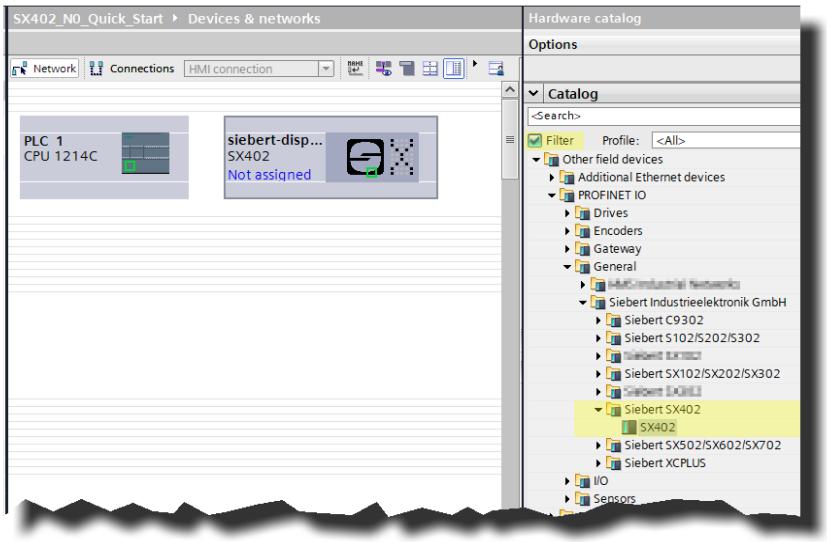


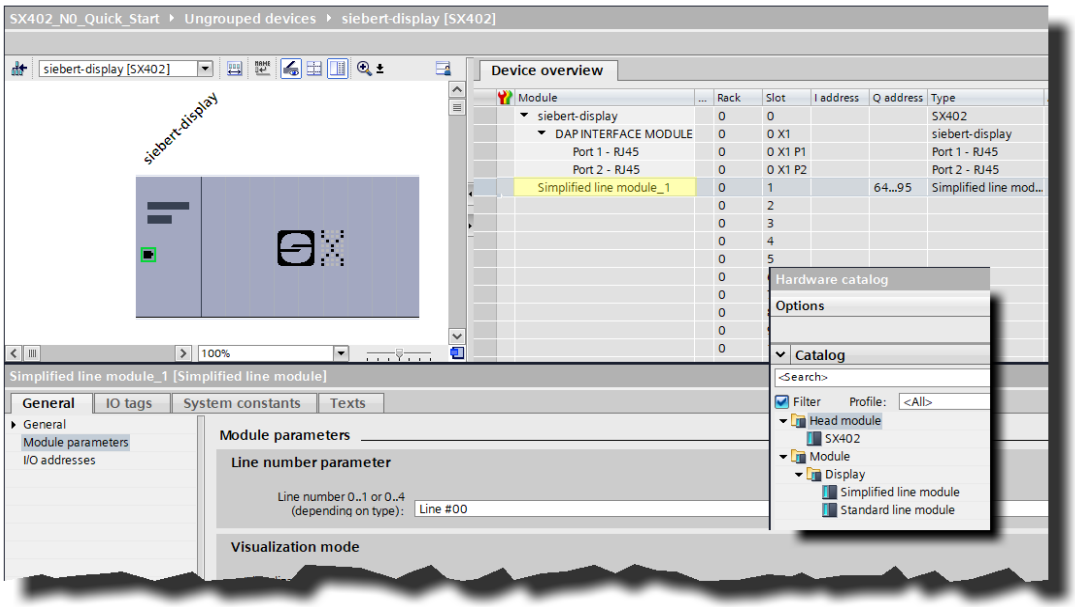


# Series SX402

## Alphanumeric displays

## with PROFINET IO RT interface –N0

## Quick start for TIA Portal

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## 2 Legal note



This operation manual has been prepared with the utmost care. However, we do not accept any liability for possible errors. We always appreciate your suggestions for improvement, corrections, comments and proposals. Please contact us: editing@siebert-group.com

## 3 Safety precautions

### Important information

Read these operating instructions before starting the unit. They provide you with important information on the use, safety and maintenance of the units. This helps you to protect yourself and prevent damage to the unit.

