

Tempsonics®

Magnetostrictive Linear Position Sensors

TempoLink Smart Assistant Operation Manual



I AM THE NEW GENERATION

Table of contents

1. Introduction	3
2. Safety instructions	4
2.1 Intended use	4
2.2 Foreseeable misuse.....	4
2.3 Installation, commissioning and operation	5
2.4 Safety instructions for use in explosion-hazardous areas	5
2.5 Warranty	5
2.6 Return.....	5
2.7 Removal.....	5
3. Package content	6
4. Connection of TempoLink smart assistant to R-Series V sensor	6
5. Connection of TempoLink smart assistant to power supply	7
5.1 Using the plug-in power supply with plug adapters	7
5.2 Using the cable for insertion in an existing sensor power supply with sensor mating connector and barrel connector.....	7
6. Connection of TempoLink smart assistant to smartphone, tablet or computer	7
6.1 Connecting a Wi-Fi enabled device to the integrated Wi-Fi access point.....	7
6.2 Connecting a computer via USB connection	7
7. Establishing a connection via browser	8
8. Graphical user interface	8
9. LEDs of TempoLink smart assistant	9

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
NOTICE	This symbol is used to point to situations that may lead to material damage, but not to personal injury.

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

2. Safety instructions

2.1 Intended use

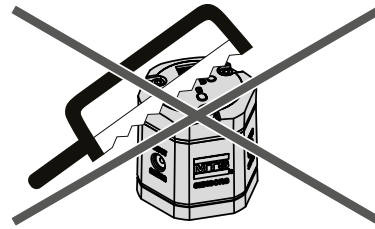
This product may be used only for the applications defined under item 1 and item 2 and only in conjunction with the third-party devices and components recommended or approved by MTS Sensors. As a prerequisite of proper and safe operation, the product requires correct transport, storage, mounting and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

1. The 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.

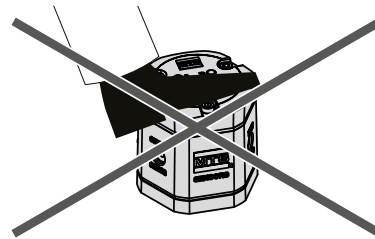
2.2 Foreseeable misuse

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 sensor assistant.
 → The sensor assistant might be damaged.



Do not step on the sensor assistant.
 → The sensor 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 and TempoLink smart assistant 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 system switch-on, ensure that nobody's safety is jeopardized by starting machines.

2.4 Safety instructions for use in explosion-hazardous areas

The sensors are not suitable for operation in explosion-hazardous areas.

2.5 Warranty

MTS Sensors grants a warranty ² period for the Temposonics® position sensors and supplied accessories relating to material defects and faults that occur despite correct use in accordance with the intended application. The MTS Sensors obligation is limited to repair or replacement of any defective part of the unit. No warranty can be taken 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 MTS Sensors 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. MTS Sensors 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 sensor can be returned to MTS Sensors or a repair facility explicitly authorized by MTS Sensors. Any shipment cost will be borne by the sender ².

2.7 Removal

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

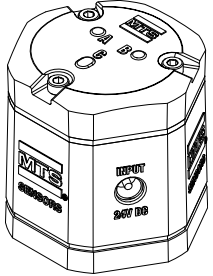
^{2/} See also applicable MTS Sensors sales and supply conditions, e.g. under www.mtssensors.com

TempoLink Smart Assistant

Operation Manual

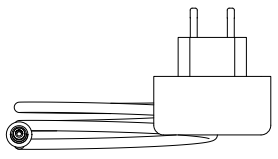
3. Package content

1 TempoLink smart assistant

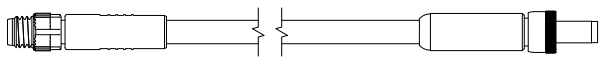


2 Plug-in power supply with plug adapters or cable for insertion in an existing sensor power supply with sensor mating connector and barrel connector

