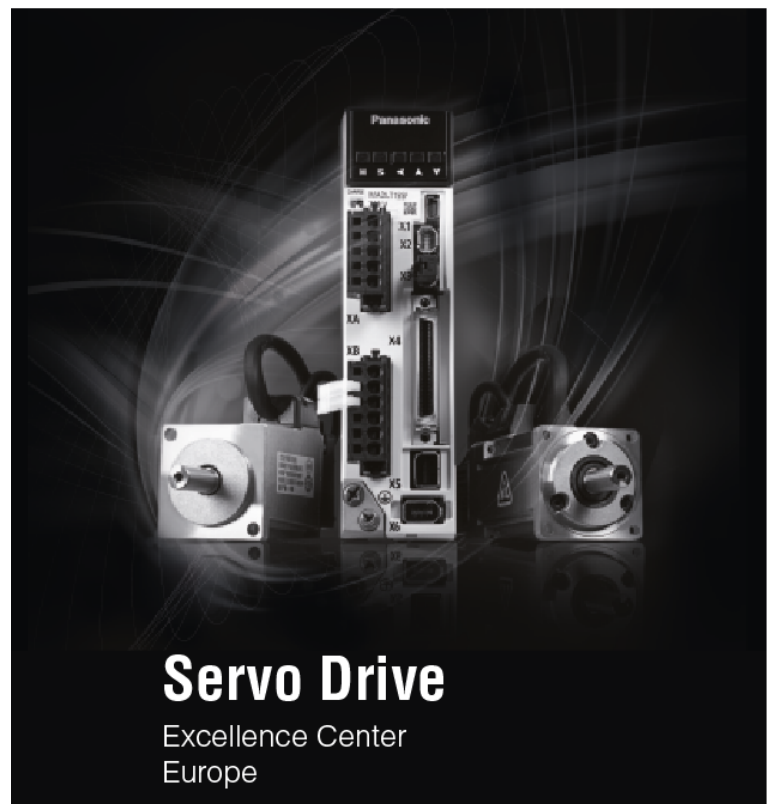


Servo Drives

Quick Start Guide

Position control using RTEX
(MINAS A5N/A6N)



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Table of contents

1 Introduction.....	4
1.1 Before you start.....	4
1.2 About this document.....	4
1.3 Related documents.....	4
1.4 Available software.....	5
2 Functional overview.....	6
3 Wiring.....	7
3.1 Recommendations for wiring.....	7
3.2 Connectors of the servo driver.....	7
4 Configure the servo driver.....	10
5 Configure the FP0H RTEX unit.....	11
6 Function test.....	14
7 Help us improve.....	15
8 Record of changes.....	16

1 Introduction

1.1 Before you start

Before operating this product, read the safety instructions in the related *Operating Instructions*.

This product is for industrial use only.

Electrical connections must be made by qualified electrical personnel.

1.2 About this document

This *Quick Start Guide* is intended to help you set up a MINAS servo drive system. It is based on information from the MINAS series manuals and the practical experience of our engineers.

Step-by-step instructions will guide you through connecting a FP0H RTEX Motion Control Module to a MINAS servo driver.

1.3 Related documents

Please refer to the original servo drive manuals for detailed information. Click on the following links to download the documents from our Panasonic Download Center.

- Information on wiring, position control, and parameters:

For MINAS A5:

[*Operating Instructions \(Overall\) AC Servo Motors & Driver MINAS A5 series*](#)

[*Reference specification MINAS A5N series SX-DSV02201*](#)

[*Functional specification MINAS A5N series SX-DSV02202*](#)

[*Communication specification for MINAS A5N series SX-DSV02203*](#)

For MINAS A6:

[*Operating Instructions \(Overall\) AC Servo Motors & Driver MINAS A6 series*](#)

[*Reference specifications MINAS A6N series SX-DSV03089*](#)

[*Functional specification MINAS A6N series SX-DSV03077*](#)

[*Communication specification MINAS A6N series SX-DSV0 3078*](#)

- Information on how to reduce electromagnetic interference (EMI):

