

Operating Instructions (EN)



ISOBUS-Terminal CCI 100/200

ISOBUS implement control



CCI.Cam

Visual implement monitoring



CCI.Control

Documentation and task management



CCI.Tecu

Tractor data



CCI.Command

GPS track guiding and section control



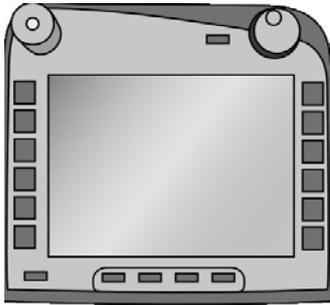
CCI.GPS

GPS settings and tractor geometry



CCI.Courier

Task data exchange between farm PC and terminal



ISOBUS Terminal CCI 100/200

ISOBUS implement control

Operating instructions

Reference: Menü v5



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1 Introduction

These operating instructions are intended as an introduction to the operation and configuration of the ISOBUS CCI 100/200 Terminal. It is only with knowledge of these operating instructions that accidental misuse of the terminal can be avoided and fault-free operation ensured.

These operating instructions must be read and understood prior to assembly and commissioning to prevent problems during operation. The company <company name> accepts no liability for damage resulting from the failure to observe these operating instructions.

1.1 About the ISOBUS Terminal CCI 100/200

CCI 100/200 is a universal terminal and makes possible ISOBUS implement control.

The following CCI.Apps can be used directly with the CCI 100/200:

CCI.Cam	Visual implement monitoring
CCI.TECU	Tractor data

The following CCI.Apps can be used with the CCI 100/200 after they are enabled:

CCI.Command	GPS lane guidance and section control
Modules: Parallel Tracking	Parallel guidance aid
Section Control	Automatic section control
CCI.Control	Documentation and task management
CCI.FieldNav	Agrarian navigation
CCI.farmpilot	Planning and fleet management
CCI.Courier	Wireless data interchange
DiGIS	Planning and fleet management
CCI.Weather	Latest weather forecast

2 Conformity

The ISOBUS conformity of the CCI terminals is DLG-certified:



3 Safety

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

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

3.1 Identification of indications in the operating instructions

The safety indications in these operating instructions are specially identified:



Warning - General Hazards!

This occupational safety symbol identifies general safety indications the non-observance of which poses a danger for life and limb. Carefully observe the indications regarding occupational safety and exert particular caution in these cases.



Attention!

This attention symbol identifies all safety indications which refer to regulations, directives or working procedures which it is essential to observe. Non-observance can entail damage to, or the destruction of, the terminal as well as malfunctions.



Note

The note symbol highlights operation tips and other particularly useful information.

3.2 Intended use

The terminal is exclusively intended for use with approved ISOBUS-compatible 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.

3.3 Safety indications for the operator / user

- Do not remove any safety mechanisms or signs.
- Disconnect the power supply to the terminal during maintenance work or when using a charging device on the battery of the towed/production implement.
- Never perform maintenance work or repairs when the device is switched on.
- Disconnect the power supply to the terminal beforehand when welding on the tractor or on an attached implement.
- Only use a soft cloth moistened with clean water or a small amount of glass cleaning agent to clean the terminal.
- Use your fingertip to operate the keys. Avoid using your finger nails.
- If, after having read these operating instructions, there are sections which you do not understand contact your dealer for clarification before using the terminal.
- Carefully read and observe all safety instructions in the manual and the safety labels on the device. Safety labels must always be in a proper legible condition. Replace missing or damaged labels. Ensure that new device 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.

3.4 Safety indications for the 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:

- Electronic hoisting gear control
- Front hoisting gear
- Power take off
- 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.

In order to retrofit mobile communication systems (e.g. radio, telephone), it is important to meet the following requirements:

- Only devices may be installed which are approved in accordance with valid farming regulations (e.g. BZT (Federal Office for Approval in Telecommunications) approval in Germany).
- The device must be properly installed.
- The operation of portable or mobile devices inside the vehicle is only permitted using a connection to a properly installed external aerial.
- The transmitting part must be installed physically and separately from the vehicle electronics.
- When fitting the aerial it must be ensured that the installation is correctly executed with a good earth connection between the aerial and vehicle earth.

The implement manufacturer's installation instructions must also be used for the wiring and installation as well as for the maximum permitted power consumption.

3.5 Safety indications for the stop switch

A safe condition for the connected implement can be established by pressing the stop switch. In order to do so, the implement must support the stop function.



Note

Under no circumstances does the stop switch intervene in tractor functions, i.e. neither power take off nor hydraulic functions are compromised.

Further information on this point can be obtained from the implement operating instructions.

4 Structure and function

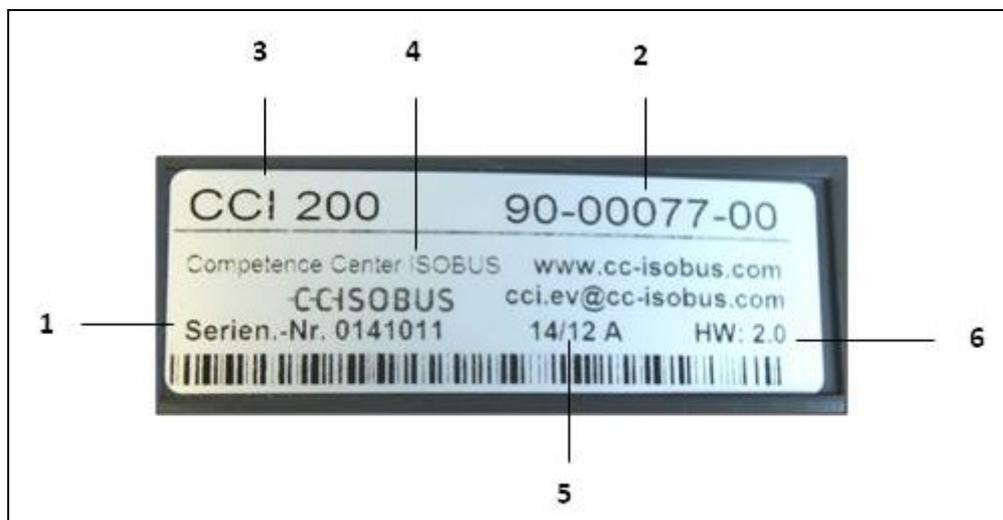
4.1 Overview



- | | |
|--------------------------------------|-------------------|
| 1 Front view with operating elements | 4 Interface strip |
| 2 Support | 5 Nameplate |
| 3 USB connection (under the flap) | 6 Softkey swap |

4.2 Nameplate

The nameplate features all important terminal information.



- | | |
|-----------------------------------------------|-----------------------------------|
| 1 Serial number | 4 Manufacturer information |
| 2 Manufacturer item number or material number | 5 Production date (week and year) |
| 3 Terminal type (CCI 100 or 200) | 6 Hardware version |

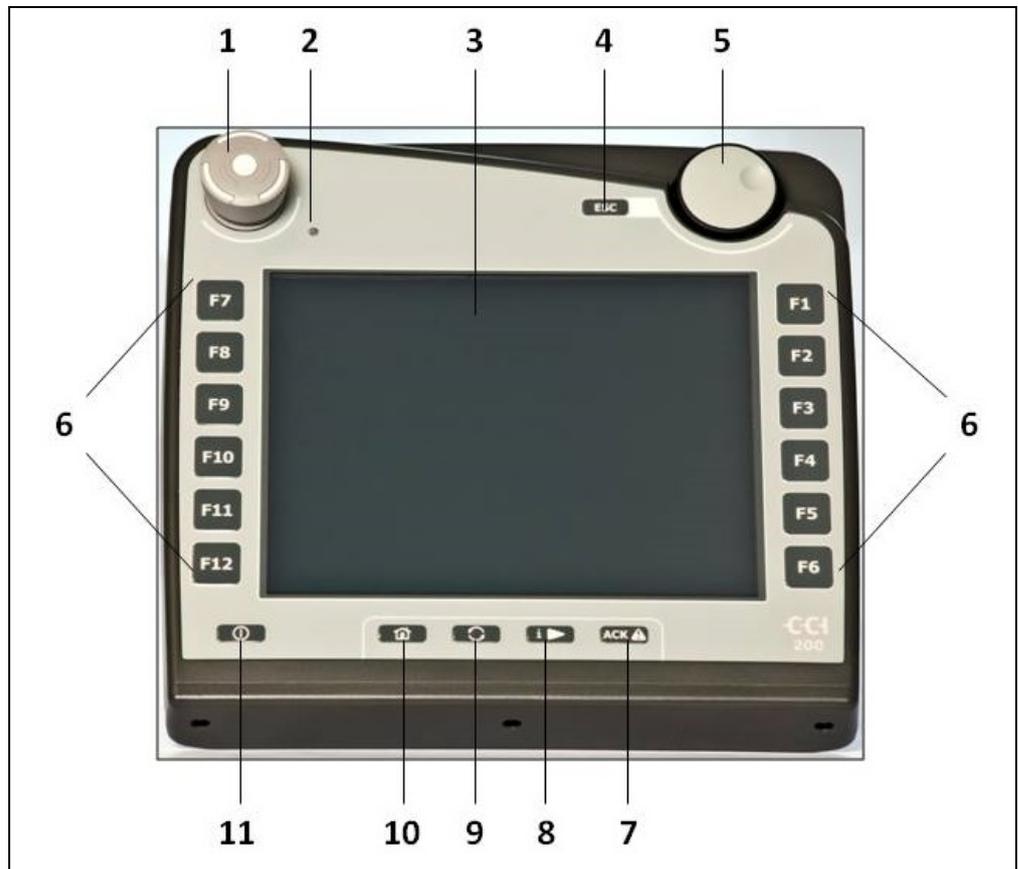


Note

The nameplates vary from manufacturer to manufacturer. As such, not all information is featured on all nameplates.

4.3 Operating elements

The following operating elements are available on the terminal:



- | | |
|---------------------|--------------------------|
| 1 Stop switch | 7 Acknowledgement button |
| 2 Brightness sensor | 8 I button |
| 3 Touchscreen | 9 Toggle button |
| 4 ESC key | 10 Home button |
| 5 Scroll wheel | 11 ON/OFF |
| 6 Function keys | |

4.3.1 Stop switch

Upon pressing the Stop switch (designed as an emergency button on the terminal), a stop command (ISO stop) is sent to the ISOBUS. This command can be assessed by a connected ISOBUS implement in order to adopt the necessary automatic measures in a dangerous situation.



Warning – Danger of injury by the implement whilst in operation!

Not all ISOBUS implements support the stop function. As a result, an implement may continue to operate after the stop switch has been pressed. This can lead to injuries.

- Please refer to the operating instructions of the implement to verify whether the function is supported or not.

4.3.2 ESC button

The ESC button is pressed to abort inputs and functions. The modifications made are not accepted and the previous valid value is maintained.



Note

The ESC button can only be used if there is an ESC button operable via the touchscreen on the display. The function of button and push button is identical.

4.3.3 Scroll wheel

The scroll wheel is used for the direct, quick input of target values, as well as for browsing through the elements in the lists:

- | | |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Turn the scroll wheel to the right | <ul style="list-style-type: none"> • In an input dialogue for numerical values increases the value. • In a list changes to the next element. |
| Turn the scroll wheel to the left | <ul style="list-style-type: none"> • In an input dialogue for numerical values decreases the value. • In a list changes to the previous element. |
| Pressing the scroll wheel | <ul style="list-style-type: none"> • The changed value in an input dialogue is adopted. • A highlighted list element is selected. |

4.3.4 Function keys

Six function keys (F1-F12) are arranged to the right and left of the display. By actuating a function key the function displayed next to the function key is performed.

4.3.5 Softkey swap

The softkey swap is a button on the rear. The positions of both softkey bars on the left- and right-hand screen edge are swapped over by pressing the softkey swap. This enables operating the device using one hand.



Note

Swapping of the softkey bar positions is only available in the area of the implement operation.

4.3.6 Acknowledgement button

The acknowledgement button (ACK) is used to confirm error messages.

4.3.7 i button

The i button is a softkey. It makes possible direct access to an app or device operation that has been selected in the user settings under "Free button assignment" (see chapter 6.3.3.2).

4.3.8 Toggle button

Repeated quick pressing of the toggle button makes possible sequential toggling between device operations and the individual apps that have been selected in the user settings under "App toggling" (see chapter 6.3.3.1) for example from device operation to CCI.TECU.



Note

With some implements, when changing from an active implement function operations being performed will automatically switch off. For further information on this point consult the implement operating instructions.

4.3.9 Home button

By pressing the home button you change directly to the main menu. The apps which are active at the time of changing remain active in the background.



Note

With some implements, when changing from an active implement function operations being performed will automatically switch off. For further information on this point consult the implement operating instructions.

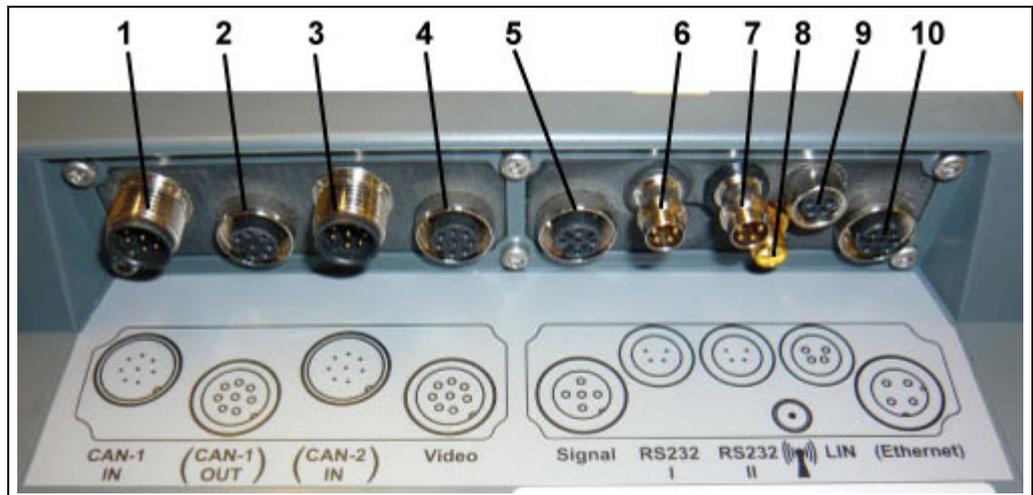
4.3.10 Touchscreen

The terminal is equipped with a top-quality touchscreen for menu navigation and the easy input of values and texts. By touching the screen functions can be requested directly and values changed.

4.4 Interfaces

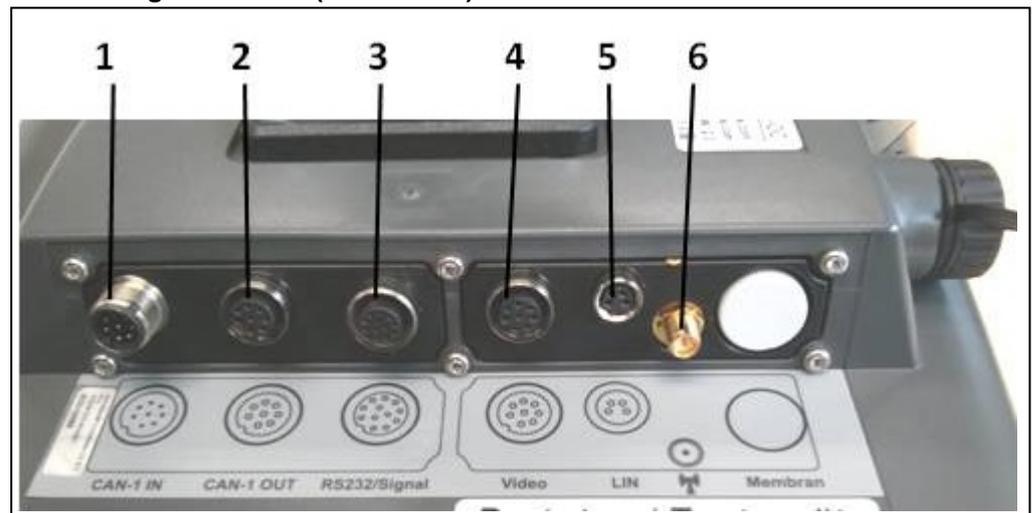
The interface bar is on the rear of the terminal. Additionally the terminal's USB connection can be found on the rear side under a flap (hardware generation 1 (version 1.x)) or a round cap (hardware generation 2 (version 2.x)). For a detailed description of the USB connection, see chapter 6.4.

Hardware generation 1 (Version 1.x):



- | | |
|--------------------------|----------------------------|
| 1 CAN1-IN | 6 RS232-1 |
| 2 CAN1-OUT | 7 RS232-2 |
| 3 CAN2-IN (only CCI 200) | 8 WLAN (only CCI 200) |
| 4 Video-IN | 9 LIN |
| 5 Signal (ISO 11786) | 10 ETHERNET (only CCI 200) |

Hardware generation 2 (Version 2.x):



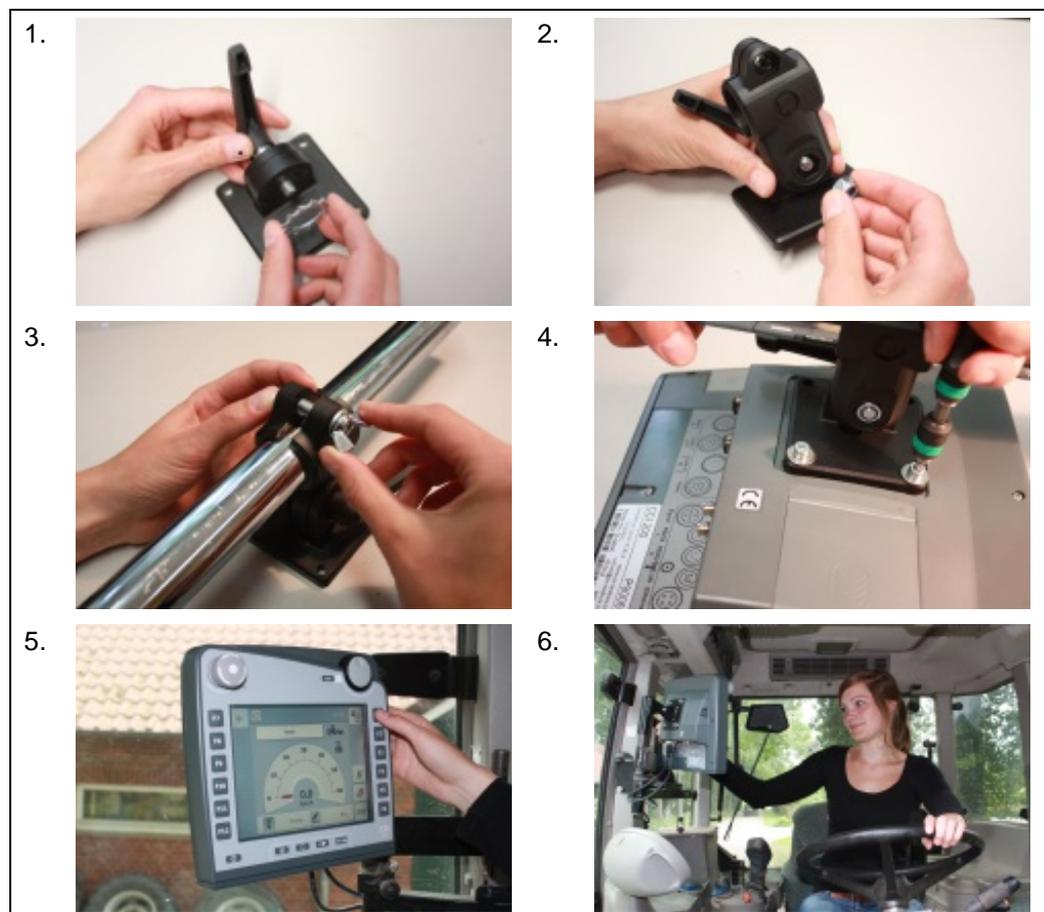
- | | |
|---------------------------------------------|------------|
| 1 CAN1-IN | 4 Video-IN |
| 2 CAN1-OUT | 5 LIN |
| 3 Signal (ISO11786) +
RS232-1
RS232-2 | 6 WLAN |

5 Commissioning

5.1 Mounting the terminal

The device support for fixing the terminal to the tractor cab is included in the scope of delivery.

Proceed as follows to mount the terminal in the cab:



- a. Assemble the device support (Figures 1 and 2).
- b. Mount the device support to the frame and to the terminal (Figures 3 and 4).
- c. Select a suitable position in the tractor cab (within the driver's field of vision) for fitting the terminal (Figures 5 and 6).
- d. Secure the terminal with the device support in the tractor cab.



Note

Ensure that the screws are tightened firmly.
Secure the terminal so that it can be read and operated easily and so that it does not hinder access to the operating elements of the tractor or block the view outside.

5.2 Connecting the Terminal

5.2.1 Connecting to ISOBUS/power supply

For connection to ISOBUS and power supply, a *type A cable* is necessary, which can be ordered using article number <ArtNumber InC>.



Cable type A

Proceed as follows to connect the *terminal* to the *ISOBUS* and the power supply:

1. Connect the "CAN1-IN" and "CAN1OUT" on the terminal using the *type A cable* to the In-cab socket of the tractor.



6 Operation

6.1 Switching on the terminal

**Note**

Before switching on the *terminal* for the first time, check that the connections on the device are properly and correctly positioned.

- Switch on the *terminal* using the "ON/OFF" button on the casing at the bottom left. Press the button for approx. 2 seconds.

6.2 Entering values

Values must be entered, changed or selected for the configuration and use of both the *terminal* and the connected *ISOBUS* implements.

The values are modified by using the so-called input dialogues. These dialogues are shown above the current active *operating mask*. After modification the input dialogue is closed and the user returns to the *operating mask*.

6.2.1 Buttons in Input Dialogues



By using the "OK" button, the newly set target value is accepted in all input dialogues. The previous value is overwritten.

Alternatively, the scroll wheel can be pressed to accept the new value.



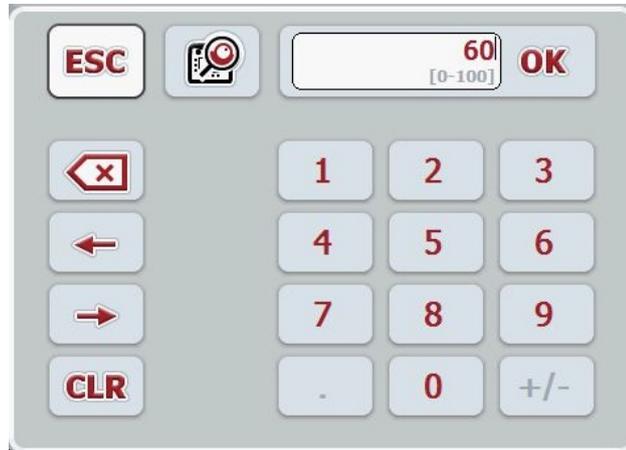
By using the "ESC" button, the input is aborted in all input dialogues. The previous value is maintained.

Alternatively, the "ESC" button can be pressed on the scroll wheel to abort the action.

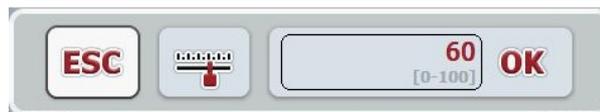
6.2.2 Entering numerical values

If a parameter is selected from an operating screen which has a numerical value, the input dialogue for numerical values appears. There are three different dialogue formats:

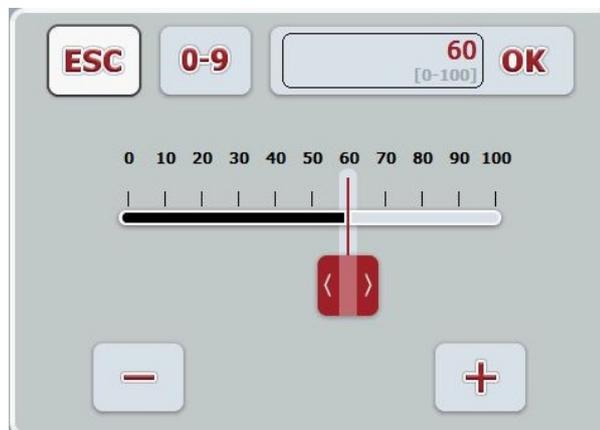
- Number block



- Scroll wheel



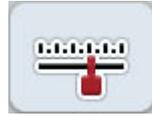
- Slider



The following buttons can be used to change between the various formats of the input dialogue for numerical values:



Change to scroll wheel setting.



Change to slider setting.



Change to number block setting.

Proceed as follows to enter a numerical value:

1. From the operating mask select the parameter whose value has to be changed. Press on the parameter on the *touchscreen* or turn the scroll wheel until the parameter is highlighted in white and then press on the scroll wheel. Once the parameter is highlighted, alternatively you can also press the "OK" button.

→ The input dialogue is opened.

2. Enter the new value. The input method depends on the format of the input dialogue:

Number Block	Enter the value using the buttons in the input dialogue or by turning the scroll wheel.
Scroll wheel	Enter the value by turning the scroll wheel.
Slider	Drag the slider or press the "+" and "-" buttons until the desired value is set. Alternatively you can also enter the value by turning the scroll wheel.

3. Confirm your input with "OK" or by pressing the scroll wheel.



Note

The terminal takes note of the last format to be selected. The next time the input dialog for numerical values is requested this format is immediately selected.



Note

The input field is highlighted in red if a value is entered outside the valid value range. In this case enter another value.

6.2.3 Entering Boolean Values

A Boolean value is a value whereby it is only possible to choose between true/false, on/off, yes/no etc. If a parameter is selected in an operating screen which has a Boolean value, the corresponding input dialogue appears.

Display for false, off, no:



Display for true, on, yes:



Proceed as follows to enter a Boolean value:

1. From the operating mask select the parameter whose value has to be changed. Press on the parameter on the touchscreen or turn the scroll wheel until the parameter is highlighted in white and then press on the scroll wheel. Once the parameter is highlighted, alternatively you can also press the "OK" button.
→ The input dialogue is opened.
2. Enter the new value. Press the square with the black border in the input field.
Alternatively you can also change the value by turning the scroll wheel.
3. Confirm your input with "OK" or by pressing the scroll wheel.

6.2.4 Selecting values from a list

For specific parameters there are lists of default values, e.g. the language setting. If such a parameter is selected from an operating screen the input dialogue for the list selection appears.



Note

You can minimise the displayed list by pressing the input field (between "ESC" and "OK"). The input dialogue for the list selection is then shown with a minimised list.

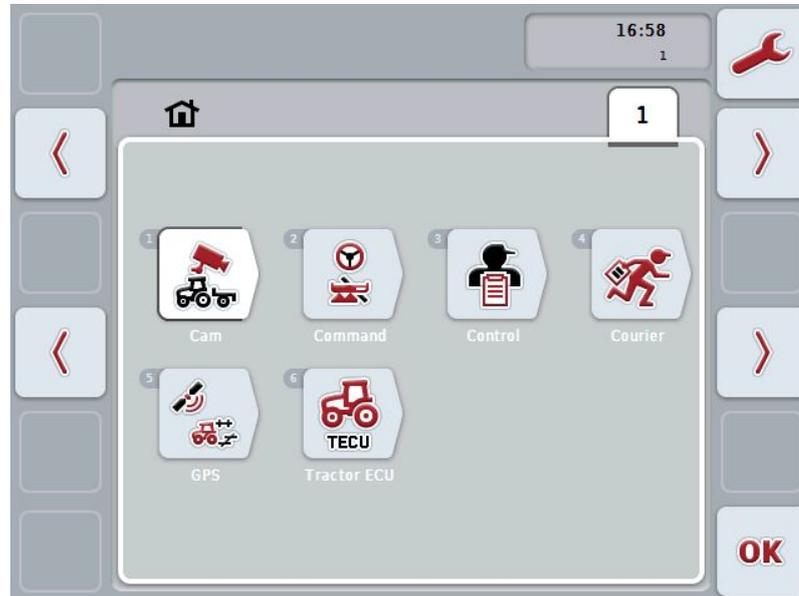
Proceed as follows to enter a value from a list:

1. From the operating mask select the parameter whose value must be changed. Press on the parameter on the touchscreen or turn the scroll wheel until the parameter is highlighted in white and then press on the scroll wheel. Once the parameter is highlighted, alternatively you can also press the "OK" button.
→ A selection list opens.
2. Select the new value from the list. To do so press the button with the value or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ The value appears in the selection window.
3. Confirm your selection by pressing "OK" or pressing the button with the value again or by pressing the scroll wheel.

6.3 Setting up the terminal

6.3.1 Main menu

Open the main menu:



All available apps are shown in the **Main menu**. These are the apps that are enabled on the *terminal*, e.g. CCI.TECU and CCI.Cam and the operating images of the connected implements.

- To call up an application, on the touchscreen press on the operating image of the implement or the app's symbol.
Once the button is highlighted white you can, alternatively, also press the scroll wheel or the "OK" (F6) button.



Note

A detailed description of the settings of a connected ISOBUS implement can be referred to in the operating instructions of the relevant implement.

You can directly access the settings (F1) from the **Main Menu**:



From each submenu (and their menu items) you can return to the **Main Menu** directly by pressing this button, which is located on the top screen edge.

In the following sections the settings are described in detail. A graphic depiction of the complete menu structure can be referred to in the chapter 9.

6.3.2 Settings

The settings are subdivided across 4 tabs: **User settings**, **Country settings**, **System settings** and **Info and Diagnostics**



These are organised as follows:

- User settings:** Offers adjustment options for the display lighting, sound, app toggling, free button assignment and the button selection with the scroll wheel.
- Country settings:** Offers setting options for language, keyboard, system of units, and decimal symbol.
- System settings:** Offers setting options for date and time, app management, CAN, interfaces, calibration of the touchscreen and access to the service menu.
- Info and Diagnostics:** Provides information about the software and hardware of the terminal, about the network participants, the internal, working and error memory. Makes it possible to test the various hardware components.

To switch between tabs, proceed as follows:

1. In the touchscreen press on the corresponding tab or select it using the arrow keys (F8, F2).

6.3.3 User settings

In the **User Settings** tab it is possible to adjust the *terminal* to match your personal requirements.



You have the following operating options:

Change to Display lighting



Press the "Display lighting" button on the *touchscreen*.

→ The **Display lighting** mask opens.

More detailed information on Display lighting can be consulted in chapter 6.3.3.4.

To change the sound



Press the "Sound" button on the *touchscreen*.

→ The **Sound** mask opens.

More detailed information on sound can be consulted in chapter 6.3.3.5.



App toggling



Free button assignment



Activating/deactivating button selection by scroll wheel

6.3.3.1 App toggling

Proceed as follows to specify the apps between which it will be possible to switch by pressing the toggle button:

1. Press on the button of the app in question on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the *Boolean value*.
3. Confirm your entry with "OK".

6.3.3.2 Free button assignment

A choice of free button assignment can be made so that it is possible to choose which app you can access directly via the i button.

To assign the i button, proceed as follows:

1. Press on the "Free button assignment" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ A selection list opens.
2. Select the desired setting from the list. To do so press the button with the app or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ The app appears in the selection window.
3. Confirm your selection by pressing "OK" or pressing the button with the app again or by pressing the scroll wheel.

6.3.3.3 Activating/deactivating button selection by scroll wheel

To activate/deactivate button selection by scroll wheel, proceed as follows:

1. Press on the "Button selection by scroll wheel" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the Boolean value.
3. Confirm your entry with "OK".



Note

This setting only acts on the machine operation.

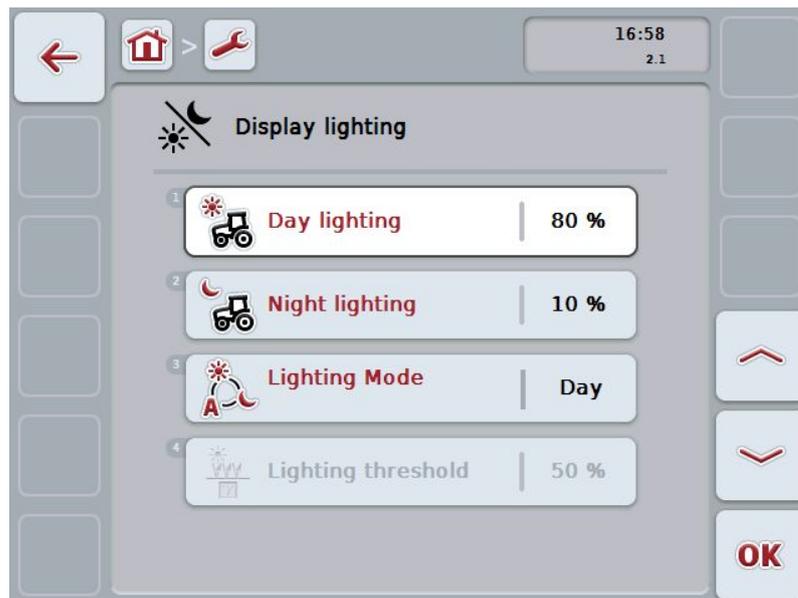
6.3.3.4 Display lighting

To change to the Display lighting settings proceed as follows:

1. Press on the "Display lighting" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ The following mask opens:



You have the following operating options:

-  Enter Day lighting
-  Enter Night lighting
-  Select Lighting Mode
-  Enter Lighting threshold

6.3.3.4.1 Enter Day lighting

To enter the desired display brightness for daytime operation, proceed as follows:

1. Press on the "Day lighting" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the value on the *touchscreen* using the digit field or the slider.
3. Confirm your entry with "OK".



Note

The value for the Display lighting is given as a percentage and can be adjusted in steps of 10%.

6.3.3.4.2 Enter Night lighting

To enter the desired display brightness for night-time operation, proceed as follows:

1. Press on the "Night lighting" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the value on the *touchscreen* using the digit field or the slider.
3. Confirm your entry with "OK".



Note

The value for the Display lighting is given as a percentage and can be adjusted in steps of 10%.

6.3.3.4.3 Select Lighting Mode

To select a Lighting Mode mode proceed as follows:

1. Press on the "Lighting Mode" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ A selection list opens.

2. Select the desired setting from the list. To do so press the button with the Lighting Mode or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

→ The Lighting Mode appears in the selection window.

3. Confirm your selection by pressing "OK" or pressing the button with the lighting mode again or by pressing the scroll wheel.

6.3.3.4.4 Enter Lighting threshold

An on/off point is specified for the display lighting. The value provided by the brightness sensor is the reference variable.

The illumination is activated when exceeding the ON activation point and deactivated when undershooting the OFF activation point.

Proceed as follows to enter the lighting threshold:

1. Press on the "Lighting threshold" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

2. Enter the value on the touchscreen using the digit field or the slider.
3. Confirm your entry with "OK".



Note

The value for the Display lighting is given as a percentage and can be adjusted in steps of 10%.

6.3.3.5 Sound

To change Sound settings proceed as follows:

1. Press on the "Sound" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ The following mask opens:



You have the following operating options:



Activate/deactivate beeper



Enter volume

6.3.3.5.1 Activate/deactivate beeper

If the beeper is active, then you receive an acoustic acknowledgement upon touching a button in the *touchscreen* or one of the function keys.

To activate/deactivate the beeper, proceed as follows:

2. Press on the "Beeper active" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

3. Enter the *Boolean value*.
4. Confirm your entry with "OK".

6.3.3.5.2 Enter volume

To enter the beeper volume, proceed as follows:

1. Press on the "Volume" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

2. Enter the value on the *touchscreen* using the digit field or the slider.
3. Confirm your entry with "OK".



Note

The value for the volume is given as a percentage and can be adjusted in steps of 5% in the range 25% to 100%.

6.3.4 Country settings

All country and language-specific settings of the terminal can be made in the tab **Country settings**.



You have the following operating options:



Select language



Select keyboard



Change to units

Press the "Units" button on the *touchscreen*.

→ The **Units** mask opens.

More detailed information about Units can be found in chapter 6.3.4.3.



Select decimal symbol

6.3.4.1 Select language

To select the language, proceed as follows:

1. Press on the "Language" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ A selection list opens.
2. Select the desired setting from the list. To do so press the button with the Language or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ The language appears in the selection window.
3. Confirm your selection by pressing "OK" or pressing the button with the language again or by pressing the scroll wheel.

6.3.4.2 Select keyboard

To select a keyboard proceed as follows:

1. Press on the "Keyboard" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ A selection list opens.
2. Select the desired setting from the list. To do so press the button with the Country or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ The country appears in the selection window.
3. Confirm your selection by pressing "OK" or pressing the button with the country again or by pressing the scroll wheel.

6.3.4.3 Select units

To select the system of units proceed as follows:

1. Press on the "Units" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ A selection list opens.
2. Select the desired setting from the list. To do so press the button with the system of units or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ The system of units appears in the selection window.
3. Confirm your selection by pressing "OK" or pressing the button with the system of units again or by pressing the scroll wheel.



Note

When *DHCP* is activated all other values are set automatically.
When *DHCP* is deactivated you must adjust the values. Consult your network administrator in this regard.

6.3.4.4 Select decimal symbol

To select the decimal symbol proceed as follows:

1. Press on the "Decimal symbol" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ A selection list opens.
2. Select the desired setting from the list. To do so press the button with the decimal symbol or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ The decimal symbol appears in the selection window.
3. Confirm your selection by pressing "OK" or pressing the button with the decimal symbol again or by pressing the scroll wheel.

6.3.5 System settings

In the **System Settings** tab it is possible to adjust the *terminal* to match your personal requirements.



You have the following operating options:

Change to Date and Time



Press the "Date and Time" button on the *touchscreen*.

→ The **Date and Time** mask opens.

You can find more detailed information about Date and Time in chapter 6.3.5.3.

Change to app management



Press the "App management" button on the *touchscreen*.

→ The **App management** mask opens.

More detailed information on App management can be consulted in chapter 6.3.5.4.



Interfaces



CAN



Perform- touch calibration



Call service area

6.3.5.1 Touch Calibration

To calibrate the touchscreen, proceed as follows:

1. Press on the "Touch calibration" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
 - The calibration view opens.
 - Five crosses are displayed on the screen one after the other.
2. On the touchscreen press as near to the centre of these crosses as possible.
3. To finalise the calibration, and to accept the values calculated, touch any part of the screen.



Note

If you do not touch the screen within 30 seconds the calibration is aborted and the previous values will be maintained.

6.3.5.2 Call service area



Attention!

Settings in the service area can only be adjusted by the manufacturer or their sales and service partners.
Therefore access to the service area is password protected.

6.3.5.3 Date and Time

To change Date and time settings proceed as follows:

1. Press on the "Date and time" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ The following mask opens:



You have the following operating options:



Enter date



Enter time



Select date format



Select time format



Activate/deactivate GPS update



Enter time zone



Activate/deactivate summer/winter time



Select am/pm

6.3.5.3.1 Enter date

To enter the date, proceed as follows:

1. Press on the "Day", "Month" and "Year" buttons on the touchscreen or turn the scroll wheel until the button in question is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the relevant value on the touchscreen using the digit field or the slider.
3. Confirm your entry with "OK".

6.3.5.3.2 Enter time

To enter the time, proceed as follows:

1. Press on the "Hour" and "Minute" buttons on the touchscreen or turn the scroll wheel until the button in question is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the relevant value on the touchscreen using the digit field or the slider.
3. Confirm your entry with "OK".

6.3.5.3.3 Select date format

To select the date specification format proceed as follows:

1. Press on the "Date Format" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ A selection list opens.
2. Select the desired setting from the list. To do so press the button with the Format or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ The format appears in the selection window.
3. Confirm your selection by pressing "OK" or pressing the button with the format again or by pressing the scroll wheel.

6.3.5.3.4 Select time format

To select the time format for displaying the time proceed as follows:

1. Press on the "Time Format" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ A selection list opens.
2. Select the desired setting from the list. To do so press the button with the Format or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ The format appears in the selection window.
3. Confirm your selection by pressing "OK" or pressing the button with the format again or by pressing the scroll wheel.

6.3.5.3.5 Activate/deactivate GPS update

To activate/deactivate GPS update, proceed as follows:

1. Press on the "GPS update" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the Boolean value.
3. Confirm your entry with "OK".

6.3.5.3.6 Enter time zone

To enter the time zone, proceed as follows:

1. Press on the "Timezone" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the value on the touchscreen using the digit field or the slider.
3. Confirm your entry with "OK".

6.3.5.3.7 Activate/deactivate summer/winter time

To activate/deactivate summer/winter time, proceed as follows:

1. Press on the "summer/winter time" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the Boolean value.
3. Confirm your entry with "OK".

6.3.5.3.8 Select am/pm

To switch between "am" and "pm", proceed as follows:

1. Press on the "am/pm" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ A selection list opens.
2. Select the desired setting from the list. To do so press the button with the Setting or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ The setting appears in the selection window.
3. Confirm your selection by pressing "OK" or pressing the button with the setting again or by pressing the scroll wheel.



Note

This selection is only available if "12h" has been selected for the time format (see chapter 6.3.5.3.4).

6.3.5.4 App management

To switch to app management, proceed as follows:

1. Press on the "App management" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ The following mask opens:



You have the following operating options:



Activate/deactivate apps

6.3.5.4.1 Activate/deactivate apps

To activate/deactivate apps, proceed as follows:

1. On the *touchscreen* press on the button with the name of the app to be activated/deactivated or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

2. Enter the Boolean value.
3. Confirm your entry with "OK".



Note

To be able to access the activated apps, the terminal must be restarted.

6.3.5.5 Interfaces



Note

The interface settings are only available if the ConnectionManager app is activated.

To switch to interface settings, proceed as follows:

1. Press on the "Interfaces" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel. Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
 - The following mask opens:



You have the following operating options:

Change to Management



Press the "Management" button on the *touchscreen*.

→ The **Management** mask opens.

More detailed information on Management can be consulted in chapter 6.3.5.5.1.

Switch to GSM settings



Press the "GSM settings" button on the touchscreen.

→ The **GSM settings** mask opens.

More detailed information about GSM Settings can be found in chapter 6.3.5.5.2.



Switch to WLAN settings

Press the "WLAN settings" button on the touchscreen.

→ The **WLAN settings** mask opens.

More detailed information about WLAN settings can be found in chapter 6.3.5.5.3.



Switch to LAN settings

Press the "LAN settings" button on the touchscreen.

→ The **LAN settings** mask opens.

More detailed information about LAN settings can be found in chapter 6.3.5.5.4.



Note

LAN settings are only available with a hardware generation 1 terminal (version 1.x).

6.3.5.5.1 Management

To switch to Management, proceed as follows:

1. Press on the "Management" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ The following mask opens:



You have the following operating options:



Select connection

6.3.5.5.1.1 Select connection

To select a connection proceed as follows:

1. Press on the "Connection" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ A selection list opens.
2. Select the desired setting from the list. To do so press the button with the Connection or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ The connection appears in the selection window.
3. Confirm your selection by pressing "OK" or pressing the button with the Connection again or by pressing the scroll wheel.

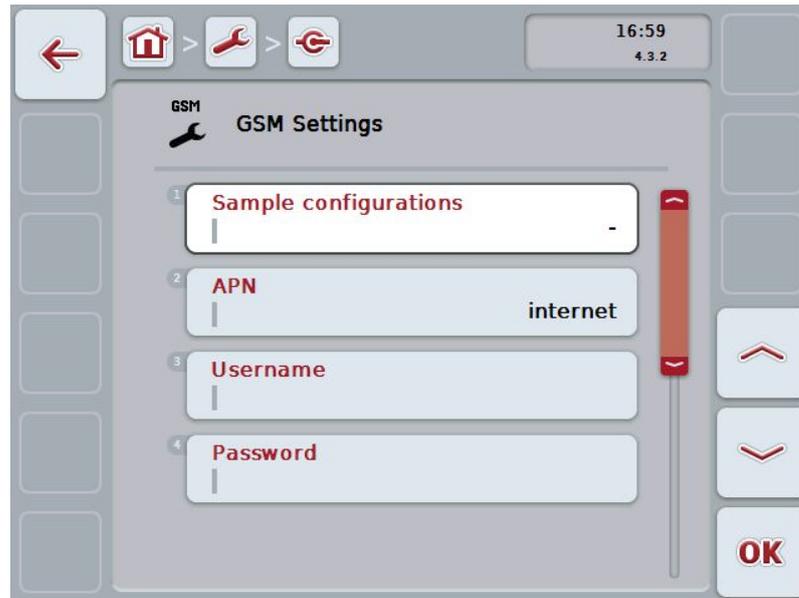
6.3.5.5.2 GSM SETTINGS

To change to the GSM settings proceed as follows:

1. Press on the "GSM settings" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ The following mask opens:



You have the following operating options:



Select sample configuration



Insert settings yourself

6.3.5.5.2.1 Select sample configuration

To select a sample configuration for GSM, proceed as follows:

1. Press on the "Sample configuration" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ A selection list opens.
2. Select the desired setting from the list. To do so press the button with the Sample configuration or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ The sample configuration appears in the selection window.
3. Confirm your selection by pressing "OK" or pressing the button with the Sample configuration again or by pressing the scroll wheel.

6.3.5.5.2.2 Insert settings yourself

To enter the GSM settings yourself, proceed as follows:

1. Sequentially press the buttons "APN", "User name", "Password" and "Dial-in number" on the touchscreen or turn the scroll wheel until the button in question is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the respective value on the touchscreen using the keyboard.
3. Confirm your entry with "OK".

6.3.5.5.3 WLAN settings

To change to the Wi-Fi (WLAN) settings proceed as follows:

1. Press on the "WLAN settings" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel. Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
 - The following mask opens:



You have the following operating options:



Switch to WLAN networks

Press the "WLAN networks" button on the touchscreen.

→ The **WLAN networks** mask opens.

More detailed information about WLAN networks can be found in chapter 6.3.5.5.3.3.



Activate/deactivate DHCP



Enter network settings yourself

6.3.5.5.3.1 Activate/deactivate DHCP

To activate/deactivate DHCP, proceed as follows:

1. Press on the "DHCP" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the *Boolean value*.
3. Confirm your entry with "OK".

6.3.5.5.3.2 Enter network settings yourself



Note

These settings are only available if DHCP is deactivated (see chapter 6.3.5.5.3.1).

To enter the WLAN settings yourself, proceed as follows:

1. Sequentially press the buttons "IP address", "Subnet mask", "Standard gateway", "Primary DNS", "Secondary DNS" and "WINS server" on the touchscreen or turn the scroll wheel until the button in question is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the respective value on the touchscreen using the keyboard.
3. Confirm your entry with "OK".

6.3.5.5.3.3 WLAN networks

To change to the WLAN networks settings proceed as follows:

1. Press on the "WLAN networks" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel. Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ The following mask opens:



You have the following operating options:

-  **Add WLAN network**
-  **Edit WLAN network**
-  **Delete WLAN network**
-  **Update the list of WLAN networks**

6.3.5.5.3.3.1 Add new WLAN network

To add a new WLAN network proceed as follows:

1. Press the "Add new WLAN network" button (F10) on the touchscreen.
→ The following operating mask opens:



2. In the operating mask, select all parameters one after the other. Press on the parameter on the touchscreen or turn the scroll wheel until the parameter is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
3. Enter the new value on the touchscreen using the keyboard.
4. Confirm your entry with "OK".

6.3.5.5.3.3.2 Save WLAN network



Note

Unsaved WLAN networks are identified in the network list by a "+" prior to the name.

To save a WLAN network, that is recognised by the terminal and listed in the network list, proceed as follows:

1. Select the network to be saved from the list of WLAN networks. To do so, on the *touchscreen* press the button with the network name or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ The following operating mask opens:



2. In the operating mask, select all parameters one after the other. Press on the parameter on the touchscreen or turn the scroll wheel until the parameter is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
3. Enter the new value on the touchscreen using the keyboard.
4. Confirm your entry with "OK".

6.3.5.5.3.3 Edit WLAN network

To edit a saved WLAN network, proceed as follows:

1. Select the network whose data is to be changed from the list of WLAN networks. To do so, on the *touchscreen* press the button with the network name or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ The context menu opens.
2. Press on the "Edit" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ The following operating mask opens:



3. From the operating mask select the parameter whose value must be changed. Press on the parameter on the touchscreen or turn the scroll wheel until the parameter is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
4. Enter the new value on the touchscreen using the keyboard.
5. Confirm your entry with "OK".

6.3.5.5.3.3.4 Delete WLAN network

To delete a WLAN network, proceed as follows:

1. From the list of WLAN networks, select the network to be deleted. To do so, press on the button with the network name on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ The context menu opens.

2. Press on the "Delete" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

6.3.5.5.3.3.5 Update the list of WLAN networks

To update the list of WLAN networks, proceed as follows:

1. Press the "Update WLAN networks" button (F1) on the touchscreen.
→ The list of WLAN networks is updated.

6.3.5.5.4 LAN Settings



Note

LAN settings are only available with a hardware generation 1 terminal (version 1.x).

To change to the LAN settings proceed as follows:

1. Press on the "LAN settings" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel. Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
 - The following mask opens:



You have the following operating options:



Activate/deactivate DHCP



Enter network settings yourself

6.3.5.5.4.1 Activate/deactivate DHCP

To activate/deactivate DHCP, proceed as follows:

1. Press on the "DHCP" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the *Boolean value*.
3. Confirm your entry with "OK".

6.3.5.5.4.2 Enter network settings yourself



Note

These settings are only available if DHCP is deactivated (see chapter 6.3.5.5.4.1).

