

ELECYLINDER® teaching
pendant with dedicated
power supply unit

TB-03E/TB-02E



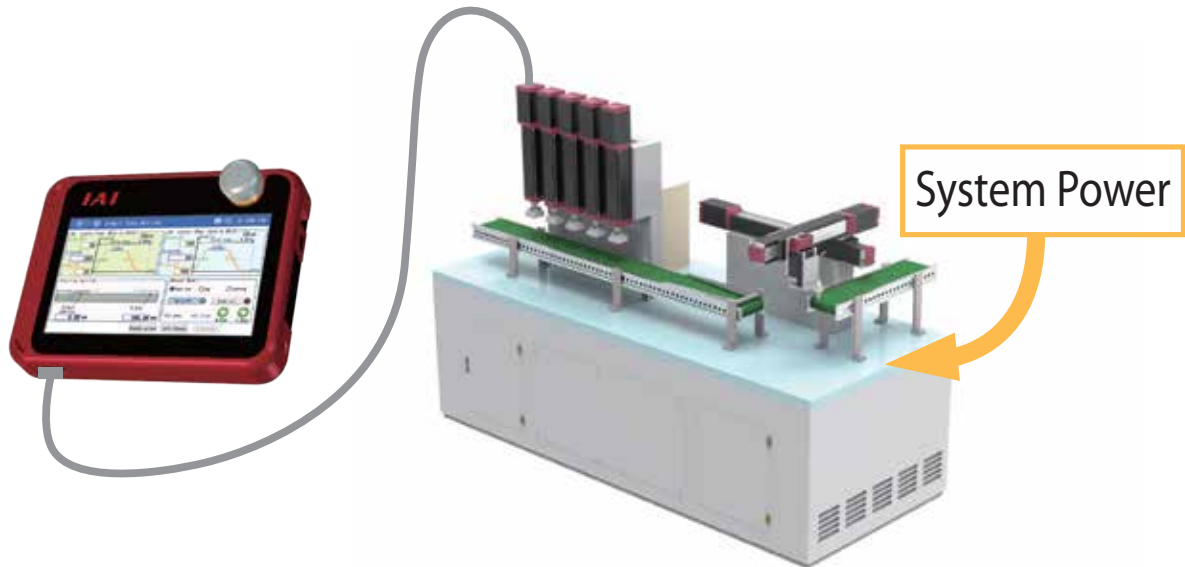
TB-03E



TB-02E

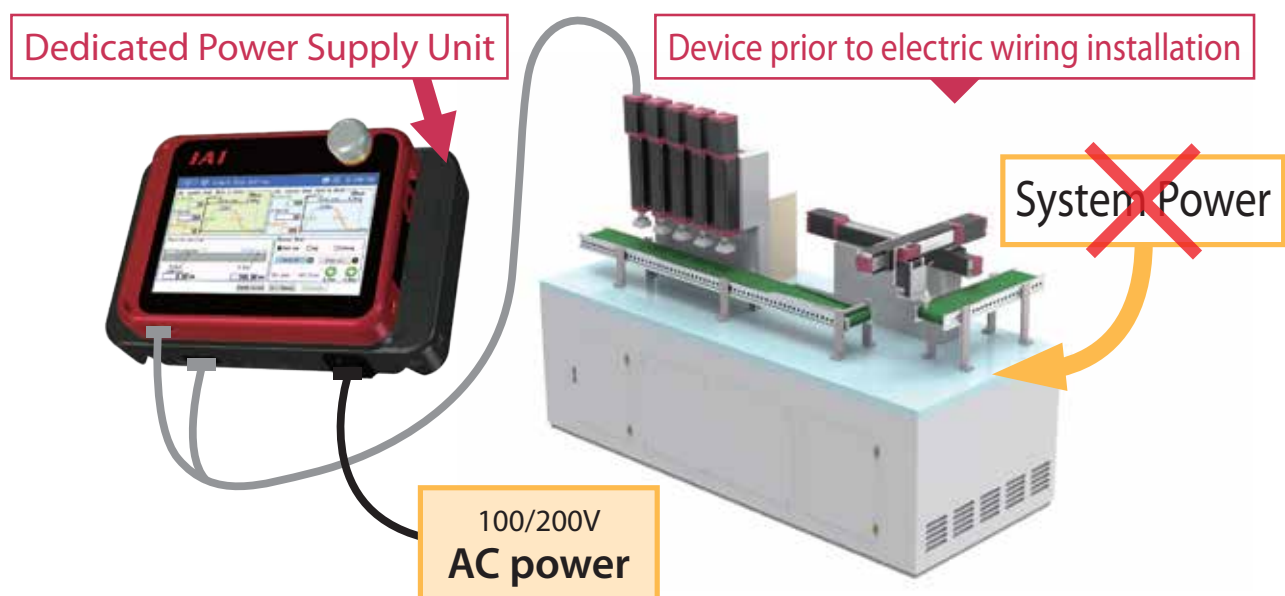
Data setting and trial operation are both possible prior to wiring and installation of the teaching pendant + system power supply unit

