OPERATING INSTRUCTIONS

Hermes ELS Connect

SICK AppSpace SensorApps

SICK
Sensor Intelligence.

Described Product

Hermes ELS Connect (Art. No. 1122749)

Manufacturer

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Germany

Legal information

Original document

This document is an original document of SICK AG

Content

1 About this document

1.1 Information on the operating instructions

These operating instructions provide important information on how to use products from SICK AG.

Prerequisites for safe work are:

- Compliance with all safety notes and handling instructions supplied.
- Compliance with local work safety regulations and general safety regulations for product applications

The operating instructions are intended to be used by qualified personnel.

NOTE
Read these operating instructions carefully before starting any work on the device, in order to familiarize yourself with the product and its functions.

The instructions constitute an integral part of the product and must be accessible to staff at all times.

These operating instructions do not provide information on operating the machine or system in which the product is integrated. For information about this, refer to the operating instructions of the specific machine.

1.2 Explanation of symbols

Warnings and important information in this document are labeled with symbols. The warnings are introduced by signal words that indicate the extent of the danger. These warnings must be observed at all times and care must be taken to avoid accidents, personal injury, and material damage.

DANGER
... indicates a situation of imminent danger, which will lead to a fatality or serious injuries if not prevented.

WARNING
... indicates a potentially dangerous situation, which may lead to a fatality or serious injuries if not prevented.

CAUTION
... indicates a potentially dangerous situation, which may lead to minor/slight injuries if not prevented.

NOTICE
... indicates a potentially harmful situation, which may lead to material damage if not prevented.

NOTE
... highlights useful tips and recommendations as well as information for efficient and trouble-free operation.

1.3 Further information

NOTE
Further documentation for the device can be found on the online product page at:

- www.sick.com/Hermes_Standard_Solutions
- www.sick.com/SIM10xx

The following information is available for download there:

- Model-specific online data sheets for device variants, containing technical data, dimensional drawing, and specification diagrams
- EU declaration of conformity for the product family
- Dimensional drawings and 3D CAD dimension models in various electronic formats
- This SensorApp documentation, available in English and German, and in other languages if necessary
- Other publications related to the devices described here
- Publications dealing with accessories

2 Safety information

2.1 Intended use

The Hermes ELS Connect SensorApp, which is part of the SICK AppSpace EcoSystem, is a digital solution from SICK for installation on programmable devices. It is used for the manufacturer-independent integration of machines with ELS interfaces into PCB assembly lines using the IPC Hermes standard.

SICK AG assumes no liability for losses or damage arising from the use of the product, either directly or indirectly. This applies in particular to use of the product that does not conform to its intended purpose and is not described in this documentation.

2.2 Incorrect use

Any use outside of the stated areas, in particular use outside of the technical specifications and the requirements for intended use, will be deemed to be incorrect use.

- The device does not constitute a safety component in accordance with the respective applicable safety standards for machines.
- The device must not be used in explosion-hazardous areas, in corrosive environments or under extreme environmental conditions.
- Any use of accessories not specifically approved by SICK AG is at your own risk.

WARNING
Danger due to improper use!
Any improper use can result in dangerous situations.
Therefore, observe the following information:
- Device should be used only in accordance with its intended use.
- All information in these operating instructions must be strictly observed.

2.3 Limitation of liability

Relevant standards and regulations, the latest technological developments, and our many years of knowledge and experience have all been taken into account when compiling the data and information contained in these operating instructions. The manufacturer accepts no liability for damage caused by:

- Non-adherence to the product documentation (e.g., operating instructions)
- Incorrect use
- Use of untrained staff
- Unauthorized conversions
- Technical modifications
- Use of unauthorized spare parts, consumables, and accessories

With special variants, where optional extras have been ordered, or owing to the latest technical changes, the actual scope of delivery may vary from the features and illustrations shown here.

2.4 Cybersecurity

To protect against cybersecurity threats, it is necessary to continuously monitor and maintain a comprehensive and holistic cybersecurity concept. A suitable concept

comprises organizational, technical, procedural, electronic, and physical levels of defense and provides suitable measures for different types of risks. SICK's products and solutions must be viewed as a component of this concept.

Information on cybersecurity can be found at: https://sick.com/psirt .

2.5 Requirements for skilled persons and operating personnel

WARNING
Risk of injury due to insufficient training.
Improper handling of the device may result in considerable personal injury and material damage.
- All work must only ever be carried out by the stipulated persons.

