

TECH NOTE :: DSE with Profinet and Siemens PLC

Version: 2020-06-09

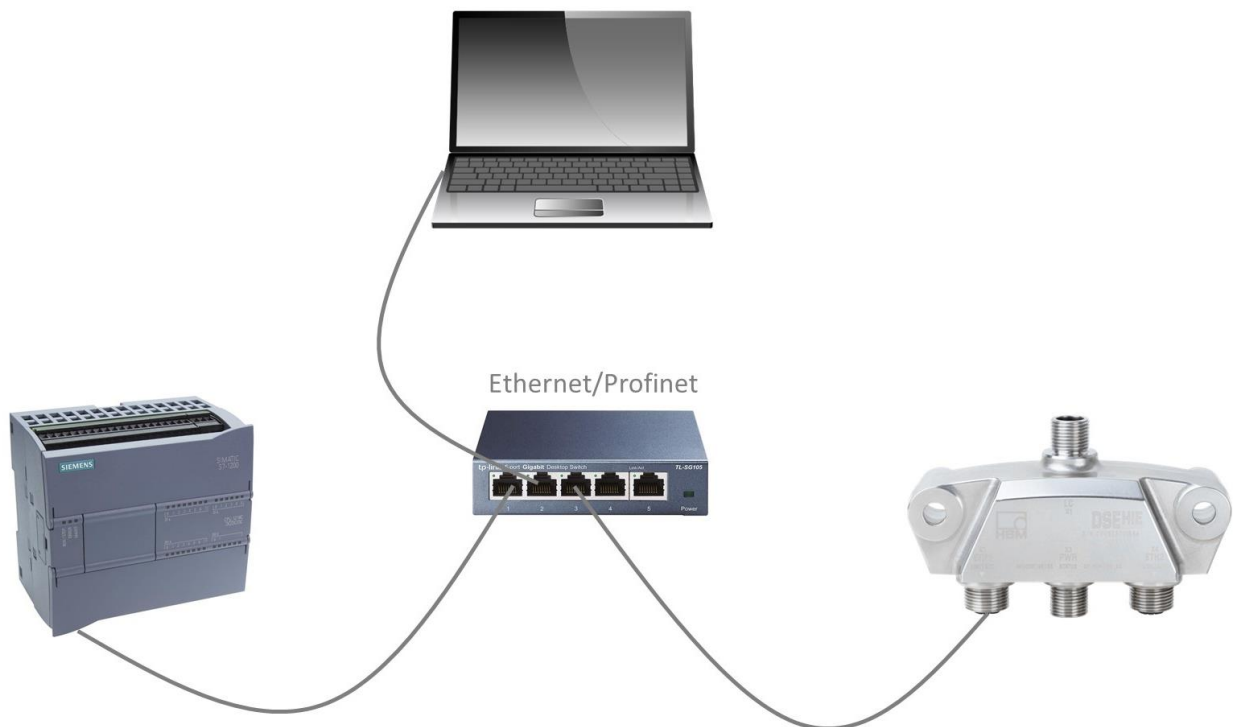
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Status: HBM: Public

Brief description

This is an instruction for using the profinet protocol for communication between DSE and a Siemens PLC. This example shows which settings must be made in the DSE web interface, how the project can be created in TIA Portal software and how individual values can be transferred.

Hint: For this example the software TIA portal V15.1 is used.

