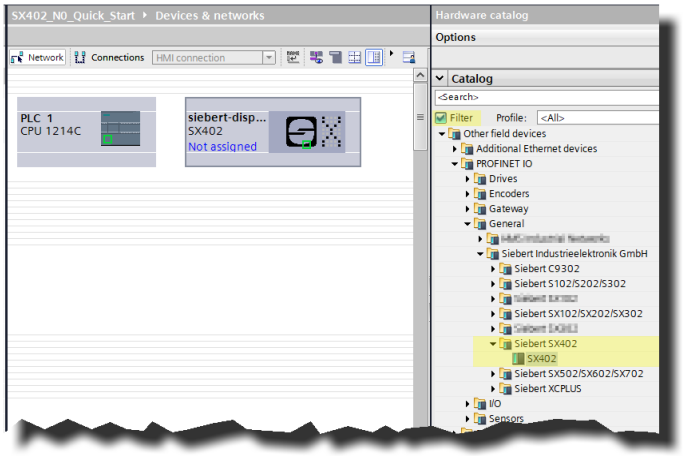
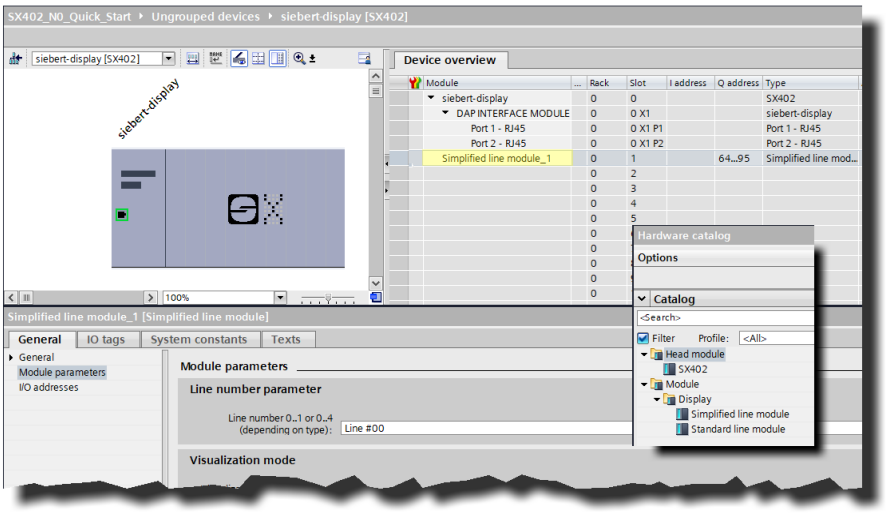




Series SX402

Alphanumeric displays with PROFINET IO RT interface

QuickStart for TIA Portal (version 2.10)

Table of contents

1 Contact

www.siebert-group.com

GERMANY

Siebert Industrieelektronik GmbH
Siebertstrasse, D-66571 Eppelborn
Phone +49 (0)6806 980-0
email: info.de@siebert-group.com

AUSTRIA

Siebert Österreich GmbH
Simmeringer Hauptstrasse 24, A-1110 Wien
Phone +43 (0)1 74040153
email: info.at@siebert-group.com

FRANCE

Siebert France Sarl
4 rue de l'Abbé Louis Verdet, F-57200 Sarreguemines
Phone +33 (0)3 87 98 63 68
email: info.fr@siebert-group.com

ITALY

Siebert Italia Srl
Via Galileo Galilei 2A, I-39100 Bolzano (BZ)
Phone +39 (0)471 053753
email: info.it@siebert-group.com

THE NETHERLANDS

Siebert Nederland B.V.
Jadedreef 26, NL-7828 BH Emmen
Phone +31 (0)591-633444
email: info.nl@siebert-group.com

SWITZERALND

Siebert AG
Bützbergstrasse 2, CH-4912 Aarwangen
Phone +41 (0)62 922 18 70 (german)
+41 (0)62 922 20 44 (french)
+41 (0)62 922 28 38 (italien)
email: info.ch@siebert-group.com

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 using the device. It contains important information on the use, safety and maintenance of the device. This helps you to protect yourself and prevent damage to the device.

