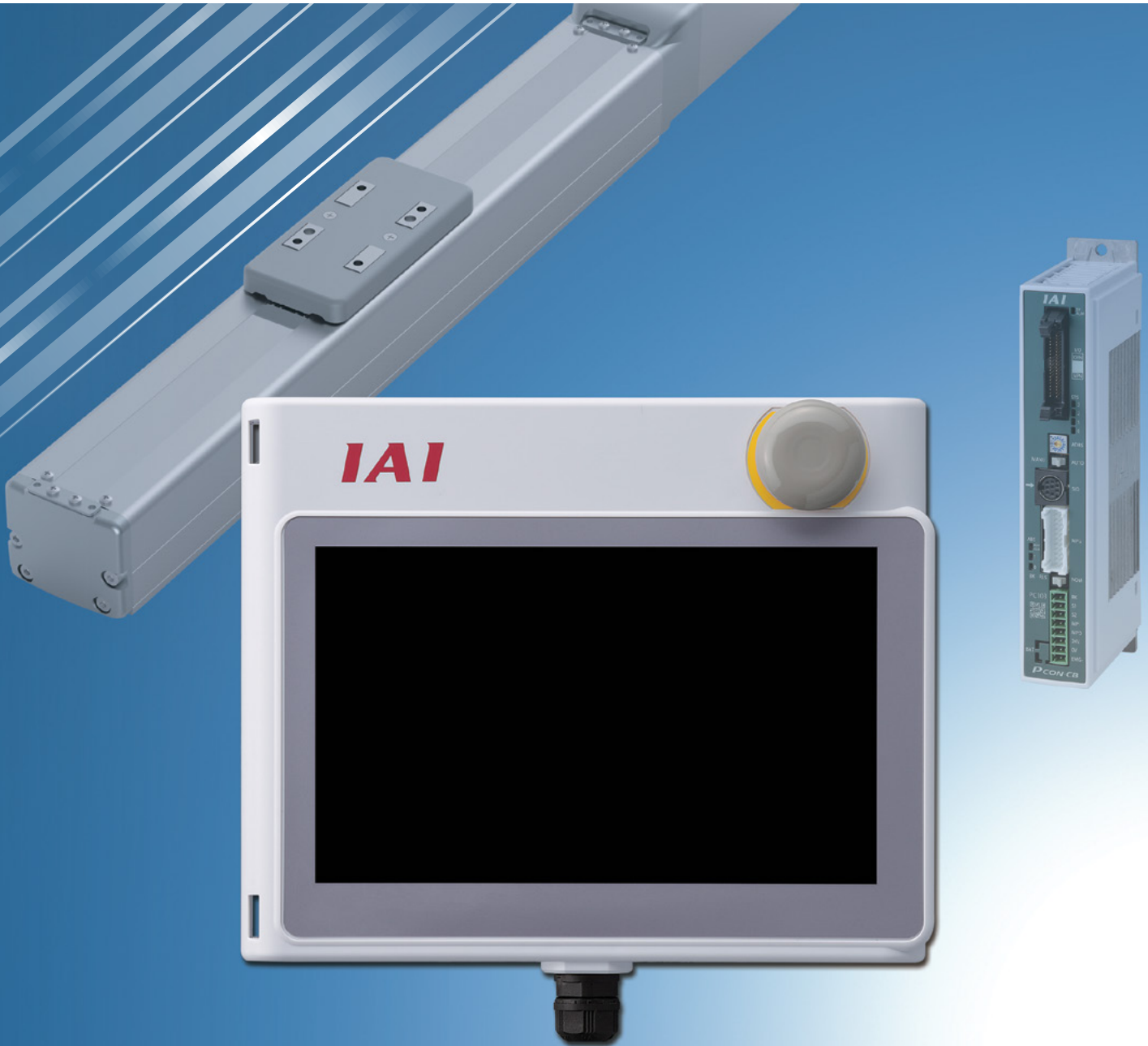


# Touch Panel Teaching Pendant **TB-02**



With the 7-inch touch panel equipped, it is easier to see, and with new functions equipped, it is easier to use. Anyone can operate it easily.



