PENKO Engineering B.V.

Your Partner for Fully Engineered Factory Solutions

How to…

Connect a 1020 Profinet to a Siemens PLC

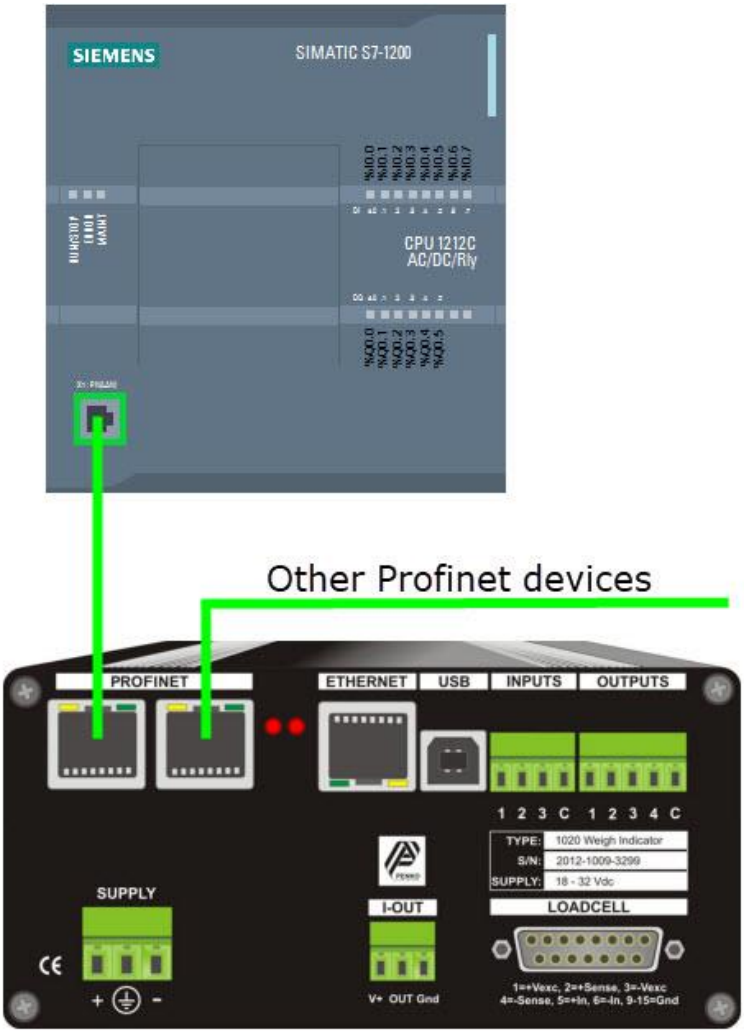
PENKO
an ETC Company

Inhoudsopgave

Hardware connection

Connect the PLC with an Ethernet cable to 1 of the Ethernet ports of the 1020 on the left side, it does not matter which port you choose. The other Ethernet port on the 1020 can be used to connect other Profinet devices.

You can also connect the PLC and 1020 through an Ethernet switch.



Software

The software that is used in this How to:

Tia Portal V15.1

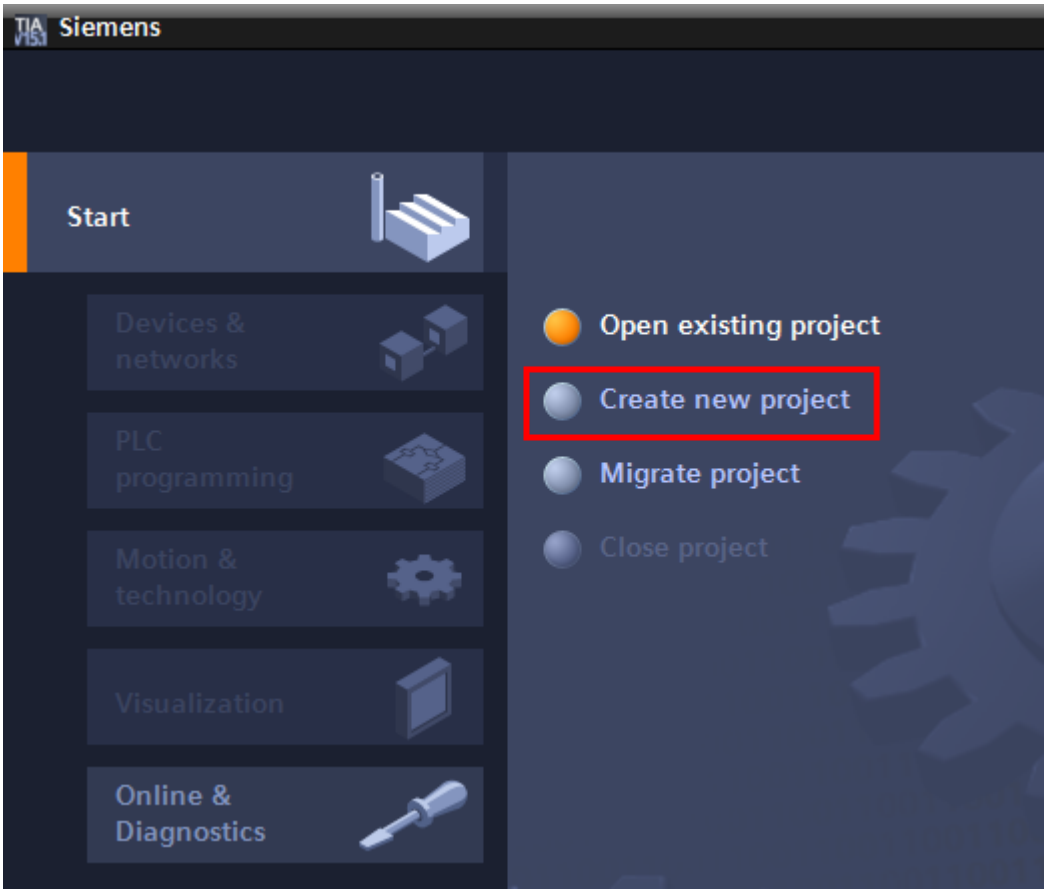
The GSDML file for the 1020 can be downloaded from the Penko website:

https://penko.com/Support/Software/

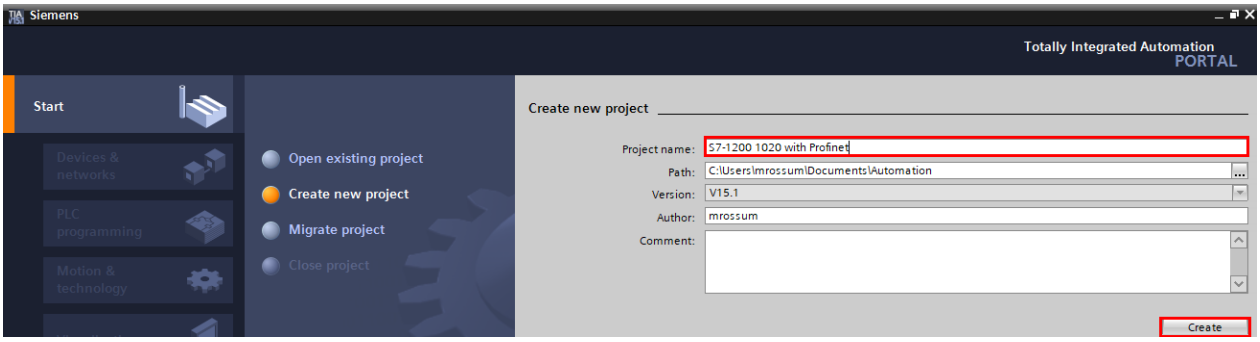
Tia Portal V15.1

Create a project

Open Tia Portal and click on Create new project.

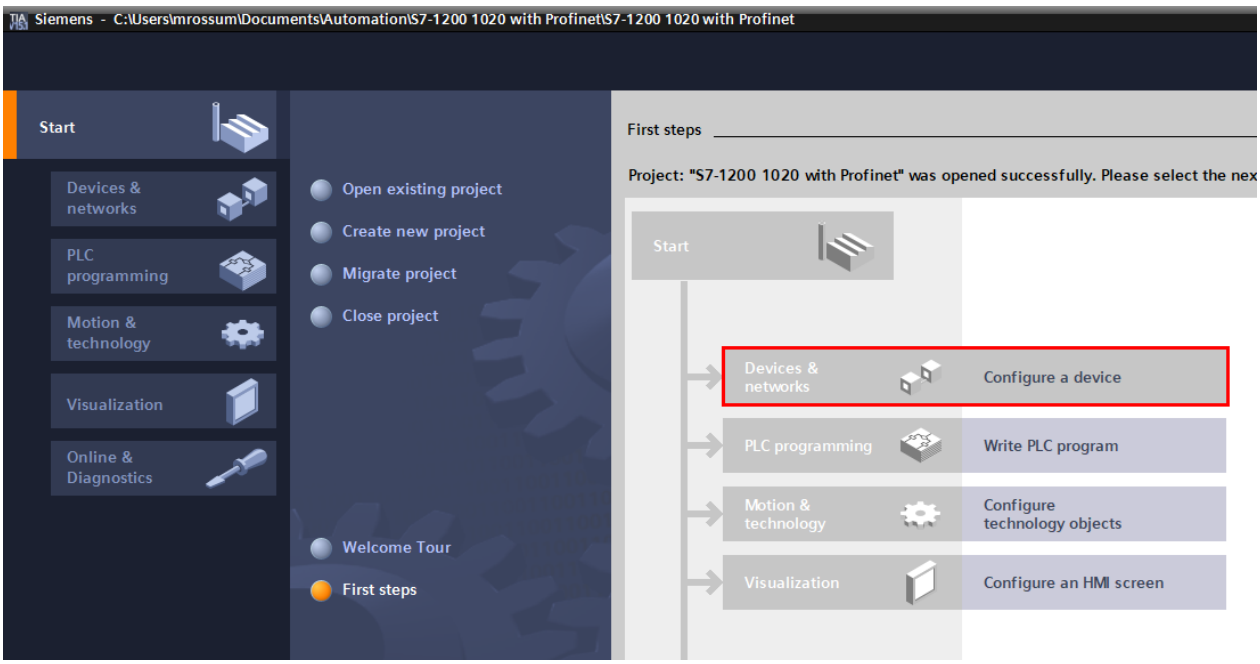


Give the project a name and click on Create.

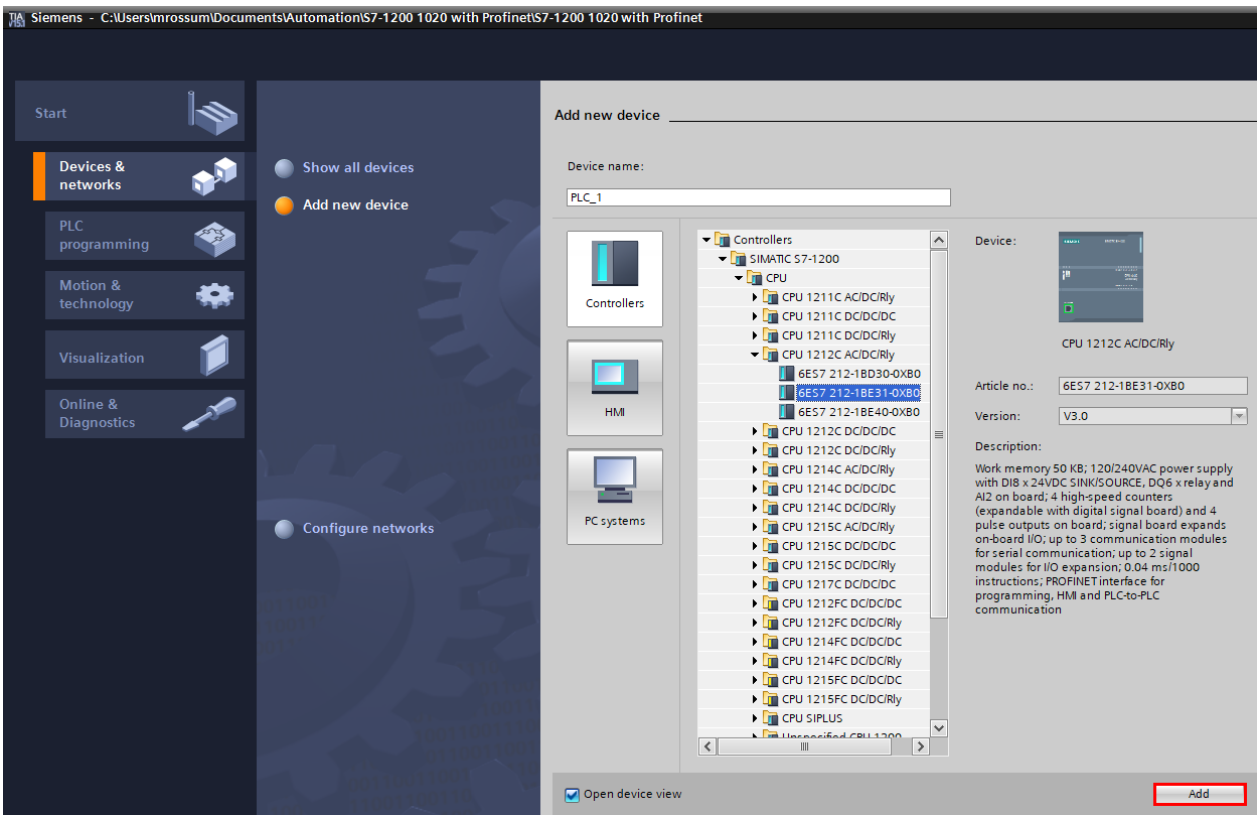


Add a PLC to the project

Click on Configure a device.

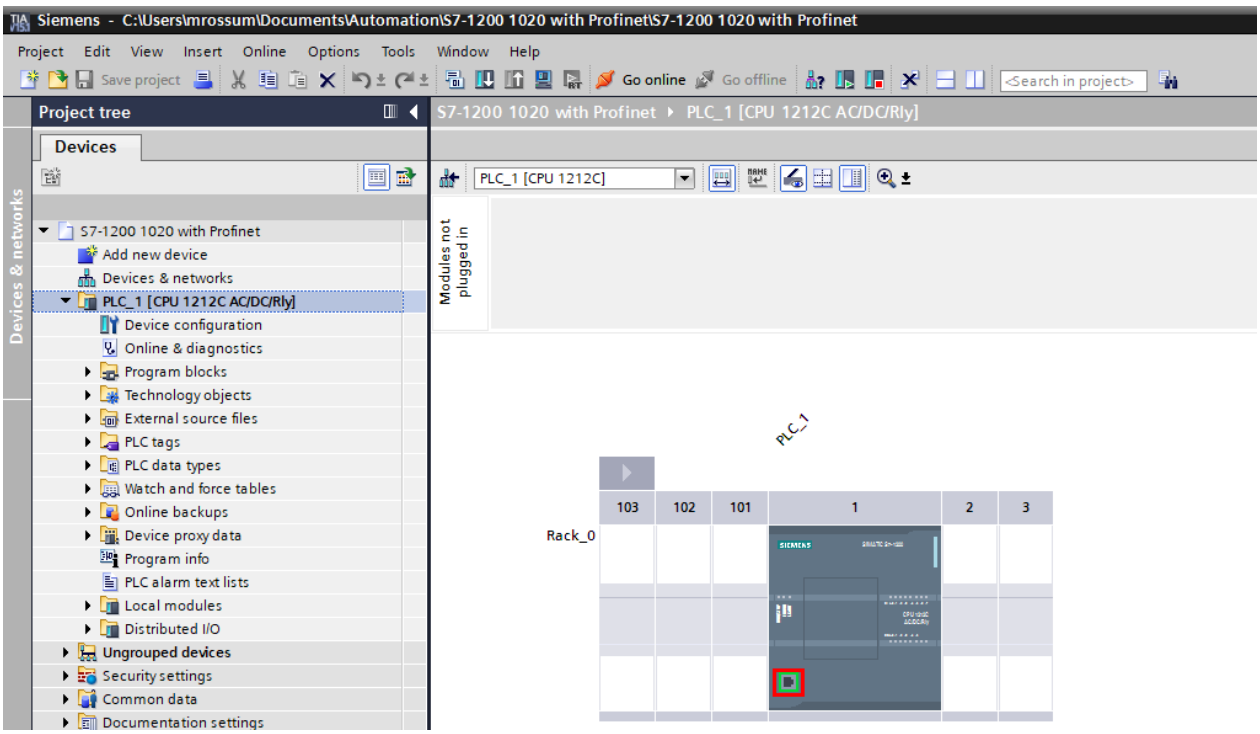


Click on Add new device, select your PLC and click on Add.

