# 3A

Quality and Innovation
Touch Panel Display
First Step Guide Third 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 downloaded the user's manual from our website. You can download it free of change. User registration is required for first time users. URL:www.iai-robot.co.jp/data_dl/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

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First Step Guide or at the end of the instruction manual. It will be provided for a fee.

### **Product Check**

If you need a bound copy of the instruction manual, order it from the nearest sales office listed in the

#### 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. Pa	rts (The option is excluded.	)		
No.	Part Name	Model		Referen
1	Main Body	Refer to "How to read the model plate", "How to read the model"		
Acces	ssories			
2	Mounting Bracket		4 Units	
3	Mounting Screw		4 Units	
4	Connector	284506-8 (Tyco Electronics AMP K.K.)		
5	First Step Guide	ME0283		
6	Safety Guide	M0194		

#### 2. Instruction Manuals related to this product

check it immediately.

■#■ 25463 ■ 254

No.	Name	Manual No.
1	Touch Panel Display RCM-PM-01 Instruction Manual	ME0182
2	ERC2 Actuator with Integrated Controller Instruction Manual <pio type=""></pio>	ME0158
3	ERC2 Actuator with Integrated Controller Instruction Manual <sio type=""></sio>	ME0159
4	ERC3 Actuator with Integrated Controller Instruction Manual	ME0297
5	PCON-CA Controller Instruction Manual	ME0289
6	PCON-C/CG/CF Controller Instruction Manual	ME0170
7	PCON-CY Controller Instruction Manual	ME0156
8	PCON-SE Controller Instruction Manual	ME0163
9	PCON-PL/PO Controller Instruction Manual	ME0164
10	ACON-C/CG Controller Instruction Manual	ME0176
11	ACON-CY Controller Instruction Manual	ME0167
12	ACON-SE Controller Instruction Manual	ME0171
13	ACON-PL/PO Controller Instruction Manual	ME0166
14	SCON Controller Instruction Manual	ME0161
15	ROBONET Instruction Manual	ME0208

#### 3. How to read the model plate



#### 4. How to read the model

### RCM-PM-01-ENG



<Option> Unspecified: Indication in Japanese ENĠ : Indication in English

# Support Models

#### List of Support Models

List 01 Su					
Model Name	Support Started Version				
ERC2	V1.00				
ERC3 <sup>*1</sup>	V2.00				
PCON	V1.00				
PCON-CA	V2.00				
ACON	V1.00				
SCON	V1.00				
ROBONET	V1.00				
Model Name         Support Started Version           ERC2         V1.00           ERC3'1         V2.00           PCON         V1.00           PCON-CA         V2.00           ACON         V1.00           SCON         V1.00           ROBONET         V1.00           *1 ERC3 is available to be connected only to CON mode.					

It is not connected to MEC mode.

Corresponding Versions of Controllers The following are the corresponding versions of connectable controllers. For any earlier versions, it is required to update them.

Model Name Support Started Version								
Model Name	Support Started Version							
PCON/ERC2	V0008 or later							
ACON	V0009 or later							
SCON	V0015 or later							

### **Basic Specifications**

Item	Specification
Surrounding Air Temperature	Temperature : 0 to 50°C
Environment Resistance	IP65 (In initial condition)
	Dust-proof and drip-proof only from the panel front
Mass	Approx. 160g

## **External Dimensions**



### Names of the Parts

# Front View Touch Panel

Operation Mode Setting Switches





**Operation Mode** 

#### SW No. OFF ON NOF Always set it to OFF before use. OFF Always set it to ON before use. 2 1234 3 Always set it to OFF before use MODE 4

lote)	· Be caref
	applied of
	It is reco
	• E is use
	A I

[COM Port (Power: RS422/RS485)]

#### RCM-PM-01 Pin No. Signal Name 1 24V DC 2 GND 3 FG 4 RS422 SD+ 5 RS422 SD-6 RS422 RD+ 7 RS422 RD-8 RS422 E

### Emergency Stop Switch

0	0

Touch Panel Display Side	254506-8 (Tyco Elec	cti
1 7	Signal	(
	+24V	
	0V	
	FG	
	+SD	
	-SD	
	+RD	
	-RD	
	E	L
Emergency	ELP-02V	
Stop Switch	(JST Mfg.	С
	Signal	(
	EMGA	
	EMGB	

-	+24V
Power Supply	
	GND

PCM-PM-01           Pin No.         Signal Name           1         24V DC           2         GND           3         FG           4         RS422 SD+           5         RS422 SD-           6         RS422 RD+           7         RS422 RD-					
Pin No.	Signal Name				
1	24V DC				
2	GND				
3	FG				
4	RS422 SD+				
5	RS422 SD-				
6	RS422 RD+				
7	RS422 RD-				
8	RS422 E				

# Wiring Diagram

ful about wiring and routing to avoid exogenous noise from being

or introduced to wiring cables. ommended to use shielded lines as wiring cables.

ed to set the end station. • Always use the insulated DC power supply as the power source.



