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# Installation instructions RS232- WiFi converter

## KERN YKI-12

Type TYKI-12-A

Version 1.0

2025-02

GB


**TYKI-12-A-IA-e-2510**

GB

# KERN YKI-12

Version 1.0 2025-02

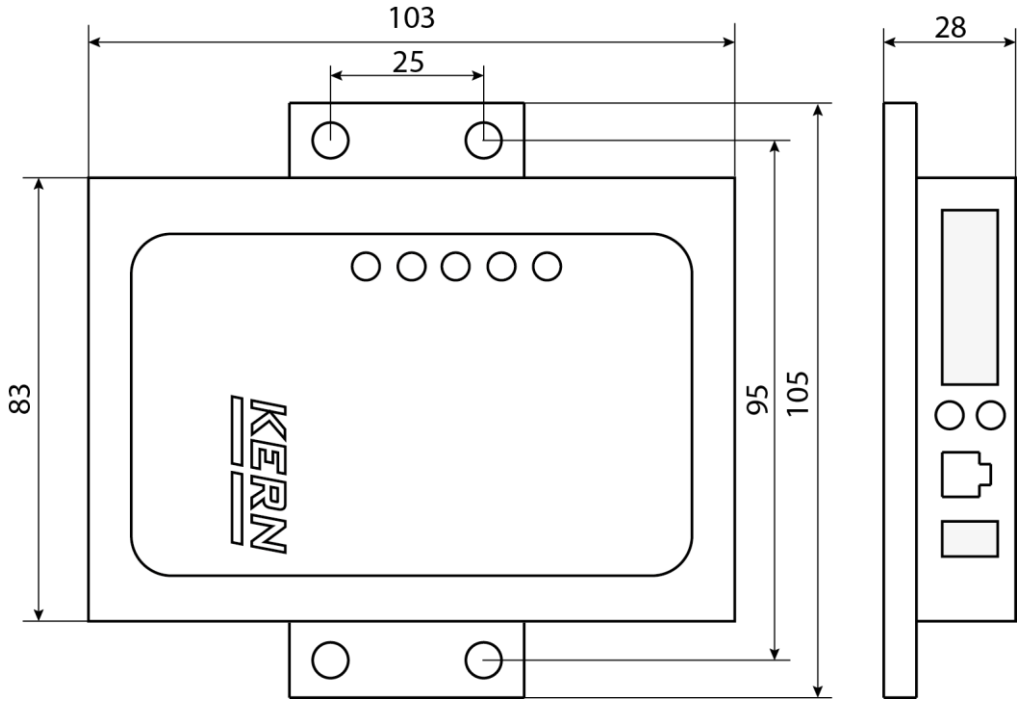
**Installation instructions**
**RS232-WiFi converter**

**Contents**

# 1 Scope of delivery

- YKI-12 Ethernet converter
- Screw-on antenna (3dbi antenna)
- Mains adapter (EU)
- KERN installation instructions (German / English) in paper (this document)

If any of the items listed above are missing, please contact your dealer immediately.



## 2 Technical data

| KERN | YKI-12 | |
|---|---|---|
| Item number / type | TYKI-12-A | |
| Wireless parameters | Standard authentication | FCC/CE |
| | Wireless standard | 802.11 b/g/n |
| | Frequency range | 2.412-2.48 GHz |
| Hardware parameters | Data interface | RS232 |
| | | 300-460800 bps |
| | | Ethernet: 10-100 Mbps |
| | Input voltage at the device | DC 5-36 V |
| | Input voltage power supply unit | 100-240 V AC, 50 / 60 Hz |
| | Working temperature | -20-+70 °C |
| | Storage temperature | -40-+125 °C |
| | Humidity during operation | 5-95 % (non-condensing) |
| | Dimensions | 103 x 105 x 25 mm (L x W x H) |
| Software parameters | Network type, wireless | STA / AP mode |
| | Security | WPA-PSK / WPA2-PSK |
| | Encryption type | TKIP / AES |
| | Work mode | Transparent transmission mode |
| | Network protocol | TCP / IP |
| | Internet protocol version | IPv4 |
| | Maximum number of TCP connections | 24 |
| | User settings | Web server |