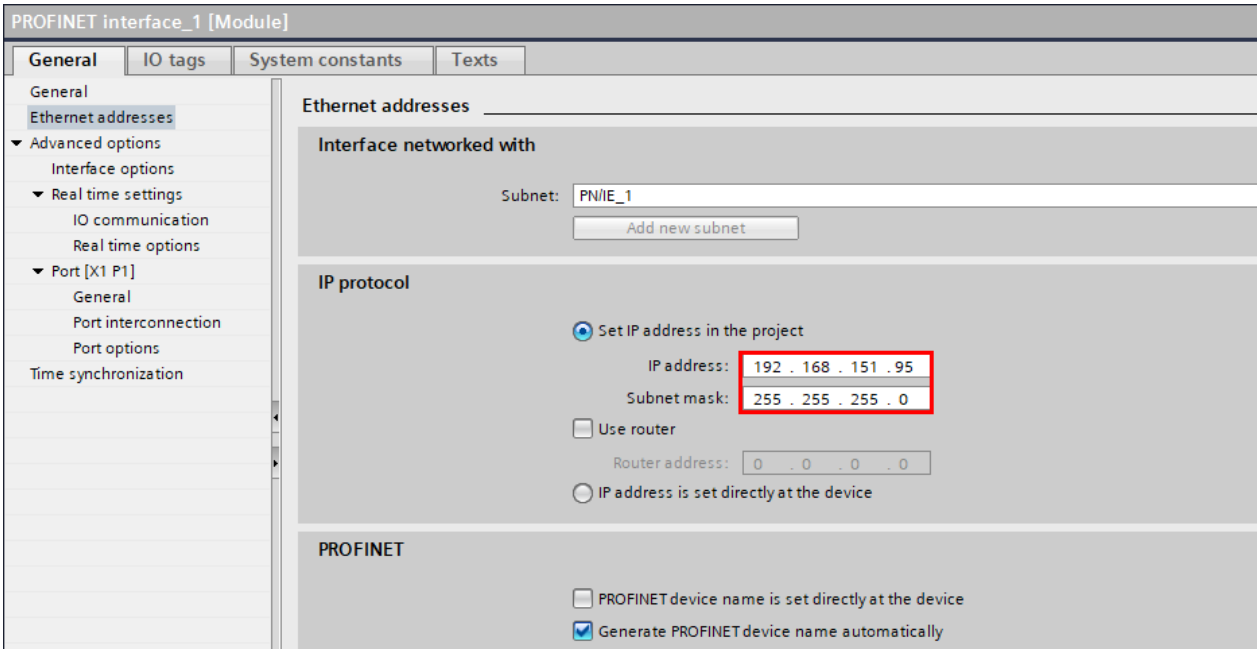


Assign an IP address to the PLC

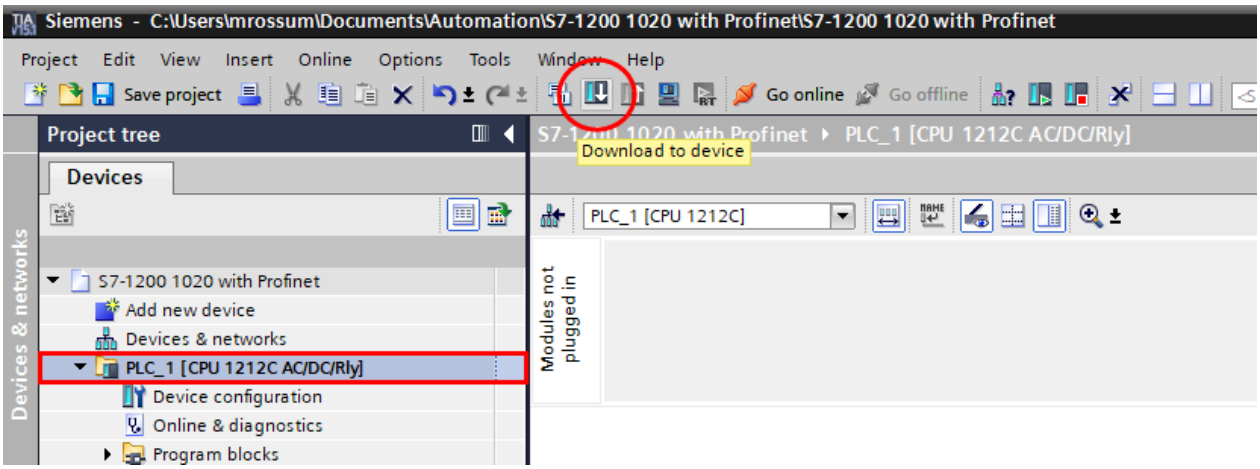
Double click on the green square of the PLC.



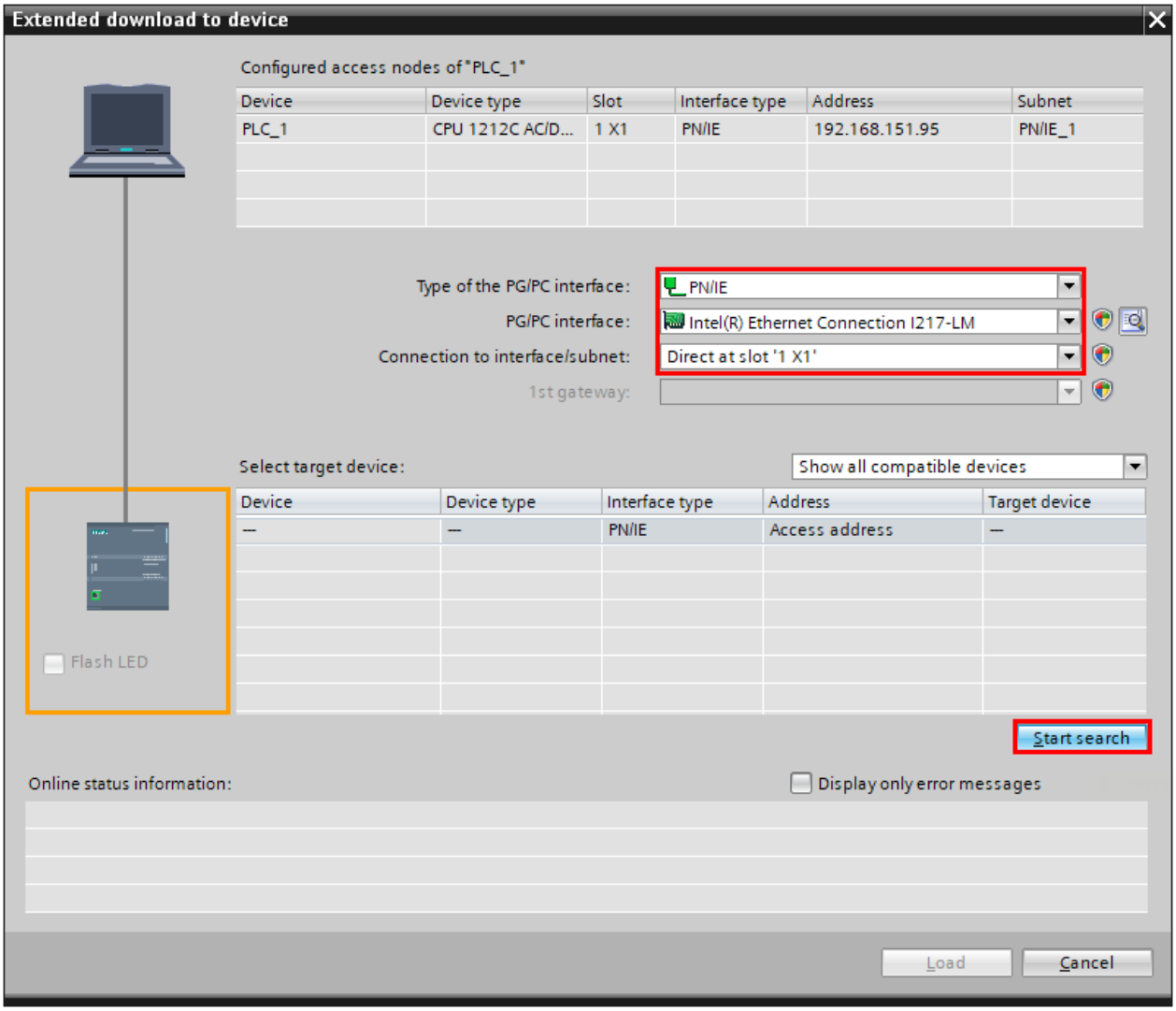
Here you can set the IP address for the PLC.



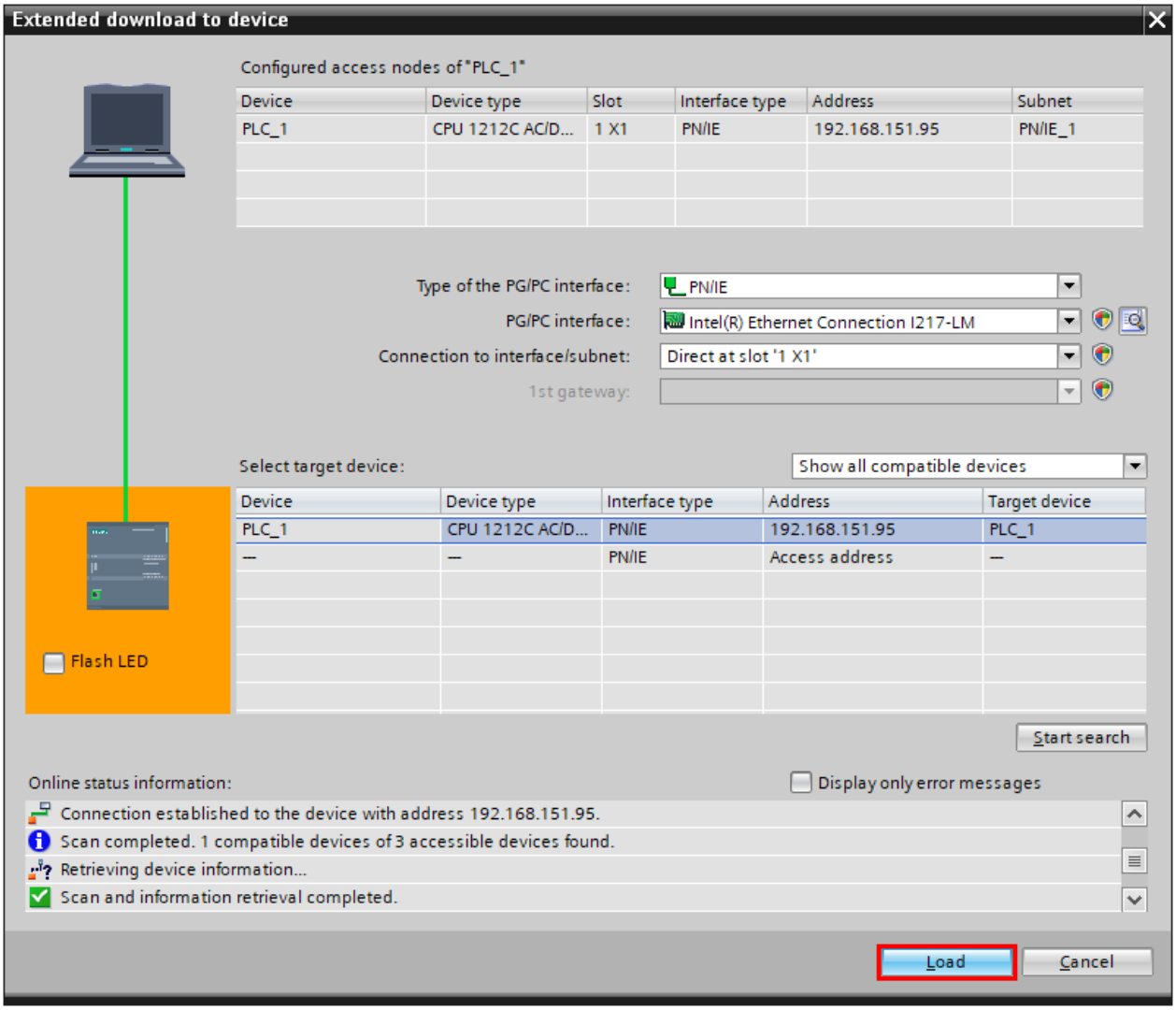
Click on the Line PLC_1 [CPU 1212C AC/DC/Rly] and click on the button Download to device.



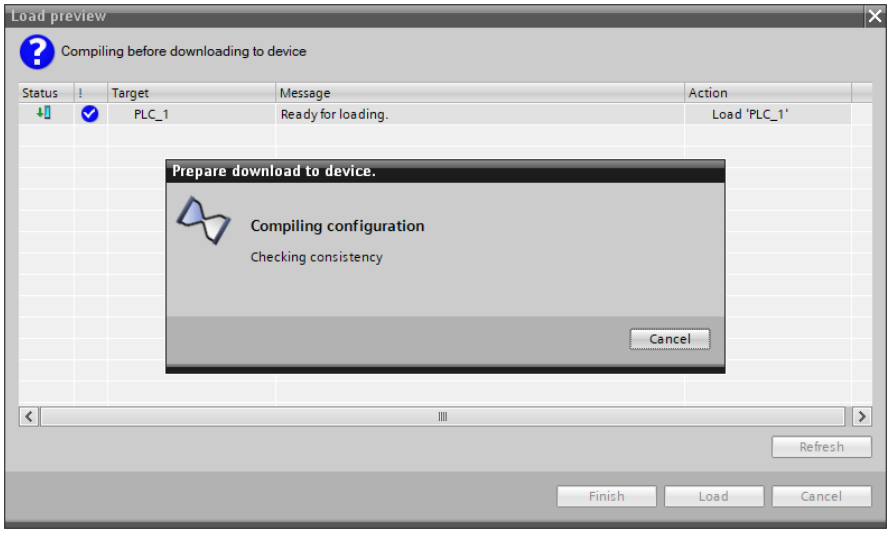
Select the interface that the PLC is connected to and click on Start search.