[*Recommendations for EMC-compliant wiring of servo drivers and motors*](#)

- Other Quick Start Guides:

[*QS2000, Position control by pulse and direction signals \(MINAS A5/A5E/A6SG/A6SF\)*](#)

[*QS2001, Position control by block operation using input signals \(MINAS A6SG/A6SF\)*](#)

[*QS2002, Position control by block operation using Modbus commands \(MINAS A6\)*](#)

[*QS2003, Position control in EtherCAT networks MINAS A5B/A6B*](#)

[*QS3000, Velocity control \(MINAS A5/A6F\)*](#)

[*QS4000, Torque control \(MINAS A5/A6\)*](#)

[*QS5000, PANATERM - Trial run*](#)

[*QS5001, PANATERM - Auto-tuning*](#)

[*QS5002, PANATERM - Fit gain tuning*](#)

1.4 Available software

The following software is available free of charge in our Panasonic Download Center. Click on the link to start the download.

- [PC configuration software PANATERM](#)
- [PC programming software Control FPCWIN Pro 7](#)

Use the positioning table configurator PM7 (RTEX unit) in this software to configure the FP0H RTEX unit.

- [MC_RTEX_FP0H_Library](#)

This programming library was developed for the FP0H RTEX unit and offers convenient functions and function blocks for basic positioning tasks.

2 Functional overview

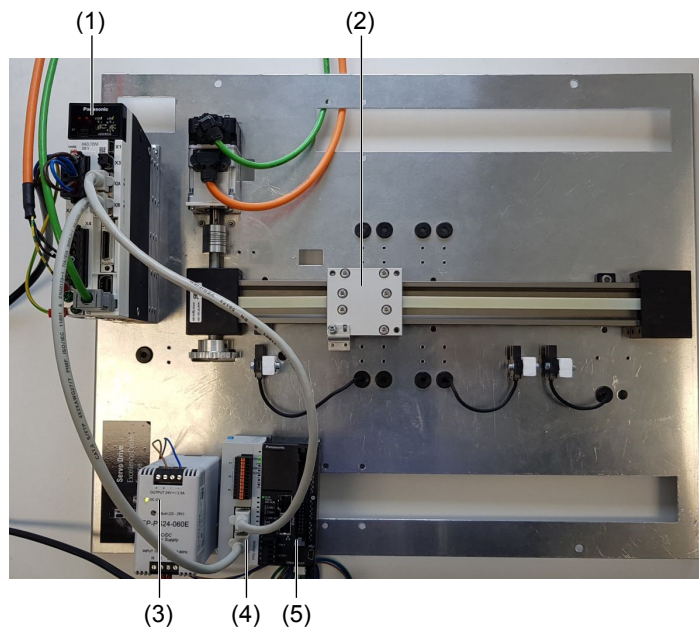
Position control is a control mode in which the motor moves the load to a specified target position.

The servo driver can be controlled via RTEX from any host controller which supports RTEX communication. This *Quick Start Guide* explains how to wire and configure the servo driver and the host controller to get your system up and running.

Use the Positioning table configurator PM7 (RTEX) in Control FPCWIN Pro 7 to configure the FP0H RTEX unit.

Example

The host controller is an FP0H PLC with an FP0H RTEX unit. It is connected to a MINAS A6N servo driver by a standard network cable.



- (1) MINAS A6N driver
- (2) Load to be moved
- (3) 24 VDC power supply
- (4) Network cable
- (5) FP0H PLC and RTEX unit

Data transmission between motion control unit and servo driver via network cable

3 Wiring

3.1 Recommendations for wiring

It is the customer's responsibility to apply the countermeasures that they consider necessary to comply with current regulations on wiring, safety and reducing EMI.

