



HM-60131-7

# Support software **MEXE02** Version 3

# **OPERATING MANUAL**

This Operating Manual describes product handling procedures and safety precautions.

• Please read it thoroughly to ensure safe operation.

• Always keep the manual where it is readily available.

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#### License Agreement for Support software (MEXE02)

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- 11. This Agreement shall be executed in both Japanese and English language, and in the event of any conflicting terms, the Japanese version shall prevail.
- 12. This Agreement shall be governed by and interpreted in accordance with the Laws of Japan.
- 13. If any dispute arises out of this Agreement, the Tokyo District Court shall have exclusive jurisdiction to settle such dispute for the first instance.

# 1 Introduction

#### Before Use

Perform any installation, uninstallation, editing, and other operations for the support software **MEXE02** using an account with Administrator privileges.

Use the **MEXE02** correctly and safely after thoroughly reading the manual and understanding the basic operating procedures and other details.

#### Applicable product

The **MEXE02** can be used with Oriental Motor's stepping motor drivers, servo motor drivers, brushless motor drivers, and network converters etc.

A product that can be combined with the **MEXE02** is described as "applicable product" here.

#### Notation rules

The description of text in this manual follows the notation rules specified as shown at the right. The screens shown in this manual are those displayed in Windows 7. The screens vary according to the operating	[]	Menus and submenus shown in/from the title bar, buttons, and other controls that can be clicked with the mouse, are enclosed in square brackets.
systems (OS) you will be using.		Dialog box messages, etc., are enclosed in double quotations marks.

Unless otherwise noted, this manual explains using screen examples of the **AR** Series FLEX AC power input Built-in controller type.

#### Functions of MEXE02

The **MEXE02** is a software program that lets you set data required for motor operation from a PC. Data can be edited in various PC screens, or data set in an applicable product can be checked from a PC. The key functions of the **MEXE02** are explained below.

(memo`

Functions, setting items, screens and others vary depending on the applicable product combined with the **MEXEO2**. For the functions and operating methods that can be used, check the <u>USER</u> <u>MANUAL</u> or <u>OPERATING MANUAL</u> **AZ** Series Function Edition of the applicable product.

#### • Editing and saving the data

Operation data and parameters can be created and edited.

Data edited in the **MEXE02** can be written to an applicable product, or data stored in an applicable product can be read into the **MEXE02**.

You can save data files created in the MEXEO2 in either the MEXEO2's dedicated file format or CSV format.

#### Monitor function

You can monitor the product (motor and driver) status, motor operating status, ON/OFF status of I/O signals, and others.

The waveform monitor lets you check I/O signals, motor speeds and other settings based on measured waveforms.

#### Test function

- I/O test can be performed to monitor input signals and cause output signals to be output forcibly.
- Test operation for the motor can be performed using the teaching/remote operation or remote operation.

#### Support menu

The [Support] menu may be shown on the menu bar depending on the applicable product combined with the **MEXEO2**. The update of firmware can be performed from the [Support] menu.



The [Support] menu is not shown for all of the applicable products.The contents of the [Support] menu vary depending on the applicable product.

#### Installation and uninstallation of MEXE02

For the installation and uninstallation of the MEXE02, refer to Oriental Motor Website.

#### Communication cables

Communication cables vary depending on the applicable product. Check the <u>USER MANUAL</u> or <u>OPERATING MANUAL</u> <u>Driver Edition</u> of the applicable product.

#### • When using a USB cable

Use a commercially available USB cable.

• When using our CC05IF-USB communication cable for the support software

Our communication cable for support software **CC05IF-USB** is a set of two cables, a PC interface cable and a USB cable. Purchase it separately.

Interface	USB Specification 1.1 (Full Speed 12 Mbps)
Connector shapes	RS-485 (Mini DIN 8 Pin: male), USB (Type Mini B: female) USB Type A connection via included USB cable to connect to a PC
Communication system	Half duplex
Communication speed	9,600 bps
Indicator	The LED is lit (green) when recognized by PC and ready to use.
Power supply	USB bus power
Current consumption	25 mA (100 mA max.)
Dimension	25×58.6×16 mm (0.98×2.31×0.63 in.) [excluding cable section]
Mass	PC interface cable: App. 0.2 kg (7.1 oz) USB cable: App. 0.03 kg (1.06 oz)
Operating environment	Ambient temperature: 0 to +40 °C (+32 to +104 °F) (non-freezing) Ambient humidity: 85% or less (non-condensing) Atmosphere: No corrosive gas, dust, water or oil
Insulation system	Non-isolated

#### General specifications of CC05IF-USB

#### System requirements

The installation of the **MEXE02** on a PC requires one of the following operating systems (OS) and a PC compatible with the OS you will be using.

• PC

Recommended CPU *1	Intel <sup>®</sup> Core <sup>™</sup> processor 2 GHz or more (Your operating system must support the OS.)
Display resolution	XGA (1024×768) or higher resolution
Recommended memory *1	32-bit (x86) version: 1 GB or more 64-bit (x64) version: 2 GB or more
Hard disk *2	Available disk space of 60 MB or more
USB port	Using USB cable: One USB2.0 port Using <b>CC05IF-USB</b> : One USB1.1 port

\*1 The hardware requirements for the OS must be satisfied.

\*2 Microsoft .NET Framework 4 Client Profile must be installed in your PC for the MEXEO2 to function. It will be installed automatically, if not already installed. Accordingly, additional free hard disk space shown below may be required. 32-bit (x86) version: 600 MB

64-bit (x64) version: 1.5 GB

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Even if the operating environment is satisfied, the MEXE02 may not operate properly or the required capacities of memory or hard disk may differ depending on your system environment.

#### • Operating System (OS)

Both the 32-bit (x86) and 64-bit (x64) versions are supported.

- Microsoft Windows 10
- Microsoft Windows 8.1
- Microsoft Windows 8
- Microsoft Windows 7 Service Pack 1
- Microsoft Windows Vista Service Pack 2\*
- Microsoft Windows XP Service Pack 3 [Service Pack 2 for 64-bit (x64) version]

\* If the root certificate is not the latest one, you may fail to install the **MEXE02**.

#### RoHS Directive

The products do not contain the substances exceeding the restriction values of RoHS Directive (2011/65/EU).

# 2 Safety precautions

The **MEXE02** is designed on the assumption that the user has an understanding of basic operations such as starting up and exiting applications in Windows and how to use a mouse. Use the product only after carefully reading and fully understanding these instructions.

Also read the "Safety precautions" section in the <u>USER MANUAL</u> or <u>OPERATING MANUAL Driver Edition</u> for the product to be used in combination with the **MEXE02**.

# 

Handling the product without observing the instructions that accompany a "WARNING" symbol may result in serious injury or death.

#### Connection

• Turn off the power to both the PC and applicable product before connecting your PC to the applicable product. Failure to follow this instruction may cause electric shock.

# 

Handling the product without observing the instructions that accompany a "CAUTION" symbol may result in injury or property damage.

#### Connection

• The data setter connector or USB connector of the applicable product is not insulated. When grounding the positive terminal of the power supply, do not connect any equipment (PC, etc.) whose negative terminal is grounded. Doing so may cause the equipment and applicable product to short, damaging both. Do not ground the equipment if you plan to connect it.

#### Disposal

• Dispose the product correctly in accordance with laws and regulations, or instructions of local governments.

# 3 Startup and shutdown

This chapter explains how to start up and shut down the **MEXE02**.

### 3-1 Starting the MEXE02

Double-click the **MEXE02** icon on the desktop to start the **MEXE02**. The following window (launcher) appears.





### 3-2 Shutting down

Click [Exit] from the [File] menu. Alternatively, click the button on the upper right of the screen. The **MEXE02** shuts down.

Open Exit		
	MEXE02	
	Initial setting	[Setting of the Communication]
	Setting of the communication	Select the communication port to communicate with the applicable product.
	C2 Device Information	Of the applicable communication port in not displayed? Is the power supply of the applicable product turned on? Is the cable completely inserted? There is a possibility that the PC has taken a long time to recognize the driver.
	Functions	Execute the communication port setting again a little later. :There is a possibility that the driver of the communication cable has not installed.
	New	Install the latest MEXE02 compatible with the operating system of the PC used.
	Data reading(Product->PC)	
	Open	-
	Show on the next startup.	Close

Close

# 3-3 Checking version information

You can check the version of the **MEXE02** software you are using.

1. Click [About **MEXE02**] from the [Help] menu.



2. After you have checked the software version, click [Close].

# 4 Connection with MEXE02 and applicable products

This chapter explains how to prepare to start communication with the **MEXE02**, and how to check the connected product.

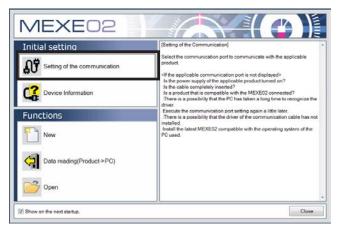
#### 4-1 Connection with applicable product

- Connect the PC in which the MEXEO2 has been installed and an applicable product. Read the <u>USER MANUAL</u> or <u>OPERATING MANUAL Driver Edition</u> of the applicable product to connect it correctly. Refer to p.5 for the communication cable.
- 2. Turn on the power to the applicable product.

#### 4-2 Setting of communication port

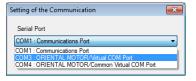
When connecting the PC and applicable product, the communication port is required to set.

1. Click [Setting of the communication] on the launcher.



2. Select the port to which the applicable product is connected and click [OK].

When connecting using the USB cable: "ORIENTAL MOTOR/common virtual COM port" is displayed.

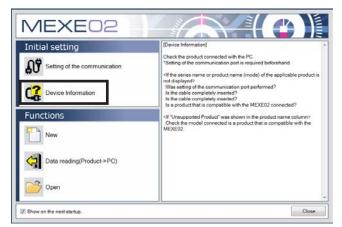


When connecting using the **CC05IF-USB**: "ORIENTAL MOTOR/virtual COM port" is displayed.

Note Before setting the communication port, make sure to connect the PC and applicable product and turn on the power of the applicable product. Without proper connection, the connection port will not be displayed.

### 4-3 Checking the connected product

1. Click [Device information] on the launcher.



2. Click [Check]. The check on the connected product starts.

evice Information		
		Check
		Close

3. When the results are displayed, click [Close].

Product Series	Product Name(Mode)	Motor/Actuator	Check
AR	AR Built-in Controller [AC]		Close

• When the series name or product name (mode) of the applicable product is not displayed.

Verify the following points:

- Is the applicable product powered on?
- Is the cable completely inserted?
- Is the connected product compatible with the **MEXE02**?
- When "Unsupported product" is shown in the product name column.

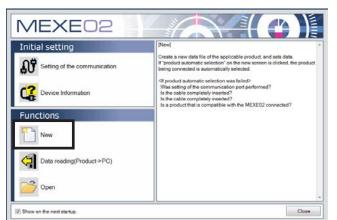
Verify that the connected product is compatible with the **MEXE02**.

# 5 Methods for creating new data and editing data

This chapter explains how to create data files, edit operation data and parameters, and store edited data.

#### 5-1 **Creating new data**

1. Click [New] on the launcher.



- 2. Select the model with any of the following methods.
  - ① Click [Product automatic selection]. The connected product is automatically selected.
  - (2) Select the model from the "Product series list," "Product name (mode) list," and "Motor/ actuator." This is a method to select the model manually
  - from the products shown in the list.
  - 3 Select the model from "Select from history." This is a method to select the model manually from "Select from history."

Product Series Lis AR ARL AZ BLE BLE BLH BX2 CRK DRL2 NETC NX PKA RK2	t	Product Name (Mode) List AR Puse hout (AC) AR Puse hout (DC) AR Built in Controller (DC) AR Built in Controller (DC) AR Device Net (AC) Motor/Actuator			Product automatic selection Setting of the Communication
Select from history Product Series AR AR	Product N AR Pulse I	ame(Mode) Input [AC] Controller [AC]	3	Motor/Actustor	

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In the case of actuators, select the series name of the motor that is equipped to the actuator.

When se

ting an electric actuator, pl

Product Name(Mode) List

3. Click [OK].

The data edit window appears.

