

QuickStart CPX-FB37 EtherCAT on TwinCAT 3

Setting up a CPX-FB37 EtherCAT slave module on Beckhoff TwinCAT 3.

CPX-FB37

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1 Components/Software used

Type/Name	Version Software/Firmware	Date of manufacture
CPX-F37	Rev 06	--
BECKHOFF CX9020	--	--
TwinCat XAE (2010)	3.1.4018	--

Table 1.1: 1 Components/Software used

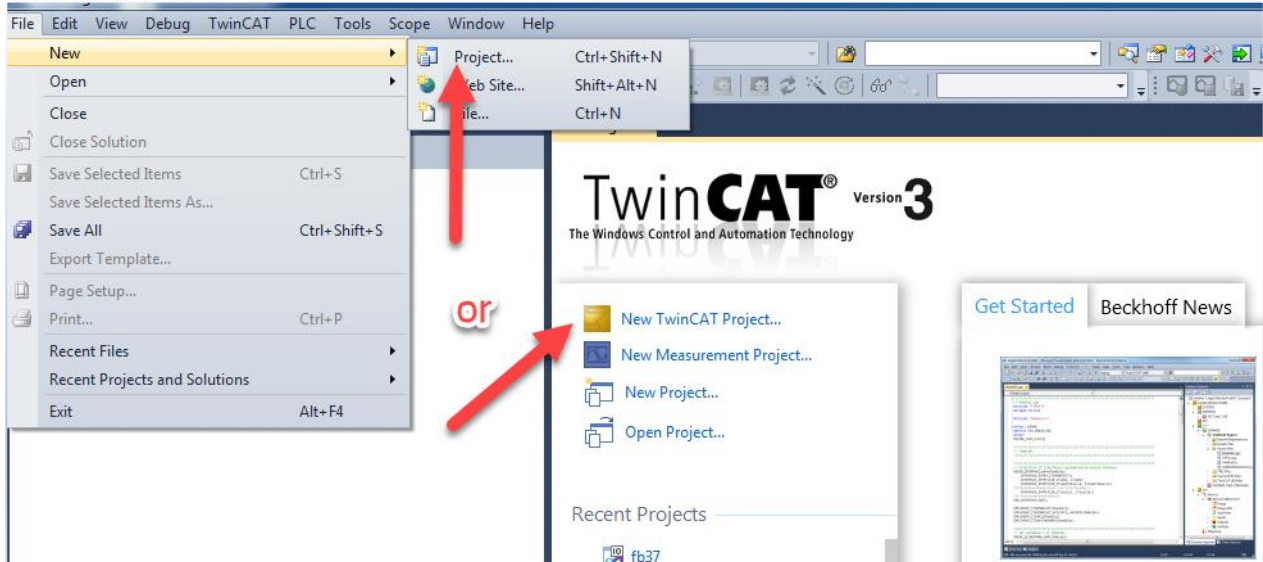
1.1 The configuration is tested on above hardware and software.

As the hardware is tested on above hardware and software, the demonstration will certainly work on this combination. This does not mean that this application note does not work on other combination, but that small differences can be present in certain other versions of the hardware and software.

