# Operating Instructions (EN)

**VT50**
Operating terminal

**CCI.Cam**
Visual implement monitoring

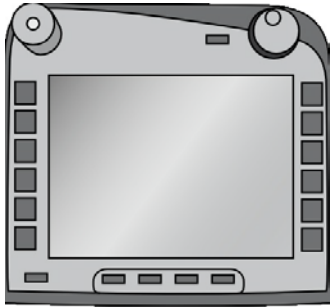**CCI.Tecu**
Tractor data

CCISOBUS

# VT50

Operating terminal

**Operating instructions**

# ISOBUS

# 1 Introduction

These operating instructions are intended as an introduction to the operation and configuration of the VT50 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 VT50

The VT50 is an operation terminal for control of implements; it is available in two versions: Basic and Comfort.

A list of the different components of these two versions can be found in chapter 7.3.

The following CCI.Apps are supplied with the VT50:

| **CCI.Cam (→ Comfort)** | Visual implement monitoring |
|---|---|
| **CCI.TECU** | Tractor data |

# 2   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.

## 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.

## 2.2 Intended use

The terminal is exclusively intended for use on approved 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.

## 2.3 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.

## 2.4 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.

## 2.5  Safety indications for the ISB button ($\rightarrow$ Basic) and stop switch ($\rightarrow$ Comfort)

The connected implement can be made safe by pressing this button. In order to do so, the implement must support the stop function.

▶ **Note**

Under no circumstances does the ISB button/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.

# 3 Structure and function

## 3.1 Overview Basic
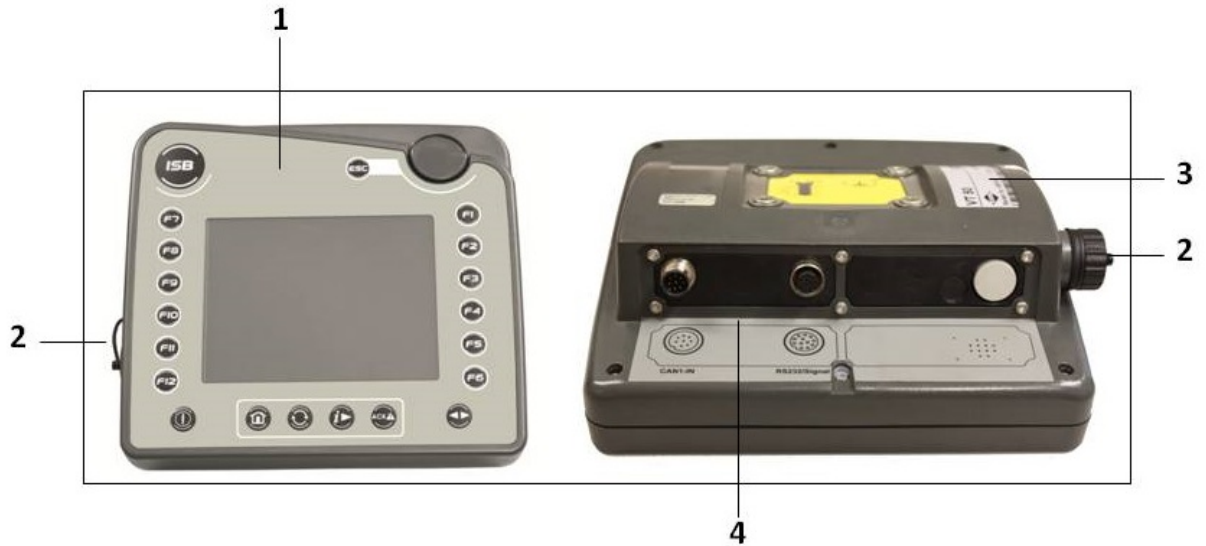


| | | | |
|---|---|---|---|
| 1 | Front view with operating elements | 3 | Nameplate |
| 2 | USB connection (under the cap) | 4 | Interface strip |

## 3.2 Overview Comfort



| | | | |
|---|---|---|---|
| 1 | Front view with operating elements | 3 | Nameplate |
| 2 | USB connection (under the cap) | 4 | Interface strip |

## 3.3 Nameplate

The nameplate features all important terminal information.



1  Serial number
2  Manufacturer item number or
   material number
3  Terminal type (VT50)
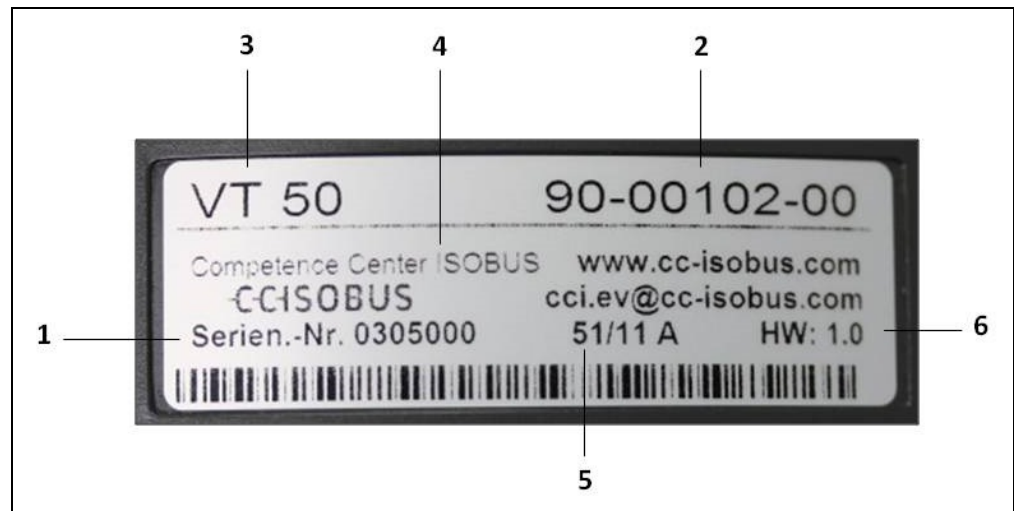
4  Manufacturer information
5  Production date (week and year)
6  Hardware version of the terminal

► **Note**

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

## 3.4   Operating elements

**Basic**

The following operating elements are available on the Basic terminal:
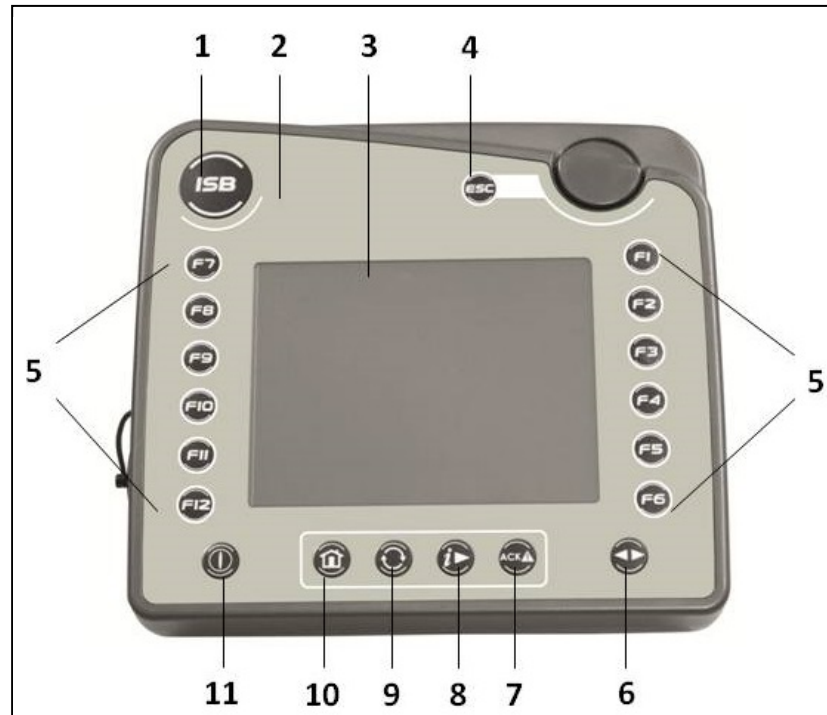


| 1 | ISB button | 7 | Acknowledgement button |
|---|---|---|---|
| 2 | Brightness sensor | 8 | i button |
| 3 | Touchscreen | 9 | Toggle button |
| 4 | ESC key | 10 | Home button |
| 5 | Function keys | 11 | ON/OFF |
| 6 | Softkey swap | | |

**Comfort**

The following operating elements are available on the Comfort terminal:
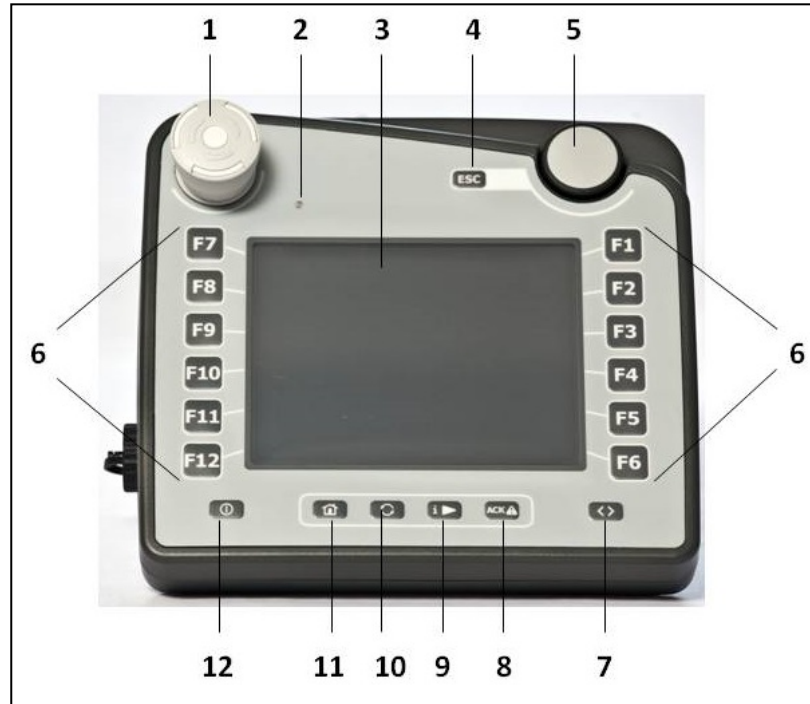


| | | | |
|---|---|---|---|
| 1 | "Stop" switch | 7 | Softkey swap |
| 2 | Brightness sensor | 8 | Acknowledgement button |
| 3 | Touchscreen | 9 | i button |
| 4 | ESC key | 10 | Toggle button |
| 5 | Scroll wheel | 11 | Home button |
| 6 | Function keys | 12 | ON/OFF |

### 3.4.1   ISB button  (→ Basic)

If the terminal ISB button is pressed, a stop command is sent to the implement. Hence in a danger situation the corresponding automatic measures can be initiated.

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

Not all implements support the stop function. As a result, an implement may continue to operate after the ISB button 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.

### 3.4.2   Stop switch (→ Comfort)

If the terminal stop switch, which is designed as a palm button, is pressed, a stop command is sent to the implement. Hence in a danger situation the corresponding automatic measures can be initiated.