This product documentation refers to the following qualification requirements for the various activities associated with the device:

- **Instructed personnel** have been briefed by the operator about the tasks assigned to them and about potential dangers arising from improper action.
- **Skilled personnel** have the specialist training, skills, and experience, as well as knowledge of the relevant regulations, to be able to perform tasks delegated to them and to detect and avoid any potential dangers independently.
- **Electricians** have the specialist training, skills, and experience, as well as knowledge of the relevant standards and provisions to be able to carry out work on electrical systems and to detect and avoid any potential dangers independently. In Germany, electricians must meet the specifications of the BGV A3 Work Safety Regulations (e.g. Master Electrician). Other relevant regulations applicable in other countries must be observed.

The following qualifications are required for various activities:

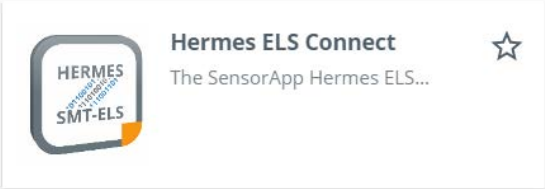
Activities	Qualification
Mounting, maintenance	• Basic practical technical training • Knowledge of the current safety regulations in the workplace
Electrical installation, device replacement	• Practical electrical training • Knowledge of current electrical safety regulations • Knowledge of the operation and control of the devices in their particular application
Commissioning, configuration	• Basic knowledge of the Windows™ operating system in use • Basic knowledge of the design and setup of the described connections and interfaces • Basic knowledge of data transmission
Operation of the device for the particular application	• Knowledge of the operation and control of the devices in their particular application • Knowledge of the software and hardware environment for the particular application

3 Product description

The Hermes ELS Connect SensorApp, which is part of the SICK AppSpace EcoSystem, is a digital solution from SICK for installation on programmable devices. It is used for the manufacturer-independent integration of machines with ELS interfaces into PCB assembly lines using the IPC Hermes standard.

3.1 Scope of delivery

The scope of delivery includes a **license key** for the activation of the **Hermes ELS Connect** SensorApp.



The SensorApp can be downloaded free of charge as *.sapk file from the web frontend of the SICK AppPool or in the SICK AppManager.

NOTE
To access the SICK AppPool via the web frontend or directly within the SICK AppManager, you will need a login with the SICK ID.

If you do not yet have a SICK ID, use the Register function in the login window to create a SICK ID.

3.2 Accessories

Accessories	Part number	Function
Sensor Integration Machine		
SIM1012	1098146	Integration product for operating the SensorApp incl. all required interfaces
Cables for Ethernet M12 to RJ45		
Leitungslänge 5 m	2106259	Required to integrate a SIM1012 into the Hermes network. A second cable is often used to connect the second Ethernet port of the SIM1012 to a network for remote access
Leitungslänge 10 m	2106260	
Voltage supply cables		
Leitungslänge 1.5 m	6059939	T-coded M12 for connecting to the SIM1012, flying leads for connecting to the machine.
Leitungslänge 3.0 m	6059907	
Mounting accessories		
Magnetic mounting kit for the SIM1012	2123575	Optional accessory for mounting a SIM1012 on magnetizable metals in the machine without additional holes

3.3 System requirements

The supported hardware as well as system requirements can be found on the product page **www.sick.com/Hermes_Standard_Solutions** on the “Technical data” tab, or in the product data sheet under the “Downloads” tab for the **Hermes ELS Connect** product.

3.4 Licensing

The Hermes ELS Connect SensorApp requires a device license. It can only be accessed after activation using a valid license key. To license the SensorApp, please download the License Manager SensorApp from the SICK AppPool: **apppool.cloud.sick.com**

Order a license using part number 1122749. An activation code (ticket) will be sent to you via e-mail.

4 Installation

Hermes ELS Connect is available via the SICK AppPool: apppool.cloud.sick.com

- To launch a preinstalled SensorApp: Follow the instructions for opening the user interface in “Opening the user interface”.
- To install the SensorApp on a device and for updates: Follow the instructions in “Installing a SensorApp on a device”.
- To start, stop or delete an installed SensorApp: Use the SICK AppManager, see “Install SICK AppManager on a PC”.

4.1 Installing the hardware components for retrofitting a machine with an ELS interface

4.1.1 Prepare the existing system for the installation

DANGER
Danger to life and limb due to live parts The SICK products are normally installed within an existing system that has an ELS interface.

- Before performing the installation, the system must be de-energized and secured by qualified specialist personnel.

4.1.2 Mechanical installation

The SIM1012 is designed for use in industrial environments. The IP65 enclosure rating according to EN 60529:1991-10 + A1:2000-02 + A2:2013-10 (requires blind plugs to be inserted in unused connections) and exclusive use of industrial plug connectors with a high mechanical ruggedness allow the device to be installed on the outside of a machine, away from the machine, or directly within the machine.

Choose a suitable position for mechanically mounting the SIM1012. The information required to prepare for the installation can be found in the technical drawing or the CAD data available in the Download section of the relevant SICK product.

As an alternative to mechanically modifying the machine, a magnetic bracket available as an accessory can also be used (see “Accessories”, page 9). First fasten it to the SIM1012 using the screws provided, then find a suitable position within the machine.

4.1.3 Electrical installation

Connections no. 1 to 3 must be installed as shown in Figure 1. Detailed descriptions of the individual connections are provided below.

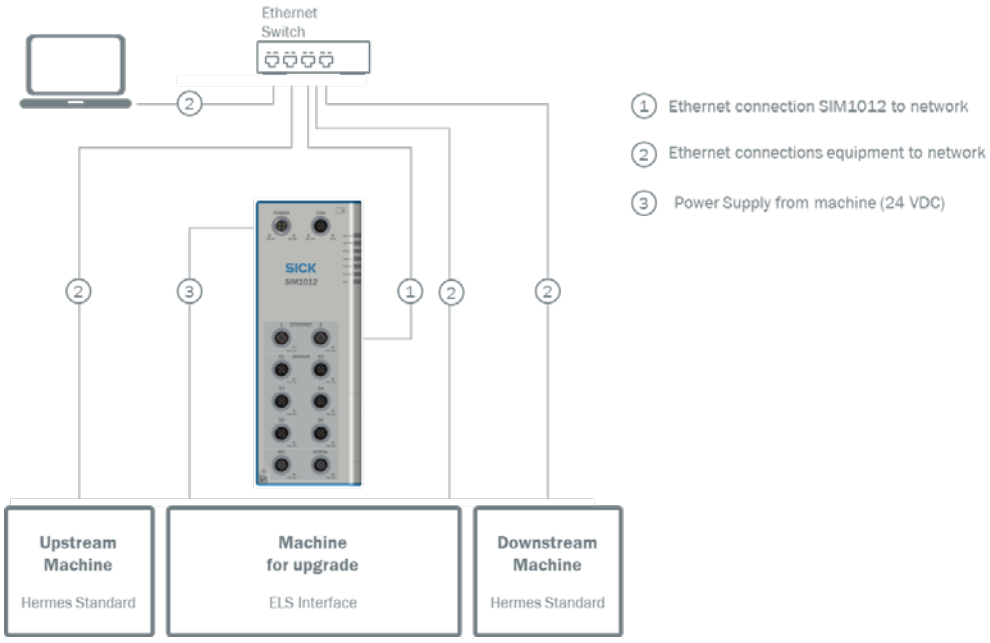


Figure 1: SIM1012 connection overview

Supply voltage for the SIM1012

The SIM1012 has two isolated voltage inputs.

- The IN1 input is the main supply of the SIM1012 and must always be connected.
- It is only mandatory to connect the IN2 input if identification sensors are connected via the CAN connection.

The accessories section lists voltage supply cables that are assembled with a suitable connector type for the POWER connection on the SIM1012. The other end of the cable comes with flying leads.

Table 2: Pin assignment and wire color for the supply voltage

POWER connector	Signal	Wire color of the accessory cable
Pin 1	+24V IN1	Brown
Pin 3	GND IN1	Blue
Pin 4	+24V IN2	White
Pin 2	GND IN2	Black

SICK does not offer a power supply unit. It is necessary to supply the SIM1012 using a power supply unit that meets the country-specific requirements. The supply voltage for the SIM1012 is specified as 24 V DC, ± 10% (SELV according to EN 60950-1). Observe the additional notes in the SIM1012 operating instructions when selecting the power supply unit.

To operate the SIM1012 on a machine with a standard ELS interface according to SEMI-SMT-ELS, a power supply unit with an output power of at least 60 W is required. If additional sensors, for example identification sensors, are used in the application, their additional power consumption must be suitably taken into account when dimensioning the power supply unit.

SIM1012 Ethernet connection

For machine-to-machine communication using the Hermes standard, all nodes must be connected in an Ethernet network. Two Ethernet ports are available on the SIM1012 for this purpose.

NOTE
Preset IP addresses of the Ethernet interfaces
- Ethernet 1: 192.168.0.1
- Ethernet 2: 192.168.1.1

Note also the instructions in Section 5.2 on changing the IP addresses

The integrated web server for the user interface of the SensorApp is available via both Ethernet ports.

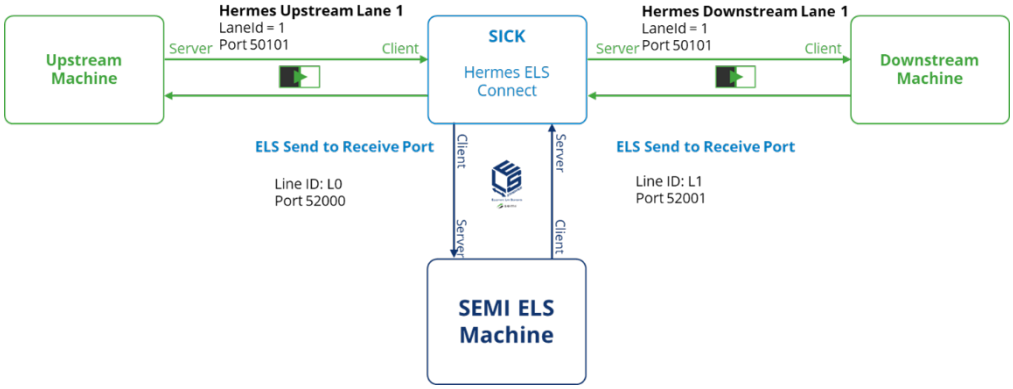


Figure 2: Exemplary Communication setup

4.2 Software installation

4.2.1 Install SICK AppManager on a PC

To install a SensorApp on a SIM1012, you need a PC with the SICK AppManager software.

Installing SICK AppManager

1. Download the latest version of SICK AppManager from www.sick.com/SICK_AppManager.
2. To install SICK AppManager on the PC, run the installation file and follow the onscreen instructions.

NOTE
SICK AppManager can be used to perform other management functions for SICK AppSpace devices.
- Firmware update
- Creation and management of device back-ups

4.2.2 Installing a SensorApp on a SICK device

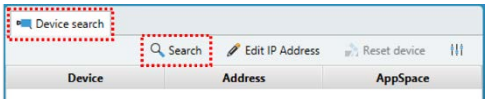
NOTE

Before opening the user interface, make sure that the following settings are correctly set up:

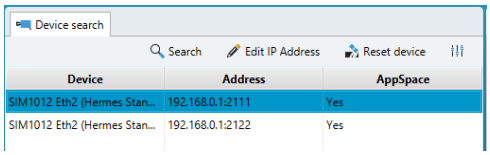
- The power to the device must be switched on.
- The device is connected to the PC via Ethernet.
- The PC must be on the same network as the device.
- The PC must not use the same IP address as the device.

4.2.3 Connecting SICK AppManager to the device

1. Open SICK AppManager on the PC.
2. In SICK AppManager, click **Search** on the Device search tab to search for available devices in the network.



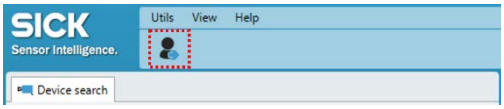
3. In the list of available devices, select the device on which you want to install the SensorApp.



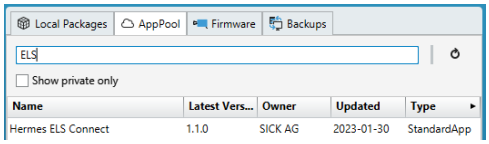
4.2.4 Installing the SensorApps using a PC with an Internet connection

If your PC is connected to the Internet when you connect to the device, the SensorApp can be downloaded and installed directly from the SICK AppPool via the SICK AppManager.

1. Log in to the SICK AppManager using your SICK ID to access the AppPool. Use the Login to SICK ID icon to do so.



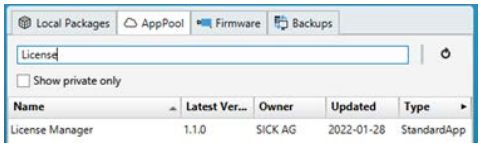
2. Click on the **AppPool** tab.
3. Select the **Hermes ELS Connect** SensorApp.



4. Click **Download and Install** to download the SensorApp to the PC and then install it on the device.
   ✓ **Hermes ELS Connect** is now installed and running on the device.

5. Click on the **AppPool** tab again.

6. Select the **License Manager** SensorApp

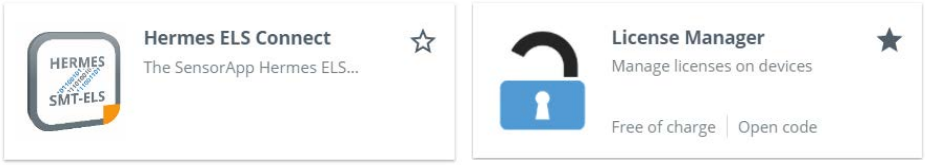


7. Click **Download and Install** to download the SensorApp to the PC and then install it on the device.
   ✓ **License Manager** is now installed and running on the device.

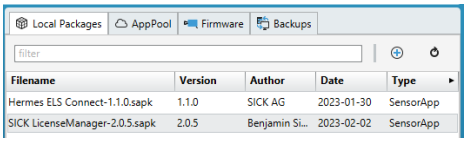
4.2.5 Installing the SensorApps using a PC without an Internet connection

If your PC is not connected to the Internet when you connect to the device, the SensorApp must be downloaded in advance via the web frontend of the SICK AppPool and made available on the PC as a *.sapk file.

1. Download the following SensorApps from the SICK AppPool.



2. Transfer the files to the PC connected to the SIM1012.
3. In the SICK AppManager, select the **Local Packages** tab.
4. Drag and drop the two *.sapk files one after the other onto the file list.
5. Select the **Hermes ELS Connect** SensorApp.



6. Click **Install** to install the SensorApp on the device:
   ✓ **Hermes ELS Connect** is now installed and running on the device.
7. Select the **License Manager** SensorApp.
8. Click **Install** to install the SensorApp on the device.
   ✓ **License Manager** is now installed and running on the device.

4.3 Activation & license management

NOTE
To activate licensed functions, the License Manager SensorApp must be installed on your device. Note the relevant instructions in Section 4.2 Software installation.

NOTE
The voltage supply of the device must be switched on.
- The device must be connected to the PC via Ethernet.
- The PC must be on the same network as the device.

The PC must not use the same IP address as the device.

4.3.1 Offline activation of the license

For offline activation, license.sick.com offers the so-called “file-based license transfer” option.

Open the user interface of the License Manager via a web browser

NOTE
Before opening the user interface, make sure that the following settings are set up correctly:
- The voltage supply of the device must be switched on.
- The PC must be on the same network as the device.
- The PC must not use the same IP address as the device

1. Open a web browser (recommended: Google Chrome).
2. Enter the IP address of the device in the address li
3. If both SensorApps have been installed as described in Section 4.2 Software installation, the user interface of Hermes ELS Connect will launch automatically. To switch to the user interface of the License Manager SensorApp, use the displayed function Switch to 'License Manager' SensorApp
   ✓ The SOPASair user interface is displayed.

NOTE
The selection Switch to 'License Manager' SensorApp is only displayed if the License Manager SensorApp is installed and started on the device. If it is not displayed, check that all steps in Section 4.2 Software installation have been performed.

NOTE
If the SOPASair start page is loaded but remains in a “Loading ...” status, this is most likely due to the version of the web browser you are using.
- All browsers based on Chromium, such as Google Chrome and Microsoft Edge (newer versions), are supported.
- Internet Explorer is not supported.

Activating a license

1. Launch the user interface of the License Manager and use the “Add License” function.
2. In step 1 “Identify Device”, download the license request file from the device to a PC via the License Manager app. To do so, follow the instructions in the user interface.
3. Enter your ticket at license.sick.com then select “Activate license”.

NOTE
You will receive your license activation ticket from SICK via e-mail as soon as you have ordered a license under the part number. If you have any questions relating to this, please contact your SICK customer representative.

4. If your SICK device is not connected to the Internet, select **“File-based license transfer”** in the web frontend.
5. Upload the license request file (*.WibuCmRaC) that you downloaded in step 2 in the web frontend and start the activation
6. Switch to the License Manager SensorApp and perform step 2 **“Get License”**.
7. In the License Manager, go to step 3 **“Confirm Activation”**. Download the “Receipt File” (*receipt.WibuCmRaC) and upload it in the web frontend of license.sick.com.

NOTE
Your device is already unlocked after performing step 2 “Get License”. Please make sure that the “Confirm Activation” step is completed in full, otherwise problems will arise with later actions due to licensing (e.g., hardware replacement)

4.3.2 Returning and transferring licenses

If a particular license is no longer used, that license can be returned and transferred to other devices. To revoke a license, you need to use the “Re-Host License” function at unter **license.sick.com**.

To return Hermes ELS Connect App licenses, open the SOPASair user interface of the License Manager SensorApp in your browser (see “Opening the user interface”, page 19), select the “Re-Host License” function and follow the instructions in the app.

IMPORTANT
Retain your ticket for managing the SensorApp license.

5 Configuration

5.1 Opening the user interface

NOTE
Before opening the user interface, make sure that the following settings are set up correctly:

- The voltage supply of the device must be switched on.
- The PC must be on the same network as the device.
- The PC must not use the same IP address as the device.

Open the user interface of the SensorApp via a web browser:

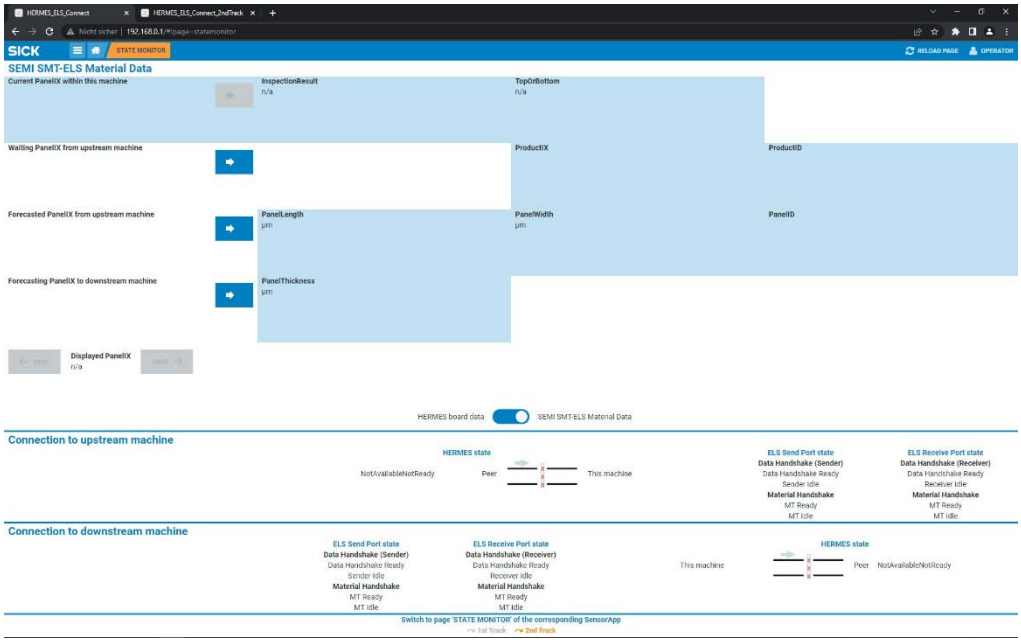
1. Open a web browser (recommended: Google Chrome).
2. Enter the IP address of the device in the address line.
   ✓ The SOPASair user interface is displayed.

NOTE
If the SOPASair start page is loaded but remains in a “Loading ...” status, this is most likely due to the version of the web browser you are using.

- All browsers based on Chromium, such as Google Chrome and Microsoft Edge (newer versions), are supported.
- Internet Explorer is not supported.

5.2 User interface

When accessing the user interface, the status monitor opens. It contains an overview of the current status of the ELS machine and the Hermes standard connections. The upper part shows the Hermes and ELS data of the current and the following board as well as the board forecast.



5.2.1 User roles

The SensorApp has different user roles that affect the contents displayed in the user interface and the ability to configure settings. When the user interface is opened, the RUN user role is active. To change the user role, click on the current user role RUN at the top right of the display.

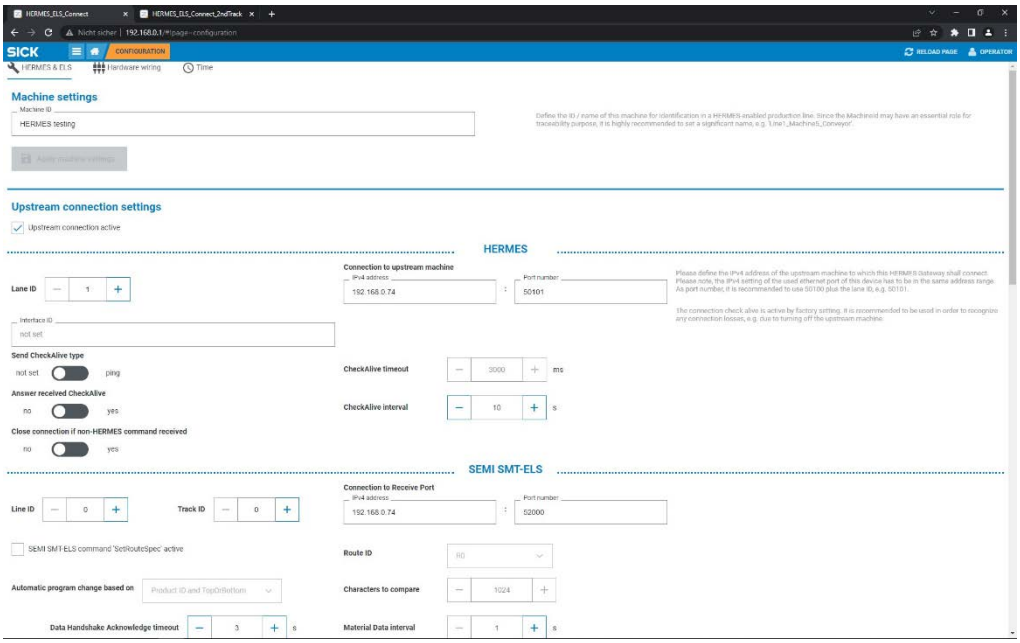
To access the configuration tab, the user role must be changed from "Run" to "Operator". The password is "operator". Here, the IP addresses of the upstream and downstream Hermes machines and the ports of the ELS machine can be entered.

NOTE
To access and save the configuration, user role OPERATOR or higher must be activated.

NOTE
This document only describes the mandatory settings that are required to set up the Hermes standard interface. For all further instructions, please refer to the user interface or the tutorials in the SupportPortal under **Hermes Standard Solutions**.

5.2.2 Configuring the Hermes standard interface

NOTE
This document only describes the mandatory settings that are required to set up the Hermes standard interface. For all further instructions, please refer to the user interface or the tutorials in the SupportPortal under **Hermes Standard Solutions**.



Configuring the upstream connection settings

- ▶ Open the “Configuration” page.
- ▶ Select the “Upstream Connection Active” checkbox.
- ▶ Configure “IPv4 address” and “Port number” for the HERMES connection to the upstream machine.

- ▶ Configure “IPv4 address” and “Port number” for the SEMI SMT-ELS connection to the receive port.
- ▶ Click “Apply upstream settings” to confirm.

Configuring the downstream connection settings

- ▶ Repeat the steps for the Upstream connection settings in the Downstream Connection Settings section.

NOTE
The IPv4 addresses for the upstream and downstream connection must be in the same network range as the SIM1012 Ethernet ports. If necessary, change the Ethernet port settings in the “Hardware wiring” tab

5.2.3 Application-relevant settings

Further use cases and examples of how to integrate additional sensors can be found in the SupportPortal under Hermes Standard Solutions in the Tutorials section.

6 Support

Support and troubleshooting for Hermes ELS Connect is available in the SICK Support Portal. Please note that you must first register and log in to the SICK Support Portal for this purpose.

6.1 Update und upgrade

Update

The term “update” means that a newer maintenance release is installed over a current version. You can update the SensorApp without a new license. When updating, the downloaded package replaces the already installed components with the updated ones.

Upgrade

The term “upgrade” means that a newer major version is installed over an older version. Upgrades may not be backward compatible. SICK reserves the right to charge for upgrades.

6.2 Support and help

For help with Hermes ELS Connect, please visit the SICK Support Portal or contact your local SICK sales office:

supportportal.sick.com

The SICK Support Portal offers a variety of tutorials, examples, and extended SICK AppSpace documentation, as well as a ticket system for direct support.

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