

XRC Controller

***FTP Function
Instruction Manual***

Part Number 145603-1

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SECTION 1

INTRODUCTION

1.1 About this Document

This manual provides instructions for FTP Function and contains the following sections:

SECTION 1 – INTRODUCTION

General information about this manual, a list of reference documents, and customer service information.

SECTION 2 – SAFETY

Provides information for the safe use and operation of Motoman products.

SECTION 3 – FTP FUNCTION INSTRUCTIONS

Provides detailed instructions to utilize the FTP Function.

1.2 Reference to Other Documentation

For additional information refer to the following:

- Concurrent I/O Parameters Manual (P/N 142102-1)
- Operator's Manual for General Purpose (P/N 142099-1)
- Operator's Manual for Handling (P/N 142100-1)
- Operator's Manual for Spot Welding (P/N 142101-1)
- Operator's Manual for Arc Welding (P/N 142098-1)
- Motoman UP6, XRC Manipulator Manual (P/N 142104-1)
- Motoman UP20, XRC Manipulator Manual (P/N 144342-1)
- Motoman UP50, XRC Manipulator Manual (P/N 144343-1)
- Motoman UP130, XRC Manipulator Manual (P/N 142107-1)

1.3 Customer Service Information

If you are in need of technical assistance, contact the Motoman service staff at (937) 847-3200. Please have the following information ready before you call:

- Robot Type (UP6, UP20, etc.)
- Application Type (welding, handling, etc.)
- Robot Serial Number (located on the back side of the robot arm)
- Robot Sales Order Number (located on back side of XRC controller)

NOTES

SECTION 2

SAFETY

2.1 Introduction

It is the purchaser's responsibility to ensure that all local, county, state, and national codes, regulations, rules, or laws relating to safety and safe operating conditions for each installation are met and followed.

We suggest that you obtain and review a copy of the ANSI/RIA National Safety Standard for Industrial Robots and Robot Systems. This information can be obtained from the Robotic Industries Association by requesting ANSI/RIA R15.06. The address is as follows:

Robotic Industries Association

900 Victors Way

P.O. Box 3724

Ann Arbor, Michigan 48106

TEL: (734) 994-6088

FAX: (734) 994-3338

Ultimately, the best safeguard is trained personnel. The user is responsible for providing personnel who are adequately trained to operate, program, and maintain the robot cell. **The robot must not be operated by personnel who have not been trained!**

We recommend that all personnel who intend to operate, program, repair, or use the robot system be trained in an approved Motoman training course and become familiar with the proper operation of the system.

This safety section addresses the following:

- Standard Conventions (Section 2.2)
- General Safeguarding Tips (Section 2.3)
- Mechanical Safety Devices (Section 2.4)
- Installation Safety (Section 2.5)
- Programming Safety (Section 2.6)
- Operation Safety (Section 2.7)
- Maintenance Safety (Section 2.8)

2.2 **Standard Conventions**

This manual includes information essential to the safety of personnel and equipment. As you read through this manual, be alert to the four signal words:

- DANGER
- WARNING
- CAUTION
- NOTE

Pay particular attention to the information provided under these headings which are defined below (in descending order of severity).



DANGER!

Information appearing under the DANGER caption concerns the protection of personnel from the immediate and imminent hazards that, if not avoided, will result in immediate, serious personal injury or loss of life in addition to equipment damage.



WARNING!

Information appearing under the WARNING caption concerns the protection of personnel and equipment from potential hazards that can result in personal injury or loss of life in addition to equipment damage.



CAUTION!

Information appearing under the CAUTION caption concerns the protection of personnel and equipment, software, and data from hazards that can result in minor personal injury or equipment damage.

NOTE: *Information appearing in a NOTE caption provides additional information which is helpful in understanding the item being explained.*

2.3 General Safeguarding Tips

All operators, programmers, plant and tooling engineers, maintenance personnel, supervisors, and anyone working near the robot must become familiar with the operation of this equipment. All personnel involved with the operation of the equipment must understand potential dangers of operation. General safeguarding tips are as follows:

- Improper operation can result in personal injury and/or damage to the equipment. Only trained personnel familiar with the operation of this robot, the operator's manuals, the system equipment, and options and accessories should be permitted to operate this robot system.
- Do not enter the robot cell while it is in automatic operation. Programmers must have the teach pendant when they enter the robot cell.
- Improper connections can damage the robot. All connections must be made within the standard voltage and current ratings of the robot I/O (Inputs and Outputs).
- The robot must be placed in Emergency Stop (E-STOP) mode whenever it is not in use.
- In accordance with ANSI/RIA R15.06, section 6.13.4 and 6.13.5, use lockout/tagout procedures during equipment maintenance. Refer also to Section 1910.147 (29CFR, Part 1910), Occupational Safety and Health Standards for General Industry (OSHA).

2.4 Mechanical Safety Devices

The safe operation of the robot, positioner, auxiliary equipment, and system is ultimately the user's responsibility. The conditions under which the equipment will be operated safely should be reviewed by the user. The user must be aware of the various national codes, ANSI/RIA R15.06 safety standards, and other local codes that may pertain to the installation and use of industrial equipment. Additional safety measures for personnel and equipment may be required depending on system installation, operation, and/or location. The following safety measures are available:

- Safety fences and barriers
- Light curtains
- Door interlocks
- Safety mats
- Floor markings
- Warning lights

Check all safety equipment frequently for proper operation. Repair or replace any non-functioning safety equipment immediately.

2.5 **Installation Safety**

Safe installation is essential for protection of people and equipment. The following suggestions are intended to supplement, but not replace, existing federal, local, and state laws and regulations. Additional safety measures for personnel and equipment may be required depending on system installation, operation, and/or location. Installation tips are as follows:

- Be sure that only qualified personnel familiar with national codes, local codes, and ANSI/RIA R15.06 safety standards are permitted to install the equipment.
- Identify the work envelope of each robot with floor markings, signs, and barriers.
- Position all controllers outside the robot work envelope.
- Whenever possible, install safety fences to protect against unauthorized entry into the work envelope.
- Eliminate areas where personnel might get trapped between a moving robot and other equipment (pinch points).
- Provide sufficient room inside the workcell to permit safe teaching and maintenance procedures.

2.6 **Programming Safety**

All operators, programmers, plant and tooling engineers, maintenance personnel, supervisors, and anyone working near the robot must become familiar with the operation of this equipment. All personnel involved with the operation of the equipment must understand potential dangers of operation. Programming tips are as follows:

- Any modifications to PART 1 of the MRC controller PLC can cause severe personal injury or death, as well as damage to the robot! Do not make any modifications to PART 1. Making any changes without the written permission of Motoman will **VOID YOUR WARRANTY!**
- Some operations require standard passwords and some require special passwords. Special passwords are for Motoman use only. **YOUR WARRANTY WILL BE VOID** if you use these special passwords.
- Back up all programs and jobs onto a floppy disk whenever program changes are made. To avoid loss of information, programs, or jobs, a backup must always be made before any service procedures are done and before any changes are made to options, accessories, or equipment.
- The concurrent I/O (Input and Output) function allows the customer to modify the internal ladder inputs and outputs for maximum robot performance. Great care must be taken when making these modifications. Double-check all modifications under every mode of robot operation to ensure that you have not created hazards or dangerous situations that may damage the robot or other parts of the system.
- Improper operation can result in personal injury and/or damage to the equipment. Only trained personnel familiar with the operation, manuals, electrical design, and equipment interconnections of this robot should be permitted to operate the system.

