STF EtherCAT Connection Guide
With Trio MC4N

Introduction

This document shows how to use Trio EtherCAT host software Motion Perfect to connect and control a Applied Motion Products' STFxx-EC EtherCAT step-servo drive. By following the steps below, you will be able to use Motion Perfect to control the motor via STFxx-EC EtherCAT drive. For more advanced motion control functions, please contact Trio.

Applies to

Trio MC4N-ECAT EtherCAT master controller
STFxx-EC step servo drives and compatible motors

Date

June, 2018

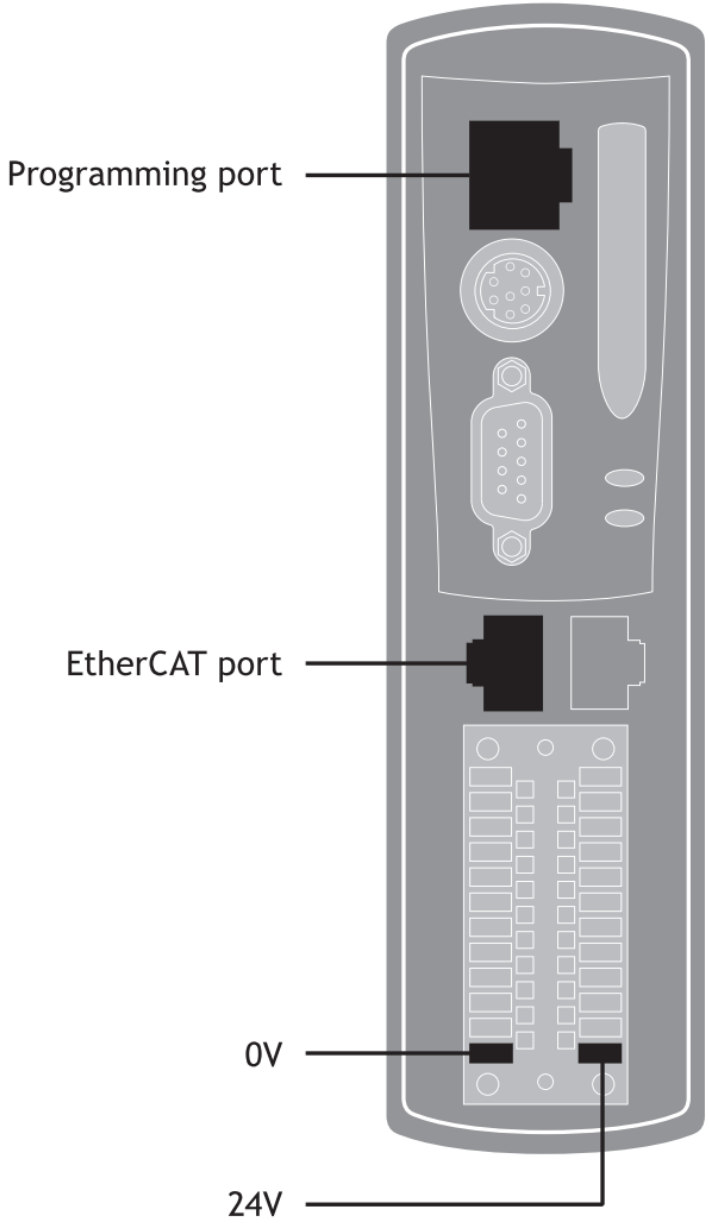
Connection Guide

Step 1 Download EC_EXTEND.TXT configuration file for STFxx-EC drive from Applied Motion Products' website

Step 2 Install Trio Motion Perfect software

Step 3 Connect the Ethernet cable from PC to the Trio controller MC4N's programming port

Step 4 Connect the Ethernet cable from MC4N's EtherCAT port to the drive's "EtherCAT LINK IN" RJ45 port