# 3 Default settings

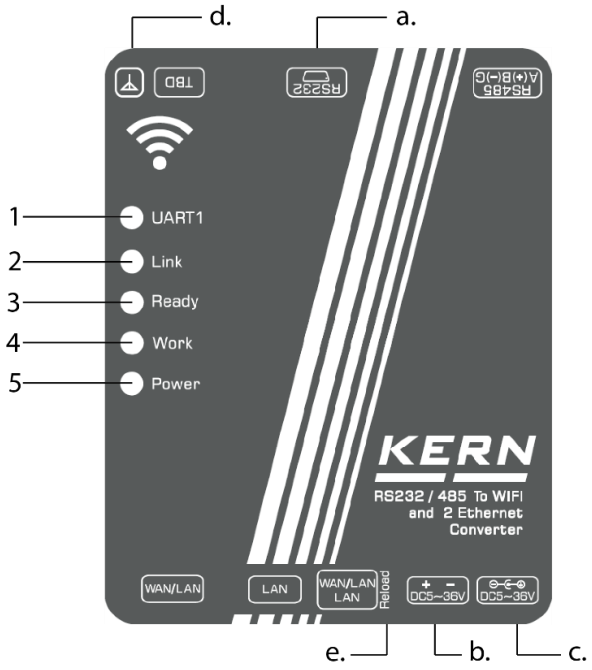
## 3.1 Default settings of the converter

| Parameters | Designation |
|---|---|
| SSID | USR-W630 _XXXX |
| IP | 10.10.100.254 |
| Subnet mask | 255.255.255.0 |
| Account | admin |
| password | admin |

## 3.2 Default settings Serial interfaces

| Parameters | Standard setting |
|---|---|
| Mode | RS485 |
| Baud rate | 57600 |
| Data bits | 8 |
| Parity | None |
| | 1 |
| Flow Control | None |
| Port | 8899 |

# 4 Product overview




## 4.1 LED overview

| Pos. | LED | Function | Description |
|---|---|---|---|
| 1 | UART1 | COM 1 Status display | Blue light flashes: Data transmission from serial connection to mains connection<br>Red light flashes: Data transmission from the mains connection to the serial connection |
| 2 | Link | Network connection | lights up with WiFi connection |
| 3 | Ready | Start display | lights up when system ready |
| 4 | Work | Operating status | Flashes at system startup |
| 5 | Power | Energy display | Flashes when power is connected |

## 4.2 Connection overview

| Pos. | Connection |
|---|---|
| a. | RS232 interface |
| b. | Power supply for top-hat rail mounting |
| c. | Power supply for power supply unit |
| d. | Stub antenna connection |
| e. | Reload button |

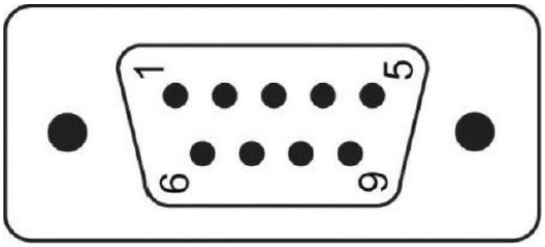
Only one of the two supply voltage connections (pos. b. or c.) may be used!

### 4.3 Pin loading

Pin 7 and pin 8 do not need to be connected

However, they must never be connected directly to the computer, as this can lead to malfunctions

| BD9 Pin | RS232 |
|---|---|
| 1 | |
| 2 | RXD |
| 3 | TXD |
| 4 | |
| 5 | Ground |
| 6 | |
| 7 | RTS |
| 8 | CTS |
| 9 | |



# 5 Installation

1. Mount the antenna on the converter (pos. d.).
2. Connect the YKI to the power supply unit and the socket (pos. b. or c.).
3. Check whether the "Ready" LED (pos. 3) lights up green.
   ➔ When the LED lights up green, the device is ready for operation and can be configured (see chapter 5).
4. Connect the RS232 cable of the scale to YKI
5. Switch on the scales

## 5.1 Setting the IP address

The interface is configured with a fixed IP address by default (see chapter 3.1). The IP address can be configured as required via the configuration page.

