IAI
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RC PC Interface Software
First Step Guide   Seventh Edition

Thank you for purchasing our product.
Make sure to read the Safety Guide and detailed Instruction Manual (CD/DVD) included with the product in addition to this First Step Guide to ensure correct use.
This Instruction Manual is original.

> ⚠ Warning : Operation of this equipment requires detailed installation and operation instructions which are provided on the CD/DVD Manual included in the box this device was packaged in. It should be retained with this device at all times.
> A hard copy of Manual can be requested by contacting your nearest IAI Sales Office listed at the back cover of the Instruction Manual or on the First Step Guide.

- 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.

Inspect the Products

Standard build of this product consists of following components. In the event of wrong components, please contact one of our offices or your distributor.

1. Components
1.1 Model RCM-101-MW
   Applicable controllers :
   RCP, RCS, E-Con, RCP2, ERC, ERC2, ERC3, PCON, ACON, SCON-C, SCON-CA, ROBONET, ASEP, PSEP, DSEP and MSEP

No.	Description	Model	Remarks
1	PC interface Software CD-ROM		
2	External device link cable	CB-RCA-SIO050	
3	RS232C Conversion adapter	RCB-CV-MW	
4	First Step Guide		
5	Operation Manual (CD/DVD)		
6	Safety Guide		
7	Customer Registration Card		

1.2 Model RCM-101-USB
   Applicable controllers :
   RCP, RCS, E-Con, RCP2, ERC, ERC2, ERC3, PCON, ACON, SCON-C, SCON-CA, ROBONET, ASEP, PSEP, DSEP and MSEP

No.	Description	Model	Remarks
1	PC interface Software CD-ROM		
2	External device link cable	CB-RCA-SIO050	
3	USB Conversion Adapter	RCB-CV-USB	
4	USB cable	CB-SEL-USB030	
5	First Step Guide		
6	Operation Manual (CD/DVD)		
7	Safety Guide		
8	Customer Registration Card		

2. Operation manual of this product recorded on CD/DVD

No.	Name	Control No.
1	Operation Manual of PC interface software RCM-101-MW and RCM-101-USB	ME0155

Software License Agreement

Before opening this product, read the software license agreement (hereinafter referred to as "Agreement").
This Agreement applies to the PC software that comes with this product (hereinafter referred to "Software").
By using this software, you are deemed to have agreed to the terms of this Agreement. You may not use this software if you do not agree to the terms of this Agreement.
If you do not agree to the terms of this Agreement, please return your product in the original, unused condition, and IAI will refund the price you paid for the product.

IAI Corporation (hereinafter referred to as "IAI") shall grant to the user (hereinafter referred to as "the User"), and the User shall accept, a non-transferable, non-exclusive right to use the software program supplied with this Agreement (hereinafter referred to as "the Licensed Software"), based on the following terms and conditions.

Witnesseth

1. Term of Agreement
This Agreement shall take effect when the User opens this software and remain effective and in force until this Agreement is terminated upon a written request made by the User to IAI or pursuant to the provision of Section 3.

2. Right of Use
The User may use this software on a computer on the condition that an external equipment communication cable manufactured and sold by IAI (hereinafter referred to as "Dedicated Connection Cable") is used. The User or a third party may use this software on multiple computers on the condition of using dedicated connection cables.

3. Termination of Agreement
If the User violates any of the provisions specified in this Agreement or any material reason arises that makes continuation of this Agreement difficult, IAI may terminate this Agreement immediately without serving any notice.
If this Agreement is terminated, the User shall destroy this software, dedicated connection cable or cables, and all copies of this software, within ten (10) days from the date of termination of this Agreement.

4. Scope of Protection
IAI may change any and all specifications regarding this software without prior notice. IAI shall also provide no warranty in connection with this software.
Neither the User nor any third party may demand compensation for any loss suffered by the User or third party as a result of use of this software by the User or third party.

Notes

① The copy right of this software belongs to IAI Corporation.
② The software and the manual can only be used upon the software license agreement.
③ It shall be accepted that we are not responsible for the results or the consequential damages of the use of the software and the manual.
④ Please note the version code (ver.) of First Step Guide and Operation Manual (the manual on CD/DVD) and that for software do not match.
⑤ The contents of First Step Guide and Operation Manual (the manual on CD/DVD) may be revised in the future without notice.

