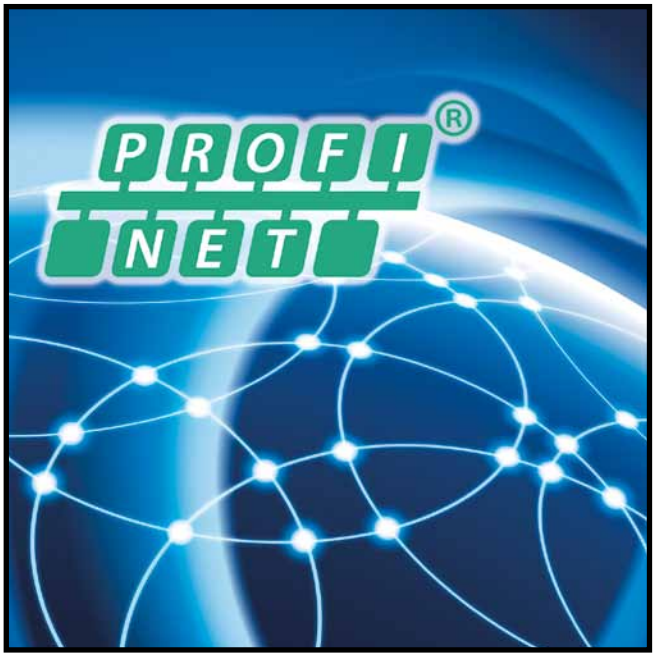
Initial Start-Up of a PROFINET Device



Operating instructions

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1. User instructions

These instructions describe the integration of a PROFINET device into an existing network and are intended to provide assistance in the most general terms with integrating PROFINET products into a controller.

2. Safety Precautions

- Carefully read through the operating instructions before using the applied products.
- Mounting, start-up and servicing of the products described should be done solely by trained personnel.
- The products described are not suitable for safety applications.
- The operator must observe the local safety regulations.

3. General note

This document is intended to demonstrate the integration of a device with a PROFINET interface using one example. This description was created on the basis of a Simatic-S7 controller from Siemens. wenglor sensoric does not guarantee the correctness and completeness of the contents. The instructions are intended only to display a typical procedure, which can also be transferred to other controllers or Sensors/switches/actuators with a PROFINET interface if needed. This version does not deal with device-specific adaptations of third-party products. We refer in this regard to the help documentation of the relevant manufacturer.

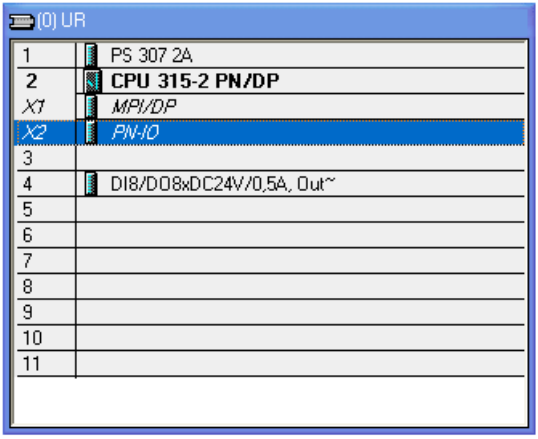
4. Integration of a PROFINET device into the operating environment

The following steps offer an example procedure for integrating a PROFINET device using the engineering tools of a Simatic-S7 controller from Siemens.

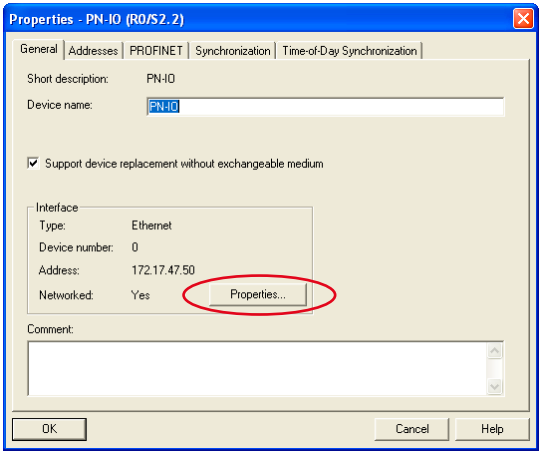
- In the first step, each device type requires a supply of power, which can either be fed in externally or realized using PoE (Power over Ethernet). You can find the connection technology required for your product on a device-specific basis on the wenglor website (**www.wenglor.com**).
- The data is transferred using shielded connection cables, which are available in both 4 and 8-pin designs (4-pin = pure data transmission; 8-pin = data transmission plus PoE). Here as well, you can find the connection technology required for your product on a device-specific basis on the wenglor website (**www.wenglor.com**).