## 5.2 Establish WiFi connection

To make settings, the PC must be connected to the WiFi of the converter.


## 5.3 Access to the web interface

Settings on the converter are made via the web interface.

### Open web interface

1. Connect your PC to the WiFi of the converter.
2. Enter the IP address of the converter in your browser and open the website (see the website (see chapter 3.1).
3. Enter user name and password (see chapter 3.1).

## 5.4 Overview and configuration via the web interface

The web interface is structured as follows:

1. Quick Configure
2. Mode Selection
3. AP Interface Setting (setting the access point interface)
4. STA Interface Setting (STA interface setting)
5. Application Setting (serial interface and network settings)
6. Ethernet Setting (settings for Ethernet functions)
7. HTTPS client mode (HTTPD client mode)
8. MQTT Setting (MQTT settings)
9. Device Management

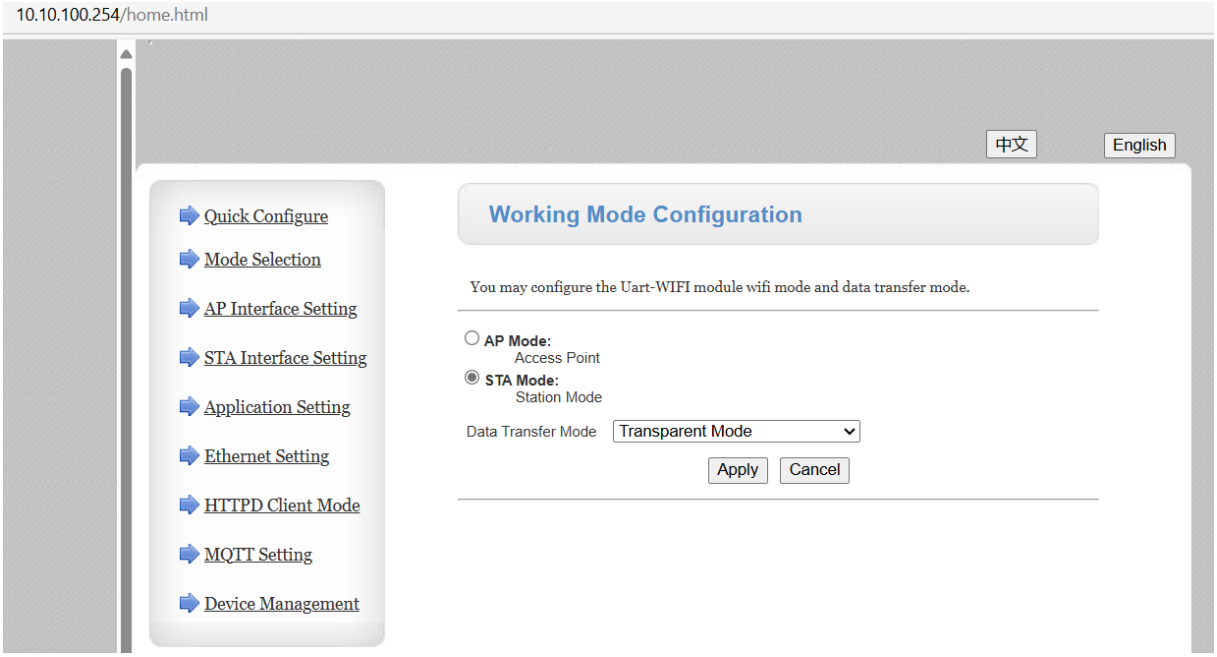
The "Apply" button only saves the respective parameter change in the web interface. To make the change valid, the converter must be restarted!

After the "Apply" button has been pressed, a new window must be displayed (see illustration below). If this does not happen, the page must be reloaded and the change made again!


The default settings can be restored using the reset function (see chapter 6.5)

## 5.5 Fashion Selection

Make the settings as shown in the following pictures.

