

Instruction manual

- FS Series Stage -



Target FV01.032 ~ Target EN01.06

MF-1023-02.01



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# Precautions for use

Please read this instruction manual carefully before use to ensure correct use. Keep this manual in a safe place and use as a reference when operating this equipment.

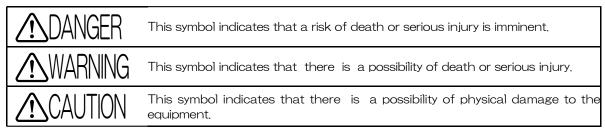
- This equipment is for controlling the associated feedback stage in closed loop and open loop. Do not use it for any other purpose.
- · This instrument is a precision instrument. Please handle with care.
- · Protect from impact or excessive force from being applied to the equipment.
- · Maintain the installation environment described in this instruction manual.



# ■ Safety Please be sure to observe

Explains what you must observe to prevent harm to people and others, and damage to property.

• The degree of harm or damage caused by improper use is classified and explained in the following display.



· Important notices are categorized and explained by the following symbols.



Indicates required content that must be executed.

Indicates prohibited content that must not be executed.

Indicates a Caution that you should be aware of. Also displayed on the equipment.

• General usage requirements.

	<b>WARNING</b>
0	Use within the power supply voltage range specified in this instruction manual. Input voltage outside the specified range may cause smoke or fire.
	Do not use a damaged power cable as this may result in electric shock, short circuit, or fire.
	Make sure that the power cable plug is fully inserted. Incomplete insertion may cause smoke or fire due to electric shock or overheating.
0	Use the fuse specified in this instruction manual. Using anything other than the rated value may cause smoke or fire.
0	Make sure to ground the protective earth terminal to earth ground to prevent electric shock.
$\bigcirc$	Do not use in an explosive atmosphere. Never use it in a place where flammable or explosive gas or vapor is present because this may cause an explosion or fire.
$\bigcirc$	Do not place in a corrosive atmosphere as this can cause corrosion and poor contact of the electrical connections and can cause malfunction or failure, possibly resulting in a fire.
$\bigcirc$	Do not use in dusty places. Dust accumulation on the power cable plug or insulation can contribute to damage due to multiple causes, possibly resulting in smoke or fire.
$\bigcirc$	Do not use the product where it will be exposed to water as this can cause an electric shock or malfunction.
$\bigcirc$	Do not open the cover. It may cause an electric shock or malfunction.
$\bigcirc$	Do not plug or unplug the power cable with wet hands due to a risk of electric shock.
$\bigcirc$	Do not connect stages other than those described in this instruction manual as this may cause an electric shock or malfunction, risk of a runaway stage, smoke, or fire.
$\Diamond$	Do not use the product if there are any signs of damage or malfunction due to risk of electric shock, smoke, or fire. In case of damage or malfunctions, immediately unplug the power cable from the outlet.



# The symbols on the product



Indicates a protective ground terminal.

Indicates a frame terminal.

# Precautions for moving and shipping

The following are precautions for moving and transporting the equipment. Please observe these precautions.

- Turn off the MAIN POWER switch, remove all connection cables, and then move the instrument.
- Do not move the equipment by stacking equipment.
- · When shipping the equipment, please use the original packing materials.
- · Be sure to attach this instruction manual when moving or s the product.

# Precautions for install

The following are precautions for installing the equipment. Please be sure to observe.

- Avoid places where the temperature and humidity are high, where the product is exposed to direct sunlight, or where the temperature changes rapidly.
- Do not install it in a place where it will be exposed to water.
- Install it on a sturdy and horizontal base.
- There is an intake slit on the right side and an exhaust slit for the cooling fan on the left side. To prevent the internal temperature from rising, provide a space of 50 mm or more on both sides.
- When using it in a closed space such as a rack, make sure that the ambient temperature of the equipment
- does not exceed 40  $^\circ\mathrm{C}$  .
- · Do not place anything over 20 kg on this equipment.
- Be sure to ground the protective earth terminal to earth.
- Connect the stage ground to the frame terminal of the instrument.
- Do not use the product in a place where there is a strong magnetic field or electric field, or where there is a lot of distortion or noise in the input power supply waveform.
- Allow for space to access the MAIN POWER switch.
- Do not plug the power cable into an outlet that makes it difficult to insert or remove the plug, or place anything in front of the plug that makes it difficult to connect or disconnect.

# Precautions for peripheral equipment connection

The following are precautions for connecting this equipment and peripheral components.

- · Do not connect or disconnect any connectors while the power button is turned on.
- Ony connect feedback stages that conform to our feedback stage specifications.
- Do not connect any active power source to the EMG connector. Passive, mechanical switch only.
- Be sure to connect models that are compatible with the minimum resolution for the feedback stage and feedback stage controller.

# Cleaning

To clean use a soft cloth with a mild detergent diluted with water and wipe gently.

MARNING When cleaning, be sure to turn off the power with the POWER button, turn off the MAIN POWER switch, and unplug the power cable from the outlet.

CAUTION Use only neutral detergent diluted with water. Discoloration and roughness of the painted surface, fading of printed characters, and cloudiness of the acrylic board may occur.

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# 1. Overview

This equipment is for controlling the feedback stage in closed loop and open loop. The communication interface is GP-IB, USB, or Ethernet, and remote operation is possible using ASCII communication commands. Using the included teaching function, this equipment can automatically execute programs written to the internal memory. The teaching function can be operated from the front panel, general-purpose I / O, all communication interfaces, and the jog controller.

# 2. Package Contents

Listed below are the items that are included in the shipping container. If anything is missing or damaged, contact us or your distributor.

Name	Model or specification	Quantity	Remarks
Feedback stage controller	FC-111 FC-411 FC-511 FC-611 FC-911		Model included will match the model that was purchased.
Power cable	Plug : KP-218 Connector : KS-16A Code : VCTF3 × 0.75mm2	1	2.3m, Tracking resistance
Protective ground wire, frame connection wire	AWG18	2	3m, Green/Yellow
Fuse	250V, 2.5A, Time lag	4	2 pre-installed at the time of shipment
Instruction manual	_	1	This book

#### · Power cable

For power supplies other than AC100 V, use an approved power supply cable which meets the safety standards where the controller will be used. If you have any questions, please contact the distributor. For the specifications of the connectable power cable and the procedure for inserting the plug of the power cable into the power outlet, refer to the following

Connector	Code	Plug	Length
IEC-60320-C13	Type SJT, No16 AWG Min.	NEMA6-15P	2.3m or less
Rated: 7A, 250V	3-Conductors	Tandem blade	
UL, CSA Approved	(Single phase: 2-current carrying & ground)	Rated: 7A, 250V	
	UL, CSA Approved	UL, CSA Approved	

Compatible commercial power supply AC100V ~ 240V, 50/60Hz

# 3. Option

See below for connectable options. Change the parameter "Option type" according to the option to connect. For details, see our catalog or website.

#### Connectable options

Model	Parameter "Option type" setting values
JC-01, JC-01-3, JC-01-4	ТуреО
MD-400	Type1

MWARNING Do not connect other than the above options.

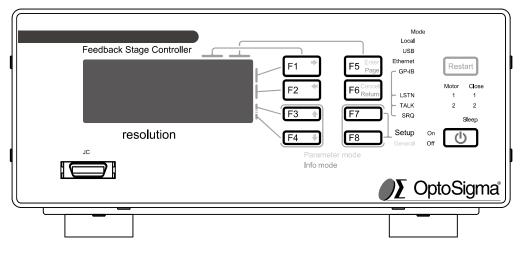


1 2 3	4 5	6 7	8 9	10 11	12	13	14	15	16
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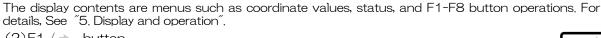
# 4. Part names and functions

# 4-1.Front panel

Description of the names and functions on the front panel.



(1) Display unit



(2)FT/ 🌩	button
(3)F2/ 🖛	button
(4)F3/ 🛧	button
(5)F4 / 🖊	button

F1 to F4 execute the functions displayed on the right side of the display unit. The arrows are used in parameter mode. For F1 to F4, See "5. Display and operation" for more information. For arrows, See "5. Display and operation" and "7. Parameters".

(6)F5 / Enter / Page button

F5 performs the function displayed on the right side of the display. Enter is used in parameter mode, and Page is used in INFORMATION mode. For F5, See "5. Display and operation" and "7. Parameters".

(7)F6/ Cancel / Return button

F6 performs the function displayed on the right side of the display. Cancel is used in parameter mode, and Return is used in INFORMATION mode. For F6 Return, See "5. Display and operation" and "7. Parameters".

- (8)F7 button
- (9)F8 button

F7 and F8 execute the functions displayed on the right side of the display unit. General is used to display parameter mode, and Setup is used to display setup mode. For F7, F8 and Setup, See "5. Display and operation". For General, See "7. About parameters".





F6 Retu

F4



1	2	З	4	5	6	7	00	9	10	11	12	13	14	15	16	
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# (10)Restart button

"Restart" will restart the controller. When the button is pressed and released, the startup operation is the same as when the power is turned on. The state after restart is shown below.

ltem	Contents
Parameters	Parameters will not be reset to default values, but if they are being changed, the changed content will not be reflected. See "7. About parameters".
Mode	After Restart, the mode will be the mode set by the parameter "Ini Mode" .
Coordinate value	Both axes will be set to zero.
Stage	If a stage is moving, it stops. If it is stopped, it remains stopped. At startup, the motor coils will be powered off momentarily, then powered back up.
Command	Any pending command will be discarded. Any pending command "A:" or "M:" is executed without setting the command "D:" or "ACC:" after the restart, the speed will be set to parameters "Max Speed" and "Acc Time". See "7. About parameters".
Teaching registration contents	It will not be deleted, but if the command "T_OFF:" is not executed after editing, the edited content will not be reflected and will be discarded.
Communication	Communication will be disconnected. After the restart is complete, it will be in the initial state, so it will be the mode set by the parameter "Ini mode". Depending on the control software used, communication may resume after the equipment has been restarted or after the mode has been changed, resulting in unintended stage operation.
Link during USB communication	Will be disconnected. To relink, the software must close the COM port and then reconnect the cable. For USB, See "(2) USB".
Jog controller	Reboot according to the mode.

#### (11) POWER button

U	

Restart

# (12)On lamp

#### (13)Off lamp

Operates the equipment power. Press to turn the power on when the MAIN POWER switch on the rear panel is ON. Press to turn off the power when the power is on or in sleep mode. However, it cannot be used when the "On lamp", "Off lamp", and "Sleep lamp" are off. The operation method is shown below.

Power on	Powe	er off	Usage prohibited
Sleep	Sleep	Sleep	Sleep
On Off •	On● Off	On U	On Off
$\downarrow$			
Press for over 0.2 seconds	Press for ove	er 1 seconds	
Sleep		Sleep	
On • U Off	On Off ●	$\bigcirc$	

If the power does not turn on even if you press it for more than 0.2 seconds when turning on the power, the internal power supply output may be shorted or overloaded. Turn off the MAIN POWER switch on the rear panel and unplug the power cable from the outlet.

<ul> <li>Be sure to read "Installation" and "Peripheral equipment connection" before turning on the power.</li> <li>If you do not intend to use the unit for a long time, turn off the MAIN POWER switch on the rear panel.</li> <li>Before turning off the MAIN POWER switch on the rear panel, turn off the power with this long time. If the MAIN POWER switch on the rear panel.</li> </ul>
key. If the MAIN POWER switch on the rear panel is turned OFF without turning off the power with this button, the state of this button will remain ON. When the MAIN POWER switch is turned on, the power to the instrument turns on without operating this button.



(14) LOCAL lamp

## (15)USB lamp

(16) Ethernet lamp

## (17)GP-IB lamp

The green indicators light up in the currently selected mode. In TEACH mode, both the "LOCAL lamp" and "REMOTE lamp" are lit.

LOCAL		REMOTE	TEACH			
LOCAL	USB	Ethernet	GP-IB	USB	Ethernet	GP-IB
Mode	Mode	Mode	Mode	Mode	Mode	Mode
Local ●	Local	Local	Local	Local ●	Local ●	Local ●
USB	USB ●	USB	USB	USB ●	USB	USB
Ethernet	Ethernet	Ethernet ●	Ethernet	Ethernet	Ethernet ●	Ethernet
	GP-IB	GP-IB	GP-IB ●	GP-IB	GP-IB	GP-IB
- LSTN	– LSTN	– LSTN	– LSTN	– LSTN	– LSTN	– LSTN
- TALK	– TALK	– TALK	– TALK	– TALK	– TALK	– TALK
- SRQ	– SRQ	– SRQ	– SRQ	– SRQ	– SRQ	– SRQ

## (18) LSTN lamp

#### (19) TALK lamp

#### (20) SRQ lamp

When communication is performed and the communication interface is set to GP-IB, the LSTN lamp, TALK lamp, and SRQ lamp will be lit depending on the status. The LSTN lamp lights when this equipment receives a command, and the TALK lamp Lights when sent to. The SRQ lamp lights when a service request is executed from this equipment.

LSTN	TALK	SRQ
Mode	Mode	Mode
Local	Local	Local
USB	USB	USB
Ethernet	Ethernet	Ethernet
⊂ GP-IB ●	GP-IB	GP-IB
– LSTN ●	– LSTN	– LSTN
- TALK	- TALK	- TALK
L <sub>SRQ</sub>	L SRQ	L SRQ ●

#### (21) Motor1, 2 lamp

This shows the motor excitation status of the stage. The axis whose green lamp is lit is energized and the axis whose light is off is demagnetized.

First axis excitation On	First axis excitation On	First axis excitation Off	First axis excitation Off
Second excitation On	Second excitation Off	Second excitation On	Second excitation Off
Motor	Motor	Motor	Motor
1 ●	1	1	1
2●	2	2	2

(22)Close1, 2 lamp

Indicates the stage control loop status. An axis whose green lamp is lit is in a closed loop state, and an axis that is not lit is in an open loop state.

First axis Close	First axis Close	First axis Open	First axis Open
Second axis Close	Second axis Open	Second axis Close	Second axis Open
Close	Close	Close	Close
●1	●1	1	1
•2	2	•2	2





Lights when the equipment is in sleep mode. At this time, the On lamp goes off.

(24) Sleep function

In sleep mode, the display turns off and the motor is demagnetized. Modes, coordinate values, statuses, and commands retain the state prior to sleep execution. When returning from the sleep state, if the stage table has moved to a different position from before sleep execution, it will move to the coordinate value before sleep execution by feedback control. However, if an error other than a limit error, overflow error, or emergency stop occurs in the sleep state, the coordinates before the sleep execution cannot be restored. In addition, when the instrument is restarted due to a power failure or instantaneous voltage drop, all retained modes, coordinate values, statuses, and commands are discarded. For error, See "11. Status". For Restart, See "(10) Restart button". Becomes a little warm in sleep mode, but this is not a malfunction.

#### (25) JC connector

	JC		
Ć		$\square$	ľ

A connector for connecting options. Change the parameter "Option type" according to the option to connect.

Connectable options

Model

JC-01, JC-01-3, JC-01-4 MD-400

MARNING Do not connect other than the above options.

When removing the jog controller from the instrument, shut off the power supply to the jog controller.

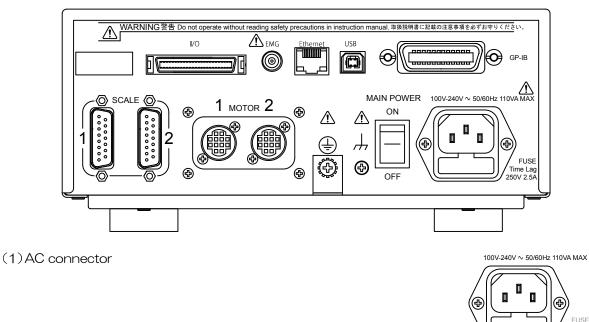


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#### 4-2.Rear panel

⚠

Names and functions on the rear panel.



Connector for power cable. When the power supply is AC100 V, use the included power cable. For power supplies other than AC100 V, use an approved power supply cable which meets the safety standards where the controller will be used. If you have any questions, please contact the distributor. For the specifications of the connectable power cable and the procedure for inserting the plug of the power cable into the power outlet, refer to the following

Connector	Code	Plug	Length
IEC-60320-C13	Type SJT, No16 AWG Min.	NEMA6-15P	2.3m or less
Rated: 7A, 250V	3-Conductors	Tandem blade	
UL, CSA Approved	(Single phase: 2-current carrying & ground)	Rated: 7A, 250V	
	UL, CSA Approved	UL, CSA Approved	

Step1 Make sure the power supply is within the AC 100 V to 240 V range.

- Step2 Check that the MAIN POWER switch is OFF.
- Step3 Connect the power cable to the AC inlet.

Step4 Insert the power cable plug into an outlet.

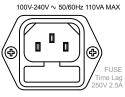
MWARNING Connect to an overvoltage category II power supply.

Use only the power cable that comes with the product or that meets local safety standards.
Do not use the power cable supplied with this equipment as the power cable for other equipment.
Please follow the procedure for plugging the power cable into the outlet.





(2)Fuse holder



The fuse holder is under the AC connector. Refer to the following for fuse specifications and replacement procedure.

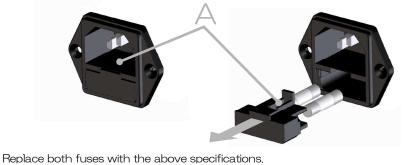
Voltage	Current	Characteristic	Size
AC250V	2.5A	Time lag	$\phi$ 5mm $ imes$ 20mm

Step1 Check that the MAIN POWER switch is OFF.

Step2 Unplug the power cable from the outlet.

Step3 Disconnect the power cable from the AC inlet.

Step4 Hook the tip of a thin flathead screwdriver or similar tool into the groove in part A below, and apply force in the direction of the arrow to remove the holder.



Step6	Push the holder with the replaced fuse firmly into the AC inlet.
Stann	Puich the holder with the replaced tuce tirmly into the AL inlet
JIEPU	

Step7 Connect the power cable to the AC inlet.

Step8	Connect the power cable according to the AC inlet insertion procedure.
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$\triangle$	<ul><li>Do not use the included fuse for other equipment.</li><li>When replacing, always replace both fuses</li></ul>	
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#### (3) Protective earth terminal



Electrical ground terminal. Connect the round crimp terminal of the included protective conductor wire to this terminal. When the power cable includes a ground connection, this terminal does not need to be used.

When using a power supply cable without a ground terminal, a separate ground connection must be used due to this being a class I apparatus. There is a risk of electric shock if not grounded.

Æ

Step5

Use the protective grounding cable supplied with the instrument for grounding.Do not use the included the protective grounding cable for other equipment.



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
(.	4)Enc	losure	termin	al											<i>.</i>
															<b>(</b> <del>)</del>
	0			<b>.</b> .	c	<b>,</b> .									•
	Conne	ect this	termir	nal to a	a surta	ce plate	e or me	etal mo	ount that	at nold	is the s	stage to	o provi	de a co	ommon

ground between the controller and the stage. Connect the round crimp terminal side to this terminal.  $\boxed{M}$  WARNING Do not use as a protective earth terminal.

CAUTION If not connected, the system may not function correctly.

 $\triangle$ 

Use the attached frame connection line for connection.
Do not use the frame connection cable supplied with this equipment for other equipment.

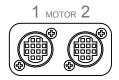
## (5) MAIN POWER switch



Turns the main power on and off. This switch alone does not turn on the power to the instrument. The POWER button on the front panel must also be pressed to turn on the instrument.

	• Be sure to read "Installation" and "Connection" before turning on the power with this
	switch.
_	<ul> <li>If not using the product for a extended time, set this switch to OFF.</li> </ul>
/!\	• Turn off the power with the POWER button on the front panel before turning off this switch.
	If this switch is turned off without turning off the power with the POWER button, the state of
	POWER button will remain ON. When the MAIN POWER switch is turned on, the power to the
	instrument turns on without operating this button.

(6) Motor cable connectors



Connections for the stage motor cables. Connect the axis one stage to the left connector and the axis two stage to the right connector.

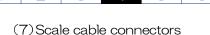
MARNING Please connect only approved feedback stages that meet our stage specifications.

 $\underbrace{ Methods and scale and scale cable to the first and second axes with the power off. If the connections are incorrect, unintended operation will occur.$ 





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Connections for the stage scale cables. Connect the axis one stage to the left connector and the axis two stage to the right connector.

WARNING Please connect only approved feedback stages that meet our stage specifications.

Be sure to correctly connect the motor cable and scale cable to the first and second axes with CAUTION Be sure to correctly connect the motor capit and social cashs as a sure to correctly connections are incorrect, unintended operation will occur.

(8) GP-IB connector

Connection for the GP-IB cable. Use this when you want to operate the instrument via the GP-IB interface. For details, see "(1) GP-IB".

(9) USB connector (B type)

Connection for the USB cable. Use this when you want to operate the instrument via the USB interface, For details, see "(2) USB".

(10) Ethernet connector (LAN)

Connection for the Ethernet cable. Use this when you want to operate the instrument via the Ethernet interface, For details, see "(3) Ethernet".

(11)I/O connector

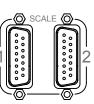
The controller has a general-purpose input and output connector which includes digital input and output, teaching operation input and status output, scale division signal output, in-position signal output, and alarm signal output. Refer to "(4) General purpose I/O" for details.

(12) EMG connector

Connection for an emergency stop switch. Use this when you want to stop the stage operation in an emergency. Refer to "(5) Emergency stop" for details.

MARNING To enable the emergency stop switch, change the parameter "EMG Connecter" to Enable and perform a test operation to confirm that it active.

 $\Lambda$  CAUTION Do not connect any device that supplies power. Passive switch only.



15

16

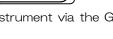
14

13









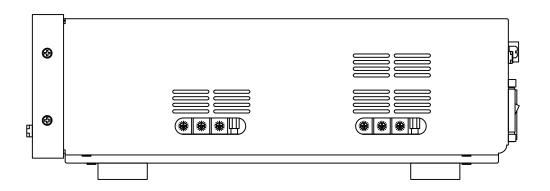
GP-IB



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
-------------------------------------

#### 4-3.Right side panel

Names and functions on the right side panel.



## (1) Ventilation slots

 $\Lambda$ CAUTION Do not block the ventilation slots. See "Installation" for details.

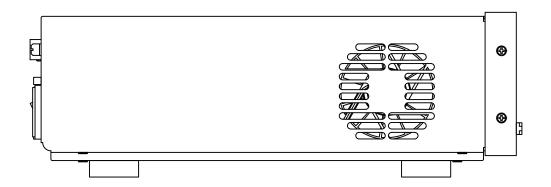
## (2) Dial switch for motor driver setting

Dial switch for motor driver setting. For details, refer to "(6) Motor driver setting switch".

CAUTION Depending on your environment, you may be asked to change the settings. Do not change any other settings. If it is changed incorrectly, unintended stage operation may occur.

## 4-4.Left side panel

Names and functions on the left side panel.



(1) Ventilation slots

CAUTION Do not block the intake slit. See "Installation" for details.

(2)Cooling fan



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	--

# 4-5.Audio Indicator

An audible beep indicates certain operations. The beep can be turned off with the parameter. Note that the beep may be interrupted at times; this is not a malfunction.

Length of beep	Operation						
About 0.1 seconds	Button operation						
About 0.1 seconds	Completion of command "RESET:"						
About 0.1 seconds twice	Start of command "RESET:"						
About 0.3 seconds (two-step sound)	Transition to sleep mode and return						
About 0.4 seconds	POWER button operation						
About 0.4 seconds	Restart button operation						
About 1 seconds	Entering stage stroke limits						
About 2 seconds	Error occurrence						
Continuous tone	Internal power supply output short circuit or overload The volume depends on the degree of overload of the internal power supply. It also sounds in sleep mode. See "14. Troubleshooting" for details.						



1 2 3 4 5 6 7 8 9 10 11 12 13 1
---------------------------------

# 5. Operations

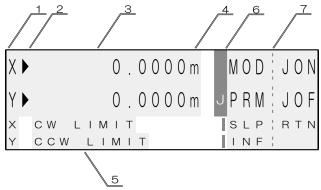
# 5-1.List of modes

The operational modes are as follows.

Mode	Contents
SETUP	Switch modes.
LOCAL	Local operation using the front panel buttons and jog controller.
REMOTE	Remote operation using a communication interface.
TEACH	Automatic execution with commands registered in the internal memory is possible.
MOVEMENT TEST	Execute a test operation to verify stage function.
PARAMETER	Edit operational Parameters.
INFORMATION	Displays controller information.

## 5-2.Common contents

The display contents are common to all modes.



No	ltem	Contents											
1	Axis name		The upper display (X) corresponds to axis one. The lower display (Y) to axis tw The display contents depend on the setting of the parameter "AXIS Name".										
		•	READY		ns Motion completed successfully, Position is Stable. *1								Jlly,
2	Desitieraiser status	Þ	READY		Motion did not complete successfully. *1								iully.
	Positioning status	>	BUSY	Operation is denied.	Motio comp				s an	d ha	as n	ot b	een
		🗌 no display	BUSY	Operation is denied.	Comı occur			pera	atio	n or	r er	ror	has
			an be either	onds to axis on the read value ount Sel″.									
		Model	Minim	Example (unit :mm)									
3	Coordinate value	FC-111	10	)Onm			0		0	0	0	1	m
		FC-411	5		0		0	0	0	0	5	m	
		FC-511	1		0		0	0	0	0	1	m	
		FC-611	5	0		0	0	0	0	0	5	m	
		FC-911		0		0	0	0	0	0	1	m	
			t by the para	nds to axis one. Imeter ″Unit Se									
		Unit	Cor	ntents	Example (Model: FC-111)								
4	Unit	n	Nanom	neter (nm)	1	2	З	4	5	6	0	0	n
		u	Microm	neter (um)		1	2	З	4	5		6	u
		m	Millime	eter (mm)		1	2		З	4	5	6	m
		0	Degre	es (mm)		1	2		З	4	5	6	0
			-	minimum resolution			1	2	З	4	5	6	
5	Status	See "11. Statu	e "11. Status" for more information.										
	Jog controller	J	"J" in the blo	ock Power is su	ipplying	; to t	he J	og co	ontro	oller.			
6	connection		Block only	The power	supply	to tł	ne Jo	og co	ntrol	ller is	shu	tting	off.
	confirmation mark		o display	The Jog co	ntroller	con	nect	or is	not d	conn	ecte	d.	
7	Menu	This is a function	on assigned f	rom F1 to F7.									

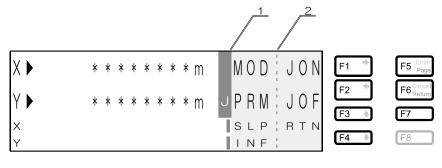
\*1 See parameter "INPos Range" for in-position range. \*2 BEC button and command "BEC:" can be used. \*3 BEC button and command "BEC:" cannot be used.



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

#### 5-3,SETUP Mode

SETUP mode is used to choose the item of each mode, sleep and the Jog Controller's power supply. To switch to this mode, press the F7 and F8 buttons simultaneously when the stage is stopped in LOCAL, REMOTE, or TEACH mode.



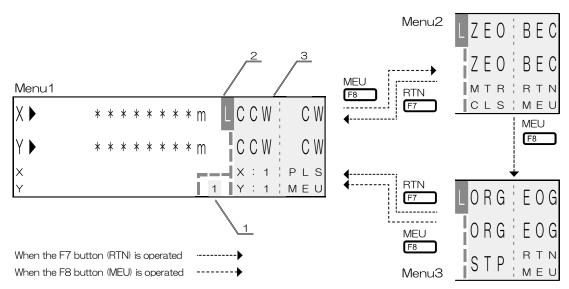
No	ltem	Contents
1	Mode	Block only
2	Menu	This is a function assigned from F1 to F7.

Button	Display Contents											
		Select a mode. Each time you press it, it switches.										
F1	MOD	LOCAL $\rightarrow$ REMOTE $\rightarrow$ TEACH $\rightarrow$ Back to top										
F2	PRM	Move to PARAMETER mode.										
F3	SLP	Transit to sleep state. For details, see "(24) Sleep function". To return from sleep mode, press any of the F1 to F8 buttons.										
F4	INF	Move to INFORMATION mode.										
F5	JON * 1	Supply power to the Jog controller.										
F6	JOF * 1, 2	Power supply to the jog controller is stopped.										
F7	RTN	Exit the SETUP mode.										
F8	-	None										

\* 1 If the jog controller connector is not connected, it will not be displayed. If it is connected, either will be displayed.d. \* 2 Can be used only when positioning is completed or an error occurs and the stage is stopped.

#### 5-4.LOCAL Mode

In LOCAL mode, the stages can be operated from the front panel of the instrument. In this mode, menus 1 to 3 are used to operate the stages from the front panel. Use the F7 or F8 button to switch menus. For the procedure to switch to this mode, refer to "5-3. SETUP mode".



No	ltem	Contents
		Represents the quantity of movement pulses output to the stage with a single click of the CW or CCW button. Use "PLS" to select the pulse amount. Only menu 1 is displayed.
2	Mode	L (LOCAL) is displayed.
3	Menu	Displays the functions assigned to F1 through F7.



|--|

Menu	Button	Target axis	Display	Contents
	F1	1	CCW	Moves the stage in the CCW direction (Motor side). Press and hold for continuous operation, and press once (single click) for pulse operation. See LS" for pulse amount selection. Flashes when at the limit of travel.
	F2	2		The control status during continuous operation differs depending on the setting of the parameters "Jog Cont" and "Stage Cont Type". *1
	F3	1	•3, 2, 1	Sets the speed of the stage when operated by the CW or CCW button The operation speed changes each time the button is pressed. The speed depends on the setting of parameters "Jog Speed 3", "Jog Speed 2" and og Speed 1". 1 at startup. Axis display depends on the parameter "AXIS
	F4	2		Name"setting. In this case, the first axis side is X and the second axis side is Y. [Speed stage1 => Speed stage2 => Speed stage3 => Back to Speed stage1]
				Moves the stage in the CW direction(Anti motor side). Press and hold for
1	F5	1	CW	continuous operation, and press once (single click) for pulse operation. See LS" for pulse amount selection. Flashes when at the limit of travel.
	F6	2		The control status during continuous operation differs depending on the setting of the parameters "Jog Cont" and "Stage Cont Type". *1
	F7	-	PLS, PST	Sets the number of movement pulses output to the stage when the CW or CCW button is clicked once. When the display is PLS, the value changes each time it is pressed. It is "1" at startup. The speed depends on the parameter "Jog Speed 1". When the stage is moving, the display changes to blinking PST, and the function of this button switches to stop movement. When movement is completed or stopped by this button, the display returns to PLS. [1pulse => 10pulse => 100pulse => 1000pulse => Back to top]
	F8	-	MEU	Switch to menu 2.
	F7+F8	-	-	If both button are pressed at the same time switches to the SETUP mode. For details on the SETUP mode, see "5-3. SETUP mode".
	F1	1	ZEO	Set the coordinate value of the target axis to zero. *1
	F2	2		
	F3	-	MTR	Set the motor power to on or off. It changes each time it is pressed. For state, check the Motor lamp on the front panel. [Motor coils excited - Power on : Exc] Moter 1 Exc => Exc => Not => Not => Back to top Moter 2 Exc Not => Not => Not
2	F4	_	CLS	Sets the positioning control method (Closed loop or Open loop). It changes each time it is pressed. For state, check the Close lamp on the front panel. Close 1 Close $\Rightarrow$ Close $\Rightarrow$ Open $\Rightarrow$ Open $\Rightarrow$ Open $\Rightarrow$ Back to top
	F5	1	BEC	Clear Error (when positioning status display is $\%$ ) or Cancel ESTOP (when emergency stop is executed). When limit error, overflow error or TEACHING
	F6	2		command error, errors can be canceled without affecting the coordinate values. To cancel the emergency stop, press either button.
	F7	-	RTN	Return to Menu 1.
	F8 F7+F8	-	MEU -	Switch to menu 3. If both button are pressed at the same time switches to the SETUP mode. For details on the SETUP mode, see "5-3, SETUP mode".
	F1	1	ORG	Return the stage to the mechanical origin . Even if the software limit is set, the software limit is ignored. The return method can be selected by the parameter "ORG Mode Sel" . Refer to <sup>©</sup> 9. Return to origin <sup>®</sup> for the return
	F2	2	UNG	method. For details on software limits, see "3. Options", "+ Soft LMT Pos" and "-Soft LMT Pos", *1
3	F3 F4	1, 2	STP	Stops movement of machine origin return and the electric origin return.
	F5 F6	1 2	EOG	Return the stage to electrical origin. Refer to "9. Return to origin" for the return method. *1
	F7	-	RTN	Return to Menu 1.
	F8	-	MEU	Return to Menu 1.
	F7+F8	-	-	If both button are pressed at the same time switches to the SETUP mode For details on the SETUP mode, see "5-3. SETUP mode".

 $\ast$  1 While one axis is operating, the other axis can be operated.

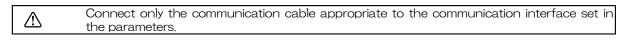
 $\triangle$ 

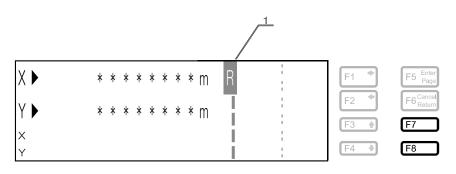
Before demagnetizing the motor or operating the stage, make sure that there is no influence on the surroundings.

ł															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

#### 5-5.REMOTE mode

Remote mode allows operation of the stages by remote control from an external computer. For the procedure to switch to this mode, refer to "① SETUP mode". For parameters, refer to "7. Parameters". For each communication interface, refer to "12. Specifications".





No	ltem	Contents
1	Mode	R (REMOTE) is displayed. When shifting to the parameter setting mode, P (PARAMETER) is displayed. For details, refer to "6. Commands".

Button	Display	Contents
F1-F8	-	None
F7+F8		If both button are pressed at the same time switches to the SETUP mode. For details on the SETUP mode, see "5-3, SETUP mode".

# 5-6.TEACH mode

TEACH mode allows the operation program registered in the internal memory of the equipment to be executed. For the procedure to switch to this mode, refer to <sup>"</sup> ① SETUP mode<sup>"</sup>. For the operation, refer to <sup>"</sup>8. TEACHING function<sup>"</sup>.

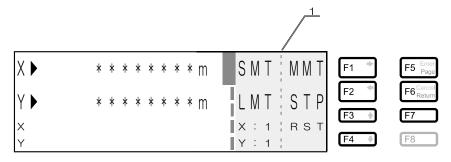


	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
--	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----

# 5-7.MOVEMENT TEST mode

Movement Test mode moves the stage with one of three prepared movement patterns. This mode can be switched by double clicking the F5 button after entering the TEACH mode.

Restart is necessary to exit this mode. For TEACH mode, refer to "5-6. TEACH mode". For details of operation, refer to "10. Movement test".



No	ltem	Contents
1	Menu	It is the function of the F1 to F7 buttons.

Button	Target axis	Display	Contents
F1	1, 2	SMT	Perform step movement. Pitch is ten percent of the stage's stroke.
F2	1, 2	LMT	Perform reciprocating motion between limit sensors.
F3	1	3, 2, 1	Select the operation speed of the test operation. The operation speed
F4	2	3, 2, 1	changes each time the button is pressed. The speed depends on the setting of parameters "Jog Speed 3", "Jog Speed 2" and "Jog Speed 1". 1 at startup.
F5	1, 2	MMT	Perform step movement, Pitch is 1mm.
F6	1, 2	STP	Stops test operation.
F7	-	RST	Reset the equipment to exit this mode.
F8	-	-	None

$\triangle$	Before operating the stage, make sure that there is no influence on the surroundings.
-------------	---

# 5-8.PARAMETER mode

PARAMETER mode is used to check or change the parameters. Refer to ~5-3. SETUP mode~ for how to enter this mode. For the operation, see "7. Parameters".



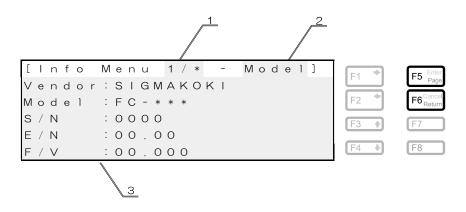
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

# 5-9.INFORMATION mode

INFORMATION mode displays information regarding this equipment on the display panel. For the procedure to switch to this mode, refer to "5-3. SETUP mode".

# (1) Equipment information

Displays information such as the controller model name.



No	ltem			Contents
1	Page	Page nu	mber	
2	Category	Model	Indicates Equipment ir	nformation.
		Vendor	Vendor name	
				FC-111
				FC-411
		Model	Model name	FC-511
З	Information			FC-611
				FC-911
		S/N	Serial Number	
		E/N	Equipment Number	
		F/V	Firmware Version	

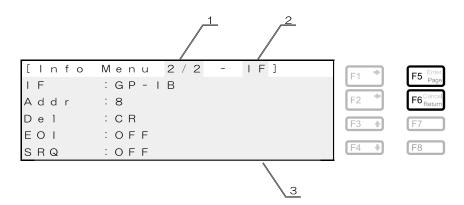
Button	Display	Contents
F1-F4	-	None
F5 (Page)	-	Switch to next page.
F6 (Return)	-	Returns to the mode before the transition to INFORMATION mode.
F7-F8	-	None



1	2	З	4	5	6	7	8	9	10	11	12	13	14	15

(2) GP-IB interface information

If the parameter "I / F Sel" is set to GP-IB, the GP-IB settings are displayed.



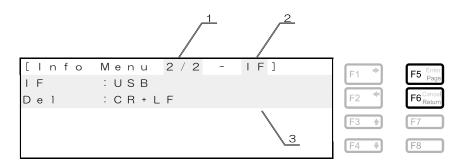
No	ltem		Contents				
1	1 Page Page number						
2	2 Category IF It means the communication information						
		IF	The configured communication interface.				
		Addr	GP-IB address setting value				
З	Information	Del	GP-IB delimiter				
		EOI	GP-IB end of Identify				
		SRQ	GP-IB service request				

Button	Display	Contents
F1-F4	-	None
F5 (Page)	-	Return to first page.
F6 (Return)	-	Returns to the mode before the transition to INFORMATION mode.
F7-F8	-	None



1	2	З	4	5	6	7	8	9	10	11	12	13	14	15
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----

(3) USB interface information If the parameter "I / F Sel" is set to USB, the USB settings are displayed.



No	ltem		Contents						
1	1 Page Page number								
2	Category IF It means the communication information								
2	Information	IF	The configured communication interface.						
5	Information	Del	USB delimiter						

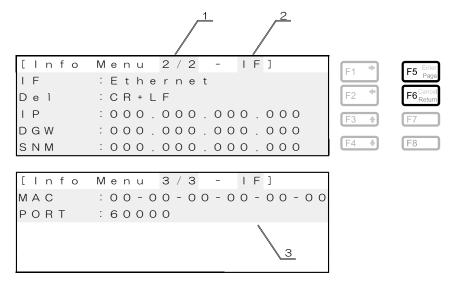
Button	Display	Contents
F1-F4	-	None
F5 (Page)	-	Return to first page,
F6 (Return)	-	Returns to the mode before the transition to INFORMATION mode.
F7-F8	-	None



1 2 3 4 5 6 7 8 9 10 11 12 13 14
----------------------------------

(4) Ethernet interface information

If the parameter "I / F Sel" is set to Ethernet, the Ethernet settings are displayed.



No	ltem									
1	Page	Page nu	mber							
2	Category	IF	It means the communication information							
		IF	The configured communication interface.							
		Del	Ethernet delimiter							
		IP	Ethernet IP address							
З	Information	DGW	Ethernet default gateway							
		SNM	Ethernet subnet mask							
		MAC	Ethernet MAC address							
		PORT	Ethernet Port Number (Fixed)							

Button	Display	Contents
F1-F4	-	None
F5 (Page)	-	Moves to the next page for the second page and to the first page for the third page.
F6 (Return)	-	Returns to the mode before the transition to INFORMATION mode.
F7-F8	-	None



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
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# 6. Commands

Commands are sent and received from the communication interface in ASCII code format.

|--|

# 6-1. List of commands

The modes that allow these commands to be used are LOCAL, REMOTE, and TEACH modes. Commands cannot be used in other modes.

#### (1) Available modes

Describes the modes in which the command can be used.

Symbol	Contents
L	It indicates that it can be used in the LOCAL mode.
R	It indicates that it can be used in the REMOTE mode.
R	Indicates that it can be used after switching from REMOTE mode to PARAMETER mode.
Т	It indicates that it can be used in the TEACH mode.
Т	Indicates that it can only be registered in the internal memory as a teaching program.

# (2) Available positioning states

Describes the positioning states in which the command can be used.

Symbol	Contents
R	It indicates that it can be used in the positioning completed state.
В	Indicates that it can be used during stage move.
-	This command is not related to the positioning status.

## (3)List

ltem	No,	Command name	Description	Ν	/lod	le	Sta	ate	Page
Control	01	RESET:	Reset controller	L	R	Т	R	В	26
	02	*RST	Reset controller	L	R	Т	R	В	26
	03	RESET_RET:	Reset controller ("END" is returned after completion)	L	R	Т	R	В	26
	04	SLEEP:	Turn on or off the sleep function	L	R	Т	F	{	26
	05	SLEEP_RET:	Turn on or off the sleep function (Status is returned after completion)	L	R	т	F	{	26
	06	SLEEP?	Get the sleep status	L	R	Т	F	{	27
	07	MODE:	Change mode	L	R	Т	F	{	27
	08	MODE?	Get current mode	L	R	Т	R	В	27
	09	F:	Change the positioning control method (Closed or Open loop)	F		Т	F	{	28
	10	FR:	Get positioning control method (Close or Open loop)		R		F	{	28
	11	C:	Change the excitation state of the motor	F		Т	F	3	28
	12	CR:	Get the excitation state of the motor		R		F	3	29
	13	BEC:	Cancel busy and error conditions	L	R	Т		В	29
	14	CMDR:	Get the last sent command (Exclude this command)	L	R	Т	R	В	29
	15	ECHO:	Change command echo back state		R		F	{	30
	16	ECHOR:	Get command echo back status		R		F	{	30
Information	17	*IDN?	Get the equipment information	L	R	Т	F	{	30
	18	VENDOR:	Get the vendor name		R		F	{	30
		MODEL:	Get the model name		R		F		31
	20	SN:	Get the serial number		R		F	{	31
	21	EN:	Get the equipment number		R		F	{	31
	22	FV:	Get the firmware varsion		R		F	{	31
	23	RESO:	Get the resolution		R		F	{	32
	24	LIMR:	Get the stage stroke		R		F	{	32
	25	AN:	Get the axis name		R		F	R	33
	26	UNT:	Get the unit		R		F	2	33



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
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ltem	No,	Command name	Description	Mo	ode	Sta	ate	Page
Motion	27	Q:	Get the status	R	Т	R	в	34
status			(Position coordinate values, Error, Motion, and Positioning)					
Information	28	SRQ:	Get the status (Error, Motion, and Positioning)	R	T	R	В	37
	29	P:	Get the position coordinate values	R	T	R	В	39
	30	ER:	Get the error status	R	T	R	В	40
	31	STS:	Get the motion status	R	Т	R	В	42
<u> </u>	32	!: 	Get the positioning status	R	T	R	В	43
Origin	33	H:	Return to mechanical origin	R	T		R	44
	34	Z:	Return to electrical origin	R	T		R	44
		R:	Set the position coordinate values to zero	R	T		R	45
	36	LIMG:	Perform the stage stroke detection movement		۲		R	45
Motion	37	L:	Operation stop and emergency stop		R		В	45
	38	ACC:	Set the acceleration and deceleration time	R	T		R	46
	39	ACCR:	Get the acceleration and deceleration time	F	7	R	В	46
	40	D:	Set the movement speed of the stage	R	Т	L	R	47
	41	DR:	Get the movement speed	F	7	R	В	48
	42	A:	Set the position to move in absolute motion	R	Т	F	R	49
	43	M:	Set the amount of movement to move in relative motion	R	Т	F	R	50
	44	G	Start moving (The setting values is lost after execution)	R	Т	F	7	51
	45	GN:	Start moving (The setting values is not lost.)	R	Т	F	R	51
	46	GC:	Delete the setting values of the "A:" and "M:" commands	F	R	F	R	52
	47	GR:	Get the setting values of the "A:" and "M:" commands	F	R	R	В	52
	48	JG:	It moves according to the set number of pulses	R	Т	F	R	53
	49	JY:	Start moving without specifying a target point	F	7	R	В	53
Position	50	PIT_DEL:	Delete location information registered for the specified number	F	7	F	2	54
registration	51	PIT_SET:	Register current coordinate value to specified number	F	7	F	7	54
	52	PIT_GET:	Get the coordinate value registered in the specified number	F	7	l F	2	54
		PITG:	Start Moving to the coordinate value registered in the		7		۲	54
0		1.	specified number		-		_	
General purpose I/O	54	. 	Get general-purpose input status	R	T	R		55
	55	0: T. 01 li	Set general-purpose Output status	R	Т	R	В	55
Teaching	56	T_ON:	Enter edit mode				7	55
	57	T_OFF:	Save contents and exit		Γ		2	55
	58	T_DEL:	Delete content		Г		R	56
	59	T_SET:	Set content		Г		7	56
	60	T_GET:	Get content		Γ		R	56
	61	TC:	Select a channel		Г		7	56
		TCR:	Get current channel		Γ	R	В	56
	63	TQ:	Get teaching status		Г	R	В	57
	64	TG:	Teaching start		Г		R	57
	65	TP:	Pause	-		R	В	57
	66	TO:	Execute line by line	-	Г	F	R	57
	67	TL:	Stop execution		Г	R	В	57
	68	TR:	Get channel subscription status	-	Г	R	В	58
	69	TFR:	Get the loop count	-	Г	R	В	58
	70	TM:	Set the Teaching monitor function	-	Г	F	R	59
	71	TMR:	Get the Teaching monitor function setting	-	Г	F	R	59
	72	TNR:	Get current line number	-	Г	R	В	60
	73	TACR:	Get current execution command	-	Г	R	В	60
Teaching	74	FS:	Loop setting		Γ	-	-	60
registration	75		Set loop end	-	Γ		-	60
only		END:	Set the execution end line		Г	· -	-	60
	77	T:	Set the wait time		Г	<u> </u>	_	60
		GIS:	Wait until the specified general-purpose input state is		<u>.                                    </u>	<b>—</b>	_	61
Parameter		PRM_ON:	reached Switch to parameter setting mode		7		7	61
settings				_				
50 LUI 153		PRM_OFF:	Exit parameter setting mode		<u>}</u>	R	B	61
		PRM_SET:	Set parameters		R	R	В	61
	00	PRM_GET:	Get parameters		7	R	В	61



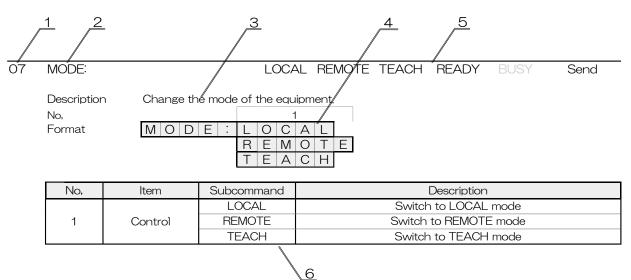
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	--

6-2. Command description format

Explains how to read the command description.

(1)Send command format

Describes the send command format. Sending means sending a command from the computer to the equipment. There is no reply from the equipment to the computer after receiving these commands. The command format is not case sensitive.



No	lte	em	Contents	Description
1	Command N	lumber	-	The command number.
2	Command N	lame	-	The name of the command.
З	Feature Des	cription	-	Describes the feature of the command.
4	Send Format		-	This is the format when sending commands.
	Conditions	Mode	LOCAL REMOTE REMOTE TEACH TEACH	It indicates that black characters are usable, and gray characters are disabled. The outline character of REMOTE can be used after sending the command "PRM_ON:". The outline character of TEACH can be used only for registration in the internal memory as a Teaching program.
5		Control state	READY * 1 BUSY * 2	It indicates that black characters are usable, and gray characters are disabled.
	00110		Send	Indicates that the command is a send-only command.
		Command	Send/Reply	Indicates that the command has a reply after sending the command.
		type	Teaching registration only	It can be used only when registering in the internal memory as a Teaching program.
			No,	Format block number.
6	Details		Subcommand	The name of the subcommand.
			Description	Describes the subcommand.

\* 1 All operations are accepted.

\* 2 Operation related to operation is denied.