4.1. Setting up the PROFINET branch in the hardware manager for the Simatic-S7 controller

- In the first step, the PROFINET bus must be inserted into the Hardware Manager (lower left area on the overview page) → double-click on the item **PN-IO.**

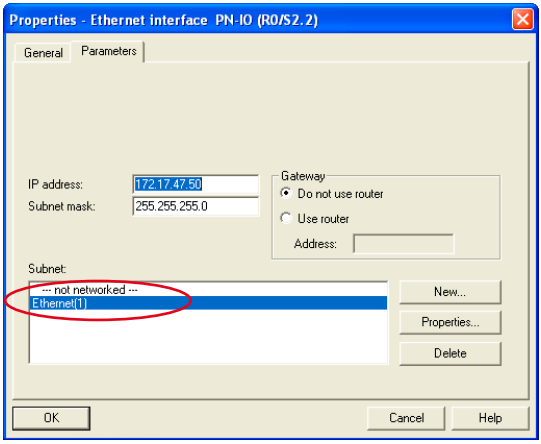


- If the Ethernet interface is not yet in the network, click on **properties.**

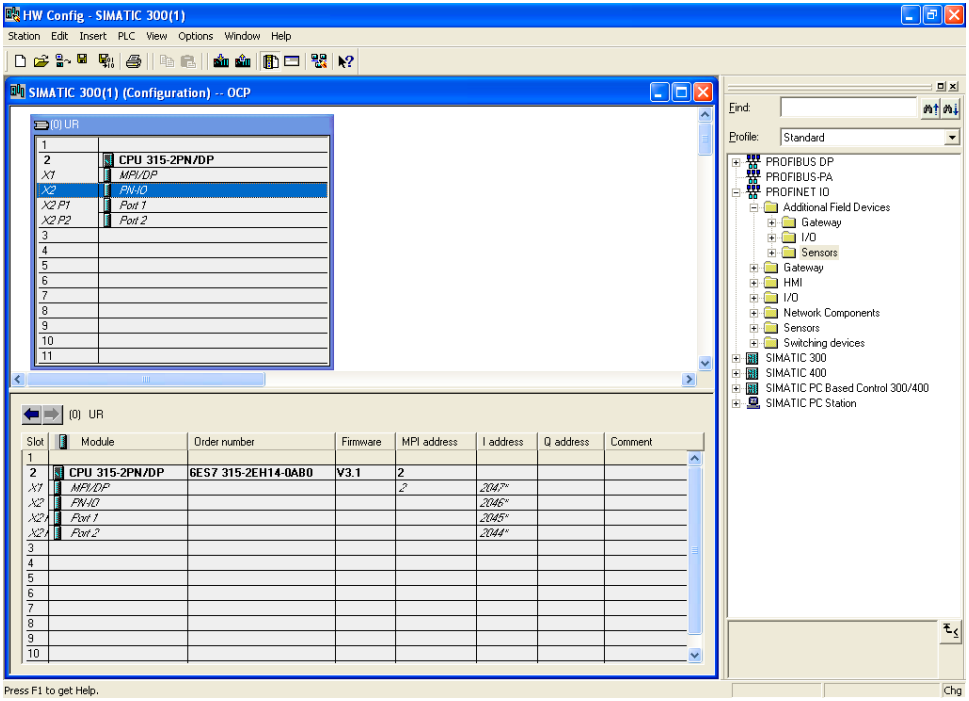


- In the window that opens, the IP address and subnet mask for the S7 controller can be input and a new connection is created by clicking on **New**, if the subnet is not yet in the network.

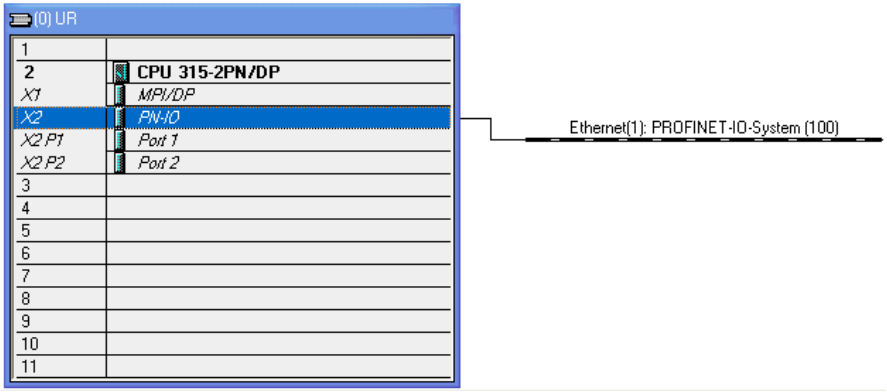
- In the window that opens, select the PROFINET network to be connected to the control unit and confirm with **OK.**



- If no PROFINET bus has yet been inserted, it can be added by a right-click on **Insert PROFINET IO System**.



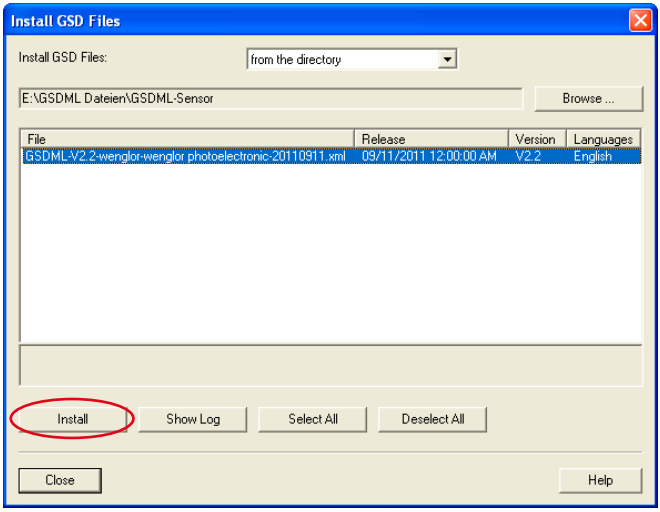
The hardware monitor now displays the PROFINET system.