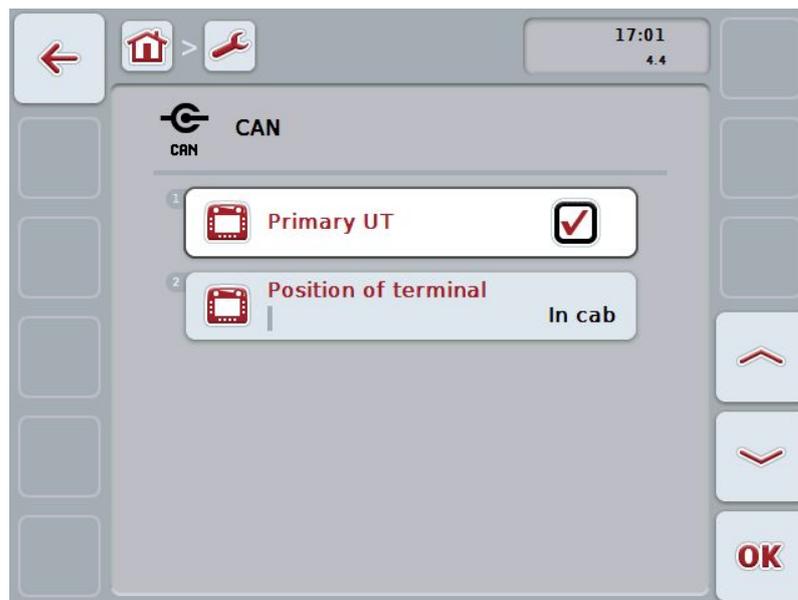
To enter the LAN network settings yourself, proceed as follows:

1. Sequentially press the buttons "IP address", "Subnet mask", "Standard gateway", "Primary DNS", "Secondary DNS" and "WINS server" on the touchscreen or turn the scroll wheel until the button in question is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the respective value on the touchscreen using the keyboard.
3. Confirm your entry with "OK".

6.3.5.4.3 CAN

To change to the CAN settings proceed as follows:

1. Press on the "CAN" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ The following mask opens:



You have the following operating options:



Activate/deactivate Primary UT



Select Position of terminal

6.3.5.5.5 Activate/deactivate Primary UT

To activate/deactivate the terminal as the primary user terminal (UT), proceed as follows:

1. Press on the "Primary UT" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the *Boolean value*.
3. Confirm your entry with "OK".



Note

The setting for "Primary UT" only has an effect when operating two or more ISOBUS terminals on a bus system. The object pool of an implement is displayed on the primary terminal by default.



Note

There may only ever be one primary terminal on the bus. If an additional primary terminal is detected on the bus by the CCI 100/200, you will receive an error message.

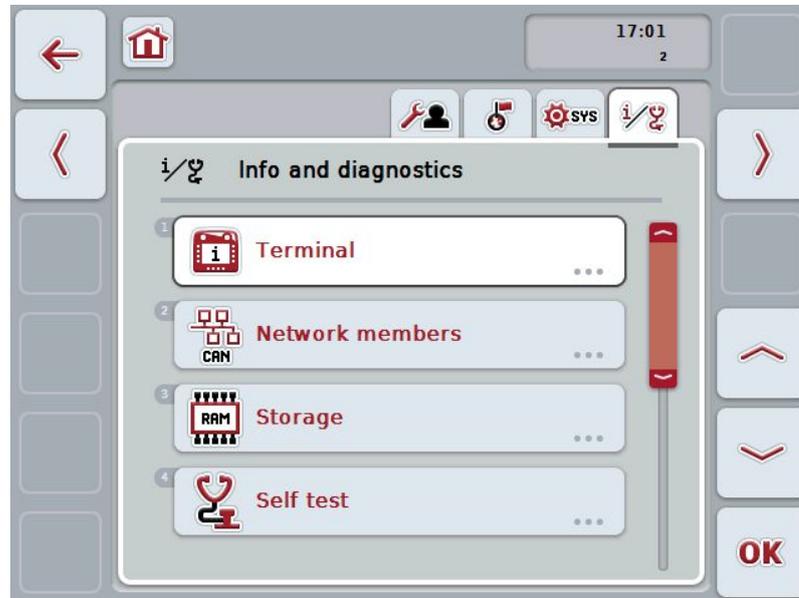
6.3.5.5.6 Select Position of terminal

To change the position of the terminal, proceed as follows:

1. Press on the "Position of terminal" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ A selection list opens.
2. Select the desired setting from the list. To do so press the button with the position or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ The position appears in the selection window.
3. Confirm your selection by pressing "OK" or pressing the button with the position again or by pressing the scroll wheel.

6.3.6 Info and Diagnostics

In the tab **Info and Diagnostics** the function and status of the software and hardware components of the terminal can be checked. You receive the version information for installed apps. Basic information on the implements connected to the ISOBUS can be called up.



You have the following operating options:



Change to the terminal information

Press the "Terminal" button on the touchscreen.

→ The **Terminal** mask opens.

More detailed information about the terminal can be found in chapter 6.3.6.2.



Change to the network member information

Press the "Network members" button on the touchscreen.

→ The **Network members** mask opens.

More detailed information about network members can be found in chapter 6.3.6.3.



Change to the storage information

Press the "Storage" button on the touchscreen.

→ The **Storage** mask opens.

More detailed information on storage can be consulted in chapter 6.3.6.4.



Change to self test

Press the "Self test" button on the touchscreen.

→ The **Self test** mask opens.

More detailed information on self test can be consulted in chapter 6.3.6.5.



Display error memory

6.3.6.1 Display error memory

To display the error memory, proceed as follows:

1. Press on the "Error memory" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ A chronologically ordered list of error messages opens.

2. To view detailed information about one of the error messages on the touchscreen press the button with the sensor or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ A mask opens with the following information about the error message:

- Date and time
- Serial number
- Version number
- Error message text

6.3.6.2 Terminal information

To change to the terminal information proceed as follows:

1. Press on the "Terminal" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ The following mask opens:



You have the following operating options:



Display software information



Display hardware information

6.3.6.2.1 Display software information

To display the software information, proceed as follows:

1. Press on the "Software" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
 - A mask opens with the following software information:
 - Package
 - Anedo Base System
 - Bootloader
 - Version number ISOBUS UT
 - Kernel
 - Version number MENU
 - Version number of the individual apps

6.3.6.2.2 Display hardware information

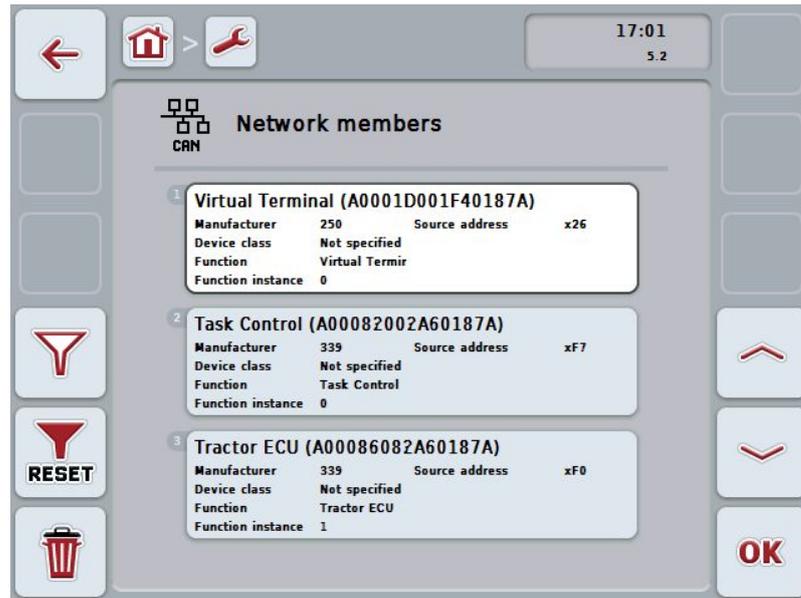
To display the hardware information, proceed as follows:

1. Press on the "Hardware" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
 - A mask opens with the following hardware information:
 - Terminal type
 - Hardware version of the terminal
 - Serial number
 - Manufacturer ID
 - Manufacturer

6.3.6.3 Network member

To change to the network members information proceed as follows:

1. Press on the "Network members" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
 Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
 - Network members are identified.
 - The following mask opens:



Note

Buttons of implements, whose object pool has been loaded once, but which are not currently connected, are shown greyed out.

You have the following operating options:

-  **Show information**
-  **Filter list**
-  **Reset filter**
-  **Delete all object pools**
-  **Delete current object pool**

6.3.6.3.1 Show information

To obtain detailed information about one of the network members, proceed as follows:

1. On the *touchscreen* press the button with the Network member or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ A mask opens with the following information about the network member:

- Manufacturer
- Device Class
- Function
- Function Instance
- Source Address

6.3.6.3.2 Filter list

To filter the list of network members, proceed as follows:

1. Press the "Filter list" button (F10) on the touchscreen.
 - The list of network members is filtered so that only the connected and active members are displayed.

6.3.6.3.3 Reset filter

To reset the filter setting, proceed as follows:

1. Press the "Reset filter" button (F11) on the touchscreen.
 - The filter is automatically reset.

6.3.6.3.4 Delete all object pools

To delete all object pools, proceed as follows:

1. Press the "Delete all object pools" button (F12) on the touchscreen.
 - All saved object pools are deleted.



Note

After a restart, all object pools are deleted. In the event that an implement is connected, the new object pool is loaded automatically.

6.3.6.3.5 Delete current object pool

To delete the current object pool, proceed as follows:

1. From the list of network members select the implement with the object pool to be deleted. To do so, press on the button with the implement designator on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ A context menu opens.
2. Press on the "Delete a specific object pool" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.



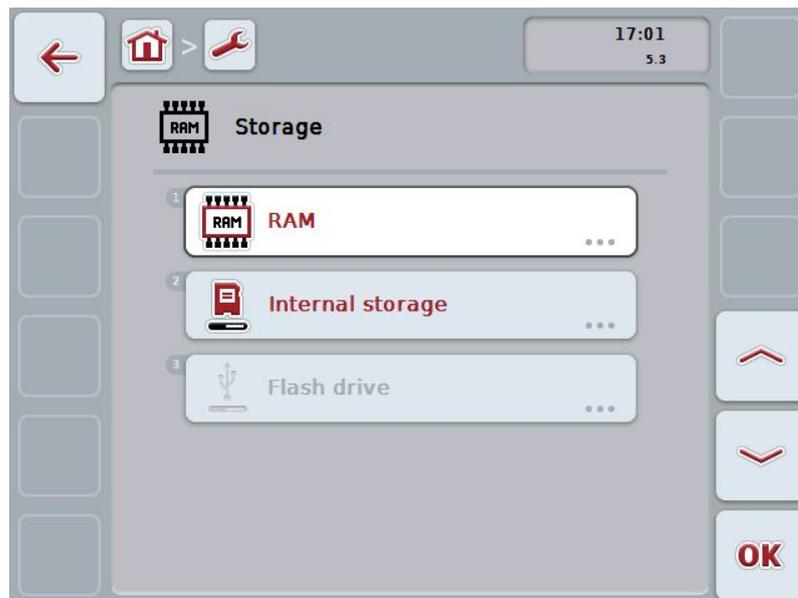
Note

Initially the object pool remains in the list after deleting, however it can no longer be operated via the context menu. When the terminal is next restarted, it is reloaded in case the implement is connected.

6.3.6.4 Storage information

To change to the storage information proceed as follows:

1. Press on the "Storage" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
- The following mask opens:



You have the following operating options:



Show RAM



Show internal storage



Show Flash drive status

6.3.6.4.1 Show RAM

To display the RAM, proceed as follows:

1. Press on the "RAM" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ A mask opens with information about RAM capacity and usage.

6.3.6.4.2 Show internal storage

To display the internal storage, proceed as follows:

1. Press on the "Internal storage" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ A mask opens with information about the capacity and usage of the internal memory.

6.3.6.4.3 Flash drive status

To display the flash drive status, proceed as follows:

1. Press on the "Flash drive" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ A mask opens with information about flash drive capacity and usage.



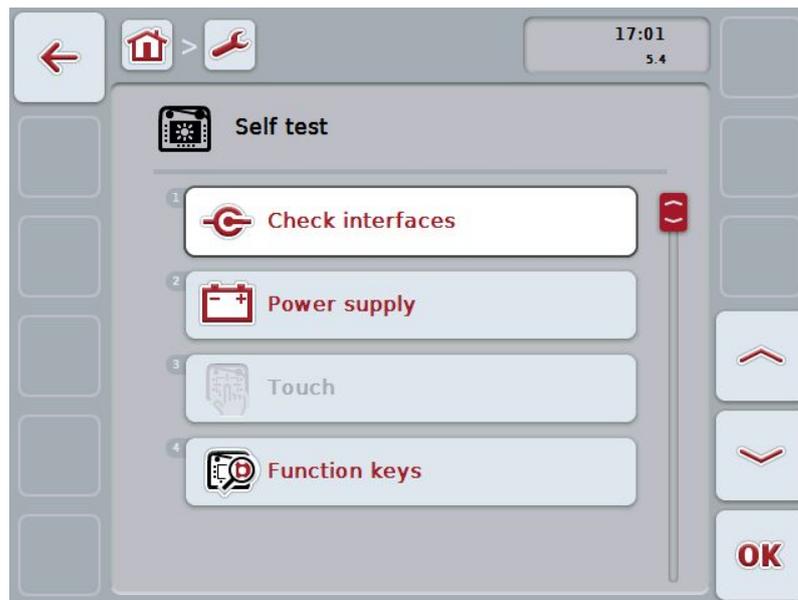
Note

This function is only available if a flash drive is inserted.

6.3.6.5 Self test

To change the self test proceed as follows:

1. Press on the "Self test" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ The following mask opens:



You have the following operating options:

-  **Display interface information**
-  **Display Power supply**
-  **Test touch**
-  **Test function keys**
-  **Test scroll wheel**
-  **Test buzzer**
-  **Display brightness sensor**
-  **Test brightness**



Display stop switch



Change to CAN trace

On the touchscreen press button "CAN trace".

→ The **CAN trace** mask opens.

More detailed information on CAN trace can be consulted in chapter 6.3.6.5.11.



Test internet connection

6.3.6.5.1 Display interface information

To display information about individual interfaces, proceed as follows:

1. Press on the "Interfaces" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ A mask opens with the various interfaces.
2. Select an interface from the list. To do so, on the touchscreen press the button with the interface or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
3. A mask opens with information about the current status of the interface.

6.3.6.5.2 Display Power supply

To display power supply information, proceed as follows:

1. Press on the "Power supply" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ A mask opens with the value of the applied voltage.

6.3.6.5.3 Test touch

Not available in this version.

6.3.6.5.4 Test function keys

To test the function keys, proceed as follows:

1. Press on the "Function keys" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ A mask opens for testing of the function keys.

2. Press in the following row on the function keys F1-F12.
 - The mask indicates which function key is being pressed.

6.3.6.5.5 Test scroll wheel

To test the scroll wheel, proceed as follows:

1. Press on the "Scroll wheel" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ A mask opens for testing the scroll wheel.

2. Turn the scroll wheel clockwise.
 - The individual segments are highlighted.
3. Press on the scroll wheel.
 - The segment highlighting is cleared.

6.3.6.5.6 Test buzzer

To test the buzzer, proceed as follows:

1. Press on the "Buzzer" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ A mask opens for testing the buzzer.

→ A tone sequence can be heard.

6.3.6.5.7 Display brightness sensor

To display brightness sensor information, proceed as follows:

1. Press on the "Brightness sensor" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ A mask opens with the current value of the brightness sensor.

6.3.6.5.8 Test brightness

To test the brightness, proceed as follows:

1. Press on the "Brightness" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ A mask opens for testing the brightness.

2. Test the brightness status (F9), manual brightness entry (F10 and F11) and perform the automatic brightness test (F12).

6.3.6.5.9 Display stop switch

To display the stop switch status, proceed as follows:

1. Press on the "Stop switch" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ A mask opens with the current status of the stop switch.

6.3.6.5.10 Test internet connection



Note

The internet connection test is only available if the ConnectionManager app is activated.

To test the internet connection, proceed as follows:

1. Press on the "Internet connection" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ A mask opens for testing the internet connection.

2. Test the internet connection (F12).

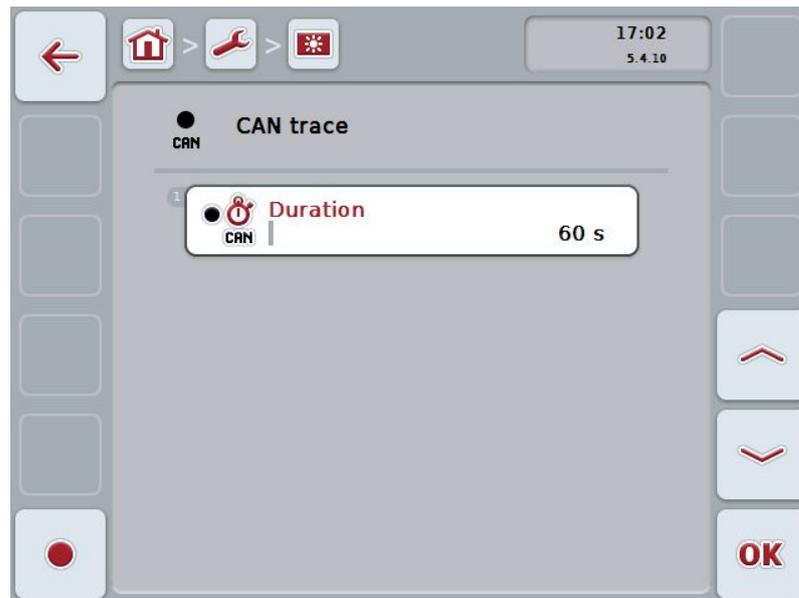
→ The following information about the internet connection is displayed:

- Connection mode
- Connection status
- Result of the connection test
- Internet address

6.3.6.5.11 CAN trace

To change to the CAN trace proceed as follows:

1. Press on the "CAN trace" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ The following mask opens:



You have the following operating options:



Enter the CAN trace duration



Start recording

6.3.6.5.11.1 Enter the CAN trace duration

Proceed as follows to enter the CAN trace duration:

1. Press on the "Duration" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the value on the *touchscreen* using the digit field or the slider.
3. Confirm your entry with "OK".



Note

Values between 60 and 6000 are valid for the duration of the CAN trace.

6.3.6.5.11.2 Start recording

To start recording of the CAN trace, proceed as follows:

1. Press the "Start recording" button (F12) on the touchscreen.
→ Recording of the CAN trace is started.



Note

The duration of the recording can be defined via the duration of the **CAN** trace (see chapter 6.3.6.5.11.1).

6.4 Creating screenshots

The terminal offers the possibility of creating a screenshot of the currently visible operating display. This function can be used to clarify a specific behaviour of the app that is otherwise difficult to describe in words to a service employee.

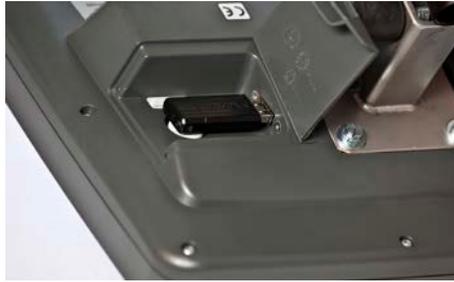


Note

Screenshots can only be created with a flash drive inserted.

Hardware generation 1 (HW1)

(Version 1.x)



Hardware generation 2 (HW2)

(Version 2.x)



To take a screenshot, proceed as follows:

1. Open the flap. To do so, press on the grooved area and pull the notch at the same time (HW1) or unscrew the cap in a clockwise direction (HW2).
2. Insert a flash drive.
3. Press on the **i** button until an acoustic signal sounds.
→ The screenshot is automatically saved on the flash drive.

7 Troubleshooting

7.1 Terminal errors

The following overview shows possible terminal errors and how to solve them:

Error	Possible cause	Rectification
The terminal does not switch on	<ul style="list-style-type: none"> • Terminal is not correctly connected • Ignition is not switched on 	<ul style="list-style-type: none"> • Check the <i>ISOBUS</i> connection • Start tractor
The software of the connected implement is not displayed	<ul style="list-style-type: none"> • Bus terminator missing • Software is loaded, however is not displayed • Connection error when uploading the software 	<ul style="list-style-type: none"> • Check resistance • Check whether the software can be manually started from the terminal main menu • Check physical connection • Contact the implement manufacturer's customer service

7.2 Error messages

The following overview shows error messages in the terminal, their possible cause and how to rectify them:

Error	Possible cause	Rectification
Program cannot find a suitable update file.	<ul style="list-style-type: none"> Flash drive is not inserted Update file is not available on the flash drive 	<ul style="list-style-type: none"> Insert flash drive Copy update file to the flash drive
Process interrupted by error.		Call service technician
Screenshot could not be created.	Flash drive is not inserted	Insert flash drive
Implement objects have been rejected.	Error in the implement object pool	Contact the implement manufacturer
Connection to a WorkingSet was broken.		Call service technician
Another VT #0 has been identified in the network. The VT cannot log on to the network.	The terminal is set as the primary terminal.	The terminal must be logged on as a secondary terminal. Under CAN settings, remove the check next to "Primary UT" (see chapter 6.3.5.5.5).
Program cannot find a suitable update file.	<ul style="list-style-type: none"> Flash drive is not inserted Update file is not available on the flash drive 	<ul style="list-style-type: none"> Insert flash drive Copy update file to the flash drive
To activate the new settings, restart the terminal.	The terminal settings have been changed.	Switch off the terminal and then switch on again.



Note

Other error messages may be displayed on the terminal that are dependent on the implement.

A detailed description of these possible error messages and troubleshooting can be found to in the implement operating instructions.



Note

If the implement cannot be operated, check whether the stop switch is pressed. The implement cannot be operated until the switch has been released.

7.3 Service

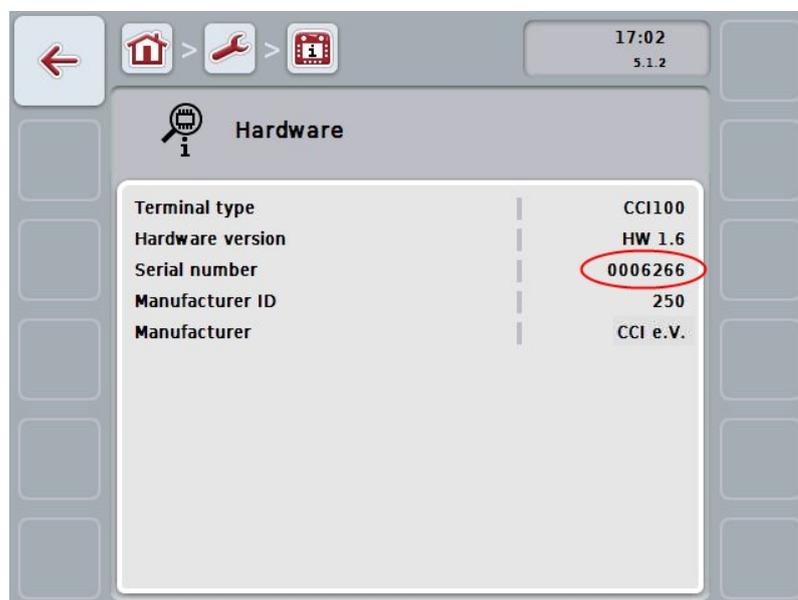


Note

If ordering spare parts or contacting customer service with a query you must Specify the serial number of the terminal.

To display the serial number, proceed as follows:

1. Press the home key to enter the main menu.
2. Press the "Settings" button (F1) in the main menu.
3. Select the tab **Info and Diagnostics**.
4. In the tab **Info and Diagnostics** press the button "Terminal".
5. On the touchscreen press button "Hardware".
 - The following information field opens:



8 Technical Information

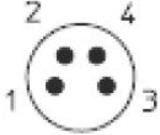
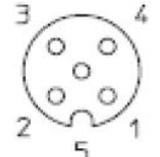
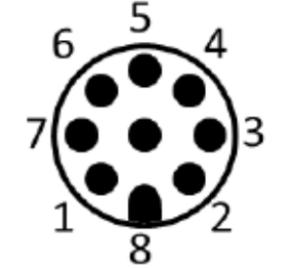
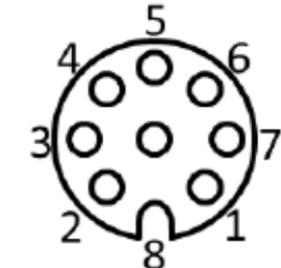
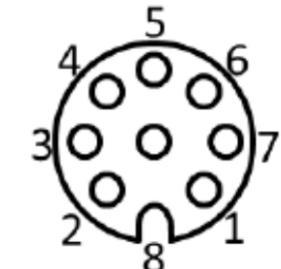
8.1 Mechanical Values

Dimensions (WxHxD) [mm]	250 x 240 x 75
Casing Type	PC-ABS multi-shell plastic casing
Fastening	80mm x 80mm flange plate with 4 x M5-threaded bush
Operating Temperature [°C]	-20 to +70
Humidity Resistance [%]	95, (+25°C...50°C)

8.2 Electronics

Supply voltage [V]	12 and 24
Permitted Range [V]	9...30
Electricity Consumption (at 13.5 V)	1.1 A – 1.5 A
Polarity Protection	Present
Display	8.4" TFT
Display Resolution [px]	640 x 480

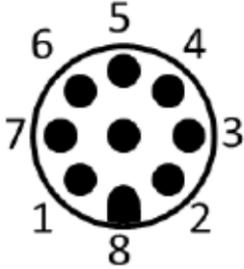
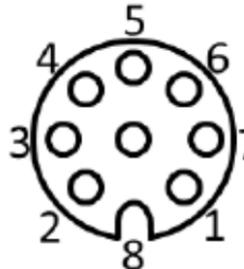
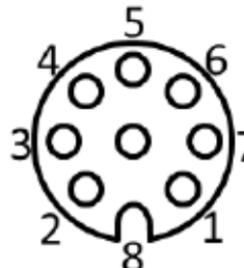
8.3 Interfaces hardware generation 1 (Version 1.x):

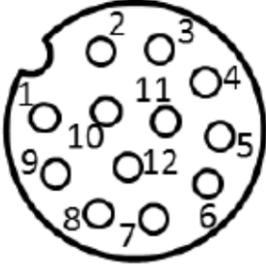
<p>RS232-1 & RS232-2</p>	<p>CCI 100 CCI 200</p>	<p>M8x1; 4-pin connector</p>		<ol style="list-style-type: none"> 1. Supply voltage 2. TxD (Transmit) 3. Earth 4. RxD (Receive)
<p>SIGNAL</p>	<p>CCI 100 CCI 200</p>	<p>M12x1;5-pin socket</p>		<ol style="list-style-type: none"> 1. Supply voltage 2. ISO11786 "PTO speed" 3. Earth 4. ISO11786 "Speed" 5. ISO11786 "Hoisting gear position"
<p>CAN1-IN</p>	<p>CCI 100 CCI 200</p>	<p>M12x1; 8-pin connector</p>		<ol style="list-style-type: none"> 1. Supply voltage 2. EMERGENCY STOP input 3. Switch on signal for ECU 4. EMERGENCY STOP supply 5. CAN Low 6. GND 7. CAN High 8. Shielding decoupled from earth
<p>CAN1-OUT</p>	<p>CCI 100 CCI 200</p>	<p>M12x1; 8-pin connector</p>		<ol style="list-style-type: none"> 1. Supply voltage 2. EMERGENCY STOP output 3. Switch on signal for ECU 4. EMERGENCY STOP supply 5. CAN Low 6. GND 7. CAN High 8. Shielding decoupled from earth
<p>Video</p>	<p>CCI 100 CCI 200</p>	<p>M12x1; 8-pin socket</p>		<ol style="list-style-type: none"> 1. Video signal 2. EIA RS-485 B 3. EIA RS-485 A 4. Supply voltage 5. EIA RS-485 A = jumpered 3 pin 6. Supply voltage 7. Supply earth 8. Shielding decoupled from earth

LIN	CCI 100 CCI 200	M8x1; 4-pin socket		<ol style="list-style-type: none"> 1. Supply voltage 2. Free 3. Earth 4. LIN bus
USB	CCI 100 CCI 200	USB Host 2.0		<ol style="list-style-type: none"> 1. Supply voltage 2. Data - 3. Data + 4. Earth
Bluetooth	CCI 200	Bluetooth Spec. V2.0 + DER Compliant Class 2 Output Power, internal antenna		
WLAN (Wi-Fi)	CCI 200	54 Mbps, 2.4 GHz, IEEE 802.11b and 802.11g, WPA, WPA2, 802.1x and 802.11i, function only at 0°C – 65°C		

- Pin
- Socket

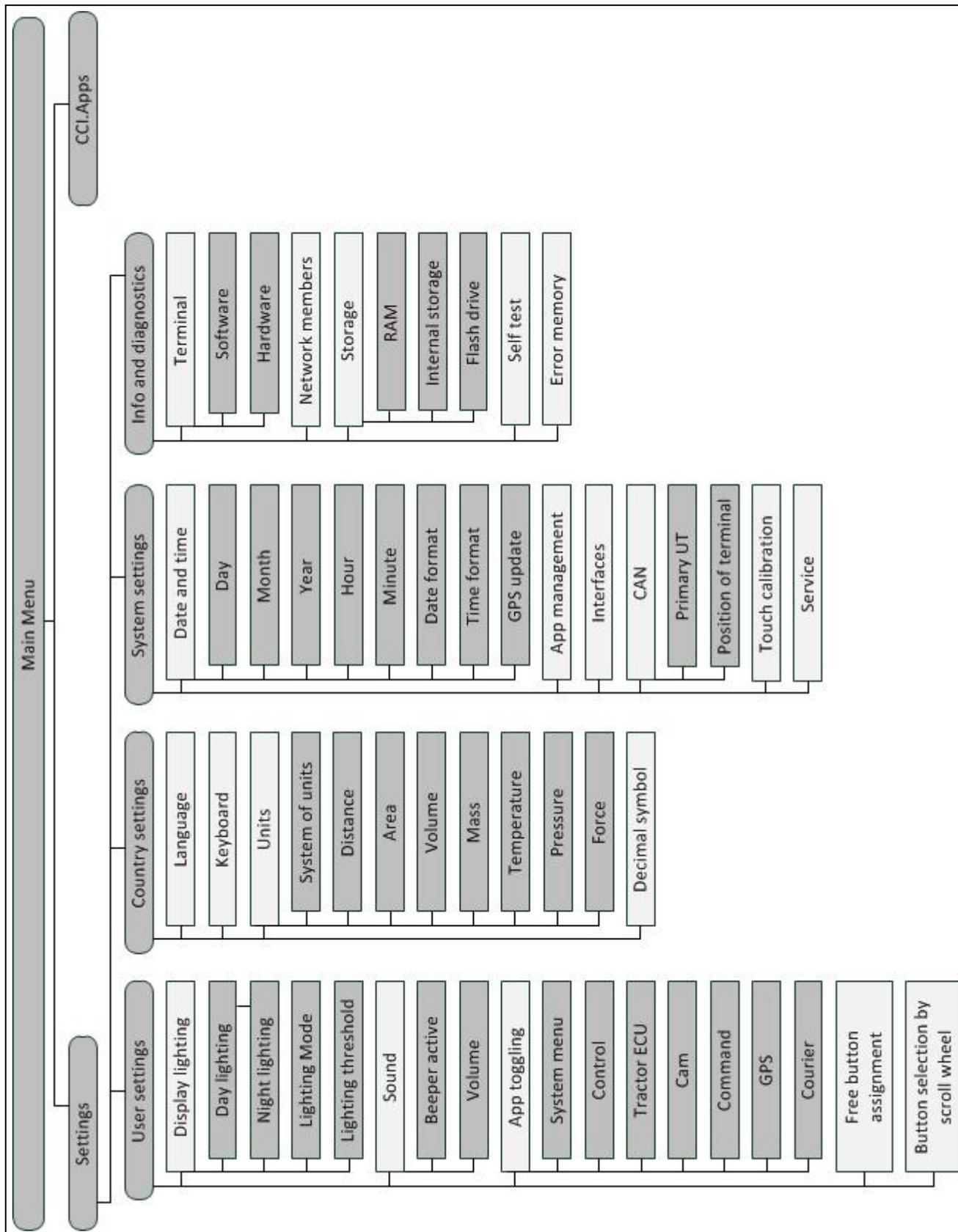
8.4 Interfaces hardware generation 2 (Version 2.x):

<p>CAN1-IN</p>	<p>CCI 100 CCI 200</p>	<p>M12x1; 8-pin connector</p>		<ol style="list-style-type: none"> 1. Supply voltage 2. EMERGENCY STOP input 3. Switch on signal for ECU 4. EMERGENCY STOP supply 5. CAN Low 6. GND 7. CAN High 8. Shielding decoupled from earth
<p>CAN1-OUT</p>	<p>CCI 100 CCI 200</p>	<p>M12x1; 8-pin connector</p>		<ol style="list-style-type: none"> 1. Supply voltage 2. EMERGENCY STOP output 3. Switch on signal for ECU 4. EMERGENCY STOP supply 5. CAN Low 6. GND 7. CAN High 8. Shielding decoupled from earth
<p>Video</p>	<p>CCI 100 CCI 200</p>	<p>M12x1; 8-pin socket</p>		<ol style="list-style-type: none"> 1. Video signal 2. EIA RS-485 B 3. EIA RS-485 A 4. Supply voltage 5. EIA RS-485 A = jumpered 3 pin 6. Supply voltage 7. Supply earth 8. Shielding decoupled from earth

<p>2x RS232 and signal</p>	<p>CCI 100 CCI 200</p>	<p>Async. max.115 Kbps/ Signal connector ISO 11786 M12x1; 12 pin socket</p>		<ol style="list-style-type: none"> 1. Supply voltage 2. Earth 3. ISO11786 "PTO speed" 4. ISO11786 "Hoisting gear position" 5. ISO11786 "Wheel Speed" 6. Direction of travel 7. ISO11786 "Ground Speed" 8. RS232-1 TxD (Transmit) 9. RS232-1 RxD (Receive) 10. Ignition signal (terminal 15) 11. RS232-2 TxD (Transmit) 12. RS232-2 RxD (Receive)
<p>LIN</p>	<p>CCI 100 CCI 200</p>	<p>M8x1; 4-pin socket</p>		<ol style="list-style-type: none"> 1. Supply voltage 2. Free 3. Earth 4. LIN bus
<p>USB</p>	<p>CCI 100 CCI 200</p>	<p>USB Host 2.0</p>	 <p>.....</p>	<ol style="list-style-type: none"> 1. Supply voltage 2. Data - 3. Data + 4. Earth
<p>Bluetooth</p>	<p>CCI 200</p>	<p>Bluetooth Spec. V2.0 + DER Compliant Class 2 Output Power, internal antenna</p>		
<p>WLAN (Wi-Fi)</p>	<p>CCI 200</p>	<p>54 Mbps, 2.4 GHz, IEEE 802.11b and 802.11g, WPA, WPA2, 802.1x and 802.11i, function only at 0°C – 65°C</p>		

- Pin
- Socket

9 Menu structure



10 Warranty and guarantee

<Company name> devices are manufactured with the utmost care and using modern production methods and are subject to numerous checks. As such <company name> provides a 12-month warranty provided the following conditions are satisfied:

- The warranty begins on the date of purchase.
- The warranty covers material or manufacturing defects. For external products (hydraulics, electronics) we only accept liability within the framework of the respective manufacturer's warranty. During the warranty period, manufacturing and material defects will be resolved free of charge by replacing or improving the affected parts. Other, further rights, such as claims for the conversion, reduction or replacement of damage which have not occurred to the contract item, are expressly excluded. The warranty reimbursement is performed by authorised workshops by <company name> factory representation or the factory.
- Exclusions from the warranty agreement are the consequences of natural wear, dirt, corrosion and any defects which have arisen due to improper use as well as external effects. The warranty remains void in the event of undertaking unauthorised repairs or modifications to the original condition. The claim for replacement is made void if no <company name> original spare parts were used. Please refer to the operating instructions for information. In the event of any queries contact our factory representative or the factory directly. To be valid warranty claims must be submitted to the factory at the latest 30 days after the damage has been detected. When doing so, please provide the purchase date and the implement number. Repairs to be performed as part of the warranty may only be carried out by the authorised workshop after consultation with <company name> or their official representative. The warranty period is not extended by warranty work. Transport defects are not factory defects and are not, therefore, included as part of the manufacturer's warranty conditions.
- A claim for the repair of damage which has not arisen on <company name> devices themselves is excluded. Within this context, liability for consequential damage as the result of random imperfections is also excluded. Unauthorised modifications to <company name> devices can lead to consequential damage and the supplier accepts no liability for such damage. In the event of intent or gross negligence by the owner or an executive employee, and in cases in which in accordance with product liability legislation there is liability for personal injury or material damage for privately used objects in the case of defects in the contract item, the supplier's liability exclusion is not applicable. This liability exclusion shall not apply either in cases where properties, which were explicitly warranted, are lacking, especially when this commitment was made in order to protect the customer against damage which did not occur on the subject of the delivery itself.

11 Contact Addresses

Amazonen-Werke H. Dreyer GmbH & Co. KG
Am Amazonenwerk 9-13
D-49205 Hasbergen
Tel: + 49 (0)5405 501 0
www.amazone.de

Grimme Landmaschinenfabrik GmbH & Co. KG
Hunteburger Str. 32
D-49401 Damme
Tel: +49 (0)5491 666 0
www.grimme.de

KUHN S.A.
BP 50060
F-67706 Saverne CEDEX
Tel: +33 (0)3 88 01 81 01
www.kuhn.com

LEMKEN GmbH & Co. KG
Weseler Straße 5
D-46519 Alpen
Tel: +49 (0)2801 81 0
www.lemken.com

ROPA Fahrzeug- und Maschinenbau GmbH
Sittelsdorf 24
D-84097 Herrngiersdorf
Tel: +49 (0)8785 9601 0
www.ropa-maschinenbau.de

Peeters Landbouwmachines B.V.
Munnikenheiweg 47
4879 NE Etten-Leur
Tel: +31 (0)76 504 66 66
www.tulipindustries.com

Maschinenfabrik Bernard KRONE GmbH
Heinrich-Krone-Straße 10
D-48480 Spelle
Tel: +49 (0)5977 935 0
www.krone.de/de/ldm/

RAUCH Landmaschinenfabrik GmbH
Landstraße 14
D-76547 Sinzheim
Tel: +49 (0)7221 985 200
www.rauch.de

Alois Pöttinger Maschinenfabrik Ges.m.b.H
Industriegelände 1
A-4710 Grieskirchen
+43 (0)7248 6 00 0
www.poettinger.at

Ludwig Bergmann GmbH
Hauptstraße 64-66
D-49424 Goldenstedt
+49 (0)4444 2008 0
www.bergmann-goldenstedt.de

Zunhammer GmbH Slurry technology – vehicle
construction
Biebing 19
D-83301 Traunreut
Tel: +49 (0)8669 8788 0
www.zunhammer.de

BEDNAR FMT s.r.o.
Lohenická 607
Prag 9 Vinohř
Tel: +420 283 092 529
www.bednar-machinery.com

12 Glossary

ACK	Acknowledge
Operating mask	The operating mask is comprised of the values and operating elements shown on the screen. The touchscreen can be used to directly select the elements shown.
Boolean value	A Boolean value is a value whereby it is only possible to choose between true/false, on/off, yes/no etc.
Bus system	Electronic system for communication between control devices.
CAN	C ontroller A rea N etwork
CCI	C ompetence C enter I SOBUS e.V.
DHCP	D ynamic H ost C onfiguration P rotocol: This enables assigning the network configuration to Clients using a server.
ESC	Escape = exit, here: cancel/interrupt a function
HW1	Hardware generation 1 Version 1.x and above
HW2	Hardware generation 2 Version 2.x and above
In-cab	From the standard ISO 11783. Describes the nine-pole ISOBUS plug in the cab.
ISO 11783	International standard Specifies interfaces and data formats for tractors and implements.
ISOBUS	ISO11783 International standard for data transfer between farming implements and devices.
Cable type A	Connects the "CAN1-IN" and "CAN1-OUT" on the terminal to the In-cab socket of the tractor.
Context menu	Graphical user interface Facilitates editing, copying, deleting or adding of data.
LAN	L ocal A rea N etwork, local network
Network member	A device that is connected to the bus and communicates via this system.
Object pool	Data record that is transferred from the ISOBUS implement to the terminal and contains the individual operating masks.
Interface	Part of the terminal which is used to communicate with other devices.
Signal connector	7-pin outlet based on the ISO 11786 standard, at which signals for speed, PTO speed and 3-point position can be read.
Terminal	CCI 100 or CCI 200 ISOBUS Terminal
Touchscreen	Touch-sensitive screen which is used to operate the terminal.
Tractor ECU	Also TECU. On an ISOBUS tractor, the TECU establishes the connection between the tractor bus system and the ISOBUS and thus provides the implement with the tractor information such as the driving speed or the power take off speed.
USB	U niversal S erial B us: Serial bus system to connect the terminal to a storage medium.

13 Buttons and icons

	OK Confirm entry or selection		ESC Exit mask or input dialogue
	Scroll wheel		Slider
	0-9 Number Block		Main menu
	Display lighting		Sound/Volume/Buzzer
	App toggling		i button
	Day lighting		Night lighting
	Lighting Mode		Lighting threshold/ Brightness sensor
	Beeper/Test touchscreen		Language
	Keyboard		Units
	1,23 Decimal symbol		Date
	App management		Testing Interfaces
	CAN		Service menu
	Time		Date format
	Time format 12/24		GPS update
	Timezone		AM/PM
	Terminal information		Network member
	Storage		Self test
	Error memory		Software information

- | | | | |
|-----------------------------------------------------------------------------------|----------------------|-----------------------------------------------------------------------------------|----------------------------------|
|  | Hardware information |  | Internal storage |
|  | Flash drive |  | Display Power supply |
|  | Test scroll wheel |  | Test function keys |
|  | Test brightness |  | Test stop switch |
|  | Enter CAN trace |  | Interface management |
|  | GSM SETTINGS |  | WLAN settings |
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CCI.Cam

Visual implement monitoring

Operating instructions

Reference: CCI.Cam v4

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Version number: v4.01

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1 Introduction

1.1 About these operating instructions

These operating instructions are intended as an introduction to the operation and configuration of the CCI.Cam app. This app is preinstalled on your ISOBUS terminal CCI 100/200 and can only be run from there. It is only with knowledge of these operating instructions that accidental misuse can be avoided and fault-free operation ensured.

These operating instructions must be read and understood prior to setting up the software to avoid problems in the application.

1.2 Reference

These operating instructions describe the CCI.Cam Version CCI.Cam v4.

To query the version number of the CCI.Cam installed on your terminal proceed as follows:

1. Press the home key to enter the main menu.
2. Press the "Settings" button (F1) in the main menu.
3. Select the tab **Info and Diagnostics**.
4. In the tab **Info and Diagnostics** press the button "Terminal".
5. Press the "Software" button on the touchscreen.
 - The version of the terminal software component is indicated in the information field that is now displayed.

1.3 About CCI.Cam

CCI.Cam is used for visual implement monitoring by video camera. The app allows the worker to keep an overview of his implement with up to 8 cameras and supports the worker during complex working procedures.

Enhanced functions such as cyclical camera switching and flexible configuration of the camera connections facilitates day-to-day working. The snapshot function allows photos to be taken and stored on a flash drive.

2 Safety

2.1 Identification of indications in the operating instructions

The safety indications in these operating instructions are specially identified:



Warning - General Hazards!

This occupational safety symbol identifies general safety indications the non-observance of which poses a danger for life and limb. Carefully observe the indications regarding occupational safety and exert particular caution in these cases.



Attention!

This attention symbol identifies all safety indications which refer to regulations, directives or working procedures which it is essential to observe. Non-observance can entail damage to, or the destruction of, the terminal as well as malfunctions.



Note

The note symbol highlights operation tips and other particularly useful information.

3 Commissioning

3.1 Mounting the terminal

For information about installing the terminal, please refer to the chapter **5.1 Mounting the terminal** in the **ISOBUS Terminal CCI 100/200** Operating Instructions.

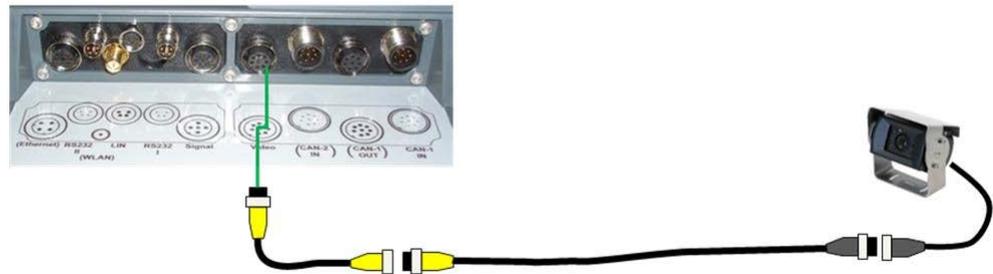
3.2 Connecting the Terminal

3.2.1 Connecting to ISOBUS/power supply

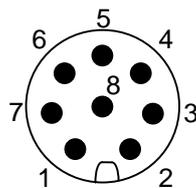
Please refer to the information in the chapter **5.2.1 Connecting to ISOBUS/power supply** of the **ISOBUS Terminal CCI 100/200** Operating Instructions.

3.3 Connecting to a camera

A camera can be directly connected to the terminal via the "Video" interface.



Camera connection



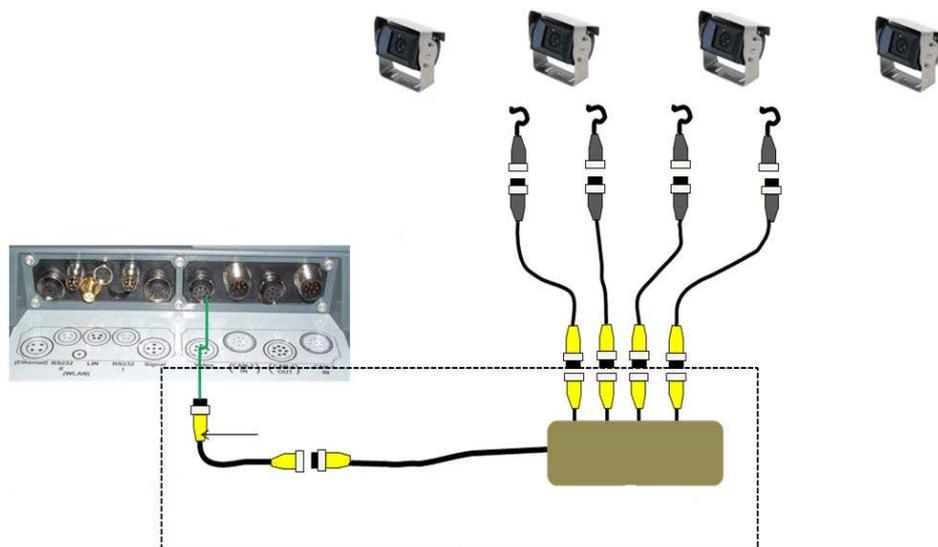
The connection of the camera to the terminal occurs via the "Video" interface.

Refer to the following set-up for the pin layout:

1. Video signal
2. RS485B
3. RS485A
4. +12V / +24 V
5. Mini Out
6. +12V / +24 V
7. GND
8. Shield

3.4 Connecting to multiple cameras

Multiple cameras can be connected to the terminal using the multiplexer <Art Nr. Multiplexer>. If more than three cameras are connected to the terminal via the multiplexer, the multiplexer requires an external voltage supply.



Multiplexer connection

The multiplexer is connected to the terminal analogously to a camera connection via the "Video" interface (compare chapter 3.3).

3.5 Installing the software

CCI.Cam is included in the scope of delivery of the CCI ISOBUS terminal, i.e. installation is neither possible nor required.

4 Operation

4.1 Program start

CCI.Cam is activated automatically by switching on the terminal.

To switch to the main view of CCI.Cam, proceed as follows:

1. Press on the "Cam" button in the main menu of the terminal on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ The following main view opens:



CCI.Cam is subdivided into 3 areas:

4.1.1 Main view (one camera)

Shows the camera image of the only connected camera.

4.1.2 Main view (multiple cameras)

Shows the camera image of one of the connected cameras.

Facilitates switching between the images from different cameras.

4.1.3 Settings

Enables the assignment of a camera image to the function keys, activation of the camera images for automatic mode and setting of the time interval.

4.2 Main view (one camera)

This is the main view if only one camera is connected to the terminal. The image from this camera is displayed in the main view.



You have the following operating options:

- 
Select full-screen mode
- 
Mirror image
- 
Take a snapshot



Note

If only one camera is connected, the button "Settings" (F12) is greyed out in the main view. The settings are only available, if a multiplexer is connected with multiple cameras (see chapter 4.3).

4.2.1 Select full-screen mode

To select the full-screen mode, proceed as follows:

1. In the touchscreen press on the button "Full screen mode" (F8), directly on the camera image display or on the scroll wheel.
 - The view changes immediately to full-screen mode, the camera image takes up the entire monitor area.



Note

In full-screen mode, the "Mirror image" (F9) and "Snapshot" (F11) functions are only available via the corresponding function buttons.



Note

To exit the full-screen mode, touch any area in the touchscreen or press the F8 function key or the scroll wheel.

4.2.2 Mirror image

To mirror the image along the vertical axis, proceed as follows:

1. Press the "Mirror image" button (F9) on the touchscreen.
 - The image is displayed as a mirror image.

4.2.3 Take a snapshot

To take a snapshot, proceed as follows:

1. Connect a flash drive to the terminal.
2. Press the "Take a Snapshot" button (F11) on the touchscreen.
 - The snapshot will be automatically saved to the flash drive in the "CAMCAP" folder. The filenames follow the convention _<JJJJ_MM_TT>_<consecutive number>JPEG.

4.3 Main view (multiple cameras)

This is the main view when multiple cameras are connected to the terminal. The images from the selected cameras are displayed in the main view.