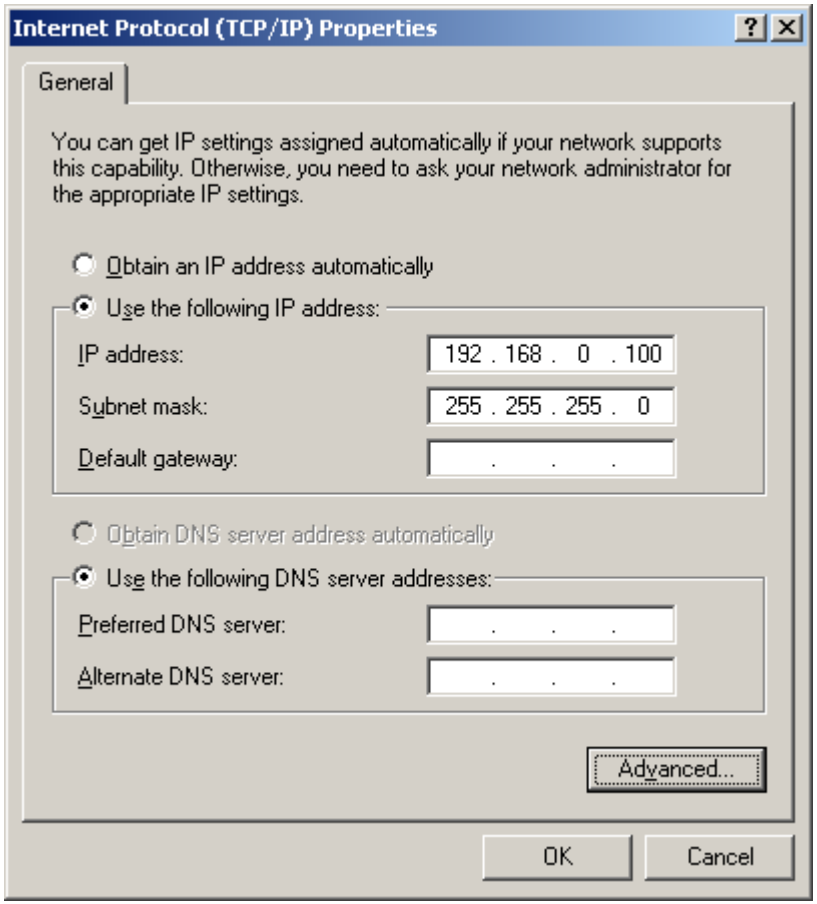

Programming port
EtherCAT port
0V
24V

Step 5 Apply power for drive and MC4N

Step 6 Set the IP address for your PC and run Motion Perfect software

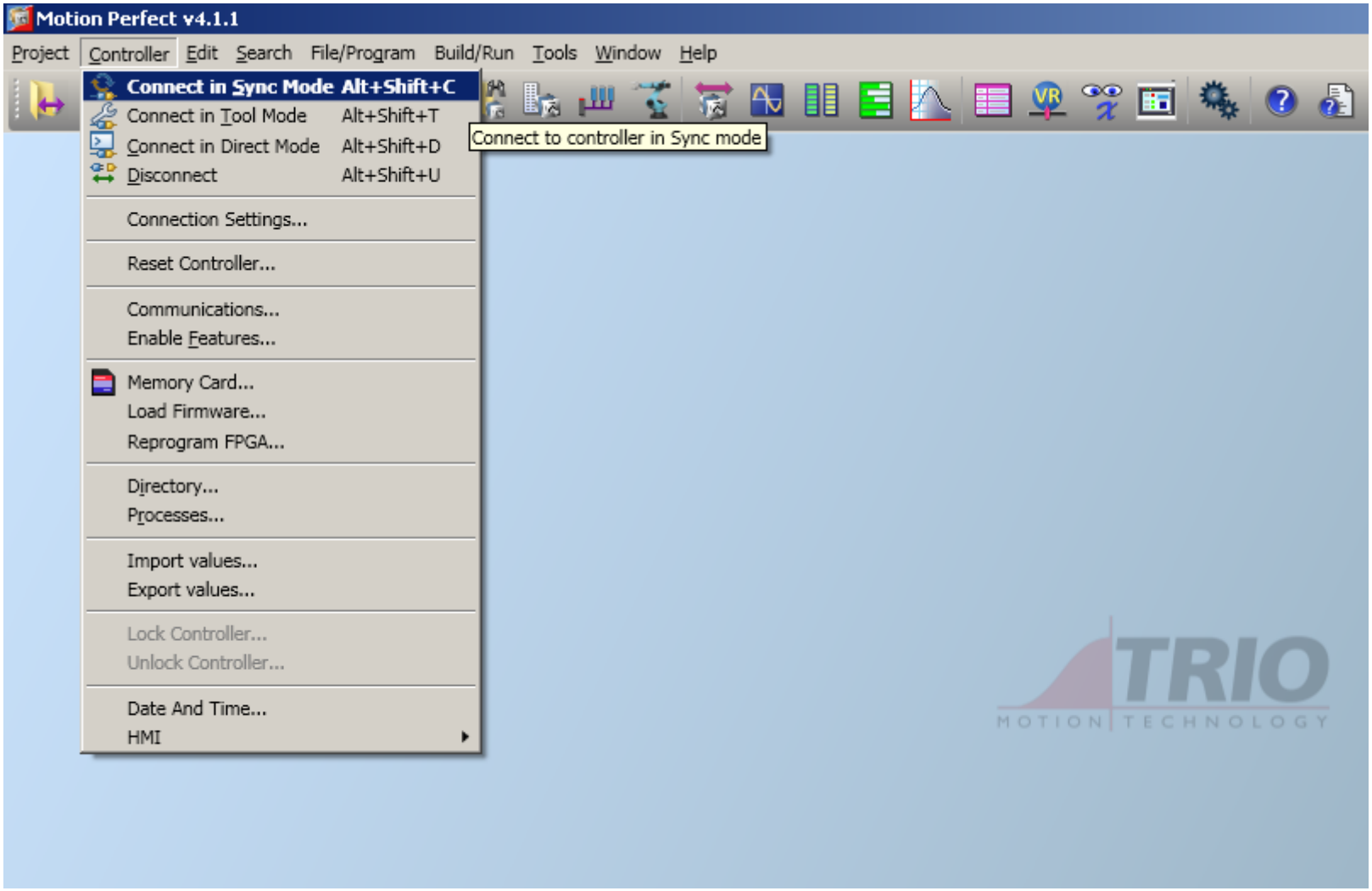
- **IP Setting**

The IP address of MC4N is usually 192.168.0.X, and the subnet mask is 255.255.255.0. You need to set the PC's IP address in the same subnet of Trio MC4N. For example, set PC's IP address to 192.168.0.100 and subnet mask to 255.255.255.0



