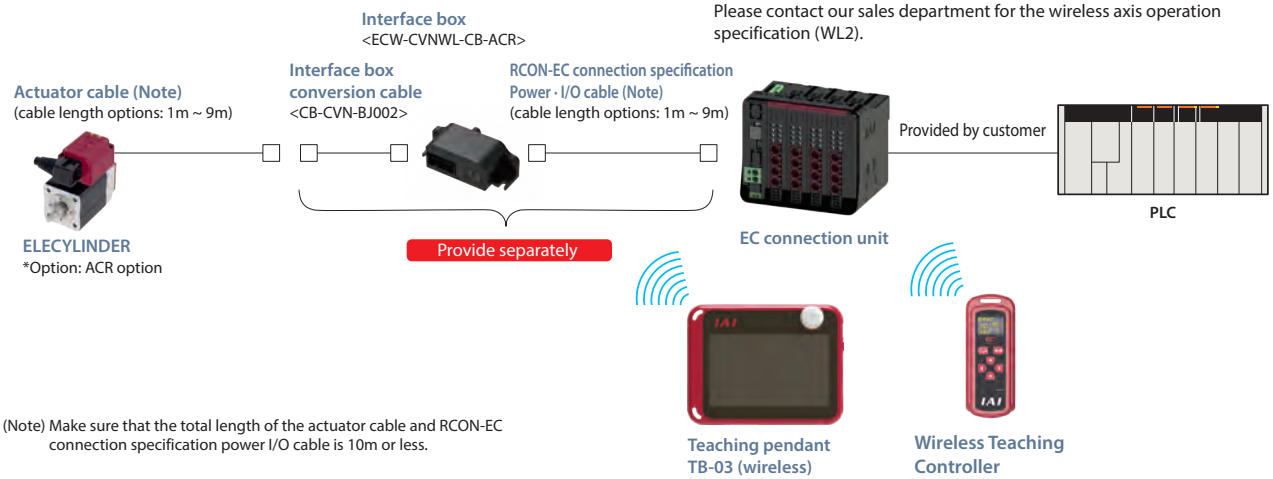
(Note) Make sure that the total length of the actuator cable and power · I/O cable (provided by the customer when using a terminal block connector) is 10 m or less.

2. Connection to PLC through an EC connection unit (RCON-EC connection specification) [Wired connection to teaching pendant]



