User Guide

essent**im** spider

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Table of Content

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Notes

⚠	Warning: This symbol represents a warning. It describes a dangerous situation or indicates safety risks.
☞	Note: This symbol indicates important information.
🗑	The symbol of a crossed-out dustbin indicates that this device contains electronic components and must not be disposed of with household waste in accordance with Directive 2002/96/EC (WEEE).

Legal notice

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Warranty and liability

The device complies with the basic safety and health requirements of the relevant EU regulations and has been tested for proper functioning at the factory. When claiming warranty, the device number must be indicated (see product label on the device). Failure to comply with the manufacturer's specifications or legal requirements or unauthorized modifications to the equipment or unauthorized replacement of individual parts or accessories may significantly impair the electrical safety of this product and void the warranty. Any liability, property damage or personal injury resulting from the device being used contrary to the instructions in this manual is excluded. We reserve the right to make technical design and execution changes at any time without prior notice as a result of continuous further development and product improvement. No liability is accepted for damage resulting from improper use. Warranty claims are then also void. Liability for any damage to property or personal injury that occurs is then transferred to the operator.

Safety Instructions

Read these instructions carefully before commissioning and using the device and always keep the instructions within easy reach!

⚠️ **Warning**
Always observe all safety instructions in this document! Non-observance may result in personal injury or damage to property! Always keep the safety instructions and the user manual permanently always keep the safety instructions and the user manual in an accessible and permanent place.

- Observe all technical limits as well as storage conditions for the device.
- If there is obvious damage to the device, it must be taken out of service and stored safely.
- Do not attempt to repair or modify the device. For maintenance and repair, the device must be sent to the manufacturer or an agency designated by the manufacturer.
- Before operation, the safety instructions and the user manual must have been read and understood by the user. The device may only be operated by persons to whom this applies.
- In addition to the instructions and safety notes in this manual, the basic regulations for occupational safety must be observed.
- The system is safe and reliable and complies with the relevant EU directives. Improper use may result in damage to the user, third parties or material objects.
- The user is responsible for safety risks arising from biological material or samples used and monitored with the device.
- Maintenance or repairs may only be carried out by the manufacturer or by persons or companies authorized by the manufacturer.
- Do not operate the device in potentially explosive atmospheres, aggressive atmospheres or explosion protection zones.
- The device is not a toy. Keep the device away from children and animals.
- Avoid contact with liquids or high humidity.
- Avoid liquid penetration into the device.
- Protect the device from permanent direct sunlight.
- Do not remove any safety signs, stickers or labels from the device. Keep all safety signs, stickers and labels in a legible condition.
- Do not open the device with a tool.
- The product should not be sterilized!

Intended Use and User

The essent**im** spider is a sensor hub for "extensions" (wired sensors) from essent**im**. The device is designed for operation with a cable connection and has an emergency power supply from alkaline batteries (4 x AA) in the event of a power failure. The spider is placed at the desired location, or alternatively attached to a surface using the supplied mounting system (e.g. magnets). For safety reasons, the maximum mounting height of 2 meters must not be exceeded when using a magnetic mounting system.

Up to four extensions can be connected to the spider. The spider is equipped with a potential-free switching contact for the direct forwarding of alarm messages.

⚠️ **Warning**
Always observe the safe operating conditions specified here!
Failure to do so may result in personal injury and/or damage to property.

- The operating conditions are from -10°C to +58°C, non-condensing humidity up to 100%, 0.3 to 1.1 bar ambient pressure.
- The device is not explosion-proof.
- The device should be used as a stationary measuring unit.
- When using the device, always observe the operating conditions for the batteries.
- Only cables and extensions approved by the manufacturer may be used with the device.
- Avoid mechanical loads, damage to the housing can lead to damage to the batteries or the circuit. This can lead to liquids leaking from the battery or short circuits and temperature increase.
- Only alkaline batteries may be used.
- The mounting height for magnetic mounting must not exceed 2 meters.
- Ship the device without batteries.
- Contact essent**im** for further information.

The user is, for example, a trained laboratory employee / assistant / technician / student. Each user must have read and understood the safety instructions and the user manual.

Device Description

General Information

The essent**im** spider is an evaluation unit for sensor extensions with a recording function (data logging function). The data is transmitted wirelessly and stored in parallel in the local memory.