- Inspect the robot and work envelope to be sure no potentially hazardous conditions exist. Be sure the area is clean and free of water, oil, debris, etc.
- Be sure that all safeguards are in place.
- Check the E-STOP button on the teach pendant for proper operation before programming.
- Carry the teach pendant with you when you enter the workcell.
- Be sure that only the person holding the teach pendant enters the workcell.
- Test any new or modified program at low speed for at least one full cycle.

2.7 Operation Safety

All operators, programmers, plant and tooling engineers, maintenance personnel, supervisors, and anyone working near the robot must become familiar with the operation of this equipment. All personnel involved with the operation of the equipment must understand potential dangers of operation. Operation tips are as follows:

- Be sure that only trained personnel familiar with the operation of this robot, the operator's manuals, the system equipment, and options and accessories are permitted to operate this robot system.
- Check all safety equipment for proper operation. Repair or replace any non-functioning safety equipment immediately.
- Inspect the robot and work envelope to ensure no potentially hazardous conditions exist. Be sure the area is clean and free of water, oil, debris, etc.
- Ensure that all safeguards are in place.
- Improper operation can result in personal injury and/or damage to the equipment. Only trained personnel familiar with the operation, manuals, electrical design, and equipment interconnections of this robot should be permitted to operate the system.
- Do not enter the robot cell while it is in automatic operation. Programmers must have the teach pendant when they enter the cell.
- The robot must be placed in Emergency Stop (E-STOP) mode whenever it is not in use.
- This equipment has multiple sources of electrical supply. Electrical interconnections are made between the controller, external servo box, and other equipment. Disconnect and lockout/tagout all electrical circuits before making any modifications or connections.
- All modifications made to the controller will change the way the robot operates and can cause severe personal injury or death, as well as damage the robot. This includes controller parameters, ladder parts 1 and 2, and I/O (Input and Output) modifications. Check and test all changes at slow speed.

2.8 Maintenance Safety

All operators, programmers, plant and tooling engineers, maintenance personnel, supervisors, and anyone working near the robot must become familiar with the operation of this equipment. All personnel involved with the operation of the equipment must understand potential dangers of operation. Maintenance tips are as follows:

- Do not perform any maintenance procedures before reading and understanding the proper procedures in the appropriate manual.
- Check all safety equipment for proper operation. Repair or replace any non-functioning safety equipment immediately.
- Improper operation can result in personal injury and/or damage to the equipment. Only trained personnel familiar with the operation, manuals, electrical design, and equipment interconnections of this robot should be permitted to operate the system.
- Back up all your programs and jobs onto a floppy disk whenever program changes are made. A backup must always be made before any servicing or changes are made to options, accessories, or equipment to avoid loss of information, programs, or jobs.
- Do not enter the robot cell while it is in automatic operation. Programmers must have the teach pendant when they enter the cell.
- The robot must be placed in Emergency Stop (E-STOP) mode whenever it is not in use.
- Be sure all safeguards are in place.
- Use proper replacement parts.
- This equipment has multiple sources of electrical supply. Electrical interconnections are made between the controller, external servo box, and other equipment. Disconnect and lockout/tagout all electrical circuits before making any modifications or connections.
- All modifications made to the controller will change the way the robot operates and can cause severe personal injury or death, as well as damage the robot. This includes controller parameters, ladder parts 1 and 2, and I/O (Input and Output) modifications. Check and test all changes at slow speed.
- Improper connections can damage the robot. All connections must be made within the standard voltage and current ratings of the robot I/O (Inputs and Outputs).

YASNAC XRC OPTIONS INSTRUCTIONS

FOR FTP FUNCTION

Upon receipt of the product and prior to initial operation, read these instructions thoroughly, and retain for future reference.

MOTOMAN INSTRUCTIONS

- MOTOMAN SETUP MANUAL
- MOTOMAN-□□□ INSTRUCTIONS
- YASNAC XRC INSTRUCTIONS
- YASNAC XRC OPERATOR'S MANUAL
- YASNAC XRC OPERATOR'S MANUAL for BEGINNERS

The YASNAC XRC operator's manuals above correspond to specific usage.
Be sure to use the appropriate manual.





MANDATORY

- This manual explains FTP function of the YASNAC XRC system and general operations. Read this manual carefully and be sure to understand its contents before handling the YASNAC XRC.
- General items related to safety are listed in Section 1: Safety of the Setup Manual. To ensure correct and safe operation, carefully read the Setup Manual before reading this manual.



CAUTION

- Some drawings in this manual are shown with the protective covers or shields removed for clarity. Be sure all covers and shields are replaced before operating this product.
- The drawings and photos in this manual are representative examples and differences may exist between them and the delivered product.
- YASKAWA may modify this model without notice when necessary due to product improvements, modifications, or changes in specifications. If such modification is made, the manual number will also be revised.
- If your copy of the manual is damaged or lost, contact a YASKAWA representative to order a new copy. The representatives are listed on the back cover. Be sure to tell the representative the manual number listed on the front cover.
- YASKAWA is not responsible for incidents arising from unauthorized modification of its products. Unauthorized modification voids your product's warranty.

NOTES FOR SAFE OPERATION

Read this manual carefully before installation, operation, maintenance, or inspection of the YASNAC XRC.

In this manual, the Notes for Safe Operation are classified as “WARNING”, “CAUTION”, “MANDATORY”, or “PROHIBITED”.



WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury to personnel.



CAUTION

Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury to personnel and damage to equipment. It may also be used to alert against unsafe practices.



MANDATORY

Always be sure to follow explicitly the items listed under this heading.



PROHIBITED

Must never be performed.

Even items described as “CAUTION” may result in a serious accident in some situations. At any rate, be sure to follow these important items



To ensure safe and efficient operation at all times, be sure to follow all instructions, even if not designated as “CAUTION” and “WARNING”.



WARNING

- Confirm that no persons are present in the manipulator's work envelope and that you are in a safe location before turning ON the YASNAC XRC power.

Injury may result if anyone enters the working envelope of the manipulator during operation. Always press an emergency stop button immediately if there are problems. The emergency stop button is located on the right side of both the YASNAC XRC playback panel and programming pendant.



CAUTION

- Perform the following inspection procedures prior to conducting manipulator teaching. If problems are found, repair them immediately, and be sure that all other necessary processing has been performed.
 - Check for problems in manipulator movement.
 - Check for damage to insulation and sheathing of external wires.

- Always return the programming pendant to the hook on the XRC cabinet after use.

The programming pendant can be damaged if it is left in the manipulator's work area, on the floor, or near fixtures.

- Read and understand the Explanation of the Alarm Display in the setup manual before operating the manipulator.

Definition of Terms Used Often in This Manual

The MOTOMAN manipulator is the YASKAWA industrial robot product.


