

Touch Panel Teaching TB-01/TB-01D/TB-01DR

Applicable for Position Controller First Step Guide Fourth Edition

Thank you for purchasing our product.

Make sure to read the Safety Guide and detailed Instruction Manual as well as this First Step Guide to ensure correct use.

This Instruction Manual is original.



Warning : Read the instruction manual carefully and follow the instruction manual when handling this equipment.
Please download the user's manual from our website.
You can download it free of charge. User registration is required for first time users.
URL: www.iai-robot.co.jp/data_d/CAD_MANUAL/
Keep a printout of the introduction manual near the equipment in which this product is installed so that it can be checked at all times, or display it on your computer, tablet terminal, etc. so that you can check it immediately.
If you need a bound copy of the instruction manual, order it from the nearest sales office listed in the First Step Guide or at the end of the instruction manual. It will be provided for a fee.

- Using or copying all or part of this Instruction Manual without permission is prohibited.
- The company names, names of products and trademarks of each company shown in the sentences are registered trademarks.

Product Check

This product is comprised of the following parts if it is of standard configuration.

If you find any fault in the contained model or any missing parts, contact us or our distributor.

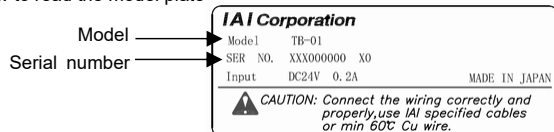
1. Parts (The option is excluded.)

No.	Part Name	Model	Remarks
1	Main Body	Refer to "How to read the model plate", "How to read the model No."	
Accessories			
2	Cable for Position Controller	CB-TB1-C050	When model C or SC is selected
3	Cable for Program Controller	CB-TB1-X050	When model S or SJ or SC is selected
4	Adaptor cable	CB-SEL-SJS002	When model SJ or SC is selected
5	Touch Pen		Provided with the main body
6	First Step Guide	ME0327, ME0328	
7	Safety Guide	M0194	

2. Instruction manuals related to this product.

No.	Name	Manual No.
1	Touch panel teaching TB-01, TB-01D, TB-01DR Applicable for Position Controller Instruction Manual	ME0324
2	Instruction Manual for the actuator with integrated ERC2 controller <PIO type>	ME0158
3	Instruction Manual for the actuator with integrated ERC2 controller <SIO type>	ME0159
4	Instruction Manual for the actuator with integrated ERC3 controller	ME0297
5	RCP6S Fieldbus communication Instruction Manual	ME0349
6	ACON-CA/DCON-CA Controller Instruction Manual	ME0326
7	ACON-CB/CGB, DCON-CB/CGB Controller Instruction Manual	ME0343
8	ACON-CYB/PLB/POB, DCON-CYB/PLB/POB Controller Instruction Manual	ME0354
9	PCON-CA/CFA Controller Instruction Manual	ME0289
10	PCON-CB/CGB/CFB/CGFB Controller Instruction Manual	ME0342
11	PCON-CYB/PLB/POB Controller Instruction Manual	ME0353
12	SCON-CA/CAL/CGAL Controller Instruction Manual	ME0243
13	SCON-CB/CGB Controller Instruction Manual	ME0340
14	ROBONET Instruction Manual	ME0208
15	ASEP/PSEP/DSEP Controller Instruction Manual	ME0267
16	PMEC/AMEC Controller Instruction Manual	ME0245
17	MSEP Controller Instruction Manual	ME0299
18	MCON-C/CG Controller Instruction Manual	ME0341
19	MSCON Controller Instruction Manual	ME0306

3. How to read the model plate



4. How to read the model No.

TB-01-N-ENG

<Model number>		<Option>	
TB-01	: Standard type	Not specified	: Screens are displayed in Japanese. (Display can be changed to other languages)
TB-01D	: With deadman switch type	ENG	: Screens are displayed in English. (Display can be changed to other languages)
TB-01DR	: Type with deadman switch attached on the right	CHI	: Screens are displayed in Chinese. (Display can be changed to other languages) (No Chinese display in Ver. 3.00 and later)
<Cable specifications>			
N	: No cable (only main unit)		
S	: With Cable for Program Controller		
C	: With Cable for Position Controller		
SJ	: With Cable for Program Controller and Conversion Cable		
SC	: With Cable for Program Controller, Conversion Cable and Cable for Position Controller		

* In TB-01D and TB-01DR, you cannot select any items except for "N: no cable."

