

Motoman NX100 Controller

Password Protect

Function Manual

Part Number: 151963-1CD
Revision 0



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Chapter 1 Introduction

The Password Protect function provides system security as well as user tracking for the NX100 controller. A system administrator provides operator access to the controller, determining login names, passwords, security level, and automatic logout timers for each authorized user. Up to 100 user profiles can be registered. User profiles can be exported to a USRINFO.DAT file for backup by system administrator. However, once these user profiles have been setup, they can only be modified by the system administrator.

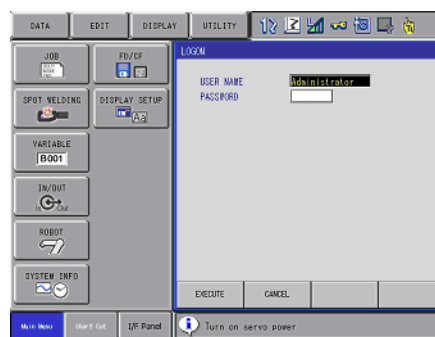


Figure 1 Logon Menu

Password Protect also enables the administrator to view alarm histories along with login names.

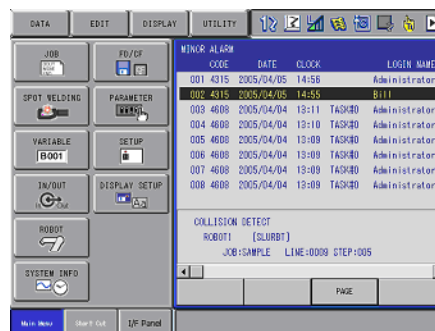


Figure 2 Alarm List

1.1 About This Document

This manual provides information for the Password Protect function and contains the following sections:

SECTION 1 - INTRODUCTION

Provides general information about the structure of this manual, a list of reference documents, and customer service information.

SECTION 2 - SAFETY

This section provides information regarding the safe use and operation of Motoman products.

SECTION 3 - PASSWORD PROTECT INSTRUCTIONS

Provides detailed instructions for Password Protect function, including specifications and operation.

1.2 Reference to Other Documentation

For additional information refer to the following:

- NX100 Controller Manual (P/N 149201-1)
- Concurrent I/O Manual (P/N 149230-1)
- Operator's Manual for your application
- Vendor manuals for system components not manufactured by Motoman

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:

- Product (Password Protect function)
- Robot Type (EA1900N, HP5, etc.)
- Application Type (arcwelding, spot welding, handling, general)
- Robot Serial Number (located on back side of robot arm)
- Robot Sales Order Number (located on back of controller)

Chapter 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 R15.06-1999. 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
INTERNET: www.roboticsonline.com

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, Operation, and Maintenance Safety (Section 2.6)

2.2 Standard Conventions

This manual includes the following alerts – in descending order of severity – that are essential to the safety of personnel and equipment. As you read this manual, pay close attention to these alerts to insure safety when installing, operating, programming, and maintaining this equipment.



DANGER!

Information appearing in a **DANGER** 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 in a **WARNING** 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 in a **CAUTION** 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 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 R15.06-1999, 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).

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 R15.06-1999 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 equipment is provided as standard:

- Safety fences and barriers
- Light curtains and/or safety mats
- Door interlocks
- Emergency stop palm buttons located on operator station, robot controller, and programming pendant

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 R15.06-1999 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, Operation, and 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. 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 program, operate, and maintain the system. All personnel involved with the operation of the equipment must understand potential dangers of operation.

- 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 all safety equipment for proper operation. Repair or replace any non-functioning safety equipment immediately.
- Do not enter the robot cell while it is in automatic operation. Be sure that only the person holding the programming pendant enters the workcell.
- Check the E-STOP button on the programming pendant for proper operation before programming. The robot 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 PART 1, System Section, of the robot controller concurrent I/O program can cause severe personal injury or death, as well as damage to the robot! Do not make any modifications to PART 1, System Section. 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.
- The robot controller allows modifications of PART 2, User Section, of the concurrent I/O program and modifications to controller parameters for maximum robot performance. Great care must be taken when making these modifications. 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 and other parts of the system. Double-check all modifications under every mode of robot operation to ensure that you have not created hazards or dangerous situations.
- Check and test any new or modified program at low speed for at least one full cycle.
- 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 robot. All connections must be made within the standard voltage and current ratings of the robot I/O (Inputs and Outputs).

