DX200 OPTIONS
INSTRUCTIONS

FOR FTP FUNCTION
(ADVANCED FEATURE OF DX200 ETHERNET FUNCTION)

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

MOTOMAN INSTRUCTIONS

MOTOMAN-□□□ INSTRUCTIONS
DX200 INSTRUCTIONS
DX200 OPERATOR’S MANUAL (for each purpose)
DX200 MAINTENANCE MANUAL

The DX200 operator’s manual above corresponds to specific usage. Be sure to use the appropriate manual.

Part Number: 165833-1CD
Revision: 1
MANDATORY

• This manual explains the FTP function of the DX200 system and general operations. Read this manual carefully and be sure to understand its contents before handling the DX200.

• General items related to safety are listed in Chapter 1: Safety of the DX200 Instructions. To ensure correct and safe operation, carefully read the DX200 Instructions 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.
We suggest that you obtain and review a copy of the ANSI/RIA National Safety Standard for Industrial Robots and Robot Systems (ANSI/RIA R15.06-2012). You can obtain this document from the Robotic Industries Association (RIA) at the following address:

Robotic Industries Association
900 Victors Way
P.O. Box 3724
Ann Arbor, Michigan 48106
TEL: (734) 994-6088
FAX: (734) 994-3338
www.roboticsonline.com

Ultimately, well-trained personnel are the best safeguard against accidents and damage that can result from improper operation of the equipment. The customer is responsible for providing adequately trained personnel to operate, program, and maintain the equipment. NEVER ALLOW UNTRAINED PERSONNEL TO OPERATE, PROGRAM, OR REPAIR THE EQUIPMENT!

We recommend approved Yaskawa training courses for all personnel involved with the operation, programming, or repair of the equipment.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.
Notes for Safe Operation

Read this manual carefully before installation, operation, maintenance, or inspection of the DX200.

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

⚠️ **DANGER**
Indicates an imminent hazardous situation which, if not avoided, could result in death or serious injury to personnel.

⚠️ **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.

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

• Before operating the manipulator, check that servo power is turned OFF pressing the emergency stop button on the programming pendant.
  When the servo power is turned OFF, the SERVO ON LED on the programming pendant is turned OFF.

  Injury or damage to machinery may result if the emergency stop circuit cannot stop the manipulator during an emergency. The manipulator should not be used if the emergency stop buttons do not function.

  Fig. : Emergency Stop Button

• Once the emergency stop button is released, clear the cell of all items which could interfere with the operation of the manipulator.
  Then turn the servo power ON.

  Injury may result from unintentional or unexpected manipulator motion.

  Fig. : Release of Emergency Stop

• Observe the following precautions when performing teaching operations within the P-point maximum envelope of the manipulator:
  – Be sure to use a lockout device to the safeguarding when going inside. Also, display the sign that the operation is being performed inside the safeguarding and make sure no one closes the safeguarding.
  – View the manipulator from the front whenever possible.
  – Always follow the predetermined operating procedure.
  – Keep in mind the emergency response measures against the manipulator's unexpected motion toward you.
  – Ensure that you have a safe place to retreat in case of emergency.

  Improper or unintended manipulator operation may result in injury.

• Confirm that no person is present in the P-point maximum envelope of the manipulator and that you are in a safe location before:
  – Turning ON the power for the DX200.
  – Moving the manipulator with the programming pendant.
  – Running the system in the check mode.
  – Performing automatic operations.

  Injury may result if anyone enters the P-point maximum envelope of the manipulator during operation. Always press an emergency stop button immediately if there is a problem.

  The emergency stop buttons are located on the right of front door of the DX200 and the programming pendant.
Definition of Terms Used Often in This Manual

The MOTOMAN is the Yaskawa industrial robot product.

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

In this manual, the equipment is designated as follows:

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Manual Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>DX200 Controller</td>
<td>DX200</td>
</tr>
<tr>
<td>DX200 Programming Pendant</td>
<td>Programming Pendant</td>
</tr>
<tr>
<td>Cable between the manipulator and the controller</td>
<td>Manipulator Cable</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Manual Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programming Pendant</td>
<td>Character Keys</td>
</tr>
<tr>
<td></td>
<td>Symbol Keys</td>
</tr>
<tr>
<td>Axis Keys</td>
<td>&quot;Axis Keys&quot; and &quot;Number Keys&quot; are generic</td>
</tr>
<tr>
<td>Number Keys</td>
<td>names for the keys for axis operation</td>
</tr>
<tr>
<td></td>
<td>and number input.</td>
</tr>
<tr>
<td>Keys pressed simultaneously</td>
<td>When two keys are to be pressed</td>
</tr>
<tr>
<td></td>
<td>simultaneously, the keys are shown with</td>
</tr>
<tr>
<td></td>
<td>a &quot;+&quot; sign between them,</td>
</tr>
<tr>
<td></td>
<td>ex. [SHIFT]+[COORD]</td>
</tr>
<tr>
<td>Displays</td>
<td>The menu displayed in the programming</td>
</tr>
<tr>
<td></td>
<td>pendant is denoted with { }. ex. {JOB}</td>
</tr>
</tbody>
</table>
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 [SELECT] is pressed, or that the item is directly selected by touching the screen.

Registered Trademark

In this manual, names of companies, corporations, or products are trademarks, registered trademarks, or brand names for each company or corporation. The indications of (R) and TM are omitted.

Safeguarding Tips

All operators, programmers, maintenance personnel, supervisors, and anyone working near the system 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 equipment, the operator's manuals, the system equipment, and options and accessories should be permitted to operate this equipment.

- Improper connections can damage the equipment. All connections must be made within the standard voltage and current ratings of the equipment.

- The system must be placed in Emergency Stop (E-Stop) mode whenever it is not in use.

- In accordance with ANSI/RIA R15.06-2012, section 4.2.5, Sources of Energy, 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).

Mechanical Safety Devices

The safe operation of this equipment is ultimately the users 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 R15.06-2012 safety standards, and other local codes that may pertain to the installation and use of this equipment.

Additional safety measures for personnel and equipment may be required depending on system installation, operation, and/or location. The following safety equipment is provided as standard:

- Safety barriers
- Door interlocks
- Emergency stop palm buttons located on operator station

Check all safety equipment frequently for proper operation. Repair or replace any non-functioning safety equipment immediately.
Programming, Operation, and Maintenance Safety

All operators, programmers, maintenance personnel, supervisors, and anyone working near the system must become familiar with the operation of this equipment. 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 equipment should be permitted to program, or maintain the system. All personnel involved with the operation of the equipment must understand potential dangers of operation.

- Inspect the equipment 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 all safety equipment for proper operation. Repair or replace any non-functioning safety equipment immediately.

- Check the E-Stop button on the operator station for proper operation before programming. The equipment must be placed in Emergency Stop (E-Stop) mode whenever it is not in use.

- Back up all programs and jobs onto suitable media before 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.

- Any modifications to the controller unit can cause severe personal injury or death, as well as damage to the robot! Do not make any modifications to the controller unit. Making any changes without the written permission from Yaskawa will void the warranty.

- Some operations require a standard passwords and some require special passwords.

- The equipment allows modifications of the software for maximum performance. Care must be taken when making these modifications. All modifications made to the software will change the way the equipment operates and can cause severe personal injury or death, as well as damage parts of the system. Double check all modifications under every mode of operation to ensure that the changes have not created hazards or dangerous situations.

- This equipment has multiple sources of electrical supply. Electrical interconnections are made between the controller and other equipment. Disconnect and lockout/tagout all electrical circuits before making any modifications or connections.

- Do not perform any maintenance procedures before reading and understanding the proper procedures in the appropriate manual.

- Use proper replacement parts.

- Improper connections can damage the equipment. All connections must be made within the standard voltage and current ratings of the equipment.
**Maintenance Safety**

Turn the power OFF and disconnect and lockout/tagout all electrical circuits before making any modifications or connections.

Perform only the maintenance described in this manual. Maintenance other than specified in this manual should be performed only by Yaskawa-trained, qualified personnel.

**Summary of Warning Information**

This manual is provided to help users establish safe conditions for operating the equipment. Specific considerations and precautions are also described in the manual, but appear in the form of Dangers, Warnings, Cautions, and Notes.

It is important that users operate the equipment in accordance with this instruction manual and any additional information which may be provided by Yaskawa. Address any questions regarding the safe and proper operation of the equipment to Yaskawa Customer Support.
Customer Support Information

If you need assistance with any aspect of your DX200, FTP Function, please contact Yaskawa Customer Support at the following 24-hour telephone number:

(937) 847-3200

For routine technical inquiries, you can also contact Yaskawa Customer Support at the following e-mail address:

techsupport@motoman.com

When using e-mail to contact Yaskawa Customer Support, please provide a detailed description of your issue, along with complete contact information. Please allow approximately 24 to 36 hours for a response to your inquiry.