Supported Models

This First Step Guide is for the position controller.

For details on handling the program controller (XSEL-J/K/JX/KX/KT/KET/P/Q/PX/QX/R/S/RX/SX/RXD/SXD/RA/SA/RAX/SAX/RAXD/SAXD, TT, TTA, ASEL, PSEL, SSEL, MSEL), refer to the separate "Touch Panel Teaching TB-01, TB-01D, TB-01DR Applicable for Program Controller First Step Guide".

List of Supported Models

Controller model	Support started version	Controller model	Support started version
ERC2 (*1)	V2.00	ASEP	V2.00
ERC3	V2.00	PSEP	V2.00
ACON	V2.00 (*2,5,6)	DSEP	V2.00
DCON	V2.10 (*5,6)	MSEP	V2.00 (*3)
PCON	V2.00 (*5,6)	AMEC	V2.00
SCON	V2.00 (*4,5,6)	PMEC	V2.00
MCON	V2.40	RCP6S	V2.40
MSCON	V2.00	RACON, RPCON	V2.00

*1 Only ERC2 models with 4904 or higher stamped on the Serial No. sticker can be connected.

Information on sticker		
I/O type	Not supported	Supported
NP	NP U5 M	NP T1 4904, 4905, 6302
PN	PN U3 M	PN T1 4904, 4905, 6302

Note that touch-panel teaching pendants can be connected to ERC2 controllers of SE type via a SIO converter regardless of their version.

- *2 ACON-CA is supported from V2.10.
- *3 The MSEP-C/LC high-power output compatible driver and RCD compatible are supported from V2.20.
- *4 SCON-CAL/CGAL are supported from V2.30.
- *5 It is applicable for ACON-CB, DCON-CB and SCON-CB since V2.40 and PCON-CB since V2.60.
- *6 It is applicable for ACON-CYB/POB/PLB, DCON-CYB/POB/PLB and PCON-CYB/POB/PLB since V2.70.

Confirming the Specifications

1. Basic Specification

Item		TB-01/TB-01D/TB-01DR specifications
Cabinet color		Black
Display colors		65536 colors (16-bit color)
Backlight method		White LED backlight
Touch panel screen		3.5-inch TFT color LCD QVGA
Touch detection method		4-wire resistive film method
Hardware key		When operating with teaching: Operation stops with STOP key or ESC key When inputting data: ESC key, BS key, numeric keypad and return keys are enabled
External memory		SD/SDHC memory card interface mounted (1G to 8G) (Toshiba recommended)
Environmental resistance		IP40 or equivalent
Size		169.5mm (H) x 210mm (W) x 88.6mm (D)
Weight (excluding cable)		TB-01: approx. 507g, TB-01D/TB-01DR: approx. 539g
Cable length		5m (standard)
Wall hanging hook		Hook with M8 hexagon socket bolt
Touch pen		Φ5×100mm
Strap		6mm wide, folded length 190mm (optional part)
Function	Language selection	Japanese/English/Chinese (No Chinese display in Ver. 3.00 and later)
	Touch sound	ON/OFF, Select volume from Loud, medium or small
	Monitor	Current position, current speed, I/O state Alarm code, alarm message, alarm details code, alarm occurrence time Automatic transition to monitor screen at startup function (only when SEP or MEC controller is connected)
		Target position, speed, acceleration, deceleration, pressing force, threshold, positioning width, zone ±, acceleration/deceleration mode, incremental, gain set, stop mode, No vibration
		Target position, speed, pressing force pressing width, acceleration, deceleration, change position, change speed, energy saving
		Stop position, speed, pressing force, pressing width, acceleration, deceleration, energy saving
	Common items	Current position import function using jog, inching or direct teaching Alarm function using input value error
	Movement functions	Set position movement, jog movement, inching movement
	Parameter edit	CON related controller parameters SEP related controller parameters, MEC related controller parameters
	Version information	Controller version, series/type name, PCB type, serial No., controller manufacturing information
	Alarm history	Past 16 alarms or 32 alarms are displayed (depending on the destination controller)
	Data save	Data save/read onto external SD card is supported (position data, parameters, alarm list)
	Display adjustment	Contrast and backlight brightness can be adjusted
	Time setting	Time can be set with real-time clock (Backed up with CR2032 button battery)
	Smart tuning function	Smart tuning function
Communication	Maintenance information	Cumulative move times, cumulative travel distance (Supported with SCON-CA/CAL/CGAL/PCON-CA/CFA/ACON-CA/DCON-CA/MSEP/MSCON/ERC3)
	Communication standards	RS-485 compliant
	Communication conditions	Transmission speed: 115,200bps 8-bit data bit, no parity, 1-bit stop bit
	Protocol	Modbus RTU
	Connector	Mini DIN
Number of connected controllers		Maximum 16 units (CON related controllers, SEP related controllers) Maximum 1 unit (MEC related controllers: AMEC, PMEC) Maximum 4 units (MEC related controllers: ERC3 MEC mode) (Different related controllers cannot be used together)
Fonts used		Japanese and English: Japanese bitmap font made by Rim Corporation, Co., Ltd.: (Fonts: Gothic)