1. Connection with Controller or ROBONET GatewayR Unit: Bus-Powered Connection It is recommended to use the "controller connection cable with the emergency stop box (CB-PM-SIO030-EB)" (option) as a connection cable.



Controller SIO Port

[Controller connection cable with the emergency stop box CB-PM-SIO030-EB]



2. Connection with Controller or ROBONET GatewayR Unit: Self-Powered Connection



(Note) The above is the connection diagram on the serial communication lines only. For the connection of the power supply and emergency stop line, refer to the operating manual of each controller.

#### 3. Connection with Multiple Controllers



- (Note) The above is the connection diagram on the serial communication lines only. For the connection of the power supply and emergency stop line, refer to the instruction manual of each controller
- (Note) The connection between controllers can be established with the following controller link cables (option) and junction boxes.



For the connections between the touch panel and the junction and between the junctions, please prepare cables separately.
Controller link cable (e-Con Connector, junction and terminal resistor included)

Model: CB-RCB-CLT002



### Installation Environment

- For the installation, please make sure to follow the conditions and cautions stated below:
- Install the system in ambient temperature 0 to 50°C and humidity 20 to 85% RH where there is no water drop or splash
- In case the system is installed in a closed area such as in a control panel, install a forced air cooling system and ensure the ambient temperature would not exceed 50°C to avoid a temperature rise on the display unit.
- · Avoid installing the system under the direct sunlight or in an environment where it is exposed to condensation
- Do not install the system to a place where flammable gas or corrosive gas is generated or where the system is often exposed to dust, metal powder or soot.
- Do not expose the system to organic solvent (thinner, benzine, etc.), high alkaline (ammonia, sodium hydroxide, etc.).
- · Avoid installing the system close to equipment that generates huge switching surge such as high-voltage devices, power driving devices, wireless sending devices, etc. Also, place the COM port connection cables in a separate duct from high-voltage cables, power cables and power supply cables.

#### Attachment



Installation (Including mounting fixtures used: 4 locations)



1) Insert the RCM-PM-01 body into the mounting plate. 2) Fit the mounting fixtures into the grooves of the RCM-PM-01 body, tighten screws and fix the RCM-PM-01 body onto the mounting plate.

the Panel during installation, it is recommend to

RCM-PM-01 in consideration of cable damage prevention and workability during installation.

leave a clearance of approx. 30 to 50mm around

Note 1) Screw torque: 0.1 to 0.25N•m Note 2) If you tighten screws excessively, the touch

(Note) Never block the body slit.

switches may not operate normally due to front side deformation

Tighten them to an appropriate torque.