Hardware requirements

To run this software the system must meet following requirements.

Compatible OS	Model	OS on which the software can run
	RCM-101-MW	Windows2000 SP4 or later, Windows XP SP2 or later[*1] Windows Vista[*2], Windows 7[*2]
	RCM-101-USB	Windows2000 SP4 or later, Windows XP SP2 or later[*1] Windows Vista[*2], Windows 7[*2]
	*1 Compatible with version V 7.00.00.00 or later. *2 Compatible with version V 9.00.00.00 or later. Applicable for 32 bit and 64 bit versions of the OS.	
Computer	The personal computers which run on compatible OS (Windows).	
Key board	The key boards which are compatible with personal computer running on compatible OS (Windows).	
Memory	Capacity must be equivalent to the memory capacity to run the compatible OS (Windows).	
Display	XGA or higher	
Pointing device	Mouse, etc. and the compatible drivers	
Memory media reading drive	CD-ROM drive	
Hard disk	Hard disk with 20MB or more free space (To run this software it must be installed on the hard disk.)	
Serial port RS232C (Compatible with EIA-S74)	Necessary following types of PC use software Model : RCM-101-MW	
USB port	Necessary following types of PC use software Model : RCM-101-USB	

Hardware requirements

① Place the installation CD ROM into the CD ROM drive.
② The screen displays an interface to select which software to install.
Select one from "RC PC interface software Japanese version", "RC PC interface software English version" and "RC PC interface software EU version", and click the button.
(Depending on the version, some items may not be displayed.)
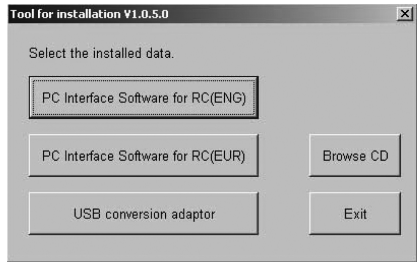
Install data selection screen
(The display will vary according to the version and the data on CD.)

※ What to do when data for installation selection screen is not displayed
If the data for installation selection screen is not displayed when the CD-ROM is inserted, follow the procedure below.

a. View the list of folders, etc. on the CD-ROM using explorer.
Folders on the CD-ROM are displayed.

AUTORUN.INF   IAI_Install....   DATA
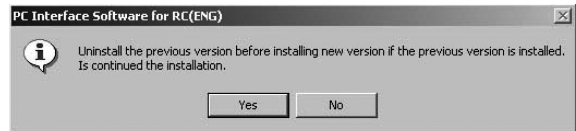
b. Double click , then the installation data selection table is shown on the screen.

③ Then you are asked whether any old version is installed.
Press "Yes (Y)", if any old version is not installed.
Press "No (N)", if any old version is installed.
Then installation is aborted. Click "Add or remove programs" on Control Panel and uninstall the software.

Check screen for old version

If installation of any old version is detected even if "Yes (Y)" was selected, the "old version detection screen" is displayed. Uninstall the old version following the commands, and then install this software.
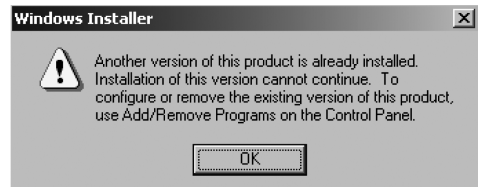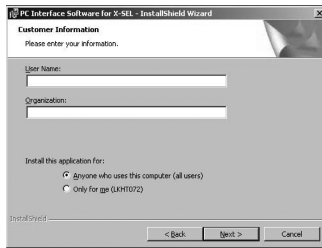

Old version detection screen

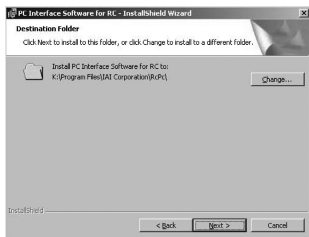④ Installation screen for PC use software for RC is displayed.
Click [Next].

Installation screen

⑤ User data registration screen is displayed, then click [Next].

User data registration screen

⑥ Specify the install destination of PC interface software for RC.
Normally there is no need to change what is displayed. After specifying the destination click [Next].
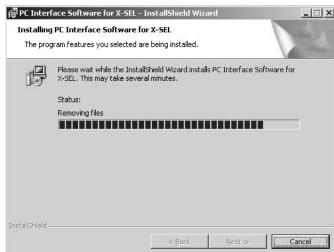
Specify install destination folder.

