

Operation Manual

TempoLink[®] Smart Assistant for the R-Series V



V
THE NEW GENERATION

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1. Introduction

1.1 Purpose and use of this manual

Before starting the operation of TempoLink® smart assistant, read this documentation thoroughly and follow the safety information. Keep this manual for future reference!

The content of this technical documentation is intended to provide information on mounting, installation and commissioning by qualified automation personnel¹ or instructed service technicians who are familiar with the project planning and dealing with Temposonics products.

1.2 Used symbols and warnings

Warnings are intended for your personal safety and for avoidance of damage to the described product or connected devices. In this documentation, safety information and warnings to avoid danger that might affect the life and health of operating or service personnel or cause material damage are highlighted by the pictogram, defined below.

Symbol	Meaning
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NOTICE	This symbol is used to point to situations that may lead to material damage, but not to personal injury.
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2. Safety instructions

2.1 Intended use

This product may be used only for the applications defined under item 1 and item 2 and only in conjunction with the third-party devices and components recommended or approved by Temposonics. As a prerequisite of proper and safe operation, the product requires correct transport, storage, mounting and commissioning and must be operated with utmost care.

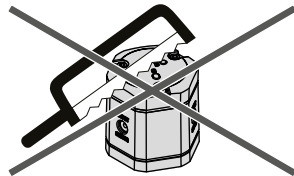
- 1/ The term “qualified technical personnel” characterizes persons who
- are familiar with the safety concepts of automation technology applicable to the particular project
 - are competent in the field of electromagnetic compatibility (EMC) or
 - have received adequate training for commissioning and service operations
 - and are familiar with the operation of the device and know the information required for correct operation provided in the product documentation

1. The sensor systems of all Temposonics series are intended exclusively for measurement tasks encountered in industrial, commercial and laboratory applications. The sensors are considered as system accessories and must be connected to suitable evaluation electronics, e.g. a PLC, IPC, indicator or other electronic control unit.
2. TempoLink® smart assistant is an accessory for Temposonics® R-Series V sensors for reading out and adjusting of sensor parameters as well as monitoring status values.

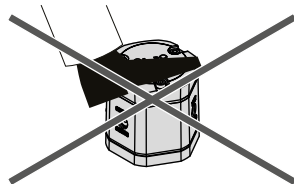
2.2 Foreseeable misuse

Foreseeable misuse	Consequence
Wrong sensor connection	The sensor and TempoLink® smart assistant will not work properly or can be damaged
Power supply is out of the defined range	The TempoLink® smart assistant can be damaged
Cables are damaged	Short circuit – the sensor and TempoLink® smart assistant can be destroyed/sensor does not respond
Wrong connection of ground / shield	Signal output is disturbed The electronics can be damaged

Do not alter the TempoLink® smart assistant.
→ The TempoLink® smart assistant might be damaged.



Do not step on the TempoLink® smart assistant.
→ The TempoLink® smart assistant might be damaged.



2.3 Installation, commissioning and operation

The position sensors and TempoLink® smart assistant must be used only in technically safe conditions. To maintain this condition and to ensure safe operation, installation, connection and service, work may be performed only by qualified technical personnel.

If danger of injury to persons or of damage to operating equipment is caused by sensor failure or malfunction, additional safety measures such as plausibility checks, limit switches, EMERGENCY STOP systems, protective devices etc. are required. In the event of trouble, shut down the sensor and protect it against accidental operation.

Safety instructions for commissioning

To maintain the sensor's and TempoLink® smart assistant's operability, it is mandatory to follow the instructions given below.

1. Protect the sensor and TempoLink® smart assistant against mechanical damage during installation and operation.
2. Do not open or dismantle the sensor and TempoLink® smart assistant.
3. Connect the sensor and TempoLink® smart assistant very carefully and pay attention to the polarity of connections and power supply.
4. Use only approved power supplies.
5. Ensure the sensor and TempoLink® smart assistant are operating within the defined limits for supply voltage, environmental conditions, etc.
6. Check the function of the sensor and TempoLink® smart assistant regularly and provide documentation of the checks.
7. Before applying power, ensure that nobody's safety is jeopardized by starting machines.

2.4 Safety instructions for use in explosion-hazardous areas

The TempoLink® smart assistant is not suitable for operation in explosion-hazardous areas.

2.5 Warranty

Temposonics grants a warranty period for their position sensors and supplied accessories relating to material defects and faults that occur despite correct use in accordance with the intended application.² The Temposonics obligation is limited to repair or replacement of any defective part of the unit. No warranty can be provided for defects that are due to improper use or above average stress of the product, as well as for wear parts. Under no circumstances will Temposonics accept liability in the event of offense against the warranty rules, no matter if these have been assured or expected, even in case of fault or negligence of the company.

Temposonics explicitly excludes any further warranties. Neither the company's representatives, agents, dealers nor employees are authorized to increase or change the scope of warranty.

2.6 Return

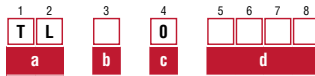
For diagnostic purposes, the TempoLink® smart assistant can be returned to Temposonics or a repair facility explicitly authorized by Temposonics. Any shipment cost is the responsibility of the sender ². For a corresponding form, see operation manuals of the R-Series V sensors (available at: www.temposonics.com).

2.7 Removal from service/dismantling

The product contains electronic components and must be disposed of in accordance with the local regulations.