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	16	)
-------------------------------------	----	---

#### (2) Send / Reply command format

Explains the format of the send /reply command. With the send/reply commands, there is a reply from the equipment after sending. Sending means sending a command from the computer to the equipment. Reply means that there is a reply from the device to the computer. The command format is not case sensitive.

D S N R	MODE? Description Send format No, Reply format Item	Check the cur MODE 1 **** , No.1 LOCAL REMOTE	No,2 None SETUP PRM INFO None PRMCMD SETUP PRM INFO JOGCMD IO EDIT TEST SETUP	AL REMOTE TEACH READY BUSY Send/Rep he equipment. Description LOCAL mode SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode TEACH mode (JOG and command operation) * 1 TEACH mode (I/O port operation) * 1 TEACH mode (I/O port operation) * 1 TEACH edit mode (From "T_ON:" command) MOVEMENT TEST mode SETUP mode
S N R	Send format No, Reply format	MODE 1 *** , No.1 LOCAL REMOTE	2 ***** No,2 None SETUP PRM INFO None PRMCMD SETUP PRM INFO JOGCMD IO EDIT TEST	Description LOCAL mode SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode REMOTE mode PARAMETER mode (From "PRM_ON:" command) SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode TEACH mode (JOG and command operation) * 1 TEACH mode (I/O port operation) * 1 TEACH mode (I/O port operation) * 1 TEACH edit mode (From "T_ON:" command) MOVEMENT TEST mode
N R	No, Reply format	1 *** , No.1 LOCAL REMOTE	2 ***** No,2 None SETUP PRM INFO None PRMCMD SETUP PRM INFO JOGCMD IO EDIT TEST	LOCAL mode SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode REMOTE mode PARAMETER mode (From "PRM_ON:" command) SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode INFORMATION mode TEACH mode (JOG and command operation) * 1 TEACH mode (I/O port operation) * 1 TEACH mode (I/O port operation) * 1 MOVEMENT TEST mode
R	Reply format	*** ,	*****         No,2         None         SETUP         PRM         INFO         None         PRMCMD         SETUP         PRM         INFO         JOGCMD         IO         EDIT         TEST	LOCAL mode SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode REMOTE mode PARAMETER mode (From "PRM_ON:" command) SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode INFORMATION mode TEACH mode (JOG and command operation) * 1 TEACH mode (I/O port operation) * 1 TEACH mode (I/O port operation) * 1 MOVEMENT TEST mode
R	Reply format	*** ,	*****         No,2         None         SETUP         PRM         INFO         None         PRMCMD         SETUP         PRM         INFO         JOGCMD         IO         EDIT         TEST	LOCAL mode SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode REMOTE mode PARAMETER mode (From "PRM_ON:" command) SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode TEACH mode (JOG and command operation) * 1 TEACH mode (I/O port operation) * 1 TEACH mode (I/O port operation) * 1 MOVEMENT TEST mode
*	Item	No,1 LOCAL REMOTE	No,2 None SETUP PRM INFO None PRMCMD SETUP PRM INFO JOGCMD IO EDIT TEST	LOCAL mode SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode REMOTE mode PARAMETER mode (From "PRM_ON:" command) SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode TEACH mode (JOG and command operation) * 1 TEACH mode (I/O port operation) * 1 TEACH mode (I/O port operation) * 1 MOVEMENT TEST mode
		LOCAL REMOTE	No,2 None SETUP PRM INFO None PRMCMD SETUP PRM INFO JOGCMD IO EDIT TEST	LOCAL mode SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode REMOTE mode PARAMETER mode (From "PRM_ON:" command) SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode TEACH mode (JOG and command operation) * 1 TEACH mode (I/O port operation) * 1 TEACH mode (I/O port operation) * 1 MOVEMENT TEST mode
		LOCAL REMOTE	None SETUP PRM INFO None PRMCMD SETUP PRM INFO JOGCMD IO EDIT TEST	LOCAL mode SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode REMOTE mode PARAMETER mode (From "PRM_ON:" command) SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode TEACH mode (JOG and command operation) * 1 TEACH mode (I/O port operation) * 1 TEACH mode (I/O port operation) * 1 MOVEMENT TEST mode
		LOCAL REMOTE	None SETUP PRM INFO None PRMCMD SETUP PRM INFO JOGCMD IO EDIT TEST	LOCAL mode SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode REMOTE mode PARAMETER mode (From "PRM_ON:" command) SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode TEACH mode (JOG and command operation) * 1 TEACH mode (I/O port operation) * 1 TEACH mode (I/O port operation) * 1 MOVEMENT TEST mode
	Status	REMOTE	PRM INFO None PRMCMD SETUP PRM INFO JOGCMD IO EDIT TEST	PARAMETER mode (From SETUP mode) INFORMATION mode REMOTE mode PARAMETER mode (From "PRM_ON:" command) SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode TEACH mode (JOG and command operation) * 1 TEACH mode (I/O port operation) * 1 TEACH mode (I/O port operation) * 1 MOVEMENT TEST mode
	Status	REMOTE	PRM INFO None PRMCMD SETUP PRM INFO JOGCMD IO EDIT TEST	INFORMATION mode REMOTE mode PARAMETER mode (From "PRM_ON:" command) SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode TEACH mode (JOG and command operation) * 1 TEACH mode (I/O port operation) * 1 TEACH mode (From "T_ON:" command) MOVEMENT TEST mode
	Status		INFO None PRMCMD SETUP PRM INFO JOGCMD IO EDIT TEST	REMOTE mode PARAMETER mode (From "PRM_ON:" command) SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode TEACH mode (JOG and command operation) * 1 TEACH mode (I/O port operation) * 1 TEACH mode (From "T_ON:" command) MOVEMENT TEST mode
	Status		PRMCMD SETUP PRM INFO JOGCMD IO EDIT TEST	PARAMETER mode (From "PRM_ON:" command) SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode TEACH mode (JOG and command operation) * 1 TEACH mode (I/O port operation) * 1 TEACH edit mode (From "T_ON:" command) MOVEMENT TEST mode
	Status		SETUP PRM INFO JOGCMD IO EDIT TEST	SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode TEACH mode (JOG and command operation) * 1 TEACH mode (I/O port operation) * 1 TEACH edit mode (From "T_ON:" command) MOVEMENT TEST mode
	Status		PRM INFO JOGCMD IO EDIT TEST	PARAMETER mode (From SETUP mode) INFORMATION mode TEACH mode (JOG and command operation) * 1 TEACH mode (I/O port operation) * 1 TEACH edit mode (From "T_ON:" command) MOVEMENT TEST mode
	Status	TEACH	INFO JOGCMD IO EDIT TEST	INFORMATION mode TEACH mode (JOG and command operation) * 1 TEACH mode (I/O port operation) * 1 TEACH edit mode (From "T_ON:" command) MOVEMENT TEST mode
	Status	TEACH	JOGCMD IO EDIT TEST	TEACH mode (JOG and command operation) * 1 TEACH mode (I/O port operation) * 1 TEACH edit mode (From "T_ON:" command) MOVEMENT TEST mode
		TEACH	IO EDIT TEST	TEACH mode (I/O port operation) * 1 TEACH edit mode (From "T_ON:" command) MOVEMENT TEST mode
		TEACH	EDIT TEST	TEACH edit mode (From "T_ON:" command) MOVEMENT TEST mode
		TEACH	TEST	MOVEMENT TEST mode
		TEACH		
			SETUP	SETUP mode
			PRM	PARAMETER mode (From SETUP mode)
			INFO	INFORMATION mode
*	* 1 It can be con	firmed by the repl	ly contents by th	e command "PRM_GET: A15" .
*				
E	* Example 1 LOCA	AL mode		
	Send			LOCAL N
	MODE ?			
*	* Example 2 PAR	METER mode	(From "PRM OF	
Ē	Send			Replay
- H	MODE ?			REMOTE, PRMCMD
6 E	ECHOR:		LOCA	AL REMOTE TEACH READY BUSY Send/Reg
D	Description	Check the ech	no back status.	
S	Send format	ECHO	R:	
			<u> </u>	
N	No,	1		
R	Reply format	0		
		1		
_				6
	No,	Item	Reply	Description
	1 :	Status	0	Not Echo back
L				Echo back

No	ltem	Contents	Description
1	Reply format	-	Reply format
		No,	Block number for reply format.
2	2 Details	Reply	The reply content.
		Description	A description of the reply.
3	Reply example	-	This is a reply example.



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	--

## 6-3. Echo back

When echo back is turned on, the command sent immediately before is echoed back. If the command sent from the equipment is a command error, "CMD ER" is returned. Note : Please be sure to clear the receive buffer of the personal computer before sending the next command.

(1)Command w	ithout a reply							
Send format	MODE: LOCAL							
No,								
Reply format	MODE:LOCAL							
No,	Description							
1	Reply send command							

# (2)Command with a reply

Μ	0	D	E	?					
		1			2			З	
Μ	0	D	E	?		L	0	С	Α
	M	M O	M 0 D 1 M 0 D	M O D E 1 M O D E	M O D E ?	M O D E ? 1 2 M O D E ?	MODE? 12 MODE?	MODE? 12 MODE?LO	MODE? 1 2 3 MODE? LOC

No,	Description						
1	Reply send command						
2	Space						
3	Reply contents of "MODE?" Command reply						

#### (3) When a command error occurs due to a send command

Send form	ormat ***							
No, Reply form	ormat C M D E R * There is a space between "CMD" and "ER" .							
No,	Description							
1	Reply command error	Reply command error						

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1	2	3	4 5	5 8	6	7 8	9	10	11	12	13	14	15	16
6-4.	Cor	mmand d	escriptior	ר										
(1	)Cc	ontrol con	nmands											
0	1	RESET:				LOC	AL REI	MOTE	TEACH	REA	DY.	BUSY	Se	end
		Description				oment. Sar			art butto	n on tl	ne fro	nt panel	, but do	pes not
		Send form				SB commu	nication	link,						
		Sena torm	at R	ES	E T	•								
_	_													
02	2	*RST				LOC	AL REI	MOTE	TEACH	REA	DΥ	BUSY	Se	end
		Decemination	. D.	ataut th		oment. Sar			aut la utta	الج مرم ما	a a fua		ام خد دما	
		Descriptior				SB commu			art putto	n on u	le Iro	nt panel	, but a	Jes not
		Send form		RS	Т									
0	3	RESET_R	FT					MOTE	TEACH	REA	DY	BUSY	Send	/Reply
00	5					200/		VIC I L				DOOT	OCH IG	
		Description	n Re	start the	e equip	ment. "ENE	D" will be	e returr	ned after t	he rest	art is o	complete	d. Same	e as the
			Re	start bu	itton or	the front	panel, bi	ut does	not disco	nnect 1	the US	B comm	unicatio	n link.
		Send form	at R	ES	ET	_ R E	T   :							
					1									
		No,		1	1									
		Reply form	at E	ND	]									
	1	No,	lten	2		Reply				Descri	ntion			
		1	State			END			Re	estart c		te		
	I		Olut	40	I'				110					
04	1	SLEEP:				LOC			TEACH	REA		BUSY	Se	end
0-	+					LUU		NOTE	ILAUII	ΠĽΑ		DUUT	00	лu
		Description	ר Th	e eauip	ment e	nters and	returns	to slee	p mode. 7	ransfe	r canr	not be pe	erforme	d while
						s and teac								
		No,				1								
		Send form	at S	L E	EP	: 0								
						1								
	1	No,	lten	2	Suba	ommand				Descri	ntion			
		TNO,	ILEII	1	Subc	0				OF				
		1	State	JS		1				10				
	I				1						-			
0	5	SLEEP_R	=T·						TEACH	REA		BUSY	Sond	/Reply
0.	5		_ ! ·			LOOP		VICTL				DOOT	OCHO,	Ticply
		Description	ו Th	e equipi	ment er	nters and r	eturns to	o sleep	mode. Re	oly afte	r going	g to sleep	o mode (	or after
			ret	urning.	Transfe	er cannot k	pe perfor	med w	hile editing					
			Fo	r details	on slee	ep, see "(24	1) Sleep	functio	n".					
		No,						1						
		Send form	at S	L E	E P	_ R E		0						
							L	1						
	1	No,	lten	า	Subo	ommand				Descri	ntion			
		110,	itori		Cape	0				OF				
		1	Cont	rol		1				0				
	I				1		<u>,</u>							
		No,	1											
		Reply form	at O											
			1											
		No,	lten	า	F F	Reply				Descri	ption			
									<u> </u>					
		1	State	JS		0			Switch Switch		•			



06	SLEEP?		LOCA	AL REMOTE TEACH READY BUSY Send/Re
	Description Send format		ep mode status P ?	s. For details on sleep, see "(24) Sleep function" .
	No, Reply format	1 0 1		
	No,	ltem	Reply	Description
	1	Status	0	Sleep mode OFF
		Status	1	Sleep mode ON
70	MODE:		LOCA	AL REMOTE TEACH READY BUSY Send
	Description	Change the m	node of the equ	lipment,
	No,	MODE		1
	Send format	A L O T E		
			TEA	
	No,	ltem S	Subcommand	Description
			LOCAL	
				Switch to LOCAL mode
	1	Control	REMOTE	Switch to REMOTE mode
		Control	REMOTE TEACH	Switch to REMOTE mode Switch to TEACH mode
08	1 MODE? Description Send format		REMOTE TEACH	Switch to REMOTE mode Switch to TEACH mode AL REMOTE TEACH READY BUSY Send/Re
08	MODE? Description	Check the cu	REMOTE TEACH LOCA	Switch to REMOTE mode Switch to TEACH mode AL REMOTE TEACH READY BUSY Send/Re
8	MODE? Description Send format No,	Check the cu MODE	REMOTE TEACH LOCA rrent mode of t	Switch to REMOTE mode Switch to TEACH mode AL REMOTE TEACH READY BUSY Send/Re
8	MODE? Description Send format No, Reply format	Check the cu MODE 1 ***	REMOTE TEACH LOCA rrrent mode of t ? 2 ***** No,2 None	Switch to REMOTE mode Switch to TEACH mode AL REMOTE TEACH READY BUSY Send/Re this equipment. Description LOCAL mode
8	MODE? Description Send format No, Reply format	Check the cu MODE 1 *** ,	REMOTE TEACH LOCA rrrent mode of t ? 2 2 **** No,2 None SETUP	Switch to REMOTE mode Switch to TEACH mode AL REMOTE TEACH READY BUSY Send/Re this equipment. Description LOCAL mode SETUP mode
80	MODE? Description Send format No, Reply format	Check the cu MODE 1 ***	REMOTE TEACH LOCA rrrent mode of t ? 2 2 ***** No,2 None SETUP PRM	Switch to REMOTE mode Switch to TEACH mode AL REMOTE TEACH READY BUSY Send/Re this equipment. Description LOCAL mode SETUP mode PARAMETER mode (From SETUP mode)
80	MODE? Description Send format No, Reply format	Check the cu MODE 1 *** ,	REMOTE TEACH LOCA rrent mode of t ? 2 2 2 **** No,2 None SETUP PRM INFO	Switch to REMOTE mode Switch to TEACH mode AL REMOTE TEACH READY BUSY Send/Re this equipment. Description LOCAL mode SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode
80	MODE? Description Send format No, Reply format	Check the cu MODE 1 *** ,	REMOTE TEACH LOCA rrent mode of t ? 2 2 **** No,2 None SETUP PRM INFO None	Switch to REMOTE mode Switch to TEACH mode AL REMOTE TEACH READY BUSY Send/Re this equipment. Description LOCAL mode SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode REMOTE mode
80	MODE? Description Send format No, Reply format	Check the cu MODE 1 *** , No,1 LOCAL	REMOTE TEACH LOCA rrent mode of t ? 2 2 **** No,2 None SETUP PRM INFO None PRMCMD	Switch to REMOTE mode Switch to TEACH mode AL REMOTE TEACH READY BUSY Send/Re this equipment. Description LOCAL mode SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode REMOTE mode PARAMETER mode (From "PRM_ON:" command)
80	MODE? Description Send format No, Reply format	Check the cu MODE 1 *** ,	REMOTE TEACH LOCA rrent mode of t ? 2 2 **** No,2 None SETUP PRM INFO None PRMCMD SETUP	Switch to REMOTE mode Switch to TEACH mode AL REMOTE TEACH READY BUSY Send/Re this equipment. Description LOCAL mode SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode REMOTE mode
8	MODE? Description Send format No, Reply format	Check the cu MODE 1 *** , No,1 LOCAL	REMOTE TEACH LOCA rrent mode of t ? 2 2 **** No,2 None SETUP PRM INFO None PRMCMD	Switch to REMOTE mode Switch to TEACH mode AL REMOTE TEACH READY BUSY Send/Rethis equipment. This equipment. Description LOCAL mode SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode REMOTE mode PARAMETER mode (From "PRM_ON:" command) SETUP mode
8	MODE? Description Send format No, Reply format	Check the cu MODE 1 *** , No,1 LOCAL	REMOTE TEACH LOCA rrent mode of t ? 2 2 **** No,2 None SETUP PRM INFO None PRMCMD SETUP PRM	Switch to REMOTE mode Switch to TEACH mode AL REMOTE TEACH READY BUSY Send/Rethis equipment. This equipment. Description LOCAL mode SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode REMOTE mode PARAMETER mode (From "PRM_ON:" command) SETUP mode PARAMETER mode (From SETUP mode)
80	MODE? Description Send format No, Reply format	Check the cu MODE 1 *** , No,1 LOCAL	REMOTE TEACH LOCA rrent mode of t ? 2 2 **** No,2 None SETUP PRM INFO None PRMCMD SETUP PRM INFO	Switch to REMOTE mode Switch to TEACH mode AL REMOTE TEACH READY BUSY Send/Rethis equipment. This equipment. Description LOCAL mode SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode PARAMETER mode (From "PRM_ON:" command) SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode
80	MODE? Description Send format No, Reply format	Check the cu MODE 1 *** , No,1 LOCAL	REMOTE TEACH LOCA rrent mode of t ? 2 ***** No,2 None SETUP PRM INFO None PRMCMD SETUP PRM INFO JOGCMD	Switch to REMOTE mode Switch to TEACH mode
80	MODE? Description Send format No, Reply format	Check the cu MODE 1 *** , No,1 LOCAL	REMOTE TEACH LOCA rrent mode of t ? 2 2 ***** No,2 None SETUP PRM INFO None PRMCMD SETUP PRM INFO JOGCMD IO EDIT TEST	Switch to REMOTE mode Switch to TEACH mode AL REMOTE TEACH READY BUSY Send/Re this equipment. Description LOCAL mode SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode REMOTE mode PARAMETER mode (From "PRM_ON:" command) SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode PARAMETER mode (From SETUP mode) INFORMATION mode TEACH mode (JOG and command operation) * 1 TEACH mode (I/O port operation) * 1 TEACH mode (I/O port operation) * 1 TEACH edit mode (From "T_ON." command) MOVEMENT TEST mode
8	MODE? Description Send format No, Reply format	Check the cu MODE 1 *** , No,1 LOCAL REMOTE	REMOTE TEACH LOCA rrent mode of t ? 2 2 ***** No,2 None SETUP PRM INFO None PRMCMD SETUP PRM INFO JOGCMD IO EDIT TEST SETUP	Switch to REMOTE mode Switch to TEACH mode AL REMOTE TEACH READY BUSY Send/Re this equipment. Description LOCAL mode SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode REMOTE mode PARAMETER mode (From "PRM_ON:" command) SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode PARAMETER mode (From SETUP mode) INFORMATION mode TEACH mode (JOG and command operation) * 1 TEACH mode (I/O port operation) * 1 TEACH edit mode (From "T_ON." command) MOVEMENT TEST mode SETUP mode
8	MODE? Description Send format No, Reply format	Check the cu MODE 1 *** , No,1 LOCAL REMOTE	REMOTE TEACH LOCA rrent mode of t ? 2 2 ***** No,2 None SETUP PRM INFO None PRMCMD SETUP PRM INFO JOGCMD IO EDIT TEST	Switch to REMOTE mode Switch to TEACH mode AL REMOTE TEACH READY BUSY Send/Re this equipment. Description LOCAL mode SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode REMOTE mode PARAMETER mode (From "PRM_ON:" command) SETUP mode PARAMETER mode (From SETUP mode) INFORMATION mode PARAMETER mode (From SETUP mode) INFORMATION mode TEACH mode (JOG and command operation) * 1 TEACH mode (I/O port operation) * 1 TEACH mode (I/O port operation) * 1 TEACH edit mode (From "T_ON." command) MOVEMENT TEST mode

Send	Reply
MODE ?	LOCAL

\* Example 2 PARAMETER mode (From "PRM\_ON:" command)

Send	Reply
MODE ?	REMOTE, PRMCMD

1 .	2 3	4 5	5 7	8	9	10	11	12	13	14	15	16		
09	F: LOCAL REMOTE TEACH READY BUSY Send													
								_						
	Description	n Change th	e feedback	stage o	control n	nethod.								
	No,	1	2											
	Send form	nat F : 1	0											
		2	1											
			-											
	No,	ltem	Subcomn	nand				Descri	ption					
			1					First	axis					
	1	Axis	2					Secon	d axis					
			W					Both	axis					
	2	Control	0					Open	loop					
	2	Control	1					Closed	loop					
10	FR:			LOCA	BEM	10TE	TFACH	RFA	DY	BUSY	Send	/Reply		
10	110			200/		IOTE		1.27		0001	Conta			
	Description	n Get the fe	edback stag	e conti	rol meth	od								
	No,		1	,		0 0								
	Send form	nat FR:												
			1											
			2											
			W											
			•••											
	No,	ltem	Subcomm	hand		Descr	ription		Re	ply form	at block	< No		
	110,	itoini			Dener	nds on t		meter				X T <b>N</b> O,		
			None	;	Dopoi	AXIS S	Sel * 1			No	one			
	1	Axis	1				axis				1			
		, , , , , , , , , , , , , , , , , , , ,	2			Secor	nd axis				1			
			W			Both	n axis	1 : First axis 2 : Second axis			ond axis			
	* 1 lt can b	e checked by "PRM_	GET: G01″ c	omman	d.									
	No,	1 2	]											
	Reply form													
			1											
	No,	ltem	Reply	/	Description									
			0		Open loop									
	1,2	Status	1			Closed								
	L													
	<u><u> </u></u>											a a al		
11	C:			LOCA	REN	IOTE	TEACH	REA	DY	BUSY	56	end		
	Description		e current m	lotor ex	citation	state.								
	No,	1	2											
	Send form		0											
		2	1											
		W												
					_		_							
	No,	ltem	Subcomn	nand				Descri						
			1					First						
	1	Axis	2					Secon						
			W					Both						
	2	Control	0					Non-exc						
	۷		1					Excite	tion					



1	2	З	4	5	6	7	8	9	10	11	12	13	14	15	16
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----

12	CR:

LOCAL REMOTE TEACH READY

Send/Reply BUSY

Description

No, Send format	С

Get the cu	irrer	nt motor excitation status.
	1	
CR:	$\square$	
	1	
	2	
	W	

No,	ltem	Subcommand	Description	Reply format block No,	
1 Axis	None	Depends on the parameter	None		
	1	First axis	1		
	2	Second axis	1		
		W	Both axis	1 : First axis 2 : Second axis	

\* 1 It can be checked by "PRM\_GET: GO1" command.

2

0

No,	1
Reply format	0
	1

No,	ltem	Reply	Description	
1,2	Status	Status 0	0	Non-excitation
			Excitation	

13 BEC: LOCAL REMOTE TEACH READY BUSY

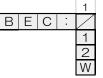
Description

Forcibly completes positioning during operation. Cancel in case of error or emergency

stop.	
	Limit error
Resolvable errors * 2	Overflow error
	Teaching command error
Releasable state	Emergency

\* 2 Command errors are excluded because they are cleared when a normal command is received.

No, Send format



No,	ltem	Subcommand	ubcommand Description							
	None	Depends on the parameter "AXIS Sel" * 3								
1	1 Axis	1	First axis							
	Axis 2		Second axis							
		W	Both axis							

\* 3 It can be checked by "PRM\_GET: G01" command.

14 CMDR: LOCAL REMOTE TEACH READY BUSY Send/Reply

Description	Gets the last normal command sent other than this command. If a command has not been sent before issuing this command. "*" is returned.
Send format	
No, Reply format	1 ****

No,	Item	Reply example	Description
1	Command	BEC:	Last command sent

Send

1	2	3	4	5	6	(	8		9	10	11	1	12	13	14	15	16
15	ſ	ECHO:					LOC	4L	REMC	DTE	TEAC	H	REA	DY	BUSY	Se	end
	ſ	Descriptio	n	Set echo I	book of	tor o	onding	000	nmond	For	dotaila	000	"6-2	Fob	obook"		
		No,	[]	Setecho	Dackai		enung	COI	nnanu	. I Or	uetans,	, see	0-3	, LCH	JUACK .		
		Send form	nat	ECH	0:	0											
						1											
	-																
	_	No,		ltem	Subo		nand						Descri				
		1	(	Control		0								ck OF ick Of			
	L												IU Da		N		
16		ECHOR:					LOC	$\Delta  $	REMC	TF	TEAC	)H	REA	DY	BUSY	Send	/Reply
10							LOO	\					1 (2) (		DOOT	Cond	
	(	Descriptio	n	Get echo	back se	etting	s status	5.									
		Send form	nat	ECH	OR	:											
		No, Reply form	nat														
	'		at	1													
		No,		ltem		Repl	у						Descri	-			
	1 Status —					0								ck OF			
	L					1						ECr	no pa	ick Of	N		
(2)	)Info	omation	comn	nands													
17		*IDN?					LOC	AL.	REMC	DTE	TEAC	н	REA	DY	BUSY	Send	/Reply
		Description		Get equip		form	nation.										
	,	Send form	nat	*     D	N ?												
	1	No,		1	2	] [	3	4 5									
		Reply form	nat	**** ,	****	,	****	,	****	,	****						
	_																
	_	No,		ltem									Descri				
	F	1 2	4			MAK C-11								name name	9		
	-	3	Inf	ormation	_	0000								umbe	r		
	ľ	4	1		(	0.00	0				E			t Num			
		5			0	0.00	0	Firmware Version									
18	,	VENDOR					LOC	4L	REMC	DTE	TEAC	H	REA	DY	BUSY	Send	/Reply
	ſ	Descriptio	n	Get the ve	ondor n	omo	of thic		inmon	+							
		Send form		VEN			:	equ		ι.							
	,																
		No,		1													
	f	Reply form	nat	****													
	г	No,						_									
				ltem	Doc1	1010	ample						Descri	nting			



1 2	2 3	4	5	6 7	8	9	10	11	12	13	14	15	16
19	MODEL:				LOCA	REN	IOTE	TEACH	REA	DY.	BUSY	Send	Reply
	Descriptio Send form		Get the N M O D	lodel name c E L :	of this ea	quipmer	ıt.						
	No, Reply forn	nat	1 ****										
	No,		ltem	Reply	'				Descri	ption			
	1	Info	ormation	FC-11 FC-41 FC-51 FC-61 FC-91	1 1 1				Model	name			
20	SN:				LOCA	REN	IOTE	TEACH	REA	DY.	BUSY	Send	Reply
	Descriptio Send form No,	nat	S N :	erial Number	name o	of this e	quipme	ent.					
	Reply form	nat	****										
	No,		ltem	Reply exa					Descri				
	1	Info	ormation	0000	)				Serial N	lumber	-		
21	EN:				LOCA	REN	IOTE	TEACH	REA	DY.	BUSY	Send	Reply
	Descriptio Send form		Get the E	quipment Nu	umber o	f this ea	uipmei	nt.					
	No, Reply forn	nat	1 ****										
	No,		ltem	Reply exa	mple				Descri	ption			
	1	Info	ormation	00.00	)			Equ	uipmen	t Numl	ber		
22	FV:				LOCA	REN	IOTE	TEACH	REA	DY,	BUSY	Send	Reply
	Descriptio Send form No, Reply form	nat	Get the Fi	irmware Ver	sion of t	this equi	pment.						
	No, 1	haf	Item	Reply exa				<b>C</b> :	Descri		20		
		I INTO	ormation	00.00	0			F*If	mware	versio			



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
2	3	RESO:					LOCA	BEM	IOTE	TEACH	REA		BUSY	Send	/Reply
2	0	HLOU.					LUUA			LAUN			DUUT	Jenia,	TICDIY
		Descriptio	n	Get the	Minim		olution o	f this eq	uipmei	nt.					
		No, Send forn	nat	RE	SO	1									
						1									
						2									
						VV									
		No,		ltem	S	Subcomr	nand			cription		Re	ply form	nat block	k No,
						None	е	Deper		the para Sel <sup>"</sup> * 1	meter		N	one	
		1		Axis		1				st axis				1	
						2				nd axis				1	
		* 1 lt can b	 ce cheo	ked by <sup>″</sup> PRI	M GET	W T: GO1″ d	command	d.	Bot	h axis		1 î Fi	rst axis	2 Seco	nd axis
		No,		1	_	2									
		Reply forn	nat	****	,   **	***									
		No,		ltem		Repl	ý				Descri	ption			
						100									
		1,2		Status		<u> </u>				Mir	nimum r		on		
		1,2		Olalos		5					(unit:	nm)			
						1									
_															<u></u>
2	4	LIMR:					LOCA	REN	IOTE	TEACH	REA	DY	BUSY	Send	/Reply
		Descriptio	n							cute the		comm	nand in a	advance	e. If the
				″LIMG:″ (	comm		s not bee	en execi	uted, ″*	⊧″ is retur	ned.				
		No, Send forn	nat		M R	1									
						1									
						2									
						VV									
		No,		ltem	S	Subcomr	nand		Desc	cription		Re	ply form	nat block	k No,
						None		Deper		the para Sel <sup>"</sup> * 2	meter		N	one	
		1		Axis		1				st axis				1	
						2				nd axis				1	
		* 2 1+ 000 h		ked by <sup>″</sup> PRI		W		4	Bot	h axis		1∶Fi	rst axis	2 : Secc	ond axis
		™ ∠ TE Garn k	Je u ieu	NEU DY PAI	vi_ae		Juninano	л <b>.</b>							
		No,		1		2									
		Reply forr	nat	****	, **	***									
		No,		ltem	B	leply exa	imple				Descri	ption			
		1,2		Stage		200000					Stro	-			
				formation digit is the i					-111 ;+	· is 20.001					
			minain		- mining		ALCH USI			5 20.000	<i></i>				

1	2	З	4	5	6	7	8	9	10		12		14	15	16
---	---	---	---	---	---	---	---	---	----	--	----	--	----	----	----

25	AN:

LOCAL REMOTE TEACH READY BUSY Send/Reply

Description	Get the axis name.
No,	1
Send format	AN:
	1
	2
	W

No,	ltem	Subcommand	Description	Reply format block No,
		None	Depends on the parameter	None
1	Axis	1	First axis	1
		2	Second axis	1
		W	Both axis	1 : First axis 2 : Second axis

\* 1 It can be checked by "PRM\_GET: G01" command.

2

No, Reply format

1 \*

No,	Reply example	Description
1	×	First axis name
2	Y	Second axis name

26 UNT:

LOCAL	REMOTE	TEACH	READY	BUSY	Send/Reply

Description	Get the unit.	
No,		1
Send format	UNT:	$\langle$
		1
	[	2
		W

No,	ltem	Subcommand	Description	Reply format block No,
		None	Depends on the parameter	None
1	Axis	1	First axis	1
		2	Second axis	1
		W	Both axis	1 : First axis 2 : Second axis

\* 2 It can be checked by "PRM\_GET: GO1" command.

1

\*

No, Reply format

### 2 \*

No,	ltem	Reply	Description
		Ν	Nanometer
		U	Micrometer
1,2	Unit	М	Millimeter
		D	Degree
		Р	No unit (minimum digit is minimum resolution digit)



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
--

## (3) Motion status Information commands

Q

```
27
```

Q:

# LOCAL REMOTE TEACH READY BUSY Send/Reply

Description

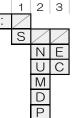
Get the coordinate values, the error, motion, and positioning status.

There are two types of reply format, and it choose by block number 1 of the send format. Reply format 1 is conventional.

Reply format 2 can choose the type and unit of coordinate value.

Also, it is possible to check the positioning status of each axis and all errors that occurre.

No, Send format

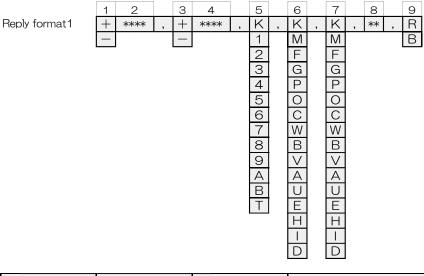


\* 1 If there is "No," to be set to "None", pad the specified No, additional command to the left. However, when No,1 is "None", No,2 and No,3 cannot be selected.

No,	ltem	Subcommand	Description				
1	Reply format	None	Format1				
* 1	heply ionnat	S	Format2				
		None	Reply in the unit set in parameter "UNIT Sel" * 2				
	2 * 1 Unit	Ν	Nanometer				
2		U	Micrometer				
* 1		Unit	М	Millimeter			
		D	Degree				
		Р	No unit (minimum digit is minimum resolution digit)				
		None	Reply with the value set in the parameter "Count Sel" * 3				
	3 Coordinate value * 1 type	E	Encoder values				
		С	Command values				

 $\ast$  2 Can be confirmed with the reply by Command "PRM\_GET: A03" or "PRM\_GET: A04" .

 $\ast$  3 Can be confirmed with the reply by Command "PRM\_GET: G15" or "PRM\_GET: G16" .



No,	ltem	Reply	Description
1 (First axis)	Sign	+	Plus
3 (Second axis)	Sign	_	Minus
2 (First axis) 4 (Second axis)	Coordinate value	00000001 * 4	Coordinate value

\* 4 The response content is an example. In the case of FC-111, it represents 100nm.

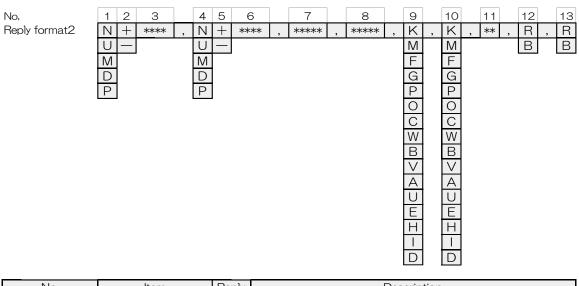
1	2	З	4	5	6	7	8	9	10	11	12	13	14	15	16
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----

No,	ltem	Reply	Description
		К	Normal (No error)
		1	Command error
		2	Scale error
		3	Limit stop
		4	Over speed error
		5	Overflow error
5	Status (Error)	6	Emergency stop
		7	Interpolator error
		8	Limit error
		9	System error
		А	Slowdown sensor area
		В	Software Limit stop
		Т	TEACHING command error
		К	Normal stop
		Μ	During command move
		F	Out of the in-position range (After positioning is completed) * 1
		G	During fine adjustment * 2, * 3
		Р	During electrical origin return
		0	During mechanical origin return
		С	CW side limit stop
6 (First axis)	Status (Motion)	W	CCW side limit stop
7 (Second axis)	Status (Motion)	В	CW side software limit stop
		$\vee$	CCW side software limit stop
		А	CW side slowdown sensor area
		U	CCW side slowdown sensor area
		E	Error occurred
		Н	Motor is transitioning to excitation
			Motor is transitioning to non-excitation
		D	Disabled axis (Not set by parameter "AXIS Sel")
8	System reservation	0000	System reservation
9	Status	R	All axes have been positioned and no errors have occurred. * 1
5	(Positioning)	В	Positioning of all axes is incomplete or an error has occurred. * 2

\* 1 All operations are accepted. (This state is READY)

 $\ast$  2 Refusing operation related to the move of the stage. (This state is BUSY)

\* 3 It can be READY state by "BEC:" command.



No,	ltem	Reply	Description
		Z	Nanometer
	Unit	U	Micrometer
1 (First axis) 2 (Second axis)		М	Millimeter
2 (Second axis)		D	Degree
		Р	No unit (minimum digit is minimum resolution digit)
2 (First axis)	Sign	+	Plus
5 (Second axis)	Sign	_	Minus





No,	ltem	Reply	Description						
3 (First axis) 6 (Second axis)	Coordinate value	****		Depends on the instruction	n unit. * 4				
			Bit	Reply: 1	Reply: 0				
			1 (MSB)	Normal	Error occurred				
			2						
			3	Scale error	No occurred				
			4	Limit stop	Other				
			5	Over speed error	No occurred				
7 (First axis)	Status	1,0	6	Overflow error	No occurred				
8 (Second axis)	(Error)	1,0	7	Emergency stop	No occurred				
			8	Interpolator error	No occurred				
			9	Limit error	No occurred				
			10	System error	No occurred				
			11	Slowdown sensor area	Other				
			12	Software limit stop	Other				
			13 (LSB)	TEACHING command error	No occurred				
		K	Normal stop						
		M		During command move					
		F	Out of the	in-position range (After position					
		G		During fine adjustment.					
		Р		During electrical origin	return				
		0		During mechanical origin					
		С		CW side limit stop					
9 (First axis)	Status	W		CCW side limit stop					
10 (Second axis)	(Motion)	В		CW side software limit stop					
				CCW side software limit stop					
		A	CW side slowdown sensor area						
		U	CCW side slowdown sensor area						
		E	Error occurred						
		Н		Motor is transitioning to e					
			Motor is transitioning to non-excitation						
	-	D							
11	System reservation	0000							
12 (First axis)	Status	R							
13 (Second axis)	(Positioning)	В		of all axes is incomplete or an	error has occurred. * 2				

\* 1 All operations are accepted. (This state is READY)

 $\ast$  2 Refusing operation related to the move of the stage. (This state is BUSY)

\* 3 It can be READY state by "BEC:" command.

\* 4 Example 1 : When the coordinate value is 12.3456mm. (use FC-111)

Unit	Reply coordinate value
nm	12345600
um	12345.6
mm	12.3456
None	123456

 $*\,4$  Example 2 : When the coordinate value is 1.23456  $^{\circ}$  . (use FC-511)

Unit	Reply coordinate value
Degree	1.23456
None	123456

Example : First axis is stopped at -12,345678mm, and the unit is nm. The second axes are operating at a position of 0.123456 mm, and the unit is  $\mu$  m. (use FC-911)

Send	Reply
Q:	-12345678,+00123456,K,K,M,0000,B
Q:S %5	N-12345678,U+123.456,1000000000000,10000000000,K,M,0000,R,B
Q:SM ** 5	M-12,345678,M+0,123456,1000000000000,10000000000,K,M,0000,R,B
Q:SE % 5	N-12345678,U+123.456,100000000000,10000000000,K,M,0000,R,B
Q:SUC % 5	U-12345.678,U+123,456,100000000000,10000000000,K,M,0000,R,B

\* 5 The number of digits of the coordinate value varies depending on the unit.



## 28 SRQ:

LOCAL REMOTE TEACH READY BUSY Send/Reply

Description

Get the status. Select Reply format in block No. 1 of Send format. Reply format1 can acquire the conventional method, and Reply format2 can acquire the positioning status and error status for each axis.

No, Send format

No,	ltem	Subcommand	Description
4	1 Reply format	None	Format1
		S	Format2

No,	1		2		З		4		5
Reply format1	Κ	,	Κ	,	Κ	,	**	,	R
	12345678	<b>,</b>	-	,	_	,		,	
	9 A B T		> A ⊃ L I − D						

No,	ltem	Reply	Description
		К	Normal (No error)
		1	Command error
		2	Scale error
		3	Limit stop
		4	Over speed error
	0	5	Overflow error
1	Status (Error)	6	Emergency stop
		7	Interpolator error
		8	Limit error
		9	System error
		А	Slowdown sensor area
		В	Software Limit stop
		Т	TEACHING command error
		К	Normal stop
		М	During command move
		F	Out of the in-position range (After positioning is completed) * 1
		G	During fine adjustment. * 2, * 3
		Р	During electrical origin return
		0	During mechanical origin return
		С	CW side limit stop
2 (First axis)	Status	W	CCW side limit stop
3 (Second axis)	(Motion)	В	CW side software limit stop
		$\vee$	CCW side software limit stop
		А	CW side slowdown sensor area
		U	CCW side slowdown sensor area
		E	Error occurred
		Н	Motor is transitioning to excitation
			Motor is transitioning to non-excitation
		D	Disabled axis (Not set by parameter "AXIS Sel")
4	System reservation	0000	System reservation

\* 1 All operations are accepted. (This state is READY)

\* 2 Refusing operation related to the move of the stage. (This state is BUSY)



1 2 3 4 5 6 7 8 9 10 11 12 13	14	15 16	3
-------------------------------	----	-------	---

$\leq$	3 4	0 7	$\circ$	9 10 11 12 13 14 13 10
	No,	ltem	Reply	Description
	5	Status	R	All axes have been positioned and no errors have occurred. * 1
	6	(Positioning)	В	Positioning of all axes is incomplete or an error has occurred. * 2
	No, Reply format2	1 2 ****** , ***** ,	<u>, × № № 0 0 0 0 0 0 0 0 0 1 0 0 1 0 0 1 0</u>	4 5 6 7 K , *** , R , R M F G P O C W B V A U E H - D

No,	ltem	Reply		Description				
			Bit	Reply: 1	Reply: O			
			1 (MSB)	Normal	Error occurred			
			2	Command error	No occurred			
			3	Scale error	No occurred			
			4	Limit stop	Other			
			5	Over speed error	No occurred			
1 (First axis)	Status	1,0	6	Overflow error	No occurred			
2 (Second axis)	(Error)	1,0	7	Emergency stop	No occurred			
			8	Interpolator error	No occurred			
			9	Limit error	No occurred			
			10	System error	No occurred			
			11	Slowdown sensor area	Other			
			12	Software limit stop	Other			
			13 (LSB)	TEACHING command error	No occurred			
	Status (Motion)	K	Normal stop					
		M		During command m	ove			
		F	Out of the in-position range (After positioning is completed) * 1					
		G	During fine adjustment. * 2, * 3					
		Р	During electrical origin return					
		0	During mechanical origin return					
		С	CW side limit stop					
3 (First axis)		W	CCW side limit stop					
4 (Second axis)		В	CW side software limit stop					
		$\vee$	CCW side software limit stop					
		А		CW side slowdown sensor area				
		U		CCW side slowdown sen	sor area			
		E		Error occurred				
		Н		Motor is transitioning to e	excitation			
		I.		Motor is transitioning to nor	n-excitation			
		D	Disabled axis (Not set by parameter "AXIS Sel")					
5	System reservation	0000		System reservatio	n			
6 (First axis)	Status	R	All axes ha	ave been positioned and no en	rors have occurred. * 1			
7 (Second axis)	(Positioning)	В	Positioning	of all axes is incomplete or an	error has occurred. * 2			

\* 1 All operations are accepted. (This state is READY)

\* 2 Refusing operation related to the move of the stage. (This state is BUSY)

\* 3 It can be READY state by "BEC:" command.

Example: When axis 1 is stopped and axis 2 is operating.

Send	Reply
SRQ:	K,K,M,0000,B
SRQ:S	100000000000,10000000000,K,M,0000,R,B



|--|

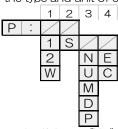
29	P:

LOCAL REMOTE TEACH READY BUSY Send/Reply

Description

Get the coordinate values. There are two types of reply format, and it choose by block number 2 of the send format. Reply format 1 is conventional. Reply format 2 can choose the type and unit of coordinate value.

No, Send format



\* 1 If there is No," to be set to "None", pad the specified No, additional command to the left. However, when No,2 is "None", No,3 and No,4 cannot be selected.

No,	ltem	Subcommand	Description	Reply format block No,
		None	Depends on the parameter "AXIS Sel" * 2	None
		1	First axis	1,2 (Reply format1)
		2	Second axis	1,2,3 (Reply format2)
1 ** 1	Axis	W	Both axis	1,2: First axis 3,4: Second axis (Reply format1) 1,2,3: First axis 4,5,6: Second axis (Reply format2)
2	Reply	None	Format1	
<u>×</u> 1	format	S	Format2	
		None	Reply in the unit set in parameter "UNIT Sel" * 3	
3		N	Nanometer	
	Unit	U	Micrometer	_
× 1	Orint	М	Millimeter	
	1	D	Degree	
		Р	No unit (minimum digit is minimum resolution digit)	
4	Coordinate	None	Reply with the value set in the parameter "Count Sel" * 4	
* 1	value type	E	Encoder values	-
		С	Command values	

\* 2 It can be checked by "PRM\_GET: G01" command.

 $\ast$  3 Can be confirmed with the reply by Command "PRM\_GET: A03" or "PRM\_GET: A04" .

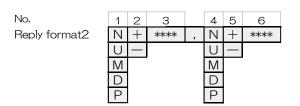
\* 4 Can be confirmed with the reply by Command "PRM\_GET: G15" or "PRM\_GET: G16" .

 No,
 1
 2
 3
 4

 Reply format1
 +
 \*\*\*\*
 ,
 +
 \*\*\*\*

	No,	ltem	Reply	Description
ſ	1 0	Sign	+	Plus
	1,3	Sign	_	Minus
ſ	2,4	Coordinate value	00000001 * 5	Coordinate value

\* 5 Contents are examples. For FC-511, it represents 10nm.



	No,	ltem	Reply	Description
Γ			Ν	Nanometer
			U	Micrometer
	1,4 Unit	М	Millimeter	
			D	Degree
			Р	No unit (minimum digit is minimum resolution digit)



1	2	3	4	6	6	7	8	9	10	11	12	13	14	15	16
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----

No,	ltem	Reply	Description
2,5	Cian	+	Plus
2,5	2,5 Sign		Minus
3,6	Coordinate value	****	Varies by unit * 1

\* 1 Example 1 : When the coordinate value is 12.3456mm. (use FC-111)

Unit	Reply coordinate value
nm	12345600
um	12345.6
mm	12.3456
None	123456

\* 1 Example 2 : When the coordinate value is 1.23456  $^{\circ}$  . (use FC-511)

Unit	Reply coordinate value
Degree	1,23456
None	123456

Example : First axis is stopped at -12,345678mm, and the unit is nm. The second axes are operating at a position of 0.123456 mm, and the unit is  $\mu$  m. (use FC-911)

Send	Reply
P:	-12345678,+00123456
P:S * 2	N-12345678,U+123,456
P:1S	N-12345678
P:2S	U+123.456
P:WSN *2	N-12345678,N+123456

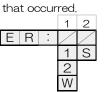
\* 2 The number of digits of the coordinate value varies depending on the unit.

## 30 ER:

Description

No,

Send format



\* 3 If there is "No," to be set to "None", pad the specified No, additional command to the left. However, when No,1 is "None", No,2 cannot be selected.

REMOTE TEACH READY

Get the error status. There are two types of reply format, and it choose by block number 1 of the send format. Reply format 1 is conventional. Reply format 2 can check all errors

BUSY

Send/Reply

No,	ltem	Subcommand	Description	Reply format2 block No,
		None	Depends on the parameter "AXIS Sel" * 4	None
1	Axis	1	First axis	1
*3	AXIS	2	Second axis	I
		W	Both axis	1: First axis 2: Second axis
2 * 3	Devely formest	None	Format1	
*3	Reply format	S	Format2	_

\* 4 It can be checked by "PRM\_GET: G01" command.



1 2 3	4	5	6	7	8	9	10	11	12	13	14	15	16
No, Reply for	mat1	1 K 1 2 3 4 5 6 7 8 9 A B T											

No,	ltem	Reply	Description
		K	Normal (No error)
		1	Command error
		2	Scale error
		3	Limit stop
		4	Over speed error
	0.	5	Overflow error
1	Status (Error)	6	Emergency stop
		7	Interpolator error
		8	Limit error
		9	System error
		А	Slowdown sensor area
		В	Software Limit stop
		Т	TEACHING command error

No, Reply format2 1 2 \*\*\*\*\* , \*\*\*\*

No,	ltem	Reply		Description			
			Bit	Reply: 1	Reply: O		
			1 (MSB)	Normal	Error occurred		
			2	Command error	No occurred		
			3	Scale error	No occurred		
			4	Limit stop	Other		
		1,0	5	Over speed error	No occurred		
1,2	Status		6	Overflow error	No occurred		
,∠	(Error)		1,0	1,0	7	Emergency stop	No occurred
				8	Interpolator error	No occurred	
				9	Limit error	No occurred	
			10	System error	No occurred		
			11	Slowdown sensor area	Other		
			12	Software limit stop	Other		
			13 (LSB)	TEACHING command error	No occurred		

Example: Both axes are normal

Send	Reply
ER:	К
ER:S	10000000000,1000000000



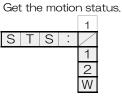


31 STS:

No,

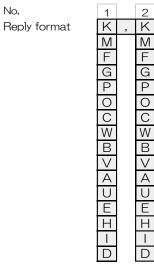
LOCAL REMOTE TEACH READY BUSY Send/Reply

Description No, Send format



No,	ltem	Subcommand	Description	Reply format block No,
		None	Depends on the parameter "AXIS Sel" * 1	None
1	Auto	1	First axis	1
	Axis	2	Second axis	I
		W	Both axis	1: First axis 2: Second axis

\* 1 It can be checked by "PRM\_GET: GO1" command.