## Features

- 1 By equipping a 7" full color touch panel, the buttons and letters became easier to see, and operability improved.
- 2 Ones used for program controllers have functions equivalent to the previous model. Ones used for the position controllers are equipped with new functions such as a guide function, and it is easy to set each model with the interactive method.
- 3 It can be used for both position controllers and program controllers. (Excludes models prior to RCP2 for the CON series and models prior to SEL-E/G)
- 4 For the standard specification, a thinness of 25mm has been realized.
- 5 Saving program/data into SD memory card.
- 6 Screen shot function convenient for procedure manual creation and recording conditions has been equipped.



Pressing and holding the bottom right section of the screen allows you to take screen shots.

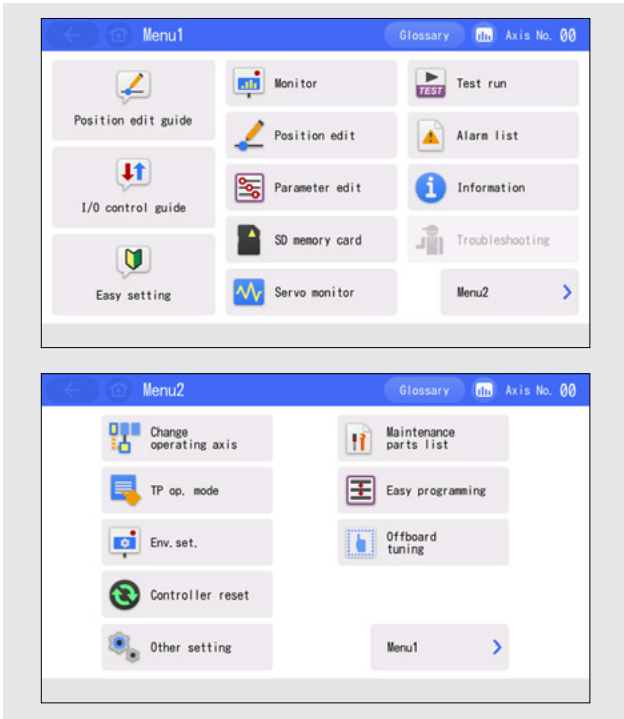
## Various new functions for easy operation and enhanced support functions (1~13 are functions for position controllers)

1	Main Menu	A menu screen that is easy to select visually with the use of icons.
2	Position Editing Guide	A function that guides through position data setting method using an interactive method.
3	I/O Control Guide	A function that guides through the I/O operation method of the position controller using an interactive method.
4	Simple Program Setting	A function that the operation method, position, and speed can be input using an interactive method.
5	Trouble Shooting	A function that displays detailed alarm information when trouble occurs and the steps to deal with the trouble using an interactive method.
6	Maintenance Parts List	A function that displays the time for regular maintenance and the maintenance parts list for parts exchange at the time of malfunction.
7	Pulse-train Control Setting	A function that makes input easy by putting together the setting of pulse-train control related parameters on a special screen.
8	Glossary of Terms	A function that displays the explanation of terms in the catalog and terms related to position controller operation.
9	Gateway Setting/Monitoring	A function for setting and monitoring the gateway unit in a gateway system for MCON/MSEP-C/RCP6S.
10	Simple Program Function	A function for performing easy program operation such as repeating position and setting stopping time.
11	Off-board Tuning	A function for calculating the setting of the optimal control parameter (each type of gain) and cycle time by inputting the operation conditions.
12	Servo Monitoring	A monitoring function to check the actual operation condition with displays of waveforms.
13	Startup Screen Setting	A function for selecting the startup screen and hiding the guide function icon of the main menu.
14	Teaching Update	A function that lets you update software.
15	Screen shot	A function for saving a bmp file of the screen shot into SD card by pressing and holding the bottom right section of the screen.
16	Large Monitor	By equipping a 7" full color touch panel, the buttons and letters became easier to see, and operability improved.
17	Multi-language Compatible	Compatible with Japanese, English, and Chinese.