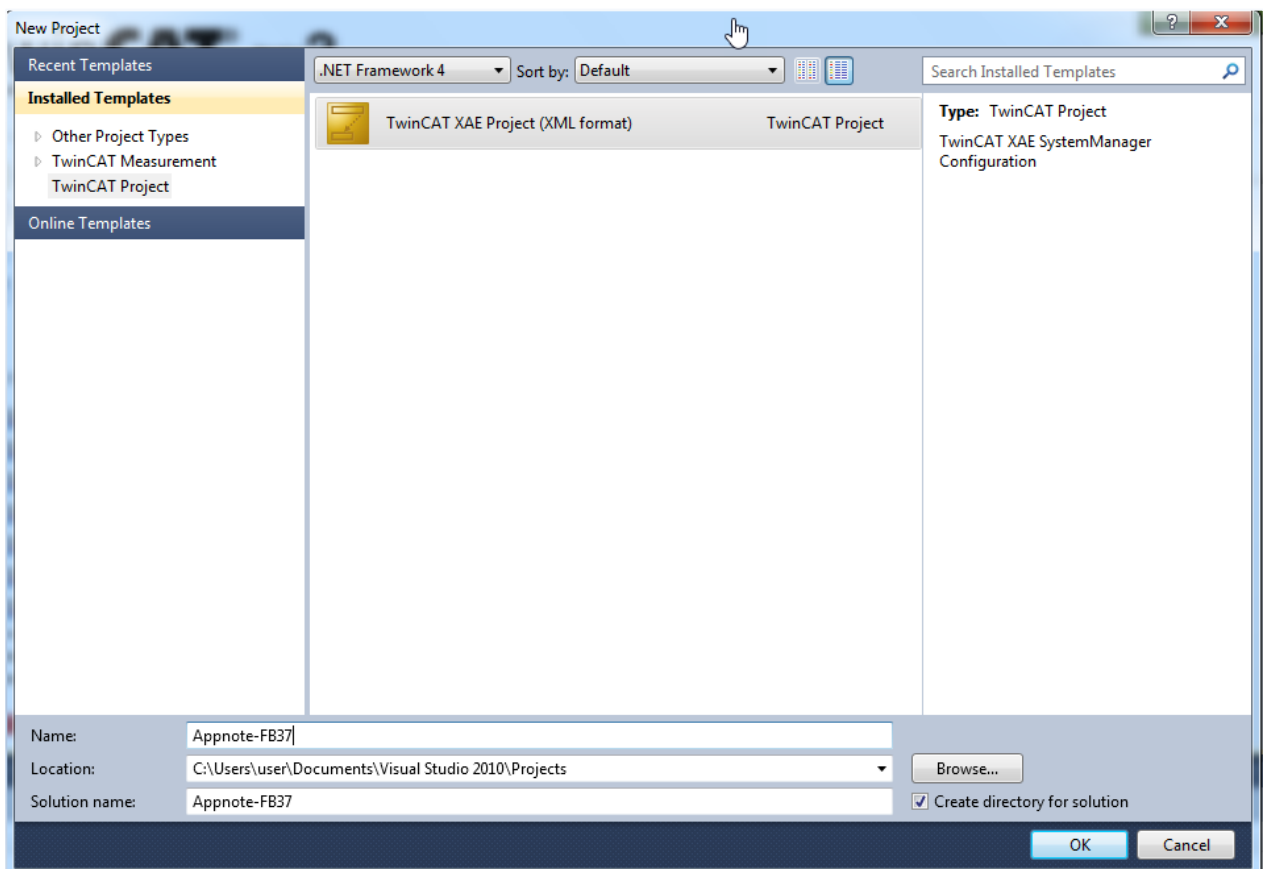
2 Introduction

2.1 First we need to start a new Twincat 3 project.

2.1.1 Opening a new project in Twincat 3



2.1.2 Selecting a name and project type



3 Assembly

3.1 Connect your PC to your PLC.



3.2 Connect your CPX-FB37 (EtherCat module) to the PLC EtherCat port.



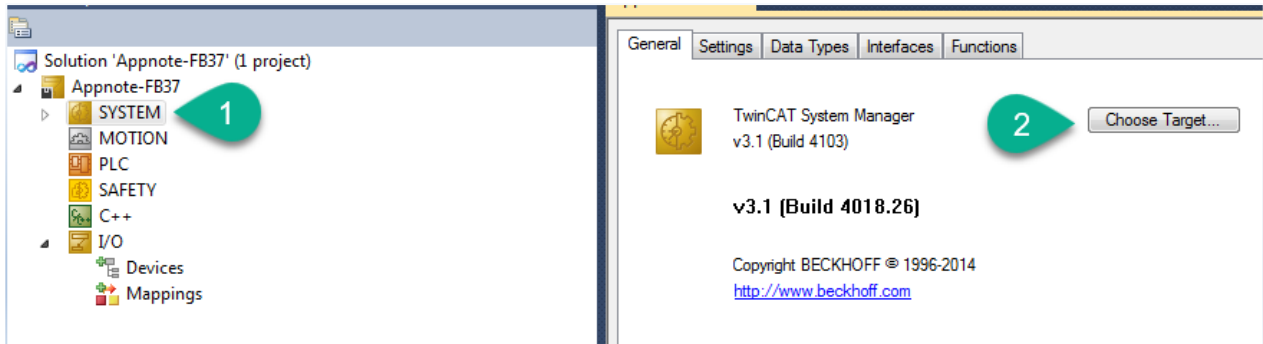
Setting up the software for usage of the FB37 EtherCAT module.

4 Setting up the software for usage of the FB37 EtherCAT module.

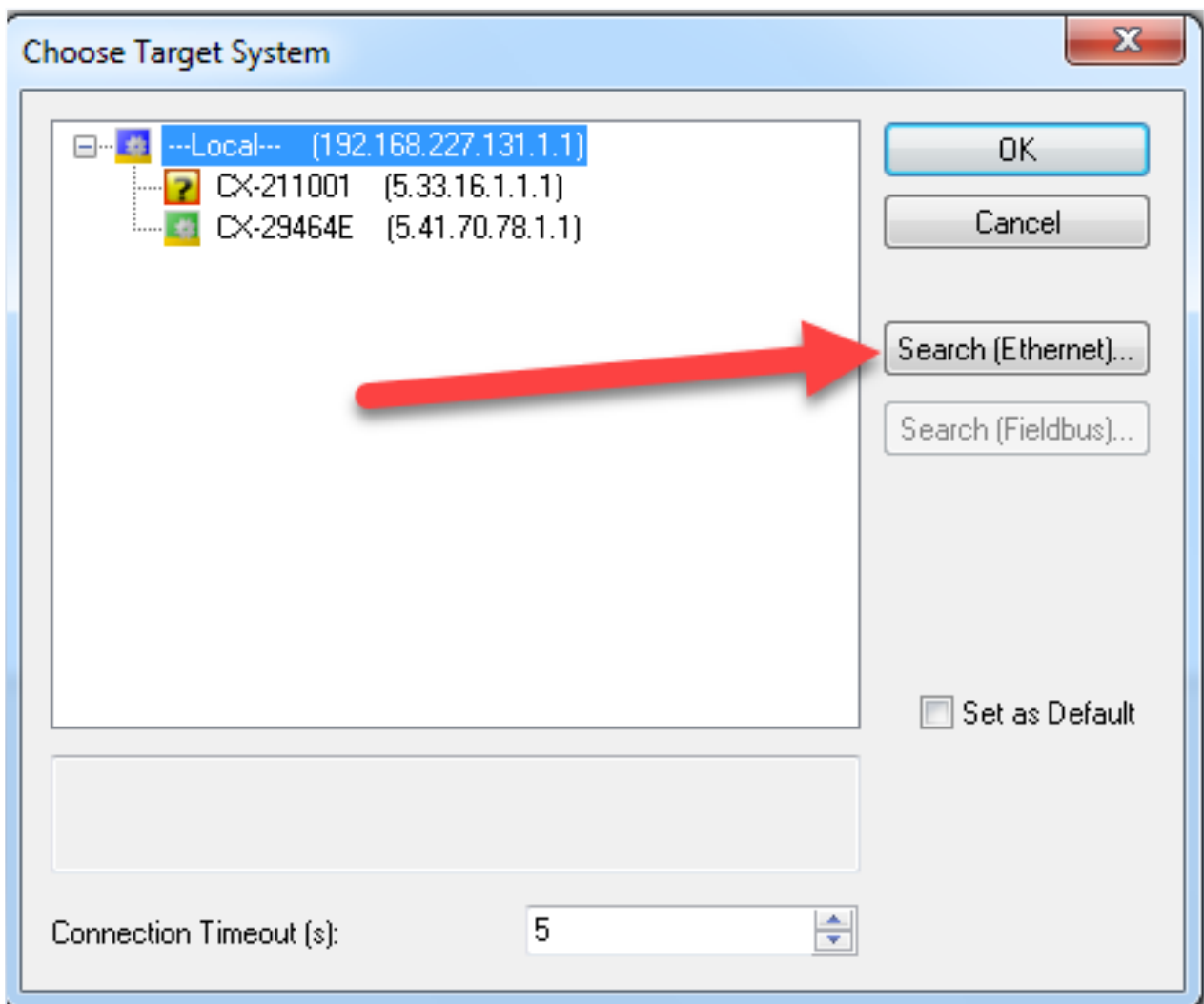
4.1 Configuration Mode

To add or remove hardware, the Beckhoff PLC needs to be put in configuration mode.

