

DX200 OPTIONS INSTRUCTIONS

FOR LAN INTERFACE EXPANSION FUNCTION

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

MOTOMAN INSTRUCTIONS

MOTOMAN-MA1440 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: 179024-1CD
Revision: 0

MANUAL NO.

HW1484004

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MANDATORY

- This manual explains the LAN interface expansion function of the DX200 system. 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 MOTOMAN-MA1440.

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.



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



DANGER

- Before operating the manipulator, check that servo power is turned OFF pressing the emergency stop buttons on the front door of the DX200 and 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.



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 cabinet of the DX200 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 Warning Labels in the DX200 Instructions before operating the manipulator:

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:

Equipment	Manual Designation
DX200 controller	DX200
DX200 programming pendant	Programming pendant
Cable between the manipulator and the controller	Manipulator cable

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

Equipment		Manual Designation
Programming Pendant	Character Keys /Symbol Keys	The keys which have characters or its symbol printed on them are denoted with []. ex. [ENTER]
	Axis Keys /Numeric Keys	[Axis Key] and [Numeric Key] 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}

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.

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.

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 LAN Interface Expansion system, 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	LAN Interface Expansion
• 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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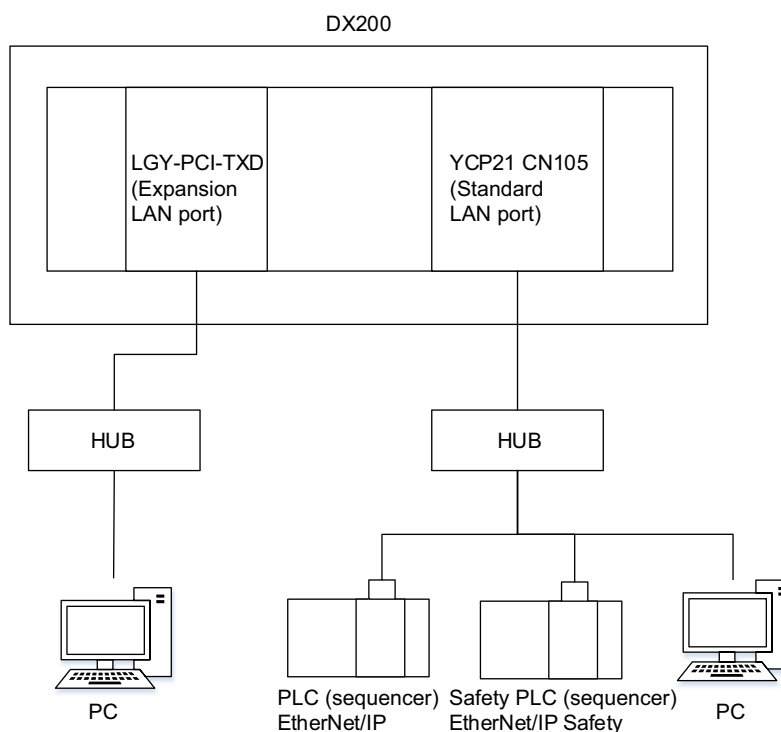
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1 Outline

For the DX200, by mounting the LAN port circuit board LGY-PCI-TXD manufactured by BUFFALO INC., the LAN port can be expanded. For the expanded LAN port (henceforth written as the expansion LAN port), similarly to the existing LAN port (henceforth written as the standard LAN port), the Ethernet communication function such as the FTP or the web server can be used. Also, by using the communication traffic monitoring function, the overload control can be performed. This manual describes the required settings and related information to use the expansion LAN port.

1.1 System Configuration

The example of the system configuration when using the expansion LAN port is shown below.



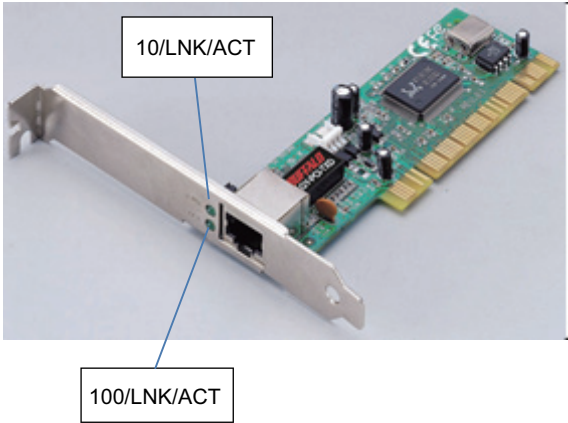
This circuit board can be used with the DN2.11-00 or later.



