Multi Axis Drive Controller for FESTO



nutai

Nuevas técnicas de automatización industrial

19 January 2022

Festo CMMP-AS Configuration Manual

www.nutai.com

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Introduction

This manual explains the configuration of Festo CMMP-AS motor controller so that it can be operated from a UR robot using the NUTAI URCap Multi Axis Drive (MAD) Controller.

Note that this manual explains the minimum required configuration, so it is left pending for the user to complete other configuration options specific for their end application.

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Necessary software

To configure the Festo CMMP-AS motor controller, the Festo Configuration Tool (FCT) software —available for Windows— must be downloaded and installed on your computer.

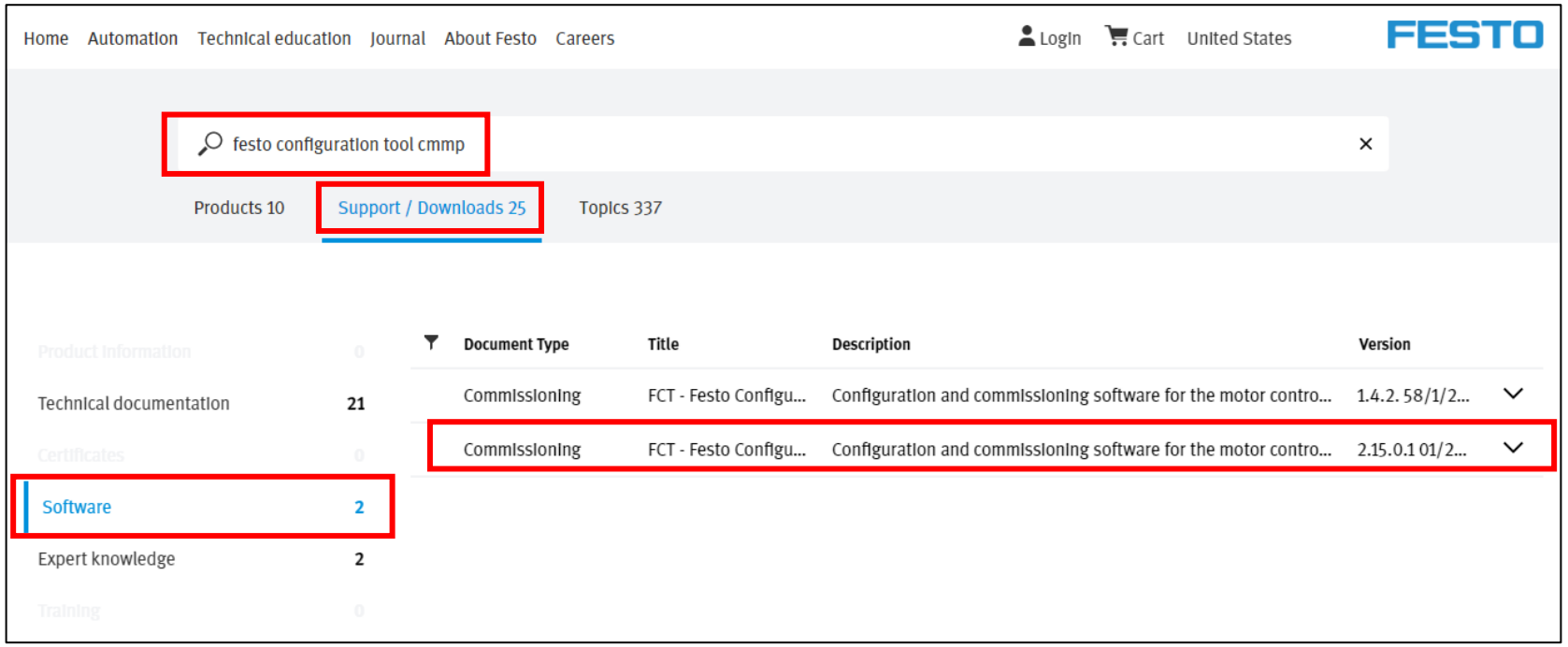
To do this, go to the Festo[1] website and download the latest version available, making sure that it is compatible with your CMMP-AS controller, as indicated in the following slides.



[1] Festo oficial website:
https://www.festo.com

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Necessary software



Necessary software

Title:
FCT - Festo Configuration Tool - Plugin

Description:
Configuration and commissioning software for the motor controller CMMP-AS FCT Plugin CMMP-AS V2.11.0.262 for Firmware V4.0.1501.2.4 FCT Plugin CMMP-AS V2.10.0.150 for Firmware V4.0.1501.2.4 FCT Plugin CMMP-AS V2.9.0.255 for Firmware V4.0.1501.2.4 FCT Plugin CMMP-AS V2.8.0.554 for Firmware V4.0.1501.2.3 FCT Plugin CMMP-AS V2.7.0.154 for Firmware V4.0.1501.2.3 FCT Plugin CMMP-AS V2.6.0.131 for Firmware V4.0.1501.2.3 FCT Plugin CMMP-AS V2.5.0.479 for Firmware V4.0.1501.2.2 FCT Plugin CMMP-AS V2.4.1.4 for Firmware V4.0.1501.2.1 Festo Configuration Tool V1.3.1.1Version changes:Configuration and commissioning software for the motor controller CMMP-AS FCT Plugin CMMP-AS V2.15.0.10 for Firmware V4.0.1501.2.4 FCT Plugin CMMP-AS V2.14.2.3 for Firmware V4.0.1501.2.4 FCT Plugin CMMP-AS V2.13.1.1 for Firmware V4.0.1501.2.4 FCT Plugin CMMP-AS V2.12.0.174 for Firmware V4.0.1501.2.4 FCT Plugin CMMP-AS V2.10.0.150 for Firmware V4.0.1501.2.4 FCT Plugin CMMP-AS V2.9.0.255 for Firmware V4.0.1501.2.4 FCT Plugin CMMP-AS V2.8.0.554 for Firmware V4.0.1501.2.3 Festo Configuration Tool V1.4.3.2 Supported systems:Motor controller CMMP-AS-C10-11A-P3-M3 (1501328) Motor controller CMMP-AS-C10-11A-P3-M3-C1 (2106335) Motor controller CMMP-AS-C15-11A-P3-M3 (3215473) Motor controller CMMP-AS-C2-3A-M3 (1501325) Motor controller CMMP-AS-C2-3A-M3-C1 (2106332) Motor controller CMMP-AS-C5-11A-P3-M3 (1501327) Motor controller CMMP-AS-C5-11A-P3-M3-C1 (2106334) Motor controller CMMP-AS-C5-3A-M3 (1501326) Motor controller CMMP-AS-C5-3A-M3-C1 (2106333)

Document type:
Commissioning

Title	Language	Version	File size	Download
Version 2.15.0.10 (26.01.2021) Version hl...	Deutsch [de], English [en], 中文 [zh-CN]	2.15.0.10 (1/26/...	1513 MB	

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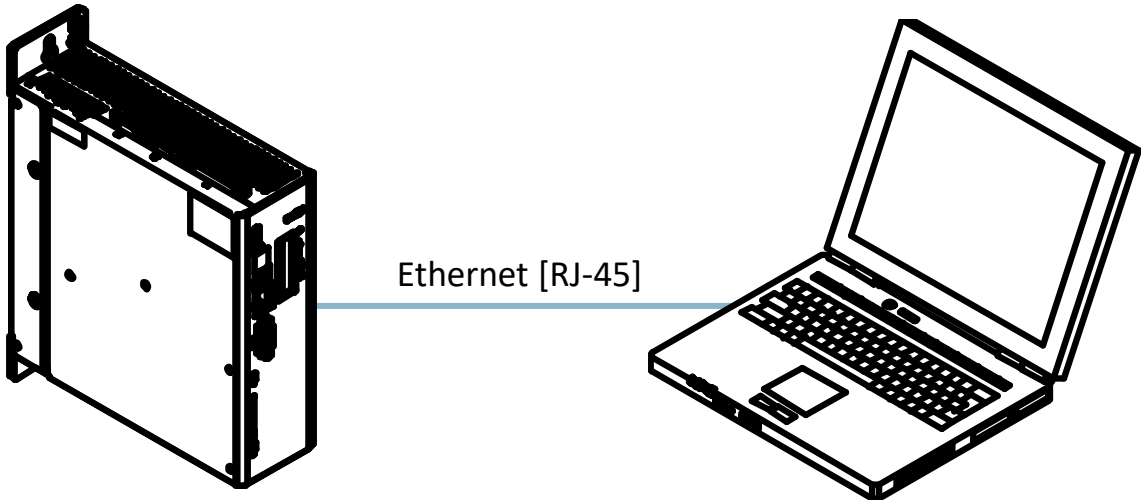
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Connection with controller

Connect your Festo CMMP-AS controller to your computer —directly or through a switch—via Ethernet.



