

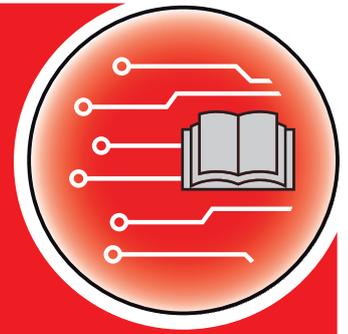
# INSTRUCTION MANUAL



**Please read carefully  
before using the ma-  
chine.**

Keep for future reference.

This instruction manual/assembly instruction is to be considered as part of the machine. Suppliers of new and second-hand machines are required to document in writing that the instruction manual/assembly instruction was delivered with the machine and handed over to the customer.



**QUANTRON-A**  
**AXIS-M**  
**MDS**

**Version 3.50.00**

Original instructions

5902662-f-en-0720

## Preface

Dear customer,

By purchasing the **control unit QUANTRON-A** for the AXIS and MDS fertiliser spreader, you have shown confidence in our product. Thank you very much! We would like to justify the trust that you have placed in us. You have purchased a reliable, high-performance **control unit**. If any unexpected problems should occur: Our customer service team is always there for you.



**Please read this operator's manual as well as the operator's manual for the fertiliser spreader carefully before commissioning, and follow the advice given.** This operator's manual explains in detail how to operate the spreader and contains important information on operation, care and maintenance.

This manual may also describe equipment that is not included in your control unit.

You should be aware that damage caused by incorrect operation or improper use may not be covered by warranty claims.

### NOTE

#### **Note the serial number of the control unit and of the machine.**

The control unit QUANTRON-A is factory-calibrated for the fertiliser spreader with which it has been delivered. It cannot be connected to another fertiliser spreader without requiring additional calibration.

Please state this information when ordering spare parts or accessories, and in case of complaints.

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|      |               |                      |
|------|---------------|----------------------|
| Type | Serial number | Year of construction |
|------|---------------|----------------------|

## Technical improvements

**We are continuously improving our products. Therefore, we reserve the right to make any improvements and changes to our machine that we consider necessary without notice. This constitutes no obligation to make such improvements or changes on machines that have already been sold.**

We will be pleased to answer any other questions that you might have.

Yours sincerely

RAUCH

Landmaschinenfabrik GmbH

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# 1 User instructions

## 1.1 About this operator's manual

This operator's manual is an **integral part** of the control unit **QUANTRON-A**.

The operator's manual contains important instructions for **safe, proper** and economic **use** and **maintenance** of the control unit. Compliance with its stipulations helps to **avoid risks**, reduce maintenance costs and downtime and to increase the machine's reliability and service life.

The operator's manual is an integral part of the machine. All documentation must be kept in an easily accessible location close to where the control unit is used (e.g. on the tractor).

The operator's manual does not replace your **own responsibility** as the operator and operating personnel of the QUANTRON-A control unit.

A quick reference guide is delivered along with the control unit QUANTRON-A. If it is not included in the shipment, please inform us.

## 1.2 Presentation information

### 1.2.1 Significance of warnings

The warning instructions in this manual have been structured according to the degree of danger and the probability of their occurrence.

Danger signs and symbols inform the user about other construction-related and unavoidable residual risks that may be encountered when operating the machine. The warning notes used are structured as follows:

| <b>Signal word</b>  |   |
|---|---|
| Symbol  | Explanation   |
| <b>Example</b>  |   |
| <b>⚠ DANGER</b>   |   |
|  | <p><b>Risk to life if warning is not observed</b></p> <p>Description of the danger and possible consequences.</p> <p>Ignoring these warnings will result in very serious or even fatal injury.</p> <p>► Measures to prevent the danger.</p> |

**Warning severity level**

The degree of danger is indicated by the signal word. The levels are classified as follows:

**▲ DANGER**



**Type and source of danger**

This warning warns of a danger posing an immediate threat to the health and life of persons.

Ignoring these warnings will result in very serious or even fatal injury.

- ▶ Always observe the measures described to prevent this danger.

---

**▲ WARNING**



**Type and source of danger**

This warning warns of a possible dangerous situation for the health of persons.

Ignoring these warnings will result in very serious injury.

- ▶ Always observe the measures described to prevent this danger.

---

**▲ CAUTION**



**Type and source of danger**

This warning warns of a potentially dangerous situation for personal health or of material and environmental damage.

Ignoring this warning can result in injuries and damage to the product or the general area.