No,	ltem	Reply	Description
		K	Normal stop
		М	During command move
		F	Out of the in-position range (After positioning is completed) * 2
		G	During fine adjustment, * 3, * 4
		Р	During electrical origin return
		0	During mechanical origin return
		С	CW side limit stop
1 (First axis)	Status	W	CCW side limit stop
2 (Second axis)	(Motion)	В	CW side software limit stop
		V	CCW side software limit stop
		А	CW side slowdown sensor area
		U	CCW side slowdown sensor area
		E	Error occurred
		Н	Motor is transitioning to excitation
		I	Motor is transitioning to non-excitation
		D	Disabled axis (Not set by parameter "AXIS Sel")

\* 2 All operations are accepted. (This state is READY)

\* 3 Refusing operation related to the move of the stage. (This state is BUSY)

\* 4 It can be READY state by "BEC:" command.



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
--

32 !:

LOCAL REMOTE TEACH READY BUSY Send/Reply

Description

Get the positioning status. There are two types of reply format, and it choose by block number 1 of the send format, Reply format 1 is conventional. Reply format 2 can check the positioning status of each axis.

No, Send format



1

%1 If there is "No," to be set to "None", pad the specified No, additional command to the left. However, when No,1 is "None", No,2 cannot be selected.

No,	Item	Subcommand	Description	Reply format block No,
		None	Depends on the parameter "AXIS Sel" * 2	None
1	Axis	1	First axis	1
* 1	AXIS	2	Second axis	I
		W	Both axis	1: First axis 2: Second axis
2	Reply format	None	Format1	
*1	neply IOmat	S	Format2	-

\* 2 It can be checked by "PRM\_GET: G01" command.



Γ	No,	Item	Reply	Description
	1	Status	R	All axes have been positioned and no errors have occurred. * 3
	1 (F	(Positioning)	В	Positioning of all axes is incomplete or an error has occurred. * 4

No, Reply format2

R, B

R

В

	No,	Item	Reply	Description
	1, 2	Status	R	All axes have been positioned and no errors have occurred. * 3
		(Positioning)	В	Positioning of all axes is incomplete or an error has occurred. * 4

\* 3 All operations are accepted. (This state is READY)

2

R

R

\* 4 Refusing operation related to the move of the stage. (This state is BUSY)

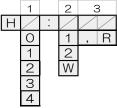
## Example: When axis 1 is stopped and axis 2 is operating.

Send	Reply
!:	В
!:S	R,B
!:1S	R
!:WS	R,B



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
			<b>.</b> .												
	(4)C	ommand	s relate	ed to th	ne orig	in									
	33	H:					LOCA	L REN	NOTE	TEACH	I REA	NDY	BUSY	Se	nd
		Descriptio	on	Perfor	ms mad	chine ho	ome pos	sition re	turn. Fo	or detai	s, see "	9. Hom	ne Retur	n".Wh	nen the
				axis to	be exe	cuted is	non-ex	citation	, the co	mmand	error oc	curs. If	″, R″ is s	specified	at the
				end of	the co	mmand,	a positi	oning c	ompletic	on reply	is sent f	for each	n axis.	•	
		No,		1	2	3									

Send format



1 If there is a number to be set to "None", pad the additional command with the specified number to the left.

No,	Item	Subcommand	Description					
		None	Depends on the parameter "ORG Mode Sel" * 2					
		0	ModeO					
1		1	Mode1					
* 1	Mode	2	Mode2					
		3	Mode3					
		4	Mode4					
		None	Depends on the parameter "AXIS Sel" * 3					
2	Astic	1	First axis					
* 1	Axis	2	Second axis					
		W	Both axis					
2		None	Do not request a reply					
3 * 1	Reply request	,R	After positioning is complete, return ~1″ for the first axis and ~2″ for the second axis.					

\* 2 Can be confirmed with the reply by Command "PRM\_GET: A30" or "PRM\_GET: A31" .

\* 3 It can be checked by "PRM\_GET: G01" command.

34	Z:	LOCAL	REMOTE TEA	ACH READY	BUSY	Send

Description

No,

Perform electrical home return. For details, see "9. Home Return". When the axis to be executed is non-excitation, the command error occurs. If ", R" is specified at the end of the command, a positioning completion reply is sent for each axis.

Send format



%4 If there is a number to be set to "None", pad the additional command with the specified number to the left.

No,	ltem	Subcommand	Subcommand Description				
		None	Depends on the parameter "AXIS Sel" * 5				
1	Auria	1	First axis				
* 4	Axis	Axis 2		Second axis			
		W	Both axis				
0		None	Do not request a reply				
2 * 4 Reply request		,R	After positioning is complete, return ~1″ for the first axis and ~2″ for the second axis.				

\* 5 It can be checked by "PRM\_GET: GO1" command.



		4			0 10		10	1.0	4.4		1.0	
1	2 3	4 5	6 7	8	9 10	) 11	12	13	14	15	16	
35	R:			LOCAL	REMOTE		I REAL		BUSY		end	
30	D.			LUUAL					1001	SE	# IQ	
	Descriptio		tes the electric metized state, a red.									
	No, Casal fam		1									
	Send forn	nat <u>R</u> :	1 2 W									
	No,	ltem	Subcommand			D	escriptior	1				
			None		Depen	ds on the	paramete	r ″AXIS \$	Sel″ * 1			
	1	Arria	1			F	First axis					
	1	Axis	2			Se	econd axi	S				
			W			E	Both axis					
	* 1 lt can b	be checked by "P	RM_GET: GO1″	command.								
36	LIMG:			LOCAL	REMOTE	TEACH	REA	DY B	BUSY	Se	end	
	Descriptio	Description Executes the stage stroke detection operation. This value can be obtained by "LIMR:" command. When the axis to be executed is non-excitation, the command error occurs. When ",R" is added to the end of the send format, the axis number is replied when it is completed.										
	No, Send forn		1 MG: 1 2	2 , R								
		* 2	If there is a nun number to the 1		et to "None	", pad the	additiona	ıl comma	and with	the spe	cified	
	No,	ltem	Subcommand			D	escriptior	้า				
			None		Depen	ds on the	paramete	r ″AXIS :	Sel″ * 3			
	1	A ·	1			F	- irst axis					
	*2	Axis	2			Se	econd axi	S				
			W			E	Both axis					
	2		None			Do not	request a	a reply				
	2	Reply request	,R		A	After posit	ioning is	complet	ie,			
	* 3 lt can h	be checked by "P			urn <i>"</i> 1″ for	the first a	ixis and "	2″ for tł	ne seco	nd axis	·.	
(5)(		s related to th		sommand.								
37	L:			I OCAI	REMOTE	TFACH	READ	DY P	BUSY	Se	end	
	– Descriptio	in Execut	te stop and em	ergency st								
	No,		1		515.							
	Send forn	nat L :										
			1									
			2									
			W									
			E									
	No,	Item	Subcommand			D	escriptior	1				
			None		Depen	ds on the i	naramete	r "AXIS	Sel <sup>″</sup> * 4			

		None	Depends on the parameter "AXIS Sel" * 4					
		1	First axis					
1	Axis	2	Second axis					
		W	Both axis					
		E	Emergency stop %5					
* 1 It cop k	* 4 It can be checked by "PPM CET CO1" command							

\* 4 It can be checked by "PRM\_GET: G01" command.

 $\ast$  5 Can be canceled with Command "BEC:" .

				OCAL REMOTE TEACH RE	ADY BUSY Send
	Description	restarte without value o	ed, or the GENEF t setting of this f the parameter	deceleration time. However, if the RAL parameter is changed, the se value, executing the "A:", "M:" or "Acc Time" is applied for the acc	t contents are discarded. V "JG:" commands, the se eleration and deceleration
			ting value of the nd "PRM_GET: A	parameter "Acc Time" can be che 19" command.	ecked by the reply of PRIVI_
	No, Send form	at AC		3 4 *** , ***	
	No,	Item	Subcommand	Description	Send format block N
	1	Axis	1 2	First axis Second axis	3
		Caraca	W Space sign	Both axis Space	3: First axis 4: Second
				Opacc	
39	2 3 4 ACCR: Description No, Send form		*** ***	Set in milliseconds (10~2000) OCAL REMOTE TEACH RE ation / deceleration time,	- EADY BUSY Send/R
39	3 4 ACCR: Description	Time	***	(10~2000) OCAL REMOTE TEACH RE	- EADY BUSY Send/R
39	3 4 ACCR: Descriptior No,	Time n Acquire lat <u>A C</u>	*** *** s the set accelera C R : 1 2 W Subcommand	(10~2000) OCAL REMOTE TEACH RE ation / deceleration time, Description	Reply format block N
39	3 4 ACCR: Description No, Send form	Time n Acquire lat <u>A C</u>	*** ***  s the set accelera  C R  1  C R  1  2  W  Subcommand  None De  1  2	(10 ~ 2000) OCAL REMOTE TEACH RE ation / deceleration time. Description pends on the parameter "AXIS Sel" First axis Second axis	Reply format block N * 1 None 1
39	3         4         ACCR:         Description         No,         Send form         No,         1	Time n Acquire lat <u>A C</u> Item s	*** ***  s the set accelera  C R  1  C R  1  2  W  Subcommand  None De  1	(10 ~ 2000) OCAL REMOTE TEACH RE ation / deceleration time. Description pends on the parameter "AXIS Sel" First axis Second axis Both axis	Reply format block N * 1 None
39	3         4         ACCR:         Description         No,         Send form         No,         1	Time	*** ***  es the set accelera  1 C R 1 2 W Subcommand None De 1 2 W	(10 ~ 2000) OCAL REMOTE TEACH RE ation / deceleration time. Description pends on the parameter "AXIS Sel" First axis Second axis Both axis	Reply format block N * 1 None 1
39	3         4         ACCR:         Description         No,         Send form         1         * 1 It can b         No,	Time	***         ****         ****         *** <td< td=""><td>(10 ~ 2000) OCAL REMOTE TEACH RE ation / deceleration time. pends on the parameter "AXIS Sel" First axis Second axis Both axis mand.</td><td>Reply format block N * 1 None 1</td></td<>	(10 ~ 2000) OCAL REMOTE TEACH RE ation / deceleration time. pends on the parameter "AXIS Sel" First axis Second axis Both axis mand.	Reply format block N * 1 None 1



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
--	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	--

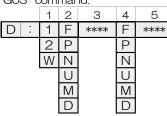
#### 40 D:

LOCAL REMOTE TEACH READY BUSY Send

Description

Set the movement speed of the stage. However, when the power is turned off, RESET, restart or the GENERAL parameter is changed, this value will be lost. When without setting of this value, executing the "A:", "M:" or "JG:" commands, the setting value of the parameter "Max Speed" is applied for the movement speed. The setting value of the parameter "Max Speed" can be checked by the reply of "PRM\_GET: GO2" and "PRM\_GET: GO3" command.

No, Send format



No,	Item	Subcommand	Description	Send format block No,				
		1	First axis	3				
1	Axis	2	Second axis	3				
		W	Both axis	3: First axis 4: Second axis				
		F, P	No unit / second * 1					
		N	Nanometer / s	sec				
2, 4	Unit	U	Micrometer / sec					
		M		Millimeter / sec				
		D	Degree / se	c				
3, 5	Speed	****	The setting speed is from the minimum resolution / sec to the parameter "Max Speed". * 2					

\* 1 The minimum digit of the operation speed is the digit of the minimum resolution.

#### \*2 Example: Operating speed setting (when FC-111 is used and 12.3456 mm / sec)

Unit	Speed
No unit / sec	123456
nm/sec	12345600
µm/sec	12345.6
mm/sec	12,3456

Example: First axis side operation speed is 12.34567mm / sec, second axis side operation speed is  $500 \,\mu$ m / sec, and when no unit is specified for both axes. (When using FC-511)

Axis	Command			
First axis only	D:1F1234567			
Second axis only	2F50000			
Both axis	D:WF1234567F50000			

Example: When the First axis side operation speed is 1.234567mm / sec and Millimeter is specified, and the second axis side operation speed is  $500 \,\mu$ m / sec and Micrometer is specified. (When using FC-911)

Axis	Axis Command				
First axis only	D:1M1.234567				
Second axis only	D:2U500				
Both axis	Both axis D:WM1.234567U500				



41 DR:

Acquires the set operation speed.

Description No, Send format

1 2 D R : 1 F 2 P W N U M D

\* 1 If there is a number to be set to "None", pad the additional command with the specified number to the left.

REMOTE TEACH

READY

BUSY

Send/Reply

No,	ltem	Subcommand	Description	Reply format block No,
		None	Depends on the parameter "AXIS Sel" * 2	None
1		1	First axis	1.0
* 1	Axis	2	Second axis	1, 2
		W	Both axis	1, 2: First axis 3, 4: Second axis
	Unit	None	Depends on the parameter	r ″UNIT Sel″ * 3
		F, P	No unit (minimum digit of operation speed	is digit of minimum resolution)
2		N	Nanometer	-
* 1		U	Micrometer	-
		Μ	Millimeter	
		D	Degree	

 $\ast$  2 It can be confirmed by the reply contents by Command "PRM\_GET: GO1" .

\* 3 It can be confirmed by the reply contents by Command "PRM\_GET: A03" and "PRM\_GET: A04" .

No,	1	2		З	4
Reply format	F	****	,	F	****
	Ρ			Ρ	
	Ν			Ν	
	U			U	
	Μ			Μ	
	D			D	

No,	Item	Reply	Description	
		F, P	No unit (minimum digit of operation speed is digit of minimum resolution)	
		Ν	Nanometer	
1,3 Unit	U	Micrometer		
		М	Millimeter	
		D	Degree	
2, 4	Speed	****	The setting speed is from the minimum resolution / sec to the parameter "Max Speed". * 4	

\* 4 Example: Operating speed setting (when FC-111 is used and 12.3456 mm / sec)

Unit	Reply speed
No unit/sec	123456
nm/sec	12345600
um/sec	12345.6
mm/sec	12.3456

\* 4 Example: Operating speed setting (when FC-411 is used and 12.3455  $^\circ$  / sec)

Unit	Reply speed
No unit/sec	123455
°/sec	1,23455

Example: When the First axis side operation speed is 1.234567mm / sec and Millimeter is specified, and the second axis side operation speed is  $500 \,\mu$ m / sec and Micrometer is specified. (When using FC-911)

Send	Reply
DR:	N1234567,U500
DR:M	M1,234567,M0,5



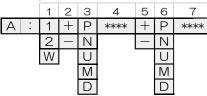
42 A:

LOCAL REMOTE TEACH READY BUSY Send

Description

Set the absolute movement coordinate value. Set the coordinate value from the origin (position where the coordinate value is zero). This command alone will not work. To make it work, execute the command "G" or "GN:" . See commands "G" and "GN:" for details.

No, Send format



No,	ltem	Subcommand	Description	Send format block No,	
		1	First axis	2, 3, 4	
1	Axis	2	Second axis	2, 3, 4	
	Axis	W	Both axis	2, 3, 4: First axis 5, 6, 7: Second axis	
2,5	Sign	+	Plus		
2, 5		_	Minus		
	Unit		Р	No unit (minimum digit of coordinate value	is digit of minimum resolution)
		N	Nanometer		
3, 6		U	Micrometer		
		М	Millimeter		
		D	Degree		
4, 7	Coordinate value	****	Coordinate value * 1 (Setting range depends on the connected stage)		

\* 1 Moving coordinate value setting example (when FC-111 is used and 12.3456mm)

Unit	Coordinate value
No unit	123456
nm	12345600
um	12345.6
mm	12,3456

 $\ast$  1 Moving coordinate value setting example (when FC-411 is used and it is 1.23455  $^\circ$  )

Unit	Coordinate value
No unit	123455
o	1,23455

Example: When using FC-911 and moving the first axis (Unit: nm) from the origin (position where the coordinate value is zero) to -1.234567mm and the second axis (Unit: um) to + 0.5mm

Send example	Send order	Command		
Euromonolo 1	1	A:W-N1234567+U500		
Example1	2	G		
European la O	1	A:W-N1234567+U500		
Example2	2	GN:W		

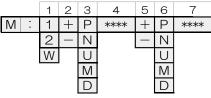
## 43 M:

LOCAL REMOTE TEACH READY BUSY Send

Description

Set the relative movement distance. This command alone will not work. To make it work, execute the command "G" or "GN:" . See commands "G" and "GN:" for details.

No, Send format



No,	Item	Subcommand	Description	Send format block No,			
		1	First axis				
1	1 Axis	2	Second axis	2, 3, 4			
		W	Both axis	2, 3, 4: First axis 5, 6, 7: Second axis			
2,5	Sign	+	Plus				
2, 5	Jigh	_	Minus				
		Р	No unit (minimum digit of moving distance	is digit of minimum resolution)			
		N	Nanometer				
3, 6	Unit	U	Micrometer				
		М	Millimeter				
		D	Degree				
4,7	Distance	****	Set the Movement dis	stance * 1			
4, 7 Distance		-1-1-2	(The range depends on the connected stage)				

\* 1 Movement distance setting example (when FC-111 is used and 12.3456mm).

Unit	Movement distance
No unit	123456
nm	12345600
um	12345.6
mm	12,3456

 $\ast$  1 Movement distance setting example (when FC-411 is used and it is 1.23455  $^{\circ}$  ).

Unit	Movement distance
No unit	123455
o	1,23455

Example: When using FC-911 and moving from the current position to the first axis (Unit: nm) -12,345678mm and the second axis (Unit: um) to + 0.5mm.

Send example	Send order	Command
Evenenia 1	1	M:W-N12345678+U500
Example1	2	G
	1	M:W-N12345678+U500
Example2	2	GN:W



1	2	0	3	4	5	6	7	,	8		9	10		11	1	2	13		14	1	5	16
				I																		
4	4	G			LOCAL REMOTE TEACH READY BUSY Send																	
		Descri No, Send		″ and	1″M:″	í are	e disc	arded										et with itioning				
		No, Item Subcommand Description																				
			,		411		one						D				a reply	у				
		1		Reply r	equest		,R					А					comp		,			
							,11			retu	ırn <i>"</i> 1	l″ for t	the	first a	axis a	nd ″:	2″ for	r the	e sec	ond	axis	
													_									
4	.5	GN:							_0C/	AL	REM	NOTE	T	EACH	- F	READ	ΟY	BL	JSY		Se	nd
		No, Send	-			A:" ai ply is 2	nd "N	M∷"a	are r	retair	ned. W										ecution itioning	
						V																
		Nc	),	lte	m	Subco	ommar	nd						D	escri	ptior	1					
		Nc	),	lte	m		ommar	nd			C	Depend	ds o					IS Se	ə)″ * <sup>-</sup>	1		
		Nc 1	),	lte Ax			one 1	nd			C	Depend	ds o	n the	para First	mete axis	r ″AXI	IS Se	ə)″ * '	1		
			),			N	one 1 2	nd			C	Depend	ds o	n the Se	para First econ	mete axis d axi:	r ″AXI	IS Se	el″ * 1	1		
			),			N	one 1 2 W	nd			[	Depend		n the Se	para First econ Both	mete axis d axis axis	r ″AXI s		e)″ * <sup>-</sup>	1		
					kis	N  	one 1 2 W one	nd					De	n the Se I o not	para First econo Both requ	mete axis d axis axis iest a	r ″AXI	У		1		
		1		Ax Reply n	kis equest		one 1 2 W one ,R				ırn <i>"</i> 1	A l‴ for t	Do After the	n the Se D not positi first a	para First econe Both requ tionir axis a	mete axis d axis axis iest a ig is d	r "AXI s a reply comp	y olete,	,		axis	
		1 2 * 1 lt c	an b ble: W (Be	Ax	kis equest ned by t 111 is u ding, co	N he repl used ar nfirm tl	one 1 2 W one ,R y conte nd Con nat the	ents k	oy Coi d "A:'	mma ""M:	<u>ırn ″1</u> and "f	A <u>1″ for 1</u> PRM_G ' "GN:"	Da After the GET: ' is u	n the Se po not posit first a GO1"	para First econe Both requ tionir axis a	mete axis axis iest a ig is o nd ";	r "AXI s a reply comp 2″ for	y olete, r the	, ) Sec	ond		
		1 2 * 1 lt c Examp	an b ile: W (Be "Q:	Ax Reply re e confirm /hen FC- ifore sena ", "SRQ	kis equest ned by t 111 is u ding, co .", "!:" /	N he repl used ar nfirm tl	one 1 2 W one ,R y conte nd Con nat the	ents b mmano	d "A:'	mma ""M: Ig sta	urn <sup>~</sup> 1 and "F :" "G" atus c	A <u>1″ for 1</u> PRM_G ' "GN:"	Da After the GET: ' is u	n the Se ponot positi first a GO1" sed emen	para First econe Both requ tionin axis a	mete axis d axis axis lest a g is o nd "2 et axi	r "AXI s a reply comp 2″ for	y Plete, r the EAD	, e sec Y wit	ond th the	e cor	
		1 2 * 1 lt c	an b ile: W (Be "Q:	Ax Reply re e confirm /hen FC- :fore sene	kis equest ned by t 111 is u ding, co .", "!:" /	N he repl used ar nfirm tl	one 1 2 W one ,R y conte nd Con nat the	ents b mmano	oy Coi d "A:'	mma ""M: Ig sta	urn <sup>~</sup> 1 and "F :" "G" atus c	A <u>1″ for 1</u> PRM_G ' "GN:"	Da After the GET: ' is u	n the Se p not posit first a GO1" sed emen	para First econe Both requ tionin axis a	mete axis d axis lest a g is c g is c nd "; et axi ent s alue	r "AXI s a reply comp 2" for s is Rf	y blete, r the EAD	, e sec Y wit	ond th the ordin	e cor ate v	nmand
		1 2 * 1 lt c Examp	an b ile: W (Be "Q:	Ax Reply re e confirm /hen FC- fore sena fore sena (" , "SRQ	kis equest ned by t 111 is u ding, co .", "!:" /	he repl used ar nfirm tl And ser	one 1 2 W one ,R y conte nd Con nat the nd it.)	ents b nmano e posit	oy Coi d "A:' tionin Descr	mma " "M: g sta riptic	u <u>rn ~1</u> and "F :" "G" atus c	A <u>1″ for 1</u> PRM_G ' "GN:"	Da After the BET: ' is u mov	n the Sc D not posiri first <u>c</u> GO1" sed emen	para First econo Both requ tionin axis a t targ	mete axis d axis est a g is c nd "? et axi et axi s alue	r "AXI s a reply comp 2" for s is Rf etting	y blete, r the EAD	y wit Coc	ond th the ordin st is	e cor ate v	nmand value econd
		1 2 * 1 lt c Examp	ean b ile: W (Be "Q: ;	Ax Reply re e confirm /hen FC- fore sena fore sena (" , "SRQ	kis equest ned by t 111 is u ding, co ding, co ommand	he repl used ar nfirm th And ser	one 1 2 W one ,R y conte nd Con nat the nd it.)	ents b nmano e posit	oy Col d "A:' tionin Descr	mma " "M: g sta riptic	urn <u>"1</u> and "F :" "G" atus c pn	A 1″ for t PRM_G ' "GN:" of the r	Do After GET: ' is u mov	n the Se I position first a GO1" sed ement Fi a No	para First econ Both requ tionir tionir t targ	mete axis d axis lest a g is c nd ": et axi et axi s et axi s f f f f f f f f f f f f f f f f f f	r "AXI a reply comp 2" for s is Rt etting econc axis	y blete, r the EAD	y wit Coc Fir: ax	ond th the ordin st is	e cor ate v	mmand value econd axis
		1 * 1 It c Examp No 1 2 3	an b le: W (Be "Q: R:W A:1 GN	Ax Reply re e confirm /hen FC- fore seno 	kis equest ned by t 111 is u ding, co ding, co ommand	he repl used ar nfirm tl And ser d Se (ze Fir Ma	one 1 2 W one ,R y conte nd Con nat the nd it.) t the e ero set st axis ove firs	ents b nmano e posit electri ) :: Abso st axis	by Col d "A:' tionin Descr ical c olute	mma " "M: g sta riptic	urn <u>"1</u> and "F :" "G" atus c pn	A 1″ for t PRM_C ? "GN:" of the r both a	Do After GET: ' is u mov	n the Se I posiri first a GO1" sed emen Fi a No A -1	para First econo Both requ tionir tionitionir tionitionir tionitionir tionitionir tionitionitionitionitionitionitionition	mete axis d axis lest a g is c nd ": et axi et axi s et axi s f f f f f f f f f f f f f f f f f f	r <sup>r</sup> AXI a reply comp <u>2</u> <sup>r</sup> for s is Rt econc axis None ↑ ↑	y blete, r the EAD	Y wit Coc Fin ax Om ↑	ond th the ordin st is mm	e cor ate v	nmand value econd axis Dmm ↑
		1 * 1 lt c Examp No 1 2 3 4	an b le: W (Be "Q:	Ax Reply re e confirm /hen FC- fore sene  Send co  Send co         	kis equest 111 is u ding, co " , "!" / ommand 00	he repl used ar nfirm tl And ser d Se (ze Fir Ma Cc	one 1 2 W one ,R y conte nd Con nat the nd it.) t the o ero set st axis sove firs mman	ents b nmano e posit electri ) :: Abso st axis id erro	oy Col d "A:' tionin Descr ical c olute	mma " "M: g sta riptic prigin moti	urn <u>"1</u> and "F " "G" atus c Dn n for I	A I <sup>″</sup> for t PRM_G ' "GN:" of the r both a	Da After the GET: ' is u move	n the Se I posii first a GO1" sed emen Fi a No A -1	para First econo Both requ tionir tionitionir tionitionir tionitionir tionitioni tionitioni tionitionitioni tionitioni	et axis axis lest a g is c nd ": ent s alue	r <sup>r</sup> AXI s comp 2 <sup>°</sup> for 2 <sup>°</sup> for econc axis None ↑ ↑	y lete, r the	y wit Coc Firi ax Om ↑	ond th the ordin st is mm	e cor ate v	nmand value econd axis Omm ↑ ↑
		1 * 1 It c Examp No 1 2 3	an b le: W (Be "Q:	Ax Reply re e confirm /hen FC- fore sene rfore sene  Send co  Send co         	kis equest 111 is u ding, co " , "!" / ommand 00	he repl used ar nfirm th And ser d Se (ze Fir Mo Cc Se	one 1 2 W one ,R y conte nd Con nat the nd it.) t the o ero set st axis sove firs mman	ents b nmann e posit ) : Abso d error xis: Ab	by Col d "A.' tionin Descr ical c olute s or bsolut	mma " "M: g sta riptic prigin moti	urn <u>"1</u> and "F " "G" atus c Dn n for I	A 1″ for t PRM_C ? "GN:" of the r both a	Da After the GET: ' is u move	n the Se I positi first a GO1" sed ement Fi a A -1	para First econo Both requ tionir tionitionir tionitionir tionitionir tionitionir tionitionitionitionitionitionitionition	et axis axis lest a g is c nd ": ent s alue	r <sup>r</sup> AXI a reply comp <u>2</u> <sup>r</sup> for s is Rt econc axis None ↑ ↑	y lete, r the	Y wit Coc Fin ax Om ↑	ond th the prdin st is mm	e cor	nmand value econd axis Dmm ↑

 $\uparrow$ 

-11mm

-12mm

 $\uparrow$ 

-13mm

Ŷ

-1mm

 $\uparrow$ 

 $\uparrow$ 

 $\uparrow$ 

M-1mm

Ŷ

 $\uparrow$ 

 $\uparrow$ 

 $\uparrow$ 

A -1mm

 $\uparrow$ 

 $\uparrow$ 

None

Discarded Discarded

M-1mm

↑

 $\uparrow$ 

 $\uparrow$ 

↑

↑

 $\uparrow$ 

 $\uparrow$ 

None

 $\uparrow$ 

 $\uparrow$ 

 $\uparrow$ 

+9mm

+8mm

 $\uparrow$ 

 $\uparrow$ 

+7mm

+6mm

↑

First axis: Relative motion (M) -1mm

Move first axis

Move first axis

Move second axis

Move both axes

Move first axis

Move both axes

Move both axes

Command error

Second axis: Relative motion (M) -1mm

First axis: Absolute motion (A) -1mm

M:W-P10000-P10000

8

9

10

11

12

13

14

15

16 G

17

GN:1

GN:1

GN:2

GN:W

GN:1

GN:W

GN:W

A:1-P10000



46 GC:

OCAL REMOTE TEACH READY BUSY Send

Description De No, Send format G

Deletes the value set by Command "A:" and "M:".

			1
C	)	•	
			1
			2
			W

No,	Item	Subcommand	Description
		None	Depends on the parameter "AXIS Sel" * 1
4	A sile	1	First axis
ļ	Axis	2	Second axis
		W	Both axis

Get the coordinate value and movement distance of the set command "A:", "M:".

\* 1 It can be confirmed by the reply contents by Command "PRM\_GET: GO1" .

## 47 GR:

LOCAL REMOTE TEACH READY BUSY Send/Reply

Description

No, Send format



GR

\*2 If there is a number to be set to "None", pad the additional command with the specified number to the left.

No,	Item	Subcommand	Description	Reply format block No,
		None	Depends on the parameter "AXIS Sel" * 3	None
1		1	First axis	1, 2, 3, 4
*2	Axis	2	Second axis	1, 2, 3, 4
		W	Both axis	1, 2, 3, 4: First axis
		vv		5, 6, 7, 8: Second axis
		None	Depends on the parameter	ŰNIT Sel″ * 4
		Р	No unit (minimum digit of moving distance	is digit of minimum resolution)
2	l locit	P N	No unit (minimum digit of moving distance Nanometer	
2 * 2	Unit			-
2 * 2	Unit		Nanometer	-

\* 3 It can be confirmed by the reply contents by Command "PRM\_GET GO1" .

\* 4 It can be confirmed by the reply contents by Command "PRM\_GET: A03" and "PRM\_GET: A04" .

No, 2 З 5 7 1 4 6 8 Reply format \* \* \* \* А +\*\*\*\* Ν +\*\*\*\* А Ν Μ U Μ U Μ Μ D

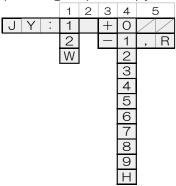
No,	Item Reply		Description
1,5	Command	А	Absolute ( "A:" command)
1, 5	Command	Μ	Relative ( "M:" command)
		Р	No unit (minimum speed digit is minimum resolution digit)
		N	Nanometer
2,6	Unit	U	Micrometer
		Μ	Millimeter
		D	Degree
3,7	Sign	+	Move in the plus direction
3, 7	Jigi i		Move in the minus direction
4,8	Coordinate value	****	Coordinate value or moving distance
(	Common	*	When not set

48	JG:			LOCAL REMOTE TEACH READY BUSY Send							
	Description Executes movement by specifying the number of pulses (1 pulse = $When \ $ , $R'$ is specified at the end, positioning completion reply is sen										
	No, Send form										
	Send form		2 –	, R							
	No,	ltem	Subcommand	Description							
	1	Astic	1	First axis							
	I	Axis	2	Second axis							
	2	Space	Space sign	Space Move in the plus direction							
	3	Cierra	+								
	3	Sign	_	Move in the minus direction							
	4	Coordinate value	***	Set movement command value $(1 \sim 1000)$							
		Reply	None	Do not request a reply							
	5	request	,R	After positioning is complete, return ~1″ for the first axis and ~2″ for the second axis.							

Executes the operation without specifying the movement distance. The operation continues until a limit sensor input, operation stop command "L" or speed stage "O" is transmitted. The operation speed can be selected from nine parameters "Jy Speed 1" to "Jy Speed 9" and "Jy Speed H". When operating at speed stages 1-9, the operating speed can be changed in stages 1-9. When operating at speed stage H, speed stages 1 to 9 cannot be selected. The control status during operation depends on the settings of the parameters "Jy Cont" and "Stage Cont Type". When ", R" is specified at the end, positioning completion reply is sent for each axis.



Description



No,	Item	Subcommand	Description
		1	First axis
1	Axis	2	Second axis
		W	Both axis
2	Space	Space sign	Space
3	Sign	+	Move in the plus direction
3	Sign	—	Move in the minus direction
		0	Stop movement when executing JY command
4	Speed stage	1~9	Set 1 to 9 (depends on parameter "Jy Speed 1 to 9")
		Н	Set H (depends on parameter "Jy Speed H")
	Reply	None	Do not request a reply
5	request	,R	After positioning is complete, return $1^{''}$ for the first axis and $2^{''}$ for the second axis.



1 4	2 3	4 5	6 7	8 9	10 11	12	13	14	15	16
(6)(	Coordinate	registration	commands							
50	PIT_DEL:	Tegistiation	Commands	LOCAL RE	MOTE TEACH	READ	DY B	USY	Se	nd
	Decembration	- Delete	- +		· · · · · · · · · · · · · · · · · · ·					<b>--.</b> ″
	Descriptior No,	n Delete	s the 1st and 2	2nd axis positio	n information re	egistered \	with Cor	mmand	I PII_S	EI.
	Send form	nat P I	T_DE	L : ***						
	NL	14	0.1	1						
	No,	ltem Number	Subcommand ***		On registration (	escription			~ 20)	
	·	1 tornio of							/	
51	PIT_SET:			LOCAL RE	MOTE TEACH	READ	DY B	USY	Se	end
	Description	Howe		ered position	he first and se will be discarde			-		
	No,	restar	eu, or paramer	1						
	Send form	nat P I	T_SE	T : ***						
	No,	ltem	Subcommand		D	escriptior	ו			
	1	Number	***	Locat	on registration (	designatio	on numk	oer (1 <sup>,</sup>	~20)	
52	PIT_GET:			LOCAL RE	MOTE TEACH	READ	DY B	USY	Send	Reply
								_ "		
	Descriptior No,	n Acquii	res the locatior		gistered with Co	ommand "	PIT_SE	Τ:″.		
	Send form	nat PI	T_GE	T : **						
				· · · ·						
	No,	ltem	Subcommand	+	Description	a a ti a va	Repi		at block	K No.
	1	Number	***		gistration design nber $(1 \sim 20)$	nation	. з		rst axis ond axi	is
	No, Reply form	nat *	, *	4						
	No,	Item	Reply		D	escriptior	۱			
	1, 3	Sign	+			Plus			-	
	2,4	Coordinate	***	Coordinate va	lue (minimum di	Minus rit is digit	with mir		resoluti	(n) * 1
		value ommon	*			nen not se		minam	10001010	<u> </u>
				I 'AXIS Sel" is zero						
53	PITG:			LOCAL RE	MOTE TEACH	READ	DY B	SUSY	Se	end
	Description	is turr registe	ned OFF, RESE pred with the c	ET, restarted, o command "PIT_	Command "PIT r the GENERAL SET:" will be dis ent for each ax	paramet	ter is ch	nanged	, the co	ontents
	No,	eria, p		1 2	ent for each ax	13.				
	Send form	nat PI	T G : *	**						
				,   R						
	No,	Item	Subcommand		Γ	escriptior	ו			
	1	Number	***		on registration (			oer (1 <sup>,</sup>	~20)	
		Reply	None			request a				
	2	request	,R	return	After posit 1″ for the first a				nd axis	
	L	1	1	I TOLGITT			5. ti		. 19 0/10	•



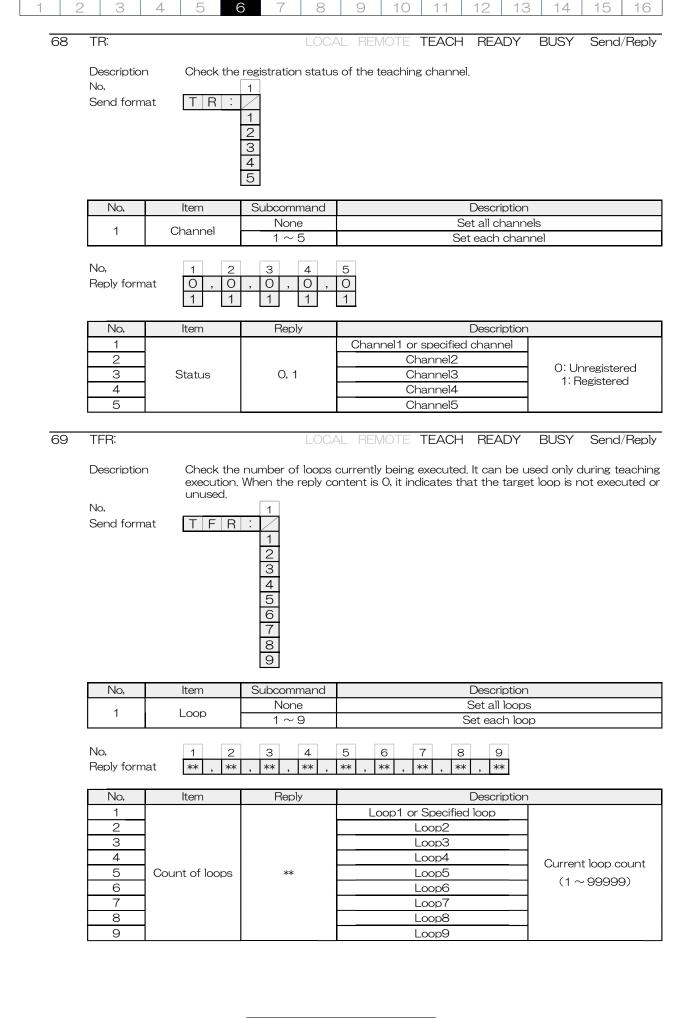
0OFFOFF1ONOFF2OFFON3ONON4OFFOFF5ONOFF6OFFON7ONON* 1 See "(4) General-purpose I / O" for ON / OFF status and input circuit.55O:LOCAL REMOTE TEACH READY BUSYDescriptionGet the status of the general-purpose output port. No,No,1Send format1O*Output statusOutput statusOutput statusOutput status0OFF1ON0OFF0OFF1ON3ON4OFF0OFF1ON3ON0OFF0OFF0OFF0OFF0OFF0OFF0OFF0OFF0OFF1ON3ON0OFF0OFF		l: Descriptior Send form No,	rpose I / O com	mands		9	10	11	12	13	14	15	16
54     I:     LOCAL REMOTE TEACH READY     BUSY       Description     Get the status of the general-purpose input port.     Send format     I       No.     1     Imput status     Imput state number       Input status     Input state number *1     Input 1 (3pin)     Input 2 (28pin)     Input 1       No.     1     O     OFF     OFF     OFF       1     0N     OFF     OFF     O       1     0N     OFF     OFF     O       1     0N     OFF     OFF     O       2     OFF     ON     O     OFF       3     ON     ON     O     OFF       4     OFF     OFF     O     O       4     OFF     ON     O     OFF       55     O:     LOCAL     REMOTE     TEACH       7     ON     ON     ON     O       * 1 See "(4) General-purpose I/O" for ON / OFF status and input circuit.     Status     Image: Status of the general-purpose output port.       No.     0:     1     Cold and and and and and and and and and an		l: Descriptior Send form No,	pose I / U com	Imande									
Description       Get the status of the general-purpose input port.         Send format       I         No.       1         Reply format       1         No.       1         Input status       Input 1 (3pin)         Input state number * 1       Input 1 (3pin)         Input state number * 1       0         O       OFF         OFF       OFF         1       0N         3       0N         4       OFF         55       ON         C       LOCAL REMOTE TEACH READY BUSY         Description       Get the status of the general-purpose output port.         No.       1         Sord format       0         1       Control *         Output state number       1         No.       1         Control *       Output state number         0       OFF	54	Descriptior Send form No,						TEAOLI				Caral	/
Send format       I         No.       1         Reply format       1         No.       Item         Reply format       1         Status       *         Input status       Input state number         Input status       Input state number * 1         Input status       Input (3pin)       Input 2 (28pin)         Input state number * 1       Input 1 (3pin)       Input 2 (28pin)         Input state number * 1       OFF       OFF         2       OFF       ON         3       ON       OFF         4       OFF       OFF         5       ON       OFF         6       OFF       ON         7       ON       ON         * 1 See "(4) General-purpose I / 0" for ON / OFF status and input circuit.       *         55       O:       LOCAL REMOTE TEACH READY BUSY         Description       Get the status of the general-purpose output port.       No.         No.       1       Ontrol       *         Send format       1       Interm Subcommand       Description         1       Control       *       Output state number         0       OFF       OFF		Send form No,			LOCAL	REIVIC	JIE	TEACH	REA	DY	BUSY	Send	/ Hep
Send format       I         No.       1         Reply format       1         No.       Item         Reply format       1         Status       *         Input status       Input state number         Input status       Input state number * 1         Input status       Input (3pin)       Input 2 (28pin)         Input state number * 1       Input 1 (3pin)       Input 2 (28pin)         Input state number * 1       OFF       OFF         2       OFF       ON         3       ON       OFF         4       OFF       OFF         5       ON       OFF         6       OFF       ON         7       ON       ON         * 1 See "(4) General-purpose I / 0" for ON / OFF status and input circuit.       *         55       O:       LOCAL REMOTE TEACH READY BUSY         Description       Get the status of the general-purpose output port.       No.         No.       1       Ontrol       *         Send format       1       Interm Subcommand       Description         1       Control       *       Output state number         0       OFF       OFF		Send form No,	n Get the st	tatus of the	general-	purpose	input	port.					
Reply format       *         No.       Item       Reply       Description         1       Status       *       Input state number         Input status       Input state number * 1       Input (3pin)       Input 2 (28pin)       Input state number         0       OFF       OFF       OFF       Input state number * 1       Input (3pin)       Input 2 (28pin)       Input state number         2       OFF       ON       OFF       OFF       Input state number * 1       ON       OFF         2       OFF       ON       OFF       ON       Input state number * 1       ON       OFF       Input state number * 1       OFF       OFF       Input state number * 1       ON       OFF       Input state number * 1       Output state number * 1       Input state number * 1					-		·	-					
Reply format       *         No.       Item       Reply       Description         1       Status       *       Input state number         Input status       Input (3pin)       Input2 (28pin)       Input         0       OFF       OFF       Input state number * 1       Input (3pin)       Input2 (28pin)       Input         0       OFF       OFF       OFF       Input state number * 1       ON       OFF         1       ON       OFF       ON       OFF       Input state number * 1       ON       OFF         2       OFF       ON       OFF       ON       Input state number * 1       ON       OFF         4       OFF       ON       OFF       ON       Input state number * 1       ON       ON         * 1 See "(4) General-purpose I/ 0" for ON / OFF status and input circuit.       Status       Input status of the general-purpose output port.       No.       No.       Status       Input statue number         Description       Get the status of the general-purpose output port.       No.       Input state number       Output state number         No.       Item       Subcommand       Description       Description       Input state number         Output status       Input s													
No.       Item       Reply       Description         1       Status       *       Input state number         Input status       Input state number * 1       Input 1 (3pin)       Input 2 (28pin)       Input         0       OFF       OFF       OFF       Input 2 (28pin)       Input         2       OFF       ON       OFF       OFF       Input 2 (28pin)       Input         3       ON       OFF       OFF       ON       Input 3 (3pin)       Input 2 (28pin)       Input         4       OFF       ON       OFF       ON       Input 3 (3pin)		Reply form											
1       Status       *       Input state number         Input state       Input state number * 1       Input 1 (3pin)       Input 2 (28pin)       Input         0       OFF       OFF       OFF         1       ON       OFF       OFF         2       OFF       ON       ON         3       ON       ON       OFF         5       ON       OFF       OFF         6       OFF       ON       ON         7       ON       ON       ON         *1 See "(4) General-purpose I / 0" for ON / OFF status and input circuit.       TEACH       READY       BUSY         Description       Get the status of the general-purpose output port.       No.       1       Send format       0       1         No.       1       O       *       Output state number       Output state number         Output status         No.       1       Output state number         Output status       Output 1 (1pin)       Output 2 (26pin)       Output 1         0       OFF       OFF       OFF       0         1       ON       OFF       ON       0         3       ON       ON       ON <td></td> <td></td> <td>at *</td> <td></td>			at *										
1       Status       *       Input state number         Input status       Input state number * 1       Input1 (3pin)       Input2 (28pin)       Input         0       OFF       OFF       OFF         1       ON       OFF       OFF         2       OFF       ON       ON         3       ON       ON       OFF         5       ON       OFF       OFF         6       OFF       ON       ON         7       ON       ON       ON         * 1 See "(4) General-purpose I / 0" for ON / OFF status and input circuit.       TEACH READY BUSY         Description       Get the status of the general-purpose output port.       No,         No,       1       OI : *         No,       1       OI : *       Output state number         Output status         No,       1       Output state number         Output status       Output state number * 1       Output1 (1pin)       Output2 (26pin)       Output         0       OFF       OFF       OFF       OFF       OI         1       ON       OFF       ON       ON       OI         3       ON       ON       OFF		No.	ltem	Rep	У				Descri	ption			
Input state number * 1       Input1 (3pin)       Input2 (28pin)       Input         0       OFF       OFF       OFF         1       ON       OFF       O         2       OFF       ON       O         3       ON       ON       O         4       OFF       OFF       O         5       ON       OFF       OFF         6       OFF       ON       O         7       ON       ON       ON         * 1 See "(4) General-purpose I / 0" for ON / OFF status and input circuit.       ON       ON         55       O:       LOCAL REMOTE TEACH READY BUSY         Description       Get the status of the general-purpose output port.       No.         No.       1       Control       *         Output state       Output state number       Output state number         0       OFF       OFF       OFF         1       On       OFF       OFF         0       OFF       OFF       O         0       OFF       OFF       O         1       Control       *       Output state number         1       ON       OFF       OFF       O <td></td> <td></td> <td></td> <td>-</td> <td>5</td> <td></td> <td></td> <td>Inp</td> <td></td> <td></td> <td>er</td> <td></td> <td></td>				-	5			Inp			er		
Input state number * 1       Input1 (3pin)       Input2 (28pin)       Input         0       OFF       OFF       OFF         1       ON       OFF       O         2       OFF       ON       O         3       ON       ON       O         4       OFF       OFF       O         5       ON       OFF       OFF         6       OFF       ON       O         7       ON       ON       ON         * 1 See "(4) General-purpose I / 0" for ON / OFF status and input circuit.       ON       ON         55       O:       LOCAL REMOTE TEACH READY BUSY         Description       Get the status of the general-purpose output port.       No.         No.       1       Control       *         Output state       Output state number       Output state number         0       OFF       OFF       OFF         1       On       OFF       OFF         0       OFF       OFF       O         0       OFF       OFF       O         1       Control       *       Output state number         1       ON       OFF       OFF       O <td></td>													
O     OFF     OFF       1     ON     OFF       2     OFF     ON       3     ON     ON       4     OFF     OFF       5     ON     OFF       6     OFF     ON       7     ON     ON       *1 See "(4) General-purpose I / O" for ON / OFF status and input circuit.       55     O:     LOCAL REMOTE TEACH READY BUSY       Description     Get the status of the general-purpose output port.       No.     1       Send format     1       O     1       Output status       Output status       Output status       Output status       O     OFF       1     ON       0     OFF       1     ON       0     OFF       1     ON       0     OFF												<u> </u>	
1     ON     OFF       2     OFF     ON       3     ON     ON       4     OFF     OFF       5     ON     OFF       6     OFF     ON       7     ON     ON       *1 See "(4) General-purpose I / 0" for ON / OFF status and input circuit.       55     O:     LOCAL REMOTE TEACH READY BUSY       Description     Get the status of the general-purpose output port.       No,     1       Send format     1       O:     *       Output state number       Output status       Output status       Output status       Output status       O     OFF       1     ON       0     OFF       0     OFF       0     OFF       0     OFF       0     OFF       0     OFF       1     ON       0     OFF       2 <td< td=""><td></td><td>Input</td><td></td><td>lr</td><td></td><td>oin)</td><td></td><td></td><td></td><td></td><td></td><td>t3 (4pir</td><td>ר)</td></td<>		Input		lr		oin)						t3 (4pir	ר)
2         OFF         ON           3         ON         ON           4         OFF         OFF           5         ON         OFF           6         OFF         ON           7         ON         ON           * 1 See "(4) General-purpose I / 0" for ON / OFF status and input circuit.           55         O:         LOCAL REMOTE TEACH READY BUSY           Description         Get the status of the general-purpose output port.           No,         1           Send format         1           O:         *           Output status         Output state number           Output status         Output 1(1pin)         Output2(26pin)           0         OFF         OFF           1         ON         OFF           2         OFF         ON           3         ON         ON           4         OFF         OFF												OFF OFF	
3       ON       ON       ON         4       OFF       OFF       OFF         5       ON       OFF       ON         7       ON       ON       ON         * 1 See "(4) General-purpose I / 0" for ON / OFF status and input circuit.       ON       ON         55       O:       LOCAL REMOTE TEACH READY BUSY         Description       Get the status of the general-purpose output port.       No,         No,       1       OI: *         No,       1       OI: *         No,       1       OI: *         No,       1       OI: *         Output status       OI: *         Output status       Output 1 (1pin)       Output 2 (26pin)         Output status       OFF       OFF         0       OFF       OFF         1       ON       OFF         2       OFF       ON         3       ON       ON         4       OFF       OFF												OFF	
4       OFF       OFF         5       ON       OFF         6       OFF       ON         7       ON       ON         *1 See "(4) General-purpose I / 0" for ON / OFF status and input circuit.         55       O:       LOCAL REMOTE TEACH READY BUSY         Description       Get the status of the general-purpose output port.         No,       1         Send format       0: *         Output status       Output state number         Output status       Output state number * 1         Output status       0         0       OFF         1       ON         0       OFF         0       OFF         0       OFF         0       OFF         0       OFF         0       OFF         1       ON         0       OFF         0       OFF         1       ON         0       OFF         1       ON         0       OFF         1       ON         3       ON         4       OFF							-					OFF	
6       OFF       ON         7       ON       ON         * 1 See "(4) General-purpose I / O" for ON / OFF status and input circuit.         55       O:       LOCAL REMOTE TEACH READY BUSY         Description       Get the status of the general-purpose output port.         No,       1         Send format       0: *         No,       1         Octput status       Output state number         Output status       Output state number * 1         Output state number * 1       Output 1 (1pin)         O       OFF         1       ON         0       OFF         0       OFF         0       OFF         0       OFF         1       ON         0       OFF			4									ON	
7       ON       ON         * 1 See "(4) General-purpose I / 0" for ON / OFF status and input circuit.         55       O:       LOCAL REMOTE TEACH READY BUSY         Description       Get the status of the general-purpose output port.       No,         No,       1       Send format       0: *         No,       1       Control       *       Output state number         Output status       Output state number * 1       Output 1 (1pin)       Output 2 (26pin)       Output 2 (26pin)         0       OFF       OFF       OFF       0       OFF       0         1       ON       OFF       OFF       0       0       0         3       ON       ON       0       0       0       0       0         0       OFF       OFF       OFF       0												ON	
* 1 See "(4) General-purpose I / O" for ON / OFF status and input circuit.         55       O:       LOCAL REMOTE TEACH READY BUSY         Description       Get the status of the general-purpose output port.       No,         No,       1         Send format       O: *         No,       1         Control       *         Output status         Output status         Output state number * 1       Output 1 (1pin)         OFF       OFF         1       ON         0       OFF         0       OFF         0       OFF         0       OFF         1       ON         0       OFF         0       OFF         1       ON         0       OFF         1       ON         0       OFF         1       ON         0       OFF         1       ON         1       OFF												ON	
55       O:       LOCAL REMOTE TEACH       READY       BUSY         Description       Get the status of the general-purpose output port.       No,       1         No,       1       O:       *         Send format       O:       *       Output state number         1       Control       *       Output state number         Output status         Output status       Output state number * 1       Output 1 (1pin)       Output 2 (26pin)       Output state         0       OFF       OFF       OFF       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       F       O       O       O       O       O       F       O       O       O       O       F       O       O       O       O       F       O       O       O       F       O       O       O       F       O       O       O       O       F       O       O       O       F       O       O       O       F       O       O       O       F       O       O       O       F       O       O       O       O       F </td <td></td> <td>* 10- "//</td> <td></td> <td>/ O" f = ON</td> <td></td> <td></td> <td></td> <td></td> <td>N</td> <td></td> <td></td> <td>ON</td> <td></td>		* 10- "//		/ O" f = ON					N			ON	
Description       Get the status of the general-purpose output port.         No,       1         Send format       0:*         No,       Item       Subcommand       Description         1       Control       *       Output state number         Output status       Output state number * 1       Output 1 (1pin)       Output 2 (26pin)       Output post         0       OFF       OFF       0 </td <td></td> <td>* 1 See (4</td> <td>General-purpose l</td> <td>TO TOP UN</td> <td>/ UFF sta</td> <td>illus and ir</td> <td>IDUT CI</td> <td>IT CUIT.</td> <td></td> <td></td> <td></td> <td></td> <td></td>		* 1 See (4	General-purpose l	TO TOP UN	/ UFF sta	illus and ir	IDUT CI	IT CUIT.					
Description       Get the status of the general-purpose output port.         No,       1         Send format       0:*         No,       Item         Subcommand       Description         1       Control       *         Output state number       Output state number         Output status       Output state number * 1         Output state       OFF       OFF         1       ON       OFF         0       OFF       OFF         1       ON       OFF         3       ON       ON         4       OFF       OFF	55	<u></u>										<u> </u>	un nl
No,       1         Send format       0: *         No,       Item       Subcommand       Description         1       Control       *       Output state number         Output status         Output state number * 1       Output 1 (1pin)       Output 2 (26pin)       Output         0       OFF       OFF       OFF         1       ON       OFF       OFF         2       OFF       ON       ON         3       ON       ON       ON         4       OFF       OFF       OFF	00	0.			LUGAL			TLACH		UT.	D031	Se	end
1Control*Output state numberOutput statusOutput state number * 1Output1 (1pin)Output2 (26pin)Output0OFFOFFOFF1ONOFFOFF2OFFONON3ONONON4OFFOFFOFF		No,	ltem	Subcom	mand				Descri	ption			
Output state number * 1Output 1 (1pin)Output 2 (26pin)Output0OFFOFF1ONOFF2OFFON3ONON4OFFOFF			Control					Out	put stat	te num	ber		
Output state number * 1Output1 (1pin)Output2 (26pin)Output0OFFOFF1ONOFF2OFFON3ONON4OFFOFF		_											
O         OFF         OFF           1         ON         OFF           2         OFF         ON           3         ON         ON           4         OFF         OFF					1+101 1+1 (1	Lucius )			(OGnin)		Outou	+2 (2p	in)
1         ON         OFF           2         OFF         ON           3         ON         ON           4         OFF         OFF		Outpu										OFF	117
3         ON         ON           4         OFF         OFF												OFF	
4 OFF OFF			2		OFF			O	N			OFF	
												OFF	
												ON	
5         ON         OFF           6         OFF         ON		1										ON ON	
7 ON ON			0				-					ON	
* 1 See "(4) General-purpose I / O" for ON / OFF status and input circuit.						itus and ir							
		* 1 See "(4	7	/ O" for O <mark>N</mark>			nput ci	ircuit.					
(8) Commands related to teaching			7 General-purpose I				nput ci	ircuit.					
56 T_ON: LOCAL REMOTE TEACH READY BUSY		commands	7 General-purpose I										
Description Move to the teaching resistantian adit reads		commands	7 General-purpose I						REA	DY	BUSY	Se	end
		commands T_ON:	7 General-purpose I related to teach	hing	LOCAL	_ REMO	DTE		REA	DY	BUSY	Se	end
		Commands T_ON: Description	7 General-purpose I related to teach	hing	LOCAL	_ REMO	DTE		REA	DY	BUSY	Se	end
		Commands T_ON: Description No,	7 General-purpose I related to teach	hing he teaching	LOCAL	_ REMO	DTE		REA	DY	BUSY	Se	end
		Commands T_ON: Description No,	7 General-purpose I related to teach	hing he teaching	LOCAL	_ REMO	DTE		REA	DY	BUSY	Se	end
Send format	56	Commands T_ON: Description No, Send form	7 General-purpose I related to teach	hing he teaching	LOCAL	_ REMO	DTE mode.	TEACH					
	56	Commands T_ON: Description No, Send form	7 General-purpose I related to teach	hing he teaching	LOCAL	_ REMO	DTE mode.	TEACH					end
Send format       T_ON:         57       T_OFF:       LOCAL REMOTE TEACH READY BUSY         Description       Return from the teaching registration edit mode. The registered content	56	Commands T_ON: Description No, Send form T_OFF:	7 General-purpose I related to teach n Move to t nat <u>T_0</u> n Return fro	hing he teaching N : om the tead	LOCAL registrat	_ REMC	DTE mode. DTE	TEACH	REA	DY	BUSY	Se	end
Send format       T_ON:         57       T_OFF:       LOCAL REMOTE TEACH READY BUSY         Description       Return from the teaching registration edit mode. The registered content returning.	56	Commands T_ON: Description No, Send form T_OFF: Description	7 General-purpose I related to teach n Move to t nat <u>T_0</u> n Return fro	hing he teaching N : om the tead	LOCAL registrat	_ REMC	DTE mode. DTE	TEACH	REA	DY	BUSY	Se	end
Send format       T_ON:         57       T_OFF:       LOCAL REMOTE TEACH READY BUSY         Description       Return from the teaching registration edit mode. The registered content returning.         No,	56	Commands T_ON: Description No, Send form T_OFF: Description No,	7 General-purpose I related to teach n Move to t hat <u>T_0</u> n Return fro returning.	hing he teaching N : om the teac	LOCAL registrat	_ REMC	DTE mode. DTE	TEACH	REA	DY	BUSY	Se	end
Send format       T_ON:         57       T_OFF:       LOCAL REMOTE TEACH READY BUSY         Description       Return from the teaching registration edit mode. The registered content returning.	56	Commands T_ON: Description No, Send form T_OFF: Description No,	7 General-purpose I related to teach n Move to t hat <u>T_0</u> n Return fro returning.	hing he teaching N : om the teac	LOCAL registrat	_ REMC	DTE mode. DTE	TEACH	REA	DY	BUSY	Se	end
Send format       T_ON:         57       T_OFF:       LOCAL REMOTE TEACH READY BUSY         Description       Return from the teaching registration edit mode. The registered content returning.         No,	56	Commands T_ON: Description No, Send form T_OFF: Description No,	7 General-purpose I related to teach n Move to t hat <u>T_0</u> n Return fro returning.	hing he teaching N : om the teac	LOCAL registrat	_ REMC	DTE mode. DTE	TEACH	REA	DY	BUSY	Se	end