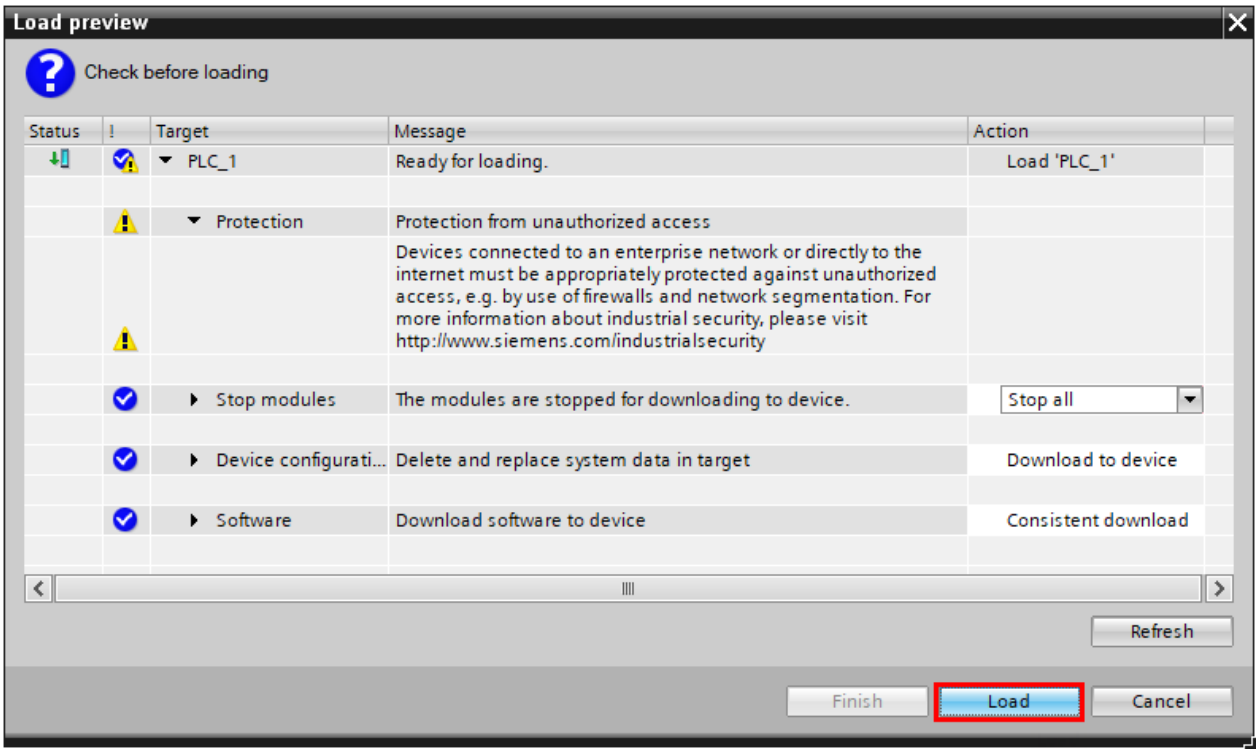
When the PLC is found click on Load. (The example below already had the correct IP address. When the PLC doesn't have an IP address yet, the MAC Address is shown.)



The configuration will compile.

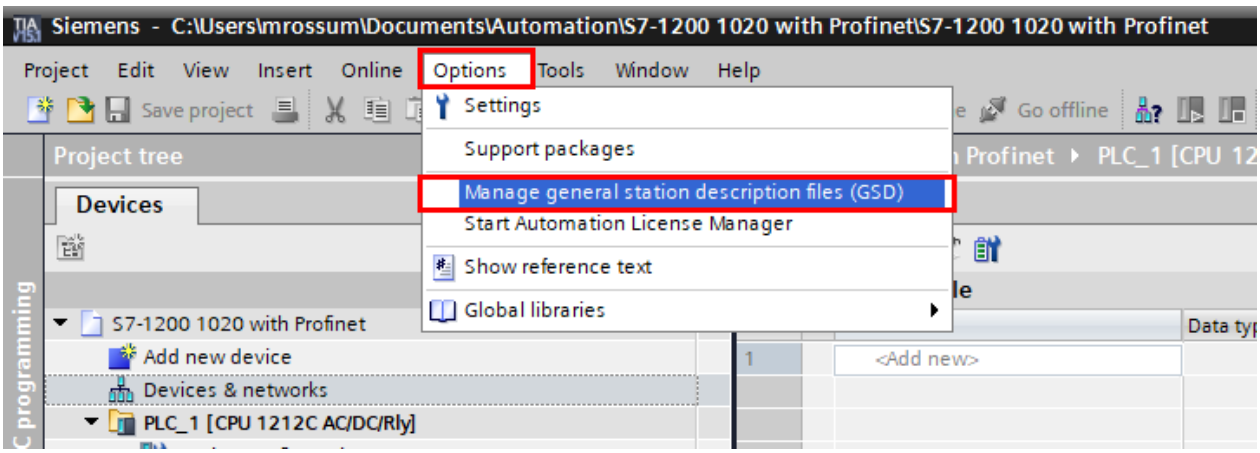


Click on Load to download the configuration into the PLC. When completed click on Finish.

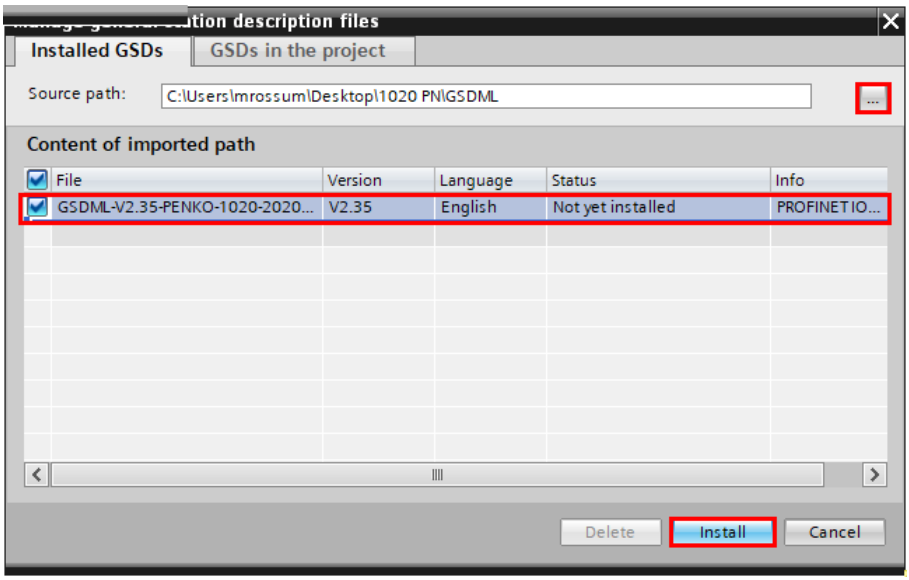


Add the GSDML file to the project

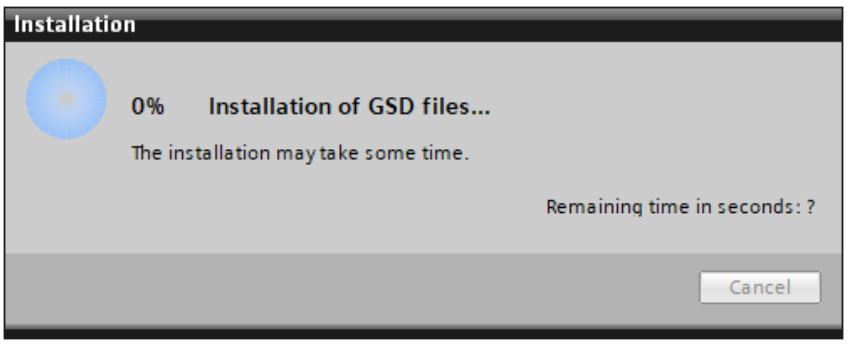
Click on Options and click on Manage general station description files (GSD).



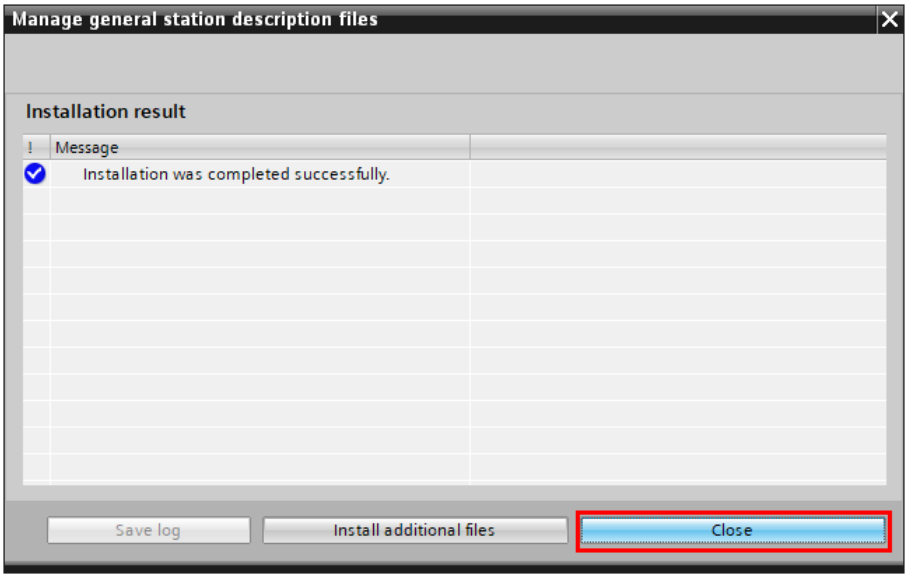
Select the folder with the GSDML file for the 1020, select the file and click on Install.



The file will be installed.



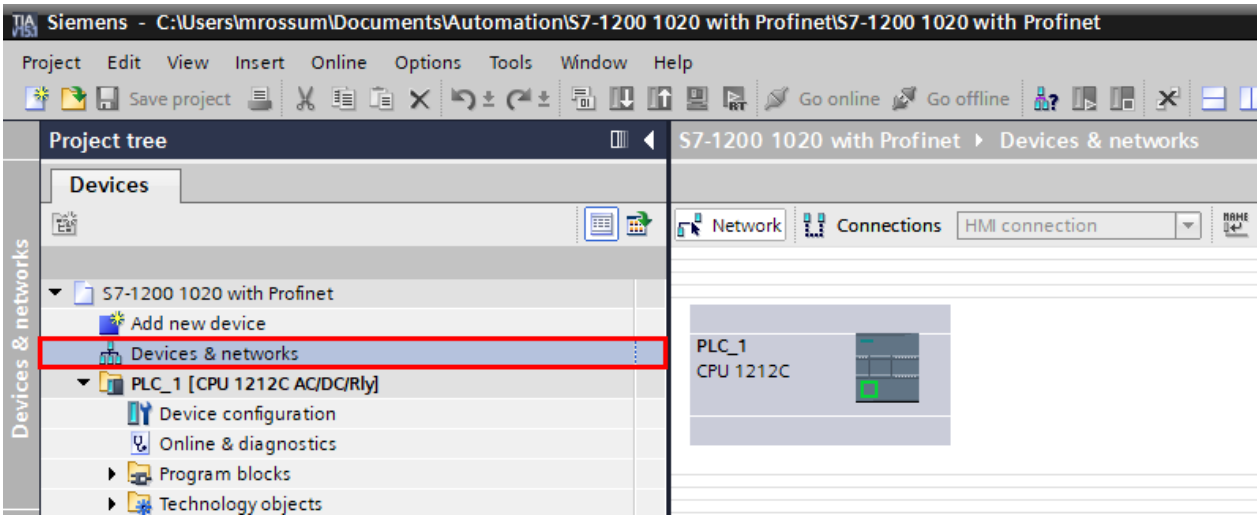
The installation result is shown, click on Close.



The hardware catalog will be updated.

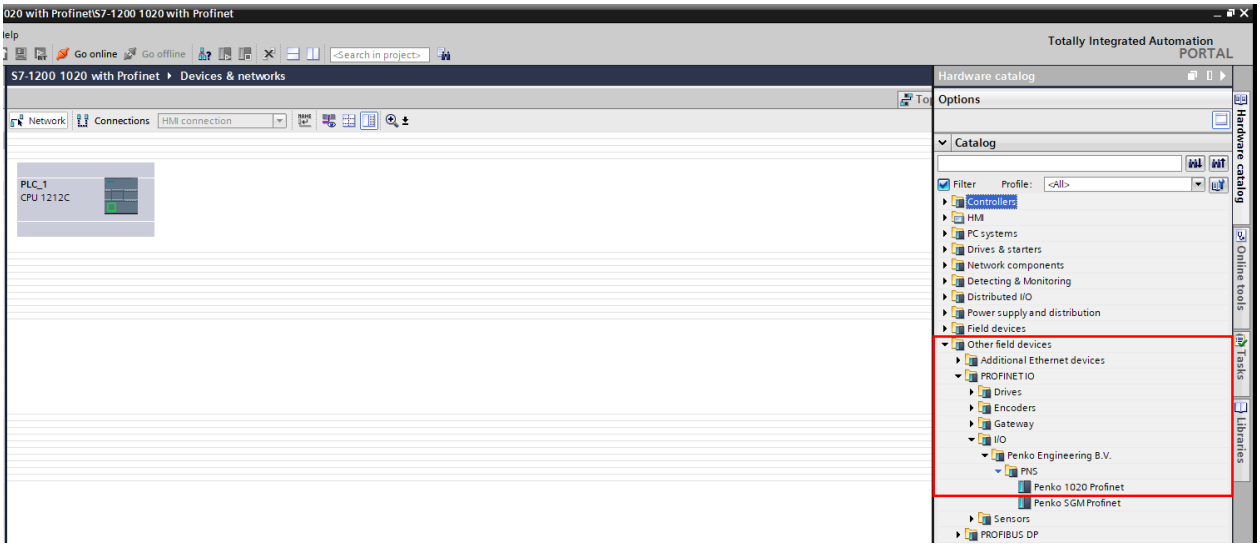
Devices & networks

Double click on Devices & networks in the left column. It will show the PLC in the network.

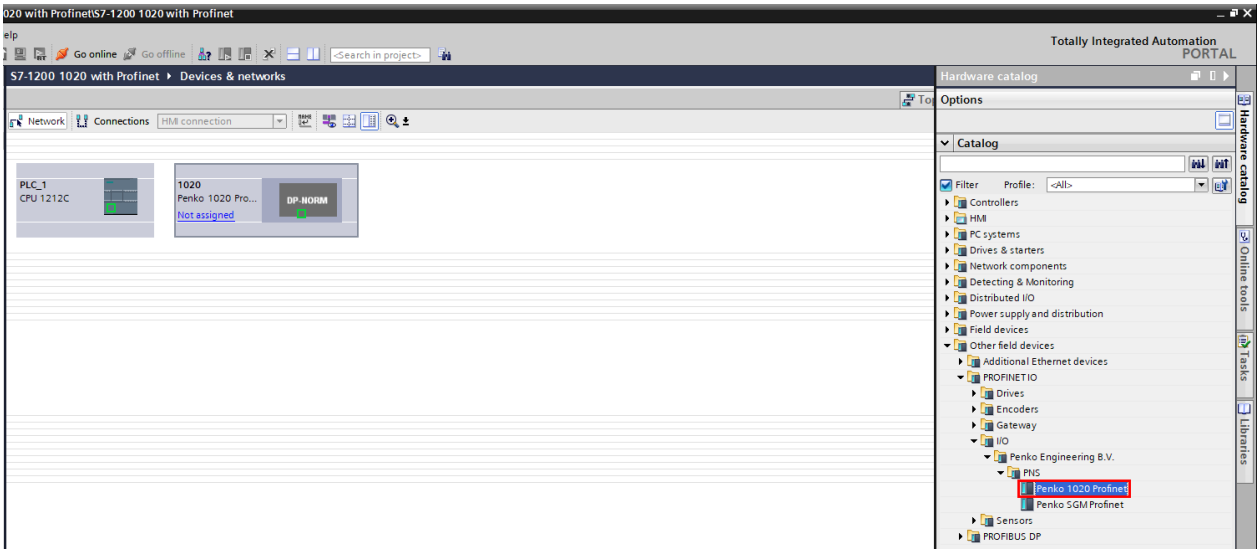


Go to the right column and select the Penko 1020 Profinet file in the Hardware catalog. Follow the path:

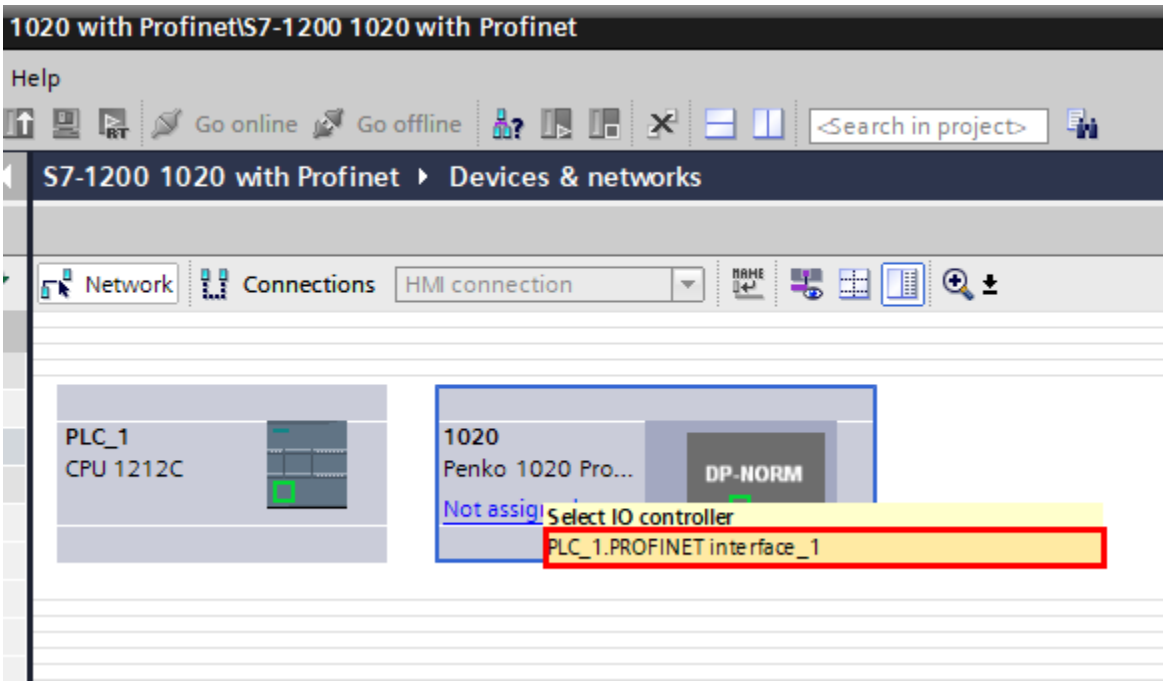
Other field devices – PROFINET IO – I/O – Penko Engineering B.V. - PNS



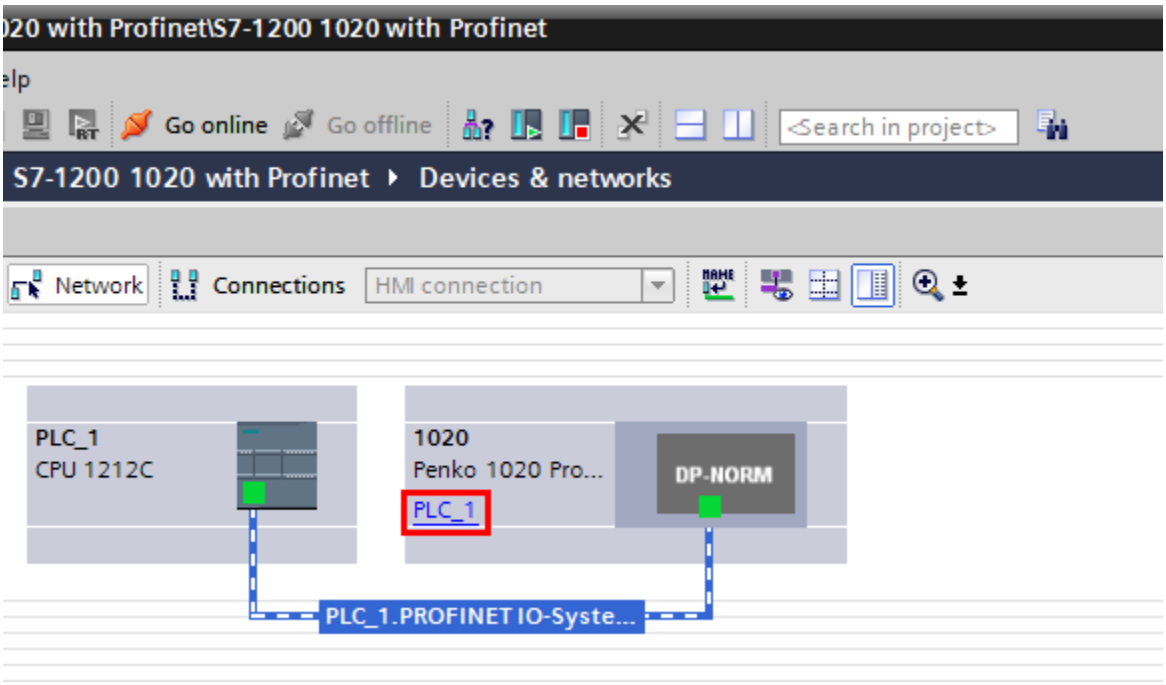
Double click on Penko 1020 Profinet to add the 1020 into the network.



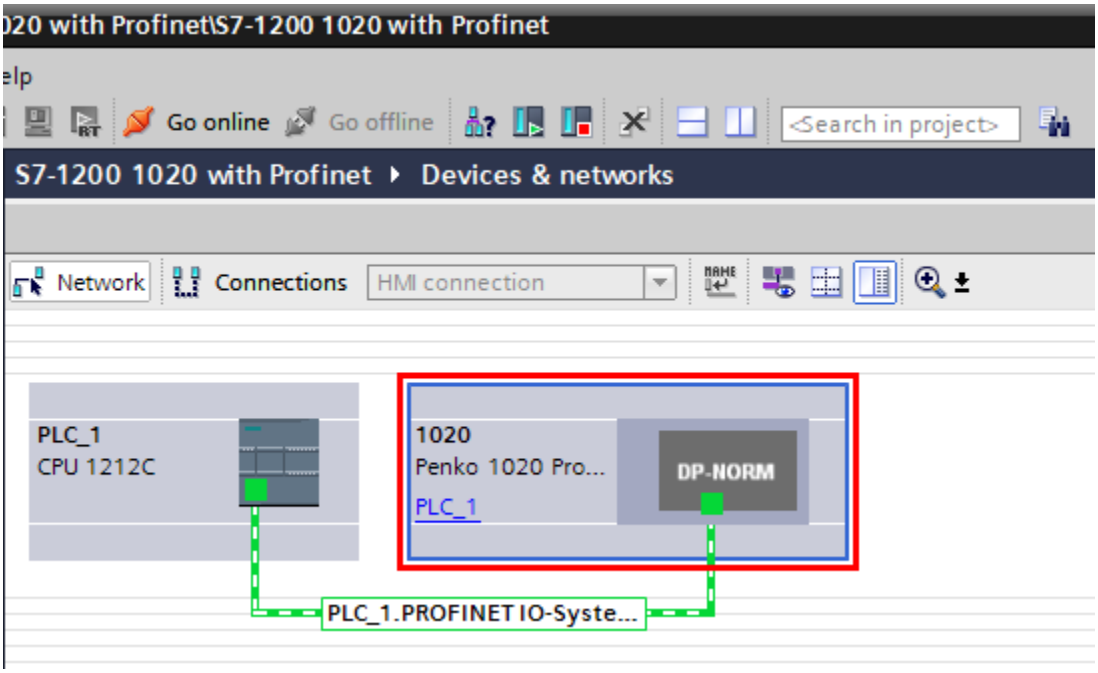
As you can see the 1020 is not assigned yet. Click on Not assigned and select the PLC_1.PROFINET interface_1



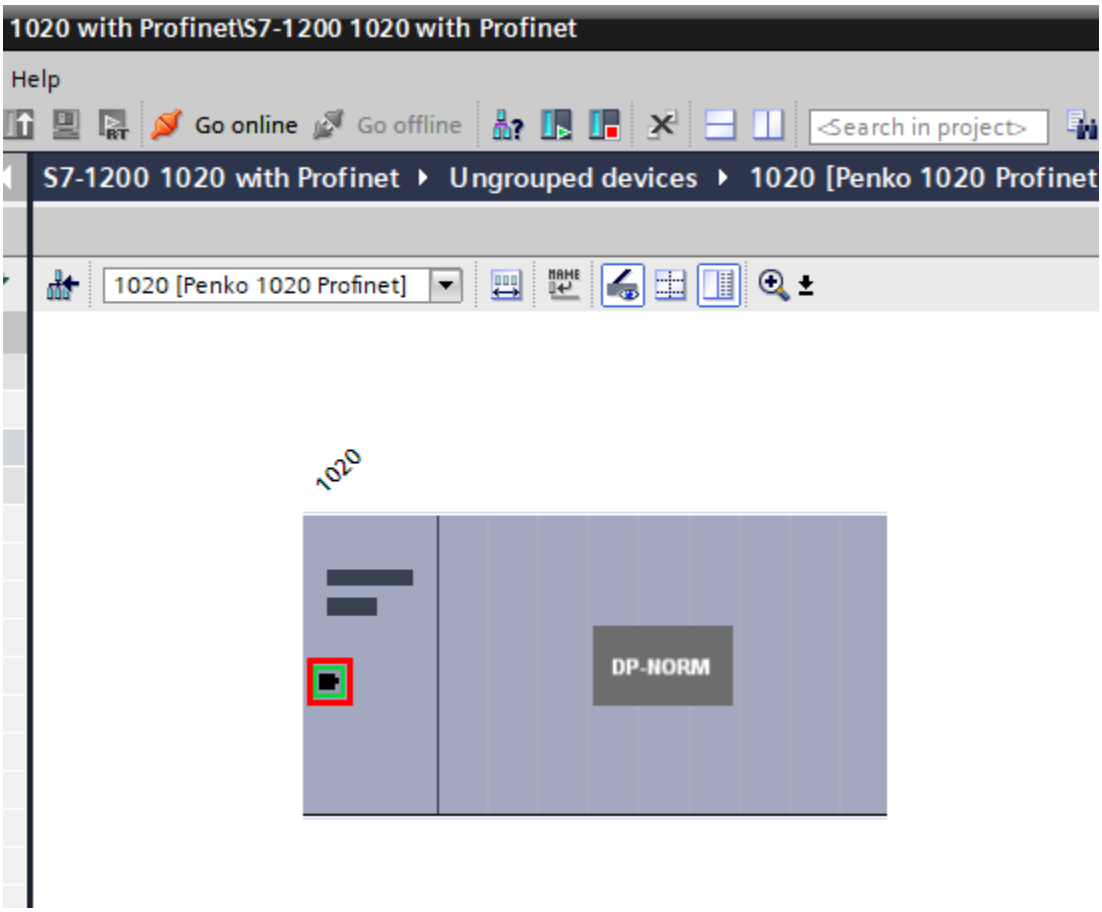
The 1020 is now assigned to PLC_1.



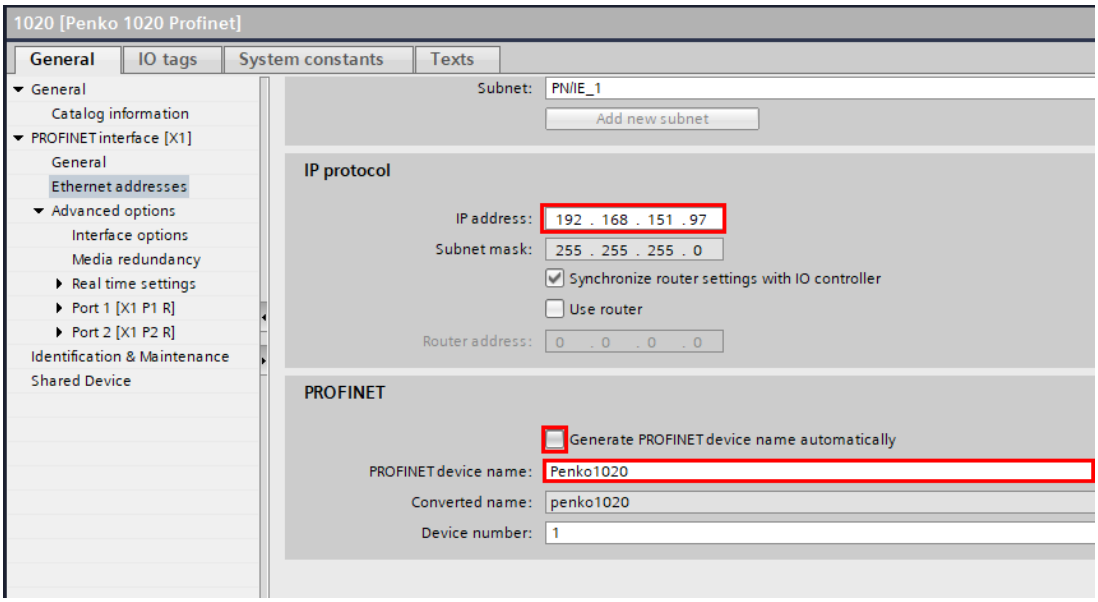
You can give the 1020 a different name and IP address if you want. Double click on the 1020 module.



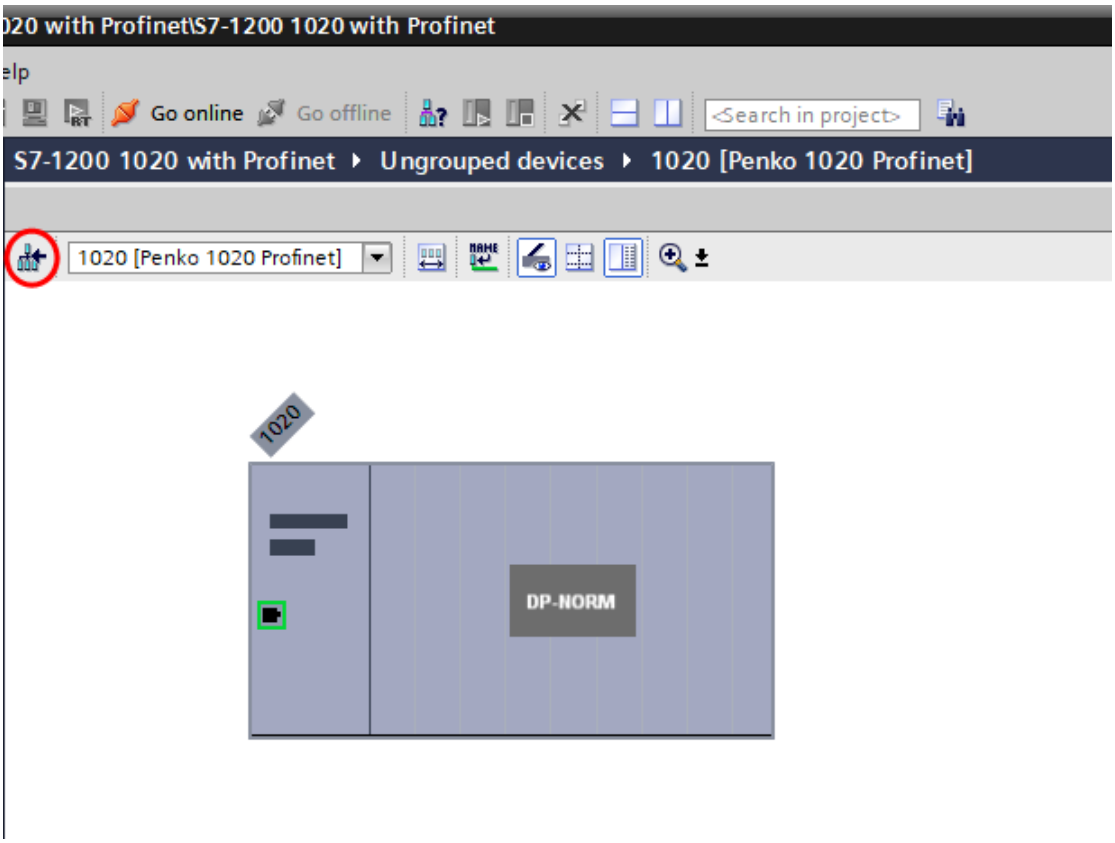
Double click on the green square in the 1020 module.