The manipulator usually consists of the controller, the playback panel, the programming pendant, and supply cables.

The MOTOMAN manipulator is the YASKAWA industrial robot product.

In this manual, the equipment is designated as follows.

Equipment	Manual Designation
YASNAC XRC Controller	XRC
YASNAC XRC Playback Panel	Playback Panel
YASNAC XRC Programming Pendant	Programming Pendant

Descriptions of the programming pendant and playback panel keys, buttons, and displays are shown as follows:

Equipment		Manual Designation
Programming Pendant	Character Keys	The keys which have characters printed on them are denoted with []. ex. [ENTER]
	Symbol Keys	The keys which have a symbol printed on them are not denoted with [] but depicted with a small picture. ex. page ke  The cursor key is an exception, and a picture is not shown.
	Axis Keys Number Keys	“Axis Keys” and “Number Keys” are generic names for the keys for axis operation and number input.
	Keys pressed simultaneously	When two keys are to be pressed simultaneously, the keys are shown with a “+” sign between them, ex. [SHIFT]+[COORD]
	Displays	The menu displayed in the programming pendant is denoted with { }. ex. {JOB}
Playback Panel	Buttons	Playback panel buttons are enclosed in brackets. ex. [TEACH] on the playback panel

Description of the Operation Procedure

In the explanation of the operation procedure, the expression "Select •••" means that the cursor is moved to the object item and the SELECT key is pressed.



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1 Outline

The XRC provides the FTP function, an application of the data transmission function (Ethernet), as a server or a client.

This manual explains the operation methods of the FTP functions.

1.1 FTP

FTP means file transfer protocol. With FTP function, the following data can be transferred between the XRC and the host computer:

- Job data
- Condition data/General data
- System information

1.2 Files to be Transferred

The following data can be transferred in FTP transmissions.

FTP Transmission Data	Processing	Files to be Transferred
Job data	Load	Jobs can be transferred in either of the following modes: <ul style="list-style-type: none"> • Single selection mode • Related selection mode
	Save	
Condition Data/General Data	Load	<ul style="list-style-type: none"> • Tool data • Weaving data • User coordinate data • Welding data • Variable data
	Save	
System Information	Save	<ul style="list-style-type: none"> • System information • Alarm history

1.2 Files to be Transferred

2 FTP Server Function

2.1 Outline

With the FTP server function in the XRC, you can save an XRC file to the host computer, and load a file from the host computer to the XRC via Ethernet upon request from the host computer such as a personal computer.

This function executes the processing equivalent to the file data transmission of the host control function in an XRC data transmission.

2.2 Settings

2.2.1 Settings for FTP Transmissions

Proceed to the operations described in “4. Settings for FTP Transmissions”.

2.2.2 Command Remote Selection

Validate the command remote selection signal.

Operation

Change the security mode to management mode ➡ Select {IN/OUT} under the top menu
 ➡ Select {PSEUDO INPUT SIGNAL}*1 ➡ Move the cursor to the CMD REMOTE SEL signal ➡ Press [INTERLOCK] + [SELECT] *2

Explanation

*1 The PSEUDO INPUT SIGNAL display appears.

DATA	EDIT	DISPLAY	UTILITY
PSEUDO INPUT SIGNAL		R1	🔍 📄 🗑️
SYSTEM SECTION			
#8210	■		
#8211	○		
#8212	○		
#8213	○		
#8214	○		INHIBIT IO
#8215	○		CMD REMOTE SEL
#8216	●		INHIBIT PP/PANEL
#8217	○		
!			

- *2 CMD REMOTE SEL signal is validated (●).
While the cursor is on CMD REMOTE SEL signal, the mark “●” is highlighted by being shown in reverse.

DATA	EDIT	DISPLAY	UTILITY
PSEUDO INPUT SIGNAL		R1	⏪ ⏩ ⏴ ⏵
SYSTEM SECTION			
#8210	<input type="radio"/>		
#8211	<input type="radio"/>		
#8212	<input type="radio"/>		
#8213	<input type="radio"/>		
#8214	<input type="radio"/>		INHIBIT IO
#8215	<input checked="" type="radio"/>		CMD REMOTE SEL
#8216	<input checked="" type="radio"/>		INHIBIT PP/PANEL
#8217	<input type="radio"/>		
!			

2.2.3 Setting to REMOTE Mode

Press the [REMOTE] button on the playback panel to set the XRC to REMOTE mode.

2.2.4 Confirmation of Command Mode

Operation

Select {IN/OUT} under the top menu ➡ Select {REMOTE}^{*1}

Explanation

- *1 The current mode status appears.
If not set to the I/O remote mode, “Command mode” appears.

DATA	EDIT	DISPLAY	UTILITY
REMOTE		R1	⏪ ⏩ ⏴ ⏵
I/O and Command mode			
CURR:			
PREV:			
DISP:			
!			

2.3 Host Computer Operations

Enter the commands as shown in the example below.

Type the commands that are underlined. After typing a command, press [Enter].

```
C:\>ftp 192.0.2.1 . . . *1
Connected to 192.0.2.1.
220 XRC FTP server (02.00) ready.
User (192.0.2.1:(none)): ftp . . . *2
331 Password required for ftp.
Password: ***** . . . *3
230 User ftp logged in.
ftp> ls . . . *4
200 PORT command successful.
150 Opening ASCII mode data connection.
123.JBI
226 Transfer complete.
9 bytes received in 0.11seconds (0.12 Kbytes/sec)
ftp> get 123.jbi . . . *5
200 PORT command successful.
150 Opening ASCII mode data connection.
226 Transfer complete.
282 bytes received in 0.35seconds (0.80 Kbytes/sec)
ftp> bye . . . *6
221 Goodbye.
C:\>
```

Explanation

- *1 Command to connect to the XRC (server) for FTP transmissions.
- *2 Enter a user name (refer to " 2.4 FTP Accounts ").
- *3 Enter the password for the aforementioned user name (refer to " 2.4 FTP Accounts ").
- *4 Command to fetch the file list of the XRC.
- *5 Command to fetch the job from the XRC.
- *6 Command to exit FTP transmissions.

2.4 FTP Accounts

Use the following user names and passwords to access the XRC with FTP server function.

User Name	Password	Purpose
xmaster	Password for management mode	Loading/Saving jobs Loading/Saving condition data/general data Saving system information Saving parameters
ftp	Arbitrary password	Loading/Saving jobs Loading/Saving condition data/general data Saving system information
anonymous	Arbitrary password	Saving jobs Saving condition data/general data

2.5 FTP Commands

The following commands can be used with FTP server function.

Classification	FTP Commands	Explanation
CONNECTION	open	Connect to a remote XRC.
	user	Type a user name to access the XRC.
	quit	Terminate and exit an FTP transmissions.
	bye	Terminate and exit an FTP transmissions.
FILE TRANSMISSION	get	Receive a file from a remote XRC. Transmit in ASC II mode.
	put	Send a file to a remote XRC. Transmit in ASC II mode.
FILE LIST	ls	Fetch a file list of the XRC. When no extension is specified, the file list of jobs is displayed. When an extension such as "*.dat" or "*.cnd" is specified, the corresponding file list is displayed.