Please use e-mail for routine inquiries only. If you have an urgent or emergency need for service, replacement parts, or information, you must contact Yaskawa Customer Support at the telephone number shown above.

Please have the following information ready before you call Customer Support:

- System: DX200, FTP Function
- Primary Application: ___________________________
- Controller: DX200
- Software Version: Access this information on the Programming Pendant’s LCD display screen by selecting {MAIN MENU} - {SYSTEM INFO} - {VERSION}
- Robot Serial Number: Located on the robot data plate
- Robot Sales Order Number: Located on the DX200 controller data plate
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<td>Transmission Parameter Setting</td>
<td>4-1</td>
</tr>
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</table>
1 Outline

The DX200 provides the FTP function, an extended application of the data transmission function (Ethernet), as a server or a client.

This manual explains the operation methods and relevant information of FTP.

1.1 System Features

1.1.1 FTP Function

FTP (File Transfer Protocol) is a widely used protocol in transferring files over the Internet or Intranet. This protocol enables the FTP function in the DX200, allowing the transfers of the following files:

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

1.1.2 Files Transferred by FTP Function

Details on the files which are transferred by FTP function are explained in the following table.

<table>
<thead>
<tr>
<th>Data Category</th>
<th>Procedure</th>
<th>Subject File</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job</td>
<td>Load</td>
<td>Jobs (Can be transferred in either of the SINGLE JOB mode or RELATED JOB mode.)</td>
</tr>
<tr>
<td></td>
<td>Save</td>
<td></td>
</tr>
<tr>
<td>Condition Data/</td>
<td>Load</td>
<td>Tool data</td>
</tr>
<tr>
<td>General Data</td>
<td></td>
<td>Weaving data</td>
</tr>
<tr>
<td></td>
<td>Save</td>
<td>User coordinate data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Welding data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Variable data</td>
</tr>
<tr>
<td>System data</td>
<td>Save</td>
<td>System information</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Alarm history</td>
</tr>
</tbody>
</table>
2 FTP Server Function

2.1 Outline

The DX200 FTP server function is a function which saves DX200 files in the host computer (an operation of the command “get” in FTP) or loads files of the host computer to the DX200 (an operation of the command “put” in FTP) via Ethernet, enabled by operating the host computer such as a personal computer.

This function can handle the processing equivalent to the file data transmission function of the host control function in an DX200 data transmission.

2.2 Settings

2.2.1 Setting up FTP

Perform the operations described in chapter 4 “FTP Settings”.

2.2.2 Command Remote Setting

Perform the following procedures to enable the command remote selection.

1. Select {IN/OUT} under the {Main Menu}.
2. Select {PSEUDO INPUT SIGNAL}.
3. Move the cursor to “CMD REMOTE SEL”, and press [INTERLOCK]+[SELECT].

– The command remote selection is enabled when the status is switched to “●”. The FTP function is disabled when the “CMD REMOTE SEL” status is “O”.

<table>
<thead>
<tr>
<th>PSEUDO INPUT SIGNAL</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CMD REMOTE SEL</td>
<td>●</td>
</tr>
<tr>
<td>INHIBIT IO</td>
<td>○</td>
</tr>
<tr>
<td>INHIBIT PP/PANEL</td>
<td>○</td>
</tr>
</tbody>
</table>

NOTE Set the command remote selection status in the management mode.
2.2.3 REMOTE Mode Setting
Set the mode switch on the programming pendant to [REMOTE].

2.2.4 Checking the Command Remote Setting
Check that the indication of “Command mode” or “I/O and Command mode” appears on the display of the remote mode.
1. Select {IN/OUT} under the {Main Menu}.
2. Select {REMOTE}.
   - The current mode status appears.

   ![Diagram showing remote mode settings]

   - The FTP server function is disabled when “Remote mode not specified” or “I/O mode” is indicated on the window.
2.3 Host Computer Operations

Refer to the example below showing the process of receiving jobs in case of using Windows XP command prompt. Note that the underlined parts are the input items: enter the commands with the host computer, and press [Enter] after typing each command.

