



**7088 300-01**

SmartMonitoring

**LIEBHERR**

# Contents

SmartMonitoring.....	4
Safety instructions SmartCoolingHub .....	4
Conformity .....	4
Open source software.....	5
Technical data sheet for the SmartCoolingHub .....	5
Data protection.....	6
General information .....	6
SmartCoolingHub package .....	6
Not included in the package:.....	7
Additional accessories for connecting multiple appliances .....	8
SmartCoolingHub system information.....	9
Power supply status .....	9
SmartCoolingHub status LED.....	10
LED error code display.....	11
SmartCoolingHub reset function .....	11
Preparation for the SmartCoolingHub commissioning procedure.....	12
General preparations .....	12
Network requirements for your target network.....	12
Networking multiple refrigerators and freezers using the SmartCoolingHub .....	12
Wall mounting the SmartCoolingHub.....	13
Commissioning procedure .....	13
Instructions for the SmartCoolingHub commissioning procedure.....	13
Configuring the Liebherr refrigerator and freezer .....	14
Connecting appliances to the SmartCoolingHub.....	15
Connecting to the SmartCoolingHub network.....	17
Setting up the SmartCoolingHub in your target network using Wi-Fi or LAN.....	17
Other Liebherr systems used .....	18
MyLiebherr corporate customer portal .....	18
How to register .....	18
Company account verification process .....	18
Managing user profiles in MyLiebherr .....	19
Account deletion.....	19
Access to MyLiebherr via SmartMonitoring .....	19
MyLiebherr license shop .....	20
Access to the MyLiebherr license shop .....	20
Purchasing licenses .....	20
License management.....	20
License allocation .....	20
Redeeming a voucher .....	20
Term of SmartMonitoring license subscription.....	20
License cancellation.....	21
SmartMonitoring.....	22
Login .....	22
General structure .....	22
Range of functions .....	22
Dashboard.....	23
Alarms .....	24
Messages.....	25
Reports.....	26
Appliance list.....	27
Settings .....	28
User profile .....	28
Help .....	29
SmartMonitoring user management .....	30
SmartSensor .....	31
Information.....	31
Safety instructions SmartSensor .....	31
Discard the sensor.....	32
Conformity SmartSensor.....	32
Technical specifications SmartSensor .....	33
Digital door contact sensor "SmartSensor Door" .....	33
Digital temperature sensor "SmartSensor Temperature".....	33
Calibration of digital sensors.....	33
SmartSensor Package.....	34
SmartSensor Door package .....	34
SmartSensor Temperature package.....	34

Not included.....	35
Requirements to operate the sensors .....	36
Accessories necessary for operation .....	36
Local conditions.....	36
Example installation of a sensor .....	36
General remark .....	36
Naming scheme .....	36
Commissioning one after the other .....	36
Door contact sensor .....	37
Temperature sensor .....	39
Application scenarios .....	40
Installation .....	40
Troubleshooting.....	41
Insufficient or insufficient radio signal strength.....	41
Sensor sporadically loses connection .....	41
Pairing fails.....	42
No door contact despite the door being closed .....	42
Status LEDs with sensor error codes.....	42
Data quality and data security .....	43
Contact information .....	44

# SmartMonitoring

## Safety instructions SmartCoolingHub

- Operate the SmartCoolingHub only with the power supply unit provided.
- Operate the SmartCoolingHub in enclosed areas only.
- Ensure that you have a suitable position for the SmartCoolingHub and a power supply for it.
- Position the SmartCoolingHub so that it does not come into contact with water.
- Position the SmartCoolingHub so that it is protected from mechanical influences.
- Please note that connected refrigerators and freezers are networked using cables. Ensure that you have suitable connections for networking multiple refrigerators and freezers in different rooms with a SmartCoolingHub and that the cables are protected from mechanical influences (for example by cover panels or cable ducting). If you do not have these facilities, we recommend that you install one SmartCoolingHub in each room.
- Do not use distributor strips and extension cables if possible.
- If the use of distributor strips and extension cables is unavoidable, do not connect multiple extension cables or distributor strips to each other.
- Do not open the SmartCoolingHub housing. The SmartCoolingHub does not contain any parts which require maintenance by the user. Opening it may result in an electric shock. If necessary, have the SmartCoolingHub checked by an electrician. Opening the SmartCoolingHub constitutes improper use.
- Do not use the SmartCoolingHub if it has suffered obvious signs of damage, for example to the housing, control elements or connection sockets. If you are in any doubt, have the SmartCoolingHub checked by an electrician.
- For safety and licensing reasons (CE), the SmartCoolingHub must not be modified and/or adjusted without permission.
- The SmartCoolingHub is not a toy. Do not allow children to play with it. Do not leave packaging material lying around. Plastic foils and bags, small accessories, etc. may become dangerous toys for children. There is a danger of them suffering asphyxiation, for example by swallowing small parts.
- Comply with the guidelines set out in the ModBus specification ([www.modbus.org](http://www.modbus.org)) for connecting refrigerators and freezers using cables.

## Disposing of the SmartCoolingHub



The SmartCoolingHub contains valuable materials. Because of this, and also to prevent harming the environment by disposing of it incorrectly, end-of-life SmartCoolingHubs must be disposed of in a professional and appropriate way, in accordance with the current local regulations and laws. The symbol showing a wheelie bin with a cross through it indicates that the SmartCoolingHub cannot be disposed of using the non-recyclable or household bin system. It must therefore be disposed separately from unsorted household refuse, for example by taking it to local recycling centres or returning it to your retailer.

The SmartCoolingHub can be disposed of free of charge using class 5 collection containers "Small appliances and small IT and telecommunications devices".

## Conformity

Liebherr-Hausgeräte Lienz GmbH hereby declares that wireless system type CM003-868 complies with Directive 2014/53/EU. The complete text of the EU declaration of conformity is available on the SmartMonitoring website. [home.liebherr.com/smartmonitoring](http://home.liebherr.com/smartmonitoring)

## Open source software

The product contains third party software, including open source software. You are entitled to use this third party software as long as you comply with the relevant licensing terms, which are available at [smartmonitoring.liebherr.com/licenses](http://smartmonitoring.liebherr.com/licenses).

### Disclaimer

The open source software included in this package is provided without any guarantee, including an implicit guarantee of its marketability or suitability for a specific purpose. The individual licenses may contain further details of the guarantee or liability restrictions.

### Note

Linux® is a registered trademark of Linus Torvalds in the USA and other countries. This product contains software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<http://www.openssl.org/>). This product contains cryptographic software from Eric Young (eay@cryptsoft.com) and software from Tim Hudson (tjh@cryptsoft.com).

### How to obtain the source code

The software included in this product may contain software, which is protected by copyright and provided under license, on the basis of which we must provide the source code to this software (such as the General Public License (GPL) or Lesser GPL (LGPL)). You can receive the complete source code for this software protected by copyright for a period of three years after the last date of delivery of this product from us free of charge. This will be possible at the earliest after 1 February 2020. In this case, please contact us using the contact information provided and quoting the build number, which you can find using the "Open Source Licenses" link on the device's web interface. Detailed instructions for opening this page are provided in the appropriate section in the user manual. This offer applies to everybody who receives this information. Furthermore, the source code is available on the internet at [smartmonitoring.liebherr.com/licenses](http://smartmonitoring.liebherr.com/licenses).

## Technical data sheet for the SmartCoolingHub

Property	Value
Wireless system type	CM003-868
Interfaces	LAN, RS485, Wi-Fi, Sub-GHz
Sub-GHz transmission frequency (wireless frequency) for Liebherr SmartSensor connection	865 - 870 MHz
Sub-GHz transmission power (wireless power) for Liebherr Smart-Sensor connection	+14 dBm
Wi-Fi transmission frequency	2.412 GHz - 2.472 GHz
Wi-Fi transmission power	100 mW
Current consumption	max. 0.7 A/h
Voltage supply	12 V DC max. 2 A
Operating temperature range	0°C to +43°C
Storage temperature range	-30°C to +60°C

The wireless range of the SmartCoolingHub can generally vary in buildings on the basis of the design of the building and temporary wireless interference from other wireless devices. Please ensure that there is adequate coverage for stable wireless reception (particularly if the SmartCoolingHub is connected by Wi-Fi).

### NOTE

You can network a maximum of 20 refrigerators or freezers using the SmartCoolingHub.

## Data protection

Protecting your personal data is a high priority for us and is taken into consideration in all the processes of our platform. Personal data means all information which relates to an identified or identifiable natural person. It is therefore important to us to let you know which of your personal data we use and for what purpose and what rights you have relating to your personal data. Our privacy policy contains a detailed overview of how your personal data are processed by Liebherr-Hausgeräte Ochsenhausen GmbH..


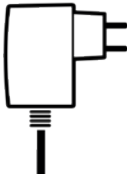
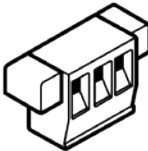
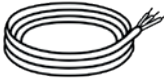
## General information

SmartMonitoring is a browser-based application which provides you with personalised ways to control, manage and monitor professional refrigerators and freezers (Liebherr networked refrigerators or freezers are hereinafter referred to as the Liebherr appliance). The SmartMonitoring dashboard provides you a quick summary of the status of the appliances and also provides all the main information and data in real-time. In the event of an alarm, messages are sent to ensure greater safety and maintain the quality of the goods. Furthermore, SmartMonitoring reports can be prepared or cloud alarms can be set.

Optional additional functions enable SmartMonitoring to be expanded at any time to suit your specific, personal requirements – for even greater convenience in managing your appliances.

## SmartCoolingHub package

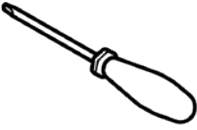
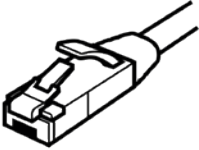
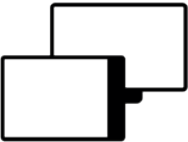
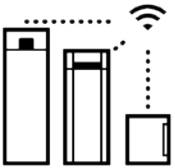
The SmartCoolingHub is supplied with the following package:

Figure	Description	Part No.
	SmartCoolingHub	6125219
	Power supply unit with plug, European version (230 V)	
	RS485 connectors (2x), for connecting a Liebherr appliance to the SmartCoolingHub	
	RS485 1.5 m connection cable (three-core, for connecting the Liebherr appliances)	
	Brief manual to enable you to tackle the commissioning procedure quickly	
	Activation code for SmartMonitoring license (12 months) for one Liebherr appliance	

### NOTE

The supplied accessories can be used to connect one Liebherr appliance to the SmartCoolingHub. Additional accessories to connect more Liebherr appliances are available on the SmartMonitoring website or from your Liebherr dealer.

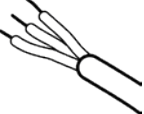
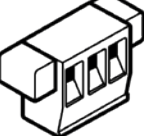
## Not included in the package:

Figure	Description	Details
	Flat-blade screwdriver	<p>You will require a 2.5 mm flat-blade screwdriver to connect the RS485 connectors to the cable.</p> <p><b>NOTE</b></p> <p>The RS485 interface on some appliances is behind the front panel. You will require a Torx screwdriver to open the panel to enable you to connect these appliances. (Further information is available in the operating instructions for the appropriate appliance.)</p>
	LAN cable	<p>If you wish to connect the SmartCoolingHub to your network using a LAN cable, you will also require a LAN cable (type RJ45 Cat. 5e minimum).</p>
	Internet-capable device	<p>An internet-capable device (for example a computer or tablet) is required to use Smart-Monitoring.</p> <p>We recommend that you use a device with a minimum resolution of 1024 x 768 pixels to ensure a perfect display and full features.</p>
	Liebherr refrigerator or freezer	<p>You require a compatible Liebherr appliance which has an RS485 interface or can be retrofitted with an adapter (interface module).</p> <p>You can check the compatibility of your Liebherr appliances at <a href="http://home.liebherr.com/smartmonitoring">home.liebherr.com/smartmonitoring</a></p>

## Additional accessories for connecting multiple appliances

You will require additional accessories for connecting multiple appliances to the SmartCoolingHub.

You can obtain these from your dealer or direct from Liebherr.