2													
58	T_DEL:			L	_OCAL	. REMC	TE	TEACH	REA	DY	BUSY	Se	eno
	Description	٦	This comr	e contents of mand can be ne command "	used a T_OFF	after sen							
	No, Send form	at	T _ D	EL: ,	1 ***								
	No,		ltem	Subcomma	Ind				Descrip				
	1		Line	***				Set line	numbe	er (1 f	~200)		
59	T_SET:			L	OCAL	. REMC	TE	TEACH	REA	DY	BUSY	Se	ene
	Descriptior	ו	command	eaching conte s that can be ding the com	set, se	e ~(4) Re	egiste	ered comr	nands"	. This	commar	nd can b	ре
	No,				1 2								
	Send form	at	T _ S	E   T   :   ,	***	****	*						
	No,		ltem	Subcomma	ind				Descrip	otion			
	1		Line	***				Set line	numbe	er (1 ~	~200)		
	2		Space	Space sig	'n				Spa				
	3	С	Command	****				Regis	tration	comn	nand		
60	T_GET:			L	_OCAL	REMC	TE	TEACH	REA	DY	BUSY	Send	/F
60	Descriptior	ו	Acquires t	he contents c	of the re								/F
60			Acquires t	he contents c									/R
60	Descriptior No,			he contents c	of the re 1 ***					selecte			/F
60	Descriptior No, Send form		T   _   G	he contents c	of the re 1 ***				Prently s	selecte	ed chanr		/F
60	Description No, Send form No,	at	T _ G	he contents c	of the re 1 ***			of the cur	Prently s	selecte	ed chanr		/F
60	Description No, Send form No, 1	at	T _ G	he contents c	of the re 1 ***			of the cur	Prently s	otion er (1 c	ed chanr		/F
60	Description No, Send form No, 1 No, Reply form	at at	T_G Item Line 1 *****	he contents c	of the re 1 ***			of the cur Set line	Descrip	otion otion	ed chanr ~ 200)		
60	Description No, Send form No, Reply form No,	at at	T_G Item Line 1 *****	he contents c	of the ra	egistered	line	of the cur Set line	Descrit numbe Descrit istered	otion er (1 conte	ed chanr ~ 200)		
	Description No, Send form No, To, Reply form No, 1 TC: Description	at at C	T _ G	he contents c	of the re 1 ***	egistered	line (	of the cur Set line Reg	Descrip Descrip Descrip gistered REA	otion r (1 ^ conte	ed chanr ~ 200) ent BUSY	nel.	
	Description No, Send form No, Reply form No, 1 TC:	at at C	T _ G	he contents c	of the re 1 ***	egistered	line (	of the cur Set line Reg	Descrip Descrip Descrip gistered REA	otion r (1 ^ conte	ed chanr ~ 200) ent BUSY	nel.	
	Description No, Send form No, 1 No, Reply form No, 1 TC: Description No, Send form	at at C	T _ G	teaching chan	of the re 1 ***	egistered	line (	of the cur Set line Reg	Descrip Descrip Descrip gistered REA	otion or (1 -	ed chanr ~ 200) ent BUSY	nel.	
	Description No, Send form No, 1 No, Reply form No, 1 TC: Description No,	at at C	T_G Item Line 1 ***** Item Command Select the TC:	the contents c E T : Subcomma *** Reply **** teaching chai	of the re 1 ***	egistered	line (	of the cur Set line Reg TEACH the regist	Descrip numbe Descrip gistered REA	otion otion otion conte DY conte	ed chanr ~ 200) ent BUSY nts to be	nel.	
61	Description No, Send form No, 1 No, Reply form No, 1 TC: Description No, Send form 1	at at C	T_G Item Line 1 ***** Item Command Select the T_C : Item	teaching char subcomma *** Reply *****	of the re 1 ***	egistered	TTE	of the cur Set line Reg TEACH the regist	Descrip numbe Descrip gistered REA cration of Descrip nel sele	otion r (1 ^ otion DY conte	ed chanr ~ 200) ent BUSY nts to be ~ 5)	see	>n•
	Description No, Send form No, 1 No, Reply form No, TC: Description No, Send form	at at C	T _ G	the contents of E T : , Subcomma *** Reply ***** teaching char 1 * Subcomma *	of the re 1 *** und	egistered	TTE	of the cur Set line Reg TEACH the regist	Descrip Descrip Descrip REA cration of Descrip	otion r (1 ^ otion DY conte	ed chanr ~ 200) ent BUSY nts to be	nel.	
61	Description No, Send form No, 1 No, Reply form No, TC: Description No, Send form 1 TCR: Description	at at at at	T       _       G         Item       1       *****         Item       6       1         Select the       T       C         Item       6       1         Get the out       6       6	the contents of E T : , Subcomma *** Reply ***** teaching char 1 * Subcomma *	of the re 1 *** und	egistered	TTE	of the cur Set line Reg TEACH the regist	Descrip numbe Descrip gistered REA cration of Descrip nel sele	otion r (1 ^ otion DY conte	ed chanr ~ 200) ent BUSY nts to be ~ 5)	see	>n•
61	Description No, Send form No, 1 No, Reply form No, 1 TC: Description No, 1 TCR: Description Send form No, 1	at at at at	T       _       G         Item       1       *****         Item       6       1         Select the       T       C         Item       6       1         Get the out       Channel       1         Get the out       T       C         Item       1       1	the contents of E T : , Subcomma *** Reply ***** teaching char 1 * Subcomma *	of the re 1 *** und	egistered	TTE	of the cur Set line Reg TEACH the regist	Descrip numbe Descrip gistered REA cration of Descrip nel sele	otion or (1 ^ otion conte otion otion otion otion	ed chanr ~ 200) ent BUSY nts to be ~ 5)	see	



	2 3		7 8	9   10   11   12   13   14   15   16
63	TQ:		LOCA	AL REMOTE TEACH READY BUSY Send/Reply
	Description Send forma		he status related t	o teaching.
	No, Reply form	at 1 2 K , * M P O I T R	3	4
		E		
	No,	ltem	Reply	Description
			M	Stopped * 1 During move * 1
			P	Paused
			0	During move (executed line by line) * 1
	1	Status		General I/O operation status
			Т	Teaching edit mode
			R	loading teaching registration contents * 2
	2	Channel	E*	Teaching command error Current channnel
	3	Line	***	Current line number
	4	Command	****	Current command
64	TG: Description		until reading is comp LOCA execution of the s	
05	Send form	at TG:		
65	TO		1 0 0 1	
	TP:		LOCA	AL REMOTE TEACH READY BUSY Send
	TP: Description Send forma	″TG:″.		
66	Description	″TG:″.	t during teaching,	
66	Description Send forma	″TG.″. at <u>TP∶</u>	t during teaching,	it will pause. If you want to resume, execute the command
66	Description Send form	TG.". at <u>TP</u> :	t during teaching, LOCA the contents line	it will pause. If you want to resume, execute the command
66	Description Send form TO: Description	TG.". at TP:	t during teaching, LOCA the contents line	it will pause, If you want to resume, execute the command AL REMOTE TEACH READY BUSY Send by line in the paused state. If the stage is operating, this discarded until positioning is completed.
	Description Send forma TO: Description Send forma	TG.". at TP: b Executes command at TO: b Stops teac	t during teaching, LOCA the contents line is not allowed and LOCA	it will pause, If you want to resume, execute the command AL REMOTE TEACH READY BUSY Send by line in the paused state. If the stage is operating, this discarded until positioning is completed.
	Description Send forma TO: Description Send forma TL: Description No,	TG.". at TP: b Executes command at TO: b Stops teac	t during teaching,	it will pause, If you want to resume, execute the command AL REMOTE TEACH READY BUSY Send by line in the paused state. If the stage is operating, this discarded until positioning is completed.
	Description Send forma TO: Description Send forma TL: Description No, Send forma	TG.". at TP: Executes command at TO: Stops teac at TL:	t during teaching,	it will pause, If you want to resume, execute the command AL REMOTE TEACH READY BUSY Send by line in the paused state. If the stage is operating, this discarded until positioning is completed. AL REMOTE TEACH READY BUSY Send the line number to the first line.





1 2	2 3	4 5	( 8	9 10 11 12 13 14 15 16
70	TM:		LOCA	AL REMOTE TEACH READY BUSY Send
	Description	the interfa and "FE:" i	ce set by the para s Reply format2. T	turning this setting ON, the executed command is returned to ameter "I / F Sel". Reply format is Reply format1 except "FE:", 'he set value of the parameter "I / F Sel" can be confirmed by nmand "PRM_GET: G24".
	No, Send form	at TM:	1 0 1	
	No,	ltem	Subcommand	Description
			0	Monitor setting OFF
	1	Control	1	Monitor setting ON
	No, Reply form	1 2 ***	3 *****	
	No,	ltem	Reply	Description
	1	Line	***	Execution line number (001 $\sim$ 200)
	2	Space	Space sign	Space
	3	Command	****	Execution command
	No, Reply form		3 4 5 ***** [	6 6 ** ]
	No,	ltem	Reply	Description
	1	Line	***	Execution line number (001 $\sim$ 200)
	2	Space	Space sign	Space
	3	Command	****	Execution command
	4 5	Space brackets	Space sign	Space Use as separator
	6	Count of loops	L **	Current loop count $(1 \sim 99999)$
	7	brackets	]	Use as separator
			-	and the execution command is "M:". Auto reply
			C	002,M:1+P10000
	Example 2:	When the line numb	er is the second line	, the execution command is "FE:", and the loop count is the third. Auto reply
				002 FE:1 [3]
71	TMR:		LOCA	AL REMOTE TEACH READY BUSY Send/Reply
	Descriptior Send form		eaching monitor se :	etting status.
	No, Reply form	at 0		
	No,	ltem	Reply	Description
	4	Stature	0	Monitor setting is OFF
	1	Status	1	Monitor setting is ON



1	2	3	4	5	6	(	8	9	10	11	12	13	14	15	16
-	70													0	
(	2	TNR:					LOCA	L REM	/IOTE	TEACH	REA	ЪY	BUSY	Send	/Reply
		Descriptio	n	Gets the	teach	ning line r	numbe	er currer	ntly bein	g execu	ted or i	n stanc	by.		
		Send form	nat	TNF	3										
		No, Reply forn	nat	1 ***											
			Παι	ጥጥጥ											
		No,		ltem		Reply					Descr	iption			
		1		Line		***				Exec	cution li	ne nun	nber		
_															
7	73	TACR:				l	LOCA	L REM	NOTE	TEACH	REA	ЪY	BUSY	Send	/Reply
		Descriptio	n	Gets the	teach	ning comr	mand	current	v being	execute	d or in i	standb	v		
		Send form				:			, 1991 19	0,000,000					
		No,		1	_										
		Reply forn	nat	****											
		No,		ltem		Reply					Descr	iption			
		1	С	ommand		*****				Exe	ecution	comma	Ind		
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# 7. Parameters

Describes the built-in setting parameters.

ho When changing parameters, please do after understanding the	; function fully	у.

- 7-1. List of parameters
  - (1)Parameter type
    - AXIS Parameters:

Perform settings related to stage operation and machine home position return direction.

GENERAL parameters: Perform settings related to stage control and communication,

Туре	No,	Axis	Display	Description	Page
	01	First			
	02	Second	AXIS Name	Setting the display axis name	71
	03	First			
	04	Second	UNIT Sel	Unit setting	71
	05	First			
	06	Second	Pos Dir	Setting the coordinate count direction	71
	07	First			
	08	Second	INPos Range	In-position range setting	71
	09	First			
	10	Second	FB Speed	Setting the feedback speed	72
	11				
		First	ZERO Cont	Zero control setting	72
	12	Second			
	13	First	Stage Config	Stage configuration settings	72
	14	Second			
	15	-	TEACH IF	TEACH operation interface settings	72
	16	First	Acc Cont	Acceleration / deceleration control settings	73
	17	Second			10
	18	First	Acc Time	Acceleration / deceleration time setting	73
	19	Second	Acc nime	Acceleration / deceleration time setting	13
	20	First			70
	21	Second	Jog Speed 3	JOG speed 3 setting	73
	22	First			70
	23	Second	Jog Speed 2	JOG speed 2 setting	73
AXIS	24	First			
	25	Second	Jog Speed 1	JOG speed 1 setting	74
	26	First		Operation control settings when operating CCW and	
	27	Second	Jog Cont	CW buttons	74
	28	First			
	29	Second	ORG Dir	Setting the machine origin return direction	74
	30	First			
	31		ORG Mode Sel	Setting the machine origin return mode	74
	32	Second			
		First	ORG Mode3 Pos	Machine origin return Mode 3 specified	75
	33	Second		position setting	
	34	First	ORG Speed H	Machine origin return speed H setting	75
	35	Second			
	36	First	ORG Speed M	Machine origin return speed M setting	75
	37	Second	,		
	38	First	ORG Speed L	Machine origin return speed L setting	76
	39	Second			Ľ
	40	First	EORG Speed	Electric origin return speed setting	76
	41	Second			10
	42	First	Soft LMT Sel	Software limit function setting	76
	43	Second			10
	44	First		Setting the software limit position on the plus	77
	45	Second	+ Soft LMT Pos	side	77
	46	First		Setting the software limit position on the	
	47	Second	– Soft LMT Pos	minus side	77
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

48         -         L < C > R Sel         Jog controller left / right button operation axis settine, 77           50         -         Right Dir         Setting, the count direction of the right button of the log controller.           51         -         Too Dir         Setting, the count direction of the right button of the log controller.         78           52         First.         Jy Cont         Command "U/C" control settings         78           53         Second         Jy Speed H         JY speed H setting.         78           54         First.         Jy Speed B         JY speed F setting.         78           56         First.         Jy Speed B         JY speed 7 setting.         80           56         First.         Jy Speed A         JY speed 7 setting.         80           66         First.         Jy Speed A         JY speed 7 setting.         80           63         Second.         Jy Speed A         JY speed 7 setting.         81           65         First.         Jy Speed A         JY speed 3 setting.         81           66         First.         Jy Speed 1         JY speed 2 setting.         82           71         Second.         Jy Speed 1         JY speed 2 setting.         83 <td< th=""><th></th><th>1</th><th></th><th></th><th></th><th></th></td<>		1				
49         -         T <> B Sel         Jog controller up / down button operation sets esting 77         77           50         -         Right Dir         Setting the count direction of the right button of the los 78           51         -         Too Dir         Controller         78           51         -         Too Dir         Controller         78           53         E-cond         Jy Cont         Command "Jy?" control settings         78           54         First         Jy Speed 9         JY speed 9 setting         79           56         First         Jy Speed 9         JY speed 9 setting         80           60         First         Jy Speed 6         JY speed 6 setting         80           62         First         Jy Speed 5         JY speed 5 setting         81           64         First         Jy Speed 1         JY speed 3 setting         81           65         First         Jy Speed 1         JY speed 3 setting         82           71         Second         Jy Speed 1         JY speed 3 setting         82           71         Second         Jy Speed 1         JY speed 3 setting         83           73         Second         JY Speed 3         JY speed 3 setting	Туре	No,	Axis	Display		Page
S0         -         Right Dir         Setting the count direction of the right button of the log oncoroller         78           S1         -         Top Dir         Satting the count direction of the up button of the log controller         78           S2         First Second         y Cont         Command "U/" control settings         78           S4         First S9         y Speed H         JY speed H setting         78           S6         First S9         y Speed 9         JY speed 9 setting         80           S6         First S9         Speed 6         JY speed 7 setting         80           G3         Second         Jy Speed 6         JY speed 7 setting         80           G4         First G5         Second         Jy Speed 7         JY speed 7 setting         81           G5         Second         Jy Speed 1         JY speed 3 setting         81         81           G7         Second         Jy Speed 1         JY speed 3 setting         82         83           G1         -         AXIS Set         Control target axis setting         83         83           G5         Second         Jy Speed 1         JY speed 3 setting         83         83         83         83         83         83			-			
SU         -         Ign U         jog controller         -         To         Dir         Setting the count direction of the up button of the leg         78           51         -         Too Dir         Setting the count direction of the up button of the leg         78           53         Second         Jy Cont         Command "Jy" control settings         78           53         Second         Jy Speed 9         JY speed 9 setting         79           56         First         Jy Speed 7         JY speed 7 setting         80           60         First         Jy Speed 7         JY speed 7 setting         80           61         Second         Jy Speed 6         JY speed 5 setting         81           62         First         Jy Speed 3         JY speed 3 setting         81           63         Second         Jy Speed 1         JY speed 1 setting         81           71         Second         Jy Speed 1         JY speed 1 setting         82           73         Second         Jy Speed 1         JY speed 1 setting         83           73         Second         Jy Speed 1         JY speed 1 setting         83           73         Second         Jy Speed 1         JY speed 1 setting <t< td=""><td></td><td>49</td><td>-</td><td>I &lt;-&gt; B Sel</td><td></td><td></td></t<>		49	-	I <-> B Sel		
AKIS         First         Controller         First           53         Second         JY Cont         Command "JY" control settings         78           54         First         JY Speed P         JY speed P setting         79           56         First         Jy Speed P         JY speed P setting         80           66         First         Jy Speed P         JY speed P setting         80           60         First         Jy Speed 7         JY speed 7 setting         80           61         Second         Jy Speed 7         JY speed 7 setting         80           62         First         Jy Speed 6         JY speed 7 setting         80           63         Second         Jy Speed 7         JY speed 7 setting         81           64         First         Jy Speed 7         JY speed 7 setting         81           65         Second         JY Speed 7         JY speed 7 setting         81           66         First         Jy Speed 1         JY speed 3 setting         81           71         Socond         Jy Speed 1         JY speed 1 setting         83           72         First         Jy Speed 1         JY speed 1 setting         83           <		50	-	Right Dir	jog controller	18
53         Second         Jy Speed H         JY speed H setting         78           56         First         Jy Speed 9         JY speed 9 setting         79           58         First         Jy Speed 9         JY speed 9 setting         80           66         First         Jy Speed 7         JY speed 7 setting         80           60         First         Jy Speed 7         JY speed 7 setting         80           62         First         Jy Speed 6         JY speed 7 setting         80           63         Second         Jy Speed 7         JY speed 7 setting         80           64         First         Jy Speed 4         JY speed 5 setting         81           65         Second         Jy Speed 1         JY speed 2 setting         81           71         Second         Jy Speed 1         JY speed 2 setting         82           71         Second         Jy Speed 1         JY speed 1 setting         83           73         Second         Max Speed         Maximum speed setting         83           74         First         Jy Speed 1         JY speed 1 setting         83           75         Second         Max Speed         Maximum speed setting         83		51	-	Top Dir		78
54         First.         J/ Speed H         JY speed 9 setting         78           56         First.         J/ Speed 9         JY speed 9 setting         79           56         First.         J/ Speed 9         JY speed 9 setting         80           57         Second         J/ Speed 7         JY speed 7 setting         80           62         First.         J/ Speed 6         JY speed 6 setting         80           63         Socond         Jy Speed 5         JY speed 4 setting         81           66         First.         Jy Speed 3         JY speed 4 setting         81           68         First.         Jy Speed 2         JY speed 3 setting         82           70         First.         Jy Speed 1         JY speed 3 setting         82           71         Socond         Jy Speed 1         JY speed 1 setting         82           71         First.         Jy Speed 1         JY speed 1 setting         83           60         Socond         Jy Speed 2         JY speed 3 setting         83           61         First.         Jy Speed 3         JY speed 3 setting         83           62         First.         Jy Speed 3         JY speed 3 setting         83 </td <td></td> <td></td> <td></td> <td>Jy Cont</td> <td>Command "JY:" control settings</td> <td>78</td>				Jy Cont	Command "JY:" control settings	78
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AXIS         59         Second Second Pirst 61         Jy Speed 7         JY speed 7 setting Jy Speed 7         80           62         First 63         Jy Speed 6         JY speed 6 setting 66         80           64         First 67         Jy Speed 5         JY speed 5 setting 67         81           66         First 67         Jy Speed 4         JY speed 3 setting 68         81           68         First 71         Jy Speed 2         JY speed 3 setting 72         81           71         Second 72         Jy Speed 1         JY speed 1 setting 73         82           71         Second 72         Jy Speed 1         JY speed 1 setting 73         82           73         Second 74         Jy Speed 1         JY speed 1 setting 73         83           02         First 73         Second 83         Max Speed         Maximum speed setting 83         83           04         First 9         Second 9         Kap Sel         Control target axis setting 84         83           05         First 07         Second 9         Kap Sel         Setting the control stage type 83         83           06         First 07         Second 84         Second 84         11         First 12         Second 84         84           <						
GO         Inst.         JY speed 7 setting         80           62         First.         Jy Speed 6         JY speed 6 setting         80           64         First.         Jy Speed 5         JY speed 5 setting         81           65         Second         Jy Speed 4         JY speed 3 setting         81           66         First.         Jy Speed 3         JY speed 2 setting         82           71         Second         Jy Speed 1         JY speed 2 setting         82           71         Second         Jy Speed 1         JY speed 1 setting         82           71         Second         Jy Speed 1         JY speed 1 setting         83           02         First.         Jy Speed 1         JY speed 1 setting         83           03         Second         Max Speed         Maximum speed setting         83           04         First.         Stop Sel         Stop control stage type         83           05         Second         Lin/Rot         Setting the control stage type         83           06         First.         Stop Sel         Stop control setting         83           07         Second         Motor Excite         Setting the motor status at emergency stop	AXIS	59	Second	Jy Speed 8	JY speed 8 setting	80
G3         Second         JY speed 5         JY speed 5 setting         80           64         First         Jy Speed 5         JY speed 5 setting         81           66         First         Jy Speed 4         JY speed 4 setting         81           67         Second         Jy Speed 3         JY speed 3 setting         81           70         First         Jy Speed 1         JY speed 2 setting         82           71         Second         Jy Speed 1         JY speed 1 setting         82           73         Second         Max Speed         Maximum speed setting         83           04         First         Jy Speed 1         Stop setting         83           05         Second         Max Speed         Maximum speed setting         83           05         Second         Lin/Rot         Setting the control stage type         83           06         First         BMG Motor Excite         Setting of motor status at emergency stop         83           07         Second         Motor Excite         Setting the feedback stage control method         84           11         First         Count Sel         Setting the feedback stage control method         84           12         Second		61	Second	Jy Speed 7	JY speed 7 setting	80
65         Second         JY speed 5         JY speed 5 setting         81           66         First         Jy Speed 4         JY speed 4 setting         81           68         First         Jy Speed 3         JY speed 3 setting         81           70         First         Jy Speed 2         JY speed 2 setting         82           71         Second         Jy Speed 1         JY speed 1 setting         82           71         Second         Jy Speed 1         JY speed 1 setting         83           01         -         AXS Sel         Control target axis setting         83           02         First         Max Speed         Maximum speed setting         83           03         Second         Ka Speed         Stop control stage type         83           06         First         Stop Sel         Stop control setting         83           07         Second         EMG Motor Excite         Setting the control stage type         83           09         Second         Motor Excite         Setting the motor status at tartup         84           11         First         Motor Excite         Setting the feedback stage control method         84           12         Second         Nor bec				Jy Speed 6	JY speed 6 setting	80
66         First         Jy Speed 4         JY speed 4 setting         81           67         Second         Jy Speed 3         JY speed 3 setting         81           70         First         Jy Speed 2         JY speed 2 setting         82           71         Second         Jy Speed 1         JY speed 1 setting         82           72         First         Jy Speed 1         JY speed 1 setting         83           01         -         AXIS Sel         Control target axis setting         83           02         First         Max Speed         Maximum speed setting         83           03         Second         Max Speed         Setting the control stage type         83           04         First         Go Second         EMG Motor Excite         Setting of motor status at emergency stop         83           08         First         Go Second         Motor Excite         Setting the motor status at startup         84           11         First         Count Set         Setting the feedback stage control method         84           12         Second         Notor Excite         Setting the feedback start timing         85           12         Second         In Prost         Count Sel         Setting the c				Jy Speed 5	JY speed 5 setting	81
68       First       Jy Speed 3       JY speed 3 setting       81         70       First       Jy Speed 2       JY speed 2 setting       82         71       Second       Jy Speed 1       JY speed 1 setting       82         73       Second       JY speed 1 setting       83         01       -       AXIS Sel       Control target axis setting       83         02       First       Max Speed       Maximum speed setting       83         03       Second       Max Speed       Maximum speed setting       83         04       First       Lin/Rot       Setting the control stage type       83         05       Second       Stop Sel       Stop control setting       83         06       First       Lin/Rot       Setting of motor status at emergency stop       83         07       Second       Motor Excite       Setting the motor status at startup       84         11       First       Stage Cont Type       Setting the feedback stage control method       84         12       Second       Con trive       Setting the current down drive       85         13       First       Co Drive       Setting the cedback start timing       85         14       Second<		66	First	Jy Speed 4	JY speed 4 setting	81
del       Second       Jy Speed 2       JY speed 2 setting       82         71       Second       Jy Speed 1       JY speed 1 setting       82         72       First       Jy Speed 1       JY speed 1 setting       83         02       First       Max Speed       Maximum speed setting       83         02       First       Max Speed       Maximum speed setting       83         03       Second       Max Speed       Maximum speed setting       83         04       First       Un/Rot       Setting the control stage type       83         05       Second       Stop Sel       Stop control setting       83         07       Second       EMG Motor Excite       Setting of motor status at emergency stop       83         08       First       Motor Excite       Setting the motor status at startup       84         12       Second       Motor Excite       Setting the feedback stage control method       84         13       First       Stage Cont Type       Setting display contents of display unit counter       84         14       Second       Count Sel       Setting the current down drive       85         20       Second       In-position judgment time setting       85		68	First	Jy Speed 3	JY speed 3 setting	81
71       Second       V       Speed 1       V speed 1 setting       82         73       Second       V       Speed 1 setting       83         01       -       AXIS Sel       Control target axis setting       83         02       First       Max Speed       Maximum speed setting       83         04       First       Lin/Rot       Setting the control stage type       83         05       Second       Lin/Rot       Setting the control stage type       83         06       First       Cop Sel       Stop control setting       83         07       Second       EMG Motor Excite       Setting of motor status at emergency stop       83         09       Second       Motor Excite       Setting the motor status at startup       84         11       First       Mator Excite       Setting the feedback stage control method       84         13       First       Con Drive       Setting the current down drive       85         13       First       CD Drive       Setting the feedback start timing       85         20       Second       In-position judgment time setting       85         21       First       CD Drive       Setting the feedback start timing       85					. IV sneed 2 setting	82
73       Second       Jy speed 1       Jy speed 1 setting       82         01       -       AXIS Sel       Control target axis setting       83         02       First       Max Speed       Maximum speed setting       83         04       First       Lin/Rot       Setting the control stage type       83         05       Second       Lin/Rot       Setting the control stage type       83         06       First       Stop Sel       Stop control setting       83         07       Second       EMG Motor Excite       Setting of motor status at emergency stop       83         09       Second       Motor Excite       Setting the motor status at startup       84         11       First       Stage Cont Type       Setting the feedback stage control method       84         13       First       Count Sel       Setting the current down drive       85         14       Second       Count Sel       Setting the feedback start timing       85         14       Second       In-Position judgment time setting       85         15       First       CD Drive       Setting the feedback start timing       85         16       Second       In-Position judgment time setting       85			_			
Q2         First         Max Speed         Maximum speed setting         83           Q4         First         Lin/Rot         Setting the control stage type         83           Q6         First         Stop Sel         Stop control setting         83           Q6         First         Stop Sel         Stop control setting         83           Q8         First         BMG Motor Excite         Setting of motor status at emergency stop         83           Q9         Second         EMG Connector         Enable / disable emergency stop function         84           11         First         Motor Excite         Setting the motor status at startup         84           13         First         Stage Cont Type         Setting display contents of display unit counter         84           15         First         CD Drive         Setting the current down drive         85           18         Second         INP Dec         In-position judgment time setting         85           21         First         INP Dec         Interface settings         86           22         Second         INP Dec         Interface setting         86           23         Init Mode         Initial mode setting         86         86			Second	Jy Speed 1	JY speed 1 setting	82
O3         Second         Max Speed         Maximum speed setting         83           O4         First         Lin/Rot         Setting the control stage type         83           O5         Second         Lin/Rot         Setting the control stage type         83           O6         First         Stop Sel         Stop control setting         83           O7         Second         EMG Motor Excite         Setting of motor status at emergency stop         83           O9         Second         EMG Connector         Enable / disable emergency stop function         84           11         First         Motor Excite         Setting the motor status at startup         84           13         First         Stage Cont Type         Setting the feedback stage control method         84           15         First         Count Sel         Setting the current down drive         85           16         Second         INP Dec         In-position judgment time setting         85           20         Second         INP Dec         In-position judgment time setting         85           21         First         EBT Sel         Setting the feedback start timing         85           23         Ini Mode         Initial mode setting         86		01	-	AXIS Sel	Control target axis setting	83
G3         Second         Mathematical mathematical products         Mathematical pro		_		Max Speed	Maximum speed setting	83
06       First       Stop Sel       Stop control setting       83         07       Second       Stop Sel       Stop control setting       83         08       First       EMG Motor Excite       Setting of motor status at emergency stop       83         10       -       EMG Connector       Enable / disable emergency stop function       84         11       First       Motor Excite       Setting the motor status at startup       84         13       First       Stage Cont Type       Setting the feedback stage control method       84         15       First       Count Sel       Setting display contents of display unit counter       84         16       Second       CD Drive       Setting the current down drive       85         20       Second       INP Dec       In-position judgment time setting       85         21       First       FBT Sel       Setting the feedback start timing       85         23       Init Mode       Initial mode setting       86         24       I/F Select       Interface settings       86         25       USB Del       USB delimiter setting       86         26       GP-IB Addr       GP-IB address setting       86         28       GP-IB Del<				· · · · · · · · · · · · · · · · · · ·		
O7         Second         Stop Sel         Stop control setting         83           08         First 09         EMG Motor Excite         Setting of motor status at emergency stop         83           10         -         EMG Connector         Enable / disable emergency stop function         84           11         First 12         Second         Setting the motor status at startup         84           13         First 14         Stage Cont Type         Setting the feedback stage control method         84           15         First 16         Second         Count Sel         Setting the current down drive         85           19         First 20         CD Drive         Setting the feedback start timing         85           21         First 22         Second         In-position judgment time setting         85           23         Ini Mode         Initial mode setting         85         85           23         Ini Mode         Interface settings         86           25         USB Del         USB delimiter setting         86           26         GP-IB Addr         GP-IB address setting         86           29         GP-IB Del         GP-IB COL Setting         87           30         ETHER Del         Ether						
O9         Second         EMG Motor Excite         Setting of motor status at emergency stop         83           10         -         EMG Connector         Enable / disable emergency stop function         84           11         First         Motor Excite         Setting the motor status at startup         84           13         First         Stage Cont Type         Setting the feedback stage control method         84           15         First         Count Sel         Setting display contents of display unit counter         84           16         Second         Count Sel         Setting the current down drive         85           18         Second         CD Drive         Setting the feedback start timing         85           20         Second         INP Dec         In-position judgment time setting         85           23         In Mode         Initial mode setting         85         86           24         I/F Select         Interface settings         86         86           25         USB Del         USB delimiter setting         86         86           26         GP-IB Addr         GP-IB address setting         86         86           26         GP-IB Del         GP-IB col setting         86         86     <		07	Second	Stop Sel	Stop control setting	83
11       First       Motor Excite       Setting the motor status at startup       84         13       First       Stage Cont Type       Setting the feedback stage control method       84         14       Second       Count Sel       Setting display contents of display unit counter       84         15       First       Count Sel       Setting the current down drive       85         19       First       CD Drive       Setting the feedback start timing       85         20       Second       INP Dec       In-position judgment time setting       85         21       First       FBT Sel       Setting the feedback start timing       85         23       Ini Mode       Interface settings       86         24       I/F Select       Interface setting       86         25       USB Del       USB delimiter setting       86         26       GP-IB Addr       GP-IB address setting       86         27       GP-IB Del       GP-IB RQ       86         28       GP-IB Del       GP-IB RQ       87         30       ETHER Del       Ethernet delimiter setting       87         31       IP Address       Ethernet default gateway settings       87         32 <td< td=""><td></td><td>09</td><td>Second</td><td></td><td></td><td>83</td></td<>		09	Second			83
12       Second       Motor Excite       Setting the motor status at startup       84         13       First       Stage Cont Type       Setting the feedback stage control method       84         14       Second       Count Sel       Setting the feedback stage control method       84         15       First       Count Sel       Setting display contents of display unit counter       84         17       First       CD Drive       Setting the current down drive       85         18       Second       INP Dec       In-position judgment time setting       85         20       Second       INP Dec       In-position judgment time setting       85         21       First       FBT Sel       Setting the feedback start timing       85         23       -       Ini Mode       Initial mode setting       86         24       -       I/F Select       Interface settings       86         25       -       USB Del       USB delimiter setting       86         26       -       GP-IB Addr       GP-IB address setting       86         27       -       GP-IB Del       GP-IB SRQ ethernet delimiter setting       87         30       -       ETHER Del       Ethernet delimiter setting       <				EMG Connector	Enable / disable emergency stop function	84
14       Second       Stage Cont Type       Setting the feedback stage control method       84         15       First       Count Sel       Setting display contents of display unit counter       84         16       Second       CD Drive       Setting the current down drive       85         19       First       CD Drive       Setting the current down drive       85         20       Second       INP Dec       In-position judgment time setting       85         21       First       FBT Sel       Setting the feedback start timing       85         23       -       Ini Mode       Initial mode setting       85         24       -       I/F Select       Interface settings       86         25       -       USB Del       USB delimiter setting       86         26       -       GP-IB Addr       GP-IB address setting       86         26       -       GP-IB Del       GP-IB Bel setting       86         29       -       GP-IB RQ       GP-IB SRQ       87         30       -       ETHER Del       Ethernet delimiter setting       87         31       -       IP Address       Ethernet default gateway settings       87         32       -		12		Motor Excite	Setting the motor status at startup	84
15First Count SelSetting display contents of display unit counter8416SecondCD DriveSetting the current down drive8517First 20CD DriveSetting the current down drive8519First 20NP DecIn-position judgment time setting8521First 22SecondFBT SelSetting the feedback start timing8523-Ini ModeInitial mode setting8524-I/F SelectInterface settings8625-USB DelUSB delimiter setting8626-GP-IB AddrGP-IB address setting8627-GP-IB DelGP-IB Bell setting8628-GP-IB DelGP-IB SRQ8730-ETHER DelEthernet delimiter setting8731-IP AddressEthernet delimiter setting8732-Default GetwayEthernet default gateway settings8733-Subnet MaskSetting the Ethernet subnet mask8734-ECHO BACKSetting the command echo back function88		-		Stage Cont Type	Setting the feedback stage control method	84
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22Second						
24-I/F SelectInterface settings8625-USB DelUSB delimiter setting8626-GP-IB AddrGP-IB address setting8627-GP-IB DelGP-IB delimiter setting8628-GP-IB EOIGP-IB EOI setting8629-GP-IB SRQGP-IB SRQ setting8730-ETHER DelEthernet delimiter setting8731-IP AddressEthernet IP address setting8732-Default GetwayEthernet default gateway settings8733-Subnet MaskSetting the Ethernet subnet mask8734-ECHO BACKSetting the command echo back function88			Second			
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26-GP-IB AddrGP-IB address setting8627-GP-IB DelGP-IB delimiter setting8628-GP-IB EOIGP-IB EOI setting8629-GP-IB SRQGP-IB SRQ setting8730-ETHER DelEthernet delimiter setting8731-IP AddressEthernet IP address setting8732-Default GetwayEthernet default gateway settings8733-Subnet MaskSetting the Ethernet subnet mask8734-ECHO BACKSetting the command echo back function88						
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29-GP-IB SRQGP-IB SRQ setting8730-ETHER DelEthernet delimiter setting8731-IP AddressEthernet IP address setting8732-Default GetwayEthernet default gateway settings8733-Subnet MaskSetting the Ethernet subnet mask8734-ECHO BACKSetting the command echo back function88						
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31-IP AddressEthernet IP address setting8732-Default GetwayEthernet default gateway settings8733-Subnet MaskSetting the Ethernet subnet mask8734-ECHO BACKSetting the command echo back function88						
32-Default GetwayEthernet default gateway settings8733-Subnet MaskSetting the Ethernet subnet mask8734-ECHO BACKSetting the command echo back function88						
33-Subnet MaskSetting the Ethernet subnet mask8734-ECHO BACKSetting the command echo back function88						
34 - ECHO BACK Setting the command echo back function 88			-			
			-			
			-	TEACH Monitor	Teaching monitor function setting	88



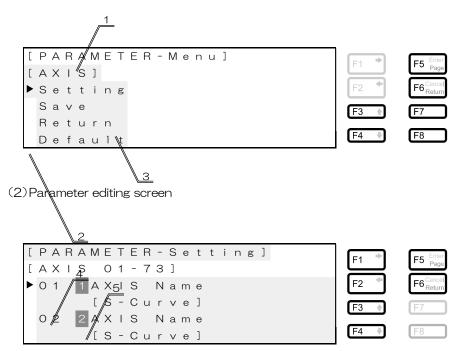
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
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Туре	No,	Axis	Display	Description							
	36	-	GENERAL IN Chat	General-purpose input port chattering check function setting							
	37	-	TEACH IN Chat	TEACH input port chattering check functior setting							
	38	-	Sleep Sel	Enable / disable sleep function							
GENERAL	39	-	BEEP Sel	Enable / disable beep sound							
	40	-	Disp bright	Setting the display brightness	89						
	41	First	last Ctore Cal								
	42	Second	lmt Stop Sel	Stop the limit sensor							
	43	-	Option type	Option type selection	89						

7-2. Description of display panel

 $\triangle$ 

(1) PARAMETER mode top screen



No	ltem		Description					
1	Туре	The type of parame	eter.					
2	Cursor	Selection cursor.	3					
		Setting	Move to the parameter edit screen.					
		Save	Save the parameters. If the parameter has not been changed, it will not be saved.					
3	Menu	Return	Returns to the mode before entering PARAMETER mode. Coordinate values are maintained. This content is displayed except after changing the GENERAL parameter.					
		Reset To Start	Reboot with the same operation as the command "RESET:". Displayed when "2: Save" is executed with the GENERAL parameter changed.					
		Default	Default all parameters of the displayed type. * After that, if you execute "2: Save", it will be saved with default parameters.					
4	Range	The range of parar	meter No.					
5	Supported axes	The axis correspo common to both a:	onding to the parameter. Parameters without axis display are xes.					
6	Contents	The content of the	parameter.					
* De	efault parameter	s may differ from facto	ry parameters. See the attached "Parameter sheet at shipment".					

