CCI.OS 2.0

Software for CCI 800 and CCI 1200

Operating instructions

CCISOBUS

team play works.
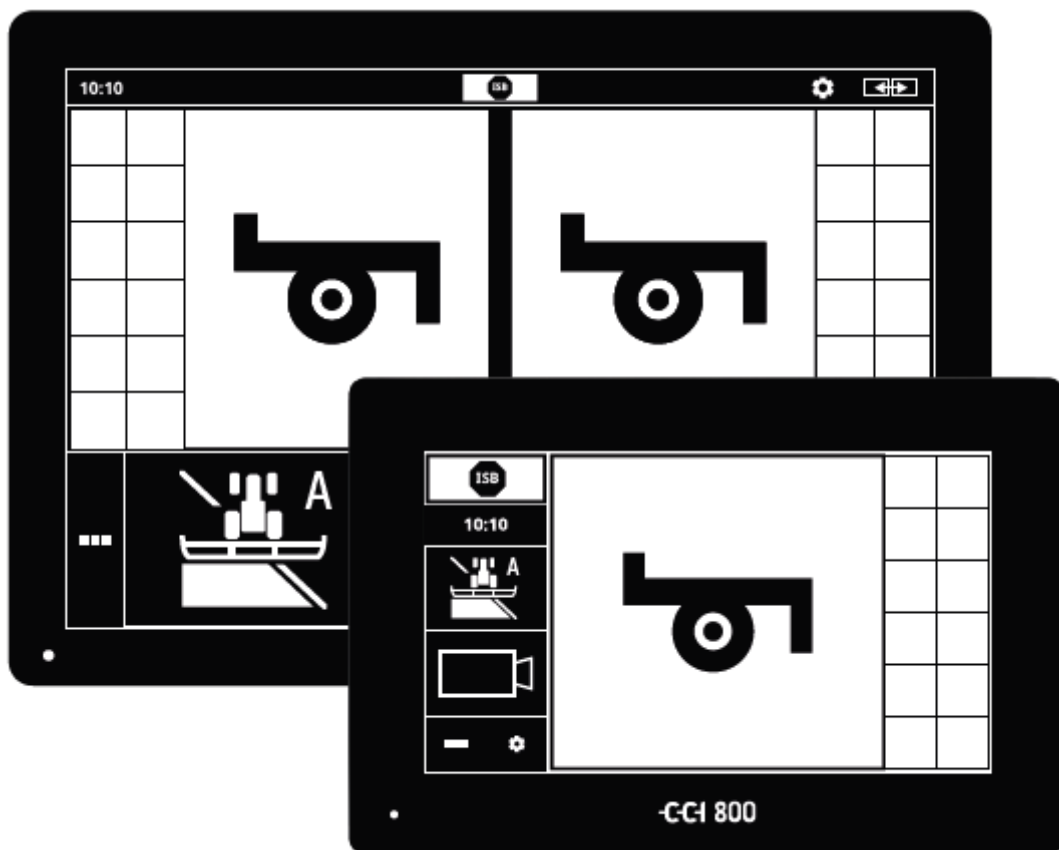
Contents

About these operating instructions

These operating instructions are intended for persons who are familiar in using the software CCI.OS and its apps on the ISOBUS terminals CCI 800 or CCI 1200. They include all necessary information for safe handling of software and terminal.

All information provided in the operating instructions relates to the following device configuration:

Terminal	CCI 800/CCI 1200
Software version	CCI.OS 2.0
Hardware version	0.5, 1.0 and higher

These operating instructions guide you chronologically through operation:

- About the CCI 800/CCI 1200
- Safety
- Setting up for operation
- Settings
- User interface
- Apps
- Troubleshooting
- Technical data, interfaces and cables

To ensure fault-free operation of your CCI 800/CCI 1200, please read through the operating instructions carefully. Keep the operating instructions for future reference.

These operating instructions must be read and understood prior to assembly and commissioning of the terminal to prevent problems during operation. No liability is accepted for damage resulting from failure to observe these operating instructions!

If you need further information or if problems occur that are not covered in enough detail in these operating instructions, then please contact your dealer to obtain the required information.

Each function is explained with step-by-step instructions. On the left next to the operation instruction you can see the button to be pressed or one of the following pictograms:

Enter a value via the keyboard

Enter the value via the terminal's screen keyboard.

Select a value from a selection list

1. Swipe through the selection list until you reach the desired value.

2. Select the value by ticking the checkbox on the right edge.

Change value

Change a value.

▶ Enter the value via the terminal's screen keyboard or via a control.

Confirm action

Confirm the action carried out previously.

▶ Press the button "OK" or "Next" or the button with the check mark.

Repeat steps or action

Repeat the preceding steps either in full or in part.

The checkbox or the switch on the right side of a button have the following functions:

Element in selection list is selected

The checkbox is activated:
→ The element in the selection list is selected.

Function is switched off

The switch at the right edge of the button is in the "off" position:
→ The function or a setting is deactivated.

Function is switched on

The switch at the right edge of the button is in the "On" position:
→ The function or a setting is activated.

About the terminal

The CCI 800 and the CCI 1200 are manufacturer-independent operating terminals for controlling ISOBUS implements.

CCI 1200

The touchscreen

- Is 12.1" in size and has a resolution of 1280x800 pixels,
- Is highly luminous and suitable for day and night operation and
- has an anti-glare coating, which prevents reflections even in direct sunlight.

The user interface

- Offers flexible layouts and displays up to 6 apps simultaneously,
- Through use of a user interface developed from practical experience, enables an intuitive approach even with complex functions.

- The plastic casing reinforced with glass beads is highly resistant.
- The ON/OFF key as well as two USB 2.0 ports are integrated in the outer surround to enable quick access.

The interfaces

- Video, GPS, LH5000, WiFi, ISOBUS, signal connector, USB:
  → the numerous interfaces ensure maximum connectivity.
- The buzzer volume signals alarm states and provides audible feedback.
- All connectors on the back of the terminal are protected against moisture and dust by rubber caps.

CCI 800

The CCI 800 is more compact than the CCI 1200.

The touchscreen

- Is 8" in size and has a resolution of 1024x600 pixels,
- Is highly luminous and suitable for day and night operation and
- has an anti-glare coating, which prevents reflections even in direct sunlight.

The user interface

- Is optimised for operation in landscape,
- Through use of a user interface developed from practical experience, enables an intuitive approach even with complex functions.

- The reinforced plastic casing is highly resistant.

The interfaces

- Video, GPS, LH5000, WiFi, ISOBUS, signal connector, USB:
  → Numerous interfaces for very good connectivity.
- The buzzer volume signals alarm states and provides audible feedback.
- All connectors on the back of the terminal are protected against moisture and dust by rubber caps.

CCI.Apps

The operating system CCI.OS 2.0 is installed on the CCI 800/CCI 1200. The following CCI.apps are part of CCI.OS 2.0:

	CCI.UT	ISOBUS implement operation
	CCI.Cam	Display of up to 8 cameras
	CCI.Config	Implement settings
	CCI.Command	Map view
	CCI.Control	Data management
	CCI.Help	Help system

The following functions must be purchased separately and can only be used once enabled:

	Parallel Tracking	Creation of tracks
	Section Control	Automatic switching of sections
	Task Control	Import and export of data

Structure
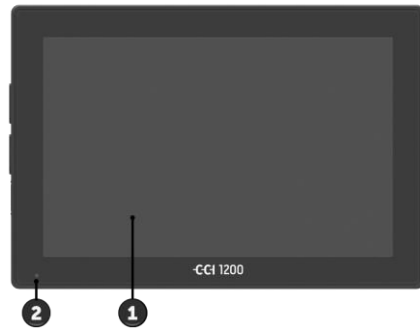
1. 12.1"   Touchscreen
2. Light sensor
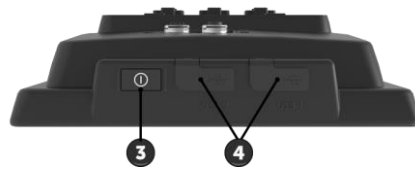
3. ON/OFF button
4. 2x USB 2.0
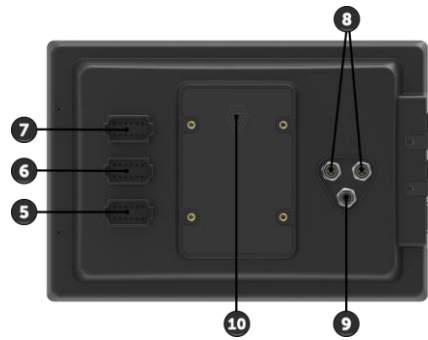
5. ISOBUS, supply voltage, ECU-Power
6. Signal connector, GPS
7. Camera, video multiplexer
8. 2x USB 2.0
9. Ethernet
10. Buzzer

1. 8" Touchscreen
2. Light sensor

3. Ethernet
4. Buzzer
5. ON/OFF button
6. 1x USB 2.0
7. Camera, video multiplexer
8. Signal connector, GPS
9. ISOBUS, supply voltage, ECU-Power

The terminal is operated via the touchscreen. Common touch gestures are supported.

Touchscreen

The light sensor measures the ambient light and matches the screen brightness to the ambient light.

Light sensor

ON/OFF

Switch the terminal on or off using the ON/OFF button.

▶ To switch on, press the ON/OFF button for 1 second until you hear a signal tone.

▶ To switch off, press the ON/OFF button for 2 seconds until you hear a signal tone.

▶ Release the ON/OFF button after the signal tone is emitted.

On some tractors and self-propelled implements, you can also switch the terminal on or off with the ignition key.

The terminal switches off automatically,

- if you pull out the ignition key or
- turn the ignition key to the OFF position.

The terminal switches back on, when the ignition is turned on again.

NOTE

If the terminal has not been switched on via the ignition, then it is not possible to switch it on via the ignition.

▶ Switch the terminal off and on via the ignition.

The LED integrated in the ON/OFF button displays the current status information. The LED is off during normal terminal operation.

The status displays are described in ⇒ Chapter 11.

Identify your device based on the information on the nameplate. The name-plate is attached on the back of the terminal.
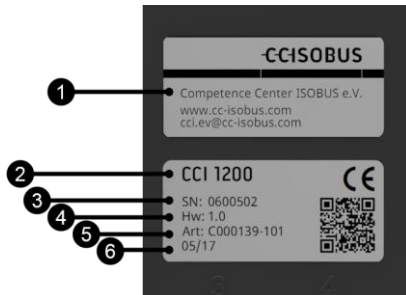
1. Manufacturer
2. Terminal type
3. Serial number
4. Hardware version
5. Manufacturer's article number
6. Production date (week/year)

NOTE

The layout and content of the nameplate on your terminal may differ from the figure.

The nameplate is attached by the manufacturer.

USB (CCI 1200)	Both USB interfaces on the left casing side are of type A. Standard flash drives can be connected.

The USB interfaces on the rear side are type M12. These interfaces protect the terminal against the penetration of dust and water, even when there is a connected USB device. |
| **USB (CCI 800)** | Both USB interface ports on the rear side are of type A. Standard flash drives can be connected. The USB interface is protected against moisture and dust by a rubber cap. |
| **Buzzer** | The buzzer is sized so that even if there is a very loud background, terminal and implement audio warnings can be clearly heard. |
| **Connector** | At connector A, you connect the terminal

- to the ISOBUS and
- to the power supply.

At connector B, you connect the terminal to

- the signal connector,
- an NMEA 0183 GPS receiver,
- the serial GPS output

  o of the tractor,
  o the self-propelled implement or
  o the automatic steering system,

- the serial interface of an N-sensor.

At connector C, you connect the terminal to

- a camera or a camera multiplexer,
- an NMEA 0183 GPS receiver,
- the serial GPS output

  o of the tractor,
  o the self-propelled implement or
  o the automatic steering system,

- the serial interface of an N-sensor. |

1 Safety

These operating instructions contain basic instructions which must be observed during setting up, configuration and operation. As such, it is absolutely essential to read these operating instructions prior to setting-up, configuration and operation.

Not only do the general safety indications listed in this chapter have to be observed but also the special safety indications appearing in other chapters as well.

1.1 Identification of notes in the operating instructions

The warning notes in these operating instructions are specially identified:

WARNING - GENERAL HAZARDS!

This warning symbol identifies general warning notes the non-observance of which poses a danger for life and limb.

▶ Strictly observe the warning notes and take particular care in these cases.

CAUTION!

This caution symbol identifies all warning notes referring to regulations, directives or working procedures which must be observed.

Non-observance can result in damage to or destruction of the terminal as well as malfunctions.

You can find tips for use in the "Notes":

NOTE

The note symbol highlights important and useful information.

Further information provides background knowledge:

The Info symbol highlights practical tips and further information.

Info-blocks
- make complex technical connections easier to understand,
- provide background knowledge,
- give practical tips.

1.2   Intended use

The terminal is intended exclusively for use with approved ISOBUS implements and devices in agriculture. Any other installation or use of the terminal is not included within the manufacturer's area of responsibility.

The manufacturer accepts no liability for any resulting personal injury or material damage. Any risks for unintended use are borne solely by the user.

Observance of the operation and maintenance conditions stipulated by the manufacturer also form part of intended use.

The accident prevention regulations in force, as well as other generally recognised safety, industrial, medical and traffic laws must be observed. Unauthorised modifications to the device exclude the manufacturer's liability.

1.3   Safety notes

WARNING - GENERAL HAZARDS!

Please take special care to ensure the following safety instructions are complied with.

Non-compliance could result in malfunctions and consequently danger for any bystanders.

▶ Switch the terminal off, if
   ○ the touch-screen does not react,
   ○ the display is locked or
   ○ the user interface is not properly displayed.

▶ Ensure that the touchscreen is dry before working with the terminal.

▶ Do not operate the terminal whilst wearing gloves.

▶ Ensure the terminal does not exhibit any external damage.

BASIC SAFETY INSTRUCTIONS

Please also observe the following safety instructions.

If they are not observed, the terminal could be damaged.

▶ Do not remove any safety mechanisms or safety signs.

▶ Do not open the terminal housing. Opening the casing can result in reduced terminal service life and malfunctions. If the terminal casing is opened, the warranty will become void.

▶ Disconnect the power supply to the terminal,
   o during welding work on the tractor and self-propelled implement or on a towed implement,
   o during maintenance on the tractor and self-propelled implement or on a towed implement,
   o when a charger is connected to the battery of the tractor and self-propelled implement.

▶ Carefully read and observe all safety information in the operating instructions and the safety labels on the terminal. Safety labels must always be in a proper legible condition. Replace missing or damaged labels. Ensure that new terminal parts are provided with the current safety labels. Spare labels can be obtained from your authorised dealer.

▶ Learn how to use the terminal in accordance with regulations.

▶ Keep the terminal and accessories in good condition.

▶ Only use a soft cloth moistened with clean water or a small amount of glass cleaning agent to clean the terminal.

▶ Do not operate the touchscreen with a sharp-edged or rough object because otherwise the anti-glare coating will be damaged.

▶ Do not exceed the temperature range of the terminal.

▶ Keep the light sensor clean.

▶ If the terminal is not fitted in the cab, it should be stored in a dry and clean location. Do not exceed the storage temperature range.

▶ Use only cables that have been approved by the manufacturer.

1.4 Installation of electrical devices

Modern farming implements use electronic components and parts the operation of which can be compromised by electro-magnetic interference from other devices. Such effects can endanger people if the following safety indications are not observed.

In the event of retrofitting electric and electronic devices, and/or components, in an implement with connection to the on-board network, the user must independently verify whether the installation interferes with vehicle electronics or other components. This is, in particular, applicable to the electronic interference of:

- EHR
- Front hoisting gear
- Power take-offs
- Engine and gears

It must be ensured in particular that the retrofitted electric and electronic components comply with the EMC Directive 89/336/EC in its respectively valid version and that they bear the CE marking.

2   Setting up for operation

Setting the terminal up for operation is a quick and uncomplicated process based on the following step-by-step guide.

2.1   Check the scope of delivery

Check the scope of delivery of your terminal before you start setting up for operation:

1. Terminal
2. Device holder
3. Cable A
4. Quick guide

NOTE

The number and type of accessories may differ between the device you have purchased and that shown in the figure.

The scope of delivery is defined by the manufacturer.

2.2　Install the terminal

The device holder is supplied with the terminal and is fitted on the terminal in the factory. Attach the terminal with the device holder to a 20mm diameter tube.

Fit the CCI 1200 in landscape or portrait, the CCI 800 in landscape.

NOTE

The terminal must be correctly installed.

▶ Install the terminal so that it
   o Is easy to read and operate,
   o Does not impede access to the tractor or self-propelled implement controls and
   o Does not impede the view to the outside.

Alternatively another device holder can be used, e.g.

- the VESA 75 adapter which is available in the tractor or the self-propelled implement
- the VESA 75 adapter 2461U from RAM.

CAUTION!

Do not overtighten the screws on the device holder and do not use screws that are too long.

Both will lead to damage of the terminal housing and malfunctioning of the terminal.

▶ Use four M5 x 0.8 hex socket cap screws.

▶ Tighten the screws to 1.5 to 2.0 Nm.
   → This is the maximum tightening torque for the screws.

▶ Use screws with an 8 mm thread length.
   → The length of the internal thread in the terminal housing is 8 mm.

▶ Secure the screws with circlip, groove washer or wave washer to prevent undoing.

2.3   Connect the terminal

Connect the terminal to the ISOBUS and supply it with power via connector A:

▶ Connect cable A to connector C on the terminal.

▶ Connect the "In-cab" coupling of cable A to the In-cab panel connector of the tractor or the self-propelled implement.
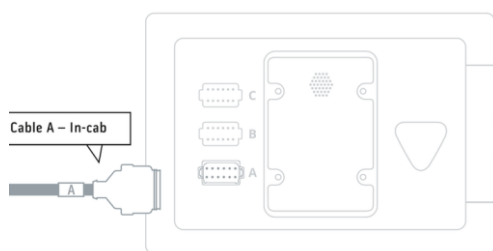
CCI 1200   **CCI 800**
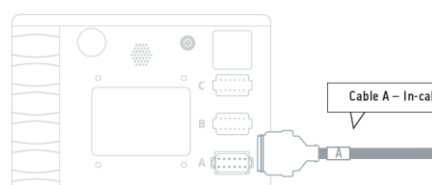
2.4   Switch on the terminal

CCI 1200   **CCI 800**
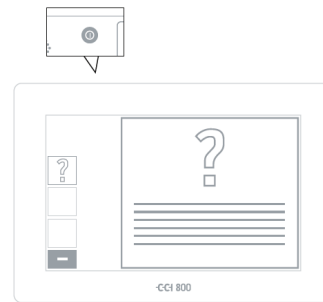
1. Press the ON/OFF button for 1 second.
   - → The terminal starts up.
   - → The safety instructions are displayed in English.

2. Press the "Language" button.
   - → The "Language" selection list is displayed.

3. Select your language.
   - → The checkbox at the right edge of the button is selected.

4. End the Process with "Back".
   - → The language setting is changed.
   - → The safety instructions are displayed in the selected language.

5. Read the safety instructions.

6. Drag the "Enter" button in the indicated direction.
   - → The arrow changes its shape to a check mark.
   - → The start screen is displayed.

2.5 Change layout

As supplied all operating screens are output in landscape format. If you have installed the CCI 1200 in portrait, then first change the layout:

1. Press the "Settings" button on the start screen.
   → The "Settings" operating screen is displayed.

2. Press the "Layout" button.
   → The "Layout" operating screen is displayed.

3. In the "Orientation" line, select the "Portrait" checkbox.
   → The layout is changed.

4. End the Process with "Back".

2.6 Select time zone

The time zone is the basis for the time displayed by the terminal. Switching between summer and winter time takes place automatically and cannot be disabled.

NOTE

An incorrect time zone affects the documenting of tasks and the log.

▶ Select the time zone with the correct time difference and the appropriate region.

1. Press the "Settings" button on the start screen.
   → The "Settings" operating screen is displayed.

2. Press the "System" button.
   → The "System" operating screen is displayed.

3. Press the "Date and time" button.
   → The "Date and time" operating screen is displayed.

4. Press the button "Time zone".
   → The "Time zone" selection list is displayed.

5. Select the Time zone.
   → The checkbox at the right edge of the button is selected.
   → The time zone is changed.

6. End the Process with "Back".

2.7 Enter terminal licence

To be able to use all functions, you must enter the terminal licence for the terminal. The terminal licence can be downloaded from the web page *https://pa.cc-isobus.com*.
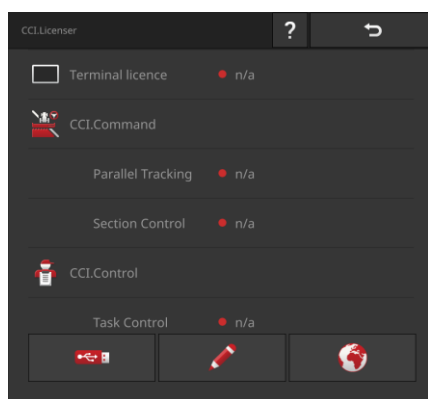
1. Press the "Settings" button on the start screen.
   → The "Settings" operating screen is displayed.
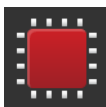
2. Press the "System" button.
   → The "System" operating screen is displayed.
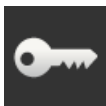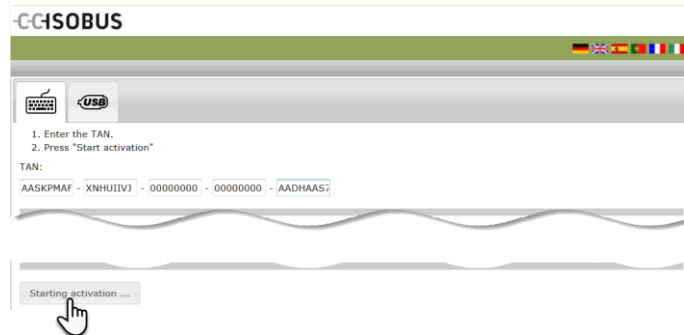
3. Press the "Licence data" button.
   → The "Licence data" operating screen is displayed.

4. Press the "Manual entry" button.
   → The "Request new licence data" operating screen is displayed:
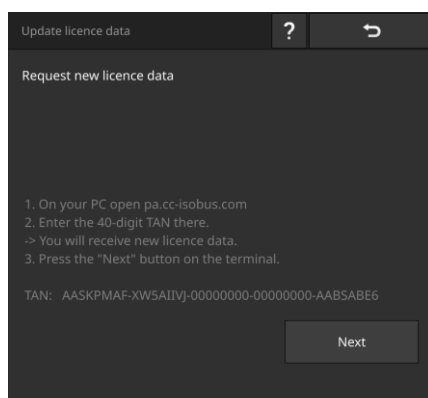
5. Change to the PC. In the browser open the web address *https://pa.cc-isobus.com*.

6. Answer the security question.

7. Enter the TAN of the terminal and press the button "Start activation...".
   → The terminal licence is displayed:

8. On the terminal, press the "Next" button.
→ The "Enter terminal licence" operating screen is displayed:
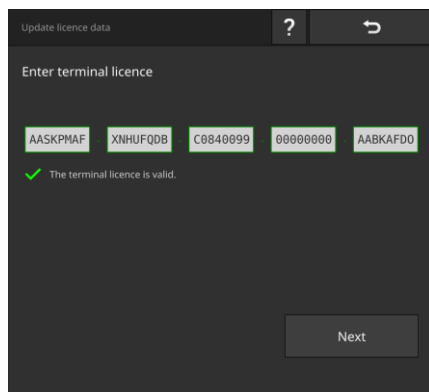
9. Enter the Terminal licence.
→ The "Enter parallel tracking licence" operating screen is displayed.

10. Press the "Next" button.
→ The operating screen "Enter section control licence" is displayed.

11. End the process with "Next".
→ The updating of the licence data is ended.
→ The "Licence data" operating screen is displayed.
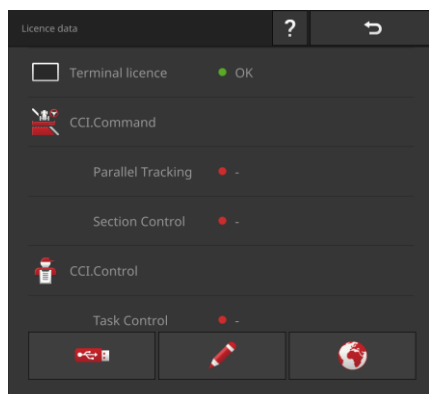
2.8   Activate apps

As supplied from the factory all apps on the CCI 1200, with the exception of CCI.UT B, are activated and ready for use.

Activate CCI.UT B, if you

- want to simultaneously display and operate two ISOBUS implements in the standard view.
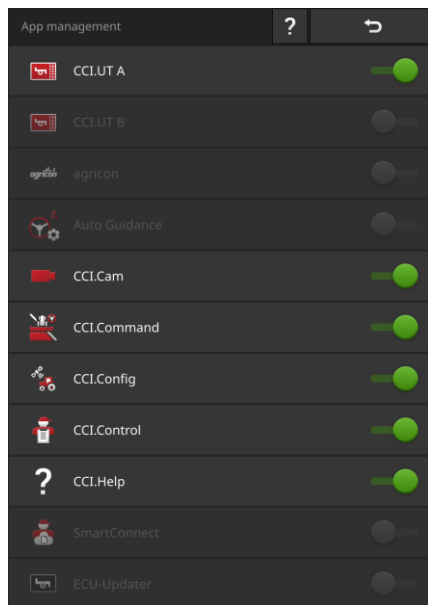
1. Press the "Settings" button on the start screen.
   → The "Settings" operating screen is displayed.

2. Press the "Apps" button.
   → The "Apps" operating screen is displayed.
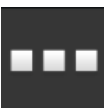
3. Press the button "App management".
   → The "App management" operating screen is displayed.

4. Switch CCI.UT B "on".
   → CCI.UT B is activated.

NOTE

We recommend leaving all apps activated.

Apps in the app menu use scarcely any CPU power or RAM.

▶ Leave unused apps in the app menu.
  → If necessary, you can then quickly activate these apps.

CCI 800

CCI.UT B is not available on the CCI 800.

2.9   Setting up the user interface

You want

- to operate an ISOBUS implement with CCI.UT,
- record the implement data with CCI.Control and
- during working still be able to see the camera image:

When the CCI 1200 is first started, CCI.Help and CCI.UT A are displayed in the standard view:

1. Press the button "App Menu".
   → The app menu opens.

2. Press the "CCI.Control" button in the app menu.
   → CCI.Control is displayed in mini view.

3. In mini view, press on "CCI.Control".
   → CCI.Control is displayed in the left half of the standard view.

4. Repeat steps one and two for CCI.Cam.
   → CCI.Cam is displayed in mini view.
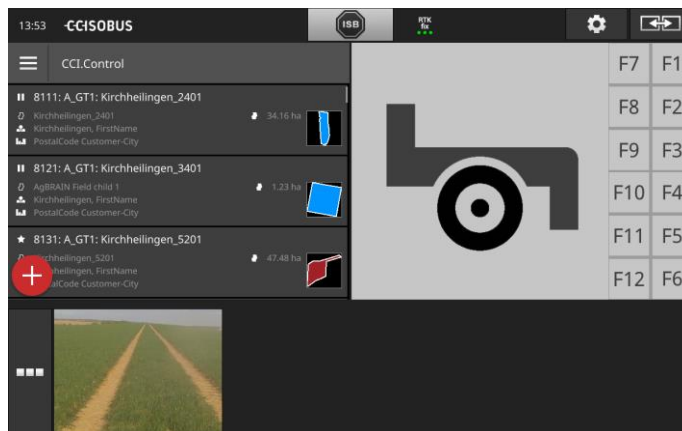
CCI 800

When the CCI 800 is first started, CCI.Help and CCI.UT A are displayed in the standard view. Only one app can be displayed on the CCI 800 in standard view.

1. Press the button "App Menu".
   → The app menu opens.

2. Press the "CCI.Control" button in the app menu.
   → CCI.Control is displayed in mini view.

3. Repeat steps one and two for CCI.Cam.
   → CCI.Cam is displayed in mini view.
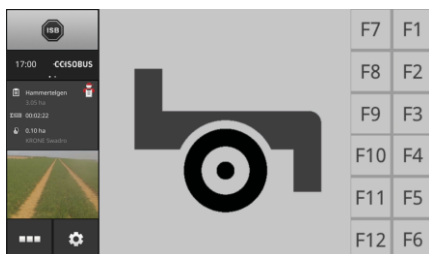
3 Graphical user interface

Familiarise yourself with the essential components and the layout of the screen content.

3.1 Help

CCI.Help supports you in your daily work with the terminal.

CCI.Help

- Answers questions about operation based on practice,
- Gives useful application notes,
- Is available at the touch of a button and
- Is very concise.

Simply pressing the question mark opens the help page relevant for the current working step:

- Help in the burger menu provides information about the basic functions of the apps,
- Help in Settings supports you during configuration.

1. Press the "Help" button.
   → The help subject is displayed.

2. Scroll the help text for other help subjects.

3.2   Touch gestures

The terminal is operated using the touchscreen alone. The terminal supports the following common touch gestures:

Press

Press briefly at the indicated point on the touchscreen. You select an item in a selection list or trigger a function.

Long press

Press for 2 seconds at the indicated point on the touchscreen.

Swipe

Navigate quickly through a selection list.

Drag and drop

Pick up an app and move it to another position on the touchscreen.

Pinch out

Zoom in on the map.

Pinch in

Zoom out on the map.

3.3 Layout

During daily work with the terminal, you must be able to see all relevant information and operate several apps simultaneously. Here the terminal supports you due to the large-sized touchscreen.

You can configure the user interface flexibly on the CCI 1200. Select the layout suitable for the installation:

CCI 1200

Default Landscape

- The layout most frequently used in practice.
- The terminal is installed in landscape alignment.
- You work with two apps.
- The apps are arranged alongside each other.
- The softkeys for ISOBUS implement operation are located at the right and left display edge.

Landscape Maxi

- The terminal is installed in landscape alignment.
- You are working with one app.
- The app is displayed magnified.
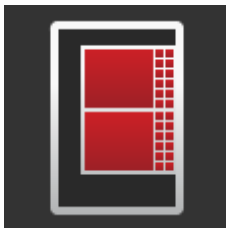
Portrait

- The terminal is installed in portrait alignment.
- The apps are arranged one below the other.
- The softkeys for ISOBUS implement operation are located at the right-hand edge.

The CCI 800 can only be installed in portrait. The app can be operated in standard view. Other active apps are displayed in mini view.

CCI 800

Landscape Standard

- The layout cannot be changed.
- The terminal is installed in landscape alignment.
- You are working with one app.

Landscape Standard is described below. The descriptions can be applied to the other layouts.

Display division

The display is divided into four areas:

CCI 1200   **CCI 800**

1
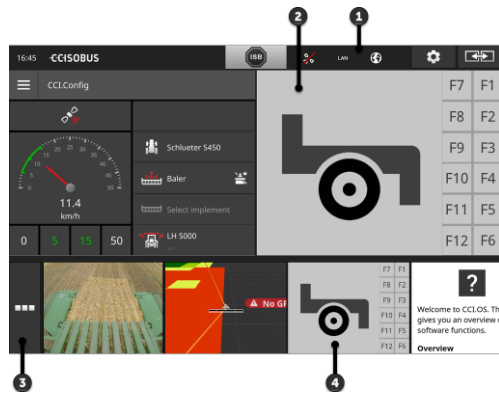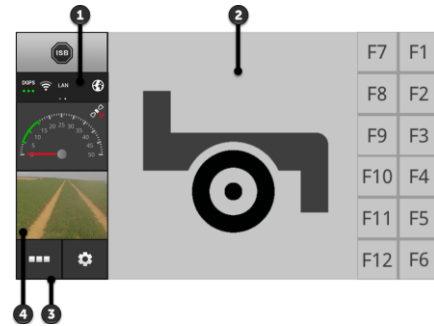
Status bar

The pictograms in the information area of the status bar give an overview of the connection status and connection quality of the following interfaces:

- GPS and
- WiFi.

The buttons in the status bar enable quick access to the ISB and frequently used functions.

2

Standard view

Up to 2 apps are displayed in the standard view. Apps can only be operated in standard view.

3

App menu

In App menu, you control the visibility of an app.

4

Mini view

An app in mini view displays relevant information but cannot be operated.

Status bar

The symbols in the information area of the status bar give an overview of the connection status and connection quality.

No signal

No GPS receiver is connected.

Invalid signal

A GPS receiver is connected. However, the received position data is invalid.
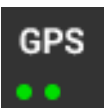
GPS

A GPS receiver is connected. The received position data correspond to the GPS standard.
→ The documenting of tasks is possible.
→ GPS is not sufficiently accurate for Section Control.
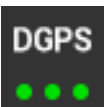
DGPS, RTK fix, RTK float

A GPS receiver is connected. The receiving quality corresponds, depending on the display, to the requirements of DGPS, RTK fix or RTK float.
→ The documenting of tasks and Section Control are possible.

No WiFi

No WiFi connection.
• No WiFi network found or
• You have not connected to an available WiFi network.

WiFi connection is created

The terminal is connected to a WiFi network.

No Internet

The terminal is not connected to the Internet.

Connected to the Internet

The terminal is connected to the Internet.

LAN

LAN

The terminal is connected via the "Eth" interface to a LAN.

CCI 800 The status bar of the CCI 800 is split into two parts.

▶ Press on the status bar, to switch to and fro between time and information area:
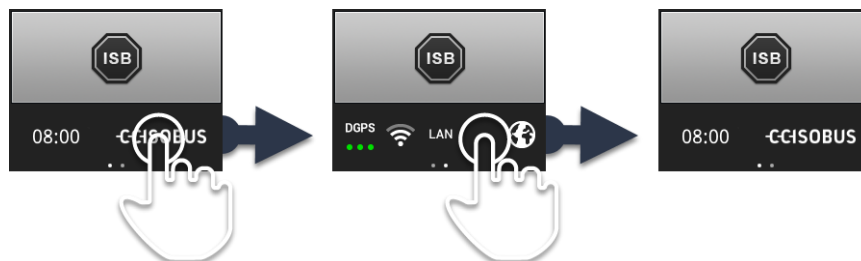
Alongside the information area is the ISB and buttons for calling frequently used functions. You have the following operating options:

CCI 1200

CCI 800
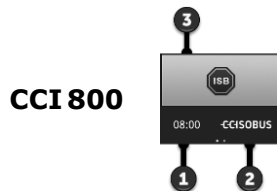
Create screenshot

If you are having problems operating the terminal or ISOBUS implement, you can capture a screenshot and send it to your contact:

1

1. Connect a flash drive to the terminal.

2. Press on the clock until the message "Screenshot saved" is displayed in the status bar.
   → The screenshot is saved on the flash drive in the main directory.

Display terminal information

You receive detailed information about the installed software version.

2

▶ Press and hold the company logo for 2 seconds.
   → The version information is displayed.

ISB

Use the *ISB*,

• If implement operation is not in the foreground,
• If you want to trigger several implement functions simultaneously.

3

Send the ISB command to all ISOBUS participants:

▶ Press the "ISB" button.
   → The terminal sends the ISB command over the ISOBUS.

You have the following additional operating options on the CCI 1200:

4

Settings

Make the basic settings before working with the terminal:

▶ Press the "Settings" button.
→ The "Settings" operating screen is opened.

5

Standard/Maxi

In landscape switch between the two layouts Standard and Maxi:

▶ Press and hold the "Layout" button for 2 seconds.
→ The new layout is displayed.

5

App position

Change the position of apps in standard view.

▶ Press the "Layout" button.
→ The apps in the Standard view change position.

WARNING - GENERAL HAZARDS!

Not all ISOBUS implements support ISB functioning.

Without checking you cannot assume that in hazardous situations certain implement functions will be triggered by the ISB.

Non-compliance could result in malfunctions and consequently danger for any bystanders.

▶ Refer to the implement operating instructions to determine,
  o whether the implement reacts to the ISB
  o which implement functions the ISB triggers on the implement.

In the event of a fault or if an operating error exists, a message window is displayed with an error message. Before you can continue working, you must rectify the problem and acknowledge the message.

→ The workflow is interrupted.

Notifications

After successful action, you receive feedback through messages in the status bar.

The messages

- are displayed on a blue background in the information area of the status bar,
- need not be acknowledged,
- are deleted after 10 seconds and
- do not interrupt the workflow.

CCI 1200 **CCI 800**
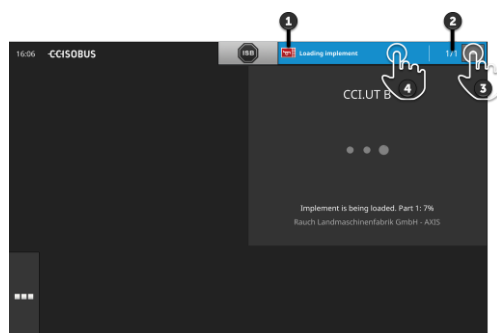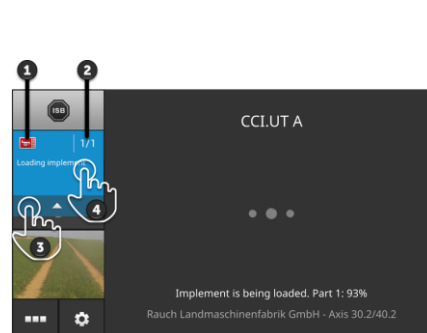
1	**Sender** The pictogram alongside the message indicates the message sender: • Terminal or • ISOBUS implement
2	**Number** The number of unread messages is indicated.
3	**Hide messages** Press the "Hide" button. → The message window is closed. → All message are deleted. → The information area is displayed.
4	**Mark a message as read** Press on the message. → The next message is displayed and the number of unread messages is decreased by one. → After the last message, the message window is closed.

Standard view

Apps can only be operated if they are included in the standard view.

App menu

The app menu is in collapsed state.

All apps that you have switched on in App management are displayed when you open the App dropdown menu. In the App menu, you control whether an app is visible in standard view or mini view.

Visible apps

- Are displayed in standard view, mini view and in the app menu,
- Have a light grey background in the app menu.

Idle apps

- Are only displayed in the app menu,
- Have a dark grey background and
- Do not use any CPU power or RAM.

Move apps that your are not using into the app menu:

1. Press the button "App Menu".
   → The app menu opens.

2. Select an app.
   → The app is removed from the mini view or standard view.

For example you only use CCI.Cam during fertilizer spreading. However, you will not be using this agricultural practice again for several months.

Example

▶ Move CCI.Cam into the app menu.

29

Mini view

Apps in mini view

- Cannot be operated,
- Only display the essential information,
- Continue running executing functions.

oll

From the fourth activated app, the mini view extends to the right beyond the visible area:

▶ Swipe the mini view to the left.
  → Apps are moved from the non-visible to the visible area.

Move

To operate an app, move it from the mini view to the standard view:

▶ Press the app in the mini view.
  → The app swaps position with the app in the left half of the standard view.

NOTE

When moved, apps continue working without interruption and without a status change.

The arrangement of apps in mini view can be changed: **Rearrange**

1. Press and hold the app.
   → The app visibly detaches from the mini view.

2. Drag the app to the new position.

Special buttons

For efficient operation, the apps have special buttons:
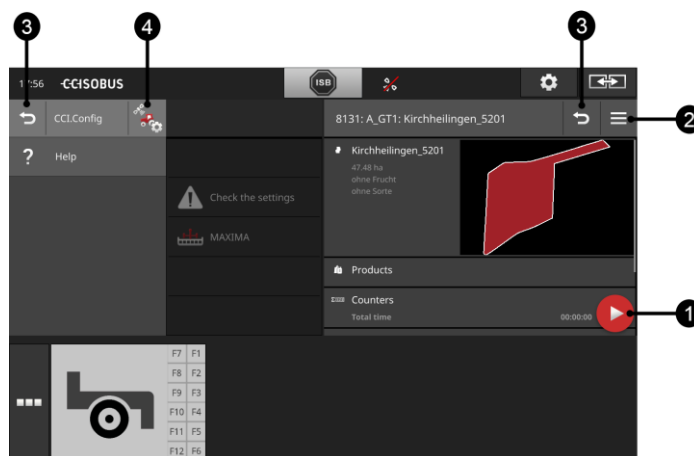
Action Button

1

The Action Button provides direct access to the functions that are currently most important.

Burger button

2

The burger button opens the burger menu. The burger menu offers access to the settings, functions and help system of an app:

▶ Press the "burger button".
    → The burger menu opens.

Back

Close the burger menu with the "Back" button:

▶ Press the "Back" button in the burger menu.
    → The burger menu is closed and the app operating screen is displayed.

3

In an app, go back to the previous operating screen by pressing the "Back" button:

▶ Press the "Back" button.
    → The active operating screen is closed.
    → The previous operating screen is displayed.

App settings

Open the app-specific settings directly from the burger menu:

4

▶ Press the button "App Settings".
    → The "Settings" operating screen of the app is displayed.

4 Settings

Adjust the system, the apps and the user preferences in the settings area. The settings area is used regularly.

→ Therefore, the button for opening the settings area is directly accessible:

CCI 1200
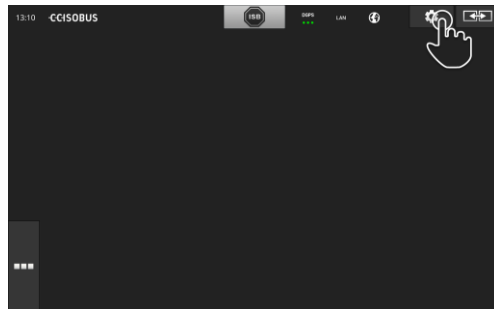
CCI 800
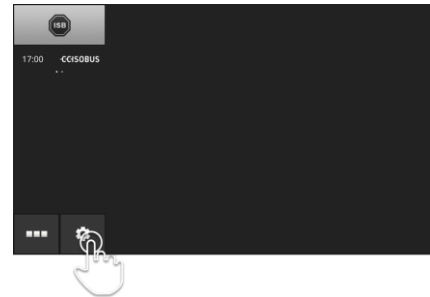
▶ Press the "Settings" button.

   → The "Settings" operating screen is displayed:
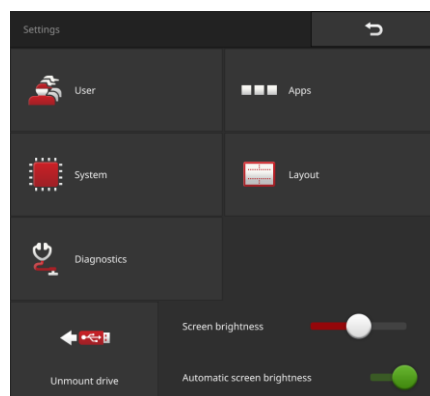
Change the following settings directly in the "Settings" operating screen:

Change screen brightness

▶ Slide the control to the left.
   → The screen becomes darker.

▶ Slide the control to the right.
   → The screen becomes brighter.

Automatic screen brightness

The light sensor measures the ambient light and matches the screen brightness to the ambient light.

1. Switch "Automatic screen brightness" on.
   → In high ambient light, e.g. direct sunlight, the screen brightness is in-creased.
   → In dim ambient light, e.g. during night-time operation, the screen brightness is reduced.

2. Regulate the behaviour of the light sensor using the slide control.
   → Push the control to the right to reach maximum screen brightness.
   → Push the control to the left to reach minimum screen brightness.

The settings are subdivided amongst the areas "User", "Apps", "System", "Layout" and "Diagnostics":

User

Adjust the operating behaviour of the terminal:
- Sound and touch sound,
- Language and units and
- user administration.

Apps
- Adjust the apps,
- Switch on apps and
- Activate ISOBUS functions.
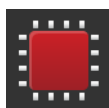
System

General settings and functions are available in the "System" area:
- Call software and hardware information,
- Set date and time,
- Reset factory settings,
- Install an update,
- Create a backup,
- Update licence data and
- Adjust Internet connection.

Layout

Select the display orientation. In landscape it is possible to choose between Standard and Maxi display layouts:

1. Press the "Layout" button.

    → The "Layout" operating screen is displayed.

2. In the "Alignment" line, press the checkbox below the desired orientation.
    → The orientation is changed.

3. In the "Layout" line press the checkbox under Standard or Maxi.
    → The layout is changed.

4. End the Process with "Back".

Diagnostics

⇒ Chapter 11.2.1

4.1 User

The operating characteristics of the terminal are set under User settings.

▶ Press the "User" button in the "Settings" operating screen.
   → The "User" operating screen is displayed:

User	↩
🔊 Volume	51%
👆 Touch sound	⬤—
👤 Language	english (en)
⚖ Units	Metric
👥 User administration	
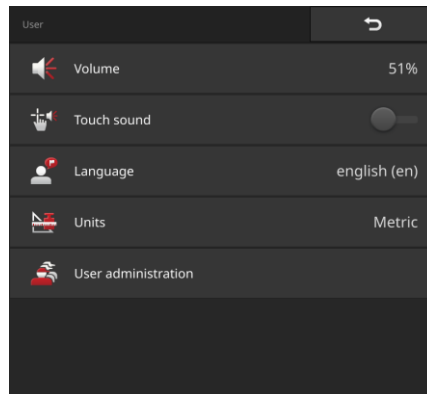
You have the following setting options:

Volume

The terminal and many ISOBUS implements issue audio warnings. The volume of the audio warnings can be adjusted:

1. Press the "Volume" button.
   → The "Volume" operating screen is displayed.

2. Press the button with the percentage.
   → The screen keyboard is displayed.

3. Enter the volume in %.

4. Confirm your entry.

5. End the Process with "Back".

Activate touch sound

▶ Switch "Activate touch sound" "on".
   → Upon pressing a button, you receive audible feedback.

Select language

Select the language in which the text is to be output to the display:

1. Press the "Language" button.
   → The "Language" selection list is displayed.

2. Select a language.
   → The text on the display is shown in the new language.

3. End the Process with "Back".

Units

Change the system of units used by the terminal:

1. Press the "Units" button.
   → The "Units" selection list is displayed.

2. Select a system of units.
   → The terminal applies the system of units to all values.

3. End the Process with "Back".

User administration

The terminal identifies the following user groups:

- User
- Service
- Developer.

The "User" group is preset. Do not change this setting.

4.2   Apps

▶ Press the "Apps" button in the "Settings" operating screen.

→ The "Apps" operating screen is displayed:

Apps	�
CCI.UT A	
CCI.UT B	
CCI.Cam	
CCI.Command	
CCI.Config	
CCI.Control	
CCI.Help	
Advanced settings	
App management	
ISOBUS settings	
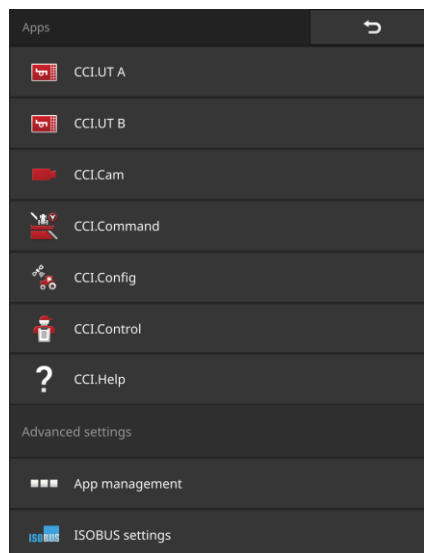
You have the following operating options:

App settings
Set up the apps.

App management
Switch apps on and off (⇒ Chapter 4.2.1).

ISOBUS settings
Adjust the behaviour of the terminal on the ISOBUS (⇒ Chapter 4.2.2).

4.2.1 App management

Non-required apps can be permanently switched off. This has no effect on the available CPU power or the available RAM.

NOTE

It may occur that an action cannot be performed because an app is switched off.

We recommend,
- CCI.UT B is switched on if you want to operate two ISOBUS implements,
- The apps agricon, Auto Guidance, SmartConnect and ECU-Updater are only switched on when necessary,
- All other apps are always switched on.