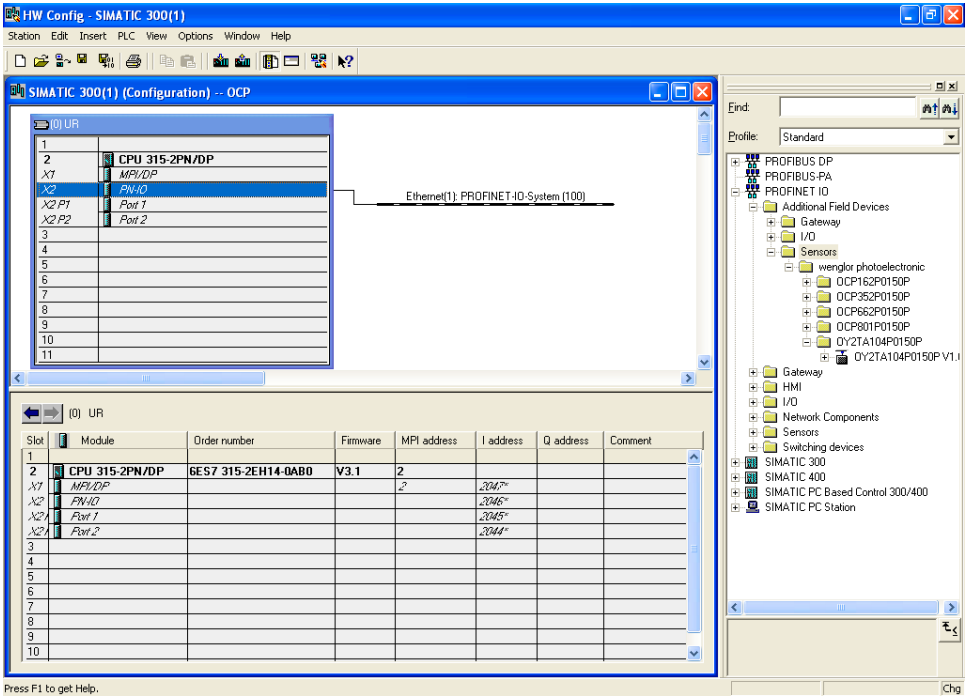
4.2. Integration of a device into the Simatic Manager

Install the associated device-specific electronic description file (e.g. GSDML file) in the Hardware Manager of the controller. You will find the required file ready for download at **www.wenglor.com → Download → Product Description Files → Product search.** The manner in which the integration of the GSD file functions will be described below.
You can also find general instructions in this regard under Siemens product support.

The wenglor products are inserted into the Simatic Manager by clicking on **Options → Install GSD Files**. Then select the previously defined storage location of the downloaded GSD file in which the wenglor XML file is located and click **Install.**



- In the catalogue of the hardware configuration, the respective product then appears in the folder structure.



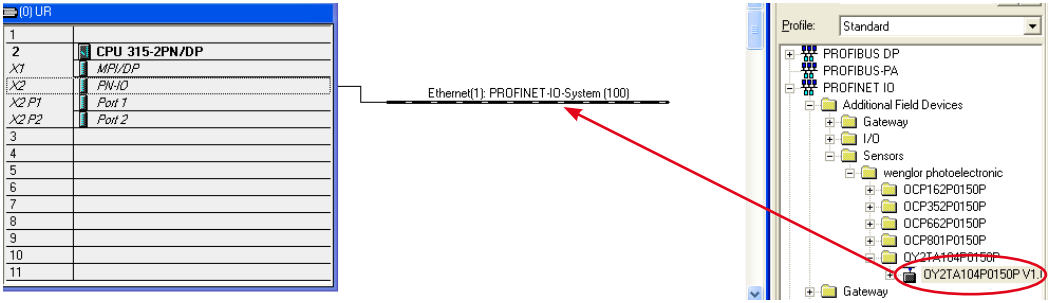
The transit time Sensor used in the example can be found under the following path:
PROFINET\Additional Field Devices\Sensors\wenglor photoelectronic\OY2TA104P0150P

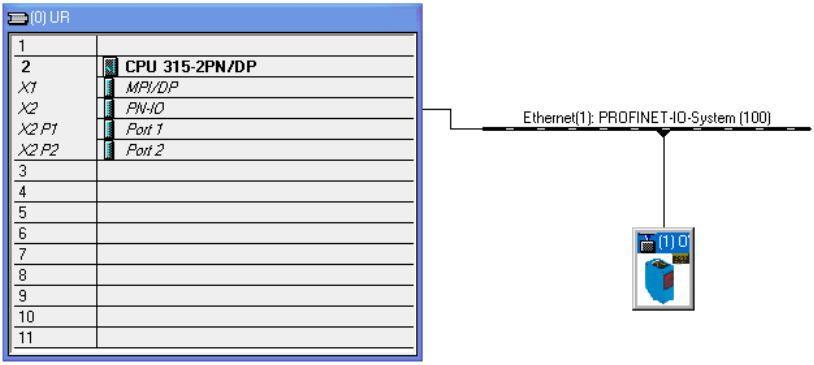
5. Integration of the device into the PROFINET bus

The following section explains how to integrate a wenglor device correctly into the PROFINET bus, how the assignment of the device name and IP address works and how to assign the device name.