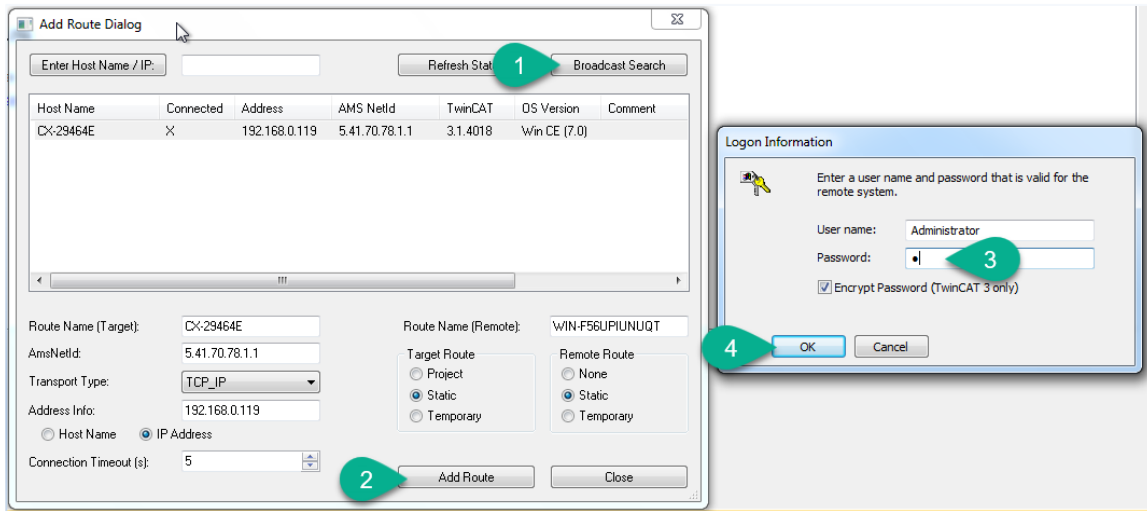
4.1.1 Connecting to the correct PLC



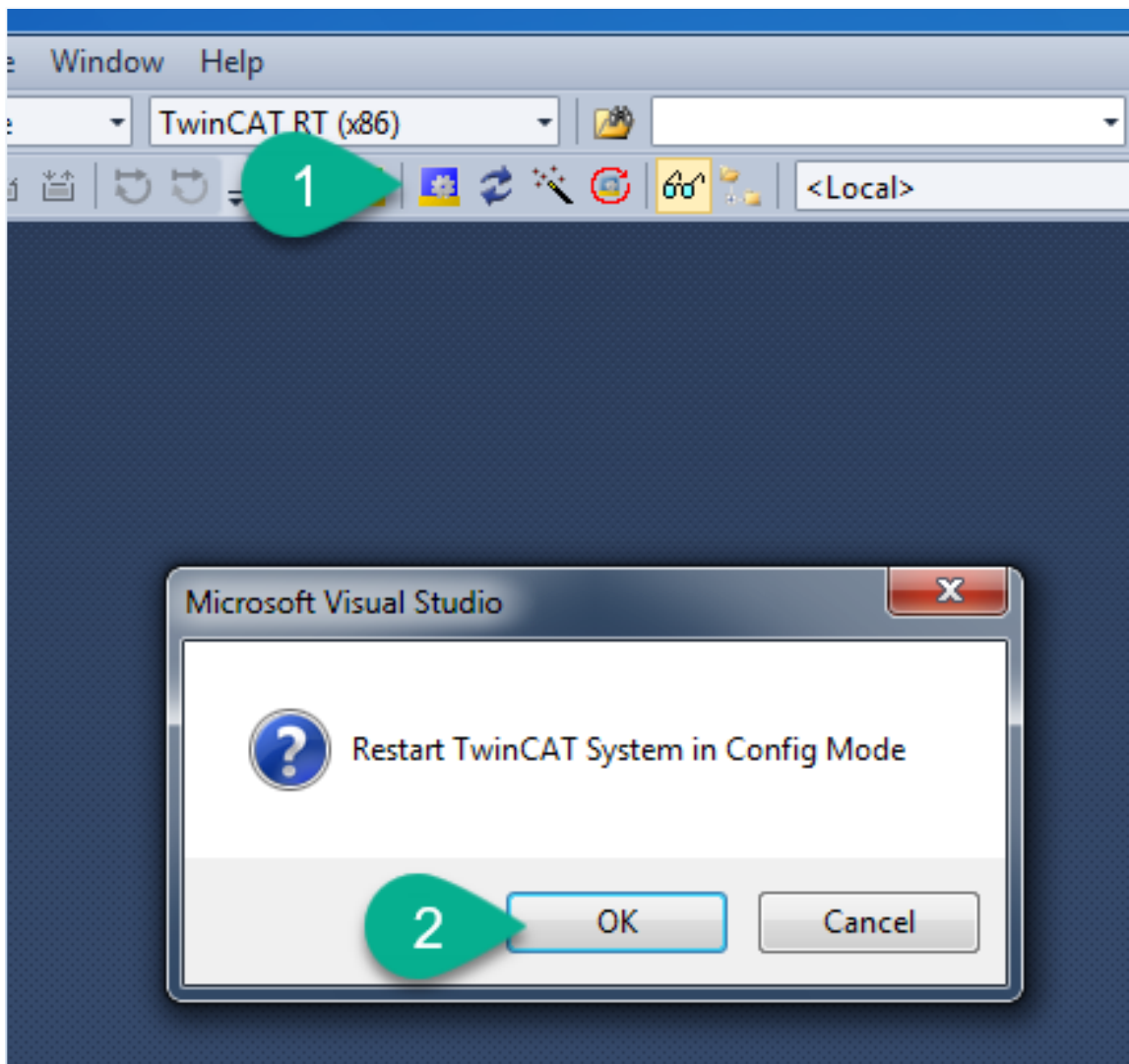
Search for the PLC using the Search Ethernet button.



By doing a broadcast search, every connectable device in the same network will be found the default password for most BeckHoff PLC's is "1"



