Operating instructions

2-way communication in the TrailerConnect© portal

As of: August 2023

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Introduction

We are pleased that you have chosen Schmitz Cargobull.
Since 2014, we have been offering extended telematics functions for transport solutions involving temperature-controlled goods as part of our telematics services.
The "2-way communication" is characterised by the fact that components connected to the telematics, such as the cooling unit, can send data to the telematics unit and also receive data from it. This document explains the functionality for controlling the refrigeration machine and the alarm system.

Thus, not only can data be read out and transmitted from the terminal to the telematics portal, but commands can also be transmitted from the telematics portal to the components. For example, the presetting of the cooling unit in relation to the operating mode or the setpoint temperature can be changed via this communication link.
By using these telematics functions, the operator takes conscious responsibility for the correct temperature control of the cargo hold.
The 2-way communication is particularly helpful where the trailer is autonomous, i.e. without a truck tractor, with a load, or is in use. Should unforeseeable events occur that could lead to damage to the goods (e.g. temperature deviation), an authorised person can command the refrigeration machine via telematics in defined functions and damage could be minimised.

The prerequisite for the functionality is an existing mobile network connection of the telematics unit.

The alarm system, consisting of the door sensor and the alarm horn, can also be activated and deactivated via 2-way communication. Unauthorised access is detected and you are also notified remotely.

This document describes the use of the 2-way functions via the telematics portal. It also contains corresponding safety / testing instructions as well as a version on the liability regulation.
Please read the operating instructions intensively before using the 2-way communication functions.

The steps described in the following require TrailerConnect® portal access with corresponding rights and corresponding hardware in the trailer that allow the component to be controlled remotely.

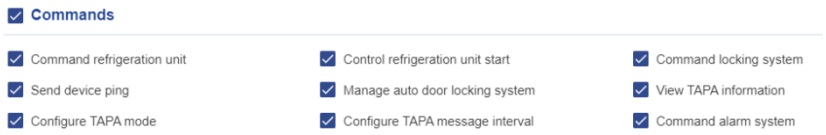
Hints for operation

The functions explained below depend on the hardware installed in the trailer and the tariff. If you do not find an option in the telematics portal, please check the equipment and the tariff booked. If you have any further questions, please do not hesitate to contact our support.

Permissions management

In order to use the functions described below, you need a user account with control rights. Administrators have all control rights. You can also grant other standard users the necessary rights via the user administration in order to be able to perform desired actions.

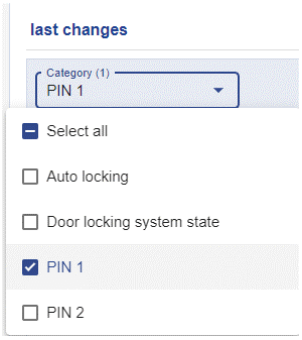
To do this, extend one of the predefined function sets under "Users" - submenu "Function set" or create a new function set and add the desired control rights via the selection:



All control options have been added to this function set in this example. You can save the set and assign it to users so that the user can perform the selected controls.

Control history

In each control menu, there is a change history in the lower area. You can use this history to retrace the last control changes.
The view can be narrowed down using the category filter so that you can, for example, only see the last PIN changes:



Filtered view:

Users	Value	Position	send	received	confirmed	Result
[redacted]	PIN 1: 2345	DE, 48161 Münster, Hägerstraße 1	17.12.2021 12:30:54	17.12.2021 12:31:02	17.12.2021 12:31:02	ok
[redacted]	PIN 1: 0000	DE, 48565 Steinfurt, B54	16.09.2021 15:29:21	16.09.2021 15:29:22	16.09.2021 15:29:31	ok
[redacted]	PIN 1: 1234	DE, 48485 Neuenkirchen, Dorfba…	16.09.2021 15:20:28	16.09.2021 15:20:29	16.09.2021 15:20:29	ok

This makes it easy to see which user has made changes and when.
Similarly, the overview also shows the status during a control. As soon as you make a change, you will see the status "Is being executed" in the column "Result" until the change has been successfully transmitted. Only when the result is displayed with "Ok" has the change been successfully executed.

Controlling the cooling unit

Please check whether settings have to be made on your cooling unit to control the remote functionalities. For further information, please refer to the operating manual of the cooling unit. In the following, we describe the steps using the Schmitz Cargobull S.CU as an example

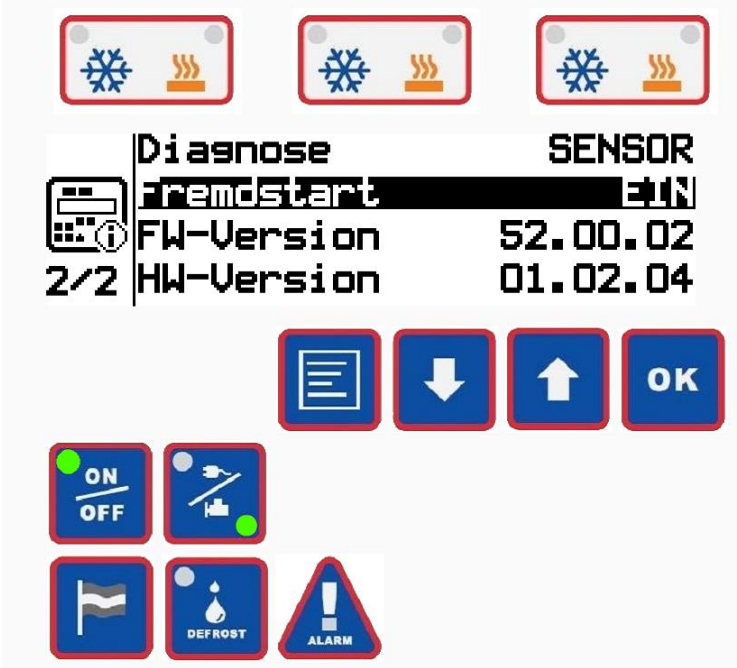
Switching the cooling unit on/off

WARNING

Please ensure that the cooling unit in diesel operation is only started outdoors. There is a risk of suffocation and poisoning from exhaust fumes during diesel operation indoors.

Also make sure that no work is being done on the cooling unit at the time of remote start.

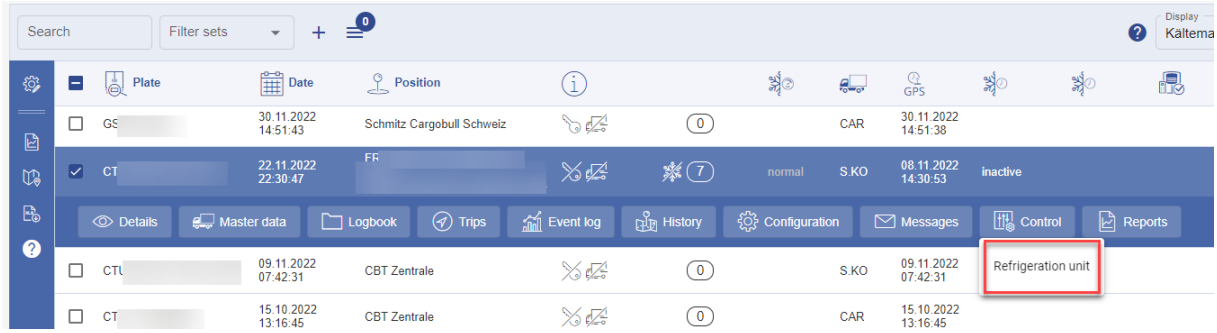
In order to be able to control the S.CU via TrailerConnect® Portal, it must first be set to standby mode on the S.CU display. This mode allows permanent communication between the CTU, the S.CU and the TrailerConnect® Portal without having to be fully switched on. In standby mode, the cooling unit is not completely switched off and thus consumes power from the cooling unit battery.
You switch on standby mode via the S.CU display by setting the "External start" option to "ON". For more detailed information, refer to the operating instructions of the S.CU cooling unit.