The expansion LAN port cannot be used without using the standard LAN port. For the expansion LAN port, some functions cannot be used.

2 Hardware Specification

2.1 External View



LED	State	Meaning
100/LNK/ACT	Lit (green)	Linking at 100 Mbps
	Blinking (green)	Sending and receiving data at 100 Mbps
10/LNK/ACT	Lit (yellow)	Linking at 10 Mbps
	Blinking (yellow)	Sending and receiving data at 10 Mbps

2.2 Board Specification

Items	Specifications
Interface to external devices	Ethernet
Board mounting position	PCI Slot in the DX200
Applicable standard	IEEE 802.3 10 Base-T/100 Base-TX compliant
Baud Rate	10 Mbps/100 Mbps (Automatically recognized when the power is turned ON.) (It is the transmission speed of signals, and not of the actual data. The baud rate of the actual data is rather slow, since it depends on the processing speed and the transmission line status in each communication station.)
Access method	CSMA/CD
Corresponding bus / Transmission method	PCI2.0 or later / Bus master transmission method
I/O port address	Allocated automatically by PCI BIOS
Interruption	Allocated automatically by PCI BIOS
Maximum dissipated power	100 mA/+5 V DC (supplied by PCI bus)
Operating environment	Temperature: 0°C to 55°C Humidity: 20% to 80%
External dimensions	120 (W) × 40 (H) mm
Acquisition standard	VCCI Class B

2.3 Communication Specification

Item	Explanation
IP	IPv4 * IPv6 is not supported.

2.4 Cable Specification

Use the following Ethernet cable.

Items	Description
Cable Type	Shielded, category 5 or more
Maximum Cable Length	100 m

3 Attaching the Board

3.1 Caution



WARNING

- Before wiring, be sure to turn OFF the power supply and put up a warning sign, such as “DO NOT TURN ON THE POWER.”

Failure to observe this warning may result in an electric shock or an injury.

- Do not touch the inside of the panel for 5 minutes after the power is turned OFF.

The remaining charged voltage in the capacitor may cause an electric shock or an injury.

- Be sure to close the door and install the protection cover while the power is turned ON.

Failure to observe this warning may result in a fire or an electric shock.



CAUTION

- The wiring and mounting must be performed by authorized and qualified personnel.

Failure to observe this caution may result in a fire or an electric shock.

- Make sure that there is no foreign matter such as metal chips on the board.

In case of malfunction, etc. it may result in an injury or damage the board.

- Make sure that there is no damage or deflection of parts on the board.

In case of malfunction, etc. it may result in an injury or damage the board.

- Correctly connect each cable and connector.

Failure to observe this caution may result in a fire or damage the board.

- Set the switches, etc. correctly.

In case of malfunction, etc. it may result in an injury or damage the board.

- Never touch the mounting surfaces and the soldered surfaces of the board parts directly with fingers.

The generated static electricity may damage the IC, and protrusions on the soldered surface may result in an injury.

- Never give any shock to the board.

The shock may damage the board.

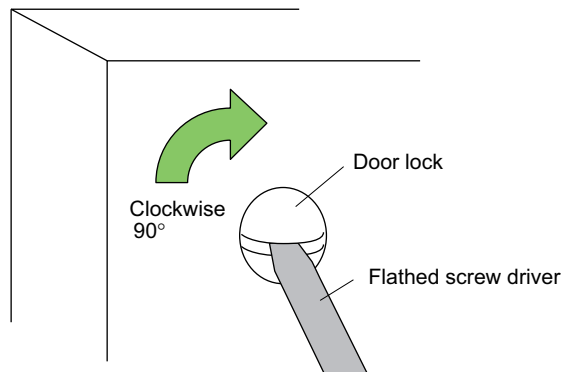
3.2 Opening Front Door of Controller

Perform the following procedures to mount the LGY-PCI-TXD circuit board.