2. Environmental Specifications

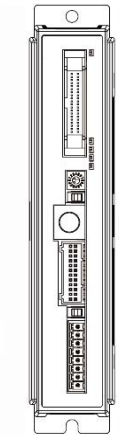
Item	TB-01/TB-01D/TB-01DR Specifications
Rated voltage	24V DC
Operating voltage range	21.6 to 26.4V DC
Power consumption	3.6W or less (150mA or less)
Working ambient temperature	0 to 50°C
Working ambient humidity	20 to 85%RH (with no dew condensation)
Storage ambient temperature	-20 to 60°C
Storage ambient humidity	10 to 85%RH (with no dew condensation)
LCD life	20,000 hours (atmospheric temperature 25°C)
Vibration resistance	10 to 55Hz (one minute cycle) Double amplitude 0.75mm, ten minutes in X, Y, Z directions
Impact resistance	147m/s ² 11msec four times in X, Y and Z directions
Environmental resistance	IP40 (in initial state)

Wiring Diagram

Turn the controller power OFF before connecting or disconnecting the touch panel teaching TB-01, TB-01D or TB-1DR.

Controller

Touch panel teaching
TB-01, TB-01D, TB-01DR

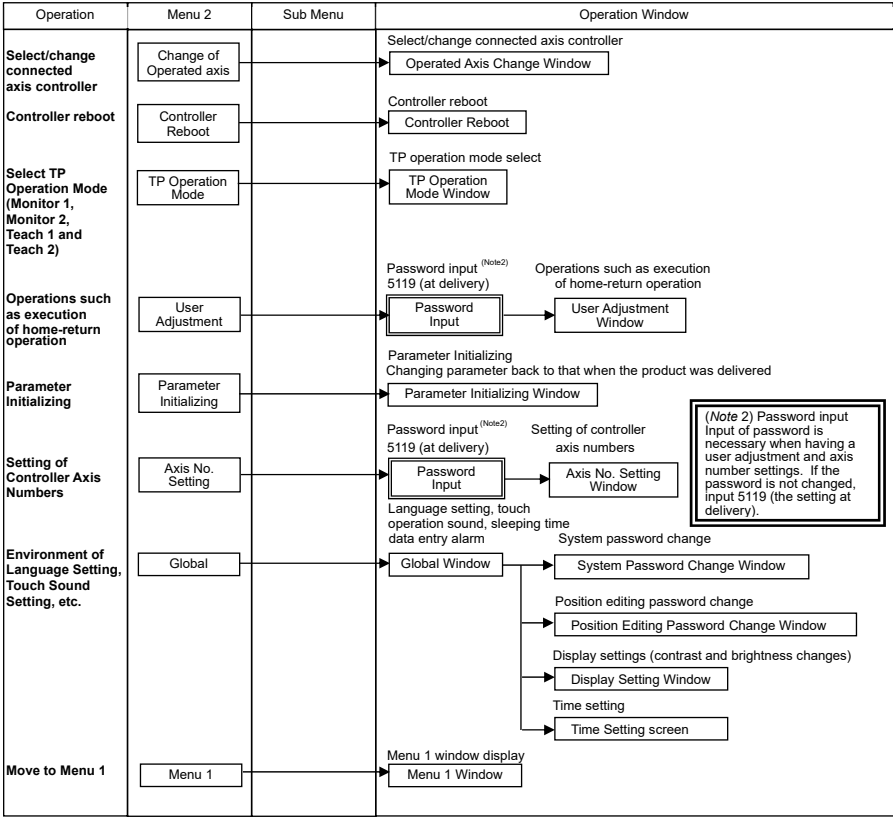


Position controller cable
CB-TB1-C050

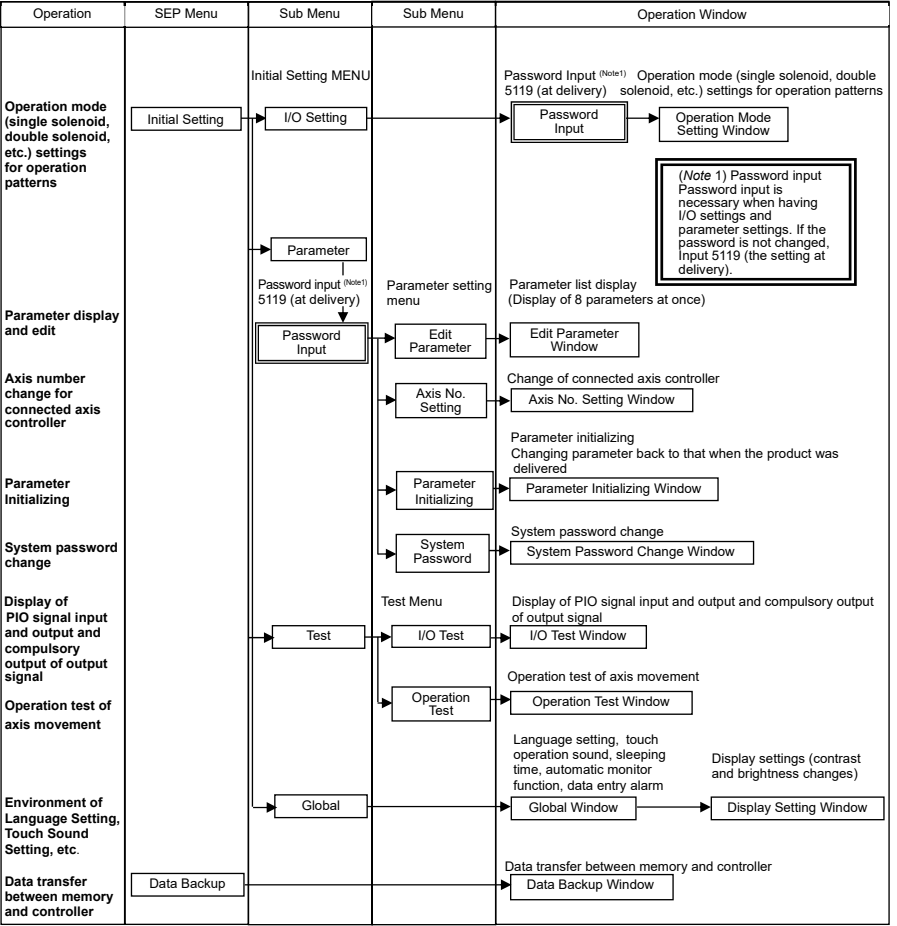
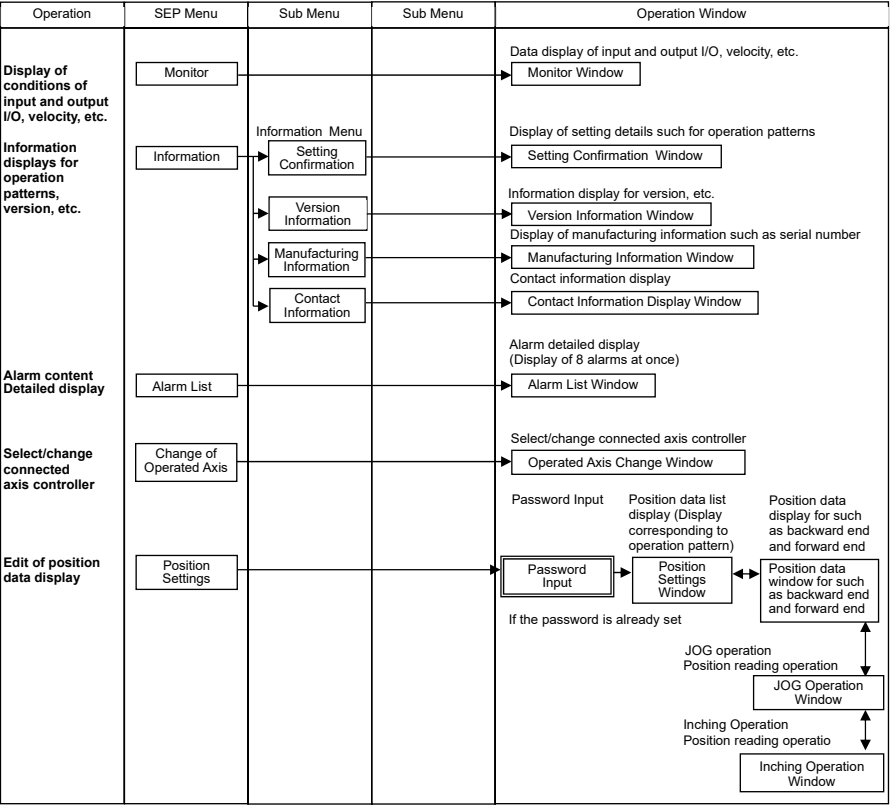
Operation Menu for CON Related Controllers