Information intended to help you to avoid death, bodily harm or considerable damage to property is highlighted by the warning triangle shown here; it is imperative that this information be properly heeded.

The operating instructions are intended for trained professional electricians familiar with the safety standards of electrical technology and industrial electronics.

Store these operating instructions in an appropriate place.

The manufacturer is not liable if the information in these operating instructions is not complied with.

### Safety

Components inside the units are energized with electricity during operation. For this reason, mounting and maintenance work may only be performed by professionally-trained personnel while observing the corresponding safety regulations.

The repair and replacement of components and modules may only be carried out by the manufacturer for safety reasons and due to the required compliance with the documented unit properties.

The units do not have a power switch. They are operative as soon as the operating voltage is applied.

### Intended use

The units are intended for use in industrial environments. They may only be operated within the limit values stipulated by the technical data.

When configuring, installing, maintaining and testing the units, the safety and accident-prevention regulations relevant to use in each individual case must be complied with.

Trouble-free, safe operation of the units requires proper transport, storage, installation, mounting and careful operation and maintenance of the units.

### Mounting and installation

The attachment options for the units were conceived in such a way as to ensure safe, reliable mounting.

The user must ensure that the attachment hardware, the unit carrier and the anchoring at the unit carrier are sufficient to securely support the unit under the given surrounding conditions.

The units are to be mounted in such a way that they can be opened up while mounted. Sufficient space for the cables must be available in the unit near the cable entries.

Sufficient space is to be kept clear around the units to ensure air circulation and to prevent the build-up of heat resulting from use. The relevant information must be heeded in the case of units ventilated by other means.

When the housing fasteners are opened, the front frame of the housing hinges out upward or downward (depending on the unit version) automatically.

### Grounding

All devices are equipped with a metal housing. They comply with safety class I and require a protective earth connection. The connecting cable for the operating voltage must contain a protective earth wire of a sufficient cross section (DIN VDE 0106 part 1, DIN VDE 0411 part 1).

## EMC measures

The devices comply with the current EU Directive (EMC Directive) and provide the required interference immunity. Observe the following when connecting the operating voltage and data cables:

Use shielded data cables.

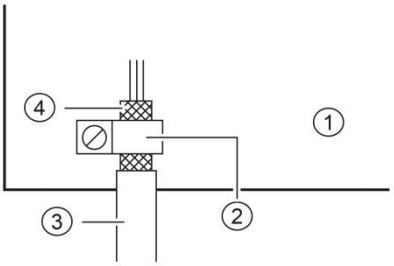
The data and operating voltage cables must be laid separately. They may not be laid together with heavy-current cables or other interference-producing cables.

The cable thickness must be properly assessed (DIN VDE 0100 Part 540).

The cable lengths inside the units are to be kept as short as possible to prevent interference. This applies especially to unshielded operating voltage cables. Shielded cables are also to be kept short due to any interference which might be emitted by the shielding.

Neither excessively long cables nor cable loops may be placed inside the units.

The connection of the cable shielding to the functional ground (PE) must be as short and low-impedance as possible. It should be made directly to the mounting plate over a large area with a conductive clip:




① mounting plate ② conductive clamp
③ data lines ④ cable shielding

The cable shielding is to be connected at both cable ends. If equipotential bonding currents are expected due to the cable arrangement, electrical isolation is to be performed on one side. In this case, capacitive connection (approx. 0.1µF/600 V AC) of the shielding on the isolated side must occur.

## Disposal

Units or unit parts which are no longer needed are to be disposed of in accordance with the regulations in effect in your country.