1. Open the front door of the DX200.

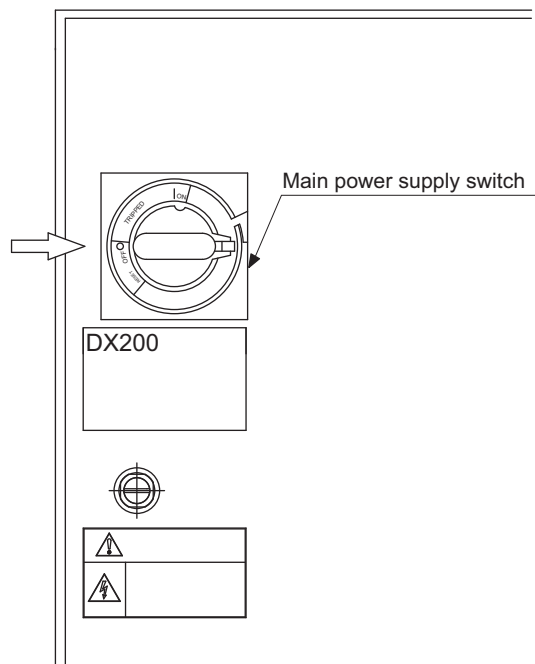
- (1) Using a flathead screwdriver, rotate the door locks on the front of the DX200 (two places) 90 degrees clockwise.

Fig. 3-1: Rotating the Door Lock Clockwise



- (2) Rotate the main power supply switch to the "OFF" position and open the door gently.

Fig. 3-2: Rotating the Main Power Supply Switch to the OFF Position



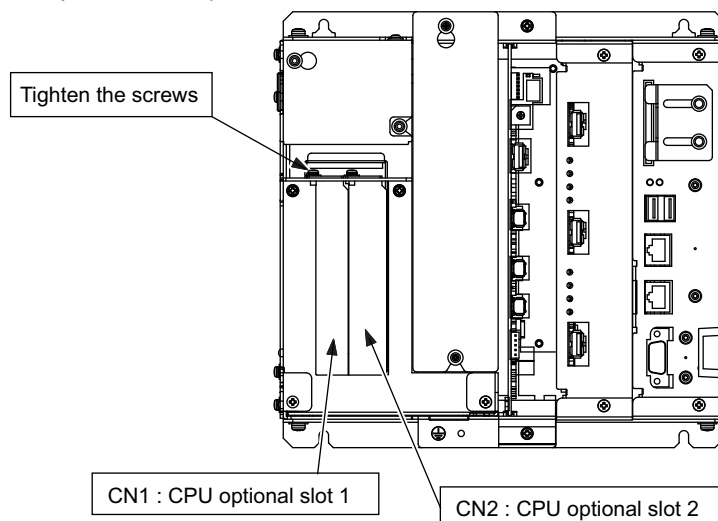
3 Attaching the Board

3.3 Attaching Circuit Board to Controller

3.3 Attaching Circuit Board to Controller

1. Remove the riser card (JANCD-YBB02-E) from the CPU rack.
2. Insert the LGY-PCI-TXD circuit board into the PCI slot of the riser card, and then attach the support.
3. Attach the riser card to the CPU rack.

Fig. 3-3: (Connection example) Connected LGY-PCI-TXD to CN1 (CPU optional slot 1)



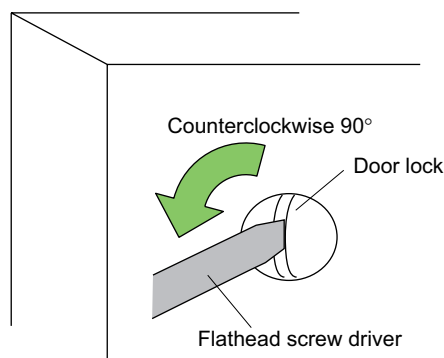
3.4 Cable Connection

1. Connect the Ethernet cable to the JGY-PCI-TXD circuit board connector.

3.5 Closing Front Door of Controller

1. Close the DX200 door.
 - (1) Close the door gently.
 - (2) Rotate the door lock counterclockwise 90 degrees.

Fig. 3-4: Rotating the Door Lock Counterclockwise



4 Ethernet Function Setting

4.1 Setting Procedure

To use the expansion LAN port, perform the settings for the optional circuit board and the Ethernet communication in accordance with the following procedure.

Confirm that the power supply of the DX200 (controller) is turned OFF.

Next, attach the LGY-PCI-TXD circuit board to the DX200 PCI slot.

When attaching the circuit board, refer to *chapter 3 “Attaching the Board”*.