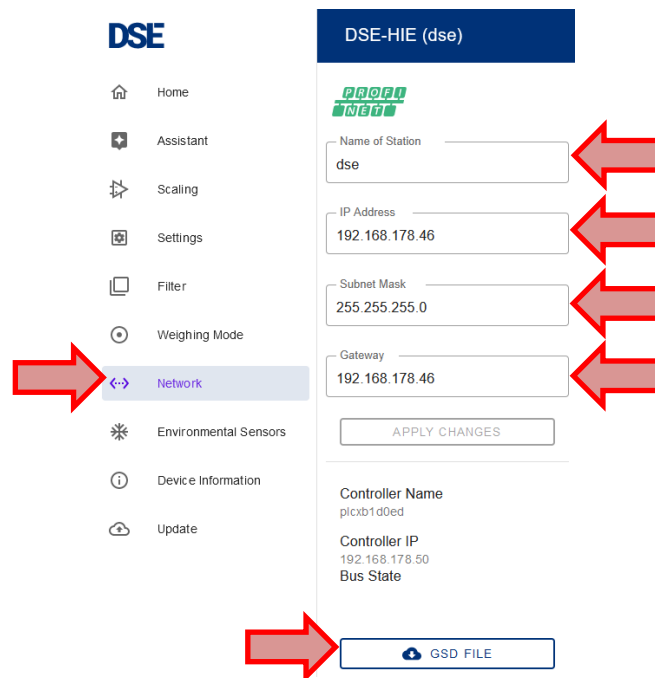


Carry out

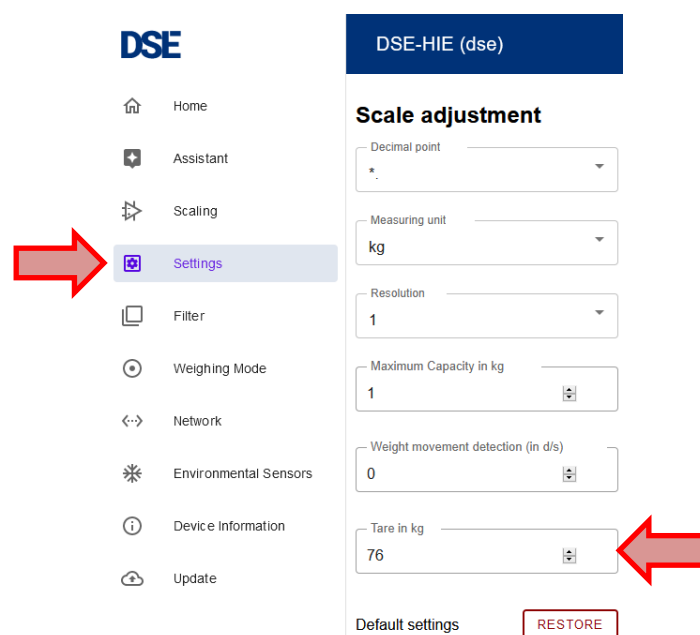
DSE settings

At first, the network settings must be set and the device description file must be downloaded from the DSE web interface.

- Open the DSE web interface
- Switch to the network menu
- Set the name of station
- Set the additional network settings (IP assignment)
- Download the GSD file



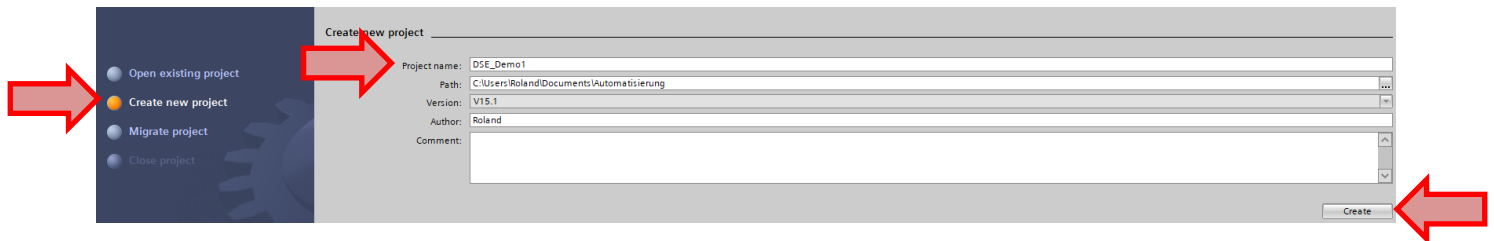
In this example we set a tare value that we will read in addition to the gross value.