## 4 Quick Start

This Quick Start applies to all alphanumeric displays of the SX402-...-N0 series with firmware from V1.0.9 and device ID 0x1402. The firmware of a device can be checked in advance, e.g. with the PRONETA Basic software from SIEMENS.

| Hersteller-ID | Geräte-ID | Firmwareversion | Hersteller-Name | Bestellnummer |
|---|---|---|---|---|
| 0x0161 | 0x1402 | V1.0.9 | Siebert Industrieelektronik GmbH | SX402-...-N0 |

The display is put into operation by following the steps below. The display then shows the values sent via PROFINET.

The screenshots were created with the hardware and software listed in the following table. The illustrations may differ for other engineering frameworks.

| | |
|---|---|
| Display | SX402-420/05/0G-001/0B-N0 |
| Engineering-Framework | Siemens TIA Portal V17, Update 4 |
| PLC | Siemens S7-1214C DC/DC/Rly, V4.5, 6ES7 214-1HG40-0XB0 |
| Operating system | Microsoft Windows 10 Professional, 64 Bit |

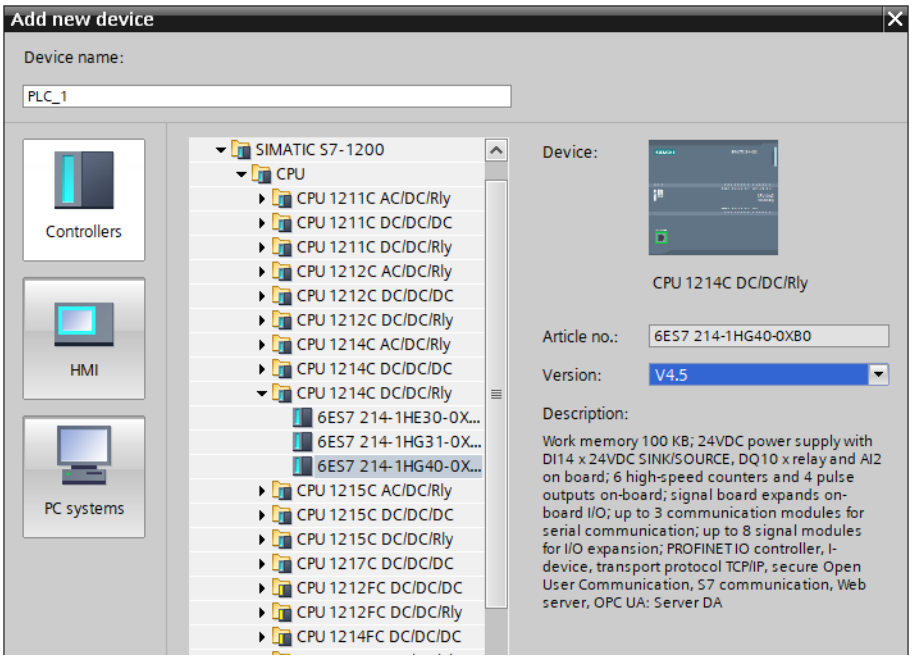
The Quick Start describes the parameterization of the display. Operation of the TIA Portal is a prerequisite.

The devices are delivered without PROFINET names.

The sample project from this Quick Start is available for download on the website www.siebert-group.com.

### Step 1: Open project

Open a new project in the engineering framework and define the CPU. The Siemens S7-1214C DC/DC/Rly version 4.5 was used to create this Quick Start.




Set the settings for the IP address, name, protection level, etc...

### Schritt 2: Install GSDML file of the display and add display

Install the GSDML file 'GSDML-V2.43-Siebert-SX402-XX-...' of the displayYou can find this on the data carrier included in the scope of delivery or on www.siebert-group.com. After installation, the display is listed in the hardware catalog.