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

Not all 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.

### 3.4.3    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, on the display on the operating screen, there is an ESC button operable via the touchscreen. The function of button and push button is identical.

### 3.4.4    Scroll wheel (→ Comfort)

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 | • 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 | • In an input dialogue for numerical values decreases the value. |
| | • In a list changes to the previous element. |
| Pressing the scroll wheel | • The changed value in an input dialogue is adopted. |
| | • A highlighted list element is selected. |

### 3.4.5    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.

### 3.4.6    Acknowledgement button

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

### 3.4.7    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 5.3.2).

### 3.4.8    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 5.3.1) 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.

### 3.4.9    Home button

By pressing the 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.

### 3.4.10   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.

## 3.5 Interfaces

**Basic**

The interface bar is on the rear of the terminal.
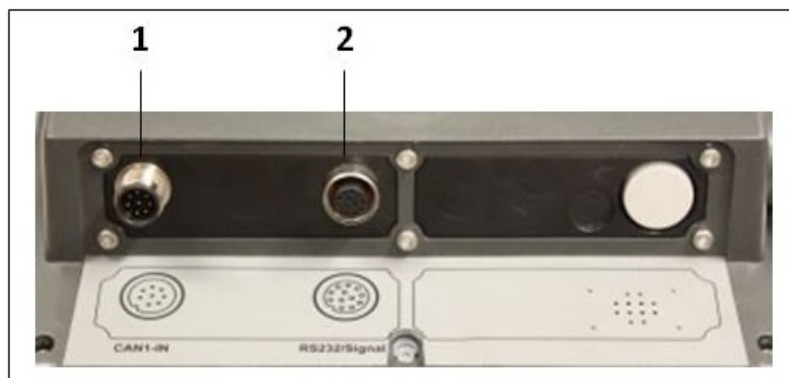


1 CAN1-IN
2 RS232 and signal

**Comfort**

The interface bar is on the rear of the terminal.
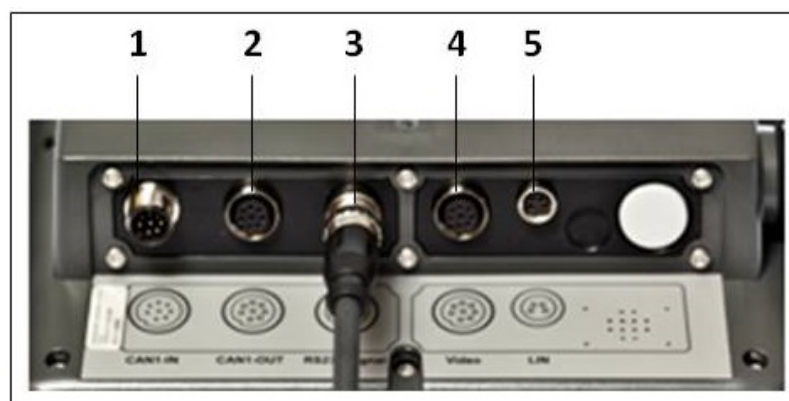


| | | |
|---|---|---|
| 1 CAN1-IN | 4 Video | |
| 2 CAN1-OUT | 5 LIN | |
| 3 2x RS232 and signal | | |

# 4 Commissioning

## 4.1 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.

## 4.2 Connecting the Terminal

### 4.2.1 Connecting to the power supply

**Basic**

A suitable cable set is required for connection to the power supply via the job computer, which can be ordered by providing article number <ArtNummer>.

Proceed as follows to connect the terminal to the power supply:

1. Connect the M12 connector on the cable set to the "CAN1-IN" interface of the terminal.



**Comfort**

A suitable cable set is required for connection to the power supply via the job computer, which can be ordered by providing article number <ArtNummer>.

Proceed as follows to connect the terminal to the power supply:

1. Connect both M12 connectors on the cable set to the "CAN1-IN" and "CAN1-OUT" interfaces of the terminal.

# 5   Operation

## 5.1   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.

## 5.2   Entering values

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

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

### 5.2.1   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.

**5.2.2    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
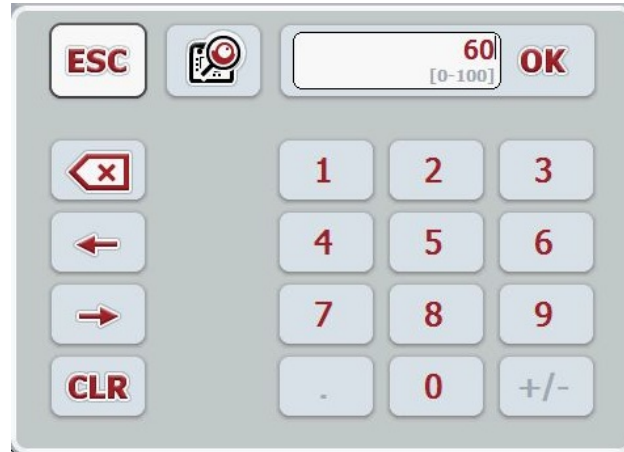


•        Scroll wheel (→ Comfort)



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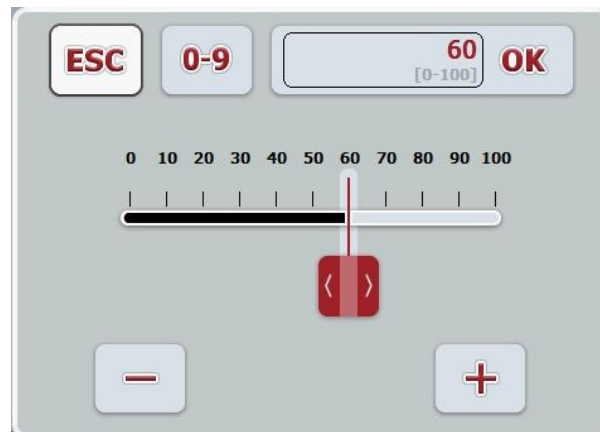
The following buttons can be used to change between the various formats of the input dialogue for numerical values:

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 you can, alternatively, 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** <br> **(→ Comfort)** | Enter the value by turning the scroll wheel. |
| **Slider** | Drag the slider or press the + and - buttons until the desired value is set. <br><br> Alternatively, you can 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.

### 5.2.3 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 enter the value by turning the scroll wheel.

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

### 5.2.4 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 lists displayed 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 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 you can, alternatively, 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.

Setting up the terminal

### 5.2.5 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 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 8.

**5.2.6    Settings**

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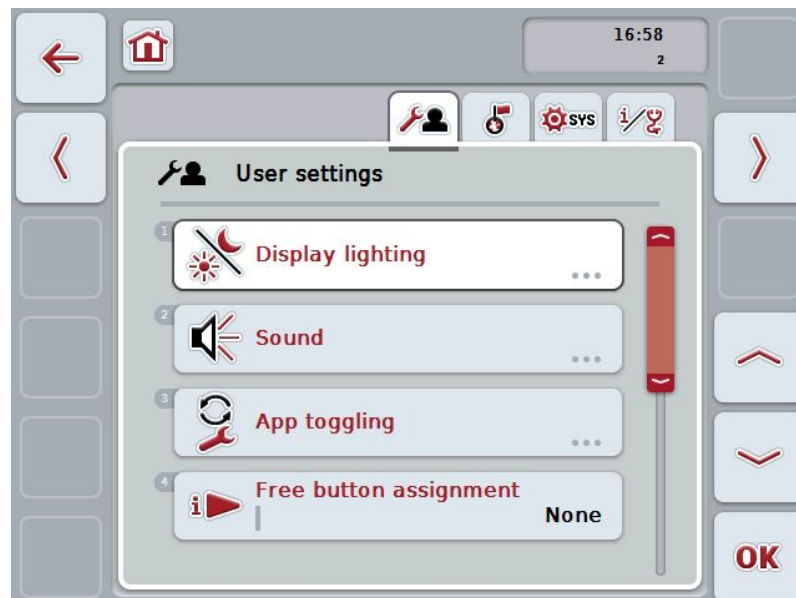


These are organised as follows:

| | |
|---|---|
| **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, country, system of units, and decimal symbol. |
| **System settings:** | Offers setting options for date and time, app management, CAN, 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).

## 5.3 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 5.3.4.

**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 5.3.5.

**App toggling**

**Free button assignment**

**Activating/deactivating button selection by scroll wheel**

### 5.3.1 App toggling

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

1. To do so, 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".

### 5.3.2 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 lighting mode.

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

### 5.3.3 Activating/deactivating button selection by scroll wheel (→ Comfort)

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.

### 5.3.4 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:
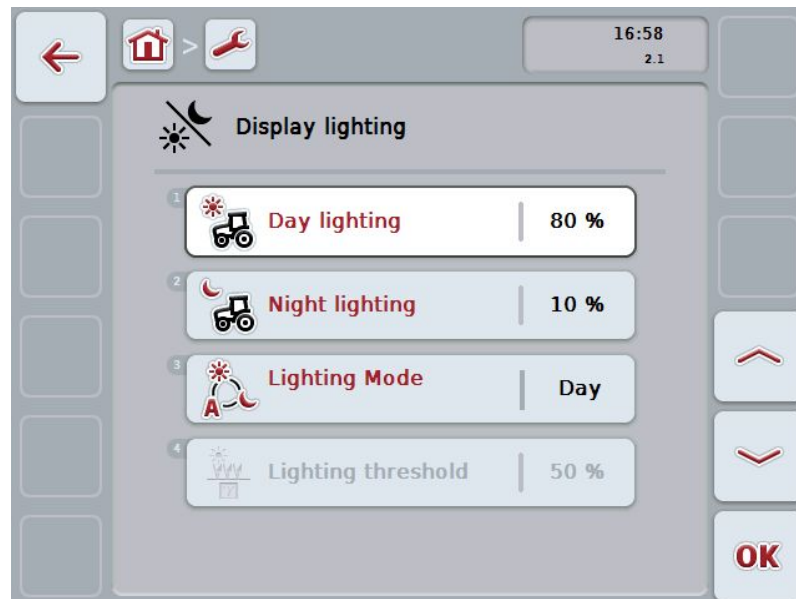


You have the following operating options:

 **Enter Day lighting**

 **Enter Night lighting**

 **Select Lighting Mode**

 **Enter Lighting threshold**

### 5.3.4.1 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%.

### 5.3.4.2 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%.

**5.3.4.3    Select Lighting Mode**

To select a lighting 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.