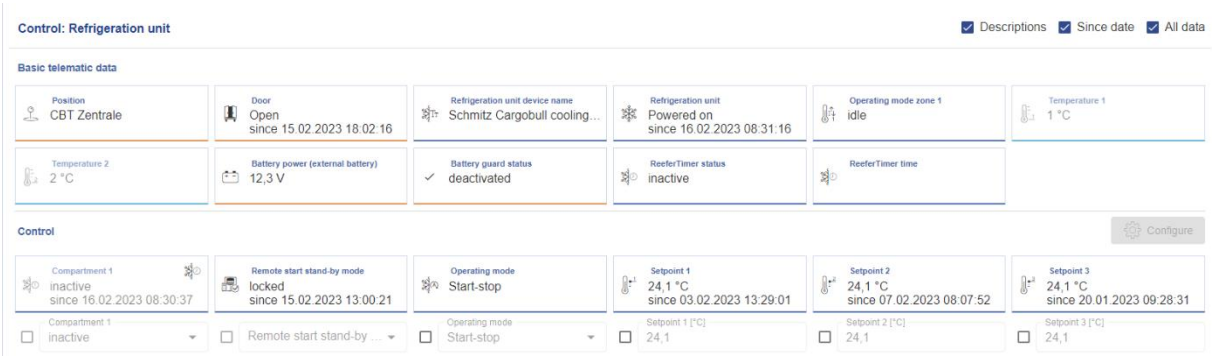
With an S.CU in standby mode, you can now perform the relevant control in the TrailerConnect® Portal.

Switching the cooling unit on/off manually

Select a vehicle in the status overview and click on the "Control" button and select the refrigeration unit item in the submenu:

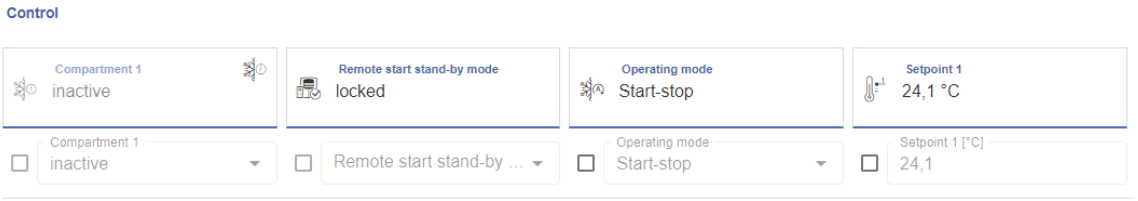


On the control page you can see current operating values of the cooling unit:

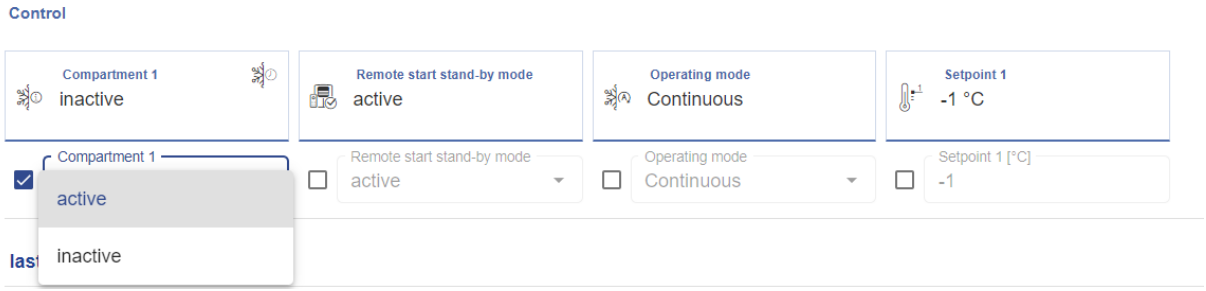


In the lower area in the category "Control", you can change parameters (e.g. setpoints) or switch on compartments if the cooling unit is supported.

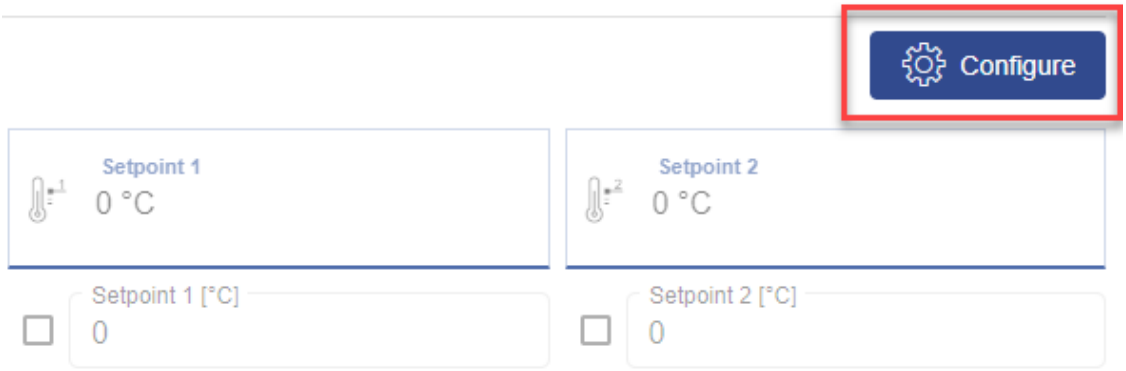
To do this, click on the box in front of the cooling unit status:



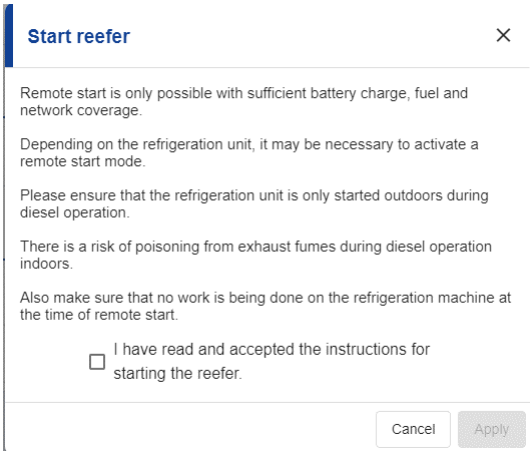
Select the desired status:



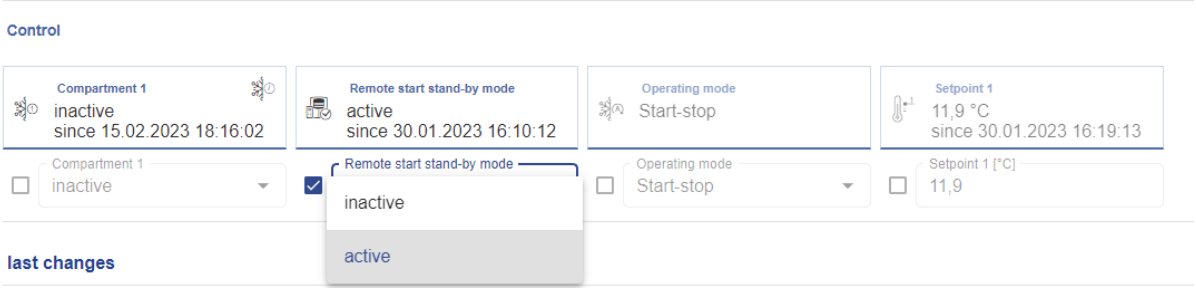
To transmit the values to the cooling unit, click on the "Configure" button in the control overview on the right-hand side:



Check the settings and confirm them by clicking on "Apply":



You can also activate or deactivate the external start standby mode in the same way:



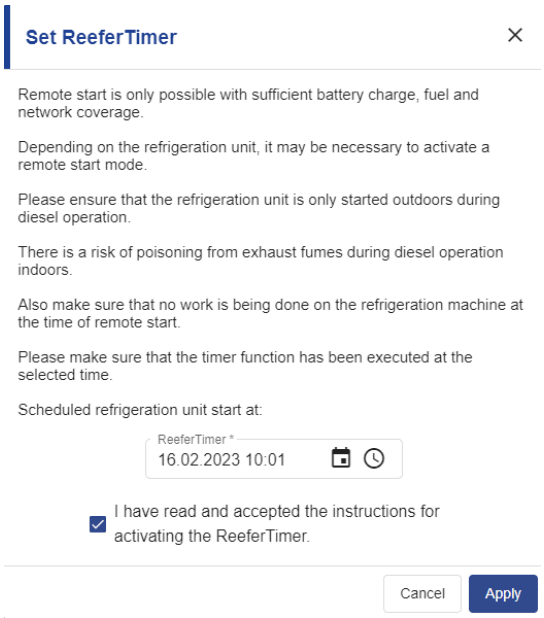
This setting remains activated for a maximum of five days, provided the cooling unit has not been switched on in the meantime.

Planning the start of the cooling unit

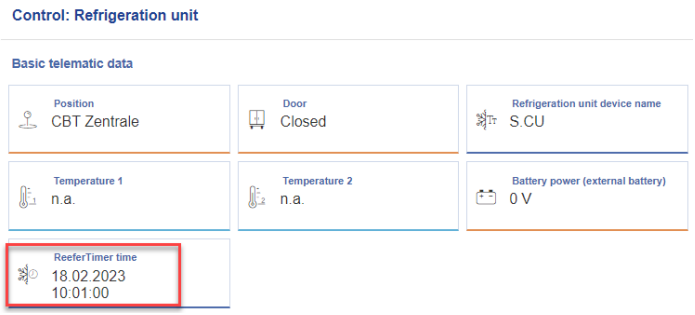
The cooling unit can be switched on time-controlled so that pre-cooling or pre-heating happens automatically.
The ReeferTimer option in the TrailerConnect® portal is available for this purpose.

Click on the split snowflake/clock symbol in the "Cooling unit" tile in the refrigeration machine control area:

A pop-up window opens in which you can set the time for switching on. Read the instructions carefully and confirm the time by clicking on "Apply".

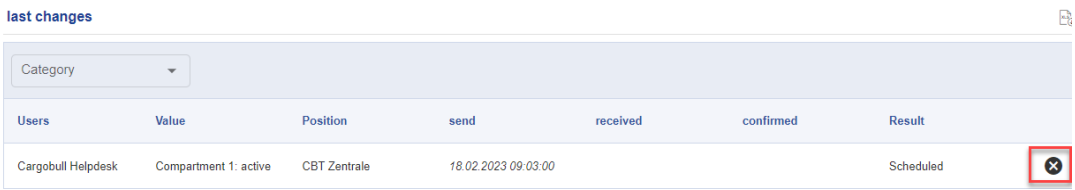


On the overview page for the control unit, you will see the now configured switch-on time in the upper area in the tile "ReeferTimer time".



This information can also be displayed via the display profile on the status page. To do this, configure a display profile that contains "ReeferTimer time" as a value and select it on the status page.

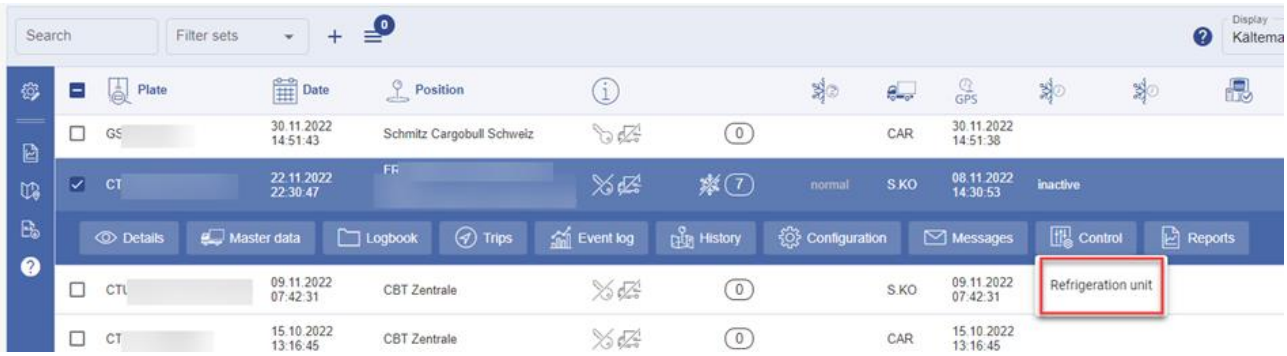
A planned start can be cancelled via the change history. To do this, click on the cancel symbol in the line:



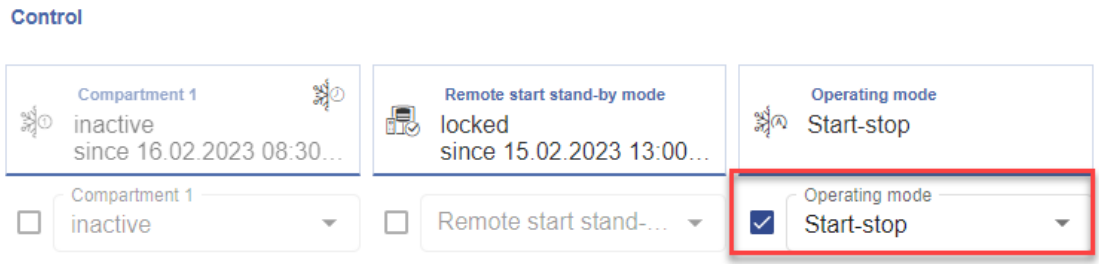
Setting the operating mode of the cooling unit

When the cooling unit is switched on, you can configure the operating mode and the cooling parameters.

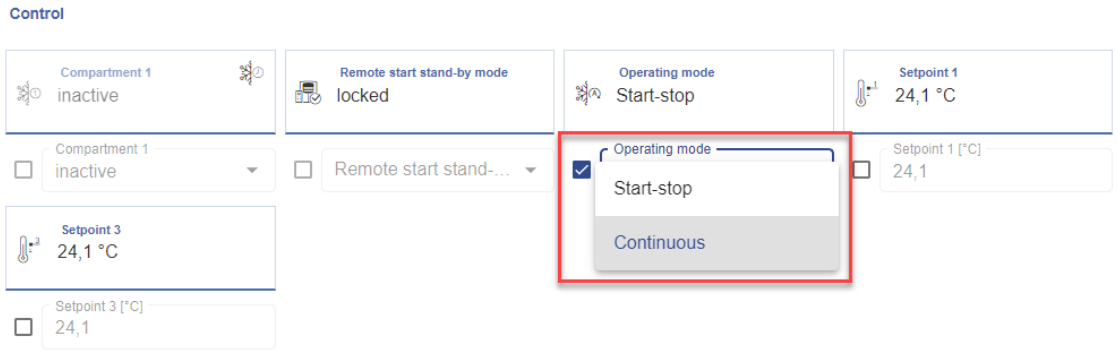
To do this, select a vehicle and click on the "Control" button and select the item "Refregiration unit" in the submenu:



You can see the currently configured operating mode in the "Control" area and can make changes in the line below. To do so, click on the box in front of the operating mode:



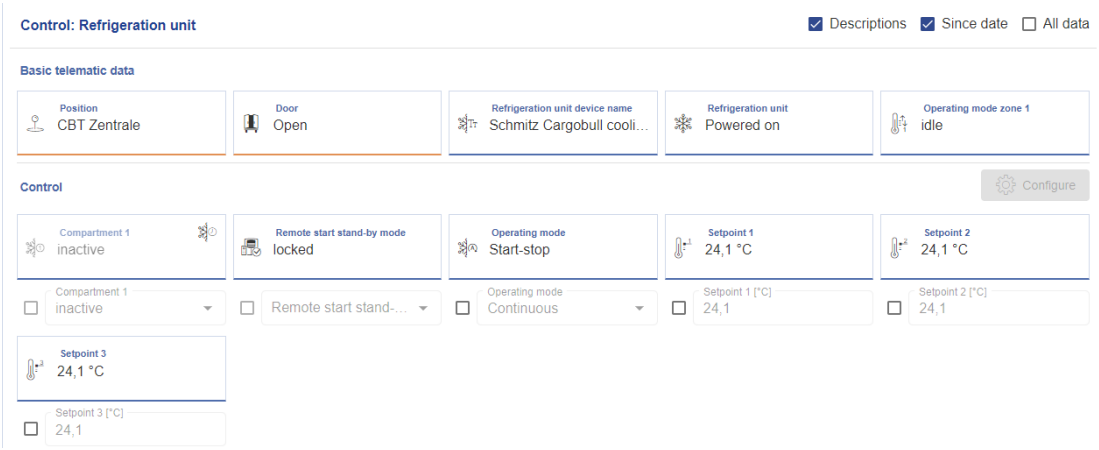
Select the desired operating mode via the menu:



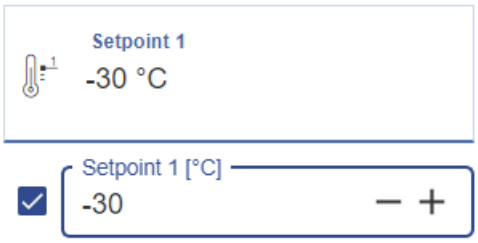
To transmit the values to the cooling unit, click on the "Configure" button on the right-hand side:

Set the target temperature of the cooling unit

You can see the currently configured setpoints of the selected vehicle in the "Control" area and can make changes in the line below.

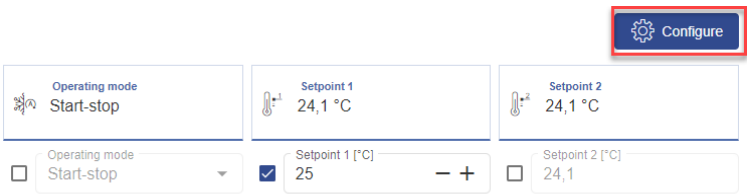


To do this, click on the box in front of the setpoint to be changed and enter the desired value for setpoint 1:



Repeat the step for the second setpoint, if desired.

To transmit the values to the cooling unit, click on the "Configure" button on the right-hand side:

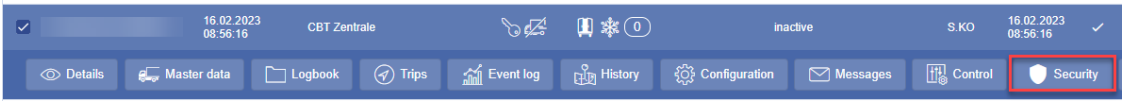


Check the values entered and confirm the changes.

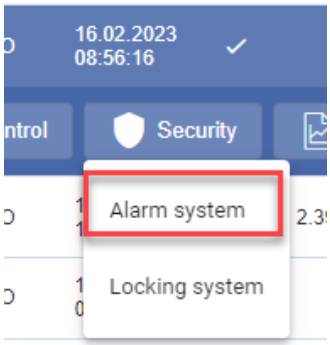
Configure alarm system

The alarm system is used to detect unwanted intrusion into the load compartment. If the door is opened, a loud acoustic signal also sounds if the trailer is equipped with the appropriate hardware.

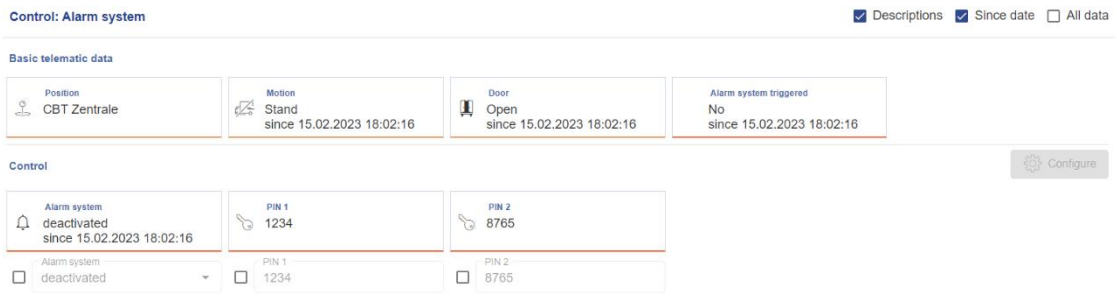
Select a vehicle with an alarm system and click on the "Security" button:



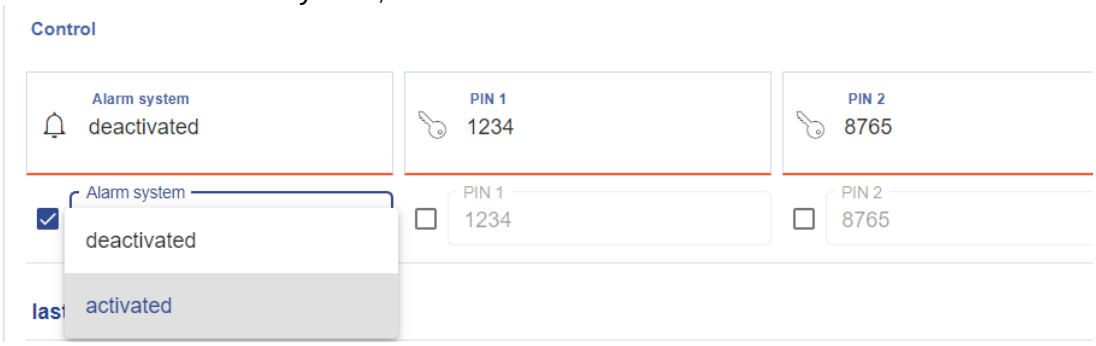
Select the item "Alarm system" in the submenu:



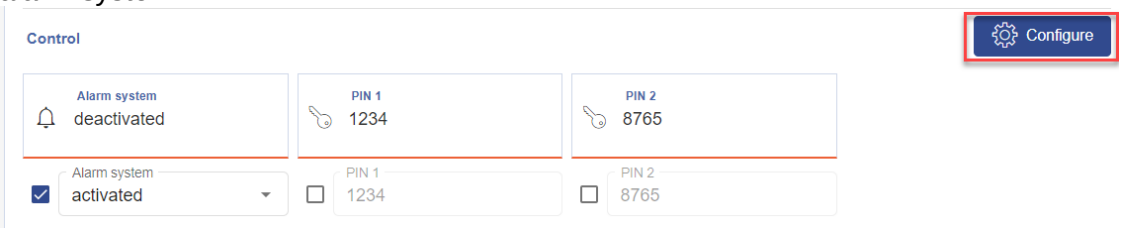
You can see the current status of the alarm system in the "Control" area:



To activate the alarm system, click on the box and then select the desired status:



The PIN codes can be configured in the same way. To do this, click on the box in front of the PIN to be changed and enter the new PIN. A PIN change can also be configured separately without activating/deactivating the alarm system.
Click on the "Configure" button on the right-hand side to transmit the changes made to the alarm system.