C:\>ftp 192.168.1.55
Connected to 192.168.1.55
220 DX FTP server ( 1.00) ready.
User (192.168.1.65:(none)): ftp
331 Password required for ftp.
Password: _ _ _ _ _ _ _ _
230 User ftp logged in.
ftp> ls
200 PORT command successful.
150 Opening ASCII mode data connection. (192,168,1,65,1233)
AA35.JBI
AA4.JBI
AA8.JBI
N.JBI
AA36.JBI
AA5.JBI
AA9.JBI
N1.JBI
AA37.JBI
AA7.JBI
AA6.JBI
226 Transfer complete.
ftp: 99 bytes received in 0.11 Seconds 0.91 Kbytes/sec.
ftp> get AA35.JBI
200 PORT command successful.
150 Opening ASCII mode data connection. (192,168,1,65,1234)
226 Transfer complete.
ftp: 121 bytes received in 0.01 Seconds 8.07 Kbytes/sec.
ftp>bye
221 Goodbye.
C:\>

*1 Command to connect to the DX200 (FTP server) for FTP transmissions.

*2 Enter a user name to login to the DX200.

*3 Enter a password corresponding to the user name.

*4 Command to fetch the file list of the DX200.

*5 Command to fetch the jobs from the DX200.

*6 Command to exit FTP transmissions.
2.4 FTP Accounts

Use the following user names and passwords to access the DX200 with FTP server function.

<table>
<thead>
<tr>
<th>User Name</th>
<th>Password</th>
<th>Processing</th>
</tr>
</thead>
<tbody>
<tr>
<td>rcmaster</td>
<td>Password for</td>
<td>Loading/saving jobs</td>
</tr>
<tr>
<td></td>
<td>management mode</td>
<td>Loading/saving condition file</td>
</tr>
<tr>
<td></td>
<td></td>
<td>/general data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Saving system data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Saving parameters</td>
</tr>
<tr>
<td>ftp</td>
<td>Arbitrary password</td>
<td>Loading/saving jobs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Loading/saving condition file</td>
</tr>
<tr>
<td></td>
<td></td>
<td>/general data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Saving system data</td>
</tr>
<tr>
<td>anonymous</td>
<td>Arbitrary password</td>
<td>Saving jobs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Saving condition file/general data</td>
</tr>
</tbody>
</table>

When the password protection function (separate paid option) is enabled, only the user name and password defined by the password protection function can be used. In such a case, the user name and login name above cannot be used.
2.5 FTP Commands

The following commands can be used with FTP server function.

<table>
<thead>
<tr>
<th>Classification</th>
<th>User Command</th>
<th>FTP Command</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONNECTIO N</td>
<td>open IP address</td>
<td>-</td>
<td>Connects to a remote DX200.</td>
</tr>
<tr>
<td></td>
<td>user username</td>
<td>USER username</td>
<td>Enter a user name to access the DX200.</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>PASS password</td>
<td>Enter a password corresponding to the user name. (Usually the client will automatically request for a password entry after an user name entry.)</td>
</tr>
<tr>
<td>quit</td>
<td>QUIT</td>
<td></td>
<td>Terminates an FTP transmissions.</td>
</tr>
<tr>
<td>bye</td>
<td>QUIT</td>
<td></td>
<td>Terminates an FTP transmissions.</td>
</tr>
</tbody>
</table>

| FILE TRANSMIS- SION | - | PORT | Specifies a control connection port. (The client will automatically send to the DX200.) |
| get filename       | RETR filename | | Receives a file from a remote DX200. |
| put filename       | STOR filename | | Sends a file to a remote DX200. |
| del filename       | DELE filename | | Delete the job in the DX200. (File except a job cannot be deleted.) |

| FILE LIST | Is (filename) | NLST (filename) | Fetches a file list of the DX200. When no extension is specified, the file list of jobs will be displayed. When an extension such as "*.dat" or "*.cnd" is specified, the corresponding file list will be displayed. |

2.6 Precautions on the “ls” Command

2.6.1 Inhibition of Using the Command Option

**NOTE**

Use the “ls” command with no options.

The information on the time stamp, attributes, and size of the file output by the command “ls -l” (“NLST -l” for FTP command) or “dir” (“LIST” for FTP command) is provided only for the compatibility of the output format, and is not correct.

In order to prevent any mistake, be sure to use the “ls” for the list command.
2.7 Restrictions on File Transfer

2.7.1 Inhibition of Transferring the Files Size “0”

Do not transfer a file of which size is “0”.

If the file is transferred (PUT), the alarm “TRANSMISSION SYSTEM ERROR” occurs, resulting in an FTP disconnection.