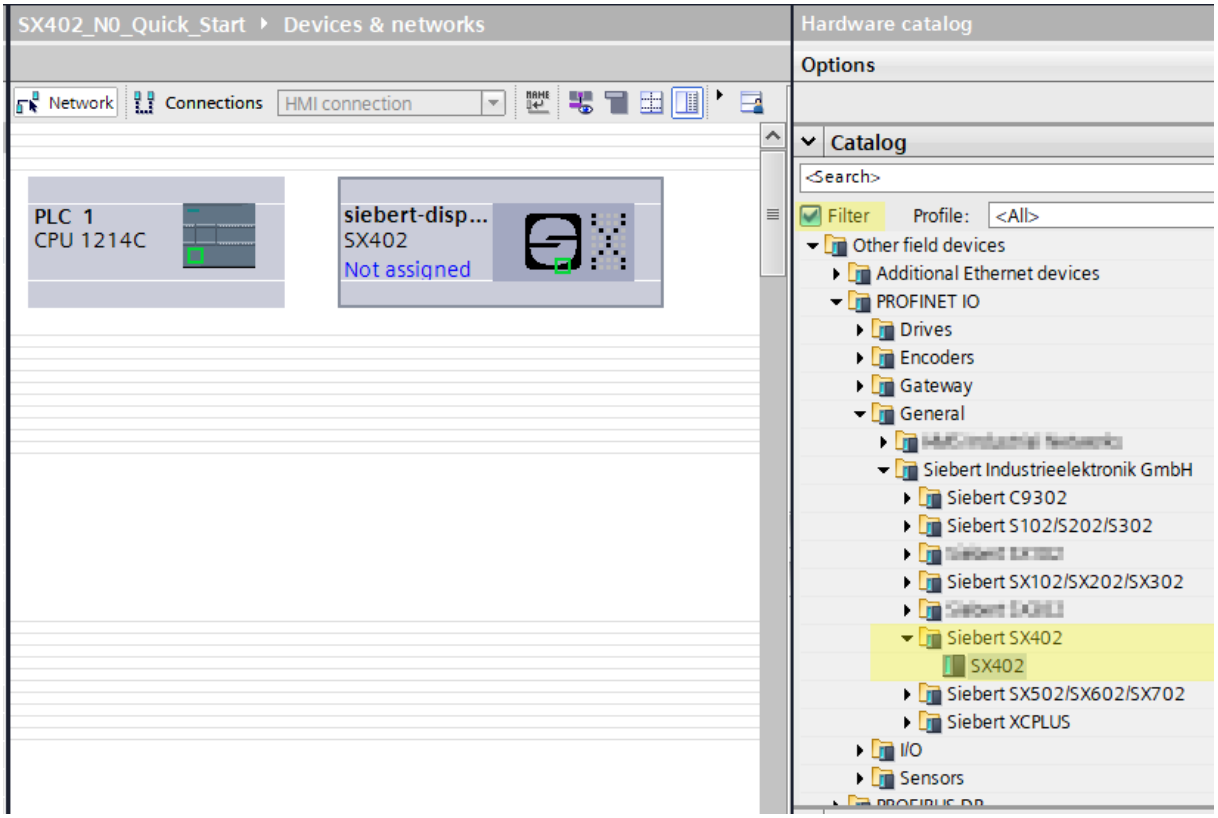
In the device catalog, activate the checkbox 'Filter' and navigate to:

'General / Siebert Industrieelektronik GmbH / Siebert SX402'.

### Step 3: Switch to project view and add device

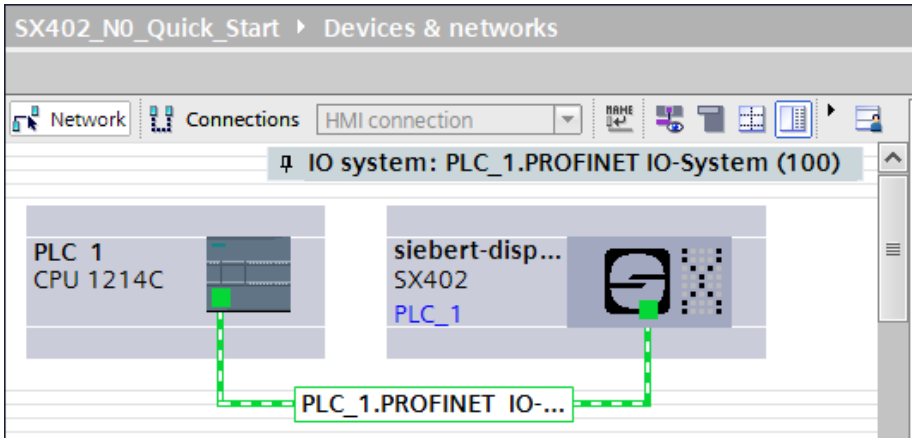
Switch to 'Devices & networks / Network view'.