You have the following operating options:

- 
Select full-screen mode (see chapter 4.2.1)
- 
Mirror image (see chapter 4.2.2)
- 
Create a snapshot (see chapter 4.2.3)
- 
Switch to the settings (see chapter 4.4)
- 
Switch automatic camera switching on or off
- 
Display camera image
- 
Display additional cameras

4.3.1 Switch automatic camera switching on or off

If you do not want to change the display of the camera images manually, you can switch on automatic camera switching. The display will then automatically switch to the different camera images at regular intervals.

To switch the automatic camera switching on or off, proceed as follows:

1. Press the "Switch on automatic camera switching" button (F10) on the touchscreen or "Switch off automatic camera switching" (F10) if this is already switched on.



Note

Automatic camera switching can only be turned on if several camera images have been activated for automatic mode (see chapter 4.4.4.1).



Note

It is possible to select the camera images amongst which automatic switching takes place (see chapter 4.4.4.1) and the interval at which the camera images change (see chapter 4.4.1).

4.3.2 Display camera image

To display the image from a specific camera, proceed as follows:

1. In the touchscreen, press on the button or the function key, to which the desired camera image is assigned (see chapter 4.4.3.1).
 - The display switches to the camera image.

4.3.3 Display additional cameras



Note

The button with this function only appears, if the function keys 3 (2), 4 (2) and/or 5 (2) have had a camera assigned to them (see chapter 4.4.3).

To display additional cameras, proceed as follows:

1. Press the "Display Additional Cameras" button (F6) on the touchscreen.
 - The additional cameras are displayed on the buttons (F3 – F5).



Note

The "Camera 1" (F1) and "Camera 2" (F2) buttons are always displayed. These buttons are the function keys for the images of the two most important cameras.

4.4 Settings

Use the "Settings" (F12) button in the main view to get to the **Settings** submenu.



You have the following operating options:

Change to function key assignment:



Press the "Assignment" button on the touchscreen.

→ The **Assignment** mask opens.

You can find more detailed information about function key assignment in chapter 4.4.3.

Change to settings in automatic mode:



Press the "Automatic mode" button on the touchscreen.

→ The **Automatic mode** mask opens.

You can find more detailed information about automatic mode settings in chapter 4.4.4.



Enter time interval



Reset all settings

4.4.1 Enter time interval

To enter the time interval for the automatic camera switching, proceed as follows:

1. Press on the "Time interval" button on the touchscreen or turn the scroll wheel until the designator is highlighted in white and then press on the scroll wheel. Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the new value for the time interval on the touchscreen using the digit field or the slider.
3. Confirm your entry with "OK".



Note

Values between 1 and 10 seconds are valid for the time interval value range.

4.4.2 Reset all settings

To reset all settings for the time interval, proceed as follows:

1. Press the "Reset" button (F1) on the touchscreen.
 - The settings are immediately reset to factory settings, there is no warning message.



Note

The factory setting for the time interval is 2 seconds.

4.4.3 Assignment

This submenu facilitates the flexible assignment of cameras to the function keys independently of the connection assignment on the multiplexer. This makes it possible to set the two most important cameras to the function keys "Function key 1" and "Function key 2" which are always displayed without having to modify the connection on the multiplexer.

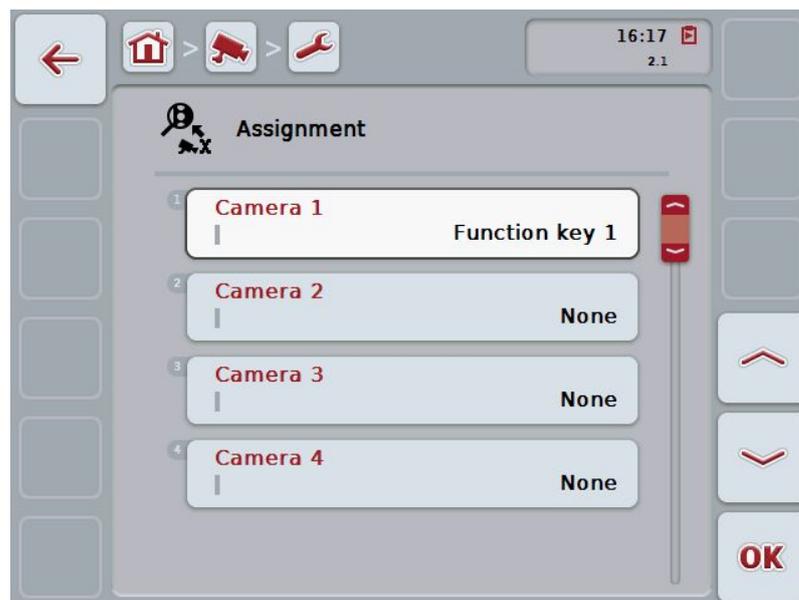


Note

An assignment of cameras to function keys is necessary to make it possible to activate the camera images for the automatic camera change (see chapter 4.4.4.1).

To change the function key assignments proceed as follows:

1. Press on the "Assignment" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel. Once the button is highlighted you can, alternatively, also press the "OK" (F8) button.
 - The following mask opens:



You have the following operating options:



Assigning the function keys

4.4.3.1 Assigning the function keys

To assign a function key to a camera, proceed as follows:

1. Press on one of the "Camera 1-8" buttons on the touchscreen or turn the scroll wheel until the button in question is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ A list of available function keys opens.

2. Select a function key from the list. To do this in the touchscreen press the button with the number of the function key.
3. Confirm your selection with "OK" or press on the button with the function key number again.



Note

A further camera can be assigned to each of function keys 3, 4 and 5 using function keys 3 (2), 4 (2) and 5 (2). To be able to access these other cameras via the function keys, the button "Display other cameras" (F6) must be pressed (see chapter 4.3.3).

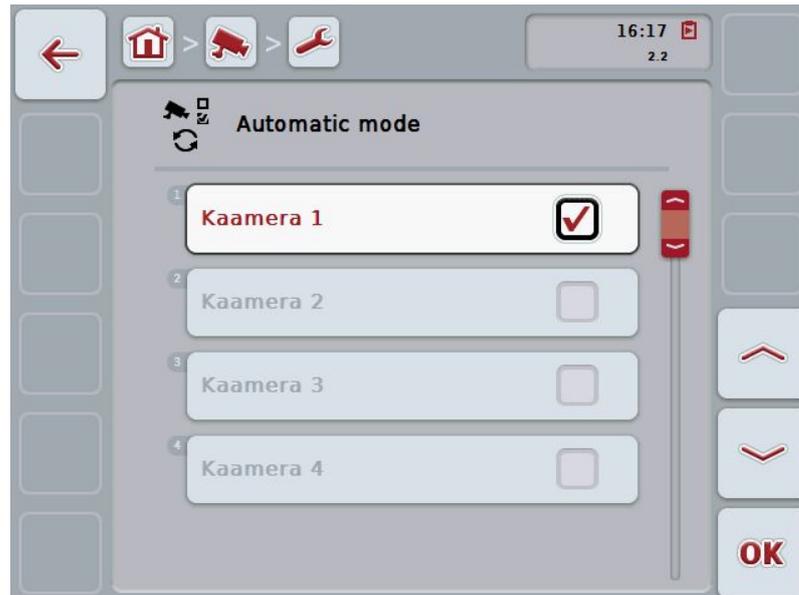
4.4.4 Automatic mode

To change automatic mode settings proceed as follows:

1. Press on the "Automatic mode" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ The following mask opens:



You have the following operating options:



Activate/deactivate camera images for automatic mode

4.4.4.1 Activate/deactivate camera images for automatic mode

To activate/deactivate the individual camera images for automatic mode, proceed as follows:

1. Press on the "Camera 1-8" button on the touchscreen or turn the scroll wheel until the button in question is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the Boolean value.
3. Confirm your entry with "OK".

**Note**

In automatic mode, changing between the activated camera images takes place automatically.

**Note**

To be able to activate the camera images for automatic camera switching, an allocation of cameras to function keys is required (see chapter 4.4.3).

5 Troubleshooting

5.1 Terminal errors

The following overview shows possible terminal errors and how to solve them:

Error	Possible cause	Rectification
The terminal does not switch on	<ul style="list-style-type: none"> Terminal is not correctly connected Ignition is not switched on. 	<ul style="list-style-type: none"> Check ISOBUS connection Start tractor.
The software of the connected implement is not displayed	<ul style="list-style-type: none"> Bus terminator missing Software is loaded, however is not displayed Connection error when uploading the software 	<ul style="list-style-type: none"> Check resistance Check whether the software can be manually started from the terminal start menu Check physical connection Contact the implement manufacturer's customer service

5.2 Error messages

The following overview shows error messages in CCI.Cam, their possible cause and how to rectify them:

Error	Possible cause	Rectification
Video Multiplexer could not be initialized.	Error at the cable connection	Check the cable connection, restart the terminal.
The required video source could not be opened. (202)	Connection to the camera lost/broken.	Check the cable connection, restart the terminal.
The required camera could not be mirrored.	Mirroring is not supported by the camera (only occurs when using the multiplexer).	Use a camera whose hardware supports mirroring.
Error when creating the screenshot. Please check whether a flash drive has been plugged in.	No flash drive plugged in.	Plug in flash drive.



Note

Other error messages may be displayed on the terminal that are dependent on the implement.

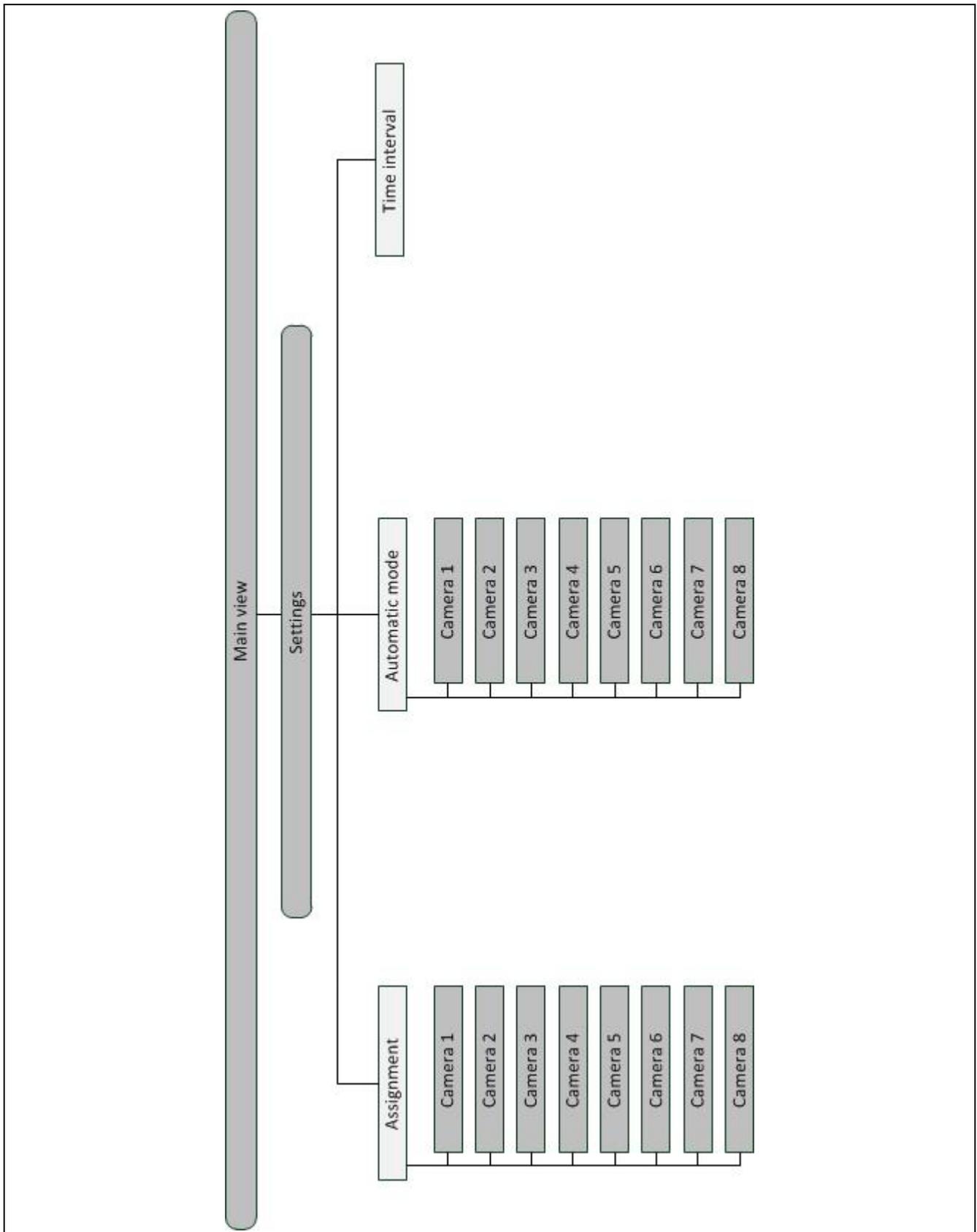
A detailed description of these possible error messages and troubleshooting can be found to in the implement operating instructions.



Note

If the implement cannot be operated, check whether the "stop switch" is pressed in. The implement cannot be operated until the switch has been released.

6 Menu structure



7 Glossary

Operating mask	The operating mask is comprised of the values and operating elements shown on the screen. The touchscreen can be used to directly select the elements shown.
Boolean value	A Boolean value is a value whereby it is only possible to choose between true/false, on/off, yes/no etc.
CCI	Competence Center ISOBUS e.V.
CCI.Cam	Visual implement monitoring
ISOBUS	Data bus for a regional or municipal technical application which is in compliance with the standard ISO 11783.
Multiplexer	Device for switching between video signals which facilitates operating multiple cameras over one video input.
Snapshot	Records the currently displayed image
Terminal	CCI 100 or CCI 200 ISOBUS Terminal
Touchscreen	Touch-sensitive screen which is used to operate the terminal.
Full-screen mode	The camera image fills the entire screen.

8 Buttons and icons



CCI.Cam



Snapshot



Switch automatic mode on/off



Display camera image



Time interval



Automatic mode



Select from a list



Full-screen mode



Mirror image



Settings



Display additional cameras



Assignment



Reset

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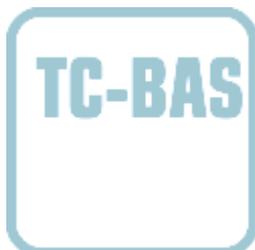


CCI.Control

Documentation and task
management

Operating instructions

Reference: CCI.Control v4.0



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Version: v4.01

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1 Introduction

1.1 About these operating instructions

These operating instructions are intended as an introduction to the operation and configuration of the CCI.Control app. This app is preinstalled on your ISOBUS terminal CCI 100/200 and can only be run from there. It is only with knowledge of these operating instructions that accidental misuse can be avoided and fault-free operation ensured.

These operating instructions must be read and understood particularly prior to processing of tasks using the software, to prevent problems during operation.

1.2 Reference

These operating instructions describe the CCI.Control Version CCI.Control v4.0. In order to query the version number of the CCI.Control installed on your CCI ISOBUS terminal, proceed as follows:

1. Press the home key to enter the main menu.
2. Press the "Settings" button (F1) in the main menu.
3. Select the tab **Info and Diagnostics**.
4. In the tab **Info and Diagnostics** press the button "Terminal".
5. Press the "Software" button on the touchscreen.
 - The version of the terminal software component is indicated in the information field that is now displayed.

1.3 About CCI.Control

In accordance with the ISOBUS standard, CCI.Control is a task controller software package which, amongst others, fulfils the requirements of the AEF functionalities TC-BAS and TC-GEO (see chapter 8).

1.3.1 Components

CCI.Control is used for documentation and task management:

Data interface	The ISO-XML format, defined for ISOBUS, is used for data exchange. Data are transferred using a flash drive or via online transfer.
Implement interface	Process data capture and implement control take place via the ISOBUS. The job computer for the implement must therefore be equipped with Task Controller software.

1.3.2 Section-specific processing

If a GPS receiver is connected section-specific processing can be automated. Tasks planned on the PC using application maps can be processed in this way and documented with position information.

1.3.3 Standalone mode

In the simplest case, CCI.Control can be operated without a task file and without an ISOBUS implement.

Master data (worker, farm, product, etc.) and task are added directly to the terminal and the CCI.Control is only used for task data capture. The time and duration of the agricultural practice, the master data allocated to the task and, if a GPS antenna is available, the lane are captured.

1.3.4 Operation with implement

1.3.4.1 ISOBUS enabled

Most modern ISOBUS implements are able to provide the CCI.Control with a series of process data.

Process data refers to the following:

- a) Implement-specific information
- b) Task-specific information (application data + yield data)

The process data made available in the counters depends on the implement and is stipulated by the implement manufacturer.

After a task is started, CCI.Control records this process data. Besides the importing of a task from the FMIS or manual creation of workers, master data (field, customer, worker, product, etc.) are stored together with process data (working time, yield, time in the working position, etc.).

1.3.4.2 Not ISOBUS enabled

When operating with an implement that is not ISOBUS compatible CCI.Control cannot record any implement data. Nevertheless the working time and the driven distance (if a GPS receiver is being used) are available.

1.3.5 Operation with an FMIS

This is the recommended operating mode.

CCI.Control takes over the exchange of task and process data between farm PC, terminal and implement. The ISO-XML format, defined for ISOBUS, is used for data exchange. It can be provided or processed by the FMIS of the relevant farming software providers.

You create a task data file on the PC in ISO-XML format which contains both master and task data. The data is read in using the import function from CCI.Control.

All task-specific information is summarised under task data:

- Who?
- Where?
- What?
- When?
- How?

When planning a task on the PC it is possible to stipulate which implement process data are to be recorded. It is, however, also possible to process a standard set of process data specified by the manufacturer. In general, any value available on the implement can be requested and written with time and position information.

In addition, ISOBUS implements can react to instructions from CCI.Control. The ISOBUS implement sends a device description (DDD) to CCI.Control. CCI.Control uses this information to identify the functionality of the ISOBUS implement. Based on the application maps created on the PC, CCI.Control is thus able to control the ISOBUS implement according to position.

CCI.Control facilitates the input of new tasks or customers during the work in the field. The new master data are automatically imported and supplemented in the FMIS.

After a task has ended it can be exported to a flash drive and transferred to the PC or transferred via online transfer. The task data now include the counter readings of the connected implements, as well as the process data requested during the planning of the task. On the basis of the data gained subsequent tasks can be planned with greater precision. Moreover, the data make it easier to document and invoice the work performed.

1.3.6 Examples

Example 1:

During the harvest a yield mapping was created. Based on this, a fertilisation plan is drawn up on the PC. The FMIS creates a task from recommended fertiliser and position data taking into consideration the functions of the implement. This is filed on a flash drive and transferred to the worker who then imports the data into CCI.Control. While the worker drives over the field, CCI.Control controls the fertilizer based on the task and the current position information via the ISOBUS. The section-specific fertiliser volumes are automatically set using the application map created on the PC.

Example 2:

An easier case is that the CCI.Control documents, for example, the bale number for a press. This information, as well as the recorded position information, can be given to the customer in an invoice.

	FMIS not available		FMIS available	
	Implement not ISOBUS enabled	Implement ISOBUS enabled	Implement not ISOBUS enabled	Implement ISOBUS enabled
Logging of times	•	•	•	•
Logging of positions	•*	•*	•*	•*
Logging of counters	-	•	-	•
Logging of process data	-	-	-	•
Automatic control of the implement	-	-	-	•*

* with connected GPS receiver

• Function available

- Function not available

2 Safety

2.1 Identification of indications in the operating instructions

The safety indications in these operating instructions are specially identified:



Warning - General Hazards!

This occupational safety symbol identifies general safety indications the non-observance of which poses a danger for life and limb. Carefully observe the indications regarding occupational safety and exert particular caution in these cases.



Attention!

This attention symbol identifies all safety indications which refer to regulations, directives or working procedures which it is essential to observe. Non-observance can entail damage to, or the destruction of, the terminal as well as malfunctions.



Note

The note symbol highlights operation tips and other particularly useful information.

3 Commissioning

3.1 Mounting the terminal

For information, please refer to the chapter **5.1 Mounting the terminal** in the **ISOBUS Terminal CCI 100/200** Operating Instructions.

3.2 Connecting the Terminal

3.2.1 Connecting to ISOBUS/power supply

Please refer to the information in the chapter **5.2.1 Connecting to ISOBUS/power supply** of the **ISOBUS Terminal CCI 100/200** Operating Instructions.

3.2.2 Connecting to a GPS receiver

The use of a GPS receiver is required in order to process a section-specific task.
For information, please refer to chapter **3.2.2 Connecting to a GPS receiver** in the **CCI.GPS** operating instructions.

3.2.2.1 GPS data requirements

The following NMEA message packages enable error-free operation with CCI.Control:

- GGA, VTG, ZDA, GSA
- GGA, RMC, ZDA, GSA
- GGA, VTG, RMC, GSA
- GGA, RMC, GSA
- RMC, GSA

3.2.3 Connecting with a GSM modem

As an alternative to importing and exporting task data using a flash drive, CCI.Control can use a mobile communications interface for online transfer.



Note

The apps CCI.Courier or CCI.farmpilot must be enabled for online data transfer.

A GSM modem is required for this and can be ordered using the article number <ArtNummer GSM>.

Proceed as follows to connect the GSM modem with the terminal:

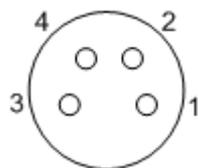
1. Connect the GSM modem to serial interface 2 (RS232-2) of the terminal.



Note

The terminal's serial interface 2 (RS232-2) setting is factory set as follows: 115200 Baud, 8N1.

GSM modem connection



Connection of the GSM modem to the terminal occurs via the R232-2 serial interface.

Refer to the following set-up for the pin layout:

1. +12V / +24V
2. TxD
3. GND
4. RxD

3.3 Installing the software

CCI.Control is included in the scope of delivery of the CCI ISOBUS terminal, i.e. installation is neither possible nor required.

In order to be able to operate the software installed ex works a licence must be acquired:

As an option when purchasing the terminal The software is enabled ex works and can be used immediately.

Upgrade In the event of licensing at a later date the software is activated by our service partners.



Note

If you own a licensed version of CCI.Control the "Control" button is visible in the main menu of your terminal.

3.4 Operating modes

3.4.1 Standalone mode:

To place CCI.Control into operation, proceed as follows:

1. Switch on the terminal.
2. Start CCI.Control.
3. Add a new task (see chapter 4.4.2.2).
4. Start the task (see chapter 4.4.3.1).
5. Exit the task after completion (see chapter 4.4.3.1).
6. Print out the task report if required.

3.4.2 Recommended operating mode with GPS receiver, ISOBUS implement and FMIS

To place CCI.Control into operation, proceed as follows:

1. Plan your tasks using an FMIS.
2. Export the task data as ISO-XML on a flash drive or via online transfer.
3. Connect an ISOBUS implement to the tractor.
4. Connect the GPS receiver to the tractor.
5. Switch on the terminal.
6. If necessary connect the flash drive to the terminal.
7. Start CCI.Control (see chapter 4.2).
8. Import the task data (see chapter 4.5).
9. Select the desired task (see chapter 4.4.2.3).
10. Start the task (see chapter 4.4.3.1).
11. Exit the task after completion (see chapter 4.4.3.1).
12. Print out the task report if required.
13. Export the task data to the flash drive or via online transfer (see chapter 4.6).
14. Import the compiled data to the FMIS and analyse it.

4 Operation

4.1 General instructions

4.1.1 Input fields

The length of the input fields for text is limited to 32 characters.

Only the e-mail address can have 64 characters.

Numerical input fields are limited to 10 (e.g. the postal code) or 20 characters (e.g. phone number).



Note

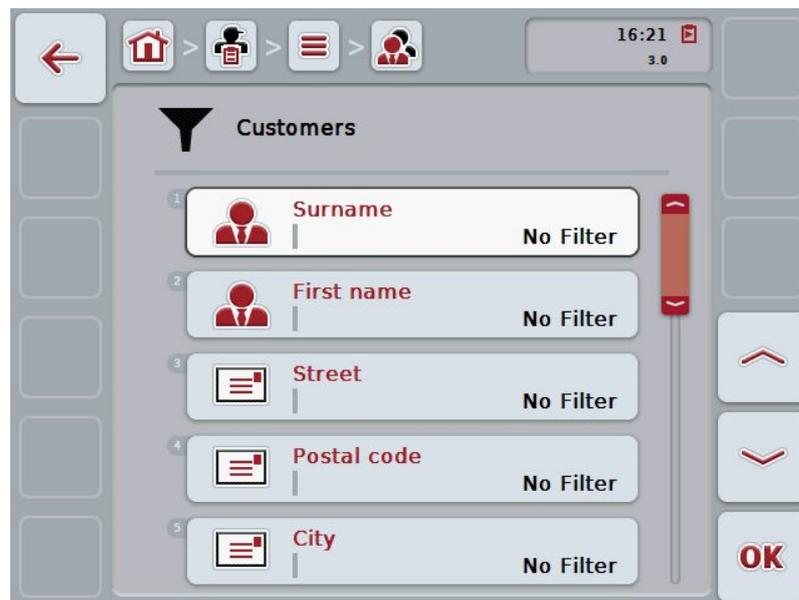
If the permitted length is exceeded the input dialogue changes colour and further keystrokes are ignored.

Delete the surplus characters and repeat the input.

4.1.2 Filter

To filter a list of stored entries, proceed as follows:

1. Press the "Filter" button (F2) on the touchscreen.
→ The following operating mask opens:



2. Select the list filter criteria. To do so, on the touchscreen press on the button with the specification or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel or on the "OK" button (F6).
→ The following selection list opens



3. Select the desired specification from the list. To do so, on the touchscreen press on the button with this specification or turn the scroll wheel until the button is highlighted in white.
 - The selection appears in the selection window.
4. Confirm the selection with "OK" or press the scroll wheel or press the button again with the desired specification.
 - This will take you to the operating mask again. To filter the list according to additional criteria, proceed again as described above.

4.1.3 Reset filter

To reset the filter setting, proceed as follows:

1. Press the "Reset filter" button (F3) on the touchscreen.

**Note**

The filter will be reset immediately without additional query.

4.1.4 Sort

To sort a saved list from A-Z or from Z-A, proceed as follows:

1. Press the "A-Z" or "Z-A" (F1) button on the touchscreen.

**Note**

The direction of sorting that will be used when the button is pressed is displayed on the button.

4.2 Program start

CCI.Control is started automatically by switching on the terminal. There is direct access to all functions via the start screen.

To switch to the CCI.Control start screen, proceed as follows:

1. Press on the "Control" button in the main menu of the terminal on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

→ The following start screen opens:



CCI.Control is subdivided into 5 areas:

4.2.1 Tasks

Task processing (Chapter 4.4).

4.2.2 Database

Input or modification of master data. If you plan and control your tasks using an FMIS system the master data are imported along with the task data. In general, the master data do not, therefore, have to be entered manually and can be returned to the FMIS by exporting the task data .

4.2.3 Import task data

Change to the operating mask for data import. The imported data usually contain master and task data. Import is either via flash drive or online transfer.



Attention!

All task and master data on the terminal are overwritten during import.

4.2.4 Export task data

The task data is exported either via a connected flash drive or via online transfer. In doing so, the master and task data as well as the accepted process and implement data are exported.

4.2.5 Settings

Switch auto-Logging and notifications on or off and make advanced settings.

4.3 Database

The master data are requested via the **Database** menu item.

All data and information in relation to the task is summarised in the database:

- Customers
- Farms
- Fields
- Workers
- Implements
- Products
- Agricultural practices
- Application techniques
- Crop types
- Crop varieties

**Note**

Editing of this master data, as described in the following chapters is not possible if the data originate from a task file created on a PC.

4.3.1 Customers

Under the menu item **Customers** is a list of the stored customers.



Note

A customer is usually the owner or tenant of the farm on which the task is executed.

A customer can be referred to from a task, a farm and a field.

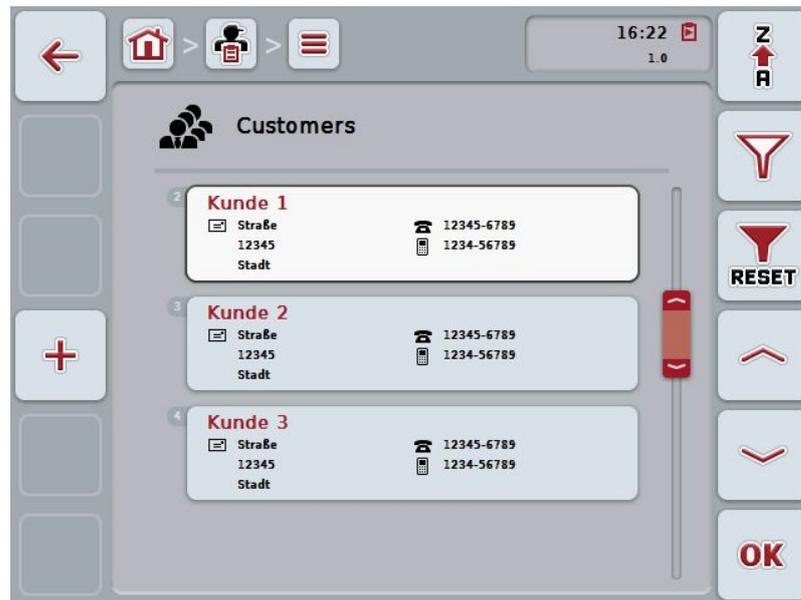
Customer data include

- **Surname,**
- First name,
- Street,
- Postal code,
- Town,
- Phone number,
- Mobile phone number.



Note

Information in bold print is for **compulsory fields**, the others are optional.



You have the following operating options:



Add customers



Edit/Display customers



Copy customers



Delete customers

4.3.1.1 Add new customers

To add a new customer proceed as follows:

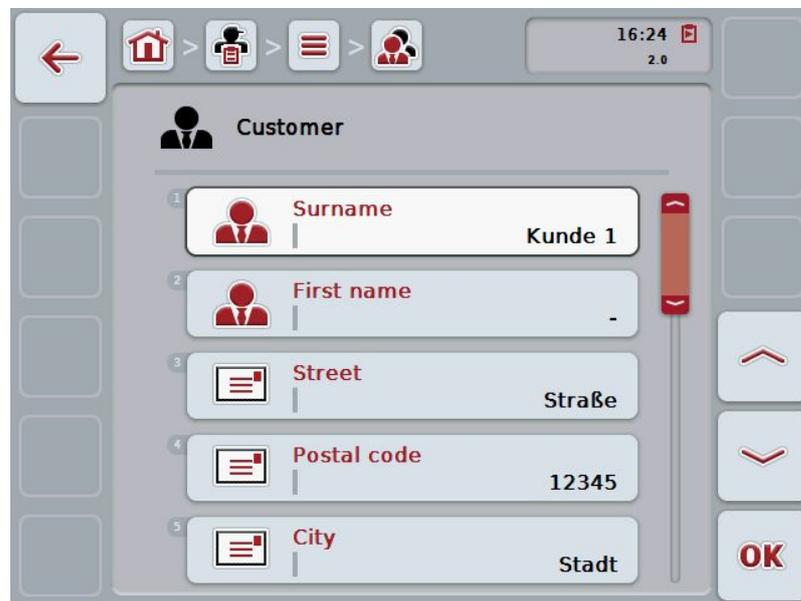
1. Press the "Create new" button (**F10**) on the touchscreen.
→ The following operating mask opens:

2. In the operating mask, select all parameters one after the other. Press on the parameter on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
3. Enter the new value on the touchscreen using the keyboard.
4. Confirm your entry with "OK".

4.3.1.2 Edit/Display customers

In order to edit/display a stored customer, proceed as follows:

1. In the customer list select the customer whose information is to be changed/displayed. To do so, on the touchscreen press the button with the customer name or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ The context menu opens.
2. Press on the "Edit/Display" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ The following operating mask opens:



3. From the operating mask select the parameter whose value has to be changed. Press on the parameter on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
4. Enter the new value on the touchscreen using the keyboard.
5. Confirm your entry with "OK".

4.3.1.3 Copy customers

Proceed as follows to copy a customer:

1. In the customer list select the customer to be copied. To do so, on the touchscreen press the button with the customer name or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ The context menu opens.

2. Press on the "Copy" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

→ The following operating mask opens:

The screenshot displays a software interface for customer data entry. At the top, there is a navigation bar with icons for back, home, list, and user, along with a status bar showing the time 16:24 and version 2.0. The main area is titled 'Customer' and contains five input fields: Surname (Kunde 1_#1), First name (-), Street (Straße), Postal code (12345), and City (Stadt). A vertical scroll wheel is on the right side of the form, and an 'OK' button is at the bottom right.



Note

The copy is identified by "#1" (sequential numbering) after the name of the customer.

4.3.1.4 Delete customers

To delete a customer proceed as follows:

1. In the customer list, select the customer to be deleted. To do so, on the touchscreen press the button with the customer name or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ The context menu opens.

2. Press on the "Delete" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.



Note

A customer can only be deleted if not being used in a task, farm or a field and it was not imported from the FMIS.

4.3.2 Farms

There is a list of the stored farms under the menu item **Farms**.



Note

The farm refers to a customer's property. All the fields owned by the customer comprise the farm. A customer can have several farms. A farm can be referred to from a task and a field.

The farm data are comprised of

- **Farm designator**,
- Street,
- Postal code,
- City,
- Customer.



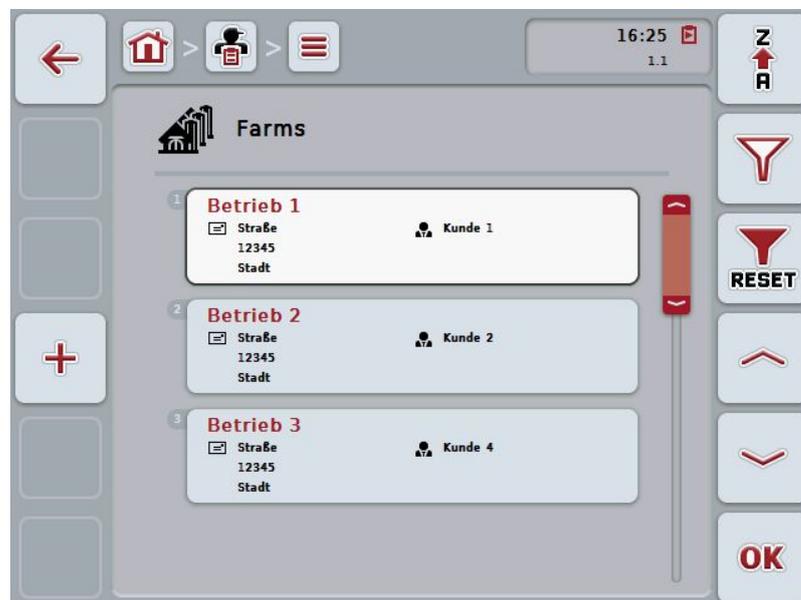
Note

Information in bold print is for **compulsory fields**, the others are optional.



Note

The allocation between the farm and the customer is carried out via the customer field. The customer is usually also the farm owner.



You have the following operating options:



Add farm



Edit/Display farm



Copy farm



Delete farm

4.3.2.1 Add new farm

To add a new farm proceed as follows:

1. Press the "Create new" button (**F10**) on the touchscreen.
→ The following operating mask opens:

2. In the operating mask, select all parameters one after the other. Press on the parameter on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
3. Enter the new value on the touchscreen using the keyboard.
4. Confirm your entry with "OK".

4.3.2.2 Edit/Display farm

To edit/display a stored farm, proceed as follows:

1. In the farm list, select the farm whose information is to be changed/displayed. To do so, press on the button with the farm name on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ The context menu opens.

2. Press on the "Edit/Display" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

→ The following operating mask opens:

3. From the operating mask select the parameter whose value has to be changed. Press on the parameter on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel. Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
4. Enter the new value on the touchscreen using the keyboard.
5. Confirm your entry with "OK".

4.3.2.3 Copy farm

To copy a farm proceed as follows:

1. In the customer list of farms, select the farm to be copied. To do so, press on the button with the farm name on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ The context menu opens.
2. Press on the "Copy" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ The following operating mask opens:



Note

The copy is identified by "#1" (sequential numbering) after the name of the farm.

4.3.2.4 Delete farm

To delete a farm proceed as follows:

1. Select the farm to be deleted from the list of farms. To do so, press on the button with the farm name on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ The context menu opens.

2. Press on the "Delete" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.



Note

A farm can only be deleted if not being used in a task or field and it was not imported from the FMIS.

4.3.3 Fields

Under the menu item **Fields** is a list of the stored fields.



Note

A field is the area to which a task can be allocated.

The field data are comprised of

- **Field designator**,
- **Area**,
- Customer,
- Farm,
- Crop type,
- Crop variety.



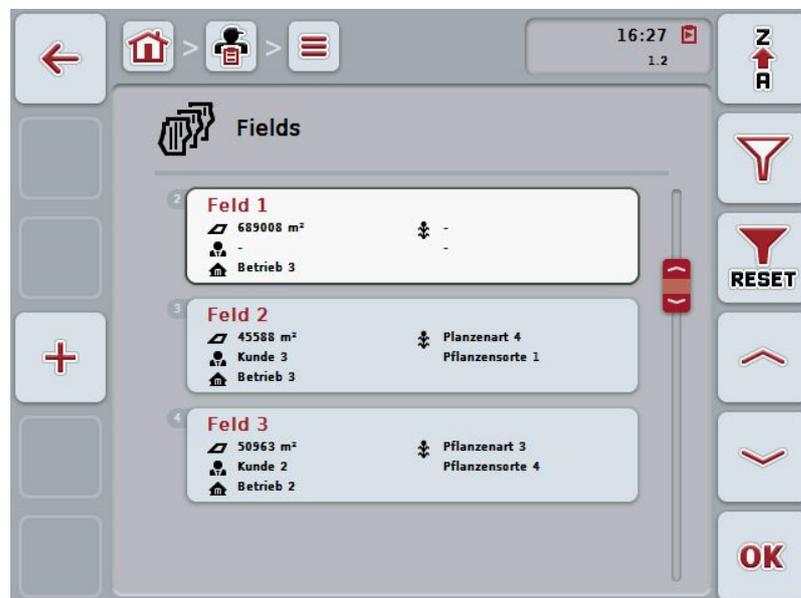
Note

Information in bold print is for **compulsory fields**, the others are optional.



Note

The allocation between the field and the customer for the activity to be performed is carried out via the customer. The customer is usually also the field owner. The farm also enables allocating the area to a property. Moreover, a crop type and crop variety can be allocated to the field.



You have the following operating options:



Add field



Edit/Display field



Copy field



Delete field



Call up Map View preview

4.3.3.1 Add new field

To add a new field proceed as follows:

1. Press the "Create new" button (**F10**) on the touchscreen.
→ The following operating mask opens:

2. In the operating mask, select all parameters one after the other. Press on the parameter on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
3. Enter the new value on the touchscreen using the keyboard.
4. Confirm your entry with "OK".

4.3.3.2 Edit/Display field

To Edit/Display a stored field proceed as follows:

1. In the field list, select the field whose information is to be changed/displayed. To do so, press on the button with the tractor name on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ The context menu opens.

2. Press on the "Edit/Display" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

→ The following operating mask opens:



3. From the operating mask select the parameter whose value has to be changed. Press on the parameter on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel. Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
4. Enter the new value on the touchscreen using the keyboard.
5. Confirm your entry with "OK".

4.3.3.3 Copy field

To copy a field proceed as follows:

1. Select the field to be copied from the list of fields. To do so, press on the button with the tractor name on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ The context menu opens.
2. Press on the "Copy" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ The following operating mask opens:



Note

The copy is identified by "#1" (sequential numbering) after the name of the field.

4.3.3.4 Delete field

To delete a field proceed as follows:

1. Select the field to be deleted from the list of fields. To do so, press on the button with the tractor name on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ The context menu opens.
2. Press on the "Delete" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

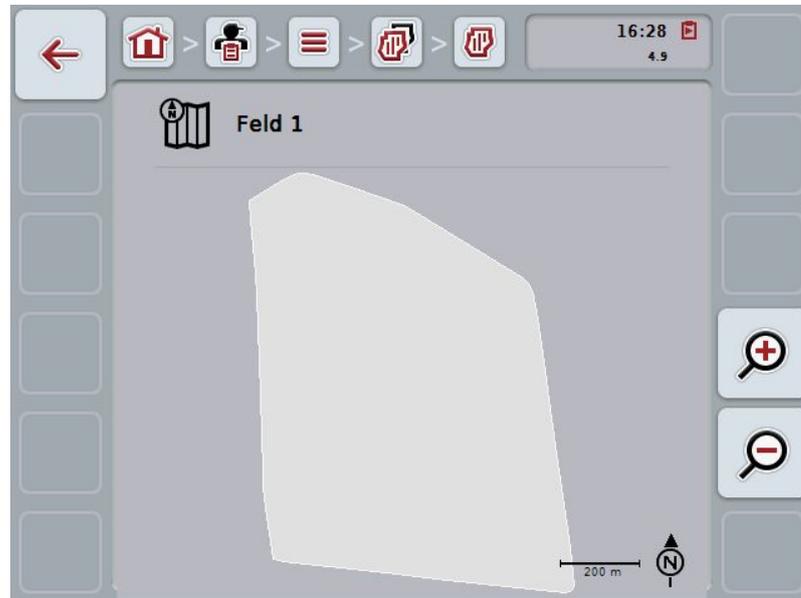
**Note**

A field can only be deleted if not being used in a task and it was not imported from the FMIS.

4.3.3.5 Call up Map View preview

To call up the Map View preview, proceed as follows:

1. Go to the operating mask of the field (compare 4.3.3.2).
2. Press the "Map View" button (F3) on the touchscreen.
→ The Map View preview opens:



You have the following operating options:



Magnifying the map view

Press the "Zoom in" button (F4) on the touchscreen.



Shrinking the map view

Press the "Zoom out" button (F5) on the touchscreen.

4.3.4 Workers

Under the menu item **Workers** is a list of the stored workers.



Note

A worker executes the planned task and operates the implement.

The worker data are comprised of

- **Surname**,
- First name,
- Street,
- Postal code,
- City,
- Phone number,
- Mobile phone number.



Note

Information in bold print is for **compulsory fields**, the others are optional.



You have the following operating options:



Add worker



Edit/Display worker



Copy worker



Delete worker

4.3.4.1 Add new worker

To add a new worker proceed as follows:

1. Press the "Create new" button (F10) on the touchscreen.
 → The following operating mask opens:



2. In the operating mask, select all parameters one after the other. Press on the parameter on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
 Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
3. Enter the new value on the touchscreen using the keyboard.
4. Confirm your entry with "OK".

4.3.4.2 Edit/Display worker

To edit/display a stored worker, proceed as follows:

1. Select the worker whose information is to be changed/shown from the worker list. To do so, press on the button with the worker name on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ The context menu opens.

2. Press on the "Edit/Display" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

→ The following operating mask opens:

3. From the operating mask select the parameter whose value has to be changed. Press on the parameter on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel. Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
4. Enter the new value on the touchscreen using the keyboard.
5. Confirm your entry with "OK".

4.3.4.3 Copy worker

Proceed as follows to copy a worker:

1. In the worker list, select the worker to be copied. To do so, press on the button with the worker name on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ The context menu opens.
2. Press on the "Copy" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ The following operating mask opens:



Note

The copy is identified by "#1" (sequential numbering) after the name of the driver.

4.3.4.4 Delete worker

To delete a worker proceed as follows:

1. Select the worker to be deleted from the worker list. To do so, press on the button with the worker name on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ The context menu opens.
2. Press on the "Delete" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.



Note

A worker can only be deleted if not being used in a task and they were not imported from the FMIS.

4.3.5 Implement

Under the menu item **implements** is a list of the stored implements. The list contains implements which have been transferred from the FMIS in the transfer file, as well as the ISOBUS implements which have been connected to the terminal since the last import.

A task can be executed with an implement. An implement can be allocated to the task during the planning of a task using an FMIS. If no implement is allocated to a task, an allocation is carried out based on the task description and the implement characteristics.

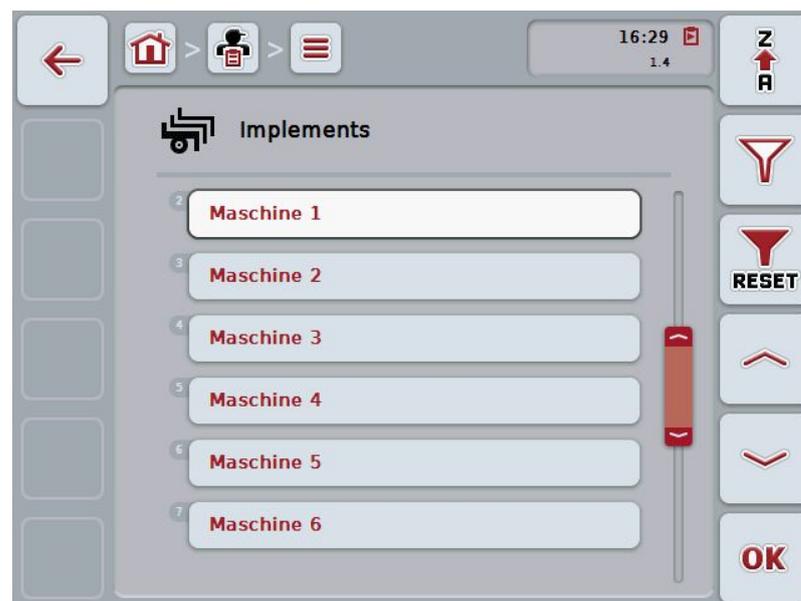
The implement data consists of

- Implement name,
- ISOBUS name.



Note

Only the implement designator can be edited.
The remaining data are used for information and are automatically read from the implement in the event that it makes them available.



You have the following operating options:



Edit/Display implement



Delete implement



Note

An implement can only be edited or deleted if the data were not imported from the FMIS.

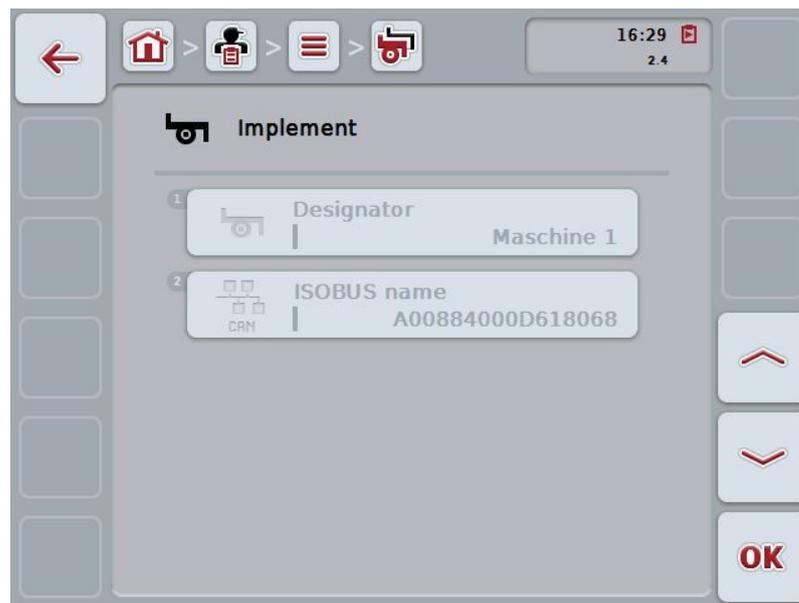
4.3.5.1 Edit/Display implement

**Note**

An implement can only be edited if the data were not imported from the FMIS.

To edit/show a stored implement, proceed as follows:

1. Select the implement whose information is to be changed/shown from the implement list. To do so, press on the button with the implement name on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ The context menu opens.
2. Press on the "Edit/Display" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ The following operating mask opens:



3. From the operating mask select the parameter whose value has to be changed. Press on the parameter on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
4. Enter the new value on the touchscreen using the keyboard.
5. Confirm your entry with "OK".

4.3.5.2 Delete implement

To delete an implement, proceed as follows:

1. In the implement list, select the implement to be deleted. To do so, press on the button with the implement name on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ The context menu opens.

2. Press on the "Delete" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.



Note

An implement can only be deleted if not being used in a task and it was not imported from the FMIS.

4.3.6 Products

Under the menu item **Products** is a list of the stored products.



Note

A product is applied to or dug into a field as part of an agricultural practice, e.g. fertilizer, pesticide or harvested product. □

The only data for a product is the

- **Product designator.**



Note

Information in bold print is for **compulsory fields**, the others are optional.



You have the following operating options:



Add product



Edit/Display product



Copy product



Delete product

4.3.6.1 Add new product

To add a new product proceed as follows:

1. Press the "Create new" button (**F10**) on the touchscreen.
→ The following operating mask opens:



2. In the operating mask, select all parameters one after the other. Press on the parameter on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
3. Enter the new value on the touchscreen using the keyboard.
4. Confirm your entry with "OK".

4.3.6.2 Edit/Display product

To Edit/Display a stored product proceed as follows:

1. In the product list, select the product whose information is to be changed/shown. To do so, press on the button with the product designator on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ The context menu opens.

2. Press on the "Edit/Display" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

→ The following operating mask opens:



3. From the operating mask select the parameter whose value has to be changed. Press on the parameter on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel. Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
4. Enter the new value on the touchscreen using the keyboard.
5. Confirm your entry with "OK".

4.3.6.3 Copy product

To copy a product, proceed as follows:

1. In the list of products, select the product to be copied. To do so, press on the button with the product designator on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press the scroll wheel. Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ The context menu opens.
2. Press on the "Copy" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ The following operating mask opens:



Note

The copy is identified by "#1" (sequential numbering) after the product designator.