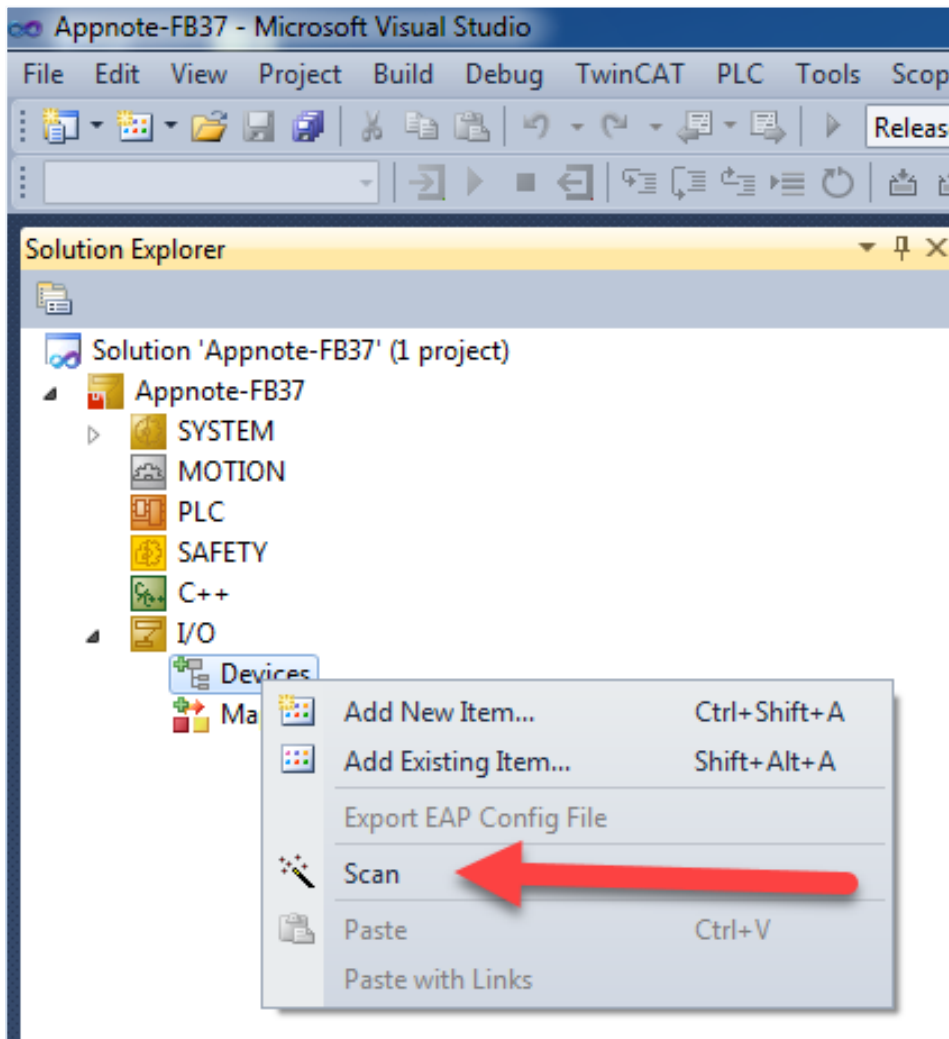
4.1.2 Set the PLC in Configuration mode



Setting up the software for usage of the FB37 EtherCAT module.

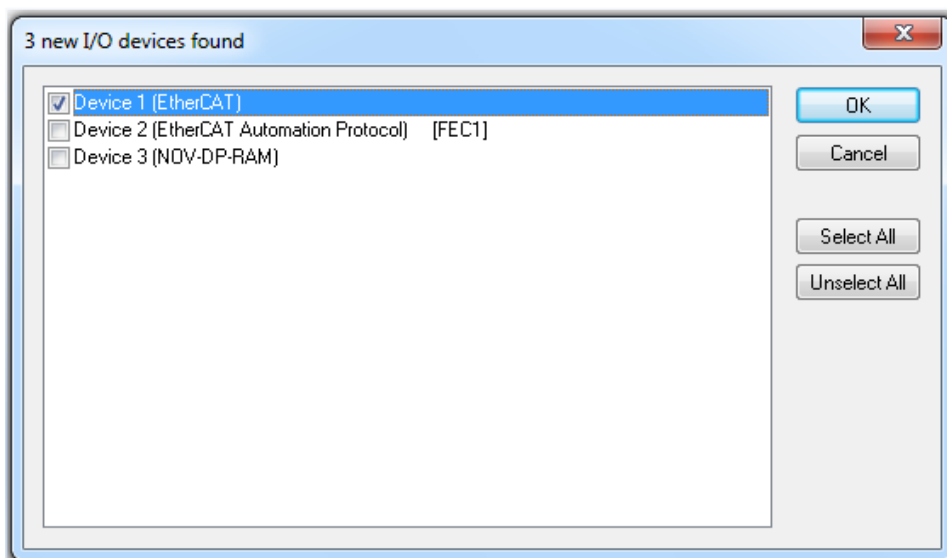
4.2 Scan for I/O devices

When in configuration mode, you are now able to scan for other devices.

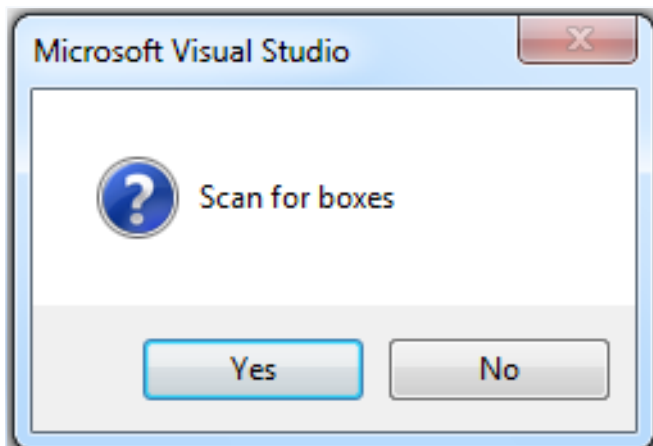


4.2.1 We only need to scan for EtherCat devices

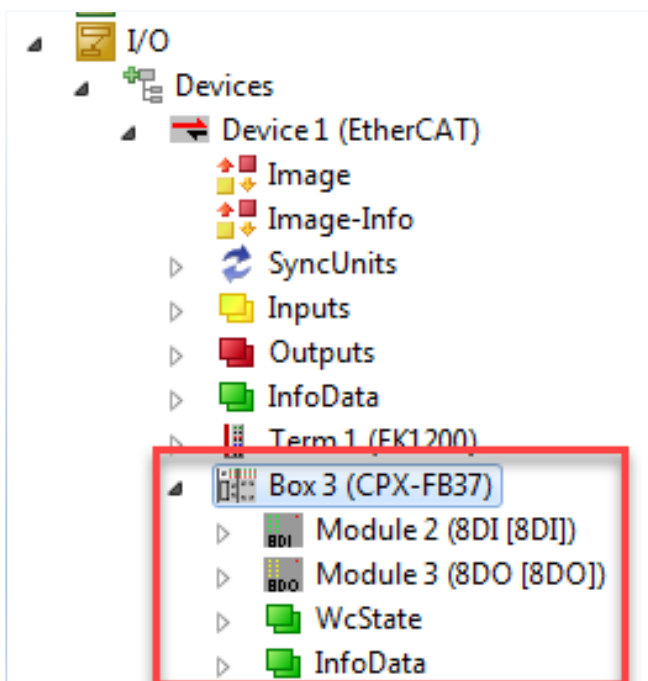
But it can do no harm to scan for all device types.



