

FAQ's Training Factory Industry 4.0 24V

With which PLC brands and configurations can I control the Training Factory Industry 4.0, 24V?

The Training Factory Industry 4.0 24V can generally be controlled with any PLC that meets the requirements of the model. The requirements can be seen in this [document](#).

How do I connect my PLC to the model? Are there allocation plans for this?

We provide free of charge on the product detail page the assignment plans for the Training Factory Industry 4.0 24V. Alternatively you can download the document directly [here](#).

Where can I find the free basic program?

fischertechnik provides a basic program for the Training Factory Industry 4.0 24V free of charge. This program is written in Structured Text and works ideally on a Siemens S7-1500. If you use a different controller, you must adapt the program accordingly. Our basic program is available on [GitHub](#).

Is the basic program subject to a fee or license?

The sample programs can be [downloaded](#) free of charge. A license is usually required for the respective PLC control. Siemens, for example, requires a license for TIA Portal v16.

Can I change the basic program and/or replace it with another program?

GitHub's basic program can be customized from the PLC control. [More information](#).

Where can I find the source code of the basic program as structured text (ST/SCL)?

You can download the source code for the base program from [GitHub](#).

Are there exercises or test tasks for Training Factory Industry 4.0 for trainees?

On fischertechnik's website there are tasks and exercises in the accompanying booklet of the Training Factory 4.0 24V, which is available for download on [fischertechnik's eLearning portal](#).

Which PLC modules do I need to use the free basic program?

On the product detail page under "Documents for download", we recommend assemblies that work ideally with the basic program. The link below will take you directly to this [recommendation](#).

How can I use the basic program with another PLC brand or model?

The source code of the basic program, which can be [downloaded](#) as SCL from, must be adapted to the respective PLC control.

What do I have to pay particular attention to with my existing PLC control system in order to use Training Factory Industry 4.0 24V?

An additional requirement is the OPC/UA interface, which is needed for Training Factory Industry 4.0 24V.

How many inputs and outputs does the Training Factory Industry 4.0 24V have?

You can see the number of inputs and outputs in this [technical data sheet](#).

Can I connect my own cloud to Training Factory Industry 4.0 24V?

Yes, your own cloud can either be connected directly to the PLC controller or via the open source [platform Node-RED](#) on the Raspberry Pi 4 by adapting the interface.

Can I design my own dashboard for the Training Factory Industry 4.0 24V?

Yes, the existing local dashboard can be extended or adapted via the open source [platform Node-RED](#) on the Raspberry Pi 4

Which version of the Raspberry Pi is integrated in the Training Factory Industry 4.0 24V?

The "Raspberry Pi 4" is integrated.

Which sensors are included in Training Factory Industry 4.0 24V?

The following sensors are included in the model: Light barriers, push buttons, color sensors, environmental sensor (measured variables: temperature, air pressure, humidity, air quality) and camera.

Is there a manual or accompanying material for Training Factory Industry 4.0 24V?

Yes, this can be [downloaded](#) free of charge.

With which software were the PLC examples created?

The examples were created with the Siemens software TIA Portal v16

Why is a fischertechnik TXT Controller 9V included although it is the Training Factory Industry 4.0 in 24V version?

The TXT Controller is required for connection to the environmental sensor, light sensor, NFC reader and the USB camera in the model. The TXT Controller also communicates with the fischertechnik cloud and is a necessary component of Training Factory Industry 4.0 24V. What it sends to the ft-cloud via the MQTT protocol is translated into OPC-UA by the Raspberry Pi and forwarded to the PLC. The Raspberry Pi allows communication in MQTT as well as in OPC-UA. This is clearly illustrated in the block diagram which can be found in the [download area](#) of the product detail.

Which IP addresses are reserved for the controllers used in the Training Factory Industry 4.0 24V?

The following IP addresses are used:

SPS: 192.168.0.1

Raspberry Pi: 192.168.0.5

TXT controller: 192.168.0.10

Which operating system and which configuration does the Raspberry Pi in the Training Factory Industry 4.0 24V have?

For the IOT Gateway (Raspberry Pi) in the Training Factory Industry 4.0 24V a completely configured 4GB µSD card is delivered. The current "Raspian lite buster" image is used as basis. The Node-RED environment can be opened via the IP address 192.168.0.5:1880 and the program on the Raspberry Pi can be adapted to your own needs.

What are the Internet connection requirements for Training Factory Industry 4.0 24V?

Proxy settings are not supported by the TXT Controller. Ports for MQTT (1883 and 8883) and NTP service must be enabled.

When connecting to the fischertechnik cloud, the QR Code appears and is then immediately hidden. Coupling with the fischertechnik cloud is not possible. What is the reason?

Proxy settings are not supported by the TXT Controller, please use an Internet connection without proxy.