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Installation instructions RS232- WiFi converter



Version 1.0 2025-02

GB



TYKI-12-A-IA-e-2510



KERN YKI-12

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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					
	Standard authentication	FCC/CE				
Wireless parameters	Wireless standard	802.11 b/g/n				
	Frequency range	2.412-2.48 GHz				
		RS232				
	Data interface	300-460800 bps				
		Ethernet: 10-100 Mbps				
	Input voltage at the device	DC 5-36 V				
Hardware parame- ters	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)				
	Network type, wireless	STA / AP mode				
	Security	WPA-PSK / WPA2-PSK				
	Encryption type	TKIP / AES				
	Work mode	Transparent transmission mode				
Software parameters	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
			Blue light flashes: Data transmission from serial connection to mains connection
1	UART1	COM 1 Status display	Red light flashes: Data transmission from the mains connection to the serial connec- tion
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!

-	Outol	Configura
~	QUICK	Configure

Set Successfully, Restart to use new setting.

Restart button in<u>Device Management</u>

Mode Selection



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.

10.10.100.254/home.html

	中文
Duick Configure	Working Mode Configuration
Mode Selection	
AP Interface Setting	You may configure the Uart-Wiri module win mode and data transfer mode.
STA Interface Setting	AP Mode: Access Point STA Mode:
Application Setting	
<u>Ethernet Setting</u>	Apply Cancel
➡ <u>HTTPD Client Mode</u>	
MQTT Setting	
Dovice Management	

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

								中文	E
		Quic	k Configu	ure		STA Inter	face Setting	g	
		Mode	e Selectio	2 <u>n</u> Sotting	You	ı could configu	re STA interface pa	arameters and turn on/off AP+STA here.	
2M Web Server - Pr	ofil 1 – Microsoft Ed	ige				-			
Nicht sicher	10.10.100.254/EN	V/site_s	urvey.htr	ml			аљ	USR-W630_AB0C Search	
Survey SSID	BSSID	RSSI	Channel	Encryption	Authentication	Network Type			
SERVICEWLAN								: DHCP(Auto config) V	
	ļ]	USR-W630_AB0C	
		+	-					Apply Cancel	
ļ		-			·		1		
]		
	1	-i	î	î —	î	î	1		

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".

192.168.178.21 enthält

Please input key!

OK

STA Interface Setting

You could configure STA interface parameters and turn on/off AP+STA here.

STA Interface Parameters						
AP1's SSID	SERVICEWLAN Search					
MAC Address1 (Optional)						
Security Mode1	WPA2PSK V					
Encryption Type1	AES V					
Pass Phrase1						
Apply Cancel WAN Connection Type: STATIC(fixed IP)						
WAN Connection	n Type: STATIC(fixed IP) V					
WAN Connection	n Type: STATIC(fixed IP) V					
WAN Connection Static Mode IP Address	n Type: STATIC(fixed IP) v 192.168.0.198					
WAN Connection Static Mode IP Address Subnet Mask	n Type: STATIC(fixed IP)					
WAN Connection Static Mode IP Address Subnet Mask Default Gateway	n Type: STATIC(fixed IP)					
WAN Connection Static Mode IP Address Subnet Mask Default Gateway DNS	n Type: STATIC(fixed IP)					

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

Wifi-Uart Setting

You could configure the Uart parameters and network parameters of the wifi-uart application.

Uart Setting	
Baudrate	9600 🗸
Data Bits	8 ~
Parity	None V
Stop	
Baudrate adaptive (RFC2117)	Enable V
	Apply Cancel

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

Network A Setting		
Mode		Server ~
Protocol		TCP V
Port		666
Server Address		10.10.100.100
MAX TCP Num. (1~24)		24
TCP Time out (MAX 600 s)		0
TCP connection password authentication Disabl		Disable ~
Socket B Setting		
Open the SocketB function	on 🗸	
Protocol	TCP \	 Image: A start of the start of
Port	18899	
Server Address	10.10.	100.100
TCPB Time out (MAX 600 s)	0	
	Apply	Cancel

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 timeout 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 pos- sible 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. The meter does not res- pond to commands.	Check whether the previous points do not apply and whe- ther the RS-232 settings of the application or the TCP ser- ver match the settings of the measuring device .

If the fault cannot be rectified, contact your dealer.