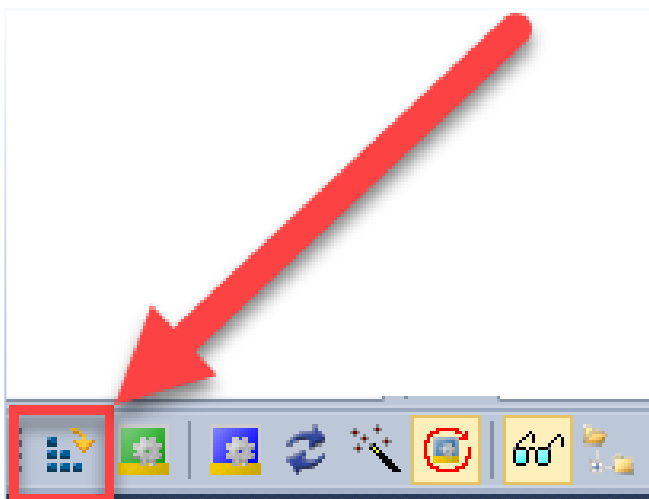
4.2.2 To Find new connected devices, scan for Boxes



4.2.3 The FB37 and its modules is automatically detected

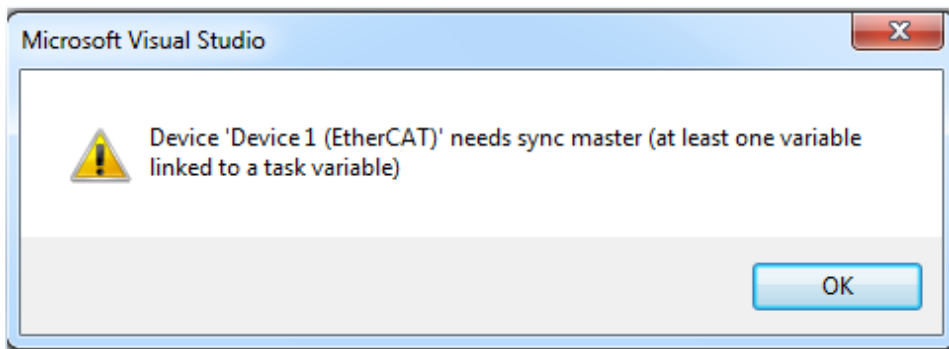


4.2.4 Now we need to activate the configuration in the PLC

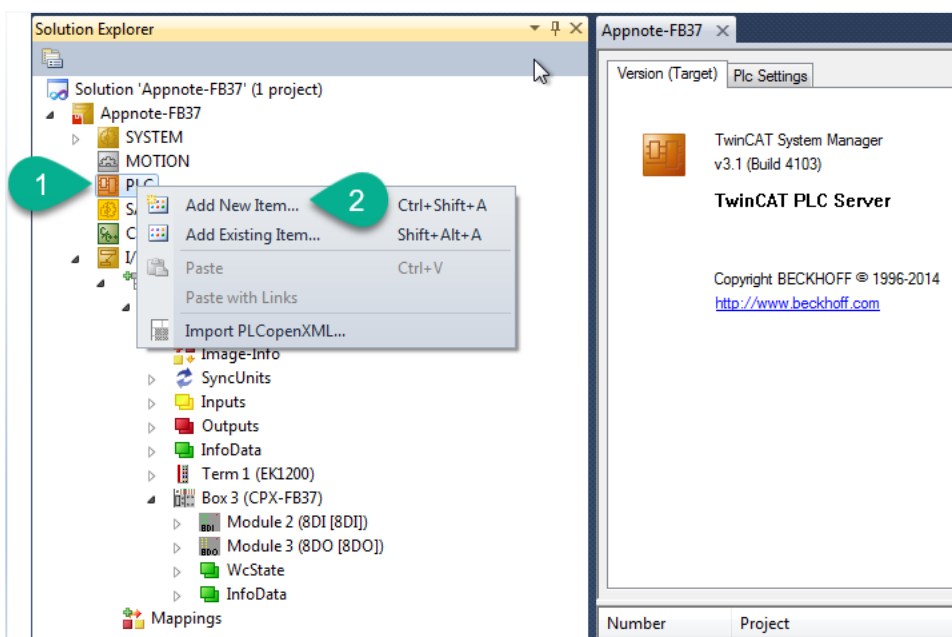


Setting up the software for usage of the FB37 EtherCAT module.

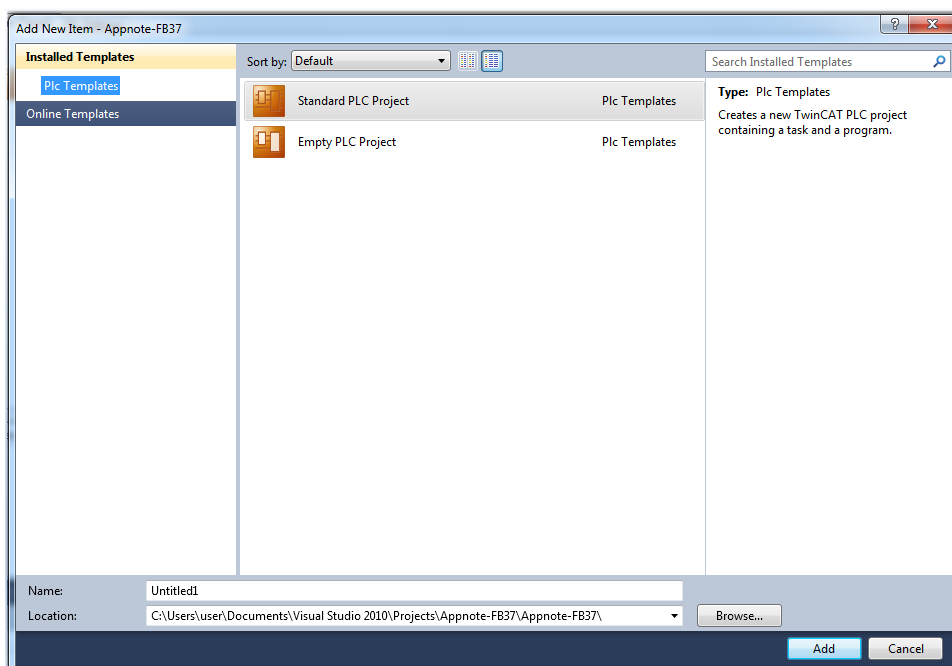
The values for the remote modules will only be updated after Linking them in your project.