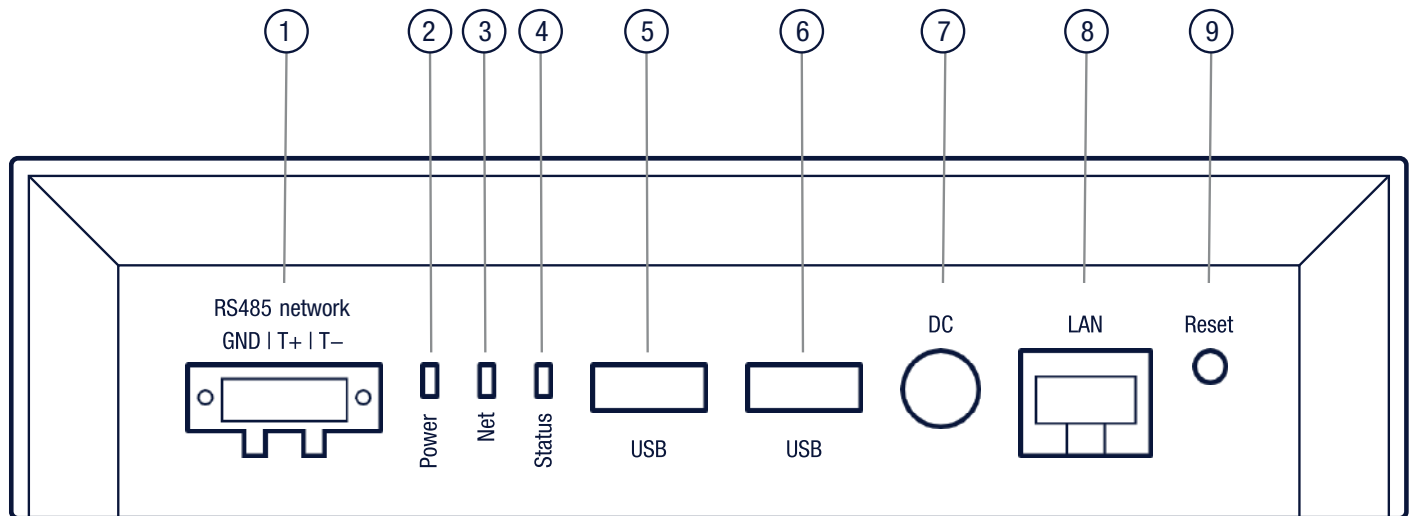
Figure	Description	Quantity per additional appliance	Comment	Part No.
	RS485 5 m connection cable	1x	For networking the SmartCoolingHub and appliance (length: 5 m).	9414 927-00
	RS485 connector	1x	For connecting the RS485 connection cable to a Liebherr appliance.	6021 661-00
	RS485 interface converter	1x	The interface converter can be used to connect retrofitted Liebherr appliances to the SmartCoolingHub. Further information is available at <a href="http://home.liebherr.com/smartmonitoring">home.liebherr.com/smartmonitoring</a>	9086 860-00

Information about the commissioning procedure can be found in "Data quality and data security" on page 43.



# SmartCoolingHub system information

The rear of the SmartCoolingHub has various interfaces and connections. This section provides more information on these.



1. RS485 connection: for the cable-based connection of your Liebherr appliances
2. Power LED: power supply status
3. Net LED: network activity
4. Status LED: provides information about the status of the SmartCoolingHub; for further information see "SmartCoolingHub status LED" on page 10
5. USB port 1
6. USB port 2
7. Power supply
8. LAN network connection
9. Reset button: for further information, see "SmartCoolingHub reset function" on page 11

## Power supply status

The power LED provides information about the power status of your SmartCoolingHub. As soon as you have connected the power supply unit (and powered it up), the power LED on the SmartCoolingHub will be lit in green, indicating that it is ready for use.

## SmartCoolingHub status LED

This section shows the various states of the SmartCoolingHub status LED. They provide information about the current operating status of the SmartCoolingHub.

LED display	Status information	Details
Off	SmartCoolingHub is switched off	SmartCoolingHub has no power supply.
Flashing green and red	SmartCoolingHub is powering up (duration: around 30 seconds)	After the SmartCoolingHub has been connected to the mains power supply and is receiving power, it will flash green and red.
Flashing green rapidly	Ready for commissioning	You can now see the SmartCoolingHub's network in your available Wi-Fi networks on your internet-capable device.
Flashes three times at intervals in green	Establishing connection to the internet	After you have connected to your target network, the SmartCoolingHub will connect to the internet.
Flashing green slowly	SmartCoolingHub is being set up	SmartCoolingHub is being configured.
Steady green	System is operating normally	As soon as the LED is steady green, the SmartCoolingHub is in normal operating mode.
Flashes once at intervals in green	Automatic connection in the event of connection problems in normal operating mode	SmartCoolingHub is experiencing connection problems and is attempting to reconnect to the Liebherr cloud service automatically.
Flashes twice at intervals in green	SmartCoolingHub is completing a software update	SmartCoolingHub is updating its system.

## LED error code display

The following lists the error codes indicated by the status LED. Refer to the following table for the recommended actions in the event of each error.

LED error code	Details	Recommended action
Steady red	General system error	Wait until the SmartCoolingHub performs a restart. This may take several minutes. If the problem persists, contact our customer service department.
Flashing red rapidly	Network error (no IP address received or no internet connection available)	Check your internet connection. If necessary, reset the Wi-Fi for the SmartCoolingHub and re-establish a connection to the internet. Refer to the information in the section entitled "Setting up the SmartCoolingHub in your target network".

If problems continue to occur despite taking the appropriate action, please contact the Liebherr customer service, see "Contact information" on page 44.

## SmartCoolingHub reset function

The SmartCoolingHub has the following reset functions:

Reset Wi-Fi settings	Press the Reset button on the SmartCoolingHub for 2-4 seconds. Two short beeps will sound. The SmartCoolingHub will then restart.	The Wi-Fi settings on the SmartCoolingHub will be reset. They can now be set up again in the commissioning procedure.
Return to factory settings	Hold the Reset button for 9-12 seconds. A long beep will sound when you release the Reset button.	The SmartCoolingHub will be returned to its condition on delivery. The SmartCoolingHub will restart.

In the event of an error, please contact the Liebherr customer service department, see "Contact information" on page 44.

# Preparation for the SmartCoolingHub commissioning procedure

Refer to the following information to ensure that the commissioning procedure can be carried out smoothly.

## General preparations

- There must be a power socket near the SmartCoolingHub.
- The following browsers are supported: Google Chrome, Mozilla Firefox, Microsoft Edge (V.43 or higher) and Apple Safari.  
Please ensure that the latest version of the browser is installed on your internet-capable device.
- You will require a MyLiebherr company account to use SmartMonitoring. You can register for this before or during the commissioning procedure using the MyLiebherr customer portal. For further information, see "MyLiebherr corporate customer portal" on page 18.
- Recommendation: one SmartCoolingHub in each room

## Network requirements for your target network

- An existing broadband internet connection with a wireless network (Wi-Fi 2.4 GHz) or cable-based network (100 Mbit Ethernet/LAN) is required for using SmartMonitoring.
- With a Wi-Fi connection: ensure that the SSID of your Wi-Fi target network is visible to set up the SmartCoolingHub. After this, the SSID can be reset to "Not visible".
- With a LAN connection: you will require a LAN/Ethernet network cable (type RJ45 Cat. 5m).
- Ensure that the following network ports are enabled within your network and at the switch point for the internet:
  - DNS: port 53/UDP
  - HTTPS: port 443 (OUT)/TCP
  - NTP: port 123 (OUT)/UDP
  - Secure MQTT: port 8883 (OUT)/TCP
  - Alternatively: (automatic) port enabling UPnP (universal plug and play)
- Ensure that static IP addresses are not used in the network (DHCP mode must be enabled).
- Ensure that if you are using a MAC filter (in your network), the MAC address of the SmartCoolingHub has been enabled in the filter. The MAC address of the SmartCoolingHub can be found on the type plate on the rear of the SmartCoolingHub.

## Networking multiple refrigerators and freezers using the SmartCoolingHub

Before you can carry out the commissioning procedure, you will require additional accessories to network multiple appliances.

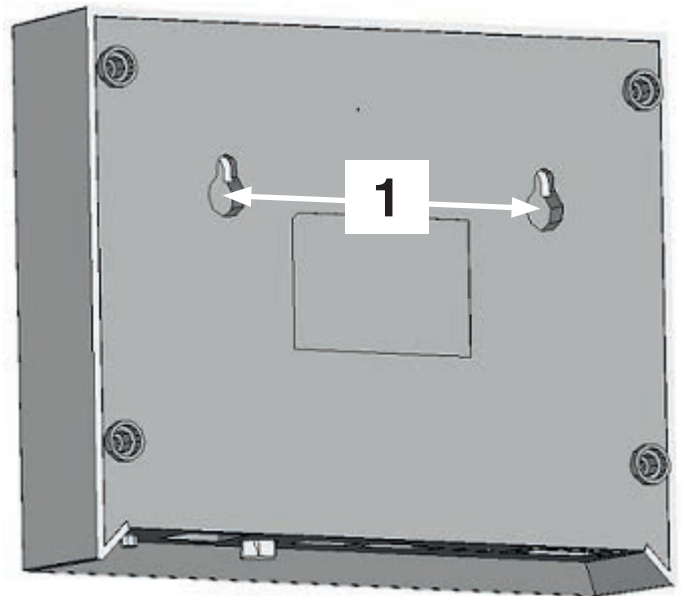
The appliances are then connected in series. Up to 20 appliances can be connected to one SmartCoolingHub.

Make sure you order the required additional accessories listed in "Additional accessories for connecting multiple appliances" on page 8 before you attempt the commissioning procedure.

## Wall mounting the SmartCoolingHub

The SmartCoolingHub can be mounted on the wall if necessary. The appropriate features are provided on the rear for this purpose.

1. Spacing: 8 cm



## Commissioning procedure

The commissioning and setup procedure for your SmartCoolingHubs is carried out online at [smart-monitoring.liebherr.com/setup](http://smart-monitoring.liebherr.com/setup) using your internet-capable device.

### NOTE

If necessary, contact the Liebherr customer service department if you require support with the setup procedure.

Follow these steps for the online commissioning procedure. Start with the online commissioning procedure for your SmartCoolingHub. This is the central interface between SmartMonitoring and the appliances. As it is a web-based application, the SmartCoolingHub must be connected to the internet.

### Instructions for the SmartCoolingHub commissioning procedure

You have two options for the network connection for the online commissioning procedure for the SmartCoolingHub. Refer to the preparations set out in "Commissioning preparations".

1. Connection by Wi-Fi:

Requirements:

- Supported standards: Wi-Fi 802.11 b/g/n (2.4 GHz), encryption WPA/WPA2
- For setting up the SmartCoolingHub by Wi-Fi, you will require a Wi-Fi-capable device to complete the installation.

2. Connection by LAN cable:

- The additional accessory you will require is a LAN/Ethernet network cable (type RJ45).

## Configuring the Liebherr refrigerator and freezer

You require a unique identification number for each appliance to enable your Liebherr appliances to communicate with the SmartCoolingHub. The SmartCoolingHub uses the network address of the appliance for this purpose.

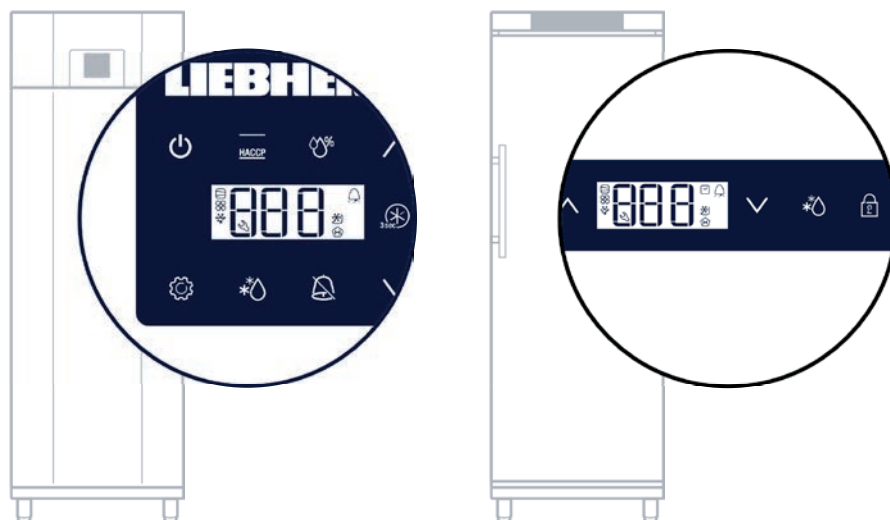
Please note the following points in this regard:

- The network address must be set on each appliance.
- The network address on your appliance must be in the address range between 1 and 20. This range is reserved for the use of SmartMonitoring.
- The network address must be unique as the appliances are uniquely identified by the SmartCoolingHub using this network address.
- Please ensure that none of the network addresses is set above the value of 20 as the SmartCoolingHub will only work in the address range shown above.
- Please ensure that no network address is allocated more than once (this relates to all the appliances connected to one SmartCoolingHub).