TAPA

Select a TAPA-capable unit which has the corresponding equipment and the associated TAPA tariff.

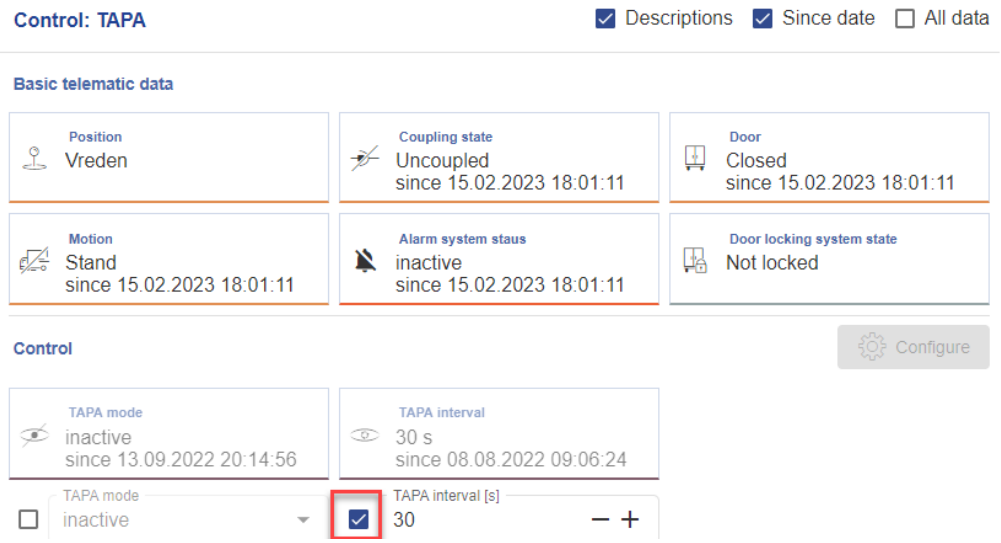
Click on the menu item "Security" and select the item "TAPA" in the submenu.

In the upper area of the control page you will see current status information on the components of the TAPA system, such as the current status of the alarm system as well as the door locking system.

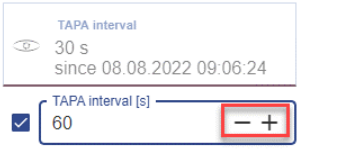
In the lower area, you can make changes to the TAPA mode.

Set TAPA message interval

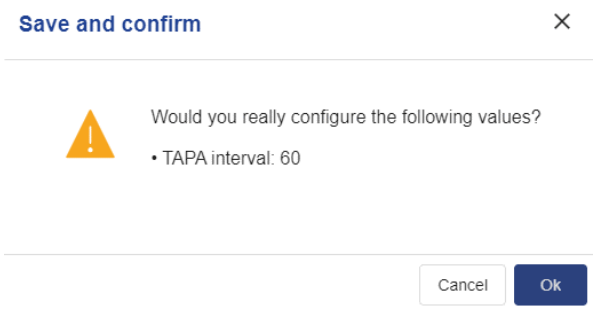
Click on the box in front of the field "TAPA interval (s)":



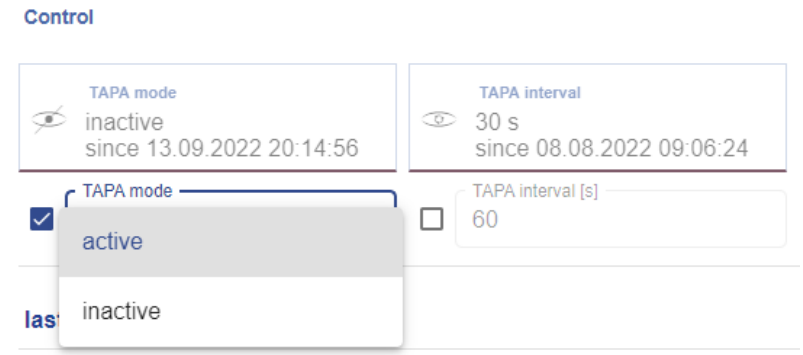
Enter the desired message interval (in seconds) at which the messages are transmitted during a TAPA trip:

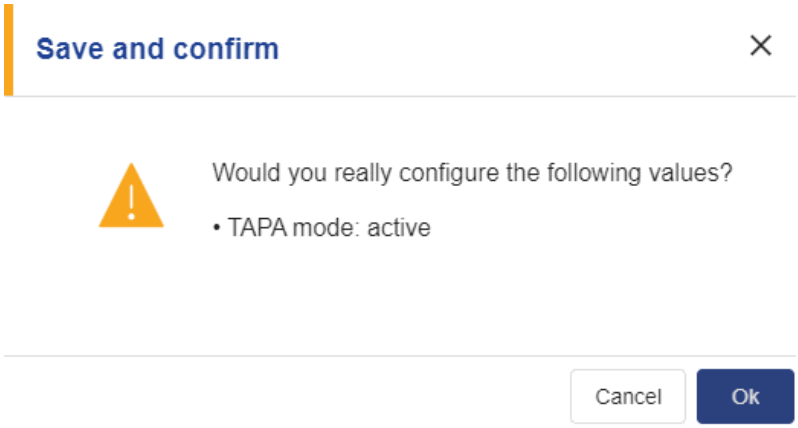


Then click on "Configure" on the right-hand side.
Confirm the specified changes in the pop-up window:



You can activate the TAPA mode in the same way. Select the status via the submenu and confirm your change.





The TAPA mode is now activated. As soon as the activation is successful, you will see this on the control page. You will now receive the safety messages of the TAPA system in addition to the usual event messages.

Active and deactivate the immobilizer

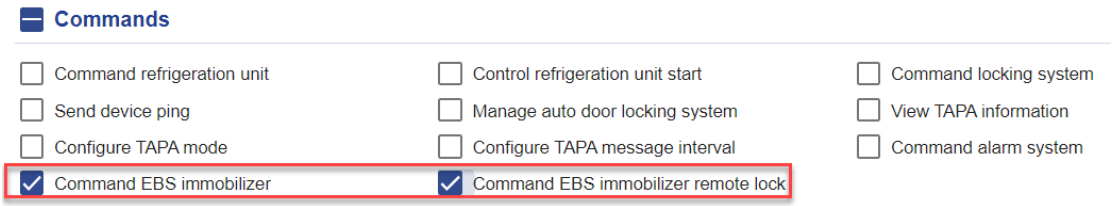
Preconditions

With the "Immobilizer" function and the corresponding portal rights, it is possible to activate and deactivate the immobilizer for a trailer via remote data transmission (RDT).
This function serves to prevent unauthorised use by third parties. The activation of the immobiliser must be used within the framework of the respective legal requirements of the respective country of use - the user of the function is responsible for checking this. We decline liability for any unlawful use of the immobilizer.
Inform the user/owner of the trailer about this function in the contract or before the start of the journey.
A remote immobilization cannot be cancelled locally on the trailer via keypad, app or similar!
Inform the user/owner in advance about an upcoming immobilization and agree on a safe time and location for immobilization. Also inform the pitch/property owner about the action.
Only use this function if you know that the trailer is in a safe condition. In particular, that no escape routes, level crossings, traffic routes, access roads etc. are blocked.
As part of its product monitoring obligation, Schmitz Cargobull reserves the right to withdraw the "immobilizer" function from the company/authorised person in the event of misuse. In addition, Schmitz Cargobull can deactivate the "immobilizer" function in the event of disregard of the operating instructions/terms of use or applicable law.