Drag the 'SX402' head module from the catalog to the 'Devices & networks / network view' area.




### Step 4: Establish connection to the display

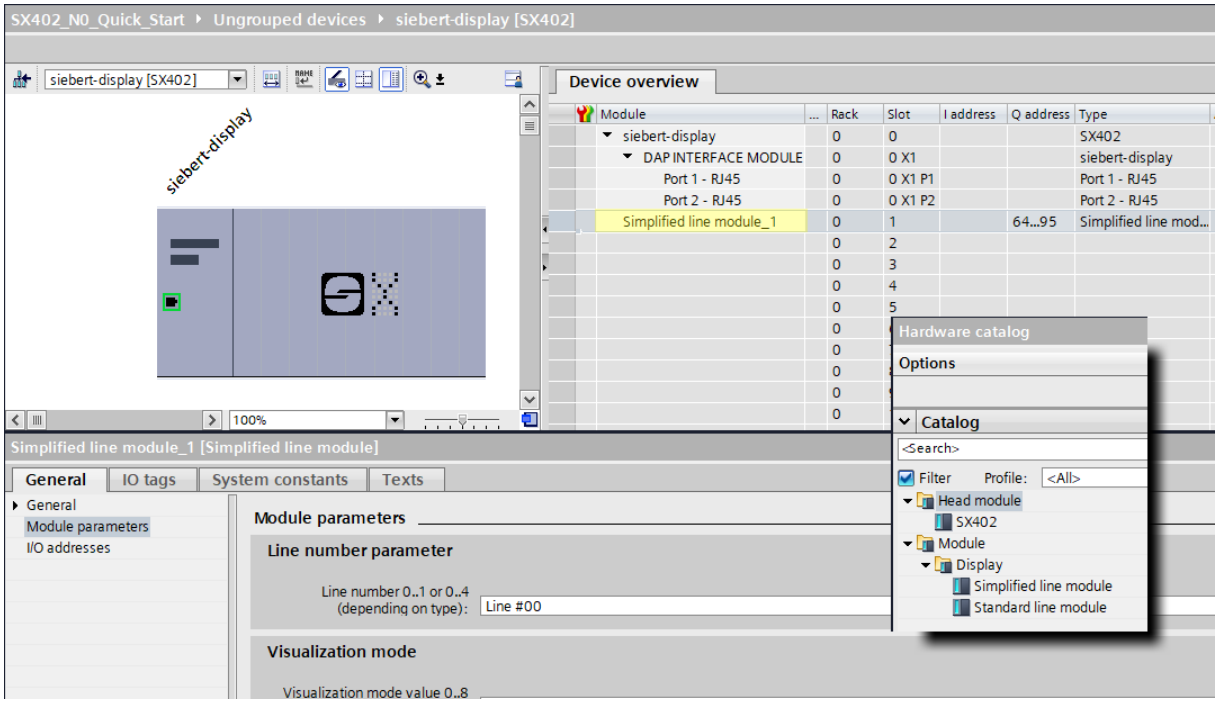
In the network view, assign the display to the desired control. The PROFINET connection is then displayed as a dashed green line.



### Step 5: Add sub-module to the display and define address range

Now add the 'Simplified line module' from the hardware catalog to the device overview.