2.6 Precautions on the “ls” Command

2.6.1 Inhibition of Using the Command Switch

When using the “ls” command, do not use “-l”, “-a”, or “-f” command switch for the FTP function.



The date, file attributes, and file size of the file list output by the “ls -l” are only for the compatibility of the output format, and are not correct information.

2.6.2 Condition Data/General Data Files



Confirm that the corresponding files exist in the XRC memory before transferring condition data/general data files.

The file lists from the pre-defined table of lists on XRC transmission system are output by the “ls *.dat” or “ls *.cnd” command. All of the displayed files may not actually exist in the XRC memory. Attempting to load a file which does not exist in the XRC memory causes the alarm “TRANSMISSION SYSTEM ERROR” and disconnects FTP communications.

2.7 Restrictions on File Transfer

2.7.1 Inhibition of Transferring the Files Size “0”



Do not transfer a zero-sized file.
If the file is transferred (PUT), the alarm “TRANSMISSION SYSTEM ERROR” occurs.

2.7.2 Interruption of Transmission



Do not press [Ctrl] + [C] to interrupt the transmission.
If [Ctrl] + [C] are pressed to interrupt the transmission, the correct transmission status cannot be maintained.

3 FTP Client Function

3.1 Outline

With the FTP client function in the XRC, you can save an XRC file to a host computer such as a personal computer, and load data from the host computer to the XRC via Ethernet upon request from the XRC.

This function executes the processing equivalent to the stand-alone function of an XRC data transmissions.

3.2 Settings

3.2.1 Settings for FTP Transmissions

Proceed to the operations described in “4. Settings for FTP Transmissions”.

3.2.2 Invalidation of the Read-only Function of the Host Control

Set the parameter RS005 to “0”.

Press the [REMOTE] button on the XRC playback panel two times to deactivate the read-only function of host control.

3.2.3 Invalidation of the Remote Mod




Confirm that the light for the [REMOTE] button is unlit. If the light is lit, press the [REMOTE] button to deactivate the remote mode.

3.3 Operation

3.3.1 Data That Can be Transferred and Destination File Names

The FLOPPY DISK/PC CARD display shown below is for FTP client function. The data files are classified in three groups. By using an FC1, FC2, or PC card, the data files of eight groups can be transferred, but the data files that can be transferred are limited to three groups.

Refer to “7.1 Floppy Disk Unit” of the YASNAC XRC OPERATOR’S MANUAL for information about each group and the destination file names.

DATA	EDIT	DISPLAY	UTILITY
FLOPPY DISK/PC CARD R1   			
FTP(SAVE)			
<input type="checkbox"/>	JOB		8
<input type="checkbox"/>	FILE/GENERAL DATA		0
<input type="checkbox"/>	SYSTEM DATA		0
!			




3.3.2 Setting the FTP Profil

Operation

Select {FLOPPY DISK/PC CARD} under the top menu ➡ Select {FTP PROFILE}^{*1} ➡
 Select an item whose setting or information you want to change^{*2} ➡ Enter the information^{*3} ➡ Press [ENTER] ^{*4}

Explanation

^{*1} The FTP PROFILE display appears.




DATA	EDIT	DISPLAY	UTILITY
FLOPPY DISK/PC CARD R1   			
FTP PROFILE			
	HOST ADDRESS	:192.0.2.2	
	USER ID	:xrc_user	
	PASSWORD	:*****	
	DIRECTORY	:xrc/data	
!			

^{*2} The text box for the host address is ready for you to enter information.

- *3 Type the address.

```
> 192.0.2.212
```

- *4 The HOST ADDRESS is set.

DATA	EDIT	DISPLAY	UTILITY
FLOPPY DISK/PC CARD		R1	  
FTP PROFILE			
HOST ADDRESS	:	192.0.2.212	
USER ID	:	xrc_user	
PASSWORD	:	*****	
DIRECTORY	:	xrc/data	
!			

Type the "USER ID", "PASSWORD", and "DIRECTORY" in the same way to complete the FTP profile.




3.3.3 Selecting FTP for Transmissions

Operation




Select {FLOPPY DISK/PC CARD} under the top menu ➔ Select {DEVICE}*1 ➔ Select "DEVICE"*2 ➔ Select "FTP" *3

Explanation

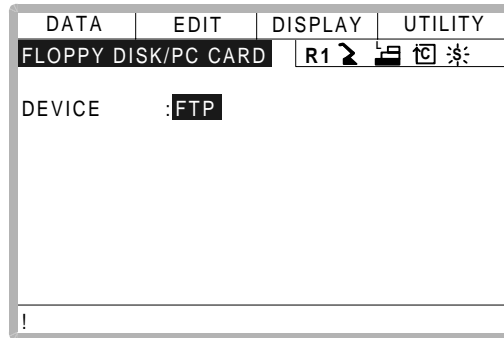
- *1 The DEVICE selection display appears.

DATA	EDIT	DISPLAY	UTILITY
FLOPPY DISK/PC CARD		R1	  
DEVICE	:	FC1	
!			

- *2 The selection list appears.

DATA	EDIT	DISPLAY	UTILITY
FLOPPY DISK/PC CARD		R1	  
DEVICE	:	FC1	
		FC1	
		FC2	
		PC	
		PC CARD	
		FTP	
!			

*3 FTP is now selected for the type of transmission.



3.3.4 LOAD

To transfer data from the FTP server (the host computer) to the XRC memory, perform the following:

■ Loading a Job

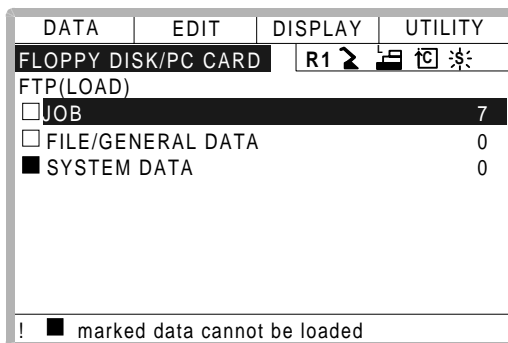
NOTE The jobs with the same names as those already registered in the XRC memory cannot be loaded. Delete these jobs from the XRC memory before loading.

Operation

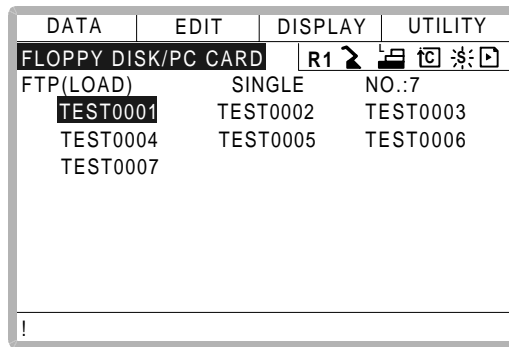
Select {FLOPPY DISK/PC CARD} under the top menu → Select {LOAD}^{*1} → Select "JOB"^{*2} → Select the job to be loaded^{*3} → Press [ENTER] ^{*4} → Select "YES" ^{*5}

Explanation

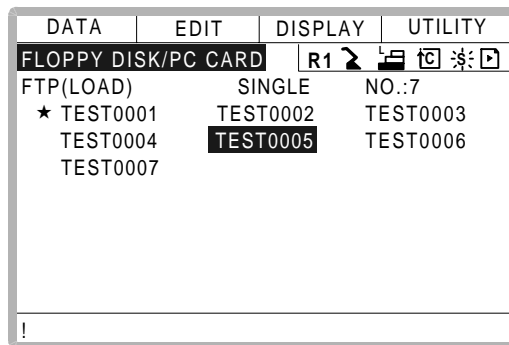
*1 The FLOPPY DISK/PC CARD display appears.