Switch an app off as follows:

1. Press the "App management" button in the "Apps" operating screen.
   → The "App management" operating screen is displayed:
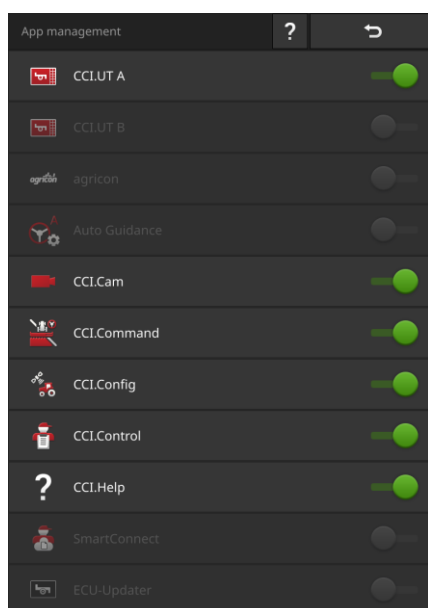
2. Switch the app "off".
   → A message window is displayed.

3. Confirm your entry.
   → The app is ended.
   → The app is no longer displayed in the app menu.

To switch an app on proceed as described above. Set the switch next to the app name to "on".

4.2.2 ISOBUS settings

The terminal makes the following functions available on the ISOBUS:

- Universal terminal,
- AUX-N,
- Task Controller,
- TECU,
- File server.

All ISOBUS functions are activated ex works.

NOTE

We recommend leaving all ISOBUS functions activated.

Only then can you take full advantage of the wide range of terminal functions:

- ISOBUS implement operation
- Recording of task data
- Section Control and Rate Control.

If you operate two ISOBUS terminals simultaneously, you can distribute the functions over both terminals:

- You operate the ISOBUS implements via the fixed ISOBUS terminal integrated in the tractor and
- You use CCI.Command on the CCI 800/CCI 1200 for Section Control.

1. In the ISOBUS settings on the CCI 800/CCI 1200, switch the "Universal Terminal" off and the "Task Controller" on.
2. In App management on the CCI 800/CCI 1200, switch CCI.UT A off and CCI.Command on.
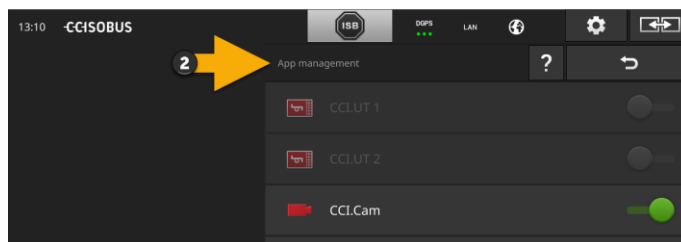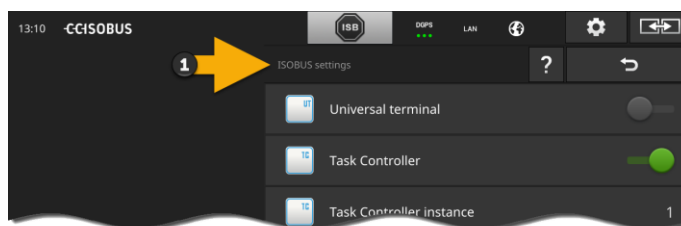
Adjust the behaviour of the terminal on the ISOBUS as follows:

▶ Press the "ISOBUS Settings" button in the "Apps" operating screen.
  → The "ISOBUS settings" operating screen is displayed:
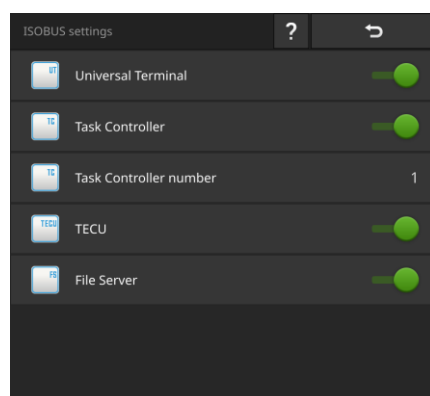
If the ISOBUS function "Universal terminal" is activated, up to

- 5 implements each can be connected to CCI.UT A and CCI.UT B
- one ISOBUS implement can be operated with each of CCI.UT A and CCI.UT B.

This is also possible, if you simultaneously use a second ISOBUS terminal.

The ISOBUS function "Universal terminal" is activated ex works.
→ The terminal logs on to the ISOBUS as a "Universal Terminal".

1. Change to the operating screen "App settings".

2. Press the button "App management".
   → The "App management" operating screen is displayed.

3. Switch CCI.UT A "on".
   → CCI.UT A is displayed in the standard view.

You do not want to operate any ISOBUS implement with the terminal.

Switch "Universal Terminal" and the apps CCI.UT A and CCI.UT B off:

1. In the "ISOBUS settings" operating screen switch the "Universal Termi-nal" "off".

    → A message window is displayed.

2. Confirm your entry.

    → The "Universal Terminal" switch is "off".
    → The terminal is no longer logged on to the ISOBUS as a "Universal Terminal".

3. Change to the operating screen "App settings".

4. Press the button "App management".

    → The "App management" operating screen is displayed.

5. Switch CCI.UT A and CCI.UT B "off".

    → CCI.UT A and CCI.UT B are no longer displayed in the app menu.

NOTE

Without the ISOBUS function "Universal Terminal" the terminal no longer logs in to the ISOBUS as a UT.

The terminal can no longer be used to operate an ISOBUS implement.

▶ Only switch the ISOBUS function "Universal Terminal" off if you want to operate the terminal without an ISOBUS implement.

Task Controller

Section Control, Rate Control and the Documentation of tasks require the ISOBUS function "Task Controller".

The ISOBUS function "Task Controller" is activated ex works.
→ The terminal logs in to the ISOBUS as a "Task Controller".

1. Change to the operating screen "App settings".

2. Press the button "App management".
   → The "App management" operating screen is displayed.

3. Switch CCI.Control "on".
   → CCI.Control is displayed in the app menu.
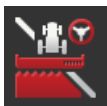
4. Switch CCI.Command "on".
   → CCI.Command is displayed in the app menu.

Task Controller Number

You are using the Task Controller of the CCI 800/CCI 1200 **and** the Task Controller of another ISOBUS terminal.

Each of the two Task Controllers must have a unique number because otherwise address conflicts on the ISOBUS may occur.

An ISOBUS implement can only connect to one Task Controller. The implement selects the Task Controller based on the Task Controller number.

The implement automatically selects

- the lowest Task Controller number or
- the Task Controller number set in the implement.

NOTE

The Task Controller number cannot be set on all ISOBUS implements.

▶ Allocate the lowest Task Controller number to the Task Controller with which the implement is to connect.

1. Press the button "Task Controller number".
   → The input dialogue is displayed.

2. Press the input field with the number.
   → The screen keyboard is displayed.

3. Enter the Task Controller number.

4. Confirm your entry.

5. End the Process with "Back".
   → A message window is displayed.

6. Confirm your entry.

NOTE

If you change the Task Controller number of the terminal, you must also adjust this setting in the ISOBUS implement.

If different Task Controller numbers are set in the implement and the terminal,

- The implement does not connect with the Task Controller
- CCI.Config, CCI.Control and CCI.Command will no longer receive any information from the ISOBUS implement
- Section Control, Parallel Tracking and Rate Control can no longer be performed.

You are using the Task Controller of another ISOBUS terminal.

Switch the "Task Controller" off:
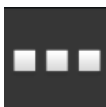
1. Switch "Task Controller" "off".
   → A message window is displayed.

2. Confirm your entry.
   → The "Task Controller" switch is "off".
   → The terminal is no longer logged in to the ISOBUS as a "Task Control-ler".

3. Change to the operating screen "App settings".

4. Press the button "App management".
   → The "App management" operating screen is displayed.

5. Switch CCI.Control "off".
   → CCI.Control is no longer displayed in the app menu.

6. Switch CCI.Command "off".
   → CCI.Command is displayed in the app menu.

NOTE

CCI.Config, CCI.Control and CCI.Command require the ISOBUS func-tion "Task Controller".

If you switch the ISOBUS function "Task Controller" off,

- CCI.Config, CCI.Control and CCI.Command will no longer receive any in-formation from the ISOBUS implement,
- Section Control and Rate Control can no longer be carried out,
- No further task data is displayed.

The ISOBUS "TECU" function sends the speed, the PTO speed and the position of the rear 3-point hitch to the ISOBUS implement.

TECU

The "TECU" ISOBUS function is activated ex works.
→ The terminal logs on to the ISOBUS as "TECU".

Switch the TECU of the CCI 800/CCI 1200 off, if the TECU of the tractor displays an error message.

1. Switch the "TECU" "off".
   → A message window is displayed.

2. Confirm your entry.
   → The "TECU" switch is "off".
   → The terminal is no longer logged on to the ISOBUS as "TECU".

The file server makes storage available to all ISOBUS participants. So for example an ISOBUS implement can save and read out configuration data on the terminal.

File server

The "File server" ISOBUS function is activated ex works.
→ The terminal logs on to the ISOBUS as "File server".

Only switch the file server off when you are sure that no ISOBUS implement is using this function.

1. Switch the "File server" "off".
   → A message window is displayed.

2. Confirm your entry.
   → The "File server" switch is "off".
   → The terminal is no longer logged on to the ISOBUS as "File server".

4.3 System
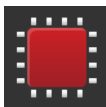
▶ Press the "System" button in the "Settings" operating screen.
   → The "System" operating screen is displayed:
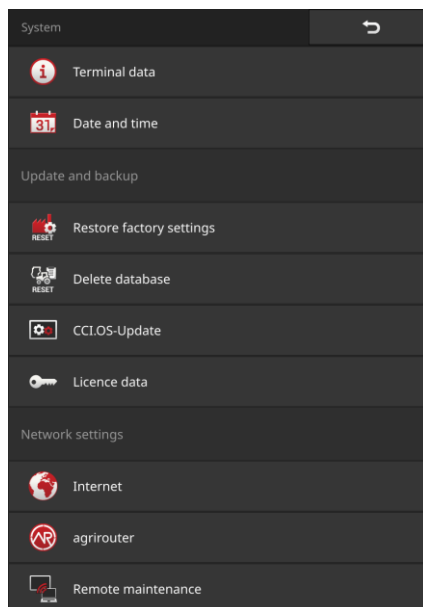
You have the following operating options:

Terminal data

In terminal data, the version of the installed software and the serial number of the terminal are displayed together with other data. The terminal data is only required for service cases of interest:

1. Press the "Terminal data" button.
   → The terminal data is displayed.
2. End the Process with "Back".

Date and time
⇒ Chapter 4.3.1

Reset factory settings

You will delete all user settings. Tractors, implements, tasks and fields are not deleted.

1. Press the "Reset factory settings" button.
   → A message window is displayed.

2. Confirm your entry.
   → The factory settings are restored.

Delete database

You will delete all tractors, implements, fields and tasks, including all master data, totals and location-based data.

CCI.OS-Update

⇒ Chapter 4.3.2
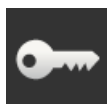
Licence data

⇒ Chapter 4.3.3

Internet

⇒ Chapter 4.3.4

agrirouter

⇒ Chapter 4.3.5

Remote View

You cannot use remote maintenance with remote view; it is only available in test mode.

▶ Do not press this button.

4.3.1 Setting date and time

NOTE

The time cannot and must not be set manually.

The terminal clock is very accurate and is set in the factory. With an active Internet connection, the terminal adjusts the time based on a time server.

▶ Press the "Date and time" button.
  → The "Date and time" operating screen is displayed:

Date and time	↩
Time zone	(UTC +01:00) ...
Time format	24h
Date format	DD.MM.YYYY
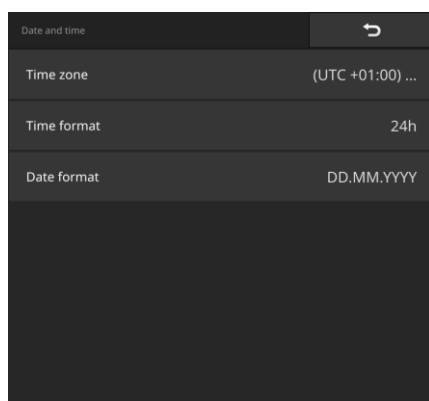
You have the following setting options:

Select time zone

Select the time zone with the correct time difference and the appropriate region:

1. Press the button "Time zone".
   → The "Time zone" selection list is displayed.

2. Select the Time zone.
   → The checkbox at the right edge of the button is selected.
   → The time zone is changed.

Select time format

1. Press the "Time format" button.
   → The "Time format" selection list is displayed.

2. Select the format.
   → The checkbox at the right edge of the button is selected.
   → The time format is changed.

Select date format

The date is displayed in the selected format
- on the terminal and
- incorporated in the time stamp that the terminal sends over the ISOBUS.

1. Press the "Date format" button.
   → The "Date format" selection list is displayed.

2. Select the format.
   → The checkbox at the right edge of the button is selected.
   → The date format is changed.

NOTE

We recommend adherence to the factory settings for time and date formats.

The time and date are displayed in the selected format
- on the terminal and
- incorporated in the time stamp that the terminal sends over the ISOBUS.

4.3.2 Updating CCI.OS

The terminal software CCI.OS is constantly subject to further development and new functions are continuously being added. Your service partner will make new updates available to you as CCI.OS updates.

CAUTION!

During the update process, the terminal interrupts the connection to the ISOBUS.

The implements connected to the ISOBUS can no longer be operated.

▶ Press the "CCI.OS-Update" button.
  → The "Updater" operating screen is displayed:
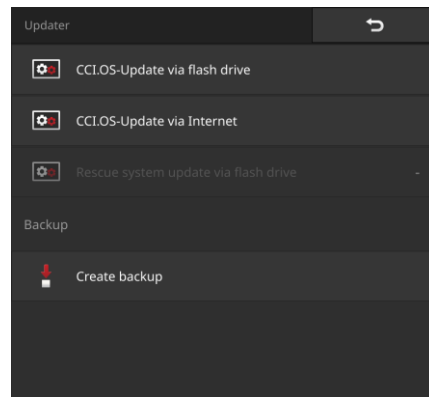
Update vs. Rollback

In an update, a terminal software CCI.OS versions is installed that is newer than the version installed on the terminal.

In a rollback the terminal software CCI.OS is rolled back to a previous version.

- The "Updater" operating screen can only be used to install updates.
- Rollbacks are carried out in the Rescue System.

  → A previously created backup is restored.

NOTE

Occasionally the update of CCI.OS may fail.

Then the terminal can only be started in the Rescue System.

▶ Create a backup, before you update CCI.OS.

You have the following operating options:

Update CCI.OS from the flash drive
See section *Update from the flash drive*

Update CCI.OS via the Internet
Updating of CCI.OS via the Internet is only available in test mode and is unavailable until further notice.

Rescue system
Updating of the Rescue System can only be performed by the manufacturer or its sales and service partners.

Create a backup

1. Connect a flash drive with at least 1 GB of free space to the terminal.
2. Press the "Create backup" button.
   → A warning message is displayed.
3. Start the backup with "OK".
   → The backup is saved on the flash drive.
4. Press the button "Restart terminal".
   → A warning message is displayed.
5. Confirm the warning message with "OK".
   → The process is completed.
   → The terminal is restarted.

You restore the old version from a backup in the Rescue System:
→ The terminal has the software version that was backed up.

Update from the flash drive

NOTE

The installation program saves data on the flash drive for the duration of the update.

▶ Use a flash drive with free space of at least 200 MB.

▶ Leave the flash drive connected to the terminal until the update has completed.

1. Press the button "CCI.OS-Update via flash drive".
   → The selection list with the available Updates is displayed.

2. Select an update.

3. Press the "Update CCI.OS" button.
   → A message window is displayed.

4. Start the update.
   → The new terminal software is installed.
   → Once the installation is complete, you are requested to restart the terminal.

5. Press the button "Restart terminal".
   → A warning message is displayed.

6. Confirm the warning message.
   → The update is complete.
   → The terminal is restarted.

4.3.3 Updating licence data

The terminal licence data must be updated under the following circumstances:

- Following a CCI.OS update,
- After acquisition of the licence for a paid-for function (e.g. Section Control or Parallel Tracking).

▶ Press the "Licence data" button.
  → The "Licence data" operating screen is displayed:
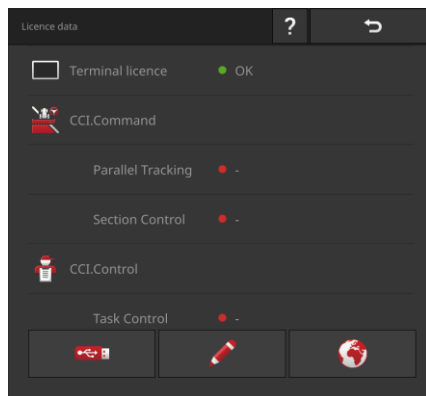
You have the following operating options:

Update the licence data via the Internet

This is the fastest and easiest update method. Use this function, if the terminal is connected to the Internet:

1. Press the "Internet" button.
   → The licence data is updated.
   → The "Licence data" operating screen is displayed.

Update the licence data via a flash drive

A quick and reliable update method. Use this function if you have access to a PC with an Internet connection:

1. Connect a flash drive to the terminal.

2. Press the button "USB".
   → The "Save TAN" operating screen is displayed.

3. Press the "Next" button.
   → The file <serial number>.UT.liz is saved to the flash drive.
   → The "Request new licence data" operating screen is displayed.

4. Connect the flash drive to your PC.

5. On the PC open the web page *https://pa.cc-isobus.com* and follow the instructions.
   → The new licence data is saved on the flash drive.

6. Connect the flash drive to the terminal.
   → The licence data is updated.
   → The "Licence data" operating screen is displayed.

Enter licence data manually

1. Press the "Manual entry" button.
   → The TAN is displayed.

2. On the PC open the web page *https://pa.cc-isobus.com*.

3. Enter the TAN and press the button "Start activation...".
   → The new licence data is displayed.

4. On the terminal, press the "Next" button.

5. Enter the Terminal licence.

6. Press the "Next" button.

7. If available, enter the Parallel Tracking licence.

8. Press the "Next" button.

9. If available, enter the Section Control licence.

10. End the process with "Next".
    → The "Licence data" operating screen is displayed.

4.3.4   Connecting to the Internet

The updating of the licence data can be performed quickly and easily via the Internet.

You must have an active Internet connection for the agrirouter.

Connect the terminal to the Internet via WiFi.

→ The W10 WiFi adapter is available for the terminal.

For example, you can create the WiFi connection by using your phone as a hotspot.

▶ Press the "Internet" button.
   → The "Internet" operating screen is displayed:

You have the following operating options:

Activate SmartConnect
You cannot use SmartConnect; it is only available in test mode.

▶ Do not switch SmartConnect "on".

Connect via WiFi
Use the W10 WiFi adapter to connect the terminal to the Internet:

1. Connect the W10 WiFi adapter to connector 3 or 4.

2. Press the "WiFi" button.
   → The "WiFi networks" selection list is displayed.

3. Select a WiFi network.
   → The window for password entry is displayed.

4. Enter the WiFi password and confirm your entry.
   → The terminal connects using WiFi.
   → The symbols in the status bar provide information about the status and quality of the connection.

WiFi pass-word

Correct an incorrectly entered WiFi password as follows:

1. In the selection list "WiFi networks", press the button with the WiFi and keep the button pressed.
   → A context menu is displayed.

2. Select "Edit".
   → The window for password entry is displayed.

3. Correct the password.

4. Confirm your entry.

4.3.5 Connecting to agrirouter

agrirouter is a data exchange platform, via which you can send and receive data. You can find more information online under *https://www.my-agrirouter.com*.

▶ Set up an agrirouter user account.

▶ Note the registration code for the account on the terminal.

▶ Connect the terminal to the Internet. (⇒ Chapter 4.3.4)

1. Ensure that the Internet symbol is displayed in the status bar.
   → You required an active Internet connection to connect to agrirouter.

2. Press the "Settings" button on the start screen.
   → The "Settings" operating screen is displayed.
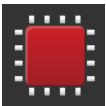
3. Press the "System" button.
   → The "System" operating screen is displayed.

4. Press the "agrirouter" button.
   → The "agrirouter" operating screen is displayed.
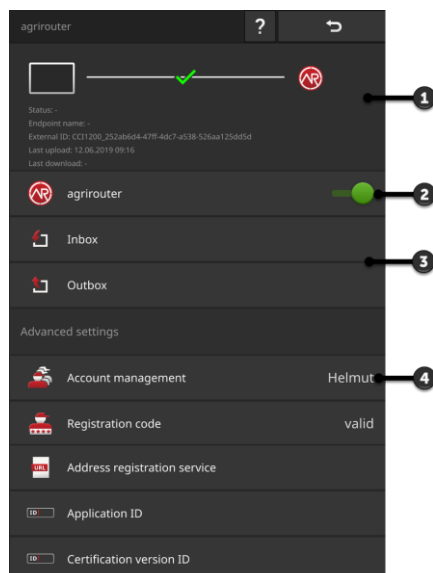
1: Information area

2: Switch on the agrirouter

3: Receive and send data

4: Manage accounts

5. Press the "Account management" button (4).
   → The "Account management" operating screen is displayed.

6. Press the "+ New account" button.

7. Enter the account name.
   ! The account name can be freely selected.

8. Confirm your entry.
   → The "Account management" operating screen is displayed.
   → The new account is selected.

9. Press "Back" to return to the "agrirouter" operating screen.

10. Press the "Registration Code" button.
    → An input dialogue is displayed.

11. Enter the account registration code. The code is case-sensitive. Confirm your entry.
    → The "agrirouter" button can be pressed now.

12. Switch the "agrirouter" "on" (2).
    → An active connection is displayed in the information area.
    → agrirouter set-up is completed.

In the "agrirouter" operating screen you have the following operating options: **Set**

agrirouter on/off

▶ Switch "agrirouter" "on".
  → The terminal connects to agrirouter.

Inbox

The inbox contains all data downloaded from the agrirouter.

Processing of the data takes place in other apps:
- ISO-XML tasks are displayed in the "Import" selection list in CCI.Control.

Data remain in the inbox even after further processing in other apps and must be manually deleted. Delete one record or all data:

1. Press the "Inbox" button.
   → The "Inbox"" selection list is displayed.

2. Press the button with the record and keep the button pressed.
   → A context menu is displayed.

3. Select "Delete" or "Delete all".
   → The record is deleted or all data is deleted.
   → The "Inbox"" selection list is displayed.

Outbox

Tasks, shape files and other data can be sent from the terminal using agr-irouter. The outbox contains all data for which send has failed.

Data in the outbox must be sent manually:

1. Press the "Outbox" button.
   → The "Outbox" selection list is displayed.

2. Press the button with the record and keep the button pressed.
   → A context menu is displayed.

3. Select "Upload".
   → The record is sent.
   → The "Outbox" selection list is displayed.

Delete unused data from the outbox, to free unused storage:

1. Press the "Outbox" button.
   → The "Outbox" selection list is displayed.

2. Press the button with the record and keep the button pressed.
   → A context menu is displayed.

3. Select "Delete" or "Delete all".
   → The record is deleted or all data is deleted.
   → The "Outbox" selection list is displayed.

Account management

Manage the accounts with which the terminal logs in to agrirouter. Multiple new accounts can be added. A registration code must be entered for each account.

Add an account:

1. Press the "Account management" button.
   → The empty account list is displayed.

2. Press the "+ New account" button.
   → An input dialogue is displayed.

3. Enter the account name and confirm your entry.
   ! The account name can be freely selected.
   → The account is displayed in the account list.
   → The account is selected.

Select an account:

1. Press the "Account management" button.
   → The account list is displayed.

2. Select an account.

3. End the Process with "Back".
   → The selected account is displayed on the "Account management" button.
   → The terminal logs on to the agrirouter using this account name.

Change an account:

1. Press the "Account management" button.
   → The account list is displayed.

2. Press the button with the account name and keep the button pressed.
   → A context menu is displayed.

3. Select "Edit".
   → An input dialogue is displayed.

4. Enter the account name and confirm your entry.
   → The account is displayed in the account list.

Delete an account:

1. Press the "Account management" button.
   → The account list is displayed.

2. Press the button with the account name and keep the button pressed.
   → A context menu is displayed.

3. Select "Delete".
   → The account is deleted.

Registration code

Each account has its own registration code. This need only be entered once.

You obtain registration code of the account here:

1. Change to the PC and log on to *https://www.my-agrirouter.com*.

2. Read out the account registration code.

Enter the registration code as follows:

1. Press the "Registration Code" button.
    → An input dialogue is displayed.

2. Enter the registration code and confirm your entry.
    → The "agrirouter" operating screen is displayed.
    → You can see in the information area whether the terminal was able to log on to the server.

Address registration service

Ex works, the registration service address is as follows *https://agrirouter-registration-service.cfapps.eu1.hana.ondemand.com/api/v1.0/registration/onboard*.

Only change the address if you are requested to do so by your service partner:

1. Press the "Registration service address" button.
    → An input dialogue is displayed.

2. Enter the Internet address of the registration service and confirm your entry.
    → The "agrirouter" operating screen is displayed.

Application ID

Only change the Application ID if you are requested to do so by the service partner:

1. Press the "Application ID" button.
    → An input dialogue is displayed.

2. Enter the ID and confirm your entry.
    → The "agrirouter" operating screen is displayed.

Certification version ID

Only change the Certification version ID if you are requested to do so by the service partner:

1. Press the "Certification version" button.
   → An input dialogue is displayed.

2. Enter the ID and confirm your entry.
   → The "agrirouter" operating screen is displayed.

5 Display of camera images

You will learn,

- How to display a camera image,
- How you connect one or more cameras to the terminal,
- How the automatic camera exchange is set up and started.

CCI.Cam is used to display camera images.

Maintain an overview of your implement and complex work processes with up to eight cameras. Automatic camera changing makes manual switching between camera screens unnecessary.

Open CCI.Cam in standard view or mini view. In this way you can see the camera image at all times:

5.1 Setting up for operation

5.1.1 Connecting one camera

You can connect one camera directly to the terminal. You require the Cable C:

1. Connect Cable C to connector C of the terminal.
2. Connect the camera to Cable C.
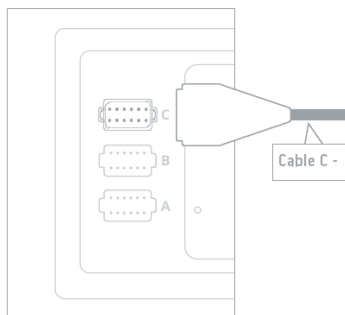
NOTE

Cable C is available in variants C1 and C2.

▶ Use cable C1 for a camera with AEF Video coupling.

▶ Use cable C2 for a camera with an M12 connector.

Adjust CCI.Cam as follows:

1. Press the "Settings" button.
   → The "Settings" operating screen is displayed.

2. Press the "Apps" button.
   → The "Apps" operating screen is displayed.

3. Press the "CCI.Cam" button.
   → The operating screen with the CCI.Cam settings is displayed.

4. Switch the "Video-Miniplexer" "off".

5. Press the "Settings" button.
   → The "Settings" operating screen is closed.

6. Open CCI.Cam in standard view.
   → The camera image of the camera is displayed.

5.1.2 Connecting two cameras

To connect two cameras to the terminal, you require a Video-Miniplexer.

The Video-Miniplexer is supplied with power from the terminal.

1. Connect the cameras at the Video-Miniplexer.
2. Connect Cable C2 to connector C of the terminal.
3. Plug the M12-coupling "M12 Video" (cable C2) into the panel connector "Out" on the Video-Miniplexer.

Adjust CCI.Cam as follows:

1. Press the "Settings" button.
   → The "Settings" operating screen is displayed.

2. Press the "Apps" button.
   → The "Apps" operating screen is displayed.

3. Press the "CCI.Cam" button.
   → The operating screen with the CCI.Cam settings is displayed.

4. Switch the "Video-Miniplexer" "on".
   → The Video-Miniplexer is activated.

5. Press the "Settings" button.
   → The "Settings" operating screen is closed.

6. Open CCI.Cam in standard view.
   → The camera image of camera 1 is displayed.

5.1.3 Connecting eight cameras

You can connect up to eight cameras to the terminal using the video multiple-xer.
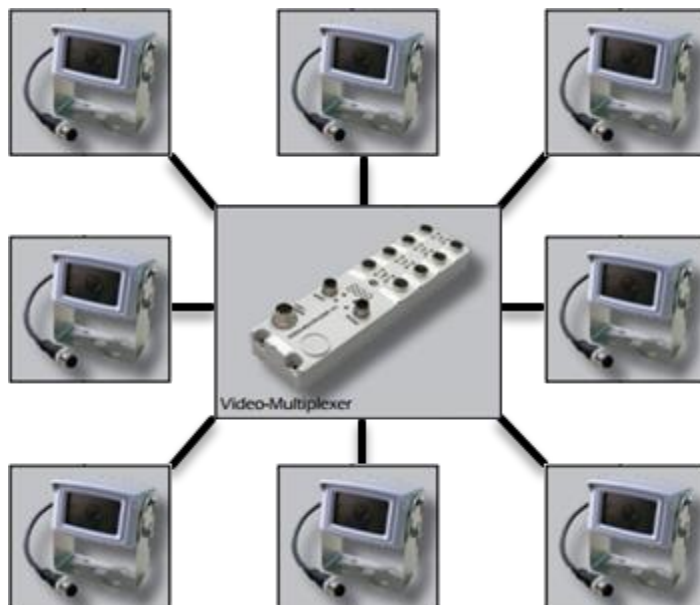
The video multiplexer is supplied with power from the terminal or an external power supply.

1. Connect the cameras at the video multiplexer.
2. Connect Cable C2 to connector C of the terminal.
3. Plug the M12-coupling "M12 Video" (cable C2) into the socket "MON1" on the video multiplexer.

CAUTION!

If you connect more than 3 cameras to the video multiplexer, you will overload the power output of the terminal.

Overloading of the power output will result in damage to the terminal.

▶ Use an external power source.

▶ Connect an external power source to the panel connector "P1" on the video multiplexer.

Adjust CCI.Cam as follows:

1. Press the "Settings" button.
   → The "Settings" operating screen is displayed.
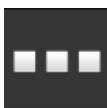
2. Press the "Apps" button.
   → The "Apps" operating screen is displayed.

3. Press the "CCI.Cam" button.
   → The operating screen with the CCI.Cam settings is displayed.

4. Switch the "Video-Miniplexer" "off".

5. Press the "Settings" button.
   → The "Settings" operating screen is closed.

6. Open CCI.Cam in standard view.
   → The camera image of camera 1 is displayed.

NOTE

Unassigned multiplexer connections output a black camera image.

5.2 Operation

5.2.1 Displaying the camera image

The camera image is displayed, if you open CCI.Cam in standard view, maxi view or mini view.

CCI.Cam can only be operated in standard view or maxi view.

5.2.2 Mirroring the camera image

The camera image is mirrored along the vertical axis.

Mirroring of the camera image is, for example, useful for reversing cameras:

1. Press centrally on the camera screen.
   → The burger button is displayed.

2. Press the burger button.
   → The "burger menu" is displayed.

3. Switch "Mirror" "On".
   → The camera image is mirrored.

Switch "Mirror" off so that the camera image is again displayed in normal view.

NOTE

The "Mirror" switch only affects the currently visible camera image.

NOTE

If the terminal is restarted, the position of the "Mirror" switch is retained.

The functions described below are only applicable if you have connected multiple cameras to the terminal.

5.2.3 Automatic reversing camera

The reversing camera is an optical manoeuvring aid for reversing.

You can use one of the cameras that are connected to the Video-Miniplexer or the video multiplexer.

Prerequisite here is that the terminal recognises the change in the direction of travel.

→ The terminal detects reversing when the tractor or self-propelled implement sends a direction of travel signal over the ISOBUS.

▶ Connecting two cameras (⇒ Chapter 5.1.2) or

▶ Connecting eight cameras (⇒ Chapter 5.1.3)

1. Press the "Settings" button.
   → The "Settings" operating screen is displayed:
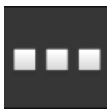
2. Press the "Apps" button.
   → The "Apps" operating screen is displayed:

3. Press the "CCI.Cam" button.
   → The operating screen with the CCI.Cam settings is displayed:

4. Press the "Reversing camera" button.
   → The "Reverse gear detection" selection list is displayed.

5. Select the method for detecting reverse gear.

6. Confirm the selection with "Back".
   → The CCI.Cam settings are displayed.

7. Press the "Camera number" button.
   → The "Reversing camera" selection list is displayed.

8. Select the number of the camera that is to be used as the reversing camera.

9. Press the "Settings" button.
   → The process is completed.

NOTE

Not all tractors or self-propelled implements make a direction of travel signal available on the ISOBUS.

→ The automatic reversing camera cannot be used without a direction of travel signal.

▶ Select "off" in step 5.

WARNING - GENERAL HAZARDS!

The reversing camera is only an aid and displays possible obstacles with a distorted perspective, incorrectly or not at all.

The reversing camera is not a replacement for your concentration.

The reversing camera does not warn you of a collision, persons or objects.

Under certain circumstances it cannot identify people or objects and continued driving will injure people or damage objects, the tractor or the self-propelled implement.

▶ You are always responsible for safety.

▶ Moreover, you must continue to be aware of your immediate surroundings when manoeuvring. This applies not only to the area behind the tractor or self-propelled implement but also the areas to the front and side.

5.2.4   Displaying the camera image continuously

You want the image of a particular camera to be displayed. The camera image is to be displayed until you make another selection:
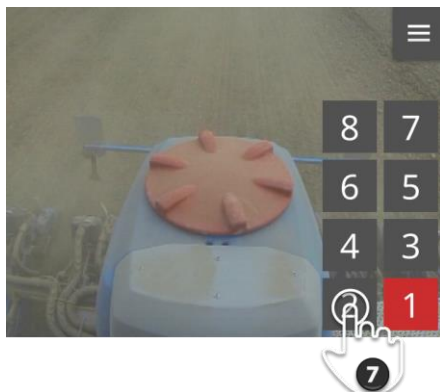
1. Press centrally on the camera screen.
    → The burger button is displayed.

2. Press the burger button.
    → The "burger menu" is displayed.

3. Switch the "event" "off".
    → Event-controlled camera switching is deactivated.

4. Switch "Time" "off".
    → Time-controlled camera switching is deactivated.

5. Press the "Back" button.
    → The camera image is displayed.

6. Press centrally on the camera screen.
    → The buttons for camera selection are displayed.

7. Press the grey button with the camera number.
    → The camera image is displayed.

5.2.5 Automatic camera switching

You want

- To switch automatically between some or all camera images and
- Specify the duration of display for each camera image.

Define,

Set

- how long each camera image is displayed and
- in which sequence the camera images change:
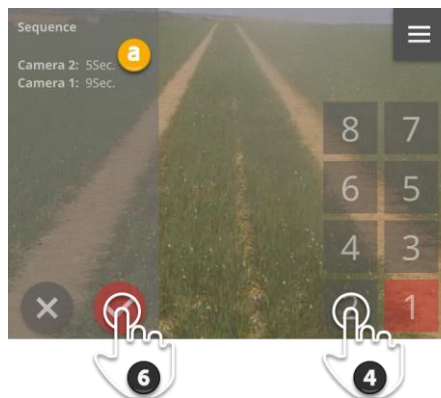
1. Press centrally on the camera screen.
   → The operating buttons are displayed.

2. Press the burger button.
   → The burger menu is displayed.

3. Press the "Sequence" button.
   → The buttons for camera selection are displayed.

4. Press the button of the camera that is to be displayed first. Press the button for as long as the camera image is to be displayed.

5. Repeat the process for the other cameras.
   → The information area (a) displays camera number and duration.

6. Press the Action button.
   → The camera image is displayed.

Start

Start automatic camera switching:

1. Press centrally on the camera screen.
   → The operating buttons are displayed.

2. Press the burger button.
   → The burger menu is displayed.

3. Switch "Time" "on".
   → Automatic camera switching starts.

NOTE

Not all camera images need be used for automatic camera switching.

▶ Omit one or more cameras in the selection of sequence and display duration.

NOTE

The settings for the sequence and the display duration of the camera images are retained.

After terminal restart you only need to start automatic camera switching.

End

End automatic camera switching as follows:

1. Press centrally on the camera screen.
   → The operating buttons are displayed.

2. Press the burger button.
   → The burger menu is displayed.

3. Switch "Time" "off".
   → Automatic camera switching is ended.
   → The latest camera image is displayed continuously.

5.2.6 Event-controlled camera switching

In event-controlled mode, the implement controls which camera is displayed.

▶ Check in the operating instructions of the implement, whether the imple-
ment can control the video multiplexer or the Video-Miniplexer.
   → If the implement does not support this function, you cannot use event-
   controlled camera switching.

▶ If you use the video multiplexer: Connect the implement to the video mul-
tiplexer.

**Prior prepa-
ration**

▶ In the implement, activate control of Video-Miniplexer or video multiplexer.

1. Press centrally on the camera screen.
   → The operating buttons are displayed.

2. Press the burger button.
   → The burger menu is displayed.

3. Switch the "event" "on".
   → Event-controlled camera switching is activated.

Implement controls camera image

Some implements specify which camera image is displayed. This makes
sense if attention must be drawn to a particular event or the implement, e.g.
opening of the hydraulic press.

These implements
- control the video multiplexer via a separate cable or
- control the Video-Miniplexer without separate cabling.

- In both cases, you cannot influence the selection of the camera image and the dis-
play duration via CCI.Cam.

6 Speed, position and geometry

You will learn,

- Why you must set the positions of the GPS aerial, coupling points, reference points and sections,
- How you set these positions,
- How you avoid overlaps or gaps by correcting the delay times,
- When you use the signal connector of the tractor,
- Which implements connect automatically with the Task Controller of the terminal and which do not,
- What a TC client is.

You want to use Parallel Tracking, *Rate Control*, *Section Control* or Tramline Control. These functions are location-dependent and require accurate information about the tractor combination or the self-propelled implement:

- Type and source of the speed information,
- Position of the GPS aerial,
- Geometry of tractor and implement,
- Implement mounting type.

You make these settings in CCI.Config.

1. Press the "Settings" button.
   → The "Settings" operating screen is displayed:
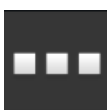
2. Press the "Apps" button.
   → The "Apps" operating screen is displayed.

3. Press the "CCI.Config" button.
   → The "CCI.Config" operating screen is displayed.
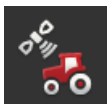
CCI.Config	?	⤺
Select tractor		
Select implement		
Select implement		
Advanced settings		
GPS		RS232 - serial
CCI.Convert		Deactivated
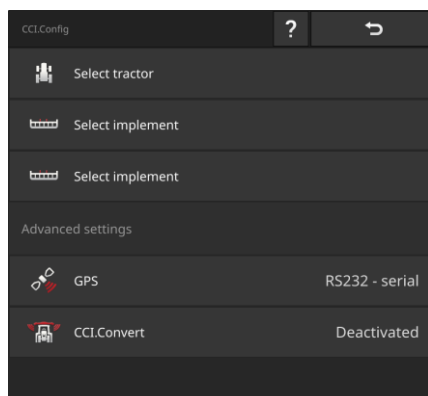
Proceed as follows:

Set up and adjust tractor

Add an entry to the tractor list for each tractor on which you use the terminal.

Define the following:
- Position of the GPS aerial,
- Mounting types of the tractor,
- Use the *signal connector*,
- Output of the GPS speed.

⇒ Chapter 6.1, ⇒ Chapter 6.2

Set up and adjust implement

Add an entry to the implement list for each implement.

Define the following:
- Position of the GPS aerial,
- Implement type,
- Working width,
- Coupling point,
- Mounting type.

⇒ Chapter 6.3, ⇒ Chapter 6.4

Adjusting the GPS receiver

The GPS receiver is connected directly at the terminal or connected to the terminal via the ISOBUS.

Define the following:
- Position of the GPS aerial,
- Interface of the GPS receiver.

⇒ Chapter 6.5
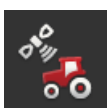
Tacho

Set up a tacho. In Tacho
- you can see the applied speed,
- you can see if you are in the optimum working area,
- you have direct access to the tractor and implement settings.

⇒ Chapter 6.7

6.1 Adding a tractor

1. Press the "Tractor" button in the CCI.Config operating screen.
   → The "Tractor" operating screen is displayed.

2. Press the "+ New Tractor" button.

3. Enter the tractor name.

4. Confirm your entry.
   → The "CCI.Config" operating screen is displayed.
   → The new tractor is selected and provided with a warning symbol.

5. Set up the tractor.
   → The tractor symbol is displayed instead of the warning symbol. The tractor can now be used.

Create an entry in the tractor list for each tractor on which the terminal is used.

We recommend adding all tractors immediately, setting them up and giving them unique names.

NOTE

The settings must be changed when switching to another tractor.

If no tractor or the incorrect tractor is selected, Parallel Tracking, Rate Control, Tramline Control and Section Control with incorrect settings.

▶ Select a tractor from the list (⇒ Chapter 6.8.1).

If the tractor is not in the list of tractors:

▶ Add the tractor to it (⇒ Chapter 6.1).

▶ Set up the tractor (⇒ Chapter 6.2).

6.2 Setting up a tractor

NOTE

Distance C must be set for all mounting types present on the tractor.

If the distance C is not set,
- The position cannot be precisely calculated
- Rate Control, Parallel Tracking, Section Control and Tramline Control can still be used but operate inaccurately.

▶ Set the distance C for all mounting types present on the tractor.

Adjust the tractor:
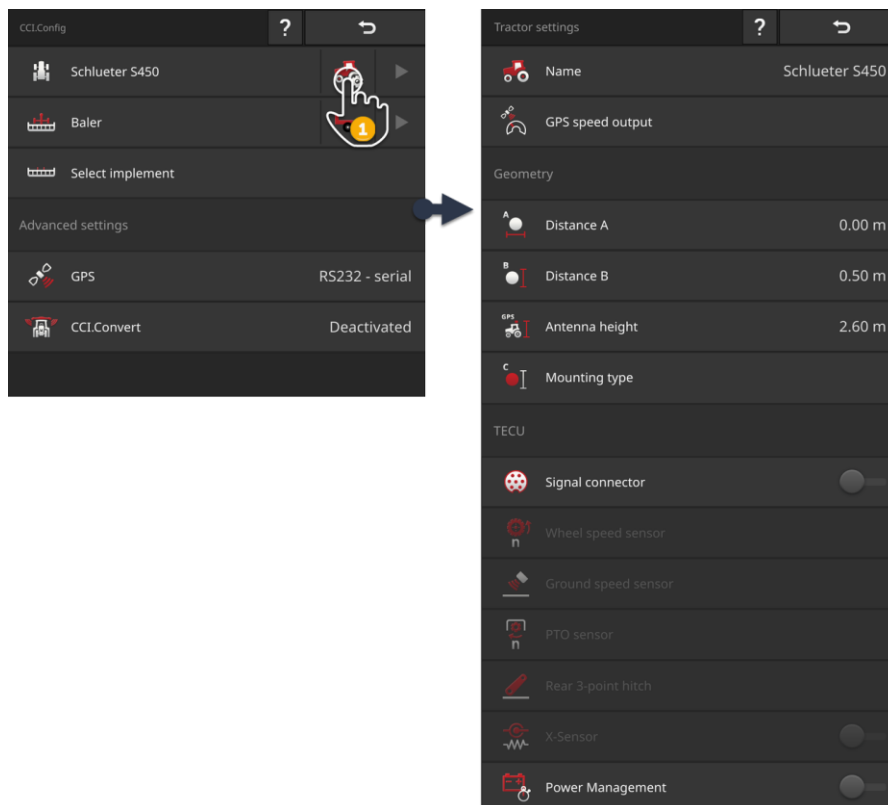
1. Press the "Tractor settings" button in the "CCI.Config" operating screen.
   → The tractor settings are displayed.

2. Follow the instructions in ⇒ Chapter 6.2.1, ⇒ Chapter 6.2.2, ⇒ Chapter 6.2.3 and ⇒ Chapter 6.2.4.

Checks

Then check the settings:
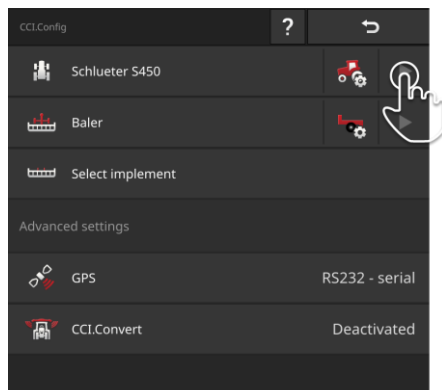
▶ In the "CCI.Config" operating screen, press the arrow button in the tractor button.
→ The "Tractor" information area is displayed.
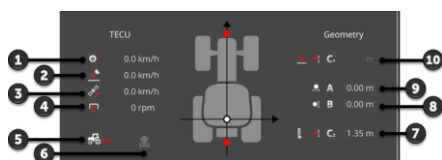
1: Wheel speed

2: Ground speed

3: GPS speed

4: Power take off speed

5: Work position

6: Direction of travel

7: Mounting type and distance C2, reference point tractor - rear coupling point

8: Distance B, reference point tractor - GPS aerial

9: Distance A, reference point tractor - GPS aerial

10: Mounting type and distance C1, reference point tractor - front coupling point

6.2.1 Position of the GPS aerial

If the tractor does not have a GPS receiver, proceed to ⇒ Chapter 6.2.2.
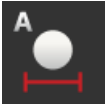
Distance A

1. Fit the GPS aerial centrally on the tractor. This is the recommended procedure.

2. Press the button "Distance A".

    → An input dialogue is displayed.

3. Set the distance A to 0.

4. End the Process with "Back".

Distance A

The distance in the transverse direction between the GPS aerial and the tractor reference point:

- The tractor reference point is the midpoint of the rear axis.
- The distance is measured relative to the longitudinal axis.
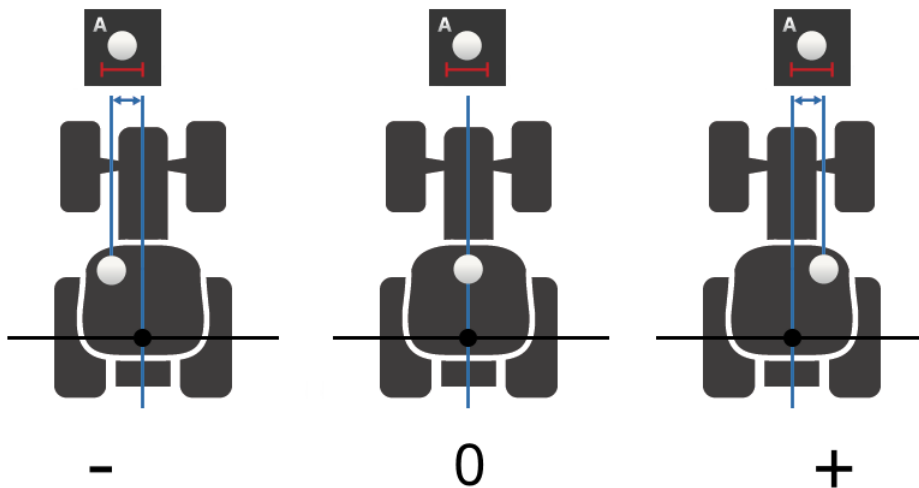
The GPS aerial is to the left of the reference point in the direction of travel:

▶ Enter distance A as a negative value.

The GPS aerial is to the right of the reference point in the direction of travel

▶ Enter Distance A as a positive value.