4.3.6.4 Delete product

To delete a product proceed as follows:

1. In the list of products, select the product to be deleted. To do so, press on the button with the product designator on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ The context menu opens.
2. Press on the "Delete" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.



Note

A product can only be deleted if not being used in a task and it was not imported from the FMIS.

4.3.7 Agricultural practices

Under the menu item **Agricultural practices** is a list of the stored agricultural practices.

A agricultural practice can be allocated to a task during the planning of a task using an FMIS. An application technique such as tillage can also belong to an agricultural practice: plough / grubber / etc.



Note

The term agricultural practices refers to the activities performed on the field such as fertilising or sowing.

The only data for an agricultural practice is the

- **Designator.**



You have the following operating options:



Add agricultural practice



Edit/Display agricultural practice



Copy agricultural practice



Delete agricultural practice

4.3.7.1 Add new agricultural practice

To add a new agricultural practice proceed as follows:

1. Press the "Create new" button (F10) on the touchscreen.
→ The following operating mask opens:



2. In the operating mask, select all parameters one after the other. Press on the parameter on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
3. Enter the new value on the touchscreen using the keyboard.
4. Confirm your entry with "OK".

4.3.7.2 Edit/Display agricultural practice

To edit/display a stored agricultural practice, proceed as follows:

1. In the list of agricultural practices, select the agricultural practice whose information is to be changed/shown. To do so, press on the button with the agricultural practice designator on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ The context menu opens.
2. Press on the "Edit/Display" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ The following operating mask opens:



3. From the operating mask select the parameter whose value has to be changed. Press on the parameter on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
4. Enter the new value on the touchscreen using the keyboard.
5. Confirm your entry with "OK".

4.3.7.3 Copy agricultural practice

To copy an agricultural practice, proceed as follows:

1. In the list of agricultural practices, select the agricultural practice to be copied. To do so, press on the button with the agricultural practice designator on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ The context menu opens.
2. Press on the "Copy" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ The following operating mask opens:



Note

The copy is identified by "#1" (sequential numbering) after the agricultural practice designator.

4.3.7.4 Delete agricultural practice

To delete an agricultural practice proceed as follows:

1. In the list of agricultural practices, select the agricultural practice to be deleted. To do so, press on the button with the agricultural practice designator on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ The context menu opens.

2. Press on the "Delete" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.



Note

An agricultural practice can only be deleted if not being used in a task and it was not imported from the FMIS.

4.3.8 Application techniques

Under the menu item **Application techniques** is a list of the stored application techniques.

The application technique belongs to the agricultural practice that may be allocated to a task when planning the task with the FMIS. For example, the application techniques "plough" or "grubber" belong to the tillage agricultural practice.

The only data for an application technique is the

- **Designator.**



You have the following operating options:

-  **Add application technique**
-  **Edit/Display application technique**
-  **Copy application technique**
-  **Delete application technique**

4.3.8.1 Add new application technique

To add a new application technique proceed as follows:

1. Press the "Create new" button (F10) on the touchscreen.
→ The following operating mask opens:



2. In the operating mask, select all parameters one after the other. Press on the parameter on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the parameter is highlighted you can, alternatively, also press the "OK" (F6) button.
3. Enter the new value on the touchscreen using the keyboard.
4. Confirm your entry with "OK".

4.3.8.2 Edit/Display application technique

To edit/display a stored application technique, proceed as follows:

1. In the list of application techniques, select the application technique whose information is to be changed/shown. To do so, press on the button with the application technique designator on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ The context menu opens.
2. Press on the "Edit/Display" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ The following operating mask opens:



3. From the operating mask select the parameter whose value has to be changed. Press on the parameter on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
4. Enter the new value on the touchscreen using the keyboard.
5. Confirm your entry with "OK".

4.3.8.3 Copy application technique

To copy an application technique, proceed as follows:

1. In the list of application techniques, select the application technique to be copied. To do so, press on the button with the application technique designator on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ The context menu opens.

2. Press on the "Copy" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

→ The following operating mask opens:



Note

The copy is identified by "#1" (sequential numbering) after the application technique designator.

4.3.8.4 Delete application technique

To delete an application technique, proceed as follows:

1. In the list of application techniques, select the application technique to be deleted. To do so, press on the button with the application technique designator on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ The context menu opens.

2. Press on the "Delete" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.



Note

An application technique can only be deleted if not being used in a task and it was not imported from the FMIS.

4.3.9 Crop types

Under the menu item **Crop types** is a list of the stored crop types.



Note

Crop type refers to the type or species of crop such as corn or barley.

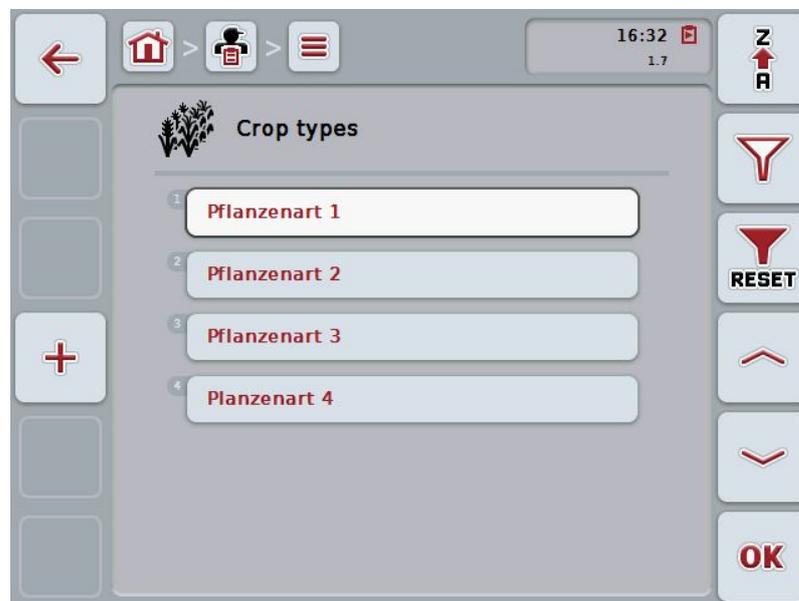
The only data for a crop type is the

- **Designator.**



Note

Information in bold print is for **compulsory fields**, the others are optional.



You have the following operating options:



Add crop type



Edit/Display crop type



Copy crop type



Delete crop type

4.3.9.1 Add new crop type

To add a new crop type proceed as follows:

1. Press the "Create new" button (F10) on the touchscreen.
→ The following operating mask opens:



2. In the operating mask, select all parameters one after the other. Press on the parameter on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
3. Enter the new value on the touchscreen using the keyboard.
4. Confirm your entry with "OK".

4.3.9.2 Edit/Display crop type

To edit/display a stored crop type, proceed as follows:

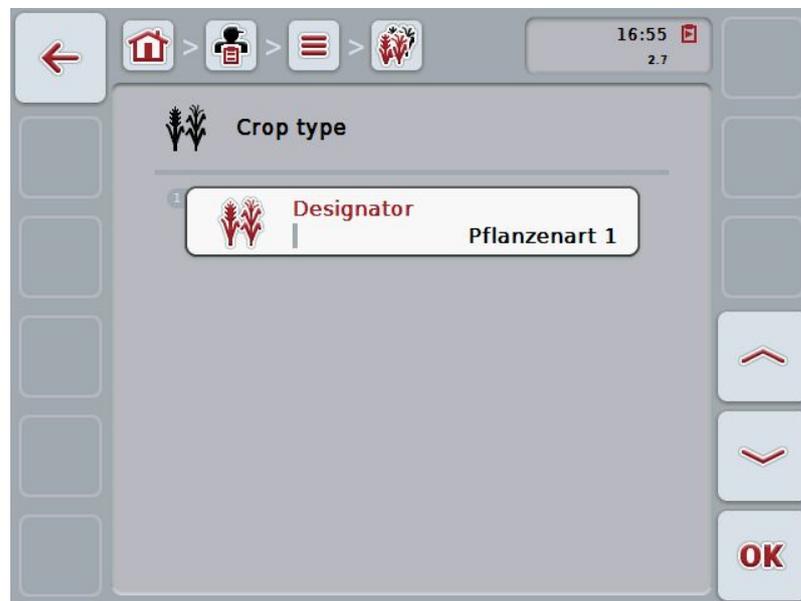
1. In the list of crop types, select the crop type whose information is to be changed/shown. To do so, press on the button with the crop type on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ The context menu opens.

2. Press on the "Edit/Display" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

→ The following operating mask opens:



3. From the operating mask select the parameter whose value has to be changed. Press on the parameter on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel. Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
4. Enter the new value on the touchscreen using the keyboard.
5. Confirm your entry with "OK".

4.3.9.3 Copy crop type

To copy a crop type proceed as follows:

1. In the list of crop types, select the crop type to be copied. To do so, press on the button with the crop type on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ The context menu opens.
2. Press on the "Copy" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ The following operating mask opens:



Note

The copy is identified by "#1" (sequential numbering) after the crop type designator.

4.3.9.4 Delete crop type

To delete a crop type proceed as follows:

1. In the list of crop types, select the crop type to be deleted. To do so, press on the button with the crop type on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ The context menu opens.
2. Press on the "Delete" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.



Note

A crop type can only be deleted if not being used in a field and it was not imported from the FMIS.

4.3.9.5 Crop varieties

Under the menu item **Crop varieties** is a list of the stored crop varieties.

**Note**

The term crop variety refers to a special type or breed of a crop type.

The only data for a crop variety is the

- **Designator.**

**Note**

You cannot make any settings under this menu item. The information about the crop varieties can only be imported.

4.4 Task data

The task data comprise all data and information in relation to the task:

- Name of Task,
- Customer,
- City,
- Farm,
- Field,
- Crop type,
- Crop variety.
- Worker,
- Agricultural practice,
- Application technique,
- Product and
- Task status.

4.4.1 Task status

A task goes through different statuses:

Initial:	A new task which has not yet been processed.
Current:	The currently active task. Only one task can ever be active. To start another task the current task must be paused or finished.
Paused:	A task which has been paused. It can be resumed at any time.
Finished:	A completed task. It cannot be resumed, nevertheless it remains in the list of saved tasks.

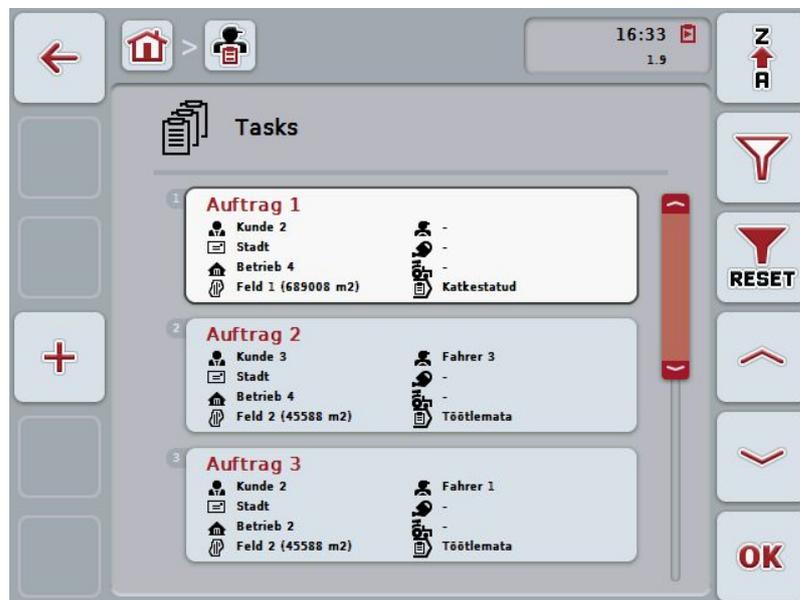


Note

As many tasks as desired can be left in **Paused** status.

4.4.2 Tasks

The task list is requested via the menu item **Tasks**.



You have the following operating options:

-  **Sort task list**
-  **Add task**
-  **Show task**
-  **Edit task**
-  **Copy task**
-  **Delete task**

4.4.2.1 Sort task list

The task list can not only be sorted from A-Z or from Z-A (see chapter 4.1.4), rather also according to the distance of the fields assigned to the task.

To sort the list of stored tasks, proceed as follows:

1. Press the "Z-A" button (F1) on the touchscreen.
 - The symbol on the button changes automatically to the symbol for sorting by distance.
2. Press the "Sort by distance" (F1) button on the touchscreen.
 - The list of saved tasks is sorted by the distance of the field assigned to the task relative to the current location. The closest field is shown first.



Note

The direction of sorting that will be used when the button is pressed is displayed on the button.

4.4.2.2 Add new task

To add a new task proceed as follows:

1. Press the "Create new" button (**F10**) on the touchscreen.
 → The following operating mask opens:



2. In the operating mask, select all parameters one after the other. Press on the relevant parameter on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel. Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
3. Enter the task designator via the keyboard on the touchscreen and select the remaining information from the respective lists.
4. Confirm your entry with "OK".



Note

The city is assigned via the customer and cannot be selected individually.



Note

The crop type and crop variety are assigned via the field and cannot be selected individually.



Note

The task status is automatically displayed.



Note

The application technique is dependent on the agricultural practice and can only be selected if an agricultural practice has already been selected.

4.4.2.3 Show task

To show a task proceed as follows:

1. on the touchscreen press the button with the task or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel. Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ The context menu opens.
2. Press on the "Show" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ A detailed view of the task opens (see chapter 4.4.3).

4.4.2.4 Edit task

To edit a task proceed as follows:

1. on the touchscreen press the button with the task or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel. Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ The context menu opens.
2. Press on the "Edit" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ The tab **Edit task** opens.
3. From the operating mask select the parameter whose value has to be changed. Press on the parameter on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel. Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
4. Enter the new value on the touchscreen using the keyboard.
5. Confirm your entry with "OK".

4.4.2.5 Copy task

To copy a stored task proceed as follows:

1. Select the task to be copied from the list of tasks. To do so, on the touchscreen press the button with the task or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ The context menu opens.
2. Press on the "Copy" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.



Note

You immediately access the detailed view of the copy.

→ The following operating mask opens:



Note

The copy is identified by "#1" (sequential numbering) after the task designator.



Note

All static task data are copied, not however process data which occur during processing (counter, duration, etc.). Tasks can be copied irrespective of their status. The task copy has in any case **Initial** status.

4.4.2.6 Delete task

To delete a task proceed as follows:

1. In the list of tasks, select the task to be deleted. To do so, on the touchscreen press the button with the task or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ The context menu opens.
2. Press on the "Delete" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.



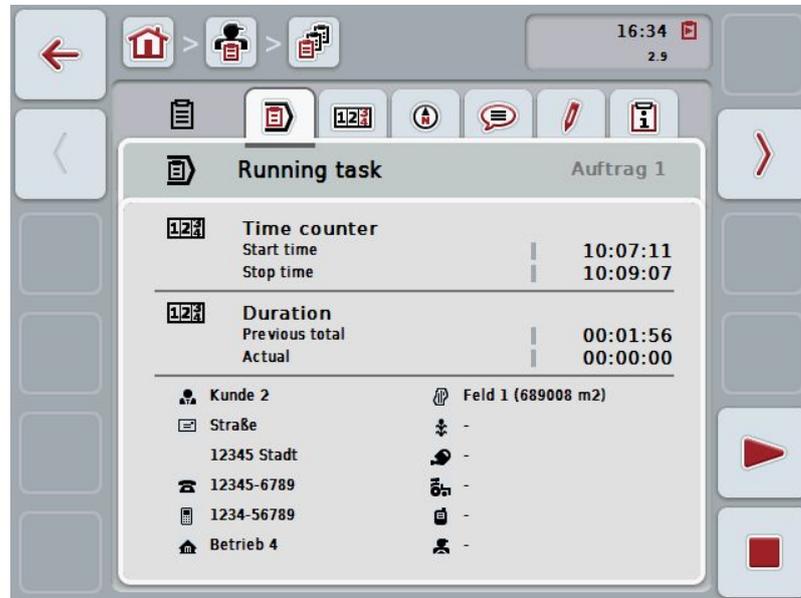
Note

Tasks can only be deleted provided they have *Initial* status.

4.4.3 Detailed view

In the task list press on the task. Press the "Show" button in the context menu. You immediately access the detailed view of the task.

The detailed view of a task is divided into 6 tabs: **Running task, Counters, Field map, Comments, Edit task and Report.**



These are organised as follows:

- Running task:** Display of the start and stop time as well as the cumulative and current duration and the task-specific data. Starting, pausing and stopping of the task.
- Counter:** Shows the total duration and the counter readings transferred from the implement.
- Field map:** Display and editing of the field map assigned to the task as well as the corresponding application maps.
- Comments:** Display and editing of comments inclusive of date and time.
- Edit task:** Display and editing of the saved data of the task.
- Report:** Display and editing of the task data compiled in the report.

To switch between tabs, proceed as follows:

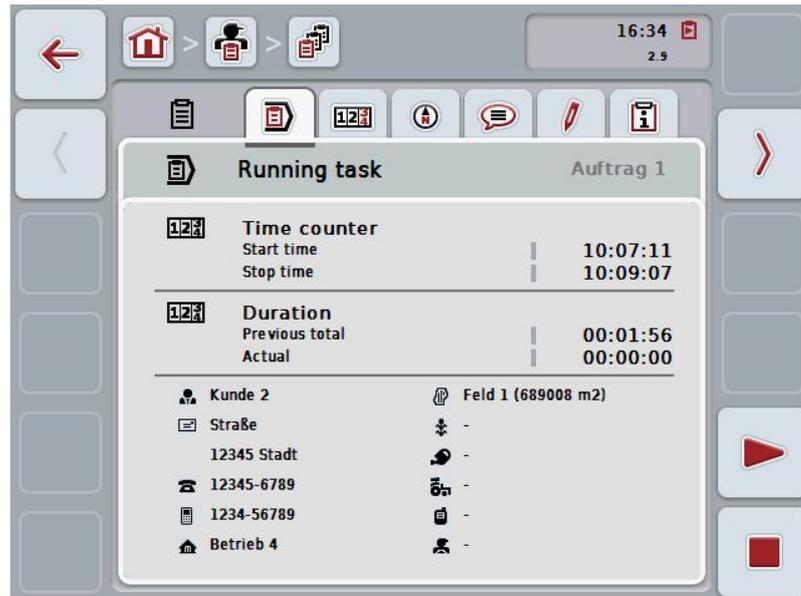
1. In the touchscreen press on the corresponding tab or select it using the arrow keys (F8, F2).

4.4.3.1 Running task

The task times and task specific data and information are displayed in this tab.

Time counter: This shows the time at which the task was started, stopped or paused.

Duration: This shows the previous total time and the current duration of the task.



You have the following operating options:



Start task:

Press the "Start" button (F5) on the touchscreen.
Task processing is started
The display shows the current duration.



Pause running task:

Press the "Pause" button (F5) on the touchscreen.
Select the reason for the pause from the selection list.
The current duration is added to the cumulative duration to date.



Resume task:

Press the "Resume" button (F5) on the touchscreen.
Task processing is started.
The display shows the duration to date and the current duration.



End task:

Press the "Stop" button (F6) on the touchscreen.



Note

A finished task cannot be continued.

A finished task remains in the list of stored tasks and cannot be deleted.



Note

If the terminal has been switched off without pausing or stopping the running task, then upon the next start-up of the terminal, a message displaying the information that the task was paused appears on the terminal.

Press the "OK" button (F6) on the touchscreen to resume the task.

Press the "ESC" button (F6) on the touchscreen to pause the task.

The **Running task** tab opens automatically.



Note

Only one task can be processed at a time. If one task is already running no other can be started. If a task is in **Paused** status, another task can be processed.

The detailed view can be exited whilst the task is running, however another task cannot be started at the same time.

4.4.3.2 Counters

This tab shows the total duration and the counter readings transferred from the implement.



You have the following operating options:



Switch to the counter readings of a different implement

Press the "Switch Counter Readings" button (F6) on the touchscreen.

→ The counter readings of the other connected implement are displayed



Note

This function is only available if more than one ISOBUS implement is connected.

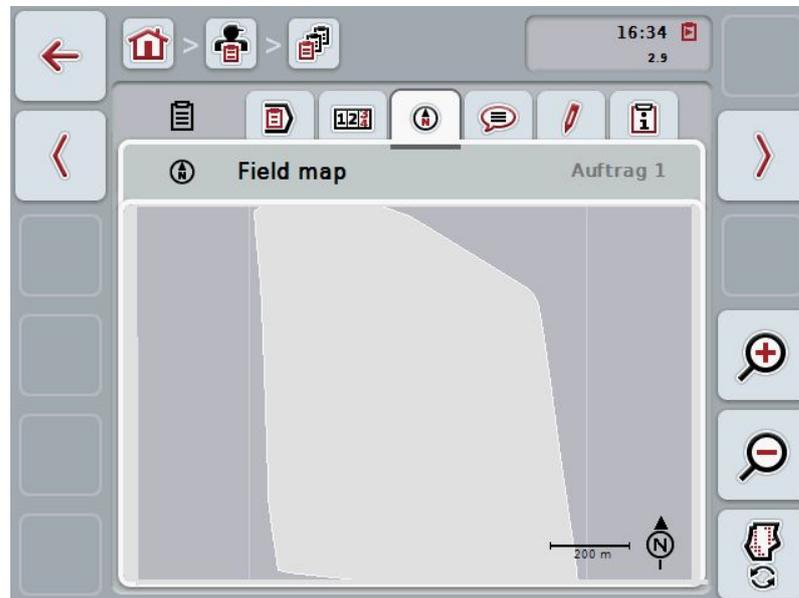


Note

The implement designator is shown in the second row. If you change to the counter readings of a different implement, the designator changes.

4.4.3.3 Field map

A field map of the field assigned to the task is displayed in this tab.



You have the following operating options:



Magnifying the map view

Press the "Zoom in" button (F4) on the touchscreen.



Shrinking the map view

Press the "Zoom out" button (F5) on the touchscreen.

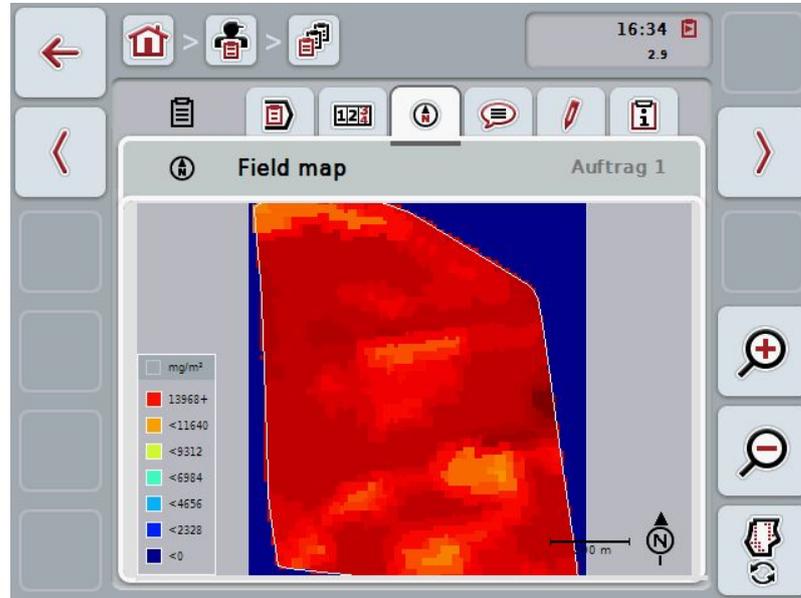


Show application maps

4.4.3.3.1 Show application maps

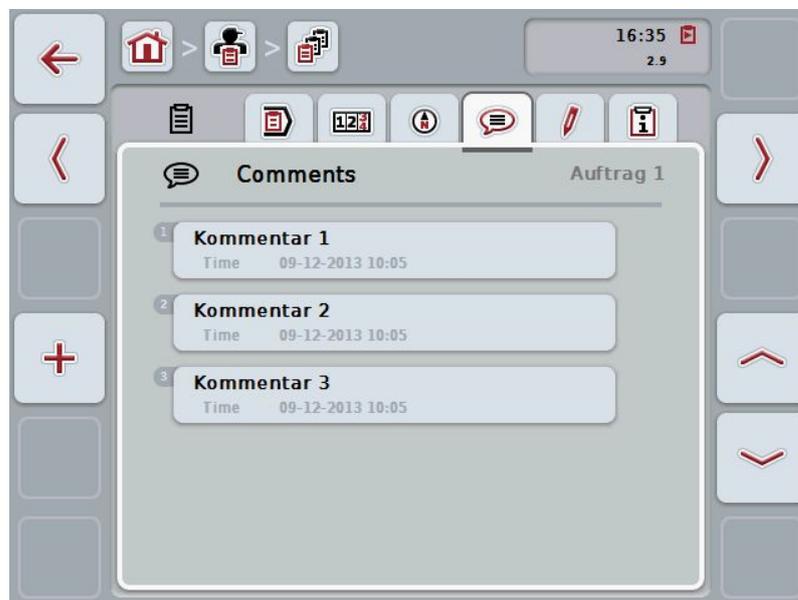
To display the application maps, proceed as follows:

1. Press the "Show Application Maps" button (F6) on the touchscreen.
 → The application maps are displayed in the map view:



4.4.3.4 Comments

In this tab there is a list of your stored comments:



To add a new comment proceed as follows:

1. Press the "Create new" button (**F10**) on the touchscreen.
2. Enter the new comment on the touchscreen using the keyboard.
3. Confirm your entry with "OK".



Note

Stored comments cannot be deleted.

4.4.3.5 Edit task

In this tab you find the following operating mask:



You have the following operating options:



Edit task

To see which operating options you have, please refer to chapter 4.4.2.4.



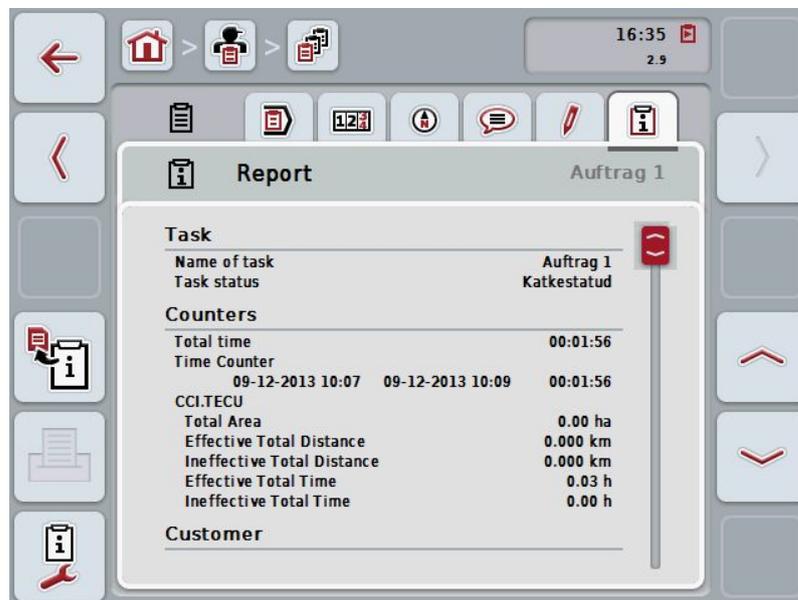
Call up database

Press on the "Database" button (F3).

To see which operating options you have in the database, please refer to chapter 4.3.

4.4.3.6 Report

This tab contains a summary of the task data.



You have the following operating options:



Generate report

Press the "Generate Report" button (F10) on the touchscreen.
→ The report is exported as PDF with the task.



Configure report

4.4.3.6.1 Configure report

To configure a task report, proceed as follows:

1. Press the "Configure Report" button (F12) on the touchscreen

→ The following operating mask opens:



2. Select the parameters which are to be displayed in the Task report. Press on the parameter on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
3. Enter the Boolean value.
4. Confirm your entry with "OK".

4.5 Import task data

To import task data proceed as follows:

1. Export the desired task data to the FMIS in ISO-XML format on a flash drive in the folder \Taskdata. If multiple task files are saved on the flash drive they can be organised in subfolders.
2. Connect the flash drive to the terminal.
3. Press on the "Import task data" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ The following operating mask opens:



4. Select the task data to be imported. To do so, on the touchscreen press on the button with the task data or change using the buttons "Up" (F10) and "Down" (F11) between the task data or turn the scroll wheel until the button is highlighted in white and press on the "OK" button (F6).



Attention!

All task and master data on the terminal are overwritten during import.



Note

The process can take a few minutes. CCI.Control will restart automatically after the data has been imported.



Note

If the task data is primarily to be imported by online transfer, the function "Delete task data after import" should be activated (see chapter 4.7.3.3).

4.6 Export task data

There are two ways to export the task data:

- On a flash drive:** requires a flash drive plugged into the terminal.
- For online transfer** Requires an app e.g. CCI.Courier or CCI.farmpilot that makes possible transfer of the task data online.

To export task data proceed as follows:

1. Press on the "Export task data" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.



Note

If no app is enabled at this point that makes possible transfer of the task data online, then the task data are transferred directly to the flash drive.

→ The following operating mask opens:



2. Select between "flash drive" and "online transfer". To do so, press on the button on the touchscreen with the desired transfer path or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" button.
3. Confirm the selection with "OK".
→ The task data are exported.

**Note**

The task data are saved on the flash drive in the folder TASKDATA under the sub-folder \TaskData\TC_xx_xx_xxxx\.

The sub-folder name contains the date and time of the export procedure. This means that several export processes can be performed on a flash drive without overwriting data.

4.7 Settings

In settings you can activate and deactivate auto-logging and notifications and call advanced settings.



You have the following operating options:



Activating/deactivating Auto-Logging



Activate/deactivate notifications



Call advanced settings

Press the "Advanced settings" button on the touchscreen.

→ The **Advanced settings** mask opens.

More detailed information about Advanced settings can be found in chapter 4.7.3.

4.7.1 Activating/deactivating Auto-Logging

Auto-Logging is used to automatically and permanently document task data. This guarantees documentation even if the worker has not created or started any task himself.

Auto-Logging documents all the work carried out in one day in a task. These task data can be calculated and evaluated on a PC, if a FMIS is used that is capable of assigning data to individual tasks.

To activate/deactivate Auto-Logging, proceed as follows:

1. Press on the "Auto-Logging" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the Boolean value.
3. Confirm your entry with "OK".



Note

If a task is started while Auto-Logging is activated, then automatic documenting is paused. If this task is stopped, automatic documenting is started again.



Note

The task data documented by Auto-Logging must be exported (see chapter 4.6). Tasks, that are older than 7 days, are automatically deleted.

4.7.2 Activate/deactivate notifications

If the terminal has been switched off during a running task, then when it is switched back on an audible signal can sound in addition to a warning message being output.

Notifications can be displayed, if a reason for the pausing of a task is to be entered or a field is reached or left.

To activate or deactivate notifications and signals, proceed as follows:

1. To do so, press on the button on the touchscreen with the desired display or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the Boolean value.
3. Confirm your entry with "OK".

4.7.3 Advanced settings

To call advanced settings, proceed as follows:

1. Press on the "Advanced settings" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ The following mask opens:



You have the following operating options:



Enter function instance



Enter time delay



Activating/deactivating delete task data after import

4.7.3.1 Enter function instance

The function instance is the address of the task controller with which the ISOBUS implement can select a task controller, in the event that there are multiple task controllers.



Note

The ISOBUS implement selects the task controller with the lowest function instance.

To enter the function instance, proceed as follows:

1. Press on the "Function instance" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the value on the touchscreen using the digit field or the slider.
3. Confirm your entry with "OK".



Note

Values between 1 and 32 are valid for the function instance.



Note

Default setting for the function instance is 1.



Note

The terminal must be restarted after changing the settings.

4.7.3.2 Enter time delay

To enter the time delay for the notification upon leaving the fields (see chapter 4.7.2), proceed as follows:

1. Press on the "Time delay" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the value on the touchscreen using the digit field or the slider.
3. Confirm your entry with "OK".

4.7.3.3 Activating/deactivating delete task data after import



Note

This function is only relevant if the task data are transferred by online transfer.

The task data that are transferred by online transfer are saved on an internal hard disk. When importing task data into CCI.Control (see chapter 4.5) these data are not deleted. To prevent the entire storage being filled over the course of time, the task data can be automatically deleted from the internal hard disk after importing.

To activate/deactivate this function, proceed as follows:

1. Press on the "Delete task data after import" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the Boolean value.
3. Confirm your entry with "OK".

5 Troubleshooting

5.1 Terminal errors

The following overview shows possible terminal errors and how to solve them:

Error	Possible cause	Rectification
The terminal does not switch on	<ul style="list-style-type: none"> • Terminal is not correctly connected • Ignition is not switched on. 	<ul style="list-style-type: none"> • Check ISOBUS connection • Start tractor.
The software of the connected implement is not displayed	<ul style="list-style-type: none"> • Bus terminator missing • Software is loaded, however is not displayed • Connection error when uploading the software 	<ul style="list-style-type: none"> • Check resistance • Check whether the software can be manually started from the terminal start menu • Check physical connection • Contact the implement manufacturer's customer service

5.2 Error messages

The following overview shows error messages in CCI.Control, their possible cause and how to rectify them:

Error	Possible cause	Rectification
Export was interrupted because no flash drive was found.	No flash drive plugged in.	Plug in flash drive.
File cannot be processed.	ISO-XML file corrupted or too large to create a preview.	-
Import was interrupted because no flash drive was found.	No flash drive plugged in.	Plug in flash drive.
No active implement. Control cannot find any active implement. Do you want to start the task anyway?	No implement with task controller functionality is connected.	Activate or connect a task controller-enabled implement.
Field map is being used by another task.	A task is already running with an application map.	Pause the running task and call up map view again.
No Map information.	No application map was allocated to the current task.	Create an application map using an FMIS and allocate it to the task.
TaskData report could not be generated.	Error during exporting. Documentation or master data is corrupted.	-
Cannot delete.	The element to be deleted cannot be deleted.	-
The entry cannot be deleted because it is not user-defined.	Data records imported from an FIMS cannot be deleted at a terminal.	-
The entry cannot be deleted because database references exist.	The data record is being used by another data record.	Allocate another entry in the referencing data record.
Control cannot find any counters. A few control functions cannot be used. Do you want to start the service anyway?	The connected implement does not support all the required counters.	Connect an implement with complete function scope.
GPS Signal is lost.	Poor reception.	Drive to a clear surface and wait until the GPS receiver has reception again.

Control has not received any valid GPS Signal.	Incorrect GPS receiver configuration.	Check the GPS receiver configuration.
End active task? Once ended, a task cannot be resumed.	If documentation has been finished, a task cannot be resumed.	Pause task.
Available storage space insufficient. Import was cancelled because there is insufficient available storage.	Task data for import are too large or the required storage space is not available.	Reduce the task data from the FMIS.
Database error Database can not be opened. The database is corrupt. Contact service.	Corrupt database.	Re-import task data. ATTENTION: In doing so, unsaved (exported) data may be lost!
Export was cancelled because there is insufficient available storage.	Task data for export are too large or the required storage space is not available.	Use another storage medium or delete unwanted data from the storage medium being used.
Implement disconnected The implement being used in the running task was logged off.	The ISOBUS plug of the implement was pulled out.	Reconnect the implement's plug.
Storage space low. The available storage space is low. Please stop the running task and export the data.	The available internal storage space is low.	End the running task and export data to an external storage medium.
Storage space insufficient. The available storage space is insufficient. The running task has been stopped. Please export the data.	The available internal storage space is insufficient to continue data recording.	Export data to an external storage medium.
Field left. The field of the current task was exited. Do you want to pause the task?	The GPS position is outside the field belonging to the task.	-



Note

Other error messages may be displayed on the terminal that are dependent on the implement.

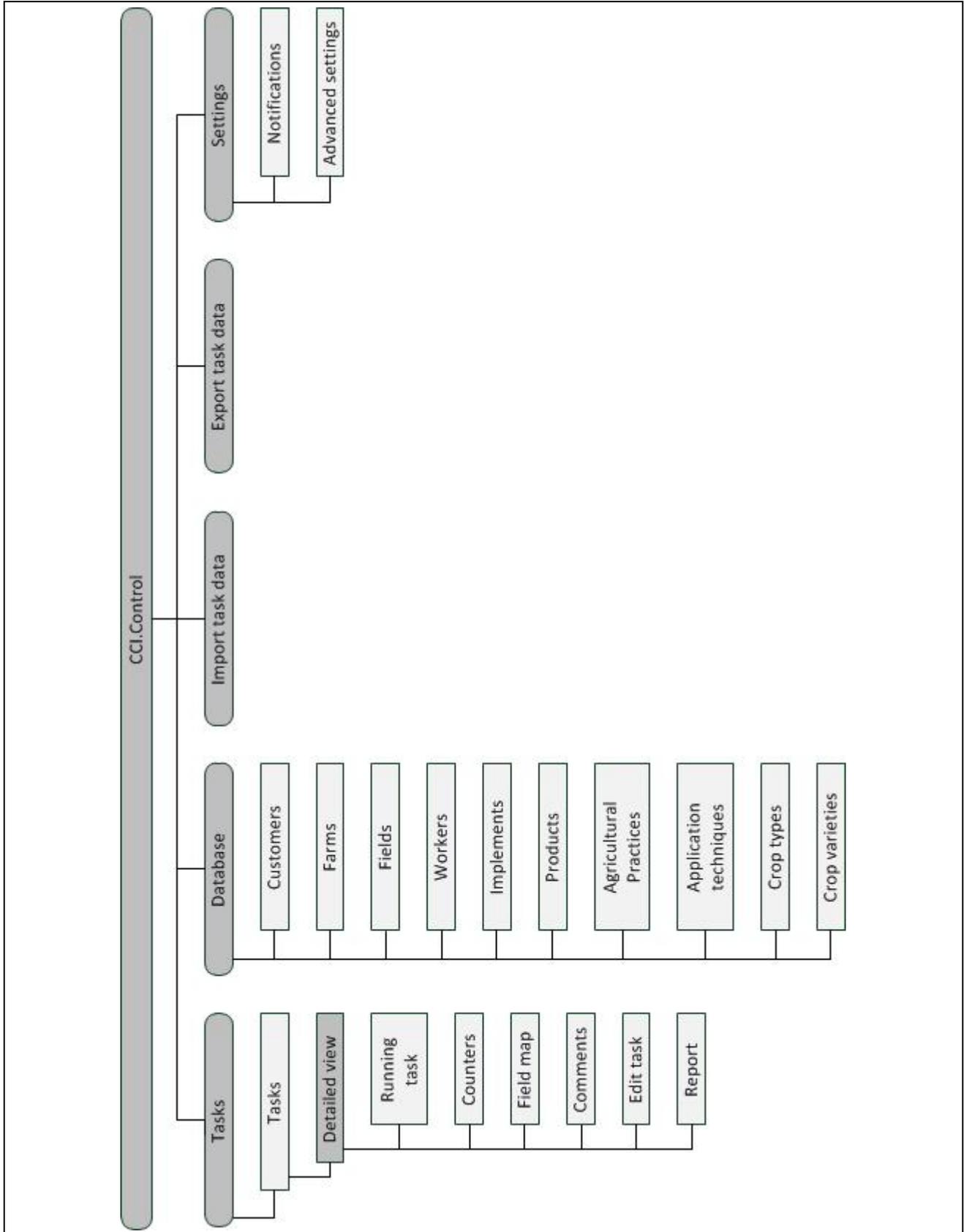
A detailed description of these possible error messages and troubleshooting can be found to in the implement operating instructions.



Note

If the implement cannot be operated, check whether the "stop switch" is pressed. The implement cannot be operated until the switch has been released.

6 Menu structure



7 Glossary

FMIS	Field mapping system, software for yield data processing and the creation of application maps. (Farm Management Information System)
Application technique	The technique with which the agricultural practice is performed, e.g. tillage with a plough or grubber.
Application map	<p>Section-specific set value map on which the amount of product to be applied in one run is defined for each section in a field e.g. in the case of fertilising. It is transferred as a file to the terminal which processes it according to position on the field during work.</p> <p>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.</p>
Task data file	A file in ISO-XML format which contains the master data and the task data. It can also contain application maps. The task data file is created in the FMIS, imported to the CCI.Control and exported for evaluation of the process data after task processing.
Operating mask	The operating mask is comprised of the values and operating elements shown on the screen. The touchscreen can be used to directly select the elements shown.
Farm	Also known as a holding. All fields which are in possession of the customer belong to a farm. A customer can have multiple farms.
Boolean value	A Boolean value is a value whereby it is only possible to choose between true/false, on/off, yes/no etc.
CCI	Competence Center ISOBUS e.V.
CCI.Control	ISOBUS task processing
Data interface	Describes the type and the path of the data exchange (e.g. by a flash drive).
DDD	<p>Device Description Data</p> <p>Electronic data sheet of the implement.</p>
Yield mapping	<p>Yield maps show how much has been harvested at what point of the field. Such information forms the basis for specific cause research in low-yield areas and offers a decisive basis for future management measures.</p> <p>If, during the evaluation of the yield maps, a farmer ascertains that the yields within a field vary considerably on a regular basis section-specific management could be recommendable.</p> <p>A system for yield mapping is comprised of</p> <ul style="list-style-type: none"> • Yield capture and • Yield data processing.
Workers	A worker executes the planned task and operates the implement.
Field	A field is the area to which a task can be allocated.
GPS	<p>Global Positioning System.</p> <p>GPS is a system for satellite-supported position determination.</p>

GSM	Global System for Mobile Communication Standard for full-digital mobile radio networks, which is primarily used for telephony and short messages such as SMS.
ISO-XML	ISOBUS-specific format for task data files based on XML.
ISOBUS	ISO11783 International standard for data transfer between farming implements and devices.
Context menu	Graphical user interface Facilitates editing, copying, deleting or adding of data.
Customer	The owner or tenant of the operation on which the task is executed.
Duration	The time in which a task is executed.
Agricultural practice	Crop-cultivation agricultural practice. Refers to the activities performed on the field such as tillage or fertilising.
Implement	Towed or attached implement. An implement with which a task can be executed.
Implement interface	Communication channel from the terminal to the implement.
PDF	Portable Document Format File format for documents
Crop type	Types or species of a crop such as corn or barley.
Crop variety	Special sort or breed of a crop type.
Product	A product is applied to or dug into a field as part of an agricultural practice, e.g. fertilizer, pesticide or harvested product. □
Process data	Parameters which an implement can make available to the CCI.Control during the work (working state, consumption, etc.). These are then adopted in the task data file for later evaluation.
Interface	Part of the terminal which is used to communicate with other devices
Serial interface	The terminal has two serial interfaces, RS232-1 and RS232-2. Via these interfaces, external expansion devices such as GPS receivers, modems or printers can be connected.
Master data	Master data are fixed data records that do not change during the work (e.g. <i>worker, farm, etc.</i>).
Standalone mode	Operation of CCI.Control without task data file.
Section	With yield maps and other methods of location analysis such as soil or relief maps, aerial views or multi-spectral records, it is possible, as the result of personal experience, to define zones within the field if they vary considerably over the period of four to five years. If these areas have an adequate size and, for example, in the case of winter wheat have a difference in yield potential of approx. 1.5 t/ha, it is recommendable to adapt crop cultivation agricultural practices in these area to the yield potential. Such areas are then designated as sections.

Section-specific processing	Satellite-supported use of an application map.
Terminal	CCI 100 or CCI 200 ISOBUS Terminal
Touchscreen	Touch-sensitive screen which is used to operate the terminal.
WLAN (Wi-Fi)	Wireless Local Area Network Wireless local network.
XML	Extended Markup Language 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.

8 ISOBUS in functionalities



Task-Controller basic (totals)

Takes over the documentation of cumulative values that are worthwhile when looking at the work carried out. In this respect, the device makes the values available. Here the data exchange between the FMIS and the task controller takes place in ISO-XML data format. Hence tasks can be conveniently imported into the task controller and / or the finished documentation can then be exported again.



Task controller geo-based (variables)

Additionally offers the possibility of also collecting position-related data – or the planning of position-related tasks, for example using application maps.

9 Buttons and icons

	CCI.Control		Database
	Customer list		Customer
	Farm list		Farm
	Field list		Field
	Worker list		Workers
	List of implements		Implement
	Product list		Product
	List of agricultural practices		Agricultural practice
	List of crop types		Crop type
	List of tasks		Running task
	Counters		Comment
	Edit task		Field map
	Start or resume task processing		Report
	Finish task processing		Pause task processing
	Switch counter readings		Show application maps
	Configure		Call up database
	Import task data		Export task data
	Flash drive		NAND Flash

- | | | | |
|-------------------------------------------------------------------------------------|----------------------------|-------------------------------------------------------------------------------------|---------------------|
|  | Map view preview |  | Generate report |
|  | Zoom in |  | Zoom out |
|  | Delete |  | Edit/Display |
|  | Add |  | Copy |
|  | Change to the right |  | Change to the left |
|  | Change up |  | Change down |
|  | Confirm selection or entry |  | Address |
|  | Phone number |  | Mobile phone number |
|  | Filter |  | Reset filter |
|  | Sort from A - Z |  | Sort from Z - A |
|  | Select from a list | | |

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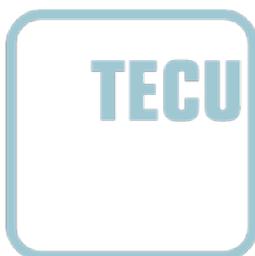


CCI.TECU

Tractor data

Operating instructions

Reference: CCI.TECU v6



CCI-SOBUS

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Version number: v6.01

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1 Introduction

1.1 About these operating instructions

These Operating Instructions are intended as an introduction to the operation and configuration of the CCI.TECU app. This app is preinstalled on your ISOBUS terminal CCI 100/200 and can only be run from there. It is only with knowledge of these operating instructions that accidental misuse can be avoided and fault-free operation ensured.

These operating instructions must be read and understood prior to setting up the software to avoid problems in the application.

1.2 Reference

These operating instructions describe the CCI.TECU version CCI.TECU v6. In order to query the version number of the CCI.TECU installed on your CCI ISOBUS terminal, proceed as follows:

1. Press the home key to enter the main menu.
2. Press the "Settings" button (F1) in the main menu.
3. Select the tab **Info and Diagnostics**.
4. In the tab **Info and Diagnostics** press the button "Terminal".
5. Press the "Software" button on the touchscreen.
 - The version of the terminal software component is indicated in the information field that is now displayed.

1.3 About CCI.TECU

A vast range of electronic components are used in modern tractors. In addition to sensors for the capture of operating data these are, above all, comprised of electronic control units (ECUs) for the control of various tractor functions. The electronic components are, as a rule, interconnected via a so-called bus system and use this to exchange tractor information such as driving speed or power take off speed.

The tractor ECU (TECU) is required so that information such as driving speed, power take off speed or the current position of the 3-point hitch can also be made available to an ISOBUS implement.

On an ISOBUS tractor, the TECU establishes the connection between the tractor bus system and the ISOBUS and thus provides the implement with the aforementioned information.

New tractors are often already ISOBUS-compatible ex works and fitted with a TECU. Such TECUs are hereinafter identified as primary TECUs.

The vast majority of tractors in use are, however, not ISOBUS-compatible but can be retrofitted using an upgrade cable set. However these cable sets do not usually include a TECU, i.e. the connection from ISOBUS implements is possible but access to tractor information is not.

The CCI.TECU described in these operating instructions closes this loophole. The app concerned is an upgrade solution.

Using CCI.TECU, tractor information is read out via the signal connector and transferred to the ISOBUS implement.

1.4 Active/passive mode

If only CCI.TECU is available on the tractor, it works automatically in active mode.
In active mode

1. CCI.TECU reads out the signal connector signals,
2. CCI.TECU calculates values for speed, power take off speed and 3-point position and
3. CCI.TECU sends the calculated values for speed, power take off speed and 3-point position to all ISOBUS implements.

If the tractor has a Primary TECU or a TECU of higher priority is available that provides the tractor information via the ISOBUS, CCI.TECU automatically switches to passive mode.

In passive mode information which is available via the ISOBUS is shown, a connection to the signal connector is only necessary if not all tractor information is provided via the ISOBUS (see chapter 4.4)

1.5 Hectare counter

CCI.TECU offers a hectare counter as an additional function.

The hectare counter is used to record ground coverage, working time and the track. Recording of ground coverage is performed by measuring the working route and multiplying the adjustable working width.

2 Safety

2.1 Identification of indications in the operating instructions

The safety indications in these operating instructions are specially identified:



Warning - General Hazards!

This occupational safety symbol identifies general safety indications the non-observance of which poses a danger for life and limb. Carefully observe the indications regarding occupational safety and exert particular caution in these cases.

**Attention!**

This attention symbol identifies all safety indications which refer to regulations, directives or working procedures which it is essential to observe. Non-observance can entail damage to, or the destruction of, the terminal as well as malfunctions.

**Note**

The note symbol highlights operation tips and other particularly useful information.

3 Commissioning

3.1 Mounting the terminal

For information, please refer to the chapter **5.1 Mounting the terminal** in the **ISOBUS Terminal CCI 100/200** Operating Instructions.

3.2 Connecting the Terminal

3.2.1 Connecting to ISOBUS/power supply

Please refer to the information in the chapter **5.2.1 Connecting to ISOBUS/power supply** of the **ISOBUS Terminal CCI 100/200** Operating Instructions.

3.2.2 Connecting to the signal connector

CCI.TECU evaluates the existing tractor information on the signal connector of the tractor (speed, power take off speed, etc.) and transmits this information to all ISOBUS implements.

A signal cable is required for connecting the terminal to the signal connector and can be ordered using article number <ArtNumber Sig>.