. "efault parameters may differ from factory parameters. See the attached "Parameter sheet at shipment

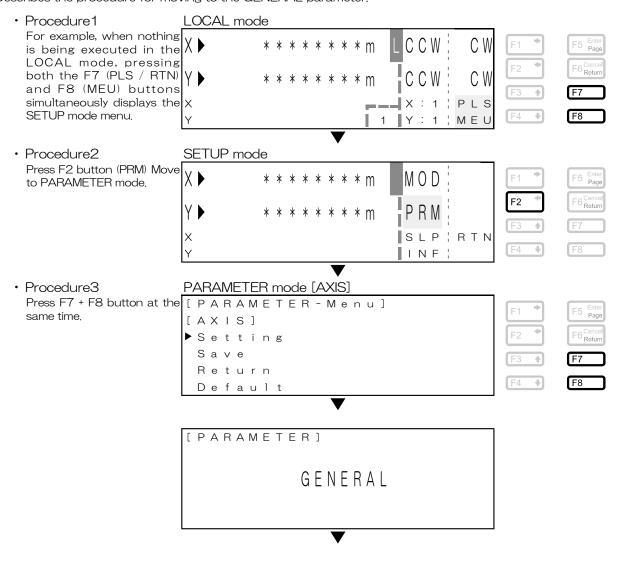
Please do not operating by setting all parameters to default values. Be sure to set according to the performance of the connected stage.



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----

Button	Display	Description						
	Тор	None						
F1 / ➡	Edit	Move the cursor up 10 items.						
	Тор	None						
F2 / 🖛	Edit	Move the cursor down 10 items.						
F3 / 🕇	Тор	Move the cursor up.						
F3/ <b>T</b>	Edit	Move the cursor up 1 items.						
F4 / 🖶	Тор	Move the cursor down.						
Γ4 / 🗸	Edit	Move the cursor down 1 items.						
F5 (Enter)	Тор	Determine the item of the cursor.						
I O (LIItel)	Edit	Move to the lower layer.						
F6 (Cancel)	Тор	None						
	Edit	Move to the upper layer.						
F7	Тор	None						
	Edit							
F8	Тор	None						
10	Edit							
F7 + F8	Тор	Move to GENERAL parameter.						
	Edit	None						

## 7-3. Procedure for transition to GENERAL parameters Describes the procedure for moving to the GENERAL parameter.





1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
									▼						
	• Pro	ocedur	e4		PAF	RAME	TER m	ode [G	<b>ENER</b>	AL]					
		NERAL	parame	ter edit	ing [ P	ARA	ΜΕΤ	ER-	Men	u ]					
	mo	de.			[ G	ΕΝΕ	RAL	]							
					► S	e t t	ing								
					S	a v e									
					R	e t u	r n								

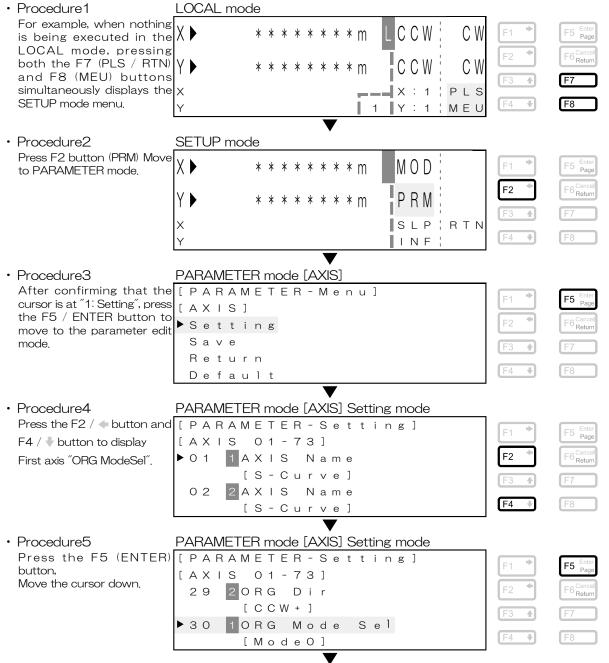
Default

## 7-4. How to change parameter settings

The parameter settings can be changed using the front panel operation or commands. For the setting method, see the setting example below.

# (1)Example 1

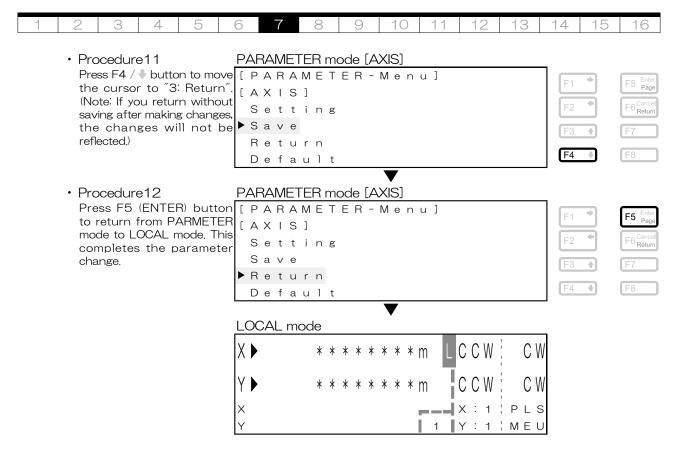
From the LOCAL mode, change the mechanical origin return method  $'' ORG \ {\rm Mode \ Sel}''$  on axis 1 by operating the front panel.





1 2	3 4 5	6 7	8 9	10	11	12	13	14	15	16
			1	1	<u> </u>					
	edure6		ER mode [A					1		
Pres	sF3 / 🔶 button t nge the item fror				ting	]		F1	•	F5 Enter Page
[Mod	leO] to [Mode1].		01-73	-				F2	<b>T</b>	F6 <sup>Cancel</sup> Return
		292	ORG Di [CCW+]	r				12		Return
		30 1	ORG Mo	de	Sel			F3	+	F7
			[Mode0					F4	Ŧ	F8
				▼				4		
	edure7		ER mode [A					1		
	s the F5 (ENETR) butto ove the cursor to th				ting	]		F1	+	F5 Enter Page
	er layer. (Note: Pressin		01-73					F2	Ť.	
	F6 (CANCEL) butto	·I —	ORG Di [CCW+]	r						F6 Cancel Return
	rns the parameter t tate before the change		ORG Mo	de	Sel			F3	+	F7
and i	moves the cursor to th		[Mode1		0 0 1			F4	Ŧ	F8
uppe	r layer.)			V				1		
	edure8		ER mode [A					-		
	s F6 (CANCEL) butto eturn from paramete				ting	]		F1	+	F5 Enter Page
	mode to PARAMETE		01-73	-					۲ ۲	
mode	9.	292	ORG Di	r				F2		F6 Return
		▶ 3 0	[CCW+] ORG Mo	al a	Sel			F3	•	F7
		- 30	[Mode1		Sei			F4	Ŧ	F8
	edure9		ER mode [A					_		
	F4 / 🗣 button to mov	e [PARA	METER -	Men	u ]			F1	+	F5 Enter Page
the	cursor to "2: Save".	[ A X I S	-						1	
		▶ Sett	ing					F2		F6 Cancel Return
		Save						F3	•	F7
		R e t u D e f a						F4	+	F8
		Dera	uii	▼						
• Proc	edure10	PARAMET	ER mode [A	XIS]						
	s F5 (ENTER) butto			Men	u ]			F1	+	F5 Enter Page
	ave the changes. Afte ve OK″ is displaye		]							
	he screen, return t	oSett	ing					F2		F6 Cancel Return
	AMETER mode. (Note e power is turned of							F3	•	F7
	e power is turned of estarted before saving	, , , , , , , , , , , , , , , , , , , ,						F4	Ŧ	F8
the	changes will not b		uit							
reflec	cted.)			▼						
		[ P A R A	METER]					1		
			SΔV	Ε Ο	K					
			0711							
		L		▼				J		
				•						





(2) Example 2

From the LOCAL mode, change the JOG speed L  $\rm ^{\prime\prime}Jog$  Speed 1 $\rm ^{\prime\prime}$  on first axis by operating the front panel.

- Procedure 1  $\sim$  3
  - Same as example 1.
- Procedure4 PARAMETER mode [AXIS] Setting mode Press the F2 / + button and [PARAMETER - Setting] F5 Enter Page F4 / 🛡 button to display first [AXIS 01-73] axis "Jog Speed 1". F6 Return F2 0 1 1 AXIS Name [S-Curve] 2 AXIS Name 02 F4 [S-Curve] PARAMETER mode [AXIS] Setting mode Procedure5 Press the F5 (ENTER) [PARAMETER - Setting] F5 片 button to move the cursor [AXIS 01-73] to the lower layer. 1 Jog Speed 1 F6 Return ▶ 2 4 1.0000]mm/s [ + 2 J o g Speed 1 25 ÷ 0000]mm/s Γ 1 Procedure6 PARAMETER mode [AXIS] Setting mode Pressing the F1 / + button [PARAMETER - Setting] F5 Pag F1 moves the Under bar from [AXIS 01-73] the first digit to the first 1 Jog Speed F6 Retu 24 1 decimal place. ▶ [ <u>1</u>.0000]mm/s 4 2 Jog Speed 1 25

1.0000]mm/s



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1 2 3 4 5 6 7 8 9 10 11 12 13	14 15	16
• Procedure7 Press F3 / ▲ button to change [0] to [5].   PARAMETER mode [AXIS] Setting mode     [ PARAMETER mode [AXIS] Setting mode     [ PARAMETER - Set t i ng]   [ AX I S 01 - 73]   24   Jog Speed 1   [ 1.0000] mm / s	F1 + F2 + F3 + F4 +	F5 Enter Page F6 Cancel F7 F8
<ul> <li>Procedure8</li> <li>Press the F5 (ENTER) button to move the cursor to the upper layer. (Note: Pressing the F6 (CANCEL) button returns the parameter to the state before the change, and moves the cursor to the upper layer.)</li> <li>PARAMETER mode [AXIS] Setting mode</li> <li>[ P A R A M E T E R - S e t t i n g ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S 0 1 - 7 3 ]</li> <li>[ A X I S</li></ul>	F1 ► F2 ► F3 ► F4 ►	F5 Enter Page F6 Cancel F7 F8
<ul> <li>Procedure9</li> <li>Press F6 (CANCEL) button to return from parameter edit mode to PARAMETER mode.</li> <li>PARAMETER mode [AXIS] Setting mode</li> <li>[ P A R A M E T E R - S e t t i n g ]</li> <li>[ A X I S 01 - 73]</li> <li>2 4 1 J o g S p e e d 1</li> <li>[ 1 . 5000] m m / s</li> <li>2 5 2 J o g S p e e d 1</li> <li>[ 1 . 0000] m m / s</li> </ul>	F1 + F2 + F3 + F4 +	F5 Enter Page F6 <sup>Cancel</sup> Return F7 F8
After that, the procedure is [PARAMETER - Menu] the same as steps 9 to 12 of setting example 1. ► Setting Save Return Default		



1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16
7-5. How to read parameter descriptions The following explains how to read the parameter description (	oage.
(1)For parameters to select	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	6
16 Acc Cont Acceleration / deceleration onto 17	rol setting RESET
Description Set the stage acceleration / deceleration control.	
First 16 1 A c c C o n /t axis [ Choices ]	
Second 1 7 2 A c c C o n t	
axis [ Choices ]	
Choices Description	Command setting, reply
S-Curve S-Curve con	
Default Linear Linear contr	
7 8 1	0 9
(2)For parameters set with numbers	
	<u>6</u> <u>11</u>
18 Acc Time Acceleration / deceleration time	setting RESET
19 Description Set the stage acceleration / deceleration time.	
First 18 1 A c c T i m e	
axis [Setting value] m s	
Second 19 2 A c c T i m e axis [Setting value] m s	
Model         Setting value           FC-111	Default Command setting, reply
FC-411	
FC-511 10~2000ms FC-611	100ms 100
FC-911	
12 7	10 9

No	ltem	Contents
1	Parameter No.	Parameter number. Used with the commands "PRM_GET:" and "PRM_SET:".
2	Parameter display name	This is the name of the parameter displayed on the display unit.
3	Parameter name	The name of the parameter.
4	Parameter description	A description of the parameter.
5	Target axis	The target axis. If the target axis is not displayed, use the common setting for both axes or select the axis to be used.
6	Choices or Setting value	Indicates the type to be set. Choices or settings.
7	Details	Indicates a choices candidate or a settable range.
8	Description	A description of the choice.
9	Command setting, reply	The value to be sent or returned when using the commands "PRM_SET:" and "PRM_GET:".
10	Default	Indicates the default of the parameter. * 1
11	Whether to restart	Indicates whether or not a restart is performed automatically after saving parameters, Black text is executed, gray text is not executed, * 2
12	Model	Indicates the model name of the feedback stage controller.

\* 1 The default parameters may be different from the factory parameters. See the attached "Parameter sheet at shipment" .

\* 2 Restarting is the same operation as the command "RESET:".



		4 5 6		
-6. F	Parameter des	cription		
	AXIS parame			
01	AXIS N	ame Dis	play axis name	RES
02				
	Description S		to be displayed. Both axes can be set the same.	
	First axis	0 1 1 A	XIS Name	
	L		Choices ]	
	Second axis	022A	XISName Choices 1	
	L	L	Chloides ]	
	Г	Choices	Description	Command setting, re
	- F			Axis name 3: 3
	1	$1 \sim 9$ and A $\sim Z$	Specify with numbers and alphabets	Axis name A: 10
		First axis	1	1
	Default	Second axis	2	2
				•
03	UNIT S	el Dis	splay unit	RES
04				
	Description S	Set the unit to be	displayed.	
	First axis	03 <u>1</u> U	NIT Sel	
	First axis	[	Choices ]	
	Second axis	042U	NIT Sel	
		[	Choices ]	
	_		_	
		Choices	Description	Command setting, re
	_	nm	Display in nanometers	0
	_	um	Display in micrometer Display in millimeter	1 2
		mm		
		Deersee		
		Degree	Display in degree	3
	Default	Degree OFF	Display in degree Display without units *	3 4
	Default	OFF	Display in degree Display without units * mm	3
		OFF	Display in degree Display without units *	3 4
05	* The minim	OFF num digit of the c	Display in degree Display without units * mm oordinate value is the minimum resolution digit.	3 4 2
05		OFF num digit of the c	Display in degree Display without units * mm	3 4
05 06	* The minim Pos Dir	OFF num digit of the c Co	Display in degree Display without units * mm oordinate value is the minimum resolution digit. ordinate value counting direction	3 4 2
	* The minim Pos Dir Description S	OFF num digit of the c Co Set the direction i	Display in degree Display without units * mm oordinate value is the minimum resolution digit. ordinate value counting direction n which the coordinate value counts up.	3 4 2
	* The minim Pos Dir Description S	OFF num digit of the c Co	Display in degree Display without units * mm oordinate value is the minimum resolution digit. ordinate value counting direction n which the coordinate value counts up. o s D i r	3 4 2
	* The minim Pos Dir Description S First axis	OFF num digit of the c Co Set the direction i 0 5 1 P	Display in degree Display without units * mm oordinate value is the minimum resolution digit. ordinate value counting direction n which the coordinate value counts up. o s D i r Choices ]	3 4 2
	* The minim Pos Dir Description S First axis	OFF num digit of the c Co Set the direction i	Display in degree Display without units * mm oordinate value is the minimum resolution digit. ordinate value counting direction n which the coordinate value counts up. o s D i r	3 4 2
	* The minim Pos Dir Description S First axis	OFF num digit of the c Co Set the direction i 0 5 1 P	Display in degree Display without units * mm cordinate value is the minimum resolution digit. ordinate value counting direction n which the coordinate value counts up. o s D i r Choices ] o s D i r	3 4 2
	* The minim Pos Dir Description S First axis	OFF num digit of the c Co Set the direction i 0 5 1 P	Display in degree Display without units * mm cordinate value is the minimum resolution digit. ordinate value counting direction n which the coordinate value counts up. o s D i r Choices ] o s D i r	3 4 2 RES
	* The minim Pos Dir Description S First axis	OFF num digit of the c Co Set the direction i 0 5 1 P [ 0 6 2 P [	Display in degree Display without units * mm oordinate value is the minimum resolution digit. ordinate value counting direction n which the coordinate value counts up. o s D i r Choices ] o s D i r Choices ]	3 4 2 RES
	* The minim Pos Dir Description S First axis	OFF num digit of the c Co Set the direction i 0 5 1 P [ 0 6 2 P [ Choices	Display in degree Display without units * mm oordinate value is the minimum resolution digit. ordinate value counting direction n which the coordinate value counts up. o s D i r Choices ] o s D i r Choices ] Description	Command setting, re
	* The minim Pos Dir Description S First axis	OFF num digit of the c Co Set the direction i 0 5 1 P [ 0 6 2 P [ Choices CCW+	Display in degree Display without units * mm oordinate value is the minimum resolution digit. ordinate value counting direction n which the coordinate value counts up. o s D i r Choices ] o s D i r Choices ] Description Set in CCW direction (motor side)	3           4           2
	* The minim Pos Dir Description S First axis Second axis	OFF num digit of the c Co Set the direction i 0 5 1 P [ 0 6 2 P [ Choices CCW+	Display in degree Display without units * mm oordinate value is the minimum resolution digit. ordinate value counting direction n which the coordinate value counts up. o s D i r Choices ] o s D i r Choices ] Description Set in CCW direction (motor side) Set in CW direction (opposite motor side)	3           4           2   RES           Command setting, re           0           1
06	* The minim Pos Dir Description S First axis Second axis Default	OFF num digit of the c Co Set the direction i 0 5 1 P [ 0 6 2 P [ Choices CCW+ CW+	Display in degree Display without units * mm oordinate value is the minimum resolution digit. ordinate value counting direction n which the coordinate value counts up. o s D i r Choices ] o s D i r Choices ] Description Set in CCW direction (motor side) CCW+	3         4         2         RES
06	* The minim Pos Dir Description S First axis Second axis	OFF num digit of the c Co Set the direction i 0 5 1 P [ 0 6 2 P [ Choices CCW+ CW+	Display in degree Display without units * mm oordinate value is the minimum resolution digit. ordinate value counting direction n which the coordinate value counts up. o s D i r Choices ] o s D i r Choices ] Description Set in CCW direction (motor side) Set in CW direction (opposite motor side)	3           4           2
06	* The minim Pos Dir Description S First axis Second axis Default	OFF num digit of the c Co Set the direction i O 5 1 P [ O 6 2 P [ Choices CCW+ CW+ CW+	Display in degree Display without units * mm oordinate value is the minimum resolution digit. ordinate value counting direction n which the coordinate value counts up. o s D i r Choices ] o s D i r Choices ] Description Set in CCW direction (motor side) Set in CW direction (opposite motor side) CCW+ position range	3         4         2         RES
06	* The minim Pos Dir Description S First axis Second axis Default INPos F Description S	OFF num digit of the c Co Set the direction i O 5 1 P [ O 6 2 P [ Choices CCW+ CW+ CW+	Display in degree Display without units * mm oordinate value is the minimum resolution digit. ordinate value counting direction n which the coordinate value counts up. o s D i r Choices ] o s D i r Choices ] Description Set in CCW direction (motor side) Set in CW direction (motor side) CCW+ position range determining the completion of positioning.	3         4         2         RES
06	* The minim Pos Dir Description S First axis Second axis Default	OFF num digit of the c Co Set the direction i O 5 1 P [ O 6 2 P [ Choices CCW+ CW+ CW+	Display in degree Display without units * mm oordinate value is the minimum resolution digit. ordinate value counting direction n which the coordinate value counts up. o s D i r Choices ] o s D i r Choices ] Description Set in CCW direction (motor side) Set in CW direction (motor side) CCW+ position range determining the completion of positioning.	3         4         2         RES
06	* The minim Pos Dir Description S First axis Second axis Default INPos F Description S First axis	OFF Num digit of the c Co Set the direction i 0 5 1 P [ 0 6 2 P [ Choices CCW+ CW+ Range In- Set the range for 0 7 1 1	Display in degree Display without units * mm oordinate value is the minimum resolution digit. ordinate value counting direction n which the coordinate value counts up. o s D i r Choices ] o s D i r Choices ] Description Set in CCW direction (motor side) Set in CW direction (motor side) CCW+ position range determining the completion of positioning. N P o s R a n g e Choices ]	3         4         2         RES
06	* The minim Pos Dir Description S First axis Second axis Default INPos F Description S First axis	OFF num digit of the c Co Set the direction i O 5 1 P [ O 6 2 P [ Choices CCW+ CW+ CW+	Display in degree Display without units * mm oordinate value is the minimum resolution digit. ordinate value counting direction n which the coordinate value counts up. o s D i r Choices ] o s D i r Choices ] Description Set in CCW direction (motor side) Set in CW direction (motor side) CCW+ position range determining the completion of positioning. N P o s R a n g e	3         4         2         RES
06	* The minim Pos Dir Description S First axis Second axis Default INPos F Description S First axis	OFF Num digit of the c Co Set the direction i 0 5 1 P [ 0 6 2 P [ Choices CCW+ CW+ Range In- Set the range for 0 7 1 1	Display in degree Display without units * mm oordinate value is the minimum resolution digit. ordinate value counting direction n which the coordinate value counts up. o s D i r Choices ] o s D i r Choices ] Description Set in CCW direction (motor side) Set in CW direction (motor side) CCW+ position range determining the completion of positioning. N P o s R a n g e Choices ] N P o s R a n g e	3         4         2         RES
06	* The minim Pos Dir Description S First axis Second axis Default INPos F Description S First axis	OFF Num digit of the c Co Set the direction i 0 5 1 P [ 0 6 2 P [ Choices CCW+ CW+ Range In- Set the range for 0 7 1 1	Display in degree Display without units * mm oordinate value is the minimum resolution digit. ordinate value counting direction n which the coordinate value counts up. o s D i r Choices ] o s D i r Choices ] Description Set in CCW direction (motor side) Set in CW direction (motor side) CCW+ position range determining the completion of positioning. N P o s R a n g e Choices ] N P o s R a n g e	3         4         2         RES         O         1         0         1         0         RES
06	* The minim Pos Dir Description S First axis Second axis Default INPos F Description S First axis	OFF The direction i Co Set the direction i 0 5 1 P [ 0 6 2 P [ Choices CCW+ CW+ CW+ CW+ CW+ CW+ CW+ CO 6 1 1 [ 0 7 1 1 [ 0 8 2 1 [	Display in degree Display without units * mm oordinate value is the minimum resolution digit. ordinate value counting direction n which the coordinate value counts up. o s D i r Choices ] o s D i r Choices ] Description Set in CCW direction (motor side) Set in CW direction (motor side) CCW+ position range determining the completion of positioning. N P o s R a n g e Choices ] N P o s R a n g e Choices ]	3         4         2         RES         O         1         0         1         0
06	* The minim Pos Dir Description S First axis Second axis Default INPos F Description S First axis	OFF The digit of the c Co Set the direction i 0 5 1 P [ 0 6 2 P [ Choices CCW+ CW+ CW+ CW+ CW+ CW+ CW+ CW	Display in degree Display without units * mm oordinate value is the minimum resolution digit. ordinate value counting direction n which the coordinate value counts up. o s D i r Choices ] o s D i r Choices ] Description Set in CCW direction (motor side) Set in CW direction (motor side) CCW+ position range determining the completion of positioning. N P o s R a n g e Choices ] N P o s R a n g e Choices ] N P o s R a n g e Choices ]	3         4         2         RES         Command setting, re         0         1         0         RES         Command setting, re         0         RES         Command setting, re         0         Command setting, re         0         Command setting, re
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1 2 3	4	5 6	6	8	9	10	11	12	13	14	15	16
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Description	Set the f	feedback	speed o	during po	sitioning	g operatio	n (BUS)	<b>Y</b> ).				
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13Stage14DescriptionFirst axisSecond axisSecond axisDefault15TEAC	Config Set the s instrumer 1 3 1 4 Cho Typ Typ Typ Typ Typ H IF Set the t 1 5 Cho JOG/	stage con nt. To char [ 2 S [ 0ices 0e0 0e1 0e2 0e3 TE teaching of T [ 0ices	figurationer figur	on. The f. settings, c g e Choices g e Choices Type1 Fr Long s T terface on interfa C H Choices ge contro	on actory so ontact us C c C c C c Stanc C-911 s stroke st ype1 ce. I F s oller JOC select	s or our dia n f i ] n f i ] escription 2 / Type3 dard settir standard s tard settir standard s age stand	stributor, g g B UJAKICX ngs setting dard set dard set	ting comman		Commar	nd settir 0 1 2 3 1	d to this



16	Acc C	ont	Acceleration / deceleration contr	rol	RES
17	/ 100 0				
	Description		acceleration / deceleration time.		
	First axis	16 1	Acc Cont [ Choices ]		
		172	Acc Cont		
	Second axis		[ Choices ]		
		Choices	Description		Command setting, rep
		S-Curve	S-Curve con		0
	Default	Linear	Linear contr S-Curve	OI	0
	Doladit				0
18	Acc T	ime	Acceleration / deceleration time		RES
19					
	Description		acceleration / deceleration time.		
	First axis	18 1	A c c T i m e [Setting value] m s		
		192	Acc T i m e		
	Second axis		[ Setting value ] m s		
			Setting value	Default	Command setting, re
		FC-111 FC-411	-		
		FC-511	10 ~ 2000ms	100ms	100
		FC-611			
		FC-911			
20 21			JOG Speed 3 tion speed 3 when pressing and ho	-	-
		Set the opera Set it below t value.		e is large, it will return	d Jog controller butto
	Description First axis	Set the opera Set it below t value. 2 0 1	tion speed 3 when pressing and ho the "Max Speed". If the setting valu J o g S p e e d	e is large, it will return	d Jog controller butto
	Description	Set the opera Set it below t value. 2 0 1	tion speed 3 when pressing and ho the "Max Speed". If the setting valu J o g S p e e d [ Setting value	e is large, it will return 3 ] m m / s	d Jog controller butto
	Description First axis	Set the opera Set it below t value. 2 0 1 2 1 2	tion speed 3 when pressing and ho the "Max Speed". If the setting valu J o g S p e e d [ Setting value J o g S p e e d [ Setting value	e is large, it will return 3 ] m m / s 3 ] m m / s	d Jog controller butto to the previous sett
	Description First axis	Set the opera Set it below to value. 2 0 1 2 1 2 Model	tion speed 3 when pressing and ho the "Max Speed". If the setting valu J o g S p e e d [ Setting value J o g S p e e d	e is large, it will return 3 ] m m / s ] m m / s Default *	d Jog controller butto to the previous sett
	Description First axis	Set the opera Set it below to value. 2 0 1 2 1 2 Model FC-111	tion speed 3 when pressing and ho the "Max Speed". If the setting valu J o g S p e e d [ Setting value J o g S p e e d [ Setting value	e is large, it will return 3 ] m m / s 3 ] m m / s	d Jog controller butto to the previous sett
	Description First axis	Set the opera Set it below to value. 2 0 1 2 1 2 Model	tion speed 3 when pressing and ho the "Max Speed". If the setting valu J o g S p e e d [ Setting value J o g S p e e d [ Setting value	e is large, it will return 3 ] m m / s 3 ] m m / s Default * 10.0000mm/s	d Jog controller butto to the previous sett
	Description First axis	Set the opera Set it below to value. 2 0 1 2 1 2 Model FC-111 FC-411 FC-511 FC-611	tion speed 3 when pressing and ho the "Max Speed". If the setting valu Jog Speed [ Setting value Jog Speed [ Setting value	e is large, it will return 3 ] m m / s 3 ] m m / s Default * 10.0000mm/s 10.00000mm/s	Command setting, re Command setting, re 100000 1000000 1000000
	Description First axis Second axis	Set the opera Set it below to value. 2 0 1 2 1 2 Model FC-111 FC-411 FC-511 FC-611 FC-911	tion speed 3 when pressing and ho the "Max Speed". If the setting valu J o g S p e e d [ Setting value J o g S p e e d [ Setting value Max Speed" mm / s or less	e is large, it will return 3 ] m m / s 3 ] m m / s Default * 10,0000mm/s 10,00000mm/s 10,00000mm/s 5,000000mm/s	Command setting, re 100000 1000000 1000000 1000000 5000000
	Description First axis Second axis	Set the opera Set it below to value. 2 0 1 2 1 2 Model FC-111 FC-411 FC-511 FC-611 FC-911	tion speed 3 when pressing and ho the "Max Speed". If the setting valu Jog Speed [ Setting value Jog Speed [ Setting value	e is large, it will return 3 ] m m / s 3 ] m m / s Default * 10,0000mm/s 10,00000mm/s 10,00000mm/s 5,000000mm/s	Command setting, re 100000 1000000 1000000 1000000 5000000
21	Description First axis Second axis * At the tir	Set the opera Set it below to value. 2 0 1 2 1 2 Model FC-111 FC-411 FC-511 FC-611 FC-911 me of paramet	tion speed 3 when pressing and ho the "Max Speed". If the setting valu J o g S p e e d [ Setting value J o g S p e e d [ Setting value "Max Speed" mm / s or less er default execution, if "Max Speed"	e is large, it will return 3 ] m m / s 3 ] m m / s Default * 10,0000mm/s 10,00000mm/s 10,00000mm/s 5,000000mm/s	Command setting, re 100000 100000 100000 100000 1000000 5000000 , it will be "Max Speed
21	Description First axis Second axis * At the tir	Set the opera Set it below to value. 2 0 1 2 1 2 Model FC-111 FC-411 FC-511 FC-611 FC-911	tion speed 3 when pressing and ho the "Max Speed". If the setting valu J o g S p e e d [ Setting value J o g S p e e d [ Setting value Max Speed" mm / s or less	e is large, it will return 3 ] m m / s 3 ] m m / s Default * 10,0000mm/s 10,00000mm/s 10,00000mm/s 5,000000mm/s	Command setting, re 100000 100000 100000 100000 1000000 5000000 , it will be "Max Speed
21	Description First axis Second axis * At the tir Jog S	Set the opera Set it below 1 value. 2 0 1 2 1 2 <u>Model</u> FC-111 FC-411 FC-511 FC-611 FC-911 me of paramet peed 2 Set the opera	tion speed 3 when pressing and ho the "Max Speed". If the setting valu J o g S p e e d [ Setting value J o g S p e e d [ Setting value "Max Speed" mm / s or less er default execution, if "Max Speed" JOG Speed 2 tion speed 2 when pressing and ho	e is large, it will return 3 ] m m / s 3 ] m m / s Default * 10,0000mm/s 10,00000mm/s 10,00000mm/s 5,000000mm/s is less than the default	d Jog controller butto to the previous sett Command setting, re 100000 1000000 1000000 5000000 s it will be "Max Speed RES
21	Description First axis Second axis * At the tir Jog S	Set the opera Set it below to value. 2 0 1 2 1 2 Model FC-111 FC-411 FC-511 FC-611 FC-911 me of paramet peed 2 Set the opera Set it below to	tion speed 3 when pressing and ho the "Max Speed". If the setting value JogSpeed 2 Setting value Setting value "Max Speed" mm / s or less er default execution, if "Max Speed"	e is large, it will return 3 ] m m / s 3 ] m m / s Default * 10,0000mm/s 10,00000mm/s 10,00000mm/s 5,000000mm/s is less than the default	d Jog controller butto to the previous sett Command setting, re 100000 1000000 1000000 5000000 s it will be "Max Speed RES
21	Description First axis Second axis * At the tir Jog S Description	Set the opera Set it below 1 value. 2 0 1 2 1 2 <u>Model</u> FC-111 FC-411 FC-511 FC-611 FC-911 me of paramet peed 2 Set the opera	tion speed 3 when pressing and ho the "Max Speed". If the setting valu J o g S p e e d [ Setting value J o g S p e e d [ Setting value "Max Speed" mm / s or less er default execution, if "Max Speed" JOG Speed 2 tion speed 2 when pressing and ho he "Jog Speed 3". If the setting value	e is large, it will return 3 ] m m / s 3 ] m m / s Default * 10,0000mm/s 10,00000mm/s 10,00000mm/s 5,000000mm/s is less than the default	d Jog controller butto to the previous sett Command setting, re 100000 1000000 1000000 5000000 s it will be "Max Speed RES d Jog controller butto
21	Description First axis Second axis * At the tir Jog S	Set the opera Set it below to value. 2 0 1 2 1 2 <u>Model</u> FC-111 FC-611 FC-611 FC-911 me of paramet peed 2 Set the opera Set it below to value. 2 2 1	tion speed 3 when pressing and ho the "Max Speed". If the setting value J o g S p e e d [ Setting value J o g S p e e d [ Setting value "Max Speed" mm / s or less er default execution, if "Max Speed" JOG Speed 2 tion speed 2 when pressing and ho he "Jog Speed 3". If the setting value J o g S p e e d [ Setting value	e is large, it will return 3 ] m m / s 3 ] m m / s Default * 10,0000mm/s 10,00000mm/s 10,00000mm/s 5,000000mm/s is less than the default Iding the CW, CCW and ue is large, it will return 2 ] m m / s	d Jog controller butto to the previous sett Command setting, re 100000 1000000 1000000 5000000 s it will be "Max Speed RES d Jog controller butto
21	Description First axis Second axis * At the tir Jog S Description	Set the opera Set it below to value. 2 0 1 2 1 2 Model FC-111 FC-611 FC-611 FC-611 FC-911 me of paramet peed 2 Set the opera Set it below to value. 2 2 1 2 3 2	tion speed 3 when pressing and ho the "Max Speed". If the setting value J o g S p e e d [ Setting value J o g S p e e d [ Setting value "Max Speed" mm / s or less er default execution, if "Max Speed" JOG Speed 2 tion speed 2 when pressing and ho he "Jog Speed 3". If the setting value J o g S p e e d [ Setting value J o g S p e e d	e is large, it will return 3 ] m m / s 3 ] m m / s Default * 10.0000mm/s 10.00000mm/s 10.00000mm/s 5.000000mm/s is less than the default lding the CW, CCW and ue is large, it will return 2 ] m m / s 2	d Jog controller butto to the previous sett Command setting, re 100000 1000000 1000000 5000000 s it will be "Max Speed RES
21	Description First axis Second axis * At the tir Jog Si Description First axis	Set the opera Set it below to value. 2 0 1 2 1 2 Model FC-111 FC-611 FC-611 FC-611 FC-911 me of paramet peed 2 Set the opera Set it below to value. 2 2 1 2 3 2	tion speed 3 when pressing and ho the "Max Speed". If the setting value J o g S p e e d [ Setting value J o g S p e e d [ Setting value "Max Speed" mm / s or less er default execution, if "Max Speed" JOG Speed 2 tion speed 2 when pressing and ho he "Jog Speed 3". If the setting value J o g S p e e d [ Setting value	e is large, it will return 3 ] m m / s 3 ] m m / s Default * 10,0000mm/s 10,00000mm/s 10,00000mm/s 5,000000mm/s is less than the default Iding the CW, CCW and ue is large, it will return 2 ] m m / s	d Jog controller butto to the previous sett Command setting, re 100000 1000000 1000000 5000000 s it will be "Max Speed RES
21	Description First axis Second axis * At the tir Jog Si Description First axis	Set the opera Set it below to value. 2 0 1 2 1 2 Model FC-111 FC-611 FC-611 FC-611 FC-911 me of paramet peed 2 Set the opera Set it below to value. 2 2 1 2 3 2	tion speed 3 when pressing and ho the "Max Speed". If the setting value J o g S p e e d [ Setting value J o g S p e e d [ Setting value "Max Speed" mm / s or less er default execution, if "Max Speed" JOG Speed 2 tion speed 2 when pressing and ho he "Jog Speed 3". If the setting value J o g S p e e d [ Setting value J o g S p e e d	e is large, it will return 3 ] m m / s 3 ] m m / s Default * 10.0000mm/s 10.00000mm/s 10.00000mm/s 5.000000mm/s is less than the default lding the CW, CCW and ue is large, it will return 2 ] m m / s 2	d Jog controller butto to the previous sett Command setting, re 100000 1000000 1000000 5000000 s it will be "Max Speed RES d Jog controller butto
21	Description First axis Second axis * At the tir Jog Si Description First axis	Set the opera Set it below to value. 2 0 1 2 1 2 Model FC-111 FC-411 FC-611 FC-611 FC-611 FC-911 me of paramet peeed 2 Set the opera Set it below to value. 2 2 1 2 3 2	tion speed 3 when pressing and ho the "Max Speed". If the setting value J o g S p e e d [ Setting value Setting value Max Speed" mm / s or less er default execution, if "Max Speed" JOG Speed 2 tion speed 2 when pressing and ho he "Jog Speed 3". If the setting value J o g S p e e d [ Setting value	e is large, it will return 3 ] m m / s 3 ] m m / s Default * 10.0000mm/s 10.00000mm/s 10.00000mm/s 5.000000mm/s is less than the default lding the CW, CCW and ue is large, it will return 2 ] m m / s 2 ] m m / s	d Jog controller butto to the previous sett Command setting, re 100000 1000000 1000000 5000000 , it will be "Max Speed RES d Jog controller butto to the previous sett
21	Description First axis Second axis * At the tir Jog Si Description First axis	Set the opera Set it below to value. 2 0 1 2 1 2 Model FC-111 FC-511 FC-611 FC-911 me of parametors peed 2 Set the opera Set it below to value. 2 2 1 2 3 2 Model	tion speed 3 when pressing and ho the "Max Speed". If the setting value J o g S p e e d [ Setting value "Max Speed" mm / s or less er default execution, if "Max Speed" JOG Speed 2 tion speed 2 when pressing and ho he "Jog Speed 3". If the setting value J o g S p e e d [ Setting value J o g S p e e d [ Setting value	e is large, it will return 3 ] m m / s 3 ] m m / s Default * 10,0000mm/s 10,00000mm/s 10,00000mm/s 5,000000mm/s is less than the default dding the CW, CCW and ue is large, it will return 2 ] m m / s 2 Default *	d Jog controller butto to the previous sett Command setting, re 100000 1000000 1000000 5000000 , it will be "Max Speed RES d Jog controller butto n to the previous sett Command setting, re
21	Description First axis Second axis * At the tir Jog Si Description First axis	Set the opera Set it below 1 value. 2 0 1 2 1 2 Model FC-111 FC-611 FC-611 FC-911 me of paramet peed 2 Set the opera Set it below t value. 2 2 1 2 3 2 Model FC-111 FC-111 FC-411 FC-511	tion speed 3 when pressing and ho the "Max Speed". If the setting value J o g S p e e d [ Setting value Setting value Max Speed" mm / s or less er default execution, if "Max Speed" JOG Speed 2 tion speed 2 when pressing and ho he "Jog Speed 3". If the setting value J o g S p e e d [ Setting value	e is large, it will return 3 ] m m / s 3 ] m m / s Default * 10,0000mm/s 10,00000mm/s 10,00000mm/s 5,00000mm/s is less than the default dding the CW, CCW and ue is large, it will return 2 ] m m / s 2 ] m m / s 2 Default * 5,00000mm/s 5,00000mm/s 5,00000mm/s 5,00000mm/s	d Jog controller butto to the previous sett Command setting, re 100000 1000000 1000000 1000000 5000000 , it will be "Max Speed RES d Jog controller butto h to the previous sett to the previous sett Command setting, re 50000 500000 500000
21	Description First axis Second axis * At the tir Jog Si Description First axis	Set the opera Set it below to value. 2 0 1 2 1 2 Model FC-111 FC-611 FC-611 FC-911 me of paramet peed 2 Set the opera Set it below to value. 2 2 1 2 3 2 Model FC-111 FC-111 FC-411	tion speed 3 when pressing and ho the "Max Speed". If the setting value J o g S p e e d [Setting value "Max Speed" mm / s or less er default execution, if "Max Speed" JOG Speed 2 tion speed 2 when pressing and ho he "Jog Speed 3". If the setting value J o g S p e e d [Setting value J o g S p e e d [Setting value]	e is large, it will return 3 ] m m / s 3 ] m m / s Default * 10,0000mm/s 10,00000mm/s 10,00000mm/s 5,000000mm/s is less than the default lding the CW, CCW and ue is large, it will return 2 ] m m / s 2 ] m m / s 2 Default * 5,0000mm/s 5,00000mm/s 5,00000mm/s	Log controller buttor to the previous setting, re 100000 10000000 10000000 100000 100000 100000 100000 100000 100000 100000 1000000 100000 100000 100000 100000 100000 100000 100000 100000 100000 100000 100000 100000 100000 100000 10000000 10000000

\* At the time of parameter default execution, if "Max Speed" is less than the default, it will be "Max Speed".



24	Jog Speed <sup>-</sup>	ال ا	OG Speed 1		RE
25	Set it		n speed 1 when pressing and hol "Jog Speed 2", If the setting valu		
	First axis	1	Jog Speed Setting value	]	
	Second axis 2 5	2	1 ] m m / s		
	M	odel	Setting value	Default *	Command setting
		-111		1.0000mm/s	10000
		-411		1.00000mm/s	100000
		-511	"Jog Speed 2" mm / s or less	1.00000mm/s	100000
		-611		1.00000mm/s	100000
		-911		1.00000mm/s	100000
	* At the time of p	barameter	default execution, if "Max Speed" i	s less than the defaul	t, it will be Max Spe
26 27	Jog Cont	S	et control when operating CCW	and CW buttons	RE
21	Description Set th	ne operati	on when operating the CW and	CCW buttons on th	e front panel Afte
			, it returns to the setting of the p		
	param	neter "Stag	ge Cont Type" is set to "Close" an	d the set speed is 10	$\mu$ m / s or less, eve
			en loop control), open loop control	will not be performed	l during operation.
	First axis 2 6	1 .			
		[	Choices ]		
	Second axis 2 7	2 0			
			Choices ]		
		Choices	Description	0	Command setting,
		OFF	Setting the parameter "Sta		0
			Setting the parameter "Sta Set to open loop		0 1
	Default	OFF	Setting the parameter "Sta		0
		OFF	Setting the parameter "Sta Set to open loop		0 1
28		OFF ON	Setting the parameter "Sta Set to open loop	control	0 1
28 29	Default	OFF ON	Setting the parameter "Sta Set to open loop ON	control	0 1 1
	Default ORG Dir	OFF ON W	Setting the parameter "Sta Set to open loop ON	control	0 1 1
	Default ORG Dir Description Set th	OFF ON W	Setting the parameter "Sta Set to open loop ON lechanical origin return direction of mechanical origin return.	control	0 1 1
	Default ORG Dir Description Set th	OFF ON W	Setting the parameter "Sta Set to open loop ON lechanical origin return direction of mechanical origin return.	control	0 1 1
	Default ORG Dir Description Set th First axis 2 8	OFF ON N e direction	Setting the parameter "Sta Set to open loop ON lechanical origin return direction of mechanical origin return. D R G D i r Choices ]	control	0 1 1
	Default ORG Dir Description Set th	OFF ON N e direction	Setting the parameter "Sta Set to open loop ON lechanical origin return direction of mechanical origin return. D R G D i r Choices ]	control	0 1 1
	Default ORG Dir Description Set th First axis 2 8	OFF ON N e direction	Setting the parameter "Sta Set to open loop ON lechanical origin return direction of mechanical origin return. D R G D i r Choices ] D R G D i r	control	0 1 1
	Default ORG Dir Description Set th First axis Second axis 2 9	OFF ON N e direction	Setting the parameter "Sta Set to open loop ON lechanical origin return direction of mechanical origin return. D R G D i r Choices ] D R G D i r	control	0 1 1
	Default ORG Dir Description Set th First axis Second axis 2 9	OFF ON N e direction 1 C [ 2 C [	Setting the parameter "Sta Set to open loop ON lechanical origin return direction of mechanical origin return. D R G D i r Choices ] D R G D i r Choices ]	control า	0 1 1
	Default ORG Dir Description Set th First axis Second axis 2 9	OFF ON e direction [ 2 C [ Choices	Setting the parameter "Sta Set to open loop ON lechanical origin return direction of mechanical origin return. D R G D i r Choices ] D R G D i r Choices ] D R G D i r	motor side)	O 1 1 RE
	Default ORG Dir Description Set th First axis Second axis 2 9	OFF ON Ne direction [ 2 C [ Choices CCW+	Setting the parameter "Sta Set to open loop ON lechanical origin return direction of mechanical origin return. D R G D i r Choices ] D R G D i r Choices ] D R G D i r Choices ]	motor side)	O 1 1 RE Command setting, O
	Default ORG Dir Description Set th First axis 2 8 Second axis 2 9	OFF ON Ne direction [ 2 C [ Choices CCW+	Setting the parameter "State         Set to open loop         ON         lechanical origin return direction         of mechanical origin return.         D R G D i r         Choices         ]         Description         Set in CCW direction (opposition         Set in CW direction (opposition	motor side)	O 1 1 RE Command setting, O 1
29	Default ORG Dir Description Set th First axis 2 8 Second axis 2 9	OFF ON N N N N N N N N C C C C C C C C C C	Setting the parameter "Sta Set to open loop ON lechanical origin return direction of mechanical origin return. D R G D i r Choices ] D R G D i r Choices ] D R G D i r Choices ] D Set in CCW direction (opport CW+	motor side)	O 1 1 RE Command setting, O 1
29	Default ORG Dir Description Set th First axis 2 9 Second axis 2 9 Default	OFF ON N N N N N N N N C C C C C C C C C C	Setting the parameter "State         Set to open loop         ON         lechanical origin return direction         of mechanical origin return.         D R G D i r         Choices         ]         Description         Set in CCW direction (opposition         Set in CW direction (opposition	motor side)	O 1 1 RE Command setting, 1 0 1 1
29	Default ORG Dir Description Set th First axis Second axis Default Default ORG Mode S	OFF ON e direction 1 C [ 2 C [ 2 C [ 2 Choices CCW+ CW+ CW+	Setting the parameter "Sta Set to open loop ON lechanical origin return direction of mechanical origin return. D R G D i r Choices ] D R G D i r Choices ] D R G D i r Choices ] D Set in CCW direction (opport CW+	motor side) site motor side)	O 1 1 RE Command setting, O 1 1 N RE
29	Default ORG Dir Description Set th First axis Second axis Default Default ORG Mode S Description Set th inform	OFF ON e direction 1 C 2 C 2 C 2 Choices CCW+ CW+ CW+ CW+ CW+ CW+ CW+	Setting the parameter "State         Set to open loop         ON         lechanical origin return direction         of mechanical origin return.         D R G D i r         Choices         ]         Description         Set in CCW direction (opposition CW+         lechanical origin return method         Plechanical origin return method. Ple	motor side) site motor side) ease refer to the "Ab	O 1 1 RE Command setting, O 1 1 N RE
29	Default ORG Dir Description Set th First axis Second axis Default Default ORG Mode S	OFF ON e direction 1 C 2 C 2 C 2 Choices CCW+ CW+ CW+ CW+	Setting the parameter "State         Set to open loop         ON         Iechanical origin return direction         of mechanical origin return.         D R G D i r         Choices         ]         Description         Set in CCW direction (opposition CW+         Iechanical origin return method         ne zero point return method. Ple         D R G M o d e S	motor side) site motor side)	O 1 1 RE Command setting, O 1 1 N RE
29	Default ORG Dir Description Set th First axis Second axis Default ORG Mode S Description Set th inform First axis	OFF ON e direction 1 C 2 C 2 C 2 Choices CCW+ CW+ CW+ Sel M he machin hation. 1 C	Setting the parameter "State         Set to open loop         ON         Iechanical origin return direction         of mechanical origin return.         O R G D i r         Choices         Image: Choices         O R G D i r         Choices         Image: CW+         Iechanical origin return method         Description         Set in CW direction (opposition)         CW+         Iechanical origin return method         D R G M o d e S         Choices         O R G M o d e S         Choices	motor side) site motor side) ease refer to the "Ab e 1	O 1 1 RE Command setting, O 1 1 N RE
29	Default ORG Dir Description Set th First axis 2 8 Second axis 2 9 Second axis 2 9 Default ORG Mode S Description Set th inform	OFF ON e direction 1 C 2 C 2 C 2 Choices CCW+ CW+ CW+ Sel M he machin hation. 1 C	Setting the parameter "State         Set to open loop         ON         Iechanical origin return direction         of mechanical origin return.         D R G D i r         Choices         Choices         Image: Set in CCW direction (opposition)         Set in CW direction (opposition)         CW+         Iechanical origin return method         D R G M o d e         S Choices         D R G M o d e         S Choices	motor side) site motor side) ease refer to the "Ab	O 1 1 RE Command setting, O 1 1 N RE
29	Default ORG Dir Description Set th First axis Second axis Default ORG Mode S Description Set th inform First axis 3 0	OFF ON e direction 1 C 2 C 2 C 2 Choices CCW+ CW+ CW+ Sel M he machin hation. 1 C	Setting the parameter "State         Set to open loop         ON         Iechanical origin return direction         of mechanical origin return.         O R G D i r         Choices         Image: Choices         O R G D i r         Choices         Image: CW+         Iechanical origin return method         Description         Set in CW direction (opposition)         CW+         Iechanical origin return method         D R G M o d e S         Choices         O R G M o d e S         Choices	motor side) site motor side) ease refer to the "Ab e 1	O 1 1 RE Command setting, O 1 1 N RE
29	Default ORG Dir Description Set th First axis 2 8 Second axis 2 9 Default Default ORG Mode S Description Set th inform First axis 3 0 Second axis 3 1	OFF ON N N N N N N N C C C C C C C C C C C C C	Setting the parameter "State         Set to open loop         ON         Iechanical origin return direction         of mechanical origin return.         D       R         G       D         Image: Choices       ]         D       R         G       D         Image: Choices       ]         D       R         G       D         Image: Choices       ]	motor side) site motor side) ease refer to the "Ab e 1	O 1 1 RE Command setting, O 1 1 NE pout 9. Origin for 1
29	Default ORG Dir Description Set th First axis 2 9 Second axis 2 9 Default Default ORG Mode S Description Set th inform First axis 3 0 Second axis 3 1	OFF ON N N N N N N N Choices CCW+ CW+ CW+ Sel N N N N N COU COU COU COU COU COU COU COU	Setting the parameter "State         Set to open loop         ON         Iechanical origin return direction         of mechanical origin return.         D R G D i r         Choices         D R G D i r         Choices         O R G D i r         Choices         Image: Description         Set in CCW direction (opport         CW+         Iechanical origin return method         Plechanical origin return method. Ple         D R G M o d e S         Choices         D R G M o d e S         Choices         D R G M o d e S         Choices         D R G M o d e S         Choices         D R G M o d e S         Choices         D R G M o d e S         Choices         D R G M o d e S         Choices         D Bescription	motor side) site motor side) ease refer to the "Ab e 1 e 1	O 1 1 RE Command setting, I O 1 1 RE pout 9. Origin″ for I Command setting, I
29	Default ORG Dir Description Set th First axis 2 9 Second axis 2 9 Default Default ORG Mode S Description Set th inform First axis 3 0 Second axis 3 1	OFF ON N N N N N N N N N N N N N	Setting the parameter "State         Set to open loop         ON         Iechanical origin return direction         of mechanical origin return.         D R G D i r         Choices         Choices         Image: Choices         Choices         D R G M o d e S         Choices         D R G M o d e S         Choices         D R G M o d e S         Choices         D R G M o d e S         Choices         D R G M o d e S         Choices         D R G M o d e S         Choices         Description         Set to Mode	motor side) site motor side) ease refer to the "Ab e 1 e 1	O 1 1 RE Command setting, I O 1 1 RE pout 9. Origin″ for I Command setting, I O
29	Default ORG Dir Description Set th First axis 2 9 Second axis 2 9 Default Default ORG Mode S Description Set th inform First axis 3 0 Second axis 3 1	OFF ON N N N N N N N N N N N N N	Setting the parameter "State         Set to open loop of ON         Ilechanical origin return direction         of mechanical origin return.         D R G D i r         Choices         Description         Set in CCW direction (opport         CW+         Ilechanical origin return method. Ple         D R G M o d e S         Choices         D R G M o d e S         Choices         D R G M o d e S         Choices         D R G M o d e S         Choices         D R G M o d e S         Choices	motor side) motor side) site motor side) ease refer to the "Ab e 1 e 1 e 1	O 1 1 RE Command setting, I O 1 1 RE pout 9. Origin" for I Command setting, I O 1 1 1
29	Default ORG Dir Description Set th First axis 2 9 Second axis 2 9 Default Default ORG Mode S Description Set th inform First axis 3 0 Second axis 3 1 Second axis 3 1	OFF ON e direction 1 C 2 C 2 C 2 C 2 2 C 4 2 2 2 2 2 2 2 2 2 2 2 2 2	Setting the parameter "State         Set to open loop of ON         International origin return direction         of mechanical origin return.         D       R         G       D         International origin return of the context of th	motor side) motor side) site motor side) ease refer to the "Ab e 1 e 1 e 1 0 1 2	O 1 1 RE Command setting, 1 O 1 1 RE pout 9. Origin" for 1 Command setting, 0 1 Command setting, 1 0 1 2
29	Default ORG Dir Description Set th First axis 2 9 Second axis 2 9 Default Default ORG Mode S Description Set th inform First axis 3 0 Second axis 3 1 Second axis 1 0 M M M	OFF ON e direction 1 C 2 C 2 C 2 C 2 C 2 C 4 5 6 e machine nation. 1 C 2	Setting the parameter "State         Set to open loop of ON         International origin return direction         of mechanical origin return.         D       R         G       D         O       R         G       D         O       R         G       D         Image: Choices       Image: Choices         Image: Choices	control	O 1 1 RE Command setting, O 1 1 RE pout 9. Origin" for Command setting, O 1 1 Command setting, O 1 1 Setting, O 1 1 Setting, O 1 1 Setting, O 1 1 Setting, O 1 1 Setting, O 1 1 Setting, O 1 1 Setting, O 1 1 Setting, O 1 1 Setting, O 1 1 Setting, O 1 1 Setting, O 1 1 Setting, O 1 1 Setting, O 1 1 Setting, O 1 1 Setting, O 1 1 Setting, O 1 1 Setting, O 1 1 Setting, O 1 1 Setting, O 1 Setting, O 1 Setting, O 1 1 Setting, O 1 Setting, Setting, O 1 Setting, Setting, O Setting, O Setting, O Setting, O Setting, O Setting, O Setting, O Setting, O Setting, O Setting, O Setting, O Setting, O Setting, O Setting, O Setting, O Setting, O Setting, Setting, O Setting, S
29	Default ORG Dir Description Set th First axis 2 9 Second axis 2 9 Default Default ORG Mode S Description Set th inform First axis 3 0 Second axis 3 1 Second axis 1 0 M M M	OFF ON e direction 1 C 2 C 2 C 2 C 2 2 C 4 2 2 2 2 2 2 2 2 2 2 2 2 2	Setting the parameter "State         Set to open loop of ON         International origin return direction         of mechanical origin return.         D       R         G       D         International origin return of the context of th	control	O 1 1 RE Command setting, 1 O 1 1 RE pout 9. Origin" for 1 Command setting, 0 1 Command setting, 1 0 1 2