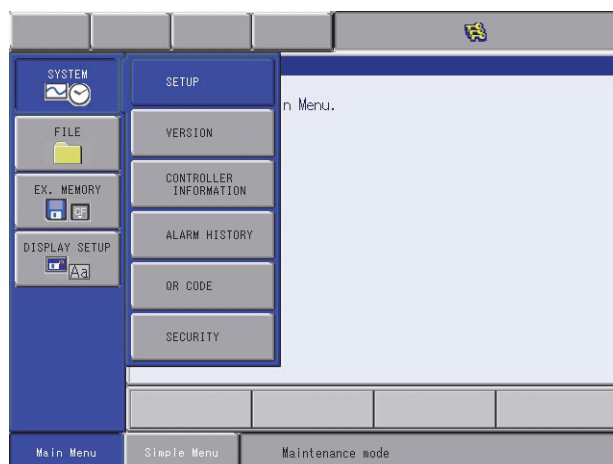
When performing the additional work, perform it in the management mode.

In the operation mode and the editing mode, additional work is not available but reference of the setting status only.

1. Turn ON the power supply again while pressing {MAIN MENU} simultaneously.
 - The Main Menu appears.

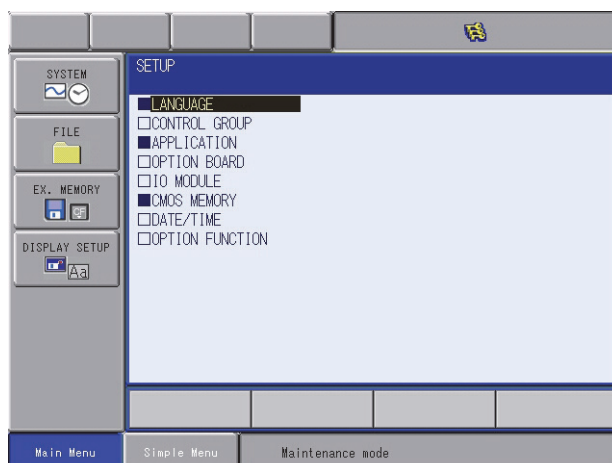


2. Change the security mode to the management mode.
3. Select {SYSTEM} under the Main Menu.
 - The sub menu appears.



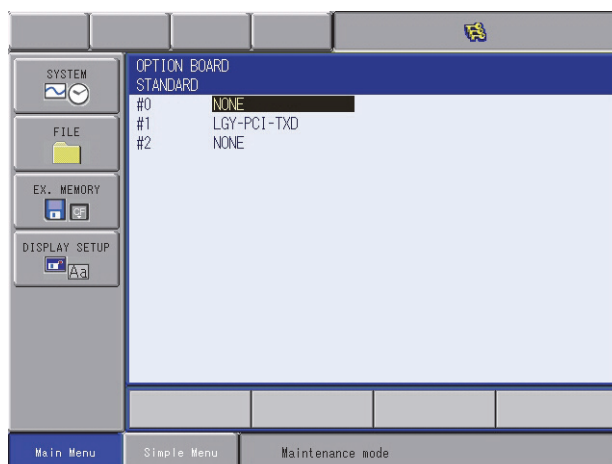
4. Select {SETUP}.

- The SETUP window appears.



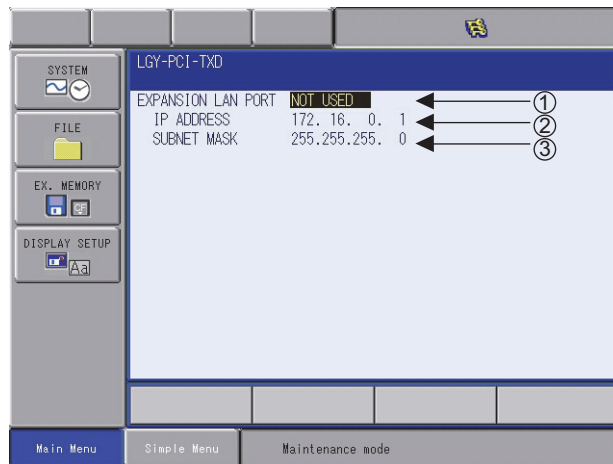
5. Select {OPTION BOARD}.

- The OPTION BOARD window appears.



6. Select "LGY-PCI-TXD".

- The setting window appears.
- Set each item on the window.



① EXPANSION LAN PORT

Sets whether to use the expansion LAN port.

Set to "USED".

② IP ADDRESS

Enter the IP address to set for the DX200 in the format [xx.xx.xx.xx] (xx is a decimal number from 0 to 255) using one-byte numeric characters and period (.).

