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

- YASKAWA INSTRUCTIONS
- MOTOMAN-INSTRUCTIONS
- OPERATOR MANUAL'S
- MAINTENANCE MANUAL

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

Part Number: 169456-1CD
Revision: 1
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Printed in the United States of America

First Printing, 2016

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www.motoman.com
MANDATORY

- This manual explains the MLX200 DATA Software. Read this manual and the MLX200 Manuals carefully and be sure to understand its contents before using this software.
- General items related to safety are listed in Section 1 of the MLX200 Manual. To ensure correct and safe operation, carefully read the section before reading this manual.

CAUTION

- The drawings and photos in this manual are representative examples and differences may exist between them and the delivered product.
- YASKAWA may modify this product without notice when necessary due to product improvements, modifications, or changes in specifications.
- If such a modification is made, the manual number will also be revised.
- If your copy of this document 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 Yaskawa Motoman robot.

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.

---

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

---

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, or that the item is directly selected by touching the screen.

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Registered Trademark

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

1 Introduction .......................................................................7  
   MLX200 Software Screen .............................................7  
   MLX200 Software .................................................8  
   Quick Links Section ................................................8  
   Motoman Contact Info ...........................................8  
   MLX200 DATA Main Screen .........................................9  
   Communication Settings .........................................10  
   Export Data ...........................................................11  
   Import Data ..........................................................12  
   Helpful Information ..............................................13  
   Customer Service Information ..................................13  
   Exported Data Structure and Compatibility .................14  

2 Installation .......................................................................16  
   Installing MLX200 DATA .............................................16  

3 Operation .........................................................................17  
   Setting the Communication Settings .........................17  
   Viewing Teach Points on the PLC .............................18  
   Exporting MLX200 Data Information .........................19  
   Importing MLX200 Data Information .........................20
MLX200 DATA software was developed for simplifying the process of importing and exporting various user data from the MLX200 control module.

1.1 MLX200 Software Screen

The MLX200 Software screen comes up first once the included DVD is installed. There are three areas on the MLX200 Software Screen (see Fig. 1-1 “MLX200 Software Screen”):

1. MLX200 Software
2. Quick Links
3. Motoman Contact Info
1.1.1 MLX200 Software

The MLX200 Software section contains the software required to use the MLX200 DATA program. The programs included are (see Fig. 1-2 “MLX200 Software”):

- **MLX200 DATA Software (PC):** Simplifies the process of finding, exporting, and importing various MLX200 Data.
- **MLX200 DATA Software Manual:** Gives easy to use instructions on how to install and operate the MLX200 DATA Software.

*Fig. 1-2: MLX200 Software*

1.1.2 Quick Links Section

In the quick link section there is a link directly to the Motoman Website for various things including Training and Support. (See Fig. 1-3 “Quick Links Section”)

*Fig. 1-3: Quick Links Section*

1.1.3 Motoman Contact Info

The Motoman Contact Info section includes information for contacting Motoman by (see Fig. 1-4 “Motoman Contact Info Section”):

- Phone
- Fax
- Email

*Fig. 1-4: Motoman Contact Info Section*
1.2 MLX200 DATA Main Screen

The MLX200 DATA software main screen is broken down into the following four areas (see Fig. 1-5 “MLX200 DATA Main Screen”):

1. Communication Settings
2. Export Data
3. Import Data
4. Helpful Information

*Fig. 1-5: MLX200 DATA Main Screen*
1.2.1 Communication Settings

The Communication Setting section of the MLX200 Data software is where communications between a computer and the MLX200 is setup at. Communication Settings on the main screen contains (See Fig. 1-5 “MLX200 DATA Main Screen” on page 1-9 and Fig. 1-6 “Communication Setting Section”):

- **PLC Processor Slot**: Allows the ability to select which Processor slot (0 to 16) is needed to communicate with for MLX200 Data information.

- **PLC IP Address**: This shows the IP address for the PLC that may be changed manually by entering the desired IP address.

\[\text{NOTE}\]

The MLX200 DATA software ships with a default IP address of 192.168.1.2.

---

**Fig. 1-6: Communication Setting Section**

<table>
<thead>
<tr>
<th>PLC Processor Slot</th>
<th>PLC IP Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>192.168.1.2</td>
</tr>
</tbody>
</table>

---

**CAUTION**

Do not change the file name or contents in the exported files or damage could occur to the equipment.
1.2.2 Export Data

The Export Data section of the MLX200 Data software is where it is decided on what is to be exported. Export Data section of the Main Screen contains (see Fig. 1-5 “MLX200 DATA Main Screen” on page 1-9 and Fig. 1-7 “Export Data Section”):

- **Export File Path**: Allows the User to say where to export data from the MLX200 control module.

- **What to Export Field**: Gives the ability to export All User Data, Job Teach Points, User Frame Data, Cubic Interference Zones, Conveyor Tracking, and Tool Data.

- **Start Export**: Starts the exporting of the selected data from the MLX200 control module.

Fig. 1-7: Export Data Section

When importing files ensure the file names and the content in the files have not changed or damage could occur to the equipment.
1.2.3 Import Data

The Import Data section of the MLX200 Data software is where what is decided to be imported. The Import Data of the Main Screen contains (see Fig. 1-5 “MLX200 DATA Main Screen” on page 1-9 and Fig. 1-8 “Import Data Section”):

- **Job Import Parameters**: This area is reserved for a new feature, which will be released at a later time.

- **Import File(s) Path**: Allows the User to say where and what to import (one file or multiple files) to the MLX200 Control Module. Multiple files can be selected by pressing the [Crtl] button and clicking on the file names.