IR IRL IZ ILE ILE2 ILH	t Product Name(Mode) List AR Pulse Input (AC) AR Pulse Input (AC) AR Built Controller (AC) AR Built in Controller (AC) AR DeviceNet (AC)	AR Pulse Input (AC) AR Pulse Input (DC) AR Buith Controller (AC) AR Buith Controller (DC)					
322 SRK JRL2 IETC IX YX YKA RK2	Motori/Actuator	Setting of the Communication	on				
		Motor/Actuator					
		Motor/Actuator					
Product Series	Product Name(Mode)						
Select from histor Product Series AR	AR Built-in Controller [AC]						
Product Series		Grandend (Granned Malers					

#### Data edit window

🛿 🚰 🛃 🕹 🐘 🛍				🕻 🔮 🕅 🚻	🗗 🚅 🧸 🕿 🐧	F	. 8
- AR Built-in Controller [AC]	Operatio	n data					
- Data - Operation data		Operation mode	Position [step]	Operating speed [Hz]	Operation function	Push current [%]	Dwell time [s]
- Parameter	#0	Incremental (INC)	0	1000	Single-motion	20.0	0.000 -
- 1/0	#1	Incremental (INC)	0	1000	Single-motion	20.0	0.000
- Motor	#2	Incremental (INC)	0	1000	Single-motion	20.0	0.000
- Operation	#3	Incremental (INC)	0	1000	Single-motion	20.0	0.000
- Alam	#4	Incremental (INC)	0	1000	Single-motion	20.0	0.000
- Warning	#5	Incremental (INC)	0	1000	Single-motion	20.0	0.000
	#6	Incremental (INC)	0	1000	Single-motion	20.0	0.000
	#7	Incremental (INC)	0	1000	Single-motion	20.0	0.000
- I/O function[Output]	#8	Incremental (INC)	0	1000	Single-motion	20.0	0.000
	#9	Incremental (INC)	0	1000	Single-motion	20.0	0.000
Communication	#10	Incremental (INC)	0	1000	Single-motion	20.0	0.000
	#11	Incremental (INC)	0	1000	Single-motion	20.0	0.000
	#12	Incremental (INC)	0	1000	Single-motion	20.0	0.000
Operation	#13	Incremental (INC)	0	1000	Single-motion	20.0	0.000
Teaching, remote operation	#14	Incremental (INC)	0	1000	Single-motion	20.0	0.000
Monitor	#15	Incremental (INC)	0	1000	Single-motion	20.0	0.000
M Obstan UO anarabas	#16	Incremental (INC)	0	1000	Single-motion	20.0	0.000
	#17	Incremental (INC)	0	1000	Single-motion	20.0	0.000
Alarm monitor	#18	Incremental (INC)	0	1000	Single-motion	20.0	0.000
Warning monitor	#19	Incremental (INC)	0	1000	Single-motion	20.0	0.000
RS-485 com. monitor	#20	Incremental (INC)	0	1000	Single-motion	20.0	0.000
Waveform monitor		Incremental (INC)	0	1000	Single-motion	20.0	0.000
Test	#22	Incremental (INC)	0	1000	Single-motion	20.0	0.000
	#23	Incremental (INC)	0	1000	Single-motion	20.0	0.000
💽 I/O test	•						•

#### Description of edit window

	NEXE02 English Edition - [New Brile Edit Move View Co			Help				-
<u></u>	t) 📂 🔚   🖕   🍋 🖪	9	<u>ା ଥା</u> ଥା <b>ଏ</b>	୍ୟା 🖏 🕺	🕻 🔝 🖓 🚻	🗗 🚅 🧸 🌄	😨   🗐	
	AR Built-in Controller (AC)	Operation					1	
	Operation data		Operation mode	Position [step]	Operating speed [Hz]	Operation function	Push current [%]	Dwell time (s
	- Parameter	#0	Incremental (INC)	0	1000	Single-motion	20.0	0.000
	1/0	#1	Incremental (INC)	0	1000	Single-motion	20.0	0.000
	Motor Operation	#2	Incremental (INC)	0	1000	Single-motion	20.0	0.000
	- Home operation	#3	Incremental (INC)	0	1000	Single-motion	20.0	0.000
>	Alam	#4	Incremental (INC)	0	1000	Single-motion	20.0	0.000
	Warning	#5	Incremental (INC)	0	1000	Single-motion	20.0	0.000
	Coordinates Common	#6	Incremental (INC)	0	1000	Single-motion	20.0	0.000
	I/O function[Input]	#7	Incremental (INC)	0	1000	Single-motion	20.0	0.000
	I/O function[Output]	#8	Incremental (INC)	0	1000	Single-motion	20.0	0.000
	I/O function[RS-485]	#9	Incremental (INC)	0	1000	Single-motion	20.0	0.000
	Communication	#10	Incremental (INC)	0	1000 5	Single-motion	20.0	0.000
		#11	Incremental (INC)	0	1000	Single-motion	20.0	0.000
		#12	Incremental (INC)	0	1000	Single-motion	20.0	0.000
	Operation	#13	Incremental (INC)	0	1000	Single-motion	20.0	0.000
	Preaching, remote operation	#14	Incremental (INC)	0	1000	Single-motion	20.0	0.000
	Monitor	#15	Incremental (INC)	0	1000	Single-motion	20.0	0.000
		#16	Incremental (INC)	0	1000	Single-motion	20.0	0.000
>	Status, I/O monitor	#17	Incremental (INC)	0	1000	Single-motion	20.0	0.000
	No Internal I/O monitor	#18	Incremental (INC)	0	1000	Single-motion	20.0	0.000
	Alarm monitor	#19	Incremental (INC)	0	1000	Single-motion	20.0	0.000
	RS-485 com, monitor	#20	Incremental (INC)	0	1000	Single-motion	20.0	0.000
	Waveform monitor	#21	Incremental (INC)	0	1000	Single-motion	20.0	0.000
		#22	Incremental (INC)	0	1000	Single-motion	20.0	0.000
	Test	#23	Incremental (INC)	0	1000	Single-motion	20.0	0.000
	🚯 I/O test	1						

1	Menu bar	This is used to select and execute a function.
2	Tool bar	Some of the functions available on the menu are provided as an array of icons.
3	Tree view	This is used to select a group of data for editing.
4	Short-cut buttons	Using these buttons, functions such as monitor and test can be executed. The functions in this area can also be executed from the [Tool] menu.
5	Data setting area	This is an area to edit data. The display is changed by selecting a group from the tree view.

### **Explanation of functions**

Functions, setting items, screens and others vary depending on the applicable product combined with the **MEXEO2**. For the functions and operating methods that can be used, check the <u>USER</u> <u>MANUAL</u> or <u>OPERATING MANUAL **AZ** Series Function Edition of the applicable product.</u>

Name	lcon	Description
Teaching remote operation	<u>₽</u>	This function lets you check how the motor will operate before actually connecting it to a host controller. Operation data can also be set using teaching function.
Remote operation	2	This function lets you check how the motor will operate before actually connecting it to a host controller.
I/O test	<b>W</b>	I/O signals of direct I/O and remote I/O can be tested. Also, you can monitor input signals and cause output signals to be output forcibly. This function is convenient if you want to check the wire connection of physical I/O with the host controller and the operation of network I/O.
Status, I/O monitor	8	You can monitor the current status of an applicable product and the ON/ OFF status of I/O signals.
Internal I/O monitor	ю	All the I/O signals of an applicable product can be monitored. You can also check signals not assigned to direct I/O or remote I/O.
Remote I/O monitor	ю	You can check the ON/OFF status of network I/O.
Remote register monitor	R	You can monitor the remote register status that can be read and written to via a network.

Name	lcon	Description
RS-485 status monitor	485	You can monitor the RS-485 communication status of an applicable product.
Remote monitor	PM	You can monitor the data sent and received between an applicable product and host controller.
Alarm monitor	4	The alarm records of up to ten most recent alarms starting from the latest one can be checked. Also, with the <b>AZ</b> Series, the operation and the status of I/O signals, which were executed when the alarm generated, can be checked.
Warning monitor	4	The warning records of up to ten most recent warnings starting from the latest one can be checked.
RS-485 communication monitor	485	The error records of up to ten most recent errors starting from the latest one can be checked. Also, with the <b>AZ</b> Series, the received data via RS-485 communication can be checked.
Waveform monitor	<	The motor speeds and I/O signal status can be checked in waveforms.
Gain tuning		You can adjust parameters while checking the motor speeds and I/O signal status in waveforms.
Launcher		You can start the launcher.

#### 5-2

### Setting data in the data edit window



Just changing the data in the **MEXE02** will not cause the data in the applicable product to change. To change the data in the applicable product, writing data must be performed. Refer to p.20 for details.

Data cannot be edited while communicating with the applicable product using the monitor or test function. Edit data after ending the communication.

#### Data entry

The background color of a cell is initially white. When the value in the cell is changed, the color of the cell changes to yellow.

The color of characters in the cell is initially blue. When the value in the cell is changed, the color of characters changes to black.

#### Entering a numeric value

Click a desired cell, and enter a numeric value using the keyboard.

Position loop gain	10
Speed loop gain	180

Normal mode

urrent control mode

Control mode

#### • Selecting a value from a pull-down menu

Double-clicking a desired cell displays a pull-down menu. Select a desired value from the pull-down menu.

# pull-down menu. Smooth drive

#### • Entering characters

Click a cell and enter characters using the keyboard.

	Name	Operation type
#0	INDEX01	Incremental positioning (based on command position)
#1	INDEX02	Incremental positioning (based on command position)

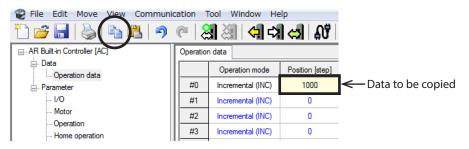


Do not enter a comma (,) in the "Name" field of the operation data. Entering a comma may cause a problem in the subsequent data edit.

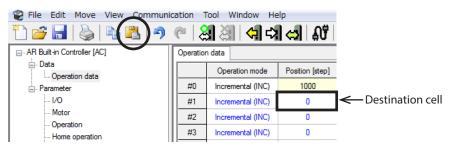
#### Copying and pasting data

You can copy an entered value and paste it into a different cell. Copying and pasting lets you quickly populate multiple cells with the same value.

1. Select the data you want to copy, and then click the [Copy] icon in the toolbar. You can select a single value or multiple values.

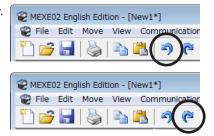


2. Click the cell you want to paste the data into, and then click the [Paste] icon in the toolbar.



#### Undoing and redoing

- 1. To undo the last edit that you made, click the [Undo] icon in the toolbar.
- 2. To redo the last edit that was undone, click the [Redo] icon in the toolbar.





- [Undo] operation cannot execute:
  When communicating with the applicable product
  When no edit has been done yet.
- [Redo] operation cannot execute: - When no [Undo] has been done yet.

### 5-3 Saving a data file

The data edited within the **MEXE02** or data read by the applicable product will be saved as a file. Data files can be saved in the **MEXE02** format (.mx2), **MEXE02** extended format (.mx2a), or CSV format (.csv). Data files saved in the **MEXE02** format and **MEXE02** extended format cannot be opened in other applications. Save data files in the CSV format if you want to open them in other applications.

#### Saving data by overwriting

Click the [Save] icon in the toolbar. The current data is saved over the existing data.



#### Saving data under a different name

1. Click [Save as] from the [File] menu.



2. Enter a new file name, and click [Save]. The data is saved under the specified name.





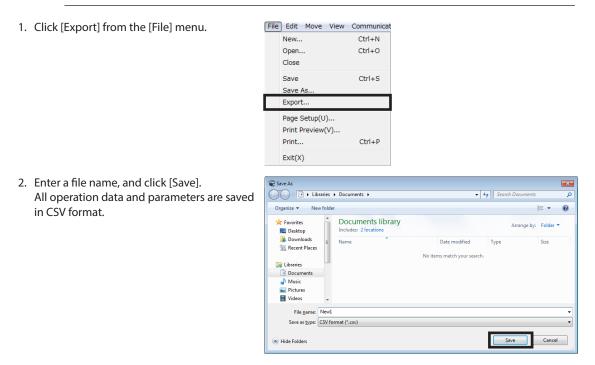
If the data, which has been saved in the **MEXE02** extended format (.mx2a), will be saved in the **MEXE02** format (.mx2) again, the extended information will be erased. Be sure to check the saving format (filename extension) beforehand.

File name:	Untitled1.mx2a	
Save as type:	MEXE02 extended format (*.mx2a)	
	MEXE02 format (*.mx2)	_
	MEXE02 extended format (*.mx2a)	
Hide Folders	Save Cancer	

#### Saving data in CSV format

Data saved in the CSV format can be edited in applications other than the MEXE02.

(memo) Data files in the CSV format cannot be opened in the **MEXE02**. To edit in the **MEXE02**, open the file in an application other than the MEXEO2, and paste the data to the MEXEO2.



#### **Data initialization** 5-4

#### Restoring the editing data to the default

You can initialize the data you have edited in the data edit window.

1. Click [Initialize] from the [Edit] menu.

Edit	Move View	Communic
	Undo	Ctrl+Z
	Redo	Ctrl+Y
	Сору	Ctrl+C
	Paste	Ctrl+V
	Initialize	
	All	Ctrl+A

2. Select the data you want to initialize, and click [OK].

×	Initialize
	Revert to initial values.
	Data Range
	<ul> <li>All</li> </ul>
	Select     Operation data only
	Parameter only
	OK Cancel
	Narning 🛛
	All data will revert to their initial values.
	Do you want to proceed?
	<u>Y</u> es <u>N</u> o
	Do you want to proceed?

3. Click [Yes]. The data being edited is returned to the default.

### Restoring only the value in the selected cell to the default

- 1. Select the cell to return to the default on the data edit window.
- Click the right mouse button, and click [Initialize]. The value in the selected cell returns to the default. The color of the cell remains as yellow. It does not return to white (initial state).