Conventionally...



ELECYLINDER trial operation could not be performed if there was no power to the device.

When using a teaching pendant with dedicated power supply unit...



Brake release, trial operation, and data setting are all possible prior to wiring since the teaching pendant has its own power supply unit!

Wireless connection enables configuration and trial operation even in places out of reach.

Wireless connection

(Compatible only with TB-03E)

AVD settings can be configured over a wireless connection.

Position adjustment and AVD settings can be set, and the actuator can be operated even without a cable connection to the ELECYLINDER body.

*Caution: The E-stop switch is only enabled for wired connections. It is disabled for wireless connections. The ELECYLINDER power supply must use a wired connection.



ELECYLINDER units that support wireless operation have different wireless functions depending on which wireless option is selected.
"-WL" = editing only, "-WL2" = editing + operation

Connected axis status monitor

(Compatible only with TB-03E)

Monitor the operating status for up to 16 axes while receiving wireless data from the ELECYLINDER.

Error recovery time also can be shortened by troubleshooting with wireless communication.

*The drive power supply can only be used with 1 axis.

Status monitor screen

Axis name display
This can be changed to a specific name according to the customer's requirements.

Status monitor
Axis status check can be used to see how far the actuator has traveled, for maintenance purposes.

Error status monitor
Alarms and warnings are displayed when generated. Useful for troubleshooting.

Troubleshooting screen

EC-S4S-200	Servo	Travel Cnt.	298,607	Alarm Group	A
S/N A80972946	Cur. pos.	Travel Dist.	57,189mm	Overload alarm	
Selectable Section ok	75,24mm	Overload Lv.	0%		

Simple, graphical support functions

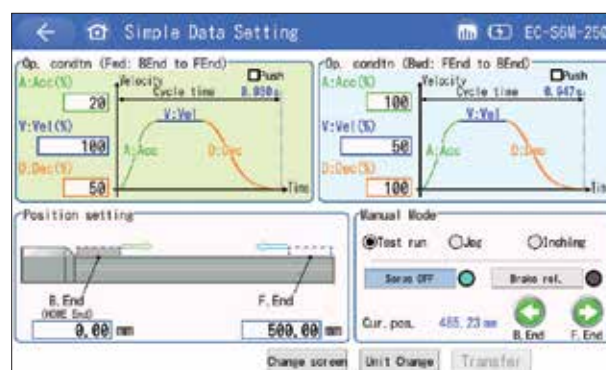
Main menu

Each menu uses icons to make menu selection easier.



Easy data setup

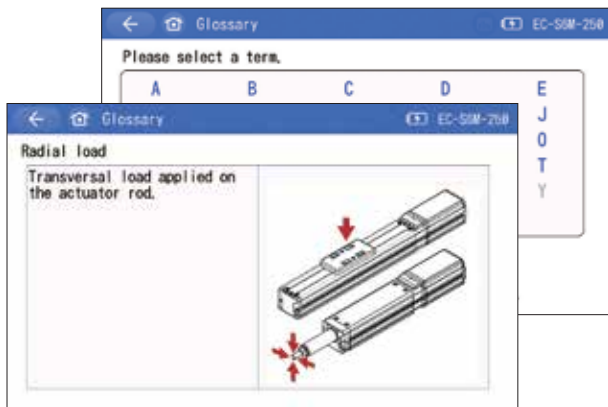
A guide screen is provided so even first-time users can easily set positions while viewing a diagram.