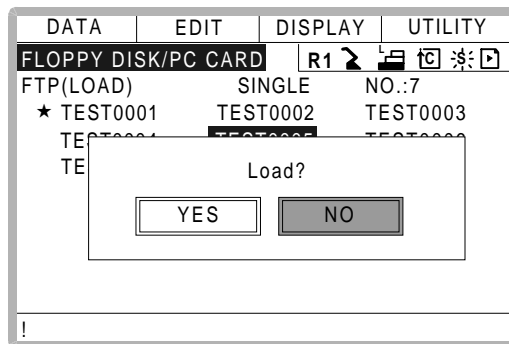
*2 The job list appears.



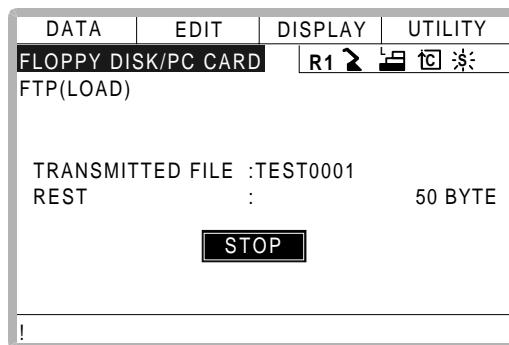
*3 The selected job is marked with a “★”.



*4 A dialog box to confirm loading appears.



*5 Loading of the selected job starts, and the transmission's progress is displayed.



When the job has been successfully loaded, the job list appears.

■ Loading Files



The files required for the system differ depending on the application, so the file lists will not be the same in all applications.

Operation

Select {FLOPPY DISK/PC CARD} under the top menu → Select {LOAD}*1 → Select the file group to be loaded*2 → Select the file to be loaded *3 → Press [ENTER] *4 → Select "YES"*5

Explanation

*1 The FLOPPY DISK/PC CARD display appears.

DATA	EDIT	DISPLAY	UTILITY
FLOPPY DISK/PC CARD R1 [F1] [F2] [F3] [F4]			
<input type="checkbox"/> JOB			8
<input type="checkbox"/> FILE/GENERAL DATA			4
<input checked="" type="checkbox"/> SYSTEM DATA			0
! <input checked="" type="checkbox"/> marked data cannot be loaded			

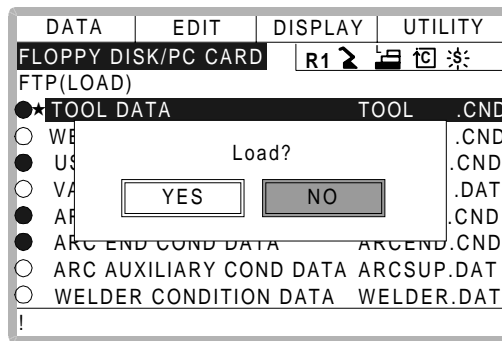
*2 The file list appears.

DATA	EDIT	DISPLAY	UTILITY
FLOPPY DISK/PC CARD R1 [F1] [F2] [F3] [F4]			
FTP(LOAD)			
<input checked="" type="radio"/> TOOL DATA		TOOL	.CND
<input type="radio"/> WEAVING DATA		WEAV	.CND
<input checked="" type="radio"/> USER COORDINATE DATA		UFRAME	.CND
<input type="radio"/> VARIABLE DATA		VAR	.DAT
<input checked="" type="radio"/> ARC START COND DATA		ARCSRT	.CND
<input checked="" type="radio"/> ARC END COND DATA		ARCEND	.CND
<input type="radio"/> ARC AUXILIARY COND DATA		ARCSUP	.DAT
<input type="radio"/> WELDER CONDITION DATA		WELDER	.DAT
!			

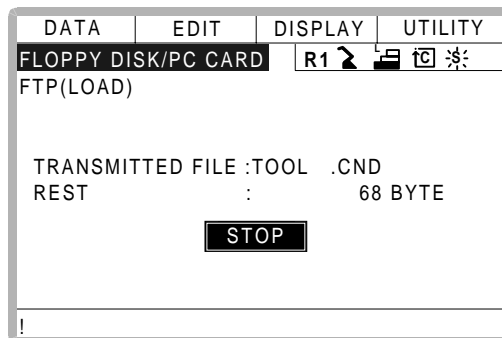
*3 The selected file is marked with a "★". A "●" indicates files that exist in the FTP server (host computer).

DATA	EDIT	DISPLAY	UTILITY
FLOPPY DISK/PC CARD R1 [F1] [F2] [F3] [F4]			
FTP(LOAD)			
<input checked="" type="radio"/> ★ TOOL DATA		TOOL	.CND
<input type="radio"/> WEAVING DATA		WEAV	.CND
<input checked="" type="radio"/> USER COORDINATE DATA		UFRAME	.CND
<input type="radio"/> VARIABLE DATA		VAR	.DAT
<input checked="" type="radio"/> ARC START COND DATA		ARCSRT	.CND
<input checked="" type="radio"/> ARC END COND DATA		ARCEND	.CND
<input type="radio"/> ARC AUXILIARY COND DATA		ARCSUP	.DAT
<input type="radio"/> WELDER CONDITION DATA		WELDER	.DAT
!			

- *4 A dialog box to confirm loading appears.



- *5 Loading of the selected file starts, and the transmission's progress is displayed.



When the file has been successfully loaded, the file list appears.

3.3.5 SAVE

To transfer data from XRC memory to the FTP server (host computer), perform the following:



When the job or file to be saved has the same name as a job or file already in the FTP server, the existing job or file will be overwritten with the new data. To keep the data in the FTP server as it is, take the necessary precautions such as changing the job or file names to prevent overwriting.

■ Saving the Job

Operation

Select {FLOPPY DISK/PC CARD} under the top menu → Select {SAVE}*1 → Select "JOB"*2 → Select the job to be saved *3 → Press [ENTER] *4 → Select "YES" *5

Explanation

*1 The FLOPPY DISK/PC CARD display appears.

DATA	EDIT	DISPLAY	UTILITY
FLOPPY DISK/PC CARD R1 ↻ 📁 🗑️ 🔄 ⚙️			
FTP(SAVE)			
<input checked="" type="checkbox"/>	JOB		8
<input type="checkbox"/>	FILE/GENERAL DATA		0
<input type="checkbox"/>	SYSTEM DATA		0
!			