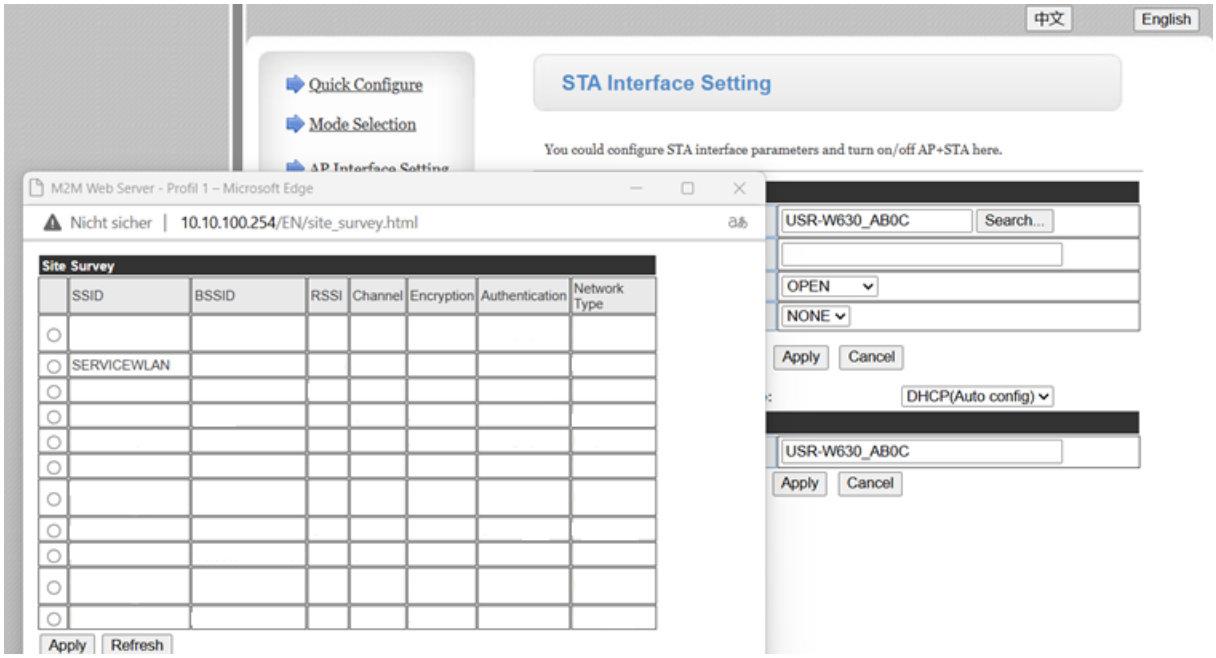



Press the "Apply" button after making the change, then you can continue with the configuration and restart the converter after the configuration. The settings are only finally applied after the restart.

The "Apply" button only saves the respective parameter change in the web interface. To make the change valid, the converter must be restarted!