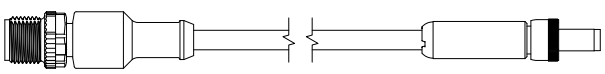
Power supply with plug adapters



M8 male (D56)*

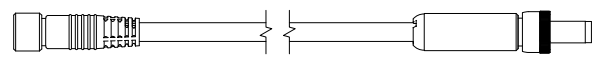


M12 male (D58)*

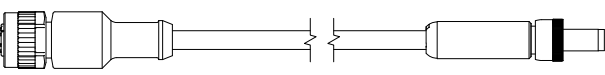


3 Adapter cable for connection of TempoLink smart assistant to R-Series V sensor

EM08 (Sensor – Barrel)*



EM12 (Sensor – Barrel)*



4 USB cable for optional connection of TempoLink smart assistant to a computer

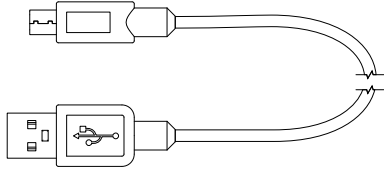


Fig. 1: Package content of the TempoLink kit

* One of the above supplied depending on the configured TempoLink kit

4. 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. Use the adapter cable **3** for connection of the TempoLink smart assistant to the R-Series V sensor. Connect the barrel connector of the adapter cable to the connection point labeled “OUTPUT SENSOR” on the TempoLink smart assistant. 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 supply power for the sensor.

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.

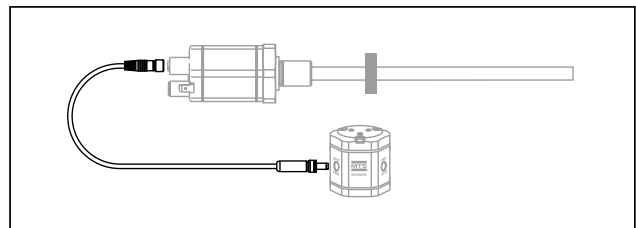


Fig. 2: Connection of TempoLink smart assistant to R-Series V sensor

5. Connection of TempoLink smart assistant to power supply

There are two ways:

5.1 Using the plug-in power supply with plug adapters

Connect the barrel connector ② to the “INPUT 24 VDC” port on the TempoLink smart assistant. Next, insert the plug into the outlet. Additional outlet adapters are supplied to support regional requirements.

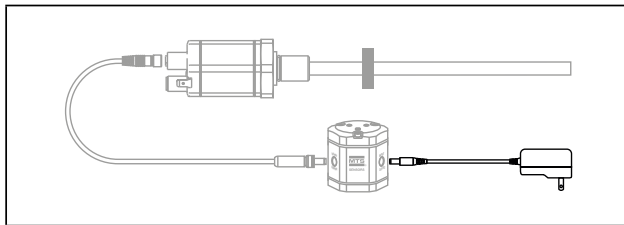


Fig. 3: Connection of TempoLink smart assistant with the plug-in power supply

5.2 Using the cable for insertion in an existing sensor power supply with sensor mating connector and barrel connector

Connect the supplied sensor mating connector ② to your existing power supply connector that was removed from the sensor. Connect the barrel connector to the “INPUT 24 VDC” port on the TempoLink smart assistant.

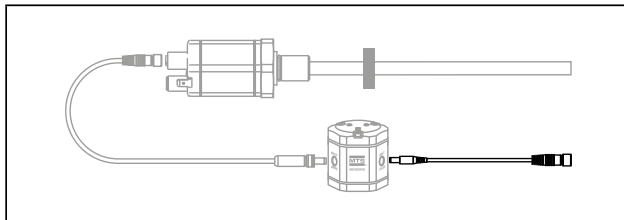


Fig. 4: Connection of TempoLink smart assistant with the cable for insertion in an existing sensor power supply cable

6. 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.

6.1 Connecting a Wi-Fi enabled device to the integrated Wi-Fi access point ③

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



Fig. 5: 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 LAN connections are active.

6.2 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”.

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

TempoLink Smart Assistant

Operation Manual

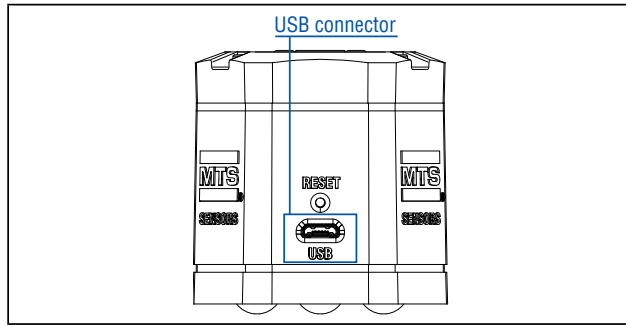


Fig. 6: USB port on the TempoLink smart assistant

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.