5.1. Inserting the device from the catalogue of the hardware configurations

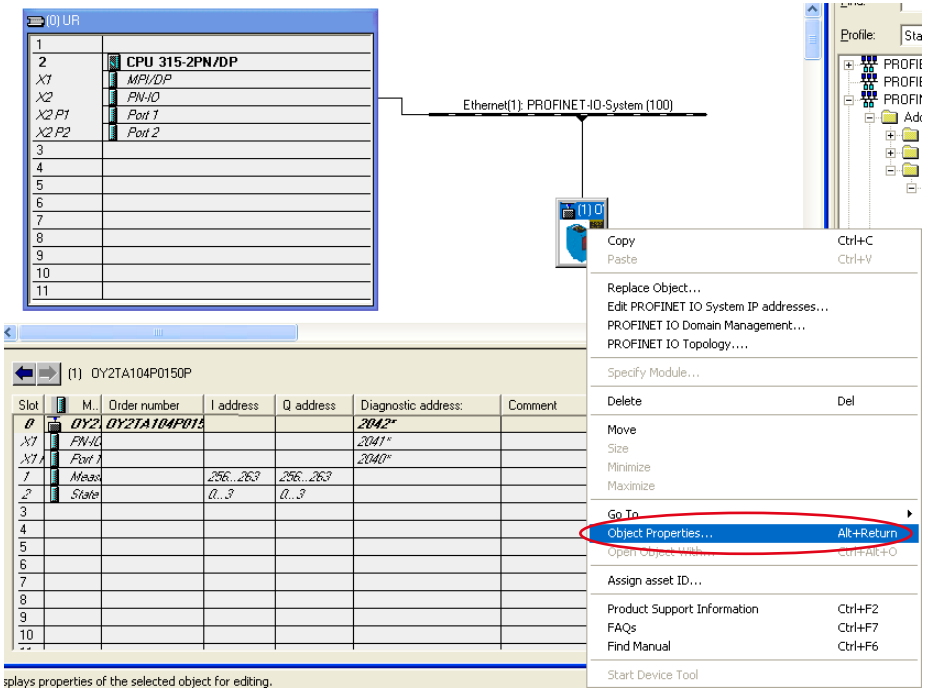
After loading the GSDML file, the product must be pulled out of the product overview into the PROFINET bus by drag and drop.



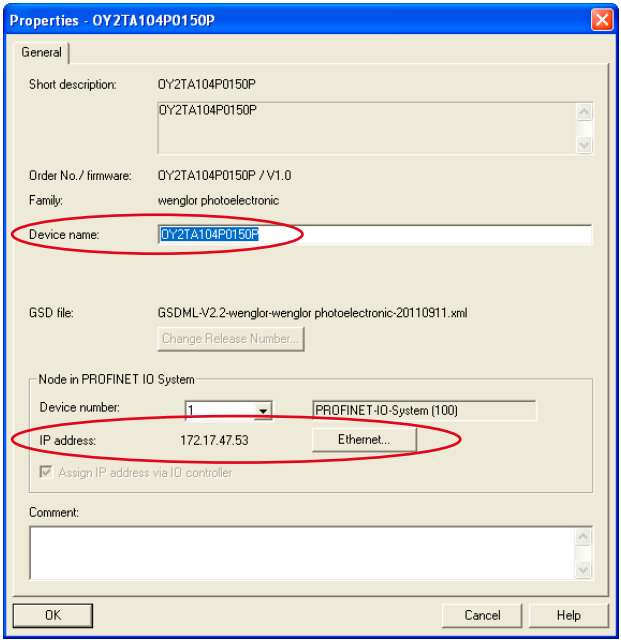


5.2. Assignment of the device name and IP address

Then the object properties of the product must be called up in order to assign the device name. This is implemented by right-clicking on the relevant product, under the **Object Properties** item.

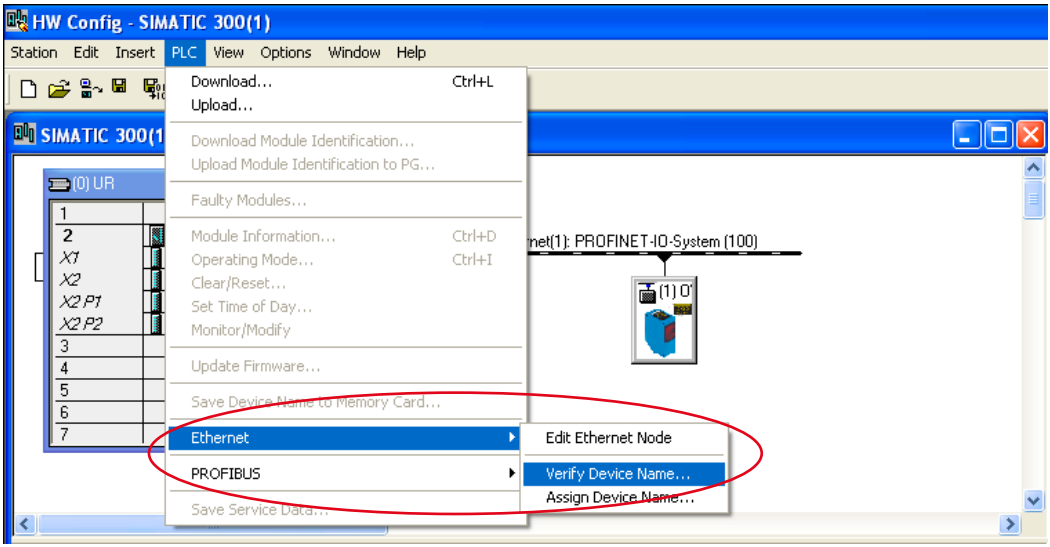


The device name can then be freely assigned. A click on **Ethernet** allows configuration of the IP address. If no change takes place in this field, then each device is automatically assigned a free IP address.