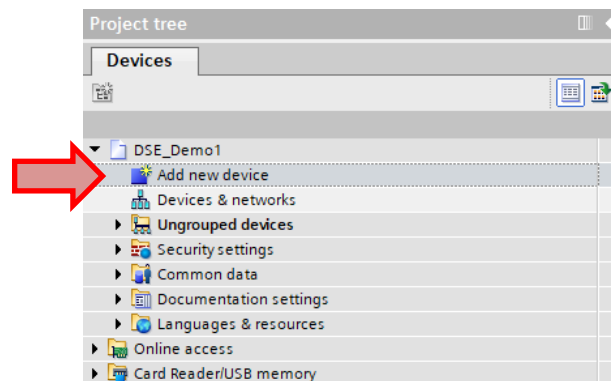
Settings in TIA Portal

In the following the TIA Portal settings are described.

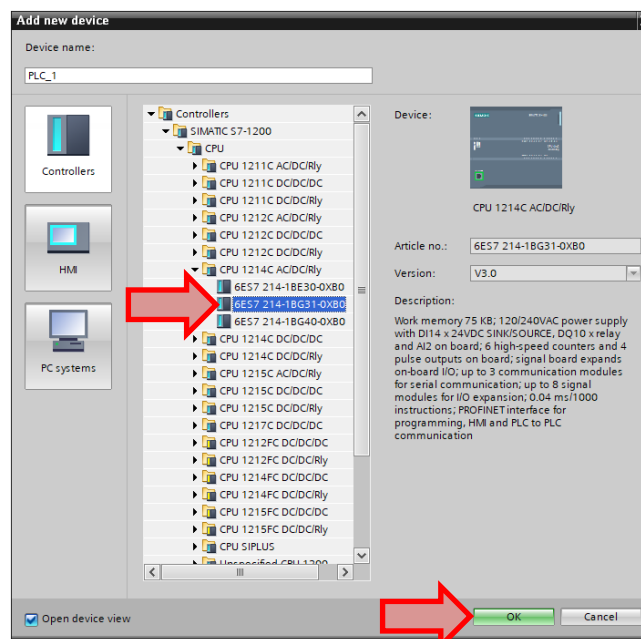
- Start the TIA Portal software
- Create a new project
- Set up a project name
- Create the new projekt



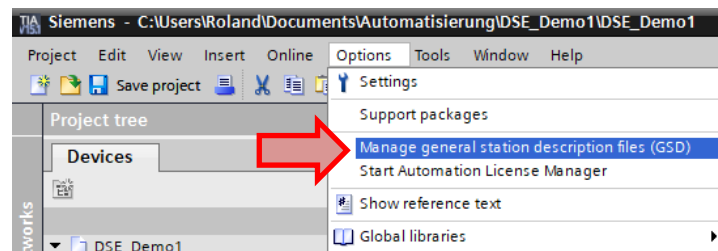
- Select 'Add new device' in the project tree



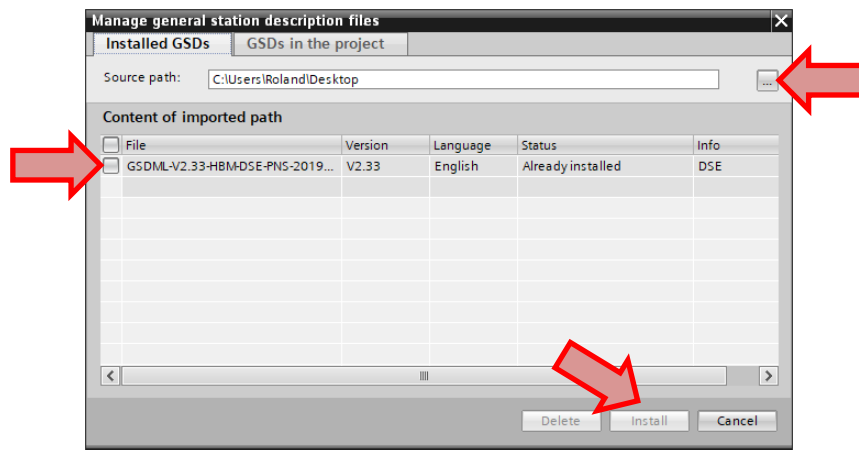
- In the following dialog select the PLC that is used