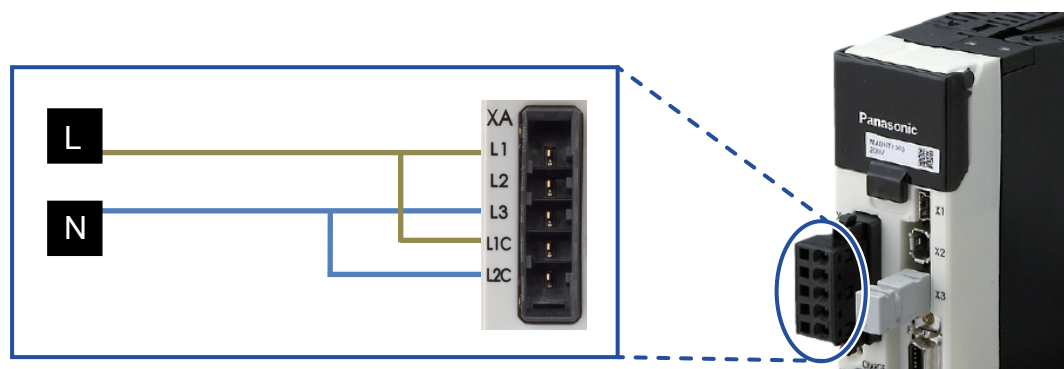
Do not forget to meet the specifications indicated in the hardware manual for each of the devices being wired. If any specifications in the manual conflict with the information in this document, the manufacturer's manual takes preference.

For detailed information on reducing EMI, please refer to [Recommendations for EMC-compliant wiring of servo drivers and motors](#).

3.2 Connectors of the servo driver

XA connector (main power connector)

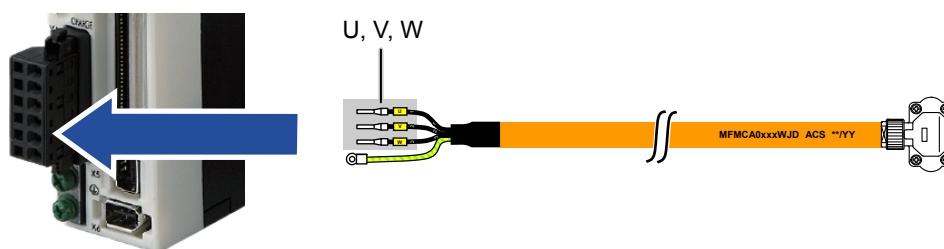
Connect the power supply cable to the XA connector. For a 1-phase power supply of 230V, connect a 2-wire cable to the servo driver as illustrated. The L2 pin is not used in 1-phase mode.



Wiring of the XA connector for a power supply of 230V

XB connector (motor connector)

Connect the motor cable to the XB connector. The wires are labeled with the letters U, V, and W. Do not change the sequence of the motor phases, e.g. by connecting V to W.



Wiring of the XB connector for the motor power supply

X6 connector (encoder connector)

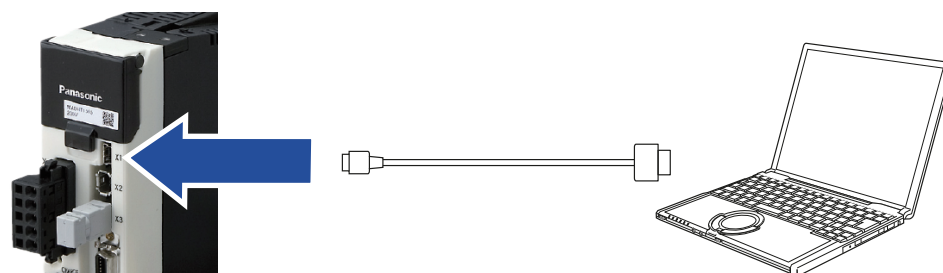
Connect the encoder cable to the X6 connector.



Wiring of the X6 connector for the encoder connection

X1 connector (USB connector for PC connection)

The servo driver is configured using the PC configuration software PANATERM. Use a commercially available USB A to mini-B cable to connect the PC to the servo driver.