### NOTE

- The use of the same network address on two appliances which are connected to the same SmartCoolingHub will result in malfunctions and can only be rectified by allocating unique network addresses.
- If the network address for an appliance is changed retrospectively, the relevant appliance must be reconfigured in the SmartMonitoring app.

Setting the network address on the appliance control panel depends on the appliance version:



How you set the network address on your Liebherr appliance is described in the operating instructions for the appliance concerned in the section "Changing the network address".

During the online commissioning procedure, you can also download the operating manual for your appliance if you do not have it to hand. Alternatively, you can download it from [home.liebherr.com](http://home.liebherr.com).

## Connecting appliances to the SmartCoolingHub

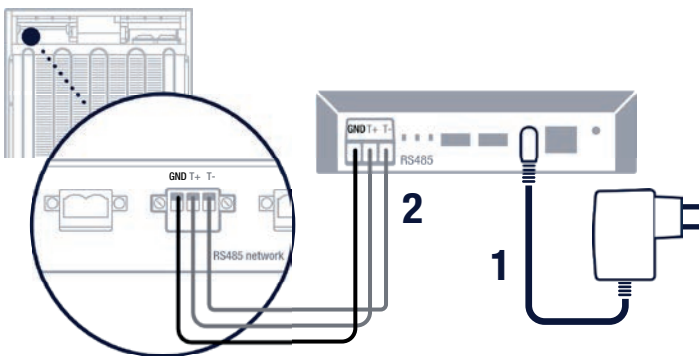
To ensure that the SmartCoolingHub can communicate with the appliances using the network address set on the appliance, they must be physically interconnected. The cabling required for this purpose is described in the following.

### a.) Connecting the SmartCoolingHub to one appliance

Your appliance must be connected to the SmartCoolingHub using the RS485 connector supplied in the package and the RS485 connection cable also provided (2).

The connection cable must be connected at both ends to the green connectors. In this respect, it is important to observe the polarity of the jacks on the appliance and SmartCoolingHub. The cable cores must be connected to the connectors so that the same cable cores are connected to the "+", "-" and "Ground" terminals to ensure that the polarity is correct (see graphic below).

After you have connected the cable to the connectors, one end of the cable must be connected to the jack on the SmartCoolingHub and the other end to the "Network" jack on the appliance. If a terminating resistor is used here, it must be removed first. Information about terminating resistors is provided in the operating instructions for the appliance. You can then connect the SmartCoolingHub to the mains power supply (1).



b.) Connecting the SmartCoolingHub to multiple appliances

Adhere to the rules of line topology to ensure that the cabling is correct. This means that the appliances must be connected in series (see graphic below).

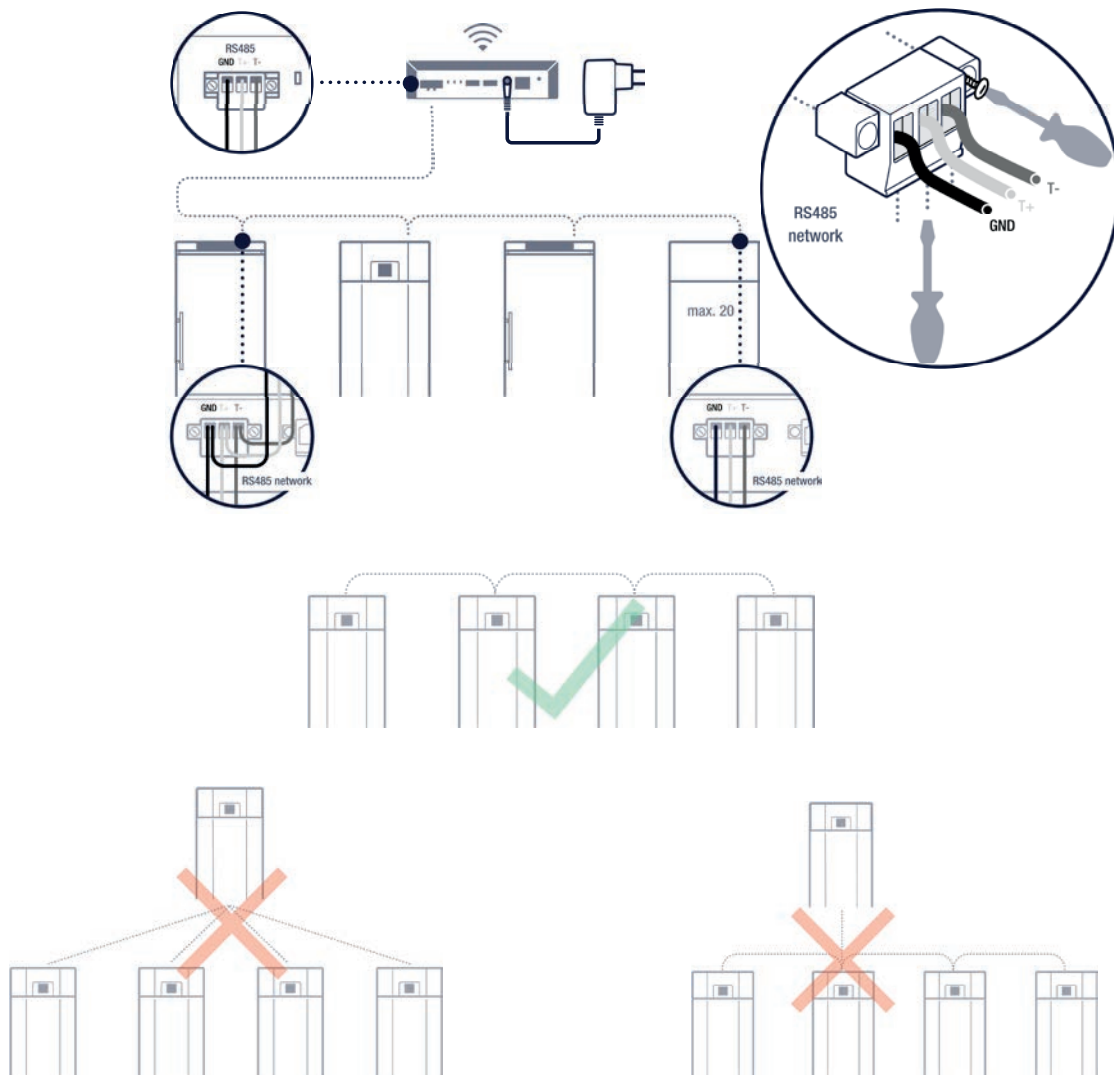
- For this purpose, connect the relevant cable ends to the RS485 connectors.
- Please note that when networking multiple appliances, two cable ends must be connected to one RS485 connector. (This does not apply to the appliances at the ends of the network.)

**NOTICE**

- Ensure that all terminating resistors are removed from the connected appliances.
- Refer to the information in the graphics below to avoid setting up the network incorrectly.
- Pay attention to the polarity of the connections. This may vary from appliance to appliance. Please check this in your appliance's operating instructions.
- **Ensure that the black cable core is always connected to Ground (GND). For both other cable cores, use one colour for each pole on the connectors. For example: connect cable core colour 1 to the two "+" terminals and cable core colour 2 to the two "-" terminals.**
- Incorrect cabling will result in malfunctions in SmartMonitoring. Neither an appliance nor people will suffer any harm as a result.

**NOTE**

The online commissioning procedure also contains tutorial videos which will help you with the cabling.



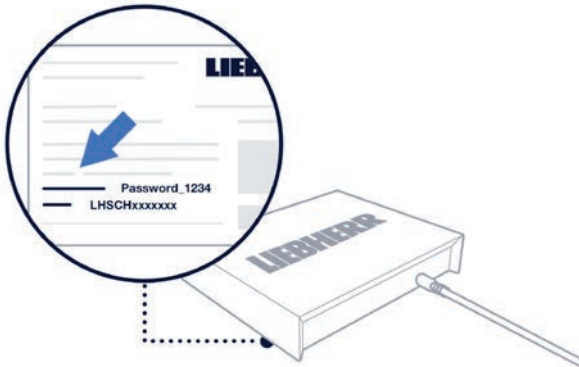


## Connecting to the SmartCoolingHub network

During the online commissioning procedure, you must connect to the SmartCoolingHub network.

To do this, follow the online steps:

- Open the Wi-Fi settings on your PC or tablet.
- Look for the SmartCoolingHub network in your available networks and connect to it. The name of the network is the serial number of the SmartCoolingHub. The serial number (SN) and password can be found on the type plate on the underside of the SmartCoolingHub (see graphic).



### NOTE

Connecting to the SmartCoolingHub may take a moment. Do not refresh your browser (F5) during this process.

## Setting up the SmartCoolingHub in your target network using Wi-Fi or LAN

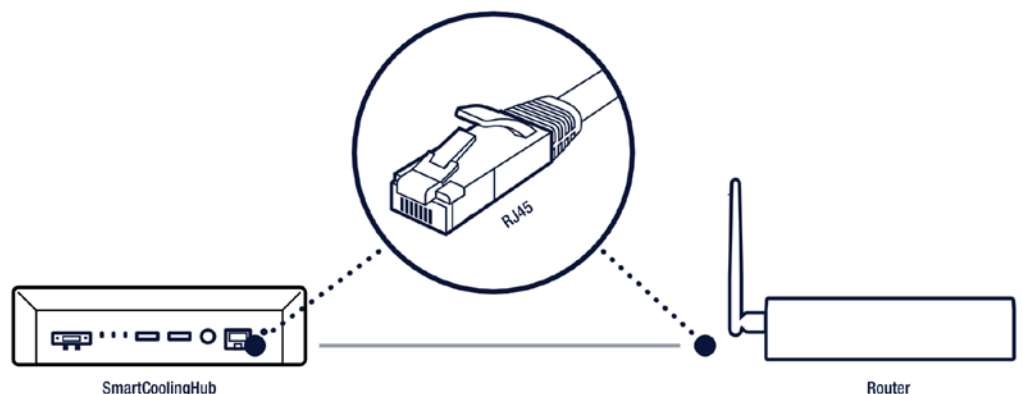
The SmartCoolingHub requires an internet connection and must therefore be connected to your target network. To do this, follow the steps for the online commissioning procedure.

The general network requirements for your target network are described in "Network requirements for your target network" on page 12.

As an alternative to a Wi-Fi connection, you can also connect the SmartCoolingHub to your router using a LAN cable.

Once you have connected the SmartCoolingHub to your target network/router, check the status LED on the SmartCoolingHub. The connection has been established as soon as it settles to a steady green light. The identification process uses the SmartCoolingHub serial number (on the type plate on the underside of your SmartCoolingHub).

You can also give your SmartCoolingHub a name, which will then be displayed in SmartMonitoring. Finally, the password of the SmartCoolingHub, which is also on the type plate, will be required for verification purposes.



## Other Liebherr systems used

Other Liebherr systems are required to enable you to use SmartMonitoring.

The following table describes the functions of these systems.

MyLiebherr Portal	MyLiebherr license shop	SmartMonitoring
<ul style="list-style-type: none"><li>• Registration as a company</li><li>• Adding additional users</li><li>• User management (mainly relating to MyLiebherr license shop rights)</li><li>• Changing the password</li></ul>	<ul style="list-style-type: none"><li>• Purchasing a license</li><li>• Allocating a license</li><li>• Login using a MyLiebherr account</li></ul>	<ul style="list-style-type: none"><li>• Login using a MyLiebherr account</li><li>• Additional user management for topics relating to the dashboard (for example visibility of appliances for users)</li><li>• Connecting to the MyLiebherr license shop for license management purposes</li></ul>

### MyLiebherr corporate customer portal

You will require a MyLiebherr company account to use SmartMonitoring. Each SmartMonitoring user must be created and managed using this MyLiebherr **company account**.

#### NOTE

The first user to register using a company account is automatically allocated administrator rights for this company in the MyLiebherr portal.

### How to register

- Please register your company before the online commissioning procedure at [myliebherr.com/hau/Pages/default.aspx](http://myliebherr.com/hau/Pages/default.aspx).
- If you already have a MyLiebherr account for commercial refrigeration and freezing, you can log in using your login data during the online commissioning procedure.

### Company account verification process

During the registration of a MyLiebherr company account, Liebherr IT Services GmbH will conduct a verification process for the company data.