Instructions that may lead to death, personal injury or considerable material damage if they are not followed or not followed correctly are highlighted by the warning triangle shown here.

The operating instructions are intended for trained professional electricians familiar with the safety standards of electrical technology and industrial electronics. The manufacturer is not liable if the information in these operating instructions is not complied with.

Store these operating instructions in an appropriate place.

Safety

Components inside the devices are energized with electricity during operation. For this reason, mounting and maintenance work may only be performed by qualified personnel in accordance with the relevant 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 devices do not have a power switch. They are in operation immediately after the operating voltage is applied.

Intended use

The devices 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 devices, 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 devices.

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 fastening material used, the device carrier and the anchoring at the unit device are sufficient for secure mounting under the given on-site conditions.

The devices 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 devices 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.

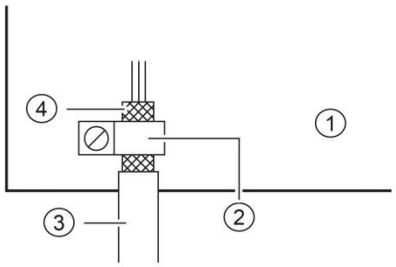
The data and operating voltage cables must be laid separately. They may not be laid together with heavy-current cables or other interference-producing cables.

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 and return of old devices

Dispose the packing in an environmentally friendly manner. This device is subject to the European directive on waste electrical and electronic equipment (WEEE). The directive provides the framework for the EU-wide take-back and recycling of old appliances. Enquiries therefore should be sent by e-mail to the following e-mail address: info@siebert-group.com

Units or unit parts which are no longer needed are to be disposed of in accordance with the regulations in effect in your country. Personal data on the old appliances to be disposed of must be deleted by the user.

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

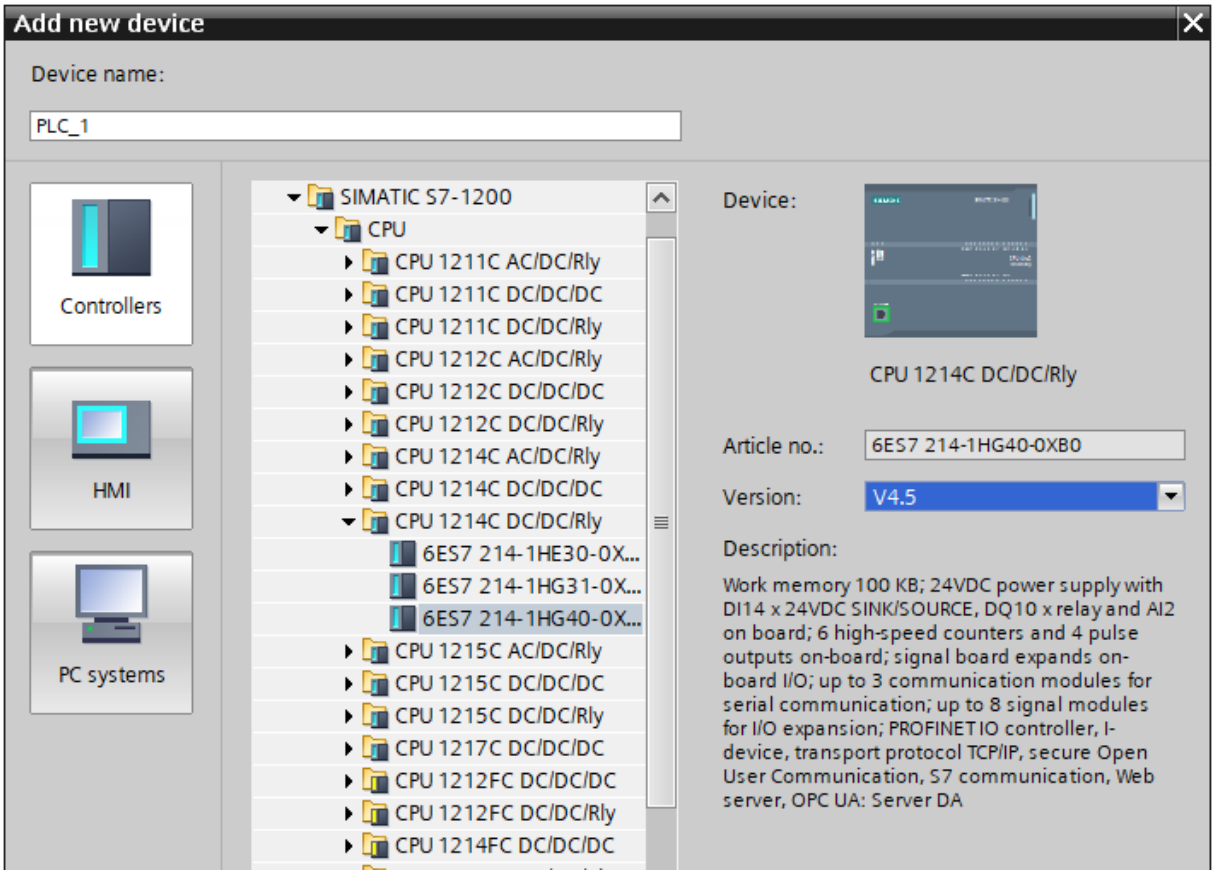
The Quick Start describes the parameterization of the display. Operation of the TIA Portal is a prerequisite.