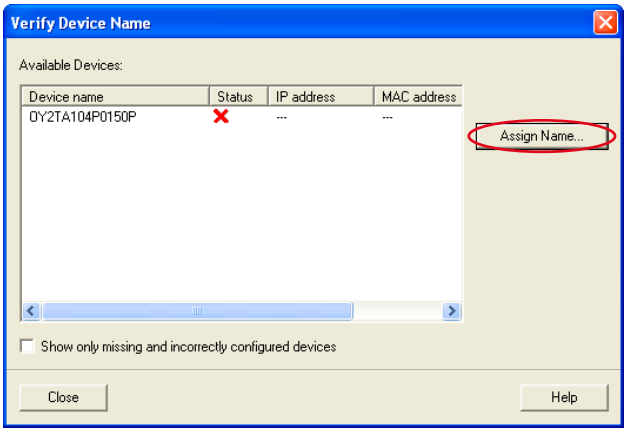


5.3. Assignment of the device name

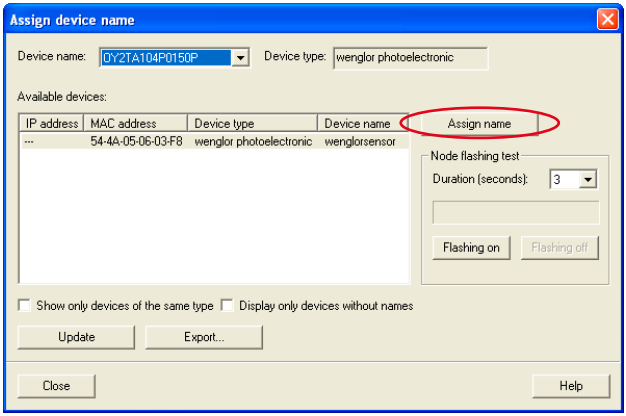
The next step checks the assigned device name with the associated product. To do this, select the item **Verify Device Name...** in Simatic Manager under **PLC → Ethernet**.



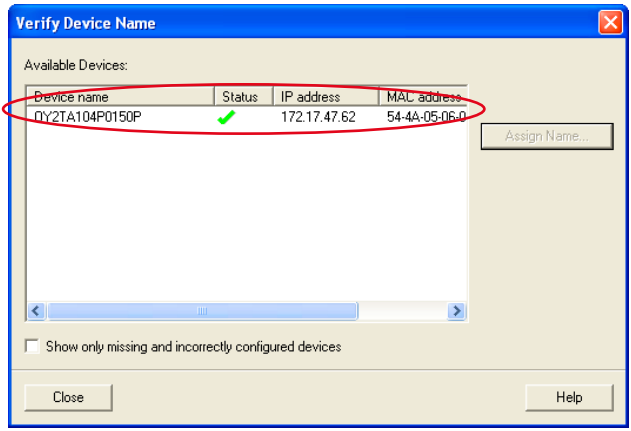
All devices to which a name can be assigned are listed along with their allocation status. The red cross in the Status tab symbolizes that the device name has not yet been assigned to the device. The field **Assign Name** opens the window necessary for the assignment.



The previously assigned device name is now allocated to the device in the **Assign device name** window → highlight correct product from the list and click on **Assign name.**

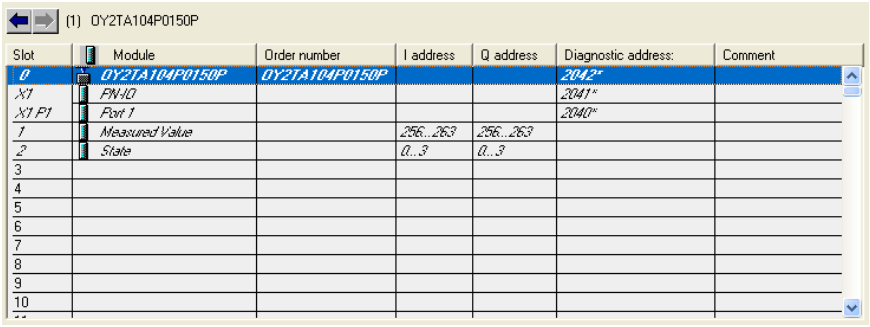


If this step is successful, the status display of the connected product changes (green checkmark). The set-up device is now assigned to the connected device.