The verification process for the company must have been completed before the MyLiebherr account settings can be used fully. This may take a little time (normally a maximum of 48 hours).

#### NOTE

- The administrator of the company account can complete the commissioning process and familiarise himself with SmartMonitoring during the verification process for the company account. As soon as the company has been enabled, you must purchase licenses for your appliances in the MyLiebherr license shop so that you can continue to monitor them.
- When your company has been enabled, you will receive an email from MyLiebherr. When you log into SmartMonitoring, you will then be notified that you additional licenses are required.
- Extended functions such as adding new users to the company account cannot be used until the verification process has been completed successfully.

## Managing user profiles in MyLiebherr

First of all, you will require a MyLiebherr company account to use SmartMonitoring. When the first user is registered, this user automatically becomes the administrator for the company account.

Users with the administrator role can invite other people to their company and allocate roles.

There are two roles to choose from for SmartMonitoring in the MyLiebherr portal: administrator and user. Administrators can define which rights their company users have. A company account may have multiple company administrators.

### NOTE

Additional rights can be defined in SmartMonitoring, which only relate to SmartMonitoring. For further details, please go to "SmartMonitoring user management".

The following table provides a summary of the roles:

Company administrators	Users
<ul style="list-style-type: none"> <li>• Creating new users for colleagues</li> <li>• Approving registration requests for your company account</li> <li>• Managing authorisations for colleagues</li> <li>• License management in the MyLiebherr license shop</li> <li>• Making purchases in the MyLiebherr license shop</li> <li>• Editing their own profile</li> <li>• Editing company data in SmartMonitoring</li> <li>• Login to SmartMonitoring</li> <li>• Enabling/Disabling colleagues' accounts</li> </ul>	<ul style="list-style-type: none"> <li>• Editing their own profile</li> <li>• Login to SmartMonitoring</li> </ul>

For further information, go to the MyLiebherr customer portal where the rights and other options are described in detail.

## Account deletion

Users can delete their own account and therefore all their data.

If a company administrator deletes his or her own account and no other company administrator has been defined, Liebherr will contact you to define a new company administrator.

## Access to MyLiebherr via SmartMonitoring

In SmartMonitoring, you have two access points to the MyLiebherr portal.

When selecting **Change password** in "SmartMonitoring" – "User Profile", you are forwarded to the MyLiebherr customer portal where you can change your password.

As your user profile was created in the MyLiebherr portal and you have logged into SmartMonitoring via MyLiebherr, you must change your password there.

The other access point is in "General Settings" – "User Management", where you can invite a new user.

In this case, you will be forwarded to the MyLiebherr portal where you can invite your colleagues – as long as you are authorised to do so.

## MyLiebherr license shop

SmartMonitoring is a license-based system. Every connected appliance requires a valid license. You can purchase licenses in the MyLiebherr license shop.

In SmartMonitoring and the online commissioning procedure, there are tutorial videos to help you use the MyLiebherr license shop.

## Access to the MyLiebherr license shop

- The MyLiebherr license shop is available once your company has been verified. (During the verification process, you can familiarise yourself with the system in demo mode, but you cannot buy any licenses until the company has been enabled.)
- During the online commissioning procedure, you can go to the MyLiebherr license shop by clicking a button at the end as long as your company has been enabled. (Please note that you must have already been registered in the MyLiebherr customer portal.)
- There is also a direct link to the MyLiebherr license shop in SmartMonitoring:
  - via the "License Management" page in "General Settings"
  - using the link in the pop-up if you have unlicensed appliances (otherwise the pop-up will not appear).

## Purchasing licenses

The MyLiebherr license shop provides a full purchase experience. You will require a company account in order to buy licenses. If applicable, your value-added tax identification number will be requested during the purchase process. Please keep this to hand (optional for purchases in Austria).

## License management

You can manage your licenses in the MyLiebherr license shop. You can access the MyLiebherr license shop easily via SmartMonitoring. This also gives you a list of your licenses.

## License allocation

After you have purchased a license, it must be assigned to a specific appliance. You can do this in the MyLiebherr license shop in "Manage licenses".

- Unused licenses can be identified by an "Assign to" button below the license.
- Licenses which have already been allocated show the name of the appliance below the license.

The validity of the license is shown on the right next to the license.

You will find a tutorial video on license management in SmartMonitoring in "License Management".

## Redeeming a voucher

You can redeem any discount vouchers you have received for your licenses in the MyLiebherr license shop. Vouchers only ever relate to a single license type. For example, you will find a voucher for a free license in the SmartCoolingHub package. You can add vouchers to your cart in the MyLiebherr license shop using the "Redeem voucher" menu option.

## Term of SmartMonitoring license subscription

The term of a license starts when a purchased license is first assigned to a connected appliance. The license is then permanently assigned to this appliance. If you assign an activated license to a new appliance, the term will not be paused in the meantime. Unless you reassign a license which has already been activated, the term will continue without interruption.

### Add-on license term

Add-on licenses start when they are purchased and end after the defined period. You can purchase a new license afterwards.

## License cancellation

You can cancel licenses at the next possible date in the MyLiebherr license shop under "Manage subscriptions".

Please refer to the license terms for more details of the cancellation periods.

If you have any other questions about the MyLiebherr customer portal or the MyLiebherr license shop, go to the FAQs in SmartMonitoring (see "Help" on page 29) or contact your service partner.

# SmartMonitoring

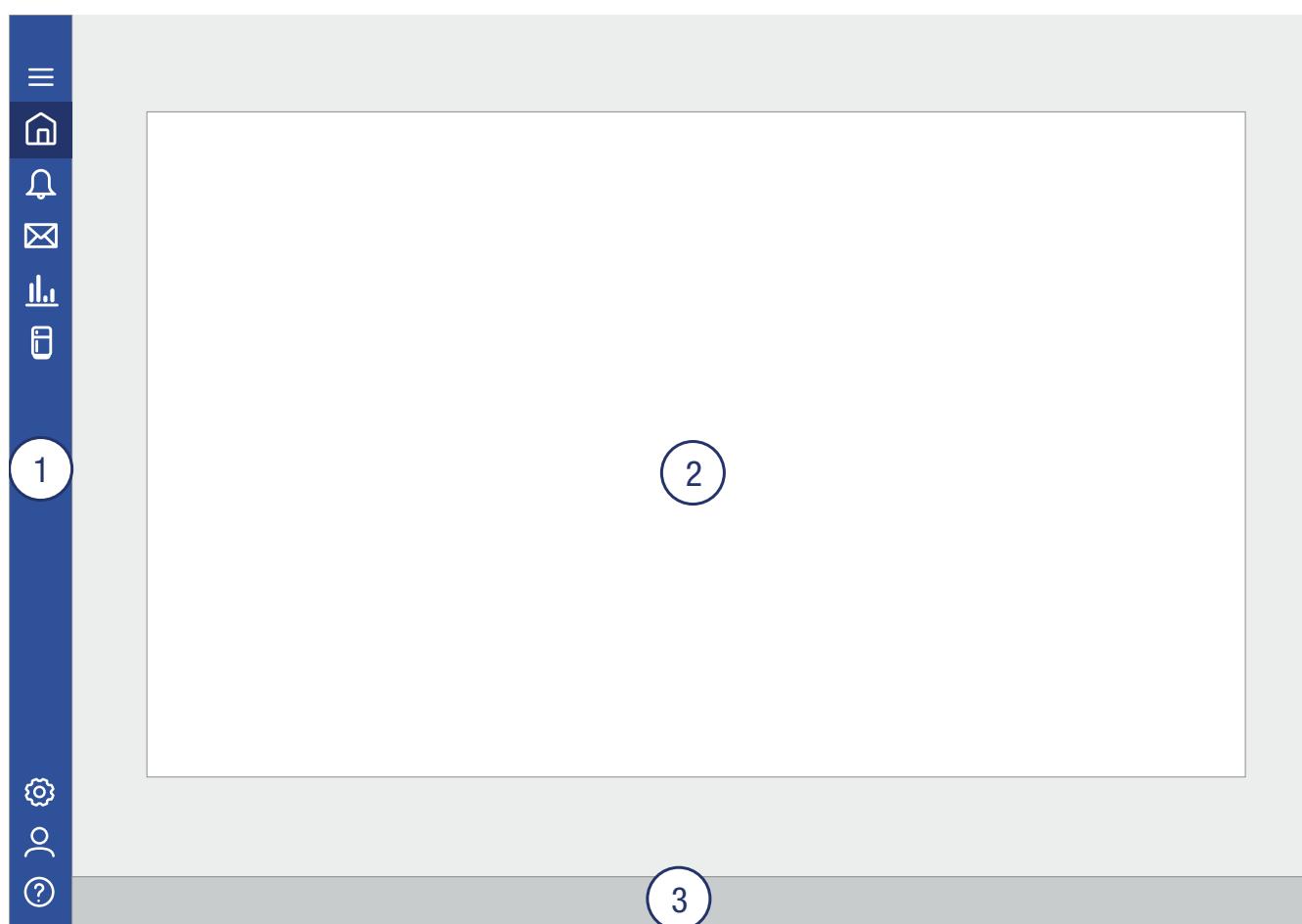
## Login

You must be logged into your MyLiebherr account to be able to use SmartMonitoring. Open SmartMonitoring by entering the following URL in your browser: [smartmonitoring.liebherr.com](https://smartmonitoring.liebherr.com).

## General structure

SmartMonitoring consists of a main menu (1) on the left-hand side. Clicking on the topmost symbol opens the menu and you can then see the names of the menu options.

In the centre (2), you can see the contents of the menu page which is currently selected. The header contains the name of the menu option and the date of the last update (on the right-hand side). The footer (3) contains general information such as legal information, data protection regulations, conditions of use and software licenses.



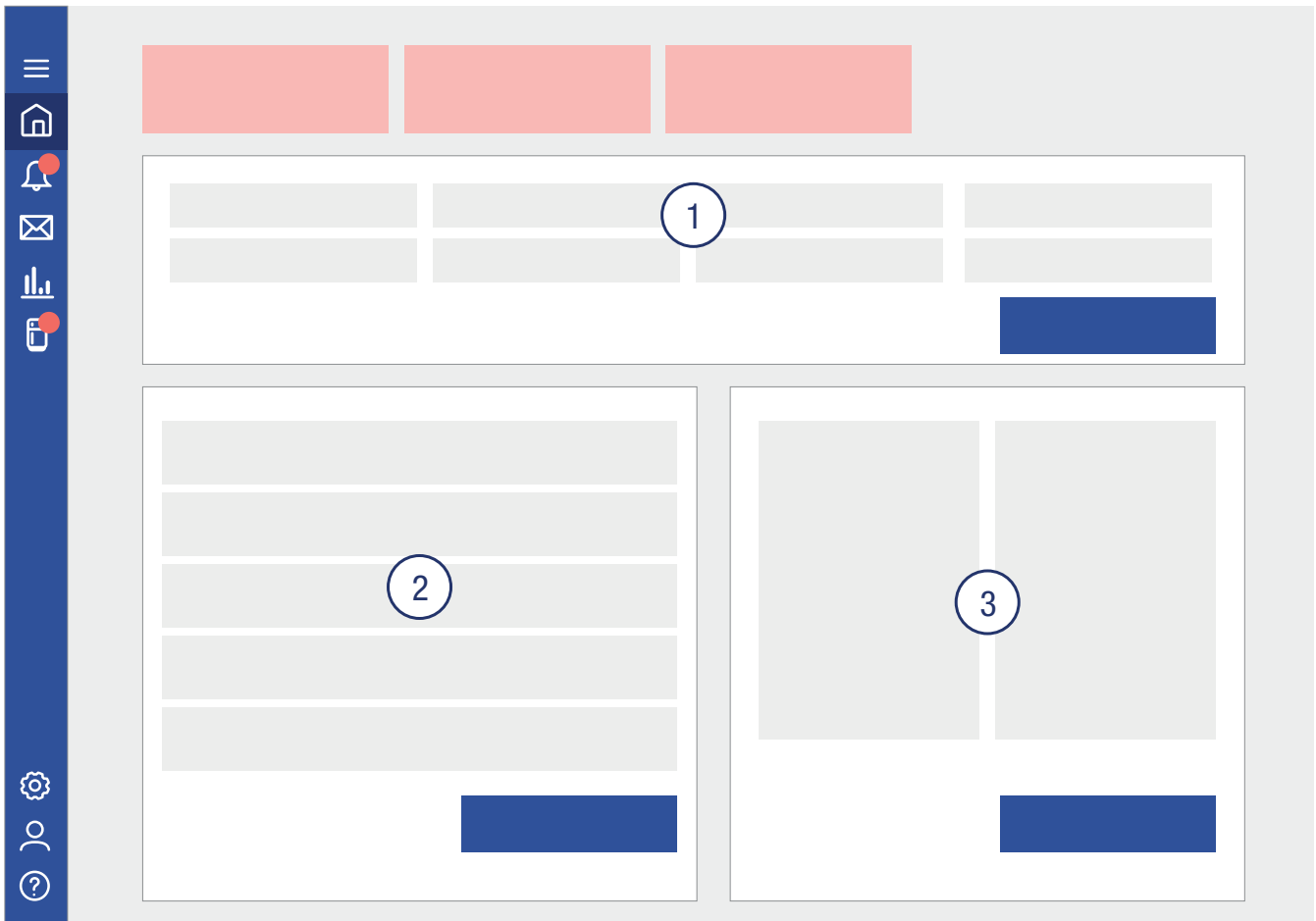
## Range of functions

The following describes the range of functions available in SmartMonitoring.