The device has up to four interfaces for essent**im** extensions and a potential-free contact.

The device starts automatically as soon as it is supplied with power using the enclosed mains adapter or batteries. The device's measurement data is forwarded via an essent**im** gateway.

Device

Technical Data

Manufacturer	essentim GmbH
Model	spider
Type	Sensor Hub für extensions
Power supply for charging	5V DC (max. 500 mA)
Battery Type	4 x AA (1,5V) alkaline batteries
Operating condition (EN / IEC 61010-1)	
● Operating location	Indoor, no use or storage in explosive atmospheres.
● Ambient temperature	-10 to +58 °C
● Humidity	Maximum 100 % relative humidity, non-condensing
● Altitude	5000 m
● Other	Do not expose to chemicals or mechanical stress. The product should not be sterilized! Observe the cleaning instructions in the user manual to prevent damage.
Storage and loading conditions	
● Temperature	0 to 40°C
● Humidity	10 to 50%
● Other	Protected from frost and heat, not in contact with hazardous substances in a place protected from dust and sunlight.
EMC/Ratio	EN 61326-1:2021, ETSI EN 301 489-1 V2.2.3:2019-11, ETSI EN 301 489-17 V3.2.4:2020-09, ETSI EN 300 328 V2.2.2:2019-07
Other conformities	RoHS, CE, UKCA
Interfaces	2.4 GHz radio interface 4 x USB type C interfaces for sensor extensions 1 x socket for potential-free contact 1 x USB type C for connecting power supply unit
Dimensions	150 x 100 x 30 mm (length x width x height)
Weight	155 g (without batteries)

Transportation and storage

⚠️ **Warning**
Improper transportation can lead to personal injury and damage to property. Please observe all instructions for safe transportation.

The spider must be secured during transportation to prevent possible mechanical impact. Ship the device without batteries.

Unused devices should be stored without batteries, protected from dust, sunlight and moisture.

☞ **Note**
Observe the storage conditions for the device specified in the "Technical data" chapter.

Initial Setup

The following steps must be carried out when using the spider for the first time:

1. If you are operating the spider in battery mode, insert four alkaline AA batteries with a voltage of 1.5 V each.

For mains operation, simply connect the device to the mains using the mains adapter supplied; the batteries then serve as a backup power supply in the event of a mains failure.
If you do not require a backup function, operate the device without batteries.

2. The device starts automatically, the status LED flashes green.

3. The spider is ready for use after switching on. After the device has been automatically registered by a gateway, the device starts to send and record measurement data. The measured values are forwarded to your configured system via the gateway.

Note
essentim recommend using high quality alkaline batteries.
The inserted batteries must be checked annually to ensure that they are intact.

Warning
Only use the supplied power adapter for mains operation.

Device functions

In addition to the evaluation function of extensions, the spider has a number of functions and interaction options.

Operating modes

Mains operation with optional backup batteries

The device can be operated continuously using the mains adapter supplied. In addition, 4 x AA 1.5V alkaline-batteries can be inserted. These serve as a backup in mains operation in the event of a power failure.

Button

The button can be used to restore the factory settings or change the switching function of the potential-free contact:

Restoring the factory settings

Switch the device off. If the button is held down when switching on, the device does not start normally but starts to flash red. Press and hold the button until the red LED lights up continuously. Then release the button to reset the device to factory settings. The process takes about 30 seconds.

> **Note**
> All settings such as the individual name, limit values or saved extensions and the measurement data from the memory are reset.

Changing the switching function of the potential-free contact

Briefly pressing the push-button during operation changes the switching behavior of the potential-free contact. The contact can either be set to "normally open (NO)", "normally closed (NC)" or deactivated.

- Normally Open (NO) means that the contact operates as a normally open contact, i.e. it is open when not switched on.
- Normally Closed (NC) means that the contact operates as a normally closed contact, i.e. it is closed when not switched on.
- Deactivated means that the switch is not activated.

Each time the button is pressed, the LED flashes in a different color. The desired switching behavior can be set via the color.