Signal cable

To connect the terminal to the signal connector of the tractor, proceed as follows:

1. Connect the "Signal" interface on the terminal to the signal connector using the signal cable.



The signal connector according to ISO 11786 has the following sensor data allocated:

Wheel speed sensor:	It emits a specific number of electrical signals in proportion to the wheel rotation. As such, the theoretical speed of the tractor can be calculated.
Ground speed sensor:	It emits a specific number of electrical pulses in proportion to the distance already covered. As such, the real speed can be calculated.
PTO sensor:	It emits a specific number of electrical pulses in proportion to the power take off speed. As such, the power take off speed can be calculated.
3-point hitch sensor:	It provides an output voltage which is proportional to the current position of the 3-point hitch.



Note

On a terminal of hardware generation 1 (version 1.x), CCI.TECU in this version can only evaluate the signals of one of the two speed sensors. With a terminal of hardware generation 2 (version 2.x) both speed signals can be used simultaneously (see chapter 4.3.3.3).

3.3 Installing the software

CCI.TECU is included in the scope of delivery of the CCI ISOBUS terminal, i.e. installation is neither possible nor required.

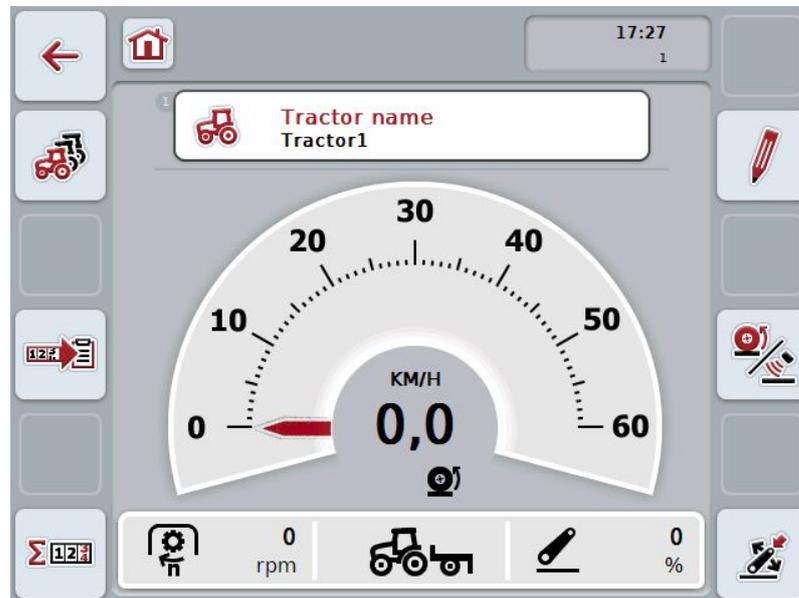
4 Operation

4.1 Program start

CCI.TECU is activated automatically by switching on the terminal. There is direct access to all functions via the main view.

To switch to the main view of CCI.TECU, proceed as follows:

1. Press on the "TECU" button in the main menu of the terminal on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
 - The following main view opens:



CCI.TECU is subdivided into 3 areas:

4.1.1 Main view

The main view is used to show the speed, power take off speed and 3-point hitch and enables direct access to all TECU functions.

4.1.2 List of tractors

Input or modification of tractor data.

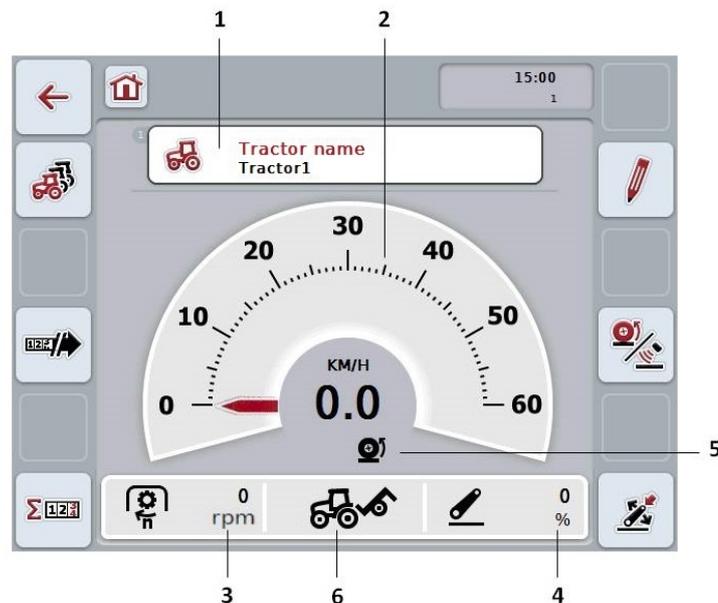
4.1.3 Hectare counter

The hectare counter shows the time since the terminal was started, the distance covered thus far and the area of ground covered. Given that you yourself can reset the counter at any time the hectare counter allows you to measure the actual working time, distance covered and the area of ground processed.

4.2 Main view

The CCI.TECU main view provides the following information:

1. Designator of the current tractor,
2. Speed display,
3. Power take off speed display,
4. 3-point hitch position display,
5. Display for the selected speed sensor and
6. Working or transport position display.



Note

The speed display of CCI.TECU does not replace the tachometer of the tractor. This speed control may not be used when driving on routes where road traffic regulations apply.

You have the following operating options:

Change to the list of tractors:



Press the "List of Tractors" button (F8) on the touchscreen. More detailed information about the list of tractors can be found in chapter 4.3.

Change to the hectare counter:



Press the "Hectare counter" button (F12) on the touchscreen. More detailed information on the hectare counter can be consulted in chapter 4.4.

Select tractor



Edit the selected tractor





Select the speed sensor



Set working position



Activate/deactivate data transfer to the task controller

4.2.1 Select tractor

To select a tractor proceed as follows:

1. On the touchscreen press the button with the name of the current tractor. If the button with the tractor name is highlighted in white you can press on the scroll wheel instead.
→ A list of the stored tractors is opened.
2. Select a tractor from the list. To do so, on the touchscreen press the button with the tractor name or turn the scroll wheel until the button is highlighted in white.
3. Confirm your selection by pressing "OK" or pressing the button with the tractor name again.

4.2.2 Edit the selected tractor

To edit the data of the selected tractor, proceed as follows:

1. Press the "Edit" button (F2) on the touchscreen.
→ A detailed view of the selected tractor is opened.
2. Select all tabs to be modified in the detailed view. To do so, press on the tab icon on the touchscreen or change using the buttons "To the left" (F8) and "To the right" (F2) between the tabs.
3. Enter the new value and execute the new setting.
The processing options for the individual tabs can be consulted in chapter 4.3.3.

4.2.3 Select the speed sensor

The speed display only evaluates one of either possible sensors. You can select between the following sensors:

- Wheel speed sensor
- Ground speed sensor

To select the speed sensor, proceed as follows:

1. Press the "Select Speed Sensor" button (F4) on the touchscreen.
→ The symbol beneath the speed display indicates which sensor is selected:



Ground speed sensor is selected



Wheel speed sensor is selected

2. Select the desired setting.



Note

With a terminal of hardware generation 1 (version 1.x) match the selection to the signal cable used.

4.2.4 Set working position

In order to establish the current position of the 3-point hitch as the working position proceed as follows:

1. Position the 3-point hitch in the desired working position.
2. Press the "Set Working Position" button (F6) on the touchscreen.
 - The new value for the working position is accepted without acknowledgement.
 - The main view displays whether the implement is in the working or transport position.



Implement in working position.



Implement in transport position.



Note

For example, when replacing an electronic hoisting gear control, the display of the 3-point hitch between working and transport position may fluctuate. To prevent this from happening, we recommend pressing the "Set working position" button (F4) several centimetres before the 3-point hitch in the working position.



Note

The working position must be set at the start of the activity to ensure the correct function of the hectare counter.

4.2.5 Activate/deactivate data transfer to the task controller

To activate or deactivate data transfer to the task controller, proceed as follows:

1. Press the "Activate data transfer"/"Deactivate data transfer" button (F10) on the touchscreen.
 - Data transfer is activated/deactivated. The symbol on the button changes and the other function becomes available.

4.3 List of tractors

You will find a list of the stored tractors under the **List of Tractors** menu item.

The tractor data consists of

- the tractor name,
- a comment and
- the tractor settings.



Note

The current tractor is identified with a small red tractor symbol in the bottom right corner of the button.



You have the following operating options:

-  **Add tractor**
-  **Edit tractor**
-  **Copy tractor**
-  **Delete tractor**

4.3.1 Add tractor

To add a tractor proceed as follows:

1. Press the "Add Tractor" button (F10) on the touchscreen.
→ A detailed view of a new tractor is opened.
2. In the detailed view, select the desired tab. To do so, press on the tab icon on the touchscreen or change using the buttons "To the left" (F8) and "To the right" (F2) between the tabs.
3. Enter the new values and execute the new settings.
The processing options for the individual tabs can be consulted in chapter 4.3.3.



Note

Upon delivery there is already an unnamed tractor in the list with some default settings. Please modify the settings (see chapter 4.3.3).

4.3.2 Edit tractor

To edit a stored tractor proceed as follows:

1. In the list of tractors select the tractor whose information is to be changed. To do so, on the touchscreen press the button with the tractor name or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ The context menu opens.
2. Press on the "Edit" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ A detailed view of the tractor is opened.
3. Select all tabs to be modified in the detailed view. To do so, press on the tab icon on the touchscreen or change using the buttons "To the left" (F8) and "To the right" (F2) between the tabs.
4. Enter the new value and execute the new setting.
The processing options for the individual tabs can be consulted in chapter 4.3.3.

4.3.2.1 Copy tractor

To copy a tractor proceed as follows:

1. In the list of tractors select the tractor whose information is to be copied. To do so, on the touchscreen press the button with the tractor name or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ The context menu opens
2. Press on the "Copy" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ A detailed view of the copied tractor is opened.



Note

The copy is identified by "Copy" after the tractor name.

4.3.2.2 Delete tractor

To delete a tractor proceed as follows:

1. In the list of tractors select the tractor whose information is to be deleted. To do so, on the touchscreen press the button with the tractor name or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ The context menu opens.
2. Press on the "Delete" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ A warning opens.
3. Press the "OK" button on the touchscreen.



Note

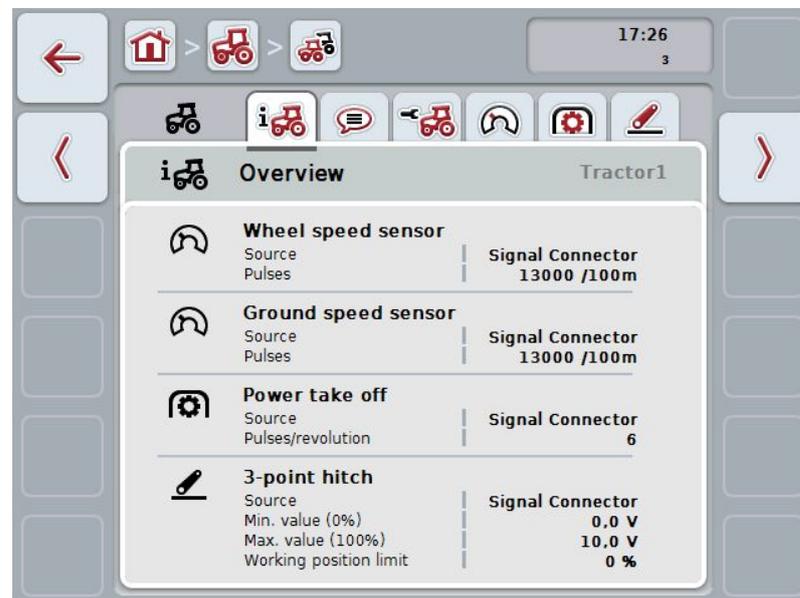
The currently selected tractor (see chapter 4.2.1) cannot be deleted.

4.3.3 Detailed view

The detailed view of a tractor is divided into 6 tabs: **Overview, Comment, Tractor Settings, Speed, Power Take Off** and **3-point hitch**.

The tabs **Speed, Power Take Off** and **3-point hitch** are not always available:

- The **Speed** tab is only available if, in the tractor settings, the signal connector has been selected as the signal source for the wheel or ground speed sensor.
- The **Power Take Off** tab is only available if the signal connector has been selected as the signal source for the power take off speed in the tractor settings.
- The **3-point hitch** tab is only available if, in the tractor settings, the signal connector has been selected as the signal source for the 3-point hitch.



These are organised as follows:

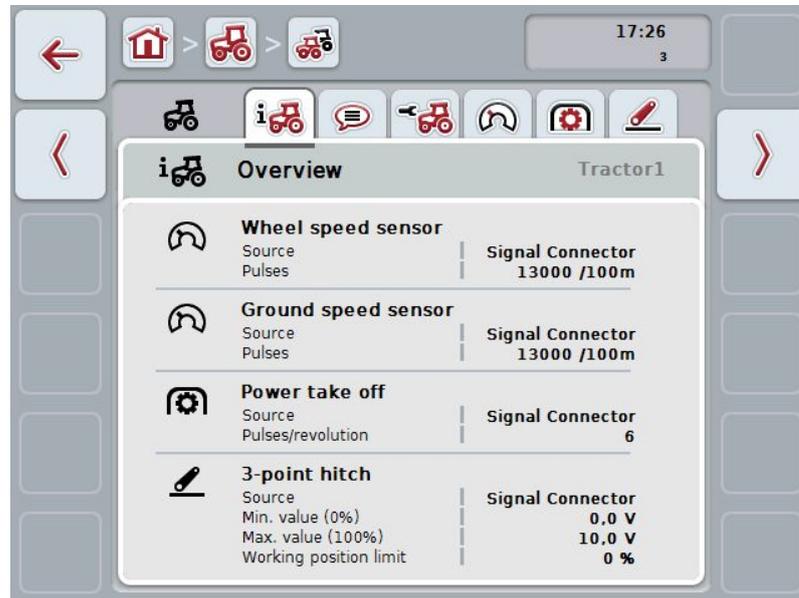
- Overview:** This shows the speed settings, PTO settings and the 3-point hitch settings.
- Comment:** This shows a comment with a maximum of 160 characters.
- Tractor settings:** This shows the tractor name and the settings for wheel speed sensor, ground speed sensor, PTO sensor and 3-point hitch sensor.
- Speed:** Shows how many pulses per 100 metres are output by the sensor.
- Power take off:** This shows how many pulses are emitted by the sensor per power take off revolution.
- 3-point hitch:** This shows the voltage values for the maximum and minimum position.

To switch between tabs, proceed as follows:

1. In the touchscreen press on the corresponding tab or select it using the arrow keys (F8, F2).

4.3.3.1 Overview

This tab shows the settings for speed, the power take off and the 3-point hitch.



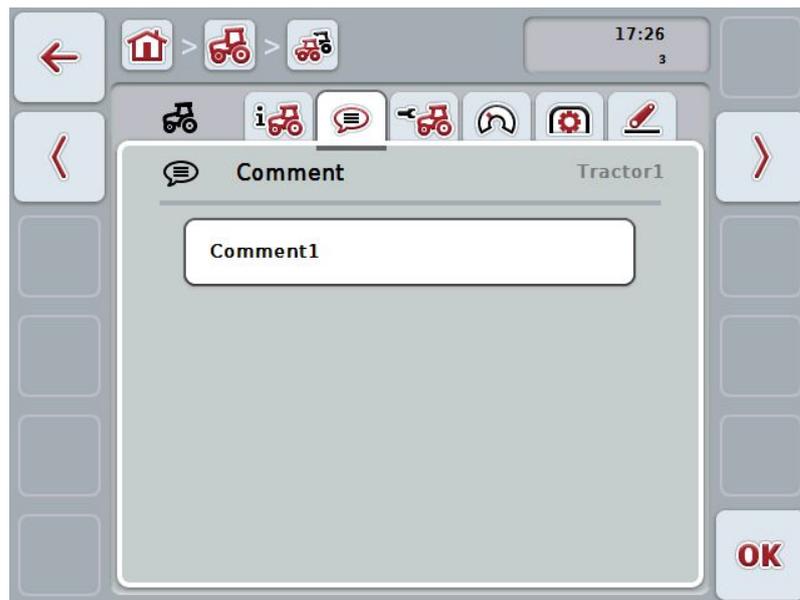
4.3.3.2 Comment

This tab shows a comment field in which notes or explanations can be inserted regarding the tractor.



Note

A comment is comprised of a maximum of 160 characters. If you exceed the text field limit the text field turns red and the input cannot be saved.



You have the following operating options:



Add comment

Edit comment

4.3.3.2.1 Add comment

To add a comment proceed as follows:

1. Press on the empty button on the touchscreen or on the scroll wheel or on the "OK" button (F6).
2. Enter the comment on the touchscreen using the keyboard.
3. Confirm your entry with "OK".

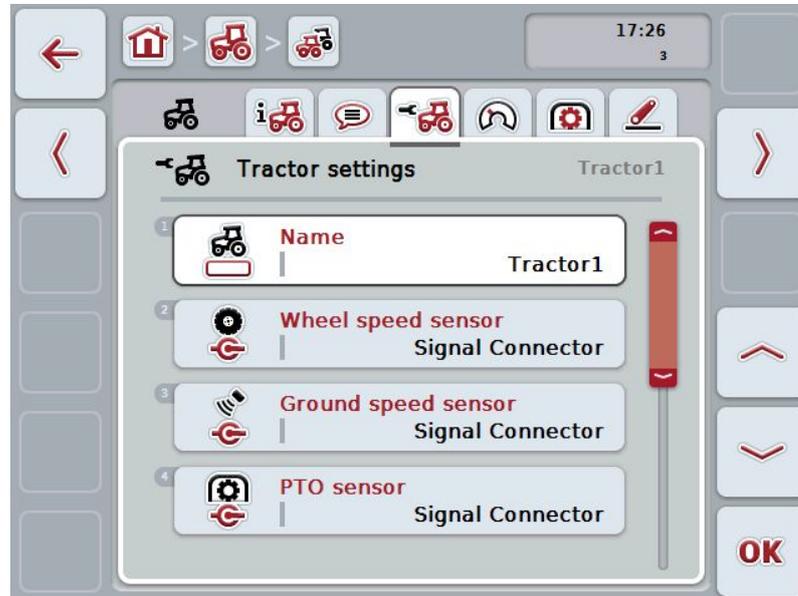
4.3.3.2.2 Edit comment

To edit a comment proceed as follows:

1. Press on the button on the touchscreen with the comment or on the scroll wheel or on the "OK" button (F6).
2. Change the comment on the touchscreen using the keyboard.
3. Confirm your entry with "OK".

4.3.3.3 Tractor settings

This tab shows the tractor designator and the settings for wheel speed sensor, ground speed sensor, PTO sensor and 3-point hitch sensor.



You have the following operating options:



Edit name

Select signal source

Select between:

- Not available
- Signal connector (ISO 11786)
- CAN 1 and
- GPS (only for the ground speed sensor).



Note

With a terminal of hardware generation 1 (version 1.x), you can either select wheel or ground speed sensor as the signal source. The other sensor is automatically shown as **Not available**. The selection is mutually exclusive.

With a terminal of hardware generation 2 (version 2.x) both speed signals can be used simultaneously.



Note

If CCI.TECU is in passive mode (see chapter 4.4), it is not possible to edit the parameters of the active tractor, that are sent from the other TECU. In this case, the relevant buttons are greyed-out and "CAN 1" is indicated as the selection.

4.3.3.3.1 Edit name

To edit the tractor name proceed as follows:

1. press on the button with the tractor name on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the new name on the touchscreen using the keyboard.
3. Confirm your entry with "OK".



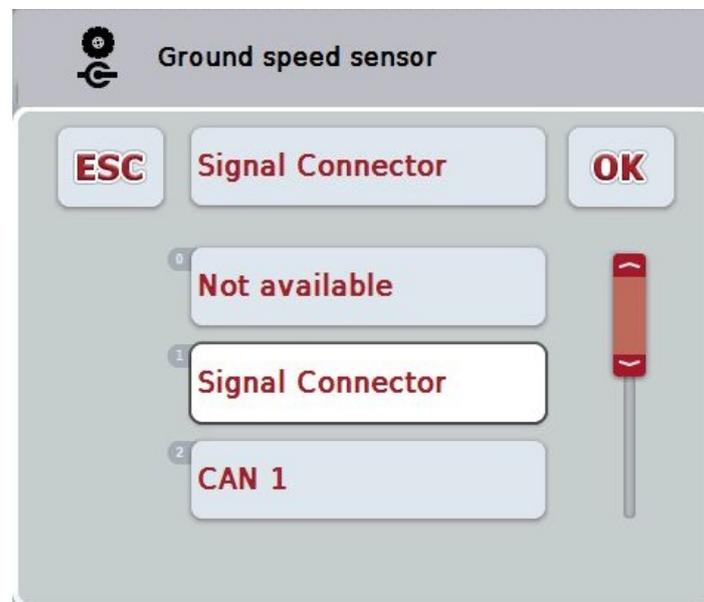
Note

The length of the name input field is limited to 16 characters.

4.3.3.3.2 Select signal source

To select the signal source for wheel speed sensor, ground speed sensor, PTO sensor and 3-point hitch sensor, proceed as follows:

1. on the touchscreen press the button with the sensor or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ The following selection list opens:



2. Select the desired signal source. To do so, on the touchscreen press the button with the signal source or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
3. Confirm the selection with "OK".



Note

If you select the signal connector as the signal source for the wheel speed sensor or the ground speed sensor you must calibrate the speed or manually enter the pulses per 100 metres.

More detailed information on speed calibration can be consulted in chapter 4.3.3.4.



Note

If you select the signal connector as the signal source for the 3-point hitch sensor you must calibrate the 3-point hitch.

More detailed information on the 3-point hitch calibration can be consulted in chapter 4.3.3.6.



Note

If you select the signal connector as the signal source for the PTO sensor you must enter the pulses per revolution.

4.3.3.4 Speed

This tab shows the number of pulses emitted by the speed sensor over 100 metres.

The default setting for the new addition of a tractor shows a value of 13000 Pul/100m.

If the value for the number of pulses per 100 metres is known (e.g. from the sensor data sheet), this can be entered directly.

In order to obtain information which is as accurate as possible, the value should actually be obtained using a calibration.



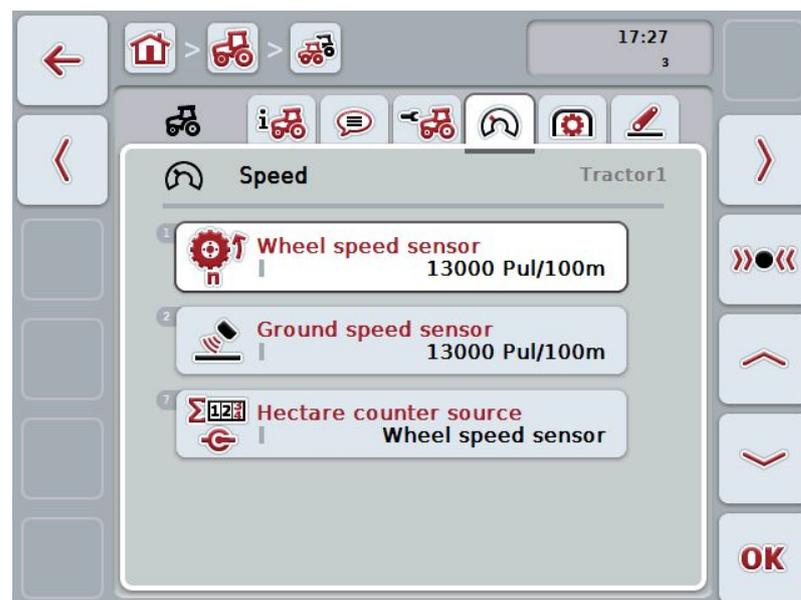
Note

The valid value range for the number of pulses is between 200 and 30000 Pul/100m.



Note

The more accurate the value is, the more precise the speed indication.



You have the following operating options:



Enter the wheel speed sensor value



Enter the ground speed sensor value



Select the hectare counter source



Calibrate

**Note**

Calibration is only possible for the active tractor. For all other tractors, the button "Calibrate" (F3) is greyed-out.

**Note**

The hectare counter source can only be selected if both speed sensors are used simultaneously (see chapter 4.3.3.3). In all other cases the "Hectare counter source" is greyed-out.

4.3.3.4.1 Enter the wheel speed sensor value

Proceed as follows to enter the value for the pulses per 100 metres for the wheel speed sensor:

1. Press on the "Wheel speed sensor" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the new value on the touchscreen using the digit field or the slider.
3. Confirm your entry with "OK".

**Note**

The valid value range for the number of pulses is between 200 and 30000 Pul/100m.

4.3.3.4.2 Enter the ground speed sensor value

Proceed as follows to enter the value for the pulses per 100 metres for the ground speed sensor:

1. Press on the "Ground speed sensor" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the new value on the touchscreen using the digit field or the slider.
3. Confirm your entry with "OK".

**Note**

The valid value range for the number of pulses is between 200 and 30000 Pul/100m.

4.3.3.4.3 Select the hectare counter source



Note

The hectare counter source can only be selected if both speed sensors are used simultaneously (see chapter 4.3.3.3). In all other cases the "Hectare counter source" is greyed-out.

To select the source for the speed displayed by the hectare counter, proceed as follows:

1. Press on the "Hectare counter source" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ A selection list opens.
2. For the hectare counter source select between wheel speed sensor and ground speed sensor. To do this, press the button with the corresponding sensor.
3. Confirm your entry with "OK".

4.3.3.4.4 Calibrate



Note

Where possible the speed calibration should not be carried out on smooth surfaces (e.g. asphalt), rather directly on the field.

In order to calibrate the speed proceed as follows:

1. Set out a distance of 100 metres.
2. Press the "Calibrate" button (F3) on the touchscreen.
→ A selection list opens.
3. For the calibration select between the wheel and ground speed sensors. To do this press on the touchscreen button for the sensor whose speed is to be calibrated or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.



Note

The selection between wheel and ground speed sensor for the calibration is only necessary for a terminal of hardware generation 2 (version 2.x) when both speed sensors are being used simultaneously (see chapter 4.3.3.3).

→ The calibration menu opens.

4. Go to the starting point and press the "Start Flag" button (F3) on the touchscreen.
5. Drive 100 metres and then press the "Target Flag" button (F9) on the touchscreen.
6. Confirm the values with "OK".



Note

The valid value range for the number of pulses is between 200 and 30000 Pul/100m.

4.3.3.5 Power take off

This tab shows the number of pulses emitted by the sensor per power take off revolution.



Note

Refer to your tractor's technical information to consult the value to be entered.



Note

The valid value range for the number of pulses is between 1 and 40 Pulses/revolution.

A frequent value in practice is 6 Pulses/revolution.



You have the following operating options:



Enter Pulses/revolution value

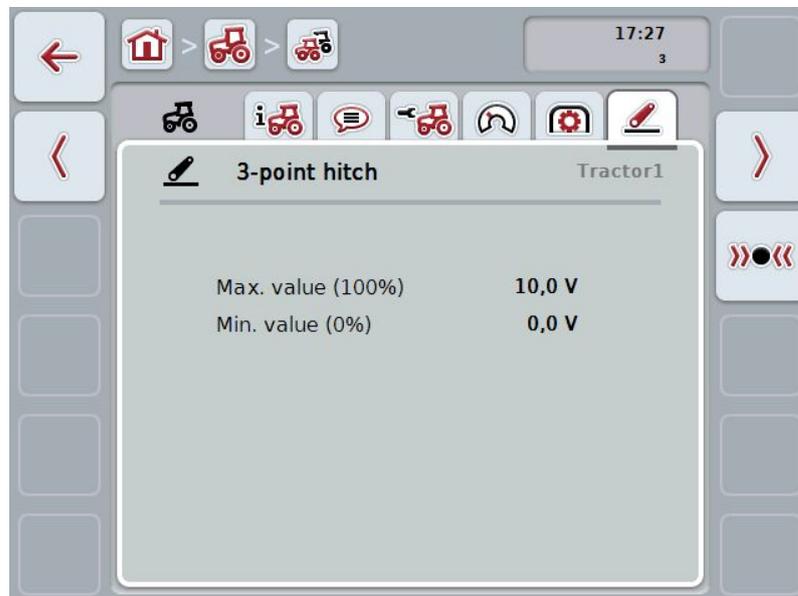
4.3.3.5.1 Enter Pulses/revolution value

Proceed as follows to enter the value for the pulses per revolution:

1. Press on the "Pulses/revolution" button on the touchscreen or press on the scroll wheel or on the "OK" button (F6).
2. Enter the new value on the touchscreen using the digit field or the slider.
3. Confirm your entry with "OK".

4.3.3.6 3-point hitch

This tab shows the voltage values for the maximum and minimum 3-point hitch position.



You have the following operating options:



Note

Calibration is only possible for the active tractor. For all other tractors, the button "Calibrate" (F3) is greyed-out.

4.3.3.6.1 Calibrate

Proceed as follows to calibrate the voltage values for the 3-point hitch:

1. Press the "Calibrate" button (F3) on the touchscreen.
→ The calibration menu opens.
2. Lift the 3-point hitch to the maximum position and then press on the "MAX" (F3) button on the touchscreen.
3. Lower the 3-point hitch to the minimum position and then press on the "MIN" (F4) button on the touchscreen.
4. Confirm the values with "OK"



Note

A plausibility check is performed. An error message is given if, for example, the minimum value exceeds the maximum value.

4.4 Passive mode

If there is a Primary TECU or a TECU of higher priority is available in the tractor, the terminal TECU changes to passive mode automatically. In passive mode the values made available by the other TECUs are identified by a blue frame and a blue "i":



If all signals are read and made available via the ISOBUS, a connection with the signal connector is not necessary.

If not all signals are transmitted, then missing information can be made available via CCI.TECU. In this case a connection with the signal connector and, as necessary, a calibration (see chapter 4.3.3.4.3, 4.3.3.5.1 and 4.3.3.6.1) are necessary.

4.5 Hectare counter

Under the menu item **Hectare Counter** there is information on

- Working width of the active implement
- Speed source for hectare counter
- Working time,
- Distance covered and
- Processed area.

A total value and a value in the working position are given for the time, distance and area respectively.

Total: This shows the time, the distance covered and the area processed since the last reset of the individual counters.

In the working position: This shows the time, the distance covered and the area processed in working position since the last reset of the individual counters.



You have the following operating options:



Reset time:

Press the "Reset Time" button (F4) on the touchscreen.



Reset distance:

Press the "Reset Distance" button (F5) on the touchscreen.



Reset area:

Press the "Reset Area" button (F6) on the touchscreen.



Enter working width

4.5.1 Enter working width

Proceed as follows to enter the working width of the active implement:

1. Press on the button "Working Width" on the touchscreen or press on the scroll wheel.
2. Enter the new value on the touchscreen using the digit field or the slider.
3. Confirm your entry with "OK".

**Note**

The valid range for the working width lies between 0.0 and 99.0 metres.

**Note**

The value entered for the working width must be as accurate as possible to enable an exact calculation of the area processed.

5 Troubleshooting

5.1 Terminal errors

The following overview shows possible terminal errors and how to solve them:

Error	Possible cause	Rectification
The terminal does not switch on	<ul style="list-style-type: none"> Terminal is not correctly connected Ignition is not switched on. 	<ul style="list-style-type: none"> Check ISOBUS connection Start tractor.
The software of the connected implement is not displayed	<ul style="list-style-type: none"> Bus terminator missing Software is loaded, however is not displayed Connection error when uploading the software 	<ul style="list-style-type: none"> Check resistance Check whether the software can be manually started from the terminal start menu Check physical connection Contact the implement manufacturer's customer service

5.2 Error messages

The following overview shows error messages in CCI.TECU, their possible cause and how to rectify them:

Error	Possible cause	Rectification
Cannot delete tractor! There is only one tractor or you are trying to delete the active tractor.	<ul style="list-style-type: none"> There is only one tractor in the list of tractors The selected tractor is currently active in the TECU main view. 	<ul style="list-style-type: none"> If you want to delete the last tractor in the list, it is not possible. Activate another tractor in the TECU main view.
Invalid value! Measured position exceeds max. value.	The maximum position was not measured during the 3-point hitch calibration.	Carry out the 3-point hitch calibration again.
Invalid value! Measured position below min. value.	The minimum position was not measured during the 3-point hitch calibration.	Carry out the 3-point hitch calibration again.

Invalid value! PTO speed exceeds 3000 rpm.	<ul style="list-style-type: none"> • Number of pulses per rotation incorrect • PTO sensor defective 	<ul style="list-style-type: none"> • Set the number of pulses in the Power Take Off tab • Replace PTO sensor
Invalid value! Speed (ground speed sensor) exceeds 85 km/h.	<ul style="list-style-type: none"> • Number of pulses per 100 m incorrect • Ground speed sensor defective 	<ul style="list-style-type: none"> • Set the number of pulses in the setting menu • Replace ground speed sensor
Invalid value! Speed (wheel speed sensor) exceeds 85 km/h.	<ul style="list-style-type: none"> • Number of pulses per 100 m incorrect • Wheel speed sensor defective 	<ul style="list-style-type: none"> • Set the number of pulses in the setting menu • Replace wheel speed sensor
Calibration error Invalid min. value! New min. position is the same or higher than the saved max. position. Ensure that the min. position is reached and the saved max. position is valid.	Calibration sequence was not observed.	Ensure that you have carried out the calibration in the correct sequence. If the problem occurs again, please contact your specialist dealer.
The TECU switches to display mode because a TECU of higher priority has been identified. Please check the tractor settings.	Another TECU is connected to the BUS. It is present in another terminal or in your tractor.	If the other TECU makes the necessary information available, then it is correct that CCI.TECU changes into passive mode. If you want to make the information available with CCI.TECU, then you must deactivate the other TECU. You can find more information about this in the relevant instruction manual.
Connection to Control could not be established.	Data transfer has been activated, but CCI.TECU could not connect to the Task Controller.	Check the status of the Task Controller being used (normally CCI.Control),



Note

Other error messages may be displayed on the terminal that are dependent on the implement.

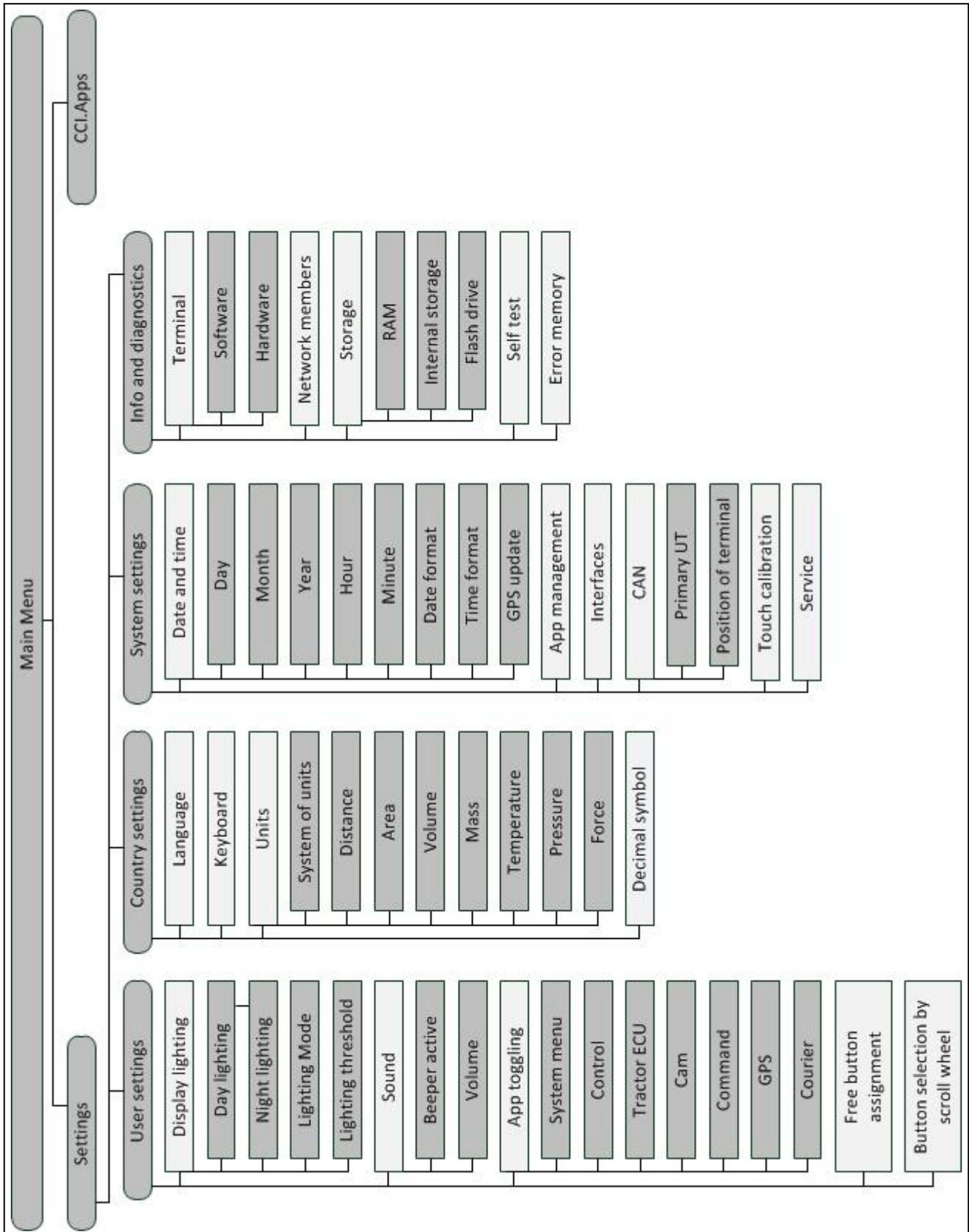
A detailed description of the possible error messages and troubleshooting can be referred to in the implement operating instructions.



Note

If the implement cannot be operated, check whether the "stop switch" is pressed in. The implement cannot be operated until the switch has been released.

6 Menu structure



7 Glossary

3-point hitch	3-point hitch, rear hoisting gear
3-point hitch sensor	Used for detecting the current position of the <i>3-point hitch</i> . It provides an output voltage to the <i>Signal connector</i> which is proportional to the current position of the 3-point hitch.
Operating mask	The operating mask is comprised of the values and operating elements shown on the screen. The touchscreen can be used to directly select the elements shown.
Bus system	Electronic system for the communication between control units.
CCI	Competence Center ISOBUS e.V.
CCI.TECU	Tractor data
ECU	Electronic Control Unit Control unit, job computer
Electronic hoisting gear control	Electronic Hoisting Gear Control
Speed sensor	(wheel or ground) speed sensor for detecting the tractor speed.
GPS	Global Positioning System. GPS is a system for satellite-supported position determination.
ISOBUS	ISO11783 International standard for data transfer between farming implements and devices.
Context menu	Graphical user interface Facilitates editing, copying, deleting or adding of data.
Implement	Towed or attached implement. An implement with which a task can be executed.
Passive mode	If there is a Primary TECU in the tractor the terminal TECU changes to the passive mode automatically.
Primary TECU	TECUs are already installed in tractors at the factory
Ground speed sensor	It emits a specific number of electrical pulses in proportion to the distance already covered. As such, the real speed can be calculated. Note that under certain circumstances, ground speed sensors may supply inaccurate speed values dependent on the background, e.g. due to high grass or puddles.
Wheel speed sensor	It emits a specific number of electrical signals in proportion to the wheel rotation. As such, the theoretical speed of the tractor can be calculated. Wheel speed sensors may supply inaccurate speed values when slip occurs.
Signal cable	Cable for connecting the CCI 100/200 terminal to the signal connector in the tractor.
Signal source	Source of the sensor values such as the speed read from the terminal.
Signal connector	Sensor connection in the tractor according to ISO 11786

TECU	Tractor ECU On an ISOBUS tractor, the TECU establishes the connection between the tractor bus system and the ISOBUS and thus provides the implement with the tractor information such as the driving speed or the power take off speed.
Terminal	CCI 100 or CCI 200 ISOBUS Terminal
Touchscreen	Touch-sensitive screen which is used to operate the terminal.
PTO sensor	Serves for detecting the speed of the power take off. It emits a specific number of electrical pulses in proportion to the power take off speed.

8 Buttons and icons

	CCI.TECU		Tractor list
	Hectare counter		Set working position
	Change between wheel and ground speed sensor		Power take off speed
	3-point hitch position		Ground speed sensor is selected
	Implement in transport position		Implement in working position
	Wheel speed sensor is selected.		Overview
	Comment		Tractor settings
	Speed		Power take off
	3-point hitch		Wheel speed sensor Ground speed sensor
	PTO sensor		3-point hitch sensor
	Wheel speed sensor		PTO settings
	Ground speed sensor		Hectare counter source
	Start flag		Target flag
	Calibrate		Establish maximum 3-point hitch position
	Establish minimum 3-point hitch position		Time
	Distance		Area
	Working width		Reset time
	Reset distance		Reset area
	Process		Copy
	Delete		Add



Change to the right



Change to the left



Change up



Change down



Confirm selection or entry



Select from a list



Activate data transfer to the task controller



Deactivate data transfer to the task controller

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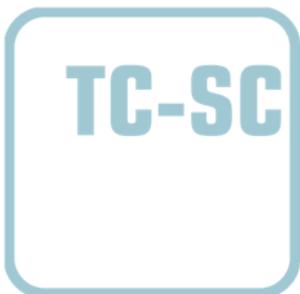


CCI.Command

GPS track guiding and section control

Operating instructions

Reference: CCI.Command v3.0



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Version number: v3.01

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1 Introduction

1.1 About these operating instructions

These Operating Instructions are intended as an introduction to the operation and configuration of *CCI.Command*. This app is preinstalled on your *ISOBUS terminal* CCI 100/200 and can only be run from there. It is only with knowledge of these operating instructions that accidental misuse can be avoided and fault-free operation ensured.

These operating instructions must be read and understood prior to setting up the software to avoid problems in the application. They must always be stored so that any employee may access them.

1.2 Reference

These operating instructions describe the app in its version *CCI.Command v3.0* with the modules *CCI.Command/Parallel Tracking* and *CCI.Command/Section Control*.

In order to query the version number of the *CCI.Command* installed on your *CCI ISOBUS terminal*, proceed as follows:

1. Press the home key to enter the main menu.
2. Press the "Settings" button (F1) in the main menu.
3. Select the tab **Info and Diagnostics**.
4. In the tab **Info and Diagnostics** press the button "Terminal".
5. Press the "Software" button on the *touchscreen*.
→ The version of the *terminal* software component is indicated in the information field that is now displayed.

1.3 About CCI.Command

CCI.Command comprises 3 modules:



CCI.Command/Parallel Tracking



CCI.Command/Section Control



CCI.Command/Headland Mode

CCI.Command/Parallel Tracking and *CCI.Command/Section Control* can be procured and used separately from each other.

CCI.Command/Headland Mode is automatically available if *CCI.Command/Section Control* is enabled.

1.3.1 CCI.Command/Parallel Tracking

This module improves, for example, orientation during plant protection agent and fertilizer application on fields without any machine tracks. More accurate linking driving helps to avoid *overlaps* and *missed areas*.

The module relates to a parallel guidance aid, which under consideration of the actual working width indicates the position of parallel tracks and using a lightbar suggests the necessary steering corrections. The tracks can be recorded as straight A-B lines or as curves.

1.3.2 CCI.Command/Section Control

Using GPS, the module automatically switches off the sections of a plant protection spray / a fertilizer 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 worker's work load reduced. From version 2.0 the module also automatically switches the sections of seed drills, single grain and potato planters, as well as mowers provided the implement fulfils the requirements for *ISOBUS* section switching. Additionally it is possible to plot obstacles. Before an obstacle is reached, a warning message is displayed.

The safe operation of the automatic *Section Control* is only possible using a *Section Control*-enabled *ISOBUS* implement.

The operating mode *Section Control* is only available in map view once all implement data has been transferred.

For safety reasons, when using a fertilizer, automatic *Section Control* is only possible after a field boundary has been logged. With field sprayers, it is possible to work without field boundaries. For safety reasons it is always recommended that a field boundary is recorded.

1.3.3 CCI.Command/Headland Mode

This module makes it possible to firstly work the inner field and then the headland to conclude. Additionally it offers a virtual headland function. There are two options for creating the headland. Together with a field boundary it is possible to plot a headland area within a width defined by the driver around the field. Likewise it is possible to plot a headland area without a field boundary. Upon reaching these areas, the implement sections are automatically switched off. For the final working of the headland, the virtual headland is simply deactivated.

This functionality is primarily used with planting devices and seed drill implements, but also when using certain pesticides there are advantages in a final working of the headland. In this way travel through the freshly worked crop when turning on the headland is avoided.

1.3.4 Operation with implement

1.3.4.1 Not ISOBUS enabled

When operating with a non-*ISOBUS* enabled implement, the following functions are available to you:

- *Parallel Tracking* after manual entry of the working width
- Manual labelling of the worked area

1.3.4.2 ISOBUS enabled and task controller enabled

When operating with an *ISOBUS* and task controller enabled implement, the following functions are available to you:

- *Parallel Tracking* (working width is automatically transferred)
- Automatic identification of the worked area (working state of the implement is transferred if an active task exists).

An *ISOBUS* and task controller enabled implement corresponds to the AEF functionalities TC-BAS and TC-GEO (see chapter 8).

1.3.4.3 ISOBUS enabled and Section Control enabled

When operating with an *ISOBUS* and *Section Control* enabled implement, the following functions are available to you:

- *Parallel Tracking* (working width is automatically transferred)
- Automatic identification of the worked area (working state of the implement is transferred if an active task exists).
- Automatic *Section Control* (geometry is transferred from the implement).

An *ISOBUS* and *Section Control* enabled implement corresponds to the AEF functionality TC-SC (see chapter 8).

2 Safety

2.1 Identification of indications in the operating instructions

The safety indications in these operating instructions are specially identified:



Warning - General Hazards!

This occupational safety symbol identifies general safety indications the non-observance of which poses a danger for life and limb. Carefully observe the indications regarding occupational safety and exert particular caution in these cases.



Attention!

This attention symbol identifies all safety indications which refer to regulations, directives or working procedures which it is essential to observe. Non-observance can entail damage to, or the destruction of, the *terminal* as well as malfunctions.



Note

The note symbol highlights operation tips and other particularly useful information.



Information

The information symbol highlights background information and practical tips.

3 Commissioning

3.1 Mounting the terminal

For information, please refer to the chapter **5.1 Mounting the terminal** in the **ISOBUS Terminal CCI 100/200** Operating Instructions.

3.2 Connecting the Terminal

3.2.1 Connecting to ISOBUS/power supply

Please refer to the information in the chapter **5.2.1 Connecting to ISOBUS/power supply** of the **ISOBUS Terminal CCI 100/200** Operating Instructions.

3.2.2 Connecting to a GPS receiver

Use of a *GPS* receiver is required for correct operation of the *CCI.Command*.

For information, please refer to chapter **3.2.2 Connecting with a GPS receiver** in the **CCI.GPS** operating instructions.

3.2.2.1 GPS data requirements

The following framework conditions must be adhered to for operation with Command:

Baud	19200
GGA + RMC + VTG	5 Hz
GSA	1 Hz
GSV (optional)	1 Hz

3.2.3 Connecting with the external lightbar CCI L10

CCI.Command provides the option of using the external lightbar CCI L10.

Proceed as follows to connect the external lightbar to the *terminal*:

1. Connect the external lightbar CCI L10 to the *terminal's* LIN interface.

3.3 Installing the software

CCI.Command is included in the scope of delivery of the CCI *terminal*, i.e. installation is neither possible nor required.

In order to be able to operate the software installed ex works a licence must be acquired:

As an option when purchasing the *terminal* The software is enabled ex works and can be used immediately.

Upgrade In the event of licensing at a later date the software is activated by our service partners.



Note

If you own a licensed version of *CCI.Command* the *CCI.Command* icon is visible in the start menu of your *terminal*.

3.4 Operating modes

3.4.1 Section Control

To place *CCI.Command* into operation, proceed as follows:

1. Switch on the *terminal*.
2. Start *CCI.Command* (see chapter 4.2).
3. Make the geometry settings (see Chapter 4.3.3).
4. Make the settings for *Parallel Tracking* (see chapter 4.3.4).
5. Make the settings for *Section Control* (see chapter 4.3.5).
6. Activate *Section Control* operating mode and change to map view (see chapter 4.1).
7. Mark out the field boundary (see chapter 4.4.1).
8. Mark out a *reference track* (see chapter 4.4.3).
9. Process the field in operating modes *Parallel Tracking* and *Section Control*.

3.4.2 Parallel Tracking

To place *CCI.Command* into operation, proceed as follows:

1. Switch on the *terminal*.
2. Start *CCI.Command* (see chapter 4.2).
3. Make the settings for *Parallel Tracking* (see chapter 4.3.4).
4. Change to map view (see chapter 4.1).
5. Mark out a reference track (see chapter 4.4.3).
6. Process the field in the operating mode *Parallel Tracking*.

4 Operation

4.1 General instructions

CCI.Command is subdivided into 2 areas: the field map view and the settings. When changing between the two areas, note the following:

If all implement data have been transferred, then upon calling up the field map, operating mode *Section Control* is automatically activated. If you return to the settings, *Section Control* is automatically paused:



Call up the field map

Activate operating mode *Section Control*



Switch to Settings

Pause operating mode *Section Control*

If no implement data was transferred, the upper area of the button is greyed out. *Section Control* is not available, the field map can however be called up:



Call up the field map



Switch to Settings

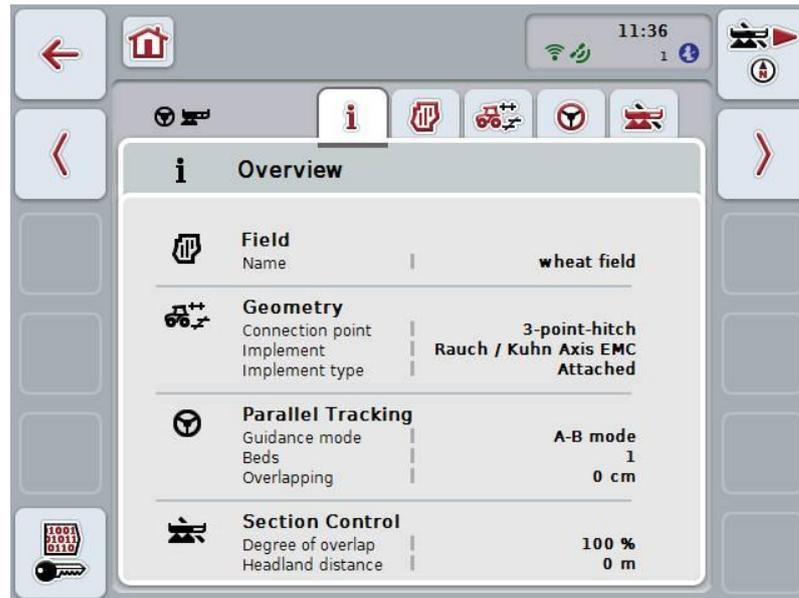
4.2 Program start

CCI.Command is activated automatically by switching on the *terminal*. There is direct access to all functions via the start screen.