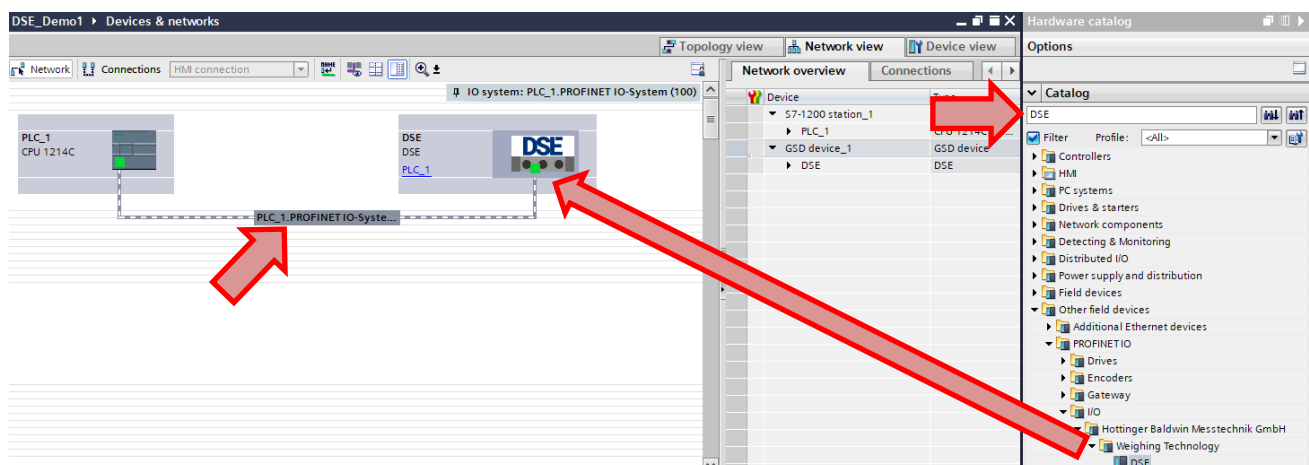
- At 'Options' select 'Manage general station description files (GSD)'



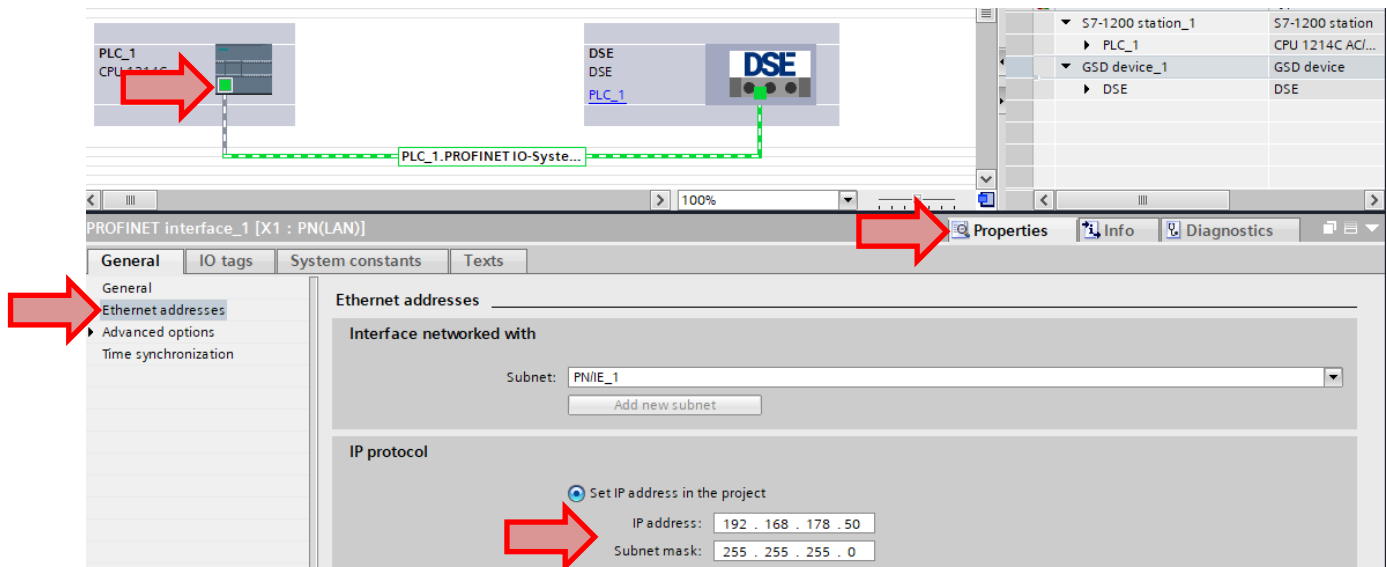
- Select the „...“ button and browse for the directory, where the GSD file is located
- Select the GSD file
- Click 'Install'