Operation	Menu 1	Sub Menu	Operation Window
Display of conditions of input and output I/O, velocity, etc.	Monitor		Data display of input and output I/O, velocity, etc. Monitor Main Window ↔ I/O Monitor Window ↔ Display of detailed information for velocity, etc. Data Monitor Window For PCON-CA, ERC3 PIO converter, SCON-CA and MSCON Maintenance information
			Password input Position data list display (Display of 8 positions at once) Position data display Password Input ↔ Position Table Window ↔ Position Number Data Edit Window If the password is already set JOG operation Position reading operation Smart Tuning Window ↔ JOG Operation Window ↔ Inching operation Inching reading operation Inching Operation Window
Parameter display and edit	Edit Parameter		Password input (Note1) 5119 (at delivery) Password Input ↔ Edit Parameter Window Parameter list display (Display of 8 parameters at once) JOG operation Inching operation JOG Operation Window ↔ Inching Operation Window
Operation test of axis movement	Trial Operation	Trial Operation menu	JOG/Inching JOG Operation Window ↔ Inching Operation Window Movement with position number indication Operation Window for Movement with Position Number Indication
		Position Movement	Movement with position (value) input Operation Window for Movement with Position (value) Input
Display of PIO signal input and output and compulsory output of output signal		Movement With Value Input	Operation Window for Movement with Position (value) Input
		I/O Test	Display of PIO signal input and output and compulsory output of output signal I/O Test Window
Alarm content Detailed display	Alarm List		Alarm detailed display (Display of 8 Alarms at once) Alarm List Window
Information display for version, etc.	Information		Information display for version, etc. Information Display Window
Data transfer between memory and controller	Data Backup		Data transfer between memory and controller Data Backup Window
Move to Menu 2	Menu 2		Menu 2 window display Menu 2 Window