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...

Step 2: Install GSDML file of the display and add display

Install the GSDML file 'GSDML-V2.43-Siebert-SX402-XX-...' of the display. You 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.

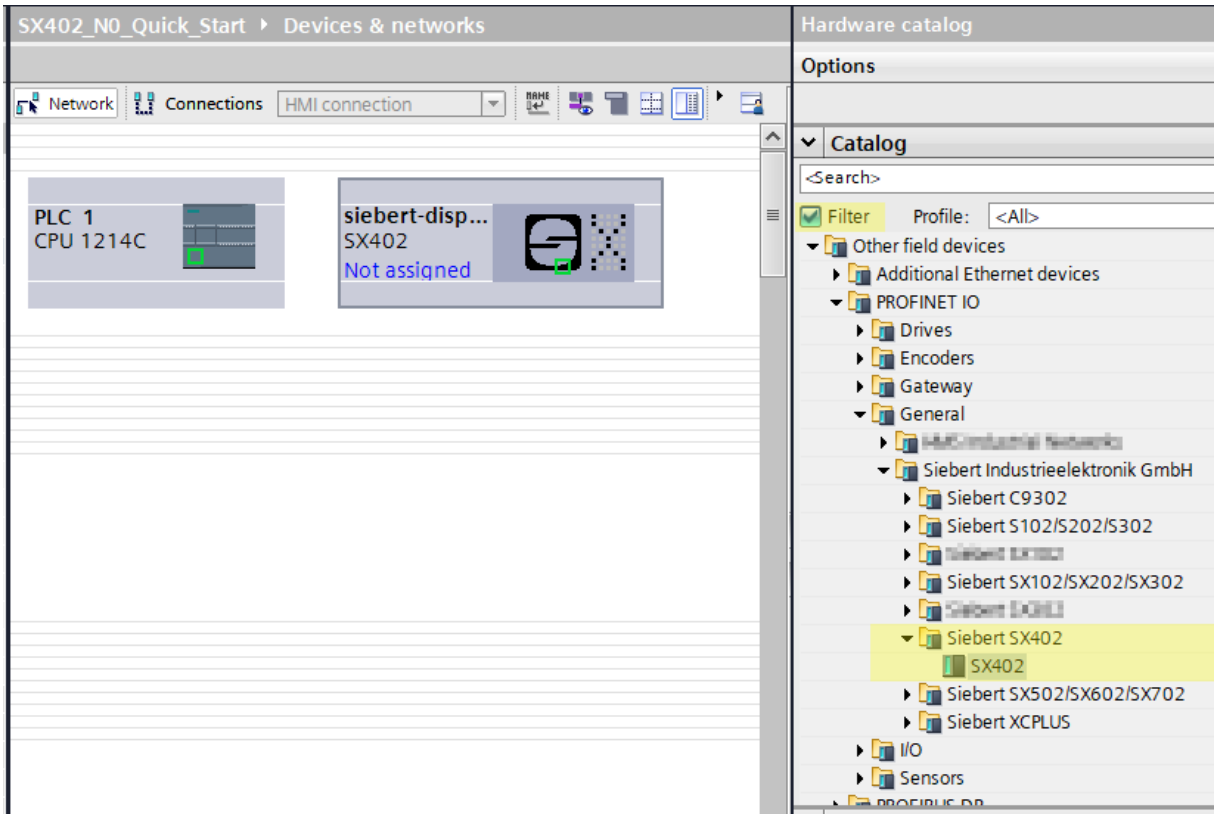
In the device catalog, activate the checkbox 'Filter' and navigate to:

'General / Siebert Industrieelektronik GmbH / Siebert SX402'.

Step 3: Switch to project view and add device

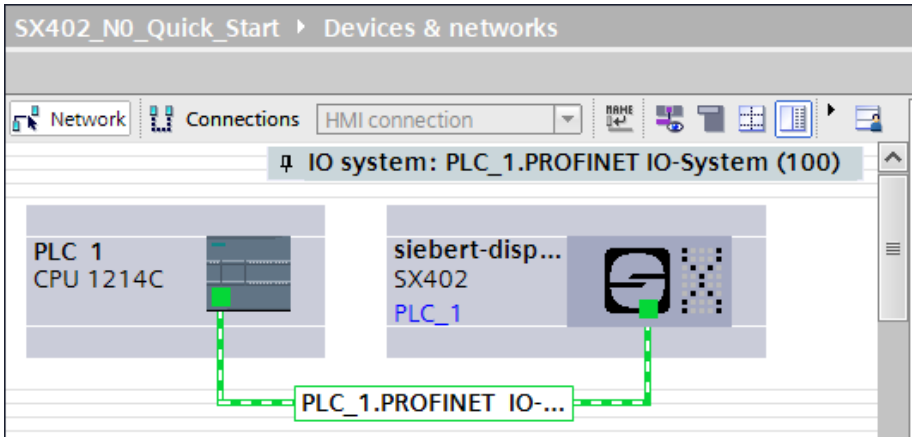
Switch to 'Devices & networks / Network view'.