4000		1000
1000	Сору	Ctrl+C
1000	Paste	Ctrl+V
1000	Initialize	
1000	All	Ctrl+A
1000		

# 5-5 Ending data edit

To close the data edit window, click [Close] from the [File] menu.

New Open	Ctrl+N
Open	
	Ctrl+0
Close	
Save	Ctrl+S
Save As	
Export	
Page Setup(U)	
Print Preview(V)	
Print	Ctrl+P
Exit(X)	

### 5-6 Opening an existing data file

- 1. Click the [Open] icon in the toolbar.
- Select the file you want to edit, and click [Open]. The data edit window appears.



2 Open				Đ
🕒 🔾 🗢 📑 🕨 Libraries	Documents	<b>-</b> +	Search Documents	
Organize 👻 New fold	ler		80.	- 11 @
🔶 Favorites	Documents library Includes: 2 locations		Arrange by:	Folder 🔻
🚺 Downloads	Name	Date modified	Туре	Size
Recent Places	New1.mx2a	10/13/2015 2:42 PM	MX2A File	154 KB
词 Libraries	New2.mx2	10/13/2015 2:42 PM	MX2 File	3 KB
Documents  Music  Pictures  Videos  Computer  Local Disk (C:)  Local Disk (D:)				
	game: New2.mx2	-	All MEXE02 format ()	*.mx2;*.mxi <del>+</del> Cancel

# 6 Communication function between MEXE02 and applicable products

This chapter explains how to hold communication between the **MEXE02** and an applicable product to write or read data.

#### 6-1 Writing data to applicable product

The data created in the **MEXE02** can be written to the applicable product.

Note Do not turn off the power of the applicable product while writing data. Doing so may destroy the data.

- 1. Click the [Data writing] icon in the toolbar.
- 2. Select data to be written and click [OK].

Data writing. (PC-:	>Product)
Writing will be start	ted.
Data Range	
All	
Select	Operation data only
	Parameter only
	Modified data only
Check the writte	en data(Verify).
	OK Cancel
Warning	8
All writin	g will be started. want to proceed?
All writin Do you v	g will be started. want to proceed?
All writin Do you v Yes Warning	g will be started. want to proceed? <u>No</u> ator does not match, or the resolution setting switch mode is diff
All writin Do you v Yes Warning The actu	g will be started. want to proceed? <u>No</u> ator does not match, or the resolution setting switch mode is diff
All writin Do you v Yes Warning The actu	g will be started. want to proceed? No nator does not match, or the resolution setting switch mode is diff
All writin Do you v Yes Warning The actu	g will be started. want to proceed? No nator does not match, or the resolution setting switch mode is diff

Data writing starts.

3. Click [Yes].

- 4. If the following message is displayed, click either [Yes] or [No] after checking the applicable product. [Yes]: Writing data will be started. [No]: Writing data will be discontinued.
- 5. After it is completed, click [OK].

	$\sim$	
$(\mathbf{m})$	em	0
(	-	

Depending on the data, you may need to turn on the power supply again or execute Configuration. Follow the instructions in the displayed messages.

<ul> <li>Restarting power</li> </ul>	Executing Configurati     Click [Yes] to execute
Information 🛛 🕅	
	lf you click [No], execu
Writing is completed	Refer to p.25 for detai
Restore the driver.	
<u>O</u> K	Information
	Writing i
	Configur Do you

executing Configuration
lick [Yes] to execute Configuration.
f you click [No], execute Configuration manually
Refer to p.25 for details.

completed

<u>Y</u>es

ation is necessary. vant to execute Configuration ?

No

# 6-2 Reading data from applicable product

The data saved in an applicable product can be read to the **MEXE02**.

- 1. Click the [Data reading] icon in the toolbar.
- If the data is being edited in the MEXE02, a confirmation message for saving the data is shown. Click [Yes] to save the edited data or [No] not to save it.

( <b>1</b> ))) ( <b>1</b> )	
Warning	23
Do you want to save the changes to	New 1?
Yes No Can	el

(memo) If you select [No], the data under editing is cleared and overwritten with the data to be read.

3. Click [OK]. Data reading starts.

Data read	ing. (Product ->PC)				×
Readin	g will be started.				
			ОК	Cancel	
		_	)		
Informati	on	-23			
1	Reading is complet	ed.			
	<u>O</u> K				

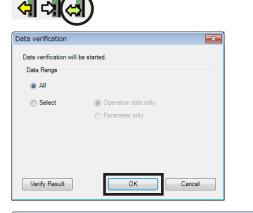
4. After it is completed, click [OK]. The screen shows the data that has been read.

# 6-3 Verifying data

verification.

The data saved in the applicable product can be verified against the data displayed in the **MEXE02**.

- 1. Click the [Data verification] icon in the toolbar.
- Select the data to be verified, and then click [OK]. Data is verified. The results are displayed after the completion of



3. After checking the verification results, click [Close].

	MEXE02	Device	
Position [step] : #0	2000	0	
Operating speed [Hz] : #5	5000	1000	

#### Copying verification results

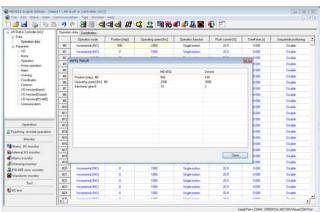
The verification results can be copied to the clipboard by clicking the right mouse button on the area that displays the results and clicking [Copy results to clipboard]. The copied data can be pasted to other applications.

ice 0
0
0
ults to Clipboard

#### ■ Jumping to desired data from verification results

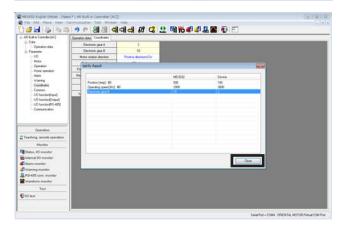
You can jump from the list of verification results to the edit window for the displayed data.

 Select and double-click data that you want to edit. The window for editing the desired data



2. Click [Close].

appears.



# 6-4 Resetting data of applicable product to factory default settings

The data saved in the non-volatile memory of the applicable product can be reset to the factory default settings.

~ /	o not turn off the power of the applica estroy the data.	able product u	ntil the process is complete. Doing so m
	cot] from the [Communication] monu-		Communication Tool Window Help
CIICK [Re	eset] from the [Communication] menu.		Setting of the communication
			Online(N)
			Offline(F)
			Data reading(Product->PC)(R) Ctrl+R
			Data writing(PC->Product)(W) Ctrl+W
			Data verification(PC<->Product)(V)
			Reset(E)
	ata that you want to reset to the factor	ry default	Reset
settings	and click [OK].		Reset
			Data Range
			<ul> <li>All</li> </ul>
			Select     Operation data only
			Parameter only
			OK Cancel
. Click [Ye	-		Warning E3
	a saved in the non-volatile memory of		All data will return to factory default.
product	will be reset to the factory default set	tings.	Do you want to proceed?
			Yes No
. After it i	s completed, click [OK].		Information 🕴
			Return to factory default was completed.
			QK
$\sim$ –			
			power supply again or execute Configu
F	ollow the instructions in the displayed	l messages.	
	<ul> <li>Restarting power</li> </ul>	<ul> <li>Executing</li> </ul>	g Configuration
			] to execute Configuration.
	Information		k [No], execute Configuration manually.
	Return to factory default was completed.		0.25 for details.
	Restore the driver.	neici to p	
	ΟΚ	ĺ	Information 🛛 🕄
	20		Return to factory default was completed.

Yes No

# 6-5 Executing Configuration

When the data of an applicable product is changed, the timing that the new value is applied varies depending on the data. When a message prompts asking to execute Configuration, perform according to the following procedure. This section explains using screen examples of the **AZ** Series Pulse input type, Pulse input type with RS-485 communication interface and Built-in controller type.

1. Click [Configuration] from the [Communication] menu.	Communication Tool Window Help
	Setting of the communication
	Online(N) Offline(F)
	Data reading(Product->PC)(R)         Ctrl+R           Data writing(PC->Product)(W)         Ctrl+W           Data verification(PC<->Product)(V)         Ctrl+W
	Reset(E)
	HMI-CLR
	Configuration
2. Click [Yes]. Configuration is executed.	Warning 23 Configuration will be started.
	Do you want to proceed?
3. After it is completed, click [OK].	Information
	Complete Configuration is completed.
	ОК

# 6-6 Going offline collectively

This is a method to end the operation function, monitor function, and test function collectively.

- Online: A state where any of the operation function, monitor function, or test function is enabled
- Offline: A state where all of the operation function, monitor function, and test function are disabled

To go offline collectively, click the "Disconnect (offline)" icon in the toolbar.

Clicking the "Disconnect (offline)" icon brings into a pressed state, causing to go offline.



(memo)

Executing any of the operation function, monitor function, or test function causes to go online automatically.

# 7 Printing data

This chapter explains how to print the set data and waveform measurement results.

# 7-1 How to print data

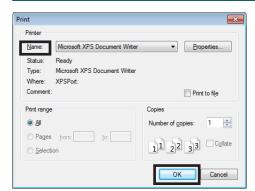
1. Click [Print] from the [File] menu.

File	Edit Move Vie	w Communicat
	New	Ctrl+N
	Open	Ctrl+O
	Close	
	Save	Ctrl+S
	Save As	
	Export	
	Page Setup(U)	
	Print Preview(V)	
	Print	Ctrl+P
	Exit(X)	

2. Set the print item, print object and color, and click [Run].

rint		
Print Item(s)		Bun
	tion[Output]	Run
	tion[RS-485]	Cancel
	Communication	
V Operation V Waveto	Waveform (image)	
Alarm		
Varning		
Coordinates		
Common		
V [/O function[Input]		
Clear all Select all		
Print what	Color	
<ul> <li>Active Item(s)(V)</li> </ul>	Black and Whi	ite
Selection(N)	Color	
Print Preview(W) Pag	e Setup(U)	

 At "Name," select a printer that you want to use for printing and click [OK]. Data is printed.



- - ×

# 7-2 Print preview

You can preview the print image on screen before printing it on the printer.

1. Click [Print preview] from the [File] menu. Alternatively, click [Print] from the [File] menu and, in the window that opens, execute print preview.

Ella.		10	Commenter
File	Edit Move	View	Communicat
	New		Ctrl+N
	Open		Ctrl+0
	Close		
	Save		Ctrl+S
	Save As		
	Export		
	Page Setup(U	)	
	Print Preview(	(V)	
	Print		Ctrl+P
	Exit(X)		

#### When [Print] is clicked

Print	×
Print Item(s) V Operation data V U0 V D0 V D0	ication Cancel
Clear all Select all	
Print what	Color
<ul> <li>Active Item(s)(V)</li> </ul>	Black and White
Selection(N)	© Color
Print Preview(W) Page	Setup(U)

The print preview window appears.

_					
Ор	eration data				
_					
	Operation mode	Position [step]	Operating speed [Hz]	Operation function	Push current [%]
#0	Incremental (INC)	0	1000	Single-motion	20.0
#1	Incremental (INC)	0	1000	Single-motion	20.0
#2	Incremental (INC)	0	1000	Single-motion	20.0
#3	Incremental (INC)	0	1000	Single-motion	20.0
#4	Incremental (INC)	0	1000	Single-motion	20.0
#5	Incremental (INC)	0	1000	Single-motion	20.0
#6	Incremental (INC)	0	1000	Single-motion	20.0
#7	Incremental (INC)	0	1000	Single-motion	20.0
#8	Incremental (INC)	0	1000	Single-motion	20.0
#9	Incremental (INC)	0	1000	Single-motion	20.0
#10	Incremental (INC)	0	1000	Single-motion	20.0
#11	Incremental (INC)	0	1000	Single-motion	20.0
#12	Incremental (INC)	0	1000	Single-motion	20.0
#13	Incremental (INC)	0	1000	Single-motion	20.0
#14	Incremental (INC)	0	1000	Single-motion	20.0
#15	Incremental (INC)	0	1000	Single-motion	20.0
#16	Incremental (INC)	0	1000	Single-motion	20.0
#17	Incremental (INC)	0	1000	Single-motion	20.0
#18	Incremental (INC)	0	1000	Single-motion	20.0
	Incremental (INC)	0	1000	Single-motion	20.0

2. After checking the print image, click [Close].

Print I	Preview					_		
Page	þ	×	100%	• P	rint Page Set	up(U) Clo	50	
		Оре	eration data					
		Оре	eration data	Position [step]	Operating speed [Hz]	Operation function	Push current [%]	
					Operating speed [Hz] 1000	Operation function Single-motion	Push current [%] 20.0	
		#0	Operation mode	Position [step]				
		#0 #1	Operation mode Incremental (INC)	Position [step]	1000	Single-motion	20.0	

# 7-3 Setting print options

1. Click [Page setup] from the [File] menu.

File Edit Move View	w Communicat
New	Ctrl+N
Open	Ctrl+O
Close	
Save	Ctrl+S
Save As	
Export	
Page Setup(U)	
Page Setup(U)	Ctrl+P
Page Setup(U) Print Preview(V)	Ctrl+P
Page Setup(U) Print Preview(V) Print	Ctrl+P

 Click the tab of an option that you want to set.
 After the setting is completed, click [OK].

ge Setup				
Page Margin Header/Foo	ter			
Orientation		Print Setting		ЭК
Portrait( <u>O</u> )		<u>Title row/col add</u>	Car	ncel
Landscape( <u>A</u> )				
Paper				
Size:( <u>Z</u> )	Letter		•	
Source:(S)	Automatically Se	lect	•	

#### • "Page" tab

Set the orientation, paper, etc. to be used for printing.

