Industrial Ethernet Training 01

Setting up default configuration of IE Training Kit

Abstract:
The devices delivered in the Training Kit are set to the factory default settings. This means that the devices use the same IP addresses, leading to possible conflicts. This application note is explaining how to change the IP addresses to use the boards and its devices. Furthermore, it is explaining how to load the latest firmware to the devices. All other Industrial Ethernet application notes will refer on the default configuration.

Hardware reference

No.	Component name	Article No.	Hardware / Firmware version
1	IE-Training Kit-01	2881730000	1.1.2 (Build 125086)
2			
3			

IE-Training Kit Content

No.	Component name	Article No.	Hardware / Firmware version
1	IE-SR-4TX	2751270000	1.4.7
2	IE-SW-AL08M-8TX	2682280000	1.08
3	IE-SW-AL05M-5TX	2682250000	1.14
4	IE-CS-MBGW-2TX-1COM	2682600000	3.11

Software reference

No.	Software name	Article No.	Software version
1			
2			
3			

File reference

No.	Name	Description	Version
1			
2			

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For any further support please contact your local sales representative:
https://www.weidmueller.com/countries

Content

1 Warning and Disclaimer

Warning
Controls may fail in unsafe operating conditions, causing uncontrolled operation of the controlled devices. Such hazardous events can result in death and / or serious injury and / or property damage. Therefore, there must be safety equipment provided / electrical safety design or other redundant safety features that are independent from the automation system.

Disclaimer
This Application Note / Quick Start Guide / Example Program does not relieve you of the obligation to handle it safely during use, installation, operation and maintenance. Each user is responsible for the correct operation of his control system. By using this Application Note / Quick Start Guide / Example Program prepared by Weidmüller, you accept that Weidmüller cannot be held liable for any damage to property and / or personal injury that may occur because of the use.

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Security notes
In order to protect equipment, systems, machines and networks against cyber threats, it is necessary to implement (and maintain) a complete state-of-the-art industrial security concept. The customer is responsible for preventing unauthorized access to his equipment, systems, machines and networks. Systems, machines and components should only be connected to the corporate network or the Internet if necessary and appropriate safeguards (such as firewalls and network segmentation) have been taken.

2 Factory defaults: IP addresses and user credentials

Number	Device	Order No.	IPv4	Username	Password
1	IE-SR-4TX	2751270000	LAN: 192.168.1.110 WAN: DHCP	admin	Detmold
2	IE-SW-AL08M-8TX	2682280000	192.168.1.110	admin	Detmold
3	IE-SW-AL05LM-5TX	2682250000	192.168.1.110	admin	Detmold
4	IE-SW-AL05LM-5TX	2682250000	192.168.1.110	admin	Detmold
5	IE-CS-MBGW-2TX-1COM	2682600000	192.168.1.110	admin	**Weidmueller**

Table 1: Default Credentials of the devices

These are the default addresses and user credentials to access the devices in the default state.

HINT: Please leave all devices unconnected from Ethernet to avoid IP address collision.

3 Setup your host ethernet connection

HINT: The IP-addresses range 192.168.1.1 - 192.168.1.255 is most common for consumer routers (e.g., DSL or TV cables internet access). If your local internet connection uses this IP range, disconnect your computer from your local router before connecting to the Industrial Ethernet Training Kit. Furthermore, note that the following description refers to Windows 10 as operating system.

1. Now we are going to change the IP address of our PC, in order to be in the same network as our devices on the Training Kit. To do this, we must open our Windows settings and navigate to "*Network & Internet*" and then select "*Change adapter*" *options* in the menu point "*Advanced network settings*".