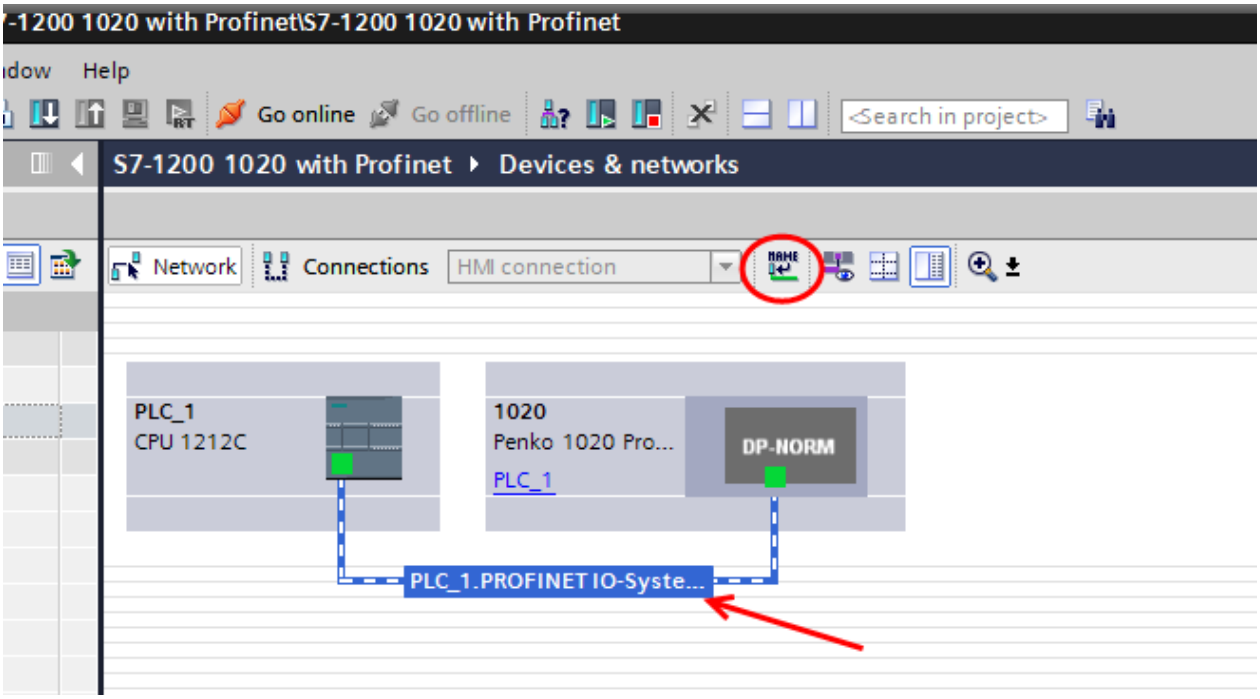
Under Ethernet Addresses you can set an IP address and set a different Profinet device name when you uncheck the option Generate PROFINET device name automatically.



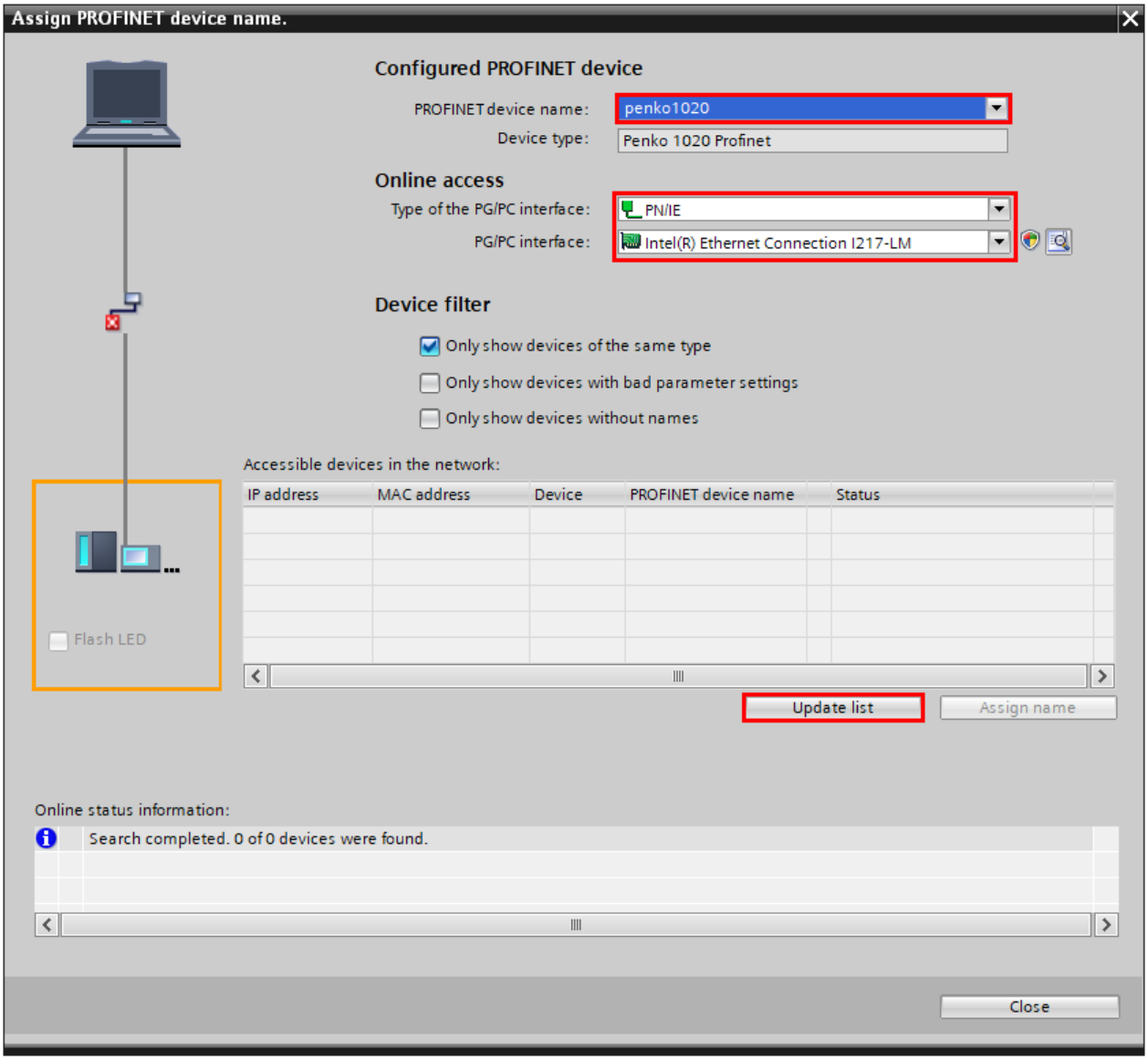
Go back to Network view by clicking on the network button.



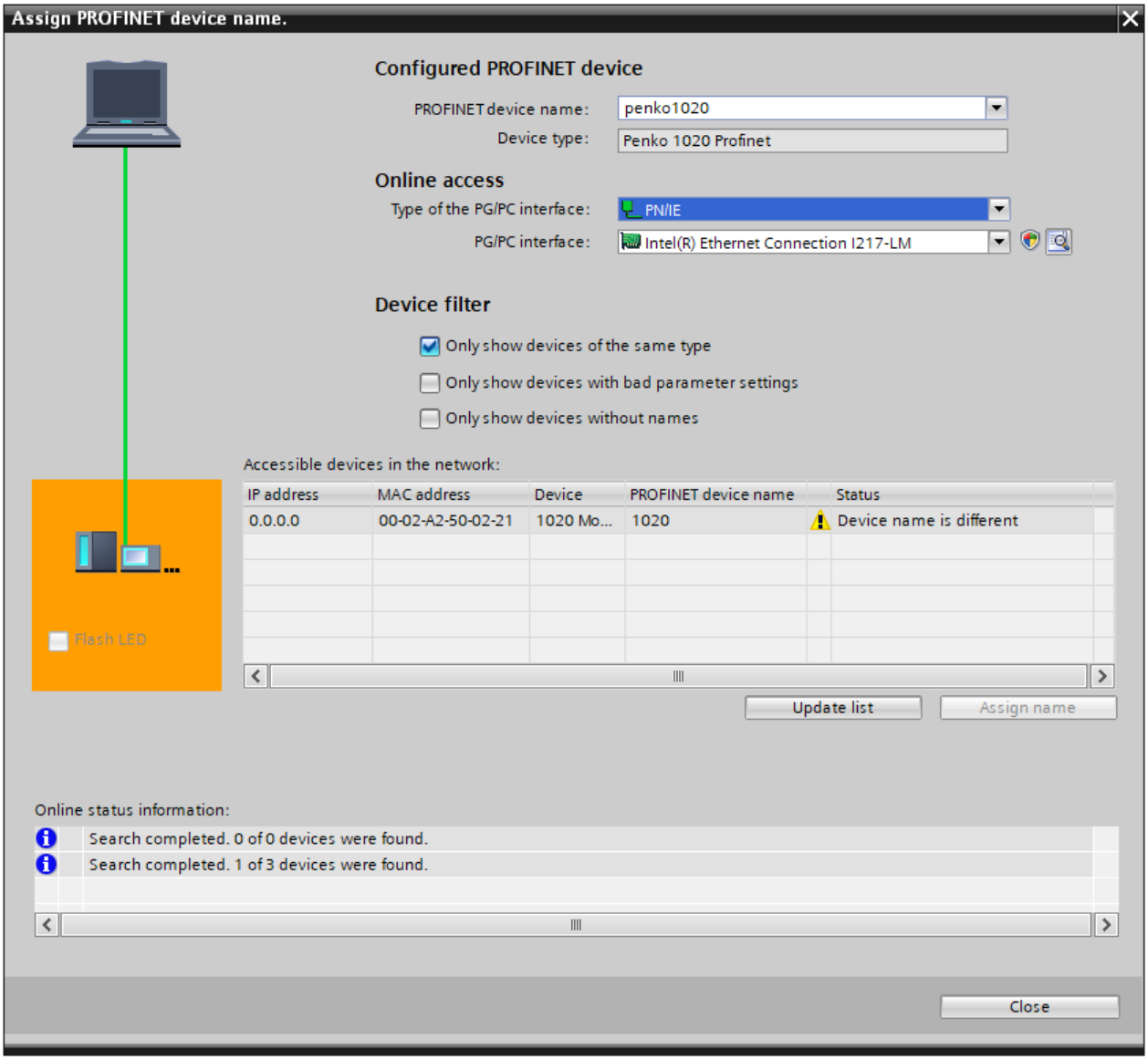
When the Profinet interface is selected you can click on the button Name.



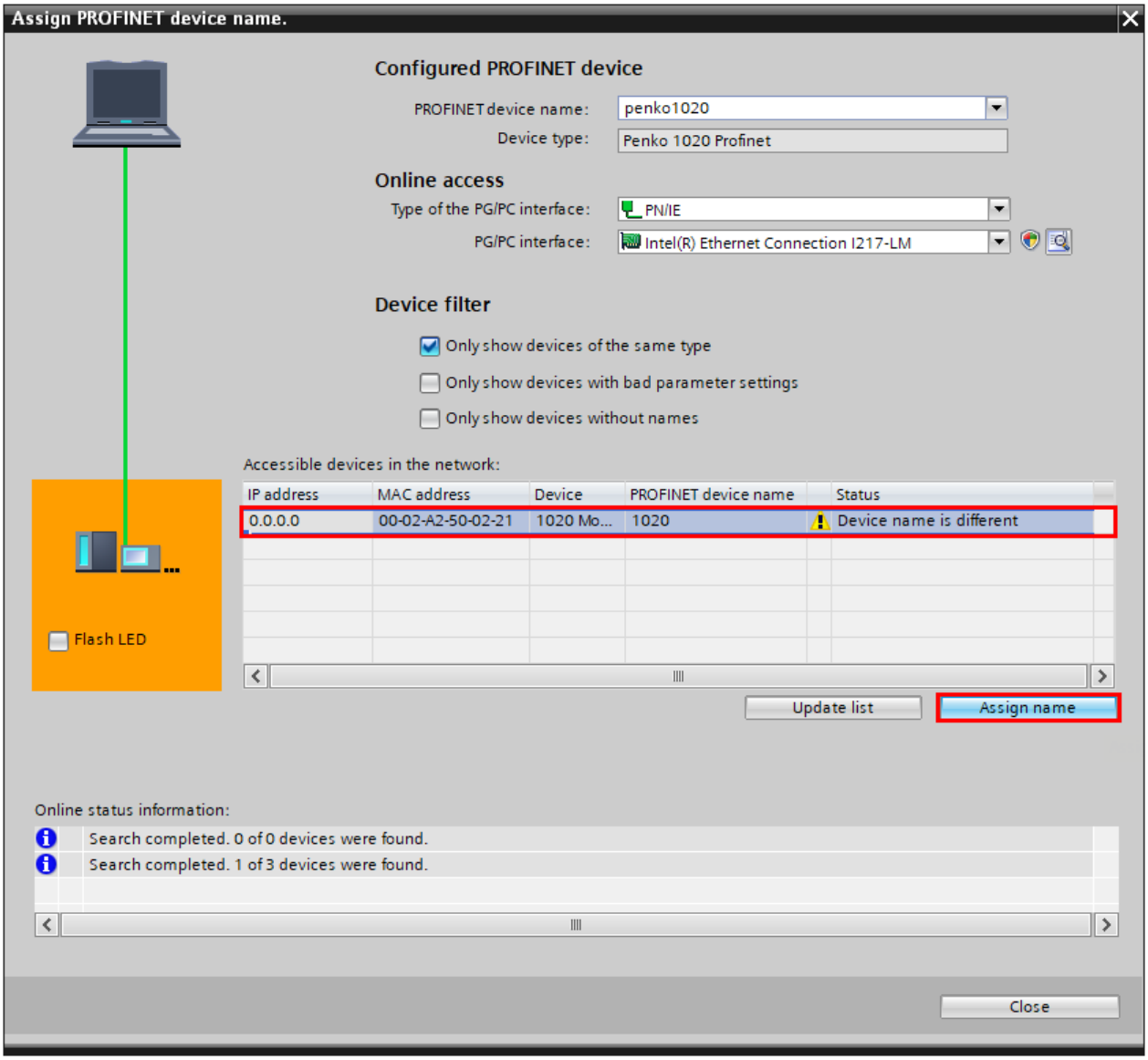
Select the name that you have given to the 1020 at the PROFINET device name and set the correct interface, then click on Update list.



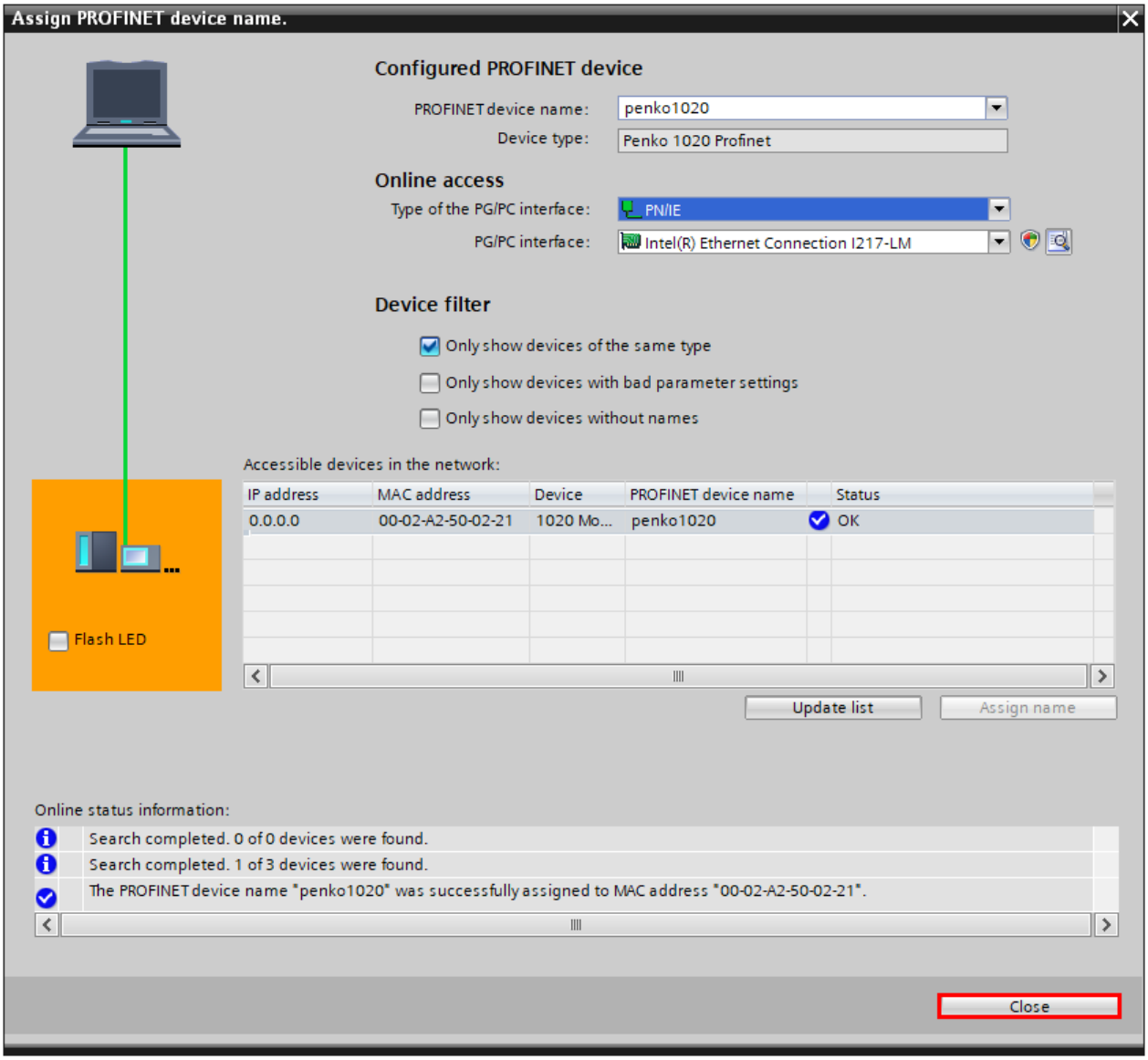
The 1020 is found but it has no IP address and a different PROFINET device name.