# New Functions

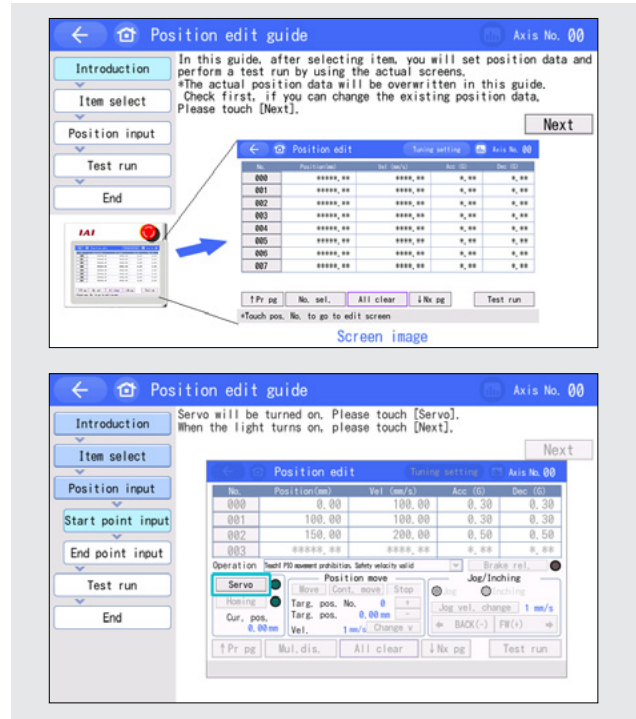
## 1 Main Menu

By using an icon for each menu, we made menu selection easier.



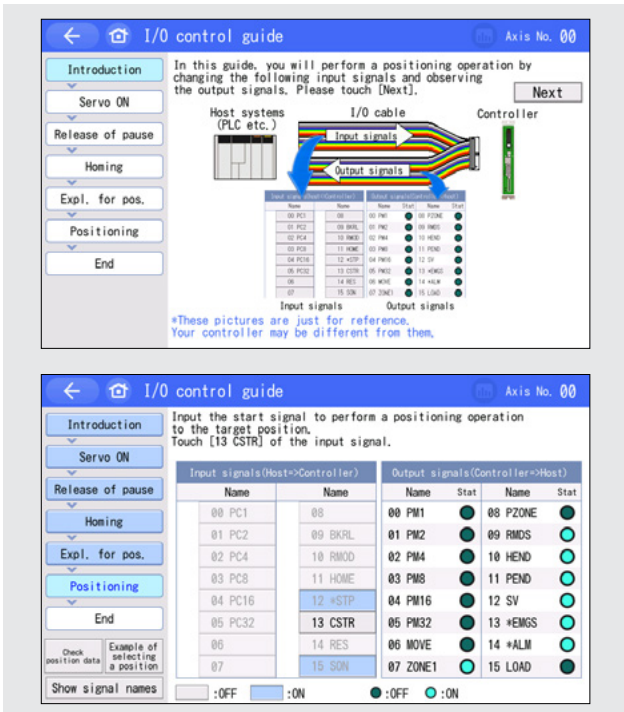
## 2 Position Editing Guide

A function that guides through position data setting method using an interactive method.



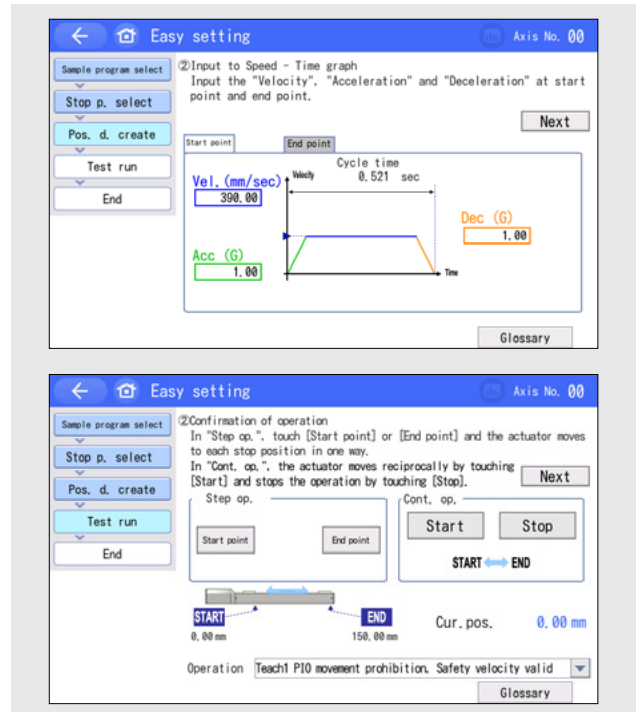
## 3 I/O Control Guide

A function that guides through the I/O operation method of the position controller using an interactive method.