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

**5.3.4.3.1    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%.

### 5.3.5 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:
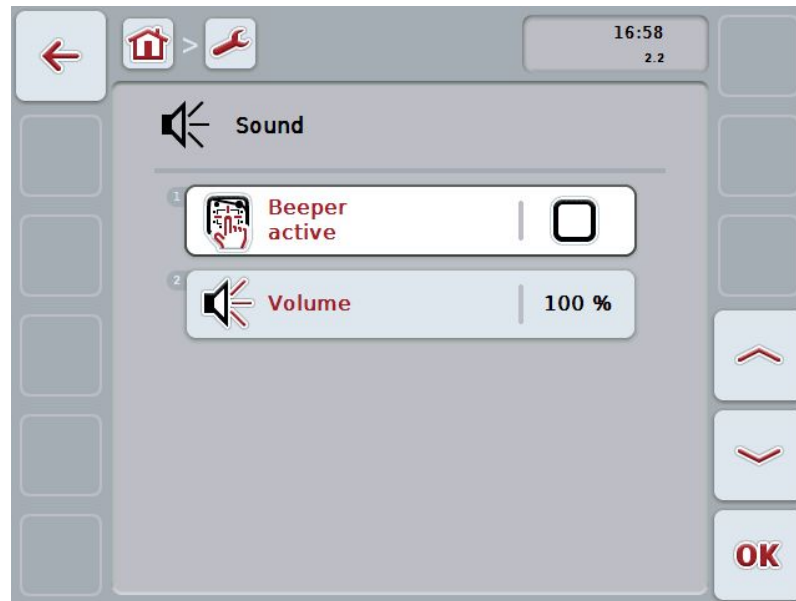


You have the following operating options:

 **Activate/deactivate beepers**

 **Enter volume**

#### 5.3.5.1 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".

#### 5.3.5.2 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%.

**5.3.6    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 5.3.6.3.

**Select decimal symbol**

### 5.3.6.1 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.

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

### 5.3.6.2 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.

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

### 5.3.6.3 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.

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

**5.3.6.4 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.

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

### 5.3.7 System settings

In the **System Settings** tab it is possible to adjust the terminal to match your personal requirements.
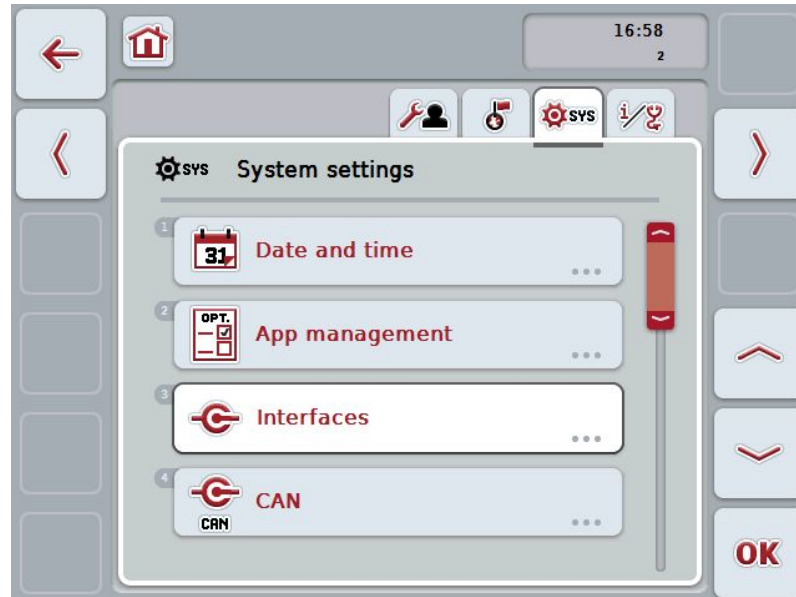
You have the following operating options:

**Change to Date and Time**

Press the "Date and Time" button on the touch screen.

→ The **Date and Time** mask opens.

You can find more detailed information about Date and Time in chapter 5.3.7.3.

**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 5.3.7.4.

**Interfaces**

**CAN**

**Perform touch calibration**

**Call service area**

**5.3.7.1   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.

**5.3.7.2   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.

#### 5.3.7.3 Date and Time

To change Date and time settings proceed as follows:

1. On the touchscreen press on the "Date and Time" button 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).

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

   →  The following mask opens:
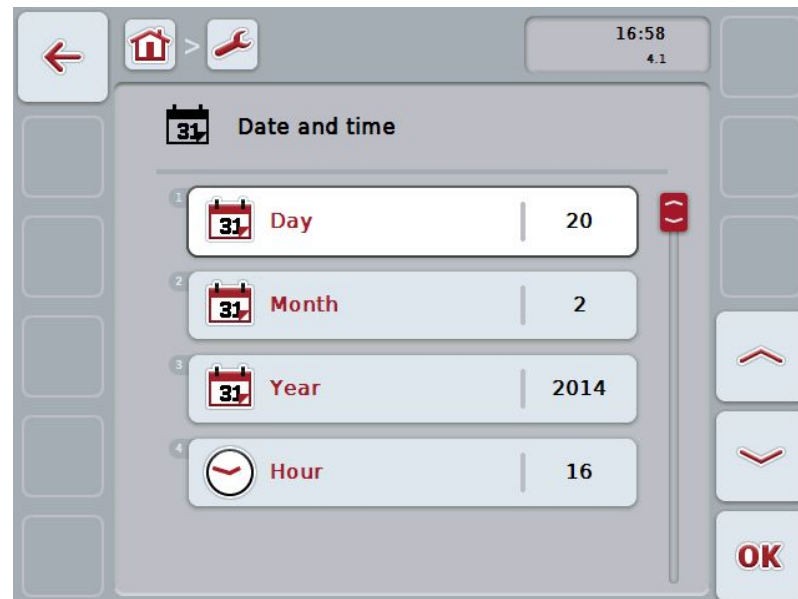
You have the following operating options:

|  | |
|---|---|
| 🗓 31 | **Enter date** |
| 🕐 | **Enter time** |
| 🗓 31 dd.mm.yyyy | **Select date format** |
| 🕐 12/24 | **Select time format** |
| 📡 GPS | **Activate/deactivate GPS update** |
| 🕐🌐 | **Enter time zone** |
| 🕐 | **Activate/deactivate summer/winter time** |

⊙
AM/PM     **Select am/pm**

### 5.3.7.3.1   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".

### 5.3.7.3.2   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".

### 5.3.7.3.3   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.

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

**5.3.7.3.4   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.

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

**5.3.7.3.5   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".

**5.3.7.3.6   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".

##### 5.3.7.3.7 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".

##### 5.3.7.3.8 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.

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

▶ **Note**

This selection is only available if "12h" has been selected for the time format (see chapter 5.3.7.3.4).

**5.3.7.4  App management**

To switch to app management, proceed as follows:

1.  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 on the "OK" button (F6).

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

    → The following mask opens:
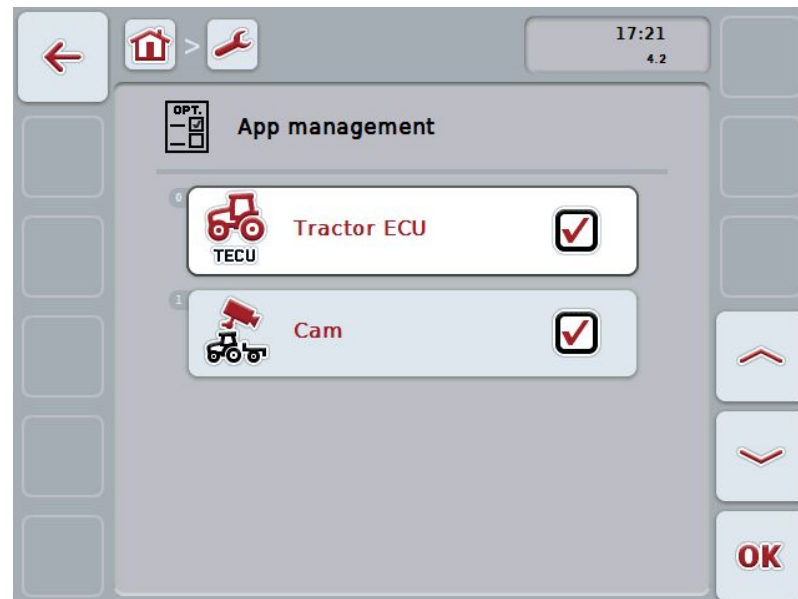


You have the following operating options:



**Activate/deactivate apps**

**5.3.7.4.1   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.

### 5.3.7.5 Interfaces

Not available in this version.

### 5.3.7.6 CAN

This setting is not necessary for the correct operation of the terminal.

!
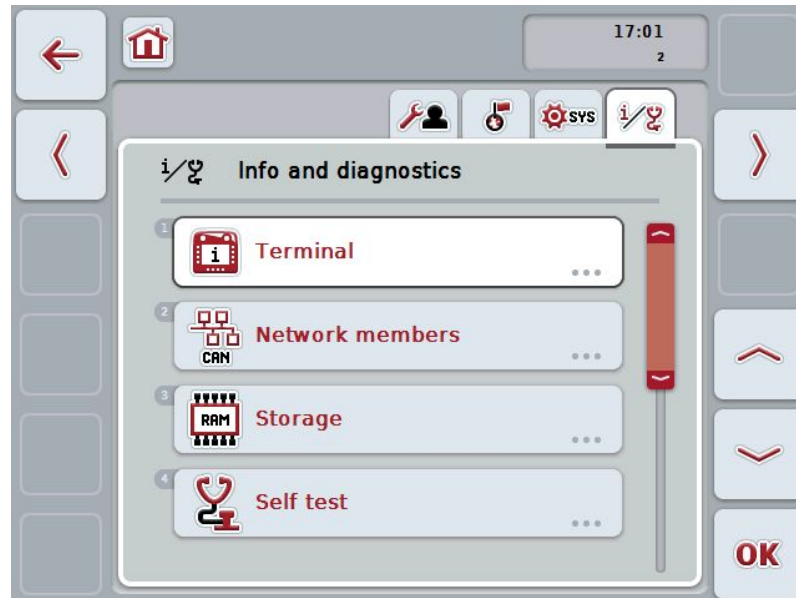
**Attention!**
Default setting maintained. The setting should not be changed.

### 5.3.8 Info and Diagnostics

In the menu **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 about the connected implements 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 5.3.8.2.