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



Step 4: Establish connection to the display

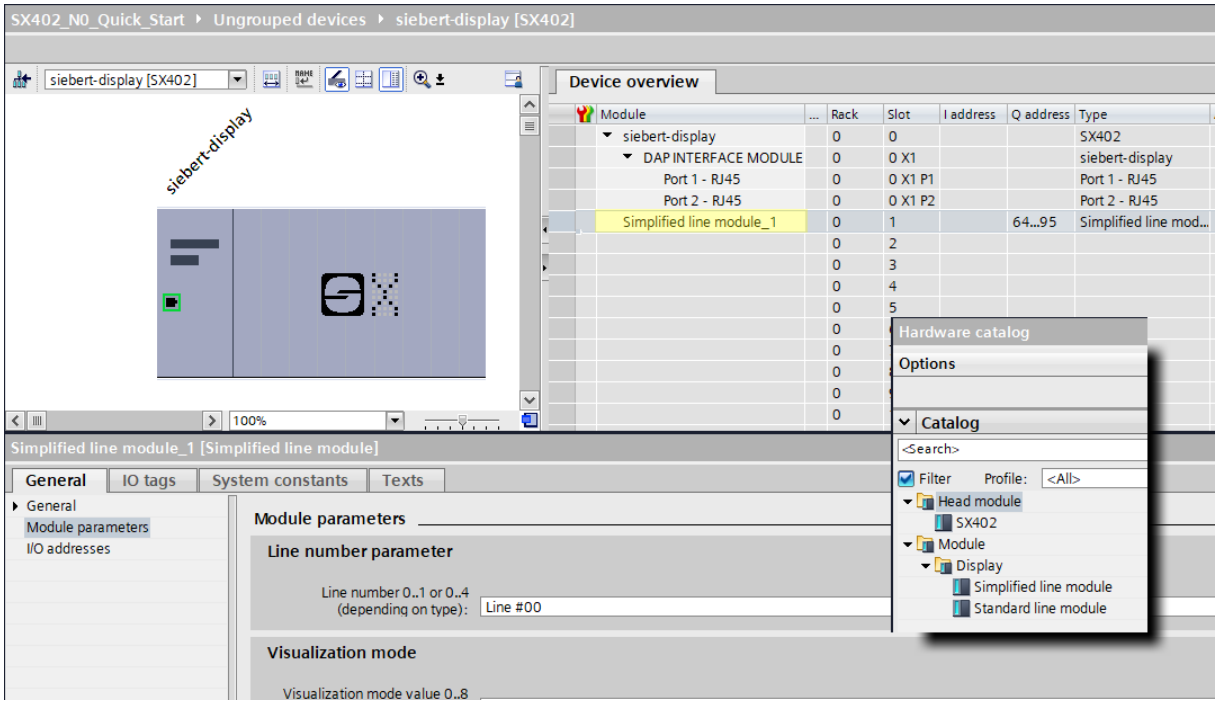
In the network view, assign the display to the desired control. The PROFINET connection is then displayed as a dashed green line.



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.

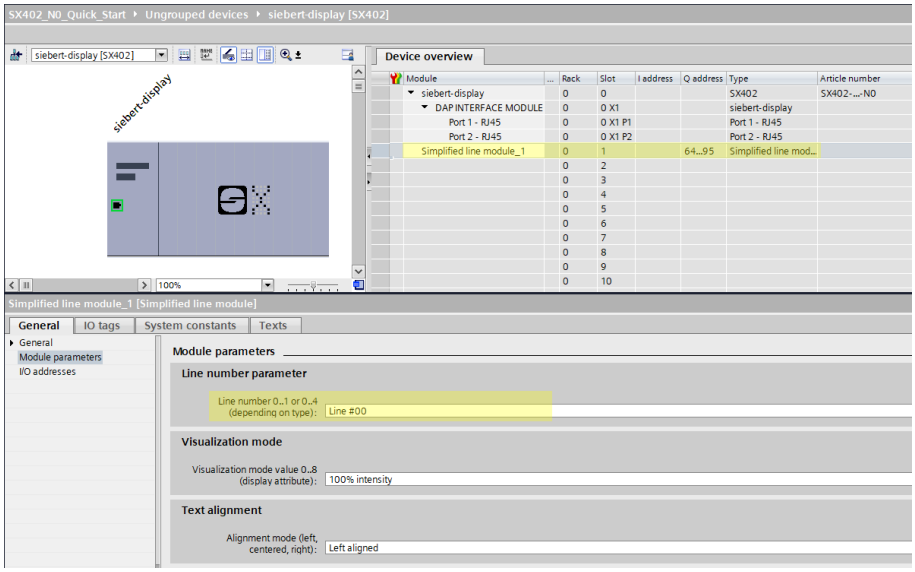
This specifies that the display expects the values to be displayed as an ASCII string. The module occupies 32 bytes in the IO area (in this example, addresses 64 to 95).