Page Setup		<b>X</b>
Page Margin Header/Footer		
Orientation ◎ Portrait( <u>O</u> ) ○ Landscape( <u>A</u> )	Print Setting	OK Cancel
Paper		
Size:(Z)	▼	
Souece:(S) Autom	atically Select 🔹	
Print Preview( <u>W</u> )	<u>P</u> rint	

#### • "Margin" tab

Set the paper margin and header/footer positions.

Page Setup	<b>×</b>
Page Margin Header/Footer	ок
Left: 25 🗼 mm Right: 25 🗼 mm	Cancel
Up:(T) 25 mm Down:(B) 25 mm	
Header: 15 mm	
Footer: 15 mm	
Print Preview(W) Print	

#### • "Header/footer" tab

Set the header/footer.

Page Setup	<b>—</b>
Page Margin Header/Footer	ОК
	Cancel
Header: Header edit Footer edit	
Footer:	
Print Preview(W) Print	
$\checkmark$	
Footer edit	×
Select the character to the character format, and click the font button.Place the page number, to page number, date, time, file, the file name and click the button to move the cursor to the text bo the corresponding.	tal OK X, Cancel
A 🗅 🖪 🖬 🕗 🗖 🏐	
Left Center Right	*
	Ŧ

# 8 Setup function

This chapter explains the functions mainly used to start up an applicable product.

#### 8-1 Editing operation data

The operation data of an applicable product can be edited using the **MEXE02**.



Just changing the data in the **MEXE02** will not cause the data in the applicable product to change. To change the data in the applicable product, writing data must be performed. Refer to p.20 for details.

- 1. Open the data edit window.
- 2. Click [Operation data] on the tree view. The operation data edit window appears.



#### Operation data edit window

File Edit Move View C	ommunic	ation Tool Window	Help				- 1
) 🧀 🔚   😓   🖦 🕮	9	୯   ଥା ଥା   ମ	ា 🚽 ស	🕻 👥 🕅 🚻	🗗 🚅 🧸 🤷 🕯	😰 🗉	
AR Built-in Controller [AC]	Operation	n data					
Data     Operation data		Operation mode	Position [step]	Operating speed [Hz]	Operation function	Push current [%]	Dwell time [s]
- Operation cases	#0	Incremental (INC)	0	1000	Single-motion	20.0	0.000
-1/0	#1	Incremental (INC)	0	1000	Single-motion	20.0	0.000
Motor	#2	Incremental (INC)	0	1000	Single-motion	20.0	0.000
- Operation - Home operation	#3	Incremental (INC)	0	1000	Single-motion	20.0	0.000
- Home operation	#4	Incremental (INC)	0	1000	Single-motion	20.0	0.000
Warning	#5	Incremental (INC)	0	1000	Single-motion	20.0	0.000
Coordinates	#6	Incremental (INC)	0	1000	Single-motion	20.0	0.000
Common I/O function[Input]	#7	Incremental (INC)	0	1000	Single-motion	20.0	0.000
- I/O function[Output]	#8	Incremental (INC)	0	1000	Single-motion	20.0	0.000
- L/O function[RS-485]	#9	Incremental (INC)	0	1000	Single-motion	20.0	0.000
Communication	#10	Incremental (INC)	0	1000	Single-motion	20.0	0.000
	#11	Incremental (INC)	0	1000	Single-motion	20.0	0.000
	#12	Incremental (INC)	0	1000	Single-motion	20.0	0.000
Operation	#13	Incremental (INC)	0	1000	Single-motion	20.0	0.000
Teaching, remote operation	#14	Incremental (INC)	0	1000	Single-motion	20.0	0.000
	#15	Incremental (INC)	0	1000	Single-motion	20.0	0.000
Monitor	#16	Incremental (INC)	0	1000	Single-motion	20.0	0.000
Status, I/O monitor	#17	Incremental (INC)	0	1000	Single-motion	20.0	0.000
Internal I/O monitor	#18	Incremental (INC)	0	1000	Single-motion	20.0	0.000
Alarm monitor	#19	Incremental (INC)	0	1000	Single-motion	20.0	0.000
Warning monitor	#20	Incremental (INC)	0	1000	Single-motion	20.0	0.000
RS-485 com. monitor	#21	Incremental (INC)	0	1000	Single-motion	20.0	0.000
Waveform monitor	#22	Incremental (INC)	0	1000	Single-motion	20.0	0.000
Test	#23	Incremental (INC)	0	1000	Single-motion	20.0	0.000
I/O test	4	incremental (INC)	J	1000	Jerge-motion	20.0	0.000

Refer to "5-2 Setting data in the data edit window" on p.15 for how to edit data and other information.

memo

When the **ARL** Series is used, set the product ID in "Select axis" before editing the operation data. To edit the data, the product ID and the ID selected in the axis selection of the **MEXE02** must be matched.

Pile Edit Move View O				않 산 태종			. 0
ARI, Buit-In Controller (DD) (AC)	Operation				<b>P</b> IEI		
(i) Data		Operation mode	Postion [step]	Operating speed [Hz]	Operation function	Push current [3]	
Parameter	#1	incremental	0	1000	Single-motion	20	
-LO	82	Incremental	0	1000	Single-motion	20	
- Motor	83	incremental	0	1000	Single-motion	20	
- Speed	84	Incremental	0	1000	Single-motion	20	
<ul> <li>Home operation</li> <li>Common</li> </ul>	85	Incremental	0	1000	Single-motion	20	
	215	Incremental	0	1000	Single-motion	20	
	87	Incremental	0	1000	Single-motion	20	
	40	incremental	0	1000	Single-motion	20	
	429	incremental	0	1000	Single-motion	20	
	#10	incremental	0	1000	Single-motion	20	
	#11	incremental	0	1000	Single-motion	20	
	#12	Incremental	0	1000	Single-motion	20	
	#13	Incremental	0	1000	Single-motion	20	
	#14	Incremental	0	1000	Single-motion	20	
Operation	#15	Incremental	0	1000	Single-motion	20	
Teaching, remote operation	#16	Incremental	0	1000	Single-motion	20	
Monitor	817	Incremental	0	1000	Single-motion	20	
Status, I/O monitor	#18	Incremental	0	1000	Single-motion	20	
Alarm monitor	815	incremental	0	1000	Single-motion	20	
Test	1120	Incremental	0	1000	Single-motion	20	
	#21	incremental	0	1000	Single-motion	20	
🚺 I/O test	#22	Incremental	0	1000	Single-motion	20	
Select Avia	#23	incremental	0	1000	Single-motion	20	
None •	#24	Incremental	0	1000	Single-motion	20	
	#25	Incremental	0	1000	Single-motion	20	

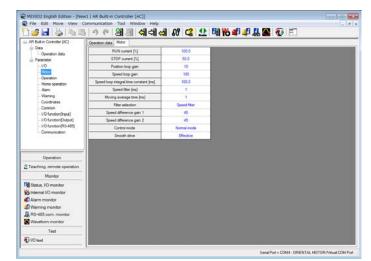
# 8-2 Editing parameters

The parameters of an applicable product can be edited using the **MEXE02**. If "Data writing" is executed, the edited data can be written to the applicable product. Refer to "6-1 Writing data to applicable product" on p.20 for details.

- 1. Open the data edit window.
- Click a parameter group that you want to edit from the tree view. The parameter edit window appears.



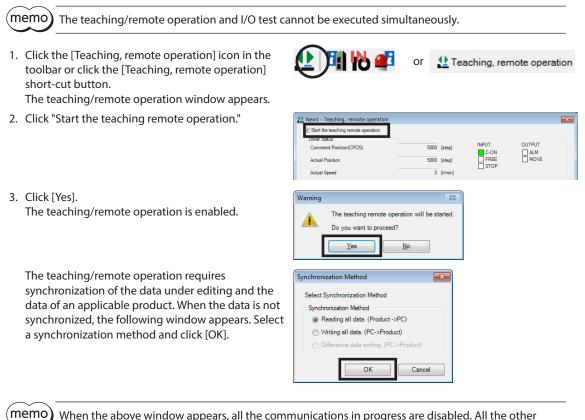
#### Parameter edit window



Refer to "5-2 Setting data in the data edit window" on p.15 for how to edit data and other information.

### 8-3 Teaching/remote operation

A motor can be operated using the **MEXE02**. This function lets you check how the motor will operate before actually connecting it to a host controller. Operation data can also be set using teaching function. Refer to p.46 for details.



When the above window appears, all the communications in progress are disabled. All the other monitors in progress in other windows are also stopped. Resume monitor after synchronization is completed.

4. To end the teaching/remote operation, unselect "Start the teaching remote operation."

New1 - Teaching, remote operatio			Ŀ
Driver status			
Command Position(CPOS)	20000 [step]	INPUT C-ON	OUTPUT ALM
Actual Position	20000 [step]	FREE	MOVE

#### 8-4 Remote operation

A motor can be operated using the **MEXE02**. This function lets you check how the motor will operate before actually connecting it to a host controller. Refer to p.46 for details.

This section explains using screen examples of the **AR** Series AC power input Pulse input type.

(memo` The remote operation and I/O test cannot be executed simultaneously. 1. Click the [Remote operation] icon in the toolbar or Remote operation or click the [Remote operation] short-cut button. The remote operation window appears. 2. Click "Start the remote operation." OUTPUT C-ON FREE 0 [step] Actual Speed 0 [r/min] 4 + ► 🗧 (step 3. Click [Yes]. Warning The remote operation is enabled. The remote operation will be started Δ Do you want to proceed? Yes No The remote operation requires synchronization of Synchronization Metho the data under editing and the data of an applicable Select Synchronization Method product. When the data is not synchronized, the Synchronization Method following window appears. Select a synchronization Reading all data. (Product ->PC) O Writing all data. (PC->Product) method and click [OK]. ОК Cancel

memo

When the above window appears, all the communications in progress are disabled. All the other monitors in progress in other windows are also stopped. Resume monitor after synchronization is completed.

4. To end the remote operation, unselect "Start the remote operation."

Start the remote operation.			
Univer Status			
Command Position	0 [step]	INPUT C-ON	OUTPUT ALM
Actual Position	0 [step]	FREE	END
Actual Speed	0 [r/min]		
Alarm Condition	Alarm Reset		
00:Alarm not present			
Operation parameter		н	lome
-			Position Reset
	listance 1 🔅 [step]		Return to electrical hom
Minimum L			operation

### 8-5 I/O test

I/O signals of direct I/O and remote I/O can be tested. Also, you can monitor input signals and cause output signals to be output forcibly.

This function is convenient if you want to check the wire connection of physical I/O with the host controller and the operation of network I/O.

Note In I/O test, you can forcibly turn on or off output signals. Consequently, other equipment connected to an applicable product may operate. Check the surrounding circumstances to ensure safety before conducting this procedure.

memo The teaching/remote operation and I/O test cannot be executed simultaneously.

 Click the [I/O test] icon in the toolbar or click the [I/O test] icon. The I/O test window appears.

2. Click "Start I/O test."

Start I/O Test			
I/O parameter           INPUT           IN0           IN1           IN2           IN3           IN4           IN5           IN6           IN7	□ +LS □ -LS □ HOMES □ SLIT	OUTPUT OUT0 OUT1 OUT2 OUT3 OUT4 OUT5	

or 🚯 I/O test

 Click [Yes]. You can now perform I/O test.

Warning		23
	The I/O test fu Do you want	unction will be enabled. to proceed?
	Yes	No

🚅 🤹 🕰

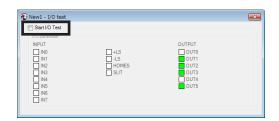
 Switch the ON/OFF status of input signals externally. The check box □ of the corresponding "INPUT" is changed in the window.

Indicator	Direct I/O	Remote I/O (RS-485 communication)
ON (green)	Conducting	Active
OFF (white)	Non-conducting	Not active

5. When switching the ON/OFF status of output signals, click the check box 
of "OUTPUT" in the window.

Indicator	Direct I/O	Remote I/O (RS-485 communication)
ON (green)	Conducting	Active
OFF (white)	Non-conducting	Not active

6. To end the I/O test, unselect "Start I/O test."



# **9** Monitor function

This chapter explains how to check the status of an applicable product using the MEXEO2.

#### 9-1 Status, I/O monitor

You can monitor the current status of an applicable product and the ON/OFF status of I/O signals.

E

 Click the [Status, I/O monitor] icon in the toolbar or click the [Status, I/O monitor] shortcut button.

The status, I/O monitor window appears.

 Click "Start the status, I/O monitor." The status, I/O monitor starts. The ON/OFF status of I/O signals is displayed as shown in the table.