NOTES

Chapter 3

Password Protect Instructions

3.1 User Accounts

Two separate accounts allow access to the NX100 controller as described below:

Administrator Account

The Administrator account is the one you use when you first set up Password Protect for the NX100 controller. You must use this account before creating other user accounts. The Administrator account has full control over access to the NX100 controller including setup of all User accounts. The Admin username and password should therefore be filed for safe-keeping by the person acting as Administrator.

The Administrator account can never be deleted, disabled, or removed, ensuring that you never lock yourself out of the controller by deleting or disabling all system accounts. This feature sets the Administrator account apart from other user accounts.

User Accounts

Password Protect allows up to 100 user accounts. The Administrator sets rights and permissions for each User account including login name, password, security level, comment, and automatic logout timer. User permissions are defined as follows:

MANAGEMENT MODE - Management mode allows those authorized to set up and maintain robot system: parameters, system time and modify user IDs.

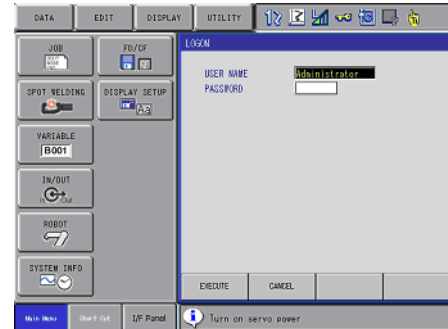
EDIT MODE - Edit mode allows the operator to teach and edit jobs and robot settings.

OPERATION MODE - Operation mode allows basic operation of the robot (stopping, starting, etc.) for people operating the robot on a production line.

3.2 Administrator Logon

To log onto the NX100 controller as the Administrator, proceed as follows:

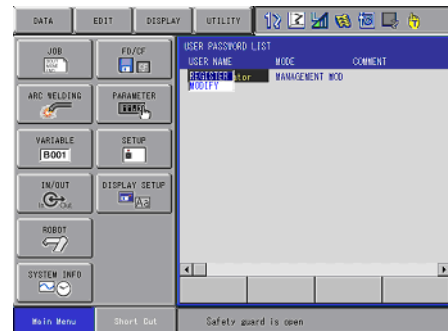
1. From the main menu, select SYSTEM INFO.
2. Using the arrow key, cursor to the LOGON menu and press LOGON. The LOGON screen appears.
3. Enter the Administrator USER NAME (default user name: Administrator).
 - a. Select USER NAME box to view keyboard.
 - b. Type in user name and press [ENTER] to return to LOGON screen.
3. Enter the Administrator PASSWORD (default password: 99999999).
 - a. Select PASSWORD box to view keyboard.
 - b. Type in password and press [ENTER] to return to LOGON screen.
3. Press [ENTER] on programming pendant to logon to the NX100 controller.



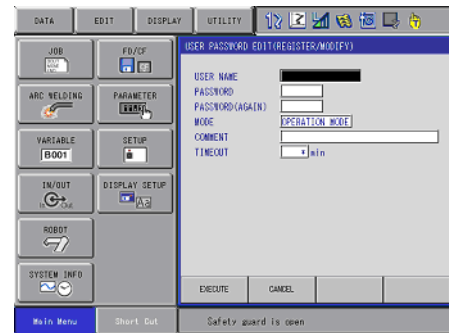
3.2.1 Register New User Accounts

Once logged in as the Administrator, you can setup additional user accounts as follows:

1. From the main menu, select SYSTEM INFO.
2. Select USER PASSWORD.
3. Logon to the system as described above (see Section 3.2 Administrator Logon).
4. Cursor to USER NAME and press [SELECT]. The USER PASSWORD LIST appears.



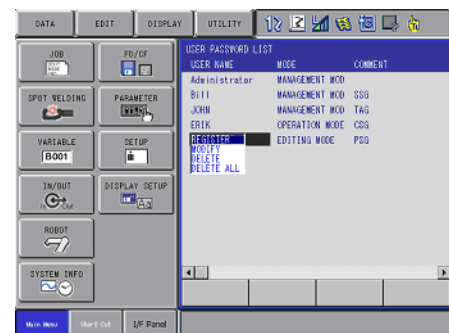
5. Cursor to REGISTER and press [SELECT]. The USER PASSWORD EDIT screen appears.
6. Setup the user account as follows:
 - USER NAME - User name can be alpha-numeric 1 to 16 characters.
 - PASSWORD - Password must be numeric, 4 to 8 digits.
 - PASSWORD (AGAIN) - Confirm password.
 - MODE - Select user's access level (Operation, Edit, or Management).
 - COMMENT - Enter descriptive comment if desired.
 - TIMEOUT - Enter the amount of time the user may be logged on the controller before being automatically logged off. If the asterisk (*) is left in this window, the password will not time out.