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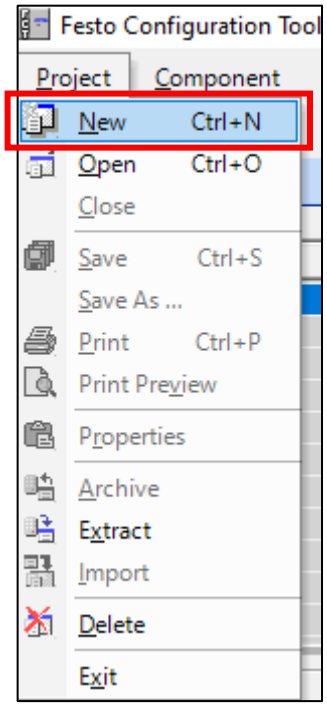
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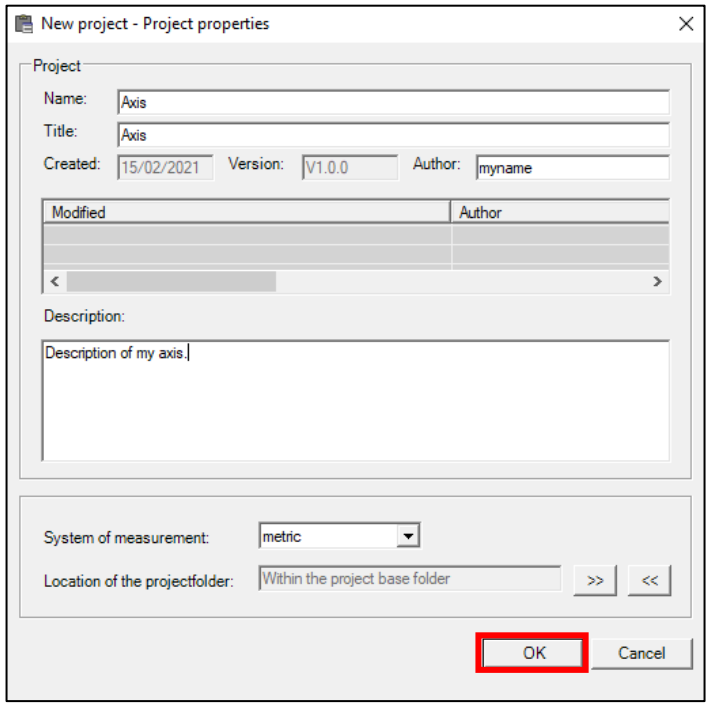
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Project creation

Start the *Festo Configuration Tool* application, click *Project* -> *New* and enter the data for the new project.





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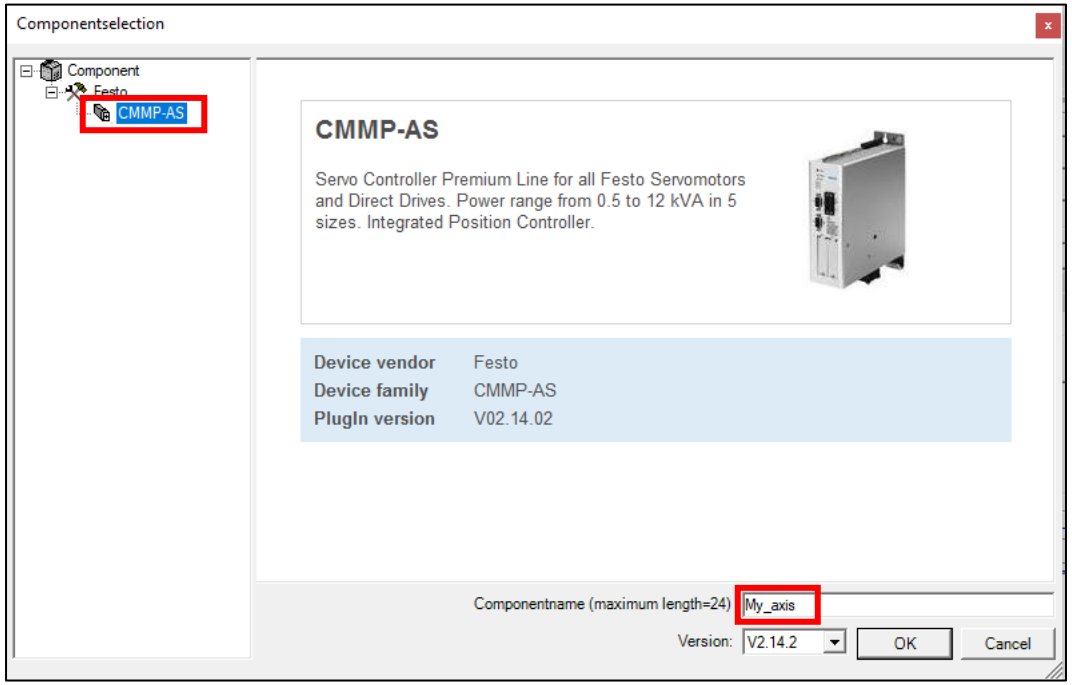
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Component selection

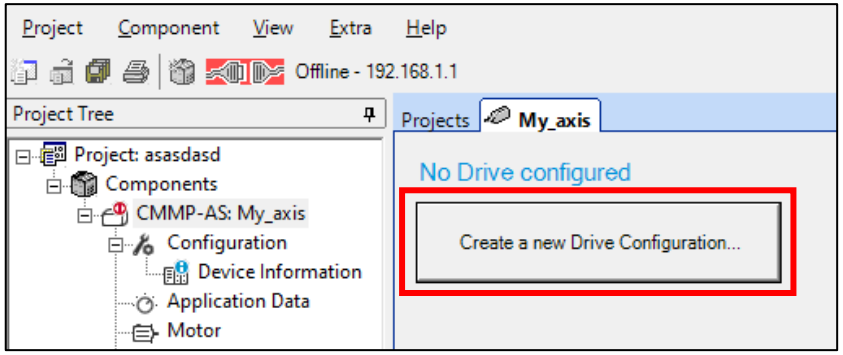
Once the project is created, go to it, select the CMMP-AS component and enter a name for this component.



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Component selection

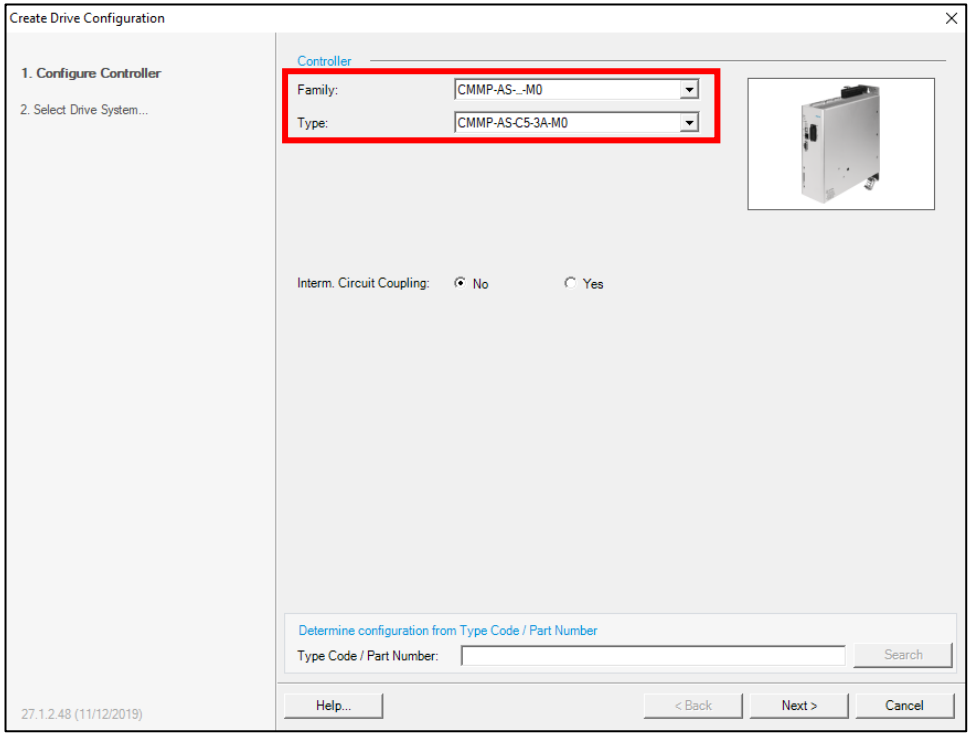
The next step will be to create a new controller configuration. Click the *Create new Drive Configuration* button.