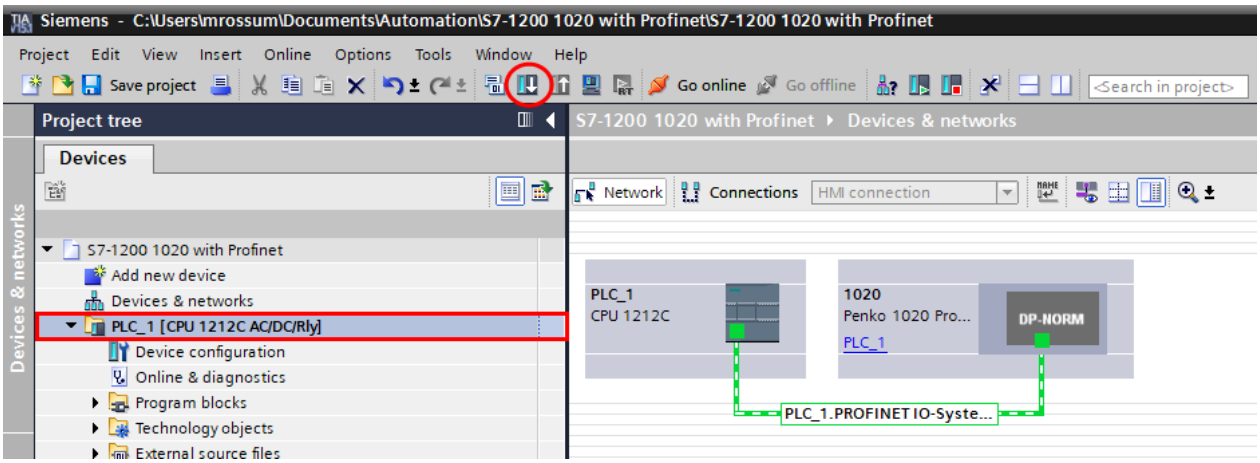
Select the line with the 1020 and click on Assign name.



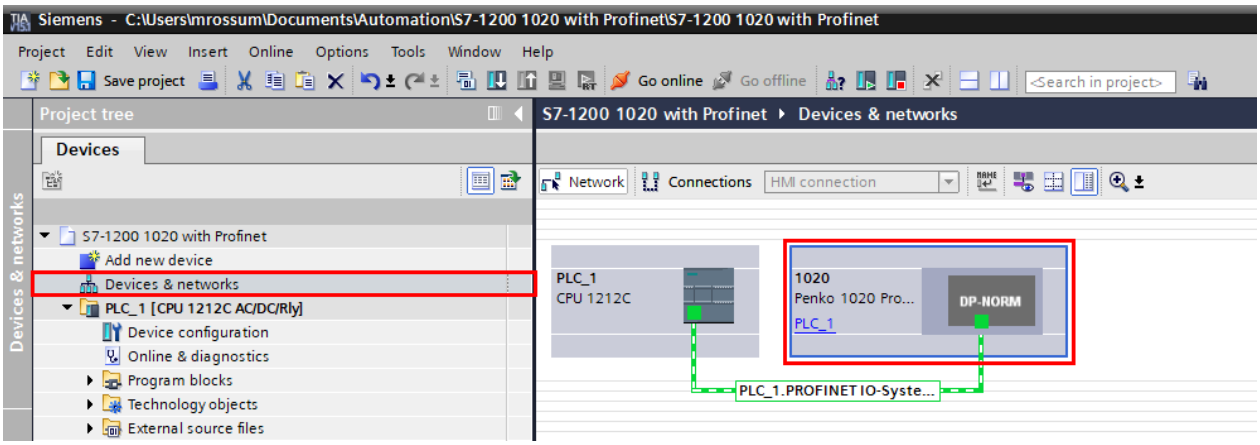
The name is now updated and the status is OK, the IP address will be assigned when the configuration is downloaded to the PLC. Close the window.



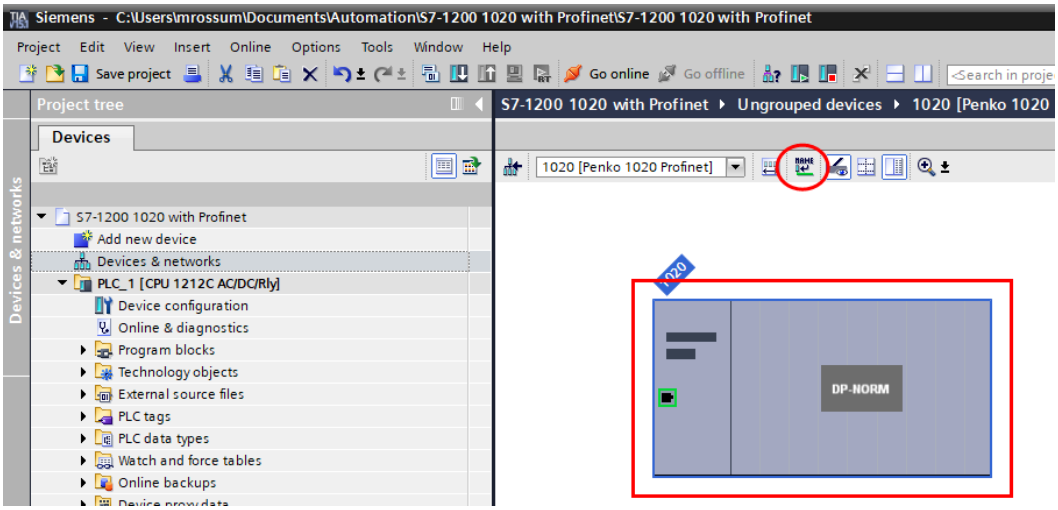
Select the line PLC_1 [CPU 1212C AC/DC/Rly] and click on download to device and follow the download steps.



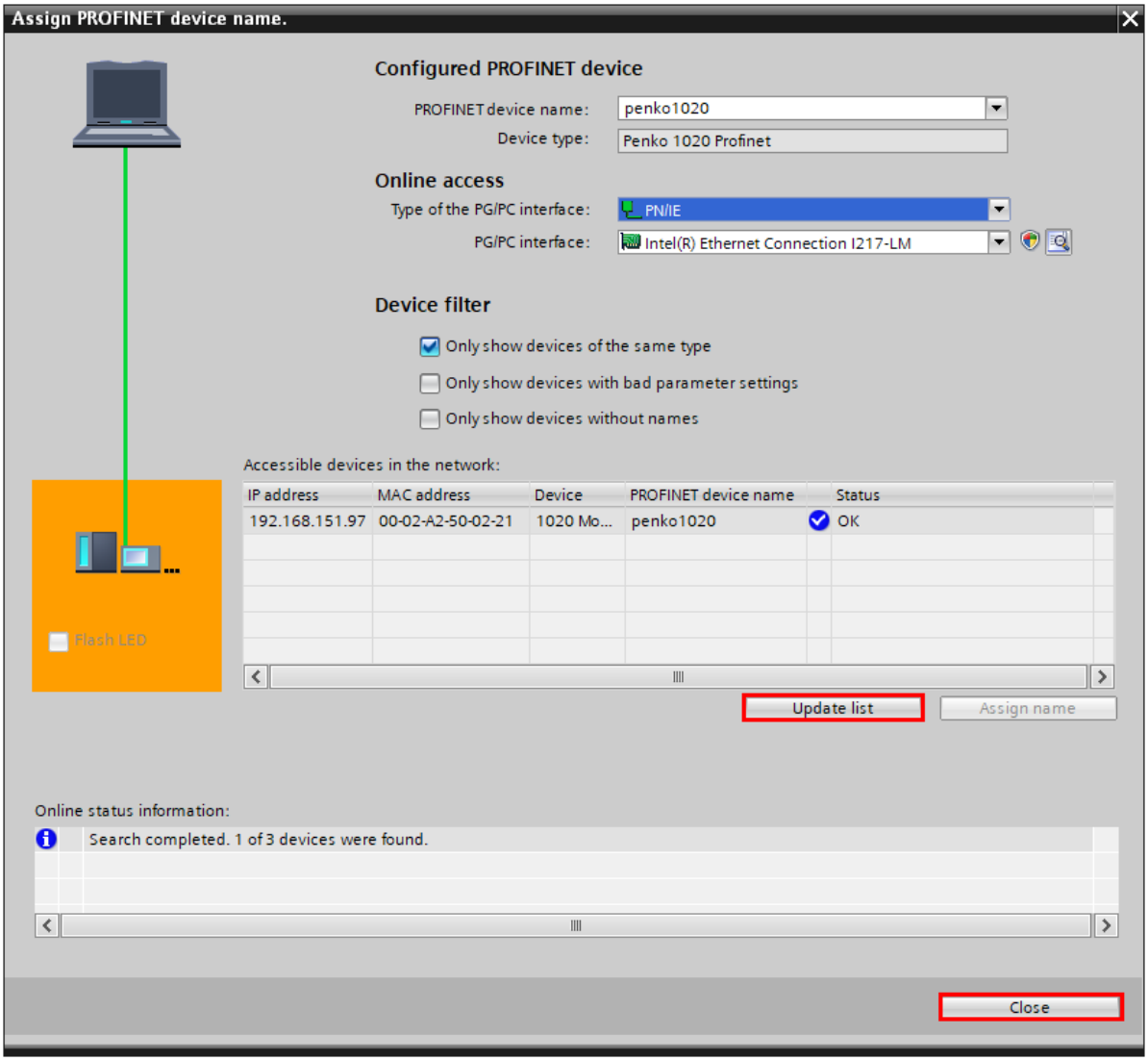
To check the IP address double click on Devices & networks and double click on the 1020 module.



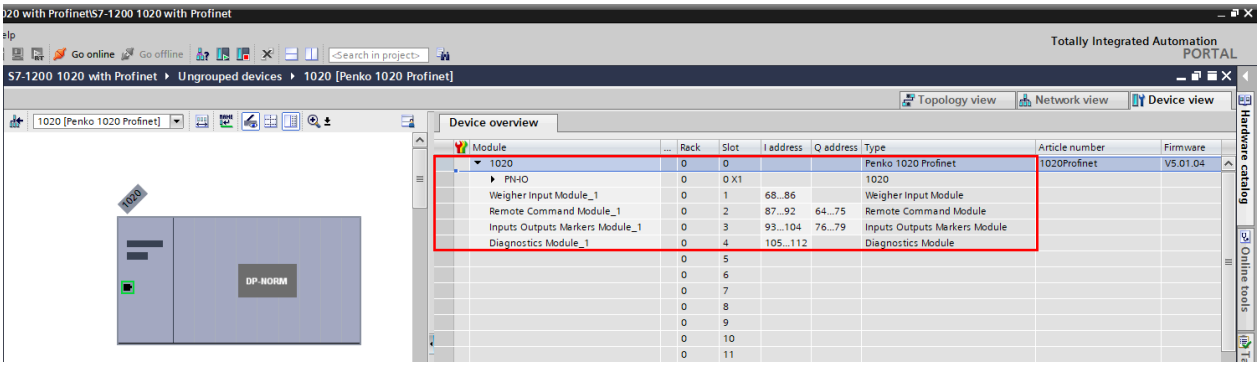
Select the module and click on Name.



Click on Update list and the 1020 is now showing the correct IP address. Click on Close.

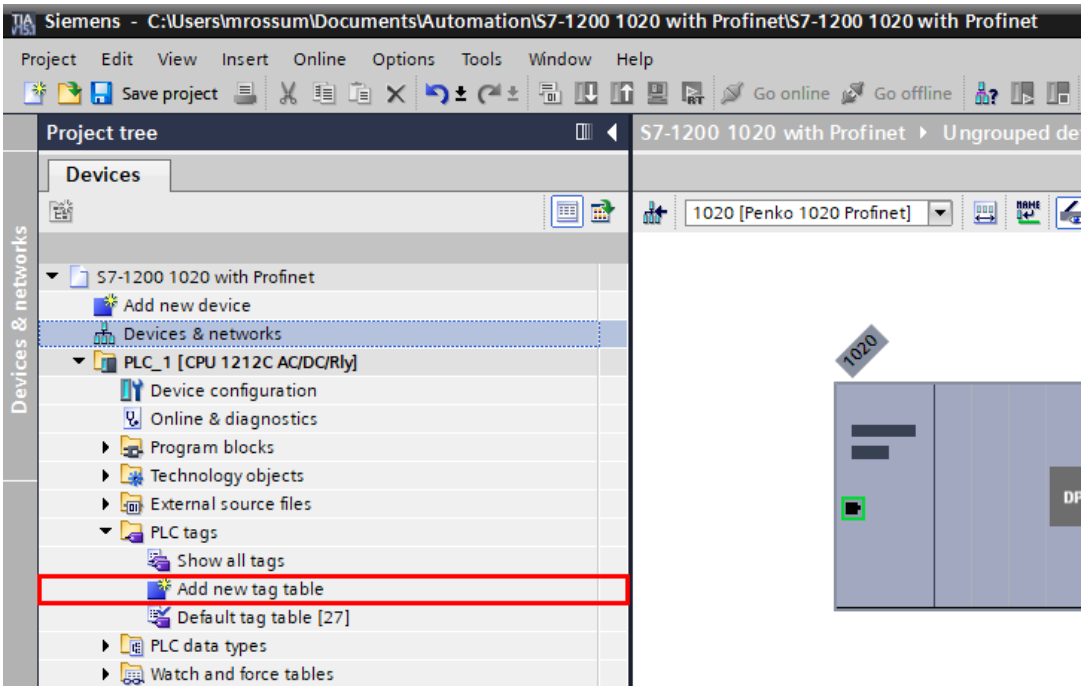


You should now also see the Device overview, here you can see the data that you can read and write. These I addresses and Q addresses can differ if you have a different PLC or already have added different modules.