Flashing green	=> NO
Flashing blue	=> NC
Flashing red	=> deactivated

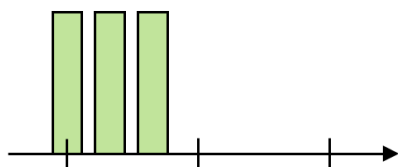# LED functions

The status LED of the spider can light up in three different colors:
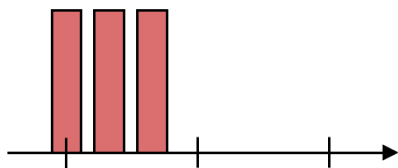
Status LED colors and their meaning

green LED	everything ok
blue LED	Memory is being read or a bridge is connected to the device
red LED	There is a problem - Connect to the device via the essentim web application to find and rectify the problem.

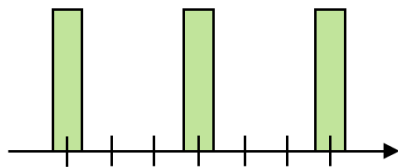## Blinkcodes Status LED

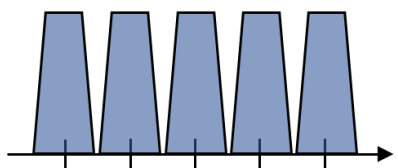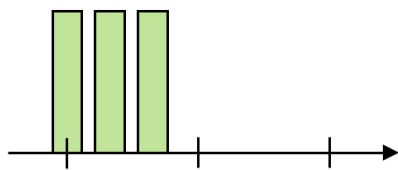|		
	Switch on	The spider flashes green 3 times quickly to indicate a successful start.
	Switch off	The spider flashes red 3 times quickly and ends all measurements and recordings.
	Battery operation	In battery mode, the spider status LED flashes every 3 seconds. The status is indicated by the color.
	Connected	As long as the spider is transferring data from the memory or is being configured by a gateway, it flashes blue.
	mains operation	In mains operation, the status LED lights up continuously. The status is indicated by the color.

Extensions

The spider can be extended with sensor extensions. This allows you, for example, to monitor ovens with high temperatures or freezers with very low temperatures. You can find more information on the available sensor extensions at www.essentim.com.
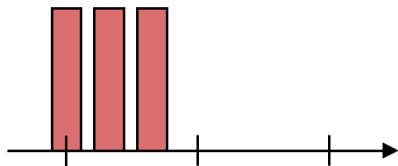
The extension is recognized automatically after it is plugged in. The new measured value appears in your system as an additional measurement parameter.

Status LED with Extensions

	Plug in	The spider flashes green 3 times quickly. The extension has been successfully detected.
	Unplugging	The spider flashes red 3 times quickly. The extension has been unplugged.
	Error in mains operation	There is a problem. The spider flashes every 3 seconds in battery mode or lights up red continuously in mains mode.

Cleaning, Maintenance and Repair

Cleaning

The essent**im** spider can be cleaned with demineralized water or isopropanol (70%). The cleaning fluid should be applied with a lint-free cloth.

> **Warning**
> Incorrect cleaning agents or cleaning agents not specified in the operating instructions or sharp objects may damage the device! Observe the information on chemical resistance!

essent**im** recommends the following procedure for cleaning:

1. Switch off the device.
2. Moisten a cloth with isopropanol (70%) and wipe over the surface.
3. Let the liquid soak for one minute.
4. Wipe the device dry, preferably with a microfiber cloth.
5. Wait a further five minutes to ensure that all residues of the isopropanol have evaporated.
6. The procedure can be repeated if necessary
7. The device can be used again.

> **Warning**
> The device should not be sterilized. essent**im** GmbH does not give approval for sterilization processes of any kind, as both thermal and chemical processes can destroy the device and lead to property damage and personal injury!

Maintenance and Repair

Checking the measuring accuracy

To determine the measuring accuracy, we recommend performing an annual metrological traceability.

Defect

In case of a defect, please contact essent**im** GmbH.
support@essentim.com
www.essentim.com

Disposal

The spider is marked according to the EU Directive on Waste Electrical and Electronic Equipment (WEEE).

WEEE registration number of essent**im** GmbH: DE 22316070.

This product must not be disposed of with household waste.

The spider can be taken to a designated primary treatment facility for the disposal of electrical and electronic equipment at your own expense for environmentally sound disposal. As a designated B2B product, you can alternatively return the spider (sufficiently stamped) to essent**im** GmbH. We will dispose of the device at our expense in a proper and environmentally friendly manner.

Changelog

25.03.2020	Erstellung der Bedienungsanleitung spider	V 1.0
31.01.2024	Anpassungen	

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