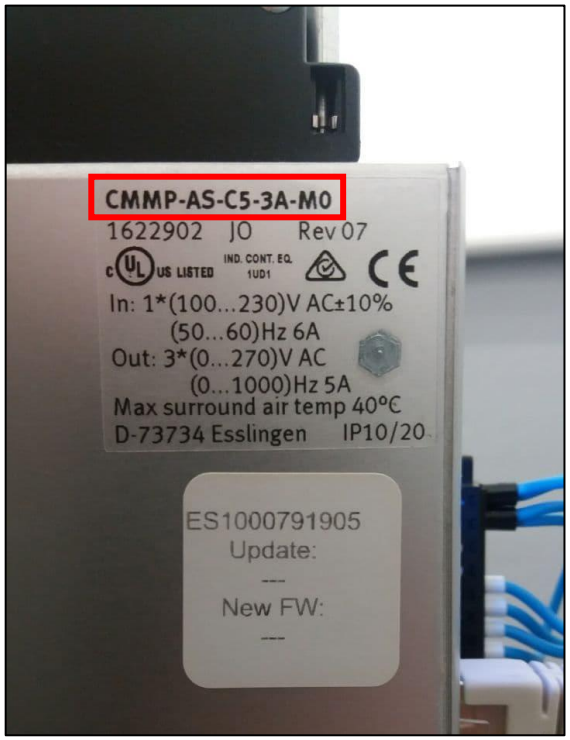


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Component selection

First, select the family and type of controller you have. If using DC power, enable the intermediate circuit option.

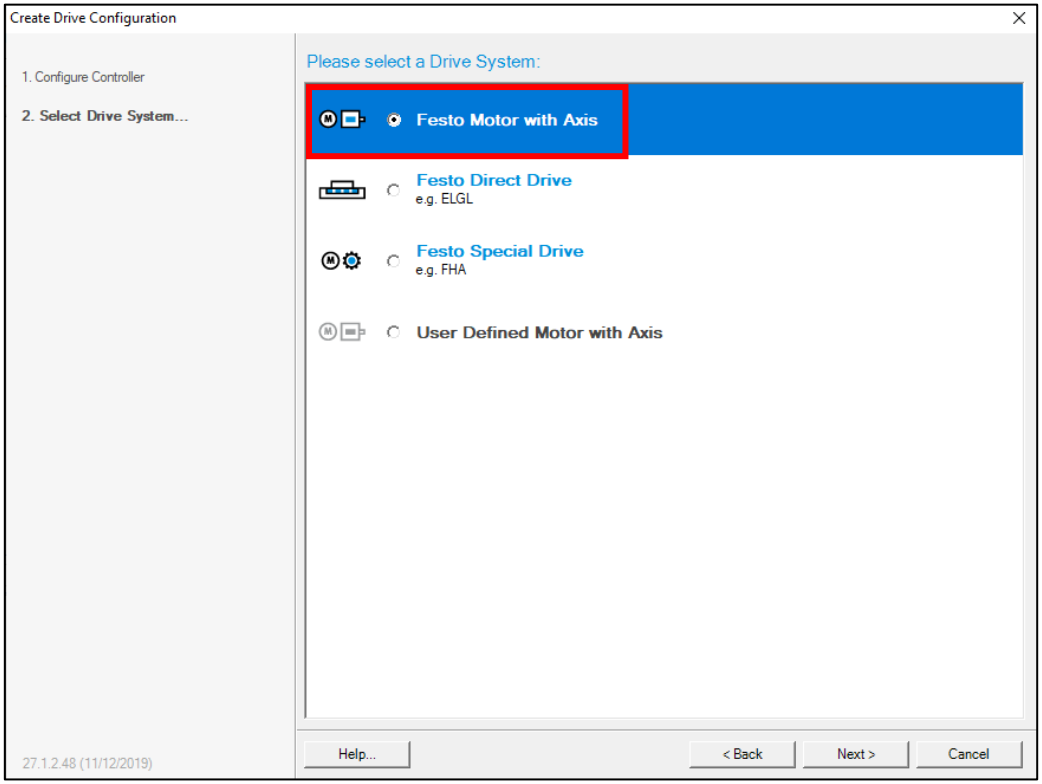




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Component selection

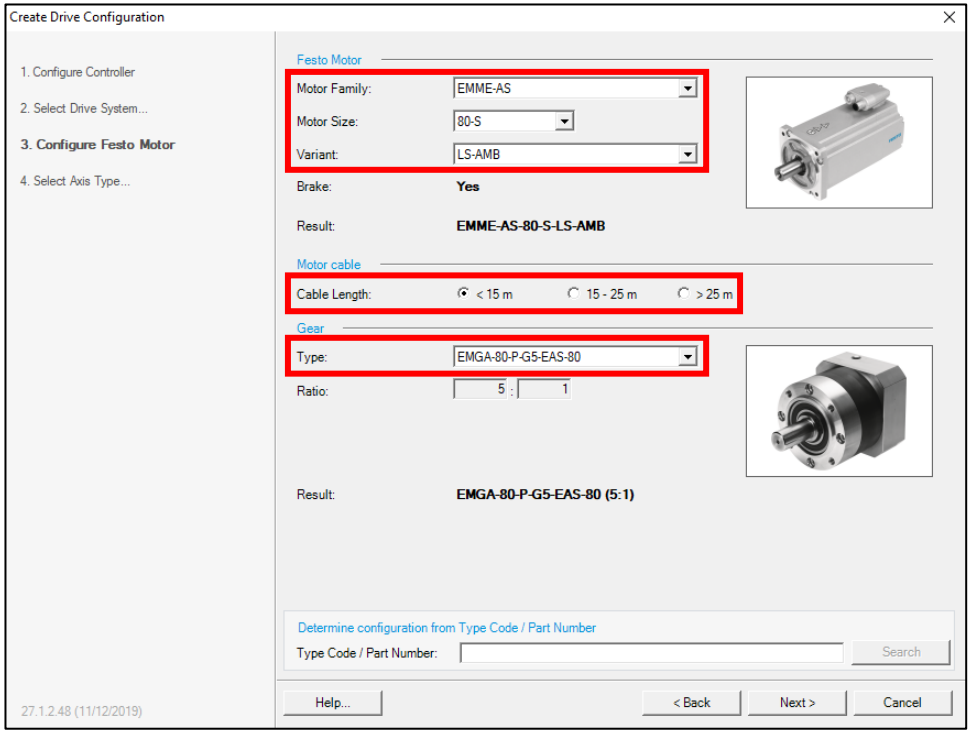
Then select the drive system: typically, *Festo Motor with Axis*.



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Component selection

The next step is to indicate the motor, the length of the cable and the reducer you have.