③ SUBNET MASK

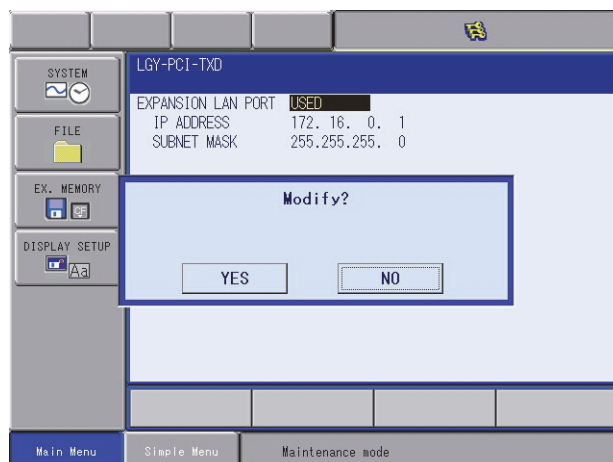
Enter the subnet mask to set for the DX200 in the format [xx.xx.xx.xx] (xx is a decimal number from 0 to 255) using one-byte numeric characters and period (.).



The DX200 does not support [10.0.0.xx] (xx is a decimal number from 0-255) among local IP addresses. Therefore, don't use [10.0.0.xx] for IP address.

7. Press [ENTER].

- The confirmation dialog box appears.

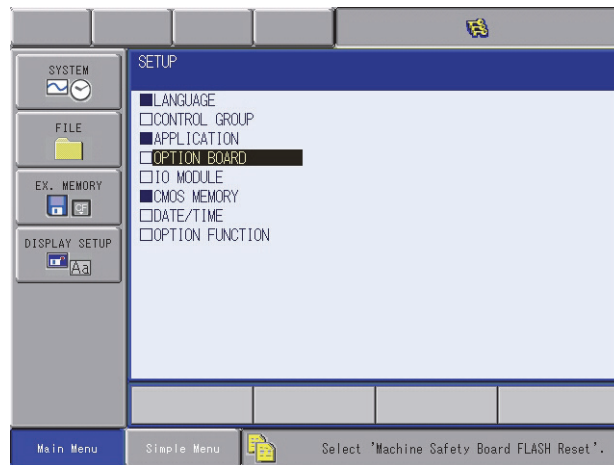


4 Ethernet Function Setting

4.1 Setting Procedure

8. Select {YES}.

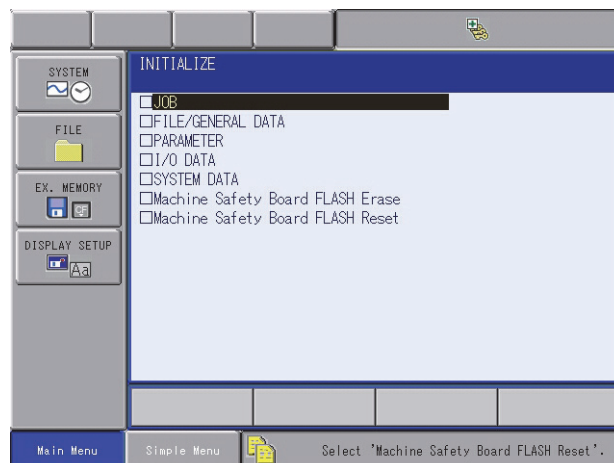
- The SETUP window appears.



9. Change the security mode to the safety mode.

10. Select {FILE} - {INITIALIZE} under the Main Menu.

- The INITIALIZE window appears.



11. Select "Machine Safety Board FLASH Reset".

12. Select {YES} from the confirmation dialog box.

- A beep sound is made and the "Select 'Machine Safety Board FLASH Reset'" message will disappear.
If the "Select 'Machine Safety Board FLASH Reset'" message appears, continue to perform machine safety board FLASH reset.
If the message disappears, steps 13. to 14. are not required.

13. Select "Machine Safety Board FLASH Reset".

14. Select {YES} from the displayed confirmation dialog.

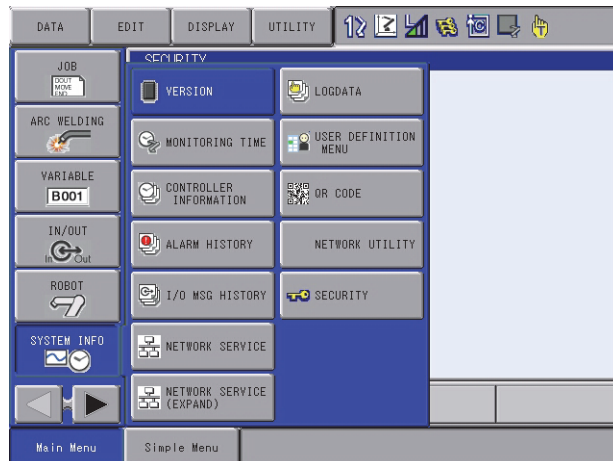
- A beep sound is made and the "Select 'Machine Safety Board FLASH Reset'" message will disappear.