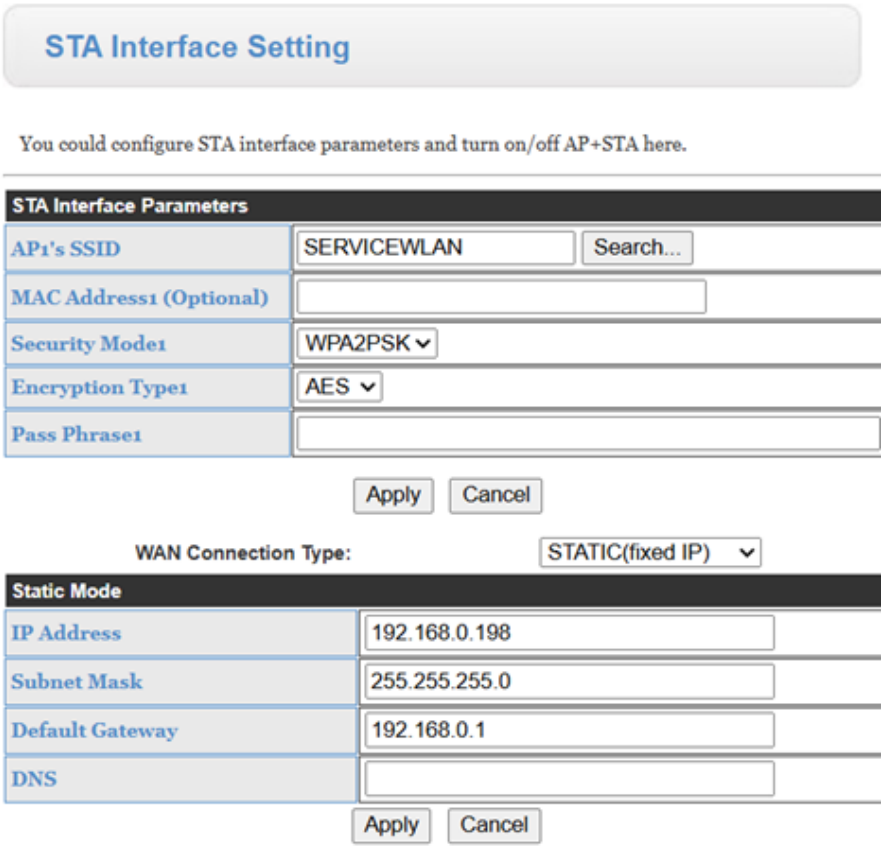
After the "Apply" button has been pressed, a new window must be displayed (see chapter 5.4). If this does not happen, the page must be reloaded and the change made again!

## 5.6 STA Interface Setting




The "STA Interface Settings" tab can be used to configure the target network. You can use the "Search..." button to display all available WiFi networks. Select your desired network and press "Apply".

You can see the new display in the following illustration. You must confirm this with "OK".




You will be prompted to enter the WiFi password under "Pass Phrase1".

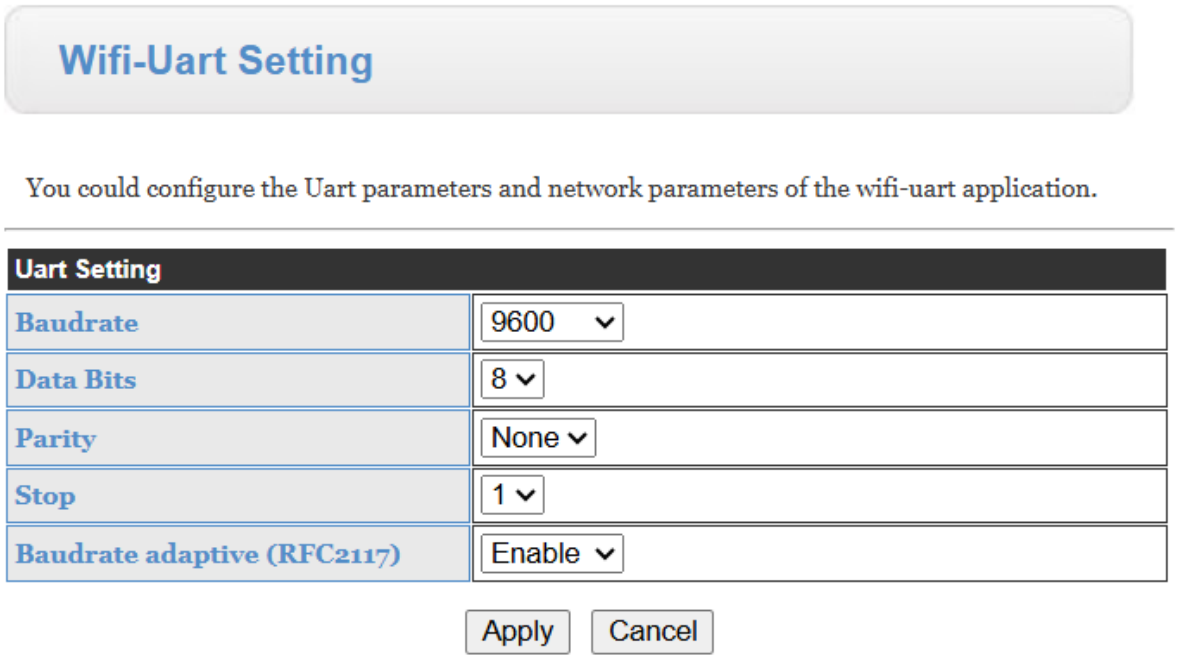
Under "WAN Connection Type", you can choose between the modes "DHCP" and "Static" (fixed IP). In the following example, a fixed IP address has been assigned.