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
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32	ORG N	Node3 Pos	Mechanical origin return Mode3	specified position	RESE
33	Description	Set the return	n position when mechanical origin re	turn Mode3 is set Please	refer to the "About
	Description		<sup>7</sup> for more information.	CUTTINOCEO IS SEL TIERS	
	_	321	ORG Mode3	Pos	
	First axis	_	[ Setting value	] m m	
		332	ORG Mode 3	Pos	
	Second axis		[ Setting value	] m m	
				-	
		Model	Setting value	Default	Command setting, re
		FC-111	0.0001~999.9999mm	0.5000mm	5000
		FC-411	0.00005~999.99995mm	0.5000mm	50000
		FC-511	0.00001~999.99999mm	0.5000mm	50000
		FC-611	0.000005~999.999995mm	0.50000mm	500000
		FC-911	0.000001~999.999999mm	0.50000mm	500000
					_
34	ORG S	Speed H	Mechanical origin return speed H	4	RESI
35	-				
	Description		nanical origin return speed High. Ple		
			tion. Set it below the "Max Speed".	It the setting value is lar	ge, it will return to t
		previous setti	ORG Speed	Η	
	First axis	0 -	Setting value	] m m / s	
		352	ORG Speed	<u>_</u>	
	Second axis		Setting value	] m m / s	
				J III III / J	
		Model	Setting value	Default *	Command setting, re
		FC-111		10,0000mm/s	100000
		FC-411		10,0000mm/s	1000000
		FC-511	/ //Max Speed/ mm / s or less	10.0000mm/s	1000000
		FC-611		10.00000mm/s	1000000
		FC-911	1	5.000000mm/s	5000000
	* At the tir		er default execution, if "Max Speed"	is less than the default, i	t will be "Max Speed
		-			
36	ORG S	Speed M	Mechanical origin return speed N	Λ	RES
37					TILO
	Description	Set the mech	nanical origin return speed Middle. P	lease refer to the "Abou	ut 9. Home Return"
			tion. Set it below the "ORG Speed H		
		previous setti			
	First axis	36 1	ORG Speed	M	
	1 11 0 1 00 10		[ Setting value	] mm/s	
	Second axis	372	ORG Speed	M	
			[ Setting value	]mm/s	
		Maalal	Catting a value	Defendet	
			Setting value	Default *	Command setting, re
		FC-111	-	5.0000mm/s	50000
		FC-411		5.0000mm/s	500000
		FC-511	ORG Speed H <sup>"</sup> mm / s or less	5.0000mm/s	500000
		FC-611	-	5.00000mm/s	500000
	۰۰ ـ - الد ۲۰ پ	FC-911	 per defeuilt exception: if "Mary Or "	2.50000mm/s	2500000
		ne of paramet	er default execution, if "Max Speed"	is less than the default, i	t will be Max Speed
	↑ At the th	·			
	↑ At the th	·			

38	ORG S	Speed L	Mechanical origin return speed L		RES
39					
[			anical origin return speed Low. Ple		
			tion. Set it below the "ORG Speed M"	. If the setting value is	large, it will return to
		previous settir 381	ORG Speed		
	First axis	5 6	Setting value		
		392	ORG Speed	]m_m/s L	
S	Second axis	00	Setting value	] m m / s	
				] [[] [] []	
		Model	Setting value	Default *	Command setting, r
		FC-111	-	1.0000mm/s	10000
		FC-411		1.00000mm/s	100000
		FC-511	"ORG Speed M" mm / s or less	1.00000mm/s	100000
		FC-611		1.000000mm/s	1000000
		FC-911		1.000000mm/s	1000000
	* At the tir	ne of paramete	er default execution, if "Max Speed" i	is less than the default	t, it will be "Max Speed
40	EORG	Speed	Electric origin return speed		RES
41					
	Description	Set the elect	ric origin return speed. Please ref	er to the "About 9. I	Home Return <sup>‴</sup> for m
		information. S	ric origin return speed. Please refe et it below the "Max Speed". If the se		
		information, S setting value.	et it below the "Max Speed". If the se		
(	First axis	information, S setting value.	et it below the "Max Speed". If the set EORG Speed	etting value is large, it v	
(		information. S setting value. 4 0 1	et it below the "Max Speed". If the se EORGSpeed [ Setting value	etting value is large, it v	
(	First axis	information. S setting value. 4 0 1 4 1 2	et it below the "Max Speed". If the set E O R G S p e e d [ Setting value E O R G S p e e d [ Setting value	etting value is large, it v ] m m / s ] m m / s	vill return to the previ
(	First axis	information, S setting value, 4 0 1 4 1 2 Model	et it below the "Max Speed". If the set E O R G S p e e d [ Setting value E O R G S p e e d	etting value is large, it v ] m m / s ] m m / s Default *	vill return to the previ
(	First axis	information. S setting value, 4 0 1 4 1 2 Model FC-111	et it below the "Max Speed". If the set E O R G S p e e d [ Setting value E O R G S p e e d [ Setting value	etting value is large, it v ] m m / s ] m m / s Default * 5.0000mm/s	Vill return to the previ
(	First axis	information, S setting value, 4 0 1 4 1 2 Model FC-111 FC-411	et it below the "Max Speed". If the set E O R G S p e e d [ Setting value E O R G S p e e d [ Setting value	etting value is large, it v ] m m / s ] m m / s Default *	Vill return to the previ Command setting, r 50000 500000
(	First axis	information, S setting value, 4 0 1 4 1 2 Model FC-111 FC-411 FC-511	et it below the "Max Speed". If the set E O R G S p e e d [ Setting value E O R G S p e e d [ Setting value	etting value is large, it v ] m m / s ] m m / s Default * 5.0000mm/s 5.00000mm/s	Command setting, r 50000 50000 50000
(	First axis	information, S setting value, 4 0 1 4 1 2 Model FC-111 FC-411 FC-511 FC-611	et it below the "Max Speed". If the set E O R G S p e e d [ Setting value E O R G S p e e d [ Setting value Setting value	etting value is large, it v ] m m / s ] m m / s Default * 5.0000mm/s 5.00000mm/s	Command setting, r           50000           50000           50000           50000           50000           500000           500000           500000
(	First axis	information, S setting value, 4 0 1 4 1 2 Model FC-111 FC-411 FC-511	et it below the "Max Speed". If the set E O R G S p e e d [ Setting value E O R G S p e e d [ Setting value Setting value	etting value is large, it v ] m m / s ] m m / s Default * 5.0000mm/s 5.00000mm/s	Command setting, r 50000 50000 50000
(	First axis Second axis * If the "Ma	information, S setting value, 4 0 1 4 1 2 Model FC-111 FC-411 FC-511 FC-611 FC-911 ax Speed ~ is le	et it below the "Max Speed". If the set E O R G S p e e d [ Setting value E O R G S p e e d [ Setting value Setting value	atting value is large, it v       atting value is large, it v       befault *       colored befault *	Command setting, r           50000           50000           500000           500000           500000           500000           500000           500000           500000           500000           5000000
(	First axis Second axis * If the "Ma	information. S <u>setting value.</u> 4 0 1 4 1 2 Model FC-111 FC-411 FC-511 FC-611 FC-911	et it below the "Max Speed". If the set E O R G S p e e d [ Setting value E O R G S p e e d [ Setting value Setting value "Max Speed" mm / s or less	atting value is large, it v       atting value is large, it v       befault *       colored befault *	Command setting, r           50000           50000           500000           500000           500000           500000           500000           500000           500000           500000           5000000
(	First axis Second axis * If the "Ma	information, S setting value, 4 0 1 4 1 2 Model FC-111 FC-411 FC-511 FC-611 FC-911 ax Speed ~ is le	et it below the "Max Speed". If the set E O R G S p e e d [ Setting value E O R G S p e e d [ Setting value Setting value "Max Speed" mm / s or less	atting value is large, it v       atting value is large, it v       befault *       colored befault *	Command setting, r           50000           50000           500000           500000           500000           500000           500000           500000           500000           500000           5000000
(	First axis Second axis * If the "Ma value of 1	information, S setting value, 4 0 1 4 1 2 Model FC-111 FC-411 FC-511 FC-611 FC-911 ax Speed ~ is le	et it below the "Max Speed". If the set E O R G S p e e d [ Setting value E O R G S p e e d [ Setting value Setting value "Max Speed" mm / s or less	atting value is large, it v       atting value is large, it v       befault *       colored befault *	Command setting, r           50000           50000           500000           500000           500000           500000           500000           500000           500000           500000           5000000
42 43	First axis Second axis * If the "Ma value of " Soft L	information. S setting value. 4 0 1 4 1 2 Model FC-111 FC-411 FC-611 FC-611 FC-911 ax Speed" is le Max Speed".	et it below the "Max Speed". If the set E O R G S p e e d [ Setting value E O R G S p e e d [ Setting value Max Speed" mm / s or less ss than the default of this parameter Software limit function setting	Default * 5.0000mm/s 5.0000mm/s 5.00000mm/s 5.00000mm/s 5.00000mm/s 5.00000mm/s 2.500000mm/s r at the time of param	Vill return to the previous of
42 43	First axis Second axis * If the "Ma value of " Soft L	information. S setting value. 4 0 1 4 1 2 Model FC-111 FC-411 FC-611 FC-611 FC-911 ax Speed" is le Max Speed".	et it below the "Max Speed". If the set E O R G S p e e d [ Setting value E O R G S p e e d [ Setting value "Max Speed" mm / s or less ss than the default of this parameter	Default * 5.0000mm/s 5.0000mm/s 5.00000mm/s 5.00000mm/s 5.00000mm/s 5.00000mm/s 2.500000mm/s r at the time of param	Vill return to the previous of
42 43	First axis Second axis * If the <sup>«</sup> Ma value of <sup>«</sup> Soft L Description	information. S setting value. 4 0 1 4 1 2 Model FC-111 FC-411 FC-611 FC-611 FC-911 ax Speed" is le Max Speed".	et it below the "Max Speed". If the set E O R G S p e e d [ Setting value E O R G S p e e d [ Setting value Max Speed" mm / s or less ss than the default of this parameter Software limit function setting	etting value is large, it v ] m m / s ] m m / s Default * 5.0000mm/s 5.00000mm/s 5.00000mm/s 2.500000mm/s r at the time of parameters the coordinate value.	Vill return to the previous of
42 43	First axis Second axis * If the "Ma value of " Soft L	information, S setting value, 4 0 1 4 1 2 Model FC-111 FC-411 FC-511 FC-611 FC-911 ax Speed" is le Max Speed". WT Sel Set whether t	et it below the "Max Speed". If the set E O R G S p e e d [ Setting value E O R G S p e e d [ Setting value "Max Speed" mm / s or less ss than the default of this parameter Software limit function setting o use the limit function specified by t S o f t L M T S [ Choices ]	etting value is large, it v ] m m / s ] m m / s Default * 5,0000mm/s 5,00000mm/s 5,00000mm/s 2,500000mm/s 2,500000mm/s r at the time of parameters the coordinate value.	Vill return to the previous of
42 43	First axis Second axis * If the "Ma value of " Soft L Description First axis	information, S setting value, 4 0 1 4 1 2 Model FC-111 FC-411 FC-511 FC-611 FC-911 ax Speed" is le Max Speed". WT Sel Set whether t	et it below the "Max Speed". If the set E O R G S p e e d [ Setting value E O R G S p e e d [ Setting value "Max Speed" mm / s or less ss than the default of this parameter Software limit function setting o use the limit function specified by t S o f t L M T S [ Choices ]	etting value is large, it v ] m m / s ] m m / s Default * 5,0000mm/s 5,00000mm/s 5,00000mm/s 2,500000mm/s 2,500000mm/s r at the time of parameters the coordinate value.	Vill return to the previous of
42 43	First axis Second axis * If the <sup>«</sup> Ma value of <sup>«</sup> Soft L Description	information, S setting value, 4 0 1 4 1 2 Model FC-111 FC-411 FC-511 FC-611 FC-911 ax Speed" is le Max Speed". WT Sel Set whether t 4 2 1	et it below the "Max Speed". If the set E O R G S p e e d [ Setting value E O R G S p e e d [ Setting value "Max Speed" mm / s or less ss than the default of this parameter Software limit function setting o use the limit function specified by t S o f t L M T S [ Choices ]	etting value is large, it v ] m m / s ] m m / s Default * 5.0000mm/s 5.00000mm/s 5.00000mm/s 2.500000mm/s r at the time of parameters the coordinate value. e 1	Vill return to the previous of
42 43	First axis Second axis * If the "Ma value of " Soft L Description First axis	information, S setting value, 4 0 1 4 1 2 Model FC-111 FC-411 FC-511 FC-611 FC-911 ax Speed" is le Max Speed". WT Sel Set whether t 4 2 1	et it below the "Max Speed". If the set E O R G S p e e d [ Setting value E O R G S p e e d [ Setting value "Max Speed" mm / s or less ss than the default of this parameter Software limit function setting o use the limit function specified by t S o f t L M T S [ Choices ] S o f t L M T S	etting value is large, it v ] m m / s ] m m / s Default * 5.0000mm/s 5.00000mm/s 5.00000mm/s 2.500000mm/s r at the time of parameters the coordinate value. e 1	Vill return to the previous of
42 43	First axis Second axis * If the "Ma value of " Soft L Description First axis	information, S setting value, 4 0 1 4 1 2 Model FC-111 FC-411 FC-511 FC-611 FC-911 ax Speed" is le Max Speed". WT Sel Set whether t 4 2 1	et it below the "Max Speed". If the set E O R G S p e e d [ Setting value E O R G S p e e d [ Setting value "Max Speed" mm / s or less ss than the default of this parameter Software limit function setting o use the limit function specified by t S o f t L M T S [ Choices ] S o f t L M T S	etting value is large, it v ] m m / s ] m m / s Default * 5.0000mm/s 5.00000mm/s 5.00000mm/s 2.500000mm/s r at the time of parameters the coordinate value. e 1	Vill return to the previous of
42 43	First axis Second axis * If the "Ma value of " Soft L Description First axis	information, S setting value, 4 0 1 4 1 2 Model FC-111 FC-411 FC-611 FC-611 FC-911 ax Speed" is le Max Speed". WT Sel Set whether t 4 2 1 4 3 2	et it below the "Max Speed". If the set E O R G S p e e d [ Setting value E O R G S p e e d [ Setting value "Max Speed" mm / s or less ss than the default of this parameter Software limit function setting o use the limit function specified by t S o f t L M T S [ Choices ] S o f t L M T S [ Choices ]	etting value is large, it v ] m m / s ] m m / s Default * 5.0000mm/s 5.00000mm/s 5.00000mm/s 2.500000mm/s r at the time of parameters the coordinate value. e 1	Vill return to the previ
42 43	First axis Second axis * If the "Ma value of " Soft L Description First axis	information. S setting value, 4 0 1 4 1 2 Model FC-111 FC-611 FC-611 FC-611 FC-911 ax Speed" is le Max Speed". WT Sel Set whether t 4 2 1 4 3 2 Choices	et it below the "Max Speed". If the set E O R G S p e e d [ Setting value E O R G S p e e d [ Setting value Setting value "Max Speed" mm / s or less ss than the default of this parameter Software limit function setting o use the limit function specified by t S o f t L M T S [ Choices ] S o f t L M T S [ Choices ]	etting value is large, it v ] m m / s ] m m / s Default * 5.0000mm/s 5.00000mm/s 5.00000mm/s 2.500000mm/s r at the time of parameters the coordinate value. e 1	Command setting, re Command setting, re S0000 S00000 S00000 2500000 RES

45	0011	LMT Pos	+ Software limit position		RE
	Description	Set the range	of the plus direction limit from the	zero position specified	by the coordinate \
			e setting exceeds the limit sensor po		
	First axis	4 4 1	+Soft LMT	Pos	
	FIRST AXIS		[ Setting value	] <u>m m</u>	
	Second axis	4 5 2	+Soft LMT	Pos	
	Securia axis		[ Setting value	] <u>m m</u>	
		Model	Setting value	Default	Command setting,
		FC-111	0.0001 ~ 999.9999mm	999.9999mm	9999999
		FC-411	0.00005~999.99995mm	999.99995mm	99999995
		FC-511	$0.00001 \sim 999.99999$ mm	999.99999mm	99999999
		FC-611	0.000005~999.999995mm	999.999995mm	999999999
		FC-911	$0.000001 \sim 999.999999$ mm	999.999999mm	999999999
				-	
46	- Soft	LMT Pos	- Software limit position		RE
47	Description	Sat the renera	of the minute direction limit from the	zoro position oposifio	d by the ecordinates
	Description	-	of the minus direction limit from the e setting exceeds the limit sensor po		-
		4 6 1	-Soft LMT	Pos	
	First axis		[ Setting value	] m m	
		4 7 2	– Soft LMT	Pos	
	Second axis		[ Setting value	] m m	
		Model	Setting value	Default	Command setting
		FC-111	0.0001 ~ 999.9999mm	999,9999mm	9999999
		FC-411	0.00005 ~ 999,99995mm	999.99995mm	99999995
		FC-511	$0.00001 \sim 999.99999$ mm	999,999999mm	99999999
		FC-611	0.000005 ~ 999.999995mm	999,999995mm	
		FC-911	$0.000001 \sim 999.999999$ mm	999.9999999mm	999999999
48	L <-> F		le e e e e e tre ller le ft / riedet le rittere		
40		n Gel	Jog controller left / right button	operation axis setur	ig RE
	Description	Set the axis th	at operates with the left / right but	tons of the jog control	ler.
		48	L < - > R S e 1		
			[ Choices ]		
		Olesiase			
		Choices	Description	1	Command setting, r
		None	No use	•-	0
		AXIS1	Set first ax		1 2
	Default	AXIS2	Set second a	AXIS	2
	Deradit				, I
49	T <-> E	3 Sel	Jog controller up / down button	operation axis settin	g RE
	Description		at operates with the up / down bu	ttons on the jog contro	oller.
		49	T < - > B S e 1		
			[ Choices ]		
		Choices	Description	1	Command setting, r
		None	No use		0
		AXIS1	Set first ax	is	1
		AXIS2	Set second a		2
	Default		AXIS2		2



	2 3	4	5	6	7	8	9	10	11	12	13	14	15	16
50	Right	Dir		Jog co	ontrolle	r right l	button	count	directio	n				RESET
	-													
	Description	Set th		_			~		utton of	the jog	contro	oller.		
		5 0		R i	0	l noices	Di	r 1						
								-					J	
		(	Choices				Desc	ription				Commai	nd settir	ng, reply
			Plus				in the p						0	
	Default		Minus			Set Plu	in the m	inus dir	rection				1 0	
	Derault					T IC	15						0	
51	Top D	Dir		Jog co	ontrolle	r up bu	utton cc	unt di	rection					RESE
	Description	-	e count	_		-		up butt	on of th	ne jog co	ontrolle	er.		
		5 1		ΓΟ	p Ch	D i noices	r	1						
				L	01	101003		]						
		(	Choices		_		Desc	ription				Commai	nd settir	ng, reply
			Plus			Set	in the p	lus dire	ection				0	
			Minus				in the m	inus dir	ection				1	
	Default					Plu	JS						0	
50	h. Ca			Comm	hand "J	V."	tual							
52 53	Jy Co	i it		COITIN		1. COL								RESE
	First axis Second axis	52	1		Ch C	o n noices o n		]						
					Ch	noices								
		(	Choices				Desc	ription				Commai	nd settir	ng, reply
			OFF		Setti	ng the I	oaramet	er ″Sta	ge Cont	Type"			0	
			ON				to open	loop c	ontrol				1	
	Default					O	N						1	
54	Jy Spe	ood H		IV Sn	eed H									RESE
55		eeun		01.00	eeun									HLOL
	Description				eed of J` revious s			t belov	v the ″M	ax Spee	əd". If t	he settir	ng value	e is large
	First axis	5 1		J C	S		e d	Η	lr	nm,	/ s			
	Coosie	55	2	Jc	S	ре	e d	Н						
	Second axis			[		Setting	value		] r	nm,	/ s			
		NЛ	odel		Set	ting val	ue		Г	Default	*	Comr	nand set	ting, ren
			-111		031					0000m		JOH	10000	
			-411							)0000n			10000	
			-511	ŰM	lax Spee	d″ mm .	/ s or les	s		)0000n			10000	
			-611							00000			100000	
		<u> </u>	-911						5.00	)0000n	nm/s		50000	00

5.00000mm/s \* At the time of parameter default execution, if "Max Speed" is less than the default, it will be "Max Speed".



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	

56Jy Speed 9JY Speed 9RESET57

Description Set the operation speed 2 when pressing and holding the CW, CCW and Jog controller buttons. Set it below the "Jog Speed 3". If the setting value is large, it will return to the previous setting value.

First axis	5	6	1 J	У	Speed	9	
FIRST axis			[		Setting value		] m m / s
Second axis	5	7	2 J	У	Speed	9	
Second axis			]		Setting value		] m m / s

[	Model	Setting value	Default *	Command setting, reply
ſ	FC-111		5.0000mm/s	50000
	FC-411		5.00000mm/s	500000
	FC-511	"Jy Speed H" mm / s or less	5.00000mm/s	500000
	FC-611		5.00000mm/s	5000000
Ī	FC-911		4.00000mm/s	4000000

\* At the time of parameter default execution, if "Max Speed" is less than the default, it will be "Max Speed".

#### About the minimum speed of Jy Speed1 to 8

The minimum operation speed of Jy Speed1 to 8 is determined by the setting of Jy Speed9. See the table below for details. For example, if Jy Speed 9 is set to 10 mm / s while using FC-111, the minimum operation speed is 0.0002 mm / s. The minimum speed of FC-111 can be set to 0.0001 mm / s, but in this example, it does not operate because the minimum speed is 0.0002 mm / s.

Model	Jy Speed 9 s	peed s	setting range	Minimum speed
	0.0001mm/s	-	6.5535mm/s	0.0001mm/s
	6.5536mm/s	-	13.1070mm/s	0.0002mm/s
FC-111	13.1071mm/s	-	32.7675mm/s	0.0005mm/s
	32.7676mm/s	-	65.5350mm/s	0.0010mm/s
	65.5351mm/s	-	100.0000mm/s	0.0020mm/s
	0.00005mm/s	-	3.27675mm/s	0.00005mm/s
	3.27680mm/s	-	6.55350mm/s	0.00010mm/s
FC-411	6.55355mm/s	-	16.38375mm/s	0.00025mm/s
FC-411	16.38380mm/s	-	32.76750mm/s	0.00050mm/s
	32.76755mm/s	-	65.53500mm/s	0.00100mm/s
	65.53550mm/s	-	100.0000mm/s	0.00250mm/s
	0.00001mm/s	-	0.65535mm/s	0.00001mm/s
	0.65536mm/s	-	1.31070mm/s	0.00002mm/s
	1.31071mm/s	-	3.27675mm/s	0.00005mm/s
FC-511	3.27676mm/s	-	6.55350mm/s	0.00010mm/s
	6.55351mm/s	-	13.10700mm/s	0.00020mm/s
	13.10701mm/s	-	32.76750mm/s	0.00050mm/s
	32.76751mm/s	-	50.0000mm/s	0.00100mm/s
	0.00005mm/s	-	0.327675mm/s	0.00005mm/s
	0.327680mm/s	-	0.655350mm/s	0.000010mm/s
	0.655355mm/s	-	1.638375mm/s	0.000025mm/s
FC-611	1.638380mm/s	-	3.276750mm/s	0.000050mm/s
	3.276755mm/s	-	6.553500mm/s	0.000100mm/s
	6.553550mm/s	-	16.383750mm/s	0.000250mm/s
	16.383755mm/s	-	30.00000mm/s	0.000500mm/s
	0.000001mm/s	-	0.065535mm/s	0.000001mm/s
	0.065536mm/s	-	0.131070mm/s	0.00002mm/s
	0.131071mm/s	-	0.327675mm/s	0.00005mm/s
FC-911	0.327676mm/s	-	0.655350mm/s	0,000010mm/s
	0.655351mm/s	-	1.310700mm/s	0.000020mm/s
	1.310701mm/s	-	3.276750mm/s	0.000050mm/s
	3.276751mm/s	-	6.00000mm/s	0.000100mm/s

	Jy Speed 8	JY Speed 8		RE
59		operation speed of JY speed. Set it I	below the ", ly Speed 9"	Í lf the setting valu
		eturn to the previous setting value.		
	First axis 5 8 1	Jy Speed 8		
	First axis	[ Setting value	] m m / s	
	Second axis 5 9 2			
		[ Setting value	] m m / s	
	Model	Setting value	Default *	Command setting,
	FC-111		1.0000mm/s	10000
	FC-411	-	1,0000mm/s	100000
	FC-511	 // Jy Speed 9″ mm / s or less	1,00000mm/s	100000
	FC-611		1.000000mm/s	1000000
	FC-911	-	1.000000mm/s	1000000
		ter default execution, if "Max Speed" i		
60	Jy Speed 7	JY Speed 7		RES
61				
01	Description Set the 7th	operation speed of JY speed. Set it I	below the "Jy Speed 8"	. If the setting valu
	large, it will re	eturn to the previous setting value.		
	First axis 6 0 1	Jy Speed 7		
	T II ST ANS	[ Setting value	] m m / s	
	Second axis 6 1 2			
		[ Setting value	] m m / s	
				_
	Model	Setting value	Default *	Command setting, I
	FC-111	_	0.5000mm/s	5000
	FC-411		0.50000mm/s	50000
	FC-511	Jy Speed 8" mm / s or less	0.50000mm/s	50000
	FC-611	_	0.50000mm/s	500000
	FC-911		0.50000mm/s	500000
		ter default execution, if "Max Speed" i	is less than the default, i	t will be Max Spee
	* At the time of parame			
62	Jy Speed 6	JY Speed 6		RES
62 63	Jy Speed 6			
	Jy Speed 6 Description Set the 6th	operation speed of JY speed. Set it I	below the "Jy Speed 7"	
	Jy Speed 6 Description Set the 6th large, it will ro	operation speed of JY speed. Set it l eturn to the previous setting value.	below the "Jy Speed 7"	
	Jy Speed 6 Description Set the 6th	operation speed of JY speed. Set it l eturn to the previous setting value. J y S p e e d 6		
	Jy Speed 6 Description Set the 6th large, it will ro First axis	operation speed of JY speed. Set it l eturn to the previous setting value. J y S p e e d 6 [ Setting value	below the <sup>″</sup> Jy Speed 7′ ] m m / s	. If the setting valu
	Jy Speed 6 Description Set the 6th large, it will ro	operation speed of JY speed. Set it l eturn to the previous setting value. J y S p e e d 6 [ Setting value	] m m / s	
	Jy Speed 6 Description Set the 6th large, it will ro First axis	operation speed of JY speed. Set it l eturn to the previous setting value. J y S p e e d 6 [ Setting value J y S p e e d 6		
	Jy Speed 6 Description Set the 6th large, it will ro First axis	operation speed of JY speed. Set it l eturn to the previous setting value. J y S p e e d 6 [ Setting value J y S p e e d 6	] m m / s	í. If the setting valu
	Jy Speed 6 Description Set the 6th large, it will ro First axis Second axis	operation speed of JY speed. Set it l eturn to the previous setting value. J y S p e e d 6 [ Setting value J y S p e e d 6 [ Setting value	] m m / s ] m m / s	í. If the setting valu
	Jy Speed 6 Description Set the 6th large, it will re First axis 6 2	operation speed of JY speed. Set it l eturn to the previous setting value. J y S p e e d 6 [ Setting value J y S p e e d 6 [ Setting value	] m m / s ] m m / s Default * 0.1000mm/s	. If the setting valu
	Jy Speed 6 Description Set the 6th large, it will re First axis Second axis Model FC-111	operation speed of JY speed. Set it l eturn to the previous setting value. J y S p e e d 6 [ Setting value J y S p e e d 6 [ Setting value	] m m / s ] m m / s Default *	. If the setting value
	Jy Speed 6 Description Set the 6th large, it will re First axis Second axis Model FC-111 FC-411	operation speed of JY speed. Set it leturn to the previous setting value. J y S p e e d 6 [ Setting value J y S p e e d 6 [ Setting value Setting value	] m m / s ] m m / s Default * 0.1000mm/s 0.10000mm/s	. If the setting value
	Jy Speed 6 Description Set the 6th large, it will re First axis Second axis Model FC-111 FC-411 FC-511	operation speed of JY speed. Set it leturn to the previous setting value. J y S p e e d 6 [ Setting value J y S p e e d 6 [ Setting value Setting value	] m m / s ] m m / s Default * 0.1000mm/s 0.10000mm/s 0.10000mm/s	. If the setting value
	Jy Speed 6 Description Set the 6th large, it will re First axis Second axis Model FC-111 FC-411 FC-511 FC-611 FC-911	operation speed of JY speed. Set it leturn to the previous setting value. J y S p e e d 6 [ Setting value J y S p e e d 6 [ Setting value Setting value	] m m / s ] m m / s Default * 0.1000mm/s 0.10000mm/s 0.10000mm/s 0.100000mm/s 0.100000mm/s	. If the setting value Command setting, r 1000 10000 10000 100000 100000



64 65	Jy Spe	ed 5	JY Speed 5		RES
00	Description		operation speed of JY speed. Set it	below the "Jy Speed 6"	. If the setting valu
			eturn to the previous setting value.		
	First axis	64 1	Jy Speed 5 [ Setting value	- /	
		652	_	] m m / s	
	Second axis		Setting value	] m m / s	
				Defection	
		Model	Setting value	Default *	Command setting, r
		FC-111	_	0.0500mm/s	500
		FC-411		0.05000mm/s	5000
		FC-511 FC-611	/Jy Speed 6″ mm / s or less	0.05000mm/s	5000
			_		
	* At the tir	FC-911	L ter default execution, if "Max Speed"	0.050000mm/s	50000
			ter deradit execution, in Max Opeed		t will be wax opeed
66	Jy Spe	ed 4	JY Speed 4		RES
67					
	Description		operation speed of JY speed. Set it	below the "Jy Speed 5"	. If the setting valu
			eturn to the previous setting value. Jy Speed 4		
	First axis	66 1	Jy Speed 4 [ Setting value		
		672		] m m / s	
	Second axis	672	Jy Speed 4 [ Setting value		
				]mm/s	
		Model	Setting value	Default *	Command setting, r
		FC-111		0.0100mm/s	100
		FC-411	-	0.01000mm/s	1000
		FC-511	″Jy Speed 5″ mm / s or less	0.01000mm/s	1000
		FC-611	_	0.010000mm/s	10000
		FC-911	_	0.010000mm/s	10000
	* At the tir	ne of paramet	ter default execution, if "Max Speed"	is less than the default, i	t will be "Max Spee
68	Jy Spe	ed 3	JY Speed 3		RES
69	Description	Sat the 2th (	operation speed of JY speed. Set it	bolow the " ly Speed 1"	If the potting value
	Description		eturn to the previous setting value.	below the Jy Speed 4	. II the setting vait
	-	6 8 1	Jy Speed 3		
	First axis		[ Setting value	] m m / s	
		692	Jy Speed 3		
	o			] m m / s	
	Second axis		[ Setting value	] / 9	
	Second axis		Setting value		
	Second axis	Model	Setting value	Default *	Command setting, r
	Second axis			1	50
	Second axis	Model		Default *	
	Second axis	Model FC-111		Default * 0.0050mm/s	50 500 500
	Second axis	Model FC-111 FC-411 FC-511 FC-611	Setting value	Default * 0.0050mm/s 0.00500mm/s 0.00500mm/s 0.005000mm/s	50 500 500 500
		Model FC-111 FC-411 FC-511 FC-611 FC-911	"Jy Speed 4" mm / s or less	Default *           0.0050mm/s           0.00500mm/s           0.00500mm/s           0.005000mm/s           0.005000mm/s           0.005000mm/s           0.005000mm/s	50 500 500 5000 5000
		Model FC-111 FC-411 FC-511 FC-611 FC-911	Setting value	Default *           0.0050mm/s           0.00500mm/s           0.00500mm/s           0.005000mm/s           0.005000mm/s           0.005000mm/s           0.005000mm/s	50 500 500 5000 5000
		Model FC-111 FC-411 FC-511 FC-611 FC-911	"Jy Speed 4" mm / s or less	Default *           0.0050mm/s           0.00500mm/s           0.00500mm/s           0.005000mm/s           0.005000mm/s           0.005000mm/s           0.005000mm/s	50 500 500 5000 5000



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
-	70	Jy Sp	eed 2		JY Spe	ed 2									RESET
-	71														
	D	escriptior								below the	e ″Jy Sp	beed 3″.	If the s	setting	value is
								etting va							
		First axis	5 7 O	1	Jу	S	ре		2		,				
							Setting			] r	nm/	S			
	Se	cond axi	5 7 1	2	Jу	S	p e		2		,				
					L		Setting	, value		] r	<u>nm /</u>	S			
			Ν.4	odel		Set	tting va				) Default *	6	Comm	and ant	ting rank
				-111		Sei	lung va	lue			0010mm		Comma	and set 10	ting, reply
				-411							0100mm	., -		100	
				-511		Speed	2″ mm	/ s or le			0100m			100	
				-611	J	Speed	5 11111	/ 50118	55	-	)1000m			100	
				-911	-						1000m		-	1000	
	*	At the t			l er defai	ilt execi	ution if	″Max Sr	heed" is				will be		
				Saramot	or dorad			Max Op				oradit, it		ivicax c	50000.
-	72	ly Sr	eed 1		JY Spe	od 1									RESET
	73	Uy OL	eeu i		UT Spe	eu i									I ILOL I
		escriptior	n Set th	ne 1th c	peration	speed	h of JY	speed \$	Set it k	pelow the	e ″Jv Sr	beed $2^{\prime\prime}$	If the s	setting	value is
		000110101				•		etting val			0,00	,			
			7 2	1	Jу	S	ре	e d	1						
		First axis	5		[		Setting			] r	nm/	S			
	<u> </u>		73	2	Jу	S	ре	e d	1						
	Se	cond axi	5		[		Setting	; value		] r	nm/	S			
			M	odel		Set	tting va	lue		C	Default *	k	Comma	and set	ting, reply
				-111	]					·	005mm			5	
				-411	]						0050mr			50	
				-511	Jy	Speed	2″ mm	/ s or le	SS		0050mr			50	
				-611	-						0500m			500	
			FC	-911						0.00	)0500m	ım/s		500	

 FC-911
 0.000500mm/s
 500

 \* At the time of parameter default execution, if "Max Speed" is less than the default, it will be "Max Speed".



	GENERAL Pa	arameters			
01	AXIS Se	el Ax	is Setting		RE
			former to be a controlled		
	_		of axes to be controlled. X   S S e 1		
	Ì	7 I U	Choices ]		
		-			
		Choices	Description		Command setting,
	_	1	First axis on		0
	_	2 1+2	Second axis o Both axis	only	1 2
	Default	ΙΤΖ	1+2		2
	L		· · ·		
02	Max Sp	eed Ma	aximum operating speed		RE
03					
			n operation speed. Set the speed		
			If the command "A:" or "M:" is st he operation will be performed at		
		021M	_	· · · · ·	
	L	]	Setting value	] m m / s	
	Second axis	032M	a x S p e e d Setting value	] /	
	L	L	Setting value	]mm/s	
		Model	Setting value	Default	Command setting
		FC-111	$0.0001 \sim 100.0000$ mm/s	10.0000mm/s	100000
			0.00005~100.0000mm/s	10.0000mm/s	100000
	_	FC-511	0.00001 ~ 50.0000mm/s	10.0000mm/s	100000
	-		0.000005 ~ 30.000000mm/s 0.000001 ~ 6.000000mm/s	10.000000mm/s 5.000000mm/s	1000000
			0.000001 0.0000001111/3	0.0000001111/3	0000000
04 05	Lin/Rot	Cc	ceeds the maximum moving spee ontrol stage type age to be controlled	d of the connected sta	age. RE
	Lin/Rot	Cc Set the type of st D 4 1 L [		d of the connected sta	-
	Lin/Rot Description S First axis	Cc Set the type of st	age to be controlled.	d of the connected sta	-
	Lin/Rot Description S First axis	Cc Set the type of st D 4 1 L [ D 5 2 L [	age to be controlled. i n / R o t Choices ] i n / R o t Choices ]		R
	Lin/Rot Description S First axis	Cc Set the type of st D 4 1 L [	age to be controlled. i n / R o t Choices ] i n / R o t		-
	Lin/Rot Description S First axis	Co Set the type of st O 4 1 L [ O 5 2 L [ Choices	age to be controlled. i n / R o t Choices ] i n / R o t Choices ] Description	tage	Command setting,
	Lin/Rot Description S First axis	Co Set the type of st O 4 1 L [ O 5 2 L [ Choices Linear	age to be controlled. i n / R o t Choices ] i n / R o t Choices ] Description Set to linear st	tage	Command setting,
	Lin/Rot Description S First axis Second axis	Co Set the type of st O 4 1 L [ O 5 2 L [ Choices Linear	age to be controlled. i n / R o t Choices ] i n / R o t Choices ] Description Set to linear st Set to rotating st	tage	Command setting, 0 1
05	Lin/Rot Description S First axis Second axis	Co Set the type of st 0 4 1 L [ 0 5 2 L [ Choices Linear Rotate	age to be controlled. i n / R o t Choices ] i n / R o t Choices ] Description Set to linear st Set to rotating st Linear	tage	Command setting, 0 1 0
	Lin/Rot Description S First axis Second axis Default Stop Se	Co Set the type of st O 4 1 L [ O 5 2 L [ Choices Linear Rotate	age to be controlled. i n / R o t Choices ] i n / R o t Choices ] Description Set to linear st Set to rotating st Linear	tage stage	Command setting, 0 1 0 RE
05	Lin/Rot Description S First axis Second axis Default Stop Se Description S	Co Set the type of st O 4 1 L [ O 5 2 L [ Choices Linear Rotate	age to be controlled. i n / R o t Choices ] i n / R o t Choices ] i n / R o t Description Set to linear st Set to rotating st Linear	tage stage	Command setting, 0 1 0 RE
05	Lin/Rot Description S First axis Second axis Default Stop Se Description S	Co Set the type of st O 4 1 L [ O 5 2 L [ Choices Linear Rotate	age to be controlled. i n / R o t Choices ] i n / R o t Choices ] Description Set to linear st Set to rotating st Linear che stage. Valid when executing t t o p S e l	tage stage	Command setting, 0 1 0 RE
05	Lin/Rot Description S First axis Second axis Default Default Stop Se Description S First axis	Co Set the type of st O 4 1 L [ O 5 2 L [ Choices Linear Rotate el Sta Set how to stop to O 6 1 S [	age to be controlled. i n / R o t Choices ] i n / R o t Choices ] Description Set to linear st Set to rotating s Linear che stage. Valid when executing t t o p S e 1 Choices ]	tage stage	Command setting, 0 1 0 RE
05	Lin/Rot Description S First axis Second axis Default Default Stop Se Description S First axis	Co Set the type of st O 4 1 L [ O 5 2 L [ Choices Linear Rotate	age to be controlled. i n / R o t Choices ] i n / R o t Choices ] Description Set to linear st Set to rotating st Linear che stage. Valid when executing t t o p S e l	tage stage	Command setting, 0 1 0 RE
05	Lin/Rot Description S First axis Second axis Default Stop Se Description S First axis	Co Set the type of st O 4 1 L [ O 5 2 L [ Choices Linear Rotate el Sta Set how to stop to O 6 1 S [	age to be controlled. i n / R o t Choices ] i n / R o t Choices ] Description Set to linear st Set to rotating st Linear Choices ] t o p S e l Choices ] t o p S e l Choices ] Description	tage stage the front panel JOG bu	Command setting, 0 1 0 RE
05	Lin/Rot Description S First axis Second axis Default Stop Se Description S First axis	Co Set the type of st O 4 1 L [ O 5 2 L [ Choices Linear Rotate Set how to stop to O 6 1 S [ O 7 2 S [ Choices SD Stop	age to be controlled. i n / R o t Choices ] i n / R o t Choices ] Description Set to linear st Set to rotating Linear be stage. Valid when executing t t o p S e ] Choices ] t o p S e l Choices ] t o p S e l Choices ]	tage stage the front panel JOG bu	Command setting, 0 1 0 RE
05	Lin/Rot Description S First axis Second axis Default Default Description S First axis Second axis	Co Set the type of st O 4 1 L [ O 5 2 L [ Choices Linear Rotate Set how to stop to O 6 1 S [ O 7 2 S [ Choices	age to be controlled. i n / R o t Choices ] i n / R o t Choices ] Description Set to linear st Set to rotating Linear be stage. Valid when executing t t o p S e ] Choices ] t o p S e l Choices ] Choices ] Choices ] Choices ]	tage stage the front panel JOG bu	Command setting, 0 1 0 RE utton and command RE utton and command Command setting, 0 1
05	Lin/Rot Description S First axis Second axis Default Stop Se Description S First axis	Co Set the type of st O 4 1 L [ O 5 2 L [ Choices Linear Rotate Set how to stop to O 6 1 S [ O 7 2 S [ Choices SD Stop	age to be controlled. i n / R o t Choices ] i n / R o t Choices ] Description Set to linear st Set to rotating Linear be stage. Valid when executing t t o p S e ] Choices ] t o p S e l Choices ] t o p S e l Choices ]	tage stage the front panel JOG bu	Command setting, 0 1 0 RE utton and command
05	Lin/Rot Description S First axis Second axis Default Default Second axis Second axis Second axis	Set the type of st O 4 1 L [ O 5 2 L [ Choices Linear Rotate Set how to stop t O 6 1 S [ O 7 2 S [ Choices SD Stop IM Stop	age to be controlled. i n / R o t Choices ] i n / R o t Choices ] Description Set to linear st Set to rotating Linear be stage. Valid when executing t t o p S e ] Choices ] t o p S e l Choices ] Choices ] Choices ] Choices ]	tage stage the front panel JOG bu	Command setting, 0 1 0 RE utton and command RE utton and command Command setting, 0 1