**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 5.3.8.3.

**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 0.

**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 5.3.8.5.

⚠ **Display error memory**

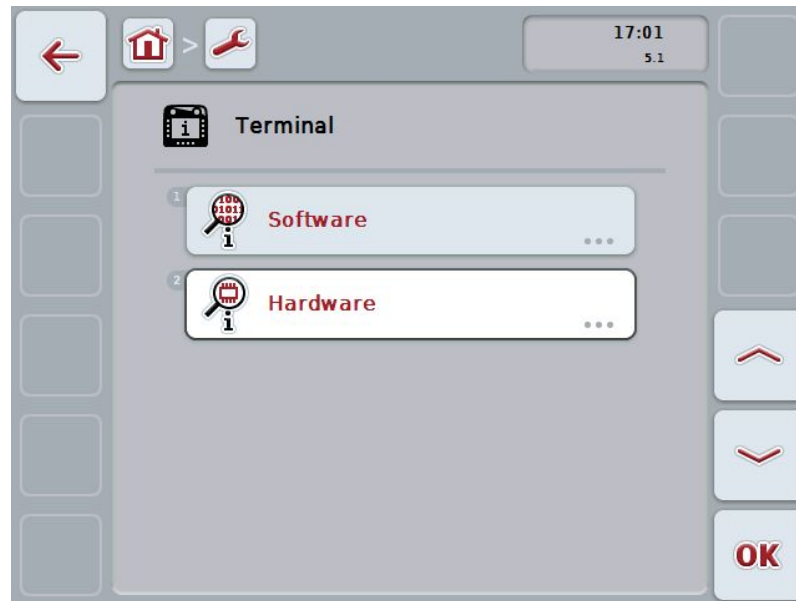**5.3.8.1    Display error memory**

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

**CC-ISOBUS**

#### 5.3.8.2 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**

**5.3.8.2.1    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

**5.3.8.2.2    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

**5.3.8.3  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:
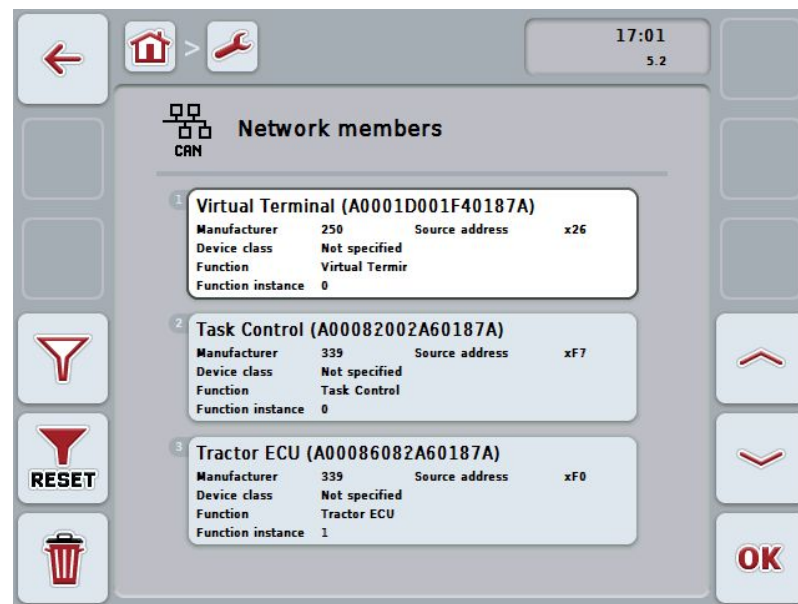


▶ **Note**

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** |

**5.3.8.3.1 Show information**

1. To view detailed information about one of the network members 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 network member:
      - Manufacturer
      - Device Class
      - Function
      - Function Instance
      - Source Address

**5.3.8.3.2 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.

**5.3.8.3.3 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.

**5.3.8.3.4 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.

**5.3.8.3.5    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 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.

→    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.

**5.3.8.4 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** |

### 5.3.8.4.1 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.

### 5.3.8.4.2 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.

### 5.3.8.4.3 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.

#### 5.3.8.5 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:
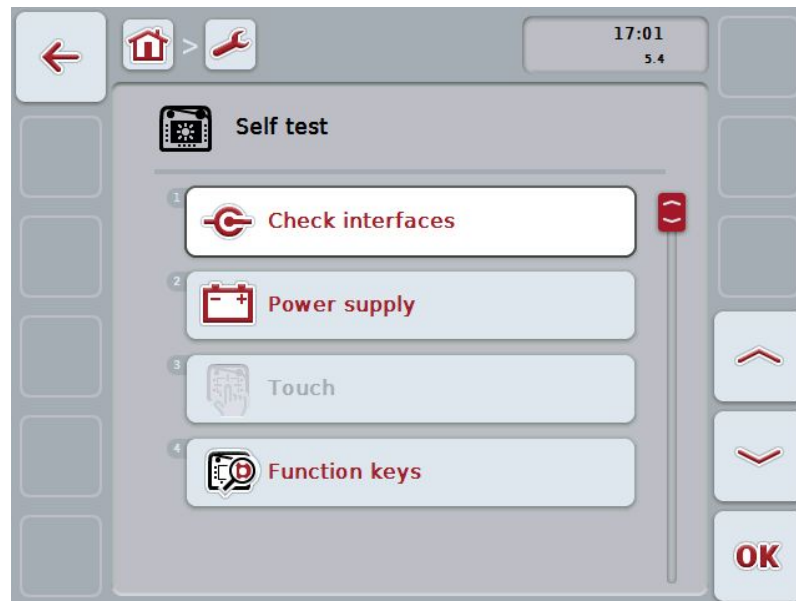


You have the following operating options:

| | |
|---|---|
|  | **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**

Press the "CAN trace" button on the touchscreen.

→   The **CAN trace** mask opens.

More detailed information on CAN trace can be consulted in chapter 5.3.8.5.10.

### 5.3.8.5.1   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.

### 5.3.8.5.2   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.

**5.3.8.5.3   Test touch**

Not available in this version.

**5.3.8.5.4   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.

**5.3.8.5.5   Test scroll wheel (→ Comfort)**

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.

**5.3.8.5.6   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.

#### 5.3.8.5.7 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.

#### 5.3.8.5.8 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).

#### 5.3.8.5.9 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.

**5.3.8.5.10  CAN trace**

To change to 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:
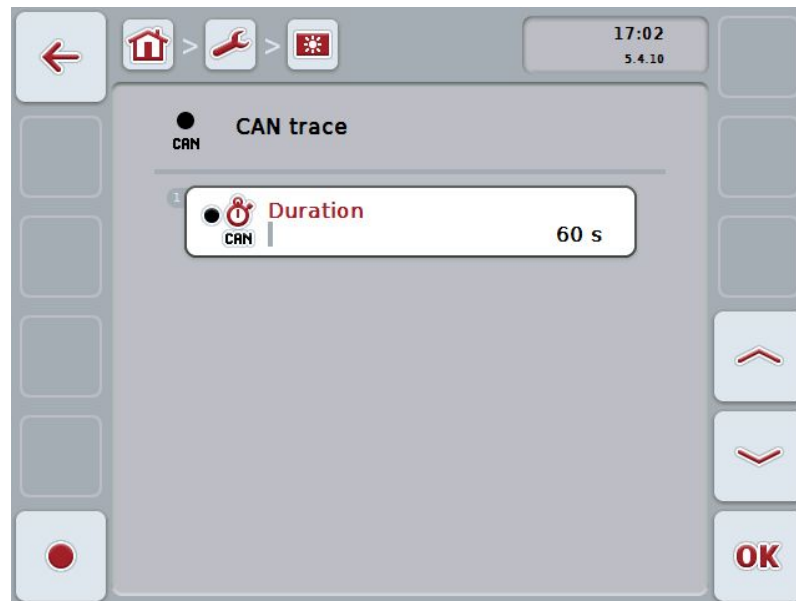


You have the following operating options:

**Enter the CAN trace duration**

**Start recording**

**5.3.8.5.10.1  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.

**5.3.8.5.11  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 5.3.8.5.10.1).

### 5.3.8.5.12 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 application that is otherwise difficult to describe in words to a service employee.

▶ **Note**

Screenshots can only be created with a flash drive inserted.



To take a screenshot, proceed as follows:

1. Unscrew the cap in the clockwise direction.
2. Insert a flash drive.
3. Press on the softkey until an acoustic signal sounds.
   → The screenshot is automatically saved on the flash drive.

# 6 Troubleshooting

## 6.1 Terminal errors

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

| Error | Possible cause | Rectification |
|---|---|---|
| The terminal does not switch on | • Terminal is not correctly connected<br><br>• Ignition is not switched on | • Check ISOBUS connection<br><br>• Start tractor |
| The software of the connected implement is not displayed | • Bus terminator missing<br><br>• Software is loaded, however is not displayed<br><br>• Connection error when uploading the software | • Check resistance<br><br>• Check whether the software can be manually started from the terminal main menu<br><br>• Check physical connection<br>• Contact the implement manufacturer's customer service |

## 6.2 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. | • Flash drive is not inserted<br><br>• Update file is not available on the flash drive | • Insert flash drive<br><br>• 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. |
| Program cannot find a suitable update file. | • Flash drive is not inserted<br><br>• Update file is not available on the flash drive | • Insert flash drive<br><br>• 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.

## 6.3 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:
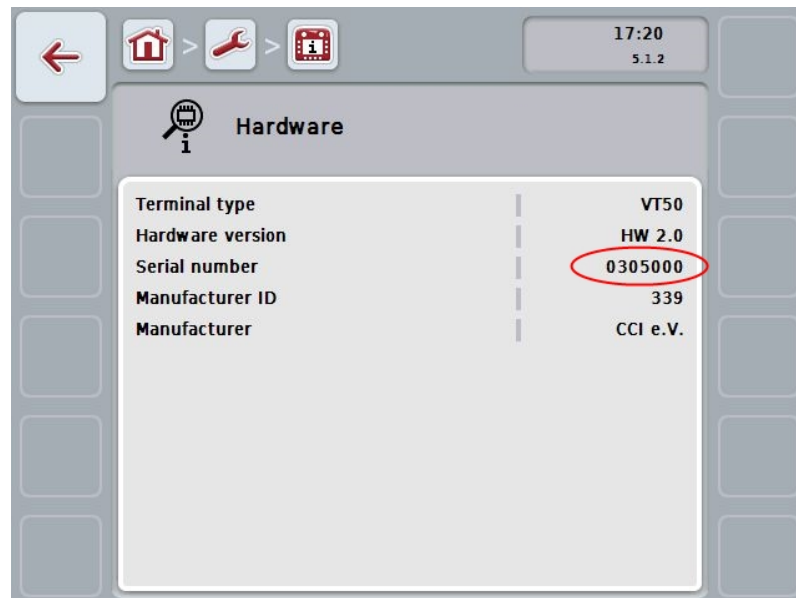
# 7   Technical Information

## 7.1   Mechanical Values

| | |
|---|---|
| **Dimensions (WxHxD) [mm]** | 200x 195 x 65 |
| **Casing Type** | Plastic housing |
| **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) |

## 7.2   Electronics

| | |
|---|---|
| **Supply voltage [V]**<br>**Permitted Range [V]** | 12<br>9...30 |
| **Power consumption (at 13.8V)** | 0.350A |
| **Polarity Protection** | Up to 30V |
| **Display** | 5.6'' TFT |
| **Display Resolution [px]** | 640 x 480 |
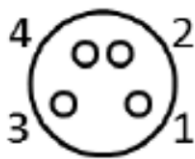
## 7.3   Accessories VT50 Basic and Comfort

| Component | Basic | Comfort |
|---|:---:|:---:|
| **Scroll wheel** | - | ● |
| **Stop switch** | - | ● |
| **ISB button** | ● | - |
| **Apps** | CCI.TECU | CCI.Cam<br>CCI.TECU |