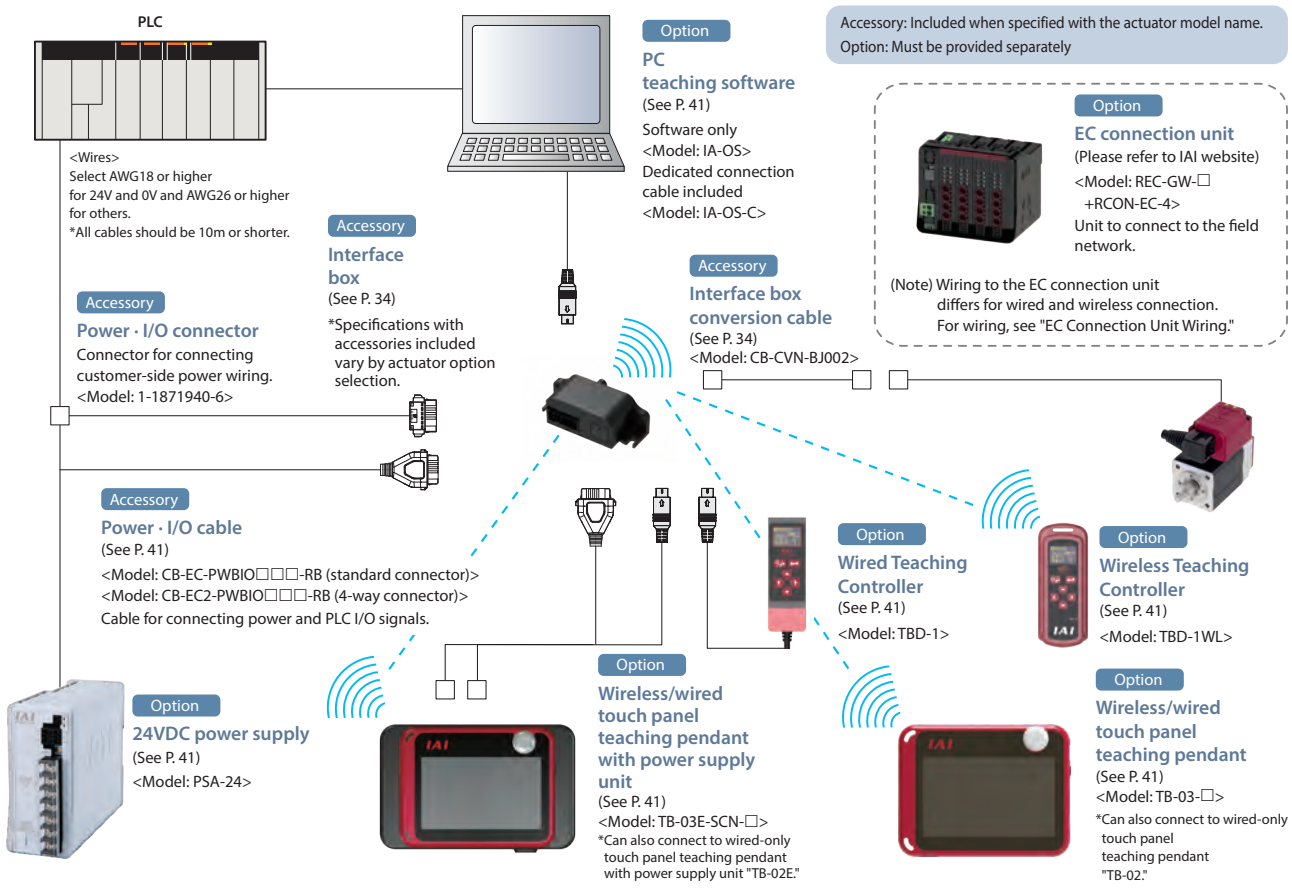
3. Connection to PLC through an EC connection unit (RCON-EC connection specification) [Wireless connection to teaching pendant]

The configuration below is with wireless communication specification (WL). Please contact our sales department for the wireless axis operation specification (WL2).



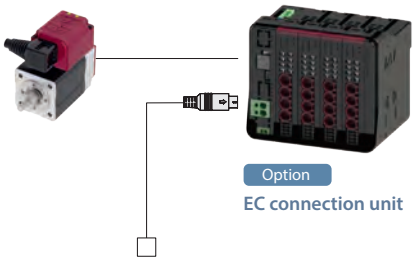
(Note) Make sure that the total length of the actuator cable and RCON-EC connection specification power I/O cable is 10m or less.

System Configuration

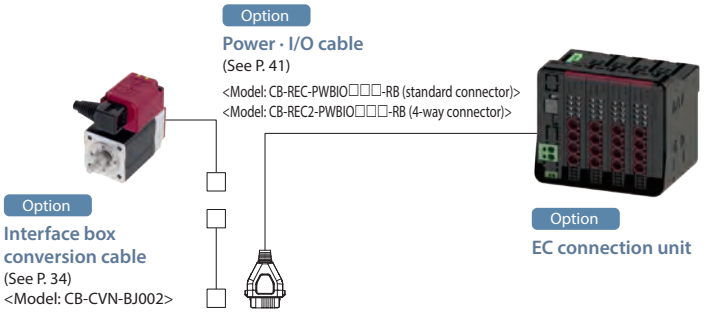


EC Connection Unit Wiring

(For teaching pendant wired connection)



(For teaching pendant wireless connection)



List of Accessories

■ Power · I/O Cable, Connectors

[Standard connector]

Product category		Accessories
Power·I/O cable length (selected with actuator model)	RCON-EC connection specification (ACR) selection	
0	No	Power · I/O connector (1-1871940-6)
	Yes	—
1 ~ 9	No	Power · I/O cable (CB-EC-PWBIO□□□-RB)