^{2/} See also applicable Temposonics sales and supply conditions, e.g. under www.temposonics.com

3. Identification



a Type				
T	L			
TempoLink® smart assistant kit				
b Power supply				
1	Plug-in power supply with plug adapters (AU, CCC, EU, UK, US)			
2	Cable for insertion in existing sensor power supply with sensor mating connector and barrel connector (for connection type D56)			
3	Cable for insertion in existing sensor power supply with sensor mating connector and barrel connector (for connection type D58)			
4	Barrel connector with pig-tail for connection to an existing power supply			
c Option				
O	No options			
d Adapter cables for connection to R-Series V				
E	M	O	8	Cable with M8 female connector (4 pin) for connection type D56 (EtherCAT®/EtherNet/IP™/POWERLINK/PROFINET) (part no. 254 887-1)
E	M	1	2	Cable with M12 female connector (4 pin) for connection type D58 (EtherCAT®/EtherNet/IP™/POWERLINK/PROFINET) (part no. 254 897-1)
S	D	7	0	Cable with M16 female connector (7 pin) for connection type D70 (SSI) (part no. 254 990-1)
S	D	8	4	Cable with M12 female connector (8 pin) for connection type D84 (SSI) (part no. 255 204-1)
A	D	3	4	Cable with M12 female connector (4 pin) for connection type D34 (Analog) (part no. 254 897-1)
A	D	6	0	Cable with M16 female connector (6 pin) for connection type D60 (Analog) (part no. 254 989-1)
A	S	0	0	Cable with 6 × terminal clamps for connection type cable output (Analog/SSI) (part no. 255 043-1)

DELIVERY

-  **TempoLink® smart assistant kit** Adapter cables to connect TempoLink® smart assistant to sensors of R-Series V can be ordered separately
- TempoLink® smart assistant
 - One of the four options for the power supply
 - One adapter cable to connect TempoLink® smart assistant to R-Series V sensor
 - USB cable for optional connection of TempoLink® smart assistant to a computer

4. Package content

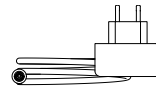
1 TempoLink® smart assistant



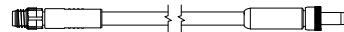
2 Power supply

Each kit includes one of the listed options for power supply

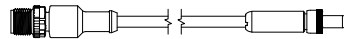
Plug-in power supply



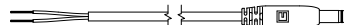
Cable for insertion in existing power supply for connection type D56



Cable for insertion in existing power supply for connection type D58



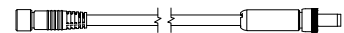
Barrel connector with pig-tail



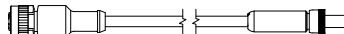
3 Adapter cable

Each kit includes one of the listed adapter cables for connecting the TempoLink® smart assistant to an R-Series V sensor

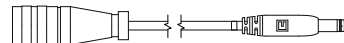
Adapter cable for connection type D56



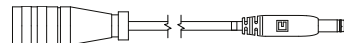
Adapter cable for connection type D58/D34



Adapter cable for connection type D60



Adapter cable for connection type D70



Adapter cable for connection type D84

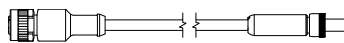


Fig. 1: Package content of the TempoLink® kit, part 1

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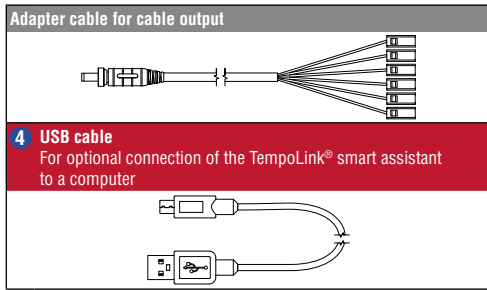


Fig. 2: Package content of the TempoLink® kit, part 2

5. Connection of TempoLink® smart assistant to R-Series V sensor

The TempoLink® smart assistant can be connected to all sensors of the R-Series V family. Depending on the sensor output, different adapter cables are available to connect the TempoLink® smart assistant to the R-Series V sensor. Use the appropriate adapter cable ③ for the sensor output. Connect the barrel connector of the adapter cable to the connection point labeled “OUTPUT SENSOR” on the TempoLink® smart assistant (Fig. 4). Next, connect the opposite end of the adapter cable to the power supply at the R-Series V sensor. The TempoLink® smart assistant also provides the power supply for the sensor. Fig. 5 shows the connection of the TempoLink® smart assistant to the R-Series V. The adapter cable is available in different versions depending on the sensor output. See the specific R-Series V operation manual for more information.

If the sensor is connected to another power supply disconnect the power supply before connecting TempoLink® smart assistant to the sensor.

NOTICE

- When disconnecting the power supply of the sensor possibly error messages occur at the connected controller.
- Do not exceed the maximum cable length between TempoLink® smart assistant and R-Series V sensor of 30 m (98.4252 ft.)

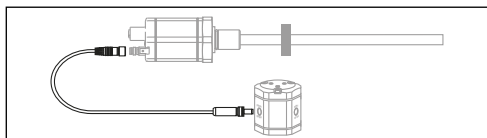


Fig. 3: Connection of TempoLink® smart assistant to R-Series V sensor

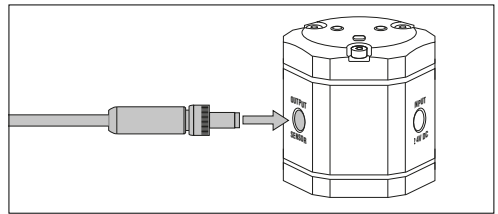


Fig. 4: Connecting the adapter cable to the TempoLink® smart assistant

A D 6 0 / S D 7 0 / A D 3 4 / S D 8 4		
R-Series V Analog/SSI with connector output		
A S 0 0		
R-Series V Analog/SSI with cable output		
Color sensor cable	Color adapter cable	Function
GY	GY	–
PK	PK	–
YE	YE	–
GN	GN	–
BN	BN	+ 24 VDC
WH	WH	DC Ground (0 V)
E M 0 8 / E M 1 2		
R-Series V EtherCAT®/Ethernet/IP™/POWERLINK®/PROFINET		

Fig. 5: Connecting the adapter cable to the R-Series V sensor inclusive connector wiring for AS00

6. Connection of TempoLink® smart assistant to power supply

Connect the barrel connector for the power supply ② to the “INPUT 24 VDC” port on the TempoLink® smart assistant (Fig. 6).