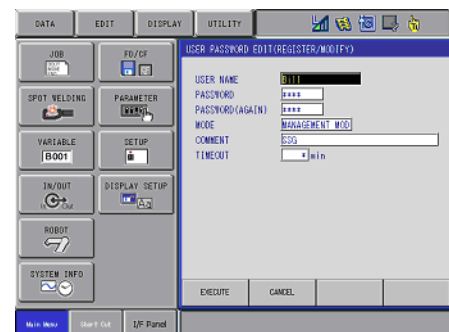
3.2.2 Modify User Accounts

Once logged in as the Administrator, you can modify existing user accounts as follows:

1. From the main menu, select SYSTEM INFO.
2. Select USER PASSWORD.
3. Logon to the system as described above (see Section 3.2 Administrator Logon).
4. Cursor to USER NAME and press [SELECT]. The USER PASSWORD LIST appears.
5. Select the user account you want to modify.
6. Cursor to MODIFY and press [SELECT]. The USER PASSWORD EDIT (REGISTER/MODIFY) screen appears.



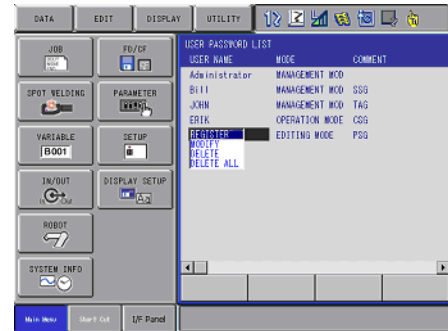
7. Modify the user account as desired.
 - USER NAME - User name can be alpha-numeric 1 to 16 characters.
 - PASSWORD - Password must be numeric, 4 to 8 digits.
 - PASSWORD (AGAIN) - Confirm password.
 - MODE - Select user's access level (Operation, Edit, or Management).
 - COMMENT - Enter descriptive comment if desired.
 - TIMEOUT - Enter the amount of time the user may be logged on the controller before being automatically logged off. If the asterisk (*) is left in this window, the password will not time out.



3.2.3 Delete User Accounts

Once logged in as the Administrator, you can delete existing user accounts as follows:

1. From the main menu, select SYSTEM INFO.
2. Select USER PASSWORD.
3. Logon to the system as described above (see Section 3.2 Administrator Logon).
4. Cursor to USER NAME and press [SELECT]. The USER PASSWORD LIST appears.
5. Select the user account you want to delete.
6. Cursor to DELETE and press [SELECT]. The user profile is deleted from the system.
7. Select DELETE ALL to remove all user accounts.

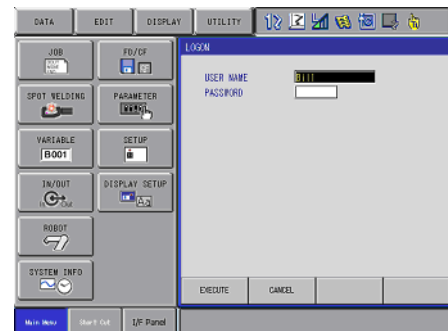


Note: The Administrator account can never be deleted, disabled, or removed, ensuring that you never lock yourself out of the controller by deleting all user accounts.

3.3 User Logon

To log onto the NX100 controller as a user, proceed as follows:

1. From the main menu, select SYSTEM INFO.
2. Using the arrow key, cursor to the LOGON menu and press LOGON. The LOGON screen appears.
3. Enter your Administrator assigned USER NAME.
 - a. Select USER NAME box to view keyboard.
 - b. Type in user name and press [ENTER] to return to LOGON screen.
3. Enter your Administrator assigned PASSWORD.
 - a. Select PASSWORD box to view keyboard.
 - b. Type in password and press [ENTER] to return to LOGON screen.
3. Press [ENTER] on programming pendant to logon to the NX100 controller.



3.4 Logoff

To logoff the NX100 controller, proceed as follows:

1. From the main menu, select SYSTEM INFO.
2. Select LOGOFF.
3. Press [ENTER] on programming pendant to logoff the NX100 controller.

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