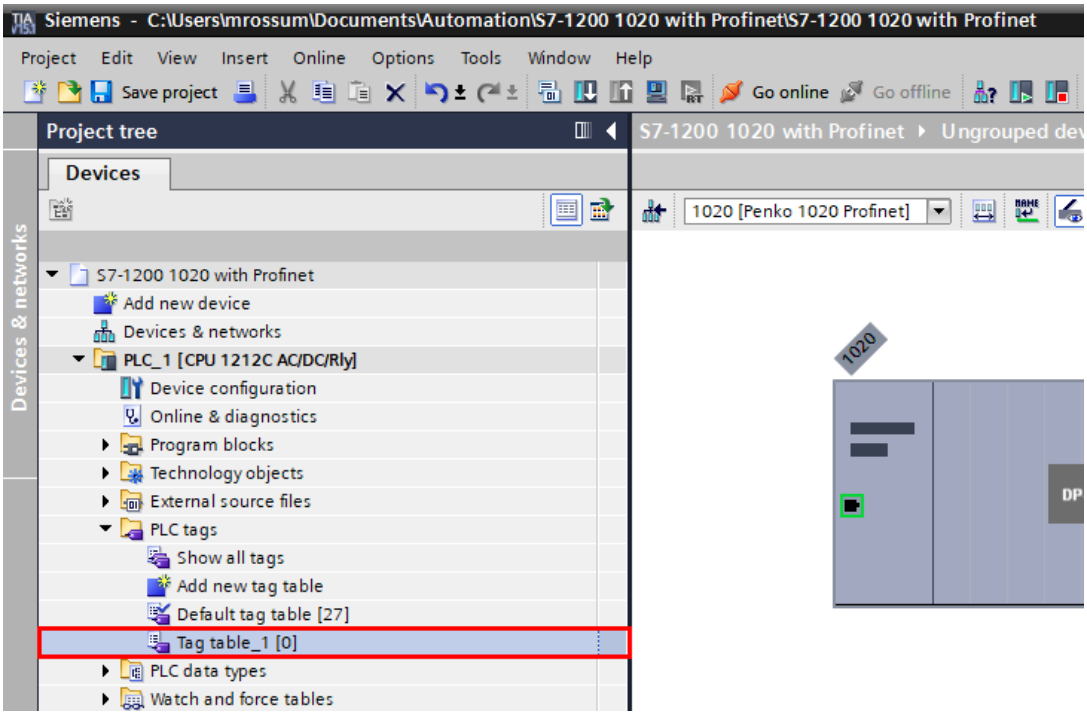


PLC Tags

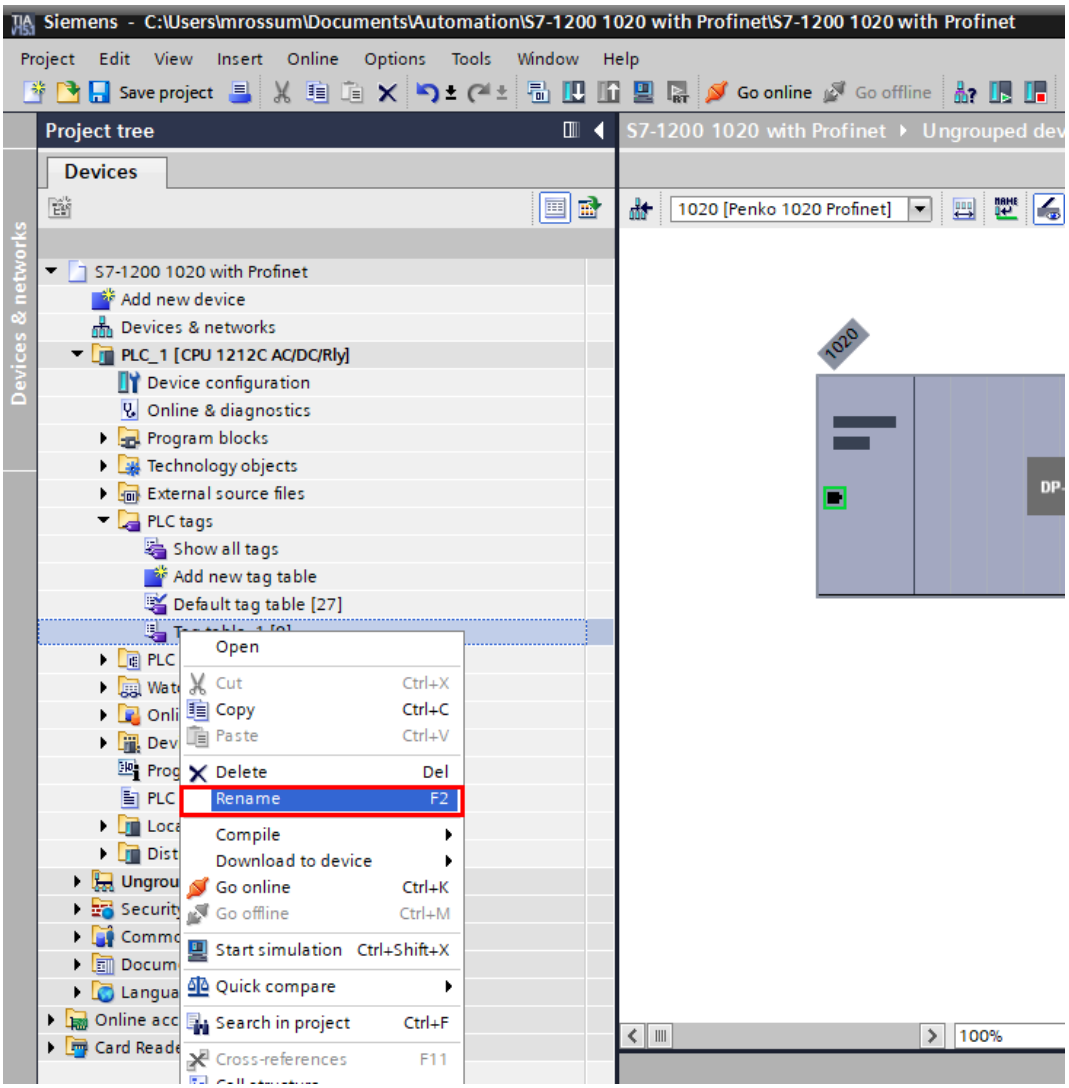
Add a new tag table by opening PLC_1 [CPU 1212c AC/DC/Rly] – PLC Tags and double click on Add new tag table.



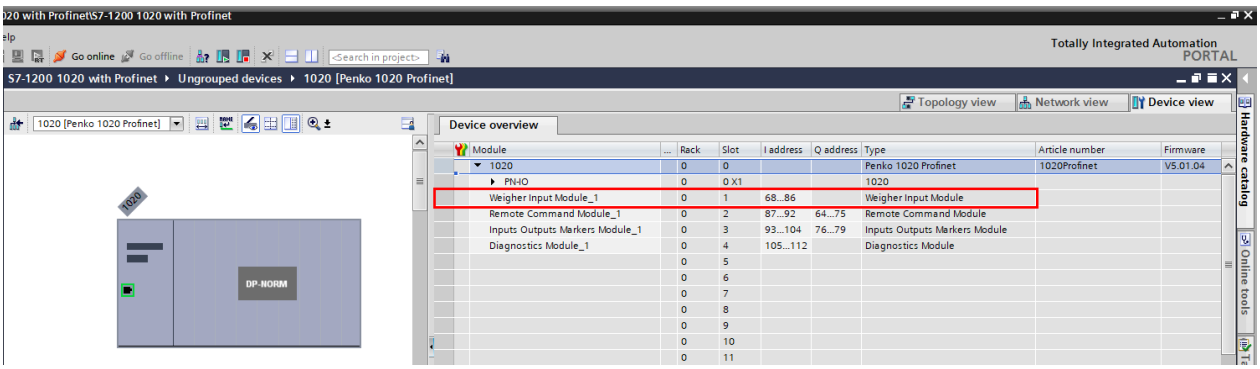
A new tag table is added to the project.



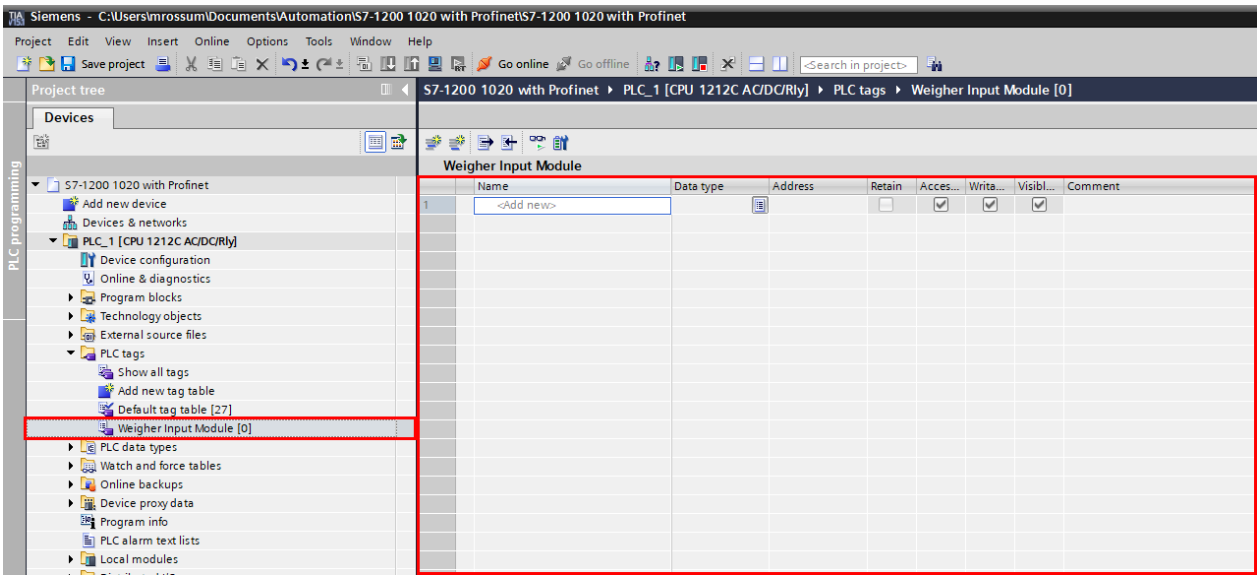
Right click on the Tag table and click on Rename.



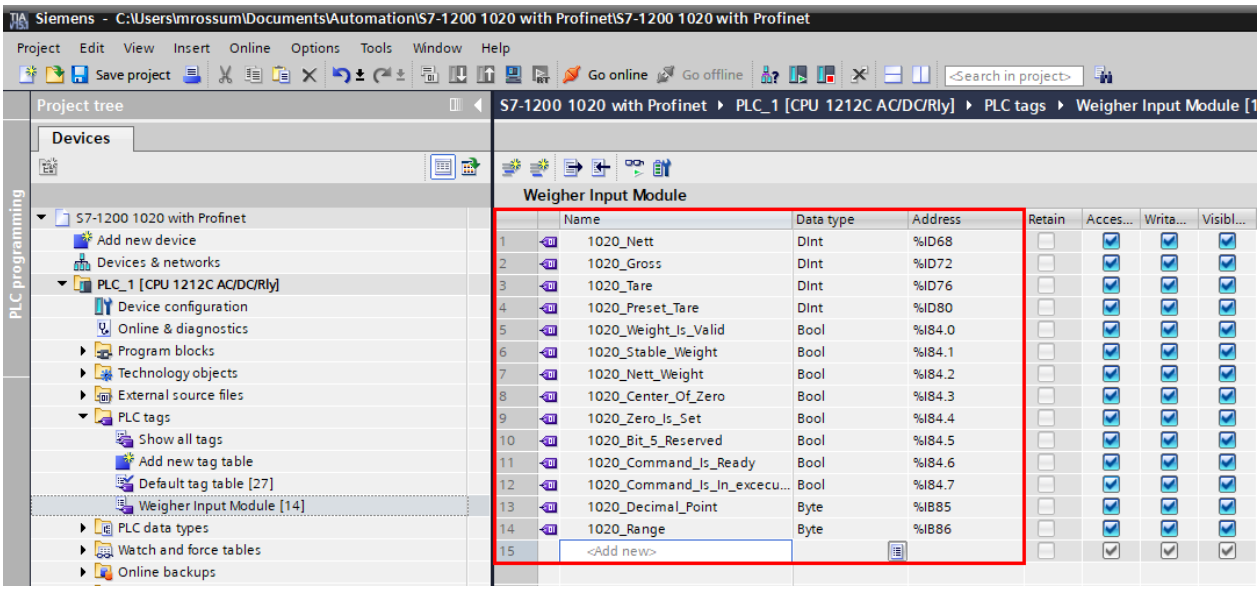
Give the Tag a name, in the example the name Weigher Input Module is used. Look at the I Addresses the range is 68-86 in the example but it can differ in your project.



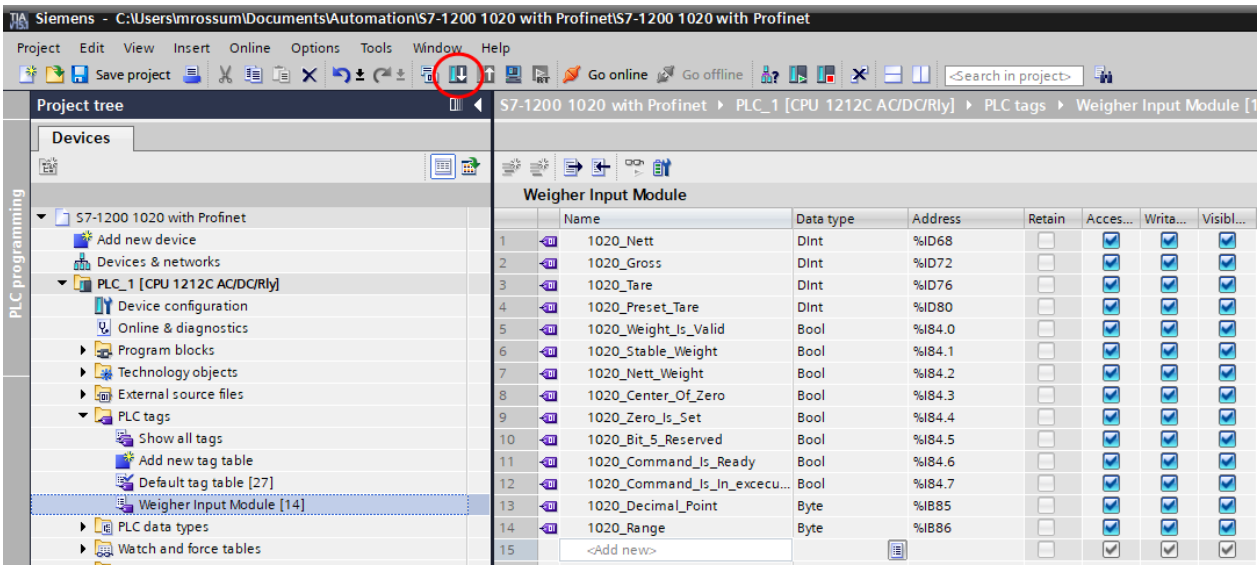
Double click on the Weigher Input Module to open the tags.



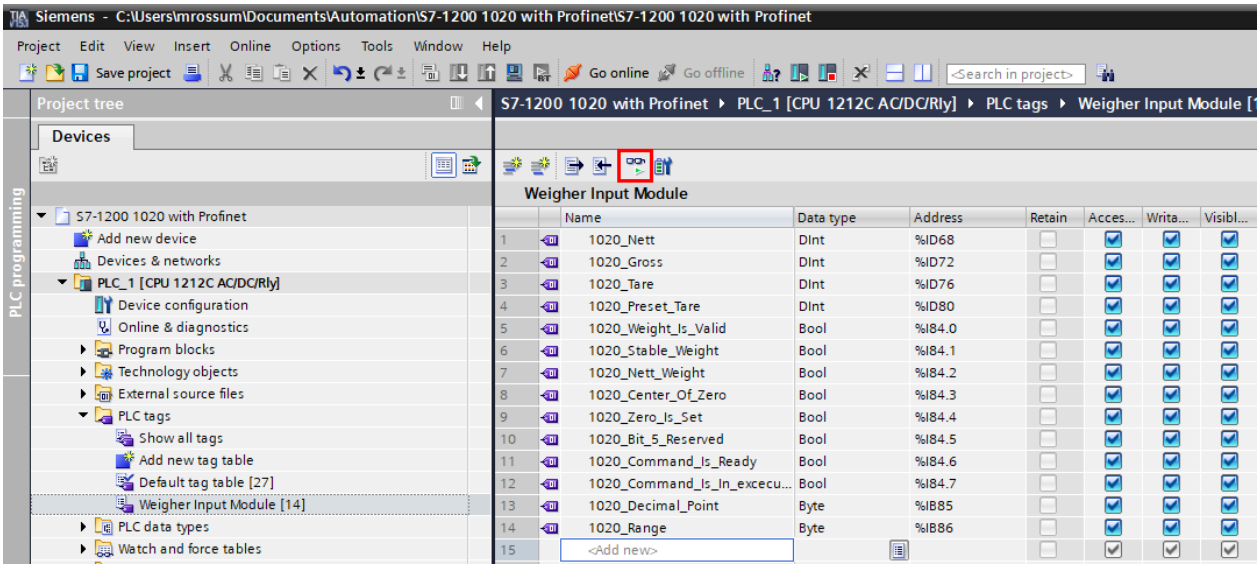
Add the following tags and set the Data type and address.