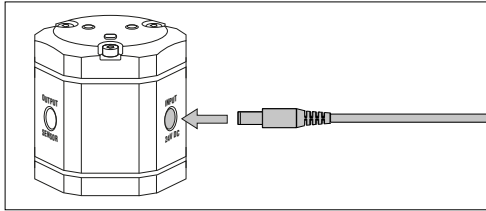


Fig. 6: Connecting the power supply to the TempoLink® smart assistant

Depending on the ordered kit configuration, the other end of the cable for power supply of the TempoLink® smart assistant is connected to a power supply.

6.1 Using the plug-in power supply with plug adapters

Insert the plug ② into the outlet (Fig. 8). Additional outlet adapters are supplied to support regional requirements.

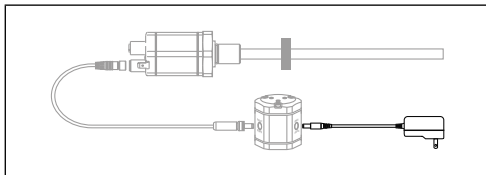


Fig. 7: Connection of TempoLink® smart assistant with the plug-in power supply

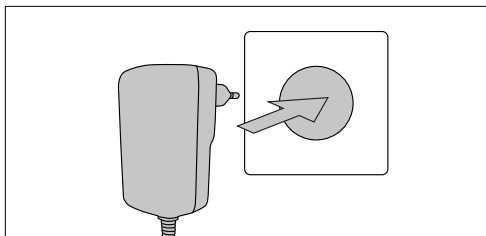


Fig. 8: Connecting the power supply to outlet

6.2 Using the cable for insertion in an existing power supply

For R-Series V with EtherCAT®, EtherNet/IP™, POWERLINK or PROFINET the TempoLink® smart assistant can be inserted in an existing power supply. Connect the sensor male connector ② to the female connector of your existing power supply that was removed from the sensor (Fig. 10).

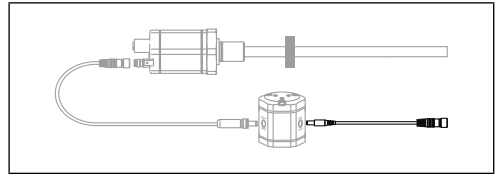


Fig. 9: Connecting the TempoLink® smart assistant with the cable for insertion in an existing sensor power supply cable for R-Series V EtherCAT®, EtherNet/IP™, POWERLINK and PROFINET

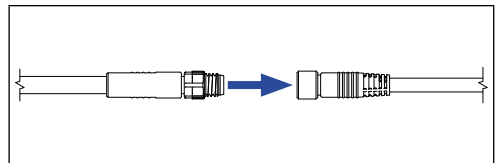


Fig. 10: Connecting the male connector to the female connector of the existing power supply

6.3 Using the barrel connector with pig-tail

Connect the cable ② to a power supply unit according to the pin assignment in Fig. 12.

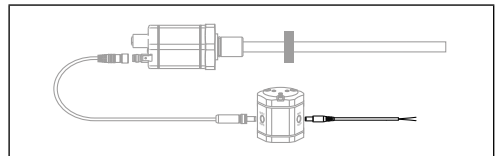


Fig. 11: Connecting the TempoLink® smart assistant with the barrel connector with pig-tail

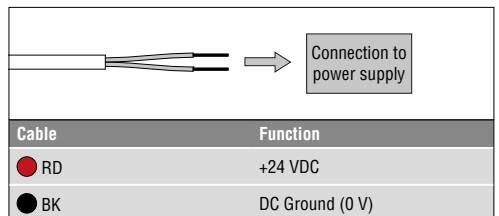


Fig. 12: Connecting the pig-tail to power supply

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7. Connection of TempoLink® smart assistant to smartphone, tablet or computer

Connect to a smartphone, tablet or computer to display the graphical user interface of the TempoLink® smart assistant.

7.1 Connecting a Wi-Fi enabled device to the integrated Wi-Fi access point³

Activate Wi-Fi on the device and choose the network “TempoLink_XXXX” (XXXX indicates the last four digits of the serial number). The access to the Wi-Fi is password protected. The default password is the serial number printed on the label on the bottom of the TempoLink® smart assistant.

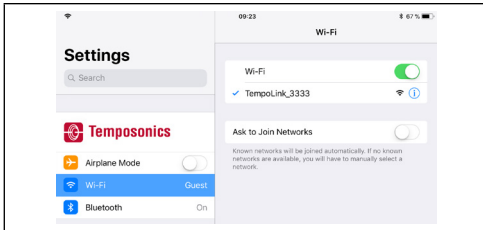


Fig. 13: Choose the network “TempoLink_XXXX” in the Wi-Fi settings of the Wi-Fi-enabled device

NOTICE

If you are using a mobile device, ensure cellular data is off. Depending on your operation system, message can appear, that there is no internet access. TempoLink® smart assistant does not need internet access. Connecting to the user interface may take longer if Wi-Fi and cellular data are active.

7.2 Connecting a computer via USB connection

The TempoLink® smart assistant can also be connected via USB. If the computer is Wi-Fi enabled deactivate Wi-Fi on the computer before setting up the USB connection.

Connect the USB cable ④ with the micro USB connector to the port labeled “USB” on the TempoLink® smart assistant. Next, connect the USB type-A connector to a free USB port of the computer. The USB connection simulates a network card. In the folder “network connections” on the computer the connection is shown as “IP-over-USB” or “Remote NDIS”.