The GPS aerial is on the longitudinal axis of the tractor:

▶ Set the distance A to 0.
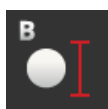
Distance B

1. Mark the mid-point of the rear axle and the position of the GPS aerial on the ground using chalk next to the tractor.

2. Measure the distance.

3. Press the button "Distance B".
   → An input dialogue is displayed.

4. Enter the measured value.

5. End the Process with "Back".

Distance B

The distance in the longitudinal direction between the GPS aerial and the tractor reference point:

- The tractor reference point is the midpoint of the rear axis.
- The distance is measured along the longitudinal axis.
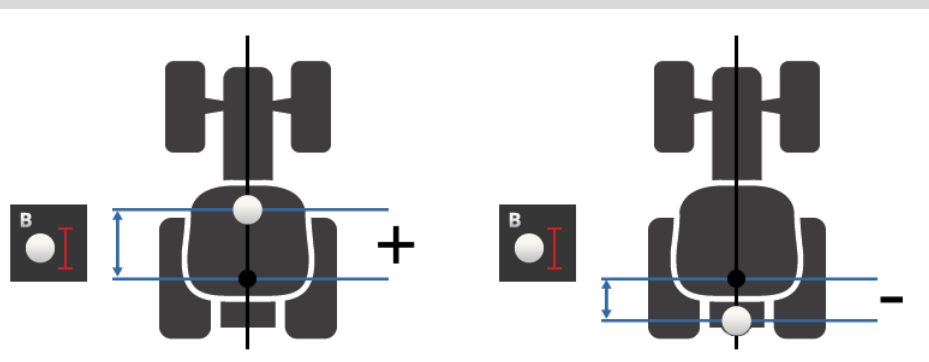
The GPS aerial is to the rear of the reference point in the direction of travel:

▶ Enter distance B as a negative value.

The GPS aerial is located prior to the reference point in the direction of travel:

▶ Enter Distance B as a positive value.

The GPS aerial is precisely over the rear axis:

▶ Set the distance B to 0.

Aerial height

Distance of the highest point of the GPS aerial from the ground.

1. Measure the distance of the highest point of the GPS aerial from the ground.
2. Press the "Aerial height" button.
   → An input dialogue is displayed.
3. Enter the measured value.
4. End the Process with "Back".

Mounting type and distance C

The distance C must be set separately for each tractor mounting type:

1. Check which mounting type the tractor has.

2. Measure distance C for each mounting type.

3. Press the "Mounting type" button.
   → The "Mounting type" selection list is displayed.

4. Press the buttons of a mounting type of the tractor.
   → An input dialogue is displayed.

5. Enter the distance C.

6. Press "Back" to return to the "Mounting type" selection list.

7. Repeat steps four to six for all other mounting types.

8. Press "Back" to end the process after entry of all values.

Mounting type

A tractor has several mountings on the rear.
One mounting type is assigned to each implement.

Distances C

The distance from the tractor reference point to the coupling point is different for each mounting type:

• The tractor reference point is the midpoint of the rear axis.
• The distance is measured along the longitudinal axis.
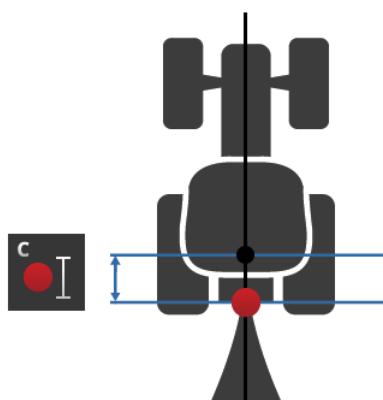
In CCI.Config, enter the distance C for each mounting type.

It is best to take the trouble to do this immediately during set-up and in this way avoid renewed measurement when coupling up the implement.

After coupling up an implement, all that is still necessary is to select the mounting type in the implement settings (⇒ Chapter 6.4.2):
→ Section Control automatically uses the correct distance C.

6.2.2 Tractor data

An ISOBUS tractor sends the following tractor data over the ISOBUS:

Tractor with *TECU*

- Ground and wheel speed,
- PTO speed,
- Direction of travel,
- Position of the *Rear 3-point hitch*.

Ex-works the *Signal connector* is switched off. For an ISOBUS tractor, maintain this setting under:
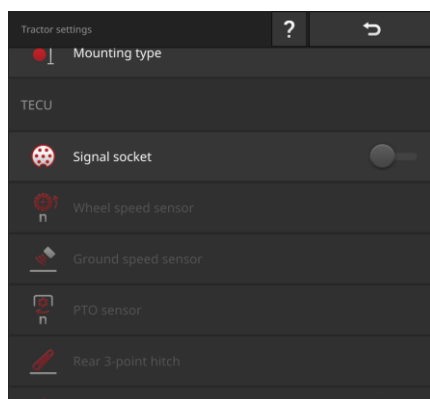
Signal connector

▶ Switch "off" the signal connector in the "Tractor settings" operating screen.
  → The buttons for setting up the signal connector are deactivated.

Checks

If you have an ISOBUS tractor, you can check in the tractor settings, which tractor data the tractor sends over the ISOBUS.
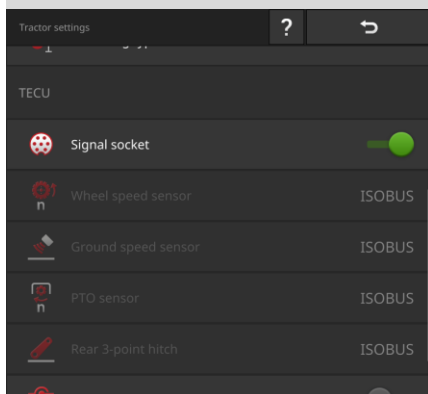
1. Connect the terminal to the signal connector as described in the section *Tractor without TECU*.

2. Switch the signal connector on.
   → The buttons of the tractor data sent from the tractor are marked with "ISOBUS".
   → The terminal can add missing tractor data if it is available at the signal connector.

Example

The ISOBUS tractor only sends the wheel speed over the ISOBUS. You have retrofitted a ground speed sensor and its output signal is available at the signal connector.

The "Ground Speed" button is marked with "Signal", the "Wheel speed" button is marked with "ISOBUS".

▶ Set up the ground speed.
   → The terminal sends the ground speed over the ISOBUS.

Recommendation

The Tractor sends all tractor data over the ISOBUS:

▶ Switch the signal connector "off".

Tractor data is present at the signal connector, which the tractor does not send over the ISOBUS:

▶ Switch the signal connector "on" and set up the additional tractor data.

If the tractor data is not made available on the ISOBUS by the tractor, the terminal must undertake this task.

You require

- Cable B,
- Cable H.

Connect the terminal to the *signal connector* in the Tractor.

→ The terminal reads out the tractor data and sends it over the ISOBUS.

1. Connect cable B to connector B of the terminal.
2. Plug "Signal" coupling (cable B) into the "Signal" M12 plug (cable H).
3. Plug "Signal" plug (cable H) into the tractor signal connector.

Signal connector

1. Connect the terminal to the signal connector as described above.

2. Switch the signal connector "on".

   → The buttons for setting the tractor data are activated.

3. Set the tractor data as described below.

NOTE

The signal socket is "on" but the tractor sends the tractor data over the ISOBUS.

If the terminal detects a TECU on the ISOBUS with the signal connector switched on, then the buttons for setting the tractor data are marked with "ISOBUS" and deactivated:

- Wheel and ground speed, PTO speed and work position cannot be set.
- The terminal does not send any tractor data over the ISOBUS.

Wheel speed

Take the number of pulses per distance travelled from the tractor's technical data.

Values between 200 and 30000 pulses/100 m are valid.

1. Press the "Wheel speed" button.
   → The "Wheel speed" operating screen is displayed.
2. Press the input field.
   → The screen keyboard is displayed.
3. Enter the number of pulses per 100 m and confirm your entry.
   → The "Wheel speed" operating screen is displayed.
4. End the Process with "Back".

Calibrate the wheel speed,
- If the wheel speed sensor has been retrofitted in the tractor,
- If the technical data of the tractor do not contain any information about the wheel speed sensor.
→ see section *Wheel speed calibration*.

Ground speed

Take the number of pulses per distance travelled from the tractor's technical data sheet of the ground speed sensor.

The valid value range is between 200 and 30000 pulses/100 m.

1. Press the "Wheel speed" button.
   → The "Ground speed" operating screen is displayed.
2. Press the input field.
   → The screen keyboard is displayed.
3. Enter the number of pulses per 100 m and confirm your entry.
   → The "Ground speed" operating screen is displayed.
4. End the Process with "Back".

Calibrate the ground speed sensor, if the technical data of the ground speed sensor are not available:
→ see section *Ground speed calibration*.

Power take off speed

Take the number of pulses per revolution from the tractor's technical data.

Values between 1 and 40 pulses/rev are valid. A frequent value in practice is 6.

1. Press the "PTO sensor" button.
   → The "PTO sensor" operating screen is displayed.
2. Press the input field.
   → The screen keyboard is displayed.
3. Enter the number of pulses per PTO rotation and confirm your entry.
   → The "PTO sensor" operating screen is displayed.
4. End the Process with "Back".

Rear 3-point hitch

see section *Calibrate rear 3-point hitch* and *Setting the work position*.

X-Sensor

Switch the "X-Sensor" "on".
→ The terminal reads out the speed data at the signal connector.

NOTE

The X-Sensor is a retrofittable speed sensor.

Only switch the X-Sensor on, if
- The tractor has an X-Sensor and,
- The sensor output is output to the signal connector.

Wheel speed calibration

NOTE

A field is not suitable for calibration of the speed.

▶ Calibrate the speed on smooth surfaces (e.g. asphalt) and not on a field.

Prior preparation

▶ Set out a distance of 100 m.

▶ Position the tractor at the start of the distance.
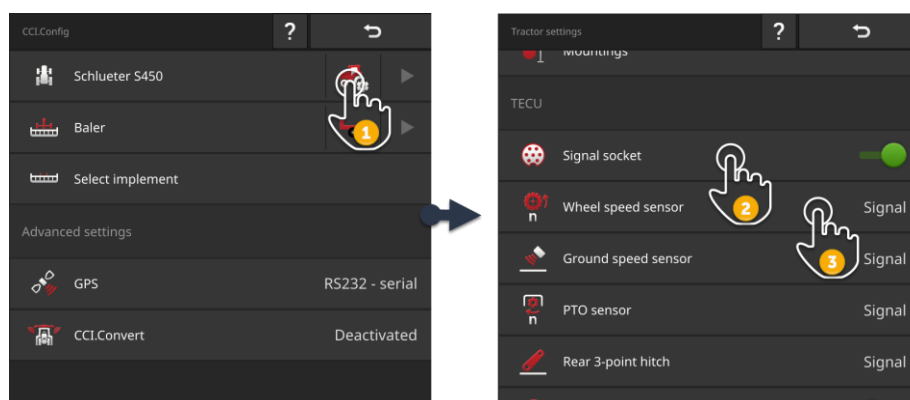
1. Open the "CCI.Config" operating screen and press on the "Tractor settings" button.
   → The tractor settings are displayed.

2. Switch the signal connector "on".
   → The "Wheel speed sensor" button is activated.

3. Press the "Wheel speed sensor" button.
   → The Wheel speed sensor" input dialogue is displayed.

4. Press the "Calibrate" button.
   → The operating screen "Step 1 of 2" is displayed.

5. Press the "START" button.

   → The operating screen "Step 2 of 2" is displayed.
   → The pulse counter displays the current value.

6. Drive 100 m and then press the "STOP" button.

   → The "Wheel speed sensor" operating screen is displayed.
   → The "Pulses/100 m" input field indicates the measured value.

7. End the Process with "Back".

   → The "Tractor settings" operating screen is displayed.

Proceed as described in the section *Wheel speed calibration*. In step 4, press the button "Ground speed sensor" button.

Ground speed calibration

Rear 3-point hitch calibration
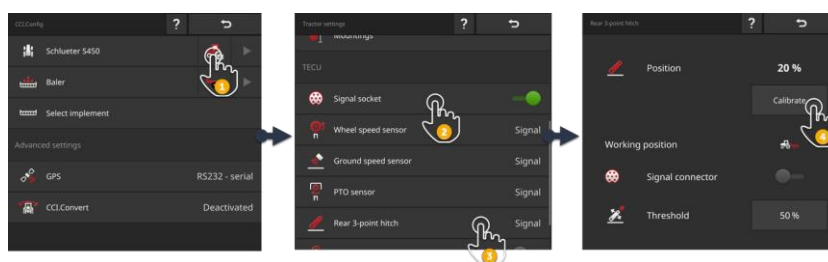
1. Open the "CCI.Config" operating screen and press on the "Tractor settings" button.
   → The tractor settings are displayed.

2. Switch the signal connector "on".
   → The "Rear 3-point hitch" button is activated.

3. Press the "Rear 3-point hitch" button.
   → The "Rear 3-point hitch" input dialogue is displayed.

4. Press the "Calibrate" button.
   → The operating screen "Step 1 of 2" is displayed.
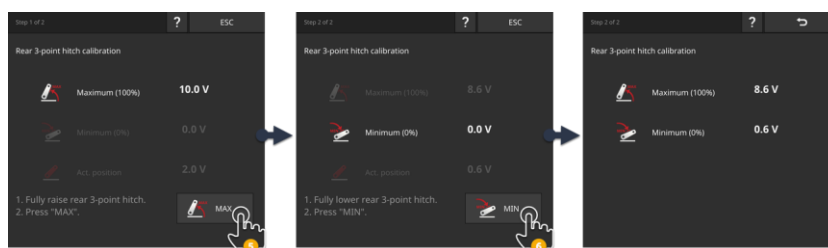
5. Fully lift the rear 3-point hitch and then press the "MAX" button.
   → The operating screen "Step 2 of 2" is displayed.
   → The voltage value for the maximum is indicated.

6. Fully lower the rear 3-point hitch and then press on the "MIN" button.
   → The voltage values for the maximum and minimum are indicated.

7. End the Process with "Back".
   → The "Tractor settings" operating screen is displayed.

Some tractors make the work position available via the signal connector. Proceed as follows:
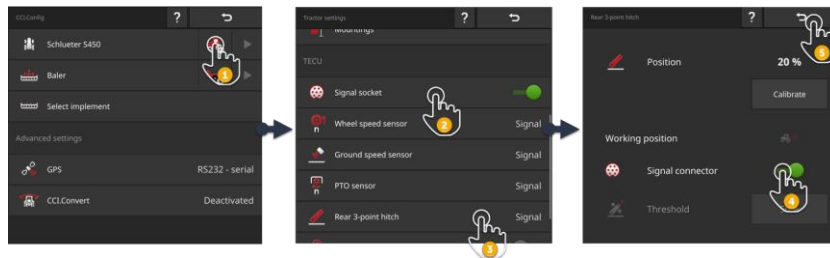
1. Open the "CCI.Config" operating screen and press on the "Tractor settings" button.
   → The tractor settings are displayed.

2. Switch the signal connector "on".
   → The "Rear 3-point hitch" button is activated.

3. Press the "Rear 3-point hitch" button.
   → The "Rear 3-point hitch" input dialogue is displayed.

4. Switch the signal connector "on".
   → Terminal uses the work position from the signal connector.

5. End the Process with "Back".
   → The "Tractor settings" operating screen is displayed.

If the *Work position* is not available at the *Signal connector*, set this as follows:
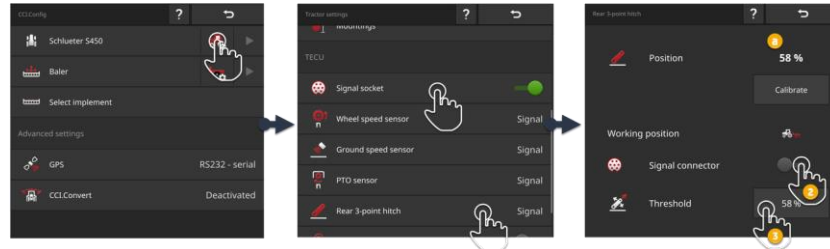
1. Move the *Rear 3-point hitch* to the work position and from the "Rear 3-point hitch" input dialogue read off the percentage value for the position (a).

2. Switch "off" the signal connector in the "Rear 3-point hitch" input dialogue.
   → The "Threshold" button is activated.

3. Press the "Threshold" input field.
   → The screen keyboard is displayed.
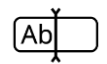
4. Enter the value read off in step 1 and confirm your entry.

5. End the Process with "Back".
   → The "Tractor settings" operating screen is displayed.

NOTE

Sometimes the *EHR* impairs display of the working position.

The display of the rear 3-point hitch then alternates between work position and transport position.

1. End the lifting of the rear 3-point hitch in step 1 a few centimetres before the work position is reached.
2. Use the displayed percentage value as a threshold.

6.2.3 GPS speed

GPS speed output

If a GPS receiver is connected to the terminal, the terminal can send the GPS speed over the ISOBUS making it available to all ISOBUS participants.

1. Press the button "GPS speed output".
   → The "GPS speed output" selection list is displayed.

2. Select the ISOBUS message with which the GPS speed is sent to the implement. You can select one or more options.
   → In the tractor settings, the buttons for the speed are marked with "GPS".
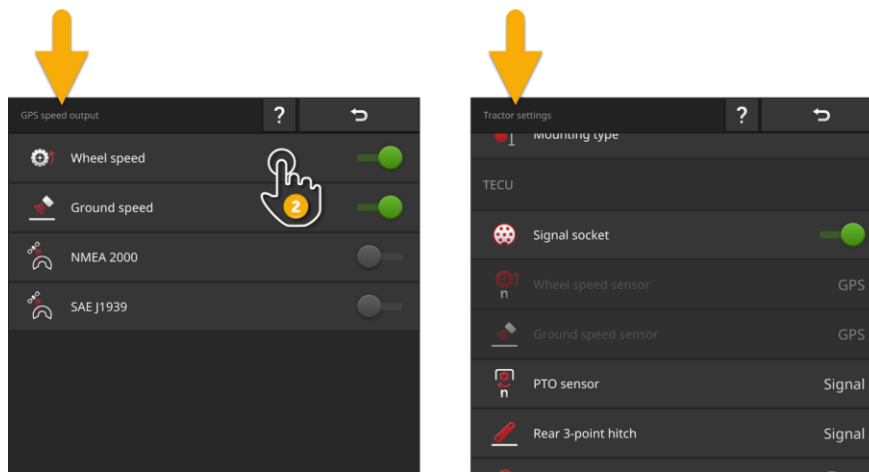
NOTE

The message must also be set up on the implement.

Use GPS speed

The GPS speed is free from slip and also very accurate if there is no DGPS or RTK available.

→ We recommend using the GPS speed.

Severe shading

If there is severe shading the GPS signals may be lost and consequently also the speed information.

→ Do not use GPS speed if your fields have significant shaded areas.

6.2.4 Power Management

Power Management is a switch-off delay. When you pull out the ignition key, the terminal is shut down with a delay.

→ Processes running on the terminal the ISOBUS implement can be ended.

Power Management can only be used in conjunction with an ISOBUS upgrade kit.

On a tractor factory-fitted with ISOBUS, Power Management does not work:

▶ Switch "Power Management" off.

NOTE

Only selected ISOBUS upgrade kits support Power Management.

Only switch Power Management on, if the ISOBUS upgrade kit supports this function.

Power Management

▶ Switch "Power Management" "on".

→ The terminal is shut down with a delay when you pull out the ignition switch.

6.3 Adding an implement

NOTE

An ISOBUS implement with TC client automatically inserts itself into the implement list.

The implement also automatically makes implement settings available. Do not add these implements manually.

If an ISOBUS implement with a TC client does not automatically enter itself in the list, there is an error.

▶ Refer to chapter ⇒ Chapter 11.1, to see how this error can be rectified.

Add a new implement to the implement list,

- if you want to use the implement for documentation of tasks, for *Section Control* or *Rate Control*
- if the implement

o is not an ISOBUS implement
o is an ISOBUS implement without a TC client.

Add an implement:

1. Press the "Implement" button in the "CCI.Config" operating screen.
   → The "Rear implement" operating screen is displayed.

2. Press the "+ new Implement" button.

3. Enter the implement name.

4. Confirm your entry.
   → The list of implements is displayed. The new implement is selected.

5. Return to the "CCI.Config" operating screen.

TC client* and *UT client

The implement list in CCI.Config must not be confused with the implement list stored in the "Saved implements" operating screen.

- "Saved implements" manages the implements that can be operated with the terminal.
- CCI.Config manages the implements that are to be used for documentation, Section Control or Rate Control.

You can operate an ISOBUS implement with the app CCI.UT A or CCI.UT B. Both apps log into the ISOBUS as a Universal Terminal (*UT*). The ISOBUS- implement has a UT client which connects to the UT on the terminal.

You carry out the documentation of tasks, Section Control and Rate Control with the apps CCI.Control and CCI.Command. These apps log on to the ISOBUS as a Task Controller (*TC*). The ISOBUS implement has a TC client which connects to the TC on the terminal.

Implement operation and documentation/Section Control/Rate Control can be performed on separate ISOBUS terminals:

- "Universal Terminal" is on and "Task Controller" off on the terminal for implement operation.

   → The UT client of the implement connects to this terminal.
- On the second terminal, "Universal Terminal" is off and "Task Controller" on.

   → The TC client of the implement connects to this terminal.

6.4   Setting up an implement

You have to make all settings for manually created implements.

An ISOBUS implement with *TC client* automatically enters itself in the implement list and also carries out the implement settings.

→ Settings made automatically by the implement cannot be changed.

▶ Check the settings made by the implement for completeness.

▶ Add any missing settings.

Configure the implement:
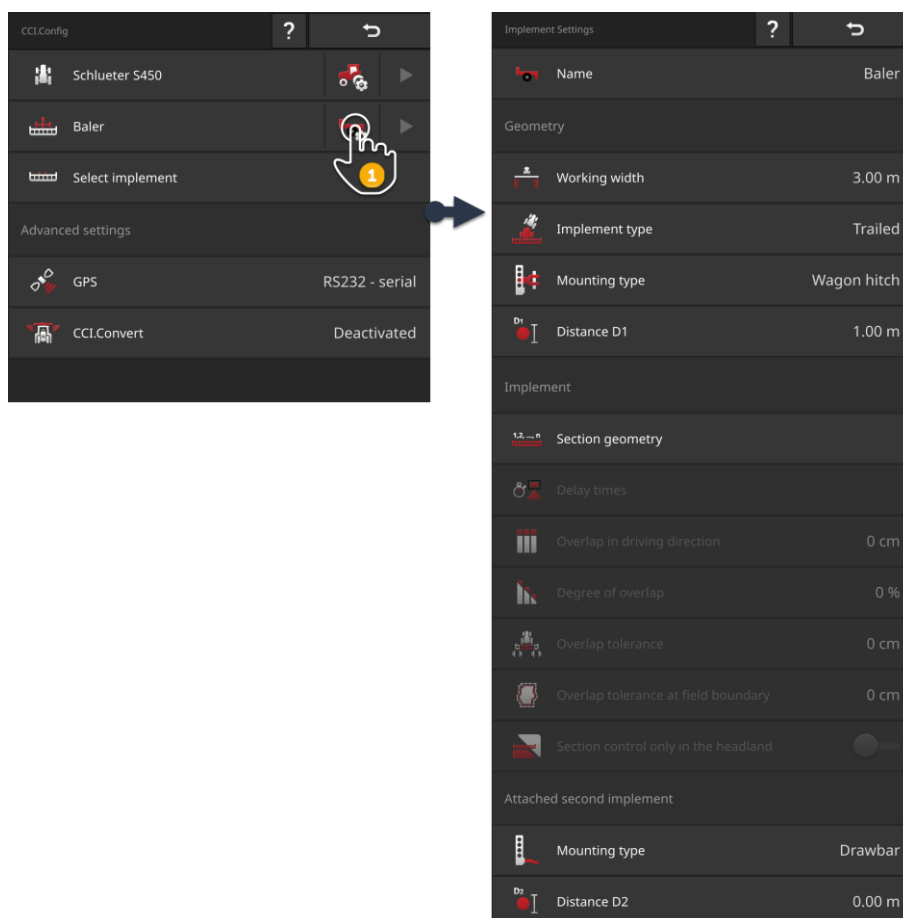
1. Press on the "Implement settings" button.
   → The implement settings are displayed.

2. Follow the instructions in ⇒ Chapter 6.4.1, ⇒ Chapter 6.4.2 and ⇒ Chapter 6.4.3.

Checks

Then check the settings:
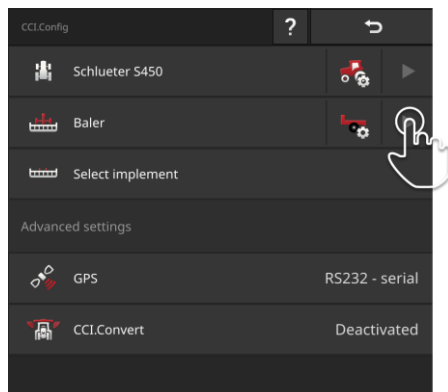
▶ In the "CCI.Config" operating screen, press the arrow button in the implement button.
→ The "Implement" information area is displayed.
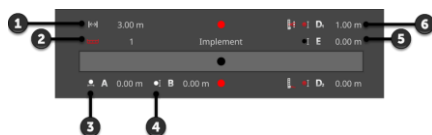
1: Working width

2: Number of sections

3: Distance A

4: Distance B

5: Distance E,
implement reference point - midpoint of the sections

6: Distance D1,
coupling point - implement reference point

6.4.1 Working width and implement type

Working width

1. Press the "Working width" button.
   → An input dialogue is displayed.

2. Enter the working width.

3. End the Process with "Back".

Implement type

1. Press the "Implement type" button
   → The "Implement type" selection list is displayed.

2. Select the implement type.

3. End the Process with "Back".

Implement type

- With trailed implements (2) and self-propelled implements (3), the position of the sections for curved tracks is calculated.
- With attached implements (1), the position of the sections is fixed.
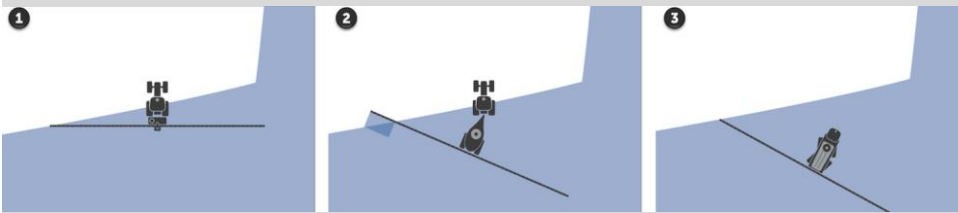
6.4.2   Mounting type and reference point

Mounting type

1. Press the "Mounting type" button.
   → The "Mounting type" selection list is displayed.
2. Select the mounting type.
3. End the Process with "Back".

Mounting type

In the tractor settings you have entered a distance C for each available tractor mounting type. Simply select the implement mounting type in the implement settings.
→ Repeat entry of distance C is not necessary.
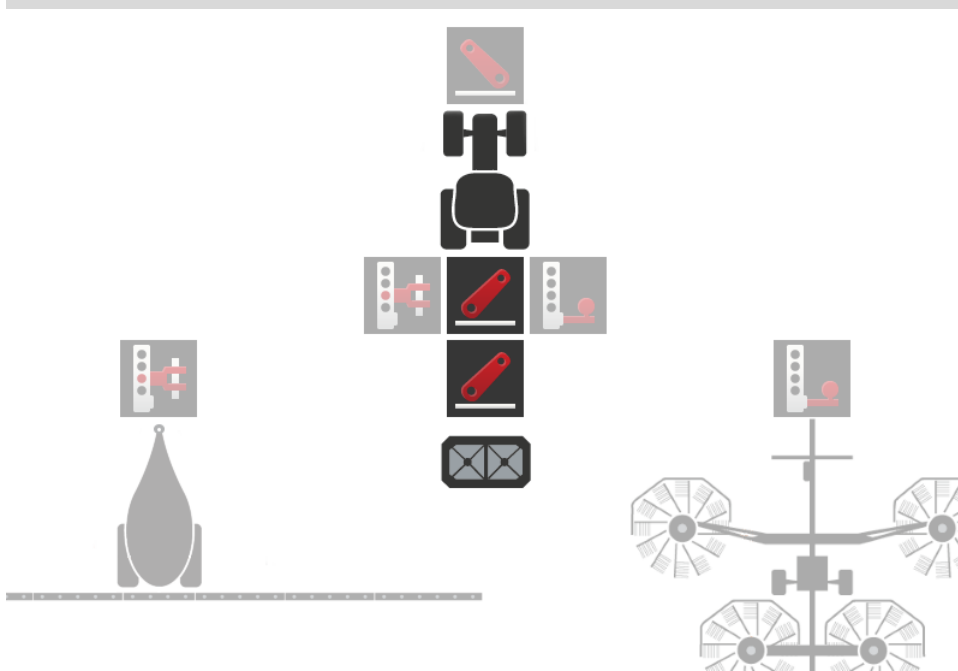
Distance D1

1. Press the button "Distance D1".
   → An input dialogue is displayed.
2. Enter the distance D1.
3. End the Process with "Back".

Distance D1

The distance between the *coupling point* and the implement reference point:
- With trailed implements, the reference point is on the midpoint of the first axle.
- With attached implements, the implement manufacturer specifies the position of the reference point.
- For manually created implements (e.g. tillage equipment), measure distance D1 between the coupling point and the last component (e.g. the roller).
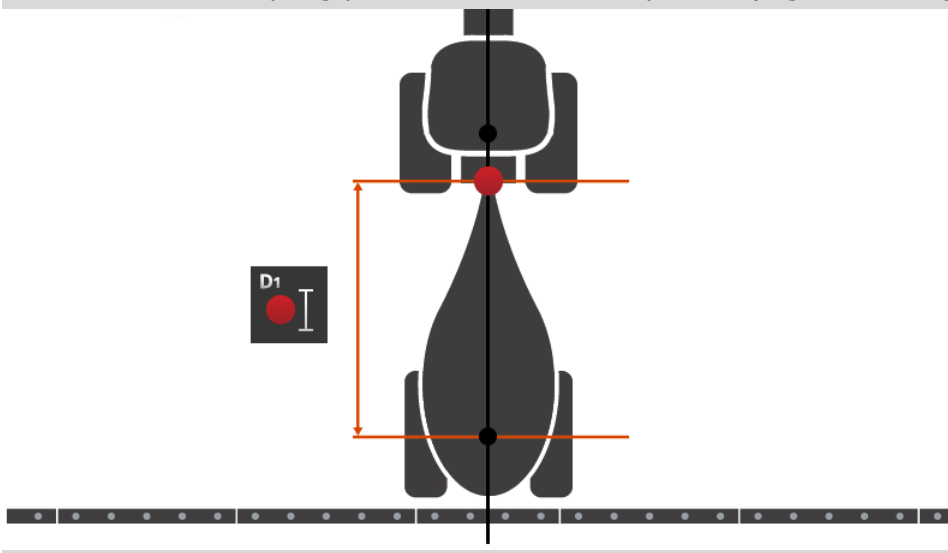
6.4.3 Section widths: Geometry and delay times

Section geometry

The following are displayed in the "Section geometry" information area:

- The values (1)-(4), (6), (8), (9) set in the implement
- The delay times corrected on the terminal (5), (7)

This information is only of interest for servicing.

1. Press the "Section geometry" button.
   → The following are displayed in the "Section geometry" information area.

	1	2	3	4
(1)	1	2	3	4
(2)	2.99	3.95	3.95	2.99
(3)	0.40	0.40	0.40	0.40
(4)	1000	1000	1000	1000
(5)	856	856	856	856
(6)	100	100	100	100
(7)	-	-	-	-
(8)	3.42	-0.83	-0.83	3.42
(9)	-5.25	-1.98	1.98	5.25

1: Number of sections
   → The numbering goes from left to right in the direction of travel.

2: Working width of the section

3: Working depth of the section

4: Turn on delay

5: Corrected turn on delay

6: Turn off delay

7: Corrected turn off delay

8: Distance E
   → The distance between the implement reference point and the midpoint of the section.
   → The distance is measured in the direction of travel.

9: Distance F
   → The distance between the implement reference point and the midpoint of the section.
   → The distance is measured perpendicular to the direction of travel.

6.4.4 Set or correct delay times

You can

- Set up the delay times
- Correct the delay times set in the implement.

Delay times and correction values

The turn on delay specifies the time delay between the command and the application. During spraying, it is the time from the command "Turn on section" until the agent is applied.

The turn off delay specifies the time delay between the command and the actual switching off of a section.

The delay times are already set in the factory for many ISOBUS implements or can be taken from the technical data of the implement.

If this data is missing, you must determine the value by taking your own measurements.

You correct the implement factory settings using the correction values for the switch-on delay time and the switch-off delay time, e.g. if these are unusable.
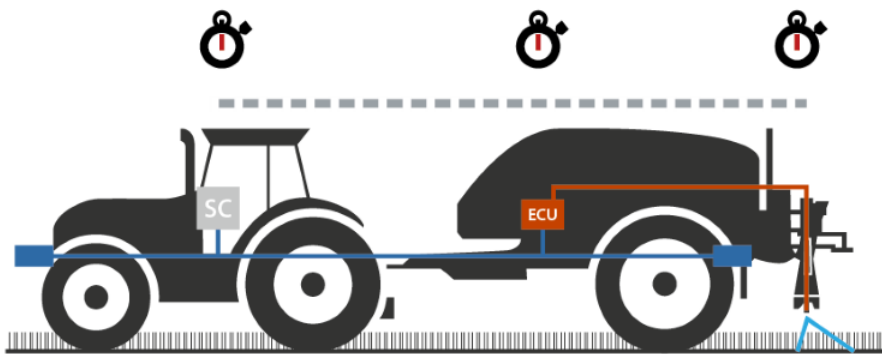
Setting delay times

For some ISOBUS implements the delay times are not set in the factory.

→ In the "Section geometry" information area (⇒ Chapter 6.4.3), the delay times have the value "0" or "-".

You can enter the delay times or allow the terminal to calculate them:
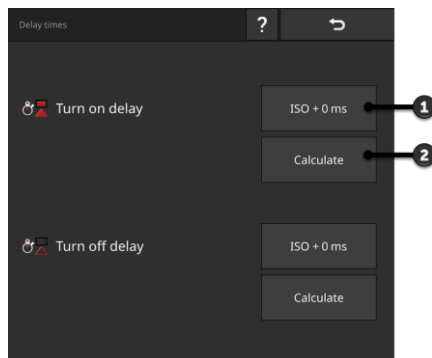
The operating screen "Delay Times":

1: **Enter delay time**

2: Allow the delay time to be calculated

3: Explanatory text:
    → Overlapping in the driving direction is set.

NOTE

Overlapping in the driving direction affects the switching points.

If an overlap is set in the driving direction (⇒ Chapter 6.4.5), you are made aware of this by an explanatory text.

▶ When setting the delay times, consider the effect of the overlap in the driving direction on the switching points.

We recommend:

▶ First check the set delay times, then the overlap in the driving direction.

1. Take the delay times from the implement technical data.

2. Press the button "Delay times" .
   → The "Delay times" operating screen is displayed.

3. Press the "ISO + 0 ms" button on the right next to the "Turn on delay".
   → An input dialogue is displayed.

4. Enter the turn on delay and confirm your entry.
   ! Only positive values can be entered.

5. Repeat steps 2 and 3 for turn off delay.

Allow the delay time to be calculated
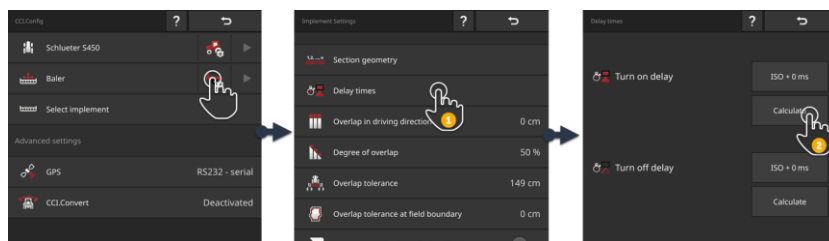
1. Press the button "Delay times" .
   → The "Delay times" operating screen is displayed.

2. Press the "Calculate" button on the right next to the "Turn on delay".
   → The operating screen "Step 1 of 3" is displayed.

3. Follow the instructions and end the process in the operation screen "Step 3 of 3" with "Completed".

4. Repeat steps 2 and 3 for turn off delay.

Correcting delay times

In some ISOBUS implements, the delay times are set, but the set values cannot be used. In this case, you must determine the correct values yourself by carrying out your own measurements. Then correct the delay times in the terminal.

Select the switch-on or switch-off delay time, dependent on whether you want to improve switching on or switching off.

→ The correction value is added to or subtracted from the value set in the implement.

→ The correction value is applied to all sections.
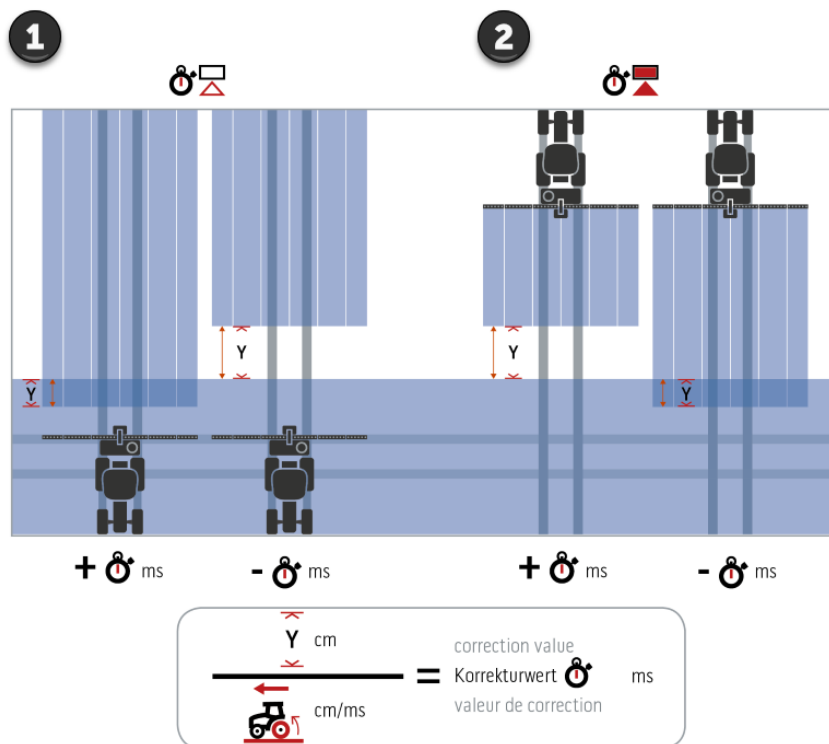
1. Turn off.
2. Turn on.

NOTE

Section Control uses the corrected delay times.

The corrected delay time

- is saved in the terminal, not in the implement
- is automatically set, if you start working again with the implement after an interruption
- is available again after restarting of the terminal.

You can enter the correction values or allow the terminal to calculate them:
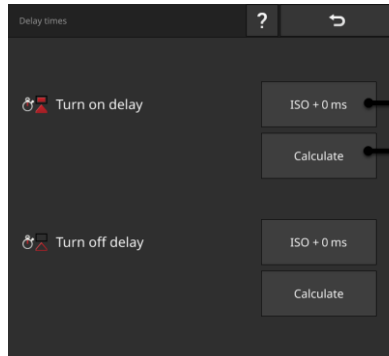
The operating screen "Delay Times":

1: Enter the correction value

2: Allow the correction value to be calculated

3: Explanatory text:
→ Overlapping in the driving direction is set.

Enter the correction value

NOTE

Overlapping in the driving direction affects the switching points.

If an overlap is set in the driving direction (⇒ Chapter 6.4.5), you are made aware of this by an explanatory text.

▶ When setting the correction values, consider the effect of the overlap in the driving direction on the switching points.

We recommend:

▶ First check the set correction values, then the overlap in the driving direction.

1. Press the button "Delay times" .
   → The "Delay times" operating screen is displayed.

2. Press the "ISO + 0 ms" button on the right next to the "Turn on delay".
   → An input dialogue is displayed.

3. Enter the correction value of the turn on delay and confirm your entry.
   → A positive value is added to the value set in the implement.
   → A negative value is subtracted from the value set in the implement.

4. Repeat steps 2 and 3 for the correction value of the turn off delay.

⊞	1	2	3	4
↔	2.99	3.95	3.95	2.99
⊥	0.40	0.40	0.40	0.40
▣	1000	1000	1000	1000
🔧	856	856	856	856
▣	100	100	100	100
🔧	-	-	-	-
●	3.42	-0.83	-0.83	3.42
⬌	-5.25	-1.98	1.98	5.25

Example

1: Turn on delay time set in the imple-ment: 1000 ms

2: Correction value -144 ms set by you.
   → Corrected turn on delay: 1000 ms - 144 ms = 856 ms

3: Turn off delay time set in the implement 100 ms.

4: No correction value.
   → Corrected turn off delay: 100 ms
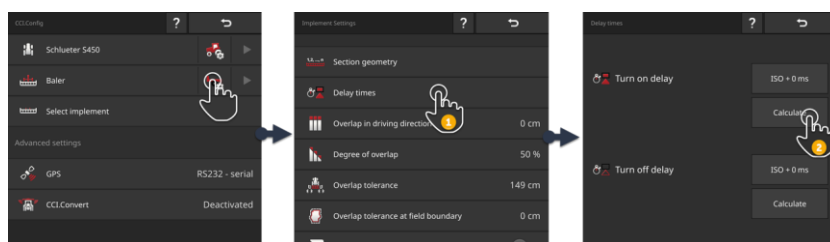
Allow the correction value to be calculated

1. Press the button "Delay times" .
   → The "Delay times" operating screen is displayed.

2. Press the "Calculate" button on the right next to the "Turn on delay".
   → The operating screen "Step 1 of 3" is displayed.

3. Follow the instructions and end the process in the operation screen "Step 3 of 3" with "Completed".

4. Repeat steps 2 and 3 for the correction value of the turn off delay.

6.4.5 Overlapping

What is your priority:

- Complete working or
- The avoidance of double treatments?

You can achieve the result you want using the overlap settings.

NOTE

An overlap in driving direction of >0 cm or <0 cm influences the switching points.

▶ First check the set delay times, then the overlap in the driving direction.

▶ When setting the delay times, consider the effect of the overlap on the switching points.

Overlap in driving direction
The valid value range for the overlap in the driving direction is between -2000 cm and +2000 cm.

1. Press the "Overlap in driving direction" button.
   → An input dialogue is displayed.
2. Enter the overlap.
3. End the Process with "Back".

Overlap in driving direction
Do you also want to avoid even the smallest possible processing gaps on the headland, e.g. during sowing or crop protection?

▶ Use "Overlap in driving direction".

200 cm   0 cm   -200 cm
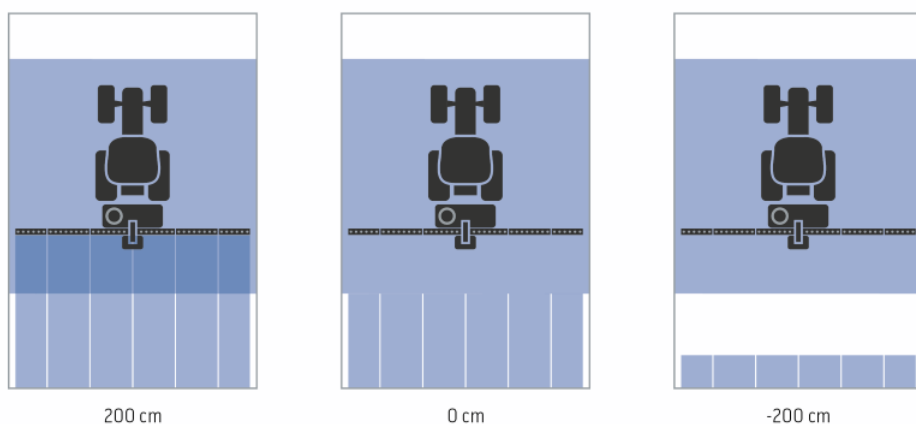
Degree of overlap

Valid values for the degree of overlap are 0, 50 or 100 %.

1. Press the "Degree of overlap" button.
   → An input dialogue is displayed.
2. Enter the degree of overlap.
3. End the Process with "Back".

Degree of overlap

Specify when a section is switched off if it overlaps an already worked area.

Assign the priority to

- Complete working or
- The avoidance of double treatments.
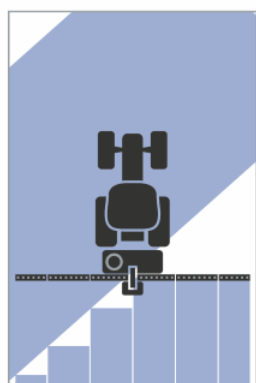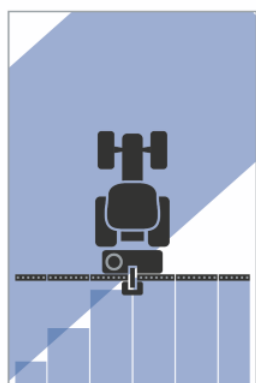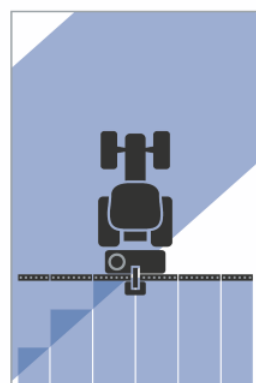
0%   50%   100%

0 %

→ The section is switched off before overlapping occurs. (left image)
→ Missed areas may occur.
→ Double treatments are avoided.

50 %

→ The section is switched off, if half of this section is located in an already worked area (middle graphic).

100 %

→ The section is only switched off, if it is completely located in an already worked area (right graphic).
→ Complete working is achieved.

Double treatments may occur.

Overlap tolerance

Specify how outer right and left sections react to overlaps.

Values between 0 cm and half of the outer section are valid for the overlap tolerance.

1. Press the "Overlap tolerance" button.
   → An input dialogue is displayed.
2. Enter the overlap tolerance.
3. End the Process with "Back".

Overlap tolerance with 0 % degree of overlap

With parallel tracks in the field (e.g. with tramlines) it can occur, that the outer left and right sections are sometimes temporarily displayed over an already worked area, although actually no double treatment is occurring.
→ In general the cause is GPS drift.

With 0 % degree of overlap, the outer section is switched off in this case.
→ A "fluttering" (continuous switching on and off) can occur.
→ Thus fluttering is prevented by setting the overlap tolerance.
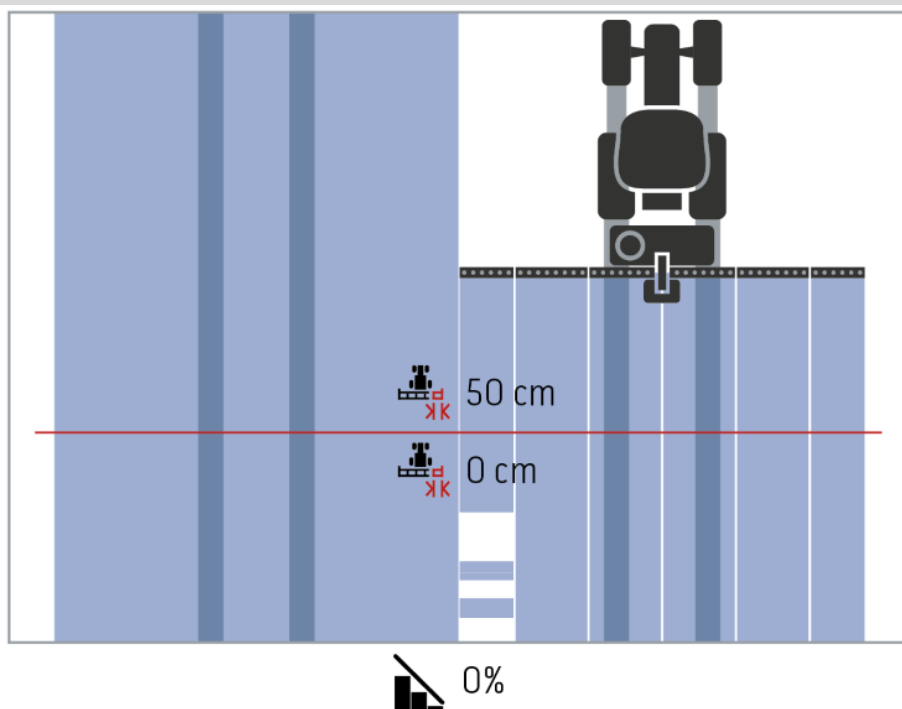
Overlap tolerance with 100 % degree of overlap

In runs over already worked areas (e.g. the headland) the outer sections may sometimes switch on in an undesired way.