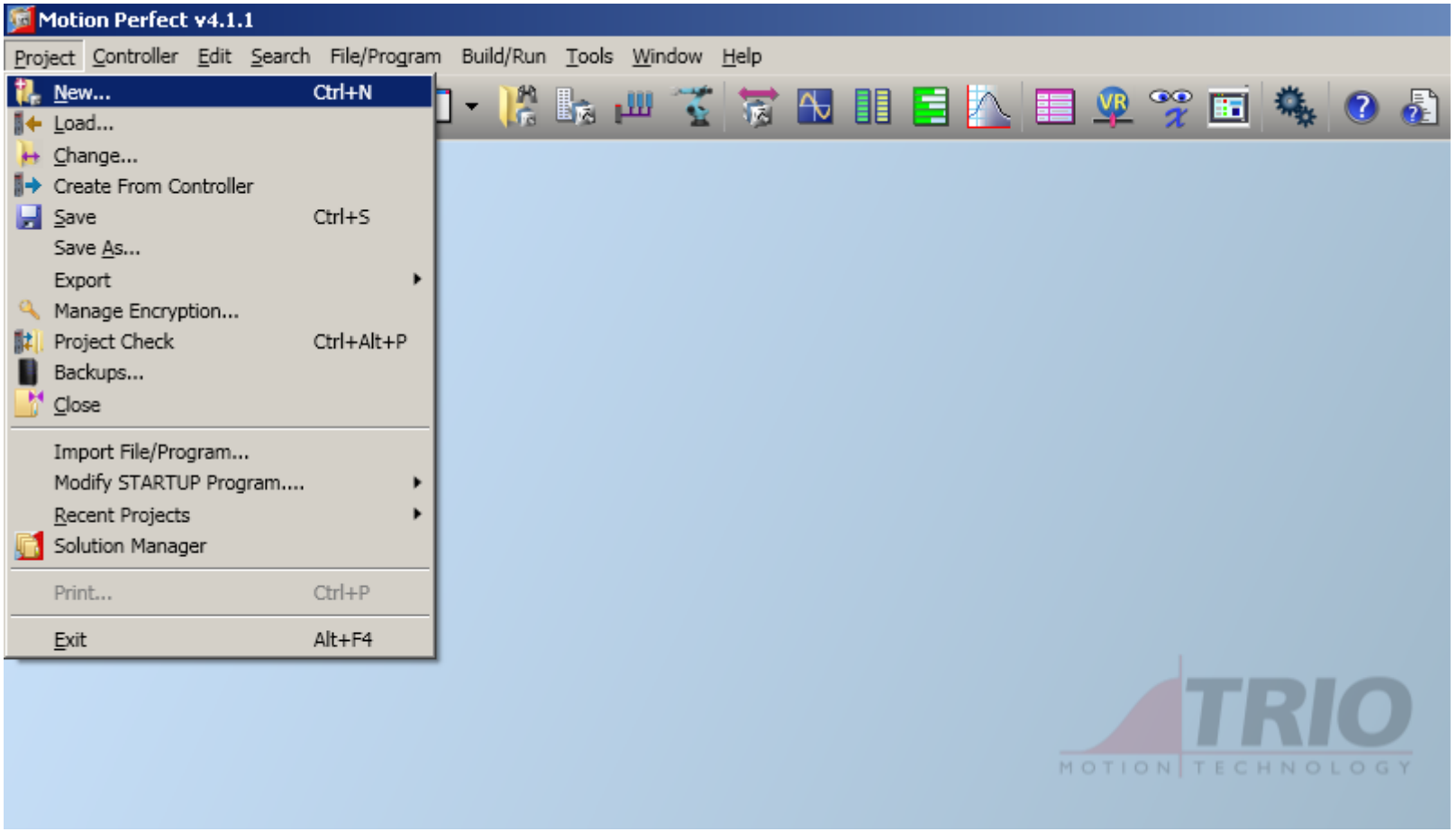
- **Connect to controller in Sync mode**