● Component available

- Component not available

## 7.4 Interfaces

| CAN1-IN | M12x1; 8-pin connector | | 1. Supply voltage<br>2. EMERGENCY STOP input<br>3. Switch on signal for ECU<br>4. EMERGENCY STOP supply<br>5. CAN Low<br>6. GND<br>7. CAN High<br>8. Shielding decoupled from earth |
|---|---|---|---|
| **CAN1-OUT**<br>**(Comfort only)** | M12x1; 8-pin connector | | 1. Supply voltage<br>2. EMERGENCY STOP output<br>3. Switch on signal for ECU<br>4. EMERGENCY STOP supply<br>5. CAN Low<br>6. GND<br>7. CAN High<br>8. Shielding decoupled from earth |
| **2x RS232 and signal** | Async. max.115 Kbps/ Signal connector ISO 11786<br>M12x1, 12-pin socket | | 1. Supply voltage<br>2. Earth<br>3. ISO11786 "PTO speed"<br>4. ISO11786 "Hoisting gear position"<br>5. ISO11786 "Wheel Speed"<br>6. Direction of travel<br>7. ISO11786 "Ground Speed"<br>8. RS232-1 TxD (Transmit)<br>9. RS232-1 RxD (Receive)<br>10. Ignition signal (terminal 15)<br>11. RS232-2 TxD (Transmit)<br>12. RS232-2 RxD (Receive) |
| **Video**<br>**(Comfort only)** | M12x1; 8-pin socket | | 1. Video signal<br>2. EIA RS-485 B<br>3. EIA RS-485 A<br>4. Supply voltage<br>5. EIA RS-485 A = jumpered 3 pin<br>6. Supply voltage<br>7. Supply earth<br>8. Shielding decoupled from earth |

| **LIN**<br>**(Comfort only)** | M8x1; 4-pin socket | | 1. Supply voltage<br>2. Free<br>3. Earth<br>4. LIN bus<br>1. |
|---|---|---|---|
| **USB** | USB Host 2.0 | | 1. Supply voltage<br>2. Data -<br>3. Data +<br>1. Earth |

- Pin
- Socket

# 8 Menu structure

Main Menu

**CCI.Apps**

**Settings**

**Info and diagnostics**
- Terminal
- Software
- Hardware
- Network members
- Storage
- RAM
- Internal storage
- Flash drive
- Self test
- Error memory

**System settings**
- Date and time
- Day
- Month
- Year
- Hour
- Minute
- Date format
- Time format
- GPS update
- App management
- Interfaces
- CAN
- Primary UT
- Position of terminal
- Touch calibration
- Service

**Country settings**
- Language
- Keyboard
- Units
- System of units
- Distance
- Area
- Volume
- Mass
- Temperature
- Pressure
- Force
- Decimal symbol

**User settings**
- Display lighting
- Day lighting
- Night lighting
- Lighting Mode
- Lighting threshold
- Sound
- Beeper active
- Volume
- App toggling
- System menu
- Control
- Tractor ECU
- Cam
- Command
- GPS
- Courier
- Free button assignment
- Button selection by scroll wheel

# 9   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 data 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.

# 10 Contact Addresses

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

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

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

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

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

# 11 Glossary

| | |
|---|---|
| → **Comfort** | This component is only available with the VT50 Comfort. |
| → **Basic** | This component is only available with the VT50 Basic. |
| **ACK** | Acknowledge |
| **Basic** | VT50 Basic<br>Distributed by: KUHN S.A. und RAUCH Landmaschinenfabrik GmbH |
| **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. |
| **Comfort** | VT50 Comfort<br>Distributed by: Grimme Landmaschinenfabrik GmbH & Co. KG, LEMKEN GmbH & Co. KG and Maschinenfabrik Bernard KRONE GmbH |
| **ESC** | Escape = exit, here: cancel/interrupt a function |
| **Context menu** | Graphical user interface<br>Facilitates editing, copying, deleting or adding of data. |
| **M12 connector** | Standard plug |
| **Network member** | A device that is connected to the bus and communicates via this system. |
| **Object pool** | Data record that is transferred from the 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. |
| **Touchscreen** | Touch-sensitive screen which is used to operate the terminal. |
| **Tractor ECU** | Also TECU. Provides the implement with 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. |
| **VT50** | Operating terminal for implement control |

# 12 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** | i button |
| | Day lighting | | Night lighting |
| | Lighting Mode | | Lighting threshold/ Brightness sensor |
| | Beeper/Test touchscreen | | Language |
| | Keyboard | | Units |
| **1,23** | Decimal symbol | **31** | Date |
| **OPT.** | App management | | Testing Interfaces |
| **CAN** | CAN | **SERVICE** | Service menu |
| | Time | **31 dd.mm. yyyy** | Date format |
| **12/24** | Time format | **GPS** | GPS update |
| | Timezone | **AM/PM** | AM/PM |
| | Terminal information | **CAN** | Network member |
| **RAM** | 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 | |

# 13 Index

# CCI.Cam

Visual implement monitoring

**Operating instructions**

Reference: CCI.Cam v4

CCISOBUS

**CCISOBUS**

# 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
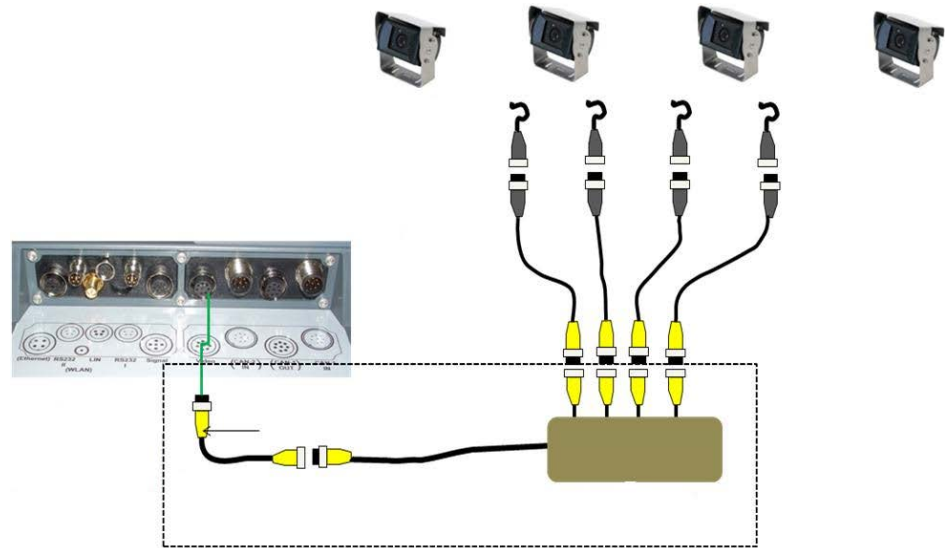5. Mini Out
6. +12V / +24 V
7. GND
8. Shield

## 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.
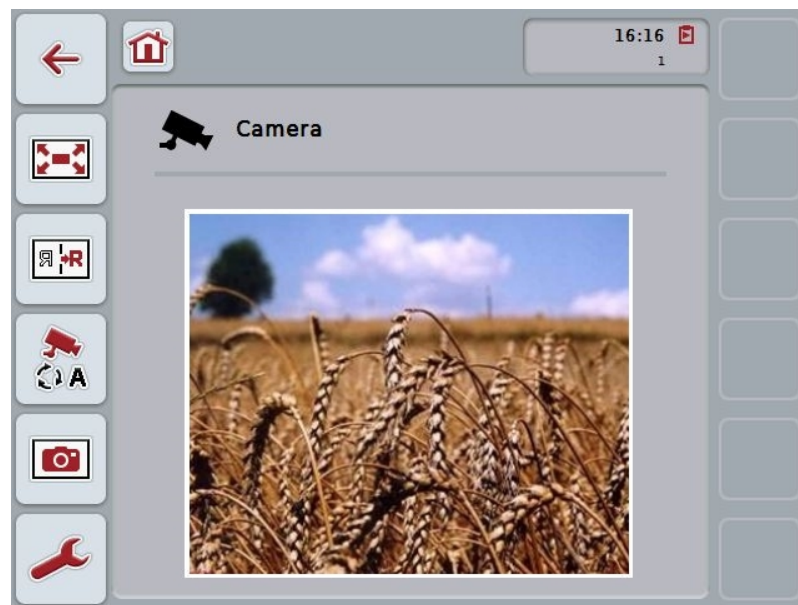
# 4 Operation

## 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 <img>_<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.
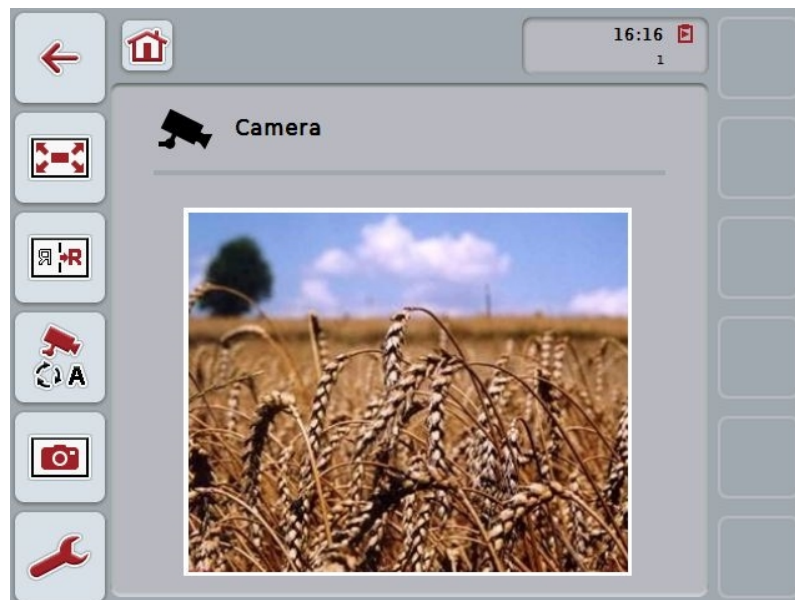


You have the following operating options:

| | |
|---|---|
| 🔲 | **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)** |
| 📹A | **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.
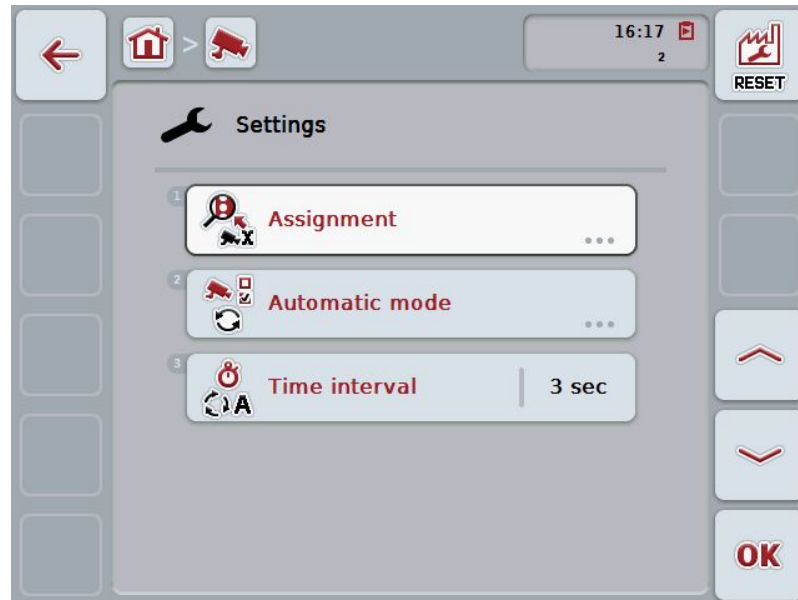