→ Causes for this are GPS drift or a track that has not been precisely follo-wed.

The overlap tolerance can prevent the unwanted switching on of the sections.
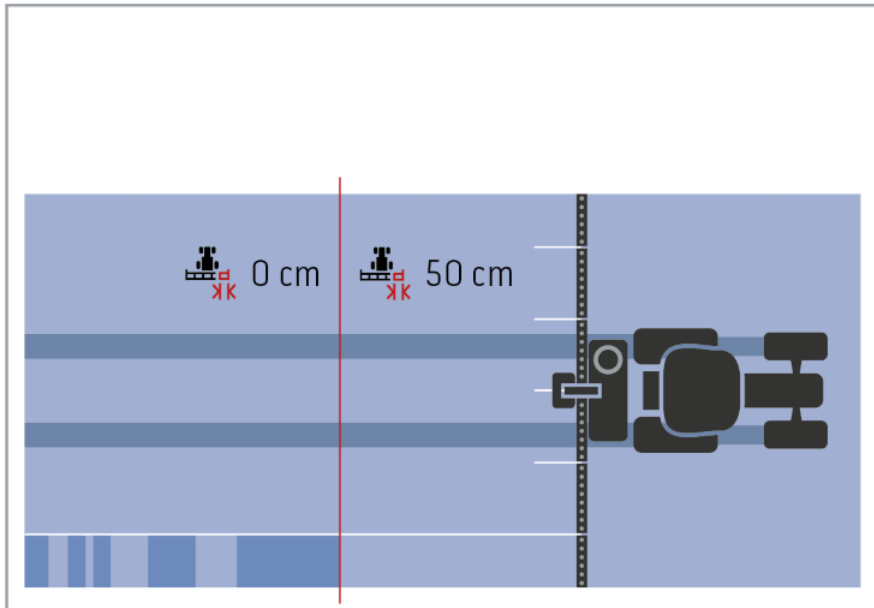
Overlap tolerance at field boundary

Values between 0 cm and half of the outer section are valid for the overlap tolerance.

1. Press the "Overlap tolerance at field boundary" button.
   → An input dialogue is displayed.
2. Enter the overlap tolerance.
3. End the Process with "Back".

CAUTION!

GPS drift can cause switching on and off of the outer section at the field boundaries.

With a field border overlap tolerance of >0 cm
- You minimise this switching on and off
- However you may also be working beyond the field boundary.

We recommend the 0 cm setting.

If you set another value, you must check whether working beyond the field boundary is acceptable.

Section Control only in the headland on/off

▶ Switch on the button "Section control only in the headland".

→ Sections are only automatically switched in the headland.

Section control only in the headland

When using seed drills and planters with very small sections (e.g. less than a meter) then with parallel tracks the result may be undesired switching off of the outer sections.

→ In general the cause is GPS drift.

Undesired switching off cannot always be avoided by adapting the overlap tolerance. In this case the option "Section control only in the headland", helps to avoid missed areas.

→ The automatic switching on and off of the sections takes place in the marked headland (orange), not on the worked area (blue).
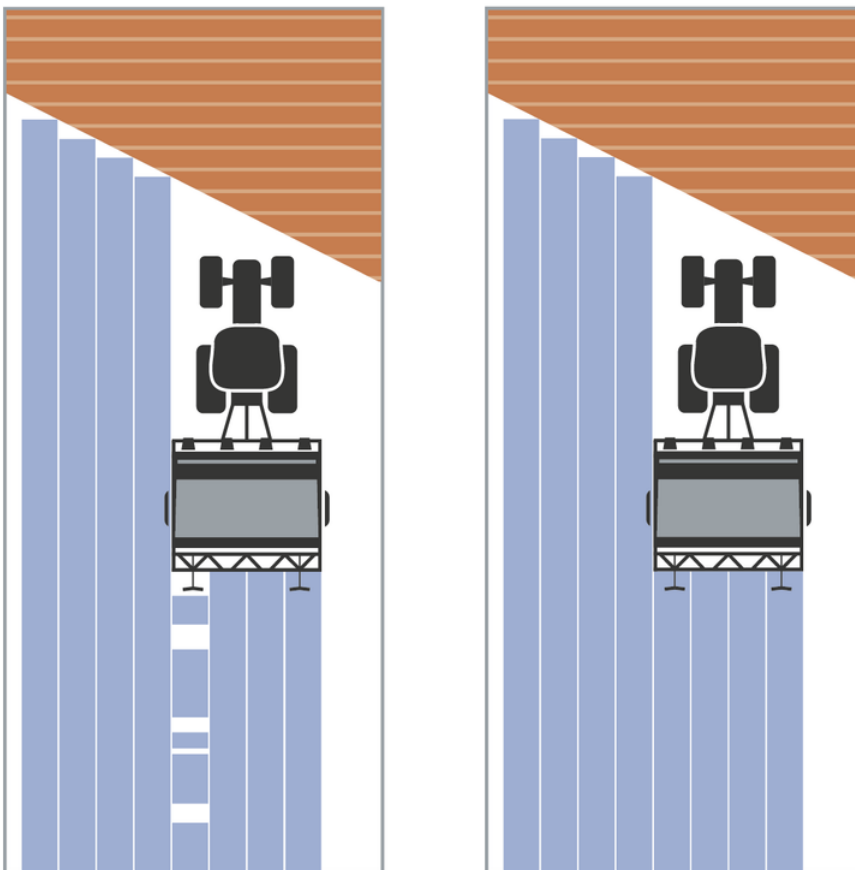
6.5 GPS settings

The terminal can read in position data from a GPS receiver.

NOTE

The position data must fulfil the standard NMEA 0183 or NMEA 2000.

If the GPS receiver uses another protocol, the terminal cannot read in the position data. Section Control and all other location-related functions cannot be used.

▶ Ensure that the GPS receiver corresponds to the standards *NMEA 0183* or *NMEA 2000*.

You must set the position and interface of the GPS receiver:
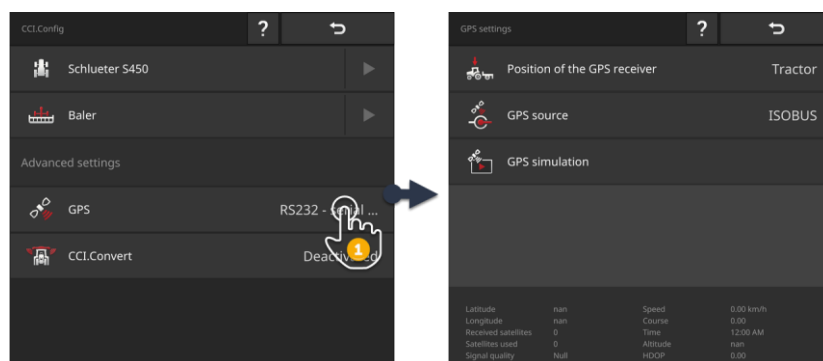
1. Press the "GPS" button in the "CCI.Config" operating screen.
   → The "GPS settings" operating screen is displayed.

2. Follow the instructions in ⇒ Chapter 6.5.1, ⇒ Chapter 6.5.2 and ⇒ Chapter 6.5.3.
3. Then check the GPS settings in the information area.
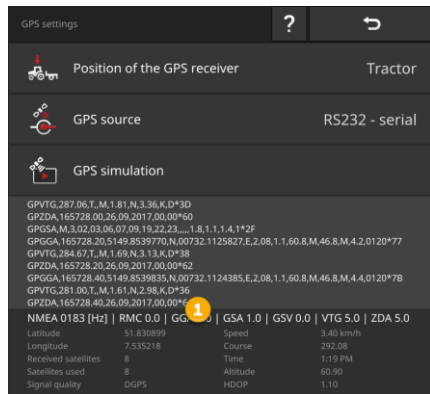
The data in the information area (1) is displayed, if

- A GPS receiver is connected and sending data
- GPS source, interface and baud rate have been correctly selected.

NOTE

CCI.Command and CCI.Control have different requirements in respect of the accuracy of the position data of the GPS receiver.

For documentation with CCI.Control, simple data records are sufficient, as are also provided by inexpensive receivers.

The minimum requirement for the data record is:

- GGA at a frequency of 5 Hz

For track guidance and Section Control with CCI.Command, receivers with accuracies of 20 cm or better are required.

The minimum requirement for the data record is:

- GGA, RMC, VTG at a frequency of 5 Hz
- GSA at a frequency of 1 Hz

6.5.1 Position of the GPS aerial

Position of the GPS aerial

You specify whether the GPS aerial is attached on the tractor or the implement.

1. Press the button "Position of the GPS receiver".
   → The "Position of the GPS aerial" selection list is displayed.
2. Select the position of the GPS aerial.
3. End the Process with "Back".
   → The "GPS settings" operating screen is displayed.

Position of the GPS aerial

There are two options for attachment of a GPS aerial:

1. On the tractor.
   → Enter the distances A and B in the tractor settings.
2. On the implement.
   → Select "Front implement", "Rear implement" or "Last implement".
   → Only attach the GPS aerial to the implement if the implement sends distances A and B to the terminal.
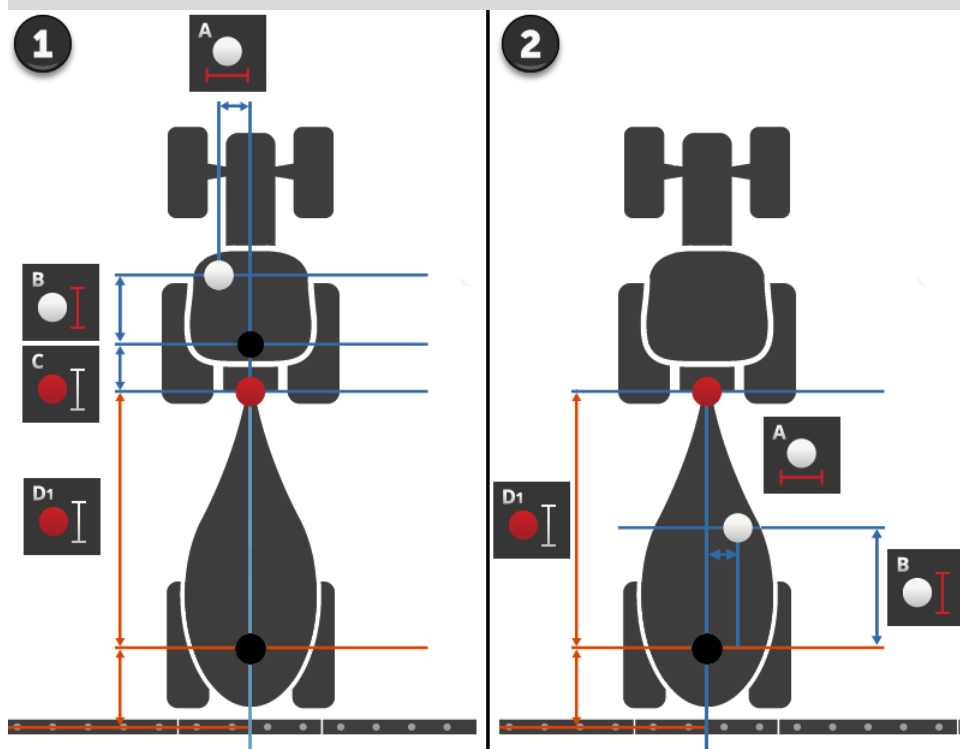
We recommend attaching the GPS receiver on the tractor.

6.5.2 GPS source

GPS source

1. Press the button "GPS source".

   → The "GPS source" selection list is displayed.

2. Select the GPS source.

3. If you have selected "RS232 - serial", then define the serial interface and baud rate now.

4. End the Process with "Back".

   → The "GPS settings" operating screen is displayed.

GPS source

Dependent on the model, a GPS receiver sends position data

- Using the NMEA 0183 protocol via the serial interface,
- Using the NMEA 2000 protocol via the ISOBUS or
- Using the J1939 protocol via the ISOBUS.

The terminal supports both protocols.

Connect GPS receiver and terminal as follows:

1. The GPS receiver has a serial interface.

   → Connect the GPS receiver to connector B or C of the terminal.
   → Select "RS232 - serial" as the GPS source.
   → Select the connector as the serial interface to which the GPS receiver is connected.

2. The automatic steering system has a serial interface for the GPS signal.

   → Connect the serial interface of the steering system to connector B or C of the terminal.
   → Select "RS232 - serial" as the GPS source.
   → Select the connector to which the steering system is connected, as the serial interface.

3. The GPS receiver has an ISOBUS interface.

   → Connect the GPS receiver to the ISOBUS.
   → Select "ISOBUS" as the GPS source.
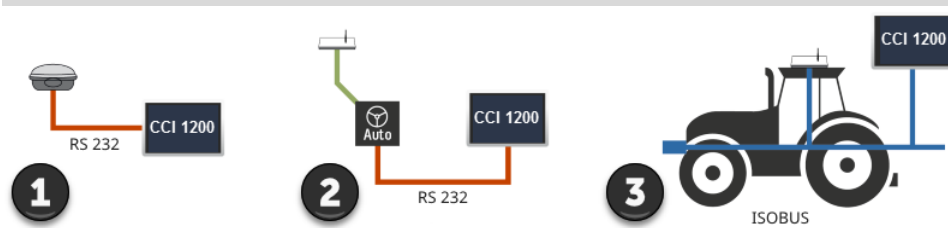
If you have selected "RS232 - serial" as the GPS source, you must configure the serial interface:

Serial interface

Configure the connector to which you have connected the GPS receiver or the serial output of the steering system.

1. Press the button "Serial interface".
   → The "Serial interface" selection list is displayed.
2. Select the connector.
3. End the Process with "Back".
   → The "GPS source" operating screen is displayed.

Baud rate

The baud rate of the terminal and the GPS receiver must match.

1. Press the "Baud rate" button.
   → The "Baud rate" selection list is displayed.
2. Select the baud rate.
3. End the Process with "Back".
   → The "GPS source" operating screen is displayed.

NOTE

The baud rate of the terminal and the GPS receiver must match.

Otherwise, the terminal cannot evaluate the position data of the GPS receiver.

▶ If you do not know the baud rate of the GPS receiver, select the "Auto" setting.
   → The terminal automatically determines the baud rate of the GPS receiver.
   → This may take a while.

6.5.3 Adjusting the GPS receiver

Optimally configure the GPS receiver with a single click.

→ This function is only available for the GPS receivers Hemisphere A100/101 and Novatel AgStar with serial interfaces.
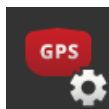
1. Press the button "Adjust GPS receiver".
   → The "Adjust GPS receiver" operating screen is displayed.

2. Press the button "GPS receiver".
   → The "GPS receiver" selection list is displayed.

3. Select the GPS receiver.

4. Press "Back" to return to the "Adjust GPS receiver" operating screen.

5. Press the button "Recommended settings".
   → The GPS receiver settings are changed according to our recommendations.

6. End the Process with "Back".
   → The "GPS source" operating screen is displayed.

NOTE

You can configure other details of the GPS receiver in the "Adjust GPS receiver" operating screen.

If the configuration is made incorrectly, GPS receiving is interrupted or suspended.

▶ Read the GPS receiver manual carefully.

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6.6 CCI.Convert

When working with an N-sensor and an ISOBUS implement, the application quantity should be automatically matched to the circumstances on the field. The N-sensor controls the application quantity of the ISOBUS implement. The setpoints of the N-sensor replace the setpoints of the application map.
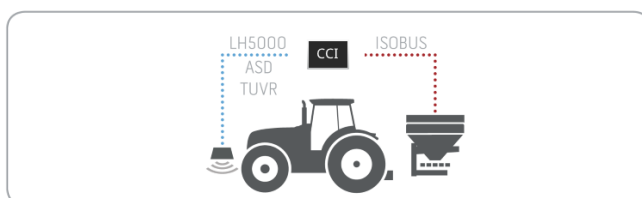
The sensor signal must be converted to a setpoint for the ISOBUS implement.

→ CCI.Convert converts the manufacturer-specific signals from N-sensors to implement-readable ISOBUS messages.

The following formats are supported:

- LH5000,
- ASD,
- ASD Section Control and
- TUVR.
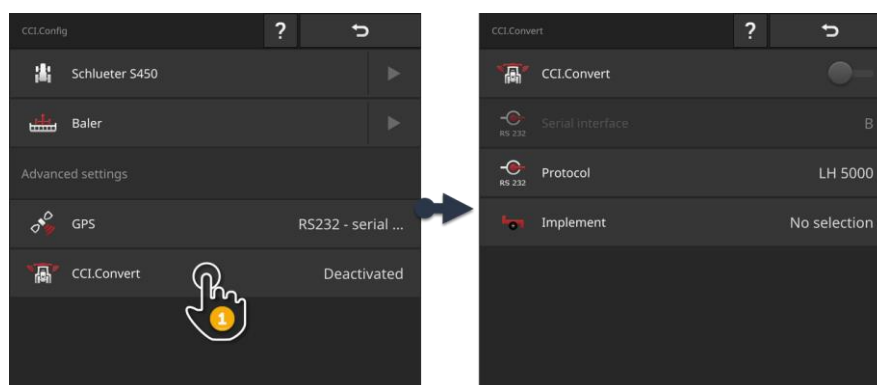
1. Press the "CCI.Convert" button in the "CCI.Config" operating screen.
   → The "CCI.Convert" operating screen is displayed.

2. Set up the protocol, interface and implement as described below.

▶ Determine which protocol the sensor uses for data transmission.

**Prior prepa-
ration**

▶ Connect the sensor and implement to the ISOBUS.

▶ Select the implement in Implement settings (⇒ Chapter 6.8.5).

You have the following setting options:

CCI.Convert on/off

Switch CCI.Convert on or off.

▶ Press the "CCI.Convert" button.

→ The switch changes the position.

Serial interface

The terminal has one serial interface at each of the connectors B and C.
CCI.Convert specifies the connector to which the sensor must be connected.
Changing is not possible.

→ The connector is indicated.
→ Connect the sensor to this connector. Use Cable B for connector B or
  Cable C1 or C2 for connector C.

Select protocol

Select the protocol to which the sensor sends a value.

1. Press the "Protocol" button.

   → The "Protocol" selection list is displayed.

2. Select the protocol.

3. End the Process with "Back".

   → The "CCI.Convert" operating screen is displayed.
   → The selected protocol is indicated on the "Protocol" button.

Selecting an implement

Select the implement to which the sensor setpoints are to be sent.

1. Press the "Implement" button.

   → The list of implements is displayed.

2. Select an implement or the option "Automatically select the implement".

3. End the Process with "Back".

   → The "CCI.Convert" operating screen is displayed.
   → The selected protocol is indicated on the "Implement" button.

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NOTE

When selecting the implement we recommend the setting "Automatically select the implement".

This is the default setting.

CCI.Convert automatically searches for the implement to which the sensor setpoints are to be sent.

▶ Correct the setting, if automatic mode selects the incorrect implement.

6.7 Tacho

Set up a tacho in CCI.Config. You can obtain a quick overview of the settings of tractor and implement with tacho:
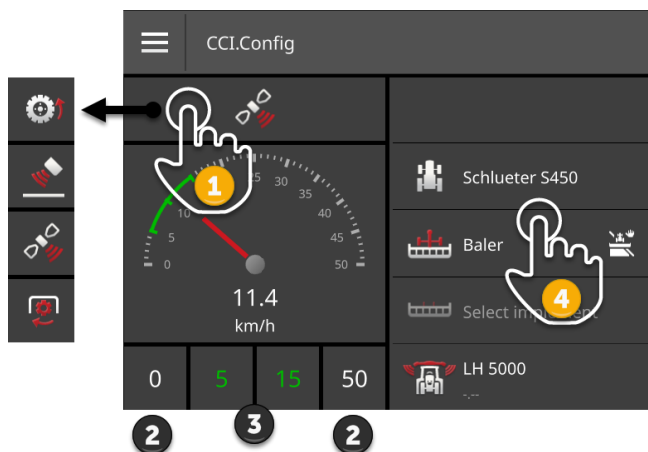
Displayed to the right alongside the tacho display

- The selected tractor,
- The selected implement,
- The CCI.Convert settings.

NOTE

Tractor and implement must be chosen correctly.

Otherwise the terminal works with incorrect settings.

▶ Check whether the tractor and implement are correctly selected.

The following can be displayed in the speedometer:

- the wheel speed,
- the ground speed,
- the GPS Speed or
- the PTO speed.

Select the indicated value (1) and set the display range (2) and the optimum working range (3).

In the tacho, you have direct access (4) to

- the implement settings,
- the tractor settings and
- CCI.Convert.

You have the following operating options:
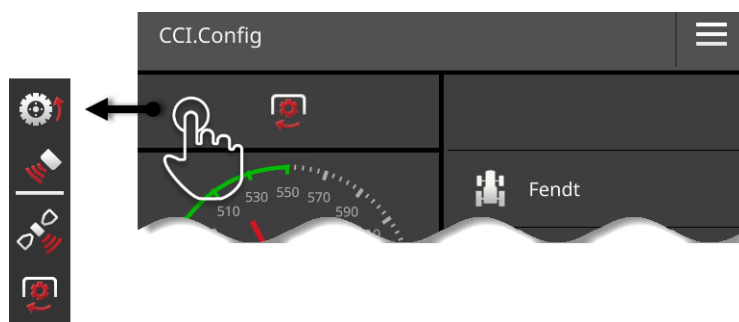
Selecting the displayed value

You select which value is to be displayed in the tacho:

- the wheel speed,
- the ground speed,
- the GPS Speed or
- the PTO speed.

1. Press the button above the tacho.

    → A selection list is displayed.

2. Select the value.

    → The selected value is displayed on the tacho.

3. Set the display range and the optimum working range for the selected value.
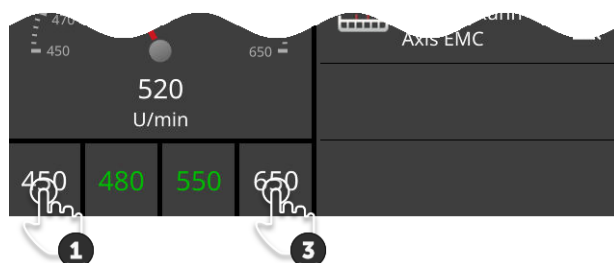
Setting the display range

Set the tacho minimum and maximum.

1. Four values are displayed below the tacho. Press the left outer button.

    → An input dialogue is displayed.

2. Enter the smallest value, that is still to be displayed and confirm your entry.

3. Press the right outer button.

    → An input dialogue is displayed.

4. Enter the largest value, that is still to be displayed and confirm your entry.

    → The tacho display range is set.
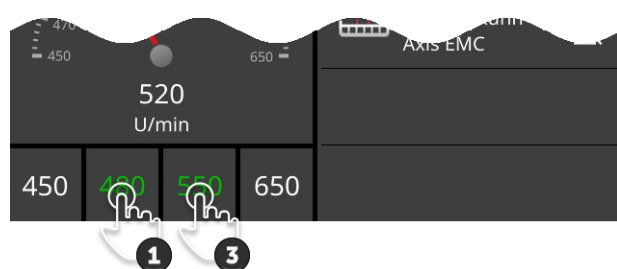
Set the optimum working range

The optimum working range is displayed on the tacho in green. You can see at a glance whether a speed correction or PTO rpm correction is necessary.

1. Four values are displayed below the tacho. Press the second button from the left.

   → An input dialogue is displayed.

2. Enter the lower limit of the optimum working range and confirm your entry.

3. Press the second button from the right.

   → An input dialogue is displayed.

4. Enter the upper limit of the optimum working range and confirm your entry.

   → The optimum working range is displayed on the tacho in green.

Tractor, implement and CCI.Convert settings

▶ Press in the area to the right of the tacho.

   → The "CCI.Config" operating screen is displayed.

NOTE

The display range and optimum working range are saved separately for each speed and the PTO speed.

The settings are available again after a restart.

6.8 Operation

You have added and adjusted the tractors on which the terminal will be used, and the implements ($\Rightarrow$ Chapter 6.1 to $\Rightarrow$ Chapter 6.7).

You have the following operating options:

- Tractor selecting, deleting, editing and exporting
- Implement selecting, deleting, editing and exporting
- Using GPS simulation

6.8.1 Select tractor

The list in the "Tractor" operating screen contains the tractors you have added.

Select the tractor on which the terminal is to be used:

1. Press the "Settings" button.
   → The "Settings" operating screen is displayed:

2. Press the "Apps" button.
   → The "Apps" operating screen is displayed:
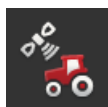
3. Press the "CCI.Config" button.
   → The "CCI.Config" operating screen is displayed.

4. Press the "Tractor" button.
   → The list of tractors is displayed.

5. Select the Tractor.

6. Press "Back" to return to the "CCI.Config" operating screen.
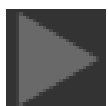
7. In the "Tractor" button, press the arrow.
   → The information area pops up.

8. Check the settings.

9. Press the "Settings" button.
   → The "Settings" operating screen is closed.

6.8.2 Delete tractor

Delete a tractor as follows:
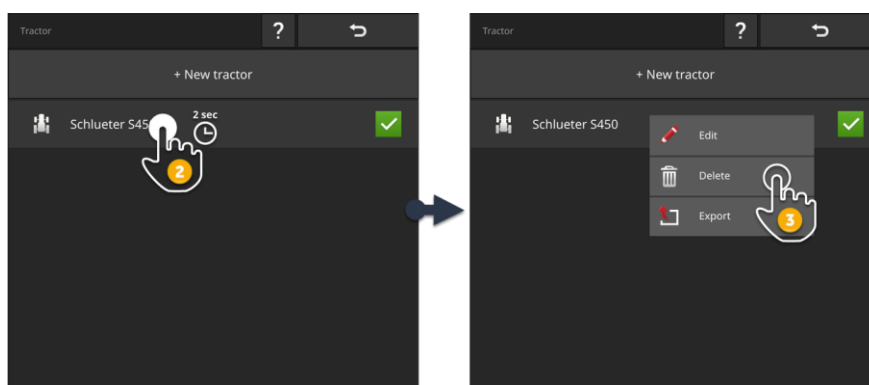
1. Press the "Tractor" button in the "CCI.Config" operating screen.
   → The list of tractors is displayed.

2. Press the button with the tractor and keep the button pressed.
   → A context menu is displayed.

3. Select "Delete".
   → A message window is displayed.

4. Confirm the message.
   → The tractor is deleted.
   → The "Tractor" operating screen is displayed.

6.8.3   Edit tractor

You can change the tractor name.

1. Press the "Tractor" button in the "CCI.Config" operating screen.
   → The list of tractors is displayed.

2. Press the button with the tractor and keep the button pressed.
   → A context menu is displayed.

3. Select "Edit".
   → The "Tractor name" input dialogue is displayed.

4. Enter the tractor name.

5. Confirm your entry.
   → The "CCI.Config" operating screen is displayed.
   → The tractor is selected.

6.8.4   Export tractor

Prior prepa-ration

▶ Connect a flash drive to the terminal.

1. Press the "Tractor" button in the "CCI.Config" operating screen.
   → The list of tractors is displayed.

2. Press the button with the tractor and keep the button pressed.
   → A context menu is displayed.

3. Select "Export tractor".
   → The tractor is saved on the flash drive.

NOTE

Exporting a tractor to the flash drive is only relevant in service cases.

6.8.5 Select implement

The list in the "Implement" operating screen contains the

- Implements created by you and
- All ISOBUS implements with *TC client* that have already been connected to the terminal at least once.

Select the implement, that is to be used for Section Control or Rate Control:

1. Press the "Settings" button.
   → The "Settings" operating screen is displayed:

2. Press the "Apps" button.
   → The "Apps" operating screen is displayed:

3. Press the "CCI.Config" button.
   → The "CCI.Config" operating screen is displayed:

4. Press the "Implement" button.
   → The list of implements is displayed.

5. Select the implement.

6. Press "Back" to return to the "CCI.Config" operating screen.
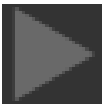
7. In the "Implement" button, press the arrow.
   → The information area pops up.

8. Check the settings.

9. Press the "Settings" button.
   → The "Settings" operating screen is closed.

NOTE

Select the just hitched up or attached implement.

If no implement or an incorrect implement is selected, Section Control and Rate Control do not work.

▶ Carry out this procedure each time, if you want to attach or suspend a new implement on the tractor.

6.8.6 Delete implement

Delete an implement as follows:
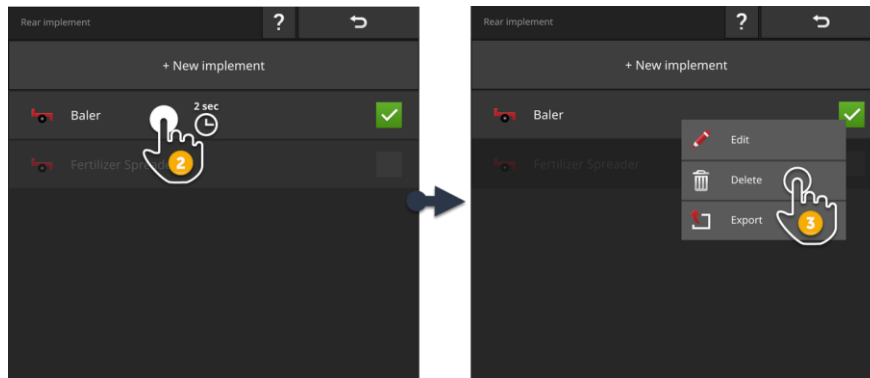
1. Press the "Implement" button in the "CCI.Config" operating screen.
   → The list of implements is displayed.

2. Press the button with the implement and keep the button pressed.
   → A context menu is displayed

3. Select "Delete".
   → A message window is displayed.

4. Confirm the message.
   → The implement is deleted.
   → The list of implements is displayed.

NOTE

Not all implements can be deleted.

You cannot delete ISOBUS implements that have been automatically added to the implement list.
You can delete implements that you have added (⇒ Chapter 6.3).

6.8.7 Edit implement

You can change the implement name.

1. Press the "Implement" button in the "CCI.Config" operating screen.
   → The list of implements is displayed.

2. Press the button with the implement and keep the button pressed.
   → A context menu is displayed.

3. Select "Edit".
   → The "Implement name" input dialogue is displayed.

4. Enter the implement name.

5. Confirm your entry.
   → The "CCI.Config" operating screen is displayed.
   → The implement is selected.

6.8.8 Export implement

Prior preparation

▶ Connect a flash drive to the terminal.

1. Press the "Implement" button in the "CCI.Config" operating screen.
   → The list of implements is displayed.

2. Press the button with the implement and keep the button pressed.
   → A context menu is displayed.

3. Select "Export implement".
   → The implement is saved on the flash drive.

NOTE

Exporting an implement to the flash drive is only relevant in service cases.

6.8.9   GPS simulation

For tests and demonstrations, it is helpful if a GPS track previously recorded or previously imported to the terminal can be replayed.

→ In a quiet hall, you can simulate the passage over a field.

NOTE

You need a password to replay the GPS track.

GPS simulation

Using the terminal, you can
- record and export a GPS track of type NMEA 0183 or
- import and play back a GPS track of type NMEA 0183.

1. Press the "GPS" button in the "CCI.Config" operating screen.
   → The "GPS settings" operating screen is displayed.
2. Press the button "GPS simulation".
   → The "GPS simulation" operating screen is displayed.

You have the following operating options:

Record GPS track

For example, during the working of a field, record the position data of the GPS receiver.

1. Drive to the start point of the recording.
2. Switch "Record GPS track" on.
   → A message window is displayed.
3. Confirm the message and travel to the end of the recording.
   → The GPS position data is recorded.
4. When you have reached the end point, switch "Record GPS track" off.
   → Recording of the GPS track is completed.
   → The GPS track on the terminal is overwritten.
   → The GPS track can be played back or exported.

GPS simulation

The switch for switching on GPS simulation is password protected.

1. Record a GPS track or import a GPS track.

2. Switch "GPS simulation" on.
   → The password query is displayed.

3. Enter the password and confirm your entry.
   → The GPS track is played back.

Repeat simulation

You can play back the GPS track once or in an infinite loop.

▶ Switch "Repeat simulation" on.
   → The GPS track is automatically played back again from the beginning once the end has been reached.

Import GPS track

1. Connect a flash drive to the terminal.
   ! The GPS track must be saved in the root directory of the flash drive.
   ! The GPS track must have the file type "nmea" or "log".

2. Press the "Import" button.
   → A selection list with the GPS tracks on the flash drive is displayed.

3. Select a GPS track.

4. Start the import by pressing "Back".
   → A message window is displayed.

5. Confirm the message.
   → The GPS track is imported.
   → The GPS track on the terminal is overwritten.

Export GPS track

1. Connect a flash drive to the terminal.

2. Press the "Export" button.
   → The GPS track is automatically saved in the root directory on the flash drive.
   → The GPS track has the file type ".log".

7 ISOBUS implement and AUX control

You will learn,

- How you operate one or more ISOBUS implements with the terminal,
- How you assign implement functions to an AUX control,
- Why it takes a long time before the implement can be operated when it is first connected,
- What should be done following an update to the implement software,
- Why the UT number is important and how it is set,
- How you set the terminal, when it is not being used for implement operation.

The app for the operation of ISOBUS implements is Universal Terminal or UT.

The CCI 1200 has two UT apps, CCI.UT A and CCI.UT B:

→ You can operate two ISOBUS implements.

The CCI 800 has one UT app, CCI.UT A:

→ You can operate one ISOBUS implement.
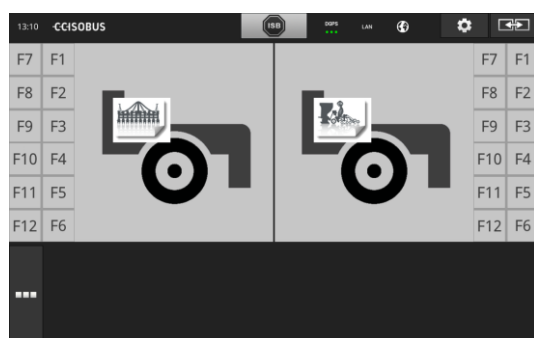
CCI 1200   **CCI 800**
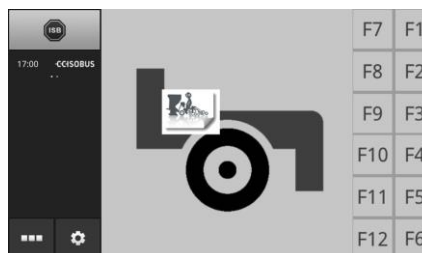
CCI 1200

Connecting up to ten implements

Five ISOBUS implements can connect with each of CCI.UT A and CCI.UT B.

One implement can be operated per UT app. The implement must be in standard view or maxi view. The other implements are in mini view and must be moved to standard view or maxi view for operation.

Sharing implements over CCI.UT A and CCI.UT B

In practice you will operate one or at most two implements with the terminal, e.g. a front fertilizer tank and a towed seed drill implement. Assign the two implements to CCI.UT A and CCI.UT B and open both UT apps in standard view:

→ Both implements can be operated.

CCI 800

Connecting up to five implements

Five implements can connect with CCI.UT A.

The implement displayed in standard view can be operated. The other implements are in mini view and must be moved to standard view for operation.

7.1   Setting up for operation

▶ In app management switch CCI.UT A "on" (⇒ Chapter 4.2.1).

▶ In the ISOBUS settings, switch the Universal Terminal ISOBUS function on
  (⇒ Chapter 4.2.2)

This concludes the pre-settings.

7.1.1   Setting the UT number

Set the UT number as follows:

1. Press the "Settings" button.
   → The "Settings" operating screen is displayed:

2. Press the "Apps" button.
   → The "Apps" operating screen is displayed.

3. Press the button "CCI.UT A".
   → The "CCI.UT A" operating screen is displayed.

4. Press the "UT number" button.
   → The "UT number" operating screen is displayed.
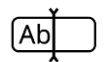
5. Enter UT number "1".

6. End the Process with "Back".
   → A message window is displayed.

7. Confirm your entry.
   → CCI.UT restarts.
   → CCI.UT logs in to the ISOBUS using the new UT number.

8. If you have switched on CCI.UT B in app management, repeat steps 4 to
   7 for CCI.UT B. Enter UT number "2".

9. Press the "Settings" button and end the process.

7.1.2 Connecting the AUX control

Connect the AUX control to the ISOBUS.

→ You require cable A.

1. Connect cable A to connector C on the terminal.
2. Insert the in-cab plug of the AUX control in the "InCab" coupling on cable A.
3. Plug the In-cab coupling of the AUX control in the In-cab panel connector of the tractor or the self-propelled implement.
    → The implement connects with CCI.UT.
    → The operating screen of the AUX control is displayed.
    → Implement functions are not yet assigned to the operating elements of the AUX control:
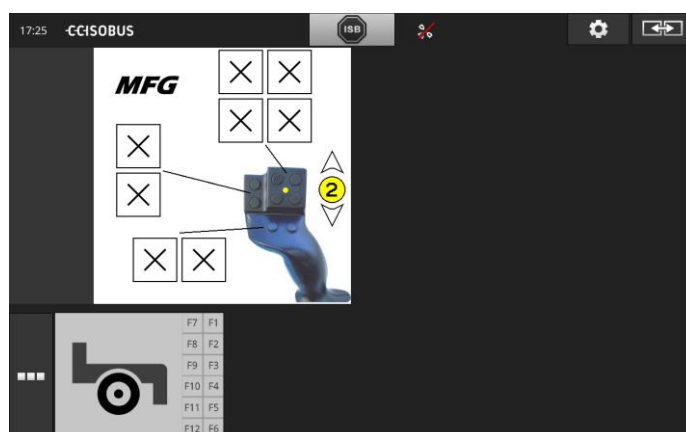
7.1.3 Connecting the implement

If you connect an implement to the ISOBUS. the implement connects with CCI.UT.

→ The implement can only be used once the connection is correctly made.
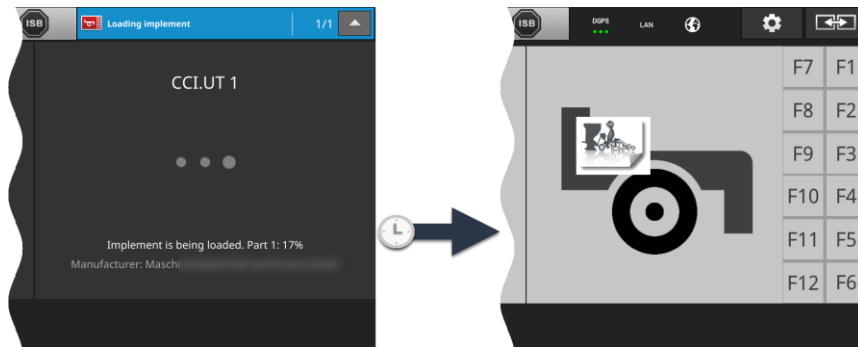
▶ If you have connected an AUX control, assign the operating elements of the AUX control to the implement functions (⇒ Chapter 7.4.1).

ⓘ *Object Pool*

The graphical user interface of an ISOBUS implement is referred to as an Object Pool. The Object Pool contains all the operating screens of an ISOBUS implement.

The operating screens consist of display and operating elements:
- Text and pictograms,
- Buttons,
- Input fields,
- Selection lists etc. .

The operating screens are displayed in CCI.UT. The display elements provide information and the operating elements are used for implement operation.

If an ISOBUS implement connects with CCI.UT for the first time, the implement uploads the Object Pool into the UT.

Dependent on the size of the Object Pool, the upload may take several minutes. The implement cannot be used during uploading:

→ Start using the implement only once its graphical user interface is displayed.

CCI.UT saves the Object Pool on the terminal. If the implement connects with CCI.UT again at a later point in time, CCI.UT uses the saved object pool.

→ Uploading is not necessary.
→ The implement can be used immediately.

7.2 Settings

1. Press the "Settings" button.
   → The "Settings" operating screen is displayed:

2. Press the "Apps" button in the "Settings" operating screen.
   → The "Apps" operating screen is displayed.

3. Press the button "CCI.UT A".
   → The "CCI.UT A" operating screen is displayed.
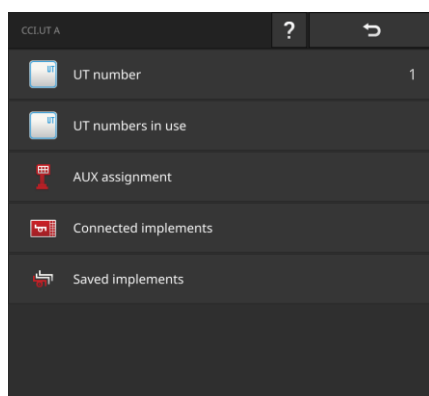
You have the following operating options:

UT number

CCI.UT logs on to the ISOBUS using the new UT number.

▶ Set the UT number as described below.

Used UT numbers

▶ Check which UT numbers are already assigned before you set the UT number for CCI.UT.

AUX assignment

Assign implement functions to the operating elements of an AUX control (⇒ Chapter 7.4).

Connected implements

The implements connected with CCI.UT are displayed (⇒ Chapter 7.5.1).

Saved implements

After an implement software update, delete the implement from the terminal (⇒ Chapter 7.5.2).

NOTE

UTs with the same UT number cannot connect to the ISOBUS.

The operation of an ISOBUS implement is not possible.

The CCI 800/CCI 1200 and a second ISOBUS terminal are connected to the ISOBUS:

▶ Ensure that CCI.UT A, CCI.UT B and other UTs connected to the ISOBUS have different UT numbers.

Proceed as follows to display no longer available UT numbers:

1. Press the "Settings" button.
   → The "Settings" operating screen is displayed:

2. Press the "Apps" button.
   → The "Apps" operating screen is displayed.

3. Press the button "CCI.UT A".
   → The "CCI.UT A" operating screen is displayed.

4. Press the "Assigned UT numbers" button.
   → The list of no longer available UT numbers is displayed.

Now enter the UT number:

5. Press the "UT number" button.
   → The "UT number" operating screen is displayed.
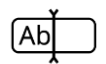
6. Enter an unassigned UT number and confirm your entry.

7. End the Process with "Back".
   → A message window is displayed.

8. Confirm your entry.
   → CCI.UT restarts.
   → CCI.UT logs on to the ISOBUS using the new UT number.

UT number

CCI.UT logs on to the ISOBUS using the new UT number.

→ CCI.UT is visible for implements and AUX controls under this UT number.
→ The implement decides with which UT it connects based on the UT number.

Implements connect first to UT number "1".

If no UT is logged onto the ISOBUS with the UT number "1", then the implement searches for the next highest UT number.

The implement saves the UT number and connects to this UT when it next connects.

AUX controls only connect with a UT with the UT number "1".

7.3   Using the CCI.UT correctly

CCI.UT adapts flexibly to your requirements.

You can

- Operate two implements simultaneously,
- Operate two or more implements in alternation,
- Use an AUX control for implement operation,
- Switch off implement operation.

The following sections describe how you use CCI.UT optimally for these applications.

Before reading any further...

- Switch an app on and off in App management (⇒ Chapter 4.2.1):

- Change the UT number of CCI.UT in the CCI.UT settings ⇒ Chapter 7.2):

- Drag and drop an app from mini view to standard view ⇒ Chapter 3.3).

7.3.1   One implement, one terminal

- The CCI 800/CCI 1200 is the only ISOBUS terminal.
- You want to operate no more than one ISOBUS implement with the terminal.

Set the terminal as follows:
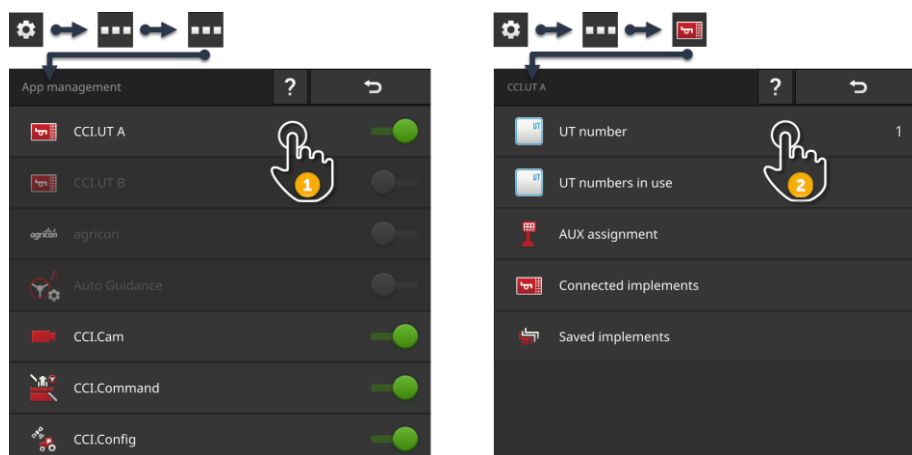
1. In app management switch CCI.UT A "on" and switch CCI.UT B "off".
2. In the settings of CCI.UT A set the UT number to 1.
3. Open CCI.UT A in standard view.
4. Connect the implement to the ISOBUS.
   - → The implement connects with CCI.UT A.

7.3.2 Two implements in an alternating manner, one terminal

- The CCI 800/CCI 1200 is the only ISOBUS terminal.
- You want to operate two ISOBUS implements alternately with the terminal, e.g. a fertilizer tank with a towed seed drill implement.

Set the terminal as follows:
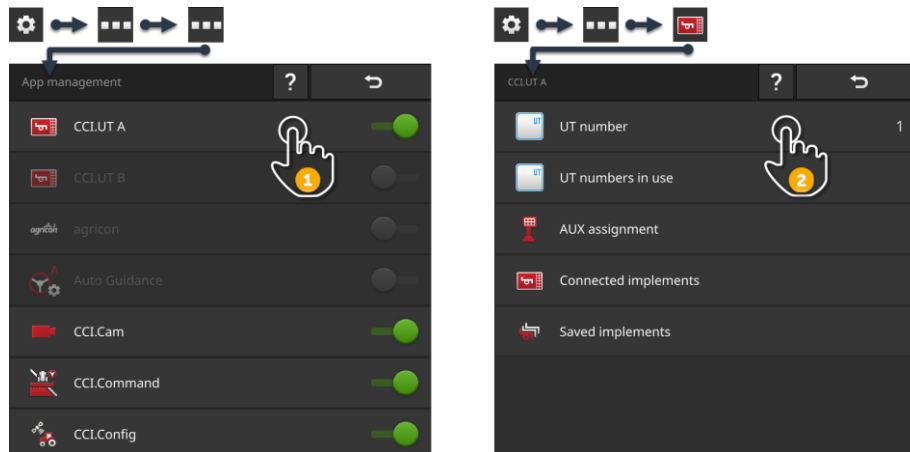
1. In app management switch CCI.UT A "on" and switch CCI.UT B "off".
2. In the settings of CCI.UT A set the UT number to 1.
3. Open CCI.UT A in standard view.
4. Connect the implements to the ISOBUS.

   → Both implements connect with CCI.UT A.

5. Open the implement you want to operate in standard view.
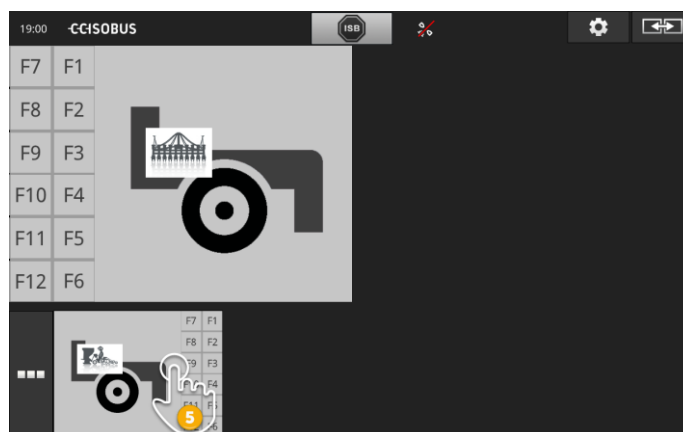
7.3.3 Two implements simultaneously, one terminal

- The CCI 1200 is the only ISOBUS terminal.
- You want to operate two ISOBUS implements simultaneously with the terminal, e.g. a fertilizer tank with a towed seed drill implement.