Click on **Connect in Sync Mode** under **Controller**



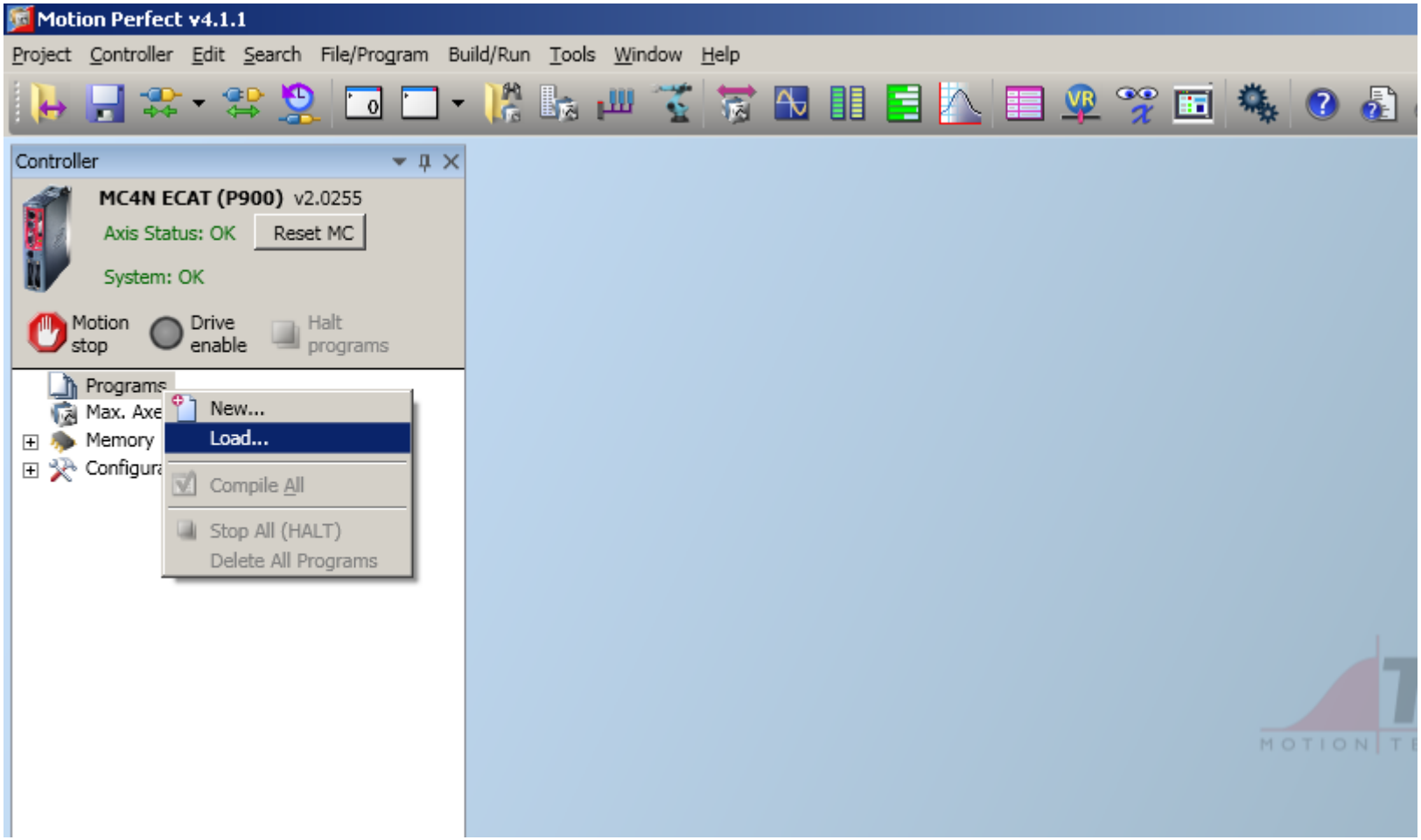
- **Build up a new project file**