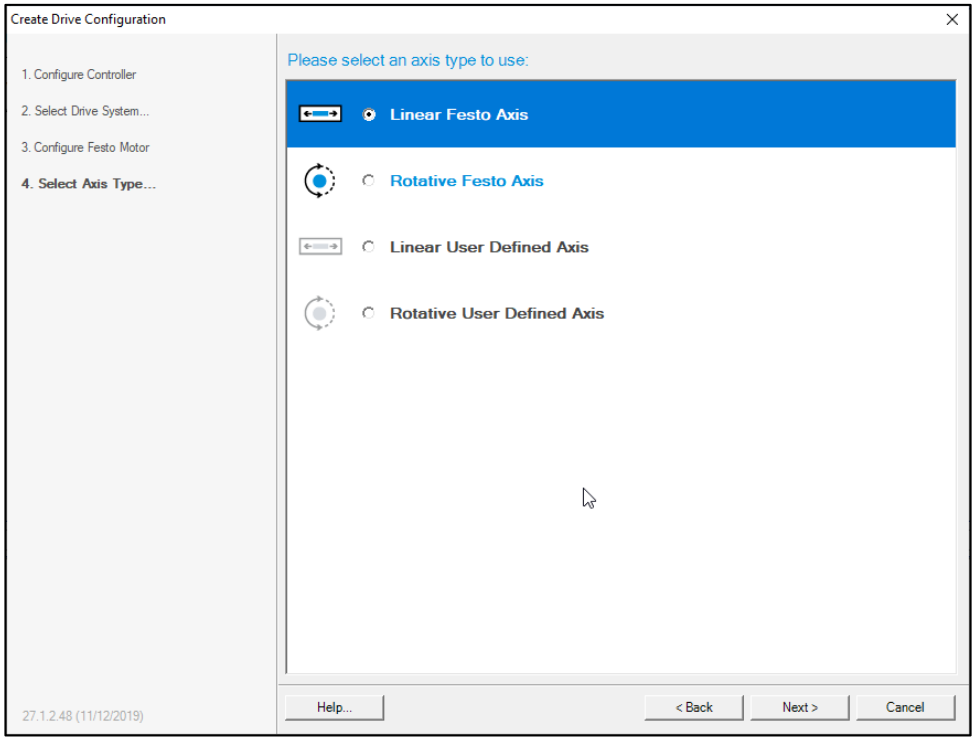




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Component selection

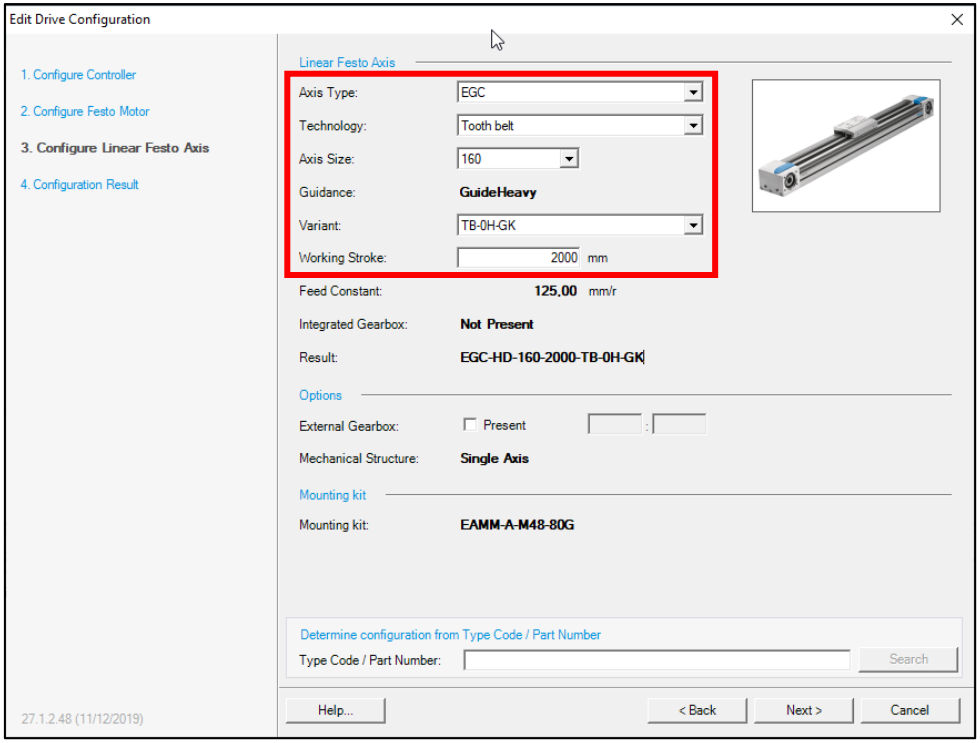
Now we select the type of axis we are going to use, typically a linear or rotative Festo axis (first 2 options).



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Component selection

Subsequently, we select the axis model that we will use.

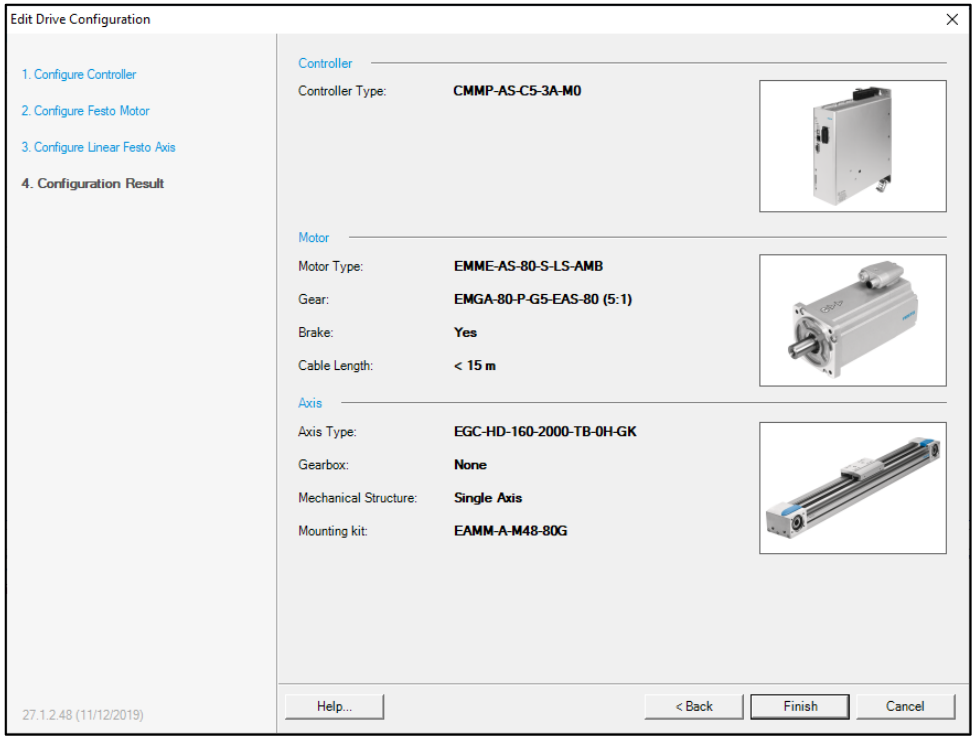




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Component selection

Finally, the result of the selected configuration is displayed.



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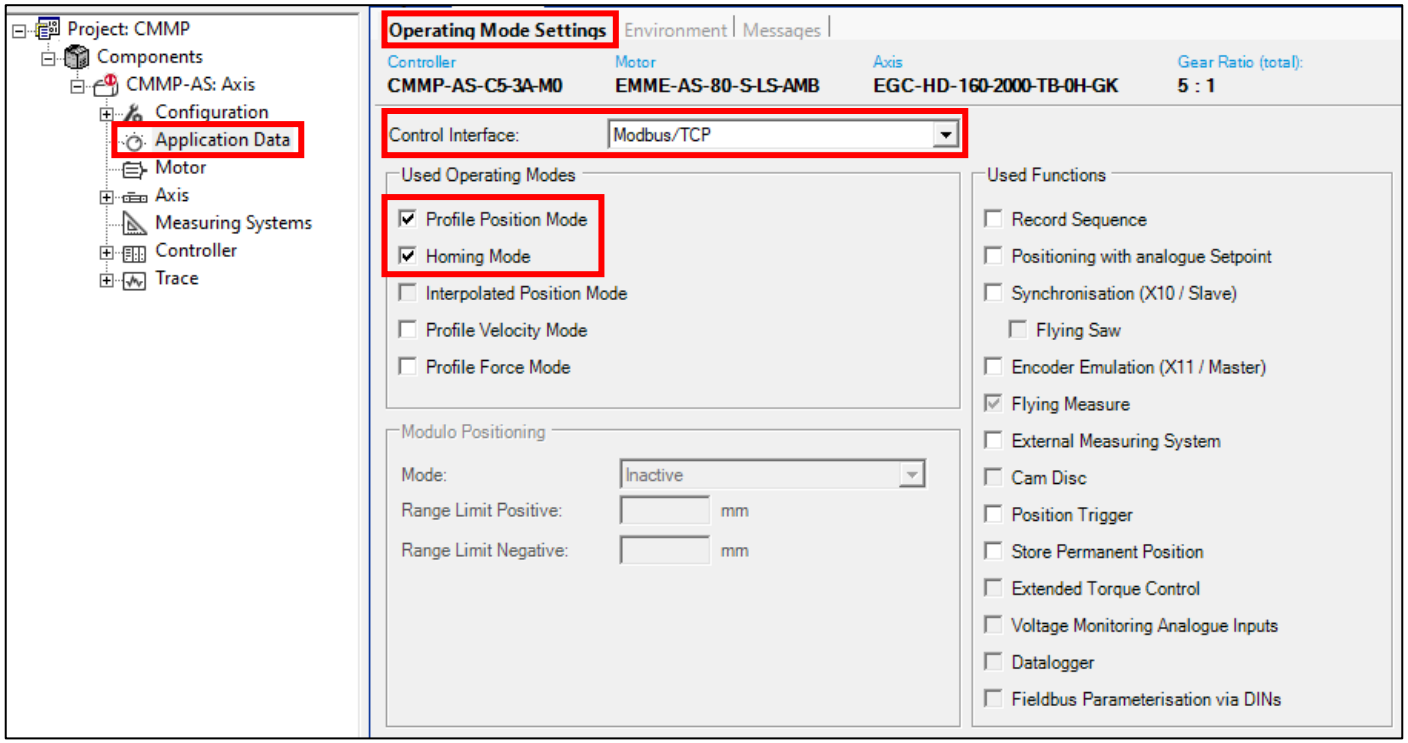
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Configuration