Immobilization of the trailer is only possible if the telematics unit has mobile radio connection, the ignition is switched on and the handbrake is applied.

Deactivation of the immobilizer is only possible if the reservoir pressure is greater than 6.5 bar.

Remote activation of the immobilizer can only be done with the necessary control rights via the TrailerConnect portal. You need the control right "Command EBS immobilizer remote locking" so that you or another user can carry out the activation in the TrailerConnect portal:

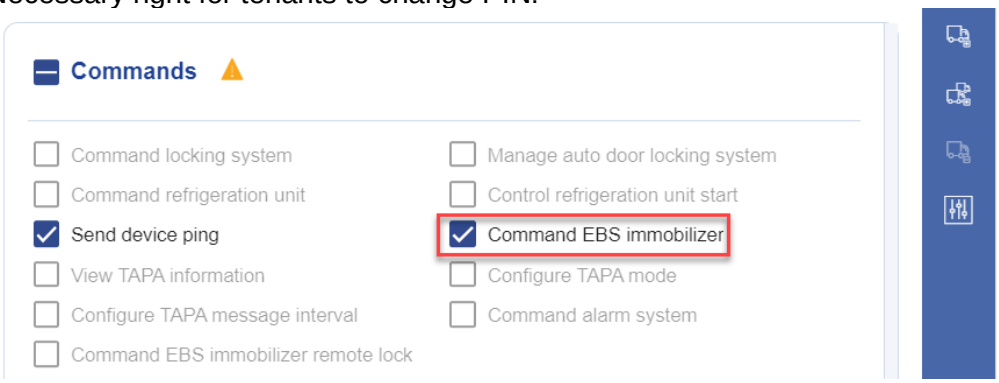


The "Command EBS immobilizer" right allows you to make PIN changes.

This right is to be assigned via user administration and associated function sets. Afterwards, the users with designated rights can carry out the control via TrailerConnect Portal.

When renting the trailer via the TrailerConnect portal, you can pass on the right to change the PIN so that the hirer can change the PIN of the immobilizer independently. The right to activate the immobilizer via the portal cannot be passed on to a tenant. As the owner, you have sole control of the remote activation.

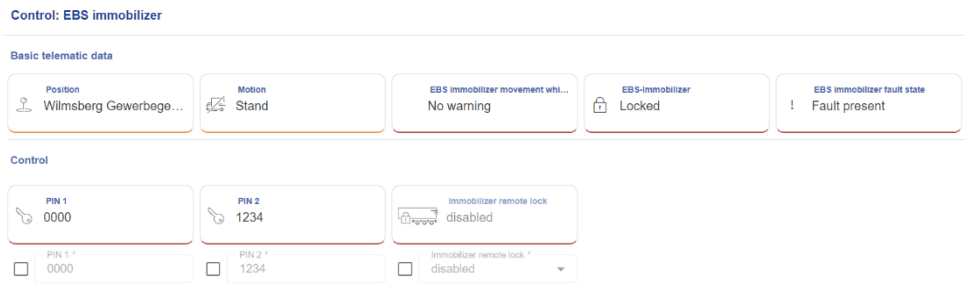
Necessary right for tenants to change PIN:



Control via TrailerConnect portal

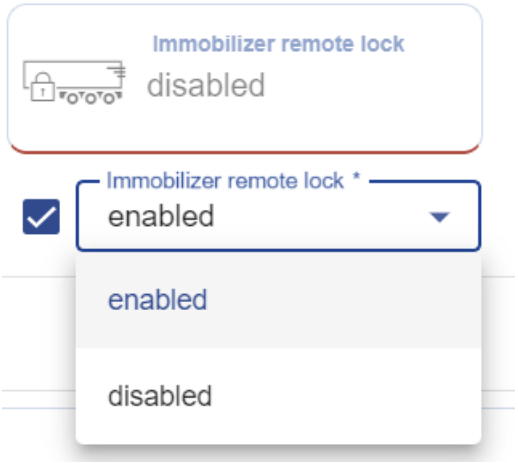
The immobilizer can be activated and deactivated via the fleet overview by clicking on the unit, then the "Security" tab, sub-item "EBS immobilizer" if the hardware and necessary tariff are available.
To do this, click on the corresponding subitem for a unit with EBS immobilizer:

Within the configuration page, you can see the current status of the immobilizer in the upper area, and you can make changes in the lower area:

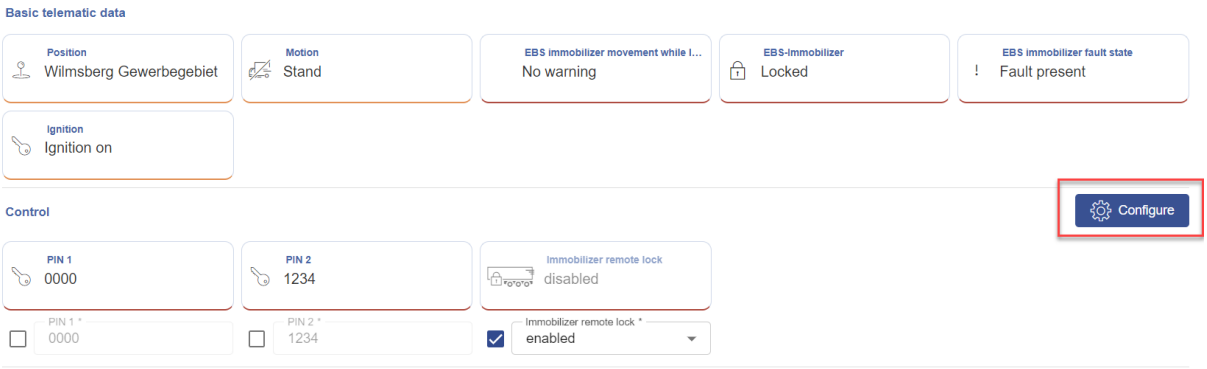


To activate the immobilizer, click on the box in front of the current status displayed:

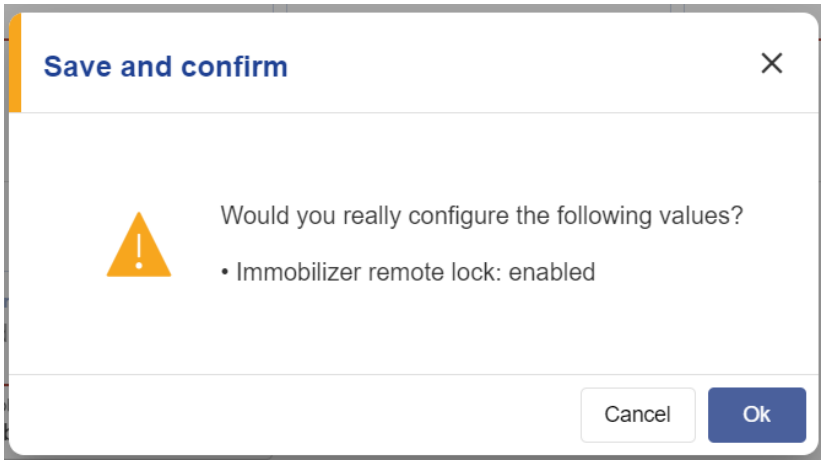
Select the desired new status via the drop-down menu:



The changes must then be confirmed by clicking on "Configure":



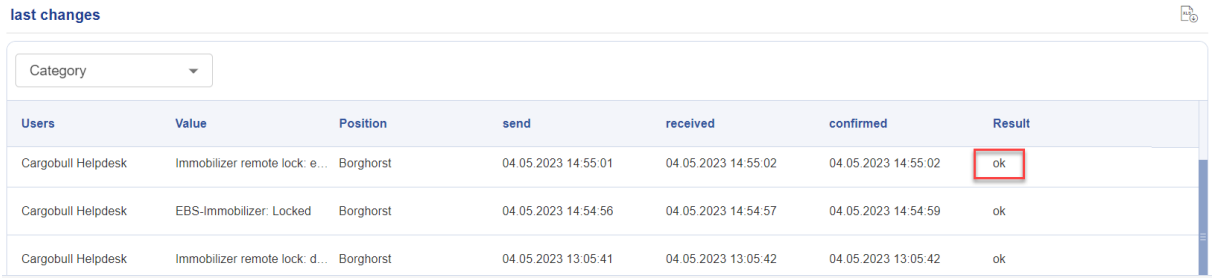
You will receive a confirmation prompt, which you must confirm with "Ok":



The system now checks whether the conditions for activating the immobilizer are met:

If the telematics unit is accessible, the ignition is switched on and the trailer is stationary, you can go one step further by clicking on "Apply".

In the next window, read the safety instructions and confirm them by clicking "Apply". An attempt will now be made to immobilise the trailer. You can see the current status of the immobilization in the change history:



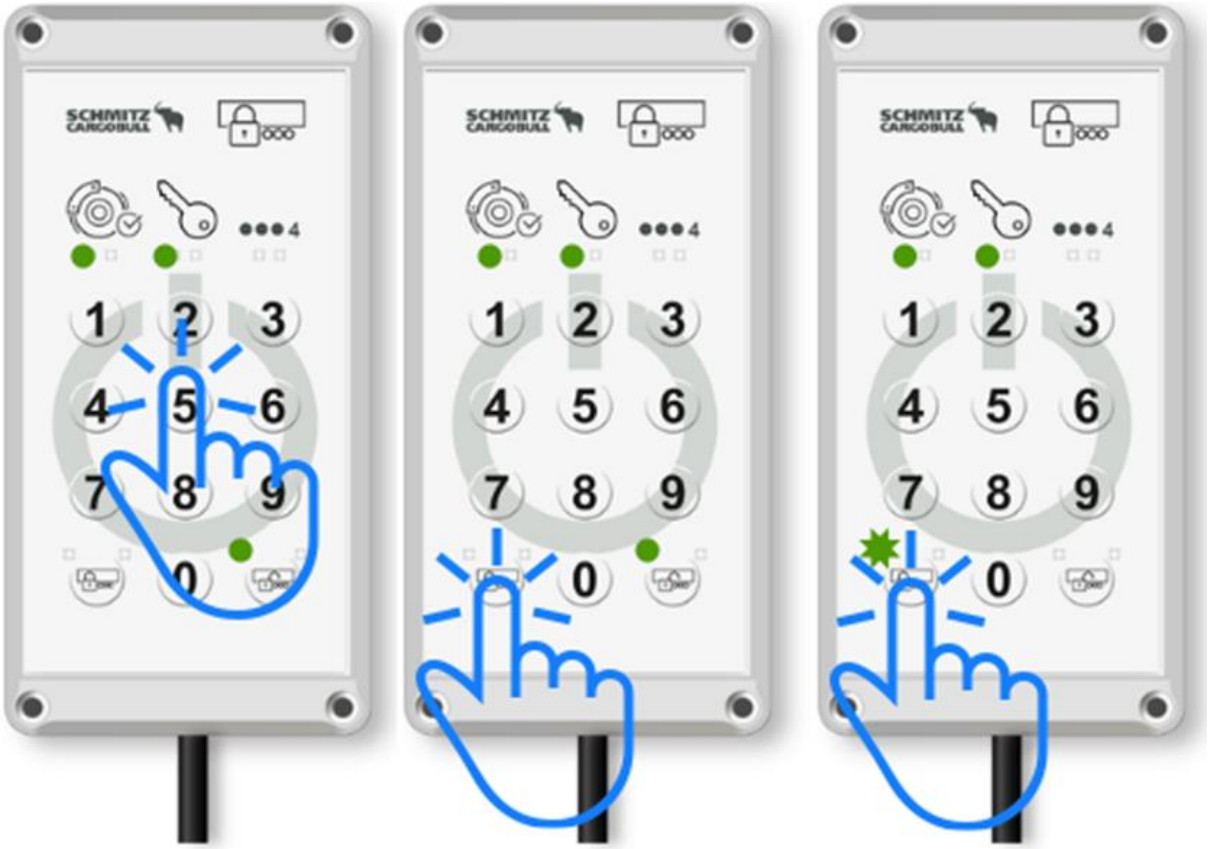
As soon as the trailer is immobilized, the result is displayed in the change history with "Ok". The status is also displayed in the overview tiles and, if the display profile is configured accordingly, on the status page.

Activating/deactivating the immobilizer via the keypad

The immobilizer can also be controlled via the keypad on the trailer if the supply to the EBS is guaranteed and the trailer is in a safe condition.
The keypad is usually in standby mode and all LEDs are off. Press any button to switch on the keypad.

When the LED of the brake symbol and the key symbol are permanently lit green, the locking can be done:

Now enter the four-digit PIN of the immobilizer and press the unlock/lock button. The code is now checked.
If the code is correct, the LED of the lock flashes green and you must confirm the lock by pressing the lock button again.



As soon as the immobilization is completed, the LEDs light up permanently green again.

If an incorrect PIN is entered, the PIN LED lights up red for 5 seconds. Then try again. If three incorrect entries have been made in succession, the PIN LED flashes red for 60 seconds. During this time, no new tries are possible. Wait until the LED stops flashing and try again.

The immobilizer can also be controlled via the S.CU display if the supply to the EBS is guaranteed and the trailer is in a safe condition.

Select the Immobilizer menu in the S.CU display. The current state is displayed. You can now activate or deactivate, depending on the current state.

To do this, select the desired state and confirm it by clicking on the "OK" button.
Now enter the PIN and confirm it by clicking the "OK" button again.
Further operating instructions can be found in the S.CU manual.

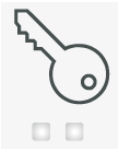
Explanation of the keypad symbols:

Status symbol brake and battery:

The two status LEDs indicate whether the immobilizer can be activated. This is the case when both LEDs light up green.
The left symbol (brake symbol) indicates whether the check of the EBS for activation was successful. The right symbol (battery symbol) indicates whether the system is powered by the tractor.

Note: almost all status LEDs light up red when the remote locking is activated and cannot be deactivated by the driver. The trailer is immobilized and cannot be moved.
When attempting to unlock, the LEDs flash red.

Ignition symbol:

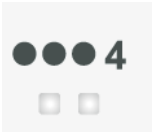


Continuous green light: Immobilizer operable if brake LED also green
Continuous red light: Immobilizer cannot be operated: either the ignition is switched off or the remote lock is active. Please switch on the ignition and/or deactivate the remote lock.
No LED lights up: Immobilizer cannot be operated, please switch on ignition.
Red flashing: Unlocking rejected due to active remote lock. Please deactivate the remote lock.

