TURCK

Your Global Automation Partner

UHF-SYS-TUNNEL...
RFID System Solution

Instructions for Use

Contents

1 About these instructions

These instructions describe the setup, functions and use of the product and help you to operate the product according to its intended purpose. Read these instructions carefully before using the product. This will prevent the risk of personal injury and damage to property. Keep these instructions safe during the service life of the product. If the product is passed on, pass on these instructions as well.

1.1 Target groups

These instructions are aimed at qualified personal and must be carefully read by anyone mounting, commissioning, operating, maintaining, dismantling or disposing of the device.

1.2 Explanation of symbols

The following symbols are used in these instructions:

	**DANGER** DANGER indicates a hazardous situation with a high level of risk, which, if not avoided, will result in death or serious injury.
	**WARNING** WARNING indicates a hazardous situation with a medium level of risk, which, if not avoided, will result in death or serious injury.
	**CAUTION** CAUTION indicates a hazardous situation with a medium level of risk, which, if not avoided, will result in moderate or minor injury.
	**NOTICE** CAUTION indicates a situation which, if not avoided, may cause damage to property.
	**NOTE** NOTE indicates tips, recommendations and important information about special action steps and issues. The notes simplify your work and help you to avoid additional work.
▶	**MANDATORY ACTION** This symbol denotes actions that the user must carry out.
⇨	**RESULT OF ACTION** This symbol denotes the relevant results of an action.

1.3 Other documents

Besides this document, the following material can be found on the Internet at www.turck.com:

- Instructions for Use for the reader
- Data sheet
- Approvals
- Configuration manual

1.4 Naming convention

Read/write devices in the HF are called “read/write heads” and “readers” in the UHF area. “Tag”, “transponder” and “mobile data memory” are common synonyms for “data carriers”.

1.5 Feedback about these instructions

We make every effort to ensure that these instructions are as informative and as clear as possible. If you have any suggestions for improving the design or if some information is missing in the document, please send your suggestions to techdoc@turck.com.

2 Notes on the product

2.1 Product identification

These instructions apply to the following RFID system solutions:

UHF – SYS – TUNNEL – Q660L720 – EU

UHF Frequency range – SYS System solution – TUNNEL Application –

Frequency range
UHF UHF Frequency range

System solution
SYS Standard solution

Application
TUNNEL RFID tunnel

Q660L720 Design – EU Country of deployment

Design
Q…L… RFID-tunnel, opening size H × B in mm

Country of deployment
AUS Australia/New Zealand
BRA Brazil
CHN China
EU EU, Turkey, India
JPN Japan
KOR Korea
MYS Malaysia
NA North America (USA, Canada, Mexico)
SGP Singapore

2.2 Scope of delivery

The delivery consists of the following:

- RFID tunnel
  - 2 side parts
  - Base plate
  - Cover plate
  - Front cover
  - Back
  - 4 × feet
- 1 × TN-UHF-Q180L300…LNX UHF reader
- 4 × UHF antennas TN-UHF-ANT-Q150…
- 5 × aluminum mounting plates for readers and antennas
- Installation material
  - 16 × M6 × 16 fillister head screws (ISO 7380-1)
  - 24 × M8 × 24 fillister head screws (ISO 7380-1)
  - 4 × M8 × 50 hexagon head screws (ISO 4014)
  - 4 × M8 × 70 hexagon head screws (ISO 4014)
  - 8 × M8 nuts (DIN 934 A4)
  - 20 × knurled screws M6
- Extension cables
  - RSSD-RJ45S-4422-5M Ethernet cable for connecting the reader
  - RSC4T-5/TXL supply cable
  - TN-UHF-CBL-HF240-RPTNC-2-SMA coaxial cable for connecting the antennas
  - Voltage
- Installation instructions

2.3 Turck service

Turck supports you in your projects – from the initial analysis right through to the commissioning of your application. The Turck product database at **www.turck.com** offers you several software tools for programming, configuring or commissioning, as well as data sheets and CAD files in many export formats.

For the contact details of our branches worldwide, please see page [▷ 35].

3 For your safety

The product is designed according to state of the art technology. Residual hazards, however, still exist. Observe the following safety instructions and warnings in order to prevent danger to persons and property. Turck accepts no liability for damage caused by failure to observe these safety instructions.

3.1 Intended use

The RFID tunnel is a UHF system for use on conveyor belts or as an independent reading station. Typical applications are:

- Simple industrial conveyor applications in which individual boxes or items are detected with an RFID reader and read errors on the rear side or in the immediate vicinity of the reader are to be limited (e.g. for parallel conveyor belts or in other storage areas)
- Detection of multiple items in boxes or on pallets
- Verification of shipment or package contents

The RFID tunnel consists of a metal housing for self-assembly, a TN-UHF-Q180L300-…-LNX RFID reader, four TN-UHF-ANT-Q150… passive RFID antennas, and connection and installation materials.

Type designation	Operating frequency	Application area
TN-UHF-Q180L300-AUS-LNX	920…926 MHz	Australia, New Zealand
TN-UHF-Q180L300-BRA-LNX	915…928 MHz	Brazil
TN-UHF-Q180L300-CHN-LNX	920.5…924.5 MHz	China
TN-UHF-Q180L300-EU-LNX	865…868 MHz	Europe, Türkiye, India
TN-UHF-Q180L300-JPN-LNX	916.7…920.9 MHz	Japan
TN-UHF-Q180L300-KOR-LNX	917…920.8 MHz	Korea
TN-UHF-Q180L300-MYS-LNX	919…923 MHz	Malaysia
TN-UHF-Q180L300-NA-LNX	902…928 MHz	North America (USA, Canada, Mexico)
TN-UHF-Q180L300-SGP-LNX	920…925 MHz	Singapore

These devices may only be started up under the following conditions:

- The particular frequency range is permissible for the use of UHF-RFID.
- The operating frequency range of the devices is compliant with the permissible UHF RFID range of the region.
- A valid certification and/or approval is available for the region of use.

The device must only be used as described in these instructions. Any other use is not in accordance with the intended use. Turck accepts no liability for any resulting damage.

3.2 General safety instructions

- The device meets the EMC requirements for the industrial areas. When used in residential areas, take measures to prevent radio frequency interference.
- The device must only be fitted, installed, operated, parameterized and maintained by trained and qualified personnel.
- Only use the device in compliance with the applicable national and international regulations, standards and laws.

4 Product description

The RFID tunnel consists of a metallic housing that is located directly at the place of use, e.g. fitted above a conveyor belt, a TN-UHF-Q180…LNX UHF reader and four TN-UHF-ANT-Q150-.... UHF antennas. The TVSnode software is preinstalled on the UHF reader. Extension cables are included for connecting the reader to the control level and to the power supply, as well as for connecting the external antennas.

The metal outer walls of the RFID tunnel limit the reader transmission zone to the right, left, top and bottom. This prevents erroneous readings outside the tunnel.

The UHF tunnel is supplied for self-assembly and can be assembled directly at the intended location. The feet for the UHF tunnel are adjustable and can be adapted, e.g. to the height of a conveyor belt.

4.1 Device overview

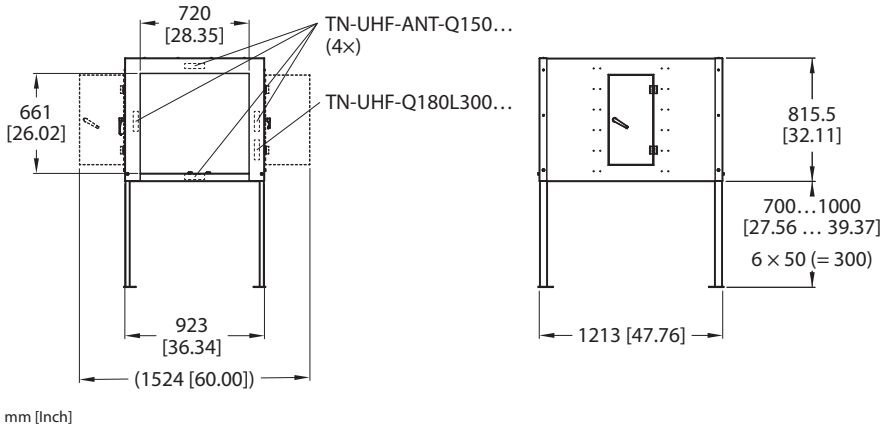


Fig. 1: Dimensions

4.2 Properties and characteristics

- UHF RFID tunnel for (bulk) detection of objects on the conveyor belt
- Preinstalled TVSnode software for commissioning and communication via an integrated REST API
- Recommended distance between objects: > 1.3 m
- Size of the tunnel opening: 720 × 660 mm

4.3 Operating principle

The readers are used for contactless data exchange with tags. For this the controller sends commands and data via the interface to the reader and receives the corresponding response data from the reader. The reading of the IDs of all RFID tags in the read area and the writing of an RFID tag with a specific production date are examples of typical commands. To communicate with the tag, the data of the reader is coded and transferred via an electromagnetic field, which at the same time supplies the tags with power.

A reader contains a transmitter and a receiver, an interface to the interface module and a coupling element (coil and dipole antenna) for communicating with the tag. Electromagnetic wave propagation is used for the transmission between reader and tag on devices for the UHF range.

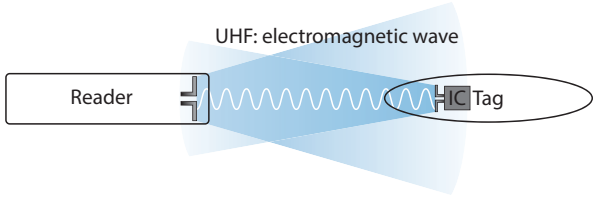


Fig. 2: Operating principle of UHF-RFID

The antenna of the reader generates electromagnetic waves. This produces a transmission window as a so-called air interface in which the data exchange with the tag takes place. The size of the transmission window depends on the combination of readers and tags, as well as on the relevant environmental conditions.