Changes within a table must be confirmed with "Apply" before adjustments can be made in the next table. Otherwise the change will not be saved!

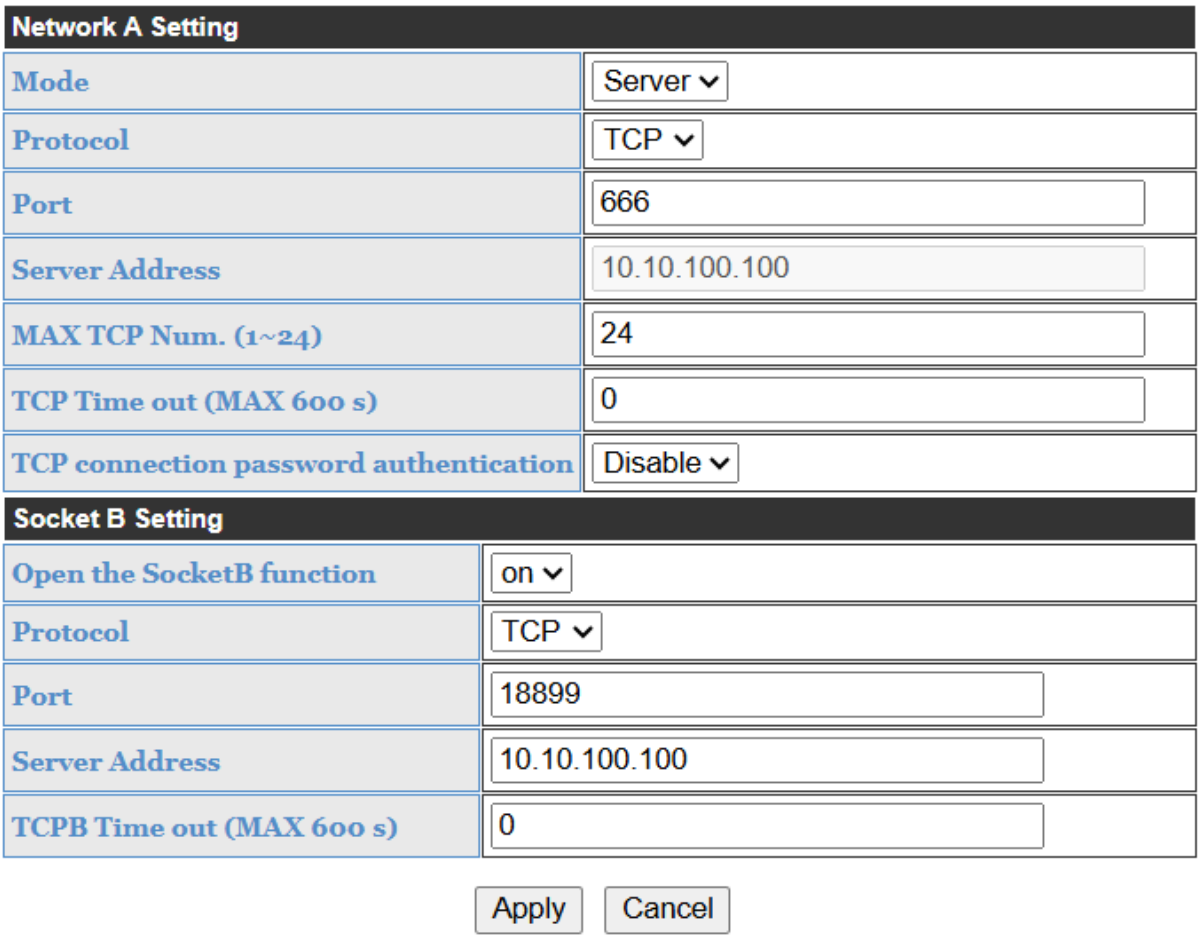
The "Apply" button only saves the respective parameter change in the web interface. To make the change valid, the converter must be restarted!