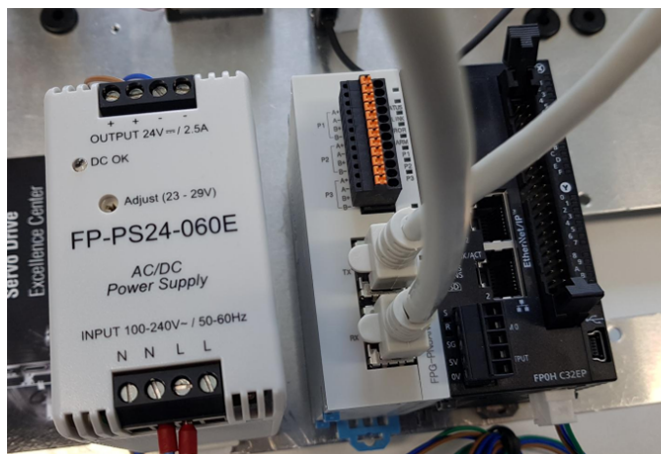
Connector X1 for PC connection

X2A and X2B connectors (RTEX connectors)

Connect one Ethernet cable to the X2A connector of the MINAS A6N driver and to the TX port of the FP0H RTEX unit.

Connect a second Ethernet cable to the X2B connector of the MINAS A6N driver and to the RX port of the FP0H RTEX unit.

Connect the FP0H RTEX unit to a 24V power supply.



Ethernet cables plugged into X2A and X2B connectors on MINAS A6N and TX and RX parts on the FP0H RTEX unit

4 Configure the servo driver

1. Use the two rotary switches on the front panel to set the MAC-ID of the servo driver. In this example, set the address 01 by setting the left switch to 0 and the right switch to 1.
2. Use the PC configuration software PANATERM to configure the MINAS A5/A6 servo driver. Please refer to other *Quick Start Guides* to learn how to set parameters in PANATERM.

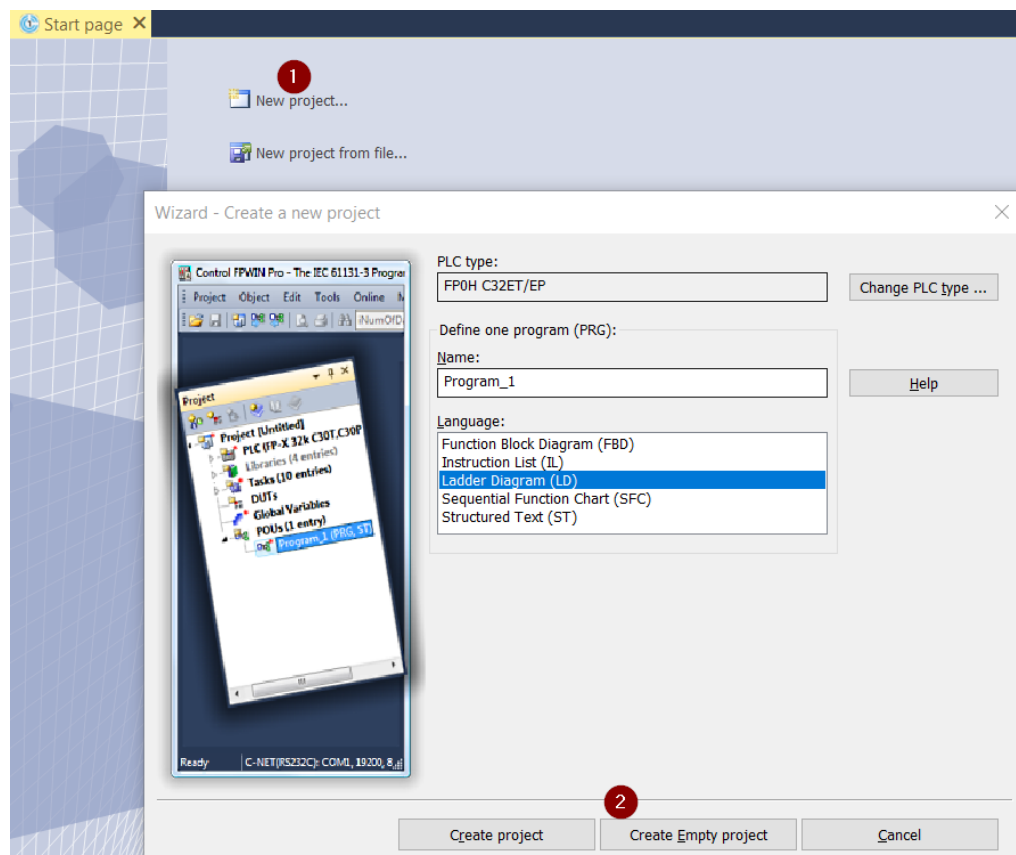
Click on the following link to download PANATERM from our Panasonic Download Center: [PC configuration software PANATERM](#)