Peace of mind when problems occur! Enhanced troubleshooting functions

Terminology explanation

The glossary provides an explanation of terms used in the general catalog and an explanation of terms related to position controller operation.



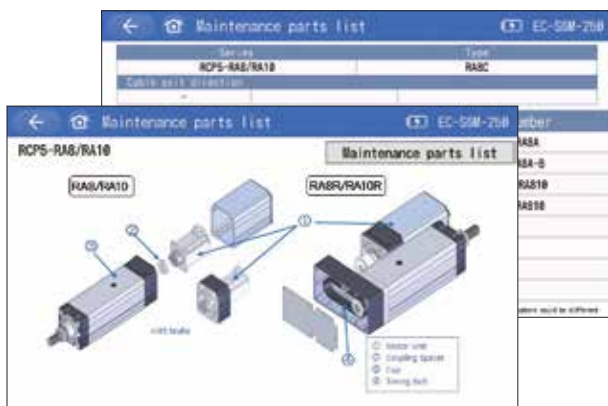
Troubleshooting

Just select YES/NO for the alarm status to navigate the troubleshooting methods.



Maintenance parts list

Enter the actuator model number to check for the model numbers of the maintenance parts.



Many other functions are available!

- **Various functions for easy operation and full support are available**
(1 and 2 are functions only when TB-03 and ELECYLINDER are connected wirelessly.)

1	Wireless connection	Position adjustment and AVD settings can be set from outside the equipment, even without a cable connection to the ELECYLINDER body
2	Connected axis status monitoring	Monitor the operating status and alarms for up to 16 axes while receiving wireless data from the ELECYLINDER
3	Main menu	Use of icons makes it easy to select items on the menu screen
4	Easy data setup	Input the position, speed, acceleration, and deceleration
5	Troubleshooting	Displays detailed alarm information and how to resolve the problem when an alarm is generated
6	Maintenance parts list	Displays a list of replacement maintenance parts for both regular maintenance and failure
7	Startup screen settings	Allows you to hide the guide function icon in the main menu and select the screen to be displayed first at startup
8	Glossary	Explains terms used in the general catalog and explains terms related to position controller operation
9	Simple program function	Enables simple program operations such as continuous position operations and setting stop times
10	Teaching update	Customers can upgrade the firmware version with ease
11	Screenshot	Saves screenshots as a bmp file to an SD card by pressing and holding the lower right corner of the screen
12	Large screen display	The customer interface is a 7-inch full-color touch screen, which makes the letters and buttons easier to see for easy operation
13	Supports multiple languages	Supports Japanese, English, and Chinese

TB-03E

ELECYLINDER® teaching pendant with dedicated power supply unit



Model

TB

Series

03E

Type

SCN

Controller connection Cable

Teaching pendant AC adapter

Power supply unit cable

03E

With actuator drive power unit for ELECYLINDER

SCN

No cable

(Blank)

For Japan/North America/Thailand/Mexico

C

For China

E

For Europe

K

For Korea

N

Without AC adapter

0

No cable

1

100VAC power cable (2m)

2

200VAC power cable (2m)

*EC power + TB-03 connection composite cable (CB-ADTB-PWTB050), which also works as a controller connection, is supplied.

AC adapter/cable

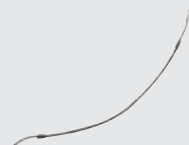
Name	TB-03E					
AC adapter	Japan/North America/Thailand/Mexico China/Europe/Korea			None		
Power cable	None	100VAC	200VAC	None	100VAC	200VAC