Indicator	I/O	RS-485 communication
ON (green)	Conducting	Active
OFF (white)	Non- conducting	Not active

New1 - Status, I/O monitor			<b>—</b>
Start the Status, I/O monitor.			
Status			
Command Position	0	[step]	
Actual Position	0	[step]	
Actual Speed	0	[r/min]	
Operation Number	-1		
Selection Number	0		
Driver version	2.00		
I/O           INPUT           IN0           IN1           IN1           IN2           IN3           IN4           IN5           IN5           IN7	□ +LS □ -LS □ HOMES □ SLIT	OUTPUT	
R5485 INFUT INET-IN0 INET-IN1 INET-IN2 INET-IN3 INET-IN5 INET-IN6 INET-IN7	NET-IN8 NET-IN9 NET-IN10 NET-IN11 NET-IN12 NET-IN13 NET-IN14 NET-IN15	OUTPUT UREF-OUT0 UREF-OUT1 UREF-OUT2 UREF-OUT3 UREF-OUT3 UREF-OUT4 UREF-OUT6 UREF-OUT6 UREF-OUT7	NET-OUT8     NET-OUT9     NET-OUT10     NET-OUT11     NET-OUT12     NET-OUT13     NET-OUT14     NET-OUT14     NET-OUT15

Status,I/O monitor

or

The status, I/O monitor requires synchronization of the data under editing and the data of an applicable product. When the data is not synchronized, the following window appears. Select a synchronization method and click [OK].

Synchronization Method
Select Synchronization Method
Synchronization Method
Reading all data. (Product ->PC)
Writing all data. (PC->Product)
O Difference data writing. (PC->Product)
OK Cancel

When the above window appears, all the communications in progress are disabled. All the other monitors in progress in other windows are also stopped. Resume monitor after synchronization is completed.

3. To exit the monitor, unselect "Start the status, I/O monitor."

Start the Status, I/O monitor.		
Status		
Command Position	0 [step]	
Actual Position	0 [step]	
Actual Speed	0 [r/min]	
Operation Number	-1	
Selection Number	0	

#### 9-2 I/O monitor

#### Internal I/O monitor

All the I/O signals of an applicable product can be monitored. You can also check signals not assigned to direct I/O or remote I/O.

- 1. Click the [Internal I/O monitor] icon in the toolbar or click the [Internal I/ O monitor] short-cut button. The internal I/O monitor window appears.
- 2. Click "Start the internal I/O monitor." The internal I/O monitor starts. The ON/OFF status of I/O signals is displayed as shown in the table.

Indicator	Internal signal status
ON (green)	Active
OFF (white)	Not active

3. To exit the monitor, unselect "Start the internal I/O monitor."



Vew1 - Internal							
INPUT FWD RVS HOME START SSTART JOG JOG	M50   M51   M52   M53   M54   M55	C-ON STOP	M0 M1 M2 M3 M4 M5	ALM-RST P-PRESET P-CLR HMI		Generic Signal R0 R1 R2 R3 R4 R5 R6 R7	R8 R9 R10 R11 R11 R12 R13 R14 R15
OUTPUT FVD_R RVS_R HOME_R START_R START_R -JOG_R -JOG_R	MS0_R   MS1_R   MS2_R   MS3_R   MS4_R   MS5_R	FREE_R C-ON_R STOP_R	M0_R M1_R M2_R M3_R M4_R M5_R	ALM WNG READY MOVE END HOME-P TLC TIM	AREA1 AREA2 AREA3 S-BSY MPS		
New1 - Internal							
INPUT FWD RVS HOME	MS0 MS1 MS2	FREE C-ON	M0 M1 M2	ALM-RST		Generic Signal	R8 R9 R10

R1 R2 R3 R4 R5 R6 R7

+LS\_R -LS\_R HOMES

AREA1 AREA2 AREA3 S-BSY MPS

M1 M2 M3 M4 M5

M0\_R M1\_R M2\_R M3\_R M3\_R M4\_R M5\_R

FREE\_R C-ON\_R STOP\_R

MS1 MS2 MS3 MS4 MS5

#### Remote I/O monitor

You can check the ON/OFF status of network I/O. This section explains using screen examples of the network converter CC-Link compatible **NETC01-CC**.

 Click the [Remote I/O monitor] icon in the toolbar or click the [Remote I/O monitor] short-cut button. The remote I/O monitor window appears.



or Remote I/O monitor

 Click "Start remote I/O monitor window appear
 Click "Start remote I/O monitor starts. The remote I/O monitor starts. The ON/OFF status of I/O signals is displayed as shown in the table.

Indicator	Remote I/O (RS-485 communication)
ON( green)	Active
OFF (white)	Not active

New7* - Remote	I/O monitor							
Start Remote I/O	Monitor							<u> </u>
0.4ZD- 0.4ZD- 0.4ET-N1 0.4ET-N1 0.4ET-N3 0.4ET-N3 0.4ET-N3 0.4ET-N5 0.4ET-N5 0.4ET-N5 0.4ET-N7 4	NET-IN8           NET-IN9           NET-IN11           NET-IN12           NET-IN14           NET-IN15           RY(n-4)8           RY(n-4)6	1.ARD-K0   NET-IN0   NET-IN1   NET-IN2   NET-IN3   NET-IN4   NET-IN5   NET-IN5   RY(n-5)0   RY(n-5)2   RY(n-5)5   RY(n-5)	NET-IN8           NET-IN9           NET-IN11           NET-IN12           NET-IN14           NET-IN15           RY(n-5)8           RY(n-5)8	2: RY(n-2)0 RY(n-2)1 RY(n-2)2 RY(n-2)3 RY(n-2)4 RY(n-2)6 RY(n-2)7 RY	RY(n+2)8     RY(n+2)9     RY(n+2)9     RY(n+2)2     RY(n+2)C     RY(n+2)C     RY(n+2)F     -    -	3: RY((n+3)0 RY((n+3)1 RY((n+3)2 RY((n+3)2 RY((n+3)4 RY((n+3)5 RY((n+3)7 System Area - - - - - - - - - - - - -	RY(n-3)8     RY(n-3)9     RY(n-3)9     RY(n-3)A     RY(n-3)A     RY(n-3)C     RY(n-3)C     RY(n-3)F     -	E
RV (NETCO-CCL 0.AZD- NET-0-UT1 NET-0-UT1 NET-0-UT3 NET-0-UT3 NET-0-UT5 NET-0-UT5 NET-0-UT5 PX(n+4)0 PX(n+4)0 PX(n+4)1 PX(n+4)0 PX(n+4)1 PX(n+4)0 PX(n+4)1 PX(n+4)0 PX(n+4)1 PX(n+4)00 PX(n+4)00 PX(n+4)0	Master)	1.ARD-KD NET-OUT0 NET-OUT2 NET-OUT2 NET-OUT2 NET-OUT4 NET-OUT6 NET-OUT7 5: RX(n=5)0 RX(n=5)1 RX(n=5)2 RX(n=5)5 RX(n=5)7	NET-OUT8           NET-OUT9           NET-OUT10           NET-OUT11           NET-OUT12           NET-OUT12           NET-OUT13           NET-OUT14           NET-OUT15           RX(n-5)8           RX(n-5)8           RX(n-5)8           RX(n-5)8           RX(n-5)8           RX(n-5)8           RX(n-5)8           RX(n-5)8           RX(n-5)8           RX(n-5)5           RX(n-5)5           RX(n-5)5           RX(n-5)5           RX(n-5)5	2: RX(n+2)0 RX(n-2)1 RX(n-2)2 RX(n-2)3 RX(n-2)5 RX(n-2)5 RX(n-2)5 RX(n-2)7 NETC01-CC M-DAT1 M-DAT3 M-DAT3 M-DAT4 M-DAT3 M-DAT4 ALM	PX(n+2)8     PX(n+2)8     PX(n+2)4     PX(n+2)4     PX(n+2)6     PX(n+2)C     PX(n+2)C     PX(n+2)F     C-SUC     -	3: PX(n+3)0 PX(n+3)2 PX(n+3)2 PX(n+3)4 PX(n+3)4 PX(n+3)4 PX(n+3)7 System Area - - - - - - - - - - - - -	PX(n+3)8     PX(n+3)8     PX(n+3)4     PX(n+3)4     PX(n+3)4     PX(n+3)C     PX(n+3)C     PX(n+3)C     PX(n+3)F     -	
Synchronizat	ronization Meth	luct ->PC) Product)						

The remote I/O monitor requires synchronization of the data under editing and the data of an applicable product. When the data is not synchronized, the following window appears. Select a synchronization method and click [OK].

/ ~	~	
(men	10)	When the above window appears, all the communications in progress are disabled. All the other
$\sim$		monitors in progress in other windows are also stopped. Resume monitor after synchronization is
		completed.

ок

Cancel

3. To exit the monitor, unselect "Start remote I/O monitor."

Start Remote I/C	Monitor						
0:AZD-*		1:ARD-KD		2:		3:	
NET-IN0	NET-IN8	NET-IN0	NET-IN8	RY(n+2)0	RY(n+2)8	RY(n+3)0	RY(n+3)8
NET-IN1	NET-IN9	NET-IN1	NET-IN9	RY(n+2)1	RY(n+2)9	RY(n+3)1	RY(n+3)9
NET-IN2	NET-IN10	NET-IN2	NET-IN10	RY(n+2)2	RY(n+2)A	RY(n+3)2	RY(n+3)A
NET-IN3	NET-IN11	NET-IN3	NET-IN11	RY(n+2)3	RY(n+2)B	RY(n+3)3	RY(n+3)B
NET-IN4	NET-IN12	NET-IN4	NET-IN12	RY(n+2)4	RY(n+2)C	RY(n+3)4	RY(n+3)C
NET-IN5	NET-IN13	NET-IN5	NET-IN13	RY(n+2)5	RY(n+2)D	RY(n+3)5	RY(n+3)D
NET-IN6	NET-IN14	NET-IN6	NET-IN14	RY(n+2)6	RY(n+2)E	RY(n+3)6	RY(n+3)E
NET-IN7	NET-IN15	NET-IN7	NET-IN15	RY(n+2)7	RY(n+2)F	RY(n+3)7	RY(n+3)F

#### 9-3 Remote register monitor

You can monitor the remote register status that can be read and written to via a network. This section explains using screen examples of the network converter CC-Link compatible **NETCO1-CC**.

 Click the [Remote register monitor] icon in the toolbar or click the [Remote register monitor] shortcut button.
 The remote register monitor window appears.



Remote Register monitor

2. Click "Start remote register monitor."

The remote register monitor starts.

Ww(Master to NET		RWr(NETC01-CC to			
/w/wn0	0000 h	RWm0	0000 h		
Wwn1	0000 h	RWm1	0000 h	RWm1-0	0
Wwn2	0000 h	RWm2	0000 h		
Wwn3	0000 h	RWm3	0000 h	RWm3-2	0
?Wwn4	0000 h	RWm4	0000 h		
RWwn5	0000 h	RWm5	0000 h	RWm5-4	0
R/w/wn6	0000 h	RWm6	0000 h		
RWwn7	0000 h	RWm7	0000 h	RWm7-6	0
N/wn8	0000 h	RWm8	0000 h		
Www9	0000 h	RWm9	0000 h	RWm9-8	0
N/wnA	0000 h	RWmA	0000 h		
RWwnB	0000 h	RWmB	0000 h	RWmB-A	0
mmand Running					
Ww(Master to NET	C01-CC)	RWr(NETC01-CC to	Master)		
l/wwnC	0000 h	RWmC	0000 h		
(WwnD	0000 h	RWmD	0000 h		
WwnE	0000 h	RWmE	0000 h		
WwnF	0000 h	RWmF	0000 h		

or

The remote register monitor requires synchronization of the data under editing and the data of an applicable product. When the data is not synchronized, the following window appears. Select a synchronization method and click [OK].

ynchronization Method	<b>×</b>
Select Synchronization Method	
Synchronization Method	
Reading all data. (Product ->PC)	
Writing all data. (PC->Product)	
O Difference data writing. (PC->Produced)	ct)
ОК	Cancel

memo

When the above window appears, all the communications in progress are disabled. All the other monitors in progress in other windows are also stopped. Resume monitor after synchronization is completed.

3. To exit the monitor, unselect "Start remote register monitor."

	te register monitor Register Monitor				×
- RWw (Master RWwn0 RWwn1	to NETC01-CC)	RWrn0	C01-CC to Master) 0000 0000		0
RWwn2 RWwn3	4 0000 H		0000		0

#### 9-4 RS-485 status monitor

You can monitor the RS-485 communication status of an applicable product. This section explains using screen examples of the network converter CC-Link compatible **NETC01-CC**.

- Click the [RS-485 status monitor] icon in the toolbar or click the [RS-485 status monitor] short-cut button. The RS-485 status monitor window appears.
- 2. Click "Start RS-485 status monitor." The RS-485 status monitor starts.