5 Configure the FP0H RTEX unit

To configure the FP0H RTEX unit, use the Positioning table configurator PM7 (RTEX) in the PC configuration software Control FFWIN Pro 7.

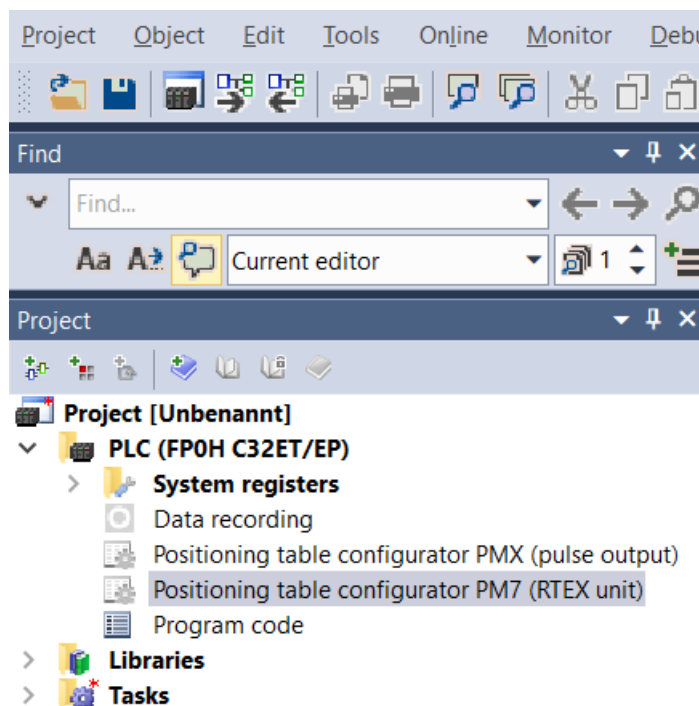
Click on the following link to download Control FFWIN Pro 7 from our Panasonic Download Center: [PC programming software Control FFWIN Pro 7](#)

1. Connect the FP0H PLC to your PC using a USB cable.
2. Start FFWIN Pro 7 and create an empty FP0H project:



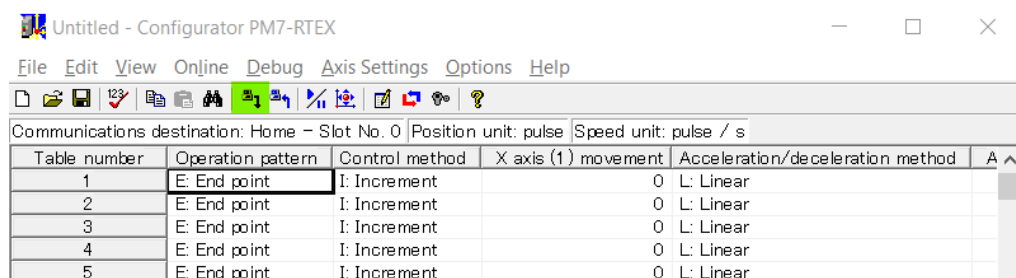
3. Double-click "PLC" in the navigator.