## 4 Simple Program Setting

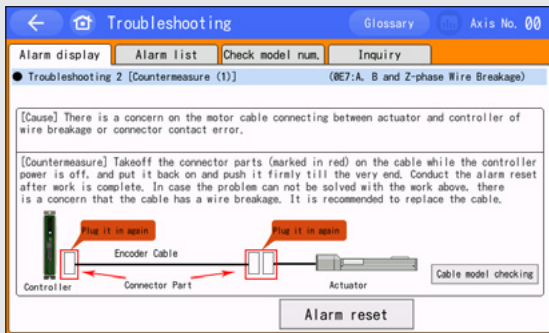
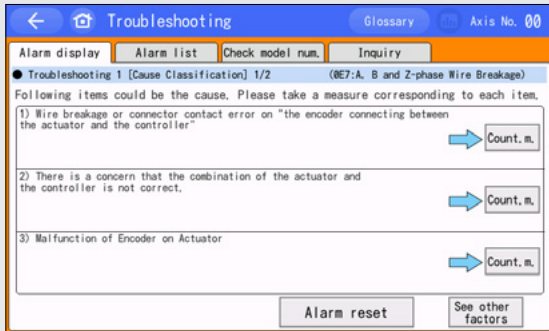
This is a guide screen that allows easy position setting for even those operating for the first time.



# New Functions

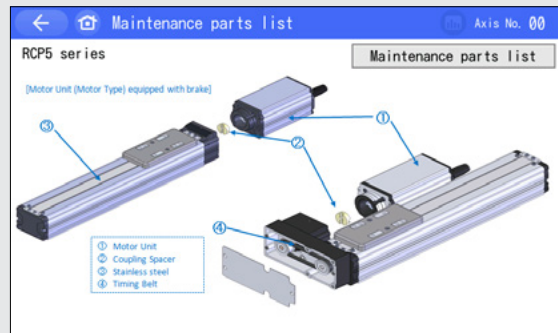
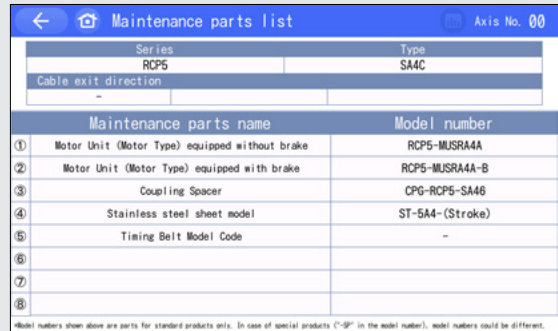
## 5 Trouble Shooting

Simply selecting YES/NO for trouble circumstances allows it to guide through the steps for dealing with the problem.



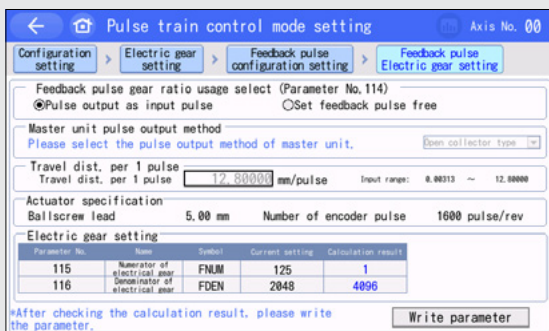
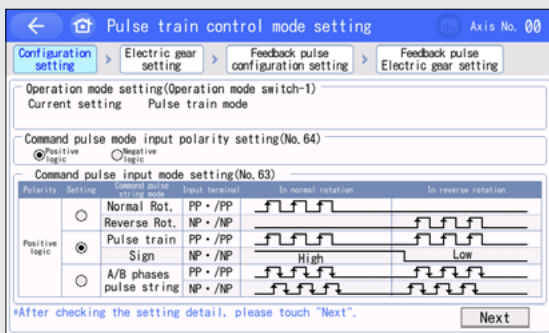
## 6 Maintenance Parts List

The maintenance parts list can be checked by inputting the model.