Click on **New** under **Project**

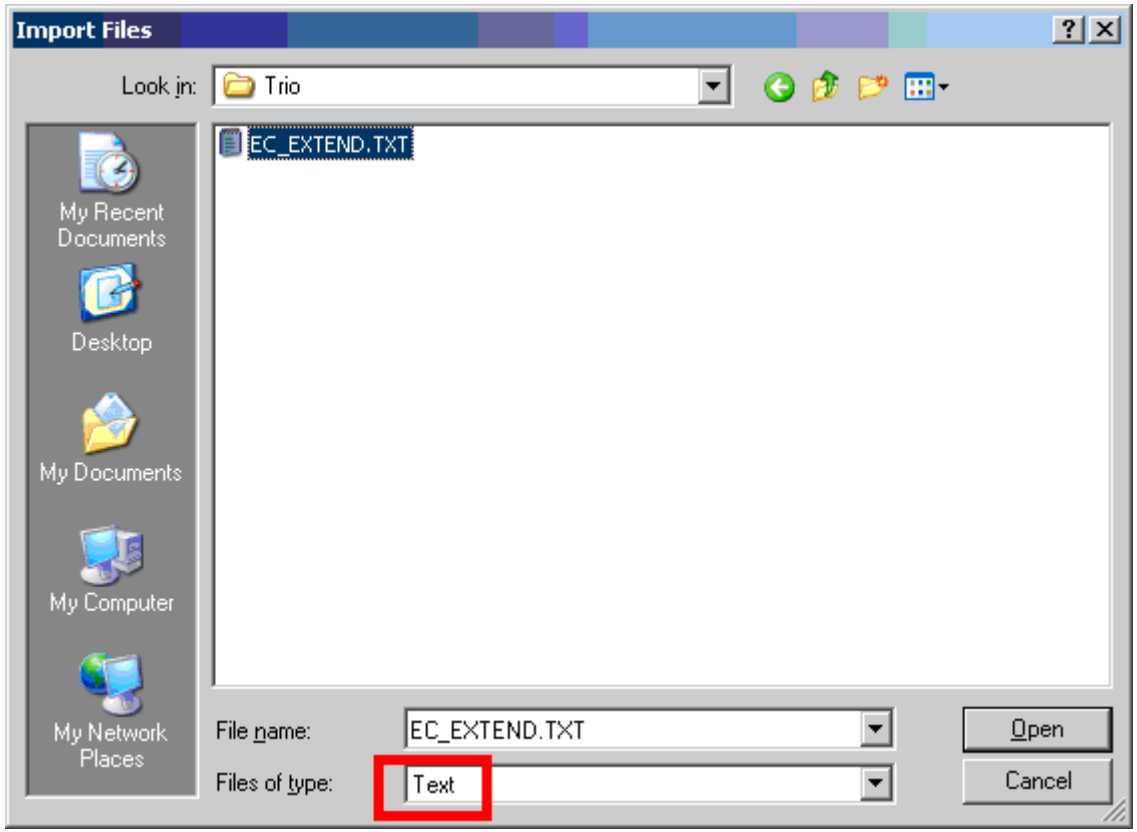


- **Load the “EC_EXTEND.TXT” file**

Right click on **Programs** and select **Load**