4. Double-click “Positioning table configurator PM7 (RTEX unit)”.

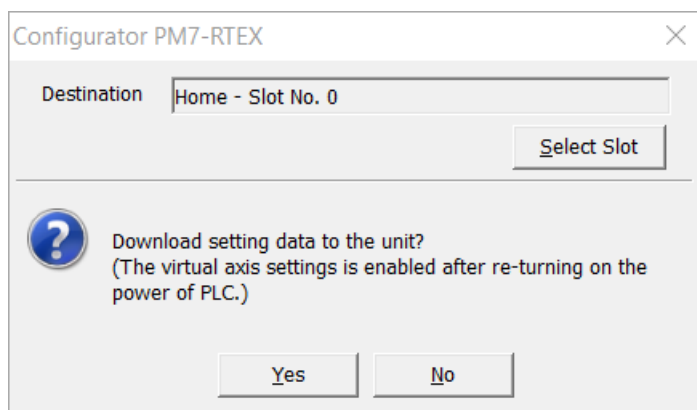


The configurator window opens.

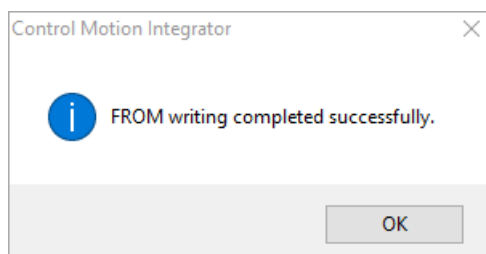
5. Select “New”, to create a new configuration file for the FP0H RTEX unit.
6. In this example, select one axis only (Axis 1). Select “OK”.
7. Select “OK” in the “Interpolation operation group settings”.
The axis to be used is an independent axis and does not belong to an interpolation group.
8. Download the configuration by selecting the green highlighted button:



9. Select the number of the slot where you have physically installed the FP0H RTEX unit. In this example, set slot number 1. Select “OK”.



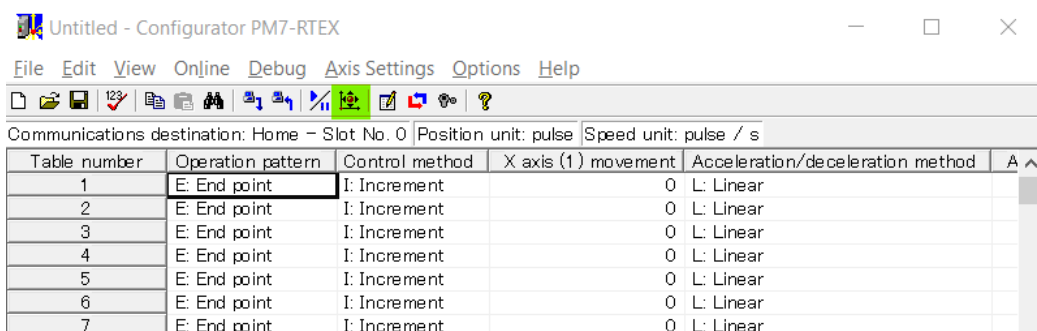
10. To additionally save the configuration in the FROM, select “Yes” in the next dialog. Otherwise the configuration data will be lost when the FP0H RTEX unit is turned off.
11. Select “OK” to complete the process.



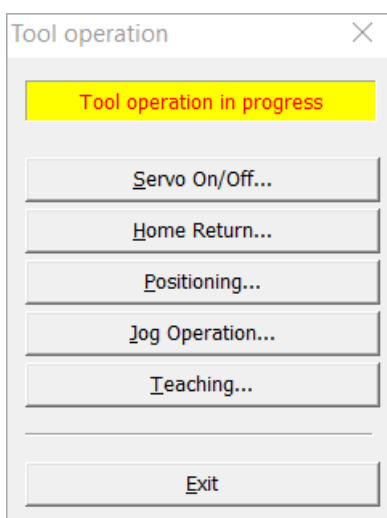
6 Function test

To quickly test your settings, perform a JOG operation using the positioning table configurator PM7.

1. Select the green highlighted button to open the “Tool operation” dialog.



2. Select the “Servo on/Off...” button to activate position control on the MINAS A6N servo driver.



3. Select the “Jog Operation...” button to start a simple trial operation and to check if the axis is moving.

7 Help us improve

Please feel free to contact us if you have any questions, or if you have any suggestions for improvement. In that case, we ask you to include the Quick Start Guide number in the email subject line. You can find the number starting with "QS" on the cover page.

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8 Record of changes

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First edition



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