	2 3	4		5	6	6	7	8		9	1	0	1	1		12		13	14	Ļ	15		16
	First axis	0	8	1	E	MO		Mo	t	0	r ı	E	Ξ	Х	С	i	t	е					
		0	9	2	E	MO		noices Mo	t	0	] r	F	-	x	0	i	t	е			_		
	Second axis		9		ſ			noices	L	0	r 1	L	-	~	C	I	ι	е					
		L									-												
			Cł	noices						Des	criptio	on							Comm	and	sett	ing, ı	epl
				sable							exci	te									0		
	Defeat	_	Er	nable					. ] .		xcite										1 0		
	Default							DIS	sable	9											0		
10	EMG	Con	nec	tor		ante	more	sency	etor	<u> </u>												RF	SE
10	LING	001			030	5010	11018		3100	,												1 1	
	Description	Set	: wh	ether t	o us	e the	emer	gency	stop	o fun	ctior	۱.											
		1	0	1	E	ΜÓ		Со	n	n	е	c t	t	0	r								
					[		Cł	noices			]												
			Cł	noices						Doc	criptio	מר							Comm	and	cott	ing 1	coply
		-		sable							t Use							_	COITIIT		0	li ig, i	epi
		-		nable							Jse	<u> </u>									1		
	Default							Dis	sable	)											0		
11	Motor	Exc	cite		Мо	tor st	atus	at sta	artup	С												RE	SE
12		<b>•</b>																					
	Description	Set	: the	motor								: +									_		
	First axis	1	I		M ſ	o t		r noices		Х	1	i t	t	е									
		1	2	2	M	o t	0	r	Е	Х	C	i t	t	е									
	Second axis				[		Cł	noices			]												
		_													_		_						
				noices sable							criptio exci								Comm		sett 0	ing, I	eply
				nable							xcite										1		
	Default							Er	able												1		
13	Stage	Co	nt T	уре	Fee	edbad	ck sta	age co	ontro	ol typ	be											RE	SE
14																							
	Description	Set		feedb										<del></del>							_		
	First axis		3		S S	t a		e noices	C	0	n 1	t		Т	У	р	е						
		1	4	2	S	t a	a g		С	0	n	t		Т	y	р	е						
	Second axis				[]			noices			]	-		-	5		-						
		_																					
				noices							criptio								Comm			ing, ı	reply
				lose							ed lo n loc										0 1		
	Default		C	)pen				С	lose	Ope		JD									0		
																					-		
15	Count	t Se	1		Dis	play o	coun	ter co	nter	nts												RE	SE
16																							
	Description	Set	: the	type c	of co																		
	First axis	1	5	1	C	οι		t	S	е	ן ר												
		1	6	2	L	<u> </u>		noices +	S		<u>ן</u>												
	Second axis	: [ '	0	2	C I	οι		t noices	3	е	i												
		<u>ــــــ</u>			L		5	- 20			<u> </u>												
			Cł	noices						Des	criptio	on							Comm	and	sett	ing, ı	eply
				coder			E	Encode													0		
		<u> </u>	Out	t Pulse	•						oordi	nate	e va	alue	)						1		
	Default	.1						End	code	r											0		



	2 3	4 5	6							
17				-lating						
17 18	CD Drive	e Ci	urrent down	drive					K	ES
10	Description S	et whether to c	perate with th	ne motor drive c	current cor	nstantly red	duced.			
		1 7 1 C		i v e						
	First axis		Choi	ices ]						
	Second axis	182C								
		[	Choi	ices ]						
	Г	Choices		Descri	ntion		C	ommand	cotting	ro
		OFF		Norr				JIIIIIanu	0	
		ON		Reduce driv					1	
	Default			OFF					0	
19	INP Dec	In	-position judg	gment time					R	ES
20										
	Description S	et the in-positic								
	First axis		Choi							
		2021		) e c					-	
	Second axis		Choi	ices ]						
	_									
		Choices Normal		Descri Norr			Co	ommand	setting, 0	re
		Short		Decrease the ju		ime			1	
	Default			Normal					0	
21	Default			Normal						FS
	FBT Sel Description S	Fe the timing to witched autom	eedback start o start feedba atically accord	Normal : timing ck. When <sup>«</sup> Nord ding to the mo	mal" is cho oving spee	oose, the t ed. When ^	After is		R Iback s	tar
	FBT Sel Description S	Fe the timing to witched autom tarted when the	eedback start o start feedba atically accord e move comma	Normal timing ck. When "Nor ding to the mo and ends regard ding a l	mal" is cho oving spee	oose, the t ed. When ^	After is		R Iback s	tar
	FBT Sel Description S st First axis	Fe the timing to witched autom tarted when the	eedback start o start feedba atically accord o move comma B T S Choi B T S	Normal timing ck. When "Nord ding to the mo and ends regard dices ] dices ]	mal" is cho oving spee	oose, the t ed. When ^	After is		R Iback s	tar
	FBT Sel Description S st First axis	Fe witched autom tarted when the 2 1 1 F	eedback start o start feedba atically accord o move comma B T S Choi	Normal timing ck. When "Nord ding to the mo and ends regard dices ] dices ]	mal" is cho oving spee	oose, the t ed. When ^	After is		R Iback s	tar
	FBT Sel Description S st First axis	Fe tet the timing to witched autom tarted when the 2 1 1 F 2 2 2 F [ Choices	eedback start o start feedba atically accord o move comma B T S Choi B T S	Normal timing ck. When "Nord ding to the model and ends regard and ends regard b e 1 ices ] Description []	mal <sup>‴</sup> is cho oving spee dless of th	oose, the t ed. When ^	After" is peed.		R Iback s , feedb	tar ack
	FBT Sel Description S st First axis	Fe the timing to witched autom tarted when the 2 1 1 F 2 2 2 2 F 2 Choices Normal	eedback start o start feedba atically accord move comma B T S Choi B T S Choi	Normal timing ck. When "Nord ding to the model and ends regard b e 1 fices ] b e 1 fices ] Description Norr	mal <sup>‴</sup> is cho oving spee dless of th  ption mal	oose, the t ed. When ^ e moving s	After" is peed.	choose	R Iback s , feedb 	tar ack
	FBT Sel Description S st First axis Second axis	Fe tet the timing to witched autom tarted when the 2 1 1 F 2 2 2 F [ Choices	eedback start o start feedba atically accord move comma B T S Choi B T S Choi	Normal timing ck. When "Nord ding to the mo and ends regard be 1 ices ] be 1 ices ] Description Norread when the mo	mal <sup>‴</sup> is cho oving spee dless of th  ption mal	oose, the t ed. When ^ e moving s	After" is peed.	choose	R Iback s , feedb setting, 0 1	tar acł
	FBT Sel Description S st First axis	Fe the timing to witched autom tarted when the 2 1 1 F 2 2 2 2 F 2 Choices Normal	eedback start o start feedba atically accord move comma B T S Choi B T S Choi	Normal timing ck. When "Nord ding to the model and ends regard b e 1 fices ] b e 1 fices ] Description Norr	mal <sup>‴</sup> is cho oving spee dless of th  ption mal	oose, the t ed. When ^ e moving s	After" is peed.	choose	R Iback s , feedb 	tar acł
22	FBT Sel Description S st First axis Second axis Default	Fe witched autom tarted when the 2 1 1 F 2 2 2 2 F Choices Normal After	eedback start o start feedba atically accord move comma B T S Choi B T S Choi	Normal timing ck. When "Nord ding to the mo and ends regard b e 1 ices ] b e 1 ices ] Description Norread when the mo	mal <sup>‴</sup> is cho oving spee dless of th  ption mal	oose, the t ed. When ^ e moving s	After" is peed.	choose	R Iback s , feedb setting, 0 1 0	tar acł
22	FBT Sel Description S st First axis Second axis	Fe witched autom tarted when the 2 1 1 F 2 2 2 2 F Choices Normal After	eedback start o start feedba atically accord move comma B T S Choi B T S Choi	Normal timing ck. When "Nord ding to the mo and ends regard b e 1 ices ] b e 1 ices ] Description Norread when the mo	mal <sup>‴</sup> is cho oving spee dless of th  ption mal	oose, the t ed. When ^ e moving s	After" is peed.	choose	R Iback s , feedb setting, 0 1 0	tar acł
22	FBT Sel Description S si First axis Second axis Default	Fe witched autom tarted when the 2 1 1 F 2 2 2 2 F Choices Normal After	eedback start o start feedba atically accord move comma B T S Choi B T S Choi Starte	Normal timing ck. When "Nord ding to the mo and ends regard b e 1 ices ] b e 1 ices ] Description Norread when the mo	mal <sup>‴</sup> is cho oving spee dless of th  ption mal	oose, the t ed. When ^ e moving s	After" is peed.	choose	R Iback s , feedb setting, 0 1 0	tar ack
22	FBT Sel Description S si First axis Second axis Default Ini Mode Description S	Fe iet the timing to witched autom tarted when the 2 1 1 F [ 2 2 2 2 F [ Choices Normal After b h	eedback start o start feedba atically accord move comma B T S Choi B T S Choi Starte	Normal timing ck. When "Nord ding to the mo and ends regard b e 1 ices ] b e 1 ices ] Description Norread when the mo	mal <sup>‴</sup> is cho oving spee dless of th  ption mal	oose, the t ed. When ^ e moving s	After" is peed.	choose	R Iback s , feedb setting, 0 1 0	tar ack
22	FBT Sel Description S si First axis Second axis Default Ini Mode Description S	Fe the timing to witched autom tarted when the 2 1 1 F 2 2 2 2 F 2 Choices Normal After e In et the startup r	eedback start o start feedba atically accord move comma B T S Choi B T S Choi Starte	Normal Normal timing ck. When "Nor ding to the mo and ends regard be a bices b	mal <sup>‴</sup> is cho oving spee dless of th  ption mal	oose, the t ed. When ^ e moving s	After" is peed.	choose	R Iback s , feedb setting, 0 1 0	tar acł
22	FBT Sel Description S si First axis Second axis Default Ini Mode Description S	Fe the timing to witched autom tarted when the 2 1 1 F [2 2 2 2 F [2 2 2 F [2 2 2 1 1] Choices Normal After e In set the startup r 2 3 I [2 3 1]	eedback start o start feedba atically accord move comma B T S Choi B T S Choi Starte itial mode node.	Normal Normal Itiming Ck. When "Norm ding to the mo and ends regard Ce 1 Ces ] Ces ] Ces ] Cescrip Norm cd when the mo Normal Content	mal <sup>"</sup> is cho oving spee dless of th ption mal ove comma	oose, the t ed. When ^ e moving s	After" is peed.	ommand	R Iback s , feedb setting, 0 1 0 R	tar ack
22	FBT Sel Description S si First axis Second axis Default Ini Mode Description S	Fe iet the timing to witched autom tarted when the 2 1 1 F [2 2 2 2 F [2 2 2 F [2 2 2 ] Choices Normal After P In iet the startup r 2 3 1 [2 3 1]	eedback start o start feedba atically accord move comma B T S Choi B T S Choi Starte itial mode node.	Normal Normal Itiming Ck. When "Norm ding to the mo and ends regard C e 1 Cos ] Cos ] Cos ] Cos ] Cos City Cos	mal <sup>"</sup> is cho oving spee dless of th ption mal ove comma ption	oose, the t ed. When ^ e moving s and ends	After" is peed.	choose	R Iback s , feedb setting, 0 1 0 R Setting,	rep ES
22	FBT Sel Description S si First axis Second axis Default Ini Mode Description S	Fe iet the timing to witched autom tarted when the 2 1 1 F [2 2 2 2 F [2 2 2 F [2 2 2 ] Choices Normal After Particle Startup r 2 3 1 [2 2 3 1 [2 2 3 1] Choices REMOTE	eedback start o start feedba atically accord move comma B T S Choi B T S Choi Starte itial mode node.	Normal Normal Itiming Ck. When "Nord ding to the mo and ends regard C e 1 ices ] C e 1 ices ] C e 1 ices ] C e control	mal <sup>"</sup> is cho pving spee dless of th ption mal pve comma ption OTE mode	oose, the t ed. When ^ e moving s and ends	After" is peed.	ommand	R Iback s , feedb setting, 0 1 0 R Setting, 0	rep ES
21 22 23	FBT Sel Description S si First axis Second axis Default Ini Mode Description S	Fe iet the timing to witched autom tarted when the 2 1 1 F [2 2 2 2 F [2 2 2 F [2 2 2 ] Choices Normal After P In iet the startup r 2 3 1 [2 3 1]	eedback start o start feedba atically accord move comma B T S Choi B T S Choi Starte itial mode node.	Normal Normal Itiming Ck. When "Norm ding to the mo and ends regard C e 1 Cos ] Cos ] Cos ] Cos ] Cos City Cos	mal <sup>"</sup> is cho pving spee dless of th ption mal pve comma ption 10TE mode CAL mode	oose, the t ed. When ^ e moving s and ends	After" is peed.	ommand	R Iback s , feedb setting, 0 1 0 R Setting,	rep ESI



2	3	4 5 0	6 7 8 9 10 11 12 1	13 14 15 16
24	I/F Sel	Co	ommunication interface	RESET
	Description	Set the communi	cation interface.	
		2 4	/FSel	
		[	Choices ]	
		Choices	Description	Command setting, reply
		USB	USB interface	0
		Ethernet	Ethernet interface	1
		GP-IB	GP-IB interface	2
	Default		USB	0
25	USB D	Del US	SB delimiter	RESE
	Description	Set the USB inter	face delimiter.	
		25 U	SB Del	
		[	Choices ]	
		Choices	Description	Command setting, reply
		CR + LF	Carriage return code and line feed code	0
		CR	Carriage return code	1
		LF	Line feed code CR + LF	2
	Default		CR + LF	0
26	GP-IB	Addr GF	D-IB address	RESET
	Description	Set the GP-IB ad	dress.	
		26 1G		
		[	Choices ]	
		Choices	Description	
		1~30	Description Specify the address numerically	Command setting, reply 1 ~ 30
	Default	1 00	8	8
	Doradit		C C	
27	GP-IB	Del GF	P-IB delimiter	RESET
	Description	Set the GP-IB int		
		27 G		
		[	Choices ]	
		Choices	Description	Command setting, reply
		CR + LF	Carriage return code and line feed code	0
		EOI	End or Identify	1
		CR	Carriage return code	2
		LF	Line feed code	3
	Default		CR + LF	0
				25057
28	GP-IB	EOI GF	P-IB EOI	RESET
	Description	Enable / disable (	EOI of GP-IB interface.	
			Choices	
		Choices	Description	Command setting, reply
		OFF	Disable	0
		ON	Enable	1
	Default		ON	1

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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
29	A	GP-IE	SBQ		GP-IE	SBQ									RESET
2															
	П	escriptior	- Enable	ae / dies	hlee th	s SBQ (	of the G	P-IR inte	orfaco						
	D	escriptior		55 / 0156	-			SR							
			29		GΡ		B	эп							
					L	U	hoices		]						
						_							_		, 1
				hoices					ription			(	Comman		ng, reply
				OFF					sable					0	
				ON				En	able					1	
		Defaul	t				O	N						1	
30	)	ETHE	RDel		Fther	net delir	niter								RESET
		ETHER Del Ethernet delimiter													
	П	escriptior	n Set th	e Etheri	net inte	erface de	elimiter								
	0	000110101	3 0		E T	ΗE		Dе	1						
			5.0				hoices		1						
					L	0	101000		]						
			C	hoices				Deer	rintion				Common	d oottin	roply
					-	0			ription	<b>f</b>	l		Comman		ig, reply
				R + LF		Car			de and li		a code			0	
				CR			Ci		return co					1	
				LF					ed code	)				2	
		Defaul	t				CR +	- LF						0	
3	1	IP Ad	dress		Ether	net IP a	ddress								RESET
	D	escriptior	n Set th	e IP ado	dress of	f the Eth	nernet ir	terface.							
			3 1		ΙP	А	d d	r							
					[		Setting	value		]					
				_											
						Se	tting val	ue				Con	nmand se	etting, r	eply
				(	00000	000000			55255				oends on		
		Defaul	t				168001					1	921680	01210	)
32	2	Defe	It Cat		Ethor	net Def		+++++0++							DECET
32	2	Derau	ult Getv	vay	Ethen	net Dei	aun Ge	livvay							RESET
			Cat the	a alafa.	lt mate.		tio o Etio d	we at lat	a urfa a a						
	D	escriptior		e delau							A /				
			32		De	fa			Ga	t e \	иау	/			
				_	L		Setting	value							
						-									
							tting val						nmand se		
				(	00000	000000			55255				oends on		
		Defaul	t			1921	168011	254				1	921680	11254	1
33	3	Subn	et Mas	k	Ether	net Suk	onet Ma	ısk							RESET
	D	escriptior	n Set th	e subne	et mask	for the	Etherne	et interfa	ace.						
	_		3 3		Su		e t			ĸ				ľ	
					r T		Setting			ר ר ו					
			<u>I</u>	_	L		Cortin IB	14140		1					
						Sa	tting val					Cor	nmand se	tting r	enlv
				(		000000			55255				pends on		
		Defe	+	(					00200						
		Defaul	ч			2002	255255						2552552	3000	,



			6 7 8 9 10 11	
34	ECHO	BACK	Command echo back	RESET
	Description	Set whether to	o return the command description sent immedia	ately before.
		34	ECHO BACK	
			[ Choices ]	
		Choices	Description	Command setting, reply
		OFF	Not reply	0
		ON	Reply	1
	Default		OFF	0
35	TEAC	H Monitor	Teaching monitor	RESET
	Description	Sat whatbar t	a rational the contents of the teaching line ourrow	ath being aver ted Penly to the est
	Description	communicatio	o return the contents of the teaching line currer n interface.	nuy being executed. Reply to the se
		35	TEACH Monitor	
			[ Choices ]	
		Choices	Description	Command acting rank
		OFF	Not reply	Command setting, reply O
		ON	Reply	1
	Default		OFF	0
36	GENE	RAL IN Chat	General-purpose input port chattering chec	ck RESET
	Descriptions			t is suit
	Description	Set whether to	o check chattering of the general-purpose input	
		36	GENERAL IN Ch	
			GENERAL IN Ch	
		36	GENERAL IN Ch [ Choices ]	a t
		3 6 Choices	GENERAL IN Ch [ Choices ] Description	a t Command setting, reply
	Default	3 6 Choices OFF	GENERAL IN Ch [Choices] Description Disable	a t Command setting, reply 0
27		3 6 Choices OFF ON	GENERAL IN Ch [Choices] Description Disable Enable OFF	a t Command setting, reply 0 1 0
37		3 6 Choices OFF	G E N E R A L I N C h [ Choices ] Description Disable Enable	a t Command setting, reply 0 1 0
37	TEAC	3 6 Choices OFF ON H IN Chat	G E N E R A L I N C h [ Choices ] Description Disable Enable OFF TEACH input port chattering check b check chattering of the teaching operation input	a t Command setting, reply 0 1 0 8 8 8 8 8 8 8 8
37	TEAC	3 6 Choices OFF ON H IN Chat	G       E       N       E       A       L       I       N       C       h         [       Choices       ]       Description       Description         Disable       Enable       Description       Description         OFF       TEACH input port chattering check       Description         Description       Description       Description         Disable       Enable       Description         OFF       Description       Description         TEACH input port chattering check       Description       Description         Description       Description       Description       Description         TEACH input port chattering of the teaching operation input       Description       Description         T       E       A       C       H       N	a t Command setting, reply 0 1 0 8 8 8 8 8 8 8 8
37	TEAC	3 6 OFF ON H IN Chat Set whether to	G E N E R A L I N C h [ Choices ] Description Disable Enable OFF TEACH input port chattering check b check chattering of the teaching operation input	a t Command setting, reply 0 1 0 RESET
37	TEAC	3 6 OFF ON H IN Chat Set whether to	G       E       N       E       A       L       I       N       C       h         [       Choices       ]       Description       Description         Disable       Enable       Description       Description         OFF       TEACH input port chattering check       Description         Description       Description       Description         Disable       Enable       Description         OFF       Description       Description         TEACH input port chattering check       Description       Description         Description       Description       Description       Description         TEACH input port chattering of the teaching operation input       Description       Description         T       E       A       C       H       N	a t Command setting, reply O 1 0 RESET
37	TEAC	3 6 Choices OFF ON H IN Chat Set whether to 3 7	G E N E R A L I N C h [ Choices ] Description Disable Enable OFF TEACH input port chattering check check chattering of the teaching operation input T E A C H I N C h a t [ Choices ]	a t Command setting, reply 0 1 1 0 RESET
37	TEAC	3 6 Choices OFF ON H IN Chat Set whether to 3 7 Choices	G E N E R A L I N C h [ Choices ] Description Disable Enable OFF TEACH input port chattering check check chattering of the teaching operation input T E A C H I N C h a t [ Choices ] Description	a t Command setting, reply 0 1 0 RESET put port.
37	TEAC	3 6 Choices OFF ON H IN Chat Set whether to 3 7 Choices OFF ON	G E N E R A L I N C h [ Choices ] Description Disable Enable OFF TEACH input port chattering check check chattering of the teaching operation input T E A C H I N C h a t [ Choices ] Description Description	a t Command setting, reply O 1 0 1 0 RESET Dut port. Command setting, reply 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	TEAC Description Default	3 6 Choices OFF ON H IN Chat Set whether to 3 7 Choices OFF ON	G E N E R A L I N C h [ Choices ] Description Disable Enable OFF TEACH input port chattering check check chattering of the teaching operation input T E A C H I N C h a t [ Choices ] Description Description Description OFF OFF	a t Command setting, reply 0 1 0 1 0 RESET cout port. Command setting, reply 0 1 0 1 0 1 0 1 0 1 0 0 1 0 0 1 0
	TEAC Description Default	3 6 Choices OFF ON H IN Chat Set whether to 3 7 Choices OFF ON Sel	G E N E R A L I N C h [ Choices ]  Description Disable Enable OFF TEACH input port chattering check check chattering of the teaching operation input T E A C H I N C h a t [ Choices ]  Description Disable Enable OFF Sleep	a t Command setting, reply 0 1 0 1 0 RESET Dut port. Command setting, reply 0 1 0 1 0 1 0 1 0 1 0 0 1 0 0 1 0
	TEAC Description Default	3 6 Choices OFF ON H IN Chat Set whether to 3 7 Choices OFF ON Sel Set whether to	G E N E R A L I N C h [Choices]] Description Disable Enable OFF TEACH input port chattering check check chattering of the teaching operation input T E A C H I N C h a t [Choices]] Description Disable Enable OFF Sleep ouse the sleep function.	a t Command setting, reply 0 1 0 1 0 RESET Dut port. Command setting, reply 0 1 0 1 0 1 0 1 0 1 0 0 1 0 0 1 0
	TEAC Description Default	3 6 Choices OFF ON H IN Chat Set whether to 3 7 Choices OFF ON Sel	G       E       N       E       A       L       I       N       C       h         [       Choices       ]       Description	a t Command setting, reply 0 1 0 1 0 RESET Dut port. Command setting, reply 0 1 0 1 0 1 0 1 0 1 0 0 1 0 0 1 0
	TEAC Description Default	3 6 Choices OFF ON H IN Chat Set whether to 3 7 Choices OFF ON Sel Set whether to	G       E       N       E       R       A       L       I       N       C       h         [       Choices       ]       Description	a t Command setting, reply 0 1 0 1 0 RESET Dut port. Command setting, reply 0 1 0 1 0 1 0 1 0 1 0 0 1 0 0 1 0
	TEAC Description Default	3 6 Choices OFF ON H IN Chat Set whether to 3 7 Choices OFF ON Sel Set whether to	G       E       N       E       A       L       I       N       C       h         [       Choices       ]       Description	a t Command setting, reply 0 1 0 1 0 RESET Dut port. Command setting, reply 0 1 0 1 0 1 0 1 0 1 0 0 1 0 0 1 0
	TEAC Description Default	3       6         OFF       OFF         ON       0         H IN Chat       0         Set whether to       3         Choices       0         OFF       0         Set       0         Set	G E N E R A L I N C h [ Choices ] Description Disable Enable OFF TEACH input port chattering check check chattering of the teaching operation input T E A C H I N C h a t [ Choices ] Description Disable Enable OFF Sleep o use the sleep function. S I e e p S e I [ Choices ]	a t Command setting, reply O 1 O 1 O RESET Dut port. Command setting, reply O 1 O RESET O RESET
37	TEAC Description Default	3 6 Choices OFF ON H IN Chat Set whether to 3 7 Choices OFF ON Sel Set whether to 3 8	G       E       N       E       R       A       L       I       N       C       h         [       Choices       ]       Description       Disable       Disable         OFF       Enable       OFF       OFF       Description intoDisable       Description       Disable         TEACH input port chattering of the teaching operation intoT       E       A       C       H       I       N       C       h       a       t         [       Choices       ]       Description       Disable       Enable       OFF         Sleep       OFF       OFF       Description       Disable       Disab	a t Command setting, reply O 1 O 1 O RESET O Command setting, reply O 1 O 1 O RESET O RESET O RESET O Command setting, reply O Command setting, reply O Command setting, reply O Command setting, reply Command setting, reply

1	2 3	4	5	6	8	9	10	11	12	13	14	15	16
39	BEEP	Sel	В	eep									RESET
	Description	Set w	hether to	emit a bee	ep sound, H	However,	continu	uous sc	und ca	nnot be	e turned	off.	
		3 9			P S	e l							
			[	-	Choices ]								
										-			
		(	Choices			Descr	iption			(	Command	d setti	ng, reply
			OFF			Do no	t beep					0	
			ON			Sound	a beep	)				1	
	Default				0	N						1	
40	Disp b	right	D	isplay bri	ightness								RESET
10													
	Description	Set th	ne display b	orightness	S.								
		4 0			p b	rig	g h '	t					
			·	-	Choices			-					
				•		-							
		(	Choices			Descr	iption			(	Command	d setti	ng, reply
			25%			Set to						0	0, 11
			50%	-		Set to						1	
			75%				75%					2	
			100%			Set to						З	
			125%	-		Set to						4	
			150%	-		Set to						5	
			175%			Set to						6	
			200%			Set to						7	
	Default				10	0%						З	
41	lmt St	on Se	l S	ton the li	imit senso	r							RESET
42						•							I LOL I
72	Description	Selec	t the stor	method	when the	- limit se	nsor is	innut					
		4 1	1	m t	S t	0 p	S e						
	First axis	· ·		·	Choices								
		4 2	2 2	m t	S t	ор	S e	e l					
	Second axis			·	Choices								
				•		-							
			Cho	ices			Descr	ription		(	Command	d setti	ng, reply
			SD S	Stop	_	Set		vdown s	stop			0	
			IM s			Set <sup>.</sup>	to stop	immedi	ately			1	
	Default				IM s	stop						1	
										•			
43	Optior	n tvne	C	ntion tyr	oe selectio	n							RESET
10	option	1 0 00	0		0000000								I LOL I
	Description	Selec	t the ontion	n type to (	connect								
	Decemption	4 3			i o m	ty	/ p (	<u>م</u>					
					Choices			0					
		L		•		-   -	1						
		(	Choices			Descr	iption			(	Command	d setti	ng, reply
			ТуреО		JC-0	1, JC-01		-01-04			2 Strinfort	0	
			Type1	1		MD-						1	
	Default	-		1	Tvr	beO	-					0	



4 15 16	13 14	12	11	10	9	8	7	6	5	4	3	2	1
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# 8. Teaching function

The teaching function is a function to execute commands registered inside this equipment when in the TEACH mode. It can execute all lines automatically or one line at a time. The registered commands are executed sequentially from the first line, and execution ends when the command "END:" or the completion of the 200th line. If there is a line where no command is registered (blank line), skip that line. In the case of an error that can be cleared, executing the error clear returns to the first line. The error can be cleared by operating the "BEC" button of the target axis after switching to the command "BEC:" or LOCAL mode.

	<ul> <li>Before moving the stage, make sure that there is no effect on the surroundings.</li> </ul>
$\wedge$	
د	<ul> <li>Check the registration details before performing teaching.</li> </ul>

## 8-1. About channels

There are 1 to 5 channels, and the number of stored lines per channel is 200. The following table shows the image stored in the internal memory.

Line	Channel1	Channel2	Channel3	Channel4	Channel5
1	D:1M1	D:1M1	JG:1 +100	JG:1 -100	FS:1 100
2	M:1+M10	M:1-M10			FS:2 100
3	G	G	END:	END:	M:1+U100
4	END:	END:			G
5					FE:2
			2		
198					FE:1
199					END:
200					

## 8-2. About registration and editing

Registration of contents is possible only by command. The commands used for registration and editing are shown below.

ltem	No,	Commands	Function	Page
Teaching	56	T_ON:	Move to teaching edit mode	55
	57	T_OFF:	Save teaching content and return to TEACH mode	55
	58	T_DEL:	Delete the contents of the line registered for teaching	56
	59	T_SET:	Set teaching content for each line	56
	60	T_GET:	Get the contents of the line registered for teaching	56
	61	TC:	Select teaching channel	56
	62	TCR:	Get the current teaching channel	56
	63	TQ:	Get teaching status	57
	68	TR:	Get teaching channel registration status	58

#### (1)Example 1

Set the operation speed of the first axis to 1 mm / sec. After moving 10 times in increments of 1 mm from the current position, move the axis in the negative direction 10 mm and wait for 1 second. Repeat this 10 times.

Send command	Description
T_ON:	Move to TEACH edit mode
TC:1	Select channel 1
T_SET:1 D:1M1	First axis operation speed set to 1mm / sec
T_SET:2 H:1	Set First axis mechanical home return
T_SET:3 FS:1 10	Set 10 times for loop level 1
T_SET:4 M:1+M1	Set first axis relative movement set value to 1mm
T_SET:5 FS:2 10	Set 10 times for loop level 2
T_SET:6 GN:1	Start moving
T_SET:7 FE:2	End location of loop level 2
T_SET:8 M:1-M10	Set first axis relative movement set value to -10mm
T_SET:9 G	Start moving
T_SET:10 T:1.0	Wait 1 second
T_SET:11 FE:1	End location of loop level 1
T_SET:12 END:	Teaching end line setting
T_OFF:	Save teaching contents and return to normal mode



ĺ	1	0	2	1	5	6	7	0	0	10	11	10	12	11	15	16
	1	$\leq$	0	4	0	0	(	0	9	ΤŪ			10	14	10	

## (2)Example 2

Retrieve the first and fourth lines from Example 1.

Send command	Reply command	Description
T_ON:	-	Move to TEACH edit mode
TC:1	-	Select channel 1
T_GET:1	D:1M1	Get first line
T_GET:4	M:1+M1	Get line 4
T_GET:13	-	Not registered

## (3)Example 3

Delete the first to fourth lines of Example 1.

Send command	Description
T_ON:	Move to TEACH edit mode
TC:1	Select channel 1
T_DEL:1	Delete first line
T_DEL:2	Delete line 2
T_DEL:3	Delete line 3
T_DEL:4	Delete line 4
T_OFF:	Save teaching contents and return to normal mode

## (4) Registration target command

This is a list of commands that can be registered for teaching.

ltem	No,	Commands	Function	Page
Control	09	F:	Change the positioning control method (Closed or Open loop)	28
	11	C:	Change the excitation state of the motor	28
Origin	33	H:	Return to mechanical origin	44
	34	Z:	Return to electrical origin	44
	35	R:	Set the position coordinate values to zero	45
Motion	38	ACC:	Set the acceleration and deceleration time	46
	40	D:	Set the movement speed of the stage	47
	42	A:	Set the position to move in absolute motion	49
	43	M:	Set the amount of movement to move in relative motion	50
	44	G	Start moving (The setting values is lost after execution)	51
	45	GN:	Start moving (The setting values is not lost.)	51
	48	JG:	It moves according to the set number of pulses	53
General purpose I/O	55	O:	Set general-purpose Output status	55
Teaching	74	FS:	Loop setting	60
registration	75	FE:	Set loop end	60
only	76	END:	Set the execution end line	60
	77	T:	Set the wait time	60
	78	GIS:	Wait until the specified general-purpose input state is reached	61



1	2	З	4	5	6	7	8	9	10	11	12	13	14	15	16
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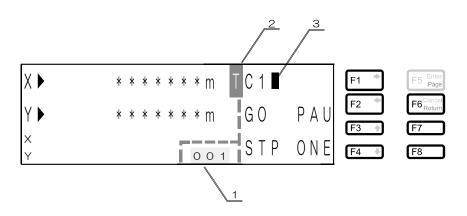
## 8-3. Teaching operation

Perform teaching operations with the front panel, commands, general-purpose I / O, and jog controller. When "I / O" is selected in the parameter "TEACH IF", operation is possible only with general-purpose I / O. When "JOG / CMD" is selected, operation can be performed from other than general-purpose I / O. There is no need to unify the types of operations. For example, you can start execution on the front panel and stop it with a jog controller or command.

 $\triangle$  Before moving the stage, make sure that there is no effect on the surroundings.

#### (1) Front panel operation

Operable when the parameter "TEACH IF" is "JOG / CMD".



No	ltem	Contents
1	Line number	Displays the current line number.
2	Mode	T (TEACH) is displayed.
3	Confirmation of registration	You can check the registration of teaching content.

Button	Display	Contents
F1	C1 ∎	Select the teaching channel. It changes each time the F1 (C) button is pressed. If no command is registered, the right side of the channel number will be blank. When the display is blinking, the teaching contents are being registered, so the F1 to F8 buttons cannot be operated. The state on the left shows that channel 1 is selected and commands are registered. $C1 \rightarrow C2 \rightarrow C3 \rightarrow C4 \rightarrow C5 \rightarrow Return to C1$
F2	GO	Perform teaching. The display flashes during execution.
F3 F4	STP	Stop the teaching execution. The blinking "GO" , "PAU" , and "ONE" will stop blinking.
F5	-	If the teaching execution has stopped, press the switch twice (double-click) to switch to the operation test mode. * The operation test mode has nothing to do with teaching.
F6	PAU	If pressed during teaching, pauses after the current execution is completed. The display flashes during pause. To restart, press F2 (GO) button.
F7		Press when stopped or paused to execute one command line. The display
F8	ONE	flashes during execution of one line. After execution of one line, the display stops blinking and pauses.
F7 + F8	-	If both button are pressed at the same time switches to the SETUP mode. For details on the SETUP mode, see "5-3. SETUP mode".

Channel selection

Select a channel with the F1 (C) button. It changes each time it is pressed.



1	2 3	4	5	6	7	8	9	10	11	12	13	14	15	16	
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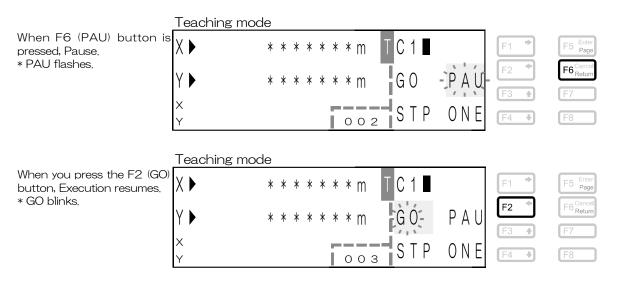
#### Start moving

Press F2 (GO) button to start execution. GO starts flashing when execution starts. Execution starts from the first line, and when the command "END:" or the 200th line is completed, execution and GO stop blinking, return to the state before execution, and wait. If an error occurs or an emergency stop occurs during execution, the operating stage stops immediately and stops at the line where it was executing. If a stop occurs due to a limit error, overflow error, or emergency stop, the line returns to the first line when released with the BEC button or command "BEC." on the front panel. To clear any error other than the above, restart the power, restart, or send the command "RESET.".

	Teaching mod	le			
When you press the F2 (GO) button, It will be executed.	X 🕨	* * * * * * * m T C 1		F1 +	F5 Enter Page
* GO blinks.	Y►	* * * * * * * m G O-	PAU	F2	F6 <sup>Cancel</sup> Return
	X Y	0 0 1 STP	ΟNΕ	F3 <b>+</b>	F7 F8

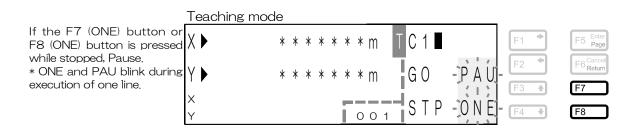
#### • Pause

To pause during execution, press the F6 (PAU) button. Pauses after execution of the currently executed line is completed, and PAU blinks. To resume execution, press the F2 (GO) button.



#### One line execution

Press F7 (ONE) button or F8 (ONE) button to execute one line at a time. Can be executed while paused or stopped. When stopped, press F7 (ONE) button or F8 (ONE) button to execute one line and pause. When paused, one line is executed each time the button is pressed. However, if the stage is operating, no operation will be accepted. If an error occurs or an emergency stop occurs during execution, the operating stage stops immediately and stops at the line where it was executing. In the case of a stop due to a limit error, overflow error, or emergency stop, if it is released with the BEC button on the front panel or the command "BEC:", it returns to the first line and waits. To clear any error other than the above, restart the power, restart, or send the command "RESET:".





1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	or to one * C	ess the I F8 (ON execute ce. NE and ecution c	IE) but the ne PAU b	ton ag xt line c ilink dur	ton ain X only Y	•		* * *	* * *		C 1 ∎ G O S T P	- P A I - O N	F1 F2 F3 F4	+ + +	F5 Enter Page F6 Cancel F7 F8
	exe	ess F2 ecute fro iO blinks	m the r		tov	•		* * *	* * *		C 1 ∎ G O = S T P	P A I O N	F1 F2 F3 E F4	*	F5 Enter Page F6 Cancel F7 F7

• Stop

If you press the F3 (STP) button or the F4 (STP) button, the stage will stop immediately if it is running, and will stop executing. After stopping, it returns to the first line.

#### Teaching mode Press F3 (STP) or F4 (STP) TC1 \* \* \* \* \* M XÞ F5 Page to stop execution. F6 Cancel Return GΟ PAL \* \* \* \* \* \* \* \* M Y F3 Х STP ONE F4 003

#### (2) Command operation

Operable when the parameter "TEACH IF" is "JOG / CMD". The list of operation commands is shown below.

ltem	No,	Commands	Description	Page
Teaching	61	TC:	Select a channel	56
	62	TCR:	Get current channel	56
	63	TQ:	Get teaching status	57
	64	TG:	Teaching start	57
	65	TP:	Pause	57
	66	TO:	Execute line by line	57
	67	TL:	Stop execution	57
	68	TR:	Get channel subscription status	58
	69	TFR:	Get the loop count	58
	70	TM:	Set the Teaching monitor function	59
	71	TMR:	Get the Teaching monitor function setting	59
	72	TNR:	Get current line number	60
	73	TACR:	Get current execution command	60

(3) Jog controller operation

Operable when the parameter <code>"TEACH IF"</code> is <code>"JOG / CMD"</code>. See the jog controller instruction manual.



1 2	3 4	5	6	7	8	9	10	11	12	13	14	15	16
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(4) Operation with general-purpose I / O Operable when the parameter "TEACH IF" is "I / O". Teaching operation can be performed by switch input. For details, see "(4) General-purpose I / O".

 $\triangle$ The input current waveform should be pulsed (rise and fall time <100  $\,\mu\,{\rm sec}).$ 

Terminal name	Terminal number	Description
T_1	43	
T_2	19	Change channel
T_3	44	
T_START	20	Start moving
T_PAUSE	45	Pause
T_ONE_STEP	21	One line execution
T_STOP	46	Stop

#### • Explanation of terms

ltem	Description
ON	ON means that a current flows through the input terminal of the photocoupler inside this
	equipment.
OFF	OFF means to cut off the current flowing to the input terminal of the photocoupler inside this
	equipment.

#### • Explanation of Terminal

Item			Descr	ription							
T_1, T_2, T_3	T_STOP are av T_2, and T_3 a	ailable while yo re set to other 1	ou continue to than channels f	select channels	at T_1, T_2, a terminal funct	nd T_3. If T_1, tions cannot be					
	Terminal name										
	T_1 ON OFF ON OFF ON										
	T_2 OFF ON ON OFF OFF										
	T_3 OFF OFF OFF ON ON										
T_START	T_START is a terminal to start teaching execution. Turn ON for 10ms or more with pulse width.										
T_PAUSE	T_PAUSE is a to the next line.	erminal for tem	porarily stoppin	g teaching. Whil	e ON, pause wit	thout executing					
T_ONE_STEP	T_ONE_STEP is a terminal to execute the registered contents line by line. Executes each time a pulse is input. However, if the stage is operating, this command will not be permitted and will be discarded until positioning is completed. If a pulse is input to the T_ONE_STEP pin while the T_PAUSE pin is turned ON when T_START is not being executed, the registered contents can be executed line by line from the first line. The pulse width should be 10ms or more.										
T_STOP	T_STOP is a p stopping the te 10ms or more v	eaching execut	ion. After stop	-	-	operating and e. Turn ON for					



Check execution status

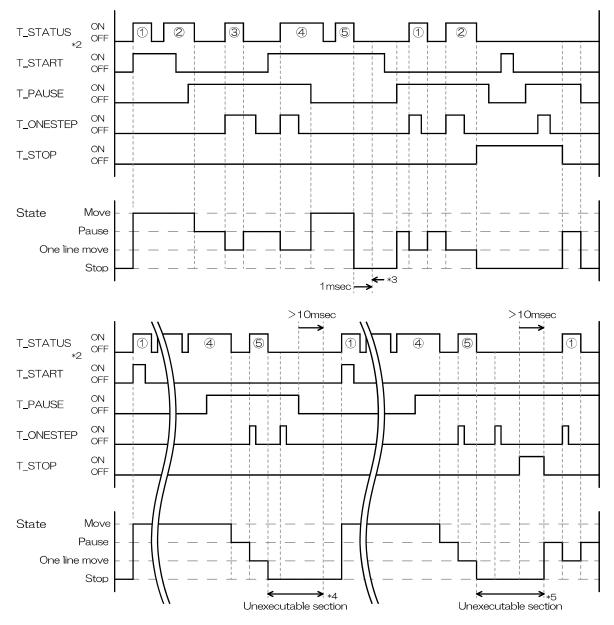
The status can be checked with the following terminals.

	Terminal name	Terminal number	Description
T_S	STATUS	17	Output HIGH during execution of registration line
/T_	STATUS	42	Inverted output of T_STATUS

\*1 The T\_STATUS signal is output regardless of the setting of the parameter "TEACH IF".

#### · Operation example and execution status of each terminal

Line number	Registered contents	Description
1	D:1M1	First axis operation speed set to 1 mm / sec
2	H:1	Set First axis mechanical home return
3	M:1+M1	Set first axis relative movement set value to +1mm
4	G	Start moving
5	END:	Teaching end line setting



\*2 ON of the T\_STATUS signal has the same meaning as T\_STATUS pin HIGH.

\*3 The OFF time of the T\_STATUS signal during automatic execution is about 500  $\mu$  sec. If the OFF time of the T\_STATUS signal continues for 500  $\mu$  sec or more (for example, 1 msec) while the T\_PAUSE pin is not turned ON, determine that automatic execution has ended.

\*4 After executing the last line in one line execution, it cannot be re-executed unless the T\_PAUSE pin is turned OFF for 10msec or more.

\*5 If the T\_PAUSE pin remains ON after executing the last row in one row execution, it cannot be re-executed unless the T\_STOP pin is turned ON for at least 10 msec.



3 4 5 6 7	8 9 10 11	12 13 14 15 16
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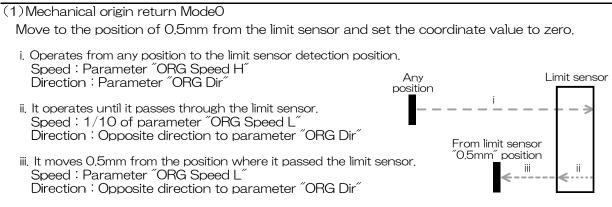
# 9.Home return

There are two types of origin, mechanical origin and electric origin.

$\triangle$	Before moving the stage, make sure that there is no effect on the surroundings.

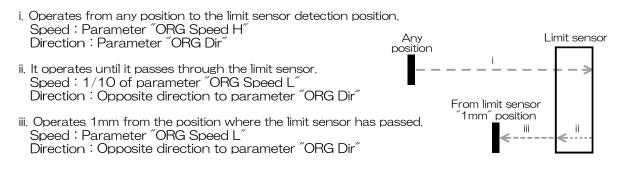
Туре	Contents
Machine origin	Position after Mode 0 to 4 operation based on the limit sensor mounted inside the stage
Electric origin	Zero position of coordinate value

## 9-1. Mechanical origin return



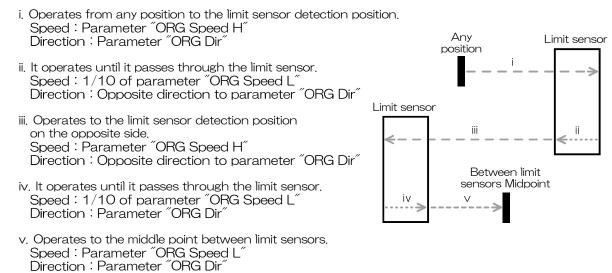
## (2) Mechanical origin return Mode1

Move to the position of 1mm from the limit sensor and set the coordinate value to zero.



## (3) Mechanical origin return Mode2

Move to the middle point between the CW and CCW limit sensors and set the coordinate value to zero.



HOURS

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
--

#### (4) Mechanical origin return Mode3

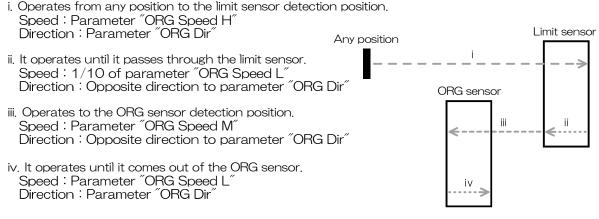
Move from the limit sensor to the setting position of the parameter  $\rm ^{\prime\prime}ORG$  Mode3 Pos  $\rm ^{\prime\prime}$  and set the coordinate value to zero.

i. Operates from any position to the limit sensor detection position. Speed : Parameter "ORG Speed H" Any Limit sensor Direction : Parameter "ORG Dir position ii. It operates until it passes through the limit sensor. Speed: 1/10 of parameter "ORG Speed L Direction : Opposite direction to parameter "ORG Dir" ÓRG Mode3 Pos iii. It operates from the position where the limit sensor setting position has been passed to the position set in the parameter "ORG Mode3 Pos". iii ii 4 Speed : Parameter "ORG Speed M" Direction : Opposite direction to parameter "ORG Dir"

## (5) Mechanical origin return Mode4

Do not use it on any stage other than the stage equipped with the ORG sensor. Unintended behavior.

Operates to the ORG sensor detection position and sets the coordinate value to zero.



9-2. Electric home return

## (1) Electric home return

Move to the position of zero (Omm) of the coordinate value from the current position.

Speed : Parameter "EORG Speed" Current position Zero (Omm) position Direction : Zero direction of coordinate value from current position



# 10. About Movement Test

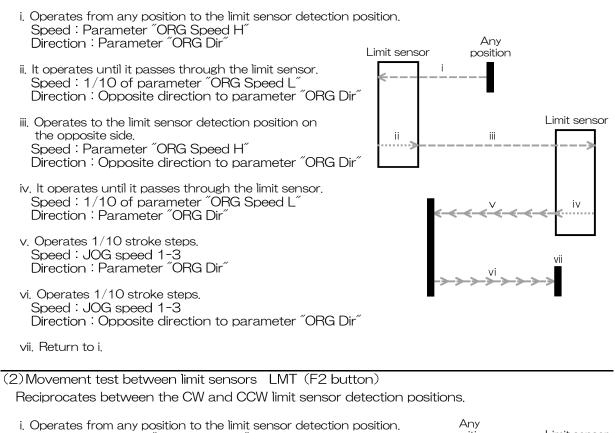
You can check that the stage is connected correctly to this instrument. There are three types of operation, and operations are performed on the front panel. See "5-7. MOVEMENT TEST mode" for how to shift to the operation test mode.

Before moving the stage, make sure that there is no effect on the surroundings.

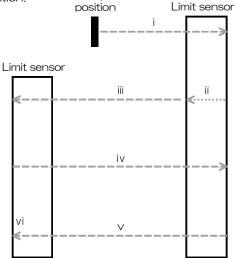
10-1. Movement Test

(1) Step Movement Test SMT (F1 button)

The travel distance obtained by dividing the stage stroke (nominal value) into 10 steps is one step, and the stage is reciprocated in 10 steps. After reciprocating, the stroke calculation operation is performed again. The stage stroke (nominal value) is calculated from the value by operating between the CW and CCW limit sensors.