To switch to the start screen from *CCI.Command*, proceed as follows:

1. Press on the "Command" button in the main menu of the *terminal* on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

→ The following start screen opens:



CCI.Command is subdivided into 2 areas:

4.2.1 Settings

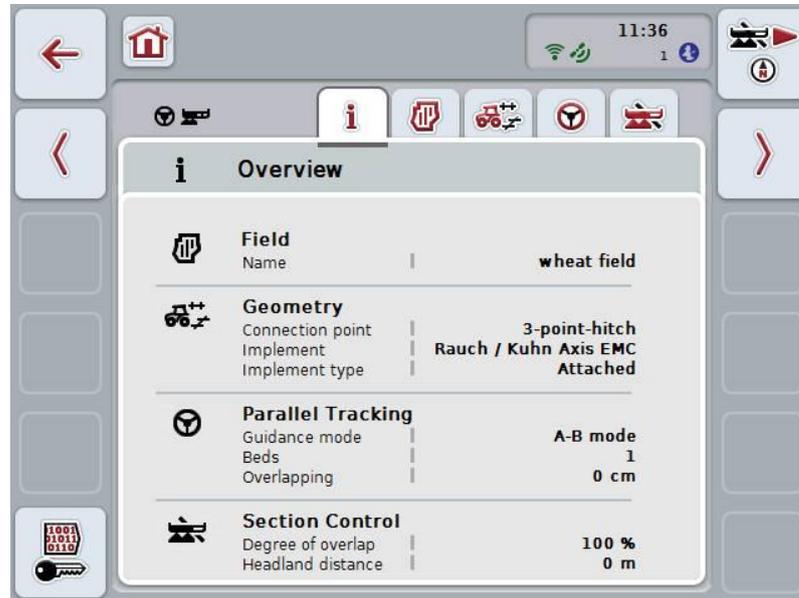
Selection of the *Field*, entry of the settings for geometry, *Parallel Tracking* and *Section Control*.

4.2.2 Map view

Parallel Tracking, *Section Control*, Obstacles and GPS Correction

4.3 Settings

Five tabs are shown in **Settings**:

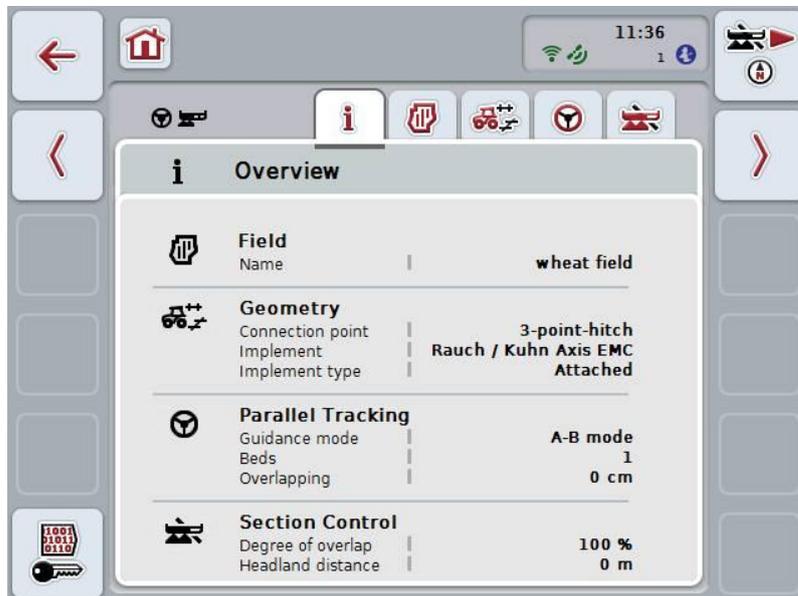


These are organised as follows:

- Overview:** Display of the settings for *Field*, geometry, *Parallel Tracking* and *Section Control*.
- Fields:** Display of the *Field* and the worked area and management of the saved *Fields*.
- Geometry** Display and editing of the geometry settings.
- Parallel Tracking:** Display and editing of the settings for *Parallel Tracking*.
- Section Control** Display and editing of the settings for *Section Control*.

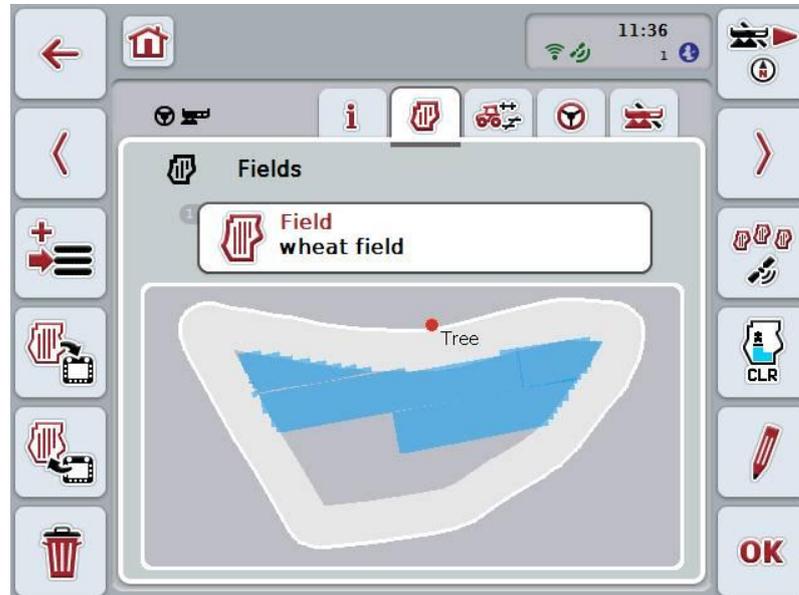
4.3.1 Overview

This tab shows a summary of the most important information for the *Field*, geometry, *Parallel Tracking* and *Section Control*.



4.3.2 Fields

This tab displays the field designator, the field boundaries, the worked area and the obstacles.



You have the following operating options:

-  **Select *Field***
-  **Save *Field***
-  **Import *Field(s)***
-  **Export *Field(s)***
-  **Delete the currently selected *Field***
-  **Find *Field***
-  **Delete worked area**
-  **Edit name**

4.3.2.1 Select field

To re-work an already stored *Field* proceed as follows:

1. Press the "Field" button on the *touchscreen*. If the button with the field name is highlighted in white you can either press on the scroll wheel or on "OK".
→ A list of the stored *Fields* opens.
2. Select a *Field* from the list. To do so, press on the button with the tractor name on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press the scroll wheel.
3. Confirm your selection by pressing "OK", pressing the scroll wheel or pressing the button with the field name once more.



Note

After starting *CCI.Command*, you can immediately start work. The selection of a saved *Field* is not necessary.

4.3.2.2 Save field

If the latest worked *Field* is to be available for subsequent working, it must be saved. To do so, proceed as follows:

1. Press the "Save field" (F9) button on the *touchscreen*.
→ The following selection list opens:



2. Select the desired action.
3. Enter the field designator on the *touchscreen* using the keyboard.
4. Confirm your entry with "OK".



Note

The current state of working of the field is saved by tapping "Save". The *Field* remains selected.

"Save + create new field" saves the current state of working of the field and opens a new unworked *Field*.

"Copy" saves the data of the currently selected *Field* under a new name. The original *Field* is retained. This allows the copying of data.

i**Importing/exporting fields**

You have the following options for the importing and exporting of field data:

1. Exchange of Field Boundaries in shape format
2. Exchange of all the data of a single field or the entire database between *CCI terminals*. This includes the field boundaries, reference lines, worked areas, created headlands, obstacles and reference points.

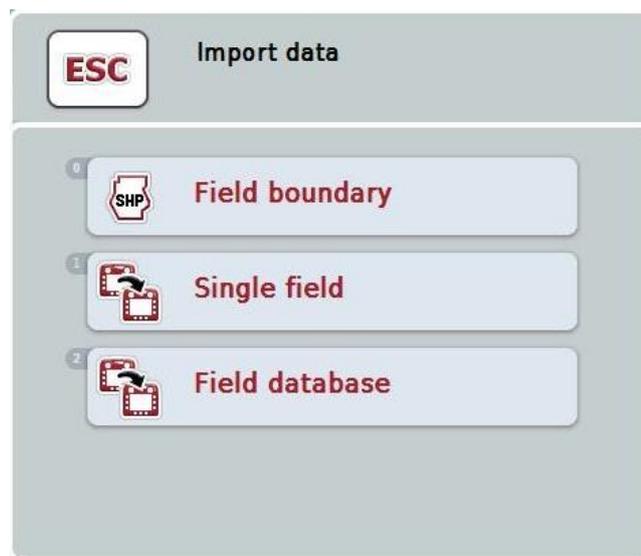
The option "Single field" is used to add a field. If two implements are working on the same field, then an exchange allows the two implements to work with same field boundary and the same headland.

Using the option "Field database" a backup can be created on a flash drive and then the data can be restored if they are unintentionally deleted. If an additional *CCI terminal* is procured this moreover makes it possible to transfer the field data to the new *terminal*.

4.3.2.3 Importing field boundary(ies)

To import a field boundary, proceed as follows:

1. On a flash drive create a folder with the name CCI.Command and a subfolder GIS.Import.
2. Save the field boundaries in the subfolder GIS.Import that you want to import as a shape file.
3. Connect the flash drive to the *terminal*. As soon as the flash drive has been identified, the buttons for importing and exporting are available.
4. Press the "Import field(s)" (F10) button on the *touchscreen*.
 - The view "Import data" opens with a selection list:



5. Select the option "Field boundary". To do so, press on the "Field boundary" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
 - A selection list opens.
6. Select the desired file. To do so, press on the button with the desired selection or turn the scroll wheel until the button is highlighted in white.
7. Confirm your entry with "OK".
 - The selection list changes. The individual elements are now displayed that are located in the selected file.
8. Select the desired element for import. To do so, press on the button with the desired selection or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
 - The element is imported and used in the currently selected field as the field boundary.



Note

The designator of the field boundary is not imported. It is possible to import other elements. Each other element is likewise plotted in the current *field* as a boundary. If this is not desired, then prior to import, the old *field* must be saved so that a new *field* is available.



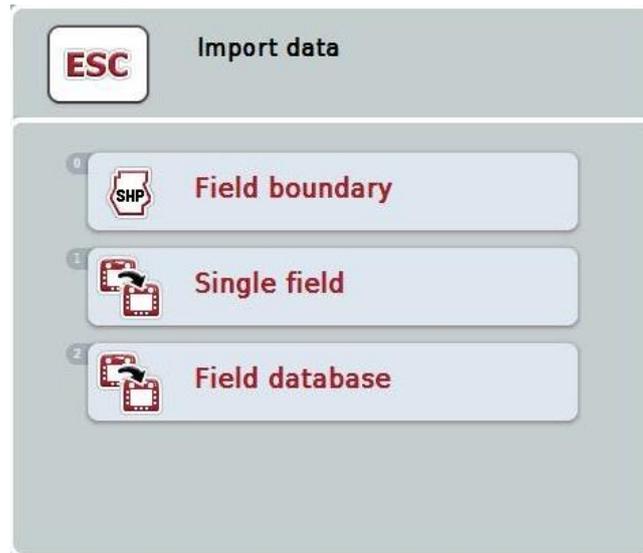
Note

If the imported file has inner field boundaries, e.g. around ponds or pools, then these are likewise imported. The sections are also automatically switched at these boundaries during working. If a headland is created, then it is also plotted at these boundaries.

4.3.2.4 Import single field / field database

To import a single field or an entire database, proceed as follows:

1. Copy a single field or a database to a flash drive.
2. Connect the flash drive to the *terminal*. As soon as the flash drive has been identified, the buttons for importing and exporting are available.
3. Press the "Import field(s)" (F10) button on the *touchscreen*.
 → The "Data Import" view opens with a selection list.



4. Select the option "Single field" or "Field database" To do so, press on the button with the desired selection or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.



Note

By importing a single *field*, it is added to the database.



Note

The imported field database replaces the existing field database. All already existing *fields* are overwritten.

4.3.2.5 Exporting field(s) in shape format

To export the selected *field(s)*, proceed as follows:

1. Press the "Export field(s)" (F11) button on the *touchscreen*.
→ A selection list opens.



2. Select between "Current field" and "All fields". To do so, press on the button with the desired selection or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.



Note

A flash drive must be inserted for one or more *fields* to be exported.



Note

If there are lots of saved fields, the export may take some time if "All fields" is selected.

4.3.2.6 Exporting field(s) for exchange between CCI terminals

To export the current *Field* or database, proceed as follows:

1. Press the "Export field(s)" (F11) button on the *touchscreen*.
→ A selection list opens.



2. Select between "Current field" and "Field database". To do so, press on the button with the desired selection or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.



Note

All field data remain in existence after an export.

4.3.2.7 Delete field

To delete the selected *field*, proceed as follows:

1. Press the "Delete" button (F12) on the *touchscreen*.
2. Confirm with "OK".

4.3.2.8 Find *Field*

To find saved fields, that are located within a radius of 7 km from the current location of the implement, proceed as follows:

1. Press the "Find field" (F3) button on the *touchscreen*.
 - A selection list opens in which the saved fields are displayed that are located within a radius of 7 km from the current location of the implement.



Note

Receipt of *GPS* is a prerequisite for use of this function.

4.3.2.9 Delete worked area

If you want to re-work an already worked *field*, this function makes it possible to delete the blue highlighted worked area of the field.

To delete the worked area of the selected *field*, proceed as follows:

1. Press the "Delete worked area" button (F4) on the *touchscreen*.
2. Confirm the prompt for confirmation with "OK".
 - The blue highlighted area is removed.

4.3.2.10 Edit name

To edit the name of a saved *field* proceed as follows:

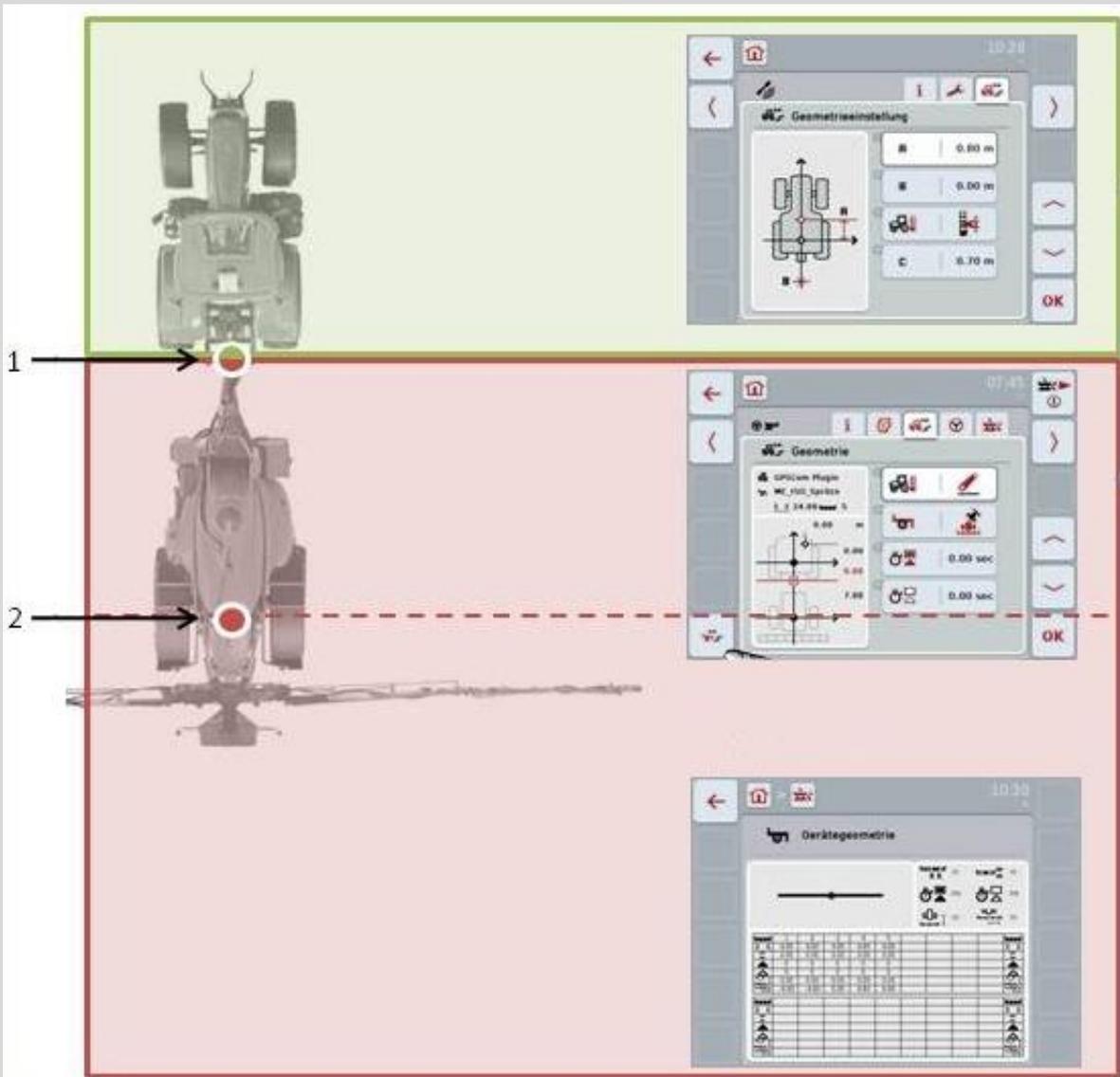
1. Press the "Edit" button (F3) on the *touchscreen*.
2. Change the *Field* designator on the *touchscreen* using the keyboard.
3. Confirm your entry with "OK".

i

Geometry settings

An exact geometry setting is the basic prerequisite for exact functioning of the automatic Section Control. *CCI.Command* uses the geometry data, that has been transferred from the implement via ISOBUS. A configuration of this data is not possible in *CCI.Command*.

The tractor geometry data (position of the *GPS* aerial) must be initially entered (one-off entry) in the *CCI.GPS* app. To do this take the information from chapter **4.4 Geometry settings** of the **CCI.GPS** operating instructions.

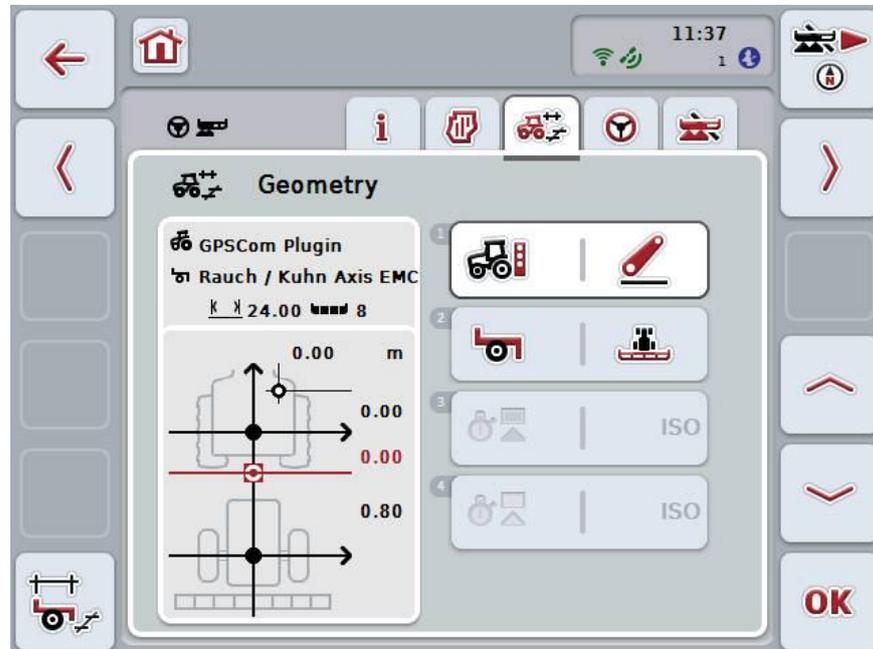


- 1. Coupling point
- 2. Implement reference point

The red area identifies the geometric data of the implement from the *Coupling point* (1). The tractor geometry data is shown in the green area.

4.3.3 Geometry

In this tab, the position of the *GPS* aerial, the implement design, the distance between the navigation point and *Coupling point*, the *delay times* and the number of sections are shown in the left display area.



You have the following operating options:



Display Section Geometry



Select *Coupling point*



Selecting the implement type



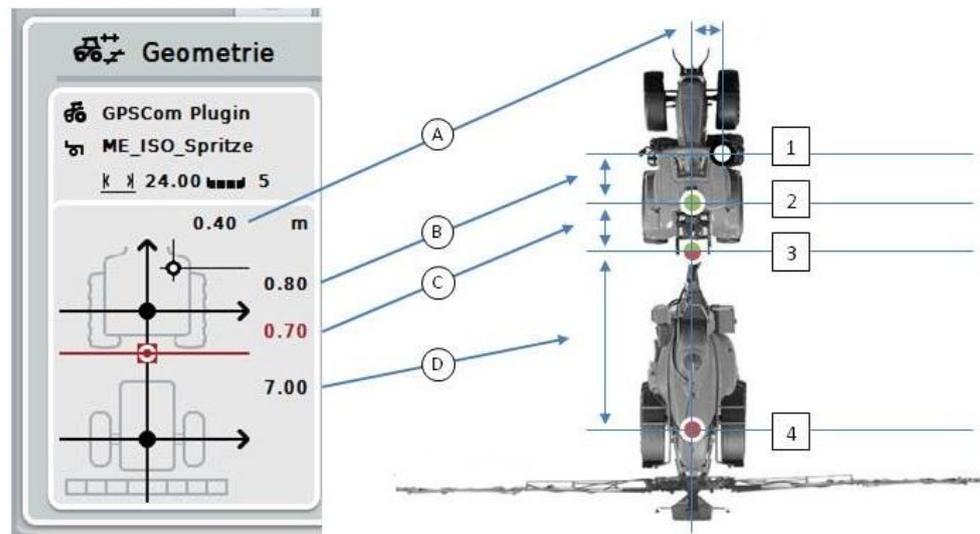
Enter *delay times*



Note

The geometry settings for the tractor must be made in the *CCI.GPS* app. You can find more information in the **CCI.GPS** operating instructions.

You are provided with the following geometry information in the display area:



Distances

- A: Distance between the tractor reference point and the *GPS* aerial perpendicular to the direction of travel.
- B: Distance between the tractor reference point and the *GPS* aerial in the direction of travel.
- C: Distance between the tractor reference point and the *Coupling point* in the direction of travel.
- D: Distance between the *Coupling point* and the implement reference point in the direction of travel.

Points

- 1: *GPS* aerial
- 2: Tractor reference point
- 3: *Coupling point*
- 4: Implement reference point



Note

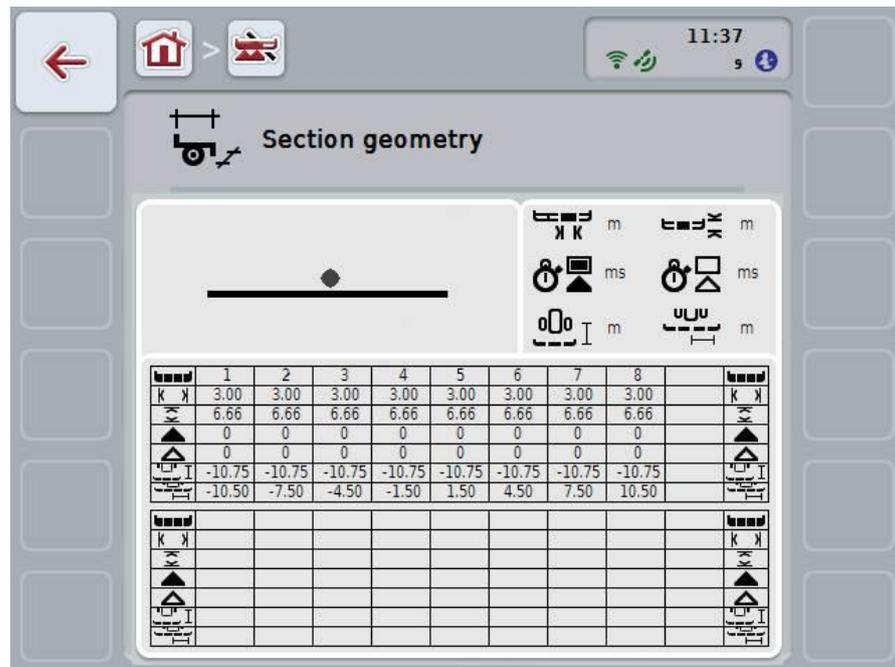
The implement reference point is at the mid-point of the first axle. If the implement does not have an axle, then the reference point is defined by the manufacturer. Take the position of the reference point from the implement manufacturer's operating instructions.

4.3.3.1 Display Section Geometry

In Section Geometry only those values are displayed that are transferred from the implement.

To display the Section Geometry, proceed as follows:

1. Press the "Display Section Geometry" button (F12) on the *touchscreen*.
 → The view for the Section Geometry opens:



The position of the sections relative to the implement reference point is shown schematically in the top left box. In this way it is possible to see at a glance, whether the sections all lie on a line, or whether different distances have been set in the direction of travel.

The units currently being used are shown in the top right box.

The values for the following details of the Section Geometry are shown in the bottom box:



Note

The symbols that are used in the bottom box, are simplified representations of the symbols in the top right box. Therefore the appropriate units for the value that is displayed in the bottom box are shown in the top right box.

Symbol: top right box	Symbol: bottom box	Meaning
		Number of section (in direction of travel counted from the left)
		Working width of the section
		Working depth of the section
		Switch-on delay
		Switch-off delay
		Distance between the implement reference point and the section in the direction of travel
		Distance between the implement reference point and the section perpendicular to the direction of travel

i

Implement mountings

There are various implement mountings, these each have their own *coupling point* offset.

In *CCI.GPS* the correct offset from the tractor reference point can be input for each implement mounting. The information is contained in chapter **4.4 Geometry settings** of the **CCI.GPS** operating instructions.

Once these settings have been made, it is sufficient to select the currently to be used *coupling point* in *CCI.Command*. Repeated remeasuring is not necessary.

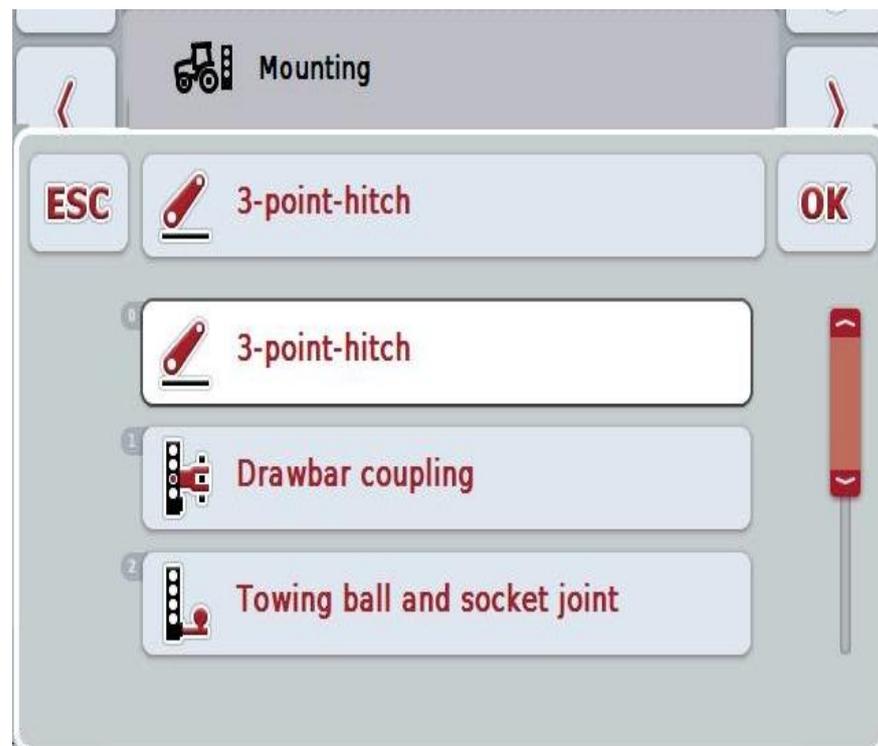
4.3.3.2 Select mounting

To select the currently used implement mounting, proceed as follows:

1. Press on the "Implement mounting" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ The following selection list opens:



2. Select the actual implement mounting from the list. To do so, on the *touchscreen* press the button with the mounting or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
 - The mounting appears in the selection window.
3. Confirm your selection by pressing "OK" or pressing the button with the mounting again or by pressing the scroll wheel.

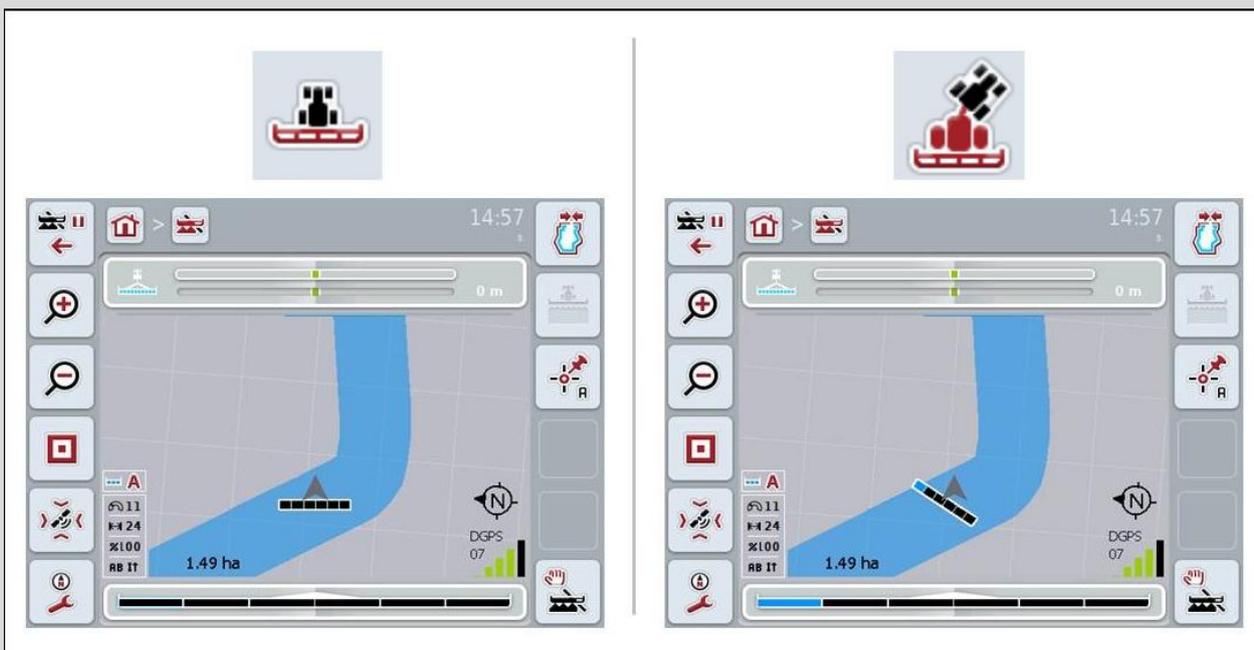


Note

In the geometry overview, the saved value for the currently selected implement mounting is displayed (red number).

i Implement types

If trailed implements are being used, the position of the sections changes for curved tracks. When using the setting "Trailed" and "Self-propelled", the position of the sections, is calculated for curved tracks (right image). With attached implements, it remains fixed (left image).



4.3.3.3 Selecting the implement type

To select the implement type proceed as follows:

1. Press on the "Implement type" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ The following selection list opens:



2. Select the desired implement type from the list. To do so, on the *touchscreen* press the button with the implement type or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ The implement type appears in the selection window.
3. Confirm your selection by pressing "OK" or pressing the button with the implement type again or by pressing the scroll wheel.



Delay times

The *delay times* describe 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). There is a *switch-on* and a *switch-off delay*.

4.3.3.4 Enter *delay times*



Note

If *delay times* are transferred from the implement, the buttons are greyed out. It is displayed in the Section Geometry (see chapter 4.3.3.1). To change the *delay times*, the implement operation must be called up. You can find more information in the operating instructions for your implement.

To enter the *delay times*, proceed as follows:

1. In the *touchscreen* press on the buttons "Switch-on delay" (button 3) and "Switch-off delay" (button 4) and enter the times that must be adhered to before individual selections are switched on or off.
2. Confirm your entry with "OK".

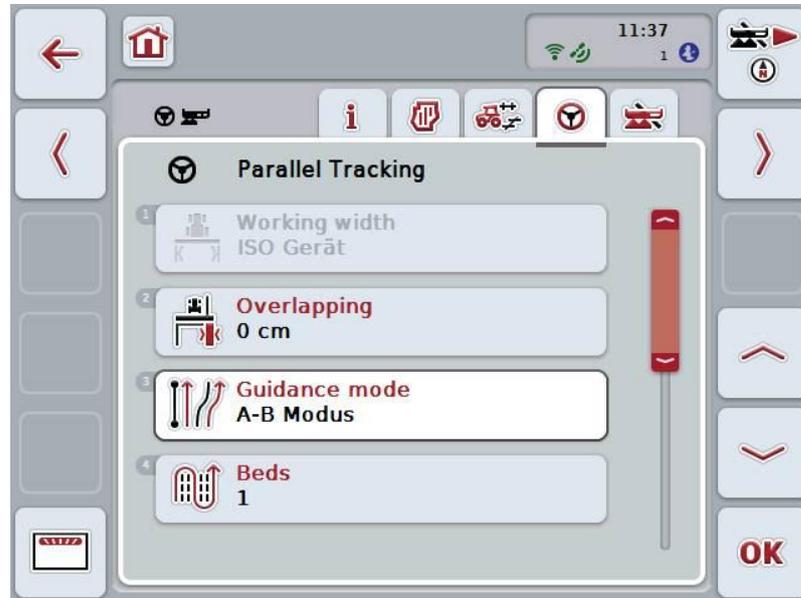


Note

Values between 0.00 and 10.00 seconds are valid for the *Delay times*.

4.3.4 Parallel Tracking

The necessary settings for *Parallel Tracking* are made in this tab.



You have the following operating options:



Enter working width



Enter the *Overlapping* value



Select Guidance Mode



Enter the *Beds* value



Headland track 2: activate/deactivate half width

Change to lightbar

Press the "Lightbar" button (F12) on the *touchscreen*.

The settings for the lightbar open:

You can find more detailed information about lightbar settings in chapter 4.3.4.6.



4.3.4.1 Enter working width

To enter the working width, proceed as follows:

1. Press on the "Working width" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

2. Enter the value on the *touchscreen* using the digit field or the slider.
3. Confirm your entry with "OK".



Note

The value entered for the working width must be as accurate as possible to enable an exact calculation of the area processed.

The valid range for the working width is between 0.0 and 99.0 metres.



Note

If the implement transfers a working width, then the button is greyed out. The working width is transferred from the implement and can only be changed in the implement mask. See the manufacturer's operating instructions for the procedure.



Overlapping

The *Overlapping* setting is used to compensate for steering faults and *GPS* inaccuracies. During operation there are 2 possible cases:

1. *Missed areas* must be avoided.

In this case a positive value must be entered. This results in the distance between the *guidance tracks* being reduced by the entered value. This reduces the effective working width, *missed areas* are avoided and *overlapping* can occur.

2. *Overlapping* must be avoided.

In this case a negative value must be entered. This results in the distance between the *guidance tracks* being increased by the entered value. In this way *overlapping* is avoided and *missed areas* can occur.

4.3.4.2 Enter the overlapping value

Proceed as follows to enter the *Overlapping* value:

1. Press on the "Overlapping" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel. Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the value on the *touchscreen* using the digit field or the slider.
3. Confirm your entry with "OK".



Note

Values between -100 and +100 cm are valid for the *Overlapping*.

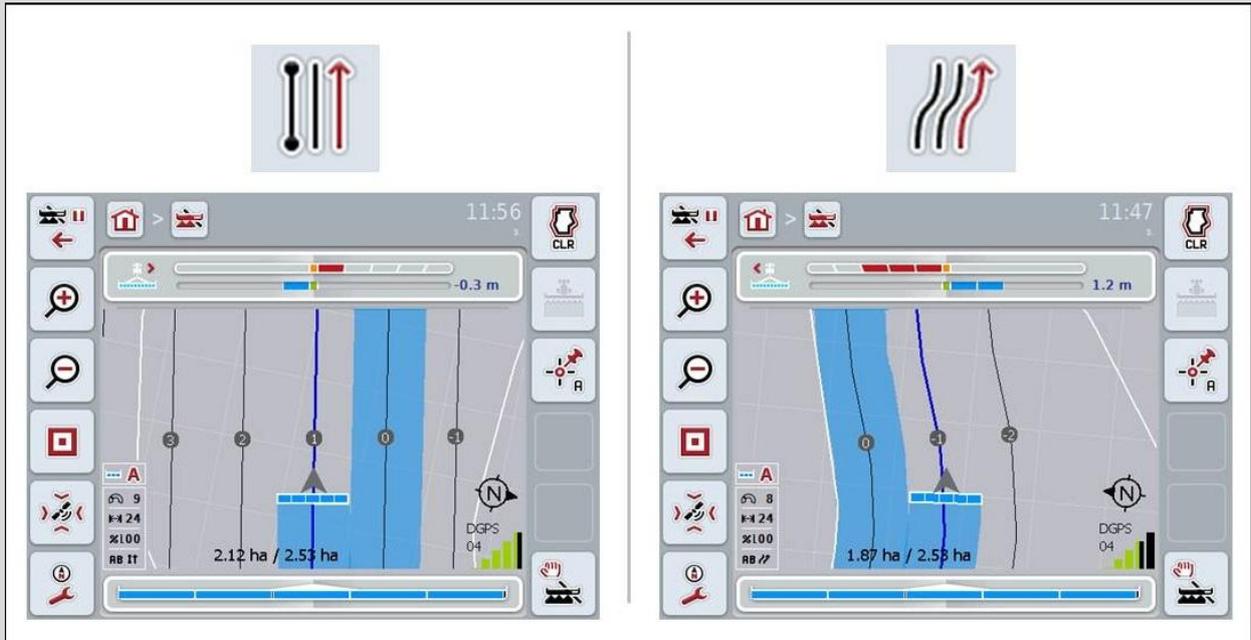


Guidance modes

There are 2 different guidance modes:

A-B mode

Curve mode



A-B mode:

The worker sets an A-point, drives further and sets a B-point. The system automatically draws a line between these two points and in addition creates parallel *guidance tracks* at a distance equal to the working width.

Curve mode:

The worker sets an A-point, drives a desired distance that may also contain curves and sets a B-point. The system records the driven distance and in addition creates parallel tracks corresponding to the working width distance. At the end of the recorded track, the line is extended with a straight line. This makes possible the reliable driving into the tracks in the headland area.

4.3.4.3 Select Guidance Mode

To select the guidance mode, proceed as follows:

1. Press on the "Guidance mode" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ A selection list opens.
2. Choose between "A-B mode" and "Curve mode". To do so, press on the button on the *touchscreen* with the desired mode or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ The mode appears in the selection window.
3. Confirm your selection by pressing "OK" or pressing the button with the mode again or by pressing the scroll wheel.

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Beds mode

Beds mode offers the possibility of missing out tracks. For example this enables turning in a train with small working widths.

Setting "1" means that every *guidance track* is used. Setting "2" means that every second *guidance track* is highlighted in the portrayal (see screenshot), the remaining ones are greyed out. The lightbar display then relates to the highlighted *guidance tracks*.



4.3.4.4 Enter the Beds value

Proceed as follows to enter the value for the beds:

1. Press on the "Beds" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the value on the *touchscreen* using the digit field or the slider.
3. Confirm your entry with "OK".



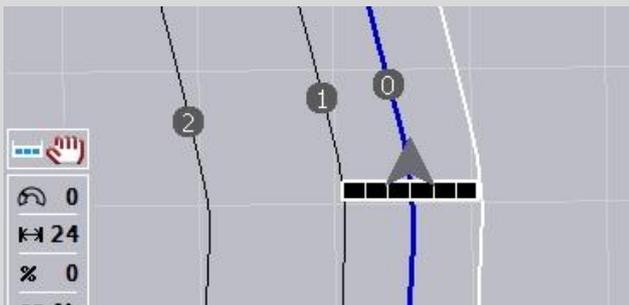
Note

Values between 1 and 5 are valid for the Beds.

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Headland track 2: half width

In the third headland mode (see infobox headland mode on page 57 and chapter 4.4.8) guidance tracks are displayed in the headland area. This function is useful if during sowing a machine track rhythm is used for working which requires that during processing of the headland a half working width must be used once. If the checkbox is ticked, the separation between guidelines 0 and 1 is calculated as a half working width. Consequently the second track in the headland is performed with just the half working width.



4.3.4.5 Headland track 2: activate/deactivate half width

To activate/deactivate half width for track 2 in the headland proceed as follows:

1. Press on the "Headland track 2 half width" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the *Boolean value*.
3. Confirm your entry with "OK".

4.3.4.6 Lightbar

In order to change to the lightbar settings proceed as follows:

1. Press the "Lightbar" button (F12) on the *touchscreen*.
 → The following mask opens:



You have the following operating options:



Enter the *Look Ahead* time

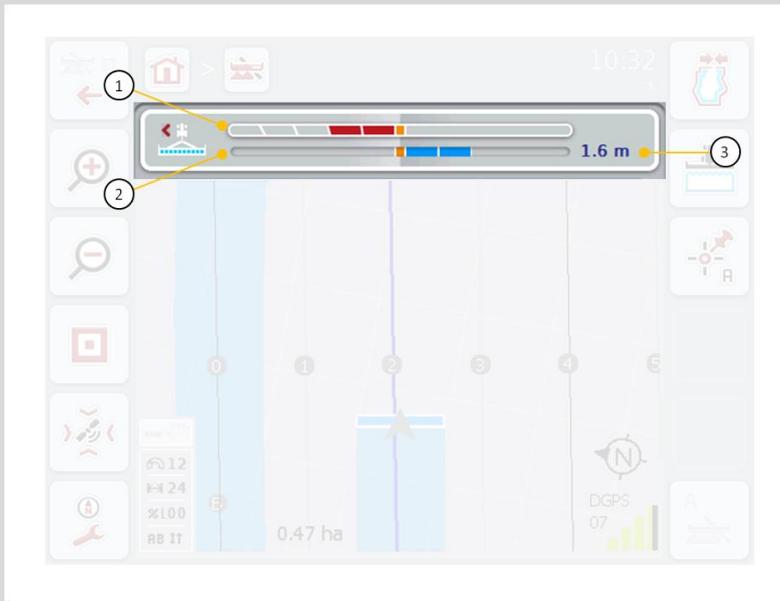


Enter the *LED Distance* value

i

Lightbar

The top segments of the lightbar (1) show the worker the steering suggestion, that is required to correct the current deviation from the *guidance track* that is shown by the bottom segments (2). The current deviation from the track is also shown as a number (3).



4.3.4.6.1 Enter the Look Ahead time

The *look ahead* time specifies the time interval for calculation of the steering suggestions. Proceed as follows to enter the *Look ahead* time:

1. Press on the "Look ahead" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the value on the *touchscreen* using the digit field or the slider.
3. Confirm your entry with "OK".



Note

Values between 1 and 10 are valid for the *Look ahead* time.

4.3.4.6.2 Enter the LED Distance value

The *LED Distance* can be used to specify how many centimetres deviation a segment of the lightbar corresponds to.

To enter the value for the *LED Distance*, proceed as follows:

1. Press on the "*LED Distance*" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the value on the *touchscreen* using the digit field or the slider.
3. Confirm your entry with "OK".



Note

Values between 10 and 100 cm are valid for the *LED Distance*.

4.3.5 Section Control

The *Section Control* settings are displayed in this tab.



You have the following operating options:



Select the degree of overlap



Enter the overlap tolerance



Enter the overlap tolerance at field boundary



Enter the headland distance



Activate/deactivate reverse gear detection



Activate/deactivate marking delay

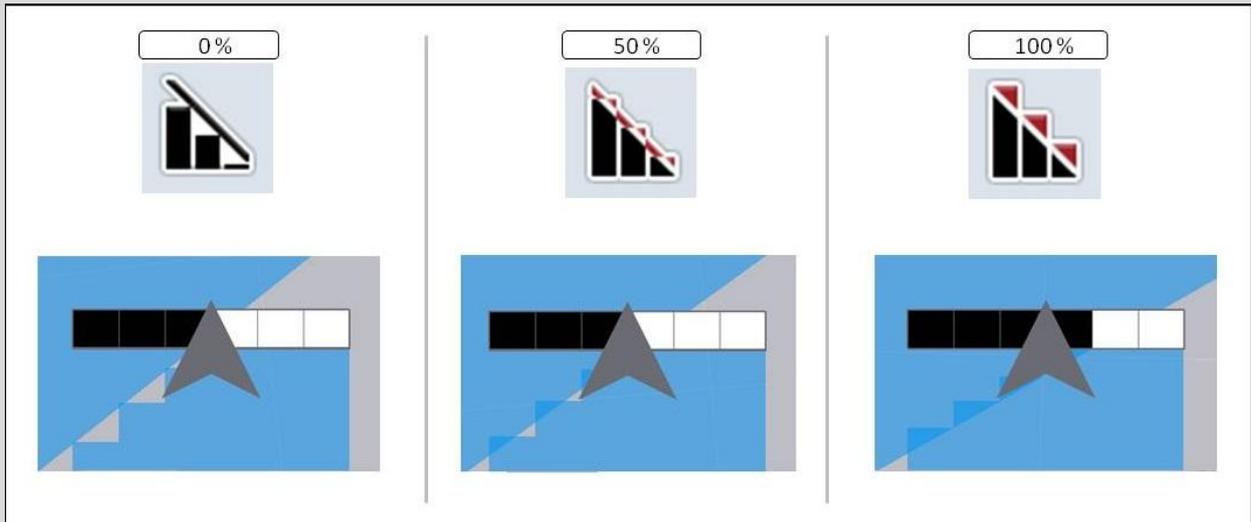


Only activate/deactivate Section Control only in the headland

i

Degree of overlap

The degree of overlap specifies for what covering individual sections are to be switched off when they impact on an already worked area. This setting depends on whether a complete working or an avoidance of double of double treatments is desired.



- 0 %** The section is switched off before *overlapping* occurs. When working in this mode, no *missed areas* result (left graphic).
- 50 %** The section is switched off, if half of this section is located in the region of an already worked area (middle graphic).
- 100 %** The section is only switched off, if it is completely located in the region of an already worked area (right graphic).

4.3.5.1 Select the degree of overlap

To select the degree of overlap, proceed as follows:

1. Press on the "Degree of overlap" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ A selection list opens.
2. Select the desired setting from the list. To do so, on the *touchscreen* press the button with the degree of overlap or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
→ The degree of overlap appears in the selection window.
3. Confirm your selection by pressing "OK" or pressing the button with the degree of overlap again or by pressing the scroll wheel.



Note

At field boundaries, 0 % degree of overlap applies as a matter of course.

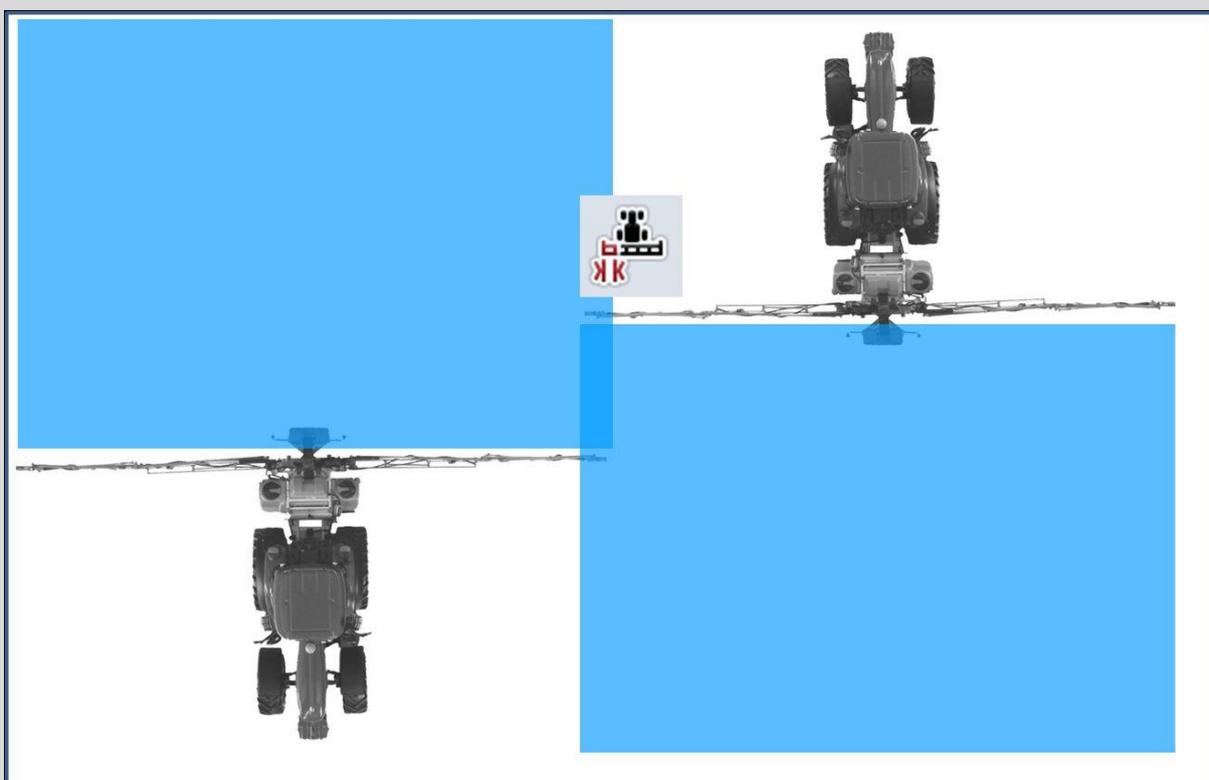
i

Overlap tolerance

The overlap tolerance specifies with what tolerance the two outer sections (right and left) react to *overlaps*.