Options

● Strap: STR-1



● Spiral cable: SIC-1



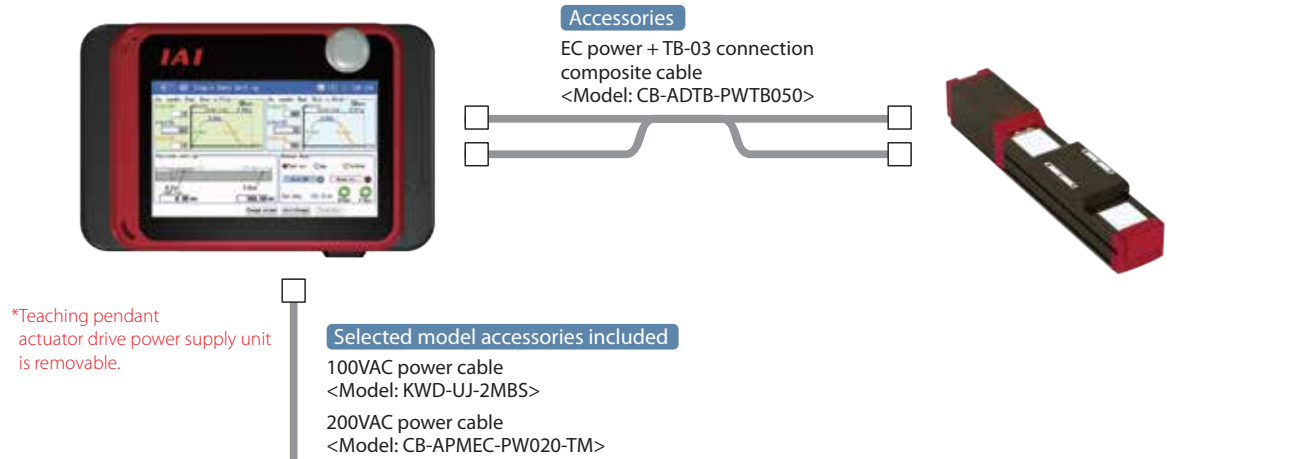
● Grip belt: GRP-2



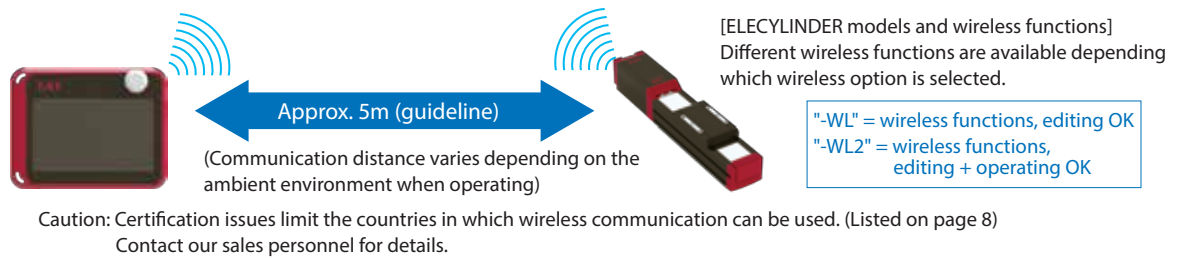
■ Maintenance parts
Battery unit: AB-7



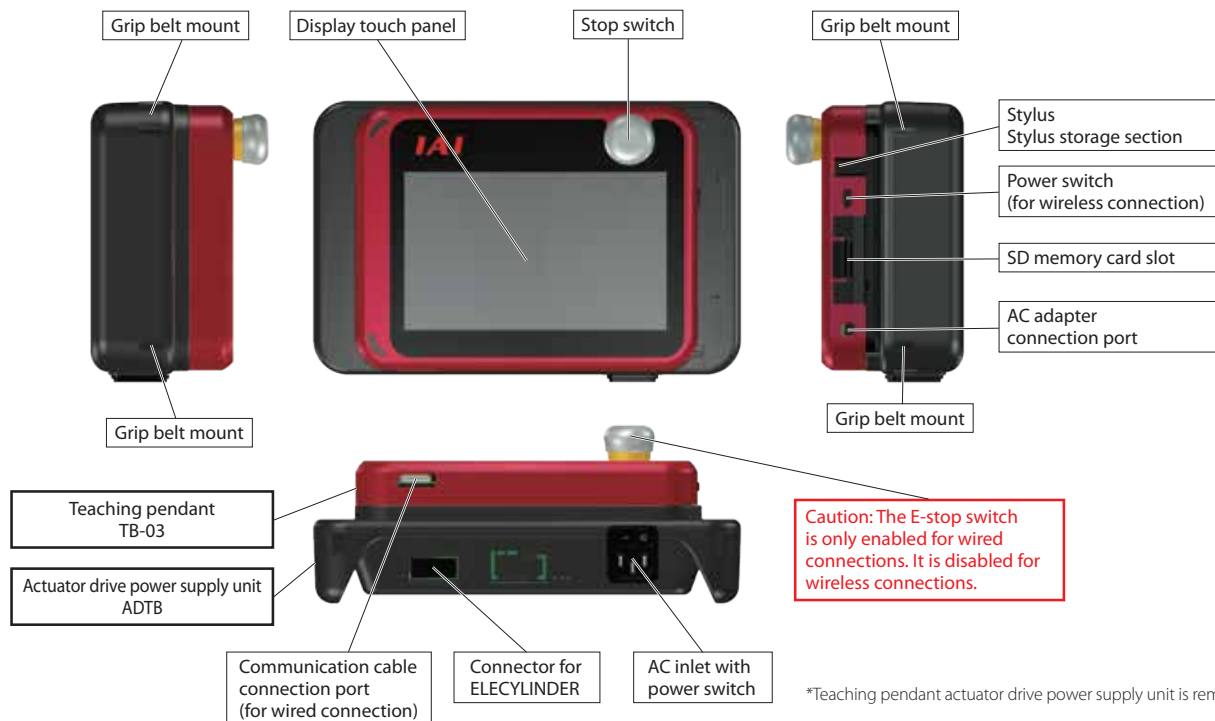
Connection



- If the "WL" or "WL2" option is selected with the ELECYLINDER, then wireless connection is possible.
*There must be wired power supplied to the ELECYLINDER.



Components



Power supply unit specifications

Rated input voltage		Single-phase 100 to 230VAC ±10%
Input current	(Specified in a 25°C operating environment and rated input/output conditions)	1.4A _{typ} (100VAC) 0.6A _{typ} (230VAC)
Frequency range		50/60Hz ±5%
Power capacity	(Specified in a 25°C operating environment and rated input/output conditions)	141VA (100VAC) 145VA (230VAC)
Output voltage		24VDC ± 10%
Load current	Standard Dust-proof/splash-proof High rigidity	Energy saving setting disabled: 3.5A rated/4.2A max Energy saving setting enabled: 2.2A rated
	Mini	2.0A max.
Output capacity		Energy saving setting disabled: 84W rated/98.4W max Energy saving setting enabled: 52.8W rated
Ambient operating temperature		0 to 40°C (no condensation or freezing)
Ambient operating humidity		5% RH ~ 85% RH (no condensation or freezing)
Ambient storage temperature		-20 to 70°C
Environment		Avoid corrosive gas and excessive dust
Elevation		1000m or less above sea level