Each reader can communicate with a number of tags. This requires the reader and the tag to operate in the same frequency range. Depending on their power and the frequency in use, the devices have a range of a few millimeters up to several meters. The specified maximum distance between the read/write heads represents values measured under laboratory conditions, free from any influences caused by surrounding materials. Attainable distances may vary due to component tolerances, mounting conditions, ambient conditions and influences caused by surrounding materials (especially metal and liquids).

The OPC UA interface is used to connect the reader to the higher-level system via Ethernet. Up to four additional antennas can be connected via the RFID interfaces. During operation, the process data is exchanged between the higher-level system and RFID system. The OPC UA server integrated into the reader communicates with the OPC UA client of the higher-level system to do this.

4.4 Functions and operating modes

The metal walls of the RFID tunnel prevent the tags located next to, above or below the RFID tunnel being read. The reader transmission zone extends forwards and backwards out of the tunnel through the openings.

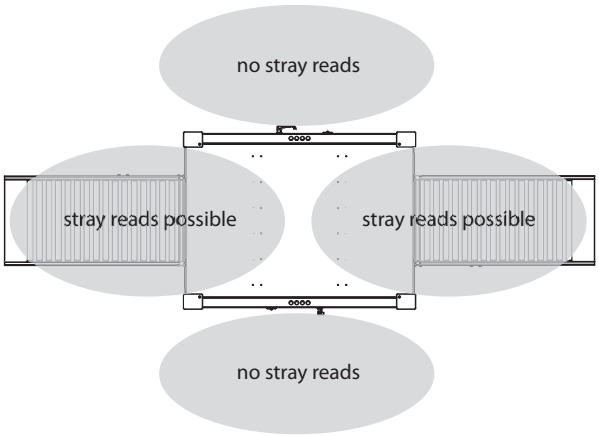


Fig. 3: Transmission zone propagation

Erroneous readings in the areas upstream and downstream of the tunnel can be prevented, for example, by adjusting the output signal or increasing the distance between the objects to be read. For information on preventing erroneous readings, see [▶ 15].

Metallic objects such as the conveyor belt itself can cause RFID signals reflections. Possible reflections depend on the application. Turck recommends performing range tests under real operating conditions.

4.4.1 Reader functions

Details of the functions offered by the UHF reader can be found in the device-specific Instructions for Use (available for download at **www.turck.com**).

4.4.2 Recommended tags

Turck recommends using UHF tags with a max. antenna length of 10 cm. Larger tags can cause erroneous readings outside the tunnel.

If metallic objects are to be identified, tags that are suitable for mounting on metal must be used (on-metal tags). There must be no metal between the tag and the reader during the read operation.

Products with ESD materials or ESD boxes can prevent the tag from being read. On-metal tags or special tags for ESD applications are suitable for applications involving ESD materials.

Suitable UHF tags can be found at **www.turck.com**.

Turck recommends performing range tests under real operating conditions.

4.4.3 Turck Vilant Node software

The reader functions can be configured and parameterized using the preinstalled Turck Vilant Node software. The UHF reader has the basic version of the software. The paid advanced version of the software offers additional features. The advanced version is available from Turck on request.

4.5 Technical accessories

Optionally available accessories for mounting, connecting and parameter setting can be found in the Turck product database at www.turck.com. Accessories are not supplied with the device.

5 Installing

Turck recommends setting up the RFID tunnel around the conveyor systems. The required installation time is approx. 45 min.

- ▶ Have two people install the RFID tunnel.

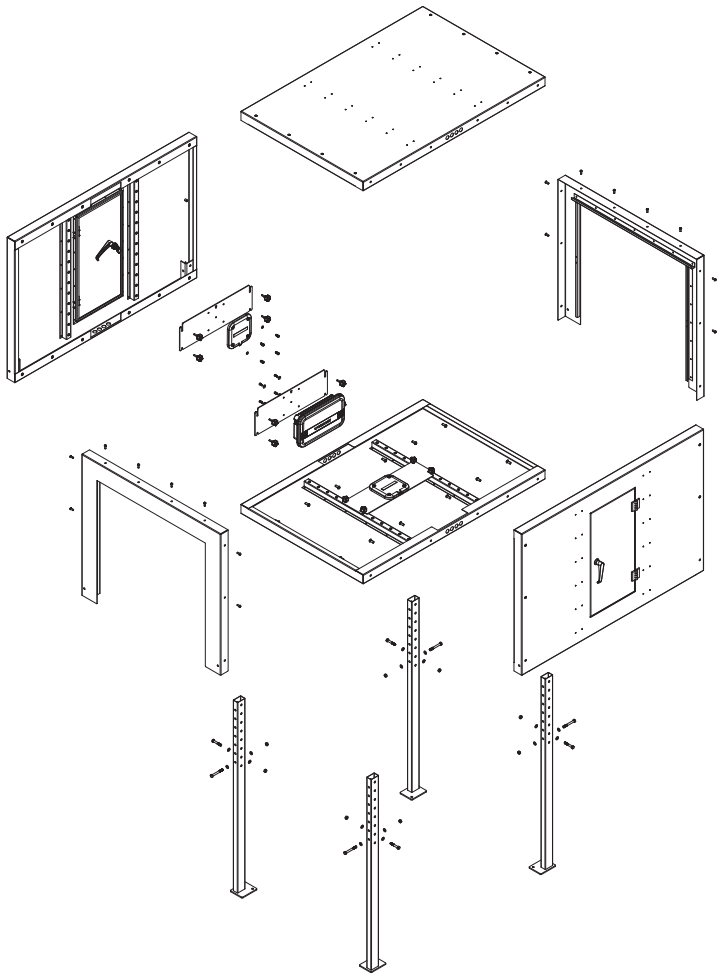


Fig. 4: Assembly diagram for the RFID tunnel

6 Connection

6.1 Connecting the UHF reader

6.1.1 Connecting devices to Ethernet

The device has a 4-pin M12 female connector for connection to an Ethernet system.

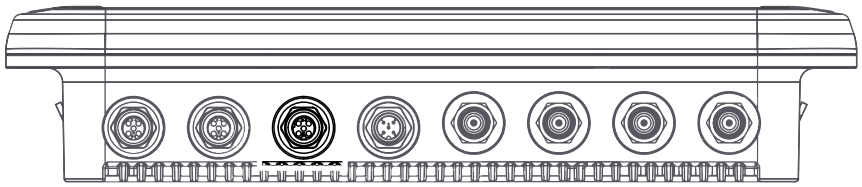


Fig. 5: M12 Ethernet connector

- ▶ Connect the device to Ethernet in accordance with the pin assignment below (max. tightening torque: 0.8 Nm).

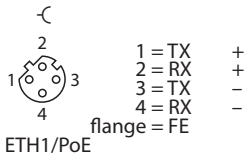


Fig. 6: Pin assignment for Ethernet connections

NOTE
With PoE, the supply voltage is transmitted via PoE Mode A with 4-wire cables.
The use of PoE and 24 VDC simultaneously is not supported.

6.1.2 Connecting the power supply

The device is provided with a 5-pin M12 plug connectors for connecting the power supply.

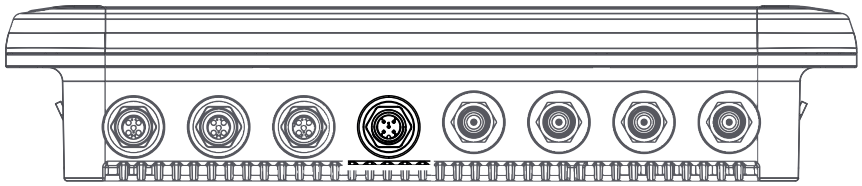


Fig. 7: M12 plug connector for connecting the power supply

- ▶ Connect the device to the power supply as per the following pin assignment (max. tightening torque 0.8 Nm).

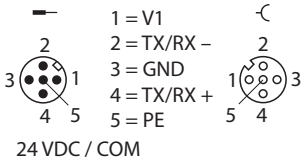


Fig. 8: Pin assignment of the power supply terminals

6.1.3 Connecting external antennas

The device is provided with four RP-TNC sockets for connecting up to four external antennas. The input impedance is 50 Ω.

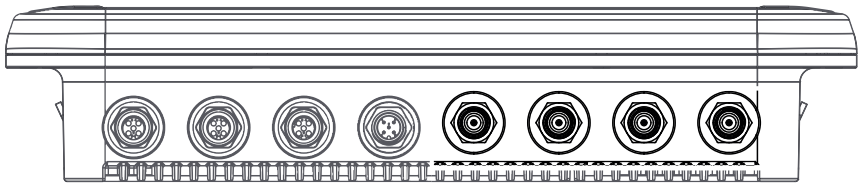


Fig. 9: RP-TNC sockets for connecting external antennas

- ▶ Connect external antennas with an RP-TNC antenna cable to the device (max. tightening torque 0.8 Nm).