[4-way connector]

Product category		Accessories
Power·I/O cable length (selected with actuator model)	RCON-EC connection specification (ACR) selection	
S1 ~ S9	No	Power · I/O cable (CB-EC2-PWBIO□□□-RB)

Basic Controller Specifications

Specification item			Specification content
Number of controlled axes			1 axis
Power supply voltage			24VDC ±10%
Power capacity (includes control power 0.3A)		CRP3/CGD3/CTC3	Rated 1.4A, max. 2.8A (with RCON connected: rated 1.1A, max. 2.5A)
		CRP5/CGD5/CTC5	Rated 1.8A, max. 3.6A (with RCON connected: rated 1.5A, max. 3.3A)
Brake release power supply			24VDC ±10%, 200mA (only for external brake release)
Generated heat (at duty ratio 100%)			5W
Inrush current (Note 1)			8.5A
Momentary power failure resistance			Max. 500μs
Motor size		CRP3/CGD3/CTC3	Hollow AC servo motor ϕ30
		CRP5/CGD5/CTC5	Hollow AC servo motor ϕ42
Motor rated current		CRP3/CGD3/CTC3	1.7A
		CRP5/CGD5/CTC5	1.6A
Motor control system			Weak field-magnet vector control
Supported encoders			Incremental
SIO			RS-485 1ch (Modbus protocol compliant)
PIO	Input specification	No. of inputs	3 points (forward, backward, alarm clear)
		Input voltage	24VDC ±10%
		Input current	5mA per circuit
		Leakage current	Max. 1mA/1 point
		Isolation method	Non-isolated
	Output specification	No. of outputs	3 points (forward complete, backward complete, alarm)
		Output voltage	24VDC ±10%
		Output current	50mA/1 point
		Residual voltage	2V or less
		Isolation method	Non-isolated
Data setting, input method			PC teaching software, touch panel teaching pendant, Wireless Teaching Controller, Wired Teaching Controller
Data retention memory			Position and parameters are saved in non-volatile memory (no limit to number of rewrites)
LED display	Controller status display		Servo ON (green light ON) / Alarm (red light ON) / Initializing when power comes ON (orange light ON) / Minor failure alarm (green/red alternately blinking) / Teaching mode: Stop from teaching (red light ON) / Servo OFF (light OFF) / Automatic servo OFF (green blinking)
	Wireless status display		Initializing wireless hardware, without wireless connection, or connecting from TP board (light OFF) Connecting through wireless (green blinking) / Wireless hardware error (red blinking) / Initializing when power comes ON (orange light ON)
Predictive maintenance/preventative maintenance			When the number of movements or operation distance has exceeded the set value or an overload warning occurs, the LED (right side) blinks alternately green and red. *Only when configured in advance
Ambient operating temperature			0 ~ 40°C
Ambient operating humidity			5%RH ~ 85%RH (no condensation or freezing)
Operating ambience			No corrosive gas or excessive dust
Insulation resistance			500VDC 10MΩ
Electric shock protection mechanism			Class 1 basic insulation
Cooling method			Natural air cooling

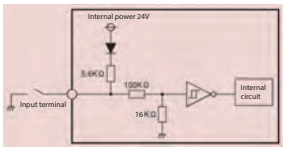
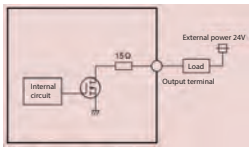
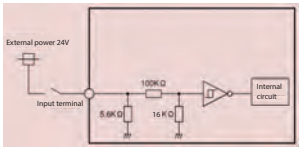
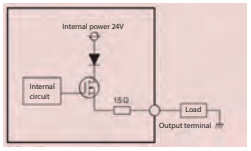
(Note 1) Inrush current flows for approximately 5ms after the power is input. (At 40°C) Inrush current value differs depending on the impedance on the power line.

Solenoid Valve Method

ELECYLINDER products normally use a double solenoid method. Change parameter No. 9 ("solenoid valve type selection") to use the single solenoid method.