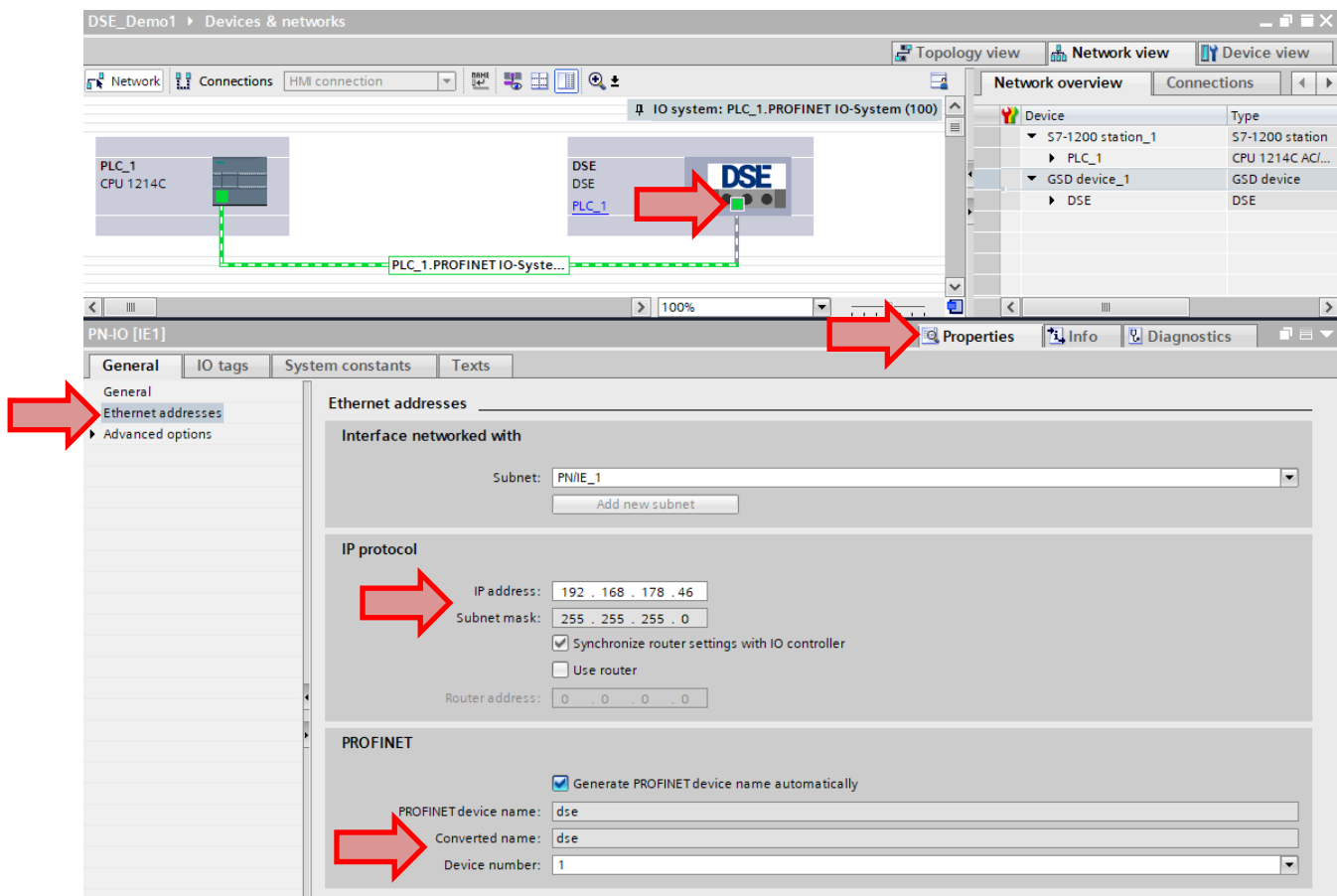
- Search for 'DSE' in the hardware catalog
- Add the device via drag and drop
- Connect the green (profinet) connectors of the devices