You have the following operating options:

**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" (F6) button.

    → The following mask opens:
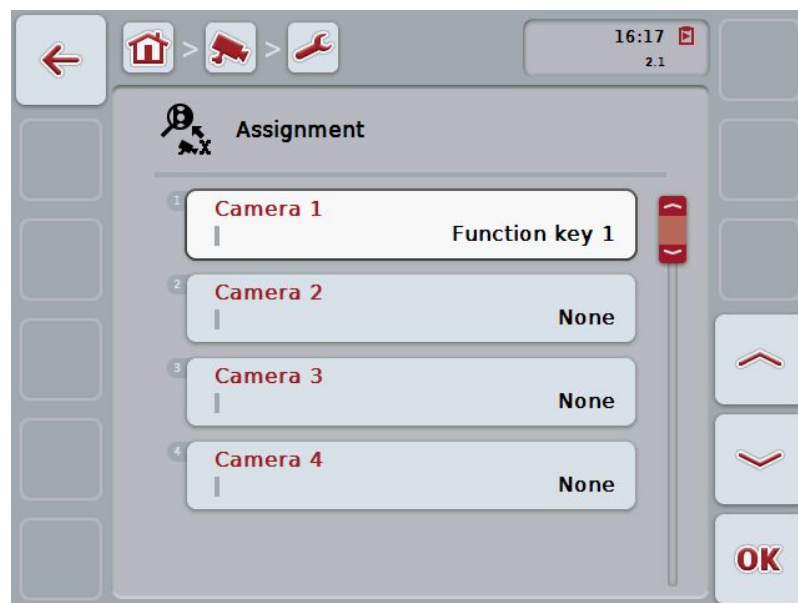


You have the following operating options:

**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 touchscreeen 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:
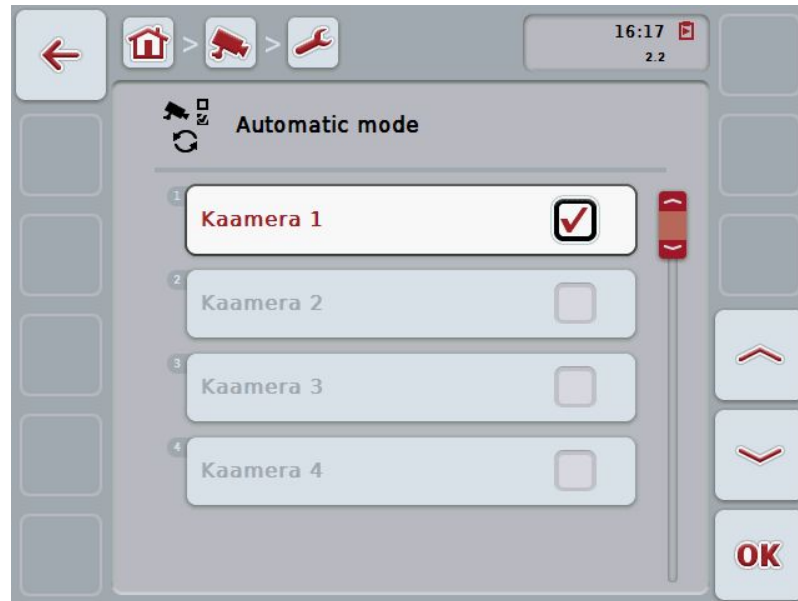
You have the following operating options:

**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 | • Terminal is not correctly connected<br><br>• Ignition is not switched on. | • Check ISOBUS connection<br><br>• Start tractor. |
| The software of the connected implement is not displayed | • Bus terminator missing<br><br>• Software is loaded, however is not displayed<br><br>• Connection error when uploading the software | • Check resistance<br><br>• Check whether the software can be manually started from the terminal start menu<br><br>• Check physical connection<br>• 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.
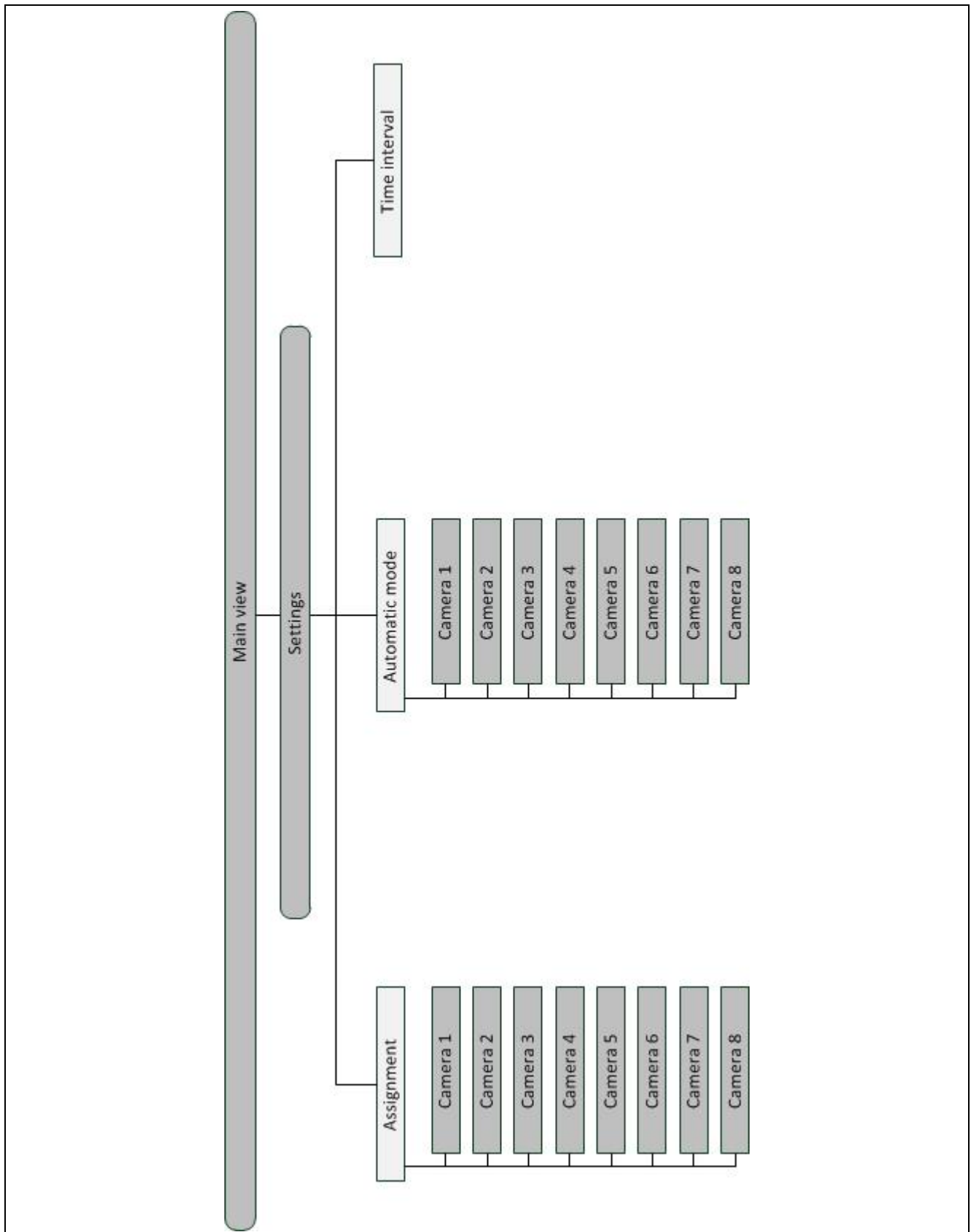
**Note**

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** | **C**ompetence **C**enter **I**SOBUS 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** | | **Full-screen mode** |
| | **Snapshot** | | **Mirror image** |
| | **Switch automatic mode on/off** | | **Settings** |
| | **Display camera image** | | **Display additional cameras** |
| | **Time interval** | | **Assignment** |
| | **Automatic mode** | | **Reset** |
| | **Select from a list** | | |

# 9 Index

# CCI.TECU

Tractor data

## Operating instructions

Reference: CCI.TECU v6

TECU

CCISOBUS

# CCISOBUS

# 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 <ArtNummer 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:
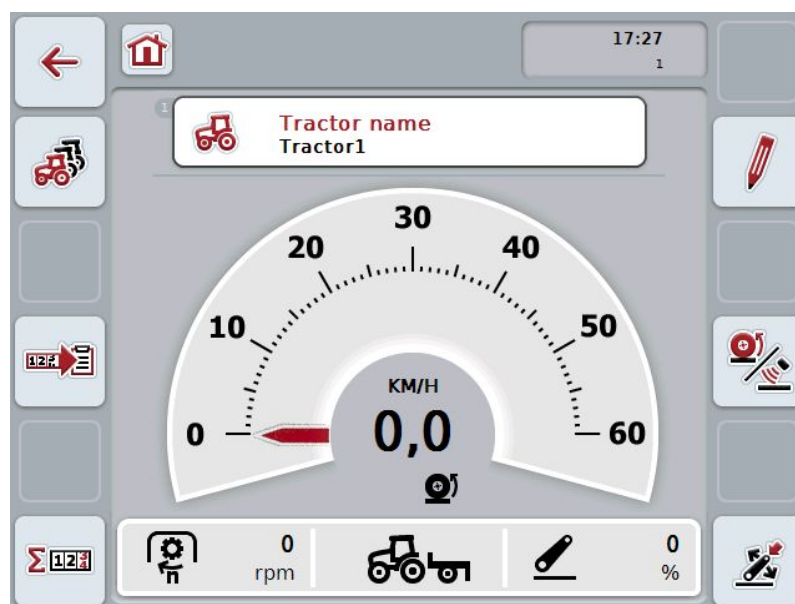


CCI.TECU is subdivided into 3 areas:

### 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.
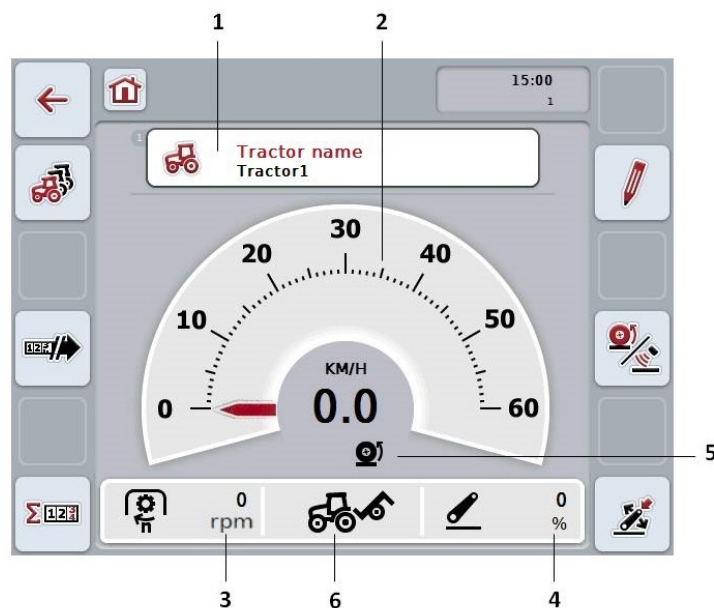


▶ **Note**

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.
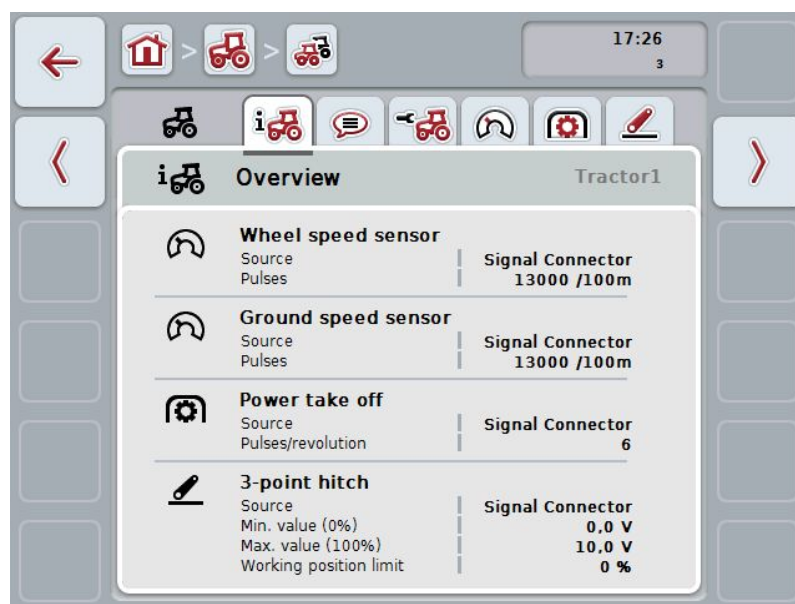


These are organised as follows:

| | |
|---|---|
| **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.
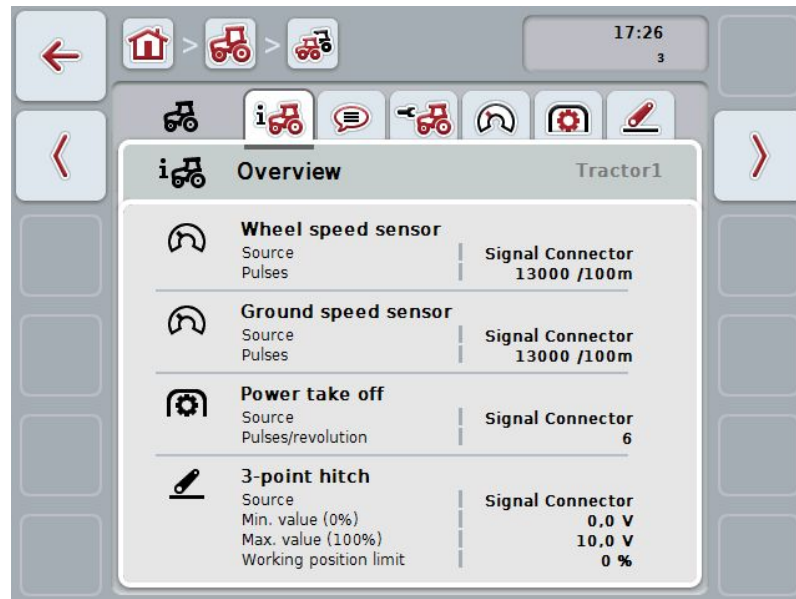
**4.3.3.2 Comment**

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.
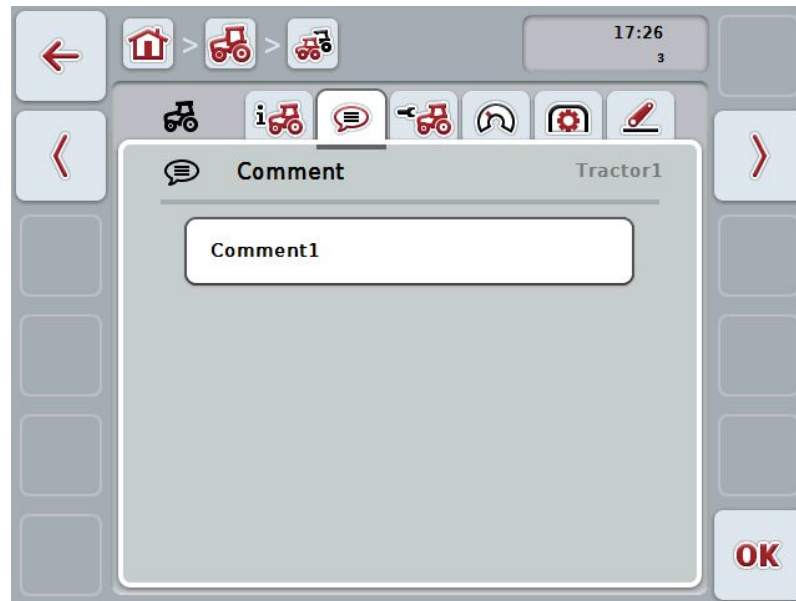
You have the following operating options:

**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.
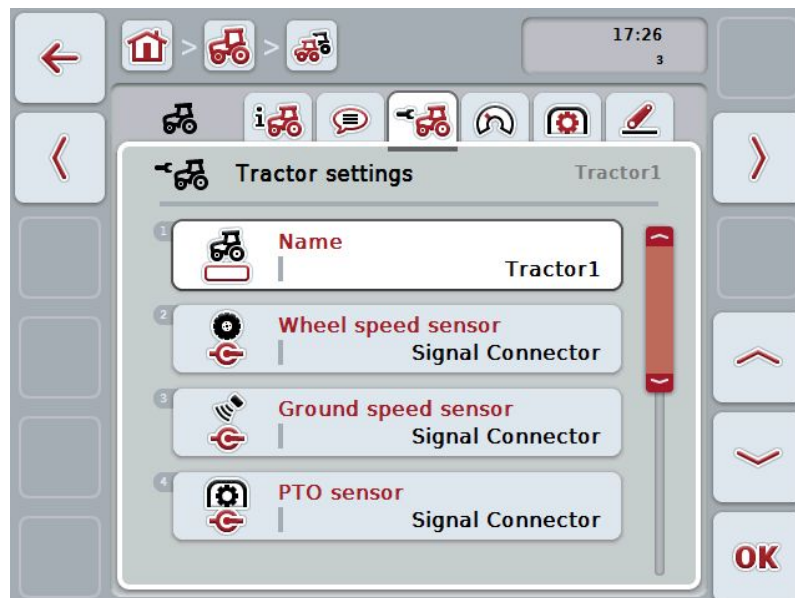


You have the following operating options:

**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:
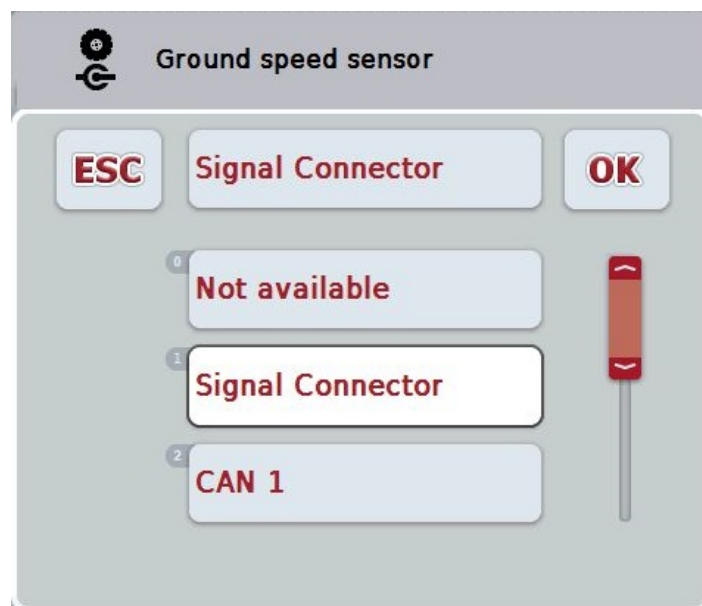


2.  Select the desired signal source. To do so, on the touchscreen press the button with the signal source or turn the scroll wheel until the button is highlighted in white and then press on the scroll wheel.

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.
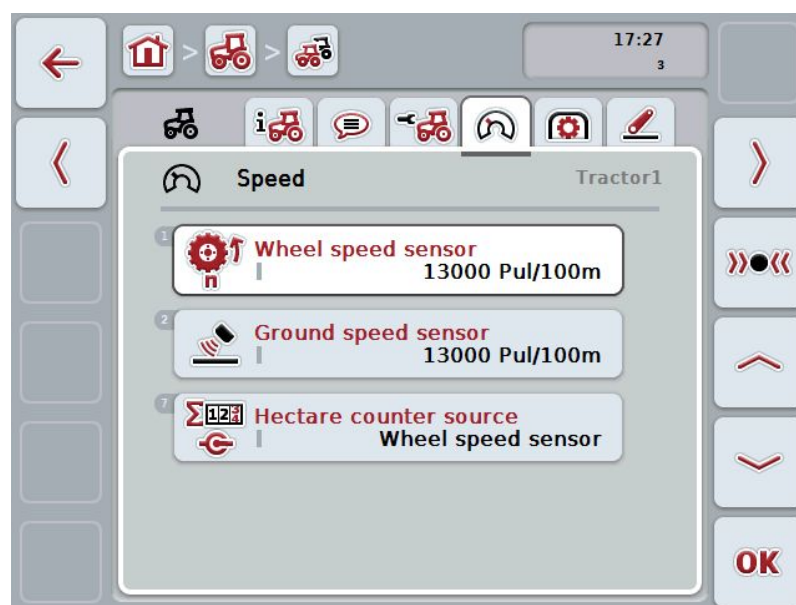
► **Note**

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.
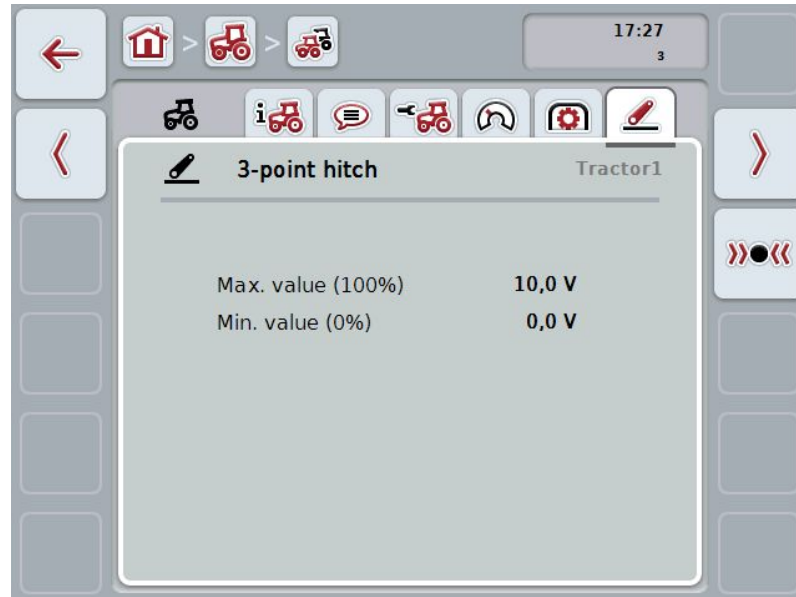