After the "Apply" button has been pressed, a new window must be displayed (see chapter 5.4). If this does not happen, the page must be reloaded and the change made again!

## 5.7 Application Setting




Set the parameters for your serial interface and confirm with "Apply".



Make the settings for "Network A Setting" as shown above.

Set the local port in the "Port" line.

With "MAX TCP Num" you can set the number of accesses to the converter.

A 3 or 4-digit port must be used. Otherwise this will result in an error message during subsequent operation.

The "Apply" button only saves the respective parameter change in the web interface. To make the change valid, the converter must be restarted!

After the "Apply" button has been pressed, a new window must be displayed (see chapter 5.4). If this does not happen, the page must be reloaded and the change made again!

# 6 Operation

## 6.1 Operating mode

Operating mode: transparent transmission mode

### 6.1.1 Transparent transmission mode

The converter supports the transparent transmission mode for serial interfaces. The data to be sent and received is transferred between the serial port and WiFi / Ethernet without any additional processing (parsing) taking place. This enables direct data transmission between devices with a serial interface and network devices.

## 6.2 Features of the wireless connection

### 6.2.1 Automatic frequency selection

In STA mode (client mode), the converter sets the WiFi server with serial connection to the same channel as the wireless channel of the access point (AP) and connects to it.

### 6.2.2 Safety mechanism

The converter supports a variety of encryption methods for wireless networks that can guarantee secure data transmission, including:

- WPA-PSK/TKIP
- WPA-PSK/AES
- WPA2-PSK/TKIP
- WPA2-PSK/AES

The WPA-PSK and WPA2-PSK passwords consist of at least 8 bits.

## 6.3 Timeout restart function

If the connection to the converter is interrupted or the converter is connected but not communicating, it will restart automatically within the specified time, provided the time-out function is activated.

The restart time can be set to 60-65535 s, the default time is 3600 s. The restart conditions are as follows:

1. When the WiFi connection is disconnected, the timer starts to run. If the timer exceeds the specified restart time, the converter is restarted automatically.
2. If there is a WiFi connection but no communication is taking place, the timer also starts to run. If the timer exceeds the specified restart time, the converter is restarted automatically.

This function is preset by default.

## 6.4 Timer restart- function

If the restart function for the time measurement is activated in non-serial command mode, the time measurement starts as soon as the converter is switched on. Restarting the converter resets the time measurement. If the measured time exceeds the specified restart time, the converter is restarted automatically.

This function is preset by default.

## 6.5 Restore factory settings

The factory settings can be restored using the "Reload" button (see chapter 6.5)

**Prerequisite**:

Device must be in normal operating mode (Ready LED illuminated) and no RS232 cable must be connected.

1. Press the reload button for at least 5 seconds.
2. Wait about 8 seconds.
   - ➔ All LEDs (except Power) go out and the device restarts automatically.
   - ➔ When the Ready lamp lights up again, the appliance is ready for operation.
   - ➔ Factory settings are restored.

# 7 Small breakdown service

| Malfunction | Remedy |
|---|---|
| Connection cannot be established | Ensuring the power supply to the YKI and the scales |
| | Ensure that the scales are switched on |
| | Ensure that the correct RS232 cable is used. For details, please refer to the manual of your scale. |
| | Ensure use of a standard Ethernet cable |
| | Enter the correct IP address in the target software |
| | Check the configuration of the RS232 interface |
| No communication possible after changing the IP address | Check the settings and ensure that they have been saved. |
| Settings are not applied | Reload page and make settings again |
| Incorrect characters are output.<br>The meter does not respond to commands. | Check whether the previous points do not apply and whether the RS-232 settings of the application or the TCP server match the settings of the measuring device . |

If the fault cannot be rectified, contact your dealer.