V Start RS-485 St	atus Monitor		
RS-485 Commun	iication Scan Time	101.4 [ms]	
RS-485 communio	cation Status		
	Request	Reply	
Axis #0			
Axis #1			
Axis #2			
Axis #3			
Axis #4			
Axis #5			
Axis #6			
Axis #7			
Axis #8			
Axis #9			
Axis #10			
Axis #11			

The RS-485 status monitor requires synchronization of the data under editing and the data of an applicable product. When the data is not synchronized, the following window appears. Select a synchronization method and click [OK].

Synchronization Method
Select Synchronization Method
Synchronization Method
<ul> <li>Reading all data. (Product -&gt;PC)</li> </ul>
Writing all data. (PC->Product)
<ul> <li>Difference data writing. (PC-&gt;Product)</li> </ul>
OK Cancel

When the above window appears, all the communications in progress are disabled. All the other monitors in progress in other windows are also stopped. Resume monitor after synchronization is completed.

3. To exit the monitor, unselect "Start RS-485 status monitor."

Start RS-485 St	atus Monitor	
RS-485 Commu	nication Scan Time	101.4 [ms]
RS-485 Communi	cation Status	
	Request	Reply
Axis #0		
Axis #1		
Axis #2		
Axis #3		
Axis #4		
Axis #5		
Axis #6		
Axis #7		
Axis #8		
Axis #9		
Axis #10		
Axis #11		

## 9-5 Remote monitor

You can monitor the data sent and received between an applicable product and host controller. This section explains using screen examples of the network converter EtherCAT compatible **NETC01-ECT**.

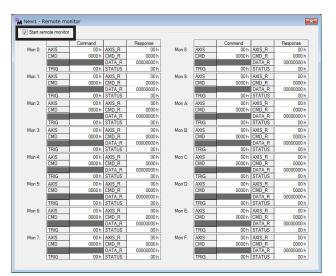
 Click the [Remote monitor] icon in the toolbar or click the [Remote monitor] short-cut button. The remote monitor window appears.



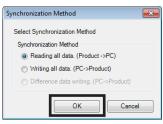
Remote monitor

or

2. Click "Start remote monitor." The remote monitor starts.

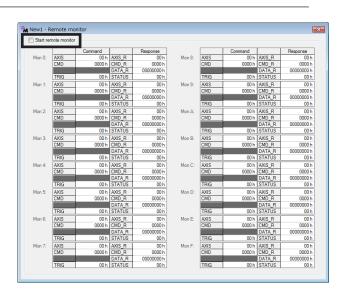


The remote monitor requires synchronization of the data under editing and the data of an applicable product. When the data is not synchronized, the following window appears. Select a synchronization method and click [OK].



When the above window appears, all the communications in progress are disabled. All the other monitors in progress in other windows are also stopped. Resume monitor after synchronization is completed.

3. To exit the monitor, unselect "Start remote monitor."



# **10 Adjustment functions**

This chapter explains how to adjust an applicable product using the **MEXE02**.

### 10-1 Waveform monitor

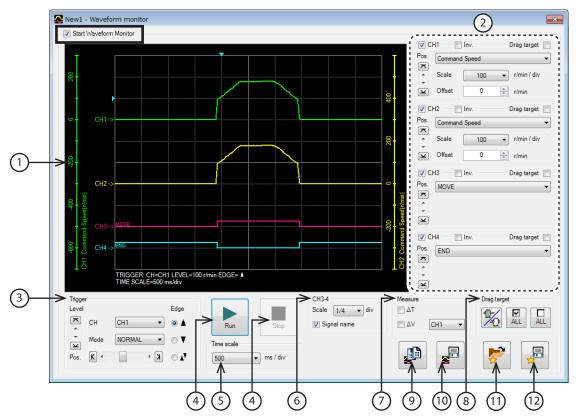
The motor speeds and I/O signal status can be checked in waveforms. Refer to p.50 for how to use the waveform monitor.

 Click the [Waveform monitor] icon in the toolbar or click the [Waveform monitor] short-cut button. The waveform monitor window appears.



2. Click "Start waveform monitor."

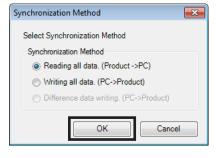
The buttons in the window are enabled, allowing you to prepare for measurement of the waveform monitor.



1	Measurement results are drawn in this area.
2	The measurement conditions for each CH can be set. Refer to Step 3 for details.
3	Waveform measurement settings: Pos (trigger position), Level, CH, Mode, and Edge (detection condition) can be specified. For "CH," only those CHs displayed at ①can be specified.
4	Run: This button is used to start measurement. Stop: This button is used to stop measurement.
5	The measurement time range can be set.
6	The display method for CH3 and CH4 can be set. Scale: The display size can be selected from 1/1 (100%), 1/2 (50%), or 1/4 (25%). Signal name: The signal name can be shown or hidden.
7	The measure for measurement can be shown or hidden. Also, the CH to be measured can be selected.

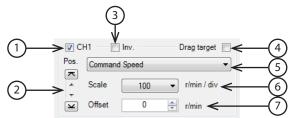
8	The method to move the display position of the waveform drawn on the window can be selected. There are the following two moving methods.
0	• Move the waveform per CH.
	• Move the waveform of the CH selected in ② simultaneously.
9	The currently displayed waveform can be copied to the clipboard.
10	The currently displayed waveform can be saved to an external file. Refer to p.52 for details.
11	The setting for measurement can be loaded from "Favorites data." Refer to p.52 for details.
12	The setting for measurement can be saved as "Favorites data."

The waveform monitor may synchronize the data under editing and the data of an applicable product. When the data is not synchronized, the following window appears. Select a synchronization method and click [OK].



When the above window appears, all the communications in progress are disabled. All the other monitors in progress in other windows are also stopped. Resume monitor after synchronization is completed.

3. Set the measurement conditions for each CH.



1	Each CH can be shown or hidden.			
2	The display position of a waveform can be moved up or down.			
3	The display of measured signal can be inverted.			
4	Selecting this check box can drag displayed waveforms drawn in the window simultaneously.			
5	This is used to select a signal to be measured.			
б	This is used to select a display scale for signals (CH1 and CH2 only). Using this setting in combination with ⑦ can zoom in on signals.			
7	The set offset value is added to the signal display (CH1 and CH2 only). Using this setting in combination with (6) can zoom in on signals.			

4. Click [Run].

The waveform measurement starts.

- 5. During measurement, click [Stop] to exit the waveform measurement. If "SINGLE" is selected for Mode in Trigger, measurement automatically ends when waveform drawing ends.
- 6. To exit the waveform measurement, unselect "Start waveform monitor."



×

Alarm Rese

Clear the alarm record.

# **11 Diagnosis functions**

Using the alarm monitor and the warning monitor, you can check the causes of errors and troubles of an applicable product.

#### 11-1 Alarm monitor

The alarm records of up to ten most recent alarms starting from the latest one can be checked. Also, with the **AZ** Series, the operation and the status of I/O signals, which were executed when the alarm generated, can be checked.

485

rt the alarm mo

Alarm Condition

No.1 No.2

No.3

No.4 No.5

No.6

No.7

or

85:RS-485 communication til

Alarm message

Alarm not prese

Alarm not present Alarm not present

Alarm not presen

Alarm not presen

Alarm not pr

🛋 Alarm monitor

Absolute position error Reset

- Click the [Alarm monitor] icon in the toolbar or click the [Alarm monitor] short-cut button. The alarm monitor window appears.
- Click "Start the alarm monitor." The alarm monitor starts. The current alarm and past alarm records are displayed. Click the displayed alarm to show the cause and measure for it.

The alarm monitor may synchronize the data under editing and the data of an applicable product. When the data is not synchronized, the following window appears. Select a synchronization method and click [OK].

	N0.8	00	, e e e e e e e e e e e e e e e e e e e	varm not pres	sent		
	No.9	00	A	larm not pre:	sent		
	No.10	00	A	larm not pres	sent		
	•					•	
						odate	
-			h a d		6	~	
Sy	nchronizat	ion wet	noa		le le		
	Coloct Cun	obroniza	tion Method				
	Select Syn	chroniza	tion Method				
	Synchroni	zation M	ethod				
	Read	ding all d	lata. (Produc	ct ->PC)			
	⊚ Writi	ing all da	ita. (PC->Pr	oduct)			
	0	-		· · ·			
	O Diffe	rence da	ata writing. (	PC->Pro	duct)		
		_					
			ОК		Cancel		

(memo

When the above window appears, all the communications in progress are disabled. All the other monitors in progress in other windows are also stopped. Resume monitor after synchronization is completed.

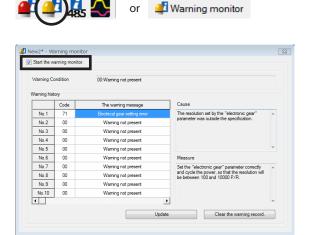
3. To exit the monitor, unselect "Start the alarm monitor."

larm Con	dition	85:RS-485 communication timeout	on error Reset	
		Absolute position	Alarm Neset	
arm history			Cause	
No.1	Code 85	Alam message	The time set in the "communication timeout"	
	85	RS-485 communication timeout	parameter has elapsed, and yet the	
No.2		Alarm not present	communication could not be established with the master controller	
No.3	00	Alarm not present		
No.4	00	Alarm not present		
No.5	00	Alarm not present		
No.6	00	Alarm not present	Measure	
No.7	00	Alarm not present	Check the connection between the master controller and driver.	
No.8	00	Alarm not present	controller and driver.	
No.9	00	Alarm not present		
No.10	00	Alarm not present	•	

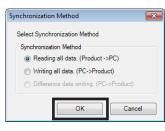
## 11-2 Warning monitor

The warning records of up to ten most recent warnings starting from the latest one can be checked.

- Click the [Warning monitor] icon in the toolbar or click the [Warning monitor] short-cut button. The warning monitor window appears.
- Click "Start the warning monitor." The warning monitor starts. The current warning and past warning records are displayed. Click the displayed warning to show the cause and measure for it.



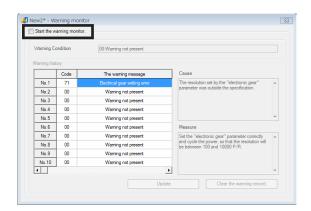
The warning monitor may synchronize the data under editing and the data of an applicable product. When the data is not synchronized, the following window appears. Select a synchronization method and click [OK].





When the above window appears, all the communications in progress are disabled. All the other monitors in progress in other windows are also stopped. Resume monitor after synchronization is completed.

3. To exit the monitor, unselect "Start the warning monitor."



or 🚜 RS-485 communication.

# 11-3 RS-485 communication monitor

The error records of up to ten most recent errors starting from the latest one can be checked. Also, with the **AZ** Series, the received data via RS-485 communication can be checked.

485

╲ 👽

- Click the [RS-485 com. monitor] icon in the toolbar or click the [RS-485 com. monitor] short-cut button. The RS-485 communication monitor window appears.
- Click "Start the RS-485 communication." The RS-485 communication monitor starts. The current communication error and past communication error records are displayed. Click the displayed communication error to show the cause and measure for it.

Start the F	IS-485 comm	unication.		
COM Erro	Condition	00:Communication error not present		
ommunicat	tion Error Histo	ny		
	Code	The communication error message	Cause	
No.1	00		-	*
No.2	00	Communication error not present		
No.3	00	Communication error not present		
No.4	00	Communication error not present		
No.5	00	Communication error not present		-
No.6	00	Communication error not present	Measure	
No.7	00	Communication error not present		*
No.8	00	Communication error not present		
No.9	00	Communication error not present		
No.10	00	Communication error not present		
4		•	1	-

3. To exit the monitor, unselect "Start the RS-485 communication."

	Condition	00:Communication error not present		
nmunicatio	on Error Histo	ry .		
	Code	The communication error message	Cause	
No.1	00			
No.2	00	Communication error not present		
No.3	00	Communication error not present		
No.4	00	Communication error not present		
No.5	00	Communication error not present		-
No.6	00	Communication error not present	Measure	
No.7	00	Communication error not present		
No.8	00	Communication error not present		
No.9	00	Communication error not present		
No.10	00	Communication error not present		

# 12 Utilizing MEXE02

This chapter provides some examples of utilizing the **MEXE02**.

## 12-1 Operating motor using the MEXE02

A motor can be operated using the **MEXE02**. This function lets you check how the motor will operate before actually connecting it to a host controller.

Operation data can be set using teaching function. Although there is no need to connect to a host controller, the applicable product must be connected to the power supply.

Use the teaching/remote operation. The teaching/remote operation allows you to perform the following operations. • Positioning operation

- Positioning operation Return-to-home operation
- ZHOME operation
- ZHOME operation
- JOG operationTeaching
- reaching

(memo) • The teaching/remote operation and I/O test cannot be executed simultaneously.

- Before performing this operation, set necessary data and write it to an applicable product.
- When the operation is started, connect the power supply to the applicable product and enable the "teaching, remote operation." Refer to p.32 for details.

#### Positioning operation

You can operate the motor using the operation data written to the applicable product.

- 1. Set the number of operation data that you want to execute in "Operation data #."
- 2. Click [Start positioning operation].