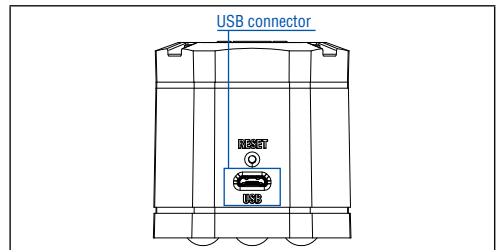


Fig. 14: USB port on the TempoLink® smart assistant

NOTICE

Only one device can be connected to the TempoLink® smart assistant at a time in order to display the graphical user interface.

NOTICE

Disable all Wi-Fi and LAN connections before connecting TempoLink® smart assistant via USB. Connecting to the user interface may take longer if Wi-Fi and LAN connections are active. It may be useful to press CTRL + F5 to delete cached text and images from prior to launching the <http://tempolink.local> website.

3/ The integrated Wi-Fi access point does not provide internet access

8. Establishing a connection via browser

After the connection via Wi-Fi or USB is established, open the browser and go to the website-URL: **http://tempolink.local**
It is recommended to use the browser Mozilla Firefox, Google Chrome, Microsoft Edge or Apple Safari.

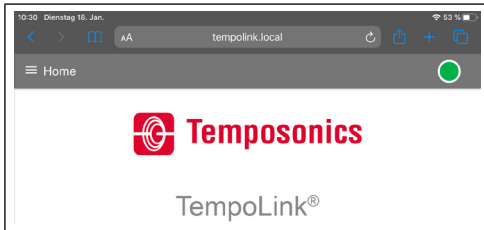


Fig. 15: Start page of the graphical user interface

The connection icon in the top right shows the status of the connection between the TempoLink® smart assistant and the sensor.




Connection status		
Green	Information	
	ON	Connection to sensor is established
Red	Information	
	ON	Connection to sensor is not established
Blue	Information	
	ON	Sensor in command mode

Fig. 16: Connection status

9. Graphical user interface

Click the menu symbol ≡ in the top left to get to the main menu of the graphical user interface (GUI) (Fig. 17):

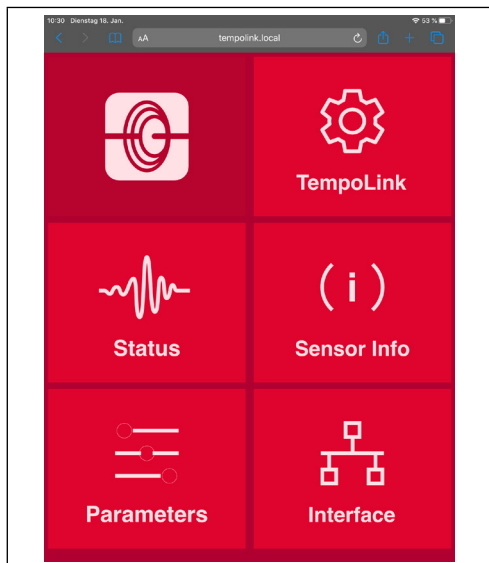


Fig. 17: Main menu of the graphical user interface

9.1 Menu item TempoLink

The TempoLink menu item includes information about the TempoLink® smart assistant like its serial number, firmware version and part number.

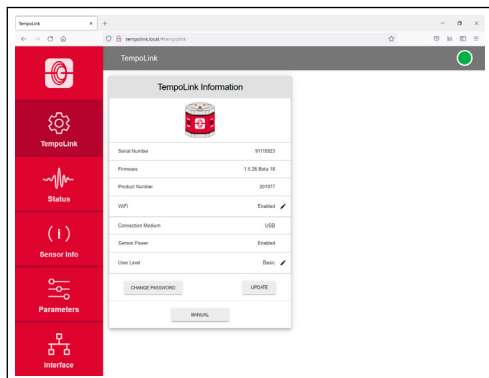


Fig. 18: Menu item TempoLink

Changing the password for Wi-Fi access

To change the password for the Wi-Fi access click on the CHANGE PASSWORD button. The “Configure TempoLink” window opens. Enter the new password two times and confirm this change by clicking the SUBMIT button. If you click the CANCEL button the change will be canceled.

Updating the TempoLink® firmware

Firmware updates of the TempoLink® smart assistant are available for download from the Temposonics website temposonics.com/tempolink.

- Download the zip file and save it on your computer.
- Unzip the file.
- Connect your TempoLink® smart assistant to your computer via USB cable or via Wi-Fi (Recommendation: Use the Wi-Fi connection). A firmware update is not possible when connecting via smartphone or tablet.
- Click the UPDATE button. The “Configure TempoLink” window opens (Fig. 19).
- Click the CHOOSE FILE button. Use the dialog to navigate to the location where you saved the firmware update file.
- Select the “update.tar” file. The selected file is displayed.
- Click the SUBMIT button to execute the update (Fig. 20).
- The update process of the firmware consists of two steps:
 1. Transferring the update file to the TempoLink® smart assistant. This step is visualized via the progress bar.
 2. Installing the firmware. The LEDs on the TempoLink® smart assistant lights up orange and the graphic shown in Fig. 21 is displayed.

The update process normally takes 3 to 4 minutes.

- If you have your TempoLink® smart assistant connected to your computer via USB connection, during the installation, a USB drive will appear and disappear at your computer.
- After successful installation, the orange LEDs go out. LED A and LED B light up depending on the connection. LED C lights up green.
 - If you have connected your computer to the TempoLink® smart assistant via Wi-Fi, restore the Wi-Fi connection after the installation is complete. The Wi-Fi connection is interrupted during the update.
 - Refresh your browser by clicking the key combination CTRL + F5 and use the TempoLink® smart assistant as usual.