Vibration resistance		Frequency 10-57Hz / Amplitude: 0.075mm Frequency 57-150Hz / Acceleration 9.8m/s ² XYZ directions: Sweep time: 10 minutes, Number of sweeps: 10 times
Packaging drop test		Drop height: 800mm 1 corner, 3 edges, 6 faces
Overvoltage category		II
Contamination		2
Electric shock protection class		II
Ingress protection		IP30
Mass		Approx. 740g
Cooling method		Natural air cooling

TB-03 body specifications

Power input voltage range	24VDC $\pm 10\%$ [supplied from controller]
	5.9VDC (5.7 to 6.3V) [supplied from AC adapter]
Power consumption	3.6W or less
Consumption current	150mA (supplied from controller)
Ambient operating temperature	0 to 40°C (no condensation or freezing)
Ambient operating humidity	5% RH ~ 85% RH (no condensation or freezing)
Ambient storage temperature	-20 to 40°C
Vibration resistance	10 to 57Hz Amplitude 0.075mm
Ingress protection	IPX0
Mass	670g (body) + approx. 285g (dedicated cable)
LCD	7" TFT color WVGA (800 x 480)
External memory	SD/SDHC memory card interfaces mounted (1G to 32G)
Charging method	Wired connection with dedicated AC adapter/controller
Language support	Japanese/English/Chinese

Wireless function

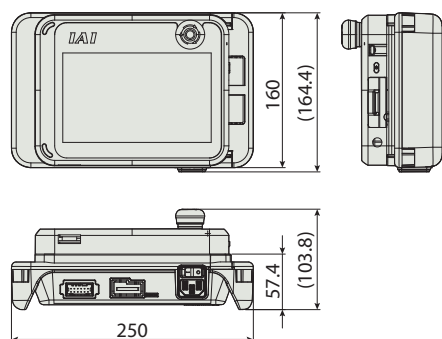
Wireless connection	Bluetooth 4.2 Class 2
Wireless function	Data setter/monitor function/axis operation
Operation command/stop command	Position movement/jog/inching
Max. number of connectable axes	16-axis
Operation	Battery (AB-7) operation
Wireless operating time	Max. 4 hours (battery driven)
Battery life	Cycle durability 300 times