You have the following operating options:

)●(  **Calibrate**

> **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":
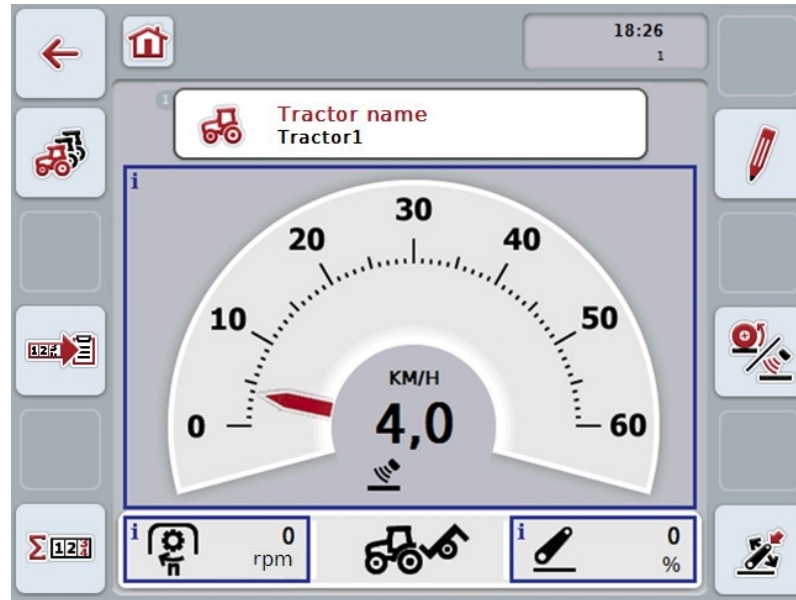


If all signals are read and made available via the ISOBUS, a connection with the signal connector is not necessary.

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. |
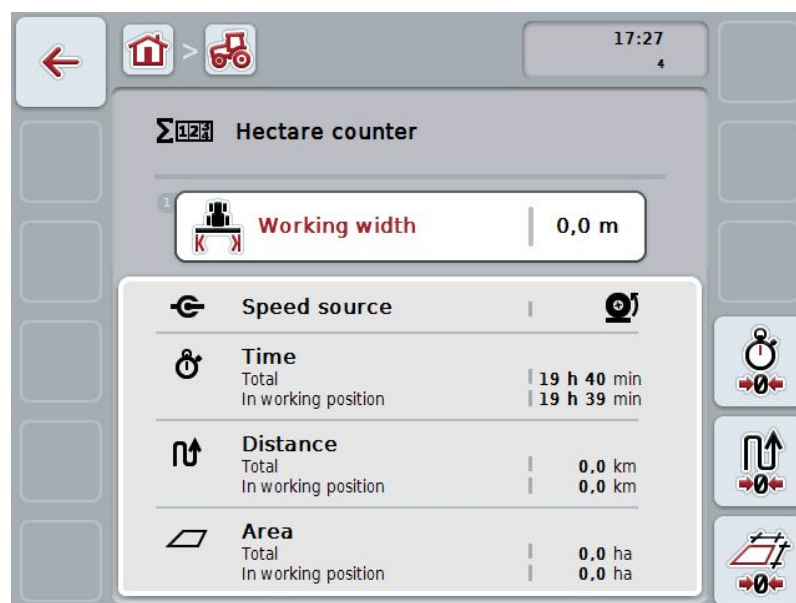


You have the following operating options:

**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 | • Terminal is not correctly connected<br><br>• Ignition is not switched on. | • Check ISOBUS connection<br><br>• Start tractor. |
| The software of the connected implement is not displayed | • Bus terminator missing<br><br>• Software is loaded, however is not displayed<br><br>• Connection error when uploading the software | • Check resistance<br><br>• Check whether the software can be manually started from the terminal start menu<br><br>• Check physical connection<br>• 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!<br>There is only one tractor or you are trying to delete the active tractor. | • There is only one tractor in the list of tractors<br><br>• The selected tractor is currently active in the TECU main view. | • If you want to delete the last tractor in the list, it is not possible.<br>• Activate another tractor in the TECU main view. |
| Invalid value!<br>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!<br>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. | • Number of pulses per rotation incorrect <br><br> • PTO sensor defective | • Set the number of pulses in the **Power Take Off** tab <br><br> • Replace PTO sensor |
|---|---|---|
| Invalid value! Speed (ground speed sensor) exceeds 85 km/h. | • Number of pulses per 100 m incorrect <br><br> • Ground speed sensor defective | • Set the number of pulses in the setting menu <br><br> • Replace ground speed sensor |
| Invalid value! Speed (wheel speed sensor) exceeds 85 km/h. | • Number of pulses per 100 m incorrect <br><br> • Wheel speed sensor defective | • Set the number of pulses in the setting menu <br><br> • Replace wheel speed sensor |
| Calibration error Invalid min. value! New min. position is the same or higher that 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.
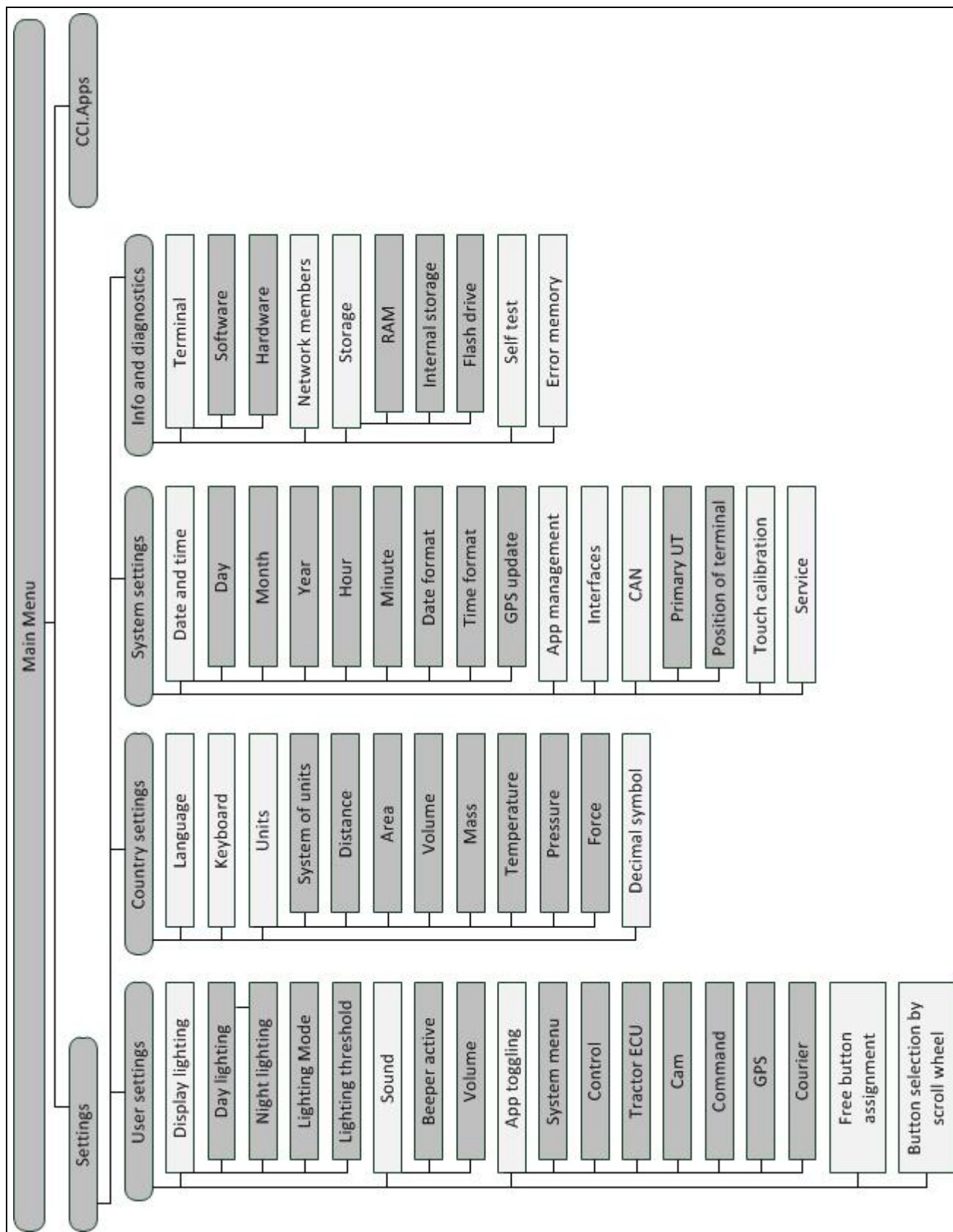
▶ **Note**

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



**Main Menu**

- CCI.Apps
- Settings
  - User settings
    - Display lighting
    - Day lighting
    - Night lighting
    - Lighting Mode
    - Lighting threshold
    - Sound
    - Beeper active
    - Volume
    - App toggling
    - System menu
    - Control
    - Tractor ECU
    - Cam
    - Command
    - GPS
    - Courier
    - Free button assignment
    - Button selection by scroll wheel
  - Country settings
    - Language
    - Keyboard
    - Units
    - System of units
    - Distance
    - Area
    - Volume
    - Mass
    - Temperature
    - Pressure
    - Force
    - Decimal symbol
  - System settings
    - Date and time
    - Day
    - Month
    - Year
    - Hour
    - Minute
    - Date format
    - Time format
    - GPS update
    - App management
    - Interfaces
    - CAN
    - Primary UT
    - Position of terminal
    - Touch calibration
    - Service
  - Info and diagnostics
    - Terminal
    - Software
    - Hardware
    - Network members
    - Storage
    - RAM
    - Internal storage
    - Flash drive
    - Self test
    - Error memory

# 7 Glossary

| | |
|---|---|
| **3-point hitch** | 3-point hitch, rear hoisting gear |
| **3-point hitch sensor** | Used for detecting the current position of the *3-point hitch*.<br><br>It provides an output voltage to the *Signal connector* 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** | **C**ompetence **C**enter **I**SOBUS e.V. |
| **CCI.TECU** | Tractor data |
| **ECU** | **E**lectronic **C**ontrol **U**nit<br><br>Control unit, job computer |
| **Electronic hoisting gear control** | **E**lectronic **H**oisting Gea**r** Control |
| **Speed sensor** | (wheel or ground) speed sensor for detecting the tractor speed. |
| **GPS** | **G**lobal **P**ositioning **S**ystem.<br><br>GPS is a system for satellite-supported position determination. |
| **ISOBUS** | ISO11783<br><br>International standard for data transfer between farming implements and devices. |
| **Context menu** | Graphical user interface<br><br>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 | **Tr**actor **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** |
| **OK** | **Confirm selection or entry** | ▭ | **Select from a list** |
| 📊 | **Activate data transfer to the task controller** | 📊 | **Deactivate data transfer to the task controller** |

# 9 Index