2.7.2 Interruption of Transmission

Do not interrupt the transmission with an operation [Ctrl] + [C].

The transmission interruption executed with [Ctrl] + [C] operation may result in a failure to maintain the correct transmission.

2.8 Exclusion of other communication processing

2.8.1 Access restriction by exclusion of other communication processing

Other transmission processing may not be performed during an FTP communication processing.

The communication functions of DX200 (Ethernet function, FTP function, Ethernet server function, etc.) cannot perform simultaneous parallel processing. Although pseudo multiplex communication can normally be performed by time division, the FTP function often occupies the communication band and, therefore, other communication processing may be forced to wait for a long time or communication time-out may occur. When building your system, design it to allow for occurrence of waiting for other communication processing due to the FTP function.
2 FTP Server Function
2.9 FTP Job Overwrite Function

2.9 FTP Job Overwrite Function

2.9.1 Outline of Function
With this function, when uploading of a job is performed by the FTP server function, uploading can be requested even during playback.
This function can be used on the version “DN2.06.00A(**)-00” or later.

2.9.2 Parameter for Setting Function
This function is set to valid or invalid by the following parameter.

<table>
<thead>
<tr>
<th>Setting the FTP job overwrite function</th>
<th>RS214</th>
<th>0: Invalid</th>
<th>2: Valid</th>
</tr>
</thead>
</table>

2.9.3 FTP Command
By uploading the job by using a normal PUT command when this function is valid, job overwrite is executed.

Note the following restrictions during playback:

- During playback, job overwrite is not immediately executed, and the status turns to overwrite waiting. In this case, if there is no free space in the job capacity, an error is returned to the client's side.
- If two or more overwrite requests are executed to the same job during playback, the job in the overwrite waiting status is updated to the latest request.
- If the target job does not exist on the job stack when the playback ends, job overwrite is executed at that time. If the target job exists on the job stack and the job stack is cleared, job overwrite is executed.
- Even if the playback does not end, job overwrite can be executed by using the RFLCTJOB instruction. However, if the target job exists on the job stack, job overwrite cannot be executed.

2.9.4 RFLCTJOB Instruction
By executing the RFLCTJOB instruction, an overwrite-waiting job is overwritten.

Syntax

```
RFLCTJOB → END
```
2.9.5 Specific Output Signal

When an overwrite-waiting job exists, the following specific output signal is turned ON.

| #51230 | OVERWRITE WAIT |

While this specific output signal is turned ON, the message “Waiting for the job to be overwritten.” appears on the message area.
3 FTP Client Function

3.1 Outline

The DX200 FTP client function is a function which saves DX200 files in the host computer (an operation of the command “put” in FTP) or loads files of the host computer to the DX200 (an operation of the command “get” in FTP) via Ethernet, enabled by operating the DX200. It allows to load/save files which correspond to security mode.

The function executes the processing equivalent to the stand-alone function of an DX200 data transmissions.

Since the data transmission function of DX200 does not support binary format files, “BATCH USER MEMORY” “BATCH CMOS” and “ALL CMOS AREA” cannot be handled. Therefore, the operation screen for the FTP client function is as follows.

Since this screen is a function in the external memory menu, refer to chapter 7, “External Memory Devices” of the “DX200 Operator’s Manual” for more information on individual files.

3.2 Settings

3.2.1 Setting up FTP

Perform the operations described in chapter 4 “FTP Settings”.

3.2.2 Cancelling the Remote Mode

Set the parameter RS005 to “0”.
Set the mode switch on the programming pendant to [REMOTE] once, then set it to [TEACH].
3 FTP Client Function
3.3 Operations

3.3 Operations

3.3.1 Setting the FTP Profile
Perform the following procedures to set up the FTP profile, such as an IP address, etc. of an FTP server.

1. Select {EX.MEMORY} under the {Main Menu}.
2. Select {FTP PROFILE}.
   - The FTP PROFILE window appears.

   ① HOST ADDRESS
   IP address of the FTP server to be connected.

   ② USER ID
   User ID to login to the FTP server.

   ③ PASSWORD
   Password corresponding to the user ID.

   ④ DIRECTORY
   Default directory to login to the FTP server.

3. Select an item to be changed.
   - The selected box is in an input status.
4. Enter new information for FTP connection.
   - New condition for FTP connection has been specified.

3.3.2 Selecting FTP as a Transmission Device

Perform the following procedures to select an FTP client as an external memory device.