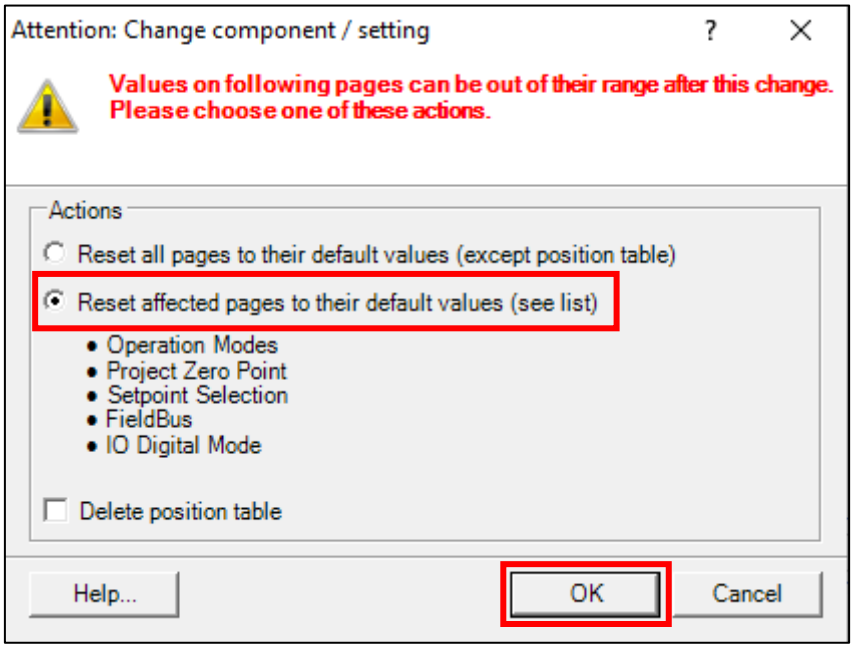
First, go to the *Application Data* category, click the *Operating Mode Settings* tab and select the control interface: *Modbus/TCP*. Also enable the *Profile Position Mode* and *Homing Mode* options.



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Configuration

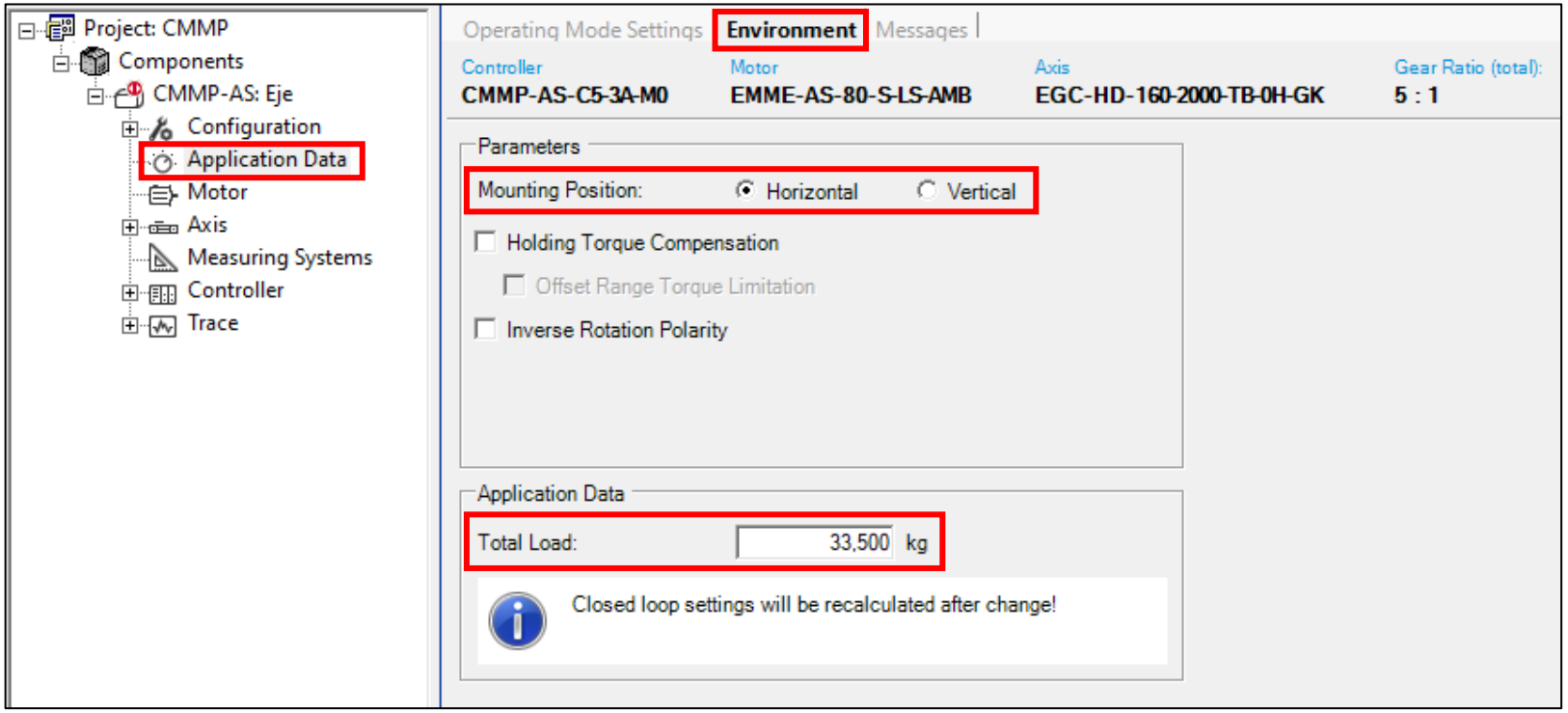
When modifying the control interface, a warning window may appear. Accept the reset of the affected pages by pressing the *OK* button.



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Configuration

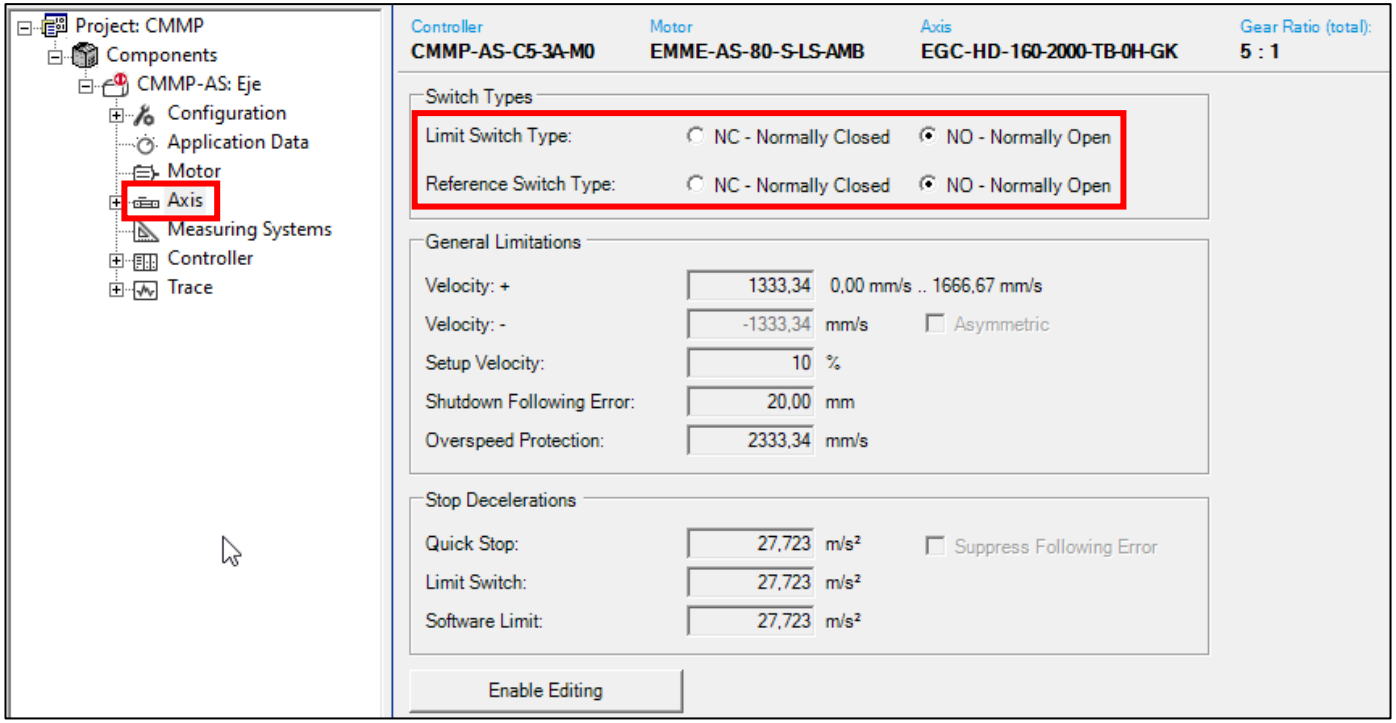
Now click on the *Environment* tab and select the axis mounting position and the approximate total load.