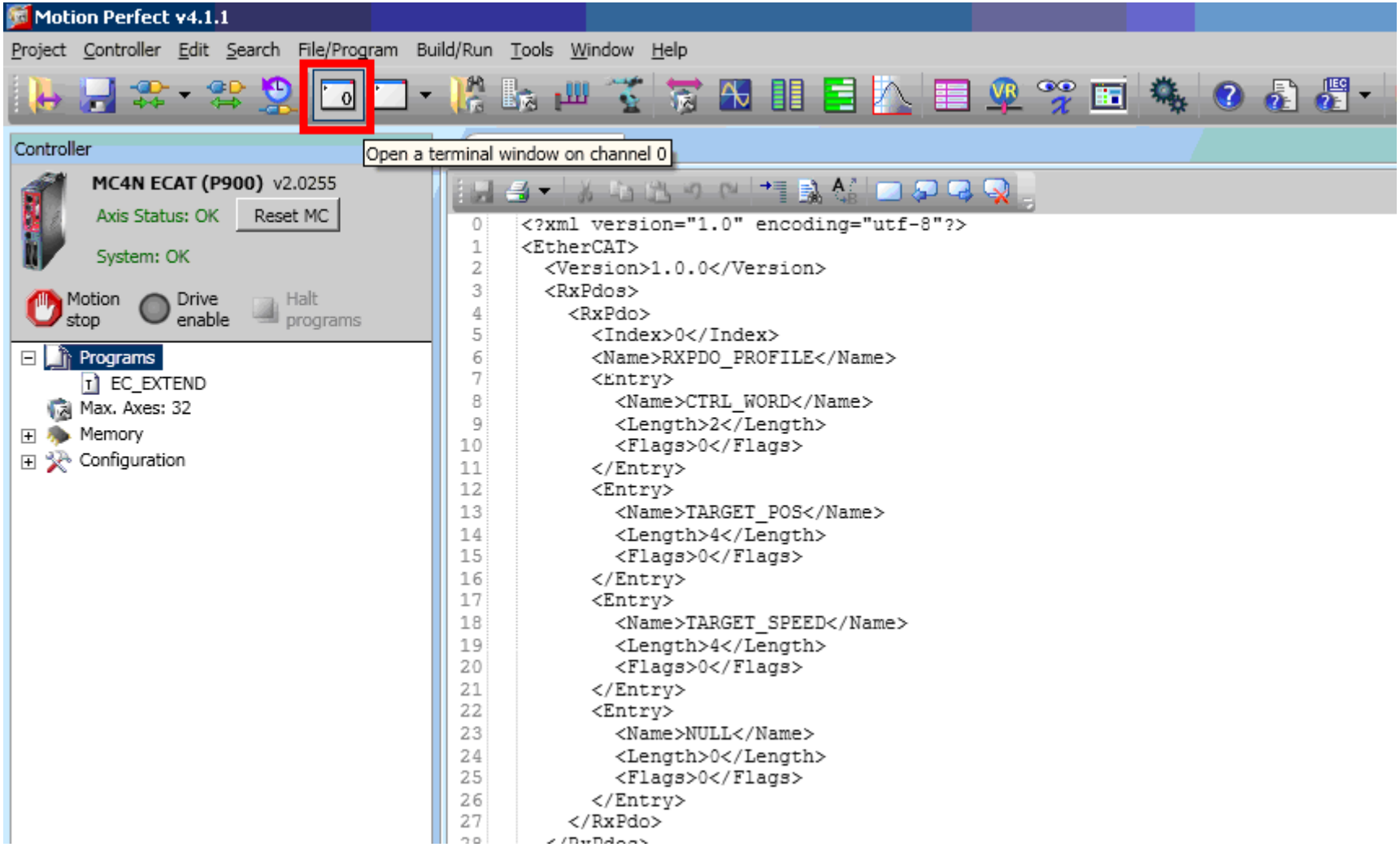


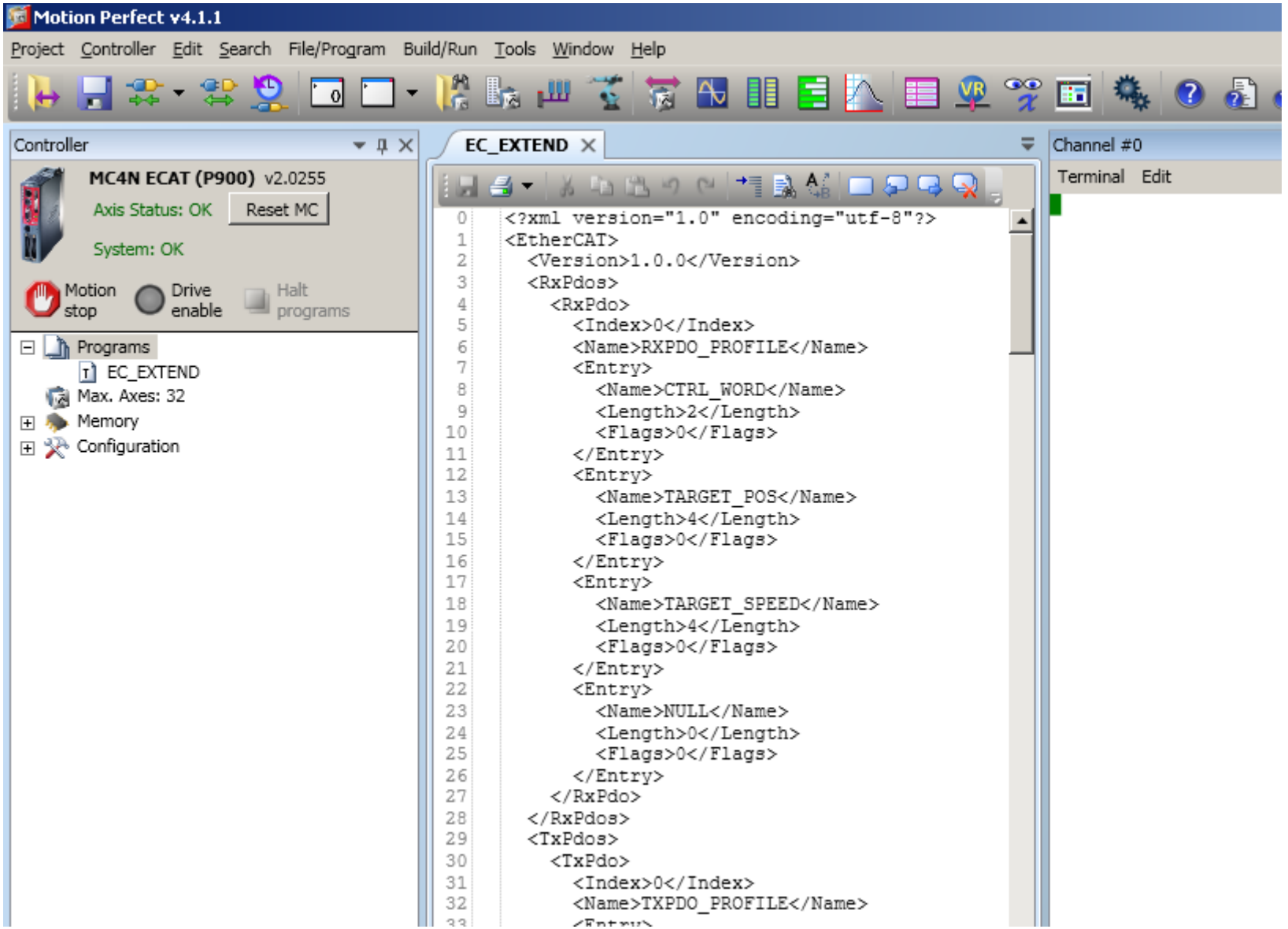
Select the **EC_EXTEND.TXT** file and load it as a text file.