4.2 Setting Confirmation

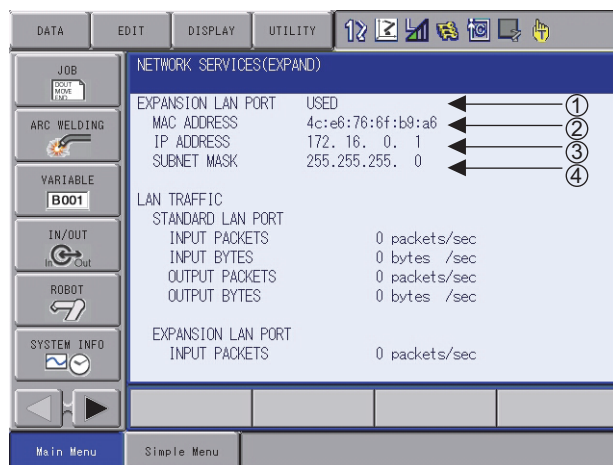
Settings made in the Ethernet communication setting can also be confirmed while in the normal operation.

Display and confirm in accordance with the following procedures.

1. Set the security mode to the management mode.
2. Select {SYSTEM INFO} under the Main Menu.
 - The sub menu appears.



3. Select {NETWORK SERVICE (EXPAND)}.
- The NETWORK SERVICE (EXPAND) window appears.



① EXPANSION LAN PORT

The setting for whether to use the expansion LAN port can be confirmed.

② MAC ADDRESS

The MAC address of the expansion LAN port can be confirmed.

③ IP ADDRESS

The IP address of the expansion LAN port can be confirmed.

④ SUBNET MASK

The subnet mask of the expansion LAN port can be performed.

■ **LAN communication traffic**

The communication traffic of the standard LAN port and of the expansion LAN port can be confirmed.

For details, refer to *chapter 5.3 "Monitoring of the Communication Traffic and Behavior when Excessive Traffic is Detected"*.

4.3 Command Remote Setting

Since the Ethernet function uses the data transmission function, when the function is used as the host control function, setting the command remote to valid is required.

For the command remote and setting the command remote to valid, refer to the "DX200 OPTIONS INSTRUCTIONS FOR DATA TRANSMISSION FUNCTION".

5 Specification

5.1 Ethernet Specification



For the details of the Ethernet specifications, refer to "DX200 OPTION INSTRUCTIONS FOR ETHERNET FUNCTION".

5.2 Difference of the Function with Standard LAN Port

The expansion LAN port and the standard LAN port have the following differences.

Items	Expansion LAN port	Standard LAN port	Supplementary notes
IP address	○	○	Setting as using only the expansion LAN port cannot be performed. Settings both ports on the identical network cannot be performed.
Subnet mask	○	○	Settings both ports on the identical network cannot be performed.
EtherNet/IP function	×	○	EtherNet/IP function cannot be used with the expansion LAN port.
EtherNet/IP safety function	×	○	EtherNet/IP safety function cannot be used with the expansion LAN port.
FTP server	○	○	
FTP client	○	○	Cannot be used simultaneously.
High-speed Ethernet server	○	○	
HSL	○	○	
BES	○	○	
Default gateway	○	○	Only either port is enabled.