1. Select {EX.MEMORY} under the {Main Menu}.
2. Select {DEVICE}.
   - The DEVICE selection window appears.
3. Select “FTP” from the selection list.
   - The FTP client has been selected as an external memory device.
3.3.3 SAVE

Perform the following procedures to transfer data from the DX200 to the FTP server (the host computer).

If the job/file to be saved has the same name as a job/file already exists in the FTP server, the existing job/file will be overwritten with the new data. To keep the existing data in the FTP server as they are, take the necessary precautions such as changing the job/file name to prevent overwriting.

3.3.3.1 Saving Jobs

1. Select {EX.MEMORY} under the {Main Menu}.
2. Select (SAVE).
   – The FTP(SAVE) window appears.
3. Select “JOB”.
   – A job list appears.

   ![FTP(SAVE) window with job list]

   If the job/file to be saved has the same name as a job/file already exists in the FTP server, the existing job/file will be overwritten with the new data. To keep the existing data in the FTP server as they are, take the necessary precautions such as changing the job/file name to prevent overwriting.
4. Select jobs to be saved.
   - Each selected job is marked with “★”.

5. Press [ENTER].
   - A confirmation dialog box appears.
3.3.3.2 Saving Files

1. Select {EX.MEMORY} under the {Main Menu}.
2. Select {SAVE}.

When the save is completed, the screen returns to the save screen.
3. Select “FILE/GENERAL DATA” or “SYSTEM DATA”.

– A selection window appears.
4. Select files to be saved.
   - Each selected file is marked with "★".

5. Press [ENTER].
   - A confirmation dialog box appears.
6. Select {YES}.

- Saving of the selected files starts, and the transmission progress appears on the window.

When the save is completed, the screen returns to the save screen.
3.3.4 LOAD

Perform the following procedures to transfer data from the FTP server (the host computer) to the DX200.

The display windows in this procedures are omitted, as they are equivalent to the windows in the saving procedures.

3.3.4.1 Loading Jobs

1. Select {EX.MEMORY} under the {Main Menu}.
2. Select {LOAD}.
   – The FTP(LOAD) window appears.
3. Select “JOB”.
   – A job list appears.
4. Select jobs to be loaded.
5. Each selected job is marked with “*”.
6. Select {YES}.
   – Loading of the selected jobs starts, and the transmission progress appears on the window.
   – When the load is completed, the screen returns to the load screen.

3.3.4.2 Loading Files

1. Select {EX.MEMORY} under the {Main Menu}.
2. Select {LOAD}.
   – The FTP(LOAD) window appears.
3. Select “FILE/GENERAL DATA” or “SYSTEM DATA”.
   – A selection window appears.
4. Select files to be loaded.
   – Each selected file is marked with “*”.
5. Press [ENTER].
   – A confirmation dialog box appears.
6. Select {YES}.
   – Loading of the selected files starts, and the transmission progress appears on the window.
   – When the load is completed, the screen returns to the load screen.
3.3.5 **VERIFY**

Perform the following procedures to verify that the data in the DX200 and the data in the FTP server (the host computer) are the same. The unmatched data will be notified with a message.

The display windows in this procedures are omitted, as they are equivalent to the windows in the saving procedures.

### 3.3.5.1 Verifying Jobs

1. Select {EX.MEMORY} under the {Main Menu}.
2. Select {VERIFY}.
   - The FTP(VERIFY) window appears.
3. Select “JOB”.
   - A job list appears.
4. Select jobs to be verified.
   - Each selected job is marked with “★”.
5. Press [ENTER].
   - A confirmation dialog box appears.
6. Select {YES}.
   - Verification of the selected jobs starts, and the transmission progress appears on the window.
   - When the verify is completed, the screen returns to the verify screen.

### 3.3.5.2 Verifying Files

1. Select {EX.MEMORY} under the {Main Menu}.
2. Select {VERIFY}.
   - The FTP(VERIFY) window appears.
3. Select “FILE/GENERAL DATA” or “SYSTEM DATA”.
   - A selection window appears.
4. Select files to be verified.
   - Each selected file is marked with “★”.
5. Press [ENTER].
   - A confirmation dialog box appears.
6. Select {YES}.
   - Verification of the selected files starts, and the transmission progress appears on the window.
   - When the verify is completed, the screen returns to the verify screen.
3.3.6 Selection Mode

The jobs and data files to be loaded, saved, or verified can be selected in either of the following modes:

- Individual Selection Mode
  Jobs or data files are selected one by one.