Driver Status			INPUT	OUTPUT
Command Position(CPOS)	1000	) [step]	C-ON	ALM
Actual Position	100	[step]	FREE STOP	MOVE
Actual Speed	(	) [r/min]		
Alarm Condition	Alarm Reset		Absolute position	error Reset
00:Alarm not present				
Operation parameter				
Operation Data #	0 Positioning mode Position [step]		_	Incremental (I
	Operating speed [H	lz]		1
Start positioning opera	tion. Push current[%] Acceleration [ms/k	Hallor [e]	_	2
	Deceleration [ms/k			10
Home Operation				
Teaching				
Operation Data #	0 🔹			
	Posit			
Absolute (ABS)	-	ion det	Reflect	ing on the driver.
Absolute (ABS)			Reflect	ing on the driver.
Absolute (ABS)		+ 1	Reflect	ing on the driver.
		+ 1		ing on the driver.
		(step)		ing on the driver.
	num Distance	+ I		ing on the driver.
Minim Negative soft limt 	num Distance	+ I	oft limit 8388607 [step]	ing on the driver.
Minim Negative soft lmt	um Distance 1 Home Position Preset		oft limit	ing on the driver.
Negative soft limit 	um Distance 1 Home Position Preset and		oft limit 8388607 [step] Preset (CPOS+1)	ing on the driver.
Minim Negative soft limt -8339608 [step] Preset	Home Position Preset		oft limit 8388607 [step] Preset	ing on the driver.
Negative soft limit 	um Distance 1 Home Position Preset and		oft limit 8388607 [step] Preset (CPOS+1)	ing on the driver.
Negative soft limit 	um Distance 1 Home Position Preset and		oft limit 8388607 [step] Preset (CPOS+1)	ing on the driver.

 Click [Yes]. The positioning operation with the selected operation data number starts.

Warr	ning			×
<u> </u>		Positioning o Do you want	peration will be sta to proceed?	arted.
		Yes	<u>N</u> o	]
Drivi	ng		<b>_</b>	<

Click [Stop] to stop the operation before completion.

Driving	×
Drivin	J
	Stop
l.	

#### Return-to-home operation

- 1. Click [Home operation].
- 2. Click [Yes]. The return-to-home operation starts.

Click [Stop] to stop the operation before completion.

	Home Op	eration	
Warning			83
wanning			
<u> </u>		ation will be s	tarted.
	Do you wa	nt to proceed?	
	Yes	No	
Home Op	erating		×
Home (	)perating		
<u>г</u>			1

#### **ZHOME** operation

You can perform return-to-mechanical home (ZHOME) operation.

- 1. Click [ZHOME operation].
- 2. Click [Yes]. The ZHOME operation starts.

	ZHOME operation	
Warning		23
<u>^</u>	The ZHOME operation will be Do you want to proceed? Yes <u>No</u>	started.
ZHOME d	Iriving	×
ZHOM	IE driving	
- [	Stop	

Click [Stop] to stop the operation before completion.

#### JOG operation

You can operate the motor either continuously or in steps of the specified minimum distance. The method of JOG operation varies depending on the product.

JOG operation can be executed using the following buttons. The JOG operating speed can be changed using a parameter.

	-		+		
	Minimum Dist	tance 1	≑ [ster	p]	

- Moves the motor in the negative direction at the JOG operating speed.
- Moves in the negative direction at the speed of one-tenth of the JOG operating speed.
- : Moves the motor in the negative direction by the minimum distance.
- Stops the operation immediately.
- + : Moves the motor in the positive direction by the minimum distance.
- : Moves in the positive direction at the speed of one-tenth of the JOG operating speed.
- ▶ : Moves the motor in the positive direction at the JOG operating speed.

### Teaching

While operating the motor, you can set the current motor position as the operation data.

1.	Change the current motor position either manually or with JOG operation. Do so while checking the "Command position (CPOS)" in "Driver status." Use the JOG operation buttons to move the motor with JOG operation.	New1* - Teaching, remote operation     Start the teaching remote operation.     Diver State     Command Position(POS)     1000 [step]     Actual Position     Actual Position     Actual Speed     0 [r/min]     Alarm Condition     Alarm Peaet     Operation parameter     Operation Data #     0
	JOG operation buttons ——	Start positioning operation          Operating generalized (Hz)         Acceleration (mis/kHz) or (p)         Acceleration         Accel
2.	Select an operation data number at "Operation data #" in "Teaching."	Teaching Operation Data # 0 (
3.	Select an operation mode and click [Position set]. If you select "No setting for operation mode," the operation mode set in the operation data number is used. The new position information is set to the selected operation data number.	
4.	Click [Reflecting on the driver] to set the teaching data to the applicable product.	Reflecting on the driver.
5.	Click [Yes]. The data is written to the applicable product.	Warning     53       Modified data will be written.     Do you want to proceed?       Yes     No

(memo) While the applicable product and PC are connected (online), you cannot edit data other than the

operation mode and position. Edit these data under disconnected condition (offline).

#### **Teaching software limit** 12-2

While operating the motor, you can set the current motor position as the software limit value.

- 1. Enable the teaching/remote operation.
- 2. Change the current motor position either manually or with JOG operation. ...

Do so while checking (CPOS)" in "Driver s

	Do so while checking the "Command position	Command Position(CPOS) 1000 [step]	
	(CPOS)" in "Driver status."	Actual Position 1000 [step] FREE MOVE	
	Use the JOG operation buttons to move the motor	Actual Speed 0 [r/min]	
	•	Alarm Condition Alarm Reset Absolute position error Reset	
	with JOG operation.	00:Alam not present	
		Operation parameter	
		Operation Data # 0 🛬 Positioning mode Incremental (INC	2)
		Position [step] Operating speed [Hz] 100	0
		Start positioning operation. Push current [%] 20 Acceleration [ms/kHz] or [s] 1.00	
		Deceleration (ms/kHz) or [s] 1.00 Deceleration (ms/kHz) or [s] 1.00	
		Home Operation	
		Teaching	
		Operation Data # 0 (=) Position Set Reflecting on the driver.	
		Absolute (ABS)	
	JOG operation buttons —		
	Jog operation batteris		
		Minimum Distance 1 (step)	
		Negative soft limit Home Positive soft limit -8388608 [step] 8388607 [step]	
		Position Preset	
		Preset (CPOS-1) (CPOS+1)	
		Position preset	
		Initialize Both limits initialize Initialize	
			-
2	Click [Preset (CPOS–1)] to set a software limit value	Negative soft limit Home Positive soft limit	
5.		-8388608 [step] 8388607 [step]	
	in the negative direction.	Preset Preset	
	Click [Preset (CPOS+1)] to set a software limit value	(CPOS-1) Position preset (CPOS+1)	
	in the positive direction.	Initialize Both limits initialize Initialize	
	in the positive direction.		
4.	Click [Yes].	Warning 83	
	The software limit value is set.	Positive software limit will set up.	
	When [Droset (CDOS + 1)] is calested the positive		
	When [Preset (CPOS+1)] is selected, the positive	Do you want to proceed?	
	software limit value is the command position +1.	Yes	
	When [Preset (CPOS-1)] is selected, the negative		
	5		
	software limit value is the command position $-1$ .		
-			

Reflecting on the driver.

Modified data will be written Do you want to proceed?

<u>N</u>o

83

1 New1\* - Teaching, remote operatio Start the teaching

5. Click [Reflecting on the driver] and then [Yes]. The data is written to the applicable product.



Just clicking [Preset (CPOS-1)] or [Preset (CPOS+1)] will not cause to write to the applicable product. Be sure to execute [Reflecting on the driver].

<u>Y</u>es

Warning

#### Utilizing waveform monitor 12-3

Refer to p.41 for the basic usage procedure of the waveform monitor.

As examples of utilization of the waveform monitor, this section explains the following items using screens of the AZ Series Pulse input type, Pulse input type with RS-485 communication interface and Built-in controller type.

- Zooming in on waveform data
- Moving drawing positions of waveforms for multiple CHs simultaneously
- Saving waveform measurement results as images
- Saving waveform measurement results as data

#### Zooming in on waveform data

You can enlarge and display part of the measured waveform data.

The following shows an example of zooming in on around the peak value after measuring the detection speed of CH1.

¥

Pos

\*

СНЗ Inv

Pos.

CH4 📄 Inv

Pos.

Offset

Scale

Scale

Scale 100

Gifset

Gffset

↓ Offset

Inv CH2

Command Speed

Present CPOS

Driver Temperature

500

0

1000

0

1. Measure the waveform.

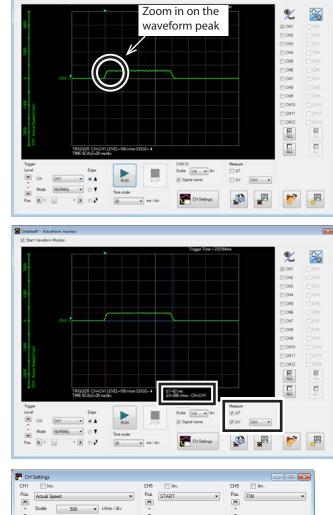
check box.

around 300 r/min.

In this example, the detection speed of CH1 is measured.

2. Select "CH1" in "Measure," and select the  $\Delta V$ 

The result shows the peak value of CH1 at



¥

CH6 

-

¥

CH7

Pos.

¥

CH8

Pos.

¥

IN-POS

🔲 Im

READY

MOVE

-

-

-

🔹 r/min

▼ r/min / div

🔹 r/min

▼ step / div

step

▼ °C / div

0 💠 °C

¥

CH10 In In

Pos TLC

¥

CH11

Pos.

×

CH12

¥

•

🗐 In

🖂 In Pos.

SYS-BSY

FREE

•

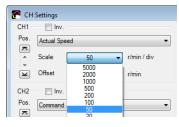
-

•

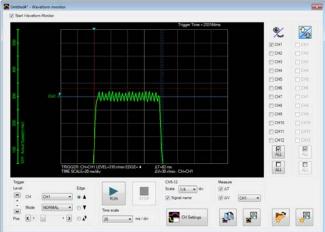
3. Click [CH settings]. The CH settings window appears.

- 4. In "Offset" of CH1, enter a center value onto which you want to zoom in. In this example, enter 300 (r/min), the measurement result of Step 2, to zoom in on around the peak value.
- 5. Change "Scale" of CH1. In this example, set the speed for each scale on the vertical axis.

🚰 СН	Settings			
CH1	Inv.			
Pos.	Actual Speed	d		•
× ,	Scale	500	•	r/min / div
¥	Offset	300	-	r/min



The waveform is zoomed in, centering on the value entered as the offset value.

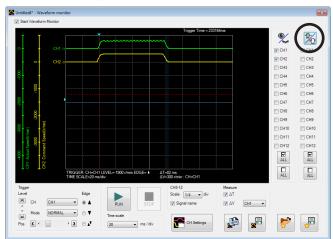


#### Moving drawing positions of waveforms simultaneously

You can change the display positions by moving the waveform curves in the window. This section explains how to move multiple CH curves simultaneously.

1. After waveform measurement, click the button located in the upper right corner of the waveform monitor window.

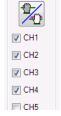
The button is changed to 搔 .



 Click the CHs that you want to move simultaneously.
 When you want to move all of the lines on the waveform simultaneously, click Place

All of the CHs can be selected.

 Drag the waveform curves in the window to move them vertically. The selected CHs are moved simultaneously.



#### Saving setting conditions for measurement

The setting for measurement can be saved as "Favorites data."

- 1. In the waveform monitor window, click [Save favorites data].
- 2. Enter a data name and click [Save]. You can also enter a memo in the comment field.



📂 AZ Pu	lse Input/Built-in Controller		
Data name	Untitled1		Save

×

#### Loading saved setting conditions

The setting for measurement can be loaded from "Favorites data."

- 1. In the waveform monitor window, click [Load favorites data].
- Select data that you want to load and click [Open]. The loaded setting conditions are applied to the waveform monitor window.



	Select items and click the right when you rename or operate existing data.							
<b>&gt;</b> AZ P.	ilse Input/Built-in Controller	Control Control of Con						
Data name	Untitled1			Open				

#### Saving waveform measurement results as images

The currently displayed waveform can be saved as a bitmap-format image.

- 1. In the waveform monitor window, click [Save waveform data].
- Enter a file name, set the file type to the bitmap format (\*.bmp), and click [Save]. The waveform is saved in the bitmap format.



	s + Documents +			• 47 Sec	irch Documents	
Organize • New fol	der				10 A	
Fevorites	Documents Includes 2 location				Arrange by: Fo	older =
Downloads	Name	 Date modified	Туре	Size		
Recent Places	🙇 Untitled1	7/22/2008 11:16 AM	Bitmep image	1,172.88		
Libraries						
Documents						
Music						
Pictures						
Videos						
Computer						
Local Disk (C:)						
Ca OS Backup (D:)						
📖 Server (Ht)						
Network						
File game Wa	reformData					
Save as type: Bitm	sap format (*.bmp)					

#### Saving waveform measurement results in CSV format

The currently displayed waveform can be saved in the CSV format.

- 1. In the waveform monitor window, click [Save waveform data].
- Enter a file name, set the file type to the CSV format (\*.csv), and click [Save].
   The waveform is saved in the CSV format.