### Position Table

#### **IPCON, ACON, SCON, ERC2, ROBONET1**

Set the Position Data to operate the actuate

Se	Set the Position Data to operate the actuator.													
1	1)	2)	3)	4)	5)	6)	7)	8)	9)	9)	10)	11)	12)	13)
N	ló.	Pos	Vel	Acc	Dcl	Push	LoŤh	Range	Zone+	Zone-	Acc/Dcl	Incre-	Cmnd	Stop
											Mode	mental	Mode	Mode
0	00	0.00	100.00	0.20	0.20	0	0	0.01	0.00	10.00	0	0	0	0
0	01	10.00	100.00	0.20	0.20	0	0	0.01	95.00	105.00	0	0	0	0
0	02													
0	03													
1)	No			Indicate	s positic	on numb	er.							
2)	Po	s		Set the	position	where t	he actu	ator is n	noved.					
3)	Vel			Set the a	actuator	speed.								
4)	Ac	С		Set the a	actuator	acceler	ation.							
5)	Dc	I		Set the a	actuator	decele	ration.							
6)	Pu	sh		When th	e push	& hold d	operatio	n is to b	e perfoi	rmed, se	et the cu	rrent lin	nit value	(%)
,				except f	or "0".				•					( )
			,	When "C	" is set.	the pos	itionina	operati	on is pe	rformed	l.			
7)	10	Th		In the ca	ise of th	e PCON	N-CF co	ntroller	the load	d output	t signal v	vill be o	utput wł	nen the
• ,				commar	nd torau	e excee	ds the t	hreshold	d if it is i	set	. e.g. a.		aipai m	
8)	Ra	nae		Defines	the dist	ance he	fore the	tarnet	nsition	to outro	ut the no	sitionin	a compl	ete
0)	i tu	ngo		sianal di	uring the	anositio		eration	booldon	to outp	at the pe		g oompi	010
				Durina ti		sing one	vining op	it onable	ne to cot	t tha dia	tanco to	norforn	the pr	accina
				oporatio	n ofter r	onchine	the tor	aot posi	tion			penom	i ule pro	ssang
0)	70	no I/		Dofinoo	the zer	eaching	the D7		uon. tout aig	nol turn				
9)	20	ne+/-	 						nput siy		S ON. f the eer	alaratia	n/deeel	aration
10)	AC		ode	in the ca	ise of th		vanu S		nuoliers	s, one o	i the acc		n/decei	eration
				patterns	can be	selecte	a from t	ne trape	ezold pa	ittern, S	-snape r	notion c	or the fir	st-order
				delay filt	er.									
11)	Inc	rementa	al	Set to "C	" when	desired	the abs	solute po	osition c	omman	d. Set to	o "1" for	the rela	tive
				position	comma	nd.								
12)	Cm	nnd Moo	de	This is ir	neffectiv	e even	if perfor	ming a	setting.	It is set	to "0" at	deliver	y.	
				(V1.00 c	r earlie	r)								
13)	Sto	op Mode	e	Standby	power s	saving m	node afte	er positio	oning is	complet	e can be	e selecte	ed from /	Auto
Servo, OFF or Full-Servo							o Contro	ol Svster	n. Powe	er savino	n mode i	s invalid	if it is se	et to "0".

#### (MENU1) Select \*Monitor \*TPmode \*Alarm \*PosEdit (MENU2) • Move \*Param \*Display

# Operation

Operations can be performed with touching the items displayed on the touch panel operation display.



Axis (controller) select : Controller status display TP operation mode select Alarm content detailed display : Position data edit and teaching functions : Axis position move, number move, jog move Parameter display and edit Settings of language, touch sound, screen contrast, display brightness and password \*Restart : Restarting of controller \*Version : Display of version information

#### [TP Operation Mode]

Stated below explains TP Operation Mode.

- Teach 1 (PIO Non Safety ON)
- PIO Non : Enables writing of position data, parameters, etc., in the controller and commands of the actuator movement system.
- Safety ON : Keeps the maximum speed at the safety speed set for the parameter regardless of position data.
- Teach 2 (PIO Non Safety OFF)
- PIO Non : Enables writing of position data, parameters, etc., in the controller and commands of the actuator movement system.
- Safety OFF : Enables movement at the speed registered in position data.
- Monitor 1 (PIO Ena· Safety ON)
- PIO Ena : Enables monitoring only. Writing of position data, parameters, etc., in the controller and commands of the actuator movement system are disabled.
- Safety ON : The maximum speed is the safety speed set for the parameter regardless of the command from the PLC.
- Monitor 2 (PIO Ena- Safety OFF)
- : Enables monitoring only. Writing of position data, parameters, etc., in the controller and PIO Ena commands of the actuator movement system are disabled. Safety OFF : It is allowed to move at a speed as commanded from the PLC.

## How to Operate (Examples)

### Position Data Setting

-			
⊨xamp	Deration	ement (300mm ⇔ 250mm, Veloc	ILY SUUMM/S)
1	Touch PosEdit on the MENU1 screen.	XENUI Axis No.00 Select Monitor TPmode Alarm PosEdit MENU2	Relefice
2	The password input window will be displayed if the password is set to other than '0000'. Input the password.	Edit789Please input456a password123****0	It is set to '5119' at delivery.
3	Move the cursor to the position where you want to input using ↓ or ↑↑. Alternatively, touch the position No The numeral keys will be displayed and you can also set the position No. directly.	Position *****• **mm Yelocity ****•**mm No. e↓↑↓JOG WRT Position No.	
4	Touch the numeric value of Position. The numeral keys will be displayed.	<b>EDIN</b> ← → MENU Position ***** ***** Yelocity ****.**ms No. Ø↓↑ JOG WRT	For any unregistered data, the display will show "*".
5	Touch 3 0 and touch 4.	<b>101</b> Positio 123 678	To stop during numeric input, touch <u>ESC</u> . Example) With the left operation, by pressing " <u>ESC</u> " immediately after inputting <u>3</u> 0, the status will return to the "*" display.
6		<b>IDN</b> Positio Velocity No. 0	During new position data registration, the initial values set with the user parameters for Velocity, Accelerate, Decelerate, etc., will automatically be input. In the left screen, the initial value is set as 100mm/s.
7	Touch the numeric value of Velocity. The numeral keys will be displayed.	123 678 Velocit: No. 0	
8	Here, touch 3 0 0 and touch	<b>EDIN</b> Position Velocit: No. 0	
9	Touch WRT.	EDIT ← → MENU Position 30.00mm Velocity 300.00ms No. 0↓↑ JOG(WRT	