NOTICE

The installation may take several minutes (typically 3 to 4 minutes) even if the LEDs do not change. Do not disconnect the TempoLink® smart assistant from the power supply during the update process.

Check regularly if a new firmware is available. Use the latest firmware. Firmware updates will improve the performance or add further features.

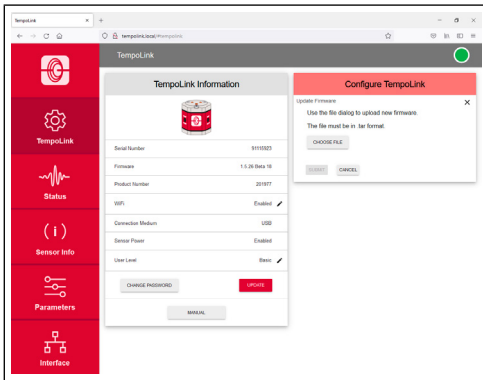


Fig. 19: The window "Configure TempoLink" to update the firmware

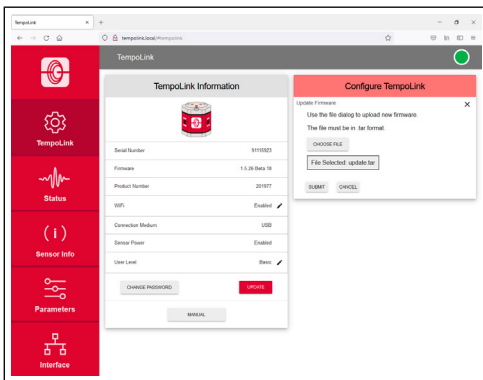


Fig. 20: Selected tar-file for the firmware update

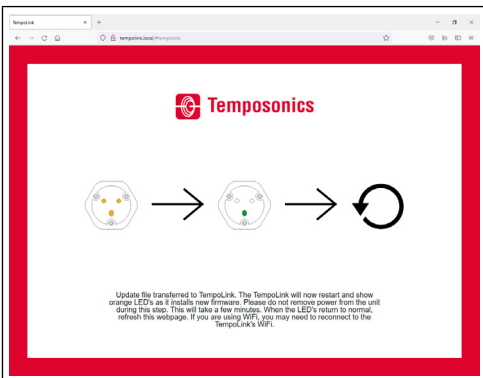


Fig. 21: Screen during firmware update

Disabling and enabling Wi-Fi

In line "WiFi" the current Wi-Fi status is shown. To disable or enable Wi-Fi click the black pencil in this line. The "Configure TempoLink" window opens. Click "Disable" to disable Wi-Fi and click "Enable" to enable Wi-Fi on the TempoLink® smart assistant (Fig. 22).

NOTICE

Disabling and enabling Wi-Fi on the TempoLink® smart assistant is only possible if the TempoLink® smart assistant is connected to the computer via USB connection.

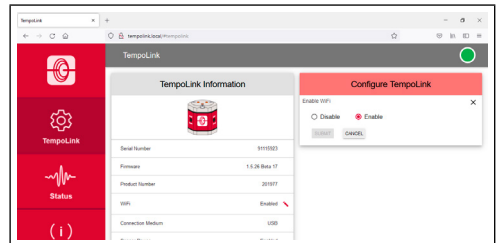


Fig. 22: Window "Configure TempoLink" to disable/enable Wi-Fi

You can open the operation manual of the TempoLink® smart assistant by clicking the MANUAL button (Fig. 18). Loading the document may take 10 to 15 seconds.

9.2 Menu item status

The status menu includes current information about the sensor status (Fig. 23):

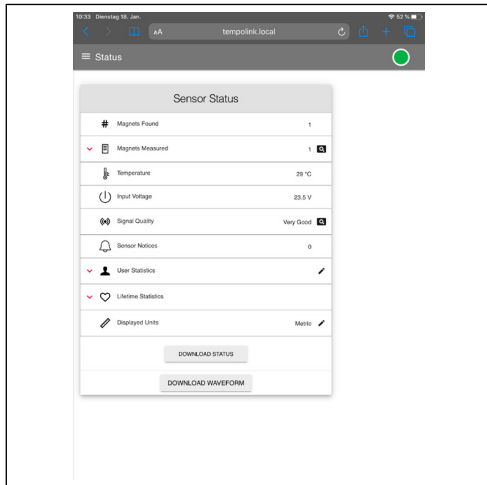


Fig. 23: Sensor status

- **Magnets Found:** Number of magnets detected on the sensor
- **Magnets Measured:** Number of set magnets. By clicking on the red arrow on the left the current position of the magnet is displayed. The magnifying glass on the right of the magnet provides a graphical display of the magnet's position (Fig. 24). Note, that the output of the position values for the graphical display is slower than the output of the position values to the controller.
- **Temperature:** Current temperature inside the sensor electronics housing.
- **Signal Quality:** The signal strength of the position magnet, judged in combination with the sensor, is reported in four levels (for a multi-position measurement, only the 1st magnet is taken into account):
 - **Marginal:** A position measurement can be performed, however incorrect results are possible.
 - **Good:** A position measurement can be performed reliably.
 - **Very Good:** A position measurement can be performed reliably.
 - **Too Strong:** Due to distortions incorrect results are possible when measuring the position. The magnifying glass on the right of the magnet provides a graphical display of the signal quality (Fig 25). Only the 1. position magnet is taken into account for a multi-position measurement.
- **Input Voltage:** Current input voltage of the sensor.
- **Sensor Notices:** Current error messages.