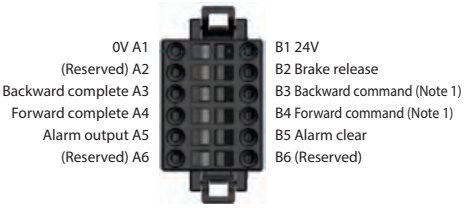
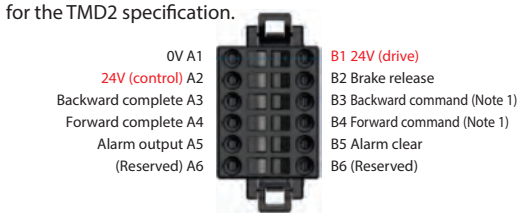
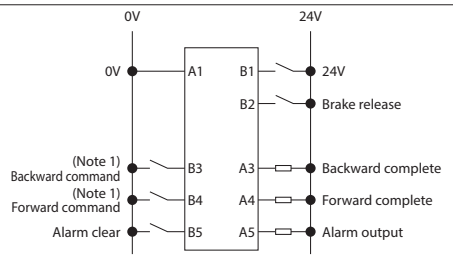
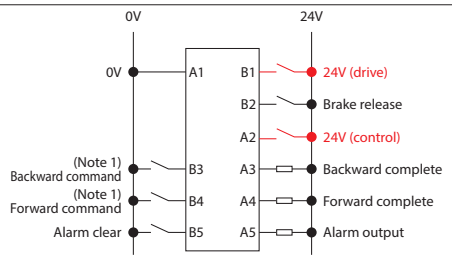
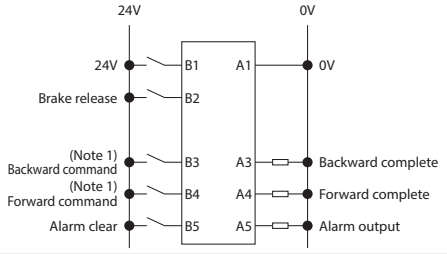
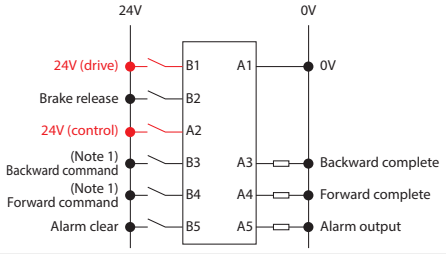
<Caution>
Operation cannot be performed using the single solenoid method when operating connected to RCON-EC.

I/O (Input/Output) Specifications

I/O		Input		Output	
Specifications		Input voltage	24VDC ±10%	Load voltage	24VDC ±10%
		Input current	5mA per circuit	Maximum load current	50mA/1 point
		ON/OFF voltage	ON voltage: Min. 18VDC OFF voltage: Max. 6VDC	Residual voltage	2V or less
		Leakage current	Max. 1mA/1 point	Leakage current	Max. 0.1mA/1 point
Isolation method		Non-isolated from external circuit		Non-isolated from external circuit	
I/O logic	NPN				
	PNP				

(Note) Isolation method is non-isolated. When grounding an external device (such as a PLC) connected to ELECYLINDER, use the same ground as ELECYLINDER.

I/O Signal Wiring Diagram

I/O		Standard specification	Split motor and controller power supply specification (option model: TMD2)
Power · I/O connector			Drive power and control power are separate for the TMD2 specification. 
I/O logic	NPN		
	PNP		

(Note 1) Switching to the single solenoid method will change B3 to "forward/backward command" and B4 to "unused."