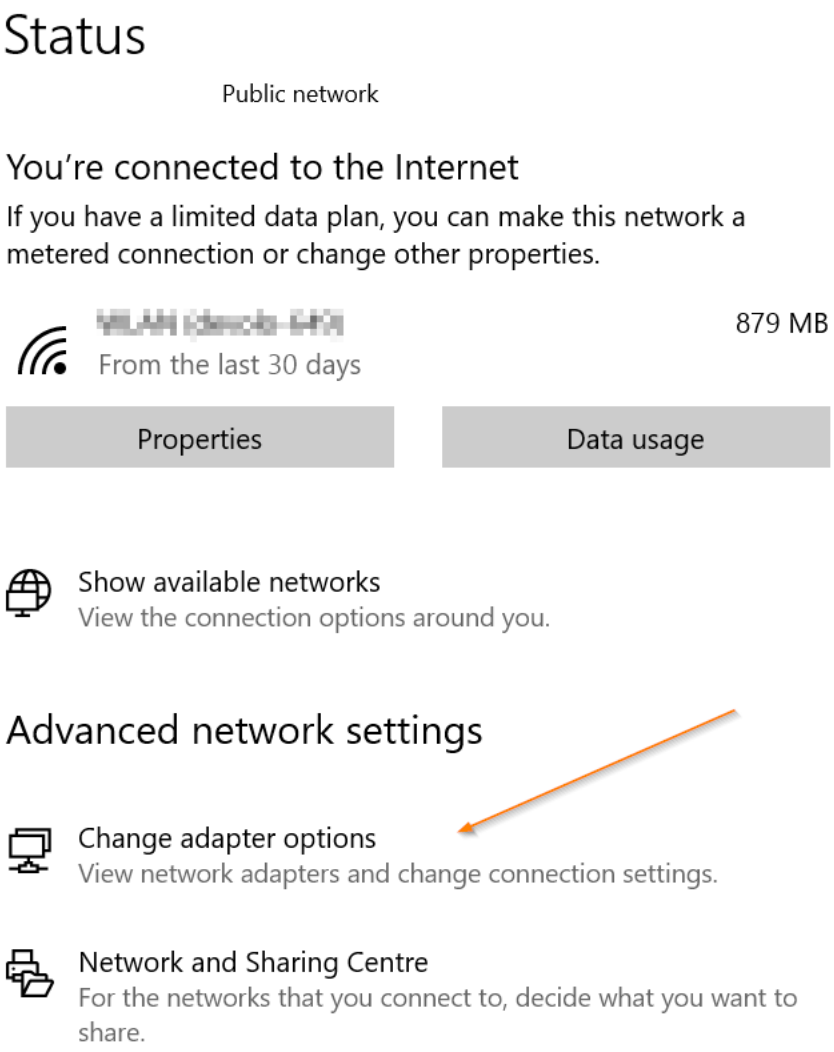

Figure 1: Changing adapter options

2. Now, we must locate which interface is used to connect the pc with the router and double click on this interface. We can simply disconnect and then connect the Ethernet cable to our router, then we can determine which Ethernet interface is used to connect to the router as it will disappear and then reappear.

Figure 2: Determining the network interface

3. A new pop-up window will open, where we select "*Internet Protocol Version 4*" with a double click.

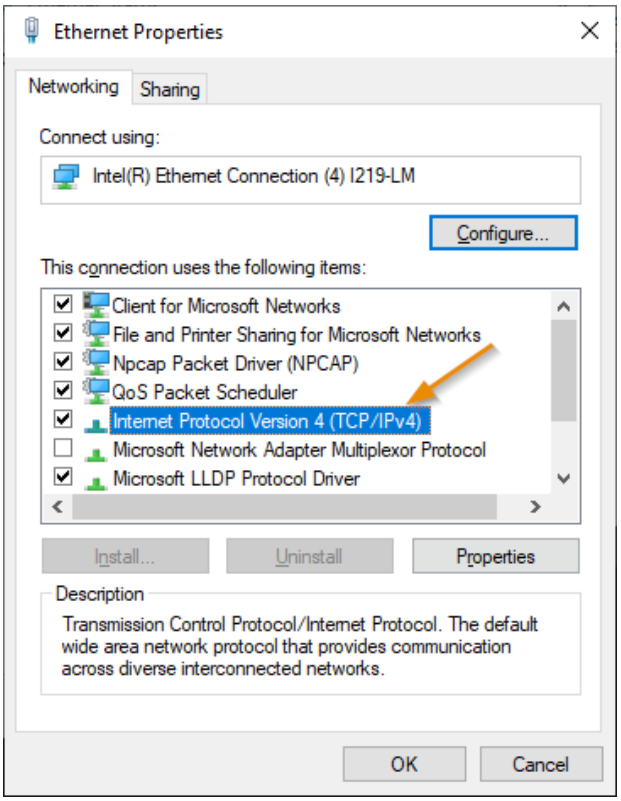

Figure 3: Navigating to IPv4 Settings

4. A new window will open where you can change the IP address of your device. Please change your IP address just like in the screenshot below to "*192.168.1.15*".