- ▶ Always observe the measures described to prevent this danger.

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**NOTICE**

General information containing application tips and particularly useful information, but which constitutes neither warnings nor hazards.

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## 1.2.2 Instructions and procedures

Steps that the operator must carry out are shown as a numbered list.

1. Instruction for action step 1
2. Instruction for action step 2

Instructions involving only one step are not numbered. The same applies for action steps that do not have a specific sequence.

A bullet is placed in front of these instructions:

- Handling instruction

## 1.2.3 Listings

Listings without a specific sequence are shown with bullet points (level 1) and dashes (level 2):

- Property A
  - Point A
  - Point B
- Property B

## 1.2.4 References

References to other text passages in the document are indicated with section number, headline text and page number:

- **Example:** See also Chapter [3: Attachment and installation, page 21](#).

References to other documents are indicated as note or instruction without exact chapter or page number:

- **Example:** Please also observe the instructions contained in the manual for the universal drive shaft.

## 1.2.5 Menu hierarchy, keys and navigation

**Menus** describe the entries listed in the **main menu** window.

In the menus, **submenus and/or menu items** are listed where you can make settings (selection lists, text or number entries, starting functions).

The different menus and keys of the control unit are illustrated in **bold** letters:

- Access the highlighted submenu by pressing the **Enter key**.

Hierarchy and the path to the requested menu item are marked with > (arrow) between menu, menu item/s:

- **System / Test > Test/Diagnosis > Voltage** means that you can access the menu item **Voltage** via the **System / Test** menu and the **Test/Diagnosis** menu item.
  - The arrow > corresponds to confirmation with the **Enter key**.



## 2 Structure and function

### 2.1 Overview of the supported versions

**NOTICE**

Some models are not available in all countries.

#### 2.1.1 MDS

| Function/options                     | MDS  |
|--------------------------------------|--|
| Spreading depending on forward speed | <ul style="list-style-type: none"><li>● MDS 8.2 Q</li><li>● MDS 14.2 Q</li><li>● MDS 18.2 Q</li><li>● MDS 20.2 Q</li></ul>                       |
|                                      | <ul style="list-style-type: none"><li>● MDS 10.1 Q</li><li>● MDS 11.1 Q</li><li>● MDS 12.1 Q</li><li>● MDS 17.1 Q</li><li>● MDS 19.1 Q</li></ul> |

2.1.2 AXIS-M

**NOTICE**

Some models are not available in all countries.

**AXIS-M V8**

8 section steps (VariSpread dynamic)

| Function/options   | AXIS-M 20 Q V8 | AXIS-M 30 Q V8 | AXIS-M 40 Q V8 | AXIS-M 20 EMC V8 | AXIS-M 30 EMC V8 | AXIS-M 40 EMC V8 | AXIS-M 30 EMC + W V8 | AXIS-M 40 EMC + W V8 |
|--|----------------|----------------|----------------|------------------|------------------|------------------|----------------------|----------------------|
| Spreading depending on forward speed                             | •              | •              | •              | •                | •                | •                | •                    | •                    |
| Mass flow control by measuring the torque of the spreading discs |                |                |                | •                | •                | •                | •                    | •                    |
| Weigh cells  |                |                |                |                  |                  |                  | •                    | •                    |

**AXIS-M VS pro**

Continuous section adjustment (VariSpread pro)

| Function/options   | AXIS-M 30 EMC VS pro | AXIS-M 40 EMC VS pro | AXIS-M 30 EMC + W VS pro | AXIS-M 40 EMC + W VS pro |
|--|----------------------|----------------------|--------------------------|--------------------------|
| Forward speed-dependent Spreading                                | •                    | •                    | •                        | •                        |
| Mass flow control by measuring the torque of the spreading discs | •                    | •                    | •                        | •                        |
| Weigh cells  |                      |                      | •                        | •                        |