In the case of parallel tracks in the *Field* (e.g. where there are machine tracks), it may occur that, due to *GPS drift*, the outer section according to the display lies briefly over an already worked area, although actually no double treatment is occurring (see the information box about *GPS drift*, page 78). For a degree of overlap of 0%, the outer section is switched off in this case. A "fluttering" (continuous switching on and off) can occur.

This fluttering can be prevented by setting the overlap tolerance.



4.3.5.2 Enter the overlap tolerance value

Proceed as follows to enter the Overlap tolerance value:

1. Press on the "Overlap tolerance" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the value on the *touchscreen* using the digit field or the slider.
3. Confirm your entry with "OK".



Note

Values between 0 cm and half of the outer Section are valid for the Overlap tolerance.



Degree of overlap and overlap tolerance at field boundaries

For safety reasons, a 0% degree of overlap always applies at the field boundary. The overlap tolerance for the field boundary can be set separately at your own responsibility.

GPS drift can cause switching on and off of the outer section at the field boundaries (see also the infobox about overlap tolerance on page 50). The user can, under their own responsibility, minimise this switching on and off by entering an overlap tolerance at the field boundaries. A setting greater than 0 cm can result in working beyond the field boundary. Before making the setting it must be checked whether this can be tolerated.

The recommended setting is 0 cm.

4.3.5.3 Enter the overlap tolerance at field boundary



Attention!

Careful checking of whether treatment beyond the field boundary can be tolerated is absolutely essential.

Once the work is carried out, the setting must be set back to 0 cm.

Proceed as follows to enter the overlap tolerance for the field boundaries:

1. Press on the "Overlap tolerance at field boundary" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the value on the *touchscreen* using the digit field or the slider.
3. Confirm your entry with "OK".



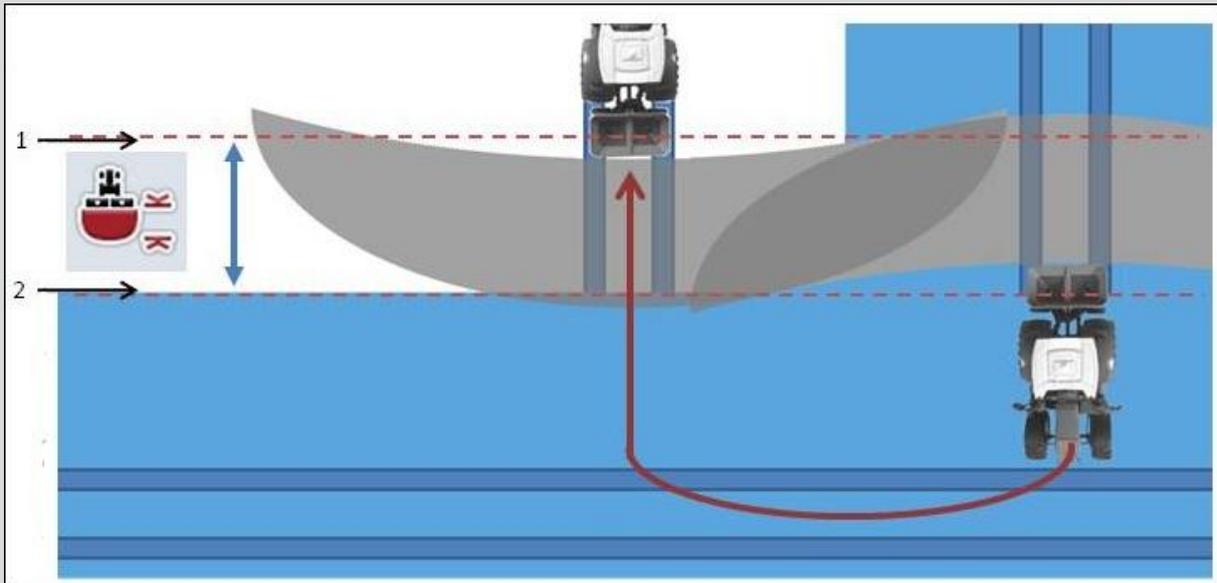
Note

Values between 0 cm and half of the outer Section are valid for the Overlap tolerance.

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Headland distance

The headland distance is used to define the switching on point after leaving an already treated area. Consequently the fertilizer is switched on and off at different points. The correct dimension for the headland distance is influenced by the implement's working width and the spreading properties of the fertilizer.



- 1: Switch-on point
- 2: Switch-off point

4.3.5.4 Enter the headland distance value



Note

This setting is only possible for a class 5 implement (fertilizer).



Note

If the *ISOBUS* implement transfers a value for the working depths of the *sections*, this button is greyed out. Entry is not necessary, because the switch-on and switch-off points are defined automatically by the implement.

To enter the value for the headland distance, proceed as follows:

1. Press on the "Headland distance" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the value on the *touchscreen* using the digit field or the slider.
3. Confirm your entry with "OK".



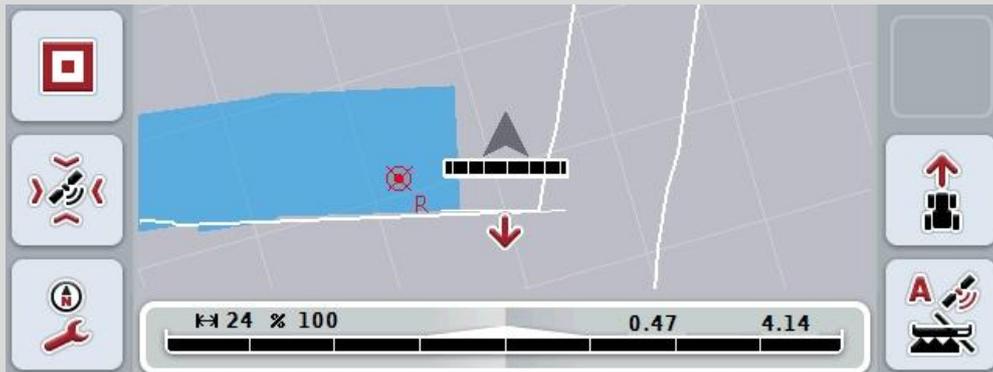
Note

The valid range for the headland distance lies between 0 metres and 50 metres.

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Reverse gear detection

CCI.Command calculates changes to the direction of travel using the positioning information of the GPS receiver. If reversing (reverse gear) is detected, the sections are automatically switched off and the implement also travels backwards in the map view. In this way, when reversing into a field corner, the implement turns in the map view but not around its own axis so that undesired switching on of the sections is prevented.



A red arrow in the map indicates reversing.

If an incorrect direction of travel is detected, the driver can correct the direction of travel detection (see chapter 4.4.4). This is required if backwards travel has started (after switching on of the *Terminal*).

CCI.Command also considers the direction of travel signal of the tractor TECU, if this makes the message available via ISOBUS.

4.3.5.5 Activate/deactivate reverse gear detection

To activate/deactivate reverse gear detection, proceed as follows:

1. Press on the "Reverse gear detection" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the *Boolean value*.
3. Confirm your entry with "OK".



Note

Dependent on the quality of the GPS receiver, incorrect detections can occur (e.g. in shadowed areas at forest edges). The direction of travel can be manually corrected at any time in the map view via button F5 (see chapter 4.4.4).



Marking delay

If marking delay is activated, the worked area (blue) is only marked after the currently set delay time (see chapter 4.3.3.4) has elapsed.

4.3.5.6 Activate/deactivate marking delay

To activate/deactivate marking delay, proceed as follows:

1. Press on the "Marking delay" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

2. Enter the *Boolean value*.
3. Confirm your entry with "OK".

i**Section Control only in the headland**

When using seed drills and planters with very small sections (e.g. less than a meter) then *GPS drift* (see infobox about *GPS drift*, page 78) then undesired switching off of the outer sections can occur with parallel tracks, that also cannot be avoided through application of the overlap tolerance (see infobox about overlap tolerance, page 51). In this case the function "Section control only in the headland" helps to avoid sowing windows in that the sections are only switched off in the headland (marked grey) and not on the worked surface (marked blue). After activation of this function it must be checked that the sections are only switched off automatically in the headland.

4.3.5.7 Activate/deactivate Section Control only in the headland

To activate/deactivate Section control only in the headland, proceed as follows:

1. Press on the "Section control only in the headland" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

2. Enter the *Boolean value*.
3. Confirm your entry with "OK".

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Exiting the field map view

There are various ways of exiting the field map view, that either lead to pausing of automatic *Section Control* or that have no effect on it:

If field map view is exited using the F7 function key to change to implement operation, automatic *Section Control* is paused.

If field map view is exited using the Home or toggle button to change to another application, automatic *Section Control* is not paused.

4.4 Map view

Pressing the button "Field map" (F1) takes you out of the Settings tab back to the **field map view**.

The **field map view** is the *CCI.Command* working area. Automatic *Section Control* is activated here.



Note

Dependent on the implement used, different buttons are available.



You have the following operating options:



Switch to settings

Press the "Switch to Settings" button (F7) on the *touchscreen*.

Settings opens.

More detailed information about Settings can be found in chapter 4.3.



Switch to headland management

Press the "Headland management" button (F8) on the *touchscreen*.

The **Headland management** mask opens.

More detailed information on headland management can be consulted in chapter 4.4.7.



Selecting headland mode

Press the "Headland mode" button (F9) on the *touchscreen*.

More detailed information about headland mode can be found in chapter 4.4.8.



Call up Obstacles

Press the "Obstacles" button (F10) on the *touchscreen*.

The field map view opens for the **obstacles**.

More detailed information on Obstacles can be consulted in chapter 4.4.10.



Call GPS Correction

Press the "GPS Correction" button (F11) on the *touchscreen*.

The field map view opens for **GPS Correction**.

You can find more detailed information about GPS Correction in chapter 4.4.11.



Call up Map Settings:

Press the "Map Settings" button (F12) on the *touchscreen*.

The **Map Settings** mask opens.

More detailed information on the Map Settings can be consulted in chapter 4.4.12.



Create / delete a field boundary



Set A point / record reference track



Correcting direction of travel



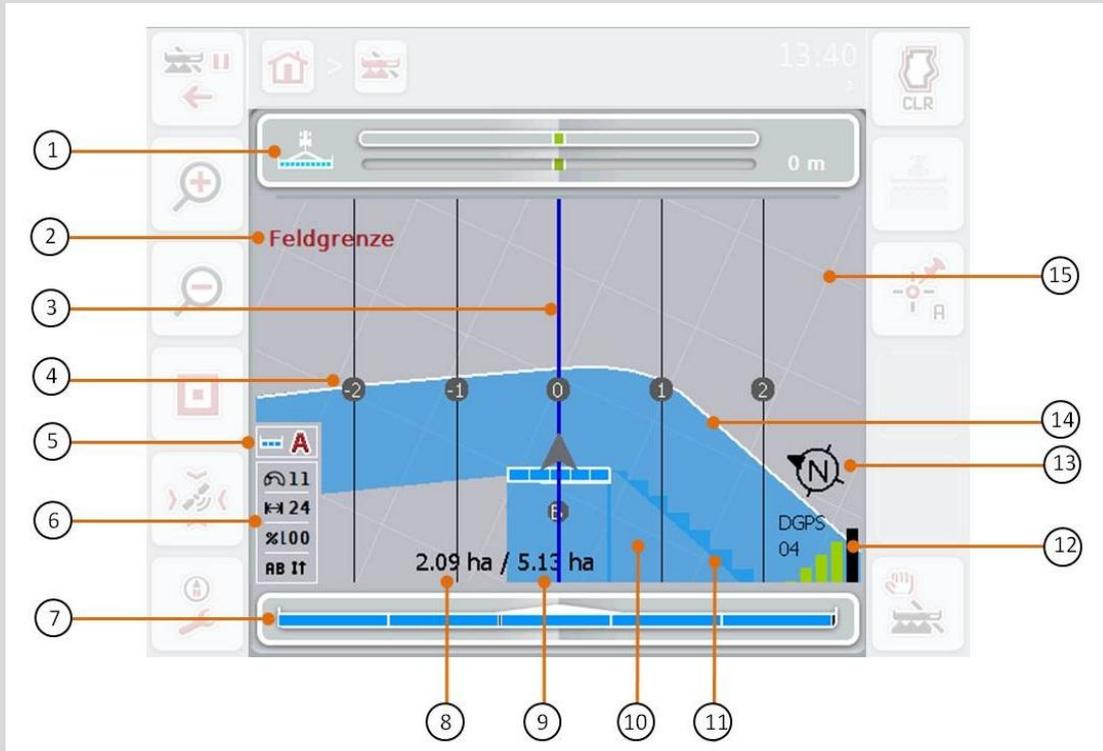
Switch on/off manual highlighting of the area travelled over



Zoom map section in/out with the scroll wheel

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Map view elements



- | | |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| 1. Lightbar | 2. Message upon reaching the field boundary or an obstacle |
| 3. Guidance tracks (active <i>guidance track</i> blue) | 4. Guidance track numbering |
| 5. Display: <i>Section Control Mode</i> | 6. Infobox (speed, working width, degree of overlap, guidance mode) |
| 7. Section status display | 8. Remaining area (not yet worked) |
| 9. Field size (if no field boundary exists, the already worked area is indicated) | 10. Worked area |
| 11. Repeated worked area | 12. <i>GPS-Info</i> (signal strength, number of satellites used, signal type) |
| 13. North arrow | 14. Field boundary |
| 15. Grid (size = working width, alignment = North) | |

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Implement depiction

The implement depiction is fixed in the bottom third of the field map. The field map rotates about the implement.



The arrow (1) indicates the position of the tractor reference point (mid-point of the rear axle). According to the set geometries, the sections (2) are positioned behind it. The white line (3) appears if the working depth is set for the sections. This is, for example, supported by a number of fertilizers.

4.4.1 Create Field boundary

To create a field boundary, proceed as follows:

1. Drive around the *field* while treating the headland. The worked area is highlighted in blue; with field sprays, at this point in time, the *Section Control* auto-mode can be immediately activated.



Attention!

Sections are only automatically switched on, if an already treated area is reached. Switching off at the field edge to protect the adjoining areas is the responsibility of the user.



Note

For safety reasons, when operating with fertilizers the sections must be manually switched during the first circumferential run around the field without a field boundary.

2. Press the "Create field boundary" button (F1) on the *touchscreen*.
 - The field boundary is created and saved on the outside edge of the already worked area. Gaps are closed by a matched line. Nevertheless, it is worthwhile travelling around the full periphery of the *field*, as the calculations do not necessarily correspond to the actual course of the field boundary.
 - The button "Create field boundary" (F1) changes automatically to "Delete field boundary" (F1). This is indicated by another symbol.

4.4.2 Delete Field boundary

To delete a saved field boundary, proceed as follows:

1. Press the "Delete field boundary" button (F1) on the *touchscreen*.
2. Confirm the prompt for confirmation with "OK".
 - The button "Delete field boundary" (F1) changes automatically to "Save field boundary" (F1). This is indicated by another symbol.

4.4.3 Set A point / record reference track

To record a *reference track* for *Parallel Tracking*, proceed as follows:

1. in the *touchscreen* press on the button "Set A point" (F2) to specify the start point for the *reference track*.
 - The button "Set A-point" (F2) changes to "Set B-point" (F2). This is indicated by another symbol.
2. Travel over the distance, that is to serve as the *reference track*.
3. In the *touchscreen* press on the button "Set B-point" (F2) to specify the end point for the *reference track*.
 - *Parallel tracking* is automatically started.



Note

Only one track is saved per *field*, if an A-point is set again, the existing track is overwritten. Confirmation of the prompt for confirmation is necessary to do this.



Reverse gear detection

CCI.Command calculates changes to the direction of travel using the positioning information of the *GPS* receiver. If reversing (reverse gear) is detected, the sections are automatically switched off and the implement also travels backwards in the map view. In this way, when reversing into a field corner, the implement turns in the map view but not around its own axis so that undesired switching on of the sections is prevented.

If an incorrect direction of travel is detected, the driver can correct the direction of travel detection (see chapter 4.4.4). This is required if backwards travel has started (after switching on of the *Terminal*).

4.4.4 Correcting direction of travel

To correct the detected direction of travel, proceed as follows:

1. Press the "Correct direction of travel" button (F5) on the *touchscreen*.
 - The direction of travel changes from "Forward travel" to "Reversing" or from "Reversing" to "Forward travel".
 - The correction is displayed through changing of the symbol on the button (F5).



Note

If *CCI.Command* detects reversing, a small red arrow is displayed.



Note

If the tractor sends its direction of travel on the *ISOBUS*, this is detected by *CCI.Command*. The GPS position calculation is deactivated and the signal from the tractor is used for reverse gear detection.

4.4.5 Switch on/off manual highlighting of the area travelled over

If no *ISOBUS* implement is connected, then no information about the already worked area is available. The worked area can be highlighted manually.

To switch the manual marking of the travelled over area on or off, proceed as follows:

1. Press the "Marking on/marking off" button (F6) on the *touchscreen*.
 - The travelled over area is highlighted / no longer highlighted in blue on the field map.
 - The button F2 changes from "Selection on" to "Selection off" and vice-versa, dependent on which function has just been chosen.



Note

This function is only available if no implement data is transferred or *Section Control* has not been activated.



Note

It is necessary that the working width is already entered for a correct display of the worked area, (see chapter 4.3.4.1).

4.4.6 Zoom map section out/in with the scroll wheel

To zoom the map section in or out with the scroll wheel, proceed as follows:

1. Turn the scroll wheel clockwise to zoom the map section in and anticlockwise to zoom the map section out.

4.4.7 Headlandmanagement

To change the headland management proceed as follows:

1. Press the "Headland management" button (F3) on the *touchscreen*.
 → Headland management opens.



Note

The selection "Circular" is only available if a field boundary has already been created (see chapter 4.4.1).



Note

The selection "Delete headland" is only available if at least one saved headland exists.

You have the following operating options:

Change to individual headland recording



Press the "Individual" button on the *touchscreen*.

→ The **Headland recording** map view opens.

You can find more detailed information about headland recording in chapter 4.4.7.1.



Create circular headland



Delete headland

4.4.7.1 Create circular headland

To create a circular (peripheral) headland, proceed as follows:

1. Press on the "Circular" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the headland width on the *touchscreen* using the digit field or the slider.
3. Confirm your entry with "OK".
→ A headland with the entered width is created along the field boundary.



Note

To be able to add a headland, a field boundary must first be created (see chapter 4.4.1).

4.4.7.2 Delete headland

To delete a saved headland, proceed as follows:

1. Press on the "Delete headland" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Confirm the prompt for confirmation with "OK".
→ The headland is deleted.



Note

This function deletes all headlands saved for this field.
If a field boundary exists, a circular headland can quickly be recreated. An individual headland must be newly driven around.



Record headland

The headland can not only be created along the field boundary (see chapter 4.4.7.1) but also be individually recorded (see chapters 4.4.7.4 and 4.4.7.5). For planters and seed drills the sections can also be automatically switched without a field boundary.

4.4.7.3 Headland recording

To switch to headland recording, proceed as follows:

1. Press on the "Individual" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ The following mask opens:



You have the following operating options:



Set A point / record reference track
(see chapter 4.4.3)



Mark curves



Mark line

**Correcting direction of travel**

(see chapter 4.4.4)

**Switch on/off manual highlighting of the area travelled over.** (see chapter 4.4.5)**Enter the desired headland width****Change the position of the marker****4.4.7.4 Mark curves**

To mark curves when recording the headland, proceed as follows:

1. Press the "Mark curves" (F3) button on the *touchscreen*.
→ Recording of the headland along the precise driven route starts.
2. Drive along the route.
3. Press the "Mark curves" (F3) button on the *touchscreen* again.
→ Recording of the headland along the precise driven route starts.
→ The recorded headland is saved.

4.4.7.5 Mark line

To mark a line when recording the headland, proceed as follows:

1. Press the "Mark line" (F4) button on the *touchscreen*.
→ The start point is set.
2. Drive to the point that is to form the end of the line and on the *touchscreen* press the button "Mark line" (F4) again.
→ A line between the start and stop point is automatically drawn and a headland created along this.
→ The created headland is saved.

4.4.7.6 Enter the desired headland width

To enter the desired headland width, proceed as follows:

1. Press the "Headland width" button (F9) on the *touchscreen*.
2. Enter the value on the *touchscreen* using the digit field or the slider.
3. Confirm your entry with "OK".

**Note**

Values between 0 and 99 m are valid for the headland width.

**Note**

The default setting for the headland width is the working width of the implement.



Headland marker

The default setting for the width of the headland marker is the working width of the implement. The width of the headland and thus the headland marker, can be manually changed (see chapter 4.4.7.6). In the event that 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.

4.4.7.7 Change the position of the marker

To change the position of the marker, proceed as follows:

1. Press the "Marker position" button (F10) on the *touchscreen*.
 - The marker position changes automatically between central, right outside edge and left outside edge.

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Headland mode

Switching between the three available different headland modes is performed by pressing the button "Change headland mode" (F3):

Mode 1: Headland blocked:



The headland is plotted in light grey, the sections are automatically switched off in this area. The inner field can be worked.

Mode 2: Headland free:



The light grey area is not displayed. The headland is available for working, the sections are not switched off here.

Mode 3: Headland with *guidance tracks*:



Guidance tracks are displayed in the headland. The reference for these *guidance tracks* is the field boundary. The headland can be worked.

4.4.8 Change headland mode

To switch between headland modes, proceed as follows:

1. Press the "Change headland mode" button (F9) on the *touchscreen*.
 - The headland mode changes.



Section Control: manual mode and auto mode

If the field map view is called up, *Section Control* is in manual mode. In this mode, the sections must be switched on or off in the implement operation or manually using the joystick. The worked area is recorded.

After activation of auto mode, *CCI.Command* transfers commands for switching sections on and off to the implement.

For some implements, the *Section Control* functionality must also first still be started in implement operation. See the manufacturer's operating instructions for the procedure.

With the fertilizer, auto mode is only available once a field boundary has been created.

4.4.9 Switch between manual and auto mode for Section Control

The change into manual mode and auto mode takes place via the same button (F4). The system changes according to which mode is currently selected:



Switch *Section Control* into auto mode



Switch *Section Control* into manual mode

To change between manual mode and *Section Control* auto mode, proceed as follows:

1. Press the "Auto mode" or "Manual mode" button (F6) on the *touchscreen*.
 - The mode changes and the symbol on the F6 button changes.



Note

This function is only available if implement data is transferred.

4.4.10 Obstacles Settings

New functions (placing, positioning and deleting of obstacles) are assigned via the "Obstacles" (F10) button in the field map view.



You have the following operating options:

- 
Set obstacle
- 
- 
- 
- 
- 
Delete all obstacles

4.4.10.1 Set and position obstacle

To set a new obstacle, proceed as follows:

1. Press the "Set obstacle" button (F10) on the *touchscreen*.
2. In the *touchscreen* enter the name of the obstacle via the keyboard.
3. Confirm your entry with "OK".
 - The obstacle is first placed in the current position of the tractor and imaged in the field map view by a flashing red spot.
4. In the *touchscreen* press on the buttons "Left" (F3), "Right" (F4), "Up" (F5) and "Down" (F6) to position the obstacle.



Note

Pressing the buttons causes the obstacle to be shifted 1 metre in the respective direction.

5. To save the obstacle in the current position, leave the view "Obstacles" and return to the normal field map view.

4.4.10.2 Delete all obstacles

To delete the obstacles, proceed as follows:

1. Press the "Delete" button (F12) on the *touchscreen*.
2. Confirm with "OK".



Note

All obstacles of the currently used field are deleted. A selection is not possible.

i

GPS-drift

When using *GPS* signals without correction, the recorded data (e.g. field boundary, worked area) may remain set for some time after the recording at another position. 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 drift. The *GPS* Correction makes it possible to compensate for this drift.

4.4.11 GPS Correction

You can use the button "GPS Correction" (F11) in the field map view to carry out the *GPS* correction, the button are assigned new functions (move *reference track*, set and calibrate reference point).



You have the following operating options:



Move reference track



Set reference point



Calibrate reference point

4.4.11.1 Move reference track

To move the *Reference track* to the current position of the tractor, proceed as follows:

1. In the field drive to the desired track and press on the button "Move *reference track*" (F9) on the *touchscreen*.
→ The *reference track* is moved to its current position.



Note

This function is only available if a *reference track* has been recorded. Only the *reference track* is moved. If the entire *field* is to be corrected, a reference point must be set (see chapter 4.4.11.2).

4.4.11.2 Set/calibrate reference point

In the first working, the reference point should be set close to a *field*. For setting, a fixed point must be selected, which can subsequently be used for calibration by approaching it from exactly the same direction and which is in exactly the same position. It is recommended that a prominent point, e.g. a gully lid or a permanent marking in the entry to the field be selected.

The recorded data can no longer be used if you can no longer find the position of the recorded reference point.

Set reference point

To set a new reference point at the current position, proceed as follows:

1. Press the "Set reference point" button (F11) on the *touchscreen*.
→ The reference point is set and is shown in the field map.



Note

The reference point is valid for the tractor combination with which it was set.

Calibrate reference point

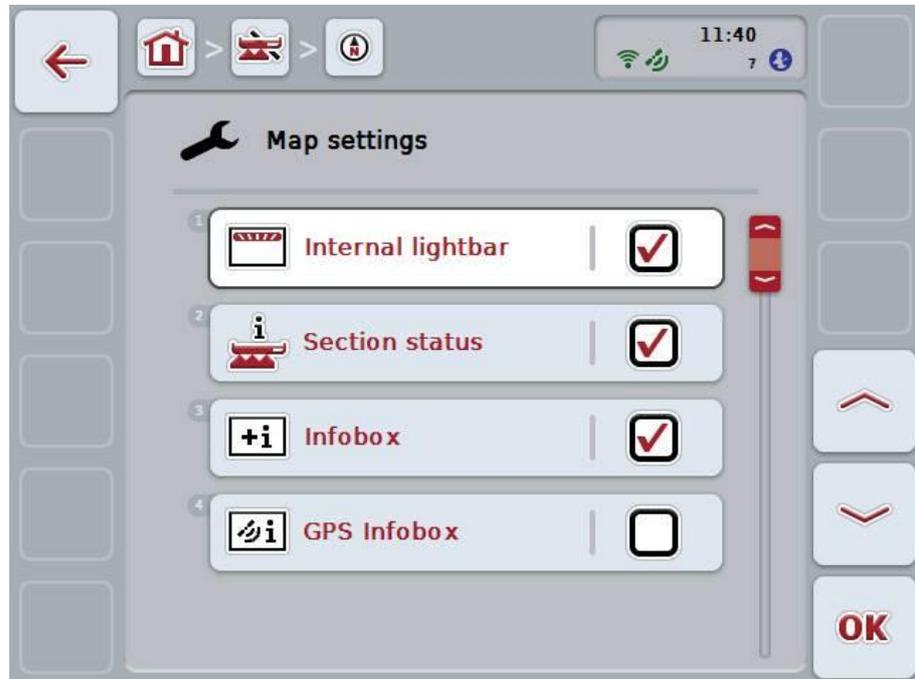
If for example you have detected a *GPS* drift after an interruption in working (e.g. filling of the spray), drive back precisely to the already set reference point. If the positions have shifted, the reference point will now no longer lie in the field map view under the arrow.

To calibrate the reference point, proceed as follows:

1. Press the "Calibrate reference point" button (F12) on the *touchscreen*.
→ The reference point is moved to its current position.

4.4.12 Map Settings

Use the "Map Settings" (F12) button in the main view to get to **map settings**. These can be used to switch individual elements of the field map view and audible warning signals on or off. The elements are displayed in the map and the warning signal can sound if the check mark is set.



You have the following operating options:

-  **Switch the Internal Lightbar on or off**
-  **Switch the Section Status on or off**
-  **Switch the infobox on or off**
-  **Switch the GPS Infobox on or off**
-  **Switch the Field size infobox on or off**
-  **Switch the grid on or off**
-  **Switch the Field boundary alert sound on or off**
-  **Switch the Obstacle alert sound on or off**



Switch the GPS alert sound on or off

4.4.12.1 Switch the display on/off

To switch the display of the Internal Lightbar, the Section Status, the infobox, the GPS Infobox, the Field size infobox or the grid on or off, proceed as follows:

1. To do so, press on the button on the *touchscreen* with the desired display or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

2. In the input dialogue select the desired setting.
3. Confirm your setting with "OK" or by pressing the scroll wheel.

4.4.12.2 Switch an audible warning signal on/off

To switch the audible warning signal on or off upon reaching the field boundary or an obstacle or if GPS receiving quality is poor, proceed as follows:

1. To do so, press on the button on the *touchscreen* with the desired display or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

2. In the input dialogue select the desired setting.
3. Confirm your setting with "OK" or by pressing the scroll wheel.

5 Troubleshooting

5.1 Terminal errors

The following overview shows possible *terminal* errors and how to solve them:

Error	Possible cause	Rectification
The <i>terminal</i> does not switch on	<i>Terminal</i> is not correctly connected	Check the <i>ISOBUS</i> connection
The software of the connected implement is not displayed	<ul style="list-style-type: none"> • Bus terminator missing • Software is loaded, however is not displayed • Connection error when uploading the software 	<ul style="list-style-type: none"> • Check resistance • Check whether the software can be manually started from the <i>terminal</i> start menu • Check physical connection • Contact the implement manufacturer's customer service

5.2 Errors during operation

The following overview shows you possible errors when operating with *CCI.Command*, their possible cause and how to rectify them:

Error	Possible cause	Rectification/approach
Calculation of the field boundary takes a long time	<p>Large distance between the blue highlighted areas, because:</p> <ul style="list-style-type: none"> the implement was switched on briefly before the passage to the <i>field</i> Data from a second, not yet removed <i>field</i> has not yet been stored or deleted. 	Go to Settings, select the Fields tab, delete the field data (see 4.3.2.7) and re-process the <i>field</i> .
Depiction of the <i>field</i> in the Fields tab is very small and not centralised.	Alongside the working of the <i>field</i> , the implement was briefly switched on at another point.	Delete field data (see 4.3.2.7) and re-work the <i>field</i> .
The current <i>guidance track</i> is not highlighted blue.	No sections are currently switched on for the implement.	If no sections are switched on, the track that was last used for working is highlighted in blue. This is to aid better re-finding of this track, e.g. after filling of the implement.
<i>Reference tracks</i> , field boundaries, and worked area are displaced.	<i>GPS-drift</i>	Calibrate reference point and/or <i>reference track</i> (see chapters 4.4.11.1 and 4.4.11.2)
No <i>GPS</i> signal	<ul style="list-style-type: none"> Not receiving Not all necessary message signals are received. 	<ul style="list-style-type: none"> Check power supply Check whether the receiver is connected to the RS233-1 <i>interface</i> and this is selected Check whether the baud rate set at the receiver and the <i>terminal</i> agree. Change the receiver settings, consult the receiver operating instructions for this purpose.

Error	Possible cause	Rectification/approach
<p>In spite of calibration, the position of the field boundary is not correct.</p>	<ul style="list-style-type: none"> • Reference point is not correctly approached. • Position of the <i>GPS</i> aerial on the tractor is changed after setting. • Poor <i>GPS</i> signal quality. 	<ul style="list-style-type: none"> • Check the position of the tractor, approach the reference point again. • Check the position of the <i>GPS</i> aerial and, if necessary, enter again (see chapter 4.4 of operating instructions CCI.GPS). • (see next point)
<p>The implement switches on and off too early/late.</p>	<ul style="list-style-type: none"> • Poor <i>GPS</i> signal quality • Incorrect geometry settings • Incorrect setting of the position of the <i>coupling point/aerial</i> • Incorrect <i>delay times</i> 	<ul style="list-style-type: none"> • Check the signal quality, drive out of any shadow region (if necessary recalibrate any reference point). • Refer to the implement operating instructions to see how these can be changed. • Re-measure and check the settings in <i>CCI.GPS</i>. • Check the selection of the <i>coupling point</i> in <i>CCI.Command</i>. • If these are transferred from the implement, consult the implement operating instructions • If these were set by you, verify the <i>delay times</i>. To do this work a strip and mark the outer worked edge e.g. with barrier tape. Drive over this strip at a 90° angle and measure how many cm the implement was switched off too early/too late. Divide this value (cm) by the average speed in the headland area (cm/ms) (e.g. 8 km/h corresponds to 0.22 cm/ms). This correction value must be added to the set value if switching off is too late and subtracted from it if switching off is too early.

Error	Possible cause	Rectification/approach
<i>Section Control</i> does not switch	The function "Section control only in the headland" is activated.	Deactivate the function "Section control only in the headland" (see chapter 4.3.5.7).

5.3 Buttons are greyed out

Button	Possible cause	Rectification
Multiple buttons in the field map view (obstacles, set field boundary, manual marking, set A-point, auto mode)	Software was not activated	Check whether the licence key has been entered.
Tabs: Parallel Tracking Settings (all buttons)	Software was not activated	Check whether the licence key has been entered.
Tabs: Section Control Settings (all buttons)	Software was not activated	Check whether the licence key has been entered.
Enter <i>delay times</i>	<i>Delay times</i> are defined by the <i>ISOBUS</i> implement and are displayed automatically.	For a few implements, the <i>delay times</i> can be set in the menu. Refer to the operating instructions of your implement to find them.
Enter working width	Working width is transferred by the <i>ISOBUS</i> implement and automatically displayed.	see above
Enter value for headland distance (dashes appear in the field)	The connected implement does not correspond to class 5 (fertilizer)	The headland distance only fulfils its purpose with fertilizers. According to the ISO standard, fertilizers conform to class 5. Transferred. If the implement is of another class, then the headland distance is not available.
Enter value for headland distance ("ISO" appears in the field)	The connected implement transfers a value for the working depth of the individual sections.	The headland distance is not required. The implement determines via the working depth at which points the sections can be switched on and off.
Start <i>Section Control</i>	The connected implement is not <i>ISOBUS</i> and <i>Section Control</i> enabled.	

Button	Possible cause	Rectification
Switch the marking of the worked area on or off	The connected implement is <i>ISOBUS</i> and <i>Section Control</i> enabled.	Manual marking is not necessary, because the implement signals its working state and this is automatically recorded.
Switch into auto mode	The connected implement is not <i>ISOBUS</i> and <i>Section Control</i> enabled or still no field boundary has been created (when using a fertilizer).	
Add headland/ Delete headland	The value 0.00 m is entered for the headland distance.	Enter a value greater than 0.00 m for the headland distance (see chapter 4.3.5.4)
Import field boundary/ Export <i>field</i>	Flash drive is not plugged in or is not yet detected.	Plug in flash drive and wait until the <i>terminal</i> detects it.

5.4 Error messages



Note

The error messages shown on the terminal depend on the connected implement. A detailed description of the possible error messages and troubleshooting can be referred to in the implement operating instructions.



Note

If the implement cannot be operated, check whether the "stop switch" is pressed in. The implement cannot be operated until the switch has been released.

5.5 Diagnostics

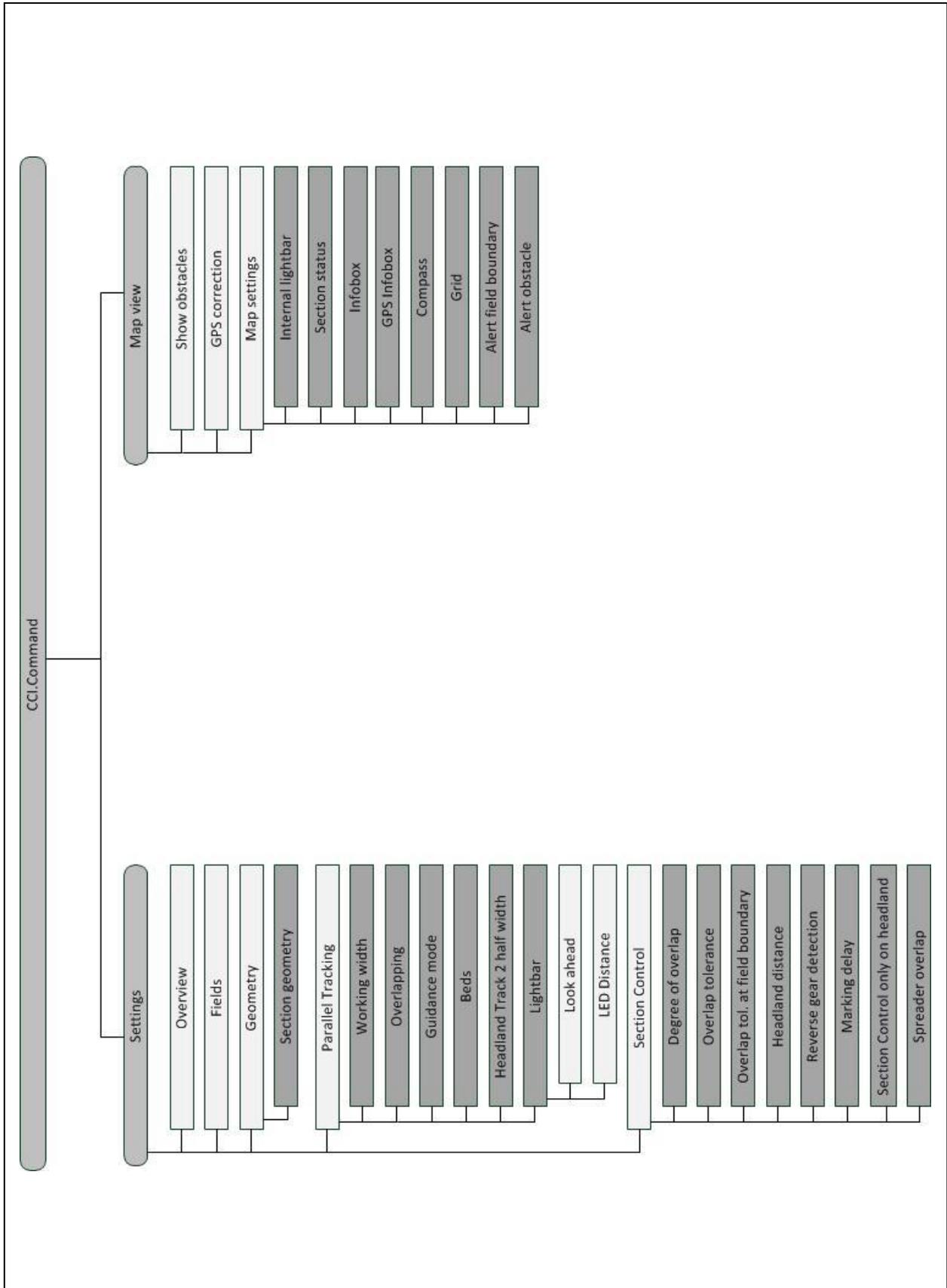
5.5.1 Check external lightbar

To check the external lightbar, proceed as follows:

1. Press the home key to enter the main menu.
2. Press the "Settings" button (F1) in the main menu.
3. Select the tab **Info and Diagnostics**.
4. In the tab **Info and Diagnostics** press the button "L10".
 - The view for the L10 opens:



6 Menu structure



7 Glossary

A-B mode	A guidance mode in which the worker sets an A and a B-point, the system automatically draws a straight line between these two points and additionally creates parallel tracks at the distance of the working width.
Switch-off delay	The delay times describe 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).
CCI	Competence Center ISOBUS e.V.
CCI.Command	GPS controlled section switching
CCI.GPS	App with tractor geometry settings.
Switch-on delay	The delay times describe 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).
Missed areas	Missed areas are the result of omissions.
Field	A field can contain the following elements: the field boundary, the reference point, the reference track, the obstacles and the worked area.
GPS	Global Positioning System. GPS is a system for satellite-supported 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.
GSM	Global System for Mobile Communication Standard for full-digital mobile radio networks, which is primarily used for telephony and short messages such as SMS.
Headland Control	Virtual headland
ISOBUS	ISO11783 International standard for data transfer between farming implements and devices.
Coupling point	The point on the implement to which the tractor is coupled
Curve mode	A guidance mode in which the worker sets an A-point, drives a distance that can also contain curves and sets a B-point. The system records the distance and in addition creates parallel tracks corresponding to the working width distance.
LED Distance	The LED Distance can be used to specify how many cms of deviation an LED represents.
Guidance track	Track created in parallel to the reference track, which is used as an orientation aid for correct linking driving
Parallel Tracking	Parallel guidance aid
Reference track	Track recorded by the worker, that is used for the calculation of other guidance tracks created in parallel for track guidance
Interface	Part of the terminal which is used to communicate with other devices
Section Control	Automatic section control
Terminal	CCI 100 or CCI 200 ISOBUS Terminal
Touchscreen	Touch-sensitive screen which is used to operate the terminal.
Overlapping	Double treatment

Delay times	The delay times describe 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).
Look ahead	The look ahead time specifies the time interval for calculation of the steering suggestion. For example, a greater time for the look ahead time gives the worker more time to react to the steering suggestion.

8 ISOBUS in functionalities



Task-Controller basic (totals)

Takes over the documentation of cumulative values that are worthwhile when looking at the work carried out. In this respect, the device makes the values available. Here the data exchange between the FMIS and the task controller takes place in ISO-XML data format. Hence tasks can be conveniently imported into the task controller and / or the finished documentation can then be exported again.



Task controller geo-based (variables)

Additionally offers the possibility of also collecting position-related data – or the planning of position-related tasks, for example using application maps.



Task-Controller Section Control

Deals with the automatic switching of sections, as with plant protection spraying, dependent on the GPS positions and desired degree of overlap.

9 Buttons and icons

	CCI.Command		Switch to Settings
	Call up the field map		Pause Section Control
	Activate Section Control		Switch to Settings
	Call up the field map		Fields
	Overview		Parallel Tracking
	Geometry		Enter licence and call up Service menu
	Section Control		Delete
	Select from a list		Confirm entry or selection
	Process		Delete worked area
	Save field		Export field
	Import field boundary		Headland track 2: half width
	Search fields		Coupling point
	Section geometry		Switch-on delay
	Implement type		Working width
	Switch-off delay		Guidance mode
	Omission/Overlapping		Curve mode
	A-B mode		Lightbar settings
	Beds		LED Distance Settings
	Look Ahead time		Overlap tolerance
	Degree of overlap		

	Overlap tolerance at field boundary		Headland distance
	Map section zoom out		Map section zoom in
	Obstacles		Set obstacle
	Position obstacle Move left		Position obstacle Move right
	Position obstacle Move forwards		Position obstacle Move rearwards
	GPS Correction		Map Settings
	Grid		Infobox
	Section status		Field size infobox
	GPS Infobox		Alert GPS
	Alert field boundary		Alert obstacle
	Create Field boundary		Delete Field boundary
	Create headland		Change headland mode
	Delete headland		Correcting direction of travel
	Switch on manual highlighting of the area travelled over		Switch off manual highlighting of the area travelled over
	Switch Section Control into auto mode		Switch Section Control into manual mode
	Set A point / record reference track		Move reference track
	Set reference point		Calibrate reference point
	Change to the right		Change to the left
	Change up		Change down
	Individual headland recording		Mark curves



Mark line



Change the position of the marker

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CCI.GPS

GPS settings and tractor geometry

Operating instructions

Reference: CCI.GPS v2.0

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Version number: v2.01

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1 Introduction

1.1 About these operating instructions

These Operating Instructions are intended as an introduction to the operation and configuration of the CCI.GPS app. This app is preinstalled on your ISOBUS terminal CCI 100/200 and can only be run from there. It is only with knowledge of these operating instructions that accidental misuse can be avoided and fault-free operation ensured.

1.2 Reference

These Operating Instructions describe the CCI.GPS Version CCI.GPS v2.0 . In order to query the version number of the CCI.GPS installed on your CCI ISOBUS terminal, proceed as follows:

1. Press the home key to enter the main menu.
2. Press the "Settings" button (F1) in the main menu.
3. Select the tab **Info and Diagnostics**.
4. In the tab **Info and Diagnostics** press the button "Terminal".
5. Press the "Software" button on the touchscreen.
 - The version of the terminal software component is indicated In the information field that is now displayed.

1.3 About CCI.GPS

CCI.GPS is an app, that displays GPS information as well as tractor geometry, GPS source and baud rate settings.

Through entry of the position of the GPS receiver on the tractor, it is made possible for CCI.GPS to transfer position data, referenced to the mid-point of the tractor's rear axle, to other apps, so that these settings need only be made once.

2 Safety

2.1 Identification of indications in the operating instructions

The safety indications in these operating instructions are specially identified:



Warning - General Hazards!

This occupational safety symbol identifies general safety indications the non-observance of which poses a danger for life and limb. Carefully observe the indications regarding occupational safety and exert particular caution in these cases.



Attention!

This attention symbol identifies all safety indications which refer to regulations, directives or working procedures which it is essential to observe. Non-observance can entail damage to, or the destruction of, the terminal as well as malfunctions.



Note

The note symbol highlights operation tips and other particularly useful information.



Information

The information symbol highlights background information and practical tips.

3 Commissioning

3.1 Mounting the terminal

For information, please refer to the chapter **5.1 Mounting the terminal** in the **ISOBUS Terminal CCI 100/200** Operating Instructions.

3.2 Connecting the Terminal

3.2.1 Connecting to *ISOBUS*/power supply

Please refer to the information in the chapter **5.2.1 Connecting to ISOBUS/power supply** of the **ISOBUS Terminal CCI 100/200** Operating Instructions.

3.2.2 Connecting to a GPS receiver

Depending on the model a GPS receiver is connected to the serial interface RS232-1 of the terminal or to the *ISOBUS*.



The correct transfer of GPS messages to terminal has been tested with the following GPS receivers:

Manufacturer	Model
Cabtronix	SmartGPS5
geo-konzept	Geo-kombi 10 GSM
Hemisphere	A100
John Deere	StarFire 300
Novatel	Smart MR10
Trimble	AgGPS 162
Trimble	AgGPS 262



Note

You can find detailed and current information about GPS receivers and settings at <http://www.cc-isobus.net/produkte/gps>.



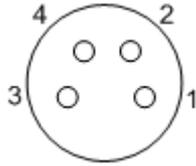
Note

The CCI.Apps place different demands on the quality and accuracy of the GPS messages. For navigation (FieldNav) and documentation (CCI.Control) simple data records are sufficient, as provided by inexpensive receivers. For track guidance and section control (CCI.Command), receivers with Egnos correction and accuracies of 20 to 30 cm are required. From this, different minimum requirements result for the NMEA data records from the receiver. Determine the precise requirement from the respective apps operating instructions.

3.2.2.1 NMEA 0183 (serial)

The terminal's "RS232-1" serial interface is factory set as follows: 4800 Baud, 8N1.

GPS receiver connection



The GPS receiver connection to the terminal is executed via the serial interface RS232-1.

Refer to the following set-up for the pin layout:

1. +12V / +24V
2. TxD
3. GND
4. RxD

3.2.2.2 NMEA 2000 (ISOBUS)

The GPS receiver is connected to the CAN-Bus, no configuration is necessary.

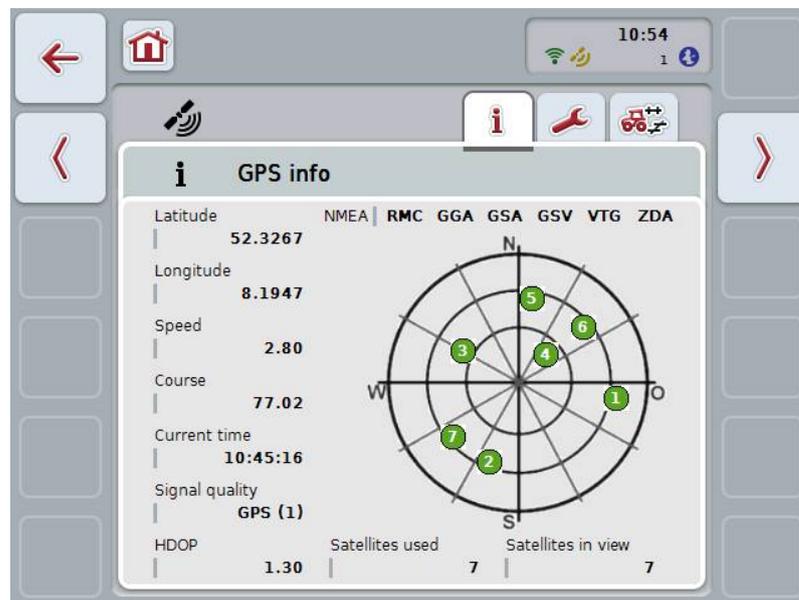
4 Operation

4.1 Program start

CCI.GPS is started automatically by switching on the terminal. There is direct access to all functions via the start screen.