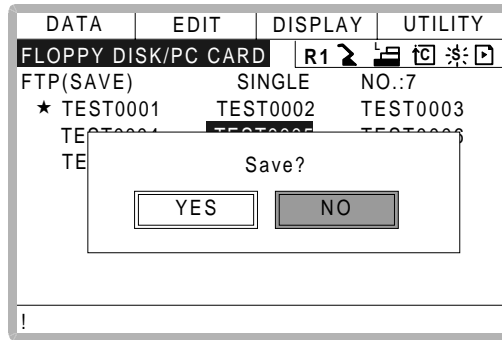
*2 The job list appears.

DATA	EDIT	DISPLAY	UTILITY
FLOPPY DISK/PC CARD R1 ↻ 📁 🗑️ 🔄 ⚙️			
FTP(SAVE)		SINGLE	NO.:7
<input checked="" type="checkbox"/>	TEST0001	TEST0002	TEST0003
	TEST0004	TEST0005	TEST0006
	TEST0007		
!			

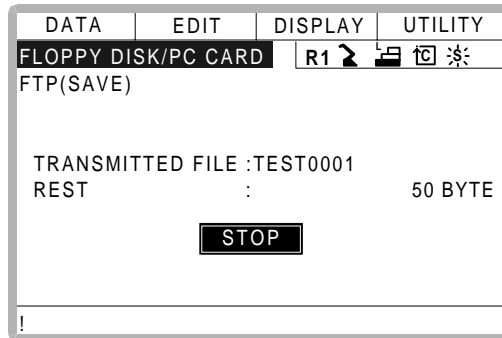
*3 The selected job is marked with a "★".

DATA	EDIT	DISPLAY	UTILITY
FLOPPY DISK/PC CARD R1 ↻ 📁 🗑️ 🔄 ⚙️			
FTP(SAVE)		SINGLE	NO.:7
<input checked="" type="checkbox"/>	★ TEST0001	TEST0002	TEST0003
	TEST0004	<input checked="" type="checkbox"/> TEST0005	TEST0006
	TEST0007		
!			

*4 A dialog box to confirm saving appears.



*5 Saving of the selected job starts, and the transmission's progress is displayed.



When the job has been successfully saved, the job list appears.

■ Saving Files



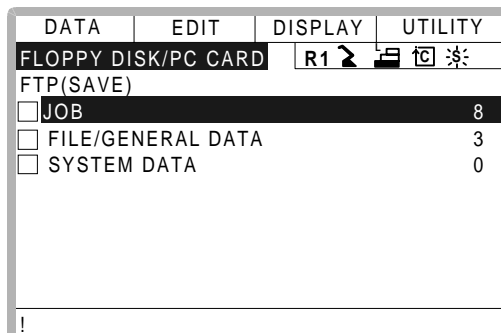
The files required for the system differ depending on the application, so the file lists will not be the same in all applications.

Operation

Select {FLOPPY DISK/PC CARD} under the top menu → Select {SAVE}^{*1} → Select the file group to be saved^{*2} → Select the file to be saved^{*3} → Press [ENTER]^{*4} → Select "YES"^{*5}

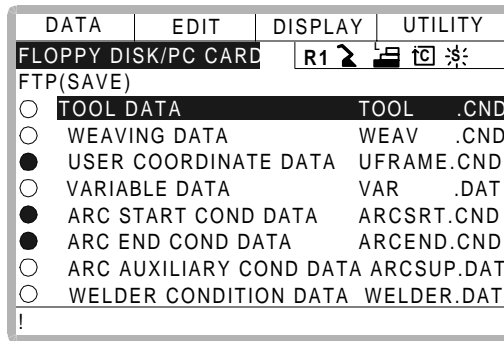
Explanation

*1 The FLOPPY DISK/PC CARD display appears.

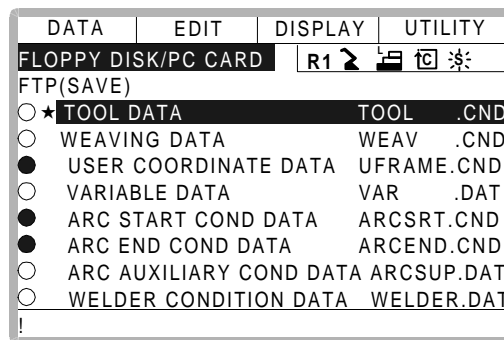


3.3 Operation

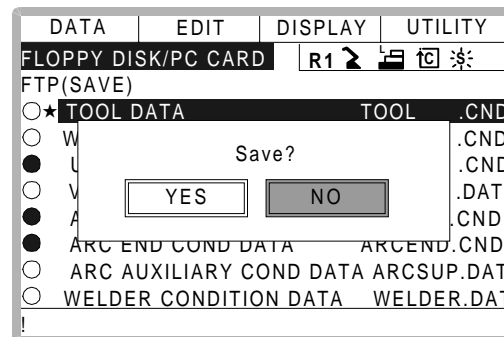
*2 The file list appears.



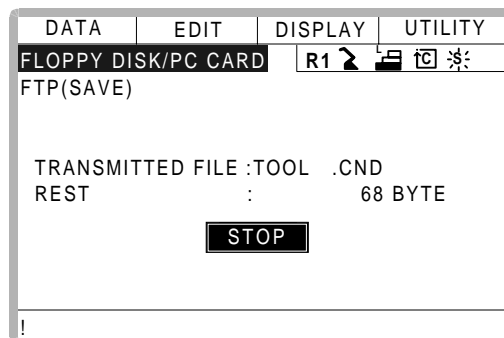
*3 The selected data is marked with a "★". A "●" indicates files that exist in the FTP server (host computer).



*4 A dialog box to confirm saving appears.



*5 Saving of the selected file starts, and the transmission's progress is displayed.



When the file has been successfully saved, the file list appears.

3.3.6 Verification

To verify that the data in the XRC memory and the data in the FTP server (host computer) are the same, perform the following.

When the data is different, a message appears on the screen.

■ Verifying a Job

Operation

Select {FLOPPY DISK/PC CARD} under the top menu → Select {VERIFY}*¹ → Select "JOB"*² → Select the job to be verified *³ → Press [ENTER]*⁴ → Select "YES"*⁵

Explanation

*¹ The FLOPPY DISK/PC CARD display appears.

DATA	EDIT	DISPLAY	UTILITY
FLOPPY DISK/PC CARD			
FTP(VERIFY)			
<input type="checkbox"/> JOB			7
<input type="checkbox"/> FILE/GENERAL DATA			0
<input type="checkbox"/> SYSTEM DATA			0
!			

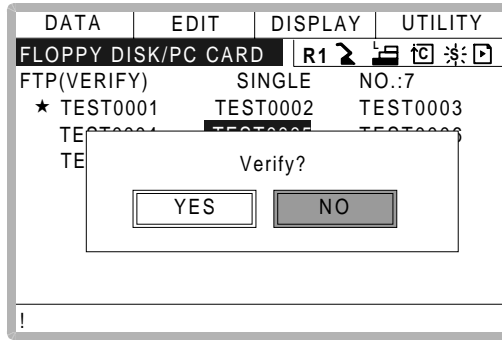
*² The job list appears.