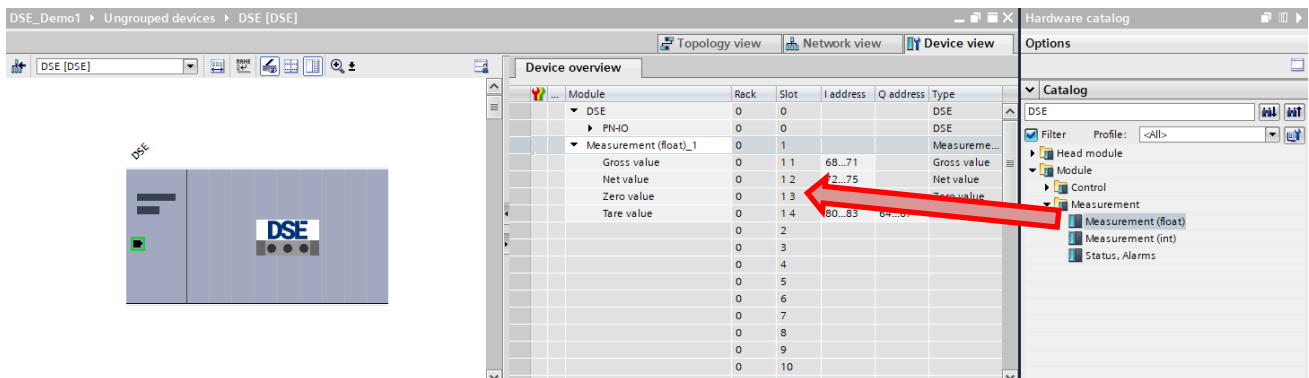
- Select the green connector of the plc
- Go to 'Properties' and then 'Ethernet addresses'
- Set up the IP address of the PLC



- Now select the green connector of the DSE
- Go again to 'Properties' and the 'Ethernet addresses'
- Set up the IP address and the station name of the DSE