4.3 Creating a PLC program

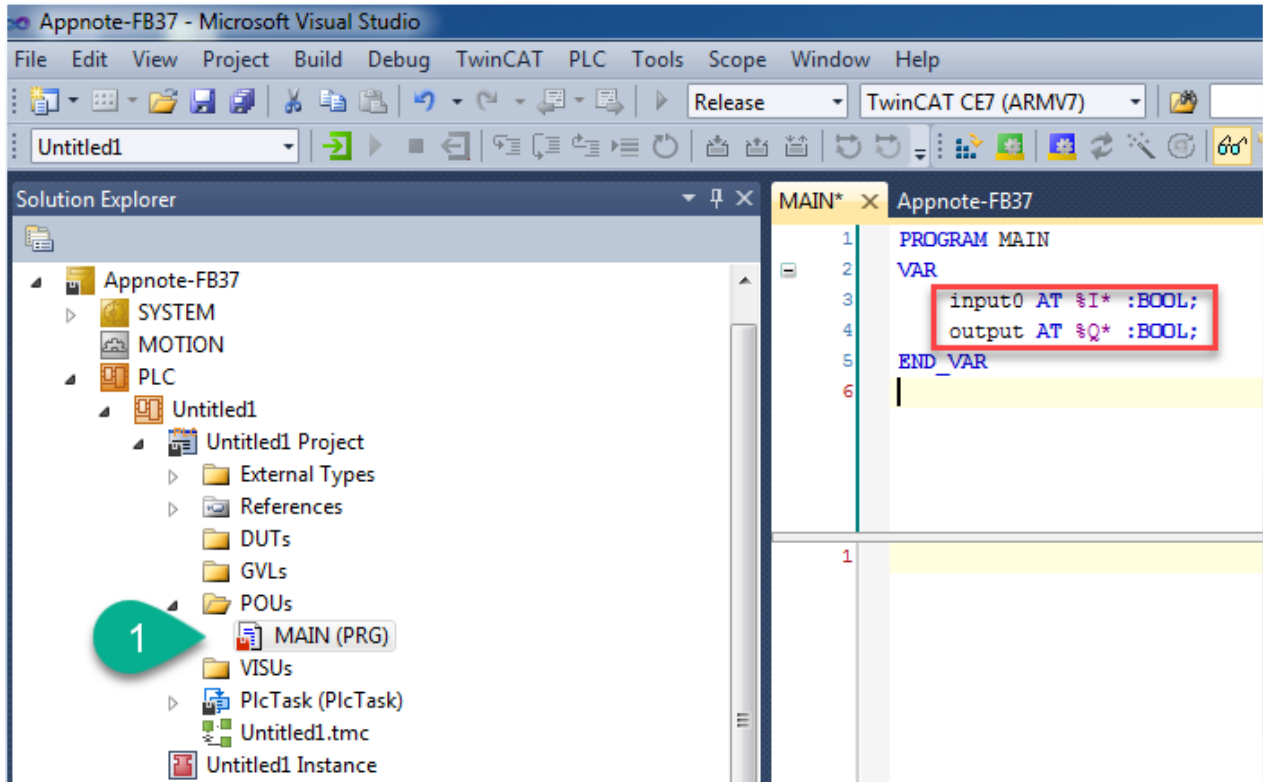


4.3.1 Name your PLC software

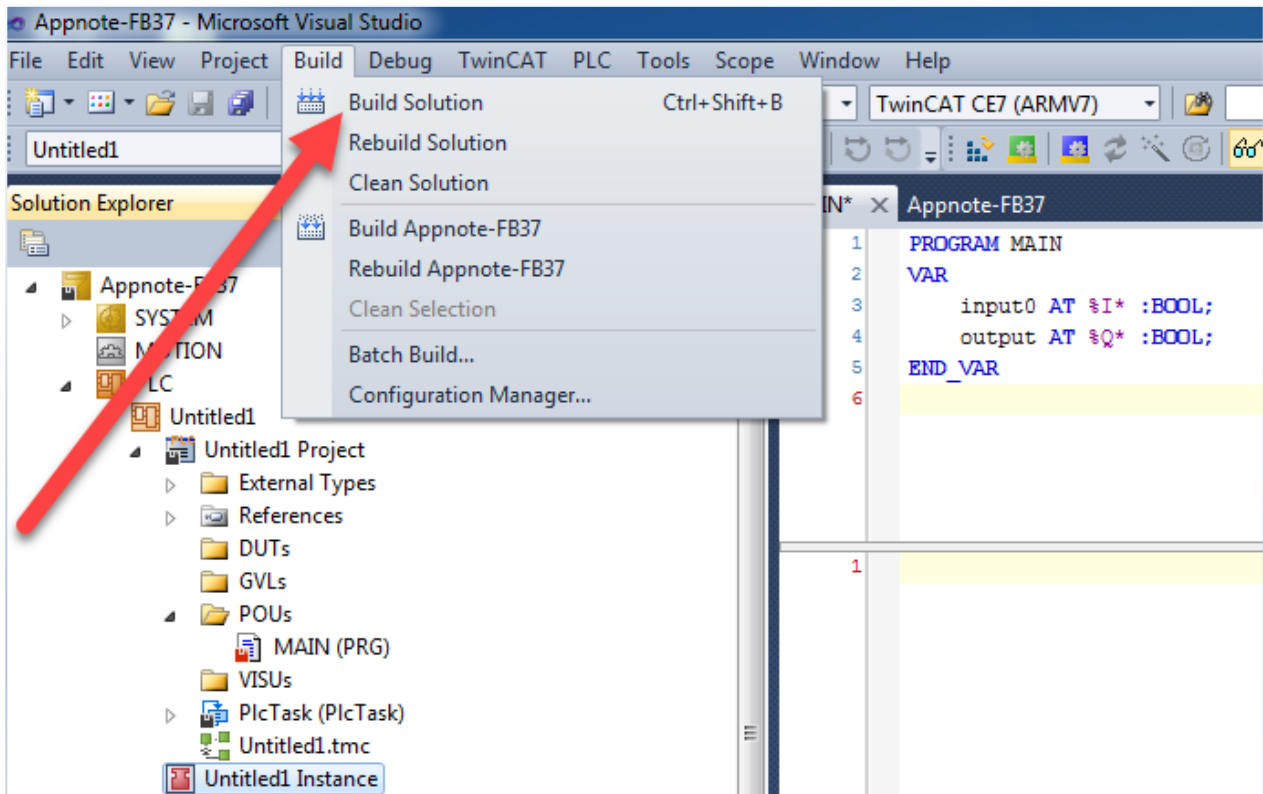


4.3.2 Create some variables to match the datatype to control

In our example we want to control or read inputs. An input is either true or false and for this we use the BOOL datatype. This can be done in a local program or global variable list.