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Configuration

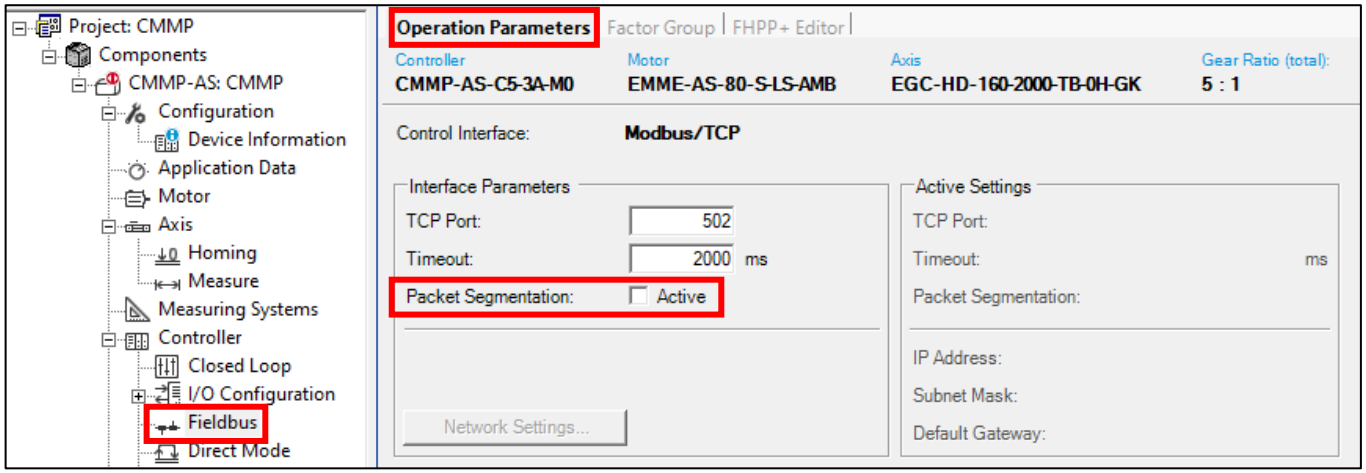
We now access the *Axis* category and configure the limit and reference switches according to whether they are NC (*Normally Closed*) or NO (*Normally Open*). In case of not using them, we configure them as NO.



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Configuration

We access the *Fieldbus* subcategory and select the *Operation Parameters* tab. We verify that the *Packet Segmentation*[1] option is **disabled**.

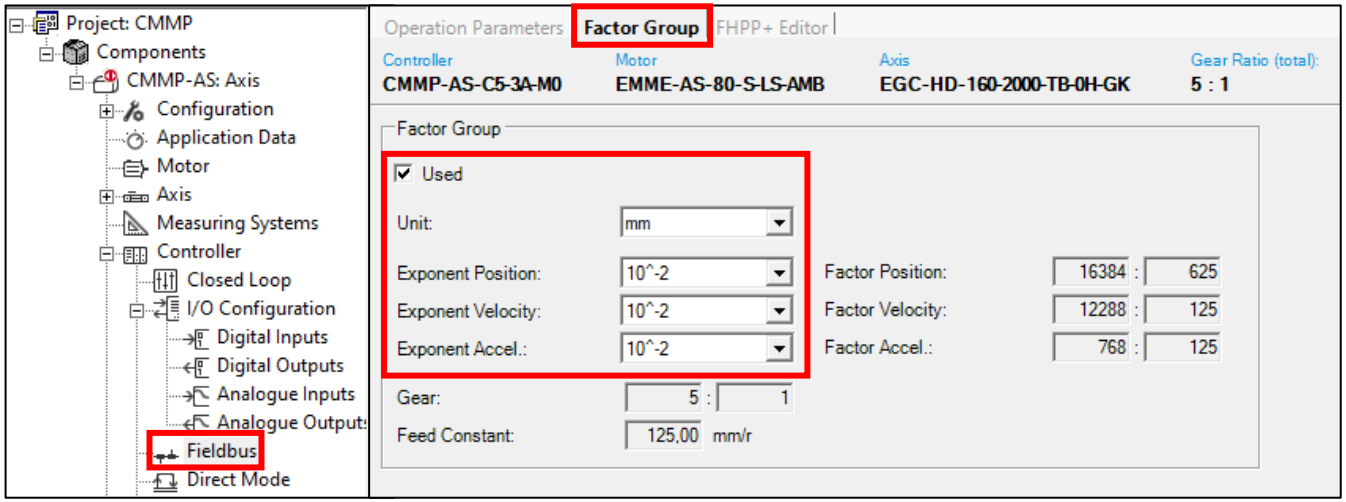


[1] If this option is not visible, update the FCT CMMP plugin to a newer version.

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Configuration

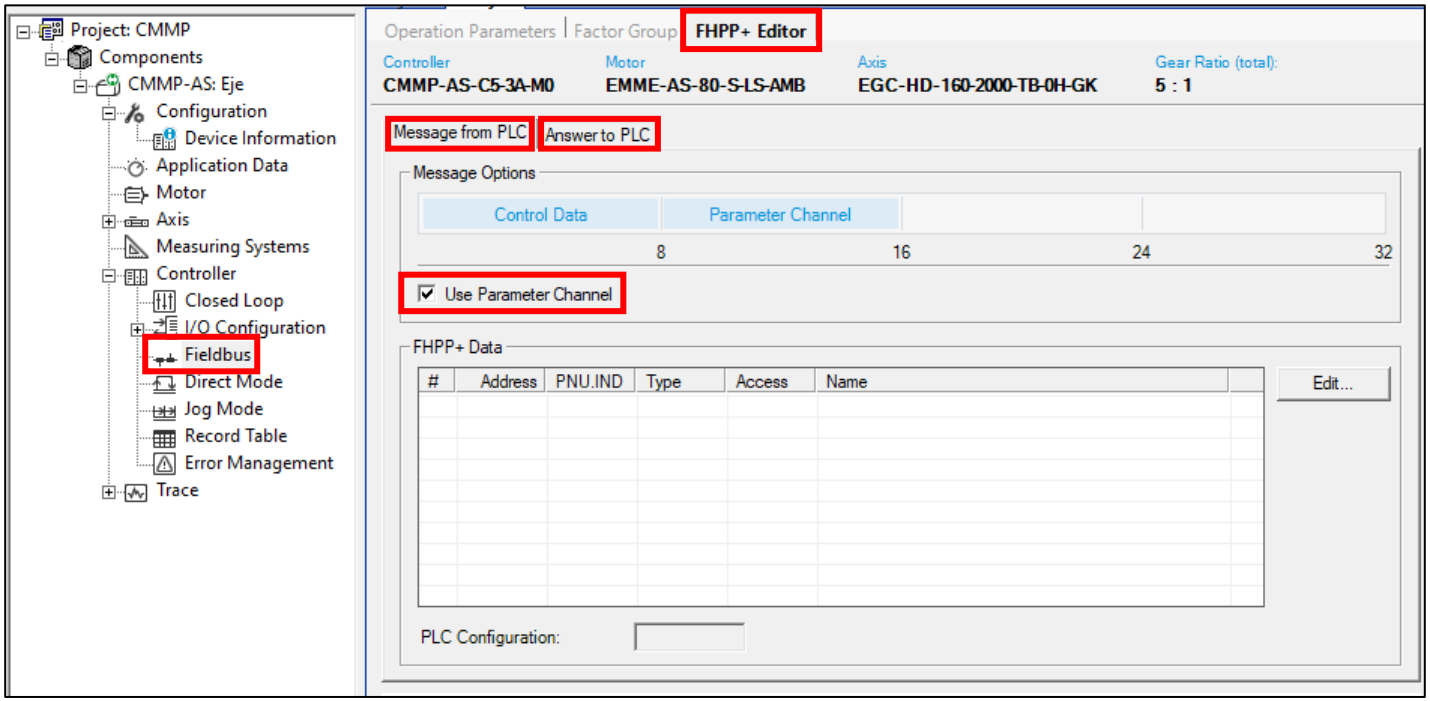
We now select the *Factor Group* tab. We set the units we want to use —typically mm/in for linear axis and r/° for rotative axis— and configure the position, velocity and acceleration exponents to 10^{-2}, as indicated in the image:



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Configuration

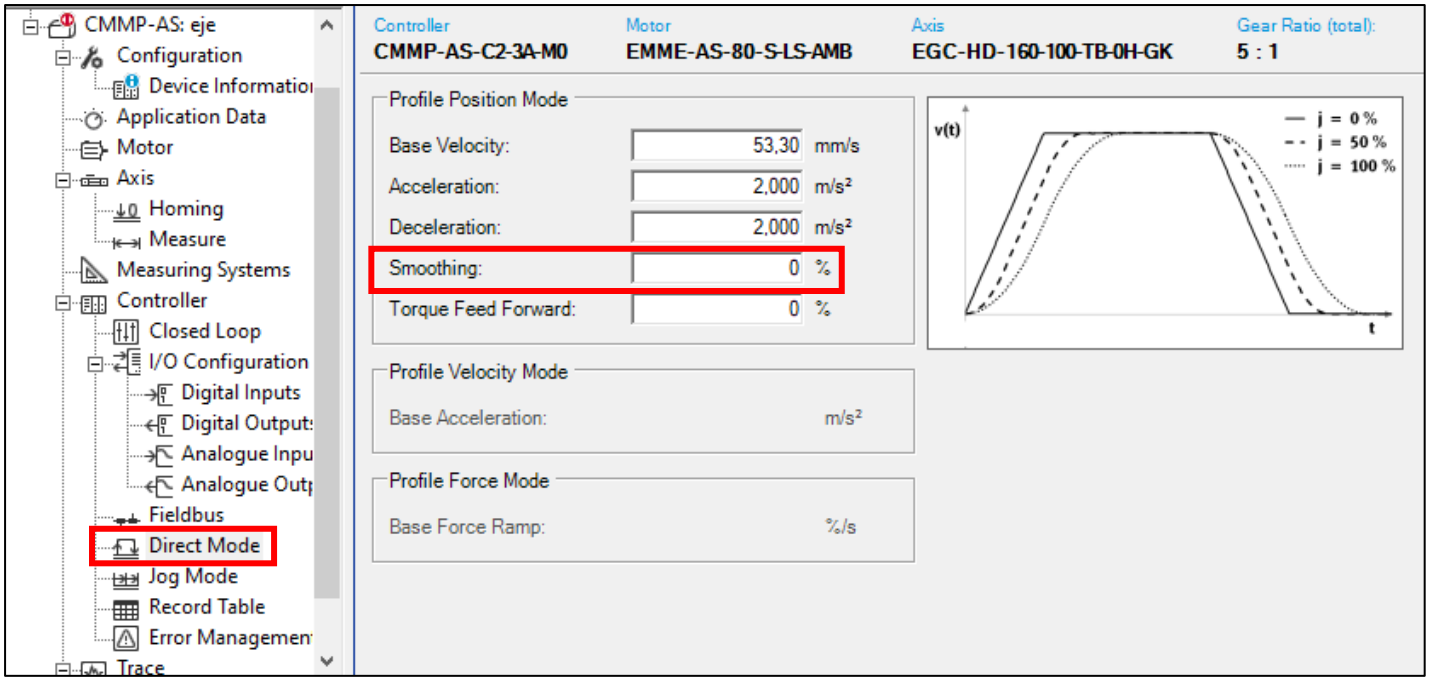
Later, we access the *FHPP+ Editor* tab and enable the *Use Parameter Channel* option in both sub-tabs: *Message from PLC* and *Answer to PLC*.



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Configuration

Finally, we select the *Direct Mode* tab and verify that the *Smoothing*[1] parameter is set to a value of 0%.

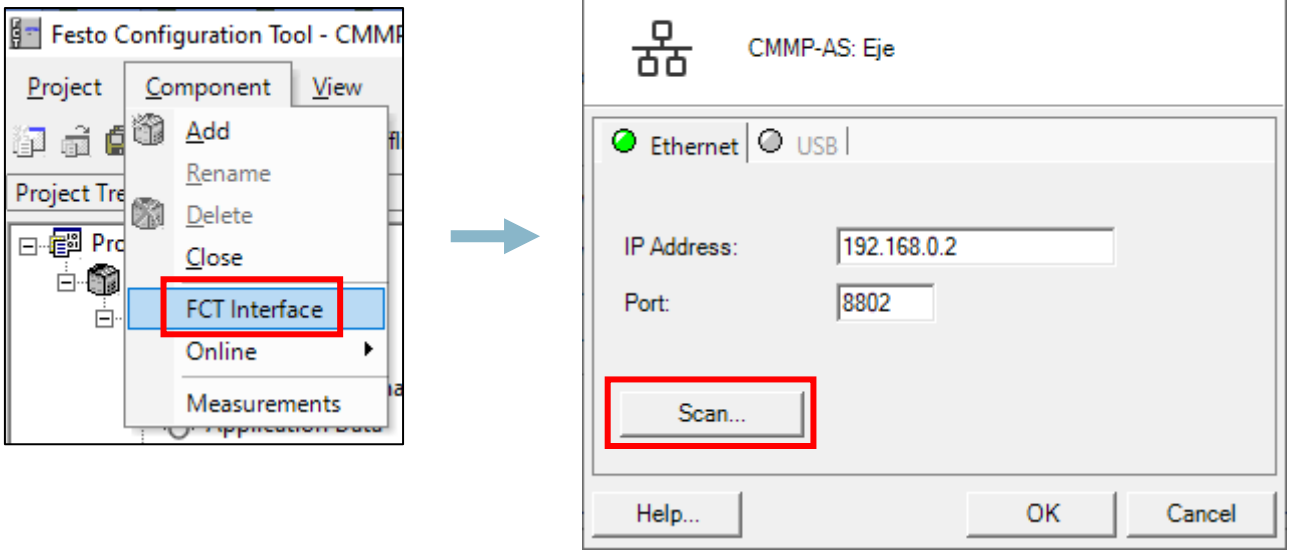


[1] Setting a percentage other than 0% can cause operational problems.

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Configuration

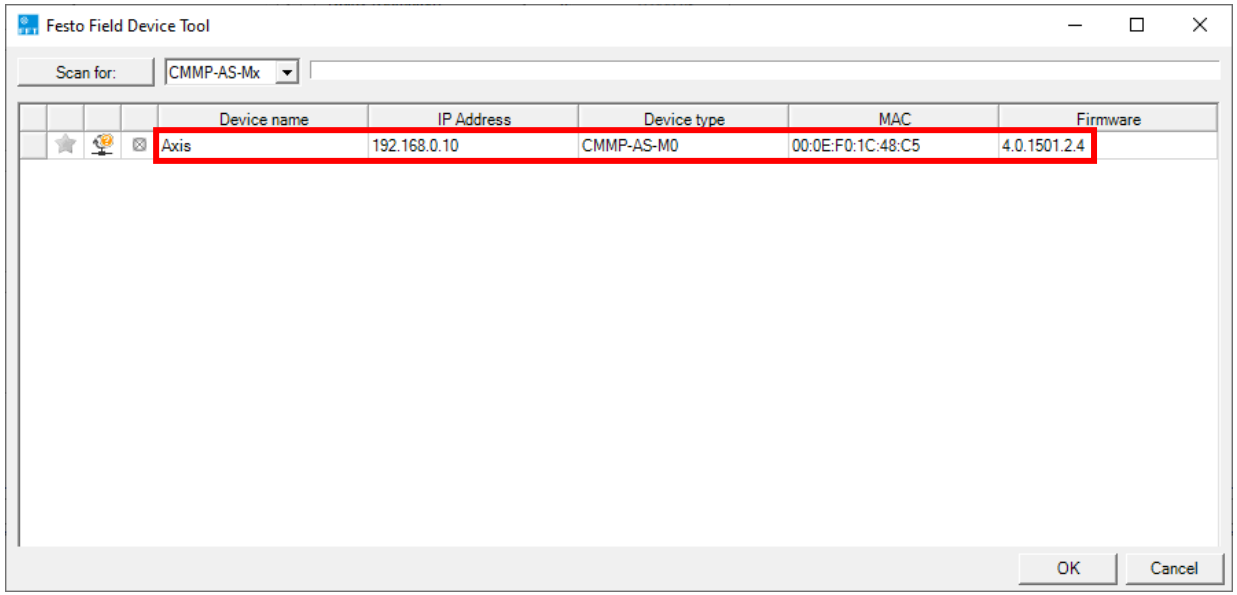
Once the configuration is complete, we proceed to connect to the controller. To do this we access *Component -> FCT Interface -> Scan*.



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Configuration

From this window we can see the devices found and their main data. It is also possible to modify[1] its name and network configuration by right clicking on it and accessing the *Network* option.