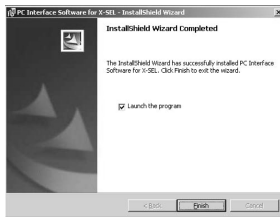⑦ Preparation for installation is complete. Click [Install] to start install procedure.
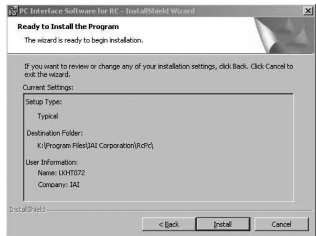
Preparation of installation

Install progress status screen is displayed during the installation.

Progress of installation

⑧ Installation completed screen is displayed on completion of installation.

Installation completed

⑨ When the installation is complete, Program (P)→IAI→RoboCylinder→RC use software is displayed on the start menu. Select the item and start up this software.
⑩ Remove CD-ROM.
※ If installation is completed with old version still installed, 2 types of shortcuts may be created with Program (P)→IAI→RoboCylinder. Then on uninstall of program only the shortcut for current version only is removed. Manually remove old version shortcut by right click old version shortcut (PC interface software for RC&E-Con), then left click "remove".
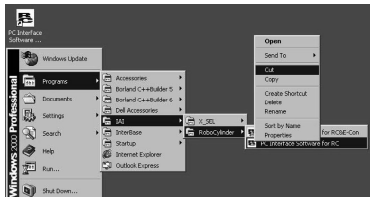
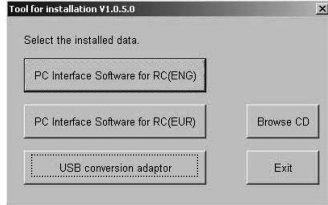Removing old version shortcut screen

Install USB driver software

To use following PC use software install USB conversion adapter driver software.
[Applicable software]
　・RCM-101-USB
　① Insert CD-ROM with this software on CD-ROM drive.
　② The screen displays selection table of the data to be installed.
　　Click "USB conversion adapter".

Install data selection screen
(The display will vary according to the data on CD.)

　③ You are asked for the driver install destination. Click "Copy" if there is no necessity to change.
To change enter manually or click "browse" and specify the copy destination folder.
On browse copy destination screen click and select the folder you want to copy to and click "OK". When "OK" is clicked, the browse copy destination screen disappears and the path of the selected folder is displayed on the copy destination specification screen.
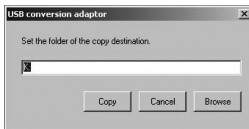
Copy destination specifying screen
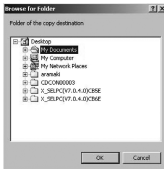
Copy destination folder browse screen

　④ If there is "IAI USB" (copy data) folder at the destination, you are asked whether to overwrite.
If it may be overwritten, click "OK", but click "Cancel" to stop copying.

Overwrite check screen

　⑤ Completion screen is displayed.

Completion screen

　⑥ On completion screen click OK. The completion screen disappears.
Then click "Cancel" on copy destination specification screen. Copy destination specification screen disappears.
Finally click Exit on data selection screen. Data selection screen disappears.

　⑦ Remove CD-ROM.

　⑧ Then insert USB conversion adapter (RCB-CV-USB) into a USB port of the PC.

　⑨ Windows will open the "Found New Hardware Wizard".
Click Next (N)>

Found New Hardware Wizard Window

　⑩ The driver search select window will open.
Check the "Search for a suitable driver for my device(recommended)"
Click Next (N)>

Driver Search Select Window

⑪ The locate driver files window will open.
　Select "Specify a location".
　Click Next (N)>

Specify the Locate Driver Files Window

⑫ The "Copy manufacturer's Files from:" window will open.
　Click "Browse" and find "K:\IAI USB (the folder you have specified in ③ and set it)"

Specify the Copy Manufacturer's Files from Window

⑬ The driver files search results window will open.
　Click Next (N)>

Driver Files Search Results Window

⑭ When the IAI USB Composite Device driver installation finish is displayed, the installation of the driver is completed.
　Click "Finish".