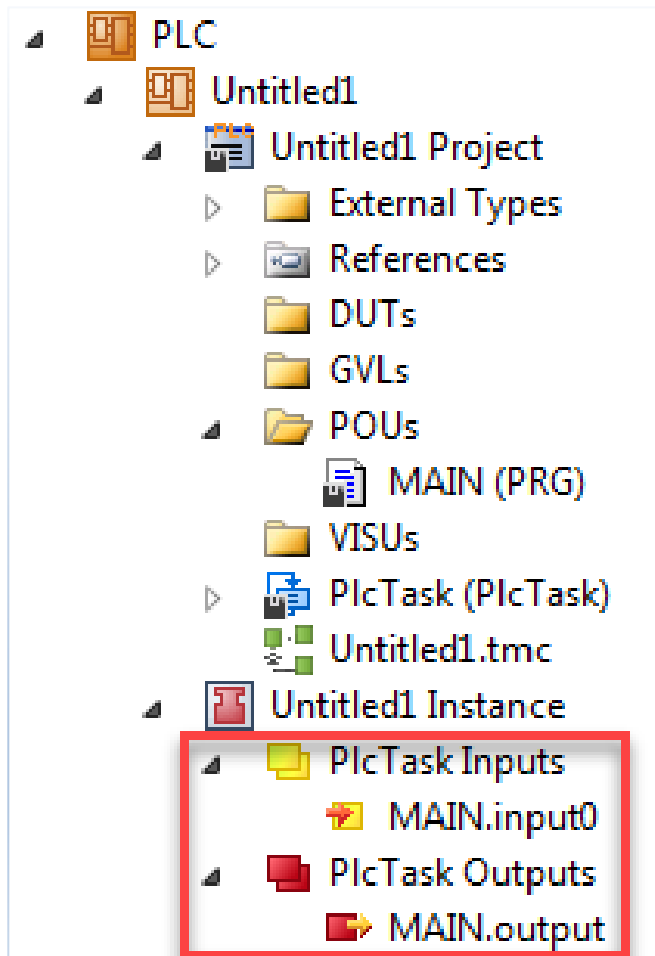
4.4 We now need to build the solution to update all items on the PLC



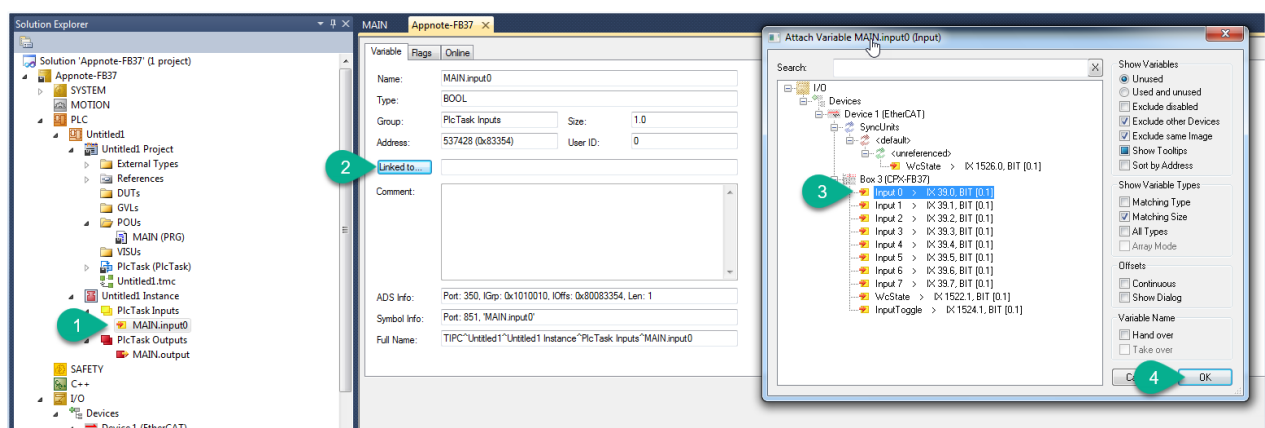
Setting up the software for usage of the FB37 EtherCAT module.

4.4.1 Linking the variables to the hardware

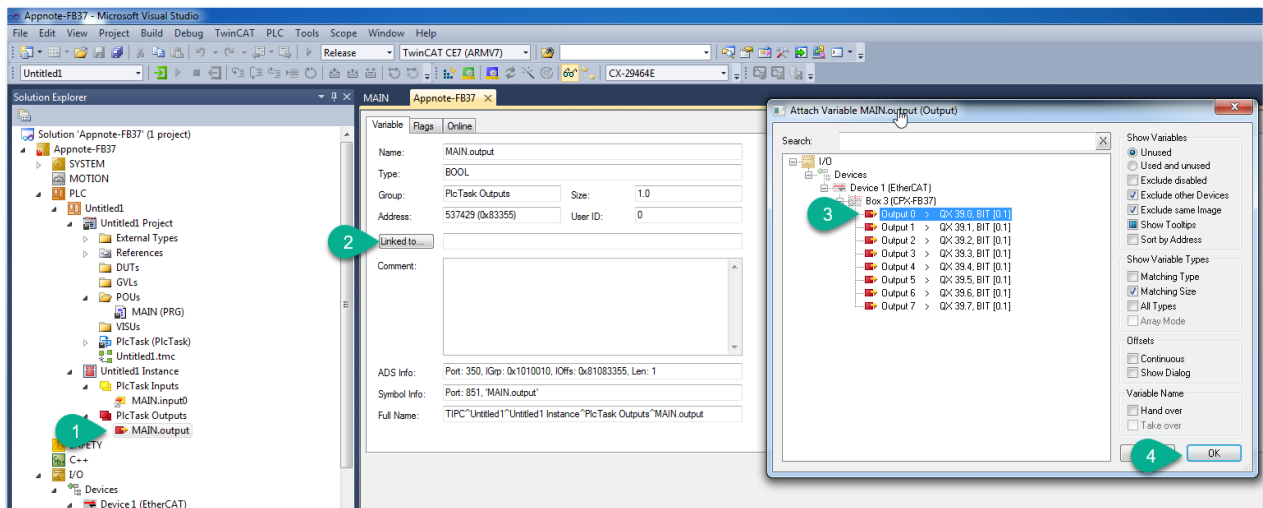
After building our solution, we can now see our variables as linkable items.