- **User Statistics:** Depending on the firmware of the sensor status information is displayed which you can reset. By clicking the red arrow on the left the following information is displayed (Fig. 26):
 - **Odometer:** Total distance travelled by the position magnet since last reset.
 - **Magnet Cycles:** Total number of directional changes of the magnet since last reset.
 - **Max Temperature:** Maximum temperature inside the sensor electronics housing reached so far since last reset.
 - **Min Temperature:** Minimum temperature inside the sensor electronics housing reached so far since last reset. To reset these values, click on the black pencil in the line „User Statistics“. The „Reset Statistics“ window opens. Enter the word RESET and confirm by clicking SUBMIT. The values displayed under „User Statistics“ are reset. If you click CANCEL, the reset will be canceled (Fig. 27).
- **Lifetime Statistics:** By clicking the red arrow on the left information about the sensor statistics is displayed (depending on the connected sensor):
 - **Odometer:** Total distance travelled by the position magnet.
 - **Magnet Cycles:** Total number of directional changes of the magnet since last reset.
 - **Operational Time:** Total operational hours of the sensor.
 - **Max Temperature:** Maximum temperature inside the sensor electronics housing reached so far.
 - **Min Temperature:** Minimum temperature inside the sensor electronics housing reached so far.
 - **Temperature Violations:** Duration of exceeding or falling below the permissible operating temperature range.
 - **Max Voltage:** Maximum input voltage reached so far.
 - **Min Voltage:** Minimum input voltage reached so far.
 - **Voltage Violations:** Duration of exceeding or falling below the permissible power supply range.
- **Displayed Units:** You can change the units of the displayed values from metric units to imperial units. To do this, click on the black pencil in this line. The “Change Display Units” window opens. Select the desired unit and confirm by clicking OK (Fig. 28).

NOTICE

The displayed values are unprocessed raw data. These values are independent of parameter adjustments.

By clicking the DOWNLOAD STATUS button you can download the current status information of the sensor (Fig. 29). If you click the button, the “Download Status Data” window opens. Click SUBMIT to start the download. The file is saved on your computer according to your browser settings. You can send this file to us, e.g. in the event of an error, so we can better support you with the error analysis.

By clicking the DOWNLOAD WAVEFORM button you can download the graphical display of the position signal on the sensor (Fig. 29). If you click the button, the “Download Waveform Data” window opens. Enter the word CONFIRM and click SUBMIT to start the download. The file is saved on your computer according to your browser settings. You can send this file to us, e.g. in the event of an error, so we can better support you with the error analysis.

NOTICE

The generation of the graphical display of the position signal on the sensor briefly interrupts the normal operation of the sensor.

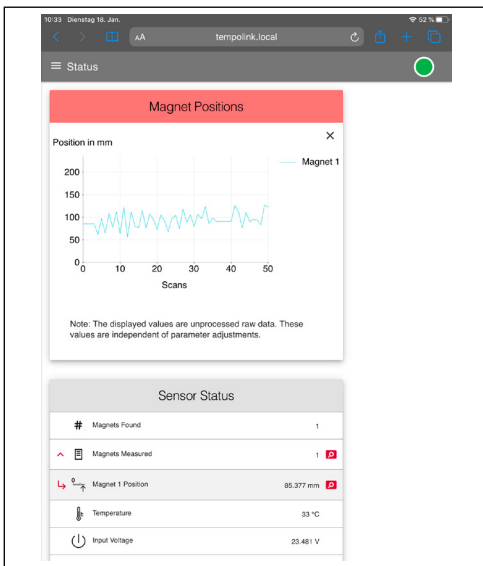


Fig. 24: Graphical display of position values

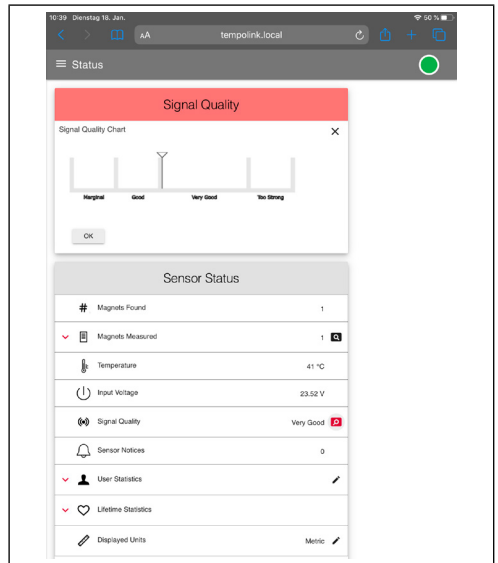


Fig. 25: Graphical display of the signal strength

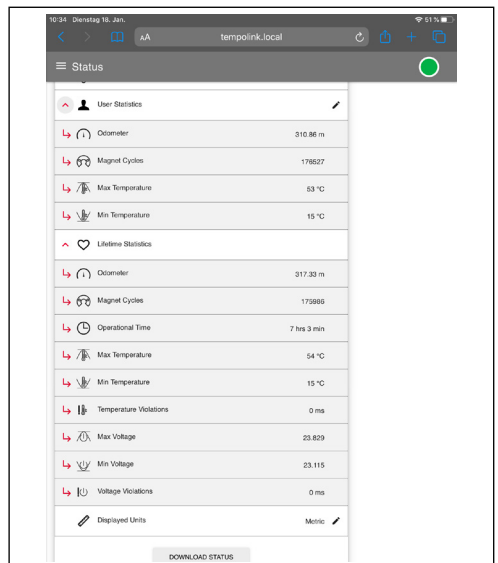


Fig. 26: Values under “User Statistics” and “Lifetime Statistics”