7 Commissioning

7.1 Avoiding erroneous readings

The RFID tunnel cannot completely prevent tags outside the tunnel from being read. Unwanted read operations can be limited or prevented as follows:

- Reduce transmission power: Set the transmission power to the lowest level that is required to read all desired tags within the tunnel.
- Determine the required transmission power with example objects and worst-case scenarios under real operating conditions: The largest possible number of tags, reading on metallic objects or testing with other materials that interfere with the read process can be considered as worst-case scenarios.
- Increase the distance between objects on the conveyor belt
- Set filters via Turck Vilant Node: The advanced version of Turck Vilant Node offers the following filters, for example:
  - RSSI filter
  - EPC filter
  - Filter for the number of read operations
  - Filter for tag movements
  - Direction detection
  - Duplicate filter

7.2 Turck Vilant Node: Starting the software

NOTICE
Insufficiently secured devices
Unauthorized access to sensitive data
- ▶ Change the password after the first login. Turck recommends the use of a secure password.

- ▶ Enter the IP address of the browser and port number 8080 in the address bar of a browser.
- ▶ Log on to the reader with a username and password. The default username is **admin**. The default password is **vilantnode**.

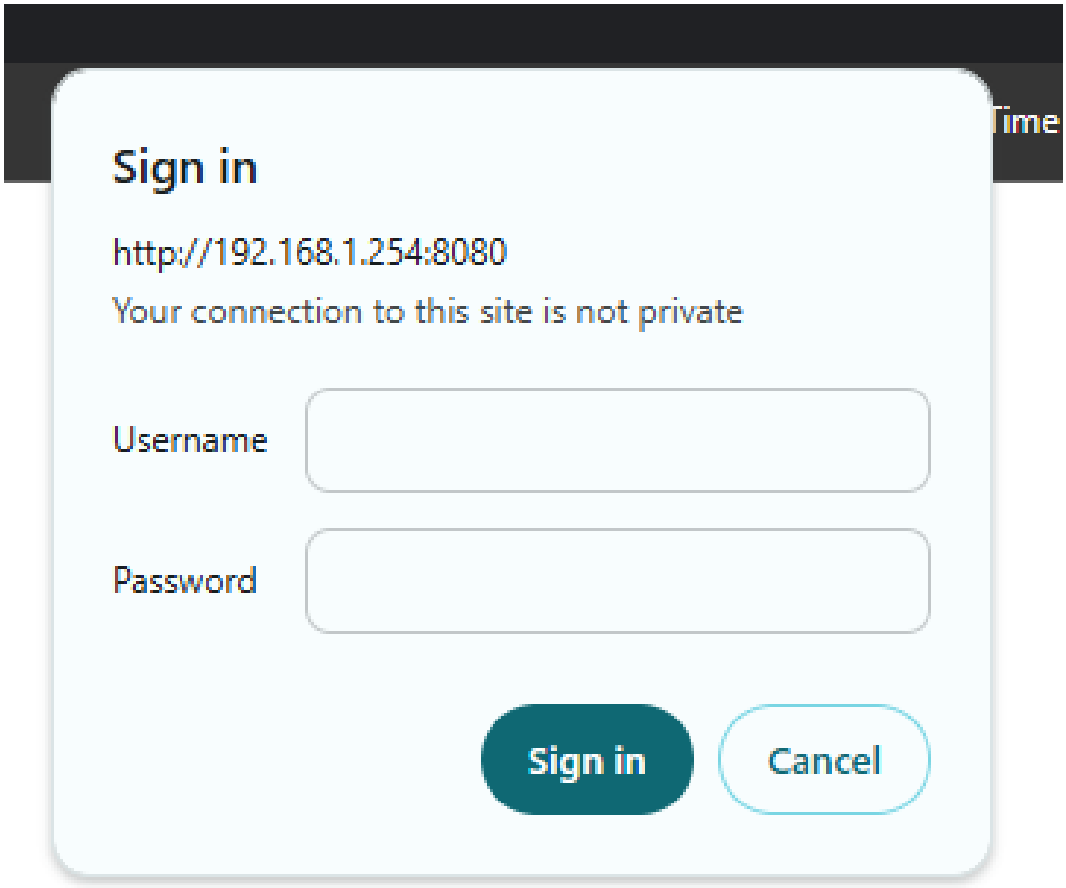


Fig. 10: Entering the IP address

▶ Open the **Configuration** area.

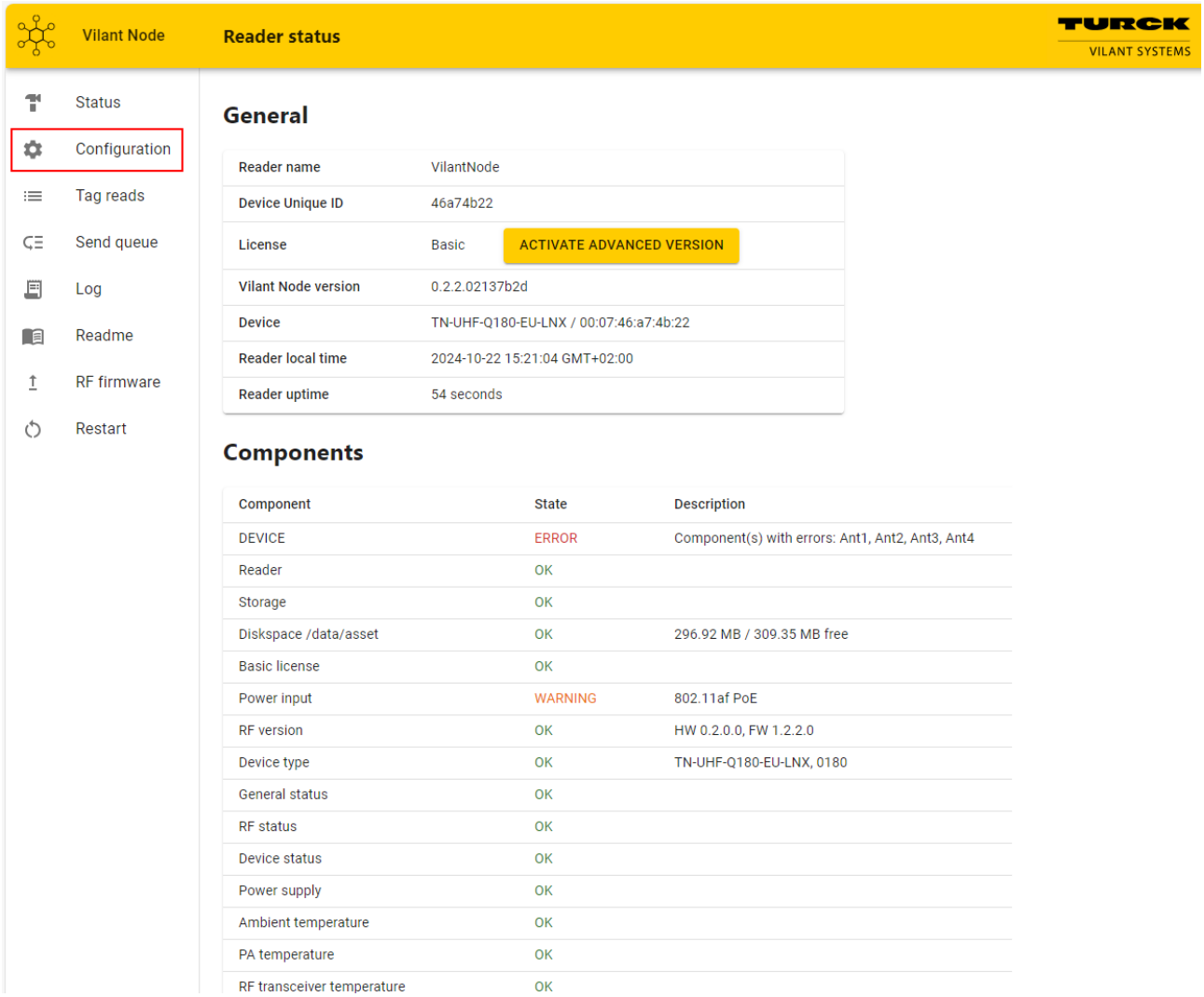


Fig. 11: Opening the Configuration area in Turck Vilant Node

▶ Configure the reader (here: Set transmission zone).

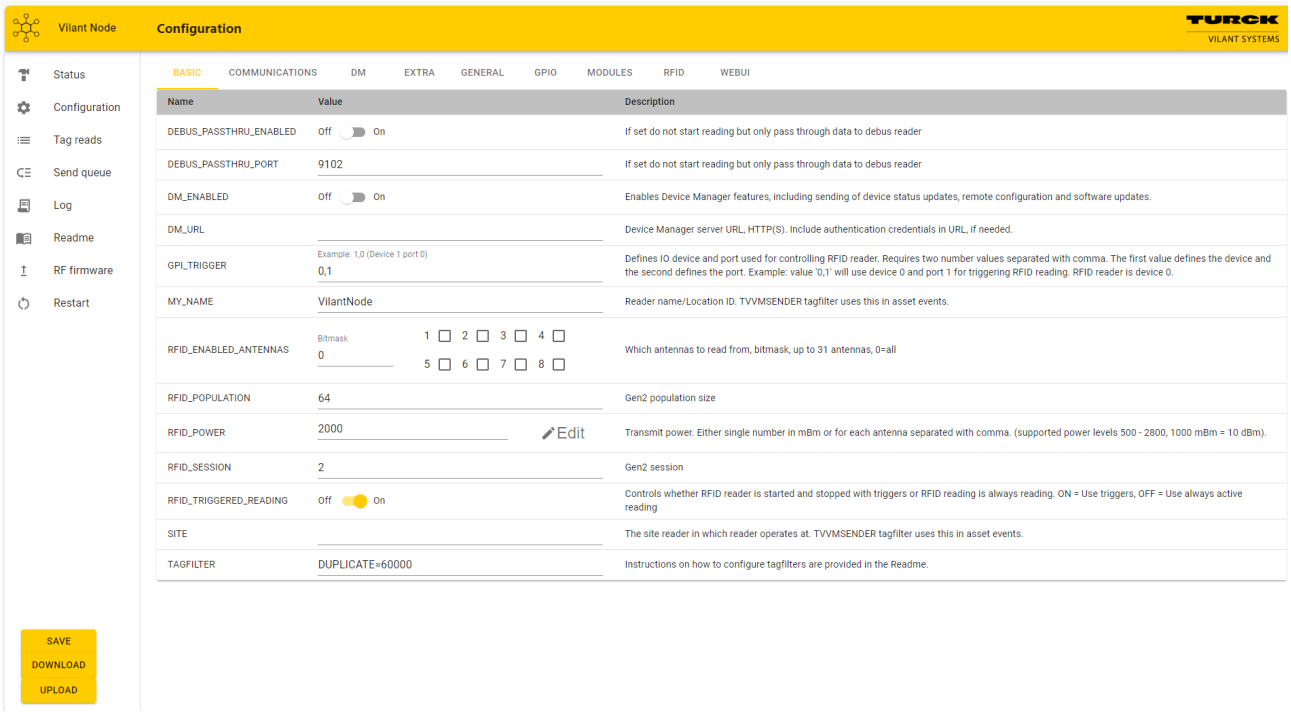


Fig. 12: Configuring the reader in the Turck Vilant Node

7.3 Setting the transmission zone

The reader transmission zone can be adapted to the specific application using the following parameters. Default values are shown in bold.