I/O Signal Table

Power · I/O connector pin assignment			
Pin No.	Connector nameplate name	Signal abbreviation	Function overview
B3 (Note 1)	Backward	ST0	Backward command
B4 (Note 1)	Forward	ST1	Forward command
B5	Alarm clear	RES	Alarm clear
A3	Backward complete	LS0/PE0	Backward complete/push complete
A4	Forward complete	LS1/PE1	Forward complete/push complete
A5	Alarm	*ALM	Alarm detection (b-contact)
B2	Brake release	BKRLS	Brake forced release (for brake equipped specification)
B1 (Note 2)	24V	24V	24V input
A1	0V	0V	0V input
A2 (Note 2)	(24V)	(24V)	24V input

(Note 1) Switching to the single solenoid method will change B3 to "forward/backward" and B4 to "unused."However, the power · I/O connector display will still read "B3: Backward" and "B4: Forward."
(Note 2) B1 is 24V (drive) and A2 is 24V (control) for the split motor and controller power supply specification (TMD2).

Options

Teaching pendant *For detailed specifications, please contact IAI.

Name	Model	Image
Wireless Teaching Controller	TBD-1WL-☐	
Wired Teaching Controller	TBD-1	
Wireless/wired touch panel teaching pendant	TB-03-☐	
Wired/wireless touch panel teaching pendant with power supply unit	TB-03E-☐	

PC teaching software *For detailed specifications, please contact IAI.

Specification	Model	Image
Software only (no connection cable) * Please purchase through your distributor and a download link will be sent to your valid email address.	IA-OS	
With external device communication cable + USB conversion adapter + USB cable * Please purchase through your distributor and a download link will be sent to your valid email address.	IA-OS-C	

24V power supply *For detailed specifications, please contact IAI.

Specification	Model	Image
Without fan	PSA-24	
With fan	PSA-24L	

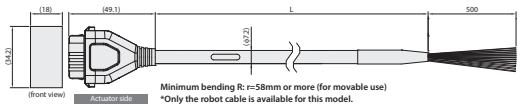
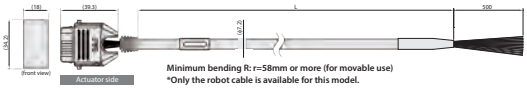
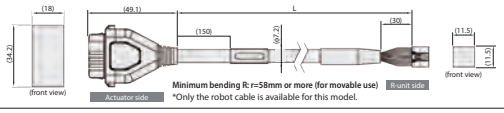
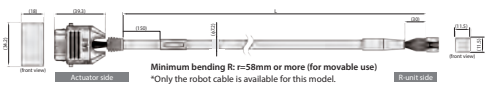
Power capacity calculation "Calculator" software

Just input the model number of the ELECYLINDER to be connected to confirm sufficient units for 24V power.

IAI Calculator Search

Maintenance Parts (Cables)

When placing an order for a replacement cable after purchasing a product, please use the model name shown below.

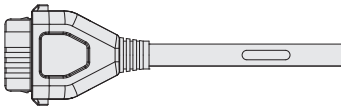
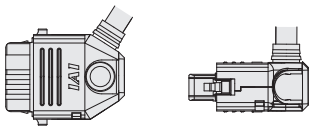
Type	Model	External view
Power · I/O cable (user-wired specification)	CB-EC-PWBIO☐☐☐-RB	
Power · I/O cable (user-wired specification, 4-way connector)	CB-EC2-PWBIO☐☐☐-RB	
Power · I/O cable (RCON-EC connection specification)	CB-REC-PWBIO☐☐☐-RB	
Power · I/O cable (RCON-EC connection specification, 4-way connector)	CB-REC2-PWBIO☐☐☐-RB	

*For assembly of the 4-way connector, see P. 42.

4-way connector cable

This cable allows the ELECYLINDER cable connector direction to be changed to any of 4 directions.
The cable management for the connector is the same as that of the power · I/O cable CB-EC-PWBIO□□□-RB / CB-REC-PWBIO□□□-RB.