AC Adapter Common Specifications

Power input voltage range	Single-phase 100 to 240VAC $\pm 10\%$
Power supply current	0.4A max.
Consumption current	2.8A max.
Output voltage	5.9VDC (5.7 to 6.3V)
Charging time	Approx. 3 hours
Cable length	1500 ± 100 mm

External dimensions

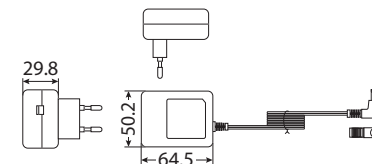
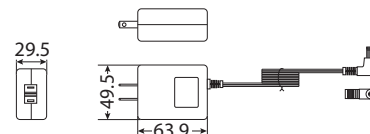
● Body



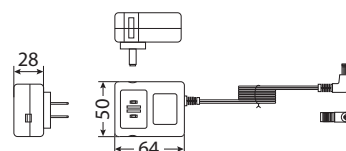
● AC adapter

Japan/North America/Thailand/
Mexico: UN318-5928

For Europe: UNE318-5928
For Korea: UNR318-5928



For China: UNZ318-5928



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

2D
CAD

3D
CAD

Cautions on axis-operations using wireless connection

This device (V2.30 or later) is capable of operating the ELECYLINDER having option code: WL2 by wireless connection. For the operation, make sure to confirm the safety according to the following items.

- When connected wirelessly, **the stop switch of the main unit does not function.**
Prepare a device or circuit that stops the operation in case of emergency.



- In ELECYLINDER operations using wireless connection, there is a function to perform operation tests (moving to the forward and backward ends, jog and inching). However, **it is not for automatic operations.** Configure a system of the equipment according to risks of the operating environment.
- **Make sure to conduct a risk assessment according to the requirements of the standard required for the built-in equipment.** Dangerous operations, such that the machine has to be stopped automatically when control signals are not received including communication interruptions, are not allowed.
- A stop motion of axis operations via wireless connection cannot be used as the safety function of EN ISO 13849-1: 2015. It does not conform to the Safety Category B and 1 to 4 of EN ISO 13849-1: 2015.

Cautions on the use of wireless connections

- This product uses 2.4GHz band wave called an ISM band (radio frequency 2,400 to 2483.5MHz, wireless output +5dBm).
- Since this frequency band is used for various devices such as microwaves and wireless LANs, wireless communications may be interrupted due to radio disturbances.
- The use of this product is permitted in the following countries (regions) only. In other countries (regions), it is necessary to acquire a certification in conformity with the concerned country (region).

Japan, U.S.A., Canada, EU countries, China, South Korea, Thailand

TB-02E

ELECYLINDER® teaching pendant with dedicated power supply unit



Model

TB

Series

02E

Type

C

Controller connection Cable

Stop switch color

Power supply unit cable

02E

With actuator drive power unit for ELECYLINDER

C

For ELECYLINDER position controller*

(Blank)

Gray

SWR

Red

0

No cable

1

100VAC power cable (2m)

2

200VAC power cable (2m)

*In addition to the ELECYLINDER/position controller connection cable (CB-TB1-C002), an EC power supply cable (CB-ADTB-PW050-RB) is included.

AC adapter/cable

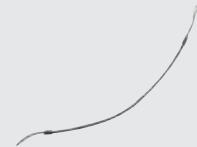
Name	TB-02E		
Power cable	None	100VAC	200VAC