Save As								-
🕖 🖻 🕨 Libraries	Documents				• 47	Search Documents		P
Organize · New fold	der .						间•	0
Favorites	Documer Includes 2 la	nts library				Arrange by	Folder •	
Countoeds Count	Name		Date modified No items r	Type natch your search.	Size			
Wetwork File game: Until	tiedl							
Save as type covi								
Hide Folders						Save	Cancel	

# 12-4 Checking wiring of applicable product

Using I/O test, you can monitor input signals and cause output signals to be output forcibly. This function is convenient if you want to check the wiring of I/O signals and the operation of network I/O.

Note In I/O test, you can forcibly turn on or off output signals. Consequently, other equipment connected to an applicable product may operate. Check the surrounding circumstances to ensure safety before conducting this procedure.

📣 🧸 🕰

(memo) The teaching/remote operation and I/O test cannot be executed simultaneously.

- Click the [Test I/O] icon in the toolbar or click the [Test I/O] short-cut button. The test I/O window appears.
- 2. Click "Start I/O test."



or

😱 Test I/O

Click [Yes].
 I/O test is enabled.



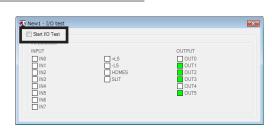
 Switch the ON/OFF status of input signals externally. The check box □ of the corresponding "INPUT" is changed in the window.

Indicator	Direct I/O	Remote I/O (RS-485 communication)
ON(green)	Conducting	Active
OFF(white)	Non-conducting	Not active

5. When switching the ON/OFF status of output signals, click the check box  $\Box$  of "OUTPUT" in the window.

Indicator	Direct I/O	Remote I/O (RS-485 communication)
ON(green)	Conducting	Active
OFF(white)	Non-conducting	Not active

6. To exit I/O test, unselect "Start I/O test."



# 12-5 Utilizing the warning function for when writing data

This function can be used only for the product that a desired name (user name) can be set to the motor or driver. When writing the **MEXE02** data to the applicable product, setting the user name can prevent from overwriting the data to a wrong product.

This section explains using screen examples of the **AZ** Series Pulse input type, Pulse input type with RS-485 communication interface and Built-in controller type.

		Series Pulse Input/Built-in Controller/Pulse Input with RS-485 com cation Tool Window Support Help	nmunication : Standard/Geared Motor]	
			D. IN 📲 📲 🖪 🐻 🕋 💳	
🗋 🥭 📶   🥥   🖷 🖷	9	🥐   絩 생] 이 이 씨 씨 🖓 🖓 😫 🏭	1010 🖤 🏴 🖓 🏍 🔂 🧏 🗄	
System of Units Customize V	Wizard	unit of display 💿 step 💿 mm 💿 deg		
Z Series Pulse Input/Built-in Contro	Operatio	on data Base settings		
- Data	1	Motor user name	Axis-16	-
- Operation 1/O event	2	Driver user name	Axis-16	
Extended operation data set	3			
Parameter	4	Driver simulation mode	Use real motor	
Base settings	5			
Motor & Mechanism(Coordin ETO & Alarm & Info	6	Base current [%]	100.0	
I/O action and function	7	Base current setting source (only for pulse input type)	The switch setting is followed	
Direct-IN function	8	Stop current [%]	50.0	
Direct-OUT function	9	Command filter setting	LPE	
Remote-I/O function(R-I/O) +	10	Command filter time constant [ms]	1	
4	11	Command filter time constant setting source (only for pulse input type)	The switch setting is followed	
Operation	12	Smooth drive	Effective	
Preaching, remote operation	12	Current control mode		
			Follow the CCM input	
Monitor	14	Servo emulation (SVE) ratio [%]	100.0	
Unit information monitor	15	SVE position loop gain	10	
Status monitor	16	SVE speed loop gain	180	
D-I/O, R-I/O monitor	17	SVE speed loop gain integral time constant [ms]	100.0	
Internal I/O monitor	18	Automatic current cutback function	Effective	
Alarm monitor	19	Automatic current cutback switching time [ms]	100	
Information monitor	20	Operating current ramp up rate [ms/100%]	0	
RS-485 com. monitor	21	Operating current ramp down rate [ms/100%]	0	
S Waveform monitor	22	Electronic damper function	Effective	
Test	23	Resonance suppression control frequency [Hz]	1000	
😲 I/O test	24	Resonance suppression control gain	0	
		Bern the state		

1. Click [Option] from the [Tool] menu. The [Option] dialog appears.

ĩool	Window Help
	Launcher
	Device Information
	Teaching, remote operation
	Status, I/O monitor
	Internal I/O monitor
	Alarm monitor
	Warning monitor
	RS-485 com. monitor
	Waveform monitor
	I/O test
	Import Waveform favorites
	Export Waveform favorites
	Option

2. Select the user name to be compared from "Warning for writing data," and click [OK].

Option			×
Communication parar	meter		
General			
When commun	ication time-out errors are	frequent, please check it.	
When a motor s	stops without intending dur	ing motor driving, please (	check it.
Monitor update in		e	
Short	Rather short	Standard	Long
Warning for writing			
Waming for writing			
Compare the "I			
Compare the "I	Motor user name". Driver user name".		
Compare the "I Compare the "I Warning for actual	Motor user name". Driver user name".	initiating a connection.	
Compare the "I Compare the "I Warning for actual	Motor user name". Driver user name". tor difference.	initiating a connection.	
Compare the "I Compare the "I Warning for actual	Motor user name". Driver user name". tor difference.	initiating a connection.	Cancel

### When writing data

When writing data, if the user name is not same between the **MEXE02** and applicable product, the following message is displayed.

Click either [Yes] of [No] after checking the applicable product. [Yes]: Writing data will be executed.

[No]: Writing data will be discontinued.

Warning	23
<b></b>	In checking at the time of writing, the following difference have been identified. Motor user name MEXEQ2 .*Axis - 16 * Driver .*Axis - 0 * Do you want to continue? Yes No

#### Updating the firmware of applicable product 12-6

The firmware of the applicable products can be updated using the MEXE02.

This section explains how to update using windows/screens of the AZ Series pulse input type, the built-in controller type, and the pulse input type with RS-485 communication interface.

(memo` • The update of firmware can be executed for the applicable products that [Firmware update] is shown under the [Support] menu.

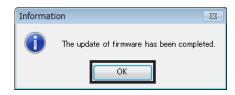
- Stop the motor before starting the update of firmware.
- Check on the Oriental Motor Website for the latest firmware version of applicable products.
- 1. Click on [AZ driver firmware update] from the Support Help [Support] menu. AZ Driver Firmware Update.. 2. Click [OK]. Warning Updating the firmware is started. Do you want to proceed? Δ Note
   Do not turn off the driver power until this operation is completed.
   If the update is executed, you will not be able to change to the previous version. OK Cancel 3. Click [Yes]. Warning 23 Updating the firmware starts. The update of firmware is performed as follows. Before updating:A461 Ver.4.10 After updating:A461 Ver.4.20 Do you want to proceed? Yes No (memo`

• Do not turn off the power of the applicable product until the update of firmware is completed.

• Once the update of firmware is executed, the version cannot be returned to the previous one. • If the firmware of the applicable product has already been updated, the following dialog box is shown.

Informat	ion 🛛 🕅
1	The update of firmware was stopped. The product currently connected is not required to update.
	OK

4. After it is completed, click [OK].



The firmware version of the applicable product can be checked with the unit information monitor.

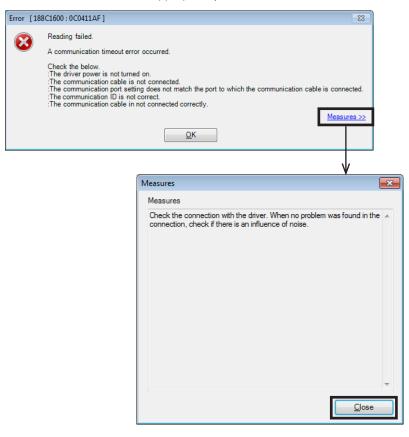
Start the Unit information monitor.					
	Motor		Mechanism		Driver
User name					
Product name		AZM46AK		-	AZD-KD
Serial number		QZ11P34301			QV41821804
CDU	A401	D-IN[0-3]	D-IN	Resolution	1000 [P/R]
Ver.	4.20	Comm.I/F(1st)	USB	Fraction of resolution	0
רוט	302011	Comm.I/F(2nd)	485		
SID	0000 h	Comm.I/F(3rd)		ROUND processing	Disable
Series (Mech.)	0000 h			ROUND range	1000 [step]
Model (Mech.)	0000 h	POW-TYPE	DC24	ROUND maximum	2147483647 [step]

(memo Even if the firmware is updated, the settings for the operation data and parameters before updating have been retained.

# 13 Troubleshooting

# 13-1 Checking error message

If the **MEXE02** has encountered a problem while running, a corresponding error message is shown in the window. "Measures" may be displayed depending on the contents of the error message. Click "Measures" to display the error details. Check the screen and appropriately deal with the issue.



# 13-2 Frequently encountered errors

This section explains frequently encountered errors and measures required for them.

#### Communication fails

During data reading, writing, monitoring and testing, the following error message may be displayed, and communication may not start.

#### Example: When reading data

Error [	042B0A80 : 0C0111B5 ] 🛛 🕅
8	Reading failed. Check the following items. :Other applications are executing. :There are a lot of residing applications. :The processing speed of PC is insufficient.
	<u>Measures &gt;&gt;</u>
	<u>O</u> K

The problem may be resolved if you specify the settings in the procedure shown below.

1. Click [Option] from the [Tool] menu. The "Option" dialog appears.

ool	Window Help
	Launcher
	Device Information
	Teaching, remote operation
	Status,I/O monitor
	Internal I/O monitor
	Alarm monitor
	Warning monitor
	RS-485 com. monitor
	Waveform monitor
	I/O test
	Import Waveform favorites
	Export Waveform favorites
	Option

Т

Γ

2. Click "When a motor stops without intending during motor driving, please check it." and then click [OK].

Option			×
Communication paran	neter		
General			
When communi	cation time-out errors are	frequent, please check it.	
I hen a motor s	tops without intending dur	ing motor driving, please	check it.
Monitor update int			
Short	Rather short	Standard	Long
-		Ó	
Warning for writing			
Compare the "E	Driver user name".		
- Warning for actuate	or difference.		
Warn you if the	actuator is different when	initiating a connection.	
		ОК	Cancel

If the problem persists after you take the procedure above, the cause may be one of the following. Take an appropriate measure.

Cause	Measure
1. Other applications are running	Exit the applications other than the <b>MEXE02</b> before continuing the operation.
2. Too many applications stay resident	Exit the resident applications before continuing the operation. For some types of applications, exiting them may not resolve problems. In this case, use a PC on which the relevant applications are not installed.
3. The processing speed of PC is insufficient	<ul><li>Take the measures 1 and 2 above.</li><li>Refer to p.5 and check that your PC satisfies the system requirements.</li></ul>

#### Communication timeout error occurs

If communication is not possible even when the applicable product is powered on and a correct communication port is selected, perform the following procedure.

Г

1. Click [Option] from the [Tool] menu. The "Option" dialog appears.

Too	Window Help
	Launcher
	Device Information
	Teaching, remote operation
	Status,I/O monitor
	Internal I/O monitor
	Alarm monitor
	Warning monitor
	RS-485 com. monitor
	Waveform monitor
	I/O test
	Import Waveform favorites
	Export Waveform favorites
	Option

otion			_
Communication param	ieter		
General			
Vnen communi	cation time-out errors are	frequent, please check it.	
When a motor s	tops without intending dur	ing motor driving, please (	check it.
Monitor update int	erval		
Short	Rather short	Standard	Long
1	1	<u> </u>	1
Warning for writing	data. lotor user name".		
Compare the "D	river user name".		
Warning for actuate	or difference.		
Warn you if the	actuator is different when	initiating a connection.	
		ОК	Cancel

2. Click "When communication time-out errors are frequent, please check it." and then click [OK].

#### Other window is communicating

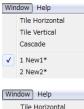
At the start of monitor or test, the following error message may be displayed, and communication may not start.

Example: Performing waveform monitor

Error [19	9871616 : 198416A8 ] 🛛 🕅 🔀
$\bigotimes$	Online failed. Other window is communicating.
	<u>o</u> ĸ

Other data setting window may be executing the communication function. While one window is executing the communication function, other windows cannot use it. Check this point using the following procedure:

 Click the [Window] menu. A list of currently open windows is displayed.



Select another window to check if it is online.
 If it is, click the [Offline] icon in the toolbar to clear the communication.

Win	Window Help		
	Tile Horizontal		
	Tile Vertical		
	Cascade		
	1 New1*		
$\checkmark$	2 New2*		

#### Editing cannot perform in communication

When editing data, the following error message may be displayed.

Error [ 082	11080 ] 🛛 🕅
$\bigotimes$	Could not edit during the operation. Execute it after shutting communication.
	<u>O</u> K

You cannot edit data while the communication function is executed. Click the [Offline] icon in the toolbar to clear the communication. Data can be edited.



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