▶ Connect one implement to CCI.UT A and the other implement to CCI.UT B and open both UTs in standard view.
  → Both implements can be operated.

Set the terminal as follows:
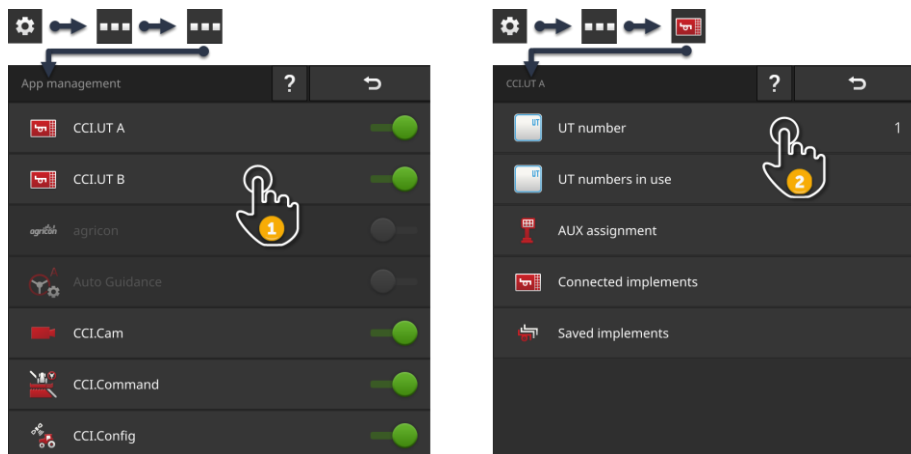
1. In app management switch CCI.UT A and CCI.UT B "on".
2. In the settings of CCI.UT A set the UT number to 1.
3. In the settings of CCI.UT B set the UT number to 2.
4. Open CCI.UT A and CCI.UT B in standard view.
5. Connect the implements to the ISOBUS.

   → Both implements connect with CCI.UT A.

6. Move an implement to CCI.UT B (⇒ Chapter 7.5.3).
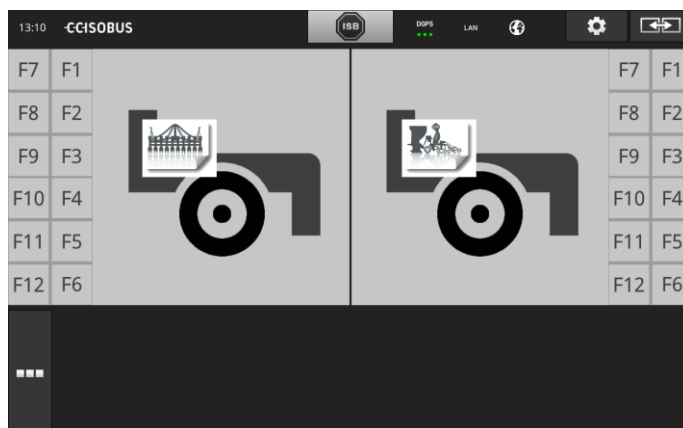
NOTE

Not all ISOBUS implements can be moved to another UT.

If this is the case, dividing of the two implements between CCI.UT A and CCI.UT B is not possible. The two implements cannot be operated simultaneously.

▶ Connect both implements with CCI.UT A ($\Rightarrow$ Chapter 7.3.2).
 → The two implements must be operated alternately.

NOTE

Only one implement can be operated with the CCI 800.

7.3.4 Changing the display positions

You want to change the position of the two implements in standard view:
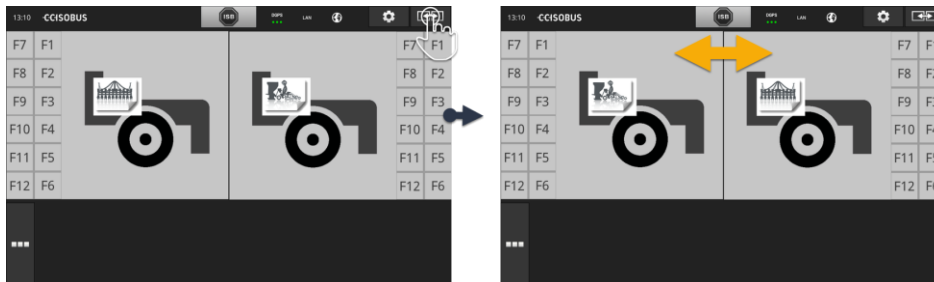
▶ Press the "Layout" button.
  → The apps change position in standard view

The CCI 800 does not have this feature.

7.3.5 Displaying the implement in maxi view

You want to display the operating screen of the implement in maxi view:
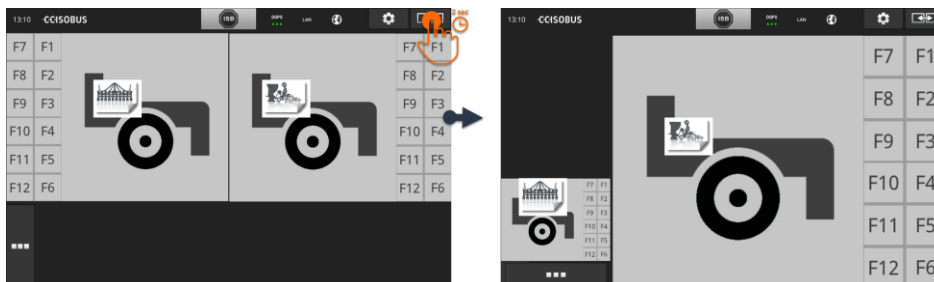
▶ Press and hold the "Layout" button for 2 seconds.
  → The right app is displayed in maxi view.
  → The left app is displayed in mini view.

Maxi view is not available in the CCI 800.

7.3.6 One implement, one AUX control

- The CCI 800/CCI 1200 is the only ISOBUS terminal.
- You want to operate no more than one ISOBUS implement with the terminal.
- You want to use an AUX control to operate the implement.

Set the terminal as follows:
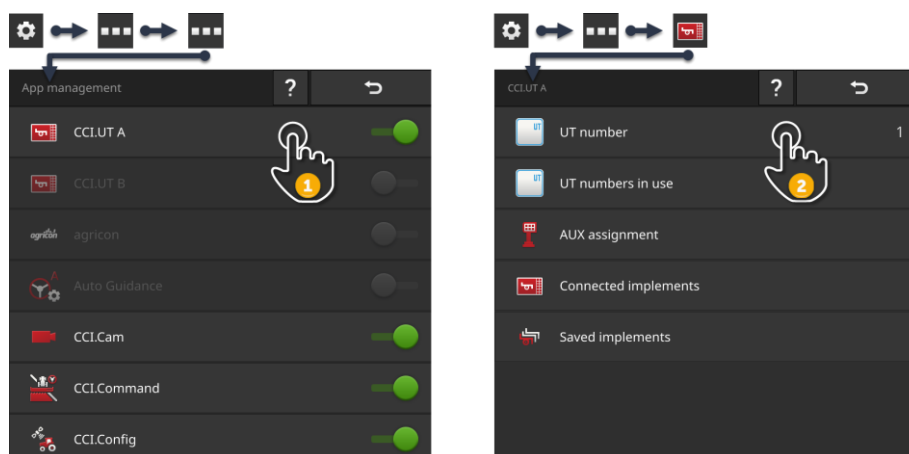
1. In app management switch CCI.UT A "on" and switch CCI.UT B "off".
2. In the settings of CCI.UT A set the UT number to 1.
3. Connect the AUX control and the implement to the ISOBUS.
4. Carry out the AUX assignment (⇒ Chapter 7.4.1).
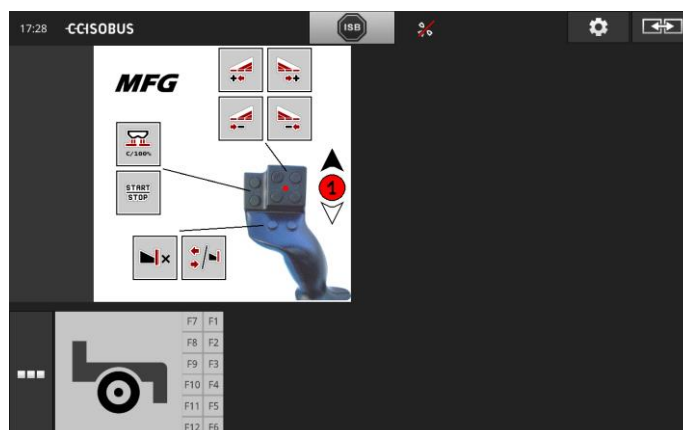
7.3.7 Two implements simultaneously, one AUX control

- The CCI 1200 is the only ISOBUS terminal.
- You want to operate two ISOBUS implements simultaneously with the terminal, e.g. a fertilizer tank with a towed seed drill implement.
- You want to be able to operate functions of both implements with the AUX control.

Set the terminal as follows:
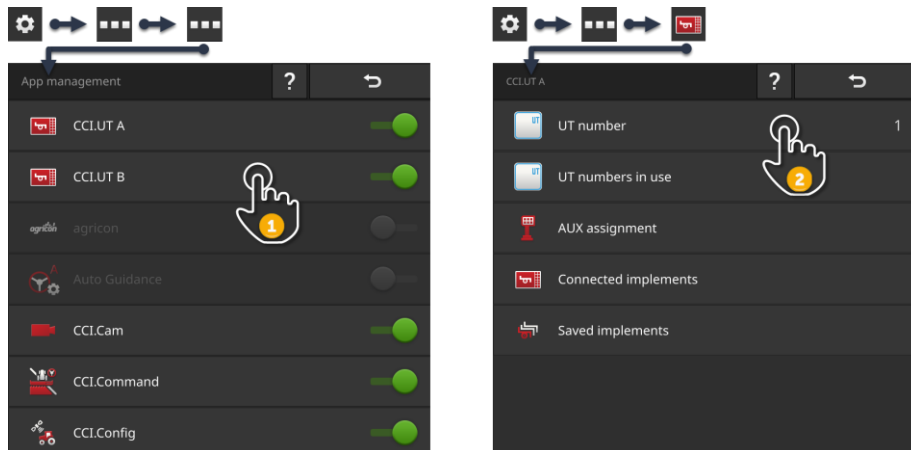
1. In app management switch CCI.UT A and CCI.UT B "on".
2. In the settings of CCI.UT A set the UT number to 1.
3. In the settings of CCI.UT B set the UT number to 2.
4. Open CCI.UT A and CCI.UT B in standard view.
5. Connect the AUX control and the implement to the ISOBUS.

   → Both implements and the AUX control connect with CCI.UT A.

6. Move an implement to CCI.UT B (⇒ Chapter 7.5.3).
7. Carry out the AUX assignment (⇒ Chapter 7.4.1).
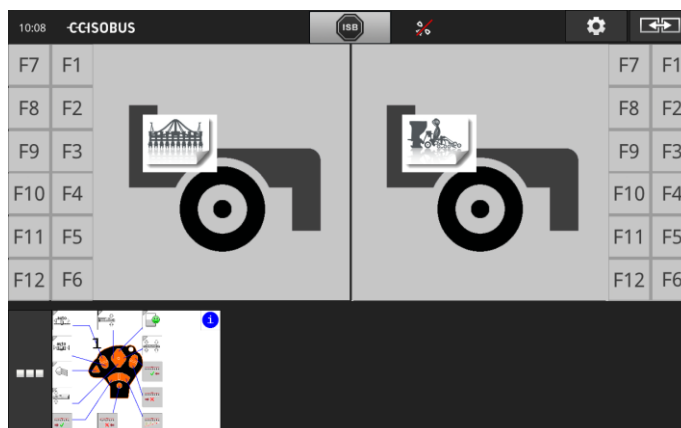
NOTE

You have set up the terminal as described in this section.

→ CCI.UT A has UT number 1.
→ The implement connected to CCI.UT A can be operated with the AUX control.

The implement connected to CCI.UT B can only be operated with the AUX control, if the implement

- can upload the list of implement functions in CCI.UT A and
- can upload the GUI in CCI.UT B.

The implement performs this process automatically.

If the implement connected to CCI.UT B does not support dividing over two UTs, the implement cannot be operated with the AUX control.

▶ Switch the implements over between CCI.UT A and CCI.UT B and try again.
→ Possibly the other implement may support the sharing of function list and GUI.

If the other implement also does not support sharing of function list and GUI, the implements cannot be operated simultaneously.

▶ Connect both implements with CCI.UT A (⇒ Chapter 7.3.8).
→ Both implements can be operated with the AUX control.
→ The two implements must be operated alternately.

NOTE

Only one implement can be operated with the CCI 800.

7.3.8 Two implements in alternation, one AUX control

- The CCI 800/CCI 1200 is the only ISOBUS terminal.
- You want to operate two ISOBUS implements alternately with the terminal, e.g. a fertilizer tank with a towed seed drill implement.
- You want to be able to operate functions of both implements with the AUX control.

Set the terminal as follows:
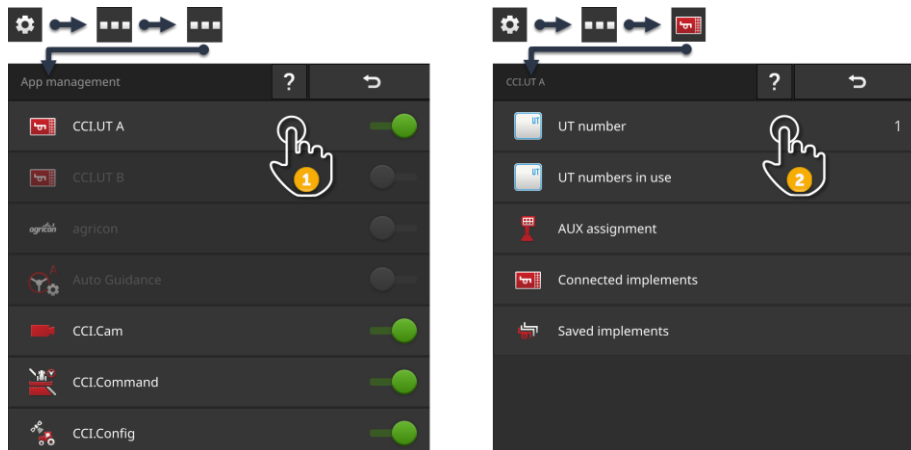
1. In app management switch CCI.UT A "on" and switch CCI.UT B "off".
2. In the settings of CCI.UT A set the UT number to 1.
3. Open CCI.UT A in standard view.
4. Connect the AUX control and the implement to the ISOBUS.

   → Both implements and the AUX control connect with CCI.UT A.

5. Carry out the AUX assignment (⇒ Chapter 7.4.1).
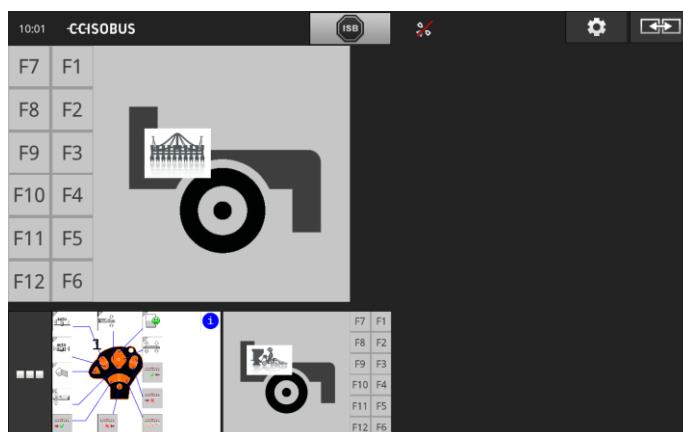
7.3.9 No implement operation

- You are using the CCI 800/CCI 1200 and a second ISOBUS Terminal.
- You do not want to operate any ISOBUS implement with the CCI 800/CCI 1200.
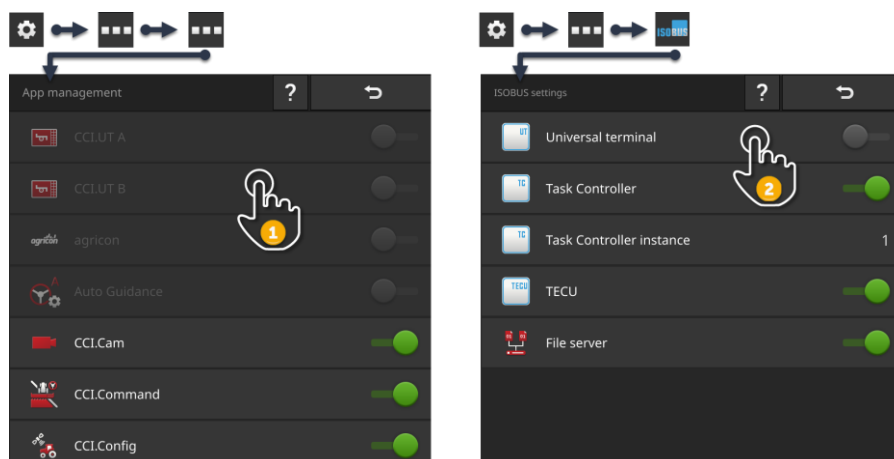
1. In app management switch CCI.UT A and CCI.UT B "off".
2. In the "ISOBUS settings" operating screen switch the "Universal Terminal" "off".

   → CCI.UT no longer connects to the ISOBUS.

7.4 Working with an AUX control

Often and regularly required functions of an ISOBUS implement, can in the main be executed more quickly using a joystick, a toggle switch strip or some other AUX control (AUX).

7.4.1 Assigning implement functions to the auxiliary control AUX

Implement functions can be assigned to the operating elements of the AUX control. You make the AUX assignments in CCI.UT via:

NOTE

The implement saves the AUX assignment.

The AUX assignment must only be performed once.

The assignment is available again after a restart of the implement and the AUX control.

NOTE

An AUX control requires a UT number "1".

The AUX control only connects to the terminal if this has logged on to the ISOBUS using the UT number "1".

▶   In CCI.UT A set the UT number to 1.

Prior prepa-
ration

▶ Perform setting up. (⇒ Chapter 7.1)

1. Press the "Settings" button.
   → The "Settings" operating screen is displayed.

2. Press the "Apps" button.
   → The "Apps" operating screen is displayed.

3. Press the button "CCI.UT A".
   → The "CCI.UT A" operating screen is displayed.

4. Press the button "AUX assignment".
   → The "AUX assignment" operating screen is displayed.
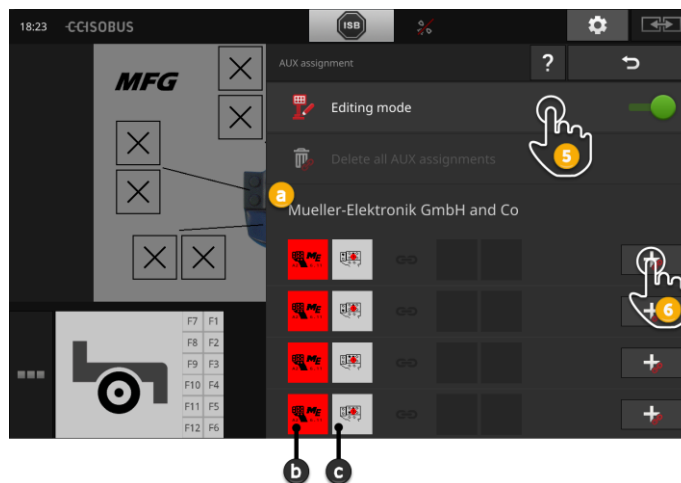
a: Manufacturer of the AUX control

b: AUX control

c: Selection list of the operating elements

5. Switch "Editing mode" "on".
   → The selection list with the operating elements of the AUX control is displayed.

6a. Press the operating element on the AUX control.

→ The selection list of the available implement functions is displayed.

NOTE:

With some AUX controls, the list of implement functions opens upon pressing the operating element.

▶ Proceed as described in step 6b.

▶ Otherwise continue with step 7.

6b Press the "+" in the operating element button.

→ The selection list of the available implement functions is displayed.
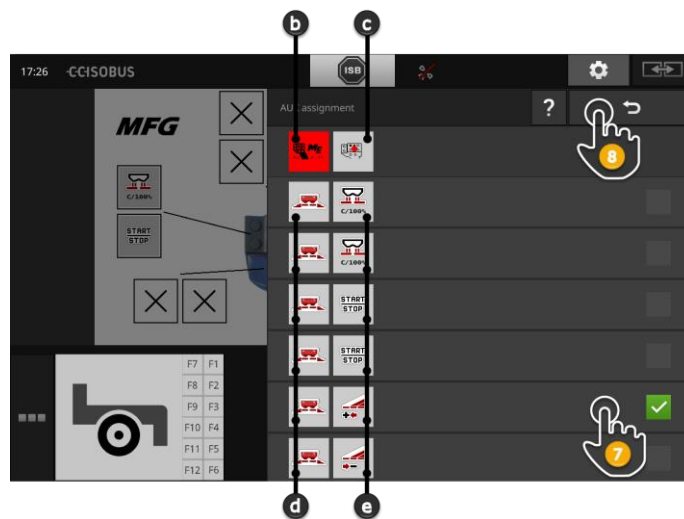
d: ISOBUS implement

e: List of implement functions

7. Select the implement function.

8. Press "Back" to return to the operating element selection list.

→ The implement function is assigned to the operating element.
→ The list element displays the operating element and the implement function.

9. To assign functions to other operating elements, repeat steps 6 to 8.

10. Press the "Settings" button.
    → Editing mode is switched off.
    → The "Settings" operating screen is closed.
    → AUX assignment is ended.
    → The implement functions can be executed with the AUX control.

Check the AUX assignment as follows:

1. Open the operating screen of the AUX control in standard view.
   → The AUX assignment is displayed.
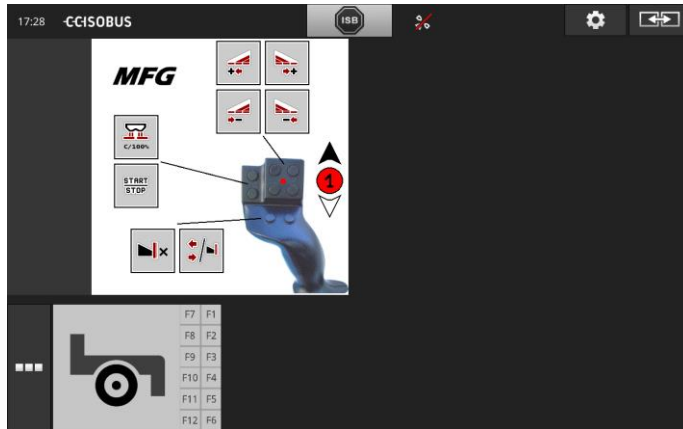
2. Change to the AUX control in all operating levels and check the AUX as-
   signments on the terminal.

NOTE

**No changes to the AUX assignments can be made in the operating
screen of the AUX control.**

▶ To make changes to the AUX assignment, switch to the "AUX assignment"
  operating screen and switch editing mode "on".

7.4.2 Deleting AUX assignments

To delete the assignment of an individual operating element, proceed as follows:

1. Switch "Editing mode" "on".
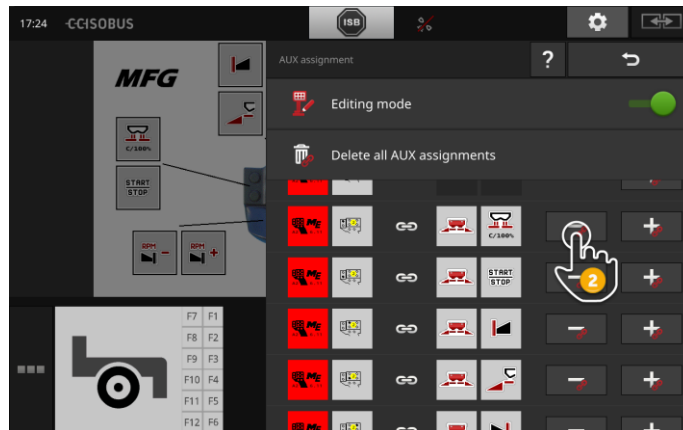
All operating elements of the AUX control are displayed in the selection list.

2. Press the "-" in the operating element button.
   → The assignment is deleted.
   → The implement function can no longer be executed with the operating element.

3. Switch "Editing mode" "off".
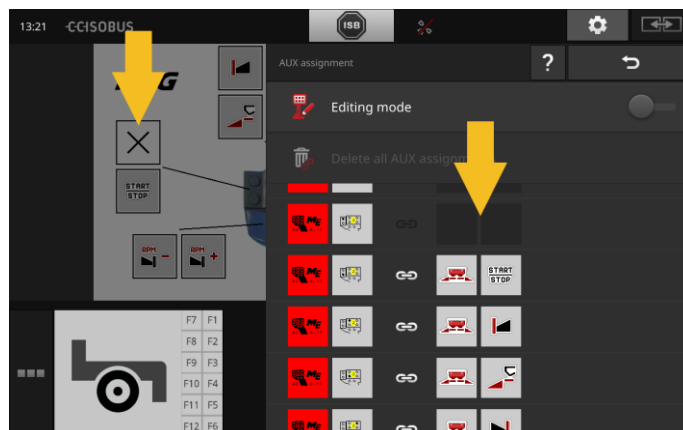
7.4.3 Deleting all AUX assignments

To delete the assignment of all operating elements, proceed as follows:

1. Switch "Editing mode" "on".

2. Press the button "Delete all AUX assignments".
   → The assignment of all operating elements is deleted.
   → The implement can no longer be operated with the AUX control.

3. Switch "Editing mode" "off".
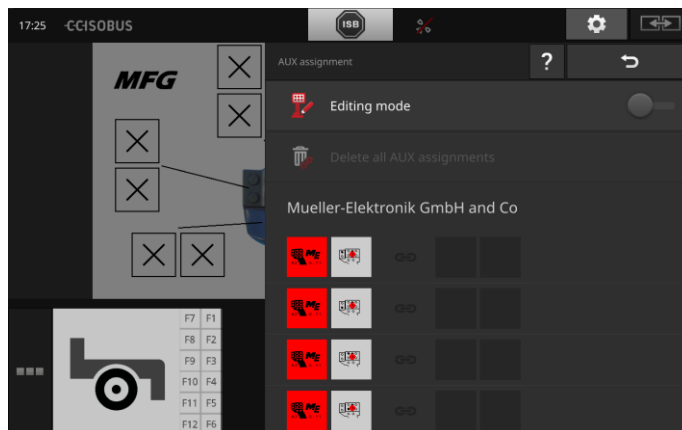
7.5 Managing implements

The implements connected to CCI.UT can be displayed or deleted.

▶ To do so, open the CCI.UT settings:

7.5.1 Displaying implement details

The implements connected with CCI.UT are displayed.

→ The displayed details are only of interest for servicing.

Connected implements

1. Press the button "Connected implements".
   → The "Connected implements" list is displayed.
2. End the Process with "Back".

Connected implements
Additional details are displayed for the implements connected with CCI.UT:
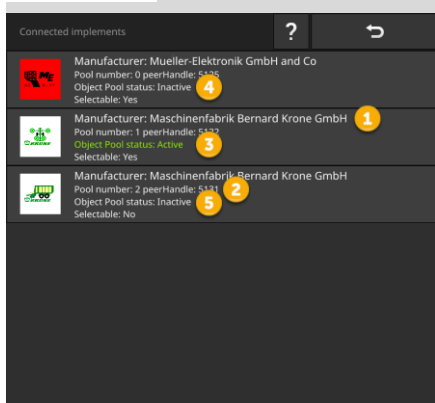
1: Manufacturer

2: Pool number and peerHandle are implement connection data and of no interest to you as a user.

3: The Object Pool status is "Active" and selectable, the button is green:
   → The implement is connected with CCI.UT.
   → The implement is shown in standard view and can be operated.

4: The Object Pool status is "inactive", but selectable:
   → The implement is connected with CCI.UT.
   → The implement is displayed in mini view.
   → Move the implement into standard view to operate it.

5: The Object Pool status is "inactive" and non-selectable:
   → The implement is connected with CCI.UT.
   → The implement is not displayed.
   → Implement functions can be assigned to an AUX control.

6: The Object Pool status is "inactive" and there is "No implement available":
   → The implement is connected with CCI.UT.
   → The implement is not displayed.
   → The implement can no longer be operated with the terminal or the AUX control.

7.5.2 Delete implement

CAUTION!

After an update of the implement software, the implement GUI saved on the terminal is not always automatically updated.

The terminal then shows you the GUI saved on the terminal and not the new GUI:

- The implement saved on the terminal and the implement software do not match.
- Malfunctions of the implement are possible.
- New implement functions are not available.

After an implement software update, delete the implement from the terminal:

1. Disconnect the implement from the ISOBUS.

2. Delete the implement from the terminal as described in this chapter.

3. Connect the implement to the ISOBUS.
   → The implement connects with CCI.UT.
   → The new graphical user interface is uploaded to the UT.
   → CCI.UT displays the new graphical user interface of the implement.

To delete an implement, proceed as follows:

1. Press the "Settings" button.
   → The "Settings" operating screen is displayed.
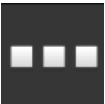
2. Press the "Apps" button.
   → The "Apps" operating screen is displayed.

3. Press the button "CCI.UT A".
   → The "CCI.UT A" operating screen is displayed.

4. Press the button "Saved implements".
   → The "Saved implements" selection list is displayed.
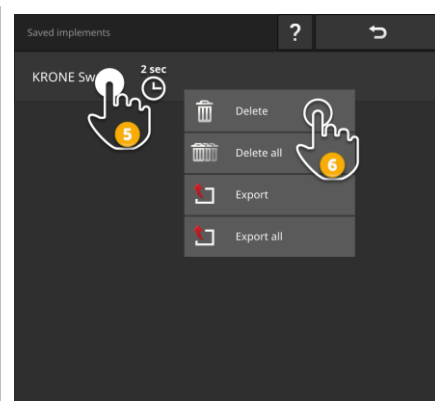
5. Press the button with the implement and keep the button pressed.
   → A context menu is displayed.

6. Press "Delete".
   → The implement is deleted without a confirmation query.

7. End the Process with "Back".

8. If CCI.UT B is switched on, repeat step 3 to 7 for CCI.UT B.

NOTE

Sometimes it is not possible to unambiguously identify the implement in the list.

Then you will have to delete all implements from the terminal.

▶ Press the "Delete all implements" button.
   → The implements are deleted without a confirmation query.

Saved implements

If an ISOBUS implement connects with CCI.UT for the first time, the implement uploads its graphical user interface, the Object Pool into the UT. CCI.UT saves the implement on the terminal.

→ When it is reconnected, uploading of the Object Pool is not necessary.

The Object Pools of all implements that are saved on the terminal are displayed in the list of saved implements:
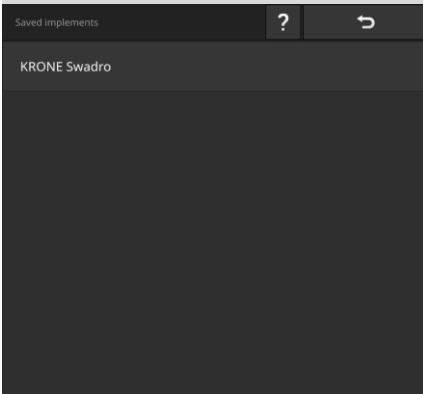
You have the following advanced operating options:

Export a saved implement

1. Connect a flash drive to the terminal.
2. Press the button with the implement and keep the button pressed.
   → A context menu is displayed.
3. Press the button "Export".
   → The implement is saved on the flash drive.
4. End the Process with "Back".

Export all saved implements

1. Connect a flash drive to the terminal.
2. Press the button of any implement and keep the button pressed.
   → A context menu is displayed.
3. Press the "Export all" button.
   → All implements are saved to the flash drive.
4. End the Process with "Back".

NOTE

Exporting an implement to the flash drive is only relevant in service cases.

7.5.3 Moving an implement to another UT

Some ISOBUS implements can be moved to another UT at the press of a button. In general, this function is contained in the ISOBUS settings of the implement.

▶ Check in the operating instructions of your implement, whether this function is available.
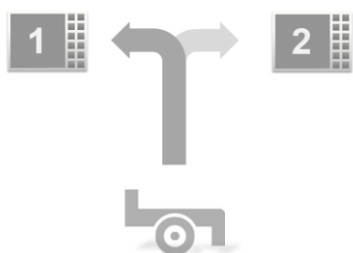
Use this function to operate the implement with the desired UT:

- In the left screen, both implements are connected to CCI.UT A.

  → The implements can only be operated in alternation.

- In the right screen, one implement is connected with CCI.UT A, the other implement is connected with CCI.UT B.

  → The implements can only be operated simultaneously.
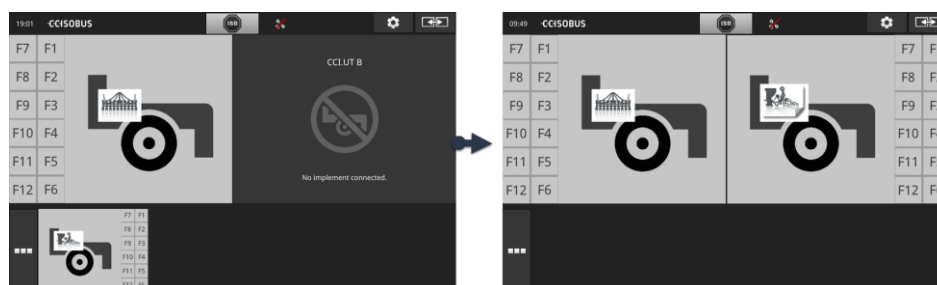
8 Tasks and fields

Data management with CCI.Control is subdivided into application areas

- Task management and documentation,
- Application maps.

CCI.Control is task controller software according to the ISOBUS standard and certified by AEF.

If a GPS receiver is connected, section-specific working can be performed in an automated manner. Tasks planned on the PC using application maps can be processed in this way and documented with position information.

8.1 Setting up for operation

▶ You require the Task Control licence (⇒ Chapter 4.3.3).

Prior prepa-ration

▶ In app management switch CCI.Control "on" (⇒ Chapter 4.2.1).

▶ Switch on the ISOBUS function Task Controller in ISOBUS settings (⇒ Chapter 4.2.2) and set a Task Controller number.

▶ Set up the tractor, implement and GPS (⇒ Chapter 6.2, ⇒ Chapter 6.4, ⇒ Chapter 6.5).

1. Press the "Settings" button on the start screen.
   → The "Settings" operating screen is displayed.
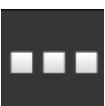
2. Press the "Apps" button.
   → The "Apps" operating screen is displayed.

3. Press the "CCI.Control" button.
   → The "CCI.Control" operating screen is displayed.

4. Press the "Settings" button on the start screen.
   → Setting up is ended.
   → The "Settings" operating screen is closed.

You have the following setting options:

Automatic export

Automatic export protects against inadvertent deleting of tasks.

You have imported a task from the flash drive into the terminal and partially or completely processed it. If you inadvertently import the same task or another task, all already documented data is overwritten.

Automatic export copies tasks saved on the terminal to the flash drive prior to any import.

▶ Switch "Automatic export" "on".
   → Tasks are no longer inadvertently overwritten.

Field finder (⇒ Chapter 8.1.1)

If you switch on "Field finder",
- A message is displayed, when the tractor or the self-propelled implement enters a field,
- A list of tasks that are assigned to the field is displayed.

Peer Control

A nutrient sensor can control the application quantity of an ISOBUS implement. The setpoints of the nutrient sensor replace the setpoints specified in an application map.

Only switch Peer Control on, if the nutrient sensor and implement support this function.

▶ Switch "Peer Control" on.
   → The nutrient sensor controls the application quantity of the ISOBUS implement.

8.1.1 Field finder

Field finder notifies you upon entry into the field and supports you in the search for the correct task.

Field finder continuously compares the GPS coordinates of the fields in the field list with the actual position.

▶ Switch "Field finder" "on".
   → The selection list "Field finder" is displayed upon entry into a field from the field list.

The "Field finder" selection list contains

- The fields that belong to the actual position,
- The tasks that are assigned to one of these fields.
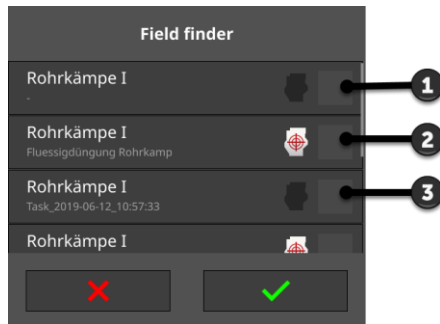
1: Field
→ Only the field name is displayed.

2: Task with application map
→ The field name, the task name and the symbol for the application map are displayed.

3: Task without application map
→ The field name and the task name are displayed.

NOTE

Do not use Field finder with AUTOLOG.

Use of Field finder only makes sense if you are not processing the task or field using "AUTOLOG".

▶ Switch Field finder off.

Select a field and create a new task:

Select field
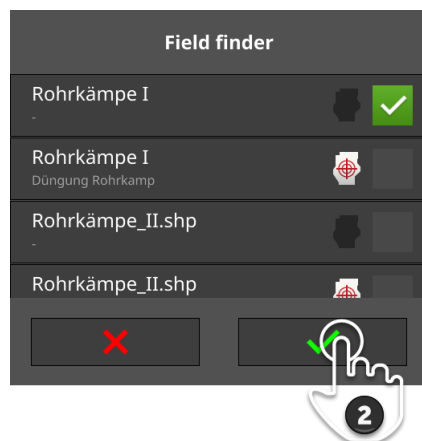
1. Drive on to the field.
→ The "Field finder" selection list is displayed. The list contains all fields that belong to the actual position.

2. Select the field and confirm your entry.
→ The "Name of task" input dialogue is displayed.

3. Enter the task name and confirm your entry.
→ The task view is displayed.
→ The new task is automatically started.

Select task

Select a task:
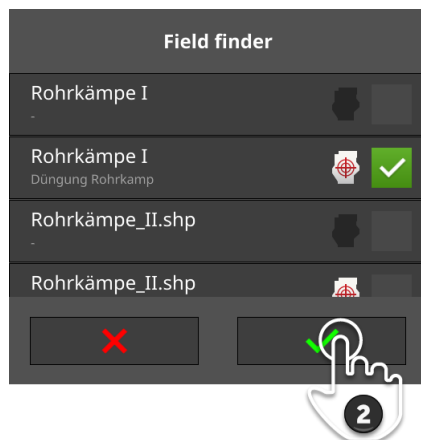
1. Drive on to the field.
   → The "Field finder" selection list is displayed. The list contains all tasks that are assigned to the field that corresponds to the actual position.

2. Select the task and confirm your entry.
   → The task view is displayed.
   → The task is automatically started.

NOTE

Field finder also recognises the field exit.

If you leave the field, the current task is automatically paused.

8.2 Selecting between field mode and task mode

CCI.Control recognises two operating modes:

- Task mode and
- Field mode.

Use task mode,

- If you are importing and exporting tasks
- If you are working with application maps
- If you are documenting totals and location-based data

1. Press the burger button.
   → The "burger menu" is displayed.

2. Switch "Field mode" "off".

Use field mode,

- If you only use fields for automatic section control
- If you are not working with tasks
- If you are not working with application maps

1. Press the burger button.
   → The "burger menu" is displayed.

2. Switch "Field mode" "on".

8.3   Starting a task

After starting the task, the totals and the location-based data are recorded. These values are added to the task. The implement manufacturer indicates which totals and location-based data are made available.

Totals are for example:

- Worked area,
- Quantity spread,
- Time in the work position,
- Distance travelled in the work position.

Location-based data is for example:

- Work position,
- Actual value of the application rate,
- Pump speed,
- Spraying pressure,
- Container volume.

Start

▶ Press the "Start" Action button.
→ Totals and location-based data are documented.
→ If the task has a field and an application map, these are displayed in the map view.

Pause or end

You want to suspend processing of the task or want to finish the task:

▶ Press the "Pause" action button.

8.4 Task list elements

CCI.Control opens when starting the task list. The task list contains all imported tasks or tasks created on the terminal.

The task list displays a short summary about the task:
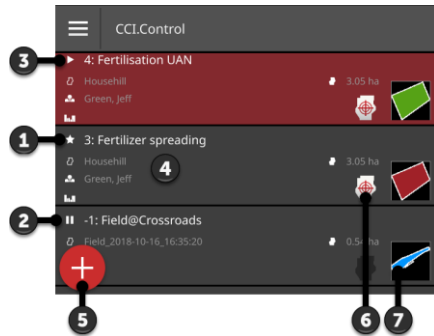
1: New task
  o Symbol
  o Red field colour
  o Green button

2: Paused task
  o Pause symbol
  o Blue field colour
  o Green button

3: Running task
  o Symbol
  o Green field colour
  o Red button

4: Task details
  o Name
  o Field name and field size
  o Customer and farm
  o Field boundary

5: Action Button
  → Add new task

6: Application map
  → Pictogram is displayed if the task contains an application map

7: Field boundary
  → Field is only displayed, if the field boundary exists

You have the following operating options:

- Press the task and change to the order and go to the task view.
  → Start of edit the task in task view.
- Insert a task using the "New" action button (1).
- In the burger menu (2) you can
  - Switch on field mode,
  - Import tasks,
  - Exporting tasks
  - Search tasks
- Using the context menu (3) you carry out the following actions for a task
  - Rename,
  - Copy
  - Delete

Burger menu

You have the following operating options in the burger menu:

Field mode (⇒ Chapter 8.2)

Select the operating mode:
- Field mode or
- Task mode

Import tasks (⇒ Chapter 8.4.1)

Import tasks from the flash drive or send agrirouter tasks to the terminal.

Export tasks (⇒ Chapter 8.4.2)

Export all tasks including the master data, totals and the location-based data. The tasks can be further processed using an FMIS.
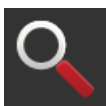
Search for task (⇒ Chapter 8.4.3)

A long task list makes it difficult to find a task. Search through the list.

▶ Press and hold the button with the task.
  → The context menu is displayed.

The following operating options are available in the context menu:

Rename task

1. Press the button "Rename".
   → The "Name of task" input dialogue is displayed.

2. Enter the task name and confirm your entry.

Copy task

A copy of the task is added to the task list.

The master data, field and application map are copied. The totals and the location-based data are not copied.

The name of the copy has the suffix "_#1".

▶ Press the button "Copy".
  → The copy of the task is displayed in the task view.
  → You can edit the task or start it.

Delete task

The task, including all saved totals and location-based data, is deleted. The master data is not deleted.

▶ Press the "Delete" button.
  → The task is deleted.
  → The task list is displayed.

8.4.1   Importing tasks

CCI.Control processes tasks in ISO-XML format, application maps in shape format and field boundaries in shape format.

Import tasks from the flash drive or send tasks to the terminal by using agrirouter.

NOTE

The import overwrites all tasks saved on the terminal.

Back up existing tasks, before you import new tasks:

▶ Export the tasks to a flash drive or send the tasks using agrirouter (⇒ Chapter 8.4.2).

If you only import tasks from a flash drive, you can automate the backup:

▶ In the CCI.Control settings, switch on "Automatic export".
    → Before any import of new tasks, the existing task are automatically copied to the flash drive.

Importing ISO-XML

Prior preparation

▶ Connect the flash drive with the task data to the terminal or

▶ send the task file to the terminal using agrirouter.

▶ Open CCI.Control in standard view (⇒ Chapter 3.3).

▶ Switch field mode "off" (Chapter 8.2).
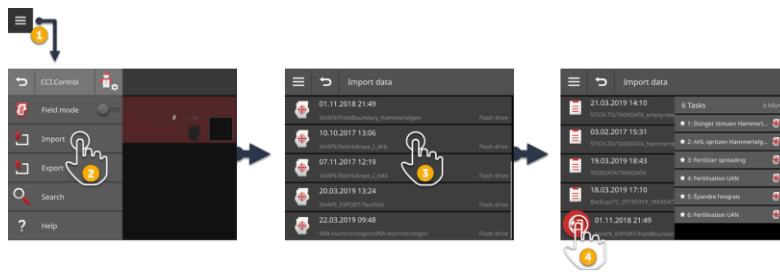
1. In the task list, press on the Burger Button.
   → The "burger menu" is displayed.

2. Press the "Import" button.
   → The "Import data" selection list with the tasks on the flash drive and in the agrirouter inbox is displayed.

3. Select the task file.
   → A task file can contain a number of tasks.
   → The numbers and names of the tasks are displayed.
   → If a task contains an application map, the "Application map" symbol is displayed.
   → The "Import" action button is displayed.

4. Press the "Import" Action button.
   → The tasks are imported and displayed in the task list.

Importing a shape application map

☀ **NOTE**

A shape file only contains an application map.

You can import a shape application map.

→ The field boundary is automatically calculated.
→ A new task is created.
→ The application map and the field boundary have been assigned to the task.

Prior prepa-ration

▶ Connect the flash drive with the shape application map to the terminal or

▶ send the shape application map to the terminal using agrirouter.

▶ Open CCI.Control in standard view (⇒ Chapter 3.3).

▶ Switch field mode "off" (Chapter 8.2).
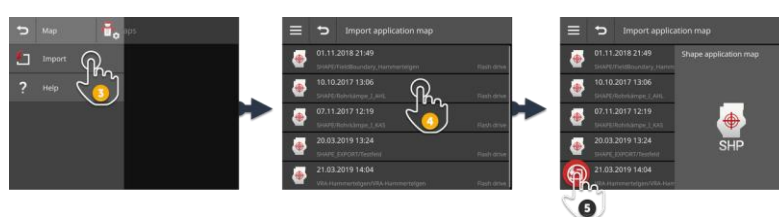
1. Press the burger button.
   → The "burger menu" is displayed.

2. Press the "Import" button.
   → The "Import data" selection list with the shape application maps on the flash drive and in the agrirouter inbox is displayed.

3. Select the shape application map.
   → The symbol SHP is displayed on the right next to the selection list.

4. Press the "Import" Action button.
   → A selection list is displayed.

5. Select "Application map".
   → The selection list with the columns of the setpoint table is displayed.
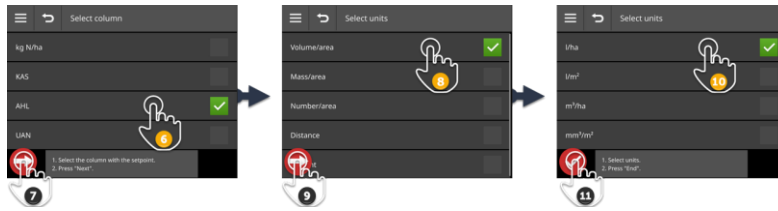
6. Select a column.

7. Press the "Next" Action button.
   → The list for preselection of the units is displayed.

8. Make a preselection.

9. Press the "Next" Action button.
   → The selection list with the units is displayed.

10. Select the units.

11. Press the "Completed" Action button.
    → The shape application map is imported.
    → The field boundary is calculated.
    → A task is created.
    → The field size, the field boundary and the products are displayed in
       the task view.

NOTE

A shape application map always comprises a number of files :

- .dbf,
- .shp,
- .shx and optional
- .prj.
→ If all the files of the shape application map are not on the flash drive, CCI.Control cannot perform the import.

▶ Copy all files of the shape application map onto the flash drive.

NOTE

The form and content of the shape application map must satisfy the specifications.

Otherwise, CCI.Control cannot process the shape application map.

▶ See the appendix *Application maps*.

Setpoint table

The setpoint table of a shape application map contains
- one or more columns and
- the rows with the setpoints.

When creating the shape application map, give the columns meaningful names. We recommend the use of product and unit, e.g. "Compost (t)".

Unit selection when importing

It is **not** apparent from a shape application map which units are to be used, i.e. whether the product application quantity should be measured in l/ha or kg/m^2.