To switch to the CCI.GPS start screen, proceed as follows:

1. Press on the "GPS" button in the main menu of the terminal on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
 → The following start screen opens:

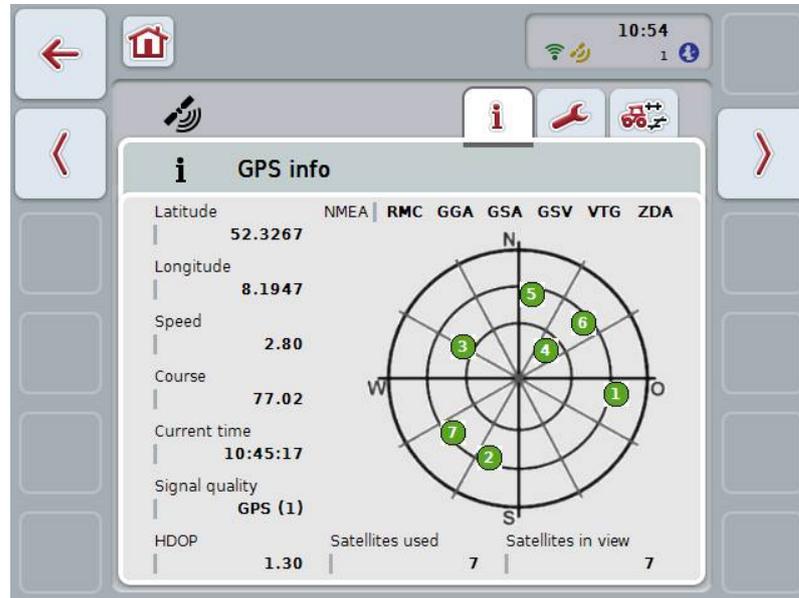


Three tabs are displayed in CCI.GPS. The following information and setting options are organised in these:

- GPS info:** Display of the currently received GPS data.
- GPS settings:** Display and setting of the GPS source and baud rate.
- Geometry settings:** Display and setting of the tractor geometry.

4.2 GPS info

The currently received GPS data are displayed in this tab.



The data are displayed if a GPS receiver is connected, the GPS source and baud rate are correctly selected and the receiver is receiving GPS signals.

The current position with latitude and longitude is indicated in the left half. Below this values for speed, course, time, signal quality and *HDOP* are given. *HDOP* is a quality value for the current GPS signal. A smaller *HDOP* means better GPS quality.

At the top right there is an indication of which message packages the GPS receiver sends (black = sent / grey = not sent).

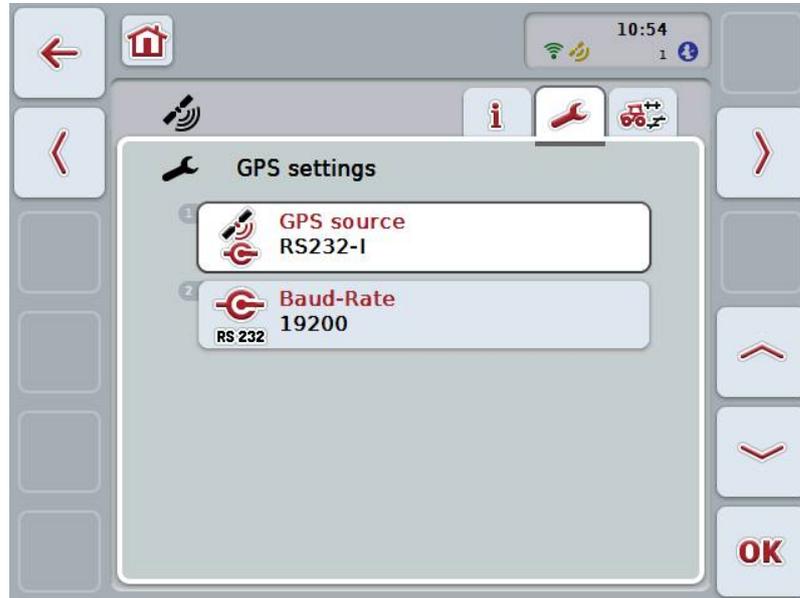


Note

If the GSV signal is not sent, then no satellites can be displayed on the graticule. This has no effect on functionality. The GSV signal is only used to display satellite positions. With many GPS receivers, the GSV signal is deactivated in the as-supplied state.

4.3 GPS settings

This tab displays the GPS source and the baud rate.



You have the following operating options:



Select GPS source



Enter baud rate

i

Connection of a GPS receiver

There are two options for connection of a GPS receiver. If the receiver has a serial output, then this is connected to the RS232-I input of the *terminal* and this input is selected as the source. If the receiver has a CAN-Bus line connection option, then this is connected to the *ISOBUS* and in the CCI.GPS, CAN-Bus must be selected as the source.

4.3.1 Select GPS source

To select the GPS source, proceed as follows:

1. Press on the "GPS source" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ The following selection list opens:

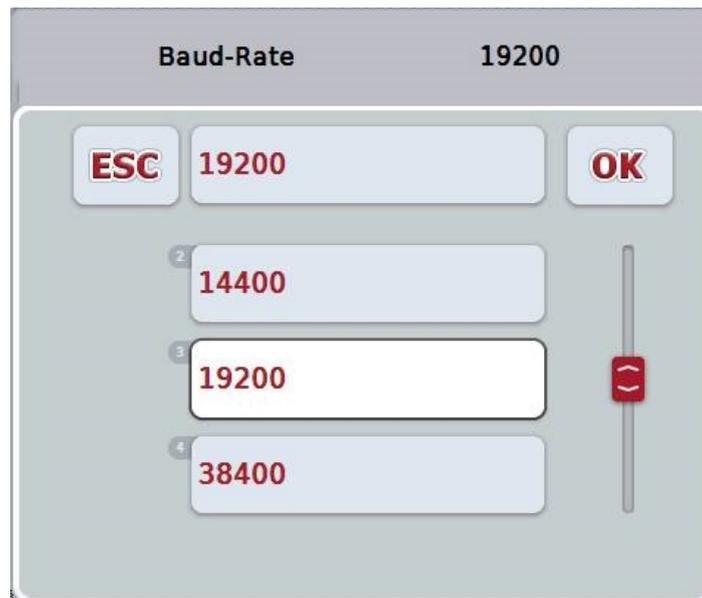


2. Select the desired GPS source in the selection list. To do so, on the touchscreen press on the button with the GPS source or turn the scroll wheel until the button is highlighted in white. The GPS source then appears in the selection window.
3. Confirm your selection with "OK" or press once again on the GPS source highlighted in white.

4.3.2 Select baud rate

To select the baud rate, proceed as follows:

1. Press on the "Baud-Rate" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel. Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
 - The following selection list opens:



2. Select the desired baud rate in the selection list. To do so, on the touchscreen press on the button with the baud rate or turn the scroll wheel until the button is highlighted in white. The baud rate then appears in the selection window.
3. Confirm your selection with "OK" or press once again on the baud rate highlighted in white.



Note

If CAN-Bus is selected as the GPS source, the baud rate is automatically selected, it cannot be set manually.



Note

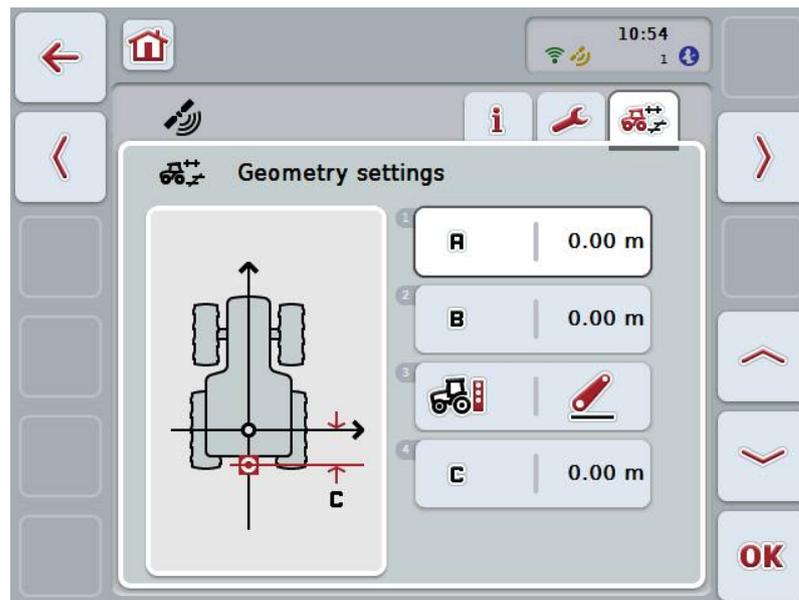
The baud rate of the terminal and the GPS receiver must match, otherwise no GPS data will be received.

i Geometry settings

Through entry of the correct position of the *GPS* receiver on the tractor, *CCI.GPS* is then able to transfer *GPS* position data, referenced to the tractor's reference point (mid-point of the rear axle) to other applications. Consequently the geometries must solely be entered in *CCI.GPS*. Most tractors have several mounting options at the rear. In *CCI.GPS*, the distance from the mid-point of the rear axle to the coupling point is entered separately for four different mountings. So that, for example, the correct distance is used in *CCI.Command*, after coupling up of an implement, the currently used mounting must be selected here. Re-measuring is no longer necessary, if the settings have been carefully made in *CCI.GPS*. (See also chapter **4.3.3 Geometry** from the *CCI.Command* operating instructions).

4.4 Geometry settings

In this tab the position of the GPS receiver on the tractor and the distance to the mounting are displayed and their setting is also possible.

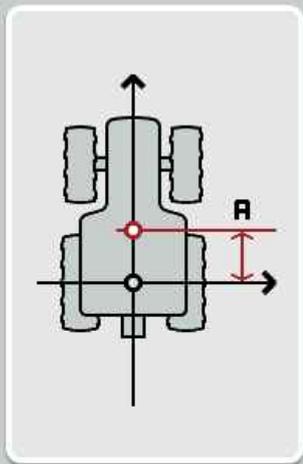


You have the following operating options:

- A** Enter distance A
- B** Enter distance B
-  Select mounting
- C** Enter distance C

i Distance A

Distance A gives the distance between the tractor reference point and the *GPS* receiver in the direction of travel:



For measuring, marking of the mid-point of the rear axle and the position of the receiver on the ground using chalk alongside the tractor and then measurement of this distance is recommended.

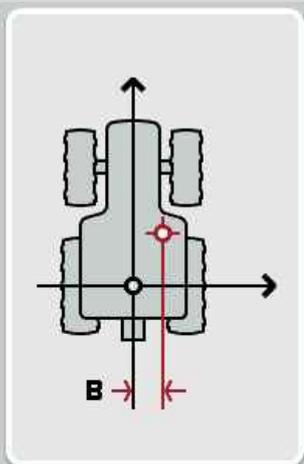
4.4.1 Enter distance A

Proceed as follows to enter distance A:

1. Press on the "A" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the value on the touchscreen using the digit field or the slider.
3. Confirm your entry with "OK".

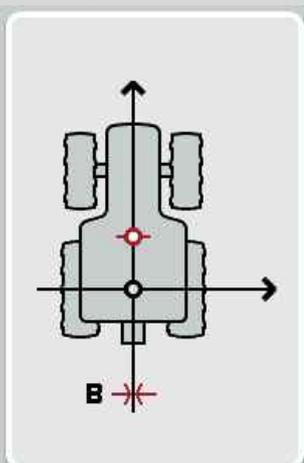
i Distance B

Distance B gives the distance between the tractor reference point and the GPS receiver perpendicular to the direction of travel:



For measuring, marking of the mid-point of the rear axle and the position of the receiver on the ground using chalk to the rear of the tractor and then measurement of this distance is recommended.

Where possible, central mounting of the receiver is recommended:



In this case, distance B can be set equal to 0.00m.

4.4.2 Enter distance B

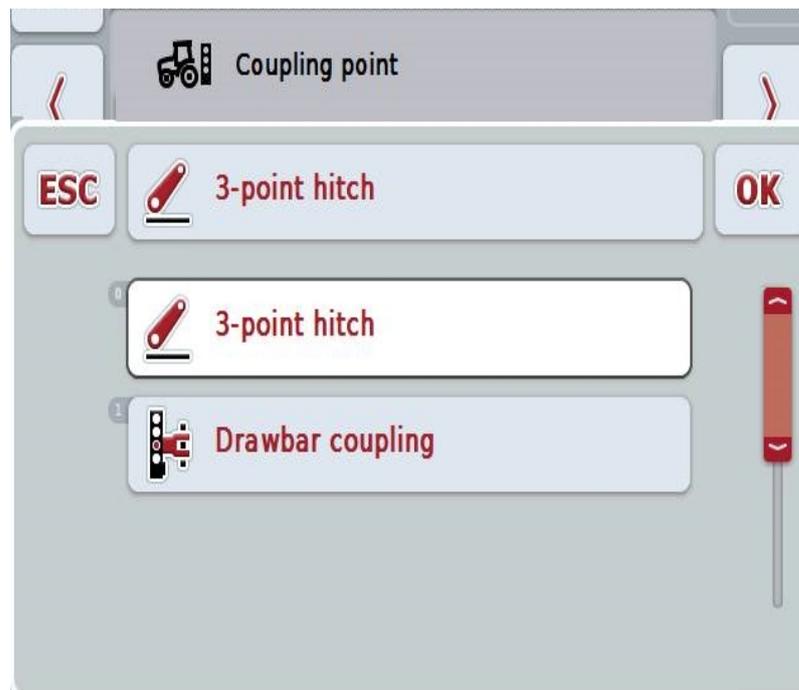
Proceed as follows to enter distance B:

1. Press on the "B" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the value on the touchscreen using the digit field or the slider.
3. Confirm your entry with "OK".

4.4.3 Select mounting

To select the mounting, proceed as follows:

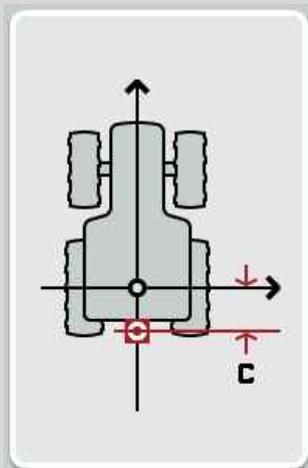
1. Press on the "Mounting" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ The following selection list opens:



2. Select the desired mounting in the selection list. To do so, on the touchscreen press on the button with the mounting or turn the scroll wheel until the button is highlighted in white. The mounting then appears in the selection window.
3. Confirm your selection with "OK" or press once again on the mounting highlighted in white.

i Distance C

Distance C gives the distance between the tractor reference point and the coupling point of the respective mounting in the direction of travel:



For measuring, marking of the mid-point of the rear axle and the position of the coupling point on the ground using chalk alongside the tractor and then measurement of this distance is recommended.

4.4.4 Enter distance C

Proceed as follows to enter distance C:

1. Press on the "C" button on the touchscreen or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the value on the touchscreen using the digit field or the slider.
3. Confirm your entry with "OK".

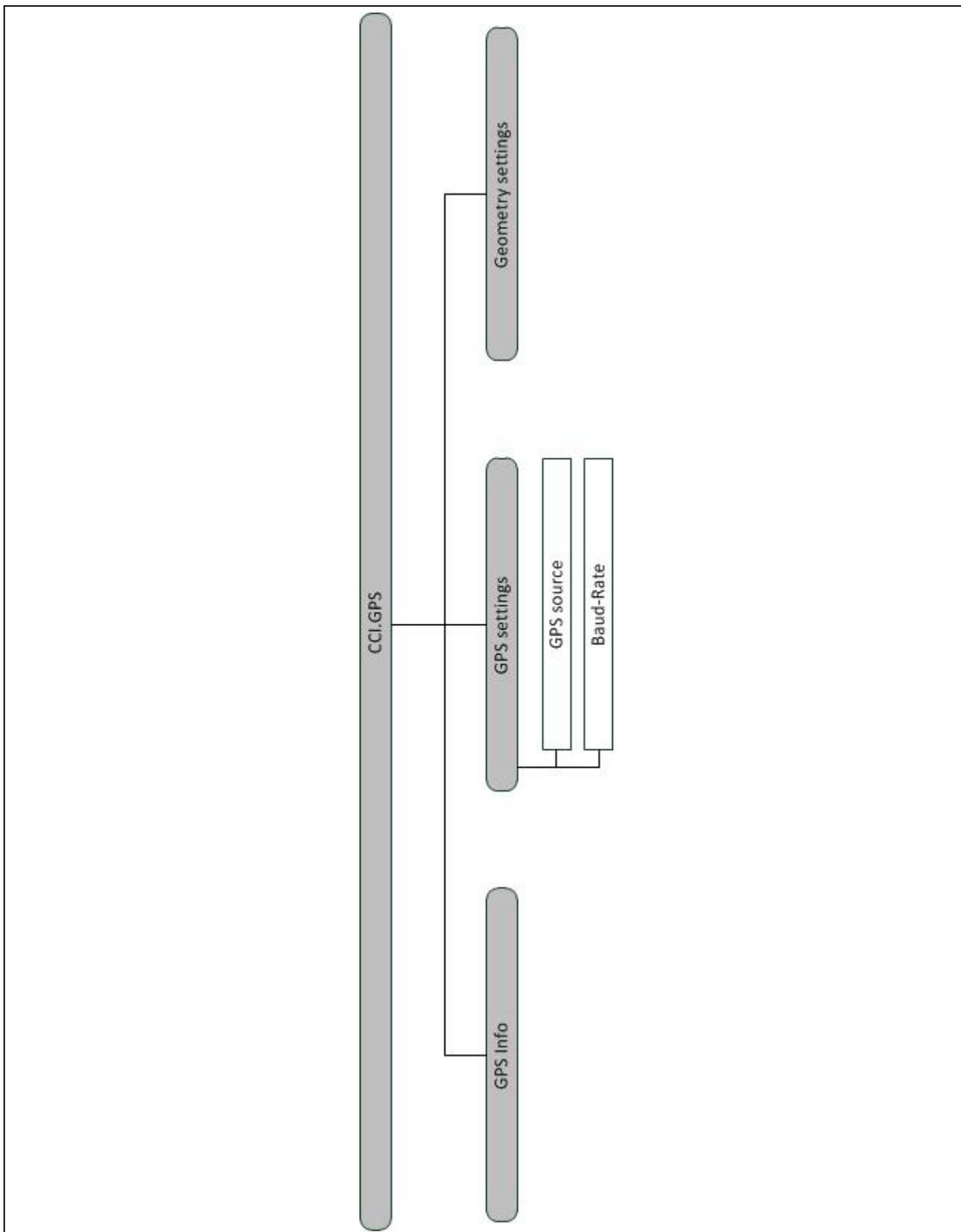
5 Troubleshooting

5.1 Errors during operation

The following overview shows you possible errors when operating with CCI.GPS, their possible cause and how to rectify them:

Error	Possible cause	Rectification/approach
<p>No GPS data are displayed in GPS info.</p>	<ul style="list-style-type: none"> • No power supply at the GPS receiver • GPS receiver not connected to the terminal • Incorrect GPS source selected • Incorrect baud rate set • Incorrect configuration of the receiver • Incorrect assignment of the cable wiring 	<ul style="list-style-type: none"> • Check the power supply to the GPS receiver • Check the connection of the GPS receiver with the terminal. If serial data are to be used, the RS232-I interface must be used. If CAN data are to be used, the receiver must be connected to the CAN-Bus. • Under GPS settings (see chapter 4.3) check whether the GPS source is selected that is currently being used. • When using serial data under GPS settings (see chapter 4.3), set the same baud rate with which your receiver is configured. • Check which configuration is necessary for your application (see for example Chapter 3.2.2.1 of the CCI.Command operating instructions) and compare this with the current configuration of your receiver. To see how the receiver is calibrated, refer to the operating instructions of your GPS receiver. • Check that the wiring assignments of your cable match the assignments given in these instructions (see chapter 3.2.2.1).

6 Menu structure



7 Glossary

CCI	Competence Center ISOBUS e.V.
CCI.Command	GPS track guiding and section control
CCI.GPS	GPS settings and tractor geometry
GPS	G lobal P ositioning S ystem. GPS is a system for satellite-supported position determination.
HDOP	Quality value for GPS signals
ISOBUS	ISO11783 International standard for data transfer between farming implements and devices.
Terminal	CCI 100 or CCI 200 ISOBUS Terminal
Touchscreen	Touch-sensitive screen which is used to operate the terminal.

8 Buttons and icons

	CCI.GPS		
	Select GPS source		Enter baud rate
	Select mounting		Confirm selection or entry
	Enter distance A		Enter distance B
	Enter distance C		GPS info
	GPS settings		Geometry settings
	Adjustable drawbar		Towing hitch ball
	Drawbar coupling		3-point-hitch
	Change to the right		Change to the left
	Change up		Change down

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CCI.Courier

Task data exchange between
farm PC and terminal

Operating instructions

Reference: CCI.Courier v2.0

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Version number: v2.01

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1 Introduction

1.1 About these operating instructions

These Operating Instructions are intended as an introduction to the operation and configuration of *CCI.Courier*. This app is preinstalled on your *ISOBUS* terminal CCI 100/200 and can only be run from there. It is only with knowledge of these operating instructions that accidental misuse can be avoided and fault-free operation ensured.

These operating instructions must be read and understood prior to setting up the software to avoid problems in the application. They must always be stored so that any employee may access them.

1.2 Reference

These Operating Instructions describe the app in its version **CCI.Courier v2.0**. In order to query the version number of the *CCI.Courier* installed on your CCI *ISOBUS* terminal, proceed as follows:

1. Press the home key to enter the main menu.
2. Press the "Settings" button (F1) in the main menu.
3. Select the tab **Info and Diagnostics**.
4. In the tab **Info and Diagnostics** press the button "*Terminal*".
5. Press the "Software" button on the *touchscreen*.

→The version of the *terminal* software component is indicated in the information field that is now displayed.

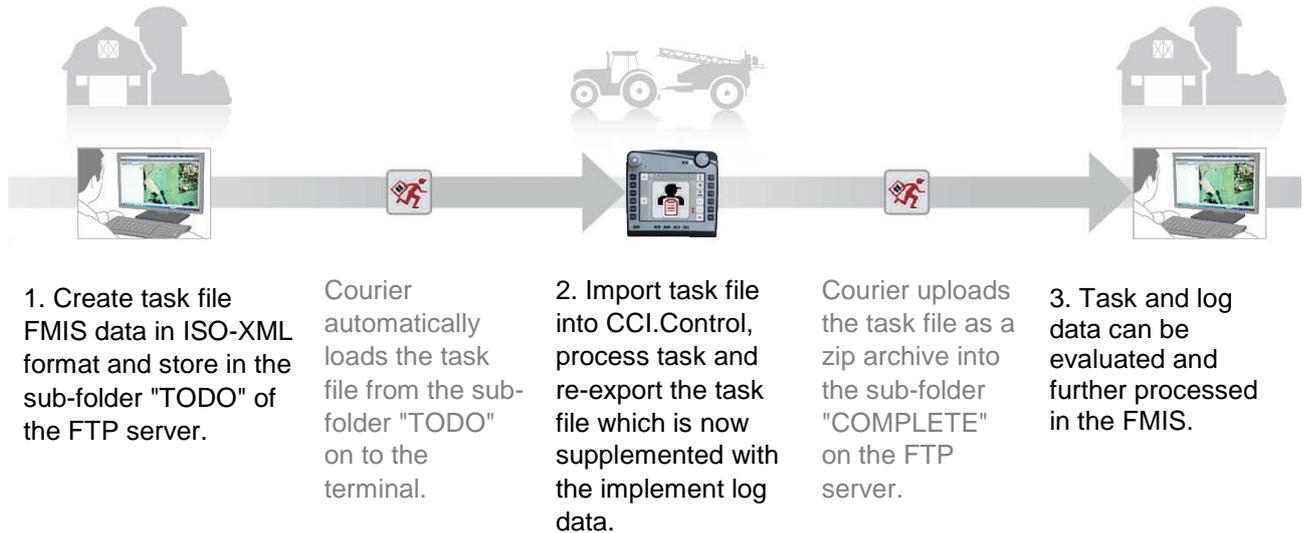
1.3 About CCI.Courier

CCI.Courier enables the convenient and cost-free exchange of task data between farm PC and terminal.

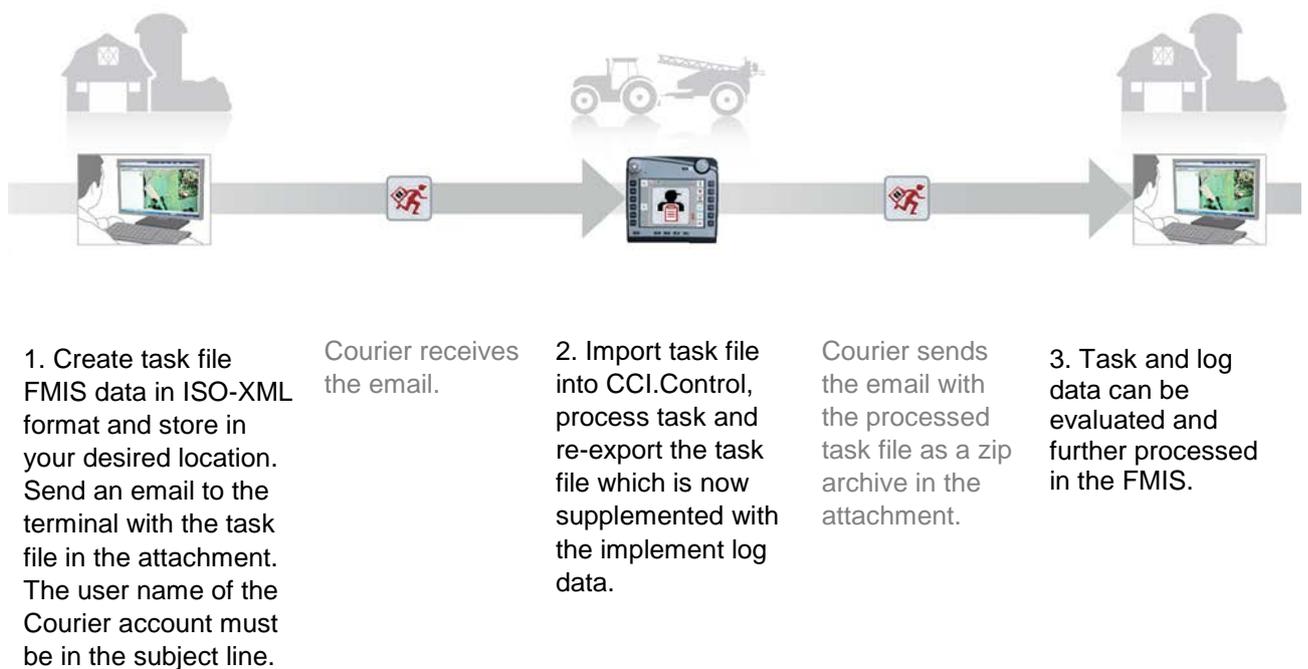
ISOBUS task data in *ISO-XML* format are created with a commercial FMIS, transferred to the CCI.Control terminal on the implement and evaluated after performance of the agricultural practice, evaluated with the log data in the FMIS.

Task data exchange is performed either by email or via an *FTP server*.

1.3.1 Flow chart FTP operating mode



1.3.2 Flow chart Email operating mode



2 Safety

2.1 Identification of indications in the operating instructions

The safety indications in these operating instructions are specially identified:



Warning - General Hazards!

This occupational safety symbol identifies general safety indications the non-observance of which poses a danger for life and limb. Carefully observe the indications regarding occupational safety and exert particular caution in these cases.

**Attention!**

This attention symbol identifies all safety indications which refer to regulations, directives or working procedures which it is essential to observe. Non-observance can entail damage to, or the destruction of, the terminal as well as malfunctions.

**Note**

The note symbol highlights operation tips and other particularly useful information.

3 Commissioning

3.1 Mounting the terminal

For information, please refer to the chapter **5.1 Mounting the terminal** in the **ISOBUS Terminal CCI 100/200** Operating Instructions.

3.2 Connecting the Terminal

3.2.1 Connecting to ISOBUS/power supply

Please refer to the information in the chapter **5.2.1 Connecting to ISOBUS/power supply** of the **ISOBUS Terminal CCI 100/200** Operating Instructions.

3.2.2 Connecting to a GSM modem

To exchange task data, *CCI.Courier* requires a mobile telephony *interface* for online data transfer. A *GSM* modem is required for this and can be ordered using the article number <ArtNummer GSM>. Proceed as follows to connect the *GSM* modem with the *terminal*:

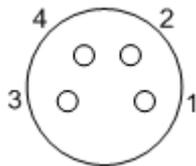
1. Connect the *GSM* modem to *serial interface 2* (RS232-2).



Note

The setting of *serial interface 2* (RS232-2) of the terminal is set in the factory as follows: 115200 Baud, 8N1. There is no need to change this setting.

GSM modem connection



The GSM modem connection to the terminal is executed via the serial interface RS232-2.

Refer to the following set-up for the pin layout:

1. +12V / +24V
2. TxD
3. GND
4. RxD

3.3 Installing the software

CCI.Courier is included in the scope of delivery of the CCI ISOBUS terminal, i.e. installation is neither possible nor required.

In order to be able to operate the software installed ex works a licence must be acquired:

As an option when purchasing the terminal The software is enabled ex works and can be used immediately.

Upgrade In the event of licensing at a later date the software is activated by our service partners.



Note

CCI.Courier must be activated in the settings of your *Terminal* so that the app is visible in the start menu. Proceed as follows:

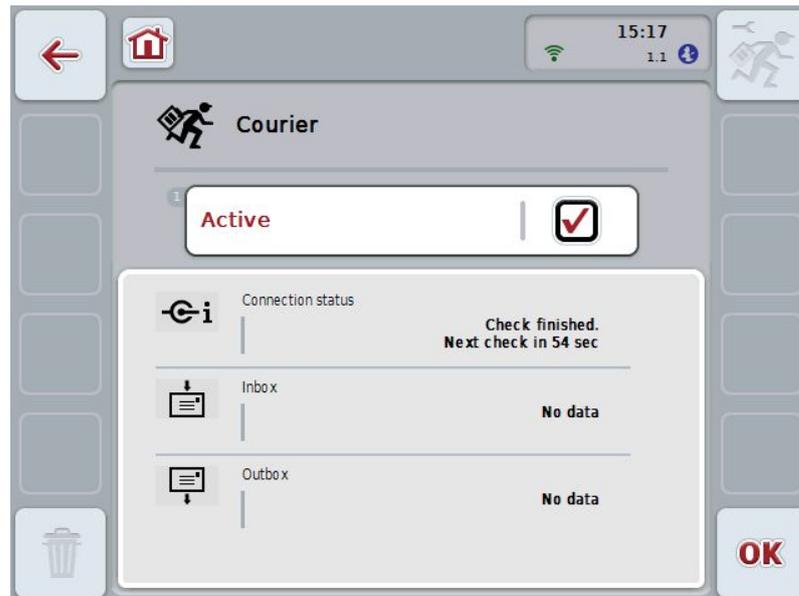
1. Press the "Settings" button (F1) in the main menu of the *touchscreen*.
 2. In the *touchscreen* press on the "System settings" tab or select it using the arrow keys (F8, F2).
 3. On the *touchscreen* press on the "App management" button or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel or confirm with "OK" (F6).
 4. On the *touchscreen* press on the "Courier" button or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel or confirm with "OK" (F6).
 5. Enter the *Boolean* value and confirm with "OK".
 6. Restart the *terminal* to import the changes.
-

4 Operation

4.1 General instructions

CCI.Courier is subdivided into 2 areas: **Main view** and **Settings**. When changing between the two areas, note the following:

If the button "Active" is checked, data exchange is active. No settings can then be made. The "Settings" (F1) button is greyed out:



To be able to access to the **Settings** operating mask, data exchange must be deactivated (see chapter 4.4.1).

4.2 Preparations

4.2.1 FTP

The following preparations must be made for the *FTP* operating mode:

1. On your FTP server create a folder with the same name, that you have given it in the general settings of your Courier account (see chapter 4.5.1.1).
2. Within this folder, create a sub-folder with the name "TODO" and a sub-folder with the name "COMPLETE".

4.2.2 Email

The following preparations must be made for the *Email* operating mode:

1. Open an email account or select an existing email account. This is used by *CCI.Courier* for the receipt and sending of task data.

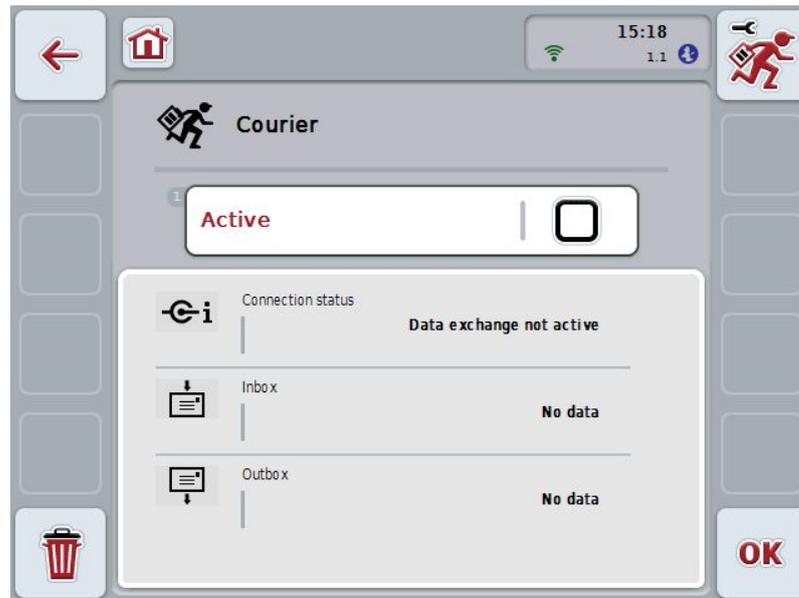
4.3 Program start

CCI.Courier is activated automatically by switching on the terminal. There is direct access to all functions via the main view.

To switch to the main view of CCI.Courier, proceed as follows:

1. Press on the "Courier" button in the main menu of the *terminal* on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

➔ The following main view opens:



After the corresponding settings have been made (see chapter 4.5), further user entries in CCI.Courier are not necessary.

CCI.Courier is subdivided into 2 areas:

4.3.1 Main view

Activation/deactivation of the data exchange (see chapter 4.4.1).
Information on the status of the connection plus incoming and outgoing data

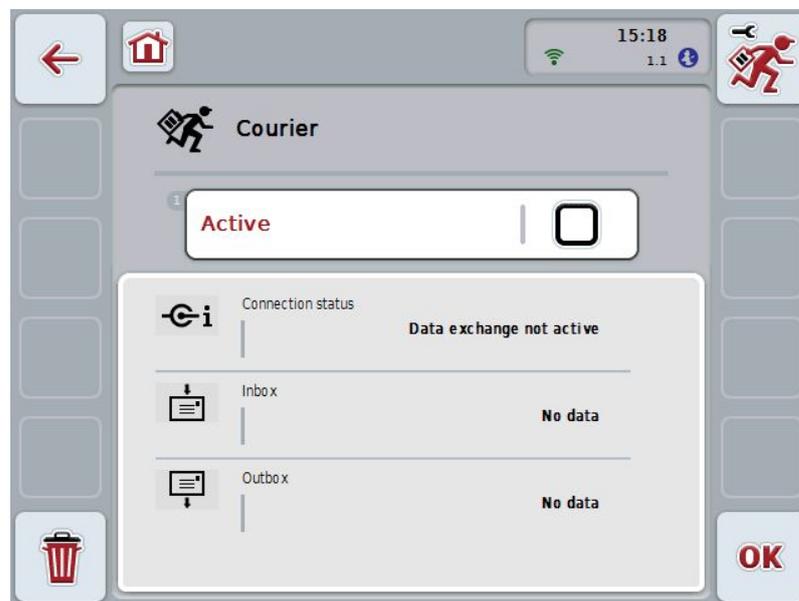
4.3.2 Settings

General settings plus configuration of the *FTP server* and the email account (see chapter 4.5)

4.4 Main view

The **main view** offers an overview of the following points:

- Connection status** Indicates the time interval until the next check for new data packets or whether there is currently an active connection to the *FTP server* or the email account.
- Inbox** Indicates whether new data is available for import to the *terminal* or the status of downloading.
- Outbox** Indicates whether new data is available for export from the *terminal* or the sending status.



You have the following operating options:



Activate/deactivate data exchange



Delete data from the inbox



Switch to settings

In the *Touchscreen* press on the "Settings" button (F1).

More detailed information about Settings can be found in chapter 4.5.

4.4.1 Activate/deactivate data exchange

If data exchange is activated, then *CCI.Courier* automatically performs a data exchange between the *terminal* and farm PC every 60 seconds.

To activate/deactivate data exchange, proceed as follows:

1. Press on the "Data exchange active" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

2. Enter the *Boolean* value.
3. Confirm your entry with "OK".

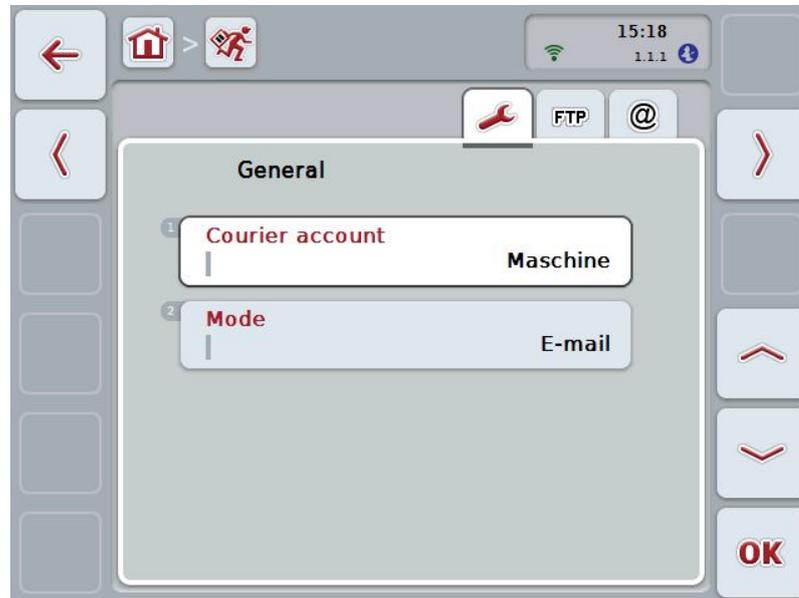
4.4.2 Delete data from the inbox

To delete data from the inbox, proceed as follows:

1. Press the "Delete" button (F12) on the *touchscreen*.
→ A warning opens.
2. Press the "OK" button on the *touchscreen*.

4.5 Settings

Three tabs are shown in **Settings**:



These are organised as follows:

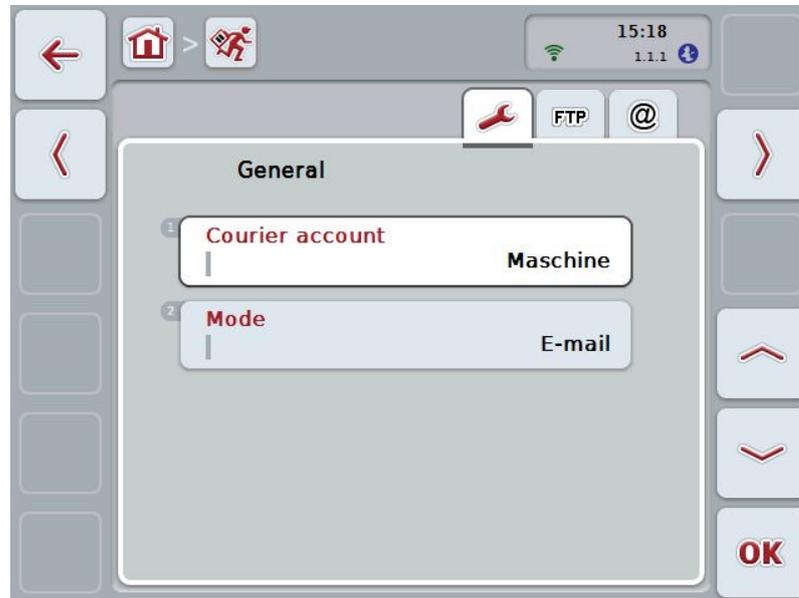
- General:** Enables the creating of a Courier account and the selecting of the operating mode.
- FTP:** The settings for *FTP* operating mode are made here.
- Email:** The settings for Email operating mode are made here.

To switch between tabs, proceed as follows:

1. In the *touchscreen* press on the corresponding tab or select it using the arrow keys (F8, F2).

4.5.1 General

This tab shows the settings for the Courier account and the operating mode.



You have the following operating options:



Enter the Courier account name



Select the operating mode

4.5.1.1 Enter the Courier account name

Enter a name for your Courier account. This is necessary later for the receipt of task data.

To enter a name for your Courier account, proceed as follows:

1. Press on the "Courier account" button on the *touchscreen* or turn the scroll wheel until the corresponding button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
2. Enter the desired name on the *touchscreen* using the keyboard.
3. Confirm your entry with "OK".



Note

The name of your Courier account must comprise only numbers and letters; special characters and blank spaces are not permitted.

4.5.1.2 Select the operating mode

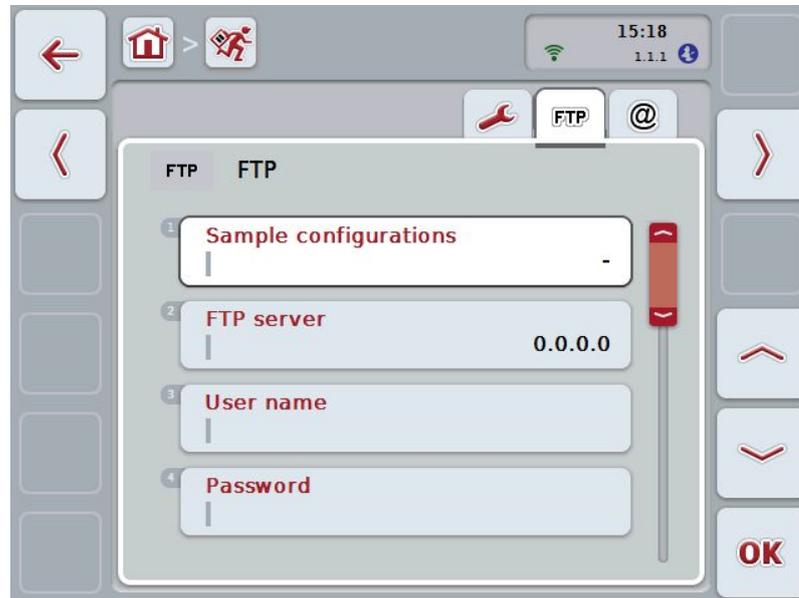
Select the operating mode. The job data can either be sent and received via your *FTP server* or email.

To select the operating mode, proceed as follows:

1. Press on the "Mode" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
→ A selection list opens.
2. Press on the desired operating mode (*FTP* or email) on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

4.5.2 FTP settings

The settings for *FTP* operating mode are made in this tab.



You have the following operating options:



Select sample configuration



Select *FTP* server for data exchange

4.5.2.1.1 Select sample configuration

To select a sample configuration for FTP, proceed as follows:

1. Press on the "Sample configurations" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

→ A selection list opens.

2. Select the desired setting from the list. To do so, on the touchscreen press the button with the sample configuration source or turn the scroll wheel until the desired sample configuration is highlighted in white and then press on the scroll wheel.

4.5.2.2 Select the FTP server for the data exchange

To select an *FTP server* for the data exchange proceed as follows:

1. Press on the "*FTP server*" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.

Enter the *IP address* or *URL* of your *FTP server*. Confirm your entry with "OK" (F6).

2. In the *touchscreen* press on the button "User name" and enter the user name via the keyboard on the *touchscreen* with which *CCI.Courier* should log into the *FTP server*. Confirm your entry with "OK".
3. In the *touchscreen* press on the button "Password" and enter the user name via the keyboard on the *touchscreen* with which *CCI.Courier* should log into the *FTP server*. Then confirm with "OK".
4. In the *Touchscreen* press on button "*FTP mode*" and select either "active" or "passive".
5. In the *Touchscreen* press on button "*Encryption*" and select either "none" or "SSL".

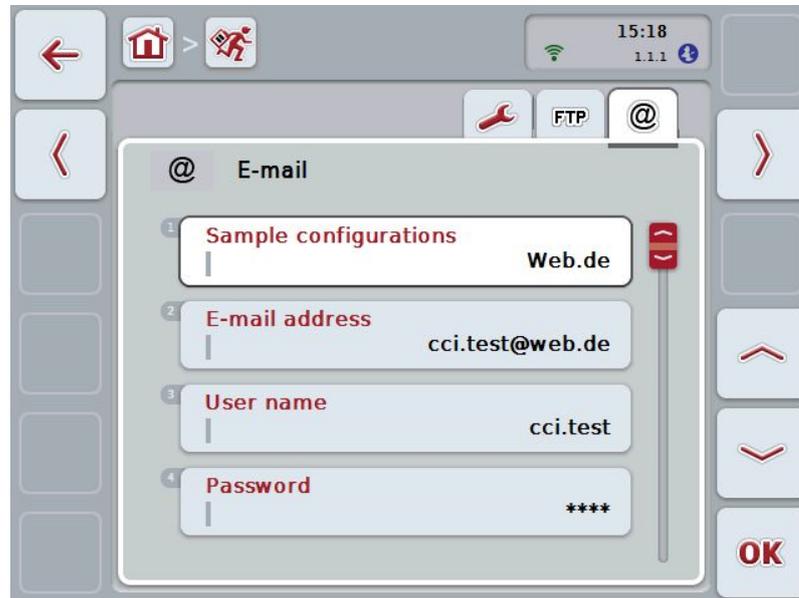


Note

The *IP address* comprises four number with a value between 0-255. The four numbers are separated by a point, e.g. 122.0.13.101. If you don't know the *IP address* of your *FTP server*, please ask your administrator.

4.5.3 Email settings

The settings for Email operating mode are made in this tab.



You have the following operating options:



Select the email account for data exchange

4.5.3.1 Select the email account for data exchange

To select an email account for the data exchange proceed as follows:

1. Press on the "Sample configurations" button on the *touchscreen* or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.
Once the button is highlighted you can, alternatively, also press the "OK" (F6) button.
Select the provider of the email account from *CCI.Courier*. If your provider is not listed, then the corresponding settings must be made manually (steps 5 to 7).
2. In the *Touchscreen* press on the button "E-mail address" and enter the email address of the email account from *CCI.Courier*. Confirm your entry with "OK" (F6).
3. In the *Touchscreen* press on the button "User name" and enter the user name of the email account from *CCI.Courier*. Confirm your entry with "OK".
4. In the *Touchscreen* press on the button "Password" and enter the password of the *CCI.Courier* email account. Confirm your entry with "OK".

Continue with step 8, if you could select the email provider of the email account of *CCI.Courier* in step 2.
5. In the *touchscreen* press on the button "*POP3 server*" and enter the incoming mail server of the *CCI.Courier* email account. Confirm your entry with "OK".
6. In the *touchscreen* press on the button "*SMTP server*" and enter the outbox server of the *CCI.Courier* email account. Confirm your entry with "OK".
7. In the *touchscreen* press on button "Encryption" and select the encryption type.
8. In the *touchscreen* press on the button "Receiver address" and enter the email address, to which *CCI.Courier* should send the completed tasks. Confirm your entry with "OK".



Note

The user name of your email account is composed differently dependent on the provider. For example, the username of a Yahoo! account is made up of the full email address, on the other hand, that of a Gmail account comprises solely the local part, i.e. the part prior to the "@".
Your provider will inform you of the names of your *POP3 server* and *SMTP server*.

5 Troubleshooting

5.1 Terminal errors

The following overview shows possible *terminal* errors and how to solve them:

Error	Possible cause	Rectification
The <i>terminal</i> does not switch on	<i>Terminal</i> is not correctly connected	Check the <i>ISOBUS</i> connection

5.2 Errors during operation

Error	Possible cause	Rectification/approach
Data exchange via <i>FTP</i> or the GSM modem does not function.	Since December 2013, some T-Mobile calling plans have blocked the <i>FTP</i> port.	Calling plan upgrade after prior consultation with T-Mobile.

5.3 Error messages

5.4 Diagnostics

6 Menu structure



7 Glossary

CCI	Competence Center ISOBUS e.V.
CCI.Courier	App for task data exchange between farm PC and terminal
FTP	File Transfer Protocol A data transfer network protocol
FTP server	The server of an FTP network. One or more clients can upload or download files to or from the server.
GSM	Global System for Mobile Communication Standard for full-digital mobile radio networks, which is primarily used for telephony and short messages such as SMS.
IP address	An IP address is an address in computer networks. It is allocated to devices that are connected to the network making them accessible.
ISO-XML	ISOBUS-specific format for task data files based on XML.
ISOBUS	ISO11783 International standard for data transfer between farming implements and devices.
POP3 server	Incoming mail server
Interface	Part of the terminal which is used to communicate with other devices
SMTP server	Mail outbox server
Terminal	CCI 100 or CCI 200 ISOBUS Terminal
Touchscreen	Touch-sensitive screen which is used to operate the terminal.
URL	Uniform Resource Locator
ZIP archive	A compressed data container

8 Buttons and icons



CCI.Courier

Aktiv Activate/deactivate data exchange



Call up settings



Settings cannot be called, because data exchange is active



No data available for deleting



Switch to general settings



Switch to *FTP* settings



Switch to E-mail settings



Delete



Confirm entry or selection



Change to the left



Change down



Change to the right



Change **Change up**

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