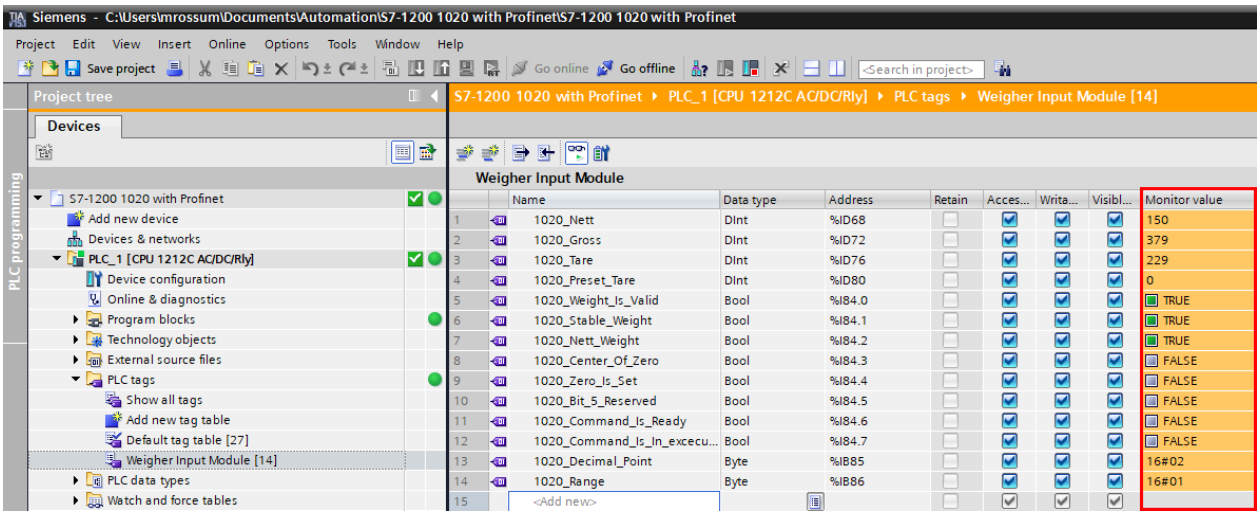
Download the tags into the PLC by clicking on the Download to device button. And follow the download steps.



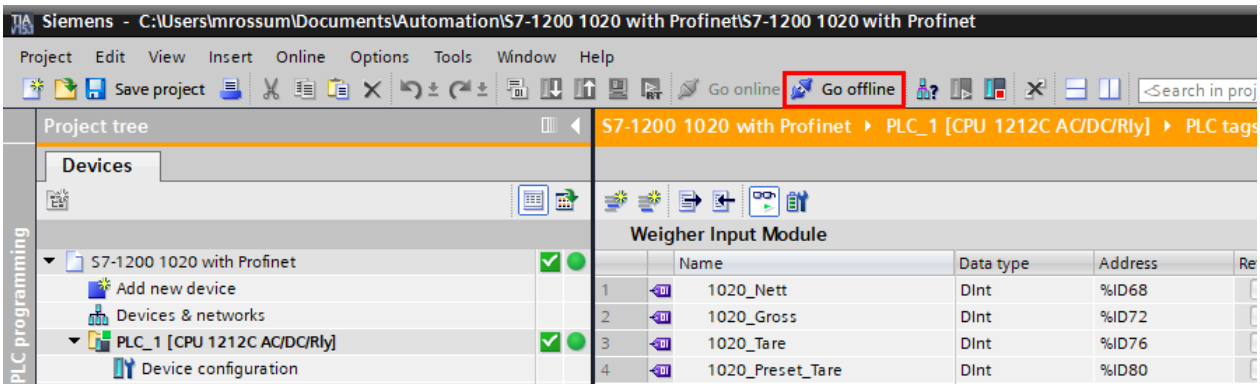
Click on Monitor All.



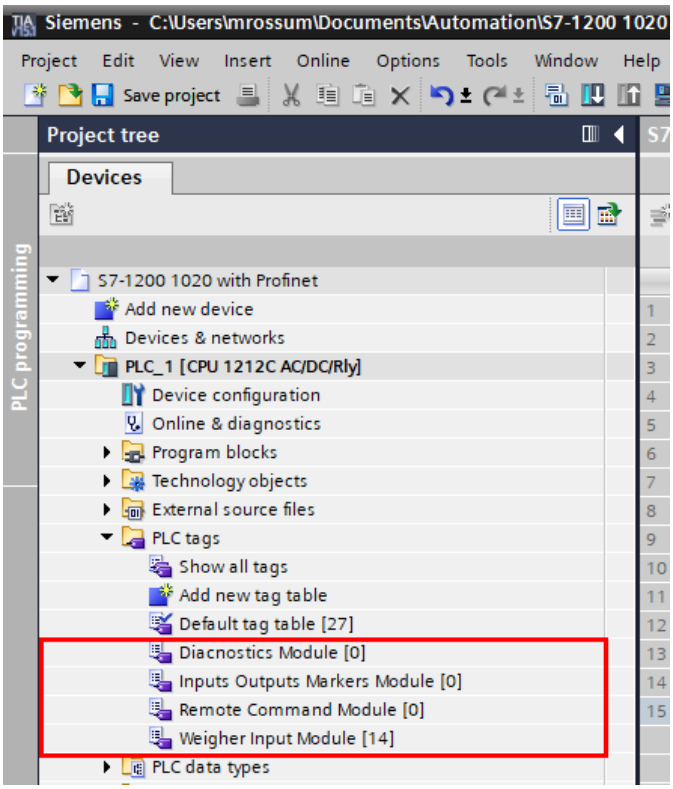
The PLC will go online and the actual values of the 1020 is shown.



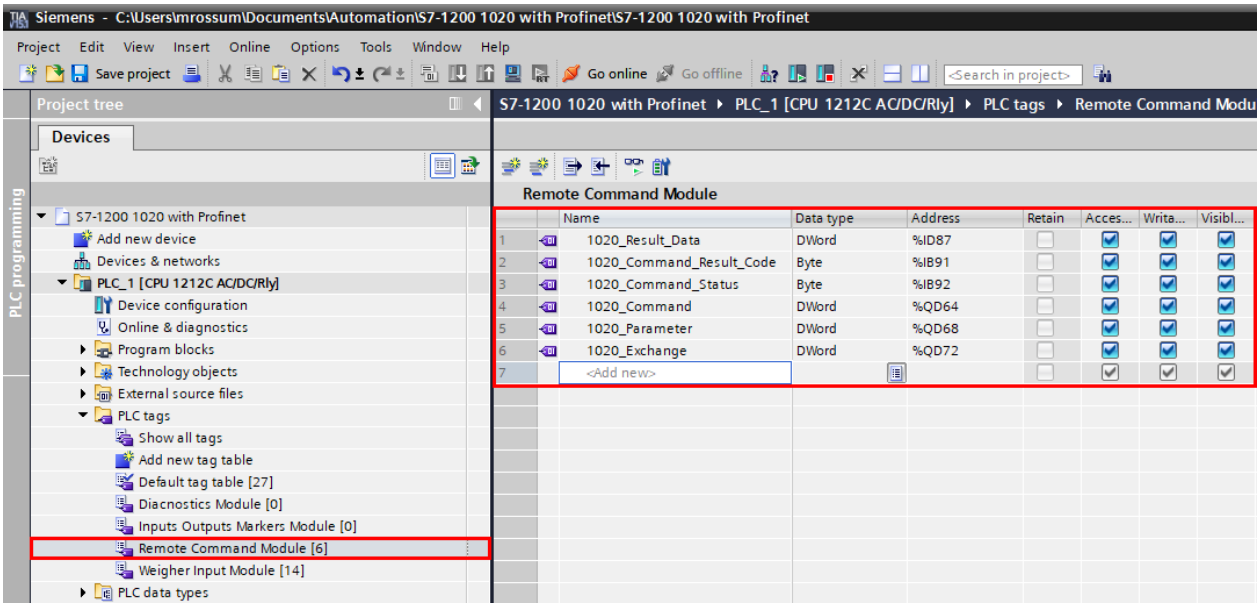
To add the other tags and rename them, go offline.



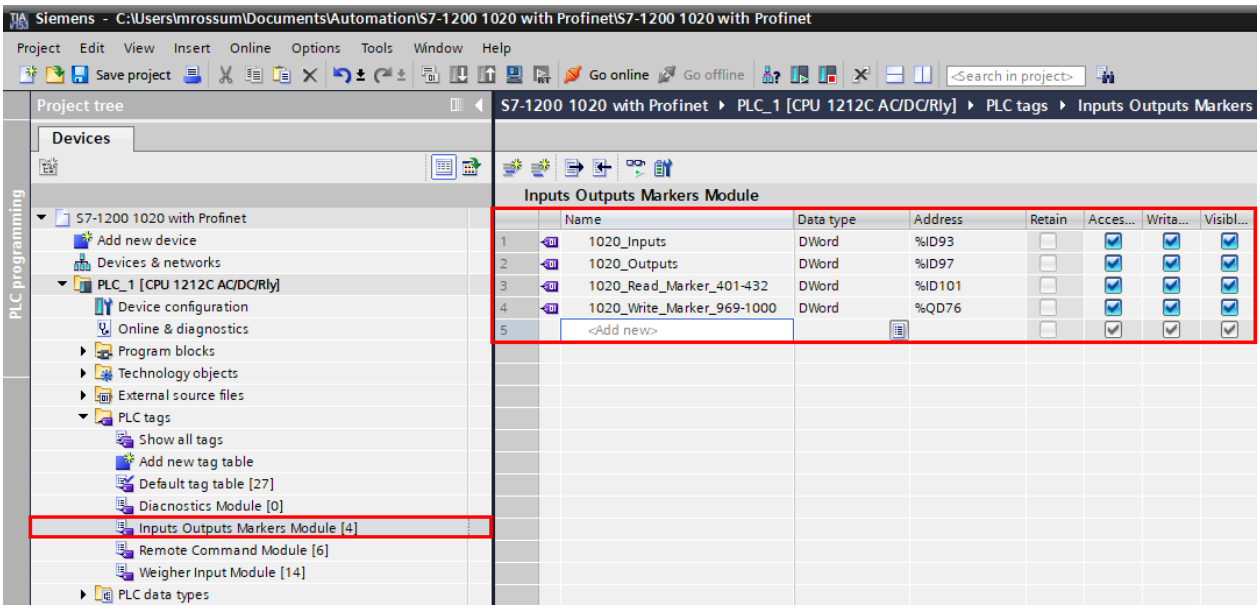
Add 3 new tags and rename them as below.



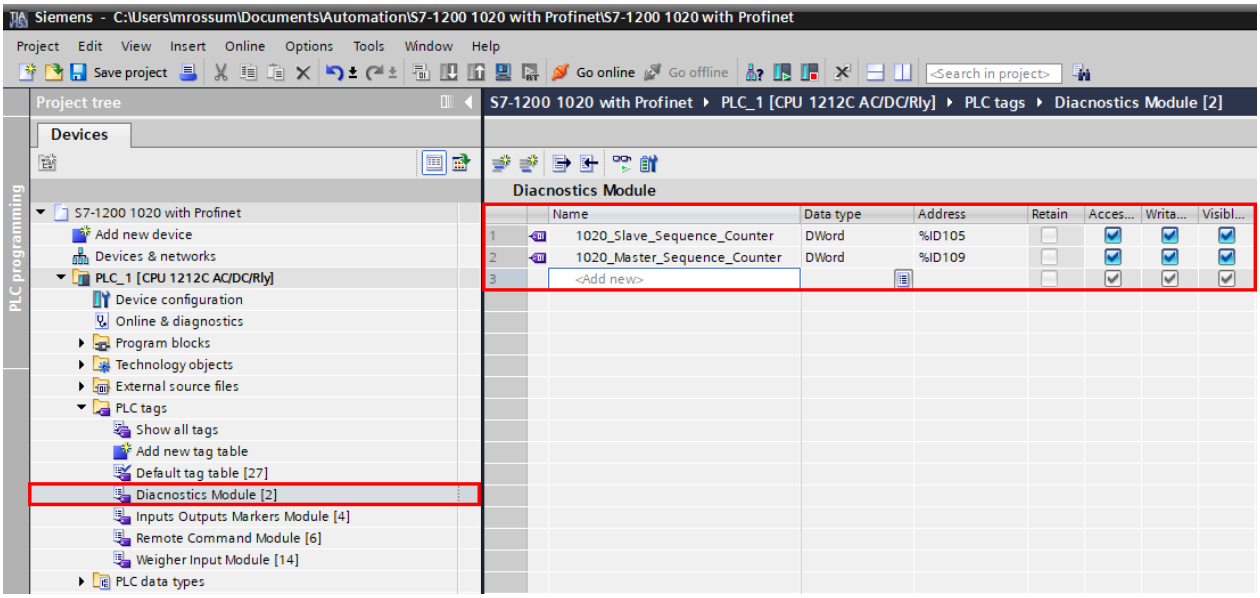
Double click on Remote Command Module and add the tags below.



Double click on Inputs Outputs Markers Module and add the tags below.



Double click on Diagnostic Module and add the tags below.



This is all the data that can be read and write to the 1020, use the Penko Manual Profinet slave module that can be downloaded from the site: https://penko.com/Support/Software/ to see what you can do with the data.

About PENKO

Our design expertise include systems for manufacturing plants, bulk weighing, check weighing, force measuring and process control. For over 35 years, PENKO Engineering B.V. has been at the forefront of development and production of high-accuracy, high-speed weighing systems and our solutions continue to help cut costs, increase ROI and drive profits for some of the largest global brands, such as Cargill, Sara Lee, Heinz, Kraft Foods and Unilever to name but a few.

Whether you are looking for a simple stand-alone weighing system or a high-speed weighing and dosing controller for a complex automated production line, PENKO has a comprehensive range of standard solutions you can rely on.

Certifications

PENKO sets high standards for its products and product performance which are tested, certified and approved by independent expert and government organizations to ensure they meet – and even – exceed metrology industry guidelines. A library of testing certificates is available for reference on:
http://penko.com/nl/publications_certificates.html

PENKO Professional Services

PENKO is committed to ensuring every system is installed, tested, programmed, commissioned and operational to client specifications. Our engineers, at our weighing center in Ede, Netherlands, as well as our distributors around the world, strive to solve most weighing-system issues within the same day. On a monthly basis PENKO offers free training classes to anyone interested in exploring modern, high-speed weighing instruments and solutions. A schedule of training sessions is found on: **www.penko.com/training**

PENKO Alliances

PENKO's worldwide network: Australia, Belgium, Brazil, China, Denmark, Germany, Egypt, Finland, France, India, Italy, Netherlands, Norway, Poland, Portugal, Slovakia, Spain, Syria, Turkey, United Kingdom, South Africa, Slovakia Sweden, Switzerland and Singapore.
A complete overview you will find on: **www.penko.com/dealers**

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