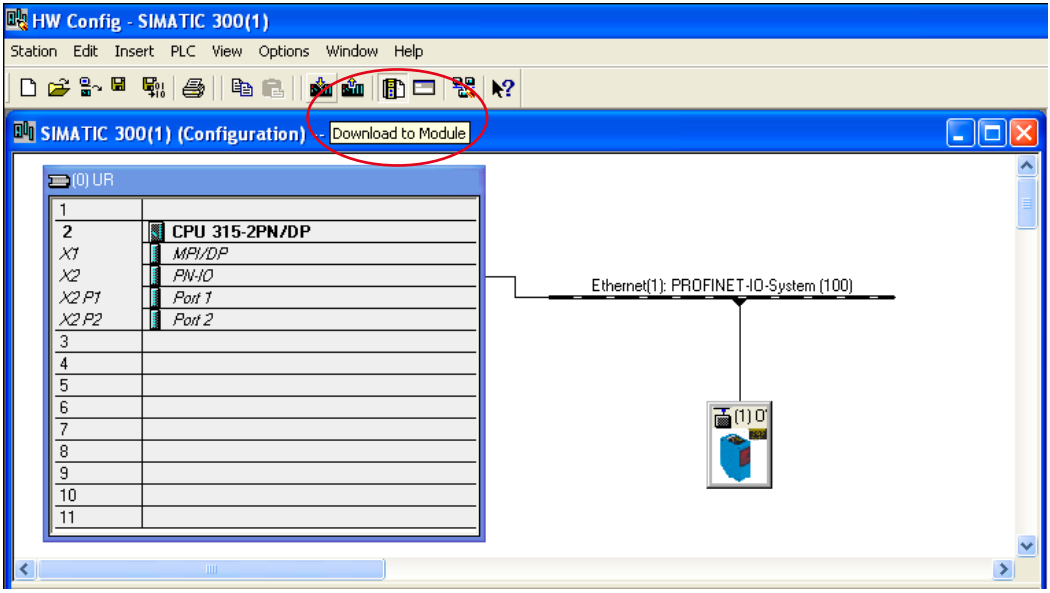
Parameterization

Every PROFINET device has device-specific parameters. They are adjusted by right-clicking on the relevant product, under the **Object Properties** item. These parameters are transferred to the devices each time the controller starts.

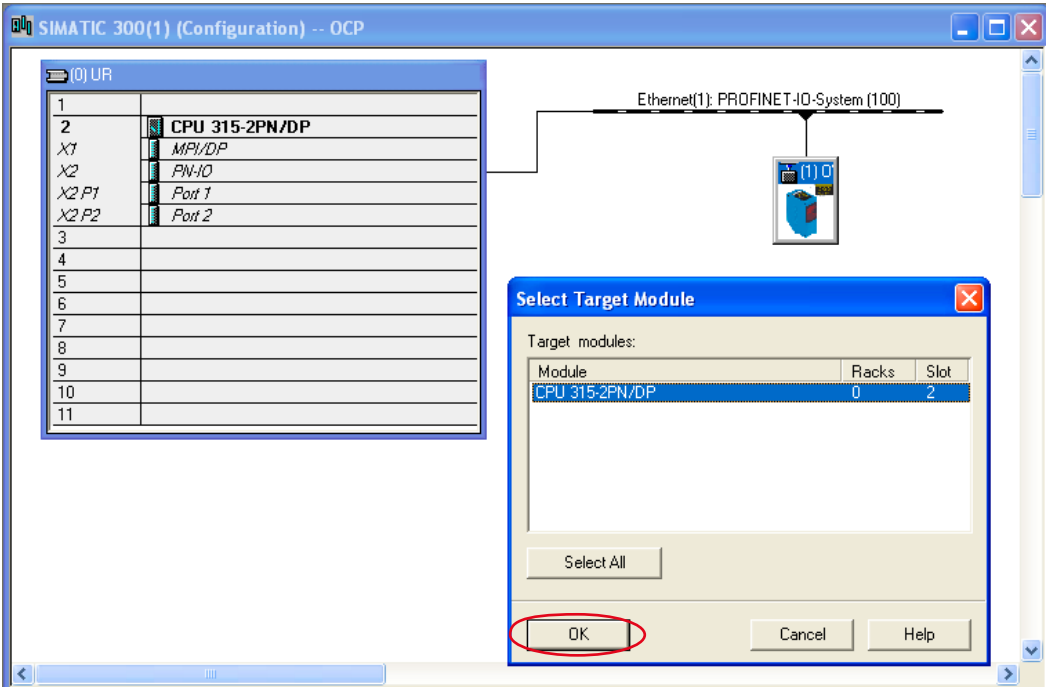


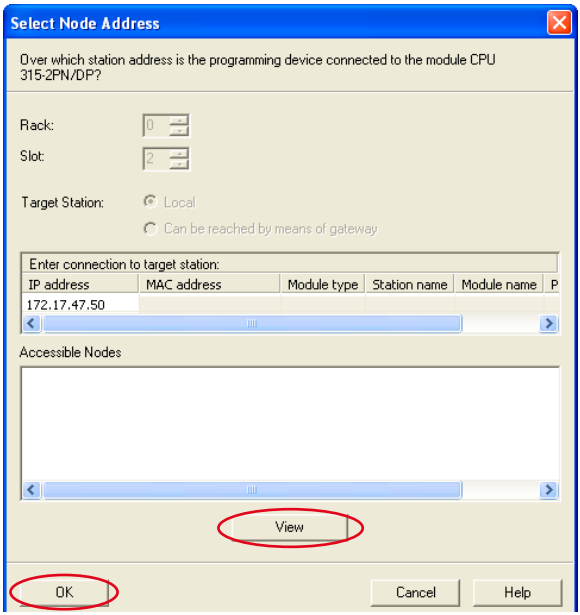
6. Transferring the setup to the controller (module)

The settings are subsequently transferred into the module. This is done by using the button **Download to Module** in the menu bar.