Brake symbol

Continuous green light: Immobilizer is operable
Solid red light: Immobilizer cannot be operated, either the vehicle is not in a safe condition or the remote lock is activated. Please bring the vehicle into a safe condition and/or deactivate the remote lock.
No LED lights up: Immobilizer cannot be operated, please switch on ignition.
Red flashing: Unlocking rejected due to active remote lock. Please deactivate the remote lock.

PIN symbol:



Continuous green light: ready for input
Green flashing: four digits have been entered
Continuous red light: PIN entry is blocked after multiple, incorrect PINs. Please wait 60 seconds and try again or the remote lock is activated, please deactivate the remote lock.
Red flashing: Incorrect PIN was entered or unlocking was refused due to an active remote lock. Please enter the PIN again and/or deactivate the remote lock.

Locked symbol:

Continuous green light: Immobilizer is activated
Green flashing (slowly): Immobilizer is being activated
Green flashing (fast): The lock must be confirmed by pressing the button again.
Continuous red light: Immobilizer is activated but in a fault condition. For more information on the fault, please refer to the vehicle file.
Red flashing: immobilizer is unlocked, but there is no pneumatic pressure at the valve

Continuous green light: Immobilizer is deactivated
Green flashing (slowly): Immobilizer is being deactivated
Green flashing (fast): Unlocking must be confirmed by pressing the button again.
Continuous red light: Immobilizer is deactivated but in a fault condition. For more information on the fault, please refer to the vehicle file.
Red flashing: Immobilizer is unlocked, but there is no pneumatic pressure at the valve

Viewing and changing the PIN

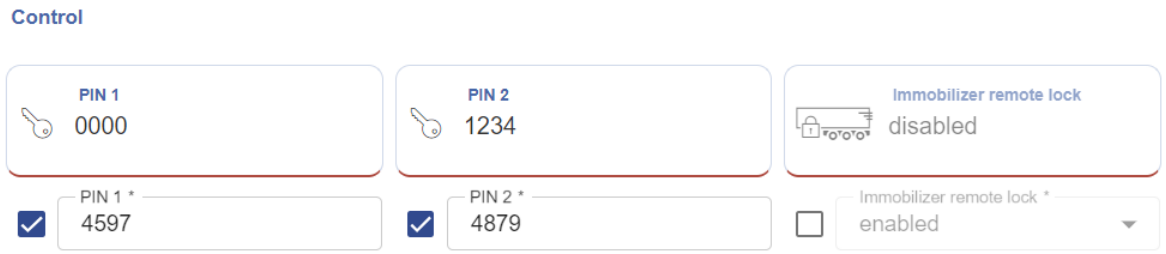
You can conveniently view and also change the PIN codes required to activate/deactivate the immobilizer via the TrailerConnect portal.

To do this, go to the "EBS immobilizer" control menu of a unit with the corresponding equipment again.

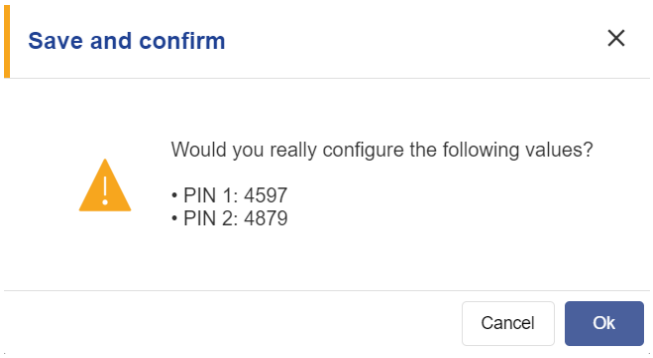
You will see the currently configured PIN1 and PIN2:

To change the PIN, click on the boxes in front of the lower fields:

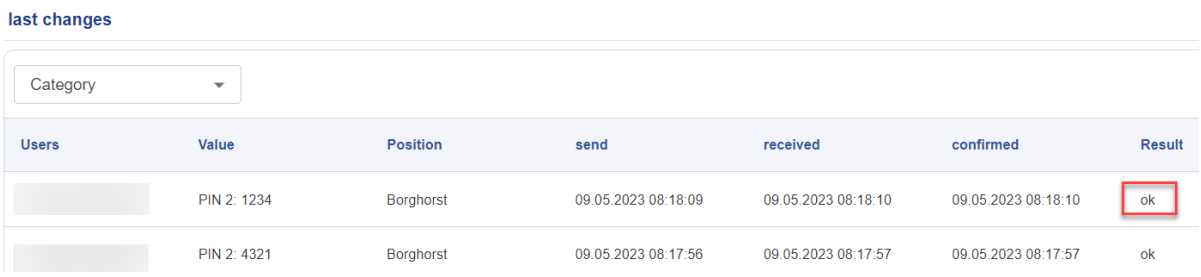
Then enter the new PIN codes:



Confirm the change by clicking on the "Configure" button.
Check the values entered and confirm them again:



As soon as the changes have been successfully transferred, you will receive "Ok" as a result in the change history on the control page:



Error in the control system

Errors can occur for various reasons during a control. You will receive corresponding information via the TrailerConnect portal, the S.CU display or the beSmart app.

You will receive short error notes and an error code. The following table contains the possible error codes and corresponding notes:

Error code	Note
12	Control not possible: please plug in the spiral cable and switch on the ignition
13	Control not possible: Vehicle is not in a safe condition. Please engage brake and wait 15s.
14	Control failed: internal error, please contact support
15	Control failed: internal error, please contact support
17	Control not possible: another user is operating the Immobilizer at the same time. Please try again.
19	Control failed: Invalid PIN entered. Please try again.
20	Control not possible: An invalid PIN has been entered several times. Further entries are blocked for 60 seconds. Then try again.
32	Control not possible: EBS error, please contact support
33	Control not possible: EBS error, please contact support
34	Control not possible: Control lock/remote lock active. Please contact the owner.
35	Control not possible: internal error, please contact support
36	Control not possible: please check red line and release trailer brake

Safety and testing instructions

The functions of 2-way communication use a complex technical infrastructure - in terms of cable connections, software and interfaces - e.g.:
Telematics portal -> GSM network -> telematics terminal in the vehicle -> connection line to the refrigeration machine -> refrigeration machine control.

WARNING

We would like to point out that improper installation, maintenance or software/component errors can lead to transmission faults.
This in turn can lead to commands sent not being implemented or not being implemented completely.

The functions of the 2-way communication have been intensively tested in relation to the approved chillers/vehicles and have been validated and technically approved by the manufacturer. Commands given via the infrastructure described above always require a confirmation response as to whether they have been received and correctly understood. These confirmations are visualised via the internet portal - see operating instructions.

The operator is obliged to make sure that the commands he/she executes have been transmitted and confirmed within the 2-way communication.
In addition, he is obliged to check the change of function/operation of the refrigerating machine/vehicle with regard to the commands executed by him via the Internet portal.
The use of 2-way communication does not release the user from checking the function and setting of the refrigerating machine/vehicle.

Disclaimer

HINWEIS

In order to use the 2-way communication via telematics infrastructure, it is absolutely necessary to observe our safety and testing instructions.
No liability is accepted for damage caused by improper use / operation of the 2-way communication.
The user is obliged to check the system function and to contact the support of Cargobull Telematics GmbH in the event of faults.

www.cargobull.com

Cargobull Telematics GmbH
Wilhelm-Schickard-Str. 4
D 48149 Münster
Tel.: +49 2558 81 1818
Tel.: 00800 – 08250867 (free)
E-Mail: helpdesk.trailerconnect@cargobull.com
www.trailerconnect.de