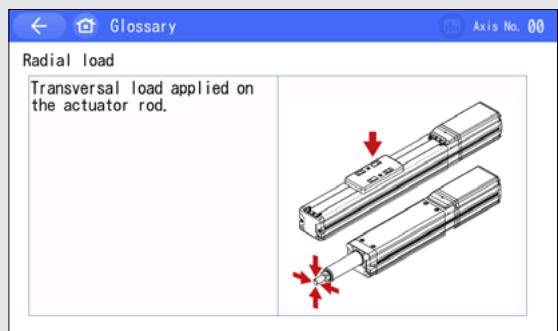
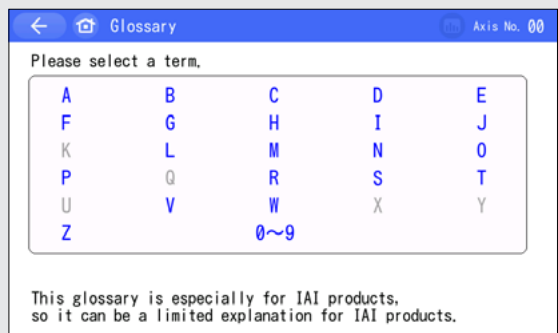
## 7 Pulse-train Control Setting

A function that makes input easy by putting the setting of pulse-train control related parameters on a special screen.



## 8 Explanation of Terms

A function that displays the explanation of terms in the catalog and terms related to position controller operation.



## 9 Gateway Setting/Monitoring

A function for setting and monitoring the gateway unit for MCON/MSEP-C/RCP6S.

**Network Setting** Axis No. 00

Network Type: EtherNet/IP

Address: [ ]

Baudrate(bps): Auto, 156k, 625k, 2.5M, 5M, 10M

IP Address: [0].[0].[0].[0]

Subnet Mask: [0].[0].[0].[0]

Default Gateway: [0].[0].[0].[0]

Next

**Each axis setting** Special parameters Axis No. 00

Number of axis sett. 6

Axis	Simple	Posit1	Full	Posit2	Positioner 3	SEP I/O
0	Valid axis					
1	Valid axis					
2		Valid axis				
3		Valid axis				
4			Valid axis			
5			Valid axis			
6						
7						

IN : 80 byte  
OUT : 80 byte

Transfer to Gateway Setting example

## 10 Simple Program Function

A function for performing easy program operation such as repeating position and setting stopping time.

**Easy programming** Axis No. 00

No.	Position(mm)	Vel (mm/s)	Acc (G)	Dec (G)
000	0.00	100.00	0.30	0.30
001	0.00	390.00	1.00	1.00
002	150.00	390.00	1.00	1.00
003	****. **	****. **	*. **	*. **

Operation Teach1 P10 movement prohibition. Safety velocity valid Brake rel.

Servo Easy programming Start Clear Example

Homing 2 5 6

Cur. pos. 13.86 mm

R(Repeat) Stop time T1 [0.0]s T2 [0.0]s T3 [0.0]s T4 [0.0]s T5 [0.0]s

Program ex. count 0 Remaining

1 Pr pg No. sel. All clear Inx pg

\*Touch pos. No. to go to edit screen

**Easy programming** Axis No. 00

e.g. 1) Move to position No.1 ⇒ Pause for "T1" seconds  
⇒ Move to position No.2 Execute this operation and finish

1 T1 2

e.g. 2) Move to position No.3 ⇒ Move to position  
Execute this operation and finish

3 4 R Program ex. count 0

e.g. 3) Move to position No.6 ⇒ Move to position No.5  
⇒ Pause for "T2"seconds Execute this operation for 50 times and finish

6 5 T2 R Program ex. count 50

## 11 Off-board Tuning

A function for calculating the setting of the optimal gain and cycle time by inputting the operation conditions.

**Offboard tuning** Axis No. 00

Cycle time: Posit. time(s) 0.590, Cycle time(s) (include pause time) 0.590, Load factor(%) 6.718

Gain: Servo gain No. 5, Position feedforward gain 0, Vel. loop proportional gain 35, Vel. loop integral gain 215, Torque filter constant 0, Current control width No. 4

Graph

Transfer parameter: Gain set No. to transfer to 00 01 02 03 Transfer

Calculated gain parameter will be transferred to selected parameter set No.

**Cycle time calculation** Axis No. 01

Vel (mm/s) Dist. (mm)

Scale Reset

Graph showing velocity and distance over time.

## 12 Servo Monitor

It is possible to display the graphs of the current position of the actuator, speed, electric current value variation, etc.