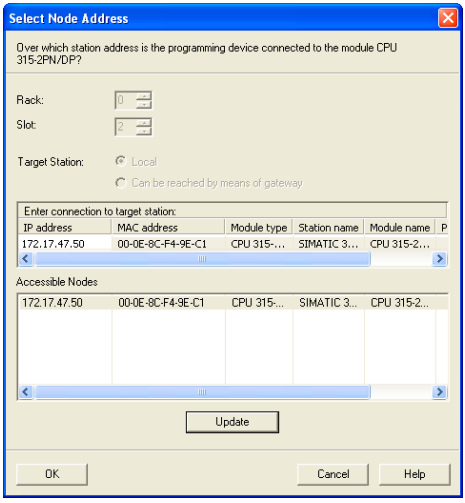


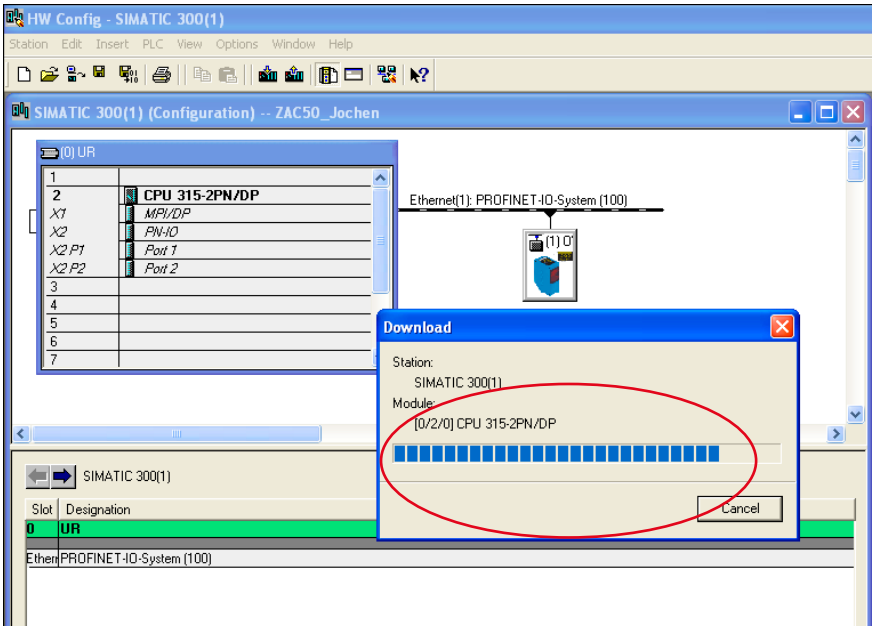
A pop-up window appears in which the correct target module, i.e. the controller being used, is listed with the PROFINET bus. Select this module and confirm with **OK.**



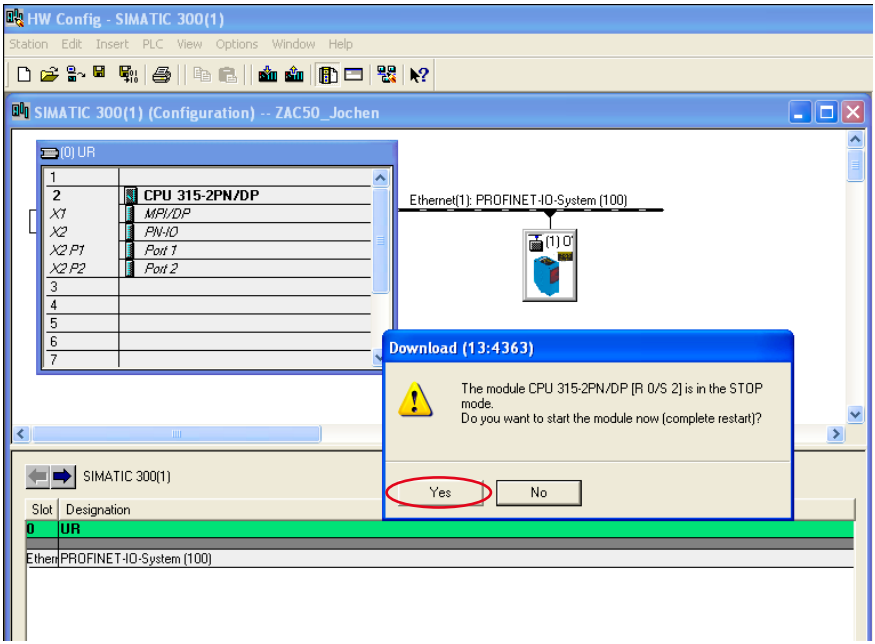


In the next step, assigned IP address of the module is displayed and must be confirmed. If several modules (controllers) are present in the network, the correct controller must be selected. The **View** button lists all controllers available in the network and allows them to be selected. The inputs are loaded into the module by clicking on **OK.**