Setting	Meaning
RFID_SESSION	**Single target, Session 1** With a smaller number of tags, dual-target mode can be used to activate software filters such as tag movement, read count and direction.
RFID_POPULATION	The setting depends on the number of expected tags ■ Low number of tags: 10 ■ Medium number of tags: 20 ■ Large number of tags: 50 Default settings: 64
Antenna transmit time	The setting depends on the number of expected tags ■ Low number of tags: 250 ms ■ Medium number of tags: 500 ms ■ Large number of tags: 500…1000 ms Default settings: 65535 ms

7.4 Typical read times

The values given below are approximate. The typical read times depend, among other things, on the following factors:

- Number of tags to be read
- The transmission zone configuration
- Movement of the objects (static or dynamic reading)

Number of tags	Typical read time
1…100	< 1 s
101…300	< 2 s
More than 300	> 2 s

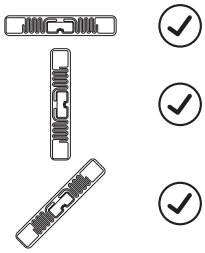
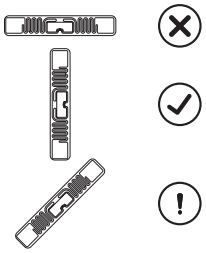
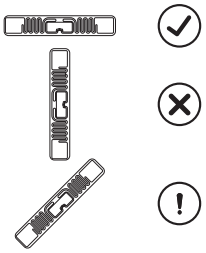
7.5 Maximum speed of the conveyor belt

The maximum speed of the conveyor belt is 1 m/s. If the speed of the conveyor belt is above 1 m/s, the tags cannot be processed reliably.

7.6 Aligning tags

The alignment of the tags depends on the antenna polarization and the alignment of the detection range.

▶ Align the tag according to the following table:

Antenna polarization	Circular	Linear	Linear
Detection range alignment	Left/right	Vertical	Horizontal
Antenna	+	|	—
Tag alignment	Not required	Vertical	Horizontal
			

8 Parameterizing and configuring

The TN-UHF-Q300-LNX reader can be parameterized and configured using the preinstalled Turck Vilant Node software.

8.1 Activating and deactivating the transmission zone: RFID Reading Control

The reader transmission zone can either be continuously active or controlled using triggers.

In the default configuration, the reader transmission zone is active. The reader automatically reads tags located in the field.

Triggers for starting the read operation can be defined using Turck Vilant Node. The reader only reads tags after the trigger has been triggered. Activation and deactivation of the transmission zone can be controlled by several triggers at the same time. Turck Vilant Node supports the following triggers via RFID_TRIGGERED_READING:

Configuration	Description
GPI	**GPI_TRIGGER** can be used to define a GPI signal to activate or deactivate the transmission zone. The signal source can be either a reader or an external sensor. The expected signal status for activating and deactivating the transmission zone can be inverted via **GPI_INVERTED**.
REST	The transmission zone can be activated and deactivated using the **/rfid/start** and **/rfid/stop** REST interfaces.

8.2 JSON data format

The read data is displayed in JSON format in Turck Vilant Node. Data in JSON format is also used for the internal reader functions and kept in STORE. Empty fields and default fields are omitted in JSON.

```json
{
  "EPC": "301588F858009D4473D8D797", // EPC in hexadecimal format
  "URI": "urn:epc:id:sgtin:6438422.000629.19123459991", //
Decrypted URN format
  "userdata": "01234567FFFF", // Read data in hexadecimal format:
TID or user memory
  "direction": "OUT", // Result of direction detection, if used
  "filterchain": 0, // Internal filter chain
  "readcount": 1, // Indicates how often a tag was read (normally
1, as the read operations are processed individually).
  "rssi": -39, // Received signal strength in dBm
  "antenna": 1, // Antenna that read the tag
  "freq": 3, // Frequency that was used during the read operation
(hardware-dependent)
  "phase": 3732, // Phase angle (hardware-dependent)
  "dopplerfreq": 7, // Doppler frequency
  "timestamp": "2024-09-23T07:40:05.520Z" // Time stamp of the
read operation
}
```

8.3 Antenna status

The RFID_ENABLED_ANTENNAS configuration parameter consists of a bit mask for activating the individual antennas.

▶ Activate antennas via the following inputs:

- 1: Activate external antenna 1
- 2: Activate external antenna 2
- 3: Activate external antenna 3
- 4: Activate external antenna 4
- Combinations (e.g. 1,2): Activate multiple external antennas (e.g. antenna 1 and antenna 2)

8.4 Interfaces: HTTP and REST

Turck Vilant Node includes an HTTP server. The reader can be accessed via ports 8080 and 8081 (SSL). The port addresses that are used for access can be configured via **HTTPD_PORT** and **HTTPSD_PORT**.

NOTICE
Insufficiently secured devices
Unauthorized access to sensitive data
▶ Change the password after the first login. Turck recommends the use of a secure password.

▶ Open Turck Vilant node: Enter **http://<reader_IP_address>:8080** in the address bar of a browser window.

▶ Log on to the reader with the following credentials:
Username: admin
Password: vilantnode

Turck Vilant Node supports the following commands:

Command	Function
POST /rfid/start	Starts the read operation
POST /rfid/stop	Ends the read operation
POST /rfid/write	Writes an EPC to a tag
GET /rfid/store	Shows a list of tags currently in the STORE module
GET /rfid/status	Queries the reader status
POST /rfid/gpo	Controls the reader status or the connected GPIO devices
GET /kill	Changes the reader status with URL query arguments
POST /inject	Changes the format for the read data
GET /rfid/config	Queries the reader configuration
POST /rfid/config	Overwrites the reader configuration

A comprehensive explanation of the commands can be found in Turck Vilant Node under **Readme**.

8.5 MQTT

NOTE
In the following descriptions, <id> is used as a placeholder for the reader ID. The individual ID can be found in the information on license activation.

The advanced version of Turck Vilant Node includes some standard functions via MQTT. MQTT functions cannot be used with a standard license. To purchase the advanced license, please reach out to your contact person at Turck.

The MQTT functions can be adapted to specific applications.

- Establish a connection to the MQTT server using the MQTT_SERVER configuration in a URL format. Examples: **mqtt://server** or **mqtts://server:8886**
- Log on to the MQTT server using MQTT_USERNAME and MQTT_PASSWORD. If no username and password are specified, an unauthenticated connection is established.

Turck Vilant Node supports the following commands:

Command	Function
App Status: /tvs/<id>/status	If an MQTT subscriber has been configured, the software sends status updates to the MQTT broker.
Tag Events: /tvs/<id>/reads	If an MQTT broker is available, the subscriber system receives messages for each tag event.
Config Data: /tvs/<id>/config	Receives the reader configuration when this is requested via cmd/config/get
Config Get Request: /tvs/<id>/cmd/config/get	Sends a GET command to the reader to provide the configuration
Config Set Request: /tvs/<id>/cmd/config/set	Writes configuration data (Config Data) to the reader
RFID Reader Start: /tvs/<id>/cmd/rfid/start	Starts the read operation
RFID Reader Stop: /tvs/<id>/cmd/rfid/stop	Ends the read operation
GPIO Events Data: /tvs/<id>/gpio	Queries GPIO events
GPIO Event Request: /tvs/<id>/cmd/gpio	Controls the GPIO ports

A comprehensive explanation of the commands can be found in Turck Vilant Node under **Readme**.

8.6 Function blocks: Modules

Turck Vilant Node contains preprogrammed function blocks to process reader data. The function blocks can be linked under **Modules** to create simple programs.

To process data, the **RFID_READER** and **STORE** modules are required as a minimum. A comprehensive explanation of the modules can be found in Turck Vilant Node under **Readme**.