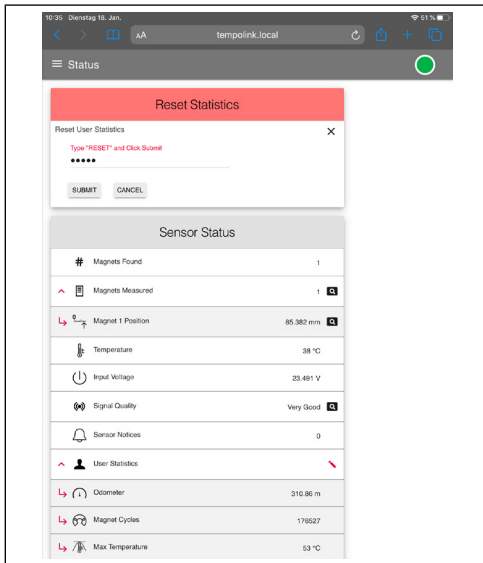


Fig. 27: Resetting the values under “User Statistics”

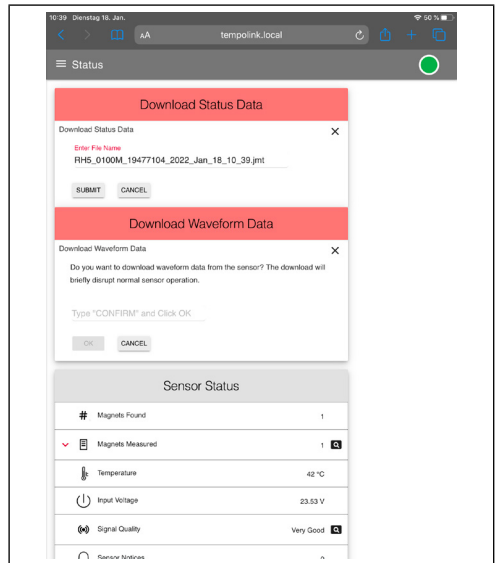


Fig. 29: Downloading status information and graphical display of the signal quality

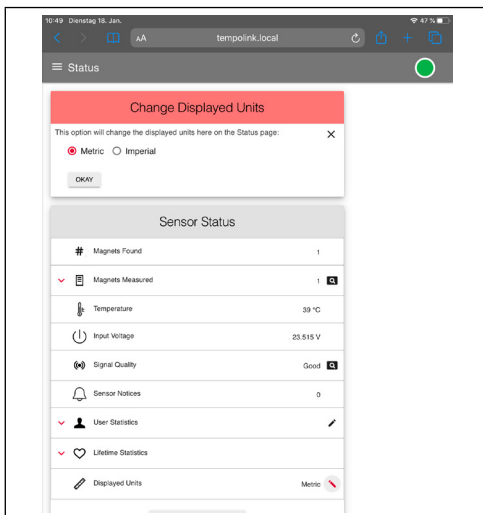


Fig. 28: Changing display units

9.3 Menu Item Sensor Info

The Sensor Info menu includes information about the connected sensor like stroke length, serial number and order code. The displayed information depends on the sensor output.

9.4 Menu Item Parameters

The Parameter menu includes information about the operational settings of the connected sensor. The displayed parameters depend on the sensor output. Depending on the output, some parameters can only be read.

NOTICE

For information about the parameters, check the R-Series V operation manual of the sensor connected to your TempoLink® smart assistant.

To change parameters or to reset the sensor to factory settings, the command mode must be started. In command mode, the sensor does not output a position value. By clicking the button ENTER COMMAND MODE the “Enter Command Mode” window opens. After reading the information, enter the word COMMAND and confirm by clicking OK (Fig. 30). After entering the command mode the connection icon on the top right will turn from green to blue. By clicking the button FACTORY RESET the sensor is reset to the factory setting.

After the parameters have been configured or the factory reset has been carried out, click the button EXIT COMMAND MODE. The "Exit Command Mode" window for exiting the command mode will open. Click the button SAVE AND EXIT to exit the command mode and to transfer the changed parameters to the sensor (Fig. 31). If you click the button EXIT WITHOUT SAVING, the changed parameters are not transferred to the sensor. In both cases the sensor returns to the normal function and outputs the current position value. The connection icon on the top right will turn to green.

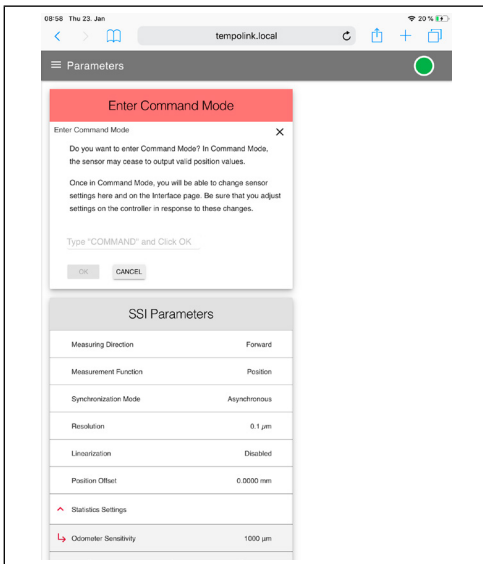


Fig. 30: Starting the command mode

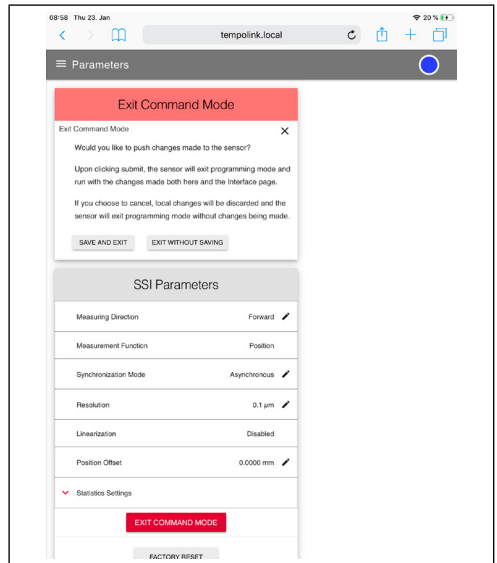


Fig. 31: Exiting the command mode

NOTICE

Do not enter the command mode and adjust parameters while the sensor is in operation.