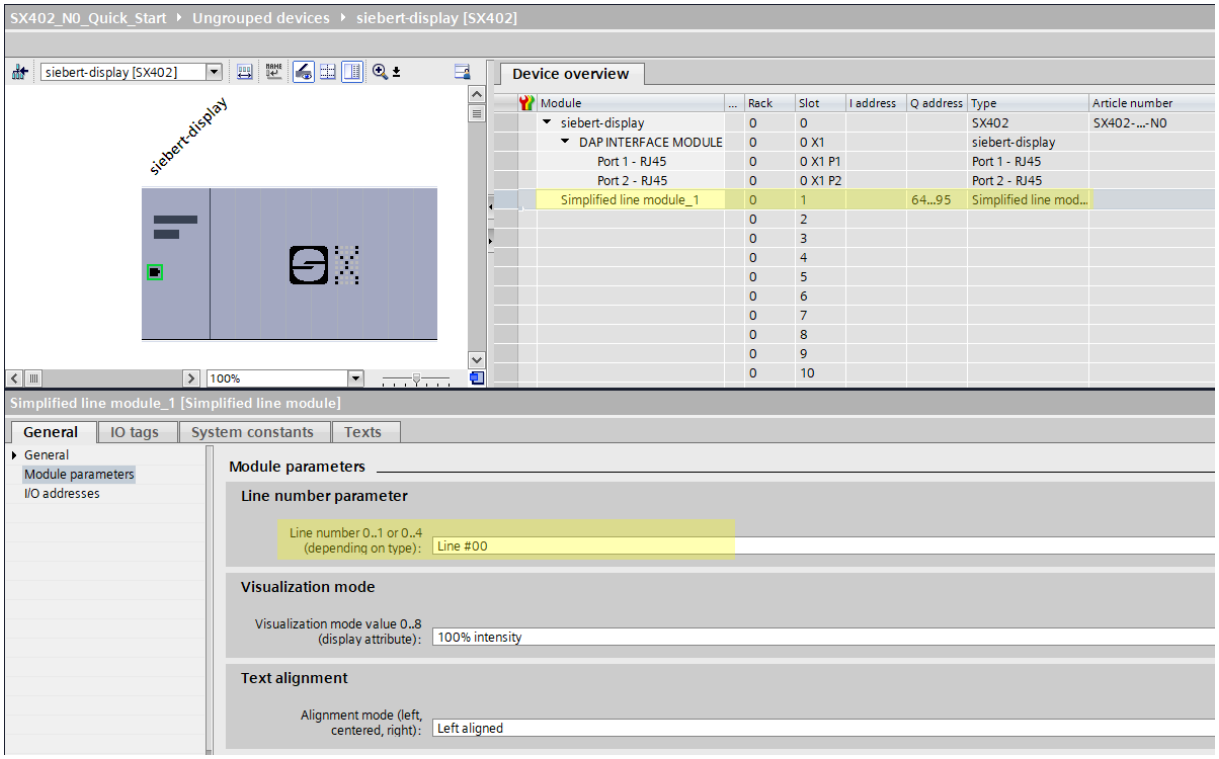
This specifies that the display expects the values to be displayed as an ASCII string. The module occupies 32 bytes in the IO area (in this example, addresses 64 to 95).




You can change the name specified by the TIA Portal individually.

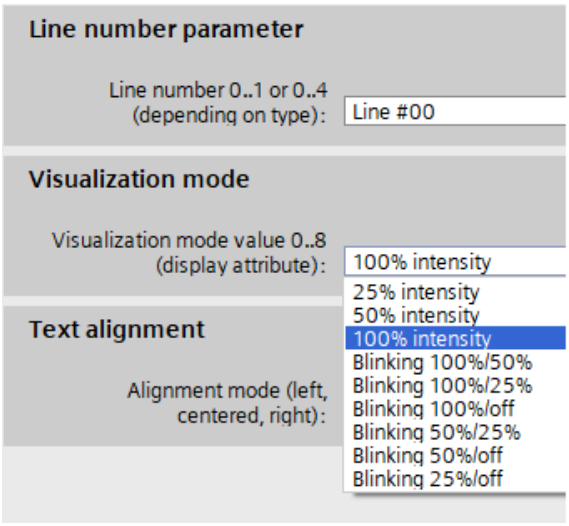
In the Assembly parameters area, you can define initialization parameters for brightness and text alignment.