Module	Function
RFID_READER	Module for the RFID reader
DUPLICATE	Duplicate filter
EVENTSENDER	Sends events to a defined end point
STORE	Module for storing data and events
RSSI	Sends events based on the received RSSI value
EPCHEX	EPC-based filter function
DIRECTION (Pro license required)	Direction detection for tags
ANTENNA	Antenna-based filter function
INPUT	Receives input data from an external I/O device
OUTPUT	Sends output data to an external I/O device
EPCMANGLE	Changes the data during the read operation
SEEN	Sends events when a tag is detected
MQTT SENDER (Pro license required)	Sends events via MQTT
TIMEOUT	Enables timeout-based triggers
DELAY	Allows a trigger signal to be delayed
AND & OR	Allows functions and modules to be logically connected
MIN_READCOUNT (Pro license required)	Enables filter functions depending on the number of read operations
TAGDATA	Supplements the read data with an additional Info field

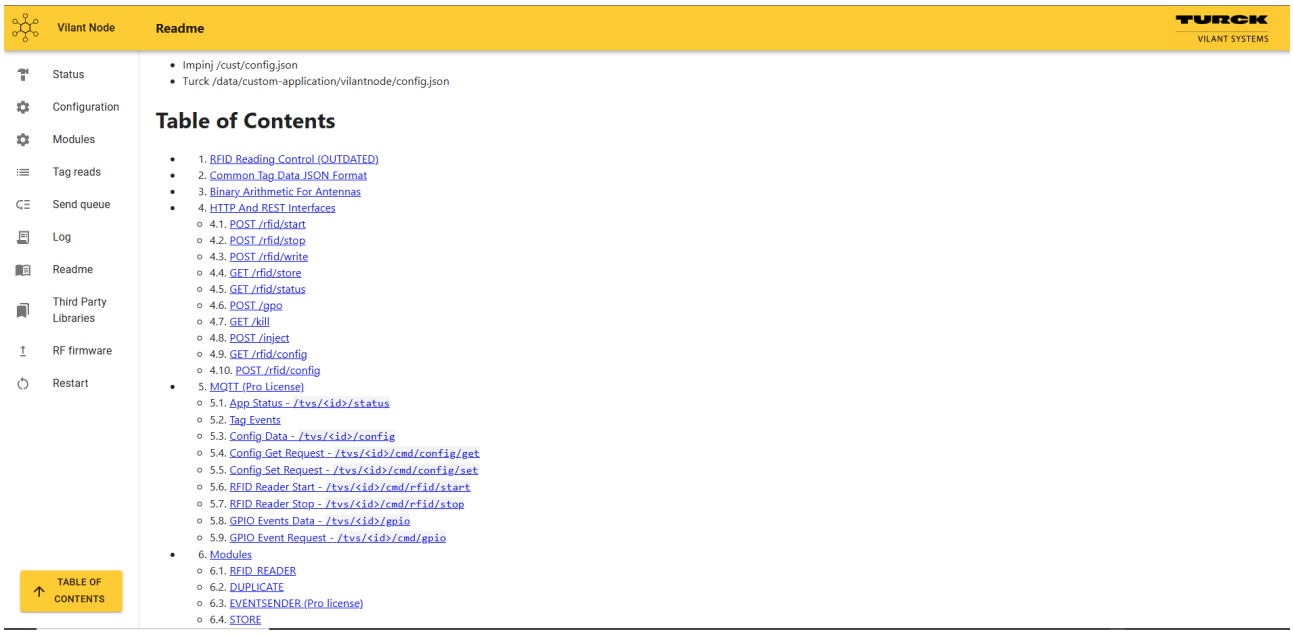


Fig. 13: Turck Vilant Node: Readme

8.6.1 Example: Creating modules

In the following example, the RFID_READER and STORE modules are created in Turck Vilant Node.

▶ Open the module configuration feature in Turck Vilant Node: Click on **Modules**.

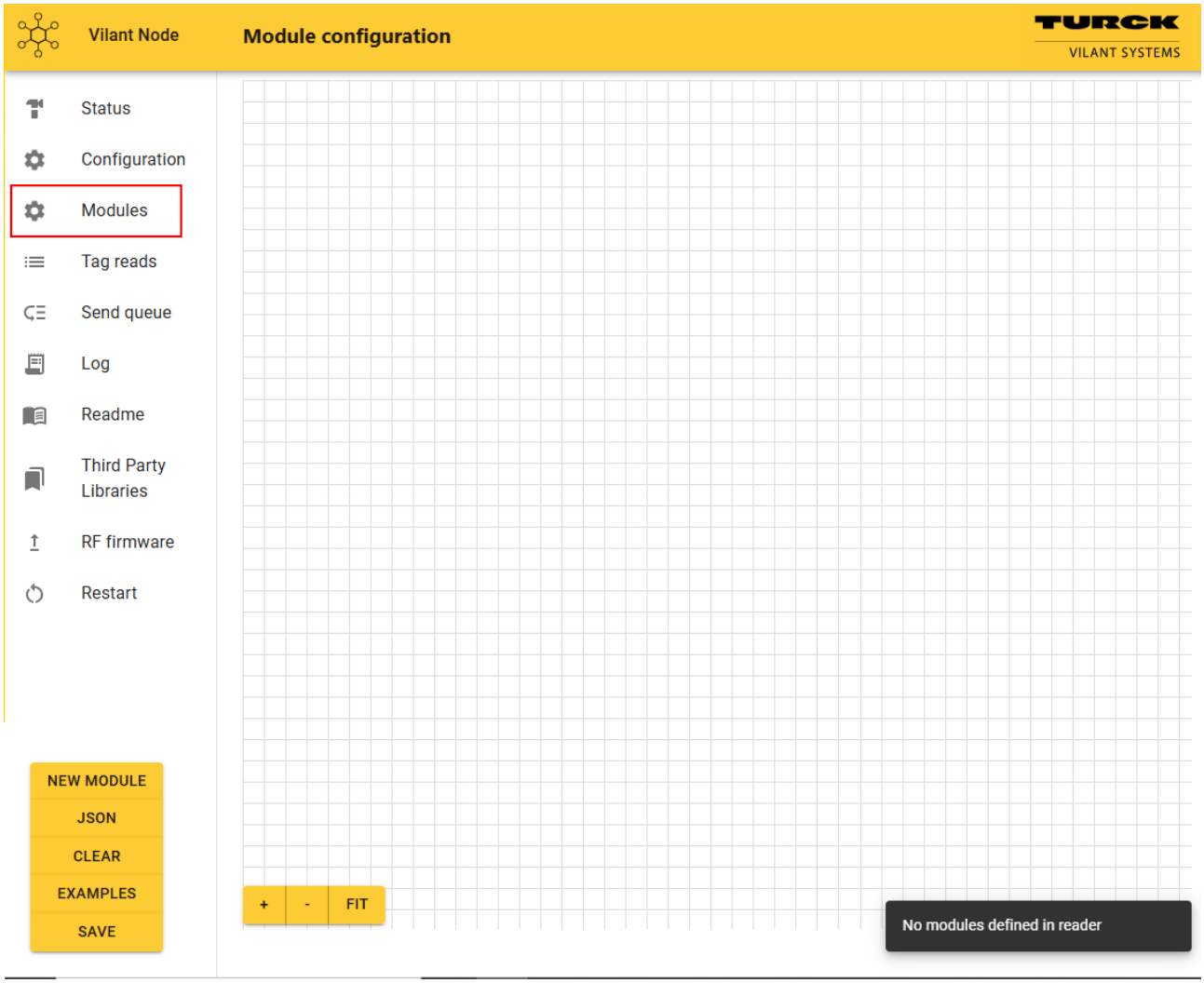


Fig. 14: Opening the Modules area

- Add modules: Click on **New Module** and drag and drop the desired module into the configuration area (in this case: RFID_READER).