## 2.2 Layout of the control unit - overview

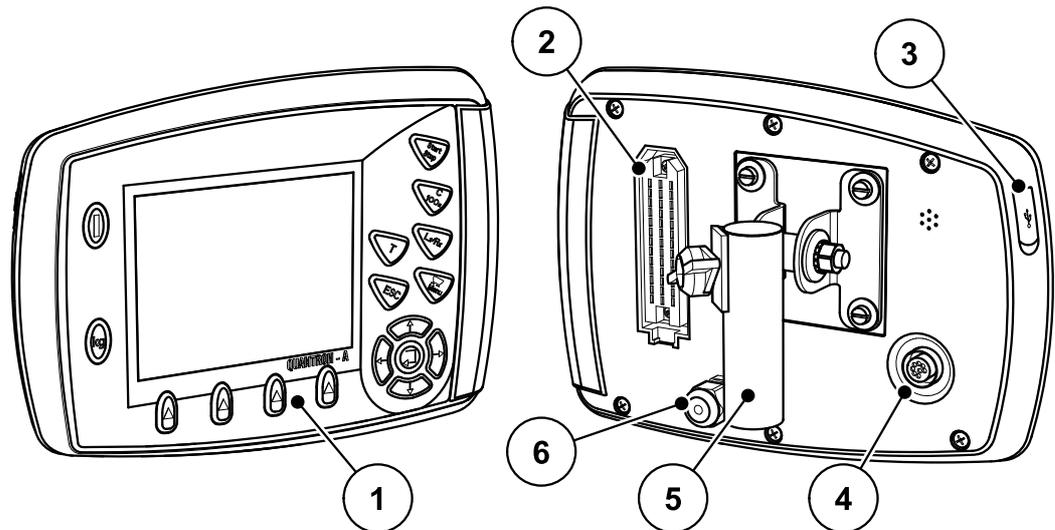
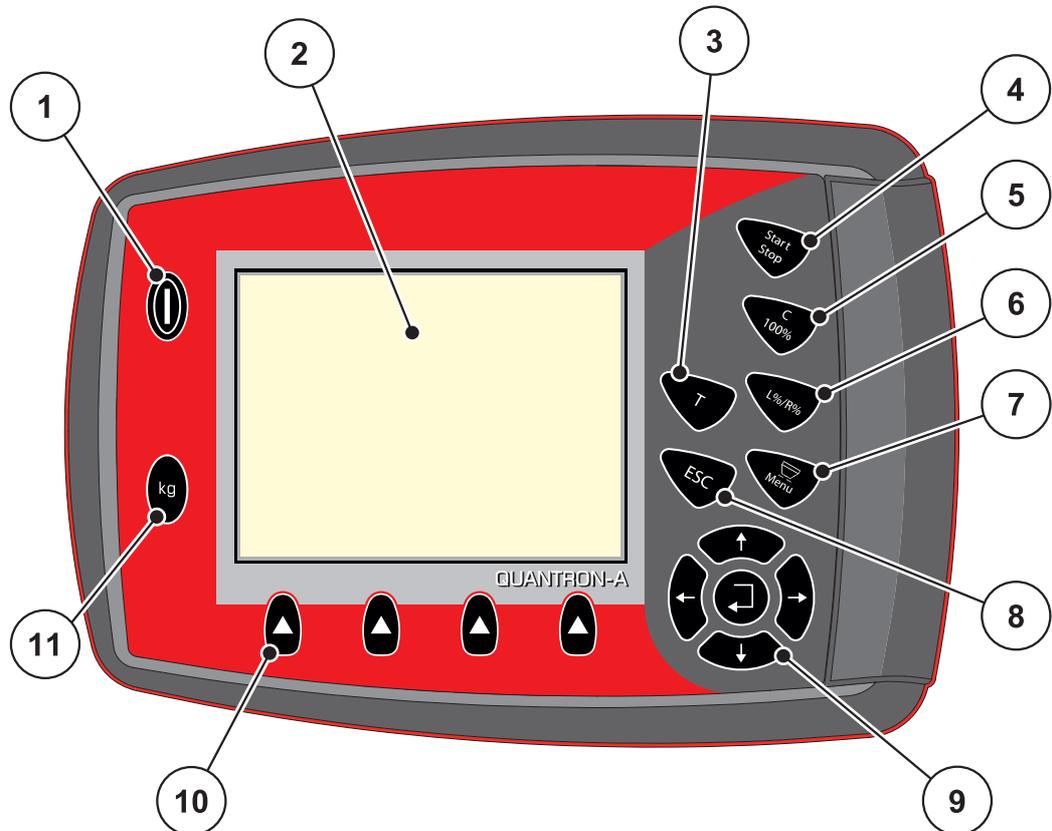