Options

● Strap: STR-1



● Spiral cable: SIC-1



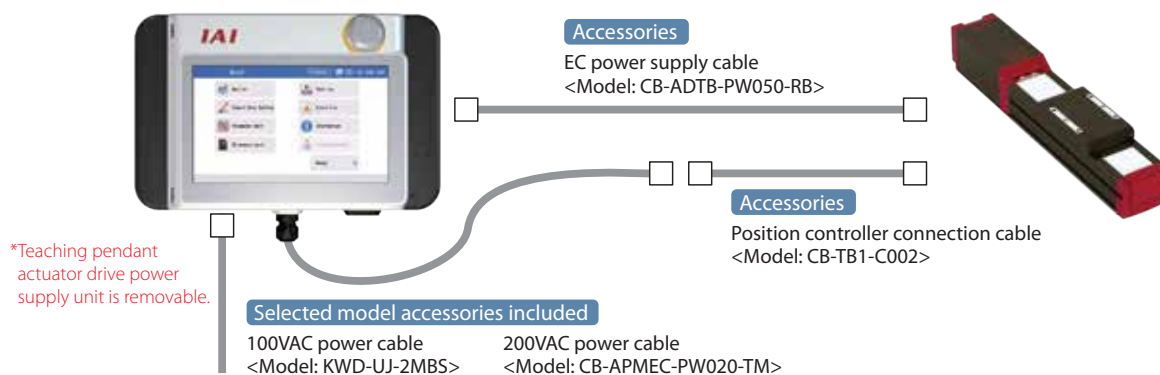
● Grip belt: GRP-2



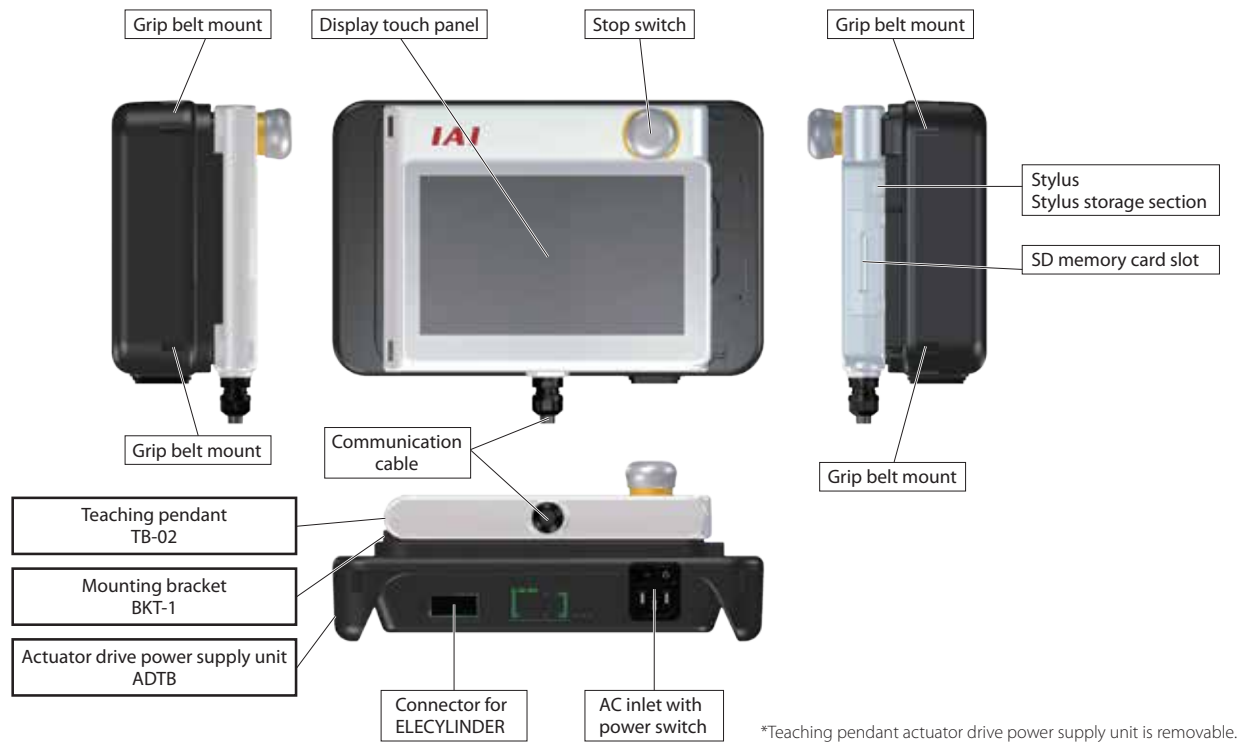
■ Maintenance parts
Mounting bracket: BKT-1



Connection



Components



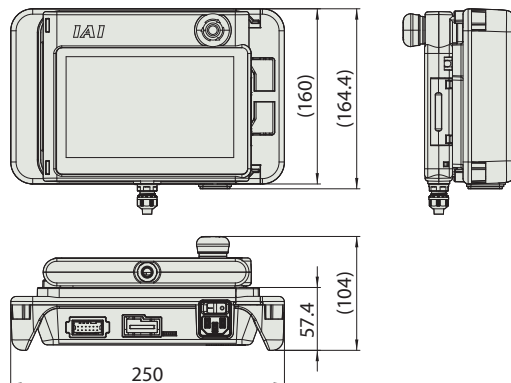
Power supply unit specifications

Refer to P. 7. Same as TB-03E.