- **Clear**: Clears ALL Import Files Path

- **Start Import of Files**: Starts importing files that are in the Import File(s) path to the MLX200 Control Module.

**Fig. 1-8: Import Data Section**

*NOTE* The PLC must be in Program Mode, before importing the MLX data.
1.2.4 Helpful Information

The Helpful Information section contains the following:

- **HELP:** Brings up the MLX200 DATA Software Manual. (See Fig. 1-5 “MLX200 DATA Main Screen” on page 1-9 and Fig. 1-9 “View Teach Points on PLC and HELP Buttons”.)

- **View Teach Point on PLC:** Shows the teach points on the screen by selecting the robot, job number, and Teach Point. (See Fig. 1-5 “MLX200 DATA Main Screen” on page 1-9 and Fig. 1-9 “View Teach Points on PLC and HELP Buttons”.)

Fig. 1-9: View Teach Points on PLC and HELP Buttons

1.3 Customer Service Information

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

- MLX200 DATA model and version
- Description of difficulty (make note of any error messages)
1.4 Exported Data Structure and Compatibility

- Each exported file is text formatted that is easy to modify. The structure format or size cannot be changed, but the actual tag data information can be. For example, you could copy the teach points from Job 2 to Job 5, or modify the heights (TCP Pos2) of multiple teach positions.

- At the top of each exported file, it will list the following information:
  1. The MLX200 Data software version that was used to export the data.
  2. The MLX200 software that was installed on the PLC at the time of exporting.
  3. The array size of all application data (Jobs, Points per Job, Tools, User Frames, Cubic Interference Zones)
     - This is shown because a programmer might have changed the array size for each of these items.
     - The array sizes on the PLC being imported must match the array sizes of the data exported.

*Fig. 1-10: MLx200 Data Teach Points*
1.4 Exported Data Structure and Compatibility

- Data can be exported from a previous MLX version that has a different tag structure, and imported into the latest version of the MLX. This information will automatically be converted to the new data structure. However, for some versions, the PLC being imported cannot be an older version.

**NOTE**

Data exported from old versions can always be imported into the latest versions. For some cases, it is not capable of importing into an older MLX version. For example, exporting from v2.x and importing to v1.x is not possible.
2 Installation

2.1 Installing MLX200 DATA

MLX200 DATA is part of the MotoSoft family of software solutions. The software simplifies the process of finding, exporting, and importing various MLX200 Data.

- Depending on local requirements software installation can be individually, with any combination or completely.
- The MLX200 DATA software is installed by default under the Motoman program manager group
  - On 32 bit windows: (C:\Program Files\Motoman\MLx200Data).  
  - On 64 bit windows: (C:\Program Files (x86)\Motoman\MLx200Data).
3 Operation

3.1 Setting the Communication Settings

1. Open the MLX200 Data Software program and observe the MLX200 DATA Main Screen appears.

2. On the MLX200 DATA Main Screen in the Communication Settings section use the pull down menus and select the desired (See Fig. 3.2 “Viewing Teach Points on the PLC”):
   • PLC Processor Slot from the pull down menus wanting to view.

Fig. 3-1: Communication Settings and View Teach Point on PLC

3. Enter the PLC IP Address in the appropriate location in the Communication Section.
3.2 Viewing Teach Points on the PLC

These procedures will give the ability to view the Teach Point directly from the PLC on a computer screen.

1. Complete section 3.1 “Setting the Communication Settings” on page 3-17, if required.

2. Press and release [View Teach Point on PLC] button and observe the View Teach Point screen appears. (See Fig. 3-2 “Select Job Number / Teach Point Section of the View Teach Point Screen”.)

![Fig. 3-2: Select Job Number / Teach Point Section of the View Teach Point Screen]

3. Using the pull down menus select the Robot Number, Job Number and Teach Point.

4. Observe the View Teach Point Data section populates with:

   • Job Name
   • Teach Point name
   • Tool Number
   • User Frame Number
   • User Frame Number
   • Axis Positions, Pos0 through Pos6
   • TCP Positions, Pos0 through Pos6

---

**NOTE**
Teach Point information can only be viewed and not changed.
3.3 Exporting MLX200 Data Information

Exporting MLX200 Data Information gives the ability to keep a record and a backup file of the required MLX200 Data.

1. Complete section 3.1 “Setting the Communication Settings” on page 3-17, if required.

2. In the Export File Path enter the location of the file(s) to export using the (Browse Button.)

Fig. 3-3: Export Section of the Main Screen

3. Using the pull down menu select from the following what to Export (See Fig. 3-3 “Export Section of the Main Screen”):
   - All User Data
   - Job Teach Points
   - UserFrame Data
   - Cubic Interference Zones
   - Export Tool Data

4. Press the [Start Export] button and observe the Success! popup screen appears press the [OK] button. (See Fig. 3-4 “Export Process Complete Popup”.)

Fig. 3-4: Export Process Complete Popup

CAUTION

The export data can be viewed using Notepad or similar software but do not change any part of the data or problems can occur if data needs restored.
3.4 Importing MLX200 Data Information

Importing MLX200 Data Information gives the ability to restore data if the data is lost or corrupted.

1. Complete section 3.1 “Setting the Communication Settings” on page 3-17, if required.

2. In the Import File(s) Path enter the location of the file to import using the (Browse Button.) Repeat for each file to import.

Fig. 3-5: Import Section on Main Screen

3. Press the [Start Import of Files] button and observe the Operation Complete popup screen appears press the [OK] button.

Fig. 3-6: Import
MLX200 DATA SOFTWARE
INSTRUCTIONS

Specifications are subject to change without notice for ongoing product modifications and improvements.