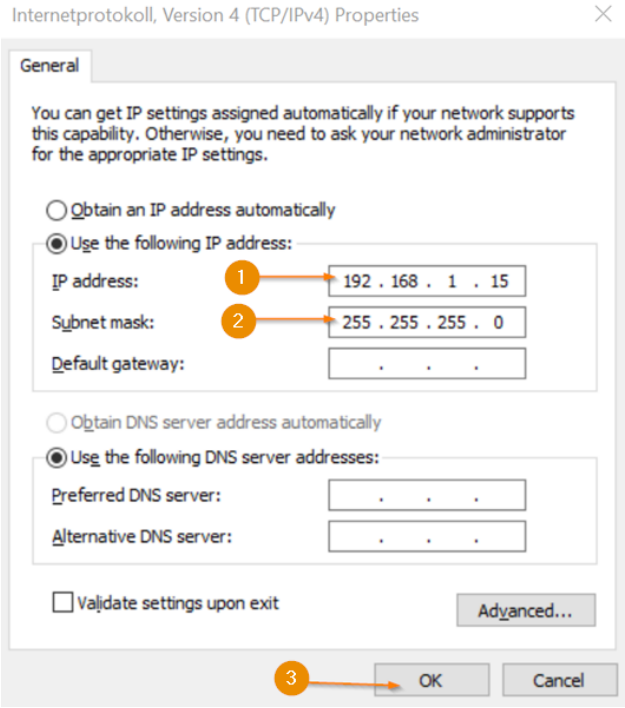

Figure 4: Changing the IP address

4 Applying new IP addresses to the devices

Do not connect all devices with each other but instead connect to each one by one so there is no network collisions and conflicts due to devices having the same IP.

This is the reference table for the new IP addresses to apply.

Number	Device	IP	Order No.
1	IE-SR-4TX	LAN: 192.168.1.10 WAN: 10.10.10.10	2751270000
2	IE-SW-AL08M-8TX	192.168.1.20	2682280000
3	IE-SW-AL05LM-5TX	192.168.1.30	2682250000
4	IE-SW-AL05LM-5TX	192.168.1.40	2682250000
5	IE-CS-MBGW-2TX-1COM	192.168.1.50	2682600000

Table 2: IP addresses for the devices

4.1 Changing the router IP address

1. After changing the computer's IP address, we can connect to the router's web interface: make sure the PC is physically connected to the router. Then, open a browser of your choice. Type the default IP "*192.168.1.110*" of the router into the URL field. A window opens, asking for the login credentials. Type in the default credentials from Table 1: Default Credentials of the devices.