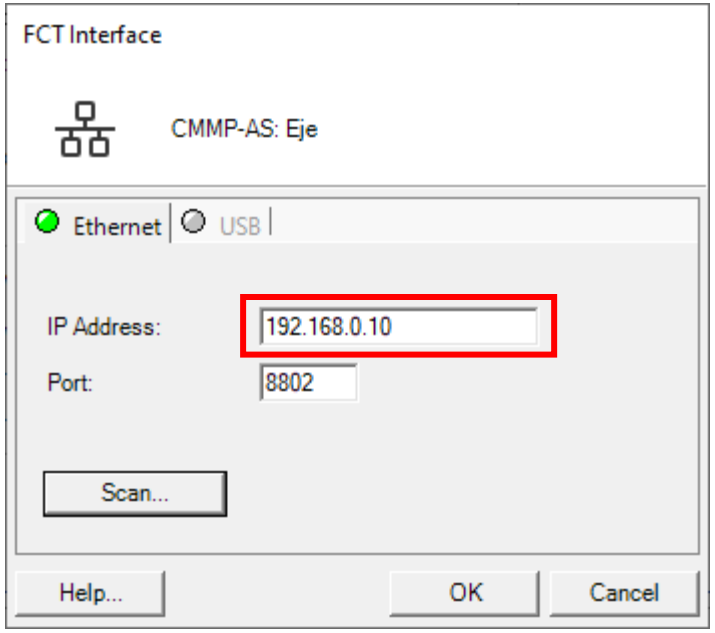


[1] You need to restart the controller to apply the changes.

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Configuration

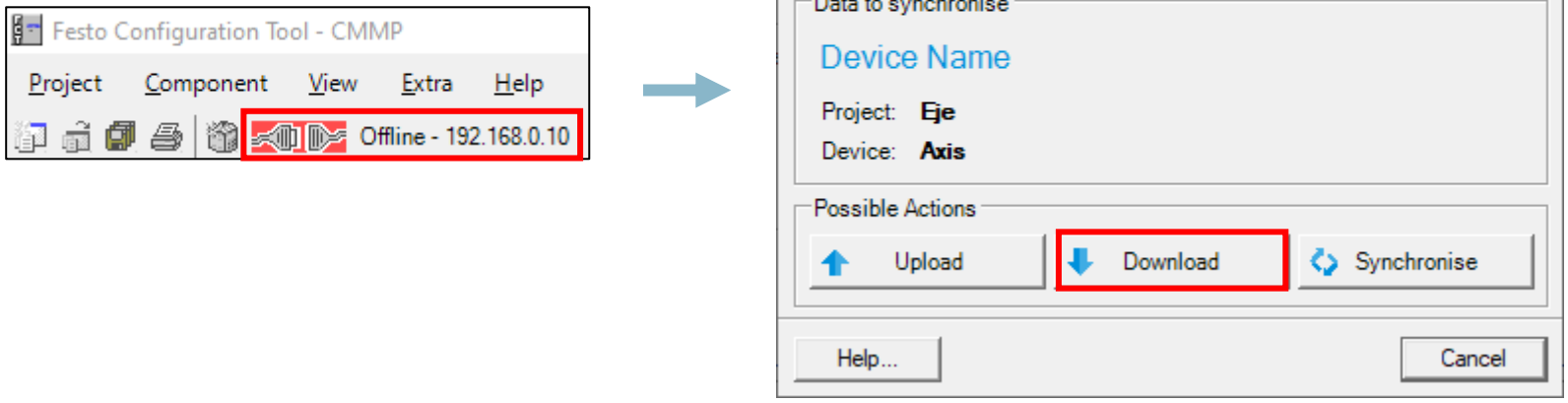
Once the controller's IP address is known, we configure it in *Component -> FCT Interface*.



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Configuration

Now we proceed to connect to the controller by clicking on the connection icon. A warning message will be displayed, and we will click the *Download* button to download the project data to the controller.

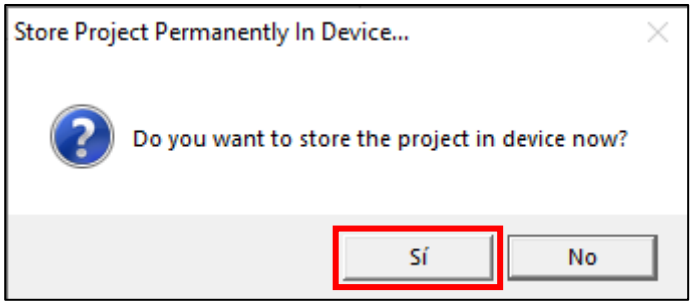


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Configuration

Once the project is downloaded, we perform a *Store* in the controller to permanently save the changes in its non-volatile memory.

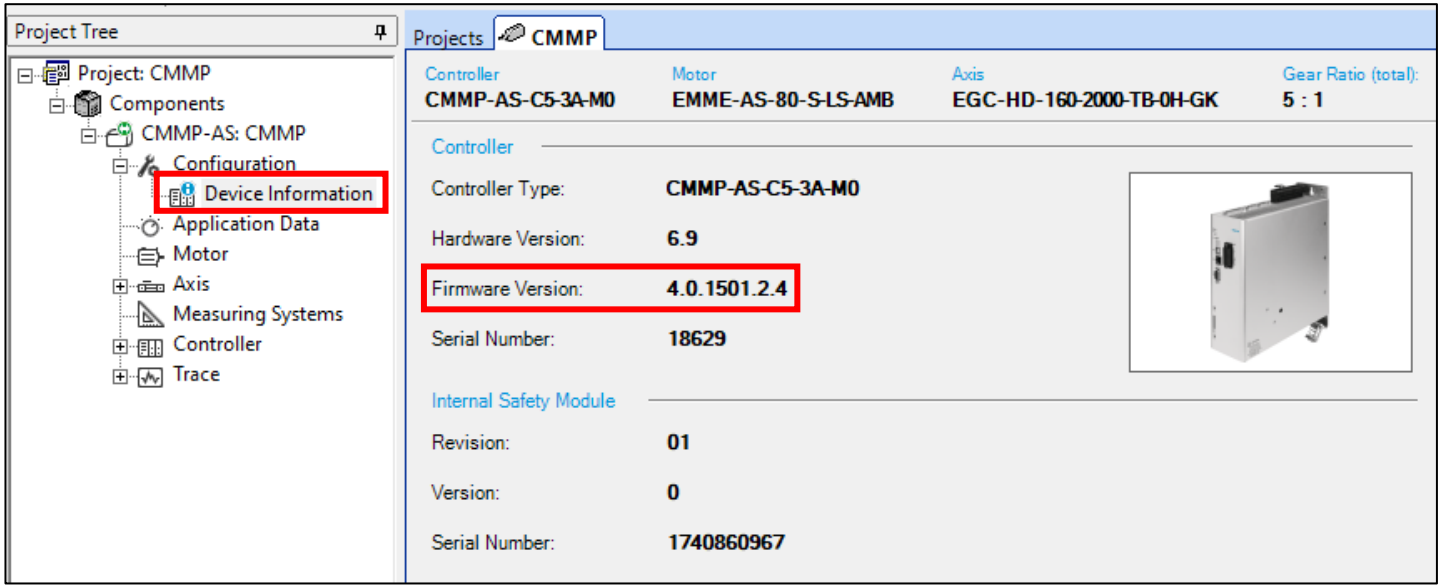




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Configuration

IMPORTANT: make sure your motor controller has firmware version 4.0.1501.2.41[1] or later installed to avoid any incompatibility.



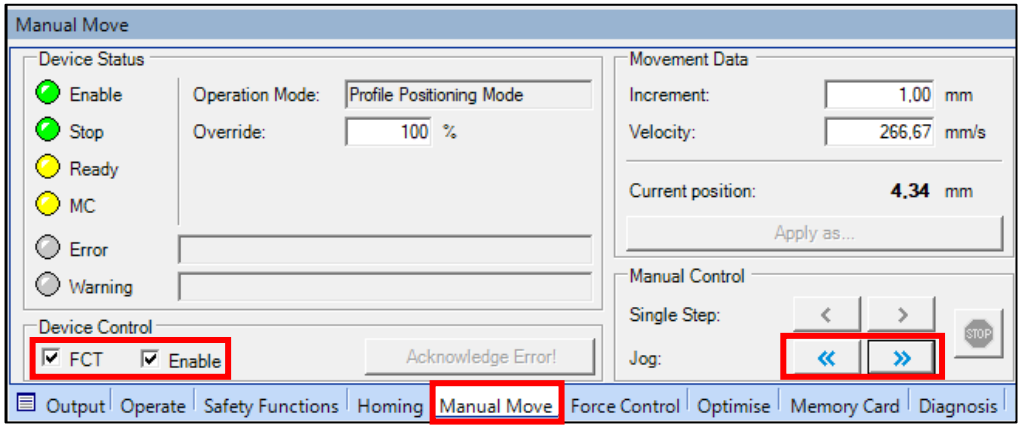
[1] In case you have an older version installed, get the latest version from the Festo website and download it to your controller from *Component -> Online -> Firmware Download*.

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Configuration

Finally, it is a good idea to check that the downloaded configuration works correctly.

To do this, we access the *Manual Move* tab and enable the *FCT* and *Enable* options to enable the controller. Subsequently, we jog the axis to one side —for example, 60 mm— and physically measure the displacement to confirm that it is correct.



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Support

For further information, please contact:

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