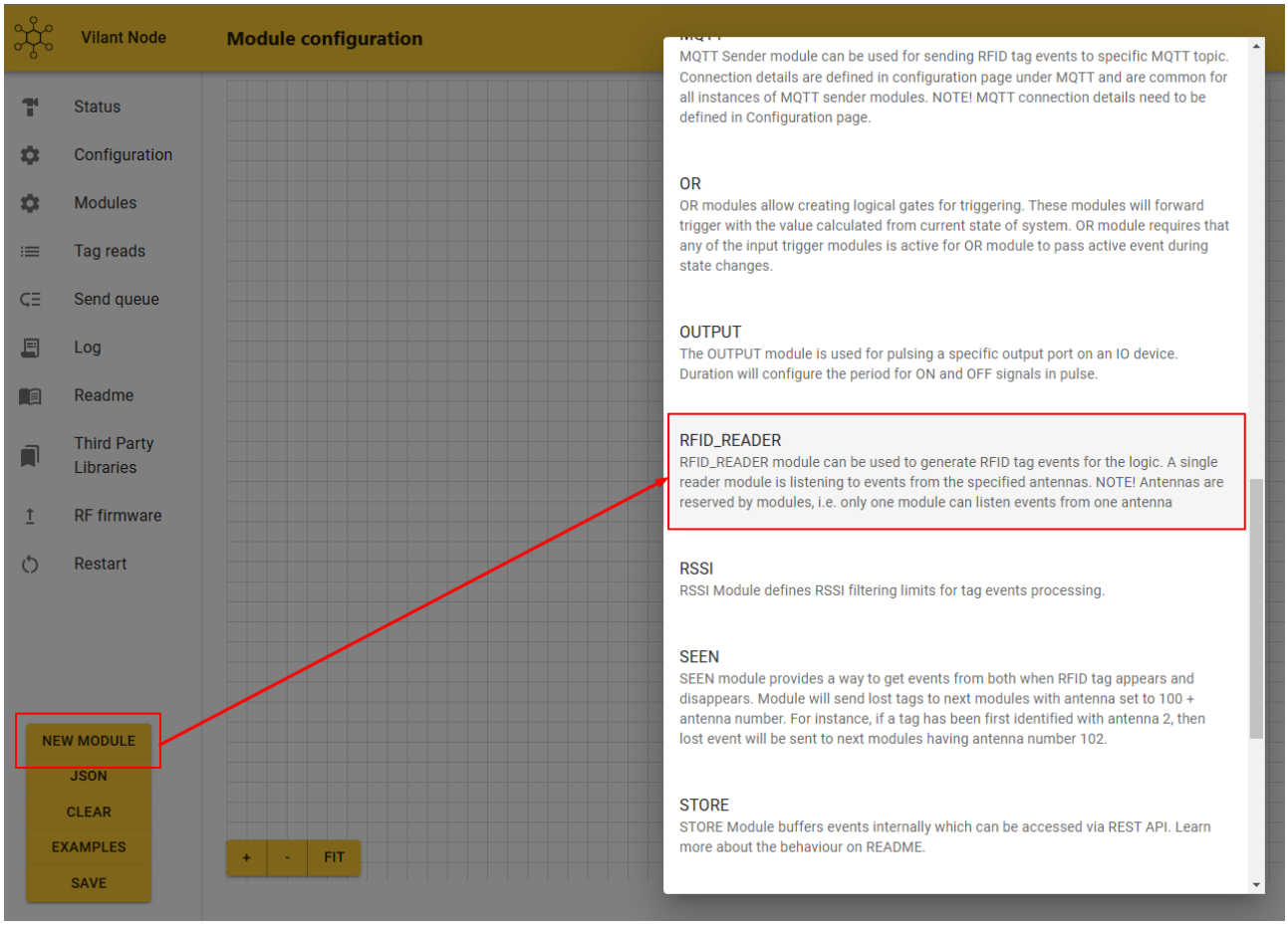


Fig. 15: Adding the RFID_READER module

- Add additional modules. The RFID_READER and STORE modules must always be present.
- Connect the inputs and outputs of the modules using drag-and-drop.

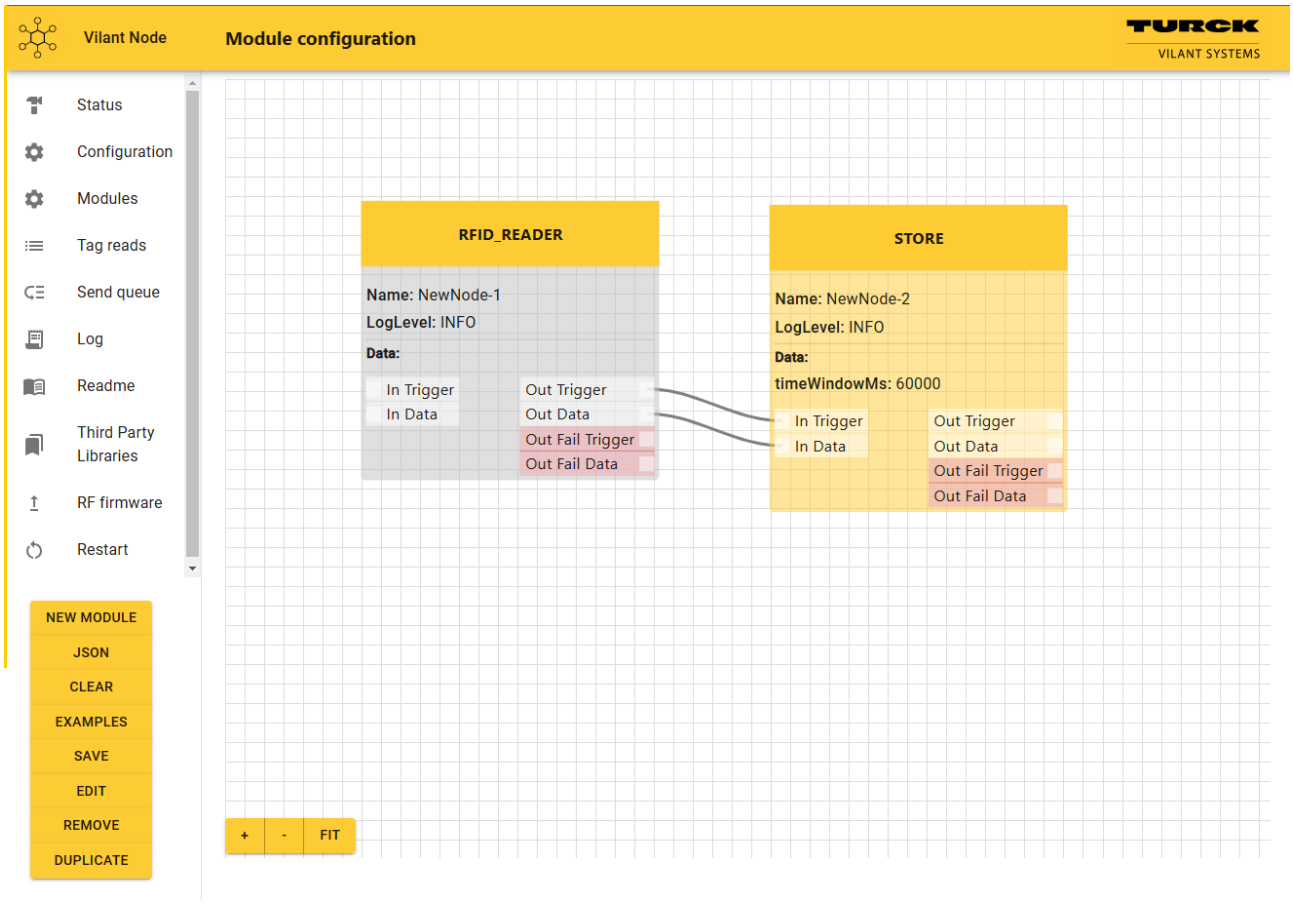


Fig. 16: Adding additional modules (in this case: STORE)

▶ Save the module configuration.

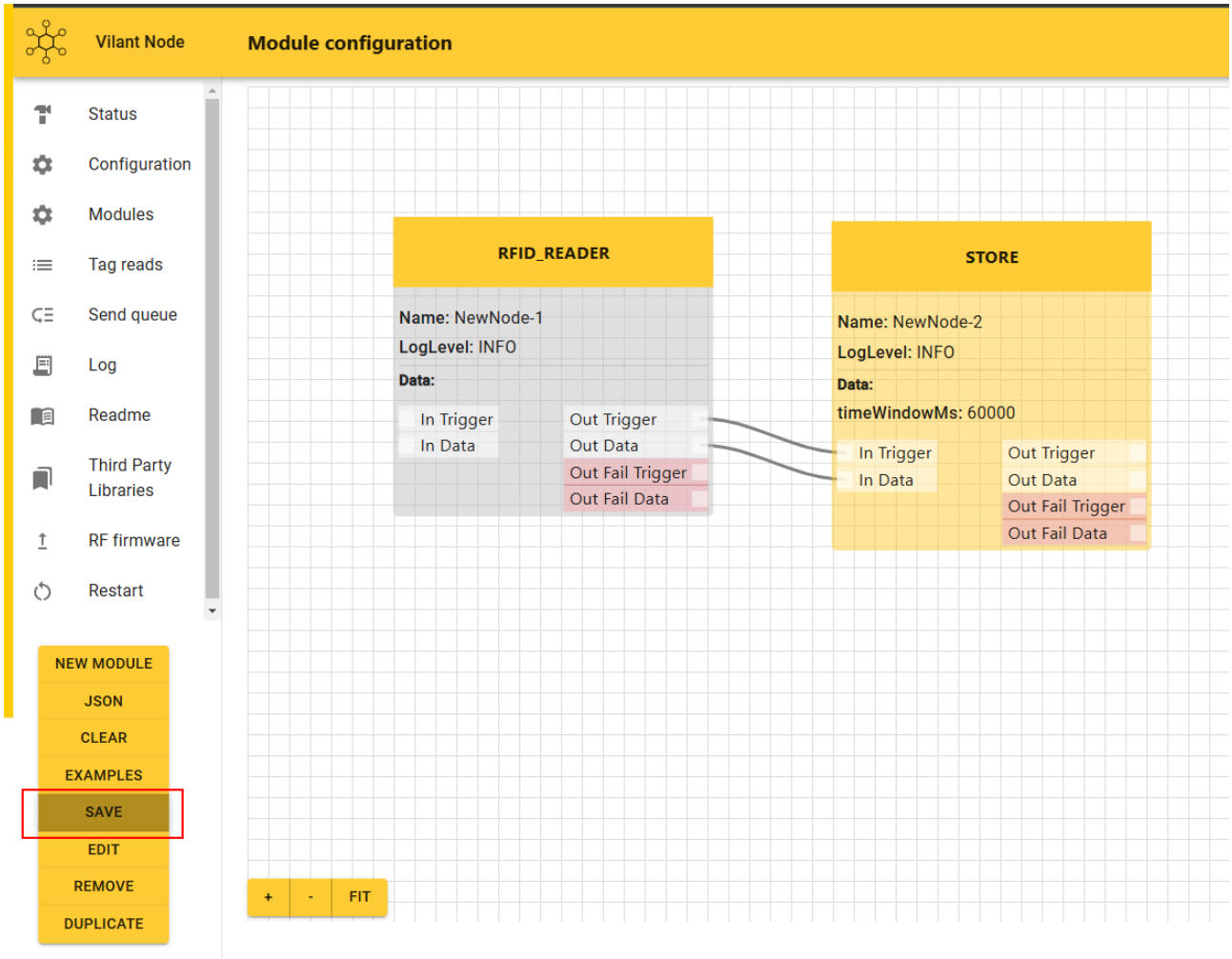


Fig. 17: Saving the module configuration

8.6.2 Creating a JSON file

For support purposes, the programs created in the Modules area can be opened in JSON format.