Figure 2.1: Control unit QUANTRON-A

| No. | Designation                  | Function  |
|-----|------------------------------|---|
| 1   | Control panel                | Consisting of foil buttons used to operate the device and the display for operating screens.  |
| 2   | Machine cable plug connector | 39-pin plug connector for connecting the machine cable to sensors and servomotors (SpeedServos).  |
| 3   | USB port with cover          | For updating the PC. Cover serves as a protection against contamination.  |
| 4   | V24 data port                | Serial interface (RS232) with LH 5000 and ASD protocol, designed for Y-RS232 cables for connection to a remote terminal.<br>Plug connector (DIN9684-1/ISO11786) for 7-pin to 8-pin cable connection for the speed sensor. |
| 5   | Mounting bracket             | Attaches the control unit to the tractor.   |
| 6   | Power supply                 | 3-pin plug connector conforming to DIN 9680 / ISO 12369 for connecting the power supply.  |

2.3 Control elements

The unit is operated by means of **17 foil buttons** (13 fixed and 4 freely configurable foil buttons).



**Figure 2.2:** Control panel at the front of the unit

| No. | Designation     | Function   |
|-----|-----------------|--|
| 1   | ON/OFF          | Switches the device on/off   |
| 2   | Display         | Display of operating screens   |
| 3   | T key (TELIMAT) | Key for displaying the TELIMAT position  |
| 4   | Start/Stop      | Start/stop spreading.  |
| 5   | Clear/Reset     | <ul style="list-style-type: none"> <li>● Clear an input in an input field,</li> <li>● Resetting the excess quantity to 100%;</li> <li>● Acknowledging alarm messages.</li> </ul> |

| No. | Designation                 | Function  |
|-----|-----------------------------|---|
| 6   | Preselected section setting | Toggle key for alternating between 4 states. <ul style="list-style-type: none"> <li>● Pre-selection of sections for changing the quantity. <a href="#">Page 66</a> <ul style="list-style-type: none"> <li>- <b>L:</b> Left</li> <li>- <b>R:</b> Right or</li> <li>- <b>L+R:</b> Left + Right</li> </ul> </li> <li>● Section management (VariSpread function) <a href="#">Page 14</a></li> </ul> |
| 7   | Menu                        | Switch between operating screen and main menu.  |
| 8   | ESC                         | Cancelling entries and/or returning to the previous menu at the same time.  |
| 9   | Navigation field            | 4 <b>arrow keys</b> and one <b>enter key</b> for navigation through menus and input fields. <ul style="list-style-type: none"> <li>● Arrow keys for moving the cursor on the display or for highlighting an input field.</li> <li>● Enter key to confirm an input.</li> </ul>   |
| 10  | Function keys F1 to F4      | Selection of the functions displayed above the function keys.   |
| 11  | Weighing/trip counter       | <ul style="list-style-type: none"> <li>● Display of the remaining quantity in the hopper.</li> <li>● Trip counter</li> <li>● kg rest</li> <li>● Metre counter</li> </ul>  |

2.4 Display

The display shows the current status information and the selection and input options for the control unit.

The most important information concerning the operation of the fertiliser spreader is displayed on the **operating screen**.

2.4.1 Operating screen description

**NOTICE**

The exact representation of the operating screen depends on the actual settings selected. Refer to chapter [4.10.2: Display configuration, page 77](#).

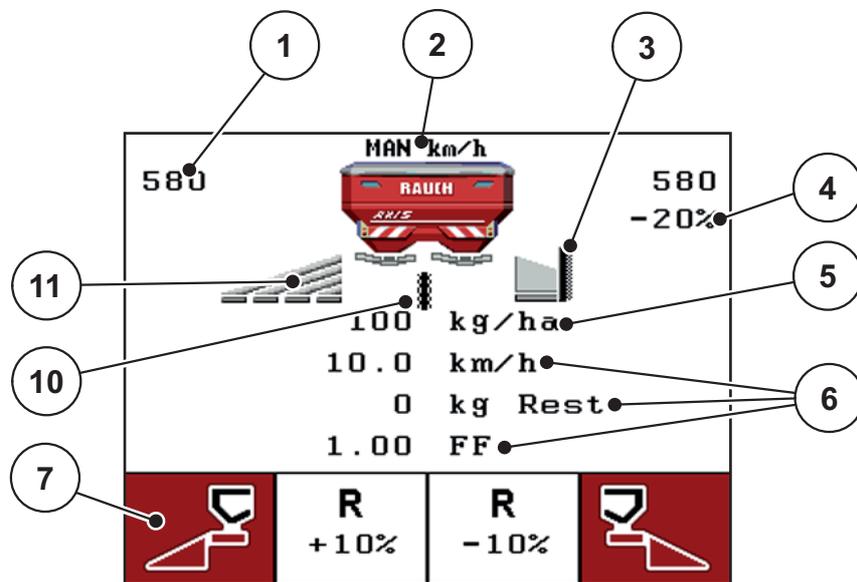


Figure 2.3: Control unit display (example AXIS-M operating screen)