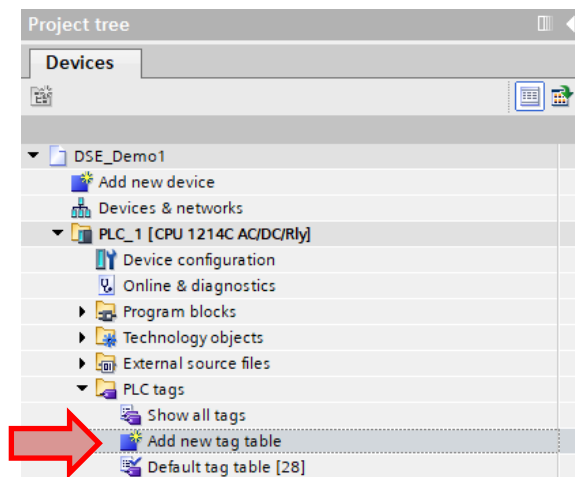


- Switch to the device view of the DSE (by double clicking the device or selecting the device view tab)
- In the catalog at 'Module' → 'Measurement' add the 'Measurement (float)' module by drag and drop



The addresses of the measured values can be taken directly from the list. In this case we will read the gross value and the tare value (Gross value: I address 68-71; Tare value: I address 80-83).

- At 'PLC Tags' add a new tag table



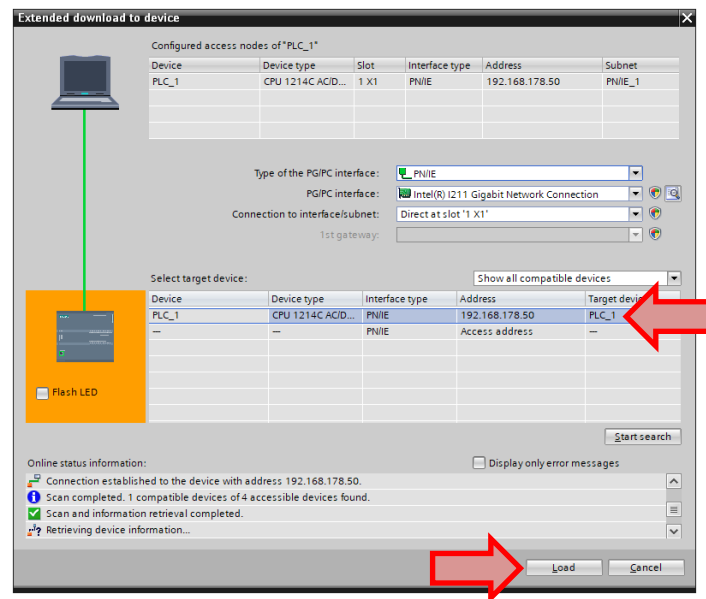
- Add both values to the tag table (enter the start addresses and the corresponding data type)

| | Name | Data type | Address | Retain | Acces... | Writa... | Visibl... |
|---|-------------|-----------|---------|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| 1 | Gross value | Real | %ID68 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2 | Tare value | Real | %ID80 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3 | <Add new> | | | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

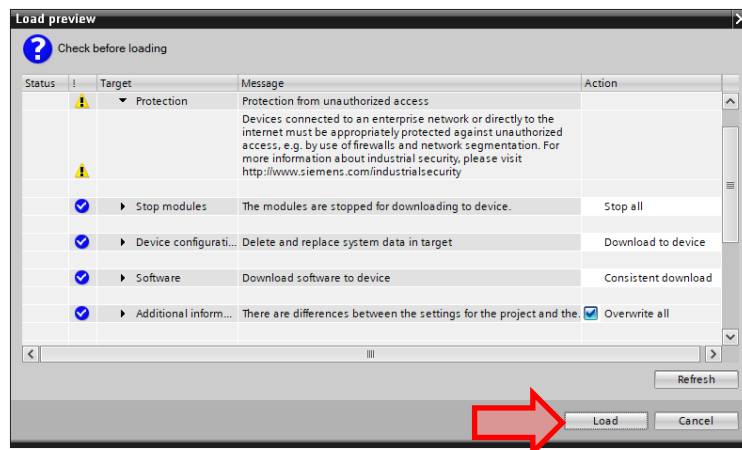
- Load the program into the PLC (the PLC must be selected)