- ▶ Click JSON in the selection menu.
- ⇨ The module configuration is displayed in JSON format.

Example:


```
{
"modules":
   {"Node-1737019719831":
      {"type":"RFID_READER","logLevel":6,"data":
{"reader":0,"antennas":[1],"readingActive":false}},
   "Node-1737019737044": {"type":"STORE","logLevel":6,"data":
{"timeWindowMs":60000,"keep":true}}},
"connections":
   [

   {"source":"Node-1737019719831","target":"Node-1737019737044",
"type":"TRIGGER","fail":false},

   {"source":"Node-1737019719831","target":"Node-1737019737044",
"type":"DATA","fail":false}
   ]
}
```


8.7 Digital I/O channels

Turck Vilant Node supports control of external I/O devices using GPIOs. In Turck Vilant Node, under Readme, you will find further information on controlling external I/O modules as well as simple programming examples.

9 Operation

9.1 UHF reader: LEDs

The meaning of the LED displays on the reader can be found in the device-specific Instructions for Use.

10 Troubleshooting

If the device does not work as expected, proceed as follows:

- Exclude environmental disturbances.
- Check the connections of the device for errors.
- Check device for parameterization errors.

If the malfunction persists, the device is faulty. In this case, decommission the device and replace it with a new device of the same type.

11 Maintenance

11.1 Installing Turck Vilant Node retrospectively

The Turck Vilant Node software is preinstalled when the system solution is delivered. Retrospective installation is only necessary if a reader has been reset to the factory settings or if a reader has been replaced. The software must be installed using the web server's firmware update function.

Installing the software via the web server

- Connect the device to a PC via the Ethernet interface.
- Open the device web server. Enter the IP address of the device in the address bar of the browser or start the web server using TAS.
- Click **Firmware** in the web server.

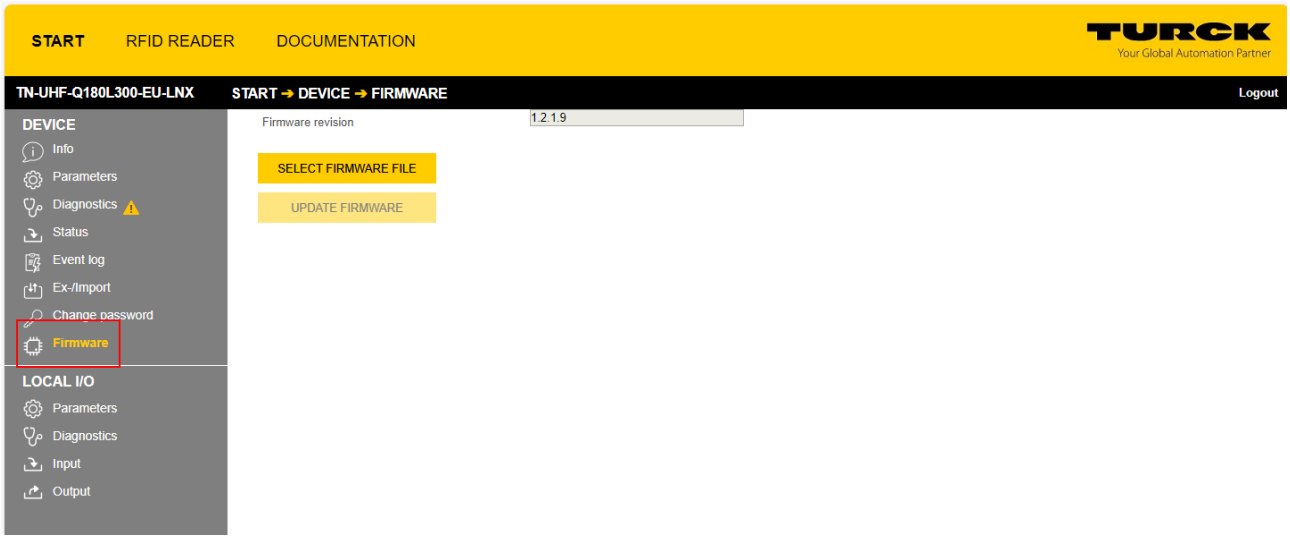


Fig. 18: Opening the firmware update function in the web server

▶ Select the update file.

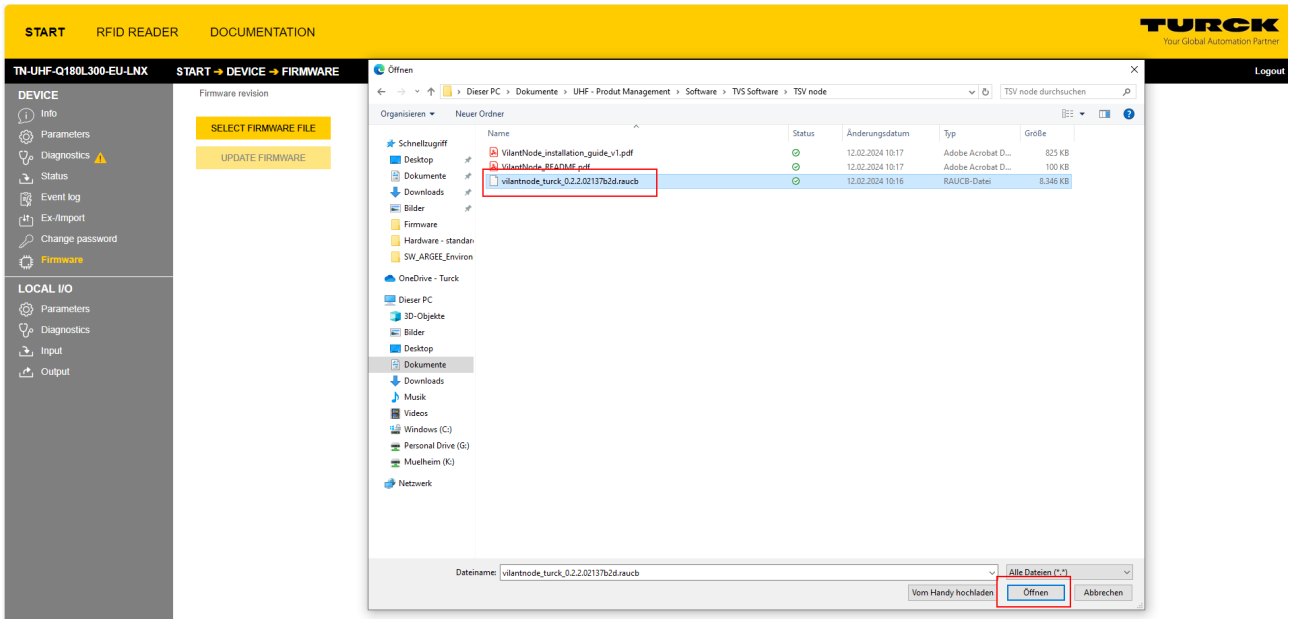


Fig. 19: Update file

▶ Start installing the update using the **UPDATE FIRMWARE** button.

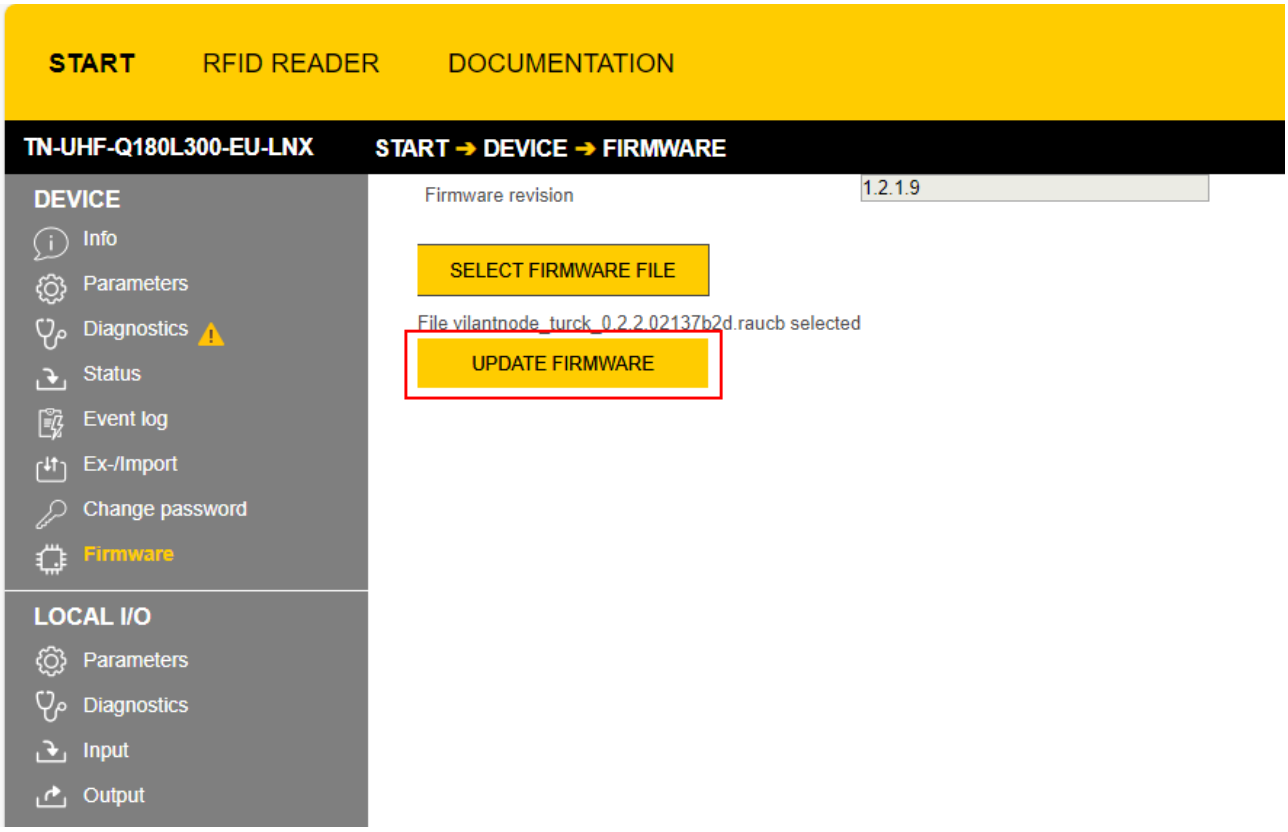


Fig. 20: Starting the update

▶ Confirm installation by clicking **OK**.