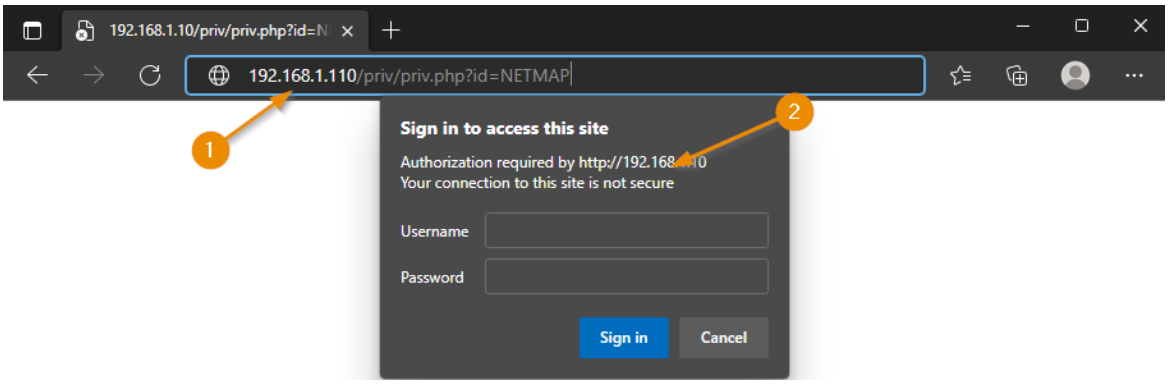

Figure 5: Accessing router web interface

2. Changing the IP address is done by navigating the menu tree to "*Configuration*" and then selecting "*IP Configuration*". First, change the "*IP assignment*" option via the drop-down menu to "*static*". Afterwards, change the IP address to "*192.168.1.10*" for the LAN interface and to "*10.10.10.10*" for the WAN interface. Both subnet masks are "*255.255.255.0*". Lastly, click on "*Apply settings*" to apply the new IP address.

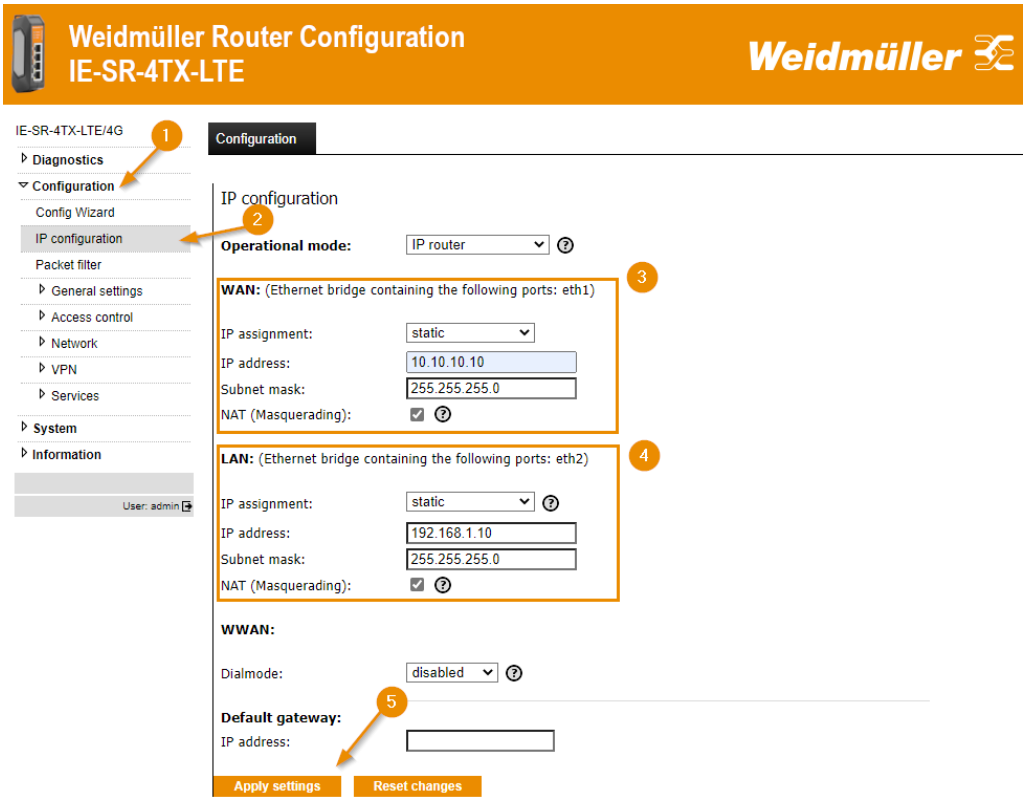

Figure 6: Changing WAN and LAN IP address

3. To save the configuration, navigate to "*System*" and then to "*Save*". In this menu, press the button "*Save settings*". This means that, for example, after a power loss, the configuration remains the same.