Updates regularly expand and improve the interface and the functions. Additional features may also be added. Therefore, information on the current status is always available in your "Messages" menu option. You can gain access to FAQs in the "Help" menu.

## Dashboard

The SmartMonitoring homepage is the dashboard. This provides an overview of the networked appliances (1). It also contains a list of all alarms (2) and a graphic display showing the status of all appliances (3). Critical appliances are displayed above the networked appliances (red rectangles in the figure). From the dashboard page, you can also navigate to various sub-pages or use the menu bar on the left-hand side.



## Alarms

The "Alarm overview" tab contains a list of all the alarms for your networked appliances and Smart-CoolingHubs (1).

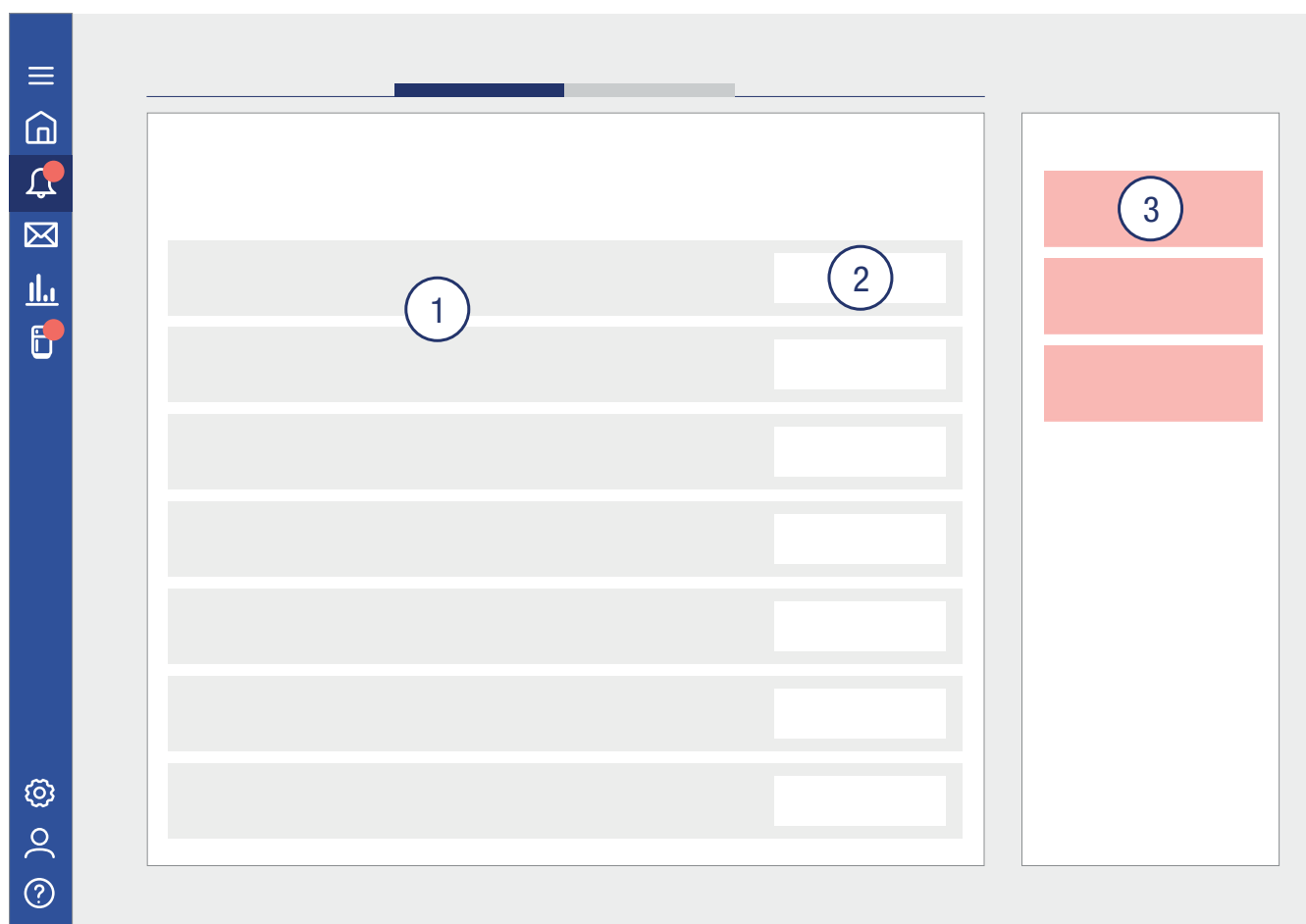
You can filter the alarm list as required using the existing filter above the alarm list.

The menu on the left shows the number of unread alarms in the red circle.

You can edit each alarm using the actions column (2). As you do so, you can mark the alarm as read or unread, enter a comment about the alarm and send a service request to the Liebherr customer service department and go straight to the appliance history to find the alarm time to check the appliance properties.

If you check the box in front of the alarm, you can download all the checked alarms using the appropriate button.

All the critical appliances are listed on the right-hand side of the alarm overview (3). Information about the various alarm types is available at the bottom of the page below the critical alarms.



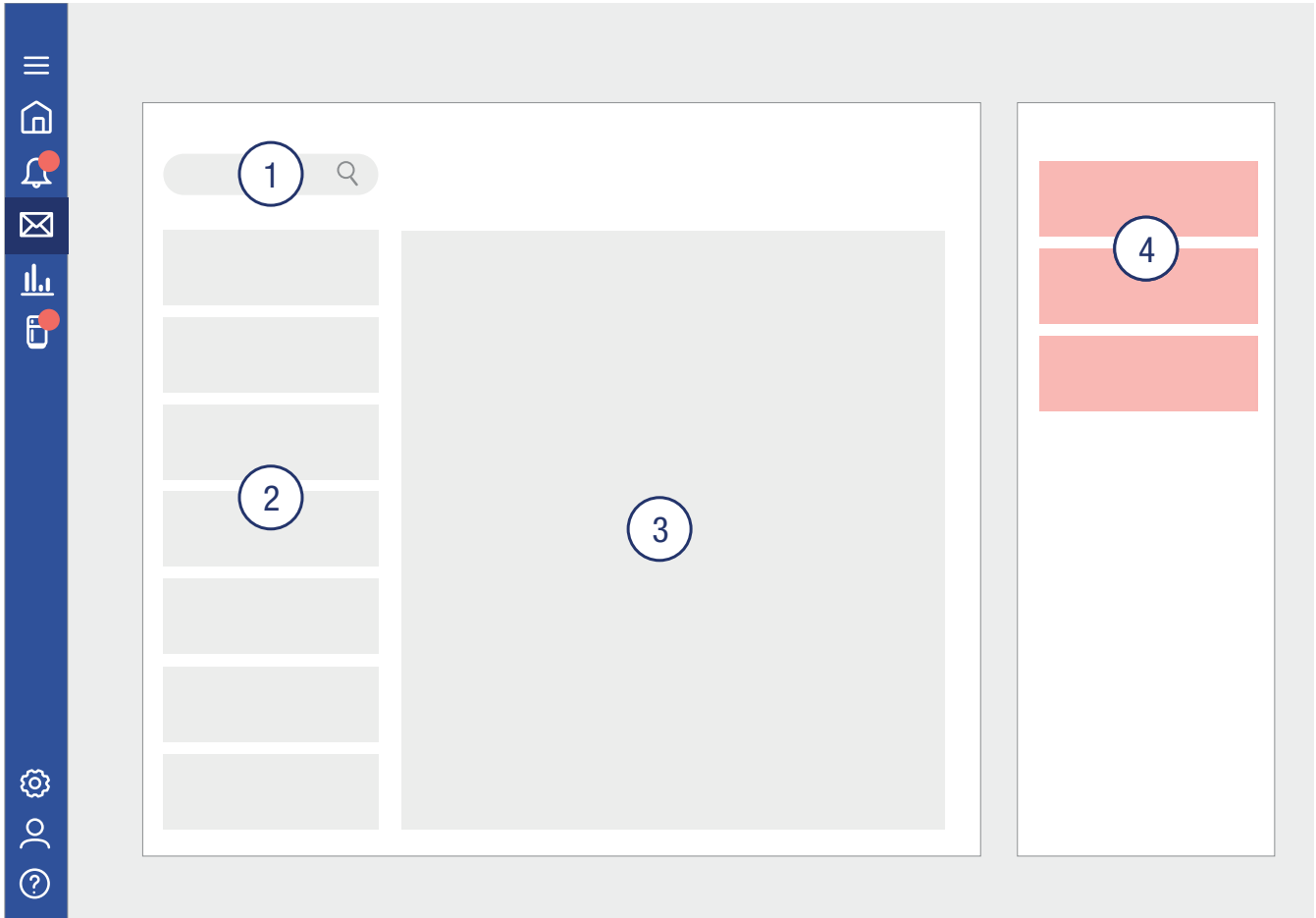
The "Alarm Profiles" tab contains a list of all existing alarm and message settings for each appliance and SmartCoolingHub. If you have the appropriate authorisation, you can also edit these settings.



## Messages

This menu option contains system messages. These contain information about the current software version, new functions and system failures or updates. You can search the messages using a search box (1). All the messages received are listed on the left (2). The selected message is displayed on the right (3). You can mark this message as unread or read or delete it.

To delete multiple messages at the same time, use the check box on the left next to the message in the message list.



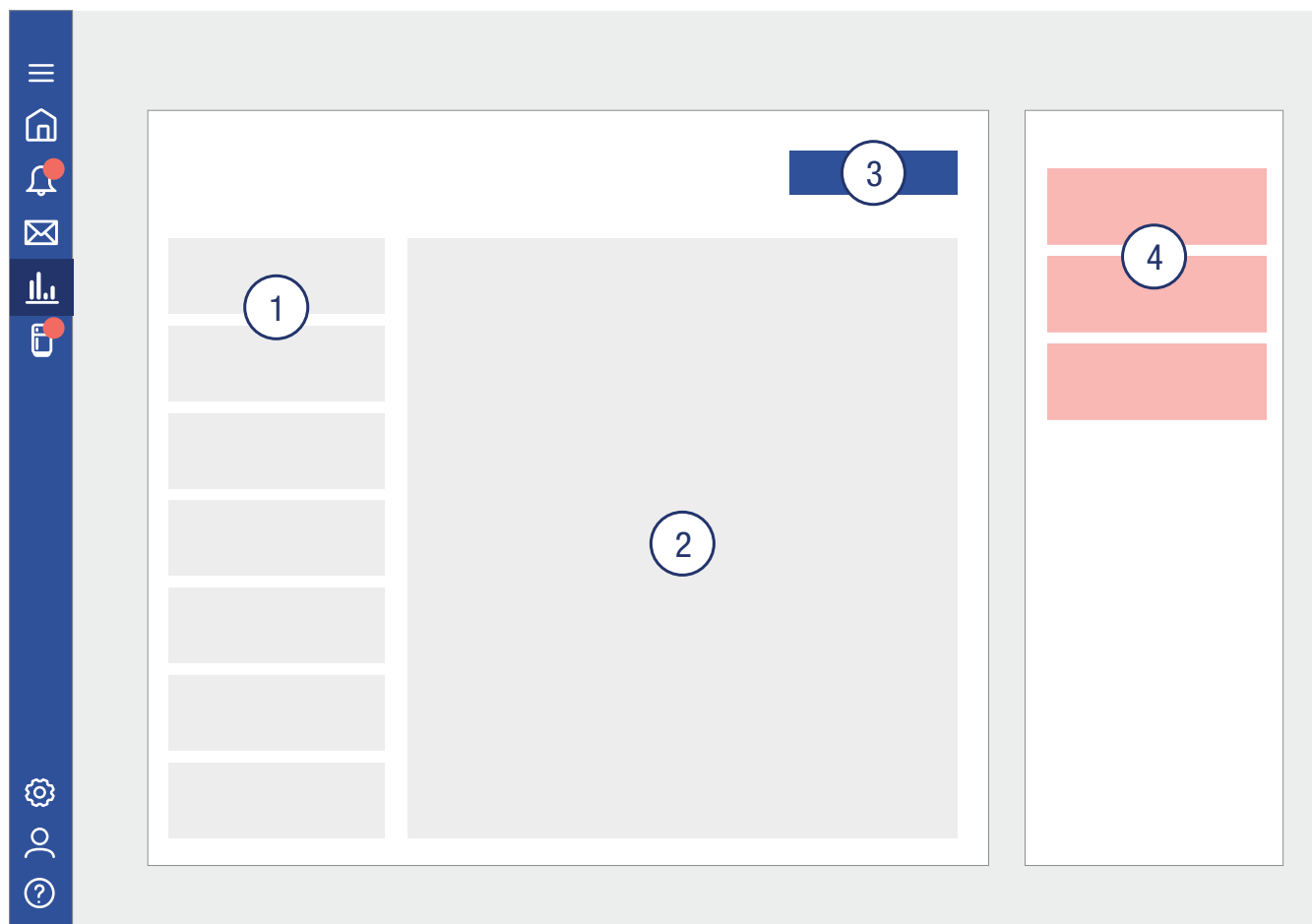
## Reports

You can create reports in "Reports" (3). Details of the report types will be explained when you select them.