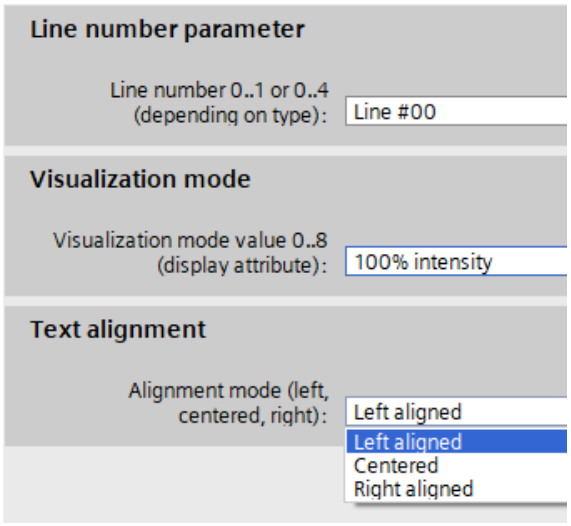
Leave the first entry 'Line number parameter' for this Quick Start unchanged at the value line #00.



Using the 'Visualization mode' parameter, you can select different values for the brightness and/or the flashing pattern.

With the parameter 'Text alignment', you can select different values for the text alignment on the display. Texts that are longer than the display are cut off according to the selected alignment.