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

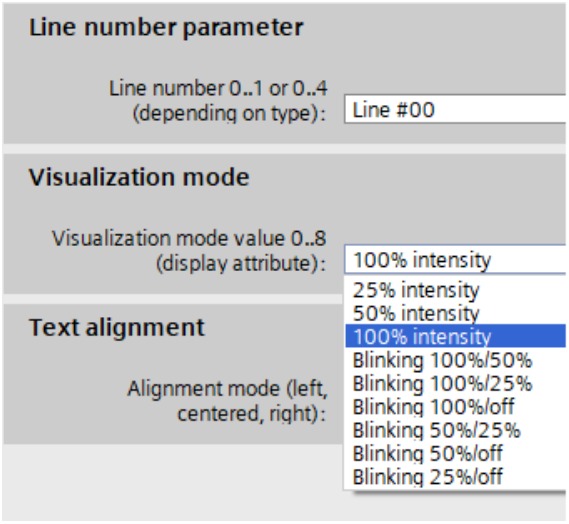
In the Assembly parameters area, you can define initialization parameters for brightness and text alignment.

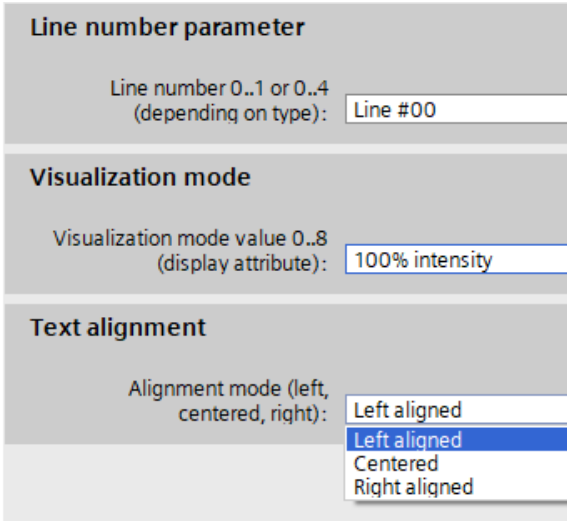
Leave the first entry 'Line number parameter' for this Quick Start unchanged at the value line #00.



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.