On the left, there is a list of all the reports created previously (1). If you select a report, you will see it in the preview (2). You can delete the report in the preview, download it in PDF format or print it and display it as a PDF preview.

If you wish to delete multiple reports or download them in PDF format at the same time, you can do so using the report list. Check the box on the left next to the individual reports and then use the functions above the report list.

Reports can be created for each appliance.



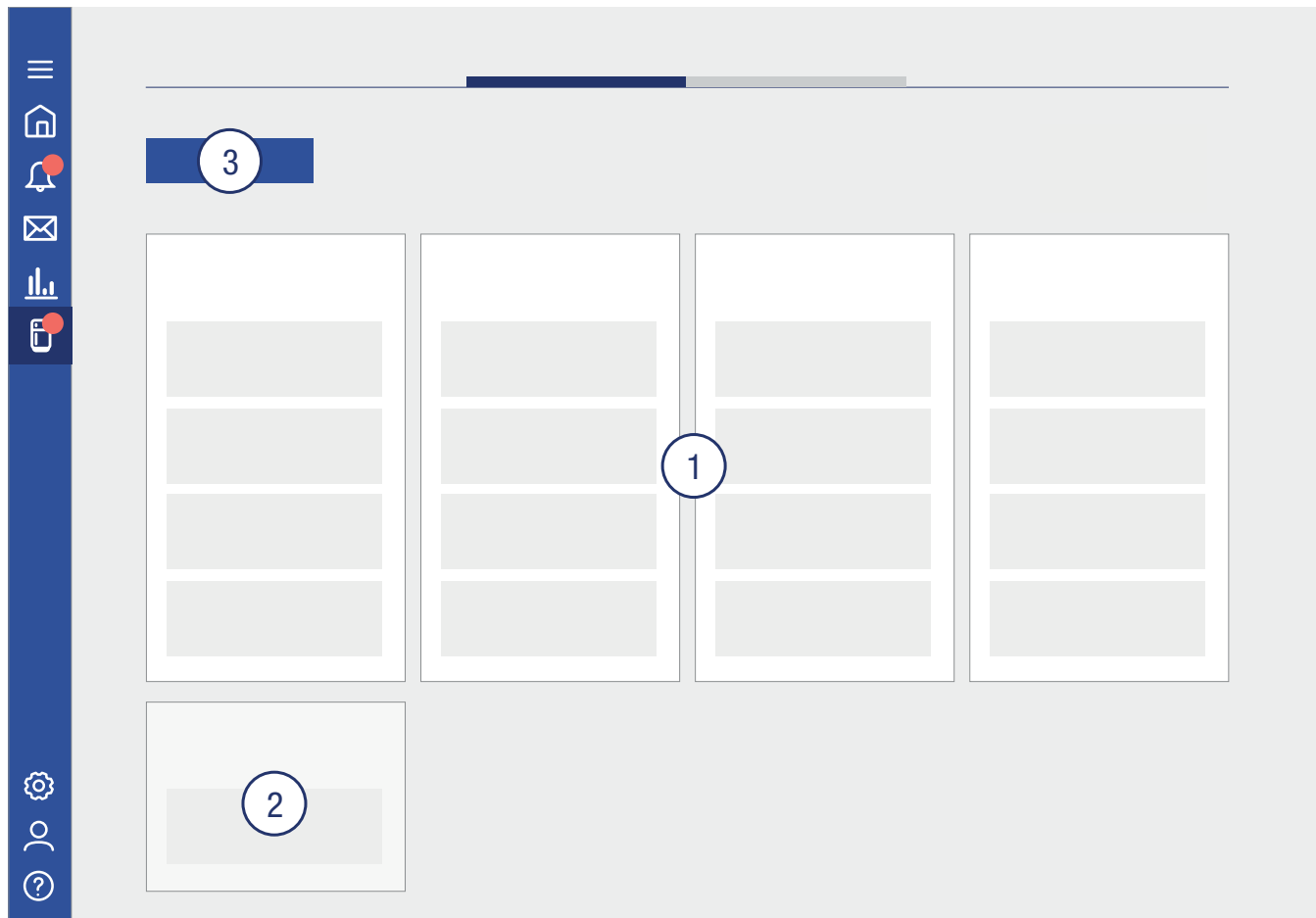
## Appliance list

The "My Devices" menu option contains two tabs: "Appliances" and "SmartCoolingHubs" (see top section in the figure below).

The "Appliances" tab will be displayed as default (figure below).

This contains all the networked appliances (1), sorted by the allocated group (3). Unlicensed appliances are listed on the left under the appropriate title (2). You can add and edit groups. Groups help you to organise your appliances.

If you select an appliance, you will receive detailed information about the appliance and can also edit it, as long as you are authorised to do so. The information is divided into various categories: "History", "Reports", "Alarms", "Properties" and "Alarm Profiles".



In the second tab "SmartCoolingHubs", you can see all your configured SmartCoolingHubs. If you select a SmartCoolingHub, you will see detailed information about it. In this case, the categories are "Alarms", "Alarm Profiles" and "Properties".

## Settings

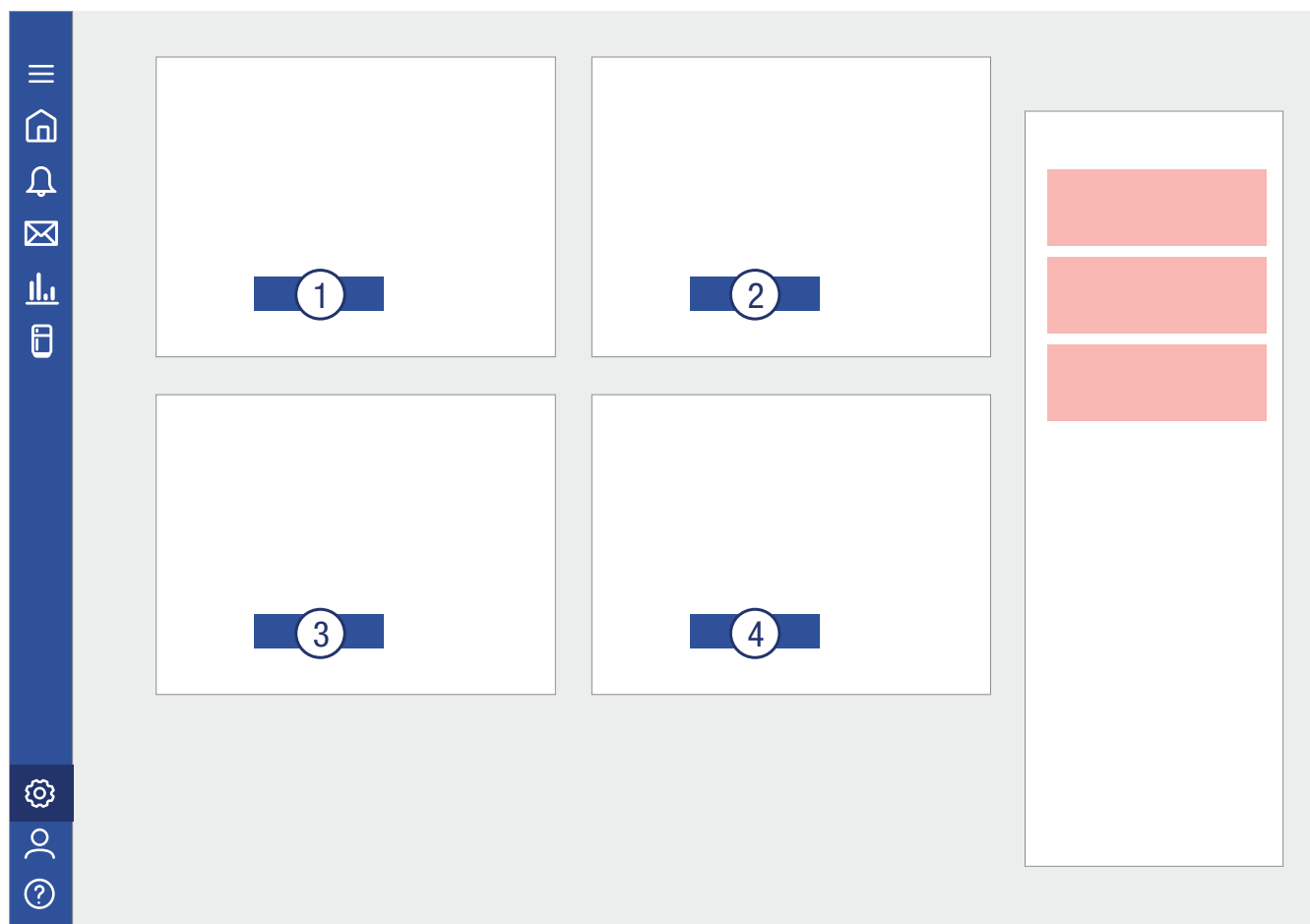
You can manage general system settings (1) in "General Settings". The categories "Device Management" (2), "License Management" (3) and "User Management" (4) are also available.

Appliances can be managed and new appliances and SmartCoolingHubs added in "Device Management".

"License Management" contains a summary of your license status as well as a link to the MyLiebherr license shop.

You can edit user rights in "User Management". Further information is available in "User Management" – "SmartMonitoring".

You may have different functions available depending on your role.



## User profile

You can log off and adjust settings for your user profile in "User Profile".