9.5 Menu item interface

The interface menu includes information about the interface settings of the connected sensor. The displayed information depends on the sensor output. To change interface settings, the command mode must be started. See section 9.4 Menu Item Parameters.

NOTICE

Do not enter the command mode and change settings while the sensor is in operation.

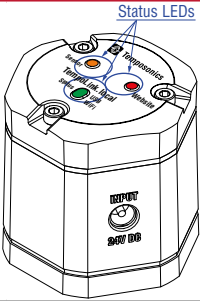
NOTICE

German version of the operation manual is available on our homepage: temposonics.com/tempolink

10. LEDs of TempoLink® smart assistant

Three LEDs in the lid of the TempoLink® smart assistant display the current status of the tool:

TempoLink® smart assistant LEDs



LED Sensor Communication between TempoLink® smart assistant and sensor			
LED color			Information
● Green	Flashing		Data transfer between TempoLink® smart assistant and sensor
● Red	ON		No connection between TempoLink® smart assistant and sensor
LED Website Communication between TempoLink® smart assistant and website			
LED color			Information
● Red	ON		Website not accessed
● Green	Flashing		Data transfer between TempoLink® smart assistant and website
LED Status USB & Wi-Fi connection			
LED color (USB)			Information
● Green	ON		USB connection exists
● Red	ON		USB connection error
● Grey	–	OFF	No USB connection
LED color (WiFi)			Information
● Green	ON		Wi-Fi activated on TempoLink® smart assistant
● Red	ON		Wi-Fi error on TempoLink® smart assistant
● Grey	–	OFF	Wi-Fi deactivated on TempoLink® smart assistant (USB connection exists)

Fig. 32: LED connection status

NOTICE
Initialization of the Wi-Fi connection or USB connection takes a few seconds. After initialization, the corresponding LED Status lights up.

11. Technical data

Operating conditions	
Operating temperature	-20...+60 °C (-4...+140 °F)
Humidity	10...90 % relative humidity, no condensation
Ingress protection	IP30
Design/Material	
Housing	ABS plastic
Dimensions (h × w × d)	54 × 44 × 53 mm (2.1 × 1.7 × 2 in.)
Electrical connection	
Connection type	1 × micro USB 1 × barrel connector 2.1 × 5.5 mm (female) 1 × barrel connector 2.5 × 5.5 mm (female)
Operating voltage	+24 VDC
Power consumption	15 W (when connecting an R-Series V sensor)
Wi-Fi	
Wi-Fi standard	IEEE 802.11b/g/n
Frequency range	2.4 GHz: 2.412 GHz...2.472 GHz

12. Troubleshooting

Troubles	Solution
Presentation of the website	
The website of the TempoLink® smart assistant is not displayed.	<ul style="list-style-type: none"> • Check if the address http://tempolink.local is called by the browser. • Press CTRL+F5, to have the browser completely reload the page or clear the browser history and reload the page. • Use a browser as Mozilla Firefox, Google Chrome, Microsoft Edge or Apple Safari.
The website of the TempoLink® smart assistant is not displayed correctly.	<ul style="list-style-type: none"> • Press CTRL+F5, to have the browser completely reload the page or clear the browser history and reload the page.
It takes a long time to load the website of the TempoLink® smart assistant.	<ul style="list-style-type: none"> • Check if the address http://tempolink.local is called by the browser. • If you have connected your TempoLink® smart assistant to a computer via a USB connection, deactivate Wi-Fi on the computer. • If you have connected your TempoLink® smart assistant to a smartphone or tablet via Wi-Fi, switch off the cellular data on the smartphone or tablet.
Firmware update	
The UPDATE button is not displayed.	<ul style="list-style-type: none"> • Updating the firmware is only possible via computer. • Connect the TempoLink® smart assistant to a computer.
After a firmware update, the old firmware is still displayed.	<ul style="list-style-type: none"> • Press CTRL+F5, to have the browser completely reload the page or clear the browser history and reload the page.
When updating the firmware, the LEDs light up green and not orange.	<ul style="list-style-type: none"> • With an USB connection between the TempoLink® smart assistant and the computer, the LEDs may light up green at the beginning of the installation. Do not interrupt the installation or the power supply. After a few minutes, the LEDs will turn orange.
After an update, there is no longer a connection between the TempoLink® smart assistant and the computer.	<ul style="list-style-type: none"> • The Wi-Fi connection is interrupted during the update process. Briefly interrupt the power supply of the TempoLink® smart assistant and re-establish the Wi-Fi connection. • Reload the website of the TempoLink® smart assistant.
Connection	
The TempoLink® smart assistant is connected to a computer, smartphone or tablet. It is displayed that there is no internet connection.	<ul style="list-style-type: none"> • The TempoLink® smart assistant does not require a connection to the Internet and does not enable a connection to the Internet.
The TempoLink® smart assistant cannot be connected to a computer, smartphone or tablet via Wi-Fi.	<ul style="list-style-type: none"> • Check that the lower LED C on the TempoLink® smart assistant is green. • Check whether Wi-Fi is activated on the TempoLink® smart assistant (see section 9.3).
The connection icon in the upper right corner is red and the user interface displays "No sensor connected" although a sensor is connected to TempoLink® smart assistant.	<ul style="list-style-type: none"> • Check that the adapter cable between sensor and TempoLink® smart assistant is correctly plugged in on both devices. • Check if the LED on the sensor are on. • Use an R-Series V sensor. • Press CTRL+F5, to have the browser completely reload the page or clear the browser history and reload the page.

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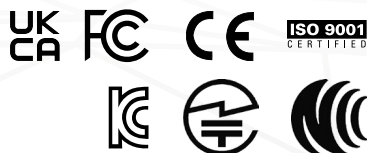
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