5.3 Monitoring of the Communication Traffic and Behavior when Excessive Traffic is Detected

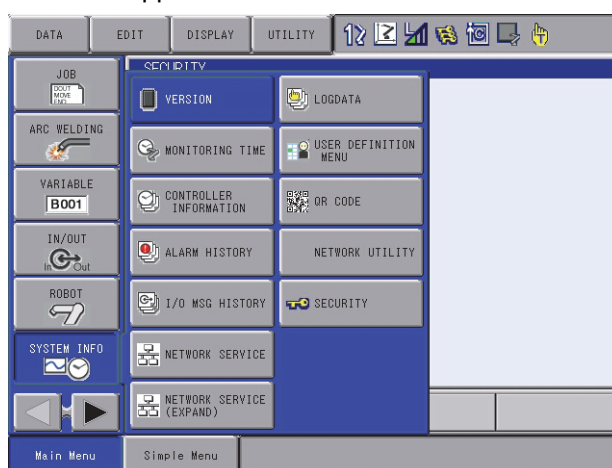
5.3.1 Monitoring of the Communication Traffic

When using the communication traffic monitoring function, the communication traffic (the number of received packets) of the LAN port is monitored. If the communication traffic for each LAN port exceeds the threshold, the system judges the excessive traffic (overload), and then following control for each LAN port is performed.

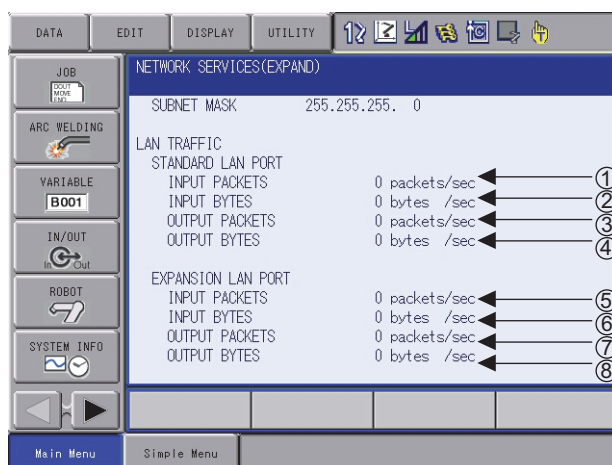
- Standard LAN port... Following alarm is output. If the overload is settled down, the alarm can be reset.
4229 Ethernet Error [41]
- Expansion LAN port... Communication is stopped, and the specific output is output. For canceling the communication stop and the specific output, restart is required.

The current communication traffic can be confirmed in accordance with the following procedure.

1. Set the security mode to the management mode.
2. Select {SYSTEM INFO} under the Main Menu.
 - The sub menu appears.



3. Select {NETWORK SERVICE (EXPAND)}.
- The NETWORK SERVICE (EXPAND) window appears.



5 Specification

5.3 Monitoring of the Communication Traffic and Behavior when Excessive Traffic is Detected

STANDARD LAN PORT

① INPUT PACKETS

The communication traffic of the received side on the standard LAN port is displayed. The units are packets/seconds.

② INPUT BYTES

The communication traffic of the received side on the standard LAN port is displayed. The units are bytes/seconds.

③ OUTPUT PACKETS

The communications traffic of the sent side on the standard LAN port is displayed. The units are packets/seconds.

④ OUTPUT BYTES

The communications traffic of the sent side on the standard LAN port is displayed. The units are bytes/seconds.

EXPANSION LAN PORT

⑤ INPUT PACKETS

The communication traffic of the received side on the expansion LAN port is displayed. The units are packets/seconds.

⑥ INPUT BYTES

The communication traffic of the received side on the expansion LAN port is displayed. The units are bytes/seconds.

⑦ OUTPUT PACKETS

The communication traffic of the sent side on the expansion LAN port is displayed. The units are packets/seconds.

⑧ OUTPUT BYTES

The communication traffic of the sent side on the expansion LAN port is displayed. The units are bytes/seconds.

5.3.2 Threshold

To detect the overload, two types of thresholds are provided for each LAN port.

- Low-rate threshold:

If a packet which exceeds the corresponding threshold is received continuously for a specified time (per 1 second), the system detects the overload. If a packet is not received continuously for a specified time, (or does not exceed the threshold at least once), the monitoring time is reset and the detection is performed again.

- High-rate threshold:

If a packet which exceeds the corresponding threshold is received at least once, the system detects the overload.

5.3.3 Specific Output

When the overload occurs and the communication of the expansion LAN port stops, the status of the LAN port is output to the following specific output. These statuses will be turned OFF if the controller is reset.

51237	51236	51235	51234	51233	51232	51231	51230
High-speed Ethernet server error	Transmission error	Expansion LAN port stop					

5.3.4 Parameter

The parameters relating to the communication traffic monitoring and the excessive traffic show as followings.