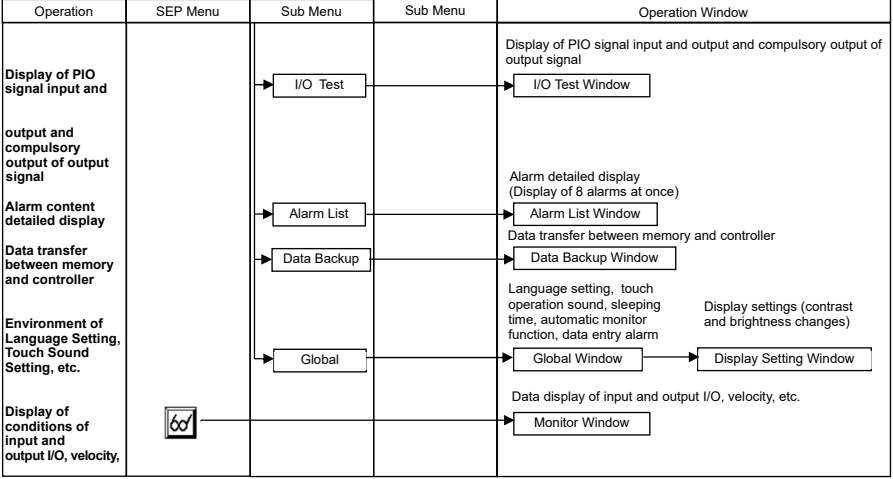
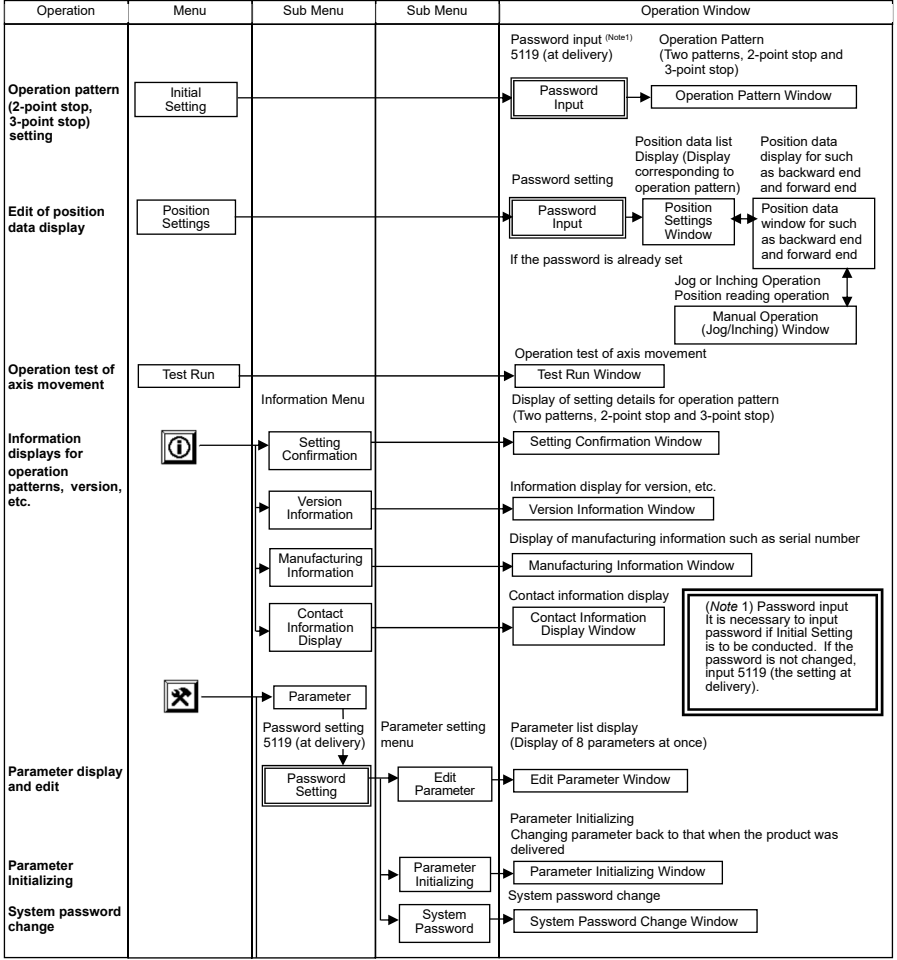
(Note 1) Password input
It is necessary to have the input of password if parameter edit is to be conducted. If the password is not changed, input 5119 (the setting at delivery).



Operation Menu for SEP Related Controllers



Operation Menu for MEC Related Controllers

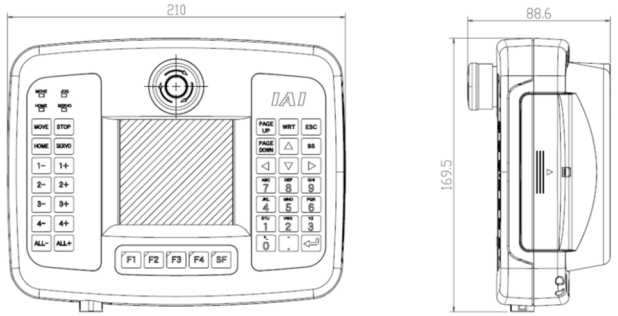


Treatment in an emergency

When any error occurs, alarms and messages on the display come from controllers or the touch panel teaching. Depending on the alarm or message code, confirm Instruction Manual of each controller or the touch panel teaching.

Code	Error level	Referent
000~7FF	Controllers warning	Please refer to Instruction Manual provided with each controller.
080~0FF	Controllers error	
100~1FF	Touch panel teaching: message	Please refer to Instruction Manual provided with the touch panel teaching, which is applicable to position controllers.
200~2FF	Touch panel teaching: operation cancel error	
300~3FF	Touch panel teaching: cold start error	

External Dimensions



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