**Servo monitor** Axis No. 01

Sampling period set. 1 msec ⇒ Max. continuous monitoring time 00h 00m 01s 536ms

In case you want to modify sampling period, please change the user parameter No. 113. Ex. scr.

**Servo monitor** Axis No. 00

Scale Reset Current disp. setting Current(mA) Ratio(%)

Motor rated cur. 409mA

Channel setting Set

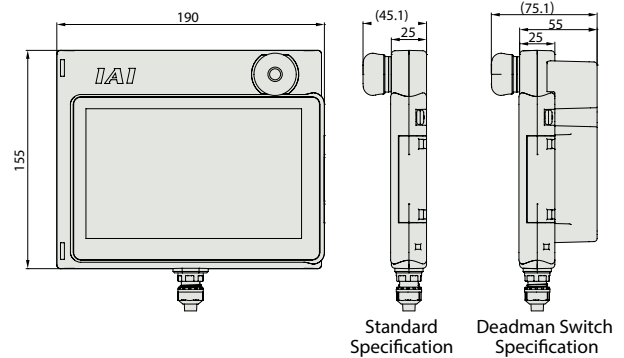
- CH1 Current position
- CH2 Current vel.
- CH3 Instruction current
- CH4 Deflection
- CH5 (mA)
- CH6 (%)
- CH7 (mm)
- CH8 (Pls/s)

Graph showing current position, speed, and deflection over time.

## Specifications

Rated voltage	24VDC
Power consumption	3.6W or less (150mA or less)
Ambient operating temp.	0 ~ 40°C
Ambient operating humidity	20 ~ 80%RH (Non-condensing)
Environmental resistance	IP20
Overseas standard	CE
Mass	470g (TB-02 box only) + 330g (5m cable)
	600g (TB-02D box only) + 330g (5m cable)
Cable length	5m (Standard cable is fixed to the box)

## External Dimensions



## Models

The teaching pendant is compatible with every controller on P. 6, but please select the cable according to the controller.

\*The recommended color of the emergency stop switch is gray when the controller is a standard specification, and is red (model: -SWR) when the controller is a safety category compliant specification. (Note) Please contact us if you are using XSEL-J/K/JX/KX.

### • Teaching Pendant + Cable as a Set

Type	Model Number	Specification	Attached Cable	
			For Position Controller	For Program Controller
Models common to position and program controllers	TB-02-SC	Standard specification (Gray stop switch)	①CB-TB1-C002	②CB-TB1-X002 + ③CB-SEL-SJS002
	TB-02-SC-SWR	Standard specification (Red stop switch)		
	TB-02D-SC	Deadman switch specification (Gray stop switch)		
	TB-02D-SC-SWR	Deadman switch specification (Red stop switch)		
Models dedicated to position controllers	TB-02-C	Standard specification (Gray stop switch)	①CB-TB1-C002	
	TB-02-C-SWR	Standard specification (Red stop switch)		
	TB-02D-C	Deadman switch specification (Gray stop switch)		
	TB-02D-C-SWR	Deadman switch specification (Red stop switch)		
Models dedicated to program controllers	TB-02-S	Standard specification (Gray stop switch)	②CB-TB1-X002 + ③CB-SEL-SJS002	
	TB-02-S-SWR	Standard specification (Red stop switch)		
	TB-02D-S	Deadman switch specification (Gray stop switch)		
	TB-02D-S-SWR	Deadman switch specification (Red stop switch)		

### • Teaching Pendant Only (No Cable Attached)

Type	Model Number	Specification
Models common to position and program controllers	TB-02-SCN	Standard specification (Gray stop switch)
	TB-02-SCN-SWR	Standard specification (Red stop switch)
	TB-02D-SCN	Deadman switch specification (Gray stop switch)
	TB-02D-SCN-SWR	Deadman switch specification (Red stop switch)