IAI USB Composite Device Installation Finish Window

(Note) COM? number shows the COM port into which the controller is inserted.
　　　COM? number varies for each controller.
　　　COM? number is necessary when a controller is connected. Make sure to record COM? number on controller, etc.

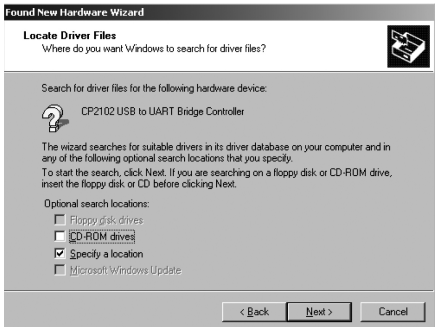⑮ Subsequently, the found new hardware wizard window will open.
　Click Next (N) >

Found New Hardware Wizard Window

⑯ The install hardware device drivers window will open.
　Select the "Search for a suitable driver for my device recommended".
　Click Next (N) >

Driver Search Select Window

⑰ The locate driver files window will open.
　Select "Specify a location".
　Click Next (N) >
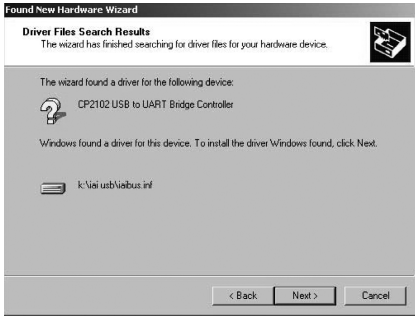

Locate Driver Files Window

⑱ The copy manufacturer's files window will open.
　Click "Browse" and find "K:\IAI USB (the folder you have specified in [3] of 1.3.3)" and set it.
　Click "OK"

Specify the Copy Manufacturer's Files from Window

⑲ The driver files search results window will open.
　Click Next (N)>

Driver Files Search Results Window

⑳ When the IAI USB to UART Bridge Controller driver installation finish window is displayed, the driver installation is completed.
　Click "Finish".

IAI USB to UART Bridge Controller Installation Finish Window

㉑ The installation of all drivers is completed.

㉒ Click "Start" on the Windows taskbar, "Settings", and then Control Panel to open the Control panel.
　Double-click "System" to open System Properties.
　Click the "Hardware" tab in "System".
　Click "Device Manager" in Hardware.
　Double-click "Ports (Com & LPT)" in "Device Manager" to expand the folder tree.
　If there is "IAI USB to UART Bridge Controller (COM?)" under "Ports (COM & LPT)" in "Device Manager", the driver has normally been installed and operated.
　(Note) The number added to the end of COM? Becomes the number of the inserted COM port.
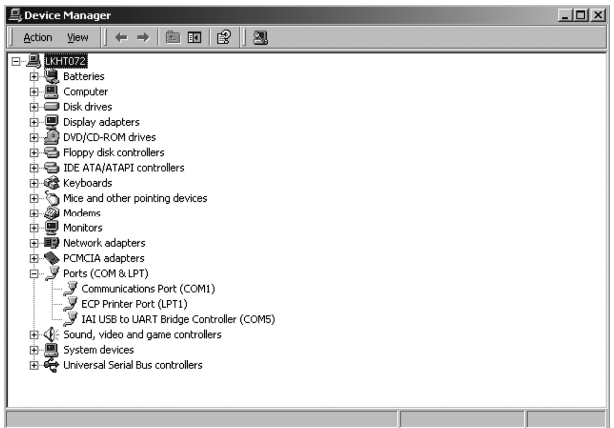
Device Manager Window

Connecting PC and controllers

1. Model: RCM-101-MW

Applicable controllers, PCON, Etc.

RS232C Conversion unit RCB-CV-MW

Communication cable CB-RCA-SIO050

2. Model : RCM-101-USB

USB cable CB-SEL-USB030

Communication cable CB-RCA-SIO050
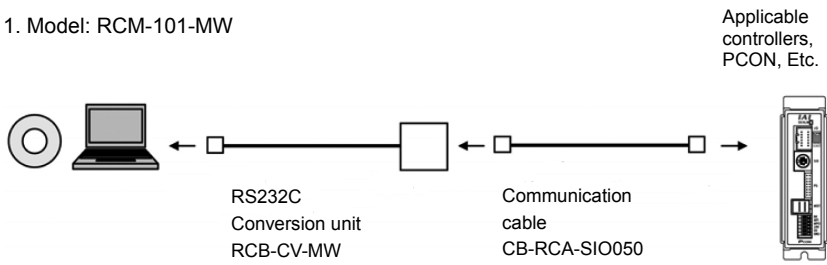
Start up RC PC interface software