The units are specified in two steps when importing the shape application map. First make a pre-selection and then select the units to be used:
- Volume/area
  - l/ha
  - m^3/ha
- Mass/area
  - kg/ha
  - t/ha
  - g/m^2
  - mg/m^2
- Number/area
  - 1/m^2
  - 1/ha
- Distance
  - mm
  - cm
  - dm
  - m
- Percent
  - %
  - ‰
  - ppm

Therefore if you want to apply the product in t/ha, select
- mass/area in step 9 of the import process and
- then in step 11 t/ha.

Importing a shape field boundary

NOTE

A shape file only contains a field boundary.

You can import a shape field boundary.

→ A new task is created.
→ The field boundary has been assigned to the task.

Prior preparation

▶ Connect the flash drive with the shape field boundary to the terminal or

▶ send the shape field boundary to the terminal using agrirouter.

▶ Open CCI.Control in standard view (⇒ Chapter 3.3).

▶ Switch field mode "off" (Chapter 8.2).
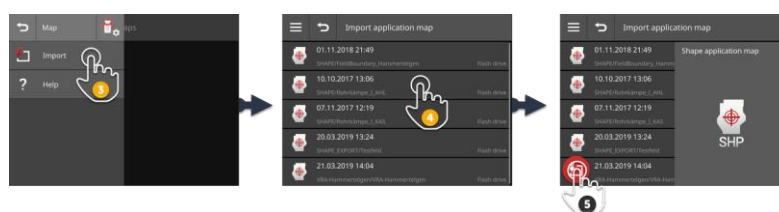
1. Press the burger button.
   → The "burger menu" is displayed.

2. Press the "Import" button.
   → The "Import data" selection list with the shape field boundaries on the flash drive and in the agrirouter inbox is displayed.

3. Select the shape application map.
   → The symbol SHP is displayed on the right next to the selection list.

4. Press the "Import" Action button.
   → A selection list is displayed.

5. Select "Field boundary".
   → The selection list with the columns of the setpoint table is displayed.

6. Press the "Next" Action button.
   → The selection list with the units is displayed.

7. Select the units.

8. Press the "Completed" Action button.
   → The shape field boundary is imported.
   → A task is created.
   → The field size and the field boundary are displayed in the task view.
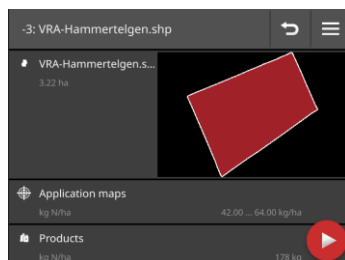
8.4.2   Exporting all tasks

Export all tasks including the master data, totals and the location-based data.
You can further process the tasks in the FMIS.

You have the following options:

- Export the tasks to a flash drive or
- send the tasks using agrirouter.

Saving to a flash drive

Export the tasks to a flash drive as follows:

1. Connect a flash drive to the terminal.

2. In the task list, press on the Burger Button.
    → The "burger menu" is displayed.

3. Press the "Export" button.
    → The "Export" selection list is displayed.

4. Press the button "USB".
    → The tasks are saved in the directory \TASKDATA on the flash drive.
    → The tasks are not deleted from the terminal.

NOTE

Data in \TASKDATA is automatically backed up.

If the directory \TASKDATA on the flash drive is not empty, the data saved
there is moved to the directory \TASKDATA_BACKUP.
Then the task is saved in the directory \TASKDATA.

Sending with agrirouter

Send the tasks using agrirouter as follows:

1. In the task list, press on the Burger Button.
   → The "burger menu" is displayed.

2. Press the "Export" button.
   → The "Export" selection list is displayed.

3. Press the "agrirouter" button.
   → The selection list "Send to:" is displayed.

4. Select the destination point to which the task is to be sent. Confirm your entry. You can select a number of destinations.
   → The tasks are sent to the destination.
   → The tasks are not deleted from the terminal.

NOTE

If the terminal is not connected to the Internet, the tasks cannot be sent.

The tasks are saved in the outbox of the agrirouter.

▶ Manually send the tasks in the outbox (⇒ Chapter 4.3.5).

8.4.3 Find task

A long task list makes it difficult to find a task. Search through the list:
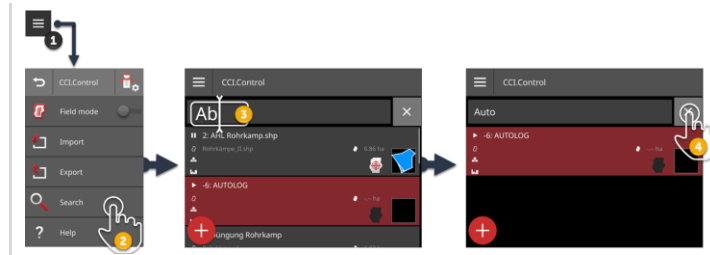
	1. In the task list, press on the Burger Button. → The "burger menu" is displayed.

	2. Press the "Search" button.
	   → The screen keyboard is displayed.
	   → The flashing cursor is displayed in the entry field.
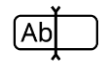
	3. Enter the search term and confirm your entry.
	   → The screen keyboard is closed.
	   → Only tasks that meet the search criterion are displayed in the task list.
	   → The search term is displayed above the task list.

	4. Press the "Delete" button on the right next to the search term.
	   → The search term is deleted.
	   → All tasks are displayed.

8.5 Edit task

To edit a task or to display the task details, open the task in the task view.

▶ Select the task from the task list.
  → The task view is displayed.
  → The task can be edited or started:
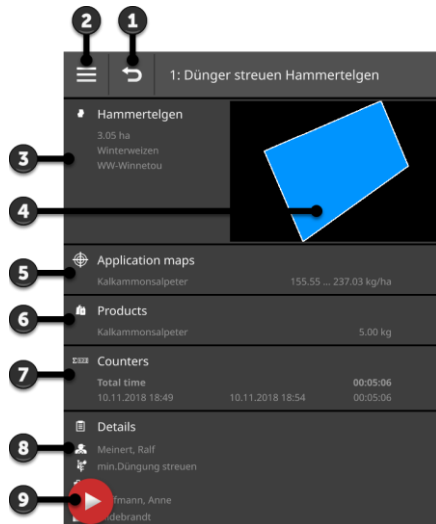
1: Back
  → Back to the task list

2: Burger button
  → Open the burger menu

3: Field
  → Select or add field

4: Field colour
  → Red: new task
  → Blue: paused task
  → Green: running task

5: Application map
  → Import or edit application map

6: Product
  → Add or edit product

7: Display of the totals

8: Details
  → Add or edit driver, agricultural practice, technique, farm, customer

9: Action Button
  → Start or pause task

You have the following operating options in the burger menu:

Burger menu

Export task (⇒ Chapter 8.5.8)

For further processing with an FMIS, the task can be saved to a flash drive or sent to agrirouter.

Export task (⇒ Chapter 8.5.9)

A summary of the task can be saved to a flash drive or sent to agrirouter.

Rename task

1. Press the button "Rename".
    → The "Name of task" input dialogue is displayed.
2. Enter the task name and confirm your entry.

Copy task

A copy of the task is added to the task list.

The master data, field and application map are copied. The totals and the location-based data are not copied.

The name of the copy has the suffix "_#1".

▶ Press the button "Copy".
    → The copy of the task is displayed in the task view.
    → You can edit the task or start it.

Delete task

The task, including all saved totals and location-based data, is deleted. The master data is not deleted.

▶ Press the "Delete" button.
    → The task is deleted.
    → The task list is displayed.

8.5.1 Add Field

A task, which you have newly created on the terminal (⇒ Chapter), is not assigned to a field.

→ The "Field" button in the task view is empty:
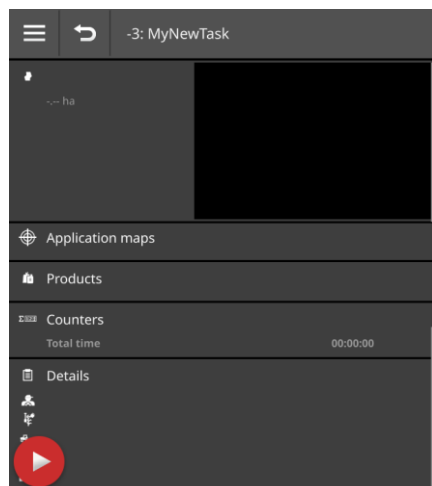
All fields available on the terminal are managed in the field list. Assign a field from the field list to the task:
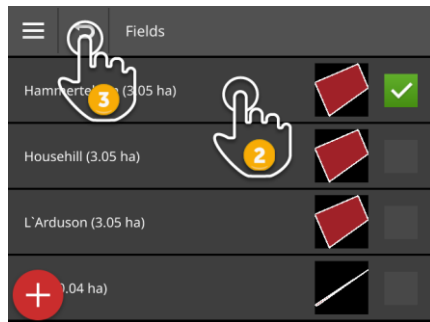
1. Press the button with the field in the task view.
   → The field list is displayed.

2. Select the field.

3. End the Process with "Back".
   → The field has been assigned to the task.
   → The task view is displayed.

NOTE

A field can be assigned to multiple tasks.

You want to assign a task to a field, but the field is not in the field list. Add a new field to the field list as follows:
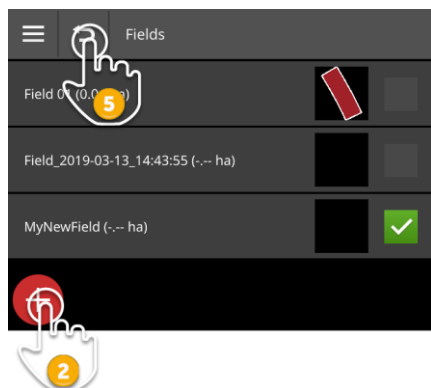
1. Press the button with the field in the task view.
   → The field list is displayed.

2. Press the "New" Action button.
   → The "Field Name" input dialogue is displayed.

3. Enter the field name and confirm your entry.
   → The "Field Size" input dialogue is displayed.

4. Confirm the preset field size of 0.00 ha.
   → The field list is displayed.
   → The new field is selected.

5. End the Process with "Back".
   → The new field has no field boundary and no field size.
   → The field has been assigned to the task.
   → The task view is displayed.

NOTE

The new field has no field boundary and a field size of 0.00 ha.

The documentation of the task data also functions without a field boundary.
The precise field size not normally known.

▶ Do not change the preset value of 0.00.

▶ Start the task and create a field boundary in CCI.Command.
→ The field size is automatically calculated.

NOTE

Field, field boundary and field size are optional.

The task can be started without a field. The totals and the location-based data are documented.

Add a field to the field list as follows:

- Create the new field in the field list (⇒ Chapter 8.5.1)
- Create the new field in the map view and add the field to the field list
- Create the field with the FMIS and import the field as an ISO-XML file
(⇒ Chapter 8.4.1)

8.5.2 Find Field

A long field list makes it more difficult to find a field.

Search through the list as follows:

1. Press the button with the field in the task view.
   → The field list is displayed.

2. Press the burger button.
   → The "burger menu" is displayed.

3. Press the "Search" button.
   → An input field is displayed.

4. Enter the search term and confirm your entry.
   → Only those fields are displayed whose name contains the search term.
   → The search term is displayed above the field list.

5. Select the field.

6. End the Process with "Back".
   → The field has been assigned to the task.
   → The task view is displayed.
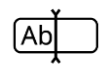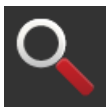
You can change or delete the search term.

8.5.3 Export field

You have added a field to the field list in CCI.Control and recorded the field boundary in CCI.Command. You want to use the field on another terminal.

▶ Export the field in shape format to a flash drive.

▶ Connect a flash drive to the terminal.
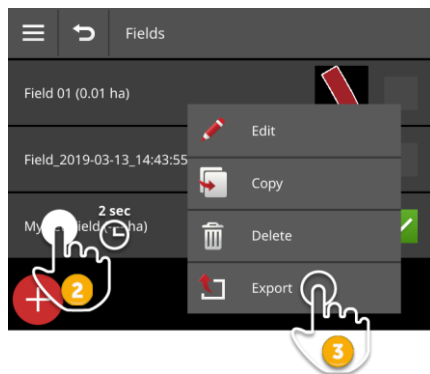
1. Press the button with the field in the task view.
   → The field list is displayed.

2. Press and hold the button with the field.
   → A context menu is displayed.

3. Press the "Export" button.
   → The field is saved on the flash drive in the directory \SHAPE_EXPORT.

NOTE
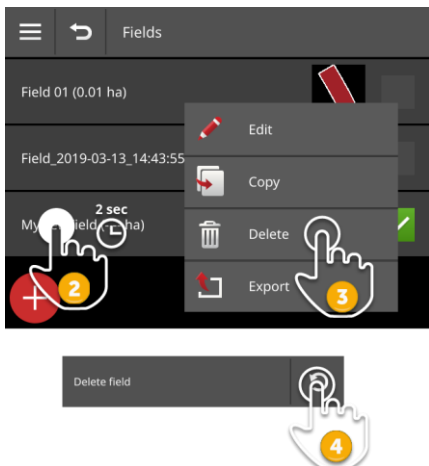
The shape file only contains the field boundary.

No other field-related data is exported.

8.5.4 Field deletion

Unused fields can be deleted from the field list.

1. Press the button with the field in the task view.
   → The field list is displayed.

2. Press and hold the button with the field.
   → A context menu is displayed.

3. Press "Delete".
   → The field is deleted without a confirmation query.
   → The field list is displayed.

NOTE

The deletion can be undone.

If you have pressed "Delete", a message window is displayed for approximately 3 seconds. The "Undo" button is located on the right edge.

4. Press the "Undo" button.
   → The field is added back to the field list.

NOTE

Not every field can be deleted.

You can delete:
- A field that you have created on the terminal.
- A field that you have imported as a shape file.

You cannot delete:
- A field that you have imported into the terminal as part of a task.

If the field cannot be deleted, the "Delete" button is not displayed in the context menu.

8.5.5 Edit field

You can change the field name and size in the field list.
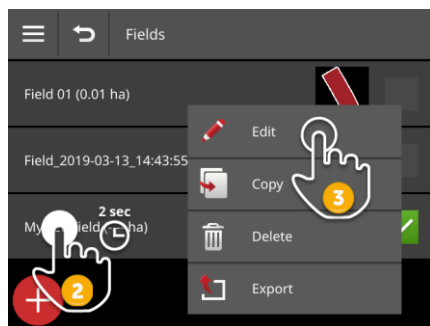
1. Press the button with the field in the task view.
    → The field list is displayed.

2. Press and hold the button with the field.
    → A context menu is displayed.

3. Select "Edit".
    → The "Field Name" input dialogue is displayed.

4. Enter the field name and confirm your entry.
    → The "Field Size" input dialogue is displayed.

5. Enter the field size and confirm your entry.
    → The field list is displayed.

NOTE

The field boundary can also be changed.

You change the field boundary in CCI.Command:

1. Delete the old field boundary ($\Rightarrow$ Chapter 9.3.3).
2. Record the new field boundary ($\Rightarrow$ chapter 9.3.2).

NOTE

Not every field can be edited.

You can edit:
- A field that you have created on the terminal.
- A field that you have imported as a shape file.

You cannot edit:
- A field that you have imported into the terminal as part of a task.

If the field cannot be edited, the "Edit" button is not displayed in the context menu.

8.5.6 Adding an application map

An application map is not assigned to every task.

→ The "Application map" button in the task view is empty:
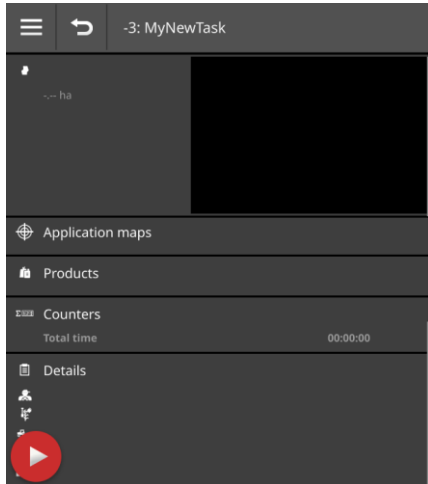
You can add an application map to the task in shape format.

▶ Connect the flash drive with the shape application map to the terminal.

Prior preparation
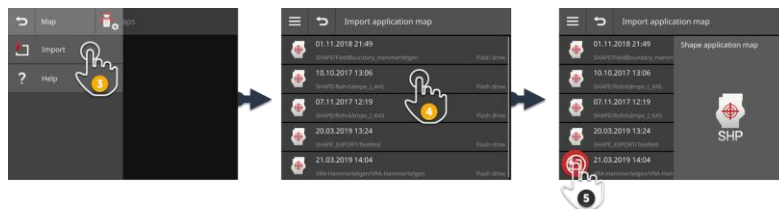
1. Press the "Application map" button in the task view.
   → The "Application map" operating screen is displayed.

2. Press the burger button.
   → The "burger menu" is displayed.

3. Press the "Import" button.
   → The selection list with shape application maps is displayed.

4. Select the shape application map.
   → The symbol SHP is displayed on the right next to the selection list.

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5. Press the "Import" Action button.
   → The selection list with the columns of the setpoint table is displayed.

6. Select a column.

7. Press the "Next" Action button.
   → The list for preselection of the units is displayed.

8. Make a preselection.

9. Press the "Next" Action button.
   → The selection list with the units is displayed.

10. Select the units.

11. Press the "Completed" Action button.
    → The shape application map is imported.
    → The field size, the field boundary and the products are displayed in the task view.

NOTE

A shape application map always comprises a number of files:

- .dbf,
- .shp,
- .shx and optional
- .prj.
→ If all the files of the shape application map are not on the flash drive, CCI.Control cannot perform the import.

▶ Copy all files of the shape application map onto the flash drive.

NOTE

The form and content of the shape application map must satisfy the specifications.

Otherwise, CCI.Control cannot process the shape application map.

▶ See the appendix *Application maps*.

8.5.7 Add product

A product is applied to the field, e.g. fertiliser, pesticide or seed. For complete documentation add all products used together with units and quantity to the task.

You can

- Add a product from the product list to the task
- Create a new product and add it to the task.

All imported products or products created on the terminal are managed in the product list.
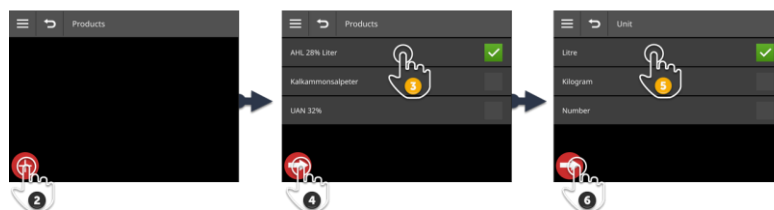
Add a product from the product list to the task:

1. Press the "Products" button in the task view.
   → The "Products" operating screen is displayed.

2. Press the "New" Action button.
   → The product list is displayed.

3. Select the product.

4. Press the "Next" Action button.
   → The "Unit" selection list is displayed.

5. Select the units.

6. Press the "Next" Action button.
   → The "Quantity" input dialogue is displayed.

7. Enter the quantity and confirm your entry.
   → The "Quantity" operating screen is displayed.

8. Press the "Completed" Action button.
   → The product has been assigned to the task.
   → The "Products" operating screen is displayed.

9. End the Process with "Back".
   → The task view is displayed.

NOTE

The product can be added to the task multiple times.

If the originally planned quantity is insufficient, add product again.

NOTE

The product cannot be deleted.

A product added to the task cannot be deleted.

▶ Instead, set the quantity to zero.

You want to assign a product to the task, but the product is not in the product list. Add a new product to the product list:
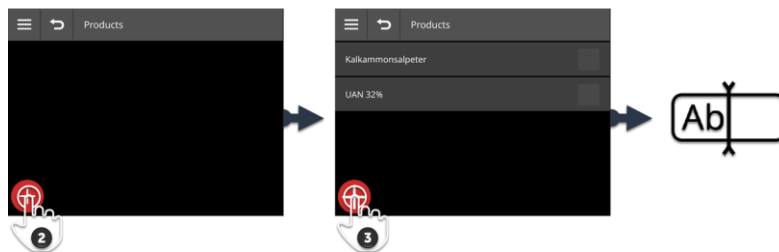
1. Press the "Products" button in the task view.
   → The "Products" operating screen is displayed.

2. Press the "New" Action button.
   → The product list is displayed.

3. Press the "New" Action button.
   → The "Product Name" input dialogue is displayed.

4. Enter the product name and confirm your entry.
   → The product list is displayed.
   → The new product is selected.
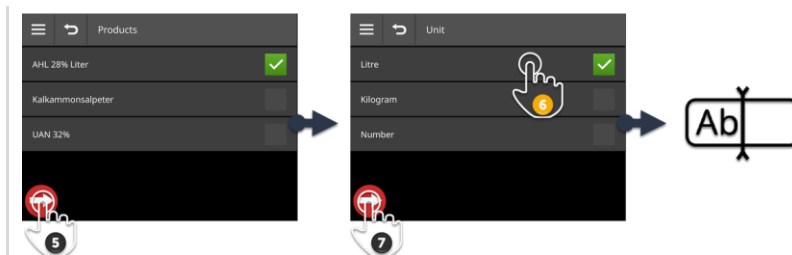
5. Press the "Next" Action button.
   → The "Unit" selection list is displayed.

6. Select the units.

7. Press the "Next" Action button.
   → The "Quantity" input dialogue is displayed.

8. Enter the quantity and confirm your entry.
   → The "Quantity" operating screen is displayed.

9. Press the "Completed" Action button.
   → The product has been assigned to the task.
   → The "Products" operating screen is displayed.

10. End the Process with "Back".
    → The task view is displayed.

8.5.8 Export task

Export the task to process it further with an FMIS. The export comprises the task including the master data, totals and the location-based data.

You have the following options:

- Export the task to a flash drive or
- send the task using agrirouter.

You can also export all tasks at once (⇒ Chapter 8.4.2).

Saving to a flash drive

Export the task to a flash drive as follows:

1. Connect a flash drive to the terminal.

2. In the task view, press on the Burger Button.
   → The "burger menu" is displayed.

3. Press the "Export" button.

4. Press the button "USB".
   → The task is saved in the directory \TASKDATA on the flash drive.
   → The task is not deleted from the terminal.

NOTE

Data in \TASKDATA is automatically backed up.

If the directory \TASKDATA on the flash drive is not empty, the data saved there is moved to the directory \TASKDATA_BACKUP.

Then the task is saved in the directory \TASKDATA.

Sending with agrirouter

Send the task with agrirouter as follows:

1. In the task view, press on the Burger Button.
   → The "burger menu" is displayed.

2. Press the "Export" button.

3. Press the "agrirouter" button.
   → The selection list "Send to:" is displayed.

4. Select the destination point to which the task is to be sent and confirm your entry. You can select one or more destinations.
   → The task is sent to the destination.
   → The task is not deleted from the terminal.

NOTE

If the terminal is not connected to the Internet, the task cannot be sent.

The task is saved in the outbox of the agrirouter.

▶ Manually send the tasks in the outbox (⇒ Chapter 4.3.5).

8.5.9   Send report

The report contains a summary of the task. The report is in the form of a PDF file.

You have the following options:

- Export the report to a flash drive
- Send the report to agrirouter

Saving to a flash drive

Export the report to a flash drive as follows:

1. Connect a flash drive to the terminal.

2. In the task view, press on the Burger Button.
   → The "burger menu" is displayed.

3. Press the "Report" button.

4. Press the button "USB".
   → The report is saved in the directory \TASKDATA on the flash drive.

Sending with agrirouter

Send the report with agrirouter as follows:

1. In the task view, open the Burger Button.

2. Press the "Report" button.

3. Press the "agrirouter" button.
   → The report is sent to all destinations.

9 Map view

CCI.Command contains a detailed map view for use with Parallel Tracking, Rate Control, Section Control or Tramline Control.

Using GPS, Section Control automatically switches off the sections of an ISOBUS implement upon passing over field boundaries and already treated areas and switches them back on upon leaving them. Possible overlaps (double treatments) are thus reduced to a minimum and the driver's work load reduced.

Section Control can be used with ISOBUS implements that support this function.

9.1 Setting up for operation

▶ Enter the licence for Section Control and/or Parallel Tracking in the termi-
nal ($\Rightarrow$ Chapter 4.3.3).

▶ In app management switch CCI.Command "on" ($\Rightarrow$ Chapter 4.2.1).

▶ Switch on the ISOBUS function Task Controller in ISOBUS settings
($\Rightarrow$ Chapter 4.2.2) and set a Task Controller number.

▶ Set up the tractor, implement and GPS ($\Rightarrow$ Chapter 6.2, $\Rightarrow$ Chapter 6.4,
$\Rightarrow$ Chapter 6.5).

1. Press the "Settings" button on the start screen.
   → The "Settings" operating screen is displayed.

2. Press the "Apps" button.
   → The "Apps" operating screen is displayed.
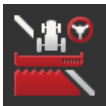
3. Press the "CCI.Command" button.
   → The "CCI.Command" operating screen is displayed.
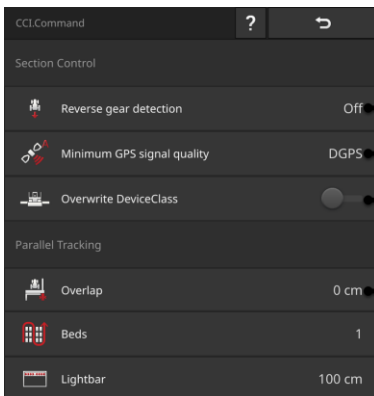
1: Automatic reverse gear detection

2: Set minimum GPS accuracy for Section Control

3: Switch for Krone Big-M

4: Avoid missed areas or double treatment by setting
the overlap

5: Beds mode

6: Adjust the internal lightbar

4. Adjust CCI.Command ($\Rightarrow$ Chapter 9.1.1 and $\Rightarrow$ Chapter 9.1.2).

5. Press the "Settings" button on the start screen.
   → Setting up is ended.
   → The "Settings" operating screen is closed.

9.1.1 Setting up Section Control

You have the following setting options:

Reverse gear detection

1. Press the "Reverse gear detection" button.
   → The "Reverse gear detection" selection list is displayed.

2. Select the method for detecting reverse gear.

3. End the Process with "Back".

NOTE

Not all tractors or self-propelled implements send a direction of travel signal over the ISOBUS.

→ Without a direction of travel signal, automatic reverse gear detection does not work.

▶ Select "off" in step 2.

Reverse gear detection

The terminal detects the change in the direction of travel via the direction of travel signal which the tractor or self-propelled implement sends over the ISOBUS.

The navigation arrow in the map view changes its direction upon reverse gear detection. The map does not rotate.

If the indicated driving direction does not correspond to the actual driving direction, proceed as follows:

▶ Press on the arrow.
   → The arrow changes the direction.

Minimum GPS accuracy

The automatic mode of Section Control requires a GPS signal with DGPS accuracy or better.

→ Automatic mode is automatically deactivated when the GPS accuracy is insufficient.

1. Press the button "Minimum GPS accuracy".
   → The "Minimum GPS accuracy" operating screen is displayed.
2. Select the accuracy class.
3. End the Process with "Back".

Overwrite Device class

Only switch on the "Overwrite Device Class" option, if the terminal is being operated on the Big-M.

▶ Press the "Overwrite DeviceClass" button.
   → The switch setting changes to "On".

NOTE

Only change the pre-setting for "Minimum GPS accuracy" if DGPS is not available.

In some regions, DGPS is permanently unavailable:

▶ Set the "Minimum GPS accuracy" to "GPS".
   → Then Section Control automatic mode also works with GPS.

9.1.2 Setting up Parallel Tracking

You have the following setting options:

Overlapping

1. Press the "Overlap" button
    → An input dialogue is displayed.

2. Enter the overlap as a positive or negative value in centimetres.

3. End the Process with "Back".

Overlapping

The overlap compensates for steering errors and position data inaccuracies.

1. Avoid missed areas.
- Enter a positive overlap.

    → The distance between the guidance tracks reduces by the entered value.
    → The effective working width is reduced.
    → Missed areas are avoided.
    → Overlapping can occur.

2. Avoid overlaps.
- Enter a negative overlap.

    → The distance between the guidance tracks increases by the entered value.
    → Overlapping is avoided.
    → Missed areas can occur.

Beds

In bed mode, you can jump tracks and thus U-turn in a single turning manoeuvre in smaller working widths.

→ With setting "1" each guidance track is used.
→ Setting 2/3/4/5 means that every second/third/fourth/fifth guidance track is highlighted in the portrayal. The remaining guidance tracks are shown as dashes.

1. Press the "Beds" button
    → An input dialogue is displayed.

2. Enter a value between 1 and 5.

3. End the Process with "Back".

Lightbar

The white segments of the lightbar indicate the deviation from the guidance track.

Specify what deviation a segment of the lightbar represents.

1. Press the "Lightbar" button.
   → An input dialogue is displayed.

2. Enter a value between 10 and 100 cm.

3. End the Process with "Back".

9.2 Map view elements
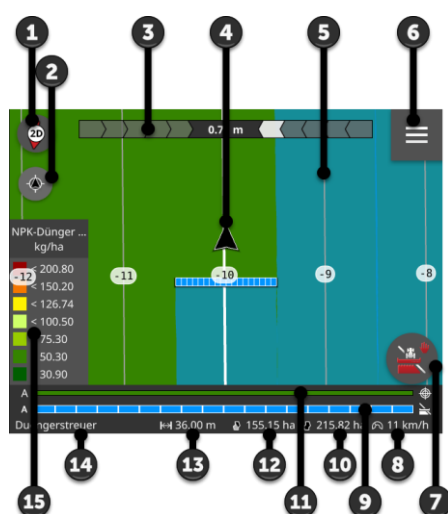
1: Compass
   → Toggle between 2D view, 3D view and overview

2: Centre map

3: Lightbar
   → To open, drag downwards
   → To close, push upwards

4: Vehicle position and direction of travel

5: Guidance track

6: Burger button
   → Open the burger menu

7: Action Button
   → Change between manual and automatic mode

8: Speed

9: Section widths
   → Blue: on
   → Black: off
   → Red: manual override

10:   Field size

11:   Actual setpoint

12:   If a field boundary is present:
   → Remaining area

12:   If no field boundary is present:
   → Worked area

13:   Working width

14:   Implement

15:   Setpoints in the application map

9.2.1 Implement depiction

The implement is shown centrally in the 2D and 3D view. The map rotates about the implement.

The vehicle position (4) is calculated based on the position of the GPS aerial. The implement depiction takes into consideration the mounting type. The sections and their geometries are also displayed.

9.2.2 Buttons and pictograms

Section Control is in automatic mode

The sections of the ISOBUS implement are switched automatically.

▶ Press the "Automatic section switching" button.

→ Section Control switches to manual mode.

Section Control is in manual mode

You switch the sections manually, e.g.

- Because the ISOBUS implement does not support Section Control or
- During boundary spreading with the fertilizer implement.

▶ Press the "Manual section switching" button.

→ Section Control switches to automatic mode.

2D map view

The map is displayed two-dimensionally.

The 2D map is displayed using a self-centred coordinate system:

→ The vehicle position is centred and points upwards.

→ The map rotates.

▶ Press the "2D Compass" button.

→ The map is displayed in 3D.

3D map view

The map is displayed three-dimensionally.

The 3D map is displayed using a self-centred coordinate system:

→ The vehicle position is centred and points forwards.

→ The map rotates.

▶ Press the "3D Compass" button.

→ The map is displayed in overview.

Overview

The entire field is displayed in overview. The overview is displayed using the geographical coordinate system:
→ The map is oriented to the North.
→ North is upwards.
→ The vehicle indication moves.

▶ Press the "Compass" button.
  → The map is displayed in 2D.

Marking of the worked area is on

The worked area is marked.

The button is displayed, if
- No ISOBUS implement is connected to the terminal
- The ISOBUS implement does not support Section Control
- You do not have a licence for Section Control.

▶ Press the "Mark area" button to switch off marking of the worked area.
  → The area is not marked.

Marking of the worked area is off

The worked area is not marked.

The button is displayed, if
- No ISOBUS implement is connected to the terminal
- The ISOBUS implement does not support Section Control
- You do not have a licence for Section Control.

▶ Press the "Do not mark area" button to switch on marking of the worked area.
  → The area is marked according to the working width of the implement.

Obstacle

Obstacles have been entered in the imported task or field. They are indicated in the map view.

Obstacles cannot be added, edited or deleted on the terminal.

Vehicle position

Position of the tractor or self-propelled implement. The vehicle is stationary or moving forward. The tip of the arrow points in the direction of travel.

If reverse gear detection is switched on, you can manually change the direction of travel. For example, this is the case if reverse gear is not automatically detected.

▶ Press on the arrow to change the direction of travel in the map view.
→ The arrow changes its colour to red.
→ The map rotates to the correct position.

Vehicle position in reverse

Position of the tractor or self-propelled implement. The vehicle travels backwards.

Reference point

The reference point created by you or imported with the task.

Centring the map view

The button "Centre map" is only displayed if you have moved the map by swiping.
→ The vehicle position is no longer centred.
→ Tracking is off, i.e. the map does not move with the vehicle.

▶ Press the "Centre map" button.
→ The map is centred.
→ The "Centre map" button is hidden.

Undoing delete actions

The following map view elements can be deleted:
• Field boundary
• Headland
• Tracks
• Worked area
• Field

The deletion can be undone.

If you have pressed "Delete", a message window is displayed for approximately 3 seconds. The "Undo" button is located on the right edge.

▶ Press the "Undo" button.
→ The previous condition is restored.

The burger menu offers the following functions:

Field boundary (⇒ Chapter 9.3)

You have the following operating options:
- Calculate a field boundary
- Record field boundary
- Delete field boundary

Headland (⇒ Chapter 9.4)

You have the following operating options:
- Lock headland
- Create circumferential headland
- Create individual headland
- Delete headland

Tracks (⇒ Chapter 9.5)

You have the following operating options:
- Select reference track
- Move reference track
- Delete reference track

Field (⇒ Chapter 9.6)

You have the following operating options:
- Delete worked area
- Save field
- Add reference point
- Calibrate reference point
- Field deletion

Add reference point

(⇒ Chapter 9.6)

Calibrate reference point

(⇒ Chapter 9.6)

9.3 Field boundary

9.3.1 Calculate

Use the "Calculate boundary" function , if you want to be able to work the outer area during the first travel around the field perimeter:

1. Drive around the field and in doing so, mark the worked area.
   → The worked area is indicated as a closed shape.

2. Press the "Field boundary" button in the burger menu.
   → The "Field boundary" menu is displayed.

3. Press the "Calculate" button.
   → The field boundary is calculated.
   → The field boundary is indicated in orange.
   → Small gaps are automatically closed.

9.3.2 Record

Use the function "Record field boundary",

- If you do not work the field during the first travel around its perimeter,
- If you want to add an inner field boundary.

1. Press the "Field boundary" button in the burger menu of the map view.
   → The "Field boundary" menu is displayed.

2. Press the "Record" button.
   → The input dialogue "Record field boundary" is displayed:
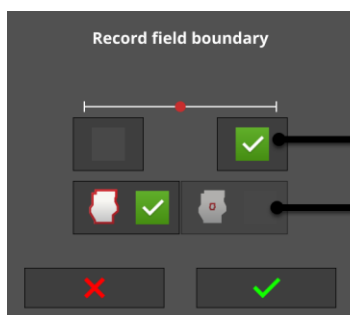
1: Position of the marker
   → Left or right outer edge of the implement

2: Outer or inner field boundary

3. Select the position of the marker.

4. Select the outer or inner field boundary and confirm your entry.
   → The "Record field boundary" map view is displayed.
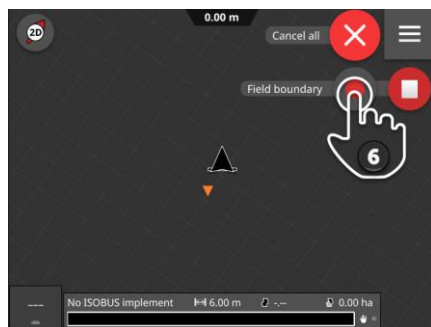
5. Drive to the start point of the recording.

6. Press the "Record" button and drive around the field.
   → The field boundary is recorded.

7. End recording with "Stop".
   → The field boundary is saved.
   → Small gaps are automatically closed.

NOTE

Pause, Start and Cancel

You can interrupt recording with "Pause" and continue it with "Start".
→ A straight line is drawn between the Pause and Record points.

You can end recording of the field boundary with "Cancel".
→ The field boundary recorded up until then is deleted.

NOTE

A field must have an outer field boundary.

An inner field boundary can only be recorded in a field with an outer field boundary.

Several inner field boundaries can be recorded.

NOTE

A field boundary can only be recorded if a GPS signal with DGPS accuracy or better is available.

The minimum GPS accuracy is set ex works to DGPS, as otherwise it will only be possible to perform location-based functions inaccurately.

In some regions, DGPS is permanently unavailable:

▶ Set the "Minimum GPS accuracy" to "GPS" ($\Rightarrow$ Chapter 9.1.1).
  → The field boundary can be recorded with a GPS signal of GPS accuracy.

9.3.3 Delete
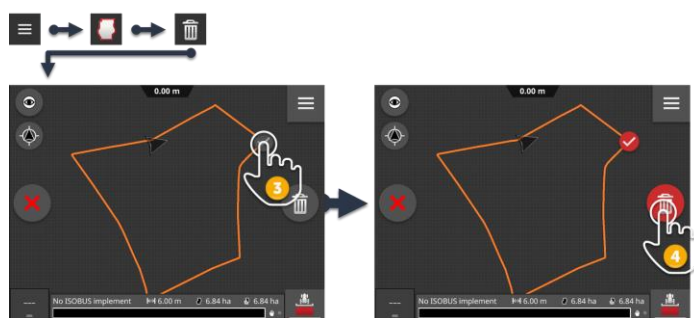
1. Press the "Field boundary" button in the burger menu.
   → The "Field boundary" menu is displayed.
2. Press the "Delete" button.
   → The "Delete field boundary" map view is displayed.
3. Select the field boundary.
4. Press the "Delete" action button.
   → The field boundary is deleted.
   → The deletion can be undone.

9.4 Headland

9.4.1 Lock

You can lock an existing headland or release it for working.

If the switch is in the "on" position, the headland cannot be worked:

→ The headland is displayed with orange hatching.
→ Sections are automatically switched off in the headland.
→ The inner field can be worked.

If the switch is in the "off" position, the headland is released for working:

→ The headland is still present, but is not displayed.
→ Headland and inner field can be worked.

▶ Switch "Locked" "on".
　→ Sections are switched off in the headland.

9.4.2 Circumferential headland

The circumferential headland is calculated based on an existing field boundary.

1. Create a field boundary (⇒ Chapter 9.3)

2. Press the "Headland" button in the burger menu.
　→ The "Headland" menu is displayed.

3. Press the "Circumferential" button.
　→ An input dialogue is displayed.

4. Enter the width of the headland and confirm your entry.
　→ The headland is displayed.
　→ The headland is locked.

9.4.3 Record

You can record an individual headland, e.g. with a headland at each of the field ends.

A field boundary is not necessary.

1. Press the "Headland" button in the burger menu of the map view.
   → The "Headland" menu is displayed.

2. Press the "Individual headland" button.
   → The input dialogue "Individual headland" is displayed:
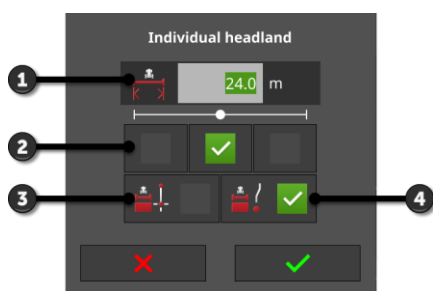
1: Width of the headland

2: Position of the marker
   → Left or right outer edge of the implement, implement middle or outer edge of the implement

3: Headland as straight line
   → The headland is the straight line between the start and end points of the recording

4: Headland follows driving track
   → The headland has the shape of the path driven between the start and end of the recording

3. Press the "Width" input field and enter the width of the headland.

4. Select the position of the marker.

5. Select the form of the headland and confirm your entry.
   → The "Record headland" map view is displayed.
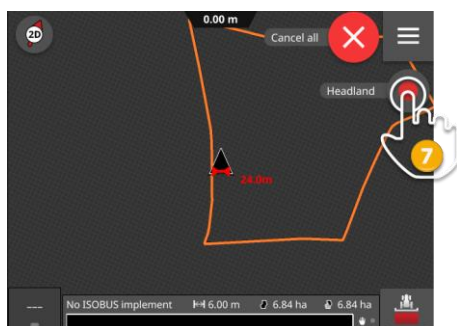
6. Drive to the start point of the recording.

7. Press the "Record" button and drive to the end point of the headland.
   → The headland is recorded.
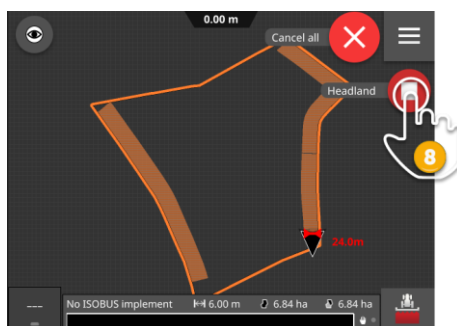
8. End recording with "Stop".
   → The headland is saved.

9. To record a headland comprising one or more sections (as shown in the figure), repeat step 1 to 8 for each section.

Headland marker

The width of the headland marker is pre-set as the working width of the implement.

The width of the headland and thus the headland marker, can be manually changed. If the width of the marker is bigger than the working width, the position of the headland marker can be changed. The setting can be changed between central (default) and right or left outside of the implement.

Selecting right or left outside edge as the setting makes it possible for example to drive with the implement directly along the field boundary and to mark the entire set width of the headland within the field boundary.

NOTE

A headland can only be recorded if a GPS signal with DGPS accuracy or better is available.

The minimum GPS accuracy is set ex works to DGPS, as otherwise it will only be possible to perform location-based functions inaccurately.

In some regions, DGPS is permanently unavailable:

▶ Set the "Minimum GPS accuracy" to "GPS" ($\Rightarrow$ Chapter 9.1.1).
   $\rightarrow$ The headland can be recorded with a GPS signal of GPS accuracy.

9.4.4 Delete
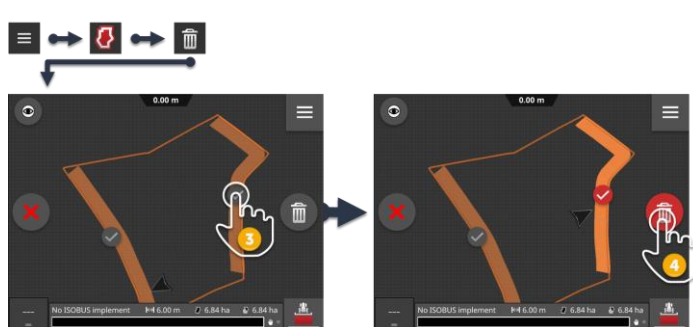
1. Press the "Headland" button in the burger menu.
    → The "Headland" menu is displayed.

2. Press the "Delete" button.
    → The "Delete headland" map view is displayed.

3. Select the headland.

4. Press the "Delete" action button.
    → The headland is deleted.
    → The deletion can be undone.

9.5 Tracks

9.5.1 Select

The reference tracks are displayed in map view. Here they can be quickly and easily selected:
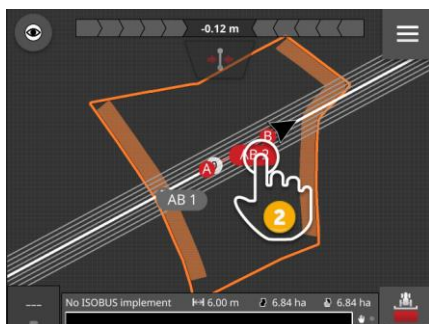
▶ Press on the track name.
  → The reference track is selected.
  → The guidance tracks are calculated and displayed.

Alternatively, you can select the track in the "Tracks" menu:
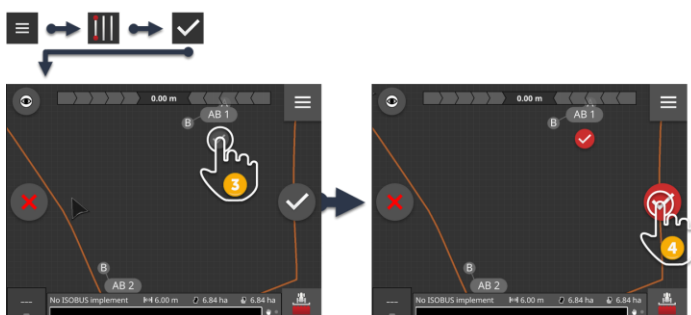
1. Press the "Tracks" button in the burger menu.
   → The "Tracks" menu is displayed.
2. Press the "Select" button.
   → The "Select reference track" map view is displayed.
3. Select the track.
4. Press the "Confirm" action button.
   → The reference track is selected.
   → The guidance tracks are calculated and displayed.

NOTE

Hide reference track and guidance tracks if not being used.

▶ Press on the track name in the map view.
  → The reference track and the guidance tracks are hidden.

9.5.2 New track

Add a new reference track. The guidance tracks are automatically calculated with a distance equal to the working width of the implement.

1. Press the "Tracks" button in the burger menu of the map view.
   → The "Tracks" menu is displayed.

2. Press the "New" button.
   → The input dialogue "New tracks" is displayed:
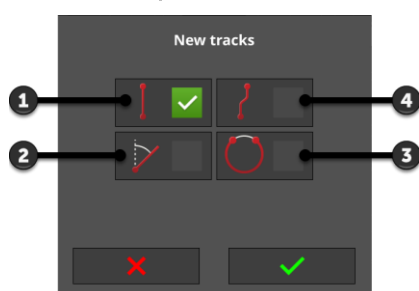
1: Straight track
   → The track is the straight line between the start and end points of the recording

2: A+

3: Circle

4: Curve
   → The track has the shape of the path driven between the start and end of the recording

3. Select the form of the track and confirm your entry.
   → The map view "New track" is displayed.
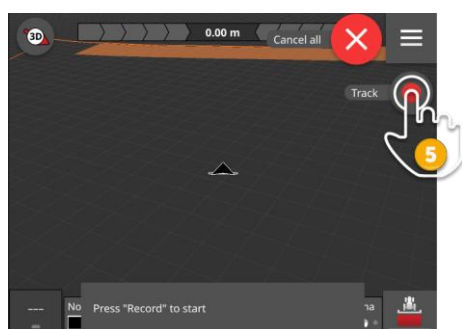
4. Drive to the start point of the recording.

5. Press the "Record" button and drive to the end point of the track.
   → Point A is drawn in.
   → The track is recorded.

6. End recording with "Stop".
   → Point B is drawn in.
   → The track is saved.
   → The track is automatically used for Parallel Tracking.

7. To record another reference track, repeat steps 1 to 6.

NOTE

You can record multiple reference tracks for a field.

Only the guidance tracks of a reference track are displayed.

▶ Select the reference track in the map view.

NOTE

A reference track can only be recorded if a GPS signal with DGPS accuracy or better is available.

The minimum GPS accuracy is set ex works to DGPS, as otherwise it will only be possible to perform location-based functions inaccurately.

In some regions, DGPS is permanently unavailable:

▶ Set the "Minimum GPS accuracy" to "GPS" (⇒ Chapter 9.1.1).
   → The reference track can be recorded with a GPS signal of GPS accuracy.

9.5.3 Move

Move the track,

- To correct for GPS drift
- If when changing the implement, the working width also changes, if for example a field sprayer with 24 m working width follows a slurry tank with 12 m working width.