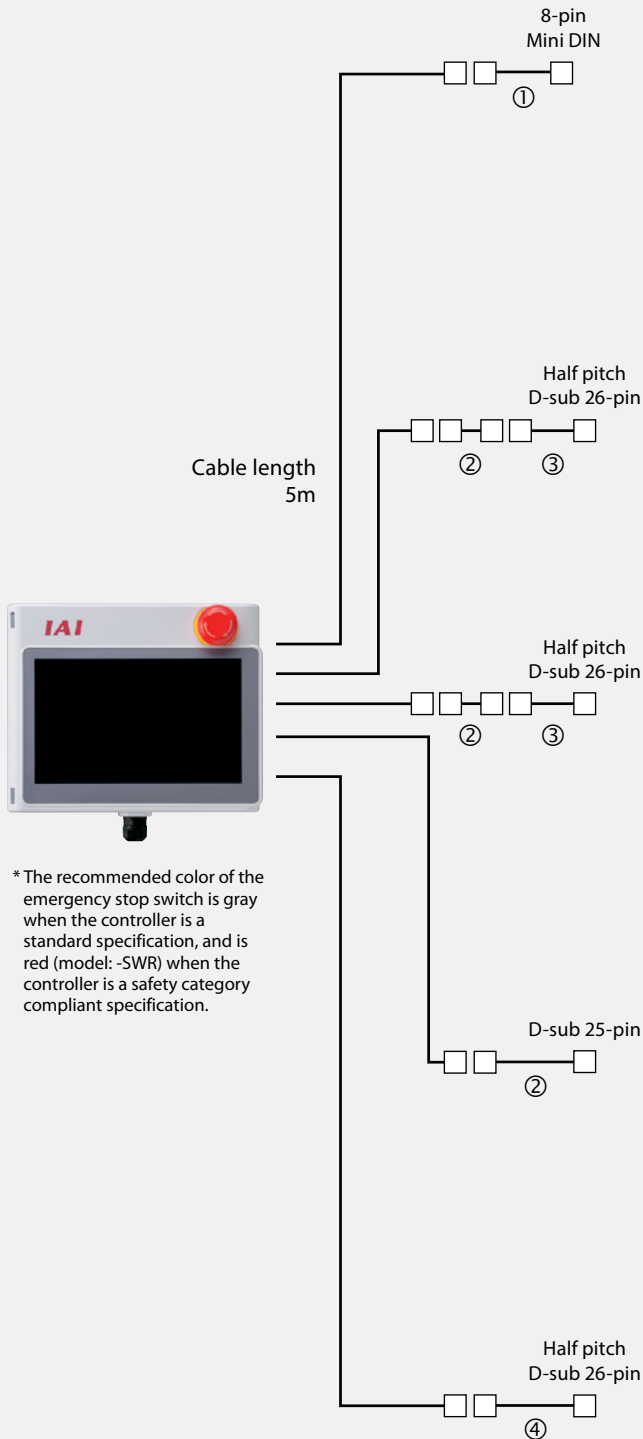
### • Individual Cable Only

Type	Model Number
Position controller connection cable	①CB-TB1-C002
Program controller connection cable	②CB-TB1-X002
	③CB-SEL-SJS002 (Adapter cable)*
TP adapter connection cable	④CB-TB1-GC002

\* Use with CB-TB1-X002 when connecting to ASEL, PSEL, SSEL, and MSEL.

### • Options

Name	Option Code	Description
Strap	STR-1	Connected to the lower left part of the box.
Grip belt	GRP-1	Safety belt to hold the box by left hand.
Spiral cord	SIC-1	A cord which connects the box and the furnished stylus.



\* The recommended color of the emergency stop switch is gray when the controller is a standard specification, and is red (model: -SWR) when the controller is a safety category compliant specification.

**Position Controllers**

PSEP	PCON-CB/CFB/CGB/CGFB
ASEP	ACON-CB/CGB
DSEP	DCON-CB/CGB
ERC3	SCON-CB/CGB *2
ERC2	SCON-CAL/CGAL
RCP6S *1	PCON-CYB/PLB/POB
MSEP-C/LC	ACON-CYB/PLB/POB
MCON-C/CG	DCON-CYB/PLB/POB
MSCON	

\* A gateway unit or a PLC connection unit is necessary to operate RCP6S.  
 \*\* SCON-CB/CGB-□F is not compatible. The wattage goes in □.

**Program controllers**

- ASEL
- PSEL
- SSEL
- MSEL

**Safety category compliant**

IA-LB-TG

TP adapter for program controllers  
IA-LB-TGS

0.5m

Program controller

**Program controllers**

- XSEL-P/Q/PX/QX/  
PCT/QCT
- XSEL-R/S/RX/SX/  
RXD8/SXD8

Tabletop robot  
TTA

(Note) Please contact us if you are using XSEL-J/K/JX/KX.