【Start up software】
① Turn controller and PC off, and connect controller and PC using the standard RS232C cable supplied with this software or USB cable.
② Turn on power of controller and PC, and start up Windows.
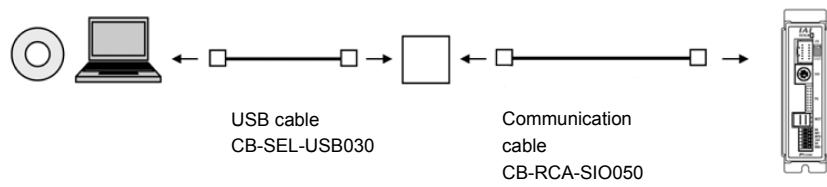③ If there is port switch on the controller, turn port switch on and start up this software.
　※This software starts on-line mode or off-line mode depending on whether controller and PC are connected. For those controllers with PORT witch, this software does not turn to on-line mode if the switch is turned on after the start up. This will turn to on-line mode by disconnecting and connecting them.
④ Check Connection Axis is displayed, and check connection axis begins.

[For PCON, ACON, SCON, ERC2, ERC3, ROBONET, ASEP, PSEP, DSEP and MSEP]

In the first start up after software installation, communication set up screen is displayed before connection axis check.

⑤ After completion of connection axis check, main screen is displayed, and manual operation mode selection screen is displayed.
Select the operation mode according to the application and press OK.
Hereafter follow the display and input appropriate parameters depending on the operation purpose.
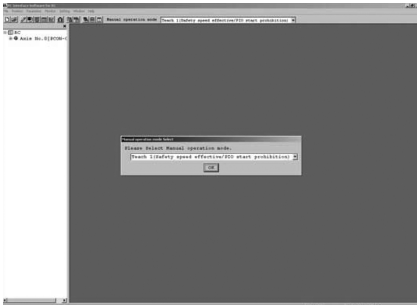
Manual Operation Mode selection screen

Select manual operation mode from the 4 options below.
・ Teach Mode 1(safe speed enabled/PIO start up disabled)
PIO start up disabled: Entry of position data and parameters to controller and command for actuator operation system are possible.
Safe speed enabled: Regardless the position data speed setting, the maximum speed is the safe speed set in the parameter.
・ Teach Mode 2(safe speed disabled/PIO start up disabled)
PIO start up disabled: Entry of position data and parameters to controller and command for actuator operation system are possible.
Safe speed disabled: It can be operated at the speed (higher than safe speed) written on position data speed setting.

・ Monitor Mode 1(safe speed enabled/PIO start up enabled)
PIO start up enabled: Only monitor is possible. Entry of position data and parameters to controller and command for actuator operation system are not possible. Operation commands (jog or return to original position) are disabled.
Safe speed enabled: Regardless PLC commands, the maximum speed is the safe speed set in the parameter.
・ Monitor Mode 2(safe speed disabled/PIO start up enabled)
PIO start up enabled: Only monitor is possible. Entry of position data and parameters to controller and command for actuator operation system are not possible. Operation commands (jog or return to original position) are disabled.
Safe speed disabled: It can be operated at the speed (higher than safe speed) specified by PLC.

> If a warning "The baud rate of PC is not supported" is displayed, and PC can not be connected with controller, select other baud rate.
> ・ Click main menu setting and select "Application Setting".
> ・ Change baud rate on "Application Setting" screen.

> ●When connected with PCON, ACON, SCON, ERC2 and ROBONET, the setting is Safe Speed enabled (safe speed limit is valid) at start up of this software. If PC Interface Software implement position movement (test operation mode), the maximum speed is the safe speed set in the parameter. To run at speed higher than the safe speed written in position data safe speed must be disabled (no safe limit). For switching between safe speed enabled and disabled refer to "3.2 Operation using tool buttons".
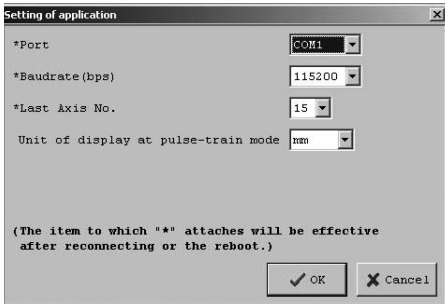
[For RCP, RCS, E-Con, RCP2 and ERC]
⑥ At completion of connection axis check, a warning screen is displayed. If OK is clicked, main screen is displayed.