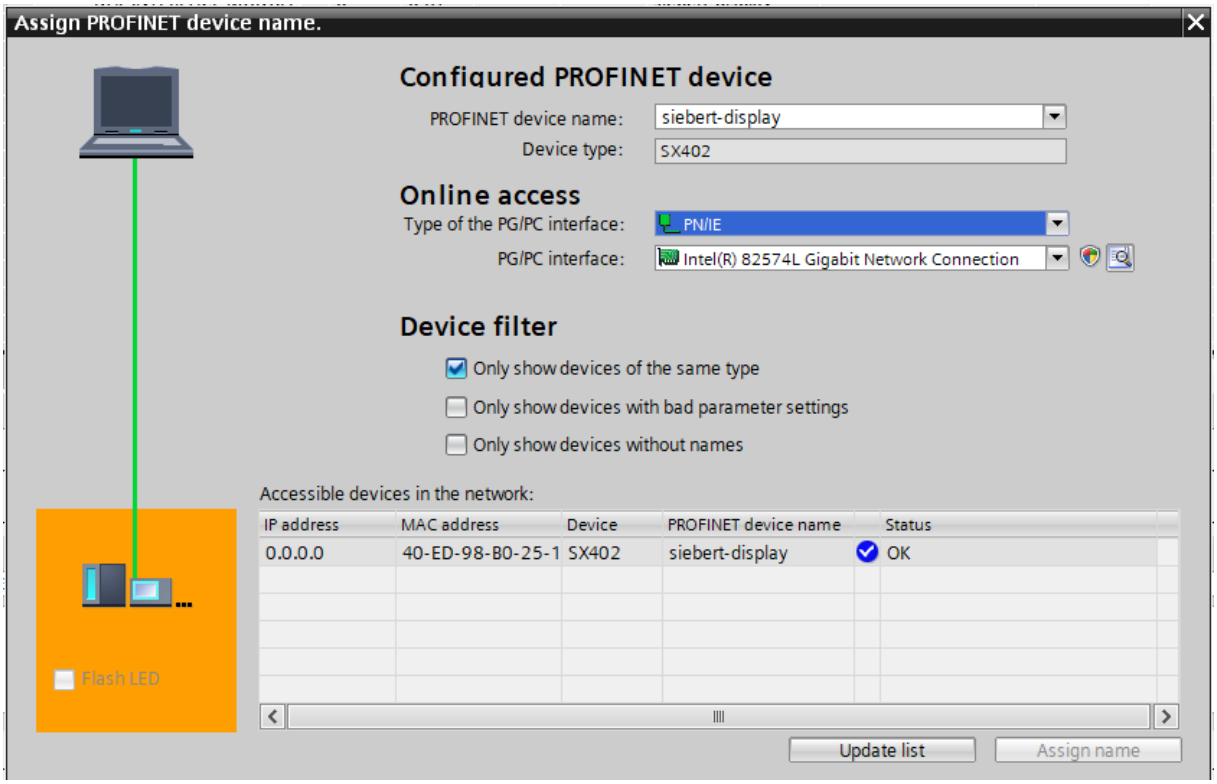




Step 6: Assign a PROFINET device name to the display

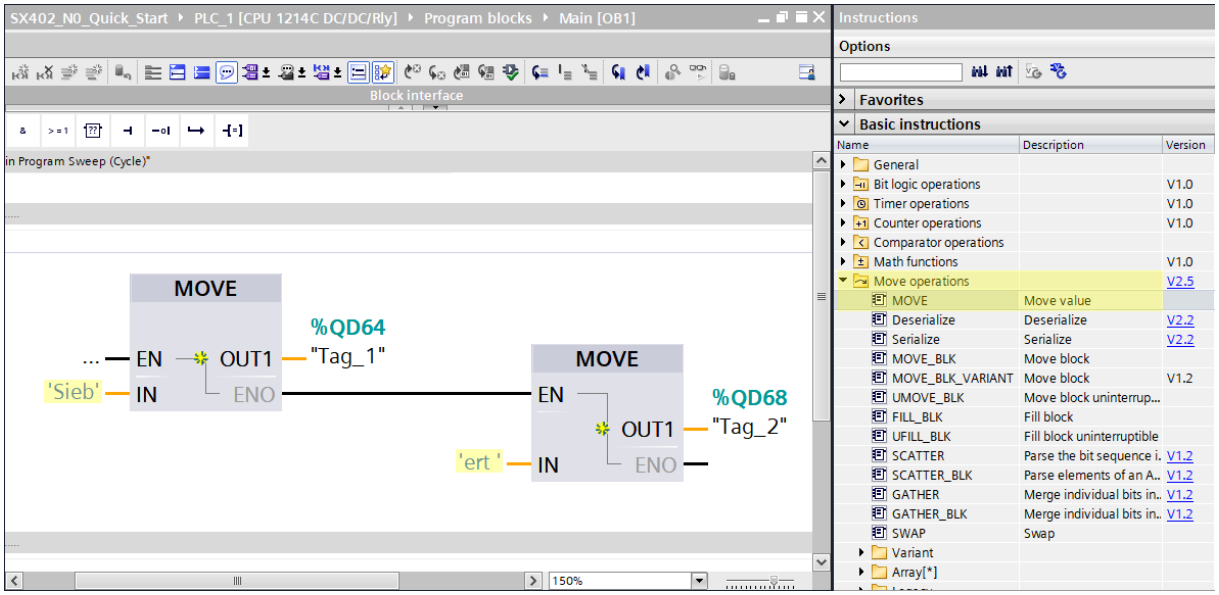
Now assign an IP address and a device name to the display. To do this, for example, call up the context menu of the Siebert display in the device view and click on 'Assign device name'.

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 ▪ no network connection
on	ons	▪ network connection exists
on	flashing	▪ initialization phase ▪ 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.