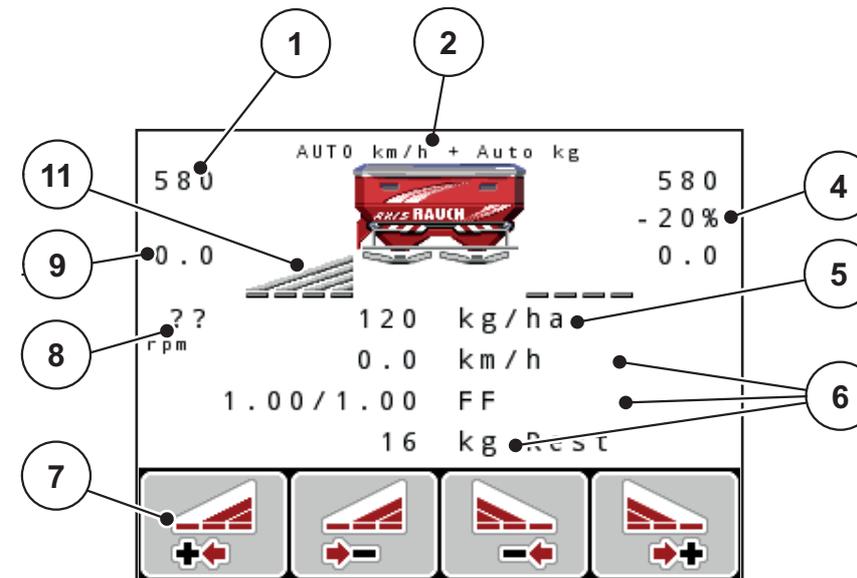


Figure 2.4: Control unit display (example AXIS-M EMC operating screen)

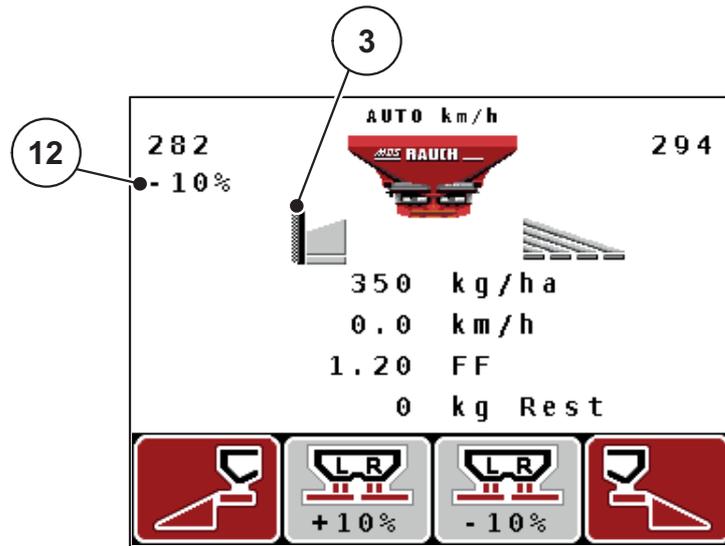


Figure 2.5: Control unit display (example MDS operating screen)

The icons and displays in the example have the following meaning:

| No. | Icon/display                      | Meaning (in the example shown)  |
|-----|-----------------------------------|---|
| 1   | Metering slide scale opening left | Current opening position of the left metering slide.  |
| 2   | Operating mode                    | Shows the current operating mode.   |
| 3   | TELIMAT icon                      | This icon appears on the right for AXIS and on the left for MDS if the <b>TELIMAT sensors</b> are installed and the <b>TELIMAT function</b> is enabled (factory setting) or the <b>T button</b> is activated.                             |
| 4   | Quantity change right             | Quantity change (+/-) in percent. <ul style="list-style-type: none"> <li>● Display of quantity changes.</li> <li>● Range of values +/- 1...99% possible.</li> </ul>   |
| 5   | Application rate                  | <b>Preset</b> application rate.   |
| 6   | Display fields                    | Individually configurable display fields (here: forward speed, flow factor, residual kg). <ul style="list-style-type: none"> <li>● Possible configuration: see chapter <a href="#">4.10.2: Display configuration, page 77</a>.</li> </ul> |
| 7   | Icon fields                       | Icon assignment to the fields <b>depending on the menu</b> . <ul style="list-style-type: none"> <li>● Selection of the function by means of the <b>function keys</b> below.</li> </ul>  |
| 8   | PTO speed                         | <b>EMC function only:</b> Current PTO speed <ul style="list-style-type: none"> <li>● See <a href="#">4.6.6: PTO shaft, page 51</a></li> </ul>   |
| 9   | Drop point                        | Current position of the drop point.   |
| 10  | GSE sensor                        | <b>AXIS only:</b> This icon appears if the <b>limited border spreading unit</b> is in the operating position and the <b>function</b> is enabled (factory setting).  |
| 11  | Section left                      | Display of status of left section. Refer to <a href="#">2.4.2: Display of the metering slide status, page 13</a> .  |
| 12  | Left application rate adjustment  | Quantity change (+/-) in percent. <ul style="list-style-type: none"> <li>● Display of quantity changes.</li> <li>● Range of values +/- 1...99% possible.</li> </ul>   |