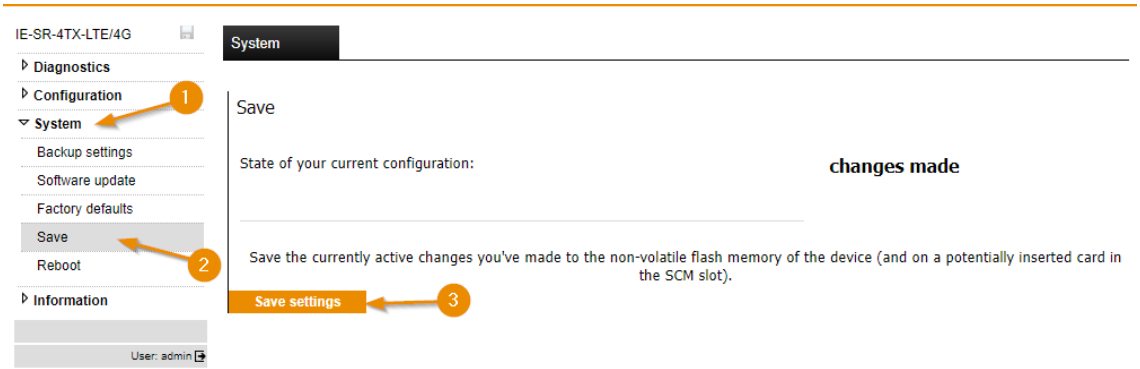

Figure 7: Saving the configuration

The device reboots and you can connect with the new IP address afterwards.

4.2 Changing the IP addresses of the switches and Modbus Gateway

First, disconnect the Ethernet cable from the router and connect it to the switch to be able to establish a connection.

1. Connecting to the switch web interface is done the same way as with the router. Type in the IP "*192.168.1.110*" into the browser's URL field and log in with the default credentials from Table 1.