- i. Operates from any position to the limit sensor detection position. Speed : Parameter "ORG Speed H" Direction : Opposite direction to parameter "ORG Dir"
- ii. It operates until it passes through the limit sensor. Speed : 1/10 of parameter "ORG Speed L" Direction : Parameter "ORG Dir"
- iii. Operates to the limit sensor detection position on the opposite side.
   Speed : Parameter "ORG Speed H" Direction : Parameter "ORG Dir"
- iv. It operates until it passes through the limit sensor.
   Speed : Parameter "ORG Speed H"
   Direction : Opposite direction to parameter "ORG Dir"
- v. Operates to the limit sensor detection position on the opposite side. Speed : Parameter "ORG Speed H" Direction : Parameter "ORG Dir"





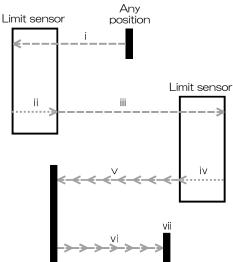


1 2 3 4 5 6 7 8 9 <b>10</b> 11 12 13 14 15 16
---

#### (3) Milli Step Movement Test MMT (F5 button)

Calculate the stage stroke (nominal value) and reciprocate between strokes in 1mm steps. After reciprocating, the stroke calculation operation is performed again. The stage stroke (nominal value) is calculated from the value by operating between the CW and CCW limit sensors.

- i. Operates from any position to the limit sensor detection position. Speed : Parameter "ORG Speed H" Direction : Parameter "ORG Dir"
- ii. It operates until it passes through the limit sensor.
   Speed: 1/10 of parameter "ORG Speed L"
   Direction: Opposite direction to parameter "ORG Dir"
- iii. Operates to the limit sensor detection position on the opposite side.
   Speed : Parameter "ORG Speed H" Direction : Opposite direction to parameter "ORG Dir"
- iv. It operates until it passes through the limit sensor.
   Speed: 1/10 of parameter "ORG Speed L"
   Direction: Parameter "ORG Dir"
- v. Operates 1mm step. Speed : JOG Speed 1 ~ 3 Direction : Parameter "ORG Dir"
- vi. Operates 1mm step. Speed : JOG Speed 1 ~ 3 Direction : Opposite direction to parameter "ORG Dir"



vii. Return to i.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
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# 11. About status

Status can be checked with the display and status command. For the display, see "5. Operation" . Refer to "6. Command" for the command.

#### 11-1. Operation related status

This status indicates the operation status of the connection stage and this equipment.

#### (1)Operation status list

No	Contents	Reply *
01	Normal stop(This state is READY)	K
02	During command move(This state is BUSY)	М
03	Out of the in-position range (After positioning is completed) (This state is FREADY)	F
04	Out of the in-position range (During fine adjustment) (This state is FBUSY)	G
05	During electrical origin return	Р
06	During mechanical origin return	0
07	CW side limit stop	С
08	CCW side limit stop	W
09	CW side software limit stop	В
10	CCW side software limit stop	V
11	CW side slowdown sensor area	А
12	CCW side slowdown sensor area	U
13	Error occurred	E
14	Motor is transitioning to excitation	Н
15	Motor is transitioning to non-excitation	
16	Disabled axis (Not set by parameter "AXIS Sel")	D

 $\ast$  See the commands "Q:" , "SRQ:" and "STS:" .

#### (2) Operation status description

#### 01 Normal stop

Description	Positioning is completed within the in-position range.
Display	See "Positioning status" in "5.0perations".
Status command reply contents	K

## 02 During command move

Description	Command operation is being performed.
Display	See "Positioning status" in "5.0perations".
Status command reply contents	M

#### 03 Out of the in-position range (After positioning is completed) (This state is READY)

Description	It is out of the in-position range after positioning is completed.
Display	See "Positioning status" in "5.0perations".
Status command reply contents	F

## 04 Out of the in-position range (During fine adjustment) (This state is BUSY)

	This is the state where the positioning operation after the command operation is being executed.
Display	See "Positioning status" in "5.0perations".
Status command reply contents	G

## 05 During electrical origin return

Description	It is operating toward the electrical origin.
Display	-
Status command reply contents	P

1	2	З	4	5	6	7	8	9	10	11	12	13	14	15	16
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## 06 During mechanical origin return

Description	It is operating toward the machine origin.
Display	-
Status command reply contents	0

## 07 CW side limit stop

Description	It is a state stopping with CW limit sensor.
Display	CW LMT (CW button flashing)
Status command reply contents	C

#### 08 CCW side limit stop

Description	It is a state stopping with CCW limit sensor.
Display	CCW LMT (CCW button flashing)
Status command reply contents	W

#### 09 CW side software limit stop

Description	It is a state stopping with CW software limit.
Display	CW SLMT (CW button flashing)
Status command reply contents	В

# 10 CCW side software limit stop

Description	It is a state stopping with CCW software limit.
Display	CCW SLMT (CCW button flashing)
Status command reply contents	V

#### 11 CW side slowdown sensor area

Description	It is in the CW side slowdown sensor.
Display	CW S/D
Status command reply contents	A

#### 12 CCW side slowdown sensor area

Description	It is in the CCW side slowdown sensor.
Display	CCW S/D
Status command reply contents	U

## 13 Error occurred

Description	An error has occurred.
Display	-
Status command reply contents	E

## 14 Motor is transitioning to excitation

	This is the state in which the motor is being shifted to the excitation state.
Display	-
Status command reply contents	Н

15 Motor is transitioning to non-excitation

	This is the state in which the motor is being shifted to the demagnetized state.
Display	-
Status command reply contents	





16 Disabled axis (Not set by parameter "AXIS Sel")

	This is the state where all controls related to the axis are disabled. Set by the parameter "AXIS Sel". See "AXIS Sel" in "7. Parameterts"
Display content	-
Status command reply contents	D

### 11-2.Error status

This status indicates the error status of the connection stage and this equipment.

## (1)Error status list

NIa	Constants	Disalau	Rep	oly *	
No	Contents	Display	Format1	Format2 (13 bits)	
01	Normal (No error)	(Hidden)	K	1st bit is 1	
02	Command error	CMD ER	1	2nd bit is 1	
03	Scale error	SCALE ER	2	3rd bit is 1	
04	Limit stop	CW LMT • CCW LMT	3	4th bit is 1	
05	Over speed error	OS ER	4	5th bit is 1	
06	Overflow error	OF ER	5	6th bit is 1	
07	Emergency stop	EMERGENCY	6	7th bit is 1	
08	Interpolator error	IP ER	7	8th bit is 1	
09	Limit error	LIMIT ER	8	9th bit is 1	
10	System error	SYS ER	9	10th bit is 1	
11	Slowdown sensor area	CW S/D • CCW S/D	А	11th bit is 1	
12	Software Limit stop	CW SLMT · CCW SLMT	В	12th bit is 1	
13	TEACHING command error	TCMD ER	Т	13th bit is 1	

\* See the commands "Q:" , "SRQ:" and "STS:" .

### Error status description

01 Normal (No error)

Description		No error has occurred.
Display		(Hidden)
Status command	Reply format 1	К
reply contents	Reply format 2	1st bit is 1

## 02 Command error

# CMD ER

	This error occurs when a command string that is not defined in this equipment or that does not match the status of this equipment is sent from the PC.
Display	CMD ER
Status command Reply format 1 reply contents Reply format 2	1 2nd bit is 1

	1) A command was sent that cannot be used in the current mode.				
	2) An ASCII code string other than the defined command was sent.				
	3) A code other than ASCII code was sent.				
	A normal delimiter was sent with a string that did not match the delimiter settings already sent to this equipment.				
Occurrence case	5) There is an unnecessary code in the communication buffer, and a command with this unnecessary code added was sent.				
	6) A command to specify an axis other than the controllable axis was sent.				
	7) The motor of the axis that issues the operation command is demagnetized.				
	8) In the limit sensor input state, a command to operate to the further limit sensor was transmitted.				
	9) In the state where the software limit is set, a command that operates to the further software limit is sent.				
Release and recovery	The command can be sent even in the command error state, so it will be canceled when a command string defined in this equipment or in accordance with the status of this equipment is sent.				

1	2	З	4	5	6	7	8	9	10	11	12	13	14	15	16
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----

03 Scale error

SCALE ER

			Occurs when no scale signal is input.	
			SCALE ER	
Status comn	nand	Reply format 1	2	
		Reply format 2	3rd bit is 1	
0	1)	The scale cable	connector has disconnected from this equipment.	
Occurrence	2)	The scale cable	is broken	

case	3) Encoder is broken.				
Release and	Furn off the power of the instrument, remove the cause, and then turn on the				
recovery	power.				

# 04 Limit stop

CW LMT · CCW LMT

Description		It is in the CW or CCW limit sensor of one or both axes.
Display	For CW limit	CW LMT(CW button flashing)
	For CCW limit	CCW LMT (CCW button flashing)
Status command	Reply format 1	3
reply contents	Reply format 2	4th bit is 1

Release and It cannot be operated in the limit sensor direction any more. Operate in the opposite direction.

05 Over speed error

OS ER

Description		Occurs when operating at a speed higher than the count capability of the coordinate value counter.
Display		OS ER
Status command	Reply format 1	4
reply contents	Reply format 2	5th bit is 1

	1) Something collided with the stage.
Occurrence	2) The stage is undergoing vibration.
case	<ol><li>Strong noise is mixed in the scale signal.</li></ol>
	4) A strong flash hit the stage.
Release and	After removing the cause, restart or restart the power supply or send the command
recovery	″RESET.″.

## 06 Overflow error OF ER

Description		Occurs when the difference between the coordinate value and the specified position is 5mm or more.
Display		OF ER
Status command	Reply format 1	5
reply contents	Reply format 2	6th bit is 1

Occurrence case	1) The stage got out of step-out.
	<ol> <li>After the positioning was completed, the stage knob was turned and moved by 5 mm or more. (Only in closed loop state)</li> </ol>
	When the stage moves without permission because the connection axis of the 3) motor cable and the scale cable do not match (when the stage moves more than 5 mm)
Release and recovery	If you want to keep the coordinate values after removing the cause, perform a busy error cancel. If it is not necessary to maintain the coordinate values, restart or restart the power supply, or send the command "RESET:".





07 Emergency stop

EMERGENCY

Description	Emergency stop.
Display	EMERGENCY
Status command Reply format 1	6
reply contents Reply format 2	7th bit is 1

Release and See "(5) Emergency stop". recovery

08 Interpolator error IP ER

Description		Occurs when the magnitude of the scale signal is out of the specified range.						
Display		IP ER						
Status command	Reply format 1	7						
reply contents	Reply format 2	8th bit is 1						

Occurrence case	1) The scale is dirty
	2) A strong flash hit the stage.
	3) Encoder is broken,
Release and	Turn off the power of the instrument, remove the cause, and then turn on the
recovery	power.

09 Limit error

LIMIT ER

Description		Occurs when the CW and CCW limits are on at the same time.
Display		LIMIT ER
Status command	Reply format 1	8
		9th bit is 1

	1) The motor cable connector has disconnected from this equipment.
	2) Both the CW and CCW limit sensor wires of the motor cable are broken.
Occurrence case	<ul><li>Either the CW or CCW limit sensor wire of the motor cable has been</li><li>disconnected, and the limit has been entered on the opposite side from the disconnected side.</li></ul>
	4) Dirt or foreign matter has entered both the CW and CCW limit sensors mounted on the stage.
	5) The limit sensor mounted on the stage has failed.
Release and recovery	If you want to keep the coordinate values after removing the cause, perform a busy error cancel. If it is not necessary to maintain the coordinate values, restart or restart the power supply, or send the command "RESET.".

### 10 System error SYS ER

Description		Occurs when this quipment system is out of order.
Display		SYS ER
Status command	Reply format 1	9
reply contents Reply format 2		10th bit is 1

Release and It cannot be canceled or restored. Unplug the power cable from the outlet and contact our company or our distributor.

## 11 Slowdown sensor input CW S/D • CCW S/D

Description		Either one-axis or both-axis CW and CCW slowdown sensors are included.
Ulsplav		CW S/D CCW S/D
Status command reply contents	Reply format 1 Reply format 2	A 11th bit is 1



12 Software limit stop

CW SLMT • CCW SLMT

Description		One or both axes CW or CCW software limit is included.					
li Jishlav		CW SLMT (CW button flashing) CCW SLMT (CCW button flashing)					
Status command reply contents	Reply format 1 Reply format 2	B 12th bit is 1					

Release and It cannot be operated in the limit sensor direction any more. Operate in the opposite direction.

13 Teaching command error TCMD ER

Description		The content of the teaching registration line to be executed does not match the status of this equipment.						
Display		TCMD ER						
Status command	Reply format 1	Т						
eply contents Reply format 2		13th bit is 1						

Occurrence case	1) In the limit sensor input state, it was the contents of the registration line that operates on the limit sensor side that is further included.
	Set the operation speed (command "D:") in the registration line, and then 2) set the parameter "Max Speed" to a value less than the registered operation speed (command "D:") and execute the registration line.
	If you want to keep the coordinate values after removing the cause, perform a busy error cancel. If it is not necessary to maintain the coordinate values, restart or restart the power supply, or send the command "RESET:".



1	2	3	4	5	6	7	00	9	10	11	12	13	14	15	16
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# 12.Specification

These are the specifications for this equipment.

12-1.Basic performance

Model	Minimum command unit	In-position range * 1	Maximum speed setting	The maximum amount of movement setting range
FC-111	100nm	$\pm$ 100, $\pm$ 300, $\pm$ 700nm	100mm/sec	-13421.7728~+13421.7727mm
FC-411	50nm	± 50, ± 150, ± 350nm	100mm/sec	-6710.88640~+6710.88635mm
FC-511	10nm	± 10, ± 30, ± 70nm	50mm/sec	-1342.17728~+1342.17727mm
FC-611	5nm	± 5, ± 15, ± 35nm	30mm/sec	-671.088640~+671.088635mm
FC-911	1nm	± 1, ± 3, ± 7nm	6mm/sec	-134.217728~+134.217727mm

 $\ast$  1 Set the in-position range with the parameter "INPos Range" .

It	tem	Contents				
Stage control axes		2				
Error detection, etc.		Command error, Scale error, Limit stop Overspeed error, Overflow error, Emergency stop Interpolator error, Limit error, System error Software limit stop, Teaching command error				
Number of control interface ports	One for each	Jog controller, Emergency stop input GP-IB, USB, Ethernet, General purpose I / O				

# 12-2. General specifications

Item	Contents
Power source	AC100V $\sim$ 240V, 50/60Hz
Allowable variations of voltage	$AC90V \sim 264V$
Power consumption	110VA max
Fuse	250V, 2.5A, Time lag, 2 used
External dimensions	W220 × H88 × D290mm
Weight	5.2kg
Operating temperature	0°C~ 40°C
Operating ambient humidity	20% $\sim$ 80%RH (No condensation)
Storage temperature	-10°C~ 55°C
Ambient storage humidity	20% $\sim$ 80%RH (No condensation)
Place of use	Indoor
Storage altitude	up to 2000m
Operating altitude	up to 2000m
Maximum operating time	Continuous operation possible

12-3. Safety and electromagnetic compatibility

ltem	Contents
Target model	FC-511, FC-611, FC-911
Safety	EN61010-1:2010 compliant, Overvoltage category II, Pollution degree 2
	EN61326-1:2013 compliant, EN61000-3-2:2014 compliant EN61000-3-3:2013 compliant

ltem			Conditions			
	Cable	Motor	Attach a ferrite core to one end (body side) of the cable. *3			
	(2m or less)	Scale	Attach ferrite cores to both ends of the cable. *3			
		Jog controller	Allach terrile cores to both ends of the cable. *			
Electromagnetic			Wrap one end (body side) of the prepared cable twice around the ferrite core. *4			
compatibility	Cable	GP-IB (shield) *2				
	(3m or less)	IUSH (shield) */	Attach a ferrite core that matches the external shape of the prepared cable to one end (body			
			side) of the cable. *4			
		汎用 I/O(shield)				
	General	Connector hood	EMI measures			
	purpose I / O	Housing	General-purpose I / O board stored in metal box			

 $\ast 2$  Connect only the interface that communicates

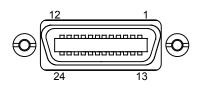
\*3 Ferrite core model: ZCAT 1730-0730A: made by TDK

\*4 Ferrite core model: ZCAT series: made by TDK



1 2 3 4 5 6 7 8 9 10 11 <b>12</b> 13 14 15 1
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12-4.Interface specifications (1)GP-IB



Connection

This instrument is equipped with a GP-IB connector and can be connected to a personal computer. When using, prepare a GP-IB cable.

Communication

In order for the PC to communicate with the instrument, the PC must have GP-IB communication-capable software (such as our sample software). Also, it is necessary to set the mode of this equipment to REMOTE and set the parameter "I / F Sel" to GP-IB. The GP-IB address must not be the same as other devices. Check the connection between the PC and this equipment by sending and receiving operation information commands (such as "Q.").

• To disconnect

Close GP-IB from the PC software. When disconnecting the cable, there is no problem even if this equipment is turned on. However, it is recommended that this equipment be turned off for safety. For information on personal computers, see the instruction manual for your personal computer.

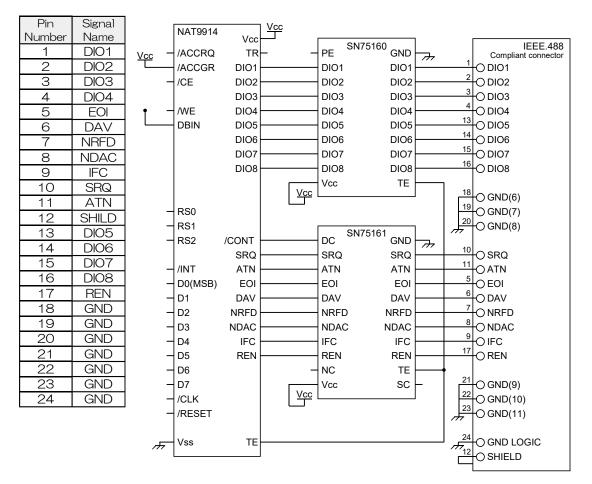
# Specification

lte	em	Contents						
	SH1	Source handshake all functions						
	AH1	Acceptor handshake all functions						
	Т6	Basic talker function, Serial poll function, Talker cancellation by MLA						
	TEO	No extended talker function						
	L4	Basic listener function, Release of listener by MTA (no listen only)						
	LEO	No function						
Function	SR1	Service request all functions						
	DC2	No SDC function						
	RL2	No local lockout function						
	DTO	No device trigger function						
	PPO	No parallel pole function						
	CO	Without controller function						
Address		1~30						
Delimiter		CR+LF, EOI, CR, LF						
Service request		Enabled or disabled						
Flow control		None (fixed)						
Connector	rused	Manufacturer: DDK Corporation Model: 57LE-20240 (57LE Series)						
Applicable	plug, cable	IEEE-488 compliant product, GP-IB compliant product						



1	2	З	4	5	6	7	8	9	10	11	12	13	14	15	16
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### Pin assignment and circuit diagram





# (2)USB



Connection

This instrument is equipped with a USB typeB connector (Function) and can be connected to a USB typeA connector (Host) of a personal computer. When using, please prepare USB1.0, 1.1, 2.0, 3.0, 3.1 compatible cable \*1. \*1 Standard-A (male) -Standard-B (male) Connector straight cable (USB1.0, USB1.1, USB2.0, USB3.0, USB3.1)

- Driver installation (for Windows 10) When connecting for the first time, connect the USB cable, turn on the PC, and then turn on the power of the instrument. The driver is automatically installed on the PC and recognized as a COM port.
- Driver installation (for Windows 7, 8, 8,1)

The setting information file "stage\_controller\_usb\_cdc\_drv\_w \*\*\*. Inf" is required. This setting information file can be obtained from the download page of our homepage (note that the setting information file differs depending on the version of Windows OS). Start the installation by manually specifying the setting information file when installing the driver. After the driver is installed, "Stage Controller Usb Cdc Port (COM \*)" will be created in the port of the PC

The COM number of "Stage Controller Usb Cdc Port (COM \*)" is changed for each USB port. Once the driver is installed, the newly added USB port will be automatically installed.

Communication

The port is recognized as a virtual COM port. In order for the PC to communicate with the DX, software that enables serial communication with the PC is required. Also, it is necessary to set the mode of this equipment to REMOTE and set the parameter "I / F Sel" to USB. Check the COM port number with Device Manager. The baud rate (communication speed) of the COM port can be set to any number (example: 9600 bps). Check the connection between the PC and this equipment by sending and receiving operation information commands (such as "Q:").

To disconnect

When disconnecting, be sure to close the COM port with the PC software before disconnecting. When disconnecting the cable, there is no problem even if this equipment is turned on. However, it is recommended that this equipment be turned off for safety. For information on personal computers, see the instruction manual for your personal computer. If the power to the instrument is restarted or restarted without closing the COM port from the PC software, it may be necessary to reconnect the cable after closing the COM port from the software to relink. (Some software automatically closes the COM port and automatically connects after restarting.)

	ltem	Contents				
Function		Used as a virtual COM port.				
Number of	port	1port				
Transfer sp	beed	Supports full-speed transfer (12Mbps)				
Delimiter		CR+LF, CR, LF				
Coursestar	Manufacturer	OMRON Corporation				
Connector used	Model	XM7B-0442				
useu	Туре	Standard-B				
Applicable plug, cable		「Standard-A (male)」connector - 「Standard-B (male)」connector Straight cable (USB1.0, USB1.1, USB2.0, USB3.0, USB3.1)				

### Specification

### Pin assignment

Pin number	Signal name
1	VBUS
2	D-
3	D+
4	GND

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
(:	3)Ethe	ernet	T			1				1 1		Green Yellow		1	8
	• Cor	nnectio	n												

This device is equipped with an Ethernet connector, and can be connected to a personal computer directly or via a hub (router). LAN cable can be either cross or straight. Use a cable category that supports 10Mbps and 100Mbps transfers. When connecting, you need to set the IP address, default gateway, and subnet mask. Set the parameters of this equipment according to the information of the IP address, default gateway, and subnet mask of the personal computer used. For the IP address setting, if the IP address of the PC used as an example is "192.168.015.188", set "188" to another value. Set the default gateway and subnet mask to the same values as on the PC. If you use the same LAN area, you do not need to set the default gateway.

Communication

In order for the PC to communicate with this instrument, the PC must have software capable of TCP / IP communication (sample software provided by NEC). Also, it is necessary to set the mode of this equipment to REMOTE and set the parameter (I + FSe) to Ethernet. Check the connection between the PC and this equipment by sending and receiving operation information commands (such as (Q, (V))). When communicating with a communication application, it is necessary to set the port number in addition to the IP address settings.

### Specification

ltem	Contents
Number of port	1
Product specifications	IEEE802.3x Flow control compliant
Transfer speed	Supports 10Mbps and 100Mbps transfer
Delimiter	CR+LF, CR, LF
IP address	000.000.000 ~ 255.255.255.255
Default gateway	000.000.000 ~ 255.255.255.255
Subnet mask	000.000.000 ~ 255.255.255.255
Port number	60000 (fixed)
Connector used	RJ45

### Pin assignment

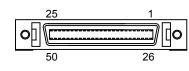
Pin number	Signal name
1	TX+
2	TX-
3	RX+
4	NC
5	NC
6	RX-
7	NC
8	NC

• LED

LED color	Contents
Green lighting	Lights when the communication speed is 100Mbps, and turns off when the communication speed is 10Mbps or when no cable is connected.
Yellow lighting	Illuminates when a valid link is detected and flashes when data transmission or reception is detected.



(4) General purpose I / O



This section describes the functions of each pin of the general-purpose I / O.

Specification

	ltem	Contents						
		General purpose input $ imes$ 3 port						
	Input	Teaching operation $\times$ 1						
		Busy error cancel $ imes$ 1						
Function		General purpose output $ imes$ 3 port						
Function		cale division pulse signal $ imes$ 2 axes						
	Output	Alarm signal $ imes$ 2 axes						
		In-position signal $ imes$ 2 axes						
		Teaching state $\times$ 1						
Connector	Manufacturer	3M Japan Co., Ltd.						
used	Model	50 pin half pitch connector (MDR) 10150-5202PL						
A revelie e le le	Manufacturer	3M Japan Co., Ltd.						
Applicable		50 pin half pitch connector (MDR) 10150-3000PE						
plug	Model	50 pin half pitch connector (MDR) 10150-6000**						

Pin assignment and function explanation

i. Input terminal The internal circuit and specifications are shown in "Internal Circuit and Specifications"-"Input Terminal".

Terminal Number	Terminal Name	Contents
3	General purpose input 1	
28	General purpose input 2	Select each general purpose input. The status can be checked with the command "I.".
4	General purpose input 3	
29	General purpose input COMMON	Common terminal for general purpose input.
43	T_1	Select a teaching number. See the table below for
19	T_2	patterns. Patterns other than those in the table below
44	T_3	are invalid.
20	T_START	Start teaching.
45	T_PAUSE	Pauses teaching execution.
21	T_ONE_STEP	Execute teaching one line at a time for each input.
46	T_STOP	Stop the teaching execution.
22	T_COMMON	Common terminal for teaching operation input.
24	BE_CANCEL	Executes busy error cancellation. See "BEC" or the command "BEC:" for details.
49	BE_COMMON	Common terminal for BE CANCEL input,

Teaching number pattern table

Terminal			Channel		
	1	2	3	4	5
T_1	ON	OFF	ON	OFF	ON
T_2	OFF	ON	ON	OFF	OFF
T_3	OFF	OFF	OFF	ON	ON



ii. Output terminal The internal circuit and specifications are shown in "Internal Circuit and Specifications"-"Output Terminal".

Terminal	Terminal . Terminal Name	Contents	Output
Number 1	General purpose output1		circuit
26	General purpose output2	Outputs the status selected by the "O:" command.	Open
2	General purpose output3	It is off at startup.	collector
27	General purpose output COMMON	Common terminal for general purpose output.	-
8	1PA	A-phase output of scale-divided pulse (2-phase square wave) on First axis side	
33	1/PA	Inverted output of 1PA	Line
9	1PB	B-phase output of scale-divided pulse (2-phase square wave) on First axis side	driver
34	1/PB	Inverted output of 1PB	
10	1AL	Alarm output for First axis. Outputs a HIGH level when any of an interpolator error, scale error, limit error, or overflow error occurs. See "11. Status" for details of each error. In the case of only a limit error, if a normal stage is connected to the motor cable, it returns to the LOW level.	
35	1/AL	Inverted output of 1AL	
11	1INP	In-position output for First axis, Outputs HIGH level upon completion of positioning and detection by limit sensor, and outputs LOW level when an operation command is input. However, if an operation command is input during detection of the limit sensor, a LOW level is output when the signal passes through the limit sensor.	
36	1/INP	Inverted output of 1INP	
37	2PA	A-phase output of scale-divided pulse (2-phase square wave) on Second axis side	
13	2/PA	2PA inverted output.	1
38	2PB	B-phase output of scale-divided pulse (2-phase square wave) on Second axis side	Line
14	2/PB	Inverted output of 2PB	driver
39	2AL	Alarm output for Second axis. Outputs a HIGH level when any of an interpolator error, scale error, limit error, or overflow error occurs. See "11. Status" for details of each error. In the case of only a limit error, if a normal stage is connected to the motor cable, it returns to the LOW level.	
15	2/AL	Inverted output of 2AL	1
	2INP	In-position output for Second axis, Outputs HIGH level upon completion of positioning and detection by limit sensor, and outputs LOW level when an operation command is input. However, if an operation command is input during detection of the limit sensor, a LOW level is output when the signal passes through the limit sensor.	
16	2/INP	2INP inverted output.	
17	T_STATUS	Execution status output of teaching registration contents	
42	/T_STATUS	Inverted output of T_STATUS	
5, 6, 25, 30, 47	+5V	5V power supply terminal. The maximum output current of each terminal is 0.2A. Do not exceed 1A in total.	_
7, 12, 18, 23, 31, 32, 41, 48, 50	GND	GND terminal for 5V power supply.	-



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	16
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### · Internal circuit and specifications

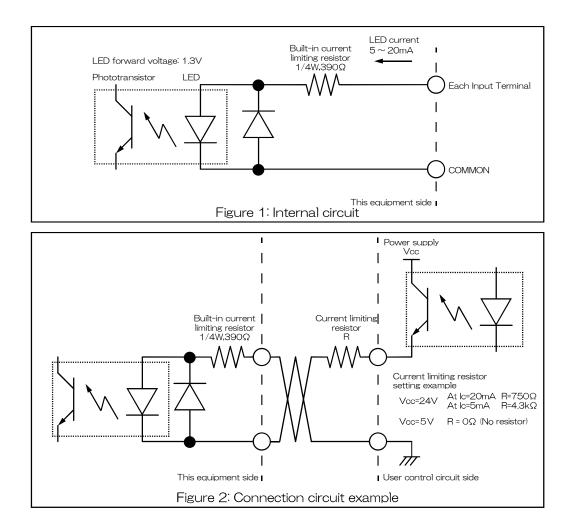
i. Input terminal

⚠

Input terminals include general-purpose input, teaching operation, and busy error cancel. The input is a photocoupler LED. The phototransistor is turned on by passing current through the LED, and the phototransistor is turned off by interrupting the current. In the case of general-purpose input, the status of this phototransistor can be checked with the command "I.". See "I." in "6. Commands" for details. For teaching operation and busy error cancellation, the function "Pin assignment and function explanation" can be executed by turning on the phototransistor.

m MCAUTION The input current must not exceed 20mA. Exceeding this may cause a failure.

- Use LED current within the range of 5 to 20mA.
- The input current waveform should be pulsed (rise and fall time <100  $\mu$ sec).
  - The time width of ON and OFF of general-purpose input should be at least longer than the transmission cycle of command "li".
  - When connecting the COMMON terminal to the GND of this instrument, use the power supply of the input terminal at 5V of this instrument.



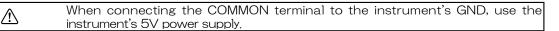


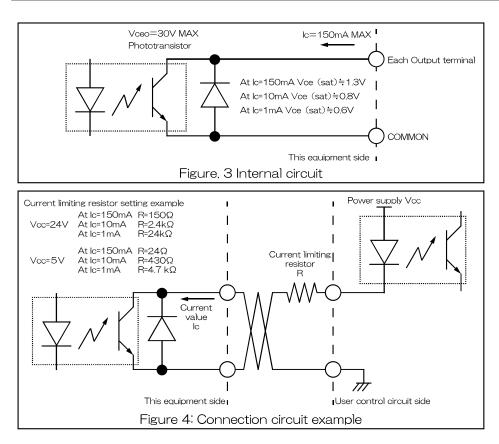
4		0	4		~			10	4 4	10	10	4 4			1
1	12	13	4	5	6	(	9	1()	11	コン	1:3	14	15	16	1
		0		$\cup$	0	1					10				1

- ii. Output terminal
  - a. Open collector

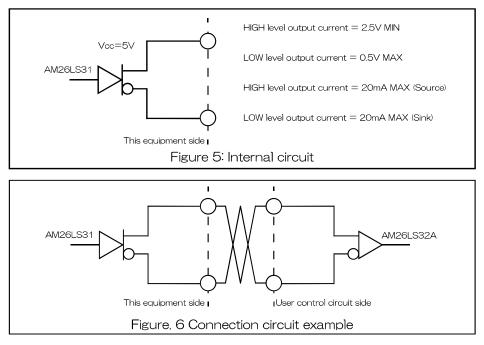
The output is a phototransistor of a photocoupler, which is open collector. The photo transistor can be turned ON and OFF with the command O. See "O." in "6. Commands" for details.

CAUTION Vceo should not exceed 30V and lc should not exceed 150mA. Exceeding this may cause a failure.





b. Line driver





1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

## (5)Emergency

Input (inside)

The contact type of the input contact is "B contact". The contact type cannot be changed. After changing the parameter "EMG Connector" to "Enable" and releasing the short circuit between the input and GND, the operation of the stage connected to the instrument is immediately stopped and "EMERGENCY" is displayed on the display. The state of the motor at this time depends on the setting of the parameter "EMG Motor Excite". After that, operations related to the stage operation cannot be performed. To recover, short-circuit the input and GND, and then cancel the busy error to maintain the coordinate value. If it is not necessary to maintain the coordinate values, restart the power, restart, or send the command "RESET:" . See "BEC" or the command "BEC:" for busy error cancellation. See "EMG Motor Excite" for the parameter "EMG Motor Excite" for setting the motor excitation and demagnetization during an emergency stop.

MARNING When using, be sure to change the parameter "EMG Connector" to Enable and perform a test operation to confirm that it can be used.

 $\triangle$  CAUTON Do not connect anything that outputs power, such as an AC adapter.

### Specification

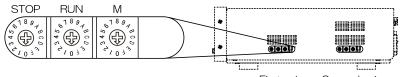
	ltem	Contents
Connector	Manufacturer	Hosiden Corporation
used	Model	HEC3800-01-010 DC power jack (JEITA RC-5320A compliant)
Applicable	plug, cable	JEITA RC-5320A TYPE4 Twisted pair

(6) Motor driver setting switch

The input terminal motor driver is set for each axis. When the right side of the stage controller is viewed from the front, the left side is the setting switch for First axis and the right side is the setting switch for Second axis. The settings to be made are the stop current, drive current, and number of divisions. At the time of shipment, it is set according to the stage purchased at the same time. If you want to change the settings, please contact us or our distributor.

AUTION Depending on your environment, you may be required to change the settings, but do not change anything else. If you change it intentionally, the stage may move unintentionally.

• Settings (FC-111, FC-411)



First axis Second axis

### i. Stop current (STOP)

Set the stop current value as a percentage (%) of the drive current.

SW No.	0	1	2	3	4	5	6	7	8	9	А	В	С	D	E	F
%	25	30	35	41	45	50	55	59	63	67	71	75	79	83	87	91

### ii. Drive current (RUN)

Set the current value when driving the motor.

SW No.	0	1	2	3	4	5	6	7	8	9	А	В	С	D	Е	F
Current value(A)	0.35	0.44	0.52	0.59	0.67	0.75	0.83	0.9	0.98	1.05	1.12	1.19	1.27	1.34	1.4	1.48

### iii. Setting the number of divisions (M)

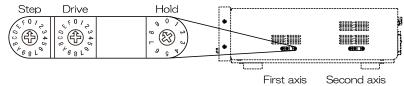
Set the number of divisions. \*

SW No.	0	1	2	З	4	5	6	7	8	9	А	В	С	D	Е	F
Division number	1	2	4	5	8	10	20	40	80	16	25	50	100	125	200	250

\* The step angle for the number of divisions is "step angle = basic step angle (0.72 or 0.36 °) / number of divisions"

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----

# • Settings (FC-511, FC-611, FC-911)



### iv. Setting the number of divisions (Step)

Set the number of divisions. \*

SW No.	0	1	2	3	4	5	6	7	8	9	А	В	С	D	Е	F
Division number	1	2	4	10	20	40	100	200	400	800	-	-	-	-	-	-

\* The step angle for the number of divisions is "step angle = basic step angle (0.72 or 0.36  $^{\circ}$  ) / number of divisions"

### v. Drive current (Drive)

Set the current value when driving the motor.

SW No.	0	1	2	3	4	5	6	7	8	9	А	В	С	D	Е	F
Current value(A)	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5	0.525	0.55	0.575	0.6	0.65	0.7	0.75

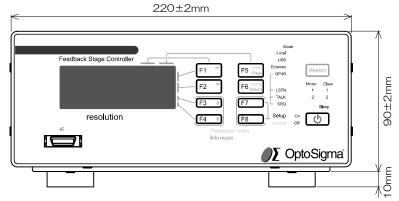
vi. Stop current (Hold) Set the stop current value as a percentage (%) of the drive current.

SW No.	0	1	2	3	4	5	6	7	8	9
%	10	20	30	40	50	60	70	80	90	100

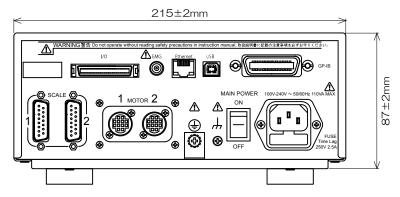
1	2	З	4	5	6	7	8	9	10	11	12	13	14	15	16
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----

# 13. Dimensions

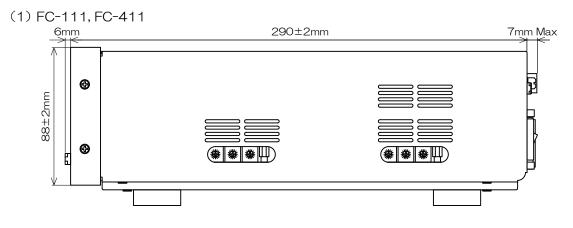
13-1.Front panel

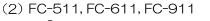


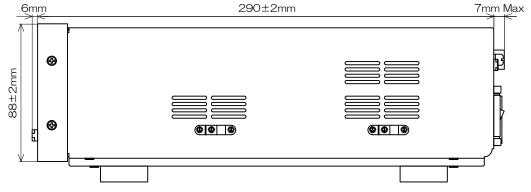
# 13-2.Rear panel



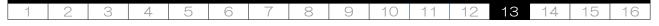
13-3. Right side panel



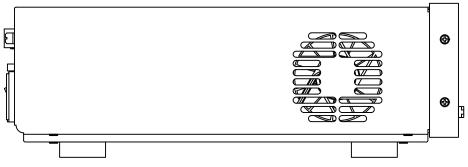








13-4.Left side panel





1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
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# 14. Trouble shooting

If a problem occurs, check the following. If this does not solve the problem, unplug the power cable from the outlet and contact our company or our distributor.

Contents	Possible cause	Workaround	Page
Can not turn on.	Power cable is not connected.	Connect the power cable,	6
• The power turned off during use.	THE TUSE HAS DIOWN,	Check the fuse and replace it if it is blown. If it cuts off frequently, the instrument may be malfunctioning. Unplug the power cable from the outlet and contact our company or our distributor.	
	The MAIN POWER switch on the rear panel is not turned on.	Turn on the MAIN POWER switch.	8
	power supply is short-circuited or overloaded.	<ul> <li>step 1 Turn off the MAIN POWER switch, disconnect all the cables of the connected peripheral devices, and wait at least 10 seconds.</li> <li>step 2 Turn ON the MAIN POWER switch with only the power cable connected. If the beep continues to sound, proceed to step 4.</li> <li>step 3 Check that the Off lamp is lit, then press and release the POWER button for one second.</li> <li>step 4 If the power cannot be turned on, the beep continues to beep even if it can be turned on, or if the Off lamp goes off while the POWER button is being pressed, the instrument may be malfunctioning. Unplug the power cable from the outlet and contact our company or our distributor. If the power can be turned on, one of the peripheral devices may be faulty or a device with a different pin assignment may be connected. Check the peripheral devices.</li> </ul>	
• The display screen is off.	front panel is not ON.	Press the POWER button to turn it on	3
	The MAIN POWER switch on the rear panel is not turned on	Turn on the MAIN POWER switch.	8
	The computer is sleeping.	Wake up from sleep.	5
<ul> <li>The menu is off.</li> <li>Certain buttons cannot be operated.</li> </ul>		Switch to LOCAL or TEACH mode.	13
GP-IB communication is not possible.	Communication interface setting is other than GP-IB.	Select GP-IB in parameter "I / F Sel".	86
	Communication settings do not match.	Check the communication conditions and set the parameters.	86
USB communication is not possible.	Communication interface setting is other than USB.	Select USB in parameter "I / F Sel".	86
	Communication settings do not match.	Check the communication conditions and set the parameters.	86
Ethernet communication     is not possible.	Communication interface setting is other than Ethernet	Select Ethernet in parameter "I / F Sel".	86
	match.	Check the communication conditions and set the parameters.	86, 87
cannot be performed with the front panel, command, or jog controller.	"TEACH IF"	Change the parameter "TEACH IF" to "JOG / CMD".	72
	the general-purpose I / O connector does not meet the specifications.		112
	"JOG / CMD" is selected in parameter "TEACH IF"	Change the parameter "TEACH IF" to "I / O".	72

Contents	Possible cause	Workaround	Page
cannot be performed from the optional jog controller.		Check the connection of the jog controller. * See the jog controller instruction manual for details.	1, 5
<ul> <li>Emergency stop is not possible.</li> </ul>	You have not changed any parameters.	Change the parameter "EMG Connector" to Enable.	84
<ul> <li>The emergency stop state cannot be released.</li> </ul>	The connector connected to the EMG connector is disconnected	Check the connection.	116
<ul> <li>Make an unintended emergency stop.</li> </ul>	The cable connected to the EMG connector is broken	Check the connected cable.	116
	The EMERGENCY switch of the optional jog controller is pressed	Set the EMERGENCY switch of the jog controller to Off. * See the jog controller instruction manual for details.	1
• Sleep cannot be performed.	The stage is operating.	Wait for positioning to be completed.	12, 43
	An error has occurred.	Please clear the error.	14, 29, 101
	Teaching is running.	Wait for the execution to be completed or stop the execution.	90
<ul> <li>Stage does not work.</li> </ul>	Motor not energized.	Check the lighting status of the front panel Motor lamp.	4
	The axis connected to the axis selection parameter does not match	Check the connection with the parameter "AXIS Sel".	83
<ul> <li>The stage moves on its own.</li> </ul>	The axes of the motor cable and scale cable are not aligned.	Check the connection.	8, 9
completed.	fixes the stage is vibrating	Make sure that vibration is not transmitted to the stage	-
Coordinate values are not stable during positioning	Strong light is on the stage	Avoid strong light on the stage	-
operation.	Receives strong magnetic fields, electric fields, and noise		-
<ul> <li>CMD ER is displayed.</li> </ul>	A command string that is not defined in this equipment or that does not match the status of this equipment is sent from the PC.		103
SCALE ER is displayed.	No scale signal is input.	See "11. Status" .	104
OS ER is displayed.	Operating at a speed higher than the count capability of the coordinate value counter.		104
• OF ER is displayed.	The difference between the coordinate value and the specified position is 5mm or more.		104
LIMIT ER is displayed.	CW and CCW limits are entered at the same time	See "11. Status".	105
<ul> <li>IP ER is displayed.</li> </ul>	The magnitude of the scale signal is out of the specified range		105
EMERGENCY is displayed.	Emergency stop	See "11. Status" .	105
SYS ER is displayed.	The instrument system is broken	See "11. Status".	105
TCMD ER is displayed.	The content of the teaching registration line to be executed does not match the status of this equipment.		106



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# 15.Update history

Edition	Document control number	Revision date	Supported FV	Supported EN	Contents
1	MF-1023-01.01	-	01.030~	01.06	_
1	MF-1023-01.02	July, 29, 2020	01.030~	01.06	<ul> <li>Warranty change</li> <li>Change of power cable specifications</li> </ul>
1	MF-1023-01.03	Aug, 20, 2020	01.030~	01.06	Vendor name change
1	MF-1023-01.04	Sep, 2, 2020	01.030~	01.06	Typo correction
1	MF-1023-01.05	Sep, 9, 2020	01.030~	01.06	Image change
2	MF-1023-02.00	Apr, 21, 2021	01.032~	01.06	<ul> <li>Command addition</li> <li>Parameter addition</li> </ul>
2	MF-1023-02.01	Aug, 31, 2021	01.032~	01.06	Change contact URL

Memo



1 2 3 4 5	6 7 8	9 10 11 12 13	14 15 <b>16</b>					
16.Index								
A About commands AC100V AC adapter AC inlet Alarm ASCII AXIS parameter B BEC Beep BUSY Busy error cancel C Cancel button CCW CCW LMT CCW S/D CCW SLMT CCW slowdown sensor input CCW software limit stop CCW limit sensor stop Cleaning Close Close 1, 2 lamp Closed loop CLS CM-52 CMD ER Command error Contact information CW CW LMT CW S/D CW SLMT CW S/D CW SLMT CW S/D CW SLMT CW slowdown sensor input CW software limit stop CW SLMT CW slowdown sensor input CW software limit stop CW software limit stop CW SLMT CW slowdown sensor input CW software limit stop CW limit sensor stop	21 6, 105 9, 114 6, 7 9, 110, 111 21, 102 72 14, 21, 88, 91 11, 65, 87, 116 12, 23, 73 14, 29, 103 2, 66 13, 14 100, 101, 102 100, 101, 104 100, 101, 104 99, 100 99, 100 V 4, 14, 21, 83, 89 4 1, 101, 102 101, 102 101, 102 100, 101, 104 100, 101, 104 100, 101, 104 100, 101, 104 99, 100 99, 100	F F1 / → button F2 / → button F3 / → button F4 / → button F5 / → button F6 / → button F7 / → button F8 / → button Feedback stage Feedback stage controller Firmware version Frame connection line Frame terminal Front panel Fuse Fuse holder F/V G General specifications General purpose I / O General purpose I / O General purpose I / O General purpose I / O GP-IB EOI GP-IB EOI GP-IB EOI GP-IB Connector GP-IB cable GP-IB connector GP-IB lamp I IF INF INFORMATION mode In-position	2 2, 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2					
Del Default gateway Display unit DGW E E Earth ground Echo back Electric fan Electric origin setting Electric home return Elongated holes EMERGENCY EMG Connector Enter button Emergency stop EOG EOI Equipment Number Error Ethernet IP address Ethernet IP address Ethernet NAC address Ethernet interface Ethernet cable Ethernet cable Ethernet cable Ethernet default gateway Ethernet delimiter Ethernet lamp Exterior Dimensions E/N	18, 19, 64, 84 20, 64, 86, 109 2 20 iii, 7 30, 64 10 14, 22, 45 14, 44, 96 iv, 10 101, 103 9, 117 2, 66 101, 103 14 18, 85, 106, 107 17 101 20, 64, 85 20 9, 20, 84, 85, 86 9 20 20 20 20 4 115 17	Interpolator error In-position range Installation IP IP ER IP addoress J JC Connector JOF JON Jog controller L LAN LAN cable LIMIT LIMIT ER Limit error LMT LOCAL mode LOCAL lamp LSTN lamp	105, 110, 111 35, 36, 37, 38, 41, 101, 103, 105, 111 12, 35, 36, 37, 38, 42, 63, 72, 73, 99, 105 ii, iv, 3, 8 20 101, 103, 117 20, 64, 85, 109 5 13 13 1, 5 9, 109 101, 103, 117 101, 103, 117 101, 103, 117 101, 103, 117 101, 103 16 13 4 4					

1 2 3 4 5	6 7 8	9 10 11 12 13	14 15 <b>16</b>
M MAC MAC address MAIN POWER switch Mechanical origin return (Mode0) Mechanical origin return (Mode2) Mechanical origin return (Mode3) Mechanical origin return (Mode4) MEU MMT MOD Model Motor 1, 2 lamp Model information Model information Model name Motor cable connector Motor driver Movement Test MTR O OF ER Off lamp ONE On lamp Open Open loop Option ORG ORG sensor OS ER Over speed error Overflow error P Page button Parameters PARAMETER mode PAU PLS PORT POWER button Power cable PRM Protective ground wire Precautions for use PST R	20 20 3, 6, 7, 8, 116 95 95 96 96 96 13, 14, 66, 67 16, 98 13 12 17 4 17 17, 21, 30 8, 103, 111, 117 8 101, 103, 117 3, 116 90 3, 5 4, 14, 21, 83, 89 4, 14, 28, 83 1, 116, 117 14 90 3, 5 4, 14, 21, 83, 89 4, 14, 28, 83 1, 116, 117 14 96 101, 102, 117 101, 102 101, 103 2 63 16 90 13, 14, 66, 67 20 3, 8, 11, 116 1 13 1, 7 ii 13, 14	910111213SMT SRQ lamp SYS ER System error Stage control axes Status STP Subnet mask S/N	14       15       16         16, 97       4         101, 104, 117       101, 104, 117         105       99         14, 16, 90, 92       20, 64, 86, 109         17       4         101, 104, 117       88         101, 104, 117       88         101, 104       117         88       15         23       24         116       9, 108         9       19, 84         9, 108       9         19, 84       9, 18, 19, 84         4       17         17, 21, 30       22, 61, 89         i, ii       14         63, 73         14, 45
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Safety SCALE ER Scale error Scale cable Scale cable connector Serial number Service request Side panel Sleep SLEEP SLEEP lamp SLP SNM	ii 101, 102, 117 101, 102 8, 9, 102, 117 9 17, 21, 30, 31 4, 106 10, 115 5 5, 21, 26, 27 5 13 20	24	