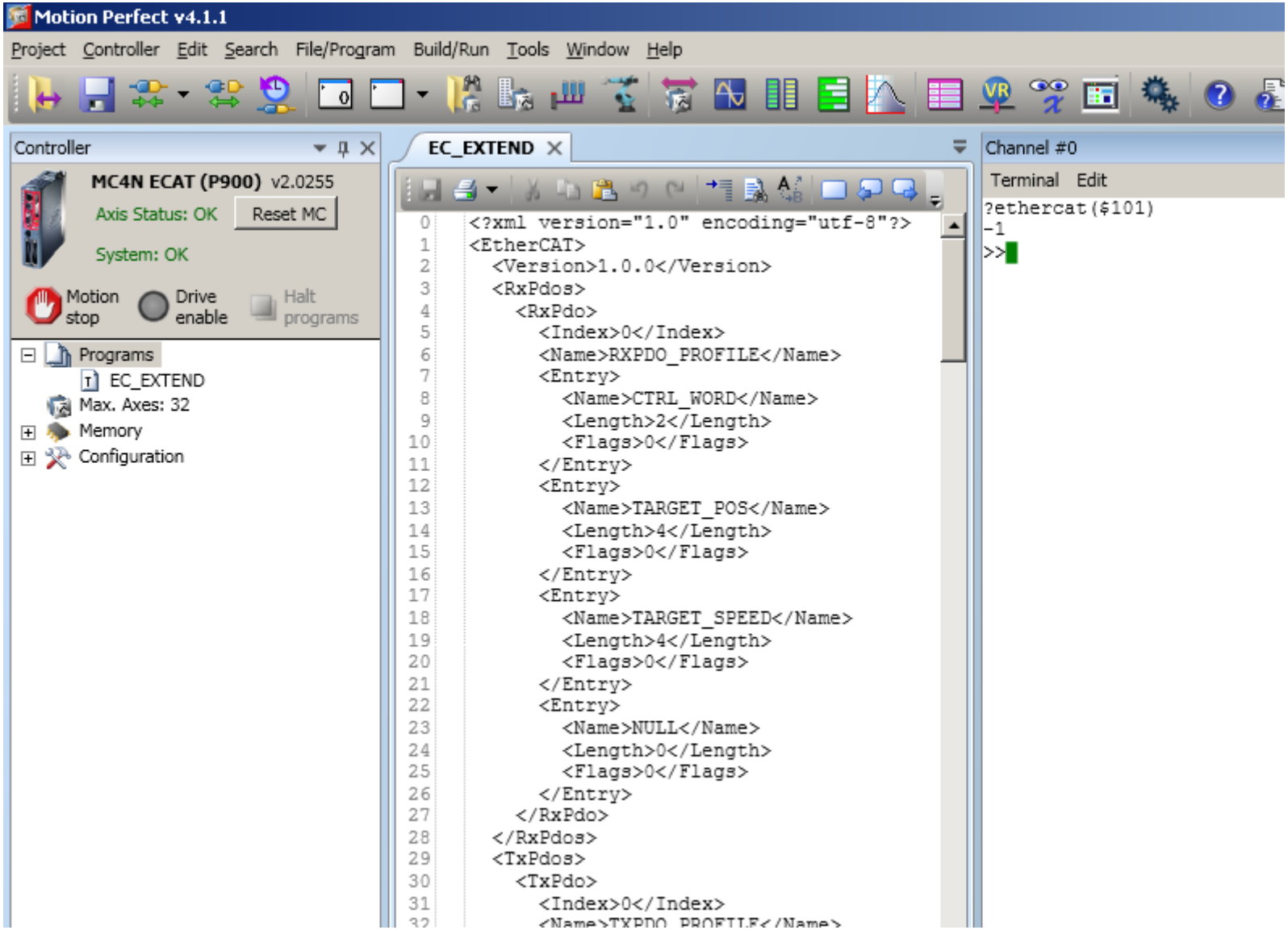
- **Open a terminal window**

Click on **Open a terminal window on channel 0** in the tool bar.

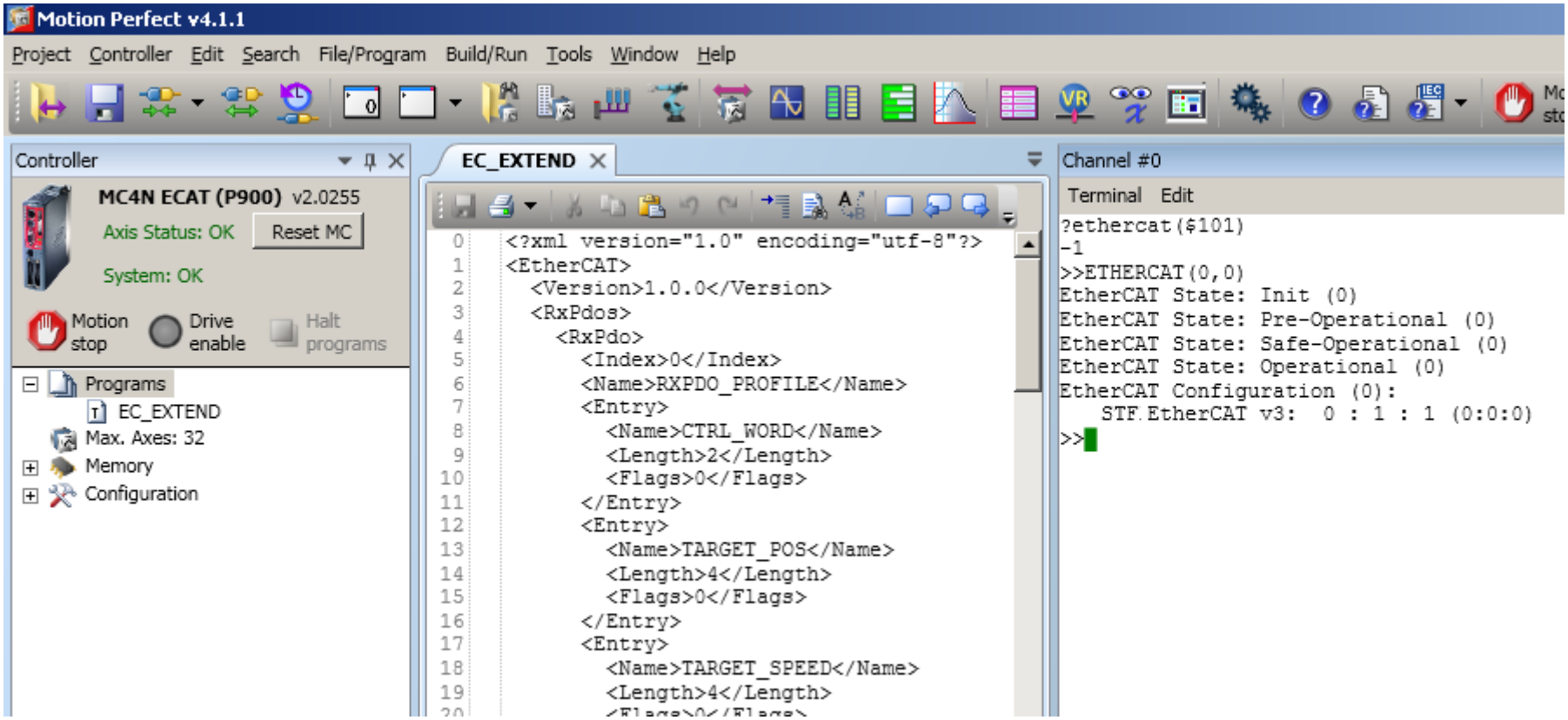



Motion Perfect v4.1.1
Project Controller Edit Search File/Program Build/Run Tools Window Help
Controller
MC4N ECAT (P900) v2.0255
Axis Status: OK
Reset MC
System: OK
Motion stop
Drive enable
Halt programs
Programs
EC_EXTEND
Max. Axes: 32
Memory
Configuration
EC_EXTEND
Channel #0
Terminal Edit
<?xml version="1.0" encoding="utf-8"?>
<EtherCAT>
<Version>1.0.0</Version>
<RxPdos>
<RxPdo>
<Index>0</Index>
<Name>RXPDO_PROFILE</Name>
<Entry>
<Name>CTRL_WORD</Name>
<Length>2</Length>
<Flags>0</Flags>
</Entry>
<Entry>
<Name>TARGET_POS</Name>
<Length>4</Length>
<Flags>0</Flags>
</Entry>
<Entry>
<Name>TARGET_SPEED</Name>
<Length>4</Length>
<Flags>0</Flags>
</Entry>
<Entry>
<Name>NULL</Name>
<Length>0</Length>
<Flags>0</Flags>
</Entry>
</RxPdo>
</RxPdos>
<TxPdos>
<TxPdo>
<Index>0</Index>
<Name>TXPDO_PROFILE</Name>