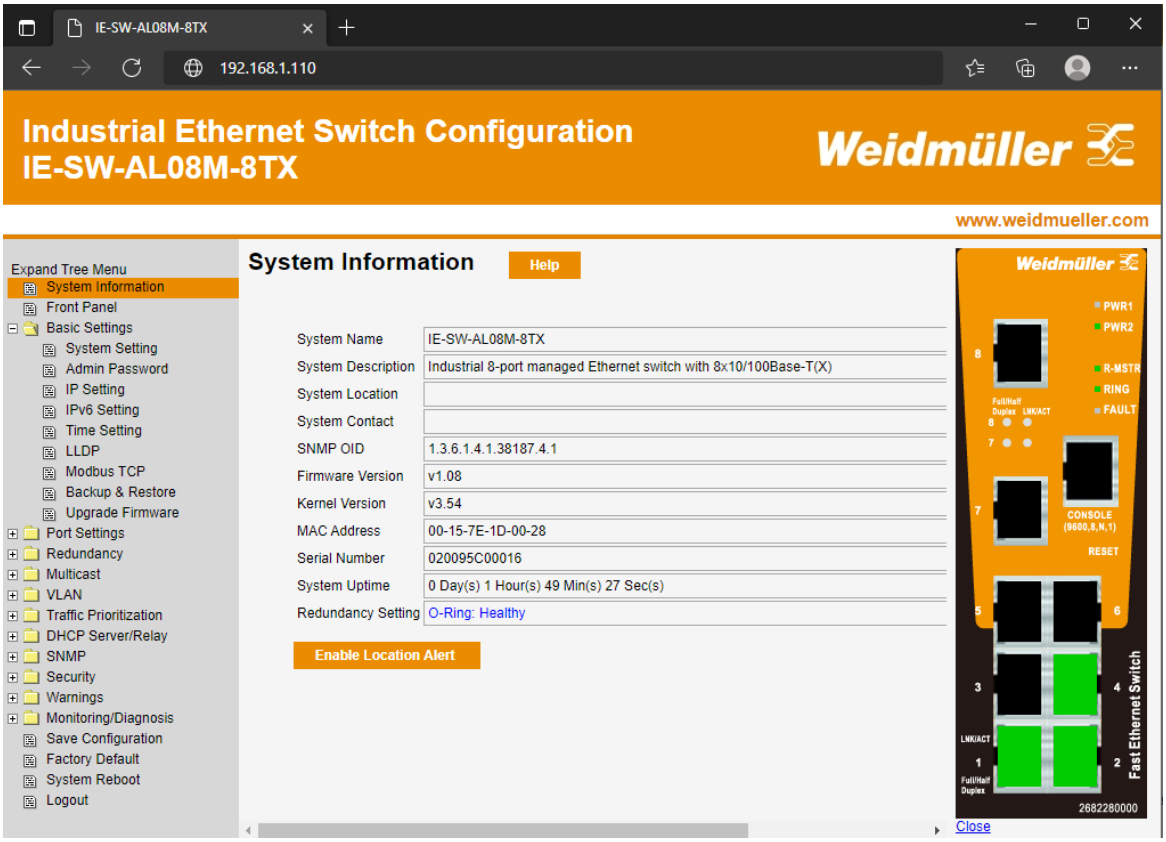

Figure 8: Switch web interface menu

2. To change the IP address, go to "*Basic Settings*" and then click on "*IP Setting*". Once again, change the "*IP Assignment*" via the drop-down menu to "*Static*". Now, change the IP address as depicted below to *"192.168.1.20*" with the subnet mask "*255.255.255.0*" and click "*Apply*".

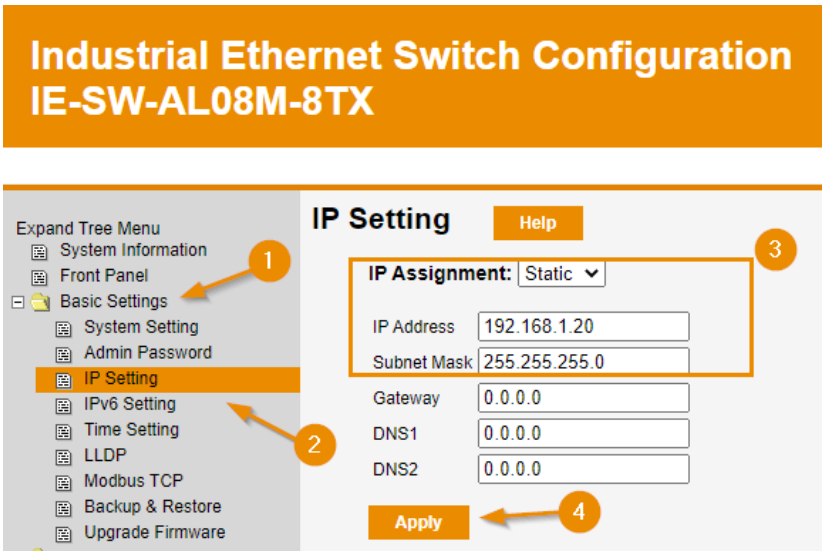

Figure 9: Changing switch IP address

3. To keep the configuration after a power loss or restart, click on "*Save Configuration*" and then press "*Save*".

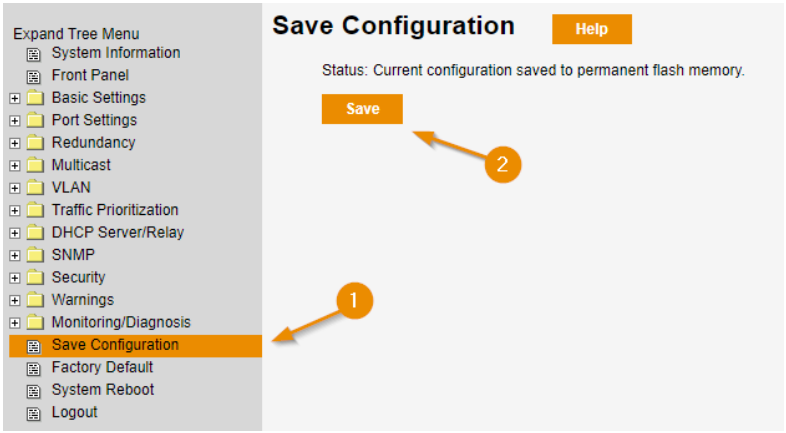

Figure 10: Saving the configuration

Note: Repeat the steps for the other devices on the Training Kit, such as the other switches and the Modbus Gateway. The steps are the same for all the devices. Change the IP address according to the IP addresses in Table 2: IP addresses for the devices.