A track can be quickly and easily moved in map view:
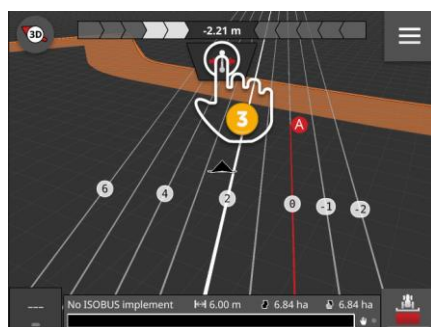
1. Fold the lightbar out.
   → The "Move" button is displayed.
   → The button is greyed out and disabled.

2. Press the "Move" button.
   → The button is enabled.

3. Press the "Move" button again.
   → The track is moved to the actual position of the tractor.

Alternatively you can move the track manually via the burger menu or automatically:

→ For manual moving, enter the size and direction of the movement.
→ With automatic moving, the track is moved to the actual position of the tractor.
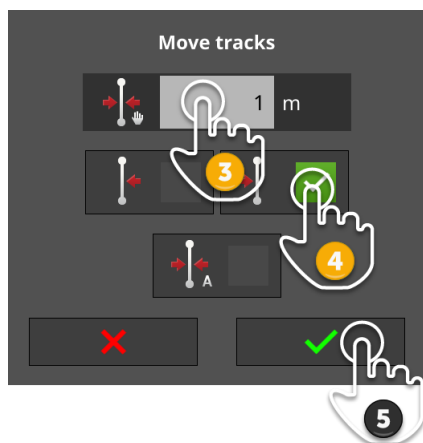
Manually move tracks

1. Press the "Tracks" button in the burger menu of the map view.
   → The "Tracks" burger menu is displayed.

2. Press the "Move" button.
   → The input dialogue "Move tracks" is displayed.

3. Press the "Movement size" input field and enter the movement.

4. Select the direction of the movement.

5. Confirm your entry.
   → The track is moved.
   → The map view is displayed.

Move tracks

0.00 m
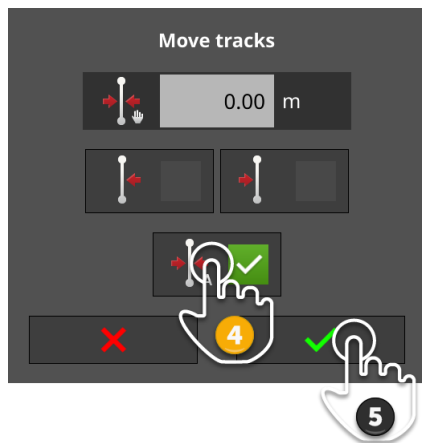
Automatically move tracks

1. Drive to the point to which the track is to be moved to.

2. Press the "Tracks" button in the burger menu of the map view.
   → The "Tracks" burger menu is displayed.

3. Press the "Move" button.
   → The input dialogue "Move tracks" is displayed.

4. Select automatic movement.

5. Confirm your entry.
   → The track is moved to the actual position of the tractor.
   → The map view is displayed.

9.5.4 Rename

If you crate a new track, it is automatically named, e.g. "AB 1".

You can rename the track in the map view:
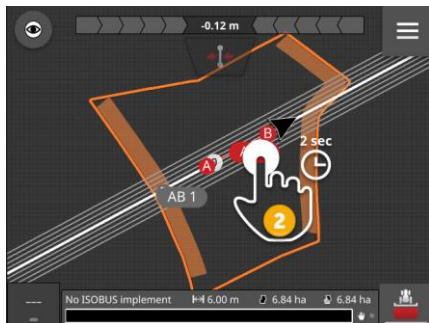
1. Press the compass until you see the map in overview.
   → The reference tracks are displayed.

2. Press and hold on the track name.
   → The "Track name" input dialogue is displayed.

3. Enter the track name and confirm your entry.

9.5.5 Delete
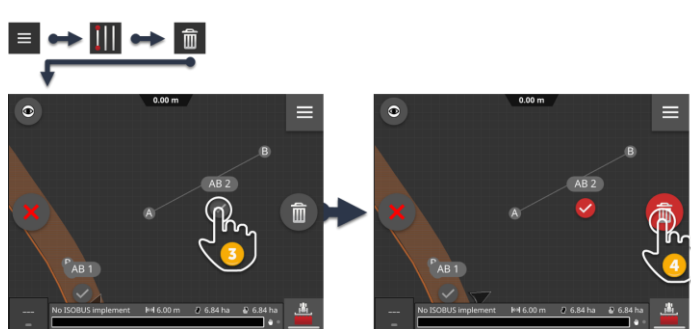
1. Press the "Tracks" button in the burger menu.
   → The "Tracks" menu is displayed.

2. Press the "Delete" button.
   → The "Delete Track" map view is displayed.

3. Select the track (2).

4. Press the "Delete" action button (3).
   → The track is deleted.
   → The deletion can be undone.

9.6 Field

9.6.1 Delete worked area

Delete the worked area, to re-work the field:

1. Press the "Field" button in the burger menu.
   → The "Field" menu is displayed.

2. Press the "Delete worked area" button.
   → The worked area is deleted.
   → The deletion can be undone.

9.6.2 Save field

The field boundary, headland and tracks are saved in the field list and can be reused:

1. Press the "Field" button in the burger menu.
   → The "Field" menu is displayed.

2. Press the "Save field" button.
   → The "Field Name" input dialogue is displayed.

3. Enter the field name and confirm your entry.
   → The field is saved in the field list.
   → A new task with the field is created in task mode.

NOTE

Saving the field is only possible in AUTOLOG.

If you have started a task, saving of the field is not necessary and not possible. The field, the tracks, the headland and the worked area are automatically saved in the task.

9.6.3 Correct GPS drift

GPS drift

Due to the Earth's rotation and the changing positions of the satellites in the sky, the calculated position of a point moves. This is referred to as GPS-drift.
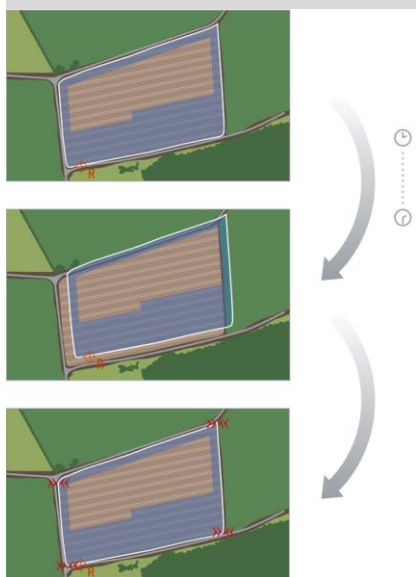
If you open saved position data after some time, then you will often notice a drift relative to the actual position.

Affected are
- Field boundary
- Worked area
- Reference track
- Guidance tracks.

The lower the accuracy of the correction data, the stronger the GPS drift.

Correct the GPS drift:

1. Calibrate the Reference point (⇒ Chapter 9.6.3).

    → Field boundary, tracks and obstacles are moved.

2. Move the reference track (⇒ Chapter 9.5.3).

Add reference point

Select a prominent point, e.g. a gulley lid or a permanent marking in the entry to the field. Mark this point.

→ To calibrate the reference point, you must be able to approach the exact same position from exactly the same direction again.

1. Drive to the reference point and bring the tractor or self-propelled implement to a stop.

2. Press the "Field" button in the burger menu.

    → The "Field" menu is displayed.

3. Press the "Set new reference point" button.

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Calibrate reference point

1. Approach the reference point with the tractor or the self-propelled implement. In doing so, approach from the same compass point as when adding the point.

2. Come to a stop precisely over the reference point.

3. Press the "Field" button in the burger menu.
   → The "Field" menu is displayed.

4. Press the "Calibrate reference point" button.

NOTE

You must be able to find the reference point again.

The recorded data is of no use if you can no longer find the position of the reference point.

▶ Note the exact position of the reference point.

NOTE

No reference point is needed with RTK.

If you use RTK, there is no GPS drift. You do not need to set the reference point.

9.6.4 Delete

Delete the field, tracks, headland and worked area:

1. Press the "Field" button in the burger menu.
   → The "Field" menu is displayed.

2. Press the "Delete field" button.
   → A message window is displayed.

3. Confirm the message.
   → The field, the tracks, the headland and the worked area are deleted.
   → The deletion can be undone.

10 Miscellaneous

10.1 Testing Parallel Tracking, Section Control and Task Control

To be able to use Parallel Tracking, Section Control or Task Control, you require a licence.

Before purchasing a licence, you can test the apps without restriction, without any obligation and free of charge for 50 hours:

1. Press the "Settings" button on the start screen.
   → The "Settings" operating screen is displayed.

2. Press the "System" button.
   → The "System" operating screen is displayed.
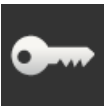
3. Press the "Licence data" button.
   → The "Licence data" operating screen is displayed.
   → The buttons for the start of the trial period are displayed.
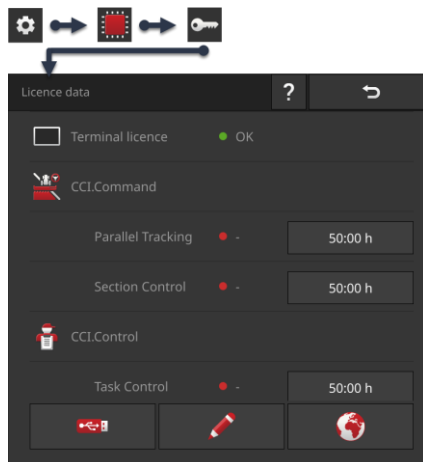
4. Press the button "50:00 h" for the app that you want to test.

5. Open the app in standard view.
   → The message window "Remaining test hours" is displayed:
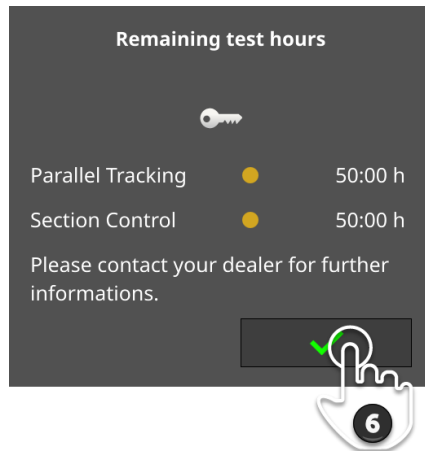
6. Confirm the message just before you want to trial the app.
   → You can use the app without any restrictions.
   → The trial period starts to count down.

7. Check the remaining trial period in the "Licence data" operating screen.
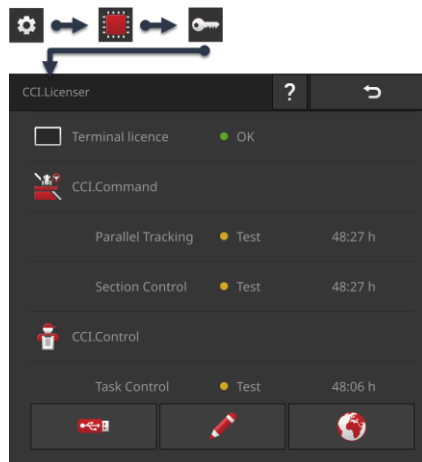
NOTE

Switch off the app if you are not using it.

The trial period starts to count down when
- You have confirmed the message "Remaining test hours" and
- the app is in mini view or standard view.

▶ Directly after each test, move the app into the app menu (⇒ Chapter 3.3).
   → The Remaining test hours do not continue to count down.

NOTE

Only confirm the message window when starting to test the app.

The message window "Remaining test hours" is displayed when you start the app. The remaining test hours only count down after you have confirmed the message.

▶ Do not confirm the message when restarting the terminal or when launching the app, rather only when you actually want to test the app.
→ In this way you have full control over when the trial period starts to count down.

10.2 Ejecting the flash drive

NOTE

Do not simply pull out a connected flash drive.

It is possible that at an app will be reading or writing to the flash drive at just this point in time. It will not be possible to end the data access cleanly. Loss of data could occur.

▶ Use "Unmount drive".

1. Press the "Settings" button.
   → The "Settings" operating screen is displayed:
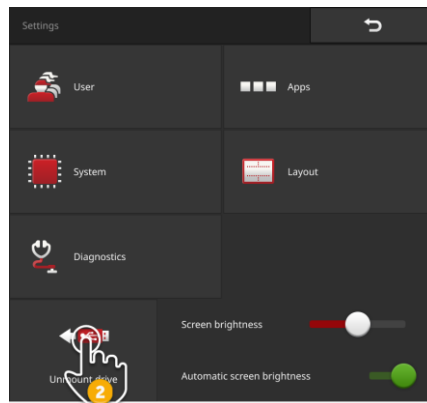
2. Press on the "Unmount drive" button.
   → CCI.OS ends all accesses to the flash drive.
   → The message "Flash drive removed" appears in the status bar

3. Pull out the flash drive.

10.3 Closing Rescue System

The Rescue System can only be used by the service partner.

For easy differentiation from the CCI.OS, the Rescue System has a graphical user interface of a different colour:
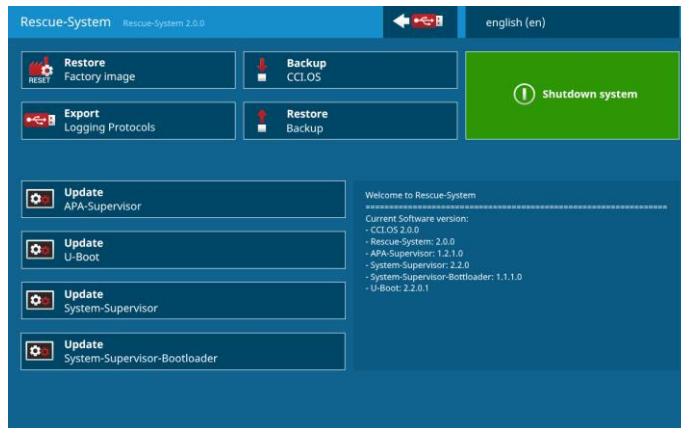
The service partner uses the Rescue System for

- Backing up and restoring
- Updating components of the operating system
- Error analysis.

The Rescue System can only be intentionally started by the service partner. After an internal error, it may occur that the terminal starts up in the Rescue System.

▶ Exit the Rescue System and restart CCI.OS.

Exit the Rescue System as follows:

1. Press the "Language" button.
   → The "Language" selection list is displayed.

2. Select your language.
   → The checkbox at the right edge of the button is selected.

3. Press "Back".
   → The Rescue System is displayed.
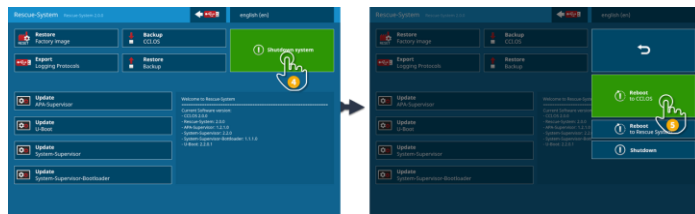
4. Press the "Shutdown System" button.
   → The "Shutdown System" menu is displayed.

5. Press the "Reboot to CCI.OS" button.
   → The terminal restarts.
   → The safety instructions are displayed.

6. Drag the "Enter" button in the indicated direction.
   → The arrow changes its shape to a check mark.
   → The start screen of CCI.OS is displayed.

NOTE

CCI.OS will no longer start.

If the CCI.OS terminal can no longer start, a severe error has occurred.
→ You will not be able to rectify the error yourself.

▶ Contact your service partner.

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11 Troubleshooting

CAUTION!

If a technical failure occurs, the work process must be interrupted.

Continuation of working after technical failures can result in damage to the terminal or the implement!

1. Stop working.
2. Look for a solution in this chapter of the operating instructions.
3. Contact your dealer if the problem persists.

In the event of a fault, the terminal may no longer respond to user inputs.

Forced shut-down

1. Press the ON/OFF button for 2 seconds.
   → The terminal shuts down.

2. Press the ON/OFF button for 1 second.
   → The terminal restarts.

CAUTION!

In a forced shut-down all internal supply voltages are switched off.

Unsaved data is lost. The terminal and its software are not damaged by the switch-off.

▶ Perform a forced shut-down only if it is absolutely unavoidable.

11 Troubleshooting

If a hardware problem exists, the terminal switches off automatically. The LED of the ON/OFF button transmits a series of blue flashes.

The LED flashes once per second and, dependent on the error, 1 to 27 times in succession. There is a two second pause at the end of the sequence. The sequence then starts again from the beginning. This makes counting easier for you.

Restart the terminal. If the terminal switches off again, and the LED of the ON/OFF button flashes blue again, the problem still exists.

You can rectify the problems listed in the following table locally.

Flashes	Cause/remedy
7	The temperature measured in the terminal exceeds 95 °C. Possibly the temperature sensor is defective. / Allow the terminal to cool before restarting. If the error reoccurs, the terminal must be sent in.
25	The internal 12 V power supply is unstable. / There may be a problem with the applied voltage at the terminal. Check the power supply.
26	The internal 5 V power supply is unstable. / There may be a problem with the applied voltage at the terminal. Check the power supply.
27	The internal 3.3 V power supply is unstable. / There may be a problem with the applied voltage at the terminal. Check the power supply.

For all other hardware problems, the terminal must be sent in. Tell the service partner the number of flashes there are.

The ON/OFF button is permanently red if the terminal is operating under the Rescue System.

→ No error exists.

The Rescue System can only be used by Service.

▶ Close the Rescue System and restart CCI.OS (⇒ Chapter 10.3).

The ON/OFF button flashes during the switching on process.

→ No error exists.

11.1 Problems during operation

This chapter lists problems that may occur during use of the terminal.

A suggestion is made for rectification for each problem. If you cannot rectify the problem based on the suggestion, contact your dealer.

Problem	Cause/remedy
The terminal does not switch off, if you switch off the tractor ignition.	The tractor does not switch off the supply to the In-cab connector. ▶ Switch the terminal off using the ON/OFF button or ▶ disconnect cable A.
The terminal does not switch on.	Terminal not connected to the ISOBUS. ▶ ⇒ Chapter 2 describes how you can connect the terminal to the ISOBUS. Ignition is not switched on. ▶ Start the tractor.
The connected implement is not displayed on the terminal.	Implement is not connected or is incorrectly connected. ▶ Ensure that the implement's ISOBUS cable is correctly connected at the tractor. Bus terminator missing. ▶ Check whether a bus terminator must be attached to the implement. Incorrect configuration of the UT. ▶ Configure the UT of the terminal according to this manual. The "Universal Terminal" is not on. ▶ In the "ISOBUS settings" operating screen switch the "Universal Terminal" on. The ISOBUS settings are located in Settings under "Apps"

Problem	Cause/remedy
Two ISOBUS terminals are present on the ISOBUS. The connected implement is not displayed on either of the terminals.	The universal terminals have the same UT number and thus cannot log in to the ISOBUS. ▶ Set different UT numbers in the two terminals.
An update has been installed on the implement. However, the terminal displays the implement's old operating screens.	The old version of the implement is still saved on the terminal. 1. Disconnect the implement from the ISOBUS. 2. Delete the implement from the terminal (⇒ Chapter 7.5.2). 3. Connect the implement to the ISOBUS.
The connected AUX control is not displayed.	Incorrect configuration of the UT. 1. Disconnect the AUX control from the ISOBUS. 2. Set the UT number to "1" in the terminal for CCI.UT. 3. Reconnect the AUX control to the ISOBUS.
The cable of the AUX control only has an In-cab connector instead of a Y-cable.	You require A and Y cables: 1. Connect cable A to connector C on the terminal. 2. Insert the plug "UT" on cable Y into the "InCab" socket on cable A. 3. Insert the plug "AUX" on cable Y into the In-cab coupling of the AUX control. 4. Insert the "InCab" coupling on cable Y into the In-cab panel connector of the tractor or the self-propelled implement.

Problem	Cause/remedy
No GPS data is displayed in the information area of the GPS settings.	No power supply at the GPS receiver ▶ Check the power supply to the GPS receiver. GPS receiver not connected to the terminal ▶ Check the connection of the GPS receiver with the terminal. → If serial data is to be used, the RS232-I interface must be used. → If CAN data is to be used, the receiver must be connected to the CAN-Bus. Incorrect GPS source selected ▶ Under GPS settings check whether the GPS source is selected that is currently being used. Incorrect baud rate set ▶ When using serial data under GPS settings, set the same baud rate with which your receiver is configured. Incorrect configuration of the receiver ▶ To see how the receiver is configured, refer to the operating instructions of your GPS receiver. Incorrect assignment of the cable wiring ▶ Use an original cable.
No implement functions are displayed in the "AUX assignment" operating screen.	Does the implement support operation via AUX control? ▶ The implement operating instructions provide information. The implement is not connected to the UT with UT number "1". ▶ Move the implement into the UT with UT number "1". Most implements offer a function for moving to another UT.
My ISOBUS implement has the Task Controller function, however, it does not register in the implement list in CCI.Config. Also, I cannot use it for Section Control or documentation.	A second ISOBUS terminal with Task Controller is logged in on the ISOBUS. The implement has connected to the Task Controller of the other terminal. ▶ Switch the Task Controller of the second ISOBUS terminal off.

Problem	Cause/remedy
I want to use the GPS receiver A101 on the terminal and accordingly am using cables B and N.	Cable N is not suitable for operation of the A101. → The contacts for the voltage signal V+ are not assigned. → The GPS receiver is not supplied with current. You require a cable that has an M8 coupling for connection to cable B and a 12-pole coupling for connection to the A101.
The warning symbol next to the tractor name is displayed, although I have set up the tractor.	The warning icon is displayed, if • No tractor is selected • The distance C is not set for the implement mounting type. Only if both conditions are met, will the warning symbol not be displayed. ▶ Select the tractor (⇒ Chapter 6.8.1) and set distance C for all implement mounting types (⇒ Chapter 6.2.1).
I cannot connect my ISOBUS implement to CCI.Convert. It does not appear in the list of implements in the CCI.Convert settings.	The Task Controller is not set up correctly on the terminal 1. Switch the ISOBUS function "Task Controller" "on". 2. Set a Task Controller number. 3. Switch the app CCI.Control "on". The implement is not connected to the ISOBUS. The implement has no TC client or it is not connected to the terminal.

11.2 Diagnostics

If you have a persistent problem that you cannot resolve on your own, your contact will be more than happy to help.

Describe in detail the work steps that led to the error. If your contact requests, also provide the log and a screenshot.

11.2.1 Export log

The terminal records a log. The log is only saved on the terminal and is not transmitted.

If you are having problems operating the terminal or ISOBUS implement, you can send the log to your contact:

Prior preparation

▶ Connect a flash drive to the terminal.

1. Press the "Settings" button.
   → The "Settings" operating screen is displayed:

2. Press the "Diagnostics" button.
   → The "Diagnostics" operating screen is displayed:

3. Press the "Log" button.
   → The "Log" operating screen is displayed:

4. Press the "Export log" button.
   → The log is saved on the flash drive.

5. Press the "Settings" button.
   → The process is ended.

11.2.2 Create screenshot

A picture says more than a thousand words.

If you are having problems operating the terminal or ISOBUS implement, you can capture a screenshot and send it to your contact:

▶ Connect a flash drive to the terminal.
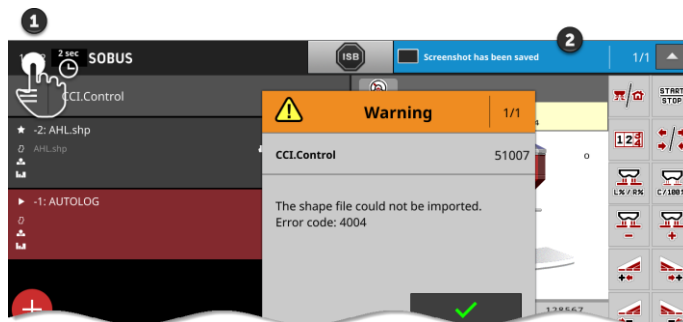
▶ Press on the left time in the status bar (1) until a message is displayed in the status bar (2).
  → The screenshot is saved on the flash drive in the main directory.

11.3 Messages

Messages

- indicate incorrect operation or an error state or
- allow you to interrupt the execution of a command.

Messages are dialogue windows, interrupt the program flow and must be acknowledged. Each message is identified by a unique error number.

1. Type
2. Message number
3. Message text
4. Button "OK"
5. Button "Cancel"
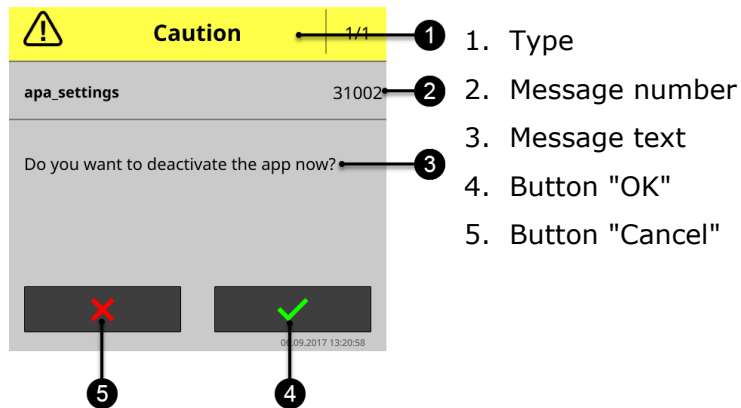
"Caution" type messages can be acknowledged in 2 ways:

Cancel
→ The started action is aborted,
→ The previous condition is restored.

OK
→ Message is understood, I want to continue.

"Warning" type messages have no "Cancel" button.

▶ Read the message. and confirm it with "OK".

Error number	Type/Message text/Remedy
14	Warning
	/
	%1 logs have been saved on the flash drive. %2 remain. The flash drive is full.
	Connect a new flash drive.
	/
	You want to save all the logs created on the terminal on the flash drive. The free storage on the flash drive is insufficient. Only some of the logs could be saved.
	Ensure that the flash drive has at least 10 MB of free storage.
21	Warning
	/
	Exporting of the licence data has failed.
	Connect a flash drive and repeat the process.
	/
	You want to update the licence data via flash drive. Saving of the TAN on the flash drive has failed.
	Ensure that,
	• the flash drive is functioning,
	• the write-protection switch of the flash drive is in the "off" position and
	• the flash drive has at least 100 kB of free storage.

36	Warning
	/
	The log could not be exported.
	Connect a flash drive and repeat the process.
	/
	You want to save all the logs created on the terminal to a flash drive. The terminal has not recognised the flash drive.
	→ The terminal has recognised the flash drive if the notification "Flash drive is connected" is displayed.
	If you have not connected a flash drive to the terminal:
	▶ Connect a flash drive.
	If you have already connected a flash drive to the terminal:
	▶ Pull out the flash drive and plug it back in.
	If the terminal does not recognise the flash drive in spite of the renewed connection:
	▶ Use a different flash drive or a different USB port on the terminal.
6000	Notification
	/
	Another TECU has been detected
	/
	The message is for your information. You must make changes to the terminal settings.
	CCI.TECU is switched on and logs on to the ISOBUS as "TECU". The terminal has found another TECU logged on to the ISOBUS.
	CCI.TECU then only sends the speed over the ISOBUS, if the other TECU has not already done so.

7035	Warning
	/
	No flash drive connected.
	/
	You want to export the log. Saving of data on the flash drive has failed. The terminal has not recognised the flash drive.
	→ The terminal has recognised the flash drive if the notification "Flash drive is connected" is displayed.
	If you have not connected a flash drive to the terminal:
	▶ Connect a flash drive.
	If you have already connected a flash drive to the terminal:
	▶ Pull out the flash drive and plug it back in.
	If the terminal does not recognise the flash drive in spite of the renewed connection:
	▶ Use a different flash drive or a different USB port on the terminal.
31001	Caution
	/
	Disconnect all implements from the terminal before restoring the factory settings.
	Check all settings once the process is completed.
	/
	Safety note. Follow the instructions.
31002	Caution
	/
	Do you want to switch the app off?
	/
	Confirmation query.
	▶ Press "OK" to switch the app off.
	▶ Press "Cancel" to cancel the action.
	→ The app remains switched on.

31003	Warning
	/
	The time zone could not be set.
	/
	You want to change the time zone in the system settings. The change fails.
	▶ Switch the terminal off and on again.
	▶ Change the time zone. Use another time zone as a test.
	If the error cannot be cleared:
	▶ Contact your dealer.
31004	Caution
	/
	You are switching the "TECU" ISOBUS function off.
	The terminal will not send any more speed information over the ISOBUS.
	/
	Confirmation query.
	▶ Press "OK" to switch the TECU ISOBUS function off.
	▶ Press "Cancel" if the terminal is to remain logged on to the ISOBUS as TECU.
31005	Caution
	/
	You are switching the "Task Controller" ISOBUS function off.
	It will only be possible to use CCI.Config, CCI.Control and CCI.Command with limited functionality.
	/
	Confirmation query.
	▶ Press "OK" to switch the Task Controller ISOBUS function off.
	▶ Press "Cancel" if the terminal is to remain logged on to the ISOBUS as Task Controller.

31006	Caution
	/
	Do you want to change the Task Controller number?
	/
	Confirmation query.
	▶ Press "OK" to change the Task Controller number.
	▶ Press "OK", if the Task Controller number should be retained.
31007	Caution
	/
	You are switching the "UT" ISOBUS function off.
	The terminal can no longer be used to operate an ISOBUS implement.
	/
	Confirmation query.
	▶ Press "OK" to switch the UT ISOBUS function off.
	▶ Press "Cancel" if the terminal is to remain logged on to the ISOBUS as UT.
31008	Caution
	/
	You are switching the "File Server" ISOBUS function off.
	The terminal will not provide any storage space for the ISOBUS participants.
	/
	Confirmation query.
	▶ Press "OK" to switch the File Server ISOBUS function off.
	▶ Press "Cancel" if the terminal is to remain logged on to the ISOBUS as File Server.
31009	Caution
	/
	Do you want to delete the database?
	/
	Confirmation query.
	▶ Press "OK" to delete the database.
	→ All tractors, implements, fields and tasks, master data, totals and location-dependent data will be deleted.
	▶ Press "Cancel" if the database should not be deleted.

32000	Warning
	/
	No bus participants have been found. The terminal must be restarted for safety reasons.
	Press "OK" to continue.
	/
	Confirmation query.
	▶ Press "OK".
	→ The terminal restarts.
32001	Warning
	/
	Internal error.
	Connection to the ISOBUS lost. Restart the terminal.
	/
	An internal error has occurred. The connection to the ISOBUS is automatically interrupted.
	→ Operation of the implement is no longer possible.
	The terminal must be restarted.
	▶ Press "OK".
	→ The terminal restarts.
	→ The connection to the implement is interrupted for the duration of the restart.
	Before restarting screenshots can be created for fault analysis or the log can be exported:
	1. Press "Cancel".
	→ The terminal is not shut down.
	→ The error message is closed.
	→ The connection to the ISOBUS remains interrupted.
	→ Instead of the ISB, the button "No ISOBUS" is displayed:
	2. Take screenshots of the active apps and the settings and export the log. Send this information to your service partner.
	3. Press the button "No ISOBUS".
	→ The terminal restarts.

32002	Warning
	/
	Internal error.
	Connection to the ISOBUS lost. Restart the terminal.
	/
	⇒ *32001*.
32003	Warning
	/
	The ISOBUS functions of the terminal have been disabled.
	You require version %1 of the APA-Supervisor.
	Repeat the CCI.OS update.
	/
	Without the named version of the APA-Supervisor, the ISOBUS functions UT, Task Controller, TECU and File Server cannot be run.
	▶ Contact your service partner.
	→ The service partner will install the version of APA-Supervisor referred to in the message.
33003	Warning
	/
	Login of user %1 has failed. The entered password is incorrect.
	/
	You have entered an invalid password.
	▶ Repeat the process.
33004	Warning
	/
	Login of user %1 has failed. The user is unknown.
	/
	You have entered an invalid user name.
	▶ Request a valid user name from the terminal administrator.
33006	Warning
	/
	User %1 is logged in and cannot be deleted.
	/
	The logged in user cannot delete themselves.
	▶ Log in as terminal administrator and repeat the process.

33009	Warning
	/
	User name %1 is invalid. A valid user name is 1-32 characters long. The special characters \\/:*?""<>| are not allowed.
	/
	You want to create a new user. The user name must not contain any of the special characters referred to in the message.
33010	Warning
	/
	Changes to default user %1 cannot be made.
	/
	The user profile cannot be changed.
33012	Warning
	/
	User name %1 is already in use. Select another user name.
	/
	You want to create a new user. A user with this user name already exists.
	▶ Select another user name.
34000	Warning
	/
	The Rescue System update has failed.
	Repeat the process.
	/
	The update has failed for an unknown reason.
	▶ Repeat the process. Leave the flash drive inserted for the duration of the update and do not switch the terminal off.
34001	Warning
	/
	The CCI.OS-Update has failed.
	/
	The update has failed for an unknown reason.
	▶ Repeat the process. Leave the flash drive inserted for the duration of the update and do not switch the terminal off.

34002	Warning
	/
	The terminal could not be disconnected from the ISOBUS.
	/
	Confirmation query.
	▶ Press "OK".
34003	Warning
	/
	The backup could not be created.
	/
	You want to create a backup, e.g. before carrying out a CCI.OS update. The backup cannot be created or cannot be saved on the flash drive.
	Ensure that,
	• the flash drive is functioning,
	• the write-protection switch of the flash drive is in the "off" position and
	• the flash drive has at least 1 GB of free storage.
	▶ Repeat the process.
34004	Caution
	/
	Do you want to run the CCI.OS-Update?
	The terminal cannot be used during the update.
	/
	Confirmation query. An update of CCI.OS could take several minutes. The terminal may restart several times. The terminal and the ISOBUS implement cannot be operated for the duration of the update.
	▶ Press "OK" to start the update.
	▶ Press "Cancel" if the update should not be performed.

34005	Caution
	/
	Do you want to create the backup?
	The terminal cannot be used while the backup is being created.
	/
	Confirmation query. The backup could take several minutes. The terminal and the ISOBUS implement cannot be operated for the duration of the backup.
	▶ Press "OK" to start the backup.
	▶ Press "Cancel" if the backup should not be performed.
34006	Caution
	/
	Do you want to restart the terminal?
	/
	Confirmation query.
	▶ Press "OK" to restart the terminal.
	→ The connection to the implement is interrupted for the duration of the restart.
	▶ Press "Cancel", if you want to continue working without a restart.
34007	Caution
	/
	Do you want to run the CCI.OS-Update?
	/
	Confirmation query. An update of CCI.OS could take several minutes. The terminal may restart several times. The terminal and the ISOBUS implement cannot be operated for the duration of the update.
	▶ Press "OK" to start the update.
	▶ Press "Cancel" if the update should not be performed.
34008	Warning
	/
	Not enough free space on the flash drive.
	Use a flash drive with additional free space of at least %1 bytes.
	/
	You want to save data to the flash drive, e.g. a backup or a log. The free space on the flash drive is insufficient.
	▶ Connect a flash drive with enough free space to the terminal.

34009	Caution
	/
	Do you want to update the Rescue System?
	The terminal cannot be used during the update.
	/
	Confirmation query. The update of the Rescue System may take several minutes. The terminal may restart several times. The terminal and the ISOBUS implement cannot be operated for the duration of the update.
	▶ Press "OK" to start the update.
	▶ Press "Cancel" if the update should not be performed.
34010	Warning
	/
	The Rescue System update has failed.
	/
	▶ Repeat the process. Leave the flash drive inserted for the duration of the update and do not switch the terminal off.
34011	Warning
	/
	The update of the "APA-Supervisor" module has failed.
	Repeat the CCI.OS update or perform the update of the APA-Supervisor in the Rescue System.
	/
	▶ Repeat the update. Leave the flash drive inserted for the duration of the update and do not switch the terminal off.
	If the update of the APA-Supervisor fails again, the APA-Supervisor must be updated separately.
	▶ Contact your service partner.
	→ The service partner has a special installation file.
	→ The service partner performs the update in the terminal's Rescue System.
	The Rescue System is not described in these operating instructions.
	▶ Contact your dealer.

34012	Warning
	/
	The update of the "System-Supervisor" module has failed.
	Repeat the CCI.OS update or perform the update of the System-Supervisor in the Rescue System.
	/
	▶ Repeat the update. Leave the flash drive inserted for the duration of the update and do not switch the terminal off.
	If the update of the System-Supervisor fails again, the System-Supervisor must be updated separately.
	▶ Contact your service partner.
	→ The service partner has a special installation file.
	→ The service partner performs the update in the terminal's Rescue System.
	The Rescue System is not described in these operating instructions.
	▶ Contact your dealer.
34013	Warning
	/
	The update of the "Bootloader" module has failed.
	Repeat the CCI.OS update or perform the update of the Bootloader in the Rescue System.
	/
	▶ Repeat the update. Leave the flash drive inserted for the duration of the update and do not switch the terminal off.
	If the update of the Bootloader fails again, the Bootloader must be updated separately.
	→ You need a special installation file.
	→ The update must be performed in the Rescue System of the terminal.
	The Rescue System is not described in these operating instructions.
	▶ Contact your dealer.

34014	Warning
	/
	The backup could not be restored.
	1. Press the ON/OFF button for 12 seconds.
	2. Press the ON/OFF button and start the Rescue System.
	3. Restore another backup or reset the terminal to its delivery state.
	/
	You want to restore a backup, e.g. to install the previous version of CCI.OS after a failed update. Restoration of the backup has failed.
	Start the Rescue System and repeat the process. If necessary, use another backup:
	1. Press the ON/OFF button for 12 seconds.
	$\rightarrow$ The terminal beeps softly several times.
	2. Release the ON/OFF button and then press it briefly.
	$\rightarrow$ The Rescue System of the terminal starts.
	3. Press the "Restore backup" button.
	If restoring of the backup fails again, you can reset the terminal to its delivery state.
	▶ In the Rescue System press the button "Restore delivery state".

34015	Warning
	/
	The terminal cannot be reset to the delivery state.
	
	1. 1. Press the ON/OFF button for 12 seconds.
	
	2. Press the ON/OFF button and start the Rescue System.
	
	3. Restore a different backup.
	/
	You want to reset the terminal to its delivery state, before you transfer the device to another user. The delivery state cannot be restored.
	Start the Rescue System and repeat the process. If necessary, use another backup:
	
	1. Press the ON/OFF button for 12 seconds.
	   → The terminal beeps softly several times.
	
	2. Release the ON/OFF button and then press it briefly.
	   → The Rescue System of the terminal starts.
	
	3. Press the "Restore delivery state" button.
	
	If the delivery state cannot be restored:
	
	▶ Contact your dealer.

34017	Caution / Do you want to download the CCI.OS-Update? / Confirmation query. The size of the update file is several MBs. Downloading it over a mobile phone network will incur a data charge. ▶ Press "OK" to start the download and carry out the update. ▶ Press "Cancel" if the update should not be performed.
34018	Warning / The CCI.OS update could not be downloaded. / The download update has failed. Either the Internet connection is unstable or the update server has malfunctioned. ▶ Repeat the process.

34019	Caution
	/
	Do you want to cancel the process?
	/
	Confirmation query. You want to cancel an active process.
	▶ Press "OK" to cancel the process.
	▶ Press "Cancel" to continue executing the process.
35000	Caution
	/
	The connected flash drive cannot be read. Use a different flash drive.
	/
	The flash drive cannot be read by the terminal.
	▶ Use a different flash drive.
35998	Notification
	/
	Flash drive was disconnected
	/
	You have pulled the flash drive out of the terminal.
35999	Notification
	/
	Flash drive connected
	/
	You have connected a flash drive to the terminal. The terminal has recognised the flash drive.

36000	Warning
	/
	The logs could not be exported.
	Connect a flash drive and repeat the process.
	/
	You want to save all the logs created on the terminal to a flash drive. No flash drive is connected or the terminal did not recognise the flash drive.
	→ The terminal has recognised the flash drive if the notification "Flash drive is connected" is displayed.
	If you have not connected a flash drive to the terminal:
	▶ Connect a flash drive.
	If you have already connected a flash drive to the terminal:
	▶ Pull out the flash drive and plug it back in.
	If the terminal does not recognise the flash drive in spite of the renewed connection:
	▶ Use a different flash drive or a different USB port on the terminal.
36001	Warning
	/
	The log level could not be set.
	/
	The log level should only be set by the developer or Service.
36997	Notification
	/
	Logs exported
	/
	All logs have been moved from the terminal to the flash drive.
36998	Notification
	/
	Log exported
	/
	The selected log has been moved from the terminal to the flash drive.

37000	Notification / IP configuration succeeded / This message is only displayed in developer mode.
37001	Notification / WiFi connection has been disconnected / You have disconnected the terminal from WiFi.
37002	Notification / WiFi connection has been made / You have connected the terminal to a WiFi network.
37003	Notification / Creating WiFi connection... / The terminal connects using WiFi. The process may take a few seconds.

37004	Caution
	/
	Connection to WiFi failed.
	The password entered is invalid.
	/
	You have entered an incorrect WiFi password.
	
	1. In the "WiFi networks" selection list, press and hold the button with the WiFi network.
	   → A context menu is displayed.
	2. Select "Edit".
	   → The window for password entry is displayed.
	3. Correct password and confirm entry.

37005	Notification / IP configuration failed / This message is only displayed in developer mode.
39000	Warning / Only %2% of internal storage left. Export all logs to a flash drive to release storage space. / You have created so many logs, that the terminal's internal storage is nearly full. Free up some internal storage so that the terminal does not become unstable during operation. ▶ Export all logs to a flash drive (⇒ Chapter 11.2.1).
39001	Warning / Only %2% or %1 MB of internal storage left. / The terminal's internal storage is nearly full. Free up some internal storage so that the terminal does not become unstable during operation. ▶ Export all logs to a flash drive (⇒ Chapter 11.2.1). ▶ Export all completed tasks (⇒ Chapter 8.4.2).
39991	Notification / Log exported / The log has been saved on the flash drive.
39992	Warning / The log could not be created. / Internal error. The cause is unknown. ▶ Repeat the process.

39993	Notification
	/
	Creating log
	/
	The log is being created. The process may take a few seconds.

39994	Notification
	/
	Exporting log
	/
	You have pressed the button "Export log" twice ($\Rightarrow$ Chapter 11.2.1). The process can only be started once.
	▶ Wait until the notification "Log file has been exported" is displayed.

39995	Notification
	/
	No log found
	/
	You want to export a log, e.g. to forward to a service partner. However, no log is available on the terminal.
	▶ Create a log.

39996	Notification
	/
	Log exported
	/
	The logs have been saved on the flash drive.

39999	Notification
	/
	Log created
	/
	The logs have been created and can now be saved on the flash drive.

40003	Caution
	/
	Do you want to delete the licence data?
	Confirm the message and restart the terminal.
	/
	This message is only displayed in developer mode.
	Confirmation query.
	You want to delete the terminal licence and licence key of the apps:
	→ The terminal can only be used for implement operation.
	→ CCI.Command and CCI.Control can no longer be used.
	▶ Press "OK" to delete the licence data.
	▶ Press "Cancel" to retain the licence data.
40004	Notification
	/
	Licence data deleted
	/
	The licence data saved on the terminal has been deleted:
	→ The terminal can only be used for implement operation.
	→ CCI.Command and CCI.Control can no longer be used.
40005	Warning
	/
	The licence data could not be deleted.
	/
	You want to delete the licence data saved on the terminal. The process has failed for an unknown reason.
	▶ Repeat the process.
40006	Warning
	/
	No licence data is present.
	/
	This message is only displayed in developer mode.
	The licence data should be deleted. However no licence data is present on the terminal.

40007	Warning
	/
	No Internet connection. Update the licence data using the flash drive or by manual entry.
	/
	You want to update the licence data over the Internet. This is the fastest and easiest update method. However, the terminal is not connected to the Internet.
	▶ Connect the terminal to the Internet (⇒ Chapter 4.3.4).
	▶ Update the licence data.
40008	Warning
	/
	Updating of the licence data failed. Update the licence data using the flash drive or by manual entry.
	/
	You want to update the licence data over the Internet. This is the fastest and easiest update method. The terminal is connected to the Internet, however the licence server signals an error.
	▶ Update the licence data via a flash drive or manually ⇒ Chapter 4.3.3).
41000	Warning
	/
	Server error. Try again later.
	/
	You want to connect the terminal to agrirouter. The terminal is connected to the Internet, but agrirouter cannot be reached.
	▶ Repeat the process in a few minutes' time.
41002	Warning
	/
	Registration at the agrirouter has failed.
	/
	You have entered the registration code in the agrirouter settings. This is received under the URL www.myagrirouter.com. The terminal is connected to the Internet. Registration with the agrirouter has failed.
	→ Presumably the entered registration code is invalid.
	▶ Read out the registration code for your account under www.myagrirouter.com.
	▶ Re-enter the registration code at the terminal.

41008	Warning
	/
	Login failed. The entered ID is invalid.
	/
	The Application ID and the Certification ID are preset in the agrirouter settings. The presetting has been changed by you or is invalid for another reason.
	▶ Contact your dealer for the correct IDs and enter them in the terminal (⇒ Chapter 4.3.5).
	▶ Switch agrirouter on. → The terminal logs in to the agrirouter using the new IDs.
41009	Warning
	/
	Login failed. The entered internet address is invalid.
	/
	The Internet address of the registration service is preset in the agrirouter settings. The presetting has been changed by you or is invalid for another reason.
	▶ Contact your dealer for the correct address of the registration service and enter it in the terminal (⇒ Chapter 4.3.5).
	▶ Switch agrirouter on. → The terminal logs in to the agrirouter using the new address.
50000	Caution
	/
	Implement could not be loaded.
	/
	The Object Pool of the implement cannot be displayed clearly by the terminal. Operation of the implement is thus not possible.
	1. Disconnect the implement form the ISOBUS and wait 5 seconds.
	2. Reconnect the implement to the ISOBUS.
	If the error cannot be cleared, there is probably a fundamental problem with the implement:
	▶ Contact the implement manufacturer or its service partner.

50001	Caution
	/
	The connection to the implement is lost.
	/
	The terminal no longer has a connection to the implement.
	• You have disconnected the implement from the ISOBUS or
	• a connection problem has occurred on the ISOBUS.
	1. Disconnect the implement form the ISOBUS and wait 5 seconds.
	2. Reconnect the implement to the ISOBUS.
50002	Warning
	/
	The automatic AUX assignment has failed. Perform the AUX assignment manually.
	/
	The AUX assignment must only be performed once. The AUX assignment is available again after a restart of the implement and the AUX control and is performed automatically. The automatic AUX assignment has failed.
	▶ Carry out the AUX assignment manually ($\Rightarrow$ Chapter 7.4.1).
50003	Warning
	/
	The AUX assignment has failed. Repeat the procedure.
	/
	If the error cannot be cleared, there is probably a fundamental problem with the implement or the AUX control:
	▶ Contact the implement manufacturer or its service partner.
50004	Caution
	/
	No connection to implement %1.
	The implement cannot be operated using the AUX operating unit.
	/
	The terminal no longer has a connection to the implement.
	• You have disconnected the implement from the ISOBUS or
	• a connection problem has occurred on the ISOBUS.
	1. Disconnect the implement form the ISOBUS and wait 5 seconds.
	2. Reconnect the implement to the ISOBUS.

50005	Warning
	/
	No connection to AUX.
	The implement cannot be operated using the AUX operating unit.
	/
	The terminal no longer has a connection to the AUX control.
	• You have disconnected the AUX control from the ISOBUS or
	• a connection problem has occurred on the ISOBUS.
	1. Disconnect the AUX control form the ISOBUS and wait 5 seconds.
	2. Reconnect the AUX control to the ISOBUS.
50006	Warning
	/
	The AUX assignment has failed. The AUX operating unit is signalling an error.
	/
	▶ Repeat the process.
	If the error cannot be cleared, there is probably a fundamental problem with the AUX control:
	▶ Contact your dealer.
50007	Warning
	/
	The AUX assignment has failed. The implement is not responding.
	/
	1. Disconnect the implement and AUX control form the ISOBUS and wait for 5 seconds.
	2. Reconnect the implement and AUX control to the ISOBUS.
	3. Repeat the AUX assignment ($\Rightarrow$ Chapter 7.4.1).
	If the error cannot be cleared, there is probably a fundamental problem with the implement or the AUX control:
	▶ Contact the implement manufacturer or its service partner.