Warning

【Communication setting at first time start up】
At first time start up after software installation, communication setting screen is displayed. Settings of communications with controllers are entered.

Communication setting screen

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① Port
Select the serial port for communications with controller from a list.

② Baud rate
Select communication baud rate from a list.
※ The baud rate selected here is used only in communication between this application and controller.
It does not affect the communication speed parameters of the controller.
※ If a baud rate is not supported by the port selected in ①, an error occurs in connection check.

③ Last axis number
Select the last axis number to be checked in connection axis check.
※ Connection is not checked on the axes higher that that selected now. Make sure to select an appropriate axis number.

④ Display units on pulse array mode
Select the display units (mm/pulse) for current position indication, etc. for SCON pulse array mode, PCON-PL/PO and ACON-PL/PO connections.

Enter above settings and click OK button to start connection axis check. (On 2nd start up and later, connection axis check is done using the settings.)
※ Above settings can be changed on application setting screen. If Cancel button is pressed, connection axis check is aborted, and the application is closed. (In following start up the communication setting screen is displayed again.)

Position table

Configure position (coordinates), velocity and acceleration, etc. for position table.
For details please refer to operation manual of the controller used.

【PCON, ACON, SCON-C, ERC2 and ROBONET】

No	Position [mm]	Speed [mm/s]	ACC [G]	DCL [G]	Push [%]	LoTh [%]	Pos.band [mm]	Zone + [mm]	Zone - [mm]	ACC/DCL mode	ABS INC	Cmnd Mode	Stop Mode	Comment
0	0.00	50.00	0.30	0.30	0	0	0.10	0.00	0.00	0	0	0	0	
1	100.00	50.00	0.30	0.30	0	0	0.01	0.00	0.00	0	0	0	0	
2														
3														
4														

【PCON, ACON, SCON-C, SCON-CA, ERC2, ERC3 and ROBONET】
Displayed in Version V8.00.00.00 or later.
(However, PCON-CA, ERC3 corresponds after a Version V8.03.01.00.)

No	Position [mm]	Speed [mm/s]	ACC [G]	DCL [G]	Push [%]	LoTh [%]	Pos.band [mm]	Zone + [mm]	Zone - [mm]	ACC/DCL mode	ABS INC	Gain Set	Stop Mode	VibSup No.	Comment
0	0.00	600.00	0.90	0.90	0	0	0.10	50.00	0.00	0	0	0	0	0	
1	200.00	600.00	0.90	0.90	0	0	0.10	50.00	0.00	0	0	0	0	0	
2															

【RCP, RCS, E-Con, RCP2, ERC2 and ERC】

No	Position [mm]	Speed [mm/s]	ACC [G]	Push [%]	Pos.band [mm]	MAX ACC flag	ABS INC	Comment
0	10.00	125	0.30	0	0.10	0	0	
1	145.00	125	0.30	0	0.10	0	0	
2	70.00	125	0.30	0	0.10	0	0	
3								
4								

【ASEP, PSEP, DSEP and MSEP】
The setting items are different according to operation pattern.
(DSEP corresponds after a Version V8.04.00.00.)
(MSEP corresponds after a Version V9.01.00.00.)

Position Name	Position [mm]	Speed [mm/s]	PushPower [%]	PushBand [mm]	ACC [G]	DCL [G]	Energy-saving Mode	Comment
Backward Position	0.00	200.00	0	0.10	0.20	0.20	0	
Forward Position	50.00		0	0.10	0.20	0.20	0	
Intermediate Position	0.00	100.00	0	0.10	0.20	0.20	0	

Before asking questions

When connection is not possible, check following.

Problem	Solution
Can not communicate with the controller.	Please check that the connection cable connectors between PC and controller are securely fitted. Select "Setting"→"Application setting screen" and open "Application screen". On "Application setting screen", make sure that communication port settings are correct. Correct errors on communication port, if any.

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