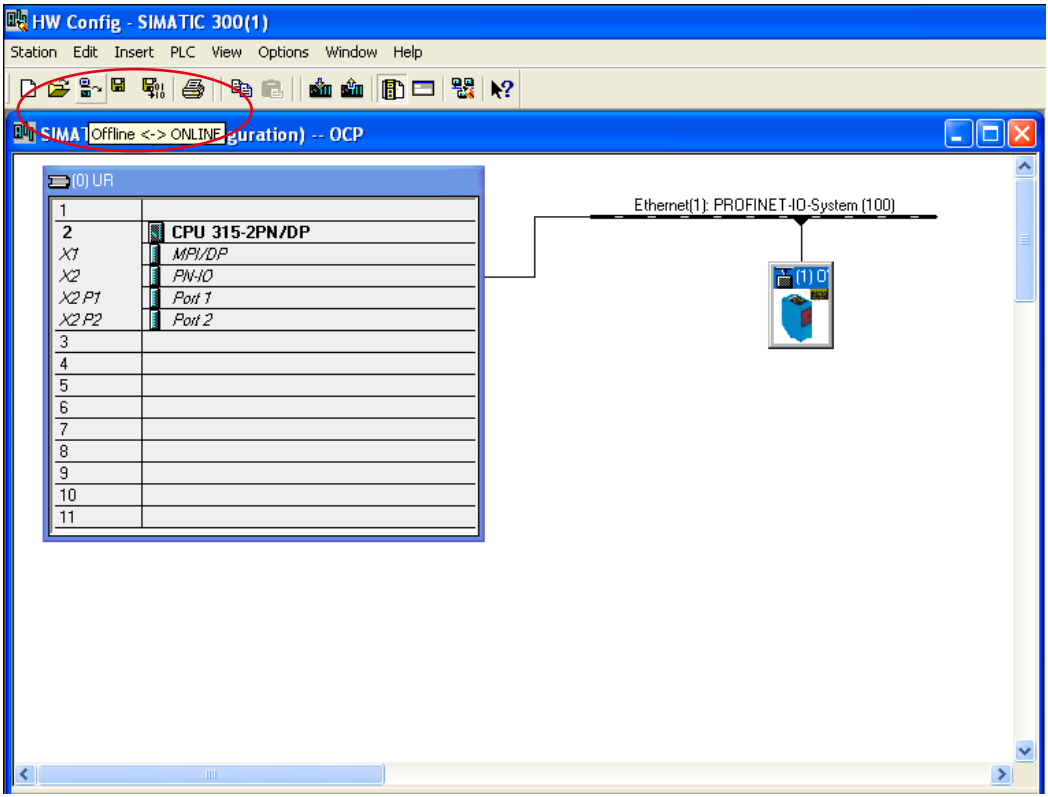




After loading, the module is still in the stopped state. A pop-up indicates this and allows restarting the module.

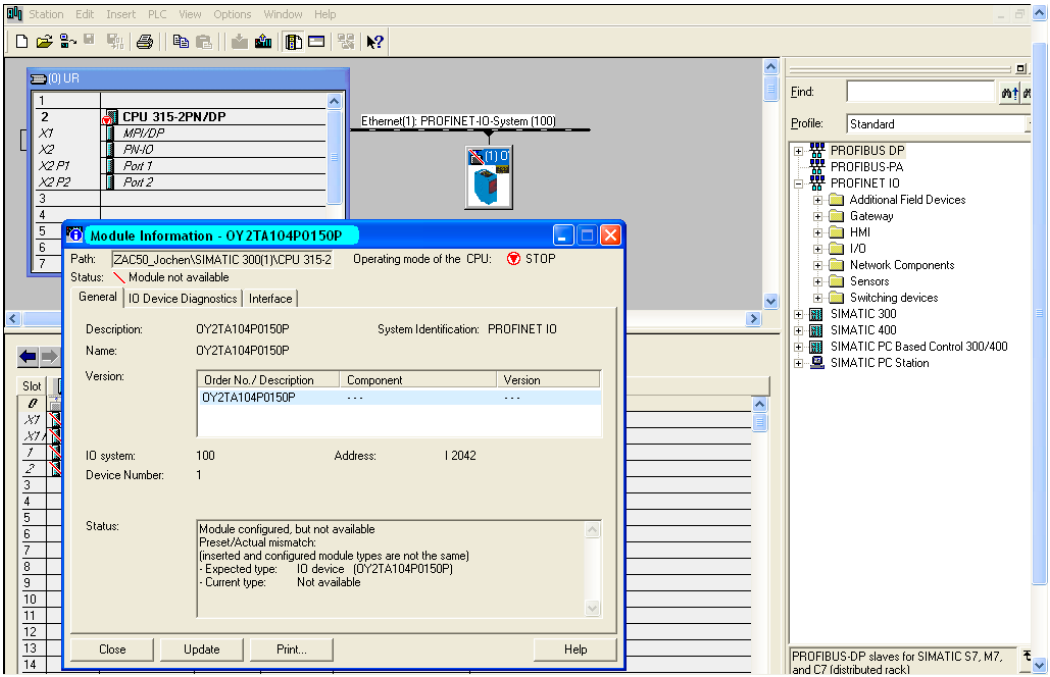


7. Diagnosis of the Device in Online Mode of the control unit



The online view opens with the button **Offline ↔ ONLINE.** The proper operation of the PROFINET communication and the devices can be checked here. A fault that has occurred can be identified via the module state of the PROFINET components. The module is not present in the example picture.

After the faults that have occurred have been corrected, the device is correctly integrated into the PROFINET network and communication between controller and device will function. Most products also indicate proper communication with the controller by signal lights or displays. The parameterization of the device is thus successfully implemented.



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