DATA	EDIT	DISPLAY	UTILITY
FLOPPY DISK/PC CARD			
FTP(VERIFY)			
	SINGLE		NO.:7
TEST0001	TEST0002		TEST0003
TEST0004	TEST0005		TEST0006
TEST0007			
!			

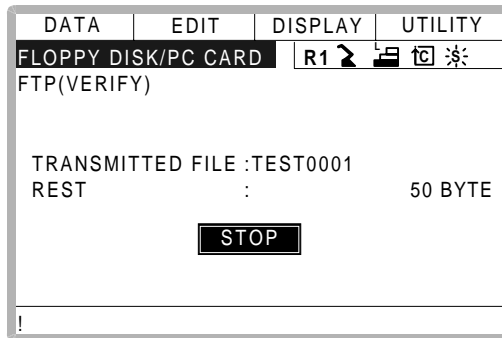
*³ The selected job is marked with a "★".

DATA	EDIT	DISPLAY	UTILITY
FLOPPY DISK/PC CARD			
FTP(VERIFY)			
	SINGLE		NO.:7
★ TEST0001	TEST0002		TEST0003
TEST0004	TEST0005		TEST0006
TEST0007			
!			

*4 A dialog box to confirm verification appears.



*5 Verification of the selected job starts, and the verification's progress is displayed.



When the data has been successfully verified, the job list appears.

■ Verifying Files



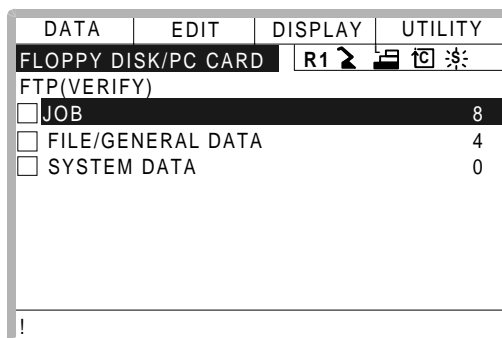
The files required for the system differ depending on the application, so the file lists will not be the same in all applications.

Operation

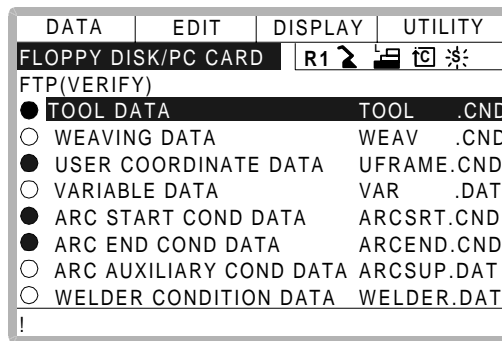
Select {FLOPPY DISK/PC CARD} under the top menu → Select {VERIFY}^{*1} → Select the file group to be verified^{*2} → Select the file to be verified^{*3} → Press [ENTER]^{*4} → Select "YES"^{*5}

Explanation

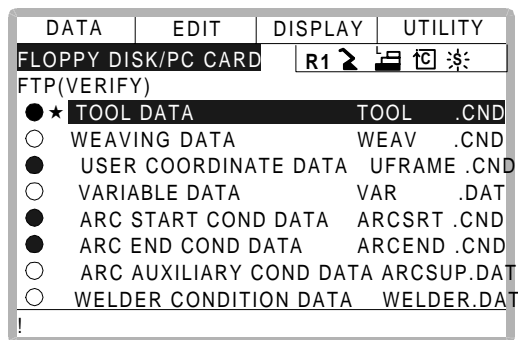
*1 The FLOPPY DISK/PC CARD display appears.



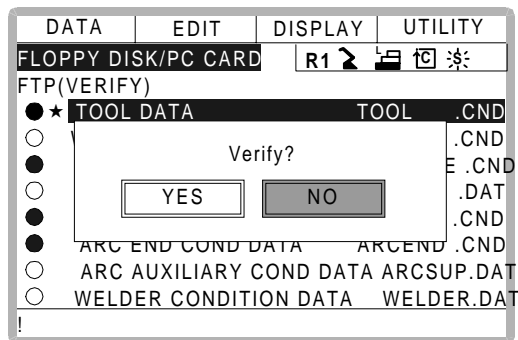
- *2 The file list appears.



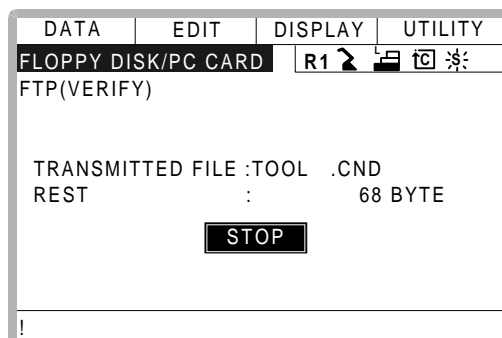
- *3 The selected file is marked with a "★". A "●" indicates files that exist in the FTP server (host computer).



- *4 A dialog box to confirm verification appears.



- *5 Verification of the file starts, and the verification's progress is displayed.



When the data has been successfully verified, the file list appears.

3.3.7 Job Selection Mode

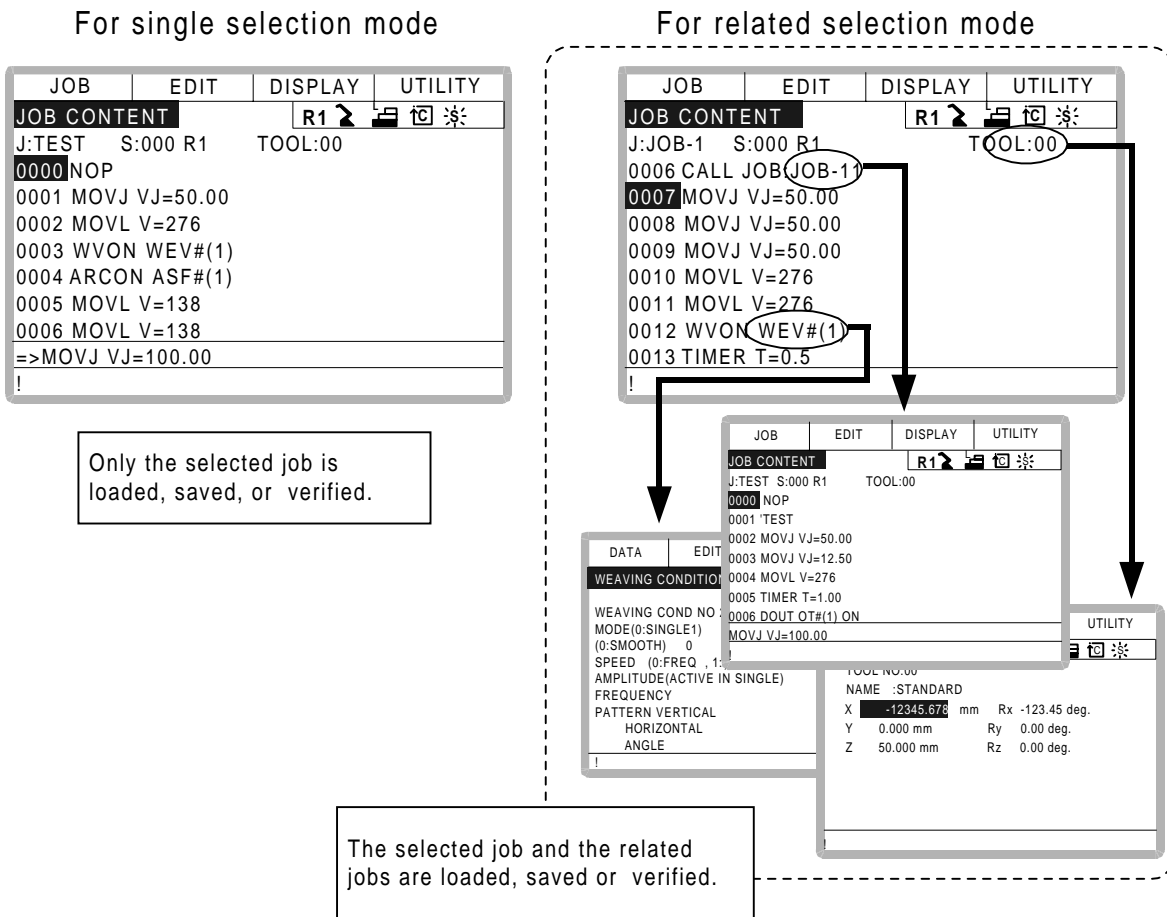
Jobs to be loaded, saved, or verified can be selected in either of the following modes:

- **Single Selection Mode**

Only the selected job is loaded, saved, or verified.

- **Related Selection Mode**

The selected job and related jobs and data files are loaded, saved, or verified.









■ Switching Selection Mode

Operation

Press the page key , or press [SHIFT] + the page key  in the job list^{*1}

Explanation

- ^{*1} Press the page key  to select the single job selection mode. Press [SHIFT] + the page key  to select the related jobs selection mode. "SINGLE" or "RELATED" is displayed respectively at the top of the middle column.

DATA	EDIT	DISPLAY	UTILITY
FLOPPY DISK/PC CARD		R1	   
FTP(VERIFY)	SINGLE	NO.:7	
TEST0001	TEST0002	TEST0003	
TEST0004	TEST0005	TEST0006	
TEST0007			
!			

3.3.8 Selecting Job and Data Fil

There are two ways to select a job and various data files to be loaded, saved, verified, or deleted.

■ EACH Selection

Selects a job or a data file one by one.

■ BATCH Selection

Selects all the jobs and data files at once.

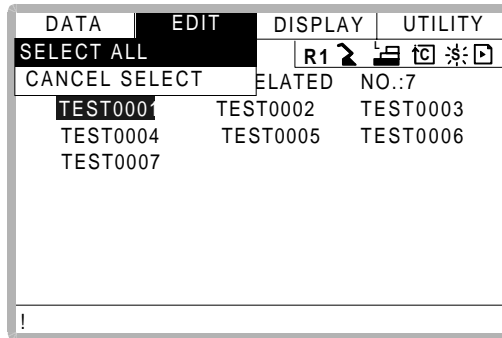
To select a batch of jobs or data files, perform the following:

Operation

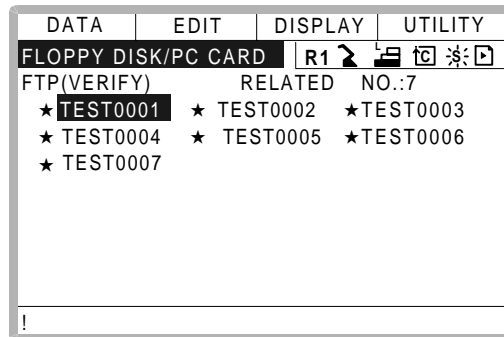
Select {EDIT} under the menu in the FLOPPY DISK/PC CARD job list or file list ^{*1} ➔
 Select {SELECT ALL} ^{*2}

Explanation

^{*1} The pull down menu appears.



^{*2} All jobs are selected.



To cancel the selection of files by batch, select {EDIT} and then {CANCEL SELECT}.

4 Settings for FTP Transmissions

Before using the FTP transmissions, make the following settings.

NOTE After all the following settings are correctly made, turn OFF the power to the XRC once, and then turn it ON again.

4.1 Settings for the Data Transmission Function

FTP is designed as an application of the data transmission function. It is essential to set the data transmission function available before using FTP.

4.1.1 “Transmission Function Enabled” Parameter

Contact your Yaskawa representative to validate the “Transmission Function Enabled” parameter.

4.1.2 Parameters for Transmission

Set the following parameters to their initial values.

Refer to the “YASNAC XRC OPTIONS INSTRUCTIONS For Data Transmission Function” for details.

Parameter No.	Contents	Initial Value
RS000	Specifies the protocol for the standard port.	2: Basic Protocol
RS030	Specifies the data length.	8: 8 bits
RS031	Specifies the number of stop bits.	0: 1 bit
RS032	Specifies the parity bits.	2: even parity
RS033	Specifies the transmission speed in bauds.	7: 9600 bauds
RS036	Specifies the number of transmission retries of the control characters for invalid or missing responses.	10: 10 times
RS037	Specifies the number of transmission retries of text for block check error (NAK reception).	3: 3 times
RS038	Specifies the checking method for text transmission errors.	0: Checksum

4.2 Settings for Ethernet Transmission

FTP is designed as an application of the Ethernet transmissions. It is essential to set Ethernet transmissions available before using the FTP.

In maintenance mode, set the following items to enable Ethernet transmissions in the optional board settings:

Set ETHERNET to "USE", and then set the "IP ADDRESS", "SUBNET MASK", "DEFAULT GATEWAY", and "SERVER ADDRESS" accordingly.

Refer to "YASNAC XRC OPTIONS INSTRUCTIONS Ethernet I/F BOARD" for details.

ETHERNET	
MAC ADDRESS	00:20:B5:32:00:01
ETHERNET	USE
IP ADDRESS	192. 0. 2. 1
SUBNET MASK	255.255.255. 0
DEFAULT GATEWAY	192. 0. 2.100
SERVER ADDRESS	192. 0. 2. 2
!Maintenance mode	

4.3 Settings for FTP Transmissions

Set the following parameters to enable FTP transmissions.

4.3.1 Parameters for FTP

Contact your Yaskawa representative to validate the "FTP Transmission Enabled" parameter.

4.3.2 Adjustment of FTP Transmission

Adjust the following parameters to stabilize the FTP transmissions as required.

Parameter No.	Contents	Initial Value	Recommended Setting for FTP
RS034	TIMER A: Timer for monitoring the sequence. Specify the response waiting time for invalid or missing responses in units of 0.1 sec. Setting range: 0 to 100	30	100
RS035	TIMER B: Timer for monitoring text reception. Specify the monitoring time to wait for the termination character in units of 0.1 sec. Setting range: 0 to 255	200	200

YASNAC XRC OPTIONS INSTRUCTIONS

FOR FTP FUNCTION

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