**Safety category compliant**

RCB-LB-TG

TP adapter for position controllers  
RCB-LB-TGS

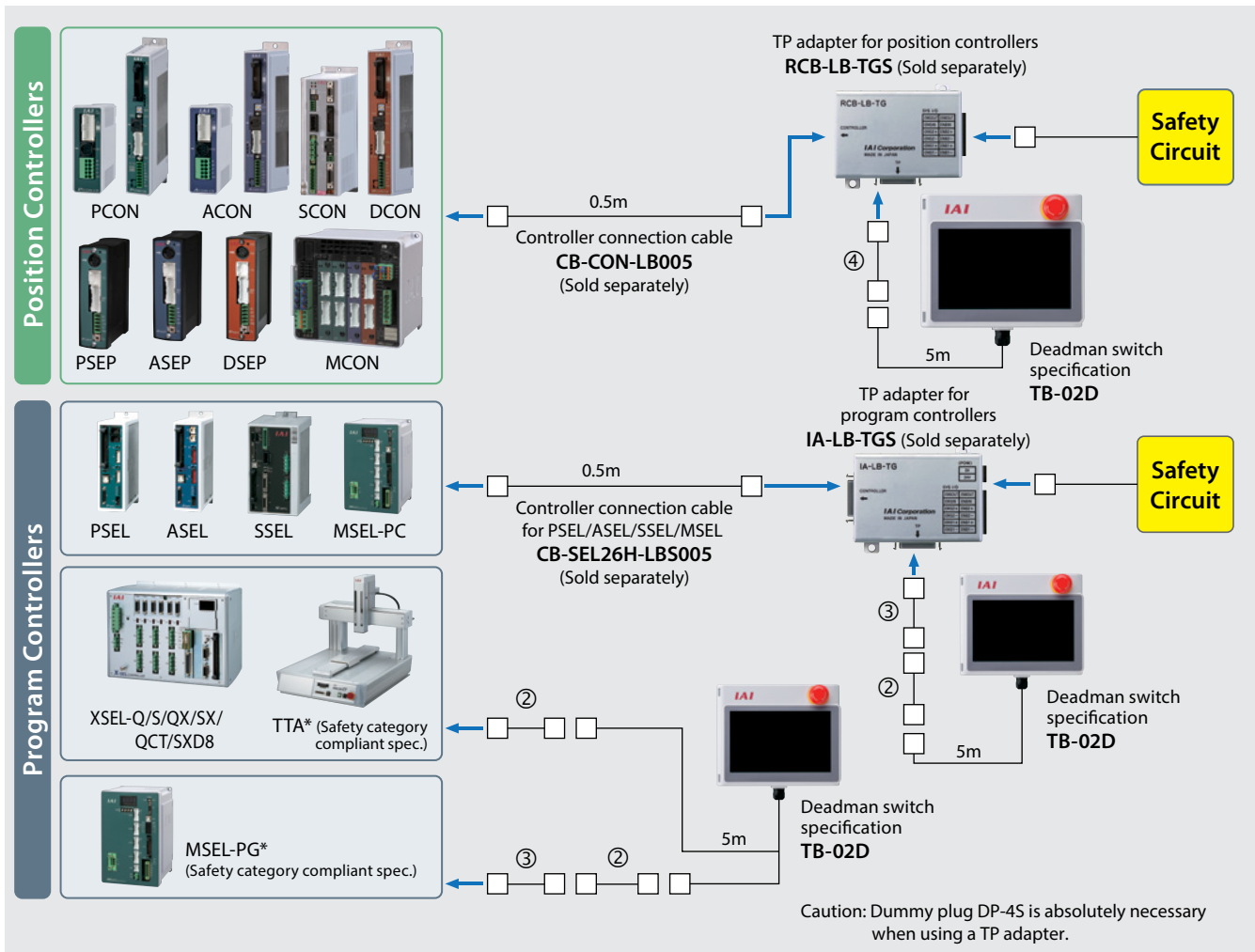
0.5m

Position controller

The version of the PC software that is compatible differs with each controller. Please contact us for details:  
[www.intelligentactuator.com](http://www.intelligentactuator.com)

**Safety Category Compliant**

- Compatibility with safety category will be constituted as below. Compatible with safety categories B to 4\*. \* Up to category 3 for MSEL and TTA.



\* Please refer to P. 5 for more information about ①~④.

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