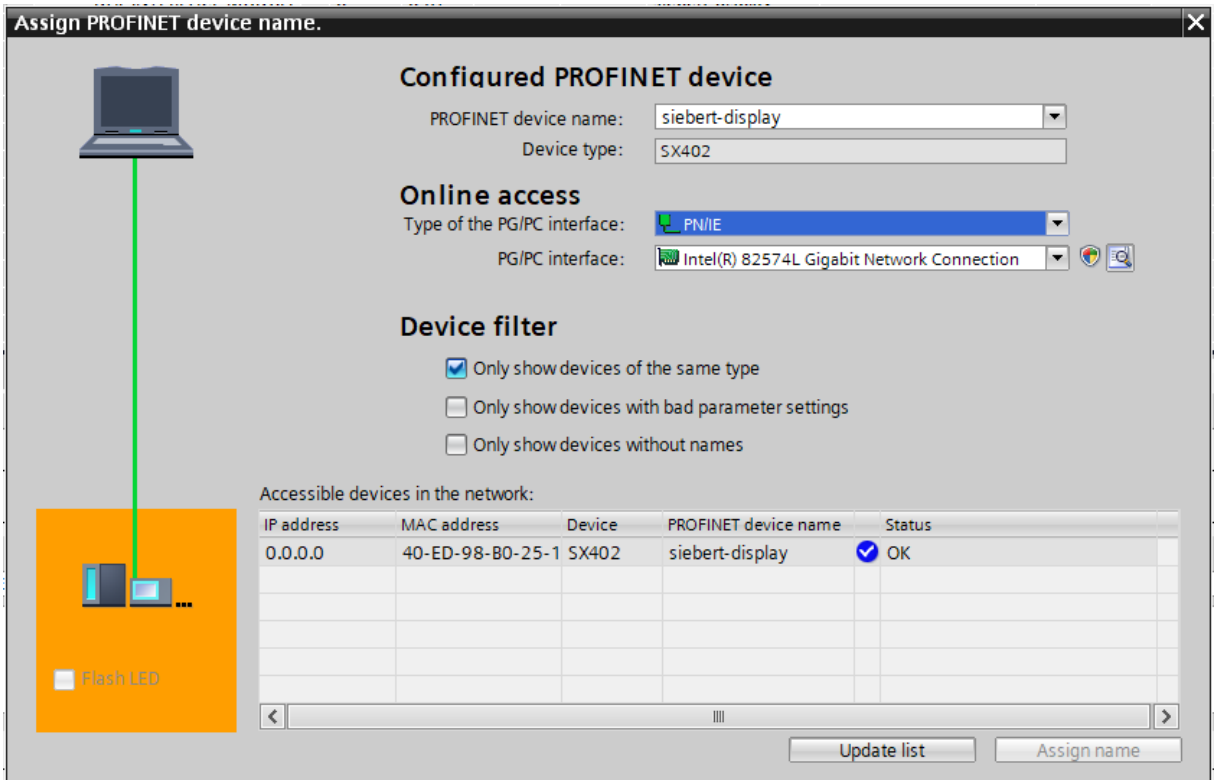


### Step 6: Assign a PROFINET device name to the display

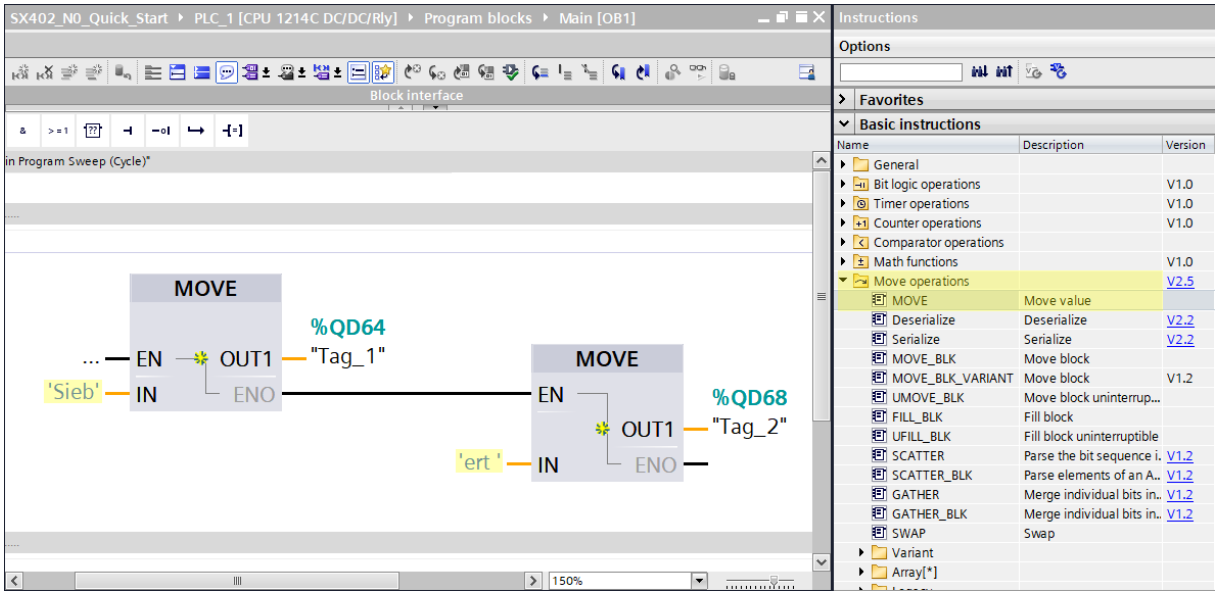
Now assign an IP address and a device name to the display. To do this, for example, call up the context menu of the Siebert display in the device view and click on 'Assign device name'.

After the data has been successfully transferred to the display, the configuration is displayed in the engineering tool as follows.



### Step 7: Define text

To send a value to display, you can, for example, create a function chart with 'MOVE' instructions. In the following screenshot, the text 'Siebert' is sent. Two 'MOVE' blocks are required for this.




### Step 8: Load hardware configuration and program into the control system

After switching on the display, the start text 'SX402' is displayed.

As soon as the configuration and the program module are loaded into the control, the control connects to the display via PROFINET and the display shows the text 'Siebert'.

## 5 Display messages

The data traffic via PROFINET is indicated with status LEDs on both RJ45 sockets.
The meaning is the same for both ports.

| LED green | LED yellow | Meaning |
|---|---|---|
| off | off | ▪ no power supply<br>▪ no network connection |
| on | ons | ▪ network connection exists |
| on | flashing | ▪ initialization phase<br>▪ application relation is set up |
| on | on | ▪ application relation is established |

If the connection can not be established or faults occur during operation the display shows error messages.Possible causes are IP problems due to incorrect network parameters, multiple device names, command of undefined properties or other fieldbus errors.