2.4.2 Display of the metering slide status

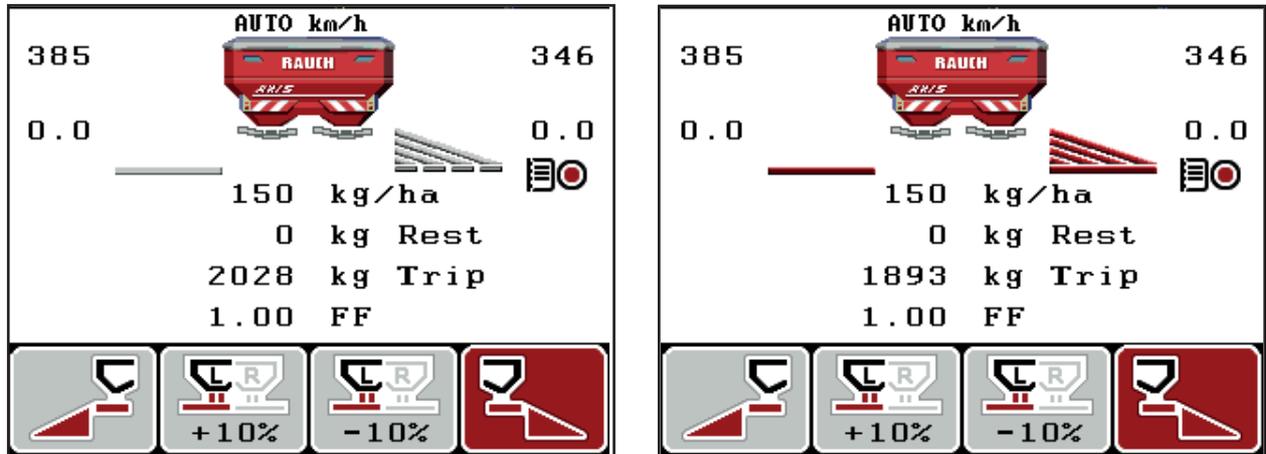


Figure 2.6: AXIS metering slide status display

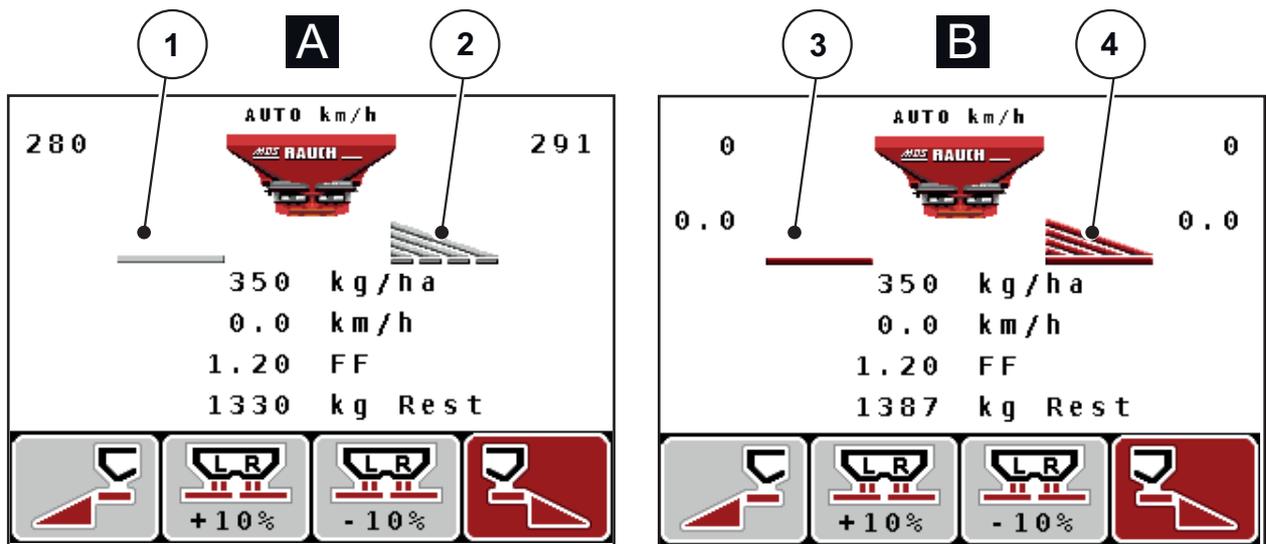
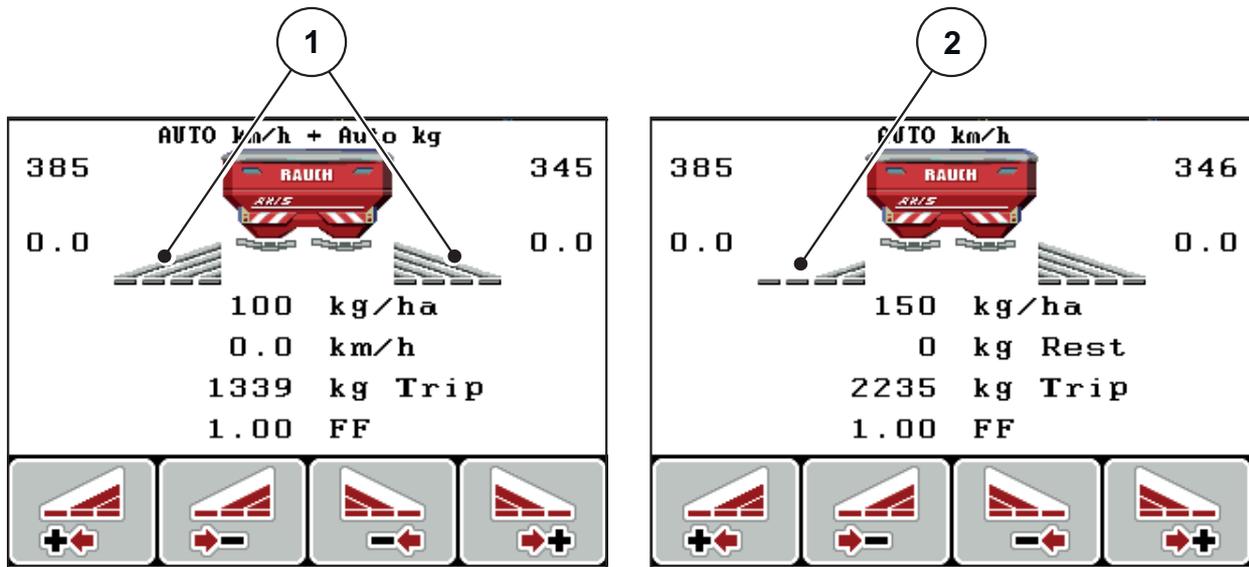


Figure 2.7: MDS metering slide status display

- [A] Spreading operation inactive (STOP)
  - [1] Section deactivated
  - [2] Section activated
- [B] Machine in spreading operation (START)
  - [3] Section deactivated
  - [4] Section activated

2.4.3 Display of sections



**Figure 2.8:** Display of the section status (example with AXIS VariSpread 8)

- [1] Activated sections with 4 possible spreading width steps
- [2] The leftsection is reduced by 2 section steps

Further display and setting options are explained in chapter [5.3: Working with sections. page 95.](#)