Parameter No.	Details	Setting Value	Initial Value
RS504	Settings the alarm notification when the standard LAN port is overloaded	0: Disable (The alarm is not notified.) 1: Enable (The alarm is notified.)	0
RS505	Settings the communication stop when the expansion LAN port is overloaded	0: Disable (Communication does not stop.) 1: Enable (Communication stops.)	0
RS506	Standard LAN port threshold (low-rate)	0: Standard threshold (5000 pkts/s) 1-255: Specified value *100 pkts/s	0
RS507	Expansion LAN port threshold (low-rate)	0: Standard threshold (5000 pkts/s) 1-255: Specified value *100 pkts/s	0
RS508	Judgment time of the standard LAN port low-rate threshold (seconds)	0: When the threshold is exceeded at the initial checked, an overload is judged. 1-255: When the threshold is exceeded consecutively for n seconds, an overload is judged.	0
RS509	Judgment time of the expansion LAN port low-rate threshold (seconds)	0: When the threshold is exceeded at the initial checked, an overload is judged. 1-255: When the threshold is exceeded consecutively for n seconds, an overload is judged.	0
RS510	Standard LAN port threshold (high-rate)	0: Standard threshold (10000 pkts/s) 1-255: Specified value *100 pkts/s	0
RS511	Expansion LAN port threshold (high-rate)	0: Standard threshold (10000 pkts/s) 1-255: Specified value *100 pkts/s	0

5.4 Restriction

For the expansion LAN port, the following restrictions exist.

- Number restriction

For this circuit board, the total number of circuit board which can be used is up to one. If two circuit boards are mounted, on the maintenance mode settings window, following error message appears.

Error 8033 : Too many boards [56]

- Duplication of settings

The identical network settings as the standard LAN port cannot be used. For the identical network settings, only the standard LAN port can be used. Also, if there are no standard LAN port settings, the expansion LAN port settings cannot be set.

Example)

Standard LAN port: 192.168.1.1 ... Available

Expansion LAN port: 192.168.1.2 ... Not available

Subnet mask: 255.255.255.0

- Default gateway

Communication by using the default gateway can be only used either the standard LAN port or the expansion LAN port. Set the default gateway settings by using the standard LAN port settings.

- FTP client

For the host settings of the FTP client, the same IP address for the standard LAN port and expansion LAN port cannot be entered.

- EtherNet/IP

For the expansion LAN port, the EtherNet/IP function cannot be used.

- Ethernet settings

The expansion LAN port does not support "DNS Settings" or "SNTP Settings".

6 Troubleshooting

In case of communication failure, try the following check items.

6.1 Confirmation of the Cable Connection

- Confirm that the cable is securely connected to the connector on the LGY-PCI-TXD board.
 - Confirm that the 100/LNK/ACT LED (green LED on the right) (or 10/LNK/ACT LED yellow LED on the right) is lit or blinks.
- Confirm that the cable connector of the hub side is properly connected.
 - Confirm that the power supply for the hub is ON.
- Confirm the cable type.
 - In case if connecting the cable to the hub which cannot auto-detect MDI/MDI-X connection, confirm that the cable used is a straight cable.
 - In case if directly connecting the DX200 and host computer, confirm that the cable used is a crossing cable.
- Confirm the baud rates of the hub and the host computer.

The DX200 automatically recognizes 10/100 Mbps when the power is turned ON.

Consequently, changing the communication speed after turning ON the power causes the normal communication to be impossible.

Before starting the DX200 system, confirm that the other end of the cable connection (HUB or host computer) is normally operating.

6.2 Confirm the Connection with Lower Protocol

In the TCP/IP network, it is possible to check if the IP packets are transmitted to the destinations using a ping command from a host computer.

Start the command prompt in the Windows 7, then input the IP address after entering "ping". If the communication is successfully done, the window displays as follows:

```
C:\>ping 192.168.255.1

Pinging 192.168.255.1 with 32 bytes of data:
Reply from 192.168.255.1: bytes=32 time<10ms TTL=255
Reply from 192.168.255.1: bytes=32 time<10ms TTL=255
Reply from 192.168.255.1: bytes=32 time<10ms TTL=255
Reply from 192.168.255.1: bytes=32 time<10ms TTL=255
Ping statistics for 192.168.255.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>
```

In case of a communication failure, the window displays as shown below. In this case, check the cable connections, network settings of the host computer, the Ethernet communication settings of the DX200 once again.

```
C:\>ping 192.168.255.1

Pinging 192.168.255.1 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.255.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>
```

DX200 OPTIONS INSTRUCTIONS

FOR LAN INTERFACE EXPANSION FUNCTION

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