7. 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/>



Fig. 7: Start page of the graphical user interface

The green or red circle 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

Fig. 8: Connection status

8. Graphical user interface

Click the menu symbol ☰ in the top left to get to the main menu:

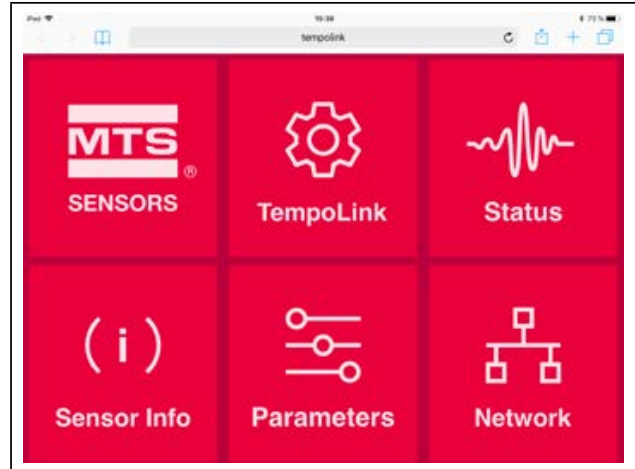


Fig. 9: Main menu of the graphical user interface

TempoLink: includes information about the TempoLink smart assistant like its serial number, firmware version and product number. In addition the password for the Wi-Fi access point can be changed.

Status: includes current information about the sensor status like

- Position of the magnet(s)
- Temperature inside sensor electronic housing
- Input voltage
- Operational time: total operational hours of the sensor
- Odometer: total distance travelled by the position magnet
- Magnet cycles: total number of directional changes of the magnet

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

Parameters: includes information about the operational settings of the connected sensor. The displayed parameters depend on the sensor protocol and some operational settings may not be adjustable.

Network: includes information about the network settings of the connected sensor. The displayed information depends on the sensor protocol.

9. 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 A			
Communication between TempoLink sensor assistant and sensor			
LED color	Information		
● Green	ON	Sensor connected	
● Red	ON	Data transfer from TempoLink sensor assistant to sensor	
● Orange	ON	Sensor connected and data transfer from TempoLink sensor assistant to sensor	
LED B			
Communication between sensor and TempoLink sensor assistant			
LED color	Information		
● Red	ON	TempoLink sensor assistant receives data from connected sensor	
● Grey	OFF	No sensor connected	
LED C			
USB & Wi-Fi connection			
LED color (up)	Information		
● Green	ON	USB connection exists	
● Red	ON	USB connection error	
● Grey	OFF	No USB connection	
LED color (down)	Information		
● Green	ON	Wi-Fi activated on TempoLink sensor assistant	
● Red	ON	Wi-Fi error on TempoLink sensor assistant	

Fig. 10: LED connection status

UNITED STATES 3001 Sheldon Drive
MTS Systems Corporation Cary, N.C. 27513
Sensors Division Phone: +1 919 677-0100
E-mail: info.us@mtssensors.com

GERMANY Auf dem Schüffel 9
MTS Sensor Technologie 58513 Lüdenscheid
GmbH & Co. KG Phone: +49 2351 9587-0
E-mail: info.de@mtssensors.com

ITALY Phone: +39 030 988 3819
Branch Office E-mail: info.it@mtssensors.com

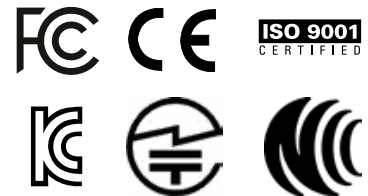
FRANCE Phone: +33 1 58 4390-28
Branch Office E-mail: info.fr@mtssensors.com

GREAT BRITAIN Phone: +44 79 44 15 03 00
Branch Office E-mail: info.uk@mtssensors.com

CHINA Phone: +86 21 6485 5800
Branch Office E-mail: info.cn@mtssensors.com

JAPAN Phone: +81 3 6416 1063
Branch Office E-mail: info.jp@mtssensors.com

Document Part Number:
551986 Revision B (EN) 10/2018



SRRC

www.mtssensors.com