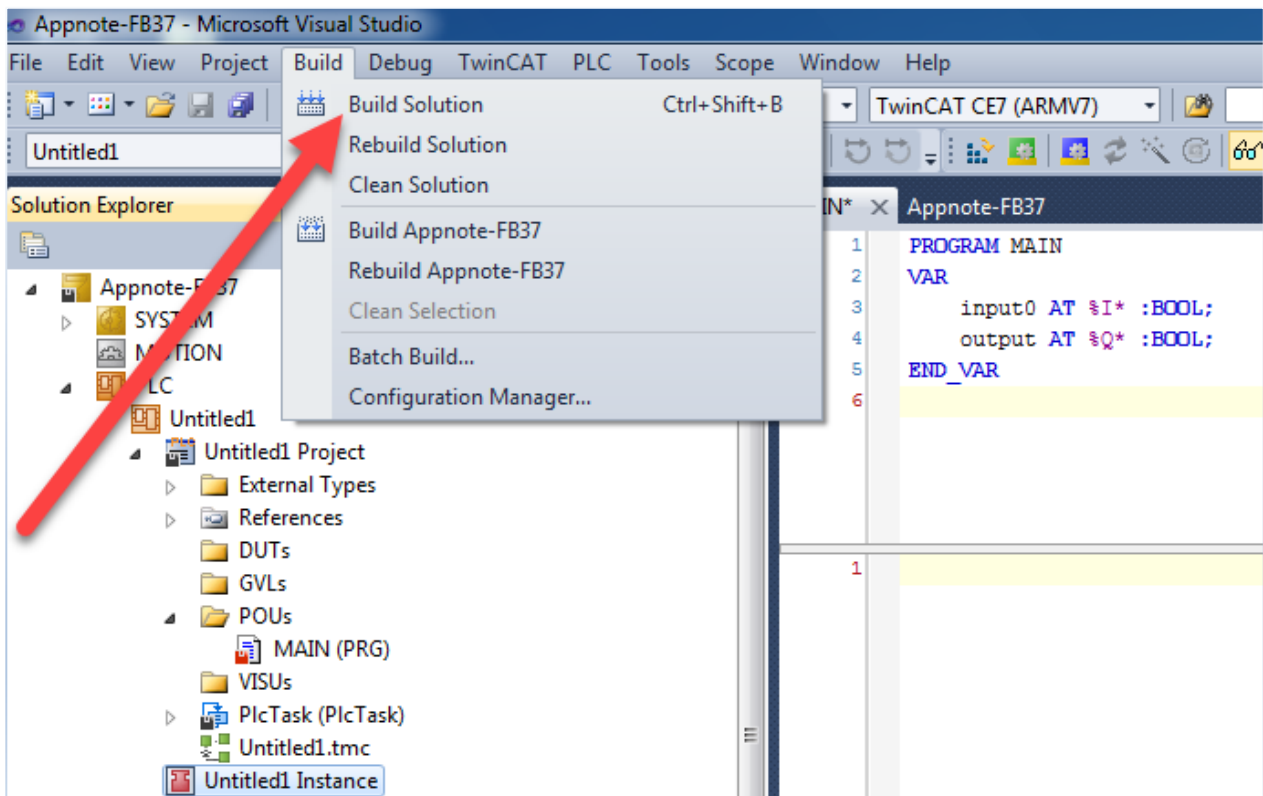
Follow the following steps to do the actual linking of the input0.



Repeat this step for all your variables.

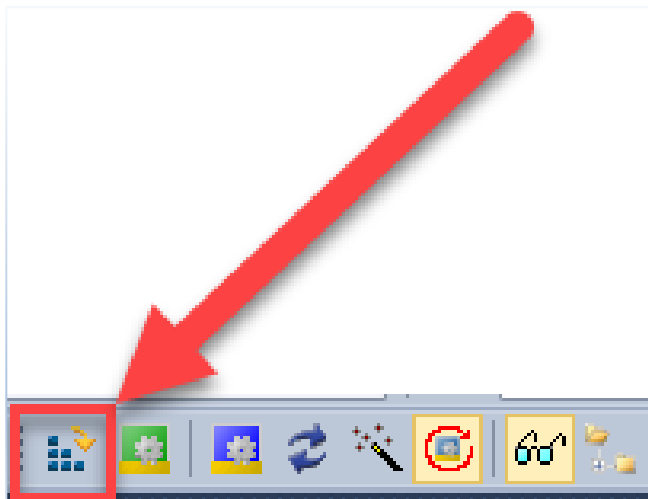


4.4.2 Repeat the building of your solution

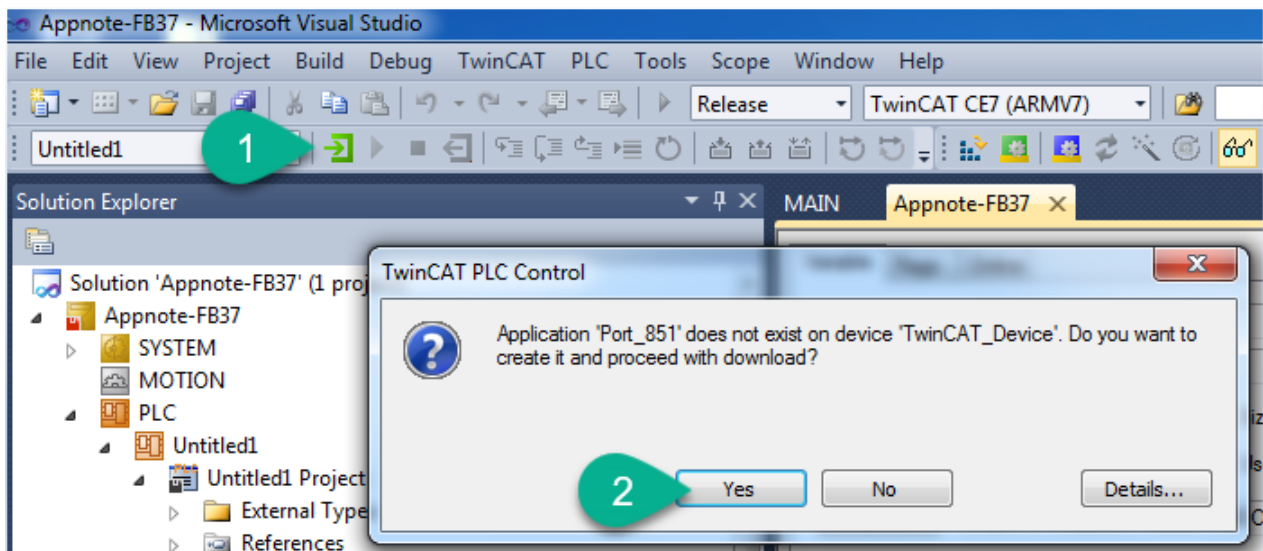


Setting up the software for usage of the FB37 EtherCAT module.

4.4.3 Repeat the configuration update in your PLC



4.5 Run your PLC with new modules



4.6 View your variables

After Downloading put your PLC in Run mode (STEP 2) and you can then modify your output variables and read your input variables. The linked variables are only visible (updated) when your PLC programming is running.