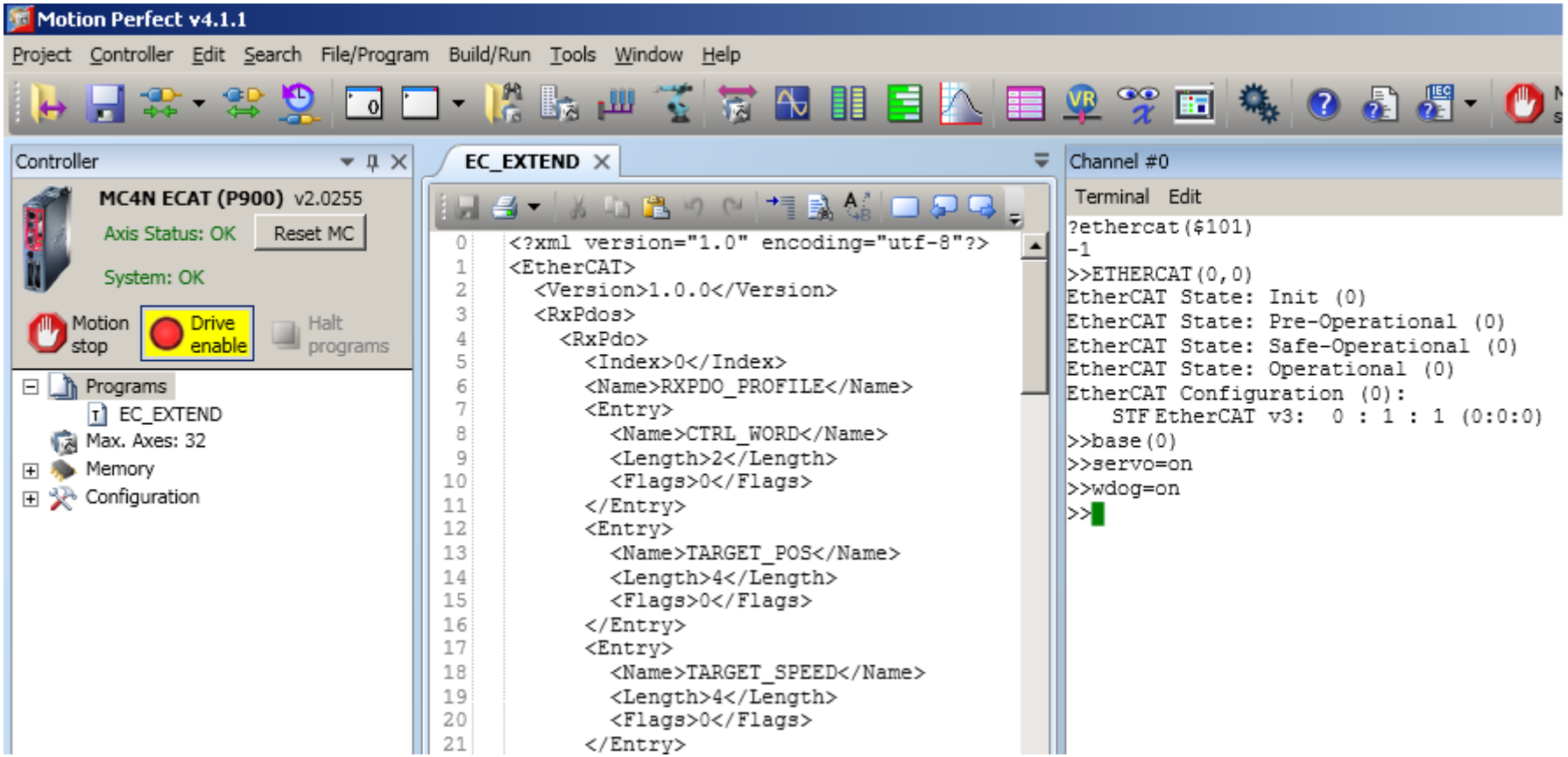
Type in **?ethercat($101)** in the terminal window. If **EC_EXTEND.TXT** file is correct it will respond **-1**



Type in **ethercat(0,0)** in the terminal window, and then the drive will go to operational status.



Type in **base(0)**, **servo=on** and **wdog=on** in the terminal window, and then the drive will be enabled.



- **Sample move**

Type in commands in the terminal window like:

UNITS=20000 // set units to the same value as drive's Electronic Gearing setting in the STF Configurator software

SPEED=10 // set motor speed to 10 rev/sec

ACCEL=100 // set motor acceleration to 100 rev/sec^2

DECEL=100 // set motor deceleration to 100 rev/sec^2

MOVE(20) // move the motor for 20 revs