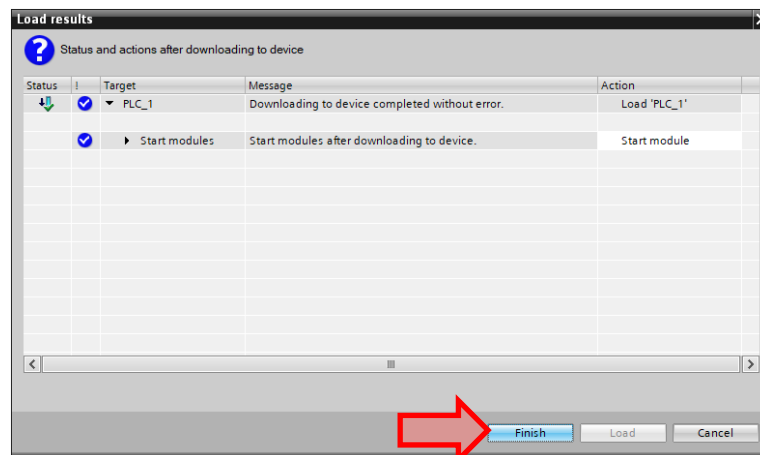
- Search for the PLC in the following dialog



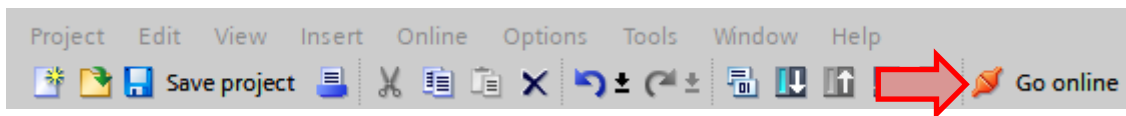
- Click 'Load'



- Select 'Start module'
- Confirm with 'Finish'

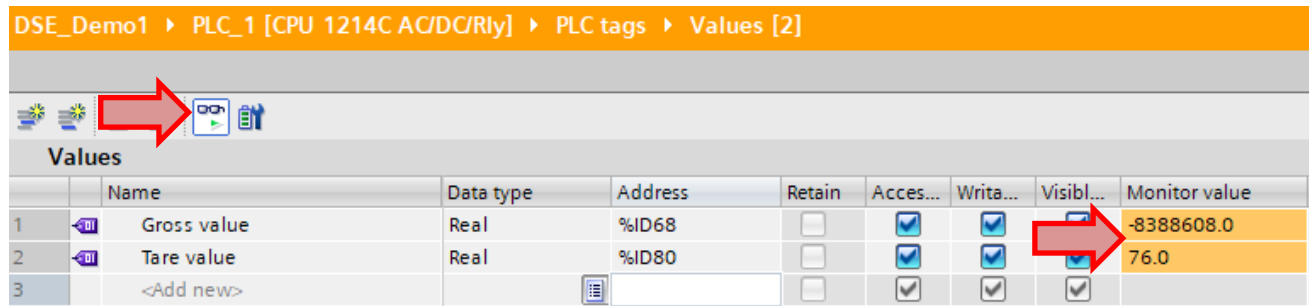


- Select 'Go online'



- Switch to the live value view

DSE_Demo1 ▶ PLC_1 [CPU 1214C AC/DC/Rly] ▶ PLC tags ▶ Values [2]



The screenshot shows the 'Values' view of the software. The toolbar at the top has a red arrow pointing to the 'Live value' icon. Below the toolbar is a table with the following columns: Name, Data type, Address, Retain, Acces..., Writa..., Visibl..., and Monitor value. The table contains three rows of data:

| | Name | Data type | Address | Retain | Acces... | Writa... | Visibl... | Monitor value |
|---|-------------|-----------|---------|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|---------------|
| 1 | Gross value | Real | %ID68 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | -8388608.0 |
| 2 | Tare value | Real | %ID80 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 76.0 |
| 3 | <Add new> | | | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | |

Disclaimer

These examples are for illustrative purposes only. They cannot be used as the basis for any warranty or liability claims.