## 2.5 Library of symbols used

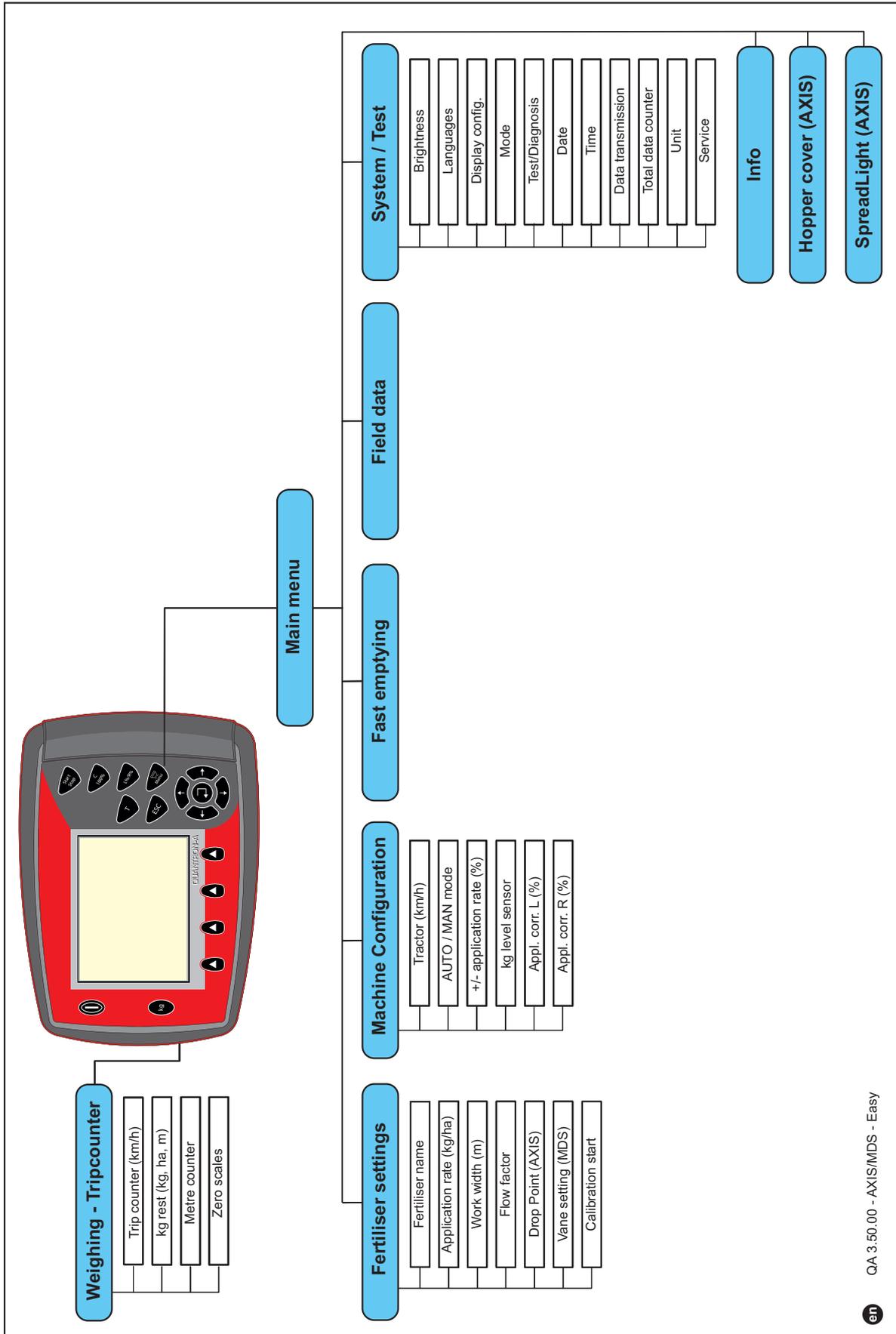
The screen of the QUANTRON-A control unit displays symbols for menus and functions.

| Symbol  | Meaning  |
|---|--|
|    | Quantity adjustment + (plus)                           |
|    | Quantity adjustment - (minus)                          |
|    | Quantity adjustment, left + (plus)                     |
|    | Quantity adjustment, left - (minus)                    |
|   | Quantity adjustment, right + (plus)                    |
|  | Quantity adjustment, right - (minus)                   |
|  | Manual change of the metering slide position + (plus)  |
|  | Manual change of the metering slide position - (minus) |
|  | Left spreading side active                             |
|  | Left spreading side inactive                           |
|  | Right spreading side active                            |
|  | Right spreading side inactive                          |

| Symbol  | Meaning                       |
|---|-------------------------------|
|  | Reduce section, right (minus) |
|  | Increase right section (plus) |
|  | Reduce section, left (minus)  |
|  | Increase left section (plus)  |