No	Operation	Screen	Reference
10	Touch YES.	Confirm (YES) NO Rewrite the position data?	To stop rewriting, touch NO.
11	Touch ESC.	Notice (ESC) Write complete	
12	Match to the next position (No. 1) using 1↑.	Image: Difference         Image: Menule           Position *****.**mm           Yelocity ****.**ms           No.         1           Image: Difference           Position No.	
13	Touch the numeric value of Position. The ten keys will be displayed.	<b>EDIO</b> ← → MENU Position (*****.**mm) Velocity ****.**ms No. 1↓↑ JOG (WRT	
14	touch 2 5 0 and touch .	EDIT Positio 123 678	To stop during numeric input, touch ESC .
15		<b>EDIT</b> Positio Velocity No. 1[	During new position data registration, the initial values set with the user parameters for Velocity, Accelerate, Decelerate, etc., will automatically be input. In the left screen, the initial value is set as 100mm/s.
16	Touch the numeric value of Velocity. The ten keys will be displayed.	123 678 Velocit: No. 1	
17	Here, touch 3 0 0 and touch	EDN Positio Velocit: No. 1	
18	Touch WRT.	<b>EDIO</b> ← → MENU Position 250.00mm Velocity 300.00ms No. 1↓↑ JOC(WRT)	
19	Touch YES.	Confirm (YES) NO Rewrite the position data?	
20	Touch ESC.	Notice (ESC) Write complete	
21		<b>EDIT</b> Positio Velocity No. 1	

<ol> <li>Turn OFF the power to th</li> <li>Take off the connection c</li> <li>Turn ON the power to the</li> </ol>			
(Note)	For PCC disconne then the Do not d an opera	ON, ACON, S ected from th emergency s isconnect the ation.	
	*1 : Op	tion cable (C	
(Note)	: In the c Operati	ase of the P0 on Mode to "	
	In the ca or SIO o If the invalive of the second se	ase of ERC2 converter : Teaching P id and contro Teaching I	
	beco	me the safet	
	beco	me the safet	
	beco	me the safet	
If the cor	beco	does not we	
If the cor Hardwar	beco nnection e Relate	me the safet does not wo	
lf the cor Hardwar Co	beco nnection e Relate de	me the safet does not wo d Error Dete	
If the cor Hardwar Co ER02	beco nnection e Relate de	does not wo d Error Dete Data addre	
If the cor Hardwar Co ER02 ER03	beco nnection e Relate de	does not wo d Error Dete Data addre Data is inco	
If the cor Hardwar Co ER02 ER03 ERFF	beco nnection e Relate de	does not wo d Error Dete Data addre Data is inco Time-up err No respons	

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# **Disconnecting Process**

ne controller. ables from the main communication port connectors on the front panel of the controller e controlle

SCON, ERC2, ERC3 and ROBONET, if the cable equipped with an emergency stop switch<sup>-1</sup> is ne touch panel display device during an operation, it causes a transient emergency stop, and stop is cancelled. Therefore, the operations of devices such as an actuator would stop. e cable equipped with an emergency stop switch\*1 from the touch panel display device during

#### B-PM-SIO030-EB), etc.

CON, ACON, ERC2 or ERC3 controller not having the AUTO/MANU switch, set the TP "Monitor2" before disconnecting the Teaching Pendant from the controller.

2 or when controller setting is made by connecting the Touch Panel Display to the gateway unit

Pendant is disconnected while the setting of "Teach1" or "Teach2" remains, I/O will become ol from PLC will become impossible.

Pendant is disconnected while the setting of "Monitor1" remains, the maximum speed wil by speed set for the parameter regardless of a command from PLC.

# Troubleshooting

ork properly, check the following item.

cted on Touch Panel Display				
Error Description	Cause and Treatment			
ss is incorrect. rrect.	It is considered that the controller version is old. Check the version. Have the software updated if it is old.			
or e is returned from the controller.	<ol> <li>A wire breakage is caused in the controller connection cable. Check the wiring for or wire breakage in the connection cable.</li> <li>It is a temporary error due to noise. Reboot either the controller or the main unit of the touch panel display device.</li> </ol>			
rror Il response is returned from the	It is temporary error due to noise. In case the error occurs often, check the noise prevention on cables, terminal resistor or the power supply devices.			



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Manual No.: ME0283-3A