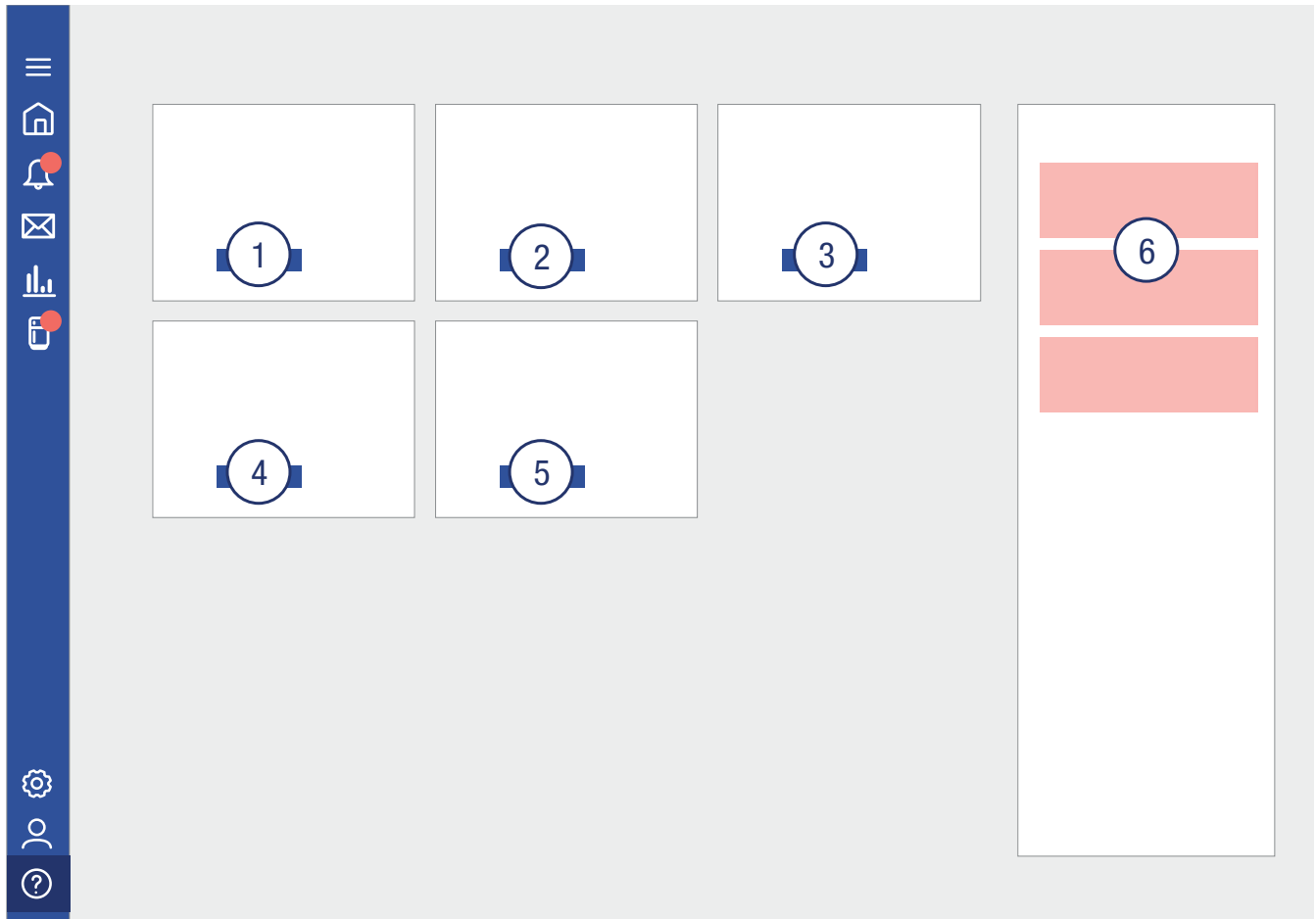
You can edit the automatic log off time. The default setting is that you will be automatically logged off after 15 minutes of inactivity.

You will be forwarded to the MyLiebherr portal to change your password.

## Help

In "Help", you can make a service request (1), view documentation (2), read FAQs (3), view tutorial videos (4) and view legal information about SmartMonitoring (5).

The current software version of SmartMonitoring is displayed below the legal information and in the footer.



## SmartMonitoring user management

SmartMonitoring has an additional user management system for settings which relate to SmartMonitoring. Go to "User Management" in "General Settings" in SmartMonitoring for this purpose.

Administrators can allocate users rights for individual appliances.

There are different functions for the two MyLiebherr user roles in SmartMonitoring:

Function	Administrator	Users
Set up the SmartCoolingHub	X	
Add appliances	X	
Add sensor	X	
Purchase/assign/manage licenses	X	
Dashboard summary	X	X
Alarm list	X	X
Edit alarm profile	X	
Messages	X	X
View and create reports	X	X
Appliance list with sensors	X	X
Edit groups	X	
View appliance details	X	X
Edit appliance properties	X	
Change language	X	X
Change logo for reports	X	
SmartCoolingHub alarm profile	X	
SmartCoolingHub visibility	All the company's SmartCoolingHubs	SmartCoolingHubs of the allocated appliances
Appliance authorisation	Authorisation for all appliances	Authorisation for allocated appliances only

# SmartSensor

## Information

You can use SmartSensors in addition to connectable Liebherr refrigerators / freezers, or to monitor non-connectable Liebherr appliances, and third-party appliances or rooms.

You can connect up to 50 SmartSensors to a SmartCoolingHub.

## Safety instructions SmartSensor

- The operation of one or more sensors requires the proper operation of a SmartCoolingHub in the radio range.
- The sensor is operated with batteries of the type LS 14500 AA 3.6V Li-SOCl<sub>2</sub>. Batteries are already inserted which you can activate without opening the housing.
- Activate only one sensor at a time and first follow the installation steps until the sensor is correctly connected. Only then do you activate further sensors if necessary.
- The sensor is activated by removing the pink tab.
- The battery life is approx. 1 year. You will receive an early notification if the battery condition becomes critical.
- Only use batteries of the type LS 14500 AA 3.6V Li-SOCl<sub>2</sub> that are approved for the temperature ranges used.
- Do not use conventional AA batteries or rechargeable batteries.
- Make sure the polarity is correct when inserting new batteries.
- Only operate the sensors in closed rooms.
- Make sure that you choose a suitable position for the sensors that is safe from mechanical influences.
- Position the sensors so that they do not dip the sensor in water.
- Note that the sensors are networked wirelessly. Make sure that you have the shortest and interference-free radio links possible for installing sensors in several refrigerators and freezers in different rooms with a SmartCoolingHub. If you do not have this requirement, it is recommended to use one SmartCoolingHub per room.
- Do not open the housing of the sensor beyond the battery compartment. The sensor does not contain any user-serviceable parts. Opening it carries the risk of damaging the electronics. In the event of a fault, have the sensor checked by a specialist. Opening the sensor represents improper handling.
- Do not use the sensor if it is visible broken on the outside. If in doubt, have the sensor checked by a specialist.
- For safety and approval reasons (CE), unauthorized modifications and / or changes to the sensor are not permitted.
- The sensor is not a toy. Do not allow children to play with it. Do not leave the packaging material lying around carelessly. Plastic foils / bags, small accessories, etc. are dangerous for children. There is a risk of suffocation, e.g. by swallowing.

## Discard the sensor

The sensor contains valuable materials. For this reason, and also to prevent possible damage to the environment through improper disposal, disused sensors must be disposed professionally and properly in accordance with the locally applicable regulations and laws. The symbol of the crossed-out bin indicate that the sensor must not be disposed in the residual or household garbage. It must therefore be collected separately from unsorted municipal waste and taken to the local recycling / waste disposal centers or return to the trader.

- To protect the environment and to recycle the valuable substances it contains, lithium thionyl chloride batteries should be removed before disposal. They can be returned free of charge to the local collection points.
- The sensor can be disposed of free of charge in the class 5 collection containers "Small devices and small devices for information and telecommunications technology".

## Conformity SmartSensor

Liebherr-Hausgeräte Lienz GmbH hereby declares that the radio system type SM002-868 complies with Directive 2014/53 / EU. The full text of the EU declaration of conformity is available at the following Internet address: [home.liebherr.com/smartmonitoring](http://home.liebherr.com/smartmonitoring)

All sensor components that the user may come into contact with are made of food grade material. This also applies to the adhesive strip. When replacing this adhesive strip, please pay attention to food quality.



## Technical specifications SmartSensor

The radio reception of the sensor can generally vary in buildings due to structural conditions and temporary radio interference from other radio devices. Please ensure sufficient coverage for stable radio reception.

### NOTE

You can network a maximum of 50 sensors with one SmartCoolingHub.

### Digital door contact sensor "SmartSensor Door"

Property	Value
Name of type	SM002-868
Type of sensor	digital
Protection class	IP 65
Signal range	45 m (free field view, depending on the local conditions, significant below)
RF Transmission frequency	865 – 870 MHz
RF Transmission power	+14 dBm
Type of battery	Lithium battery / Type LS 14500 / 3.6 V / 2700 mAh
Battery life	approx. 1 year (Standard setting: 5 minutes data transmission interval)
Usage environment	Indoor use only
Operating temperature range	-30 °C to +50 °C, non condensing
Contact range	5 – 25 mm

### Digital temperature sensor "SmartSensor Temperature"

Property	Value
Name of type	SM001-868
Type of sensor	digital
Protection class	IP 65
Signal range	45 m (free field view, depending on the local conditions, significant below)
RF Transmission frequency	865 – 870 MHz
RF Transmission power	+14 dBm
Type of battery	Lithium battery / Type LS 14500 / 3.6 V / 2700 mAh
Battery life	approx. 1 year (Standard setting: 5 minutes data transmission interval)
Operating range	-30 °C to +50 °C
Reaction delay	90 % temperature < 20 min
Usage environment	Indoor use only
Operating temperature and measuring range	-30 °C to +50 °C, non condensing
Accuracy	+/- 0,25 °C

### Calibration of digital sensors

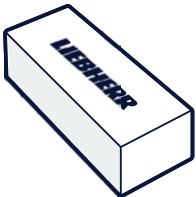
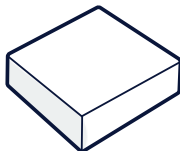
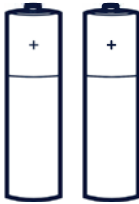
Our digital sensors are calibrated in accredited laboratories and do not require any recalibration. The sensors are calibrated for their entire lifetime with an accuracy of +/- 0.25 °C.

## SmartSensor Package

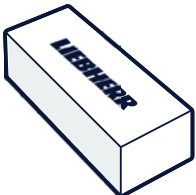
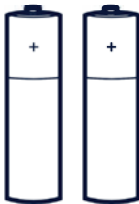
### NOTE

Additional accessories and other SmartCoolingHubs are available from the SmartMonitoring website [home.liebherr.com/smartmonitoring](http://home.liebherr.com/smartmonitoring) or from your Liebherr dealer.

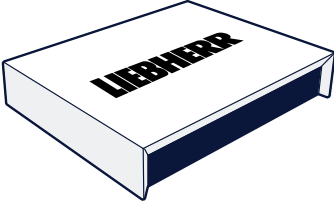
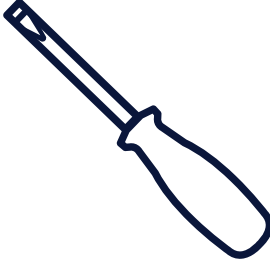
## SmartSensor Door package

Graphic	Description	Order ID
	SmartSensor Door	6125225-00
	Magnet	
	2x AA Lithium Battery 3,6 V (not a standard AA battery)	

## SmartSensor Temperature package

Graphic	Description	Order ID
	SmartSensor Temperature	6125223-00
	2x AA Lithium Battery 3,6 V (not a standard AA battery)	

**Not included**

<b>Graphic</b>	<b>Description</b>	<b>Order ID</b>
	(Connected) SmartCoolingHub	6125219-00
	Screwdriver	

# Requirements to operate the sensors

## Accessories necessary for operation

The sensors are designed for radio contact with a Liebherr SmartCoolingHub, which must be set up and ready for operation before the sensors are installed. Further information is available on the Smart-Monitoring website [home.liebherr.com/smartmonitoring](http://home.liebherr.com/smartmonitoring) or from your Liebherr dealer.

## Local conditions

The sensor must be installed in a fixed place, must not simply be put down or attached to a moving part. The intended adhesive surface must be free of grease and clean. When choosing the surface, make sure that the surface is flat, that there are no obstructions from pull-outs and other moving parts and that the installation location does not hinder the loading of the refrigerator. Cooling devices and rooms can have a shielding or attenuation of radio signals; indications of this can impair the signal and the range.

## Example installation of a sensor

### General remark

The positioning of a sensor can have a decisive influence on the range of the radio signal. You should therefore only stick the sensor in or on the cooling device after setting it up via the SmartCoolingHub dashboard and ensuring the wireless range in the setup process. Loosening and reattaching the sensor reduces the durability of the adhesive strip.

### Naming scheme

As soon as you register several sensors on a SmartCoolingHub, it is advisable to design a naming scheme for the sensors so that they can be found quickly during a check or an upcoming battery change. For example, you can use the position of the sensor in connection with the cooling device and an ordinal number.