TB-02 body specifications

Rated voltage	24VDC
Power consumption	3.6W or less (150mA or less)
Ambient operating temperature	0 to 40°C
Ambient operating humidity	5% RH ~ 85% RH (non-condensing)
Ingress Protection	IP20
Overseas standard	CE Marking
Mass	470g (TB-02 body) + 330g (5m cable)
Cable length	5m (standard cable is included and fixed to the body)

External dimensions



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



ADTB

Teaching Pendant Actuator Drive Power Supply Unit



Model

ADTB

Series	Compatible actuators	Connection cable type	Cable length	Power supply unit cable	TB-02 mounting bracket
EC	ELECYLINDER				
N	No cable	0	No cable	0	No accessories
EC (Note 1)	EC power connection cable	5	5m (Standard)	1	100VAC power cable (2m)
ECT (Note 2)	EC power + TB-03 composite connection cable	10 (Note 3)	10m	2	200VAC power cable (2m)

(Note 1) EC power cable (CB-ADTB-PW050-RB or CB-ADTB-PW100-RB) is included.
 (Note 2) EC power + TB-03 connection composite cable (CB-ADTB-PWTB050 or CB-ADTB-PWTB100) is included. Select only for the TB-03.
 (Note 3) Not available for the TB-02.

(Note) A dedicated bracket is required if mounting to TB-02.

AC adapter/cable

● Body + cable set

Name	ADTB														
Attached cable	None (Model: N)			EC power cable (Model: EC)						EC power + TB-03 composite connection cable (Model: ECT)					
Accessory cable length	-			5m			10m			5m			10m		
Power supply unit cable	None	100V	200V	None	100V	200V	None	100V	200V	None	100V	200V	None	100V	200V

● Connection cable

Name	EC power connection cable						EC power + TB-03 composite connection cable					
Model	CB-ADTB-PW□□□□-RB						CB-ADTB-PWTB□□□□-RB					
Connection cable length	5m			10m			5m			10m		

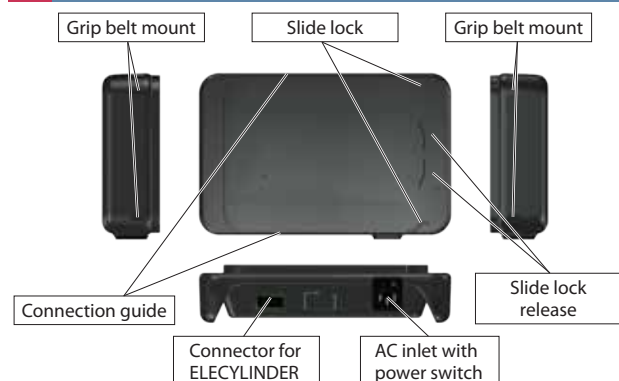
● Power supply unit cable

Name	100VAC power cable (2m)	200VAC power cable (2m)
Model	KWD-UJ-2MBS	CB-APMEC-PW020-TM

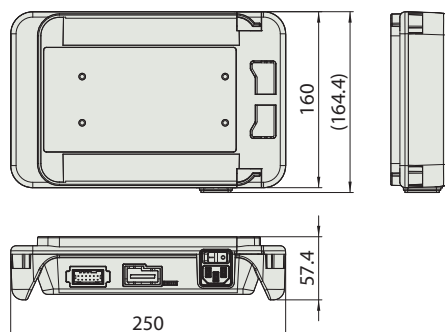
● Options

Name	TB-02 mounting bracket	Grip belt Separately sold options
Model	BKT-1	GRP-2

Components



External dimensions



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The information contained in this product brochure may change without prior notice due to product improvements.

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