50008	Warning
	/
	The AUX assignment has failed. The implement is signalling an error.
	/
	1. Disconnect the implement and AUX control form the ISOBUS and wait for 5 seconds.
	2. Reconnect the implement and AUX control to the ISOBUS.
	3. Repeat the AUX assignment ($\Rightarrow$ Chapter 7.4.1).
	If the error cannot be cleared, there is probably a fundamental problem with the implement or the AUX control:
	▶ Contact the implement manufacturer or its service partner.
50009	Warning
	/
	The AUX assignment has failed. The AUX operating unit is not responding.
	/
	1. Disconnect the implement and AUX control form the ISOBUS and wait for 5 seconds.
	2. Reconnect the implement and AUX control to the ISOBUS.
	3. Repeat the AUX assignment ($\Rightarrow$ Chapter 7.4.1).
	If the error cannot be cleared, there is probably a fundamental problem with the implement or the AUX control:
	▶ Contact the implement manufacturer or its service partner.
50010	Warning
	/
	The selected UT number is already being used. Please select another UT number and restart the terminal.
	/
	The UT is the ISOBUS function for operating ISOBUS implements. Generally each ISOBUS terminal has a UT. Each UT on the ISOBUS must receive a unique UT number. Therefore if you operate multiple ISOBUS terminals and thus UTs on the ISOBUS, then you must assign each UT a unique number.
	Note: The CCI 800/CCI 1200 has two UTs.
	Note: The UT with which you want to operate the AUX control, must receive the UT number 1.
	The error message appears if two UTs have the same UT number. Change the UT number of the UT on the CCI 800/CCI 1200 or on the other ISOBUS terminal.

50011	Notification
	/
	Implements have been exported
	/
	You have saved one or more implements to a flash drive.
	Exporting an implement to the flash drive is only relevant in service cases. The exported data can only be evaluated by Service.
50012	Caution
	/
	The implements could not be exported. Check that a flash drive is connected.
	/
	You want to save one or more implements to a flash drive. No flash drive is connected or the terminal did not recognise the flash drive.
	→ The terminal has recognised the flash drive if the notification "Flash drive is connected" is displayed.
	If you have not connected a flash drive to the terminal:
	▶ Connect a flash drive.
	If you have already connected a flash drive to the terminal:
	▶ Pull out the flash drive and plug it back in.
	If the terminal does not recognise the flash drive in spite of the renewed connection:
	▶ Use a different flash drive or a different USB port on the terminal.
50995	Caution
	/
	Do you want to change the UT number? The connection to the implement will be interrupted and CCI.UT restarted.
	/
	Confirmation query. You have changed the UT number, e.g. to ensure that all UTs connected to the ISOBUS have different UT numbers.
	▶ Press "OK" to accept the changes.
	→ The connection to the implement will be interrupted and CCI.UT restarted.
	→ No implement operation will be possible for the duration of the process.
	▶ Press "Cancel" to retain the old UT number.

50996	Warning
	/
	This UT number is assigned to another CCI.UT.
	Select another UT number.
	/
	You have changed the UT number CCI.UT A (or B) , e.g. to ensure that all UTs connected to the ISOBUS have different UT numbers. However, the number you want to assign to CCI.UT A (or B) is already assigned to CCI.UT B (or CCI.UT A).
	▶ Set another UT number.
50997	Caution
	/
	The terminal must be restarted to apply the changes.
	/
	Confirmation query. Some changes only become effective once the terminal has been restarted.
	▶ Press "OK" to restart the terminal.
	→ No implement operation will be possible for the duration of the process.
50998	Notification
	/
	Loading implement
	/
	Loading of the graphical user interface of the ISOBUS implement can last several minutes.

51001	Warning / No flash drive connected. / The selected function requires a flash drive. No flash drive is connected or the terminal did not recognise the flash drive. → The terminal has recognised the flash drive if the notification "Flash drive is connected" is displayed. If you have not connected a flash drive to the terminal: ▶ Connect a flash drive. If you have already connected a flash drive to the terminal: ▶ Pull out the flash drive and plug it back in. If the terminal does not recognise the flash drive in spite of the renewed connection: ▶ Use a different flash drive or a different USB port on the terminal.
51002	Notification / Tasks imported / The tasks have been imported from the flash drive or agrirouter and can now be processed or started.
51003	Warning / The tasks could not be imported. / The error can have the following causes: • You removed the flash drive before the action was completed. • The free space on the terminal is insufficient. ▶ Repeat the process and leave the flash drive plugged in until the process has completed.
51004	Notification / Tasks exported / Tasks have been saved to a flash drive or sent to agrirouter.

51005	Warning / The tasks could not be exported. / You want to save tasks to a flash drive. The tasks cannot be saved on the flash drive. Ensure that, • the flash drive is functioning, • the write-protection switch of the flash drive is in the "off" position and • the flash drive has at least 20 MB of free storage. ▶ Repeat the process. The flash drive must remain connected to the terminal until the process has completed: → The notification *51004* "Tasks exported" is displayed.
51006	Notification / Shape file imported / A shape file has been imported from the flash drive or agrirouter.
51007	Warning / The Shape file could not be imported. / Did you remove the flash drive before the action was completed? ▶ Repeat the process and leave the flash drive plugged in until the process has completed.
51008	Notification / Shape file exported / The shape file has been saved to a flash drive or sent to agrirouter.

51009	Warning
	/
	The shape file could not be exported.
	/
	Did you remove the flash drive before the action was completed?
	▶ Repeat the process and leave the flash drive plugged in until the process has completed.
51010	Notification
	/
	Report exported
	/
	Reports have been saved to a flash drive or sent to agrirouter.
51011	Warning
	/
	The report could not be exported.
	/
	Did you remove the flash drive before the action was completed?
	▶ Repeat the process and leave the flash drive plugged in until the process has completed.
51012	Notification
	/
	Tasks exported
	/
	Tasks have been saved to a flash drive or sent to agrirouter.
51013	Warning
	/
	The task data could not be exported.
	/
	Did you remove the flash drive before the action was completed?
	▶ Repeat the process and leave the flash drive plugged in until the process has completed.

51014	Warning
	/
	The task could not be deleted.
	/
	The task must (and can) not be deleted.
	▶ Press "OK".
	→ The task will not be deleted.
51015	Warning
	/
	The driver could not be deleted.
	/
	The driver must (and can) not be deleted.
	▶ Press "OK".
	→ The driver will not be deleted.
51016	Warning
	/
	The agricultural practice could not be deleted.
	/
	The agricultural practice must (and can) not be deleted.
	▶ Press "OK".
	→ The agricultural practice will not be deleted.
51017	Warning
	/
	The technique could not be deleted.
	/
	The technique must (and can) not be deleted.
	▶ Press "OK".
	→ The technique will not be deleted.
51018	Warning
	/
	The customer could not be deleted.
	/
	The customer must (and can) not be deleted.
	▶ Press "OK".
	→ The customer will not be deleted.

51019	Warning
	/
	The farm could not be deleted.
	/
	The farm must (and can) not be deleted.
	▶ Press "OK".
	→ The farm will not be deleted.
51020	Warning
	/
	The field could not be deleted.
	/
	The field must (and can) not be deleted.
	▶ Press "OK".
	→ The field will not be deleted.
51021	Warning
	/
	The product could not be deleted.
	/
	The product must (and can) not be deleted.
	▶ Press "OK".
	→ The product will not be deleted.
51022	Warning
	/
	The Task Controller function of the implement is defective. Rate Control and Section Control cannot be performed.
	/
	The implement Task Controller has an error.
	→ Rate Control and Section Control cannot be performed.
	▶ Contact your dealer.
51023	Notification
	/
	New tasks available
	/
	New tasks are available for import in the agrirouter inbox (⇒ Chapter 8.4.1).

51024	Notification / Data sent to agrirouter / You have exported tasks, reports or other data to agrirouter. The process is completed.
51025	Warning / agrirouter could not send the tasks. / You have exported tasks, reports or other data to agrirouter. The data could not be sent to agrirouter from the terminal. The data is saved in the outbox of the agrirouter. → Data in the outbox must be sent manually. 1. Connect the terminal to the Internet. 2. Manually send the data in the outbox (⇒ Chapter 4.3.5).
51026	Warning / The task could not be started. An application map in the task is not assigned to any implement. / The task contains several application maps. However, one of the application maps is not assigned to any implement. ▶ Assign the application map to an implement.
51029	Notification / Entered field / This message is displayed, if the option "Message on field entry" is activated. → The tractor or self-propelled implement has crossed the field boundary and is on the field. → All tasks to which the field is assigned, are displayed. ▶ Select a task from the list or create a new task.

51030	Notification
	/
	Exited field
	/
	This message is displayed, if the option "Message on field entry" is activated.
	→ Tractor or self-propelled implement has left the field.
	▶ Pause the task.
52001	Caution
	/
	Do you want to delete the field boundary?
	/
	Confirmation query.
	▶ Confirm the query with "OK" to delete the field boundary.
	▶ Confirm the query with "Cancel" to interrupt the delete process. → The field boundary will not be deleted.
52002	Caution
	/
	Do you want to delete the headland?
	/
	▶ Confirm the query with "OK" to delete the headland.
	▶ Confirm the query with "Cancel" to interrupt the delete process. → The headland will not be deleted.
52003	Warning
	/
	First calculate or record the field boundary. Then create the new headland.
	/
	Confirmation query.
	▶ Confirm the query with "OK".
	The surround headland can only be calculated, if a field boundary is present.
	1. Record the field boundary or calculate the field boundary (⇒ Chapter 9.3).
	2. Create the headland (⇒ Chapter 9.4.2)

52004	Caution
	/
	Do you want to delete the worked area?
	/
	Confirmation query.
	▶ Confirm the query with "OK" to delete the worked area.
	▶ Confirm the query with "Cancel" to interrupt the delete process.
	→ The worked area will not be deleted.
52005	Caution
	/
	Do you want to delete the field?
	/
	Confirmation query.
	▶ Confirm the query with "OK" to delete the field.
	▶ Confirm the query with "Cancel" to interrupt the delete process.
	→ The field will not be deleted.
52010	Warning
	Section Control: Automatic mode has been deactivated. The GPS accuracy is insufficient.
	/
	Section Control requires a GPS signal of accuracy class DGPS or better if it is to perform location-based section switching. Atmospheric interference and shadowing can result in failures of the DGPS.
	1. Check the symbol in the status bar (⇒ Chapter 3.3).
	→ Three green dots must be displayed for Section Control.
	→ Using EGNOS or WAAS correction, "DGPS" is indicated by 3 green dots, next to RTK correction "RTK fix" or "RTK float".
	2. Wait until the signal is available with the required accuracy.
	3. Switch automatic mode on.

52011	Warning / Automatic mode Section Control could not be activated. The GPS accuracy is insufficient. / ⇒ Warning 52010 1. Wait until the GPS signal is available with the required accuracy. 2. Repeat the process.
52012	Warning / Stop the vehicle to change the calibration or reference point. / The reference point can only be set if the vehicle is at a complete standstill.
52013	Caution / Do you want to change the calibration? / Confirmation query. You want to change the calibration of the reference point. ▶ Confirm the query with "OK" to change the calibration. → The position of the tractor is saved as a reference point. The existing reference point is overwritten. ▶ Confirm the query with "Cancel" to retain the existing reference point.
52014	Caution / The existing reference point will be replaced by the new reference point. / Confirmation query. You want to add a reference point, although a reference point already exists. ▶ Confirm the query with "OK" to change the calibration. → The existing reference point is overwritten. ▶ Confirm the query with "Cancel" to retain the existing reference point.

52015	Warning
	/
	There is no flash drive plugged in.
	/
	The selected function requires a flash drive. No flash drive is connected or the terminal did not recognise the flash drive.
	→ The terminal has recognised the flash drive if the notification "Flash drive is connected" is displayed.
	If you have not connected a flash drive to the terminal:
	▶ Connect a flash drive.
	If you have already connected a flash drive to the terminal:
	▶ Pull out the flash drive and plug it back in.
	If the terminal does not recognise the flash drive in spite of the renewed connection:
	▶ Use a different flash drive or a different USB port on the terminal.
52016	Caution
	/
	Section Control is more accurate with DGPS than with GPS.
	Do you want to allow GPS for Section Control?
	/
	Confirmation query. You have set GPS as the Minimum GPS signal quality in the Section Control Settings.
	▶ Confirm the query with "OK" to set the GPS accuracy to GPS.
	▶ Confirm the query with "Cancel" to retain the set GPS accuracy.
	Note: Only change the pre-setting for "Minimum GPS accuracy" if DGPS is not available.

52017	Caution
	/
	The worked area is too large. Long loading times or section control errors may occur. Do you want to delete the worked area?
	/
	The message is most frequently displayed if you have worked for too long with the Autolog task, without deleting the worked area. So much data is saved in the task, that further working takes place in a delayed manner.
	▶ Delete the worked area (⇒ Chapter).
52018	Caution
	/
	Recording could not be started. The GPS accuracy is insufficient.
	/
	▶ Confirm the query with "OK".
	The GPS accuracy is insufficient for recording of location-based data. You may possibly be in an area with a high degree of shading.
	1. Check the symbol in the status bar (⇒ Chapter 3.3).
	→ Three green dots must be displayed for Section Control.
	→ Using EGNOS or WAAS correction, "DGPS" is indicated by 3 green dots, next to RTK correction "RTK fix" or "RTK float".
	2. Wait until the signal is available with the required accuracy.
	3. Start the recording.
52019	Caution
	/
	Section Control not possible. The implement can only have up to four booms. Reconfigure the implement.
	/
	Section Control only supports implements with up to four booms.
	▶ Change the implement configuration.

54001	Caution
	/
	Do you want to delete the implement?
	/
	Confirmation query.
	▶ Confirm the query with "OK" to delete the implement.
	→ The implement and implement settings are deleted from the terminal.
	→ The implement must be set up again if you want to use it again.
	▶ Confirm the query with "Cancel" to retain the implement.
54002	Caution
	/
	Do you want to delete the tractor?
	/
	If you confirm the message with "OK", the tractor and tractor settings are deleted from the terminal. The settings must be re-entered.
	Confirmation query.
	▶ Confirm the query with "OK" to delete the tractor.
	→ The tractor and tractor settings are deleted from the terminal.
	→ The tractor must be set up again if you want to use it again.
	▶ Confirm the query with "Cancel" to retain the tractor.
54003	Warning
	/
	The entered value <x>is not in the permissible range from 0 ... <x1>.
	/
	The entered value is outside the permitted range.
	▶ Enter a valid value.
54004	Warning
	/
	The entered value <x>is not in the permissible range from <x1> ... <x2>.
	/
	The entered value is outside the permitted range.
	▶ Enter a valid value.

54005	Warning
	/
	The entered value \<x>is not in the permissible range from \<x1> ... \<x2>.
	/
	The entered value is outside the permitted range.
	▶ Enter a valid value.

54006	Caution
	/
	TECU will be restarted to activate Power Management.
	/
	To switch on Power Management, TECU must be restarted.
	→ The connection of the TECU to ISOBUS is interrupted for the duration of the restart.

54007	Caution
	/
	TECU will be restarted to deactivate Power Management.
	/
	To switch off Power Management, TECU must be restarted.
	→ The connection of the TECU to ISOBUS is interrupted for the duration of the restart.

54012	Warning
	/
	There is no flash drive plugged in.
	/
	The selected function requires a flash drive. No flash drive is connected or the terminal did not recognise the flash drive.
	→ The terminal has recognised the flash drive if the notification "Flash drive is connected" is displayed.
	If you have not connected a flash drive to the terminal:
	▶ Connect a flash drive.
	If you have already connected a flash drive to the terminal:
	▶ Pull out the flash drive and plug it back in.
	If the terminal does not recognise the flash drive in spite of the renewed connection:
	▶ Use a different flash drive or a different USB port on the terminal.

54013	Warning
	/
	Importing of the GPS tack has failed.
	/
	The free space on the terminal is insufficient.
	→ The GPS track cannot be copied to internal memory.
54014	Warning
	/
	Exporting of the GPS track has failed. Ensure that a flash drive is plugged in.
	/
	You want to export the GPS track saved on the terminal. The GPS track cannot be saved on the flash drive. No flash drive is connected or the terminal did not recognise the flash drive.
	→ The terminal has recognised the flash drive if the notification "Flash drive is connected" is displayed.
	If you have not connected a flash drive to the terminal:
	▶ Connect a flash drive.
	If you have already connected a flash drive to the terminal:
	▶ Pull out the flash drive and plug it back in.
	If the terminal does not recognise the flash drive in spite of the renewed connection:
	▶ Use a different flash drive or a different USB port on the terminal.
54015	Notification
	/
	GPS track imported
	/
	Importing of the GPS track from the flash drive is complete.
54016	Notification
	/
	GPS track exported
	/
	The GPS track has been successfully saved on the flash drive.
	→ You will find the file with the file type *.nmea or *.log in the route directory of the flash drive.

54018	Warning
	/
	No GPS track has been recorded yet.
	/
	You have pressed the "Export" button in the "GPS simulation" operating screen. However, no GPS track is yet available on the terminal that could be exported.
	▶ Record a GPS track using "Record GPS track NMEA 0183" ($\Rightarrow$ Chapter 6.8.9).
54019	Warning
	/
	The GPS receiver was not recognised. Check the GPS settings.
	/
	The GPS receiver set in the terminal is not the connected GPS receiver:
	▶ Select the correct GPS receiver.
	The set GPS receiver and the connected GPS receiver are identical. Presumably then the settings in the terminal and GPS receiver are incompatible.
	▶ Check the settings of the GPS receiver and adjust the terminal settings.
54020	Warning
	/
	The GPS receiver has not saved the changes.
	1. Ensure that the correct GPS receiver is selected.
	2. Repeat entry of the settings.
	/
	▶ Proceed as described in the error message.
54021	Caution
	/
	The GPS connection will be lost when adjusting the GPS receiver.
	/
	To reset the GPS receiver, the connection to the receiver must be briefly interrupted.
	$\rightarrow$ The terminal will not receive any position data for the duration of the interruption.

54022	Warning
	/
	Invalid entry. Select 2 PRNs or switch to AUTO mode.
	/
	▶ In the "SPAS" operating screen, select at least two PRNs or switch on AUTO mode.
54023	Notification
	/
	Settings exported
	/
	The implement settings or the tractor settings have been successfully saved on the flash drive.
	→ You will find the file DEVICEDATA.XML in the route directory of the flash drive.
54024	Warning
	/
	The tractors and implements could not be exported. Connect a flash drive with enough free space and repeat the process.
	/
	You want to export the implement and tractor settings. The settings cannot be saved on the flash drive.
	Ensure that,
	• the flash drive is functioning,
	• the write-protection switch of the flash drive is in the "off" position and
	• the flash drive has at least 20 MB of free storage.
54025	Notification
	/
	Settings imported
	/
	Importing of the implement and tractor settings from the flash drive is complete.
54026	Warning
	/
	The tractors and implements could not be imported.
	/
	The error can have the following causes:
	• The free space on the terminal is insufficient.
	• File DEVICEDATA.XML on the flash drive has an incorrect format.

54027	Caution
	/
	Only one GPS track can be stored. The current GPS track will be overwritten.
	/
	Confirmation query. You want to record a GPS track. Recording overwrites the GPS track already saved on the terminal.
	▶ Confirm the query with "OK" to start recording.
54028	Caution
	/
	Only one GPS track can be stored. The current GPS track will be overwritten.
	/
	Confirmation query. You are importing a GPS track from the flash drive. The import will overwrite the GPS track already saved on the terminal.
	▶ Confirm the query with "OK" if you want to save a new GPS track on the terminal.
56000	Caution
	/
	The terminal is not connected with the ISOBUS. The camera cannot be used by the ISOBUS-implement.
	/
	Some ISOBUS implements can use/control the camera connected at the terminal. Both terminal and implement must be connected with the ISOBUS.
	1. Restart the terminal.
	2. Disconnect the implement form the ISOBUS and wait 5 seconds.
	3. Reconnect the implement to the ISOBUS.

12 Glossary

Agricultural practice	Crop cultivation measure
	The action performed on a field such as tillage or fertilising.
agrirouter	A data exchange platform for farmers and contractors, with which implements and agricultural software can be connected independent of the software developer.
	agrirouter transports data but does not store it.
Application map	Section-specific setpoint map on which the quantity of product to be applied for each section in a field is specified, e.g. in the case of fertilising.
	The terminal processes it according to the position on the field during work.
	Usually during the planning of application maps, in addition to the yield maps, lots of other information is entered such as weather information, results of the variety tests as well as the results of the location analysis such as soil tests, soil maps or aerial views.
AUX control	Also: AUX-Control.
	Typical AUX controls are joysticks or toggle switch strips.
	An AUX control enables the comfortable and efficient operation of frequently used implement functions.
AUX Control	AUX control, see also *AUX control*
Baud rate	Unit with which the speed of data transfer over the serial interface is measured.
Burger menu	Navigation element of the graphical user interface.
	You can access all functions and settings not directly available on the screen via the burger menu.
Button	Operating element in the operating screen that is activated by pressing the touchscreen.
CAN	**C**ontroller **A**rea **N**etwork
CCI	**C**ompetence **C**enter **I**SOBUS e.V.
Connection point	The point on the implement to which the tractor is coupled.
Coupling	Female connector on the end of a cable.

Crop type	Types or species of a crop such as corn or barley.
Crop variety	Special sort or breed of a crop type.
Customer	The owner or tenant of the operation on which the task is executed.
Delay time	The delay time specifies the time delay between the command and the actual activation of a section (e.g. during spraying, the time from the command: "Switch on section", until when the agent is actually applied).
ECU	**E**lectronic **C**ontrol **U**nit Control unit, job computer
EHR	**E**lectronic **H**oisting force **R**egulation
FMIS	**F**arm **M**anagement **I**nformation **S**ystem Also: FMIS Software for yield data processing and the creation of application maps.
GPS	**G**lobal **P**ositioning **S**ystem. Satellite-based system for position determination.
GPS drift	Due to the Earth's rotation and the changing position of the satellites in the sky, the calculated position of a point moves. This is referred to as GPS drift.
Ground speed sensor	It emits a specific number of electrical pulses in proportion to the distance already covered. As such, the real, slip-free speed, the ground speed, can be calculated. Note that under certain circumstances, ground speed sensors may supply inaccurate speed values depending on the surface, for example, high grass or puddles.
GUI	**G**raphical **U**ser **I**nterface The purpose of the graphical user interface is to ensure apps and ISOBUS implements can be operated on the terminal using graphical symbols. The GUI comprises all *Operating screens* of an app or implement.
Guidance track	Track created in parallel to the reference track, which is used as an orientation aide for correct adjoining parallel driving
Headland	The area at the edge of a field used during working of the land.
Implement	Towed or attached implement. An implement with which a task can be executed.
In-cab	Term from the standard ISO 11783. Describes the nine-pole ISOBUS panel connector in the tractor cab.

Input dialogue	Element of the graphical user interface.
	Enables the input or selection of values.
Interface	Part of the terminal which is used to communicate with other devices.
ISB	**I**SOBUS **S**hortcut **B**utton
	The ISB makes it possible to deactivate implement functions that have been activated via an ISOBUS terminal.
	This is necessary if implement operation on the terminal is not currently in standard view.
	Which precise functions an ISB is able to deactivate on an implement, differs widely. You can find this information in the operating instructions for your implement.
ISOBUS	ISO 11783
	International standard for data transfer between farming implements and devices.
ISOBUS participant	A device that is connected to the ISOBUS and communicates via this system.
ISO-XML	ISOBUS-specific format for task data files based on XML.
Location-based data	Implement data and yield data such as hoisting gear version, bale length, section or application rate per hectare. This data is recorded and saved together with the current GPS position.
Master data	Customer or field data managed in the terminal or FMIS that can be assigned to a task.
Miniplexer	Device for switching between video signals which facilitates operating of two cameras via one video input (similar to a multiplexer, but with limited functions).
Multiplexer	Device for switching between video signals which facilitates operating multiple cameras over one video input.
NMEA 0183	NMEA 0183 is a standard for communication between GPS receiver and terminal. It comprises a serial interface and data records in a standardised format.
NMEA 2000	NMEA 2000 is a CAN based network for data transfer that is primarily used in shipping. In land-based technology NMEA 2000 is used for communication between GPS receivers and terminals via ISOBUS.

Object Pool	A term taken from the ISOBUS standard ISO 11783.
	All operating screens of an ISOBUS implement are combined in the Object Pool. The operating screens consist of display and operating elements:
	• Text and pictograms,
	• Buttons,
	• Input fields,
	• Selection lists etc. .
	These display and operating elements are displayed on the terminal for implement operation.
	The Object Pool is sent to the ISOBUS terminal by the implement the first time the implement is connected to the terminal. The terminal saves the Object Pool.
Operating screen	The part of the graphical user interface (*GUI*) of an app or an ISOBUS implement visible on the display.
	The operating screen comprises the indication and operating elements shown on the display. The indication elements provide information and the operating elements can be selected directly via the touchscreen.
Panel connector	Male connector permanently integrated in a device casing.
Parallel Tracking	Parallel driving aide
	Indicates, taking into account the current working width and position, parallel tracks and the current deviation from the track and suggests necessary steering corrections via a lightbar or similar.
	For optimum driving of parallel tracks when spreading fertilizer or spraying herbicides or pesticides on meadows and pasture or during pre-emergence spraying.
PDF	**P**ortable **D**ocument **F**ormat
	File format for documents
Plug	Male connector on the end of a cable.
Product	A product is applied to or removed from a field as part of an agricultural practice, e.g. fertiliser, pesticide or harvested product.
PTO sensor	Measures the speed of the power take off.
	It emits a specific number of electrical pulses in proportion to the power take off speed.
Rate Control	Rate Control enables the import of maps for section-specific application in shape or ISO-XML format. Information such as masses, volumes, distances and percent are supported.
Rear 3-point hitch	Hydraulic device on tractors for coupling up and raising attachable devices (working devices).
	Also: 3-point, rear 3-point hitch or rear hoisting gear.

Reference track	Track recorded by the driver, that is used for the calculation of other lead tracks created in parallel for track guidance.
Screenshot	Capture and saving of the display content in a file.
Section	Using yield maps and other methods of location analysis such as ground or contour maps, aerial photographs or multi-spectral images, it is possible, based on individual experience, to define zones within the field, if these significantly differ over periods of four to five years.
	If these zones have a sufficient size and, for example with winter wheat a difference in yield potential of approximately 1.5 t/ha, it makes sense to , match the cultivation and agricultural practices in these zones to the yield potential.
	Such areas are then designated as sections.
Section Control	Automatic Section Control
Section-specific working	Satellite support use of an application map.
Signal connector	Seven pole socket based on the ISO 11786 standard, at which signals for speed, PTO speed and position of the rear 3-point hitch can be read.
Socket	Female connector permanently integrated in a device casing.
TAN	**T**rans**a**ction **n**umber:
	A single-use password that you need to obtain new licence data.
Task Controller	An ISOBUS function.
	The Task Controller undertakes the documenting of totals and location-based data, which are made available by the implement.
Task set	A task set is a collection of multiple tasks.
	There must not be any connection between the individual tasks of a task set. All task sets access the same master data.
TC client	Task Controller Client
	The part of the implement software that connects with the Task Controller on the terminal. The implement requires a TC client for documentation, Section Control and Rate Control.
TECU	**T**ractor **ECU**
	On an ISOBUS tractor, the TECU establishes the connection between the tractor bus system and the ISOBUS. The tractor sends its tractor data to all ISOBUS participants:
	• Ground and wheel speed,
	• PTO speed,
	• Direction of travel,
	• Position of the rear 3-point hitch.

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Terminal	The CCI 800/CCI 1200 terminal
Totals	Totals of countable implement data such as number of bales, total consumption or total application rate.
Touchscreen	Touch-sensitive display for operation of the terminal.
Tramline Control	Function for automatic switching of the tramlines via GPS. This function can be used in beds during sowing, laying or planting; the tramlines are still precisely laid out.
URL	**U**niform **R**esource **L**ocator A standard used for website addressing in the World Wide Web; the Internet address.
USB	**U**niversal **S**erial **B**us: Serial bus system to connect the terminal to a storage medium.
UT	The Universal Terminal is the human machine interface (HMI) of ISOBUS. This is the display and operating device. Each implement connected to the ISOBUS logs on to the UT and uploads its Object Pool. You operate the implement via the operating screens of the Object Pool.
UT client	Universal Terminal Client The part of the implement software that connects with the Universal Terminal on the terminal. Used for implement operation.
Wheel speed sensor	It emits a specific number of electrical signals in proportion to the wheel rotation. As such, the theoretical slip-including speed of the tractor, the wheel speed, can be calculated. Wheel based speed sensors may supply inaccurate speed values when slip occurs.
WLAN (WiFi)	**W**ireless **L**ocal **A**rea **N**etwork Wireless or WiFi network
Work position	Position of the rear 3-point hitch (and thus the attached implement) can be edited in the field.
XML	E**x**tended **M**arkup **L**anguage Logical markup language and both successor and enhancement of HTML. XML permits the specification of its own language elements so that other markup languages such as HTML or WML can be defined by using XML.

13 Disposal

Dispose of a defective or no longer used terminal with due care for the environment:

- Dispose of the device parts in an environmentally friendly manner.
- Observe the local regulations.

Plastics

Dispose of plastics with normal domestic waste or according to the local regulations.

Metal

Enter metal into a metal recycling chain.

PCBs

Deliver the terminal PCBs to a specialist recycling company.

14 Index

X

A Technical Information

	CCI 1200	CCI 800
Dimensions (B x H x D) [mm]	312 x 213 x 66	
Casing Type	Glass fibre reinforced polyamide	
Fastening	VESA75	VESA75
Operating Temperature [°C]	-15 - +70	-30 - +70
Supply voltage [V]	12 VDC or 24VDC	12 VDC or 24VDC
Permitted Range [V]	7.5 VDC - 32VDC	7.5 VDC - 32VDC
Power consumption (at 12V) [W]	17, typical 143, maximum	
Display [inch]	12.1 TFT	8 TFT
Display resolution [px]	WXGA, 1280 x 800	WSVGA, 1024 x 600
Colour depth	24 bit	24 bit
Buzzer	85 dBA	
Storage temperature [°C]	-30 - +80	-30 - +80
Weight [gr]	2000	
Protection class	IP65	IP65
EMC	ISO 14982	ISO 14982:2009
ESD protection	ISO 10605:2008	

B Interfaces

CAUTION!

Do not connect or disconnect cable during live operations.

Connection or disconnection of a cable during live operation can cause an overvoltage at the terminal or a peripheral.

Overvoltages can destroy the electronics of the terminal or peripherals.

▶ Switch the terminal off before connecting or disconnecting connector A, B or C.

CAUTION!

Plugs and sockets with dissimilar coding must not be connected.

The connecting together of connectors with dissimilar coding will result in damage to socket or plug.

All terminal connectors are mechanically protected to prevent incorrect connection or interchanging.

▶ Ensure that *plugs* and *sockets* have the same coding.

▶ Do not apply excessive force when connecting plug and socket.

CAUTION!

Panel connectors with bent contacts must not be used.

If a pin becomes bent, the connection no longer functions reliably.
Every time the connector is plugged in again, the contact pin bends further.

▶ Submit the device for repair.

NOTE

Seal off unused connectors.

If a connector is not sealed, dust or moisture can get into the terminal.

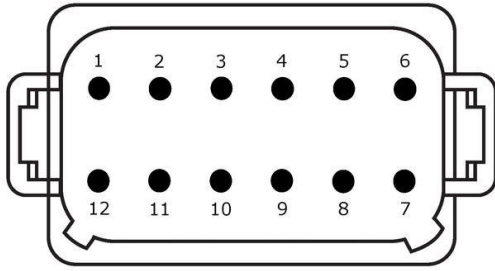▶ Seal off unused connectors with blanking caps.

CCI 1200

CCI 800

B.1.1.1   Connector A

Connector type

Panel connector German DT, 12 pole, A-coded

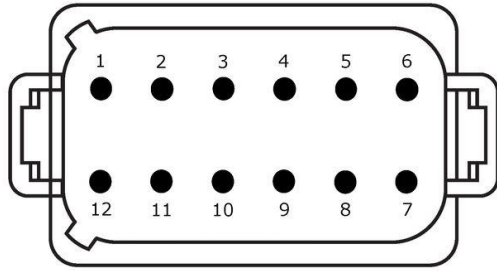**Function**
- CAN1
- CAN2
- ECU power
- Power supply

Use
ISOBUS, switched ECU supply

Pin	Signal	Comment
1	V+ in	Supply voltage, 12VDC or 24VDC
2	ECU Power enable	Switched ECU supply voltage
3	Power enable	Switched supply voltage
4	CAN_H	CAN1 High
5	CAN_L	CAN1 Low
6	CAN_GND	CAN 1 earth
7	CAN_H	CAN2 High
8	CAN_L	CAN2 Low
9	CAN_GND	CAN2 earth
10	Key Switch State	Ignition signal
11	Shield	Shielding
12	GND	Earth

B.1.1.2   Connector B

Connector type
Panel connector German DT, 12 pole, B-coded

Function
- RS232
- ISO 11786

Use
Signal connector, GPS/LH5000/ADS/TUVR

Pin	Signal	Comment
1	V+ out	12VDC or 24VDC
2	ISO 11786, Ground based speed	Ground speed sensor
3	ISO 11786, Wheel based speed	Wheel speed sensor
4	ISO 11786, PTO speed	Power take off speed
5	ISO 11786, In/out of work	Working position of the 3-point hitch
6	ISO 11786, Linkage position	Position of the rear 3-point hitch
7	Key Switch State	Ignition signal
8	GND	Earth
9	Direction signal	Direction of travel
10	RS232 TxD	RS232-1
11	RS232 RxD	RS232-1
12	GND	Earth

B.1.1.3   Connector C
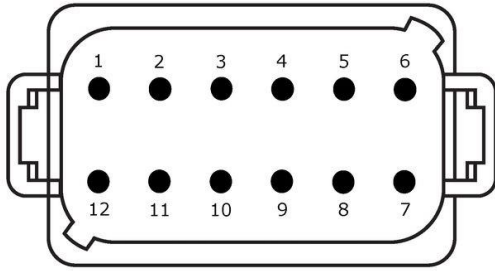
Connector type

Panel connector German DT, 12 pole, C-coded
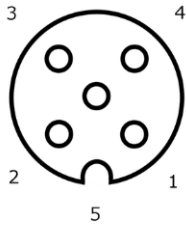
Function
- RS232
- RS485
- Video

Use

Camera, Video-Miniplexer, video multiplexer, GPS/LH5000/ADS/TUVR

Pin	Signal	Comment
1	V+ out	Camera power supply
2	Video IN	
3	Video GND	Earth
4	RS485B	
5	RS485A	
6	V+ out	Supply voltage Video-Miniplexer or video multiplexer
7	NC	Not connected
8	NC	Not connected
9	RS232, V+ out	Supply voltage RS232
10	RS232, TxD	RS232-2
11	RS232, RxD	RS232-2
12	RS232, GND	Earth

B.1.1.4   Connector 3 and 4

Connector type

Socket M12, 5-pole, A-coded

Function

- USB 2.0

Use

Flash drive, W10 WiFi adapter

Pin	Signal	Comment
1	V+	Supply voltage
2	D-	Data -
3	D+	Data +
4	GND	Earth
5	GND	Earth

B.1.1.5   Connector Eth
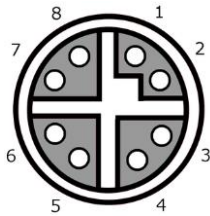
Connector type

Socket M12, 8-pole, X-coded

Function

- Ethernet

Use

LAN

Pin	Signal	Comment
1	TR0+	
2	TR0-	
3	TR1+	
4	TR1-	
5	TR3+	
6	TR3-	
7	TR2+	
8	TR2-	

C Cables

NOTE

Where possible only use the original cable to connect the terminal.

You can order this from the manufacturer or its approved dealers.

Identifier:

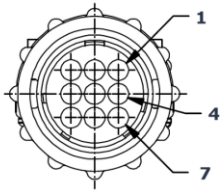Cable A

Length:

150 cm

"InCab":

Coupling, 9-pole

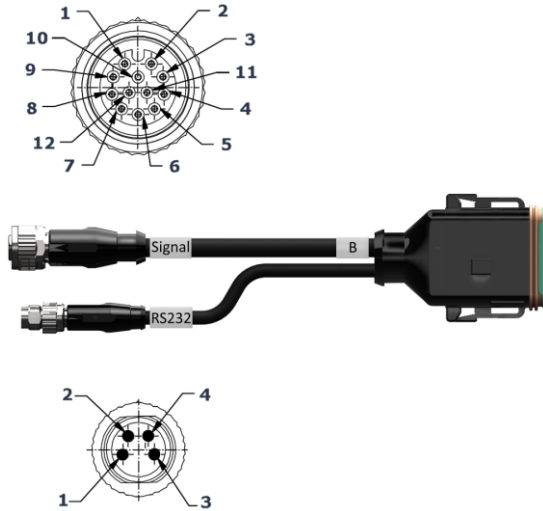→ In-cab *panel connector* in the tractor

"A":

Coupling, 12-pole

→ Connector A on the terminal

Use:

Connect terminal to the power supply and ISOBUS

InCab

#1: V+ in
#2: CAN_L IN
#3: CAN_L OUT
#4: CAN_H IN
#5: CAN_H OUT
#6: -
#7: V+ in
#8: -
#9: GND

Identifier:

Cable B

Length:

30 cm

"Signal":

Coupling M12, 12-pole
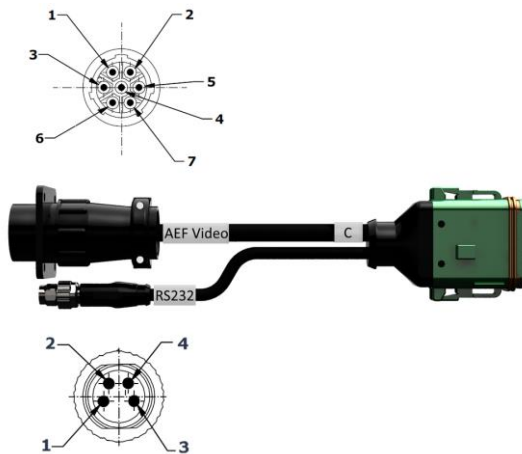
→ Cable H "Signal"

"B":

Coupling, 12-pole

→ Connector B on the terminal

"RS232":

Plug M8, 4-pole

→ GPS receiver, sensor

Use:

- Connect terminal to signal connector
- Connect a GPS receiver or sensor with a serial interface to the terminal

Signal	RS232
#1: -	#1: V+ out
#2: GND	#2: RS232 TxD
#3: PTO speed	#3: GND
#4: Linkage position	#4: RS232 RxD
#5: Wheel based speed	
#6: In/out of work	
#7: Ground based speed	
#8 - #12: -	

Identifier:

Cable C1

Length:

35 cm

"AEF Video":

Plug, 7-pole

→ Camera

"C":

Coupling, 12-pole

→ Connector C on the terminal

"RS232":
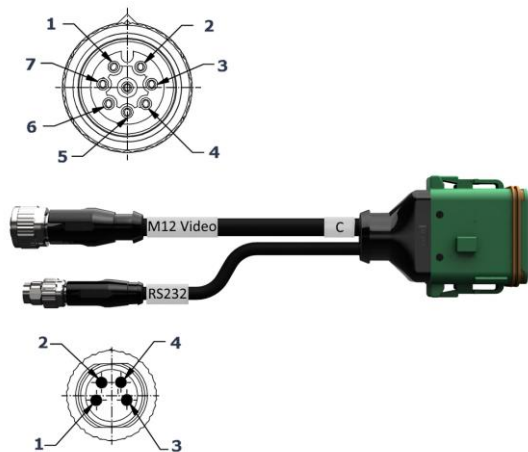
Plug M8, 4-pole

→ GPS receiver, sensor

Use:

- Connect terminal to camera
- Connect a GPS receiver or sensor with a serial interface to the terminal

AEF–Video

#1: V+ out
#2: V+ out
#3: Video GND
#4: Video IN
#5: -
#6: -
#7: GND

RS232

#1: V+ out
#2: RS232 TxD
#3: GND
#4: RS232 RxD

Identifier:

Cable C2

Length:

30 cm

"Video":

Coupling M12, 8-pole

→ Camera

"C":

Coupling, 12-pole

→ Connector C on the terminal

"RS232":

Plug M8, 4-pole

→ GPS receiver, sensor

Use:

- Connect terminal to camera or to Video-Miniplexer or video multiplexer
- Connect a GPS receiver or sensor with a serial interface to the terminal

M12-Video

#1: Video IN
#2: RS485B
#3: RS485A
#4: V+ out
#5: V+ out
#6: V+ out
#7: GND
#8: Video GND

RS232

#1: V+ out
#2: RS232 TxD
#3: GND
#4: RS232 RxD

Identifier:
Cable H (also: cable type H)

Length:
200 cm

"":
Plug, 7-pole
→ Signal connector in the tractor
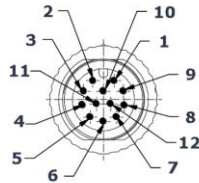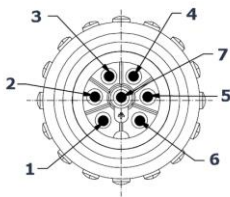
"Signal":
Plug, M12, 12-pole
→ Coupling "Signal" on cable B

Use:
Connect terminal to signal connector

Note:
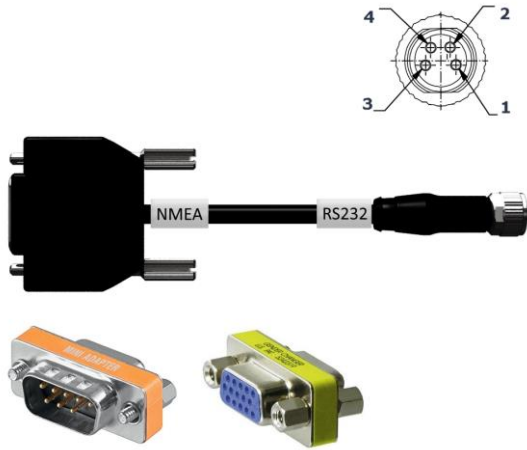The ISO 11786-Signal "Work position" and the "Direction of travel" signal are not available over cable H

„"
#1: Ground based speed
#2: Wheel based speed
#3: PTO speed
#4: -
#5: Linkage position
#6: V+
#7: GND

Signal
#: -
#2: GND
#3: PTO speed
#4: Linkage position
#5: Wheel based speed
#6: -
#7: Ground based speed
#8, #9: -
#10: V+ (Key Switch)
#11,#12: -

Identifier:

Cable N (also: cable type N)

Length:

200 cm

"NMEA":

Plug D-SUB, 9-pole

→ GPS receiver

"RS232":

Coupling M8, 4-pole

→ Plug "RS232" to cable B or C

Use:

Connecting the terminal to the GPS receiver

Note:

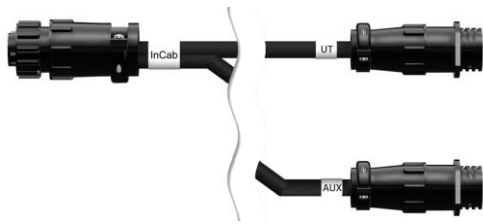Power supply to the GPS receiver is not possible with the cable N

NMEA
#1: -
#2: RS232 RxD
#3: RS232 TxD
#4: -
#5: GND
#6 - #9: -

RS232
#1: -
#2: RS232 TxD
#3: GND
#4: RS232 RxD

Identifier:

Cable Y

Length:

15 cm

"InCab":

Coupling, 9-pole

→ In-cab panel connector in the tractor

"UT":

Plug, 9-pole

→ Coupling "InCab" on cable A

"AUX":

Plug, 9-pole

→ AUX control

Use:

Connect terminal and AUX control to the ISOBUS

D Application maps

ISO-XML

An application map in ISO-XML format may contain any approved DDI in the *Data Dictionary*.

Percentage values can be processed.

Zones	• Grid type 1: max. 255 • Grid type 2: no limit • Polygon: max. 255
Colours	Up to 12 colours can be displayed in the legend

Shape

Permitted formats	WGS84 Projection or PolygonZ
Zones	Max. 255
Points	Max. 10000

E AEF functionalities

CCI.OS undergoes the AEF conformance test with each new version.

CCI.OS 2.0 is certified for the following AEF ISOBUS functionalities:

Universal Terminal

So that the terminal can be used to operate different implements.

Task Controller basic (totals)

For the documentation of totals and data exchange between FMIS and terminal via ISO-XML files.

Task Controller geo-based (variables)

For the documentation of location-based data and the planning of location-based tasks.

Task Controller Section Control

For the automatic switching of sections depending on the GPS position.

Auxiliary Control (new)

For the operation of frequently used implement functions with an AUX control.

Here there are "old" and "new" versions that are not compatible with each other. AUX controls that are AUX-N certified cannot be used with terminals that are certified AUX-O and vice-versa.

Basic Tractor ECU

For the provision of tractor data over the ISOBUS relating to ground and wheel speed, PTO speed, direction of travel and position of the rear 3-point hitch.

ISOBUS Shortcut Button

For rapid deactivation of implement functions without ISOBUS implement operation.

F Time zones

- (UTC -09:00) Alaska
- (UTC -08:00) Tijuana, Baja California (Mexico)
- (UTC -08:00) Los Angeles, Vancouver
- (UTC -07:00) Chihuahua, Mazatlan
- (UTC -07:00) Denver, Salt Lake City, Calgary
- (UTC -07:00) Dawson Creek, Hermosillo, Phoenix
- (UTC -06:00) Costa Rica, Guatemala, Managua
- (UTC -06:00) Chicago, Winnipeg
- (UTC -06:00) Cancun, Mexico City, Monterrey
- (UTC -05:00) Havana
- (UTC -05:00) Detroit, New York, Toronto
- (UTC -05:00) Bogota, Lima, Panama
- (UTC -04:00) Caracas
- (UTC -04:00) Bermuda, Halifax
- (UTC -04:00) Campo Grande, Cuiaba
- (UTC -04:00) Asuncion
- (UTC -04:00) Santiago
- (UTC -03:00) Montevideo
- (UTC -03:00) Sao Paulo
- (UTC -03:00) Buenos Aires, Cordoba
- (UTC -03:00) Mendoza, Recife, San Luis
- (UTC +00:00) Casablanca, Reykjavik
- (UTC +00:00) Dublin, Lisbon, London
- (UTC +01:00) Windhoek
- (UTC +01:00) Algiers, Porto Novo
- (UTC +01:00) Berlin, Oslo, Paris, Rome, Stockholm
- (UTC +01:00) Tunis
- (UTC +02:00) Cairo
- (UTC +02:00) Jerusalem, Tel Aviv
- (UTC +02:00) Kaliningrad, Minsk
- (UTC +02:00) Athens, Helsinki, Istanbul, Riga
- (UTC +02:00) Johannesburg, Tripoli
- (UTC +03:00) Moscow, Volgograd
- (UTC +04:00) Yerevan, Samara
- (UTC +05:00) Yekaterinburg
- (UTC +05:30) Calcutta, Colombo
- (UTC +05:45) Kathmandu
- (UTC +06:00) Novosibirsk, Omsk
- (UTC +07:00) Krasnoyarsk
- (UTC +08:00) Hong Kong, Perth, Singapore
- (UTC +08:00) Irkutsk
- (UTC +08:45) Eucla
- (UTC +09:00) Seoul, Tokyo
- (UTC +09:00) Yakutsk
- (UTC +09:30) Darwin
- (UTC +09:30) Adelaide
- (UTC +10:00) Vladivostok
- (UTC +10:00) Canberra, Melbourne, Sydney
- (UTC +11:00) Magadan
- (UTC +12:00) Kamchatka
- (UTC +12:00) Auckland