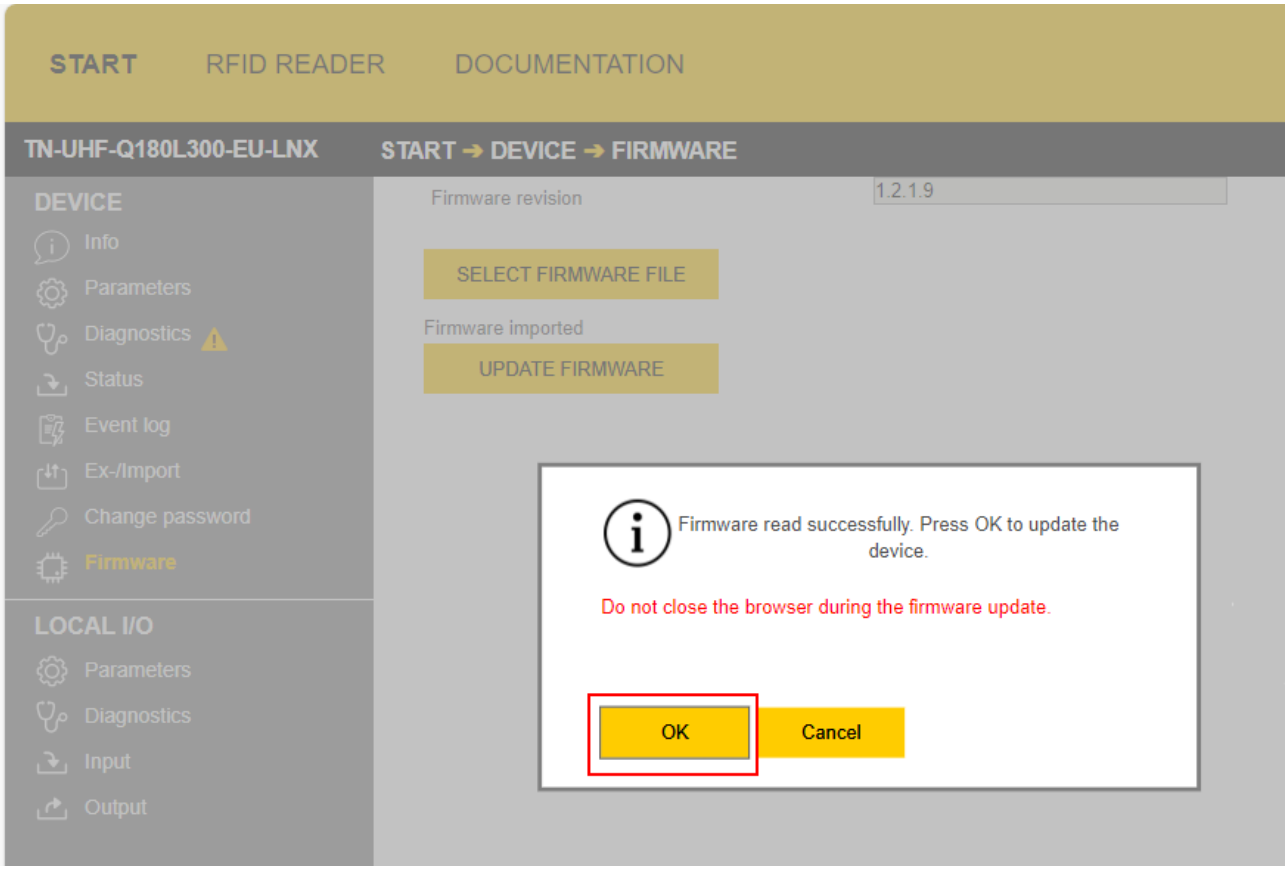


Fig. 21: Confirming installation

11.2 Updating the reader

Information on updating the reader can be found in the device-specific Instructions for Use.

12 Repair

The device is not intended for repair by the user. The device must be decommissioned if it is faulty. Observe our return acceptance conditions when returning the device to Turck.

12.1 Returning devices

If a device has to be returned, bear in mind that only devices with a decontamination declaration will be accepted. This is available for download at
https://www.turck.de/en/return-service-6079.php
and must be completely filled in, and affixed securely and weather-proof to the outside of the packaging.

13 Disposal

The devices must be disposed of properly and do not belong in the domestic waste.

14 Technical data

	UHF-SYS-GATE-PASS...
Electrical data	
Operating voltage U_B	12…30 VDC
DC rated operating current I_e	≤ 1200 mA
PoE standard	IEEE 802.3at (PoE+)
Data transfer	Electromagnetic AC field
Technology	UHF-RFID
Radio communication and protocol standards	ISO 18000-63 EPCglobal Gen 2
Mechanical data	
Ambient temperature	-30…+50 °C
Dimensions	1213 × 923 × 1515 mm
Housing material	Metal, yellow
Protection class	IP67
System description	
Network protocol	TCP/IP REST API
Programming interface	Ethernet
System data	
Web server	Default: 192.168.1.254:8080

15 Turck branches — contact data

Germany	Hans Turck GmbH & Co. KG Witzlebenstraße 7, 45472 Mülheim an der Ruhr www.turck.de
Australia	Turck Australia Pty Ltd Building 4, 19-25 Duerdin Street, Notting Hill, 3168 Victoria www.turck.com.au
Austria	Turck GmbH Graumanngasse 7/A5-1, A-1150 Vienna www.turck.at
Belgium	TURCK MULTIPROX Lion d'Orweg 12, B-9300 Aalst www.multiprox.be
Brazil	Turck do Brasil Automação Ltda. Rua Anjo Custódio Nr. 42, Jardim Anália Franco, CEP 03358-040 São Paulo www.turck.com.br
Canada	Turck Canada Inc. 140 Duffield Drive, CDN-Markham, Ontario L6G 1B5 www.turck.ca
China	Turck (Tianjin) Sensor Co. Ltd. 18,4th Xinghuazhi Road, Xiqing Economic Development Area, 300381 Tianjin www.turck.com.cn
Czech Republic	TURCK s.r.o. Na Brne 2065, CZ-500 06 Hradec Králové www.turck.cz
France	TURCK BANNER S.A.S. 11 rue de Courtalin Bat C, Magny Le Hongre, F-77703 MARNE LA VALLEE Cedex 4 www.turckbanner.fr
Hungary	TURCK Hungary kft. Árpád fejedelem útja 26-28., Óbuda Gate, 2. em., H-1023 Budapest www.turck.hu
India	TURCK India Automation Pvt. Ltd. 401-403 Aurum Avenue, Survey. No 109 /4, Near Cummins Complex, Baner-Balewadi Link Rd., 411045 Pune - Maharashtra www.turck.co.in
Italy	TURCK BANNER S.R.L. Via San Domenico 5, IT-20008 Bareggio (MI) www.turckbanner.it
Japan	TURCK Japan Corporation ISM Akihabara 1F, 1-24-2, Taito, Taito-ku, 110-0016 Tokyo www.turck.jp

Korea	Turck Korea Co, Ltd. A605, 43, Iljik-ro, Gwangmyeong-si 14353 Gyeonggi-do www.turck.kr
Malaysia	Turck Banner Malaysia Sdn Bhd Unit A-23A-08, Tower A, Pinnacle Petaling Jaya, Jalan Utara C, 46200 Petaling Jaya Selangor www.turckbanner.my
Mexico	Turck Comercial, S. de RL de CV Blvd. Campestre No. 100, Parque Industrial SERVER, C.P. 25350 Arteaga, Coahuila www.turck.com.mx
Netherlands	Turck B. V. Ruiterlaan 7, NL-8019 BN Zwolle www.turck.nl
Poland	TURCK sp.z.o.o. Wroclawska 115, PL-45-836 Opole www.turck.pl
Romania	Turck Automation Romania SRL Str. Siriului nr. 6-8, Sector 1, RO-014354 Bucuresti www.turck.ro
Sweden	Turck AB Fabriksstråket 9, 433 76 Jonsered www.turck.se
Singapore	TURCK BANNER Singapore Pte. Ltd. 25 International Business Park, #04-75/77 (West Wing) German Centre, 609916 Singapore www.turckbanner.sg
South Africa	Turck Banner (Pty) Ltd Boeing Road East, Bedfordview, ZA-2007 Johannesburg www.turckbanner.co.za
Turkey	Turck Otomasyon Ticaret Limited Sirketi Inönü mah. Kayisdagi c., Yesil Konak Evleri No: 178, A Blok D:4, 34755 Kadiköy/ Istanbul www.turck.com.tr
United Kingdom	TURCK BANNER LIMITED Blenheim House, Hurricane Way, GB-SS11 8YT Wickford, Essex www.turckbanner.co.uk
USA	Turck Inc. 3000 Campus Drive, USA-MN 55441 Minneapolis www.turck.us

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