5 Firmware Update

We recommend updating the firmware of all devices for performance and security reasons.
You can find the latest version of the firmware in the Weidmüller Online Catalog at: ***https://catalog.weidmueller.com/***

The webpage for the downloads is depicted down below, with the firmware download option being in the software section of the device.

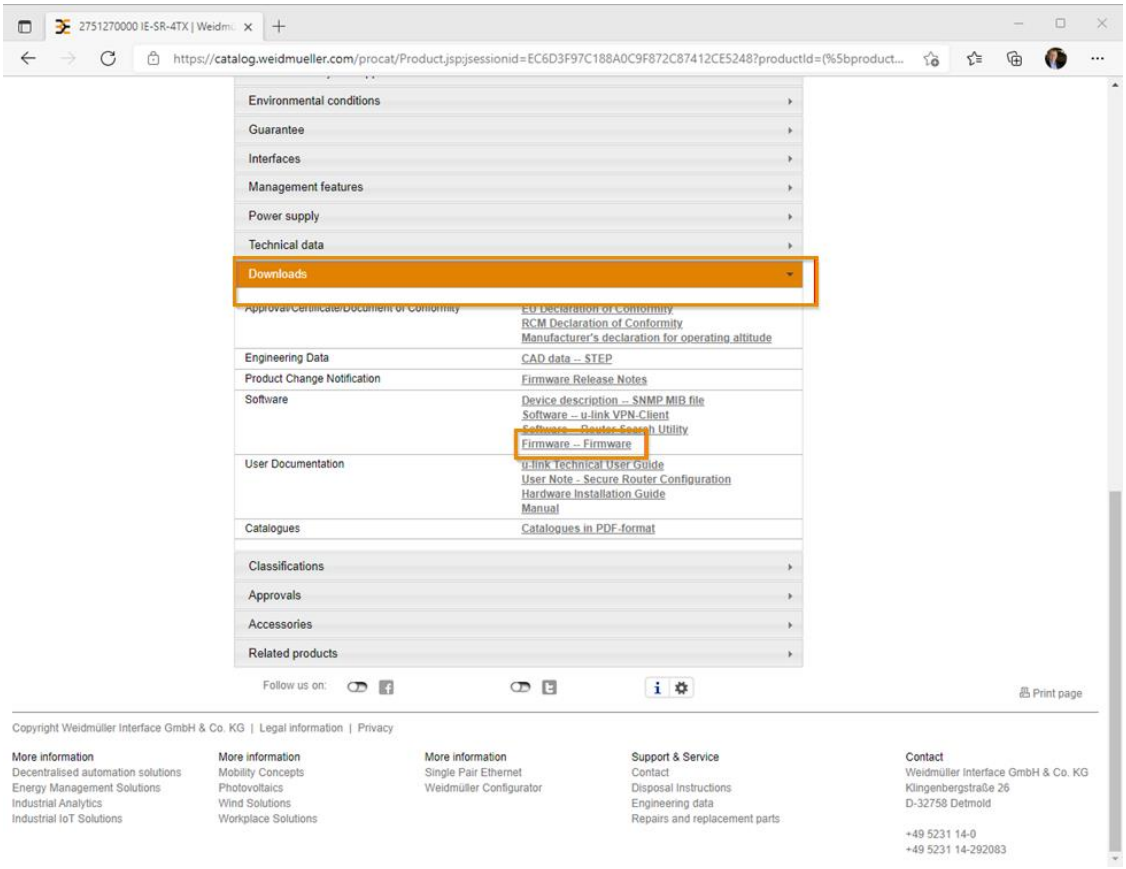

Figure 11: Online catalogue for download

Reset:

All Ethernet devices have reset switches to go back to the factory default configuration.
Please check the corresponding product manual how to find and use the reset switch.
The manual of each device can be found in the download section below the headline "*User Documentation*" in the Online Catalogue.

6 Results

With the completion of this Application Note, we know how to configure the basic settings, such as the IP address of the devices. Besides, we know how to connect and log in to the devices' web interfaces. Furthermore, we can use them simultaneously without an IP traffic collision.

7 List of tables

8 List of figures