Indicate the cable length in □□□
(Ex.) 050=5m

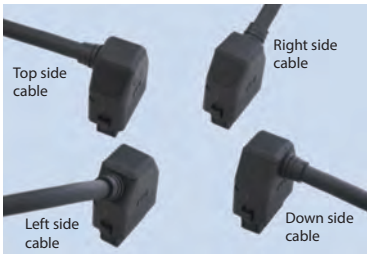
	Standard connector (actuator side)	4-way connector (actuator side)
External view		
User wiring specification	CB-EC-PWBIO□□□-RB	CB-EC**2**-PWBIO□□□-RB
RCON-EC connection specification	CB-REC-PWBIO□□□-RB	CB-REC**2**-PWBIO□□□-RB

■ How to Order

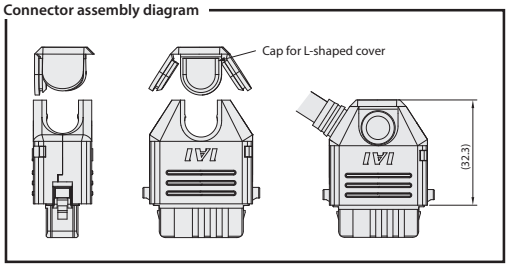
The cable length may be from 1m to 10m long.
The length can be specified in 1m units.

(Ex.) When ordering 4-way connector 3m/10m
Cable length 3m : CB-EC2-PWBIO030-RB
Cable length 10m : CB-EC2-PWBIO100-RB

■ Assembly Method



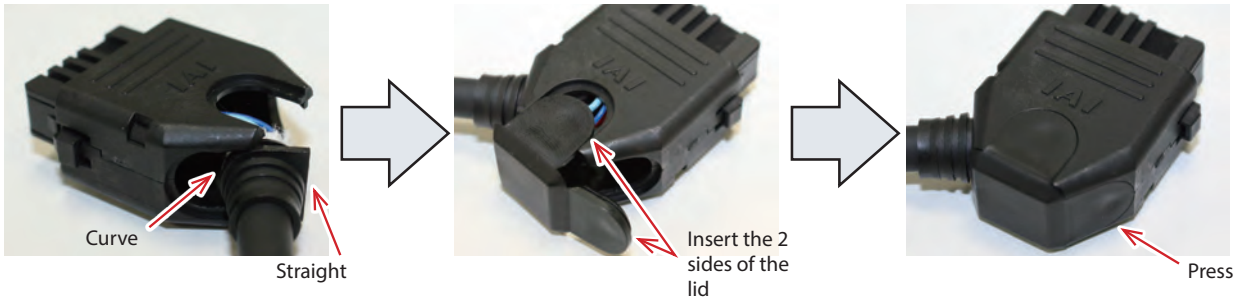
Cable direction can be set to any of 4 directions



(1) Insert while sliding along the groove in the desired direction from the semi-cylindrical curved portion.

(2) Confirm that the cable has been firmly inserted, and then insert the 2 sides of the lid along the groove.

(3) Finally, press the remaining side of the lid.



Catalog No. CE0411-1A (2024AUG)

IAI America, Inc.
USA Headquarters & Western Region : 2690 W. 237th Street, Torrance, CA 90505, USA TEL:+1-310-891-6015
Midwest Branch Office : 110 East State Parkway, Schaumburg, IL 60173, USA TEL:+1-847-908-1400
Southeast Branch Office : 1220 Kennestone Circle, Suite 108, Marietta, GA 30066, USA TEL:+1-678-354-9470
www.intelligentactuator.com

JAPAN Headquarters : 1210 Iharacho, Shimizu-ku, Shizuoka-shi, Shizuoka, 424-0114, JAPAN

IAI (Shanghai) Co., Ltd.
CHINA Headquarters : A8-303, 808 Hongqiao Rd. Shanghai 200030, China
Shenzhen Branch Office : Rm 502, 212 Block, Tairan 4th Rd, Tairan Industry Park, Chegongmiao, Shenzhen 518042, China
Tianjin BranchRm : 2-1105,Hesheng Fortune Square, South side of Beian Bridge, Nanshi Street, Heping Qu, TianJin 300021, China
IAI Industrieroboter GmbH
Ober der Röth 4, D-65824 Schwalbach am Taunus, Germany
IAI Robot (Thailand) Co., Ltd.
825 Phairojkijja Tower 7th Floor, Debaratana Rd., Bangna Nuea, Bangna, Bangkok 10260, Thailand