- Batch Selection Mode
  Jobs or data files are selected collectively at a time.

3.3.6.1 Individual Selection Mode

1. Select {EX.MEMORY} under the {Main Menu}, and select jobs/files for desired operation in a job list/selection window.
   - Jobs/files are selected.
   - Each selected job/file is marked with “★”.

3.3.6.2 Batch Selection Mode

1. Select (EX.MEMORY) under the (Main Menu), and select (EDIT) when a job list/selection window is on the screen.
   - A pull-down menu appears.
2. Select {SELECT ALL}.
   - All the listed jobs/files are selected.
   - Select {EDIT}, then {CANCEL SELECT} to cancel all the selected jobs/files at a time.
4 FTP Settings

Perform the following settings for both the FTP server and the FTP client to enable the FTP function.

4.1 Ethernet Function Setting

The FTP function is designed as an extended application of the Ethernet function. Therefore, it is required to enable the Ethernet function before using the FTP function.

Refer to chapter 3 “Ethernet Function Settings” in the “DX200 OPTIONS INSTRUCTIONS FOR ETHERNET FUNCTION” for details.

4.2 Parameters for the FTP Function

Enable the FTP function parameters.

(Contact your Yaskawa representative in case of changing these parameters.)

4.3 Transmission Parameter Setting

The parameters related with transmissions are listed in the following tables.

Refer to the “DX200 OPTIONS INSTRUCTIONS FOR DATA TRANSMISSION FUNCTION” for the details.

Be sure to change the value of the following parameter:

<table>
<thead>
<tr>
<th>Parameter No.</th>
<th>Contents</th>
<th>Setting Value</th>
<th>Initial Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS000</td>
<td>Specifies the protocol for the standard port.</td>
<td>2 (BSC)</td>
<td>3 (FC1)</td>
</tr>
</tbody>
</table>

Be sure to change the value of the following parameter when using a FTP client function:

<table>
<thead>
<tr>
<th>Parameter No.</th>
<th>Contents</th>
<th>Setting Value</th>
<th>Initial Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS005</td>
<td>Host control (read only)</td>
<td>0 (Invalid)</td>
<td>0 (Invalid)</td>
</tr>
</tbody>
</table>
4 FTP Settings  
4.3 Transmission Parameter Setting

Set the following parameters to their initial values.

<table>
<thead>
<tr>
<th>Parameter No.</th>
<th>Contents</th>
<th>Initial Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS029</td>
<td>Loading of job/variable during playback</td>
<td>1: Enable</td>
</tr>
<tr>
<td>RS030</td>
<td>Specifies the data bits.</td>
<td>8: 8 bits</td>
</tr>
<tr>
<td>RS031</td>
<td>Specifies the stop bits.</td>
<td>0: 1 bit</td>
</tr>
<tr>
<td>RS032</td>
<td>Specifies the parity.</td>
<td>2: Even parity</td>
</tr>
<tr>
<td>RS033</td>
<td>Specifies the baud rate.</td>
<td>7: 9600 bauds</td>
</tr>
<tr>
<td>RS036</td>
<td>Specifies the inquiry character retry count</td>
<td>10: 10 (counts)</td>
</tr>
<tr>
<td></td>
<td>for invalid responses or non-responses.</td>
<td></td>
</tr>
<tr>
<td>RS037</td>
<td>Specifies the text data transmission retry</td>
<td>3: 3 (counts)</td>
</tr>
<tr>
<td></td>
<td>count for block check error (NAK reception).</td>
<td></td>
</tr>
<tr>
<td>RS038</td>
<td>Specifies the block check method.</td>
<td>0: Checksum</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Parameter No.</th>
<th>Contents</th>
<th>Recommend Setting for FTP</th>
<th>Initial Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS034</td>
<td>TIMER A: Timer for monitoring the sequence.</td>
<td>200</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Controls the response waiting time for the</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>invalid responses or non-responses.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Units: 0.1 sec (setting range: 0 to 100)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RS035</td>
<td>TIMER B: Timer for monitoring text reception.</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td>Controls the monitoring time to wait for the</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>text termination character.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Units: 0.1 sec (setting range: 0 to 255)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
DX200 OPTIONS

INSTRUCTIONS

FOR FTP FUNCTION

(ADVANCED FEATURE OF DX200 ETHERNET FUNCTION)

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