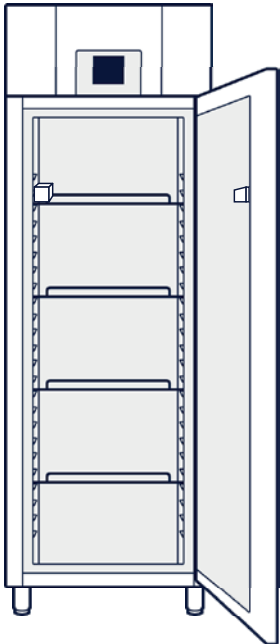
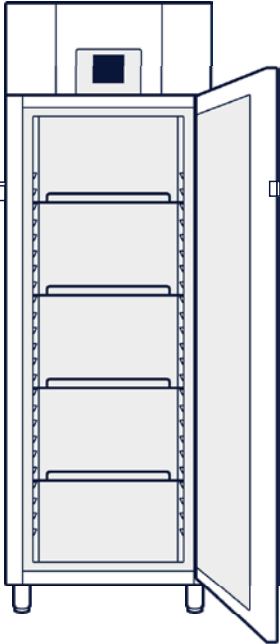
### Commissioning one after the other

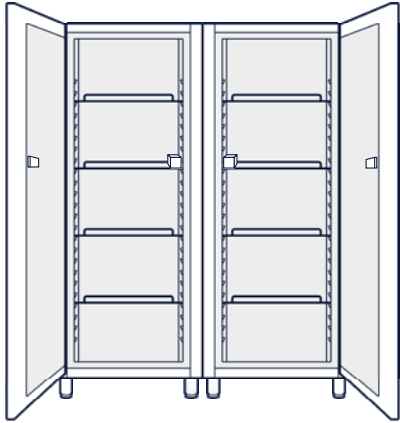
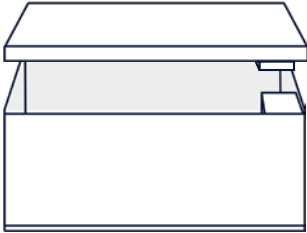
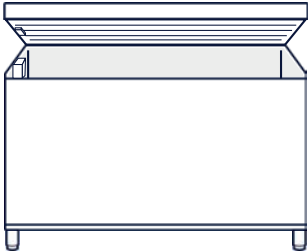
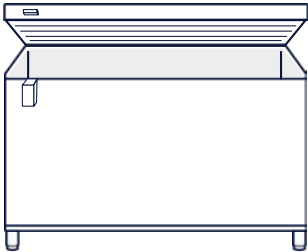
In order to avoid confusion within the installation and learning process (so-called pairing), it is advisable to only supply the sensors with battery power when you are prompted to do so in the step-by-step process of the SmartCoolingHub dashboard.

## Door contact sensor

- The door contact sensor is suitable for in-chamber and on-chamber installation of a cooling device.
- The door contact sensor is equipped with a magnetic counterpart, which must be positioned at a minimum distance from the sensor when closed.
- The sensor should be placed so that it is centered on the magnetic counterpart.
- The minimum distance from magnet to sensor is 5 mm, the maximum (and therefore trigger distance) 25 mm. The shift to the center of the sensor and the magnet (offset) must not exceed 10 mm.
- For proper installation, pencil marks or tape to test position may help.

### Example positioning

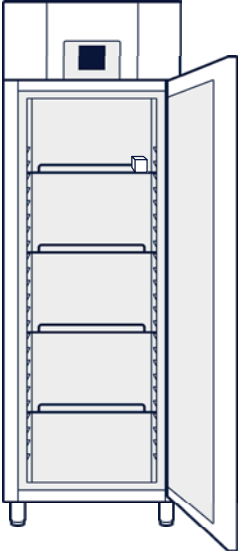
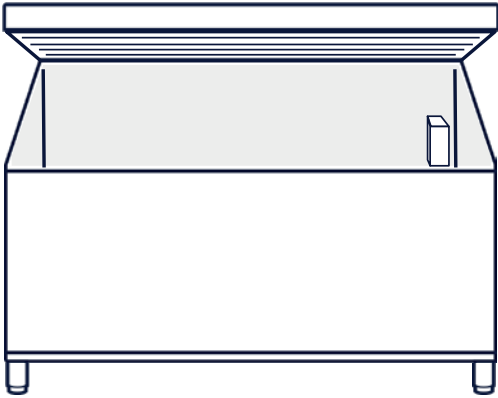
Door type	Position	Example
Single door	in-chamber	
	on-chamber	

Door type	Position	Example
double door	in-chamber	
drawer	in-chamber	
inside freezer	in-chamber	
	on-chamber	

## Temperature sensor

- The temperature sensor is suitable for in-chamber installation of a cooling device.
- The positioning is to be chosen so that the sensor does not create any mechanical obstacle that would impair the handling of the cooling device.
- To get the most accurate display of the real chamber temperature possible, it is recommended to place the sensor close to the temperature sensor of the refrigerator.

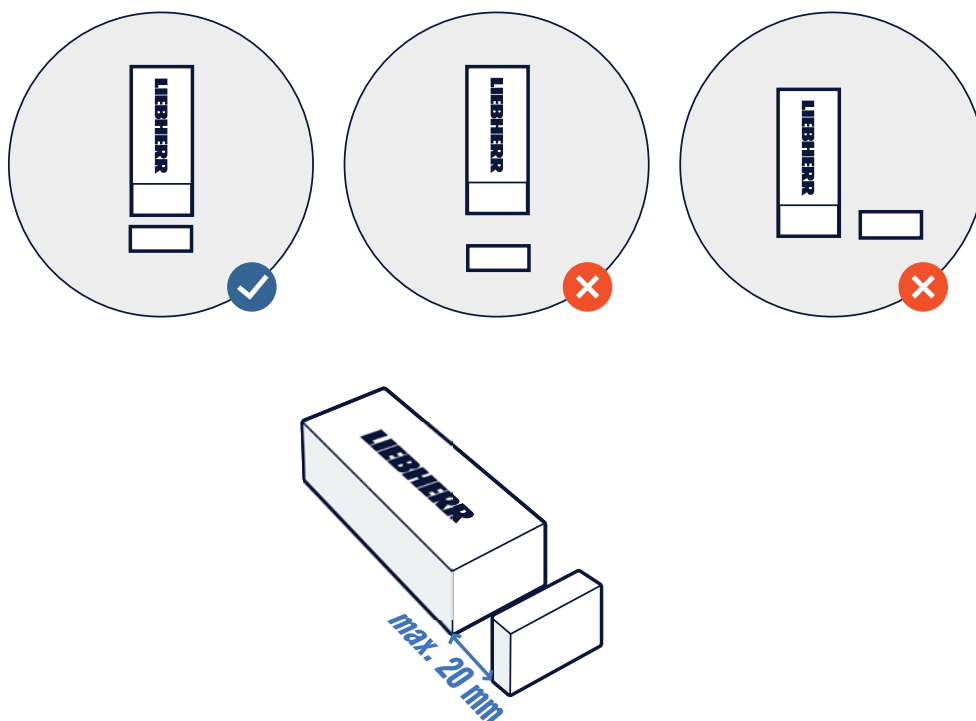
### Example positioning

Door type	Example
Cooling appliance	
Freezing appliance	

## Application scenarios

- It is possible to set up several sensors per measuring point
- Use with third-party devices is possible as well as installation in cold storage rooms / cells (one SmartCoolingHub is mandatory)
- The integration of a sensor requires the acquisition of a corresponding license with a defined term.
- The SmartCoolingHub dashboard offers the option of up to 20 measuring points / cooling devices, each with a max. 3 sensors to manage (the maximum number of sensors is limited to 50).

## Installation



- Please make sure that you have an already set up SmartCoolingHub available or set it up before starting up the SmartSensor.
- Open <https://smartmonitoring.liebherr.com/setup> and select "Add SmartSensor"
- Follow the Step-by-Step guidance of the onboarding process
- During the configuration you have to place the SmartSensor near the SmartCoolingHub (max. 50 cm).
- After the successful connection place your SmartSensor at the desired place.
- Keep in mind: The ideal distance between the SmartSensor and the SmartSensor magnet is approx. 20 mm. Please check before the configuration where you want to place the SmartSensor later.



## Troubleshooting

The following area covers problems that you may have despite following the instructions. Some factors Liebherr cannot influence. This includes spatial conditions, sources of interference or the identification of defective components.

A general section of the most frequently asked questions can be found at [smartmonitoring.liebherr.com/faqs](https://smartmonitoring.liebherr.com/faqs) (MyLiebherr login required). Below are the questions specifically related to the sensors.

### Insufficient or insufficient radio signal strength

The specified range of 45 m is the purely theoretical maximum range. In practice this can be much lower because there are strongly shielding objects in the 868 MHz frequency band. Despite the short distance between the sensor and the SmartCoolingHub, the radio signal can be significantly impaired. Walls, large objects or even the refrigerator itself can have a detrimental effect. Metallic materials are particularly influential here, such as metal linings in refrigerators, metal shelves, heat shields, reinforced concrete, etc. To improve the signal, you can:

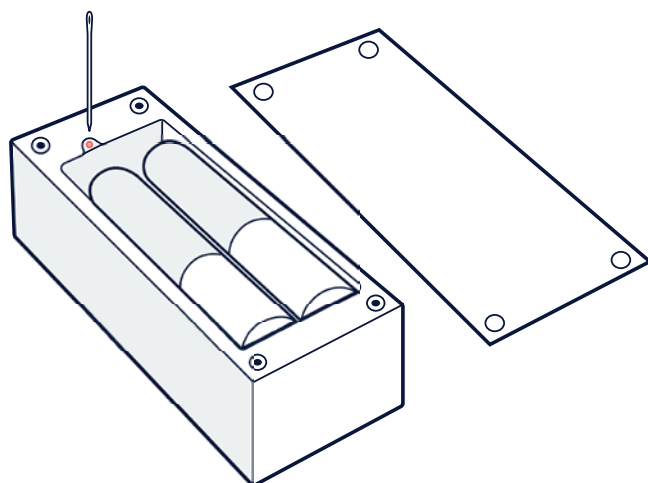
- Reposition the sensor, turn it 180 °, choose a different housing wall or, for door sensors, choose external installation
- Position the SmartCoolingHub differently, do not place it directly on a metal surface, vary the hanging and standing position
- Relocate the refrigerator to another location in the room
- Move objects in the room, including objects that are not in a direct distance to the transmitter / receiver, to a different location

### Sensor sporadically loses connection

If the problems with the radio connection vary or the radio connection breaks off regularly, you should first check whether the distance between the transmitter and receiver is too long.

If similar routes with other sensors do not lead to malfunctions, it is necessary to contact customer service.

## Pairing fails



A sensor can be reset by pressing the reset button for 5 seconds with the battery inserted. Then remove the battery, wait 10 seconds and reinsert the batteries.

When installing multiple sensors, make sure that you only connect one sensor at a time (pairing).

The 868 MHz radio band is not exclusive. It is possible that you have other devices in the vicinity which are falsifying the radio signal. This can include LTE devices, weather stations, radio bells or heating thermostats.

## No door contact despite the door being closed

If you get the signal that a door is open although it is closed, check the adhesive points of the sensor and, if necessary, the magnet, check the specified positioning and their minimum / maximum distances.

## Status LEDs with sensor error codes

If the sensors are faulty, you can recognize this from the connected SmartCoolingHub. The error codes relating to the sensors can be found in the FAQ at [smartmonitoring.liebherr.com/faqs](https://smartmonitoring.liebherr.com/faqs) (MyLiebherr login required).

## Data quality and data security

- Due to the measuring interval, the data transmission and storage, there are given latencies of the display in the dashboard (time and temperature latency) of up to 5 minutes.
- If the SmartCoolingHub is inaccessible for the sensor, although it is connected, the sensor saves data for up to 24 hours and sends it when it is available again.
- The measuring interval of the temperature and door sensors are different due to the logic. The door sensor uses a switching logic that transmits data as soon as there is a change, whereby the temperature sensor uses a specified measuring interval (preset: 5 min.) To transmit the sensor values to the SmartCoolingHub.

## Contact information

Liebherr-Hausgeräte Lienz GmbH

For the contact information in your country, please go to our website [home.liebherr.com/smartmonitoring](http://home.liebherr.com/smartmonitoring). This contains a list of contacts at the Liebherr customer service department in your country.

### Germany:

Phone: +49 (0)7352 911 7270

Service email: [service.lhv@liebherr.com](mailto:service.lhv@liebherr.com)

Info-Center email: [info-center.lhg@liebherr.com](mailto:info-center.lhg@liebherr.com)

### Austria:

Phone: +43 (0)50809 21700

Service email: [service.lwl@liebherr.com](mailto:service.lwl@liebherr.com)

Info-Center email: [info.lwl@liebherr.com](mailto:info.lwl@liebherr.com)

### United Kingdom:

Phone: +44(0)3330 147 888 (option 3)

Mail: [lgb.refrigeration@liebherr.com](mailto:lgb.refrigeration@liebherr.com)





**Liebherr Hausgeräte Lienz GmbH**

Dr.-Hans-Liebherr-Strasse 1

A-9900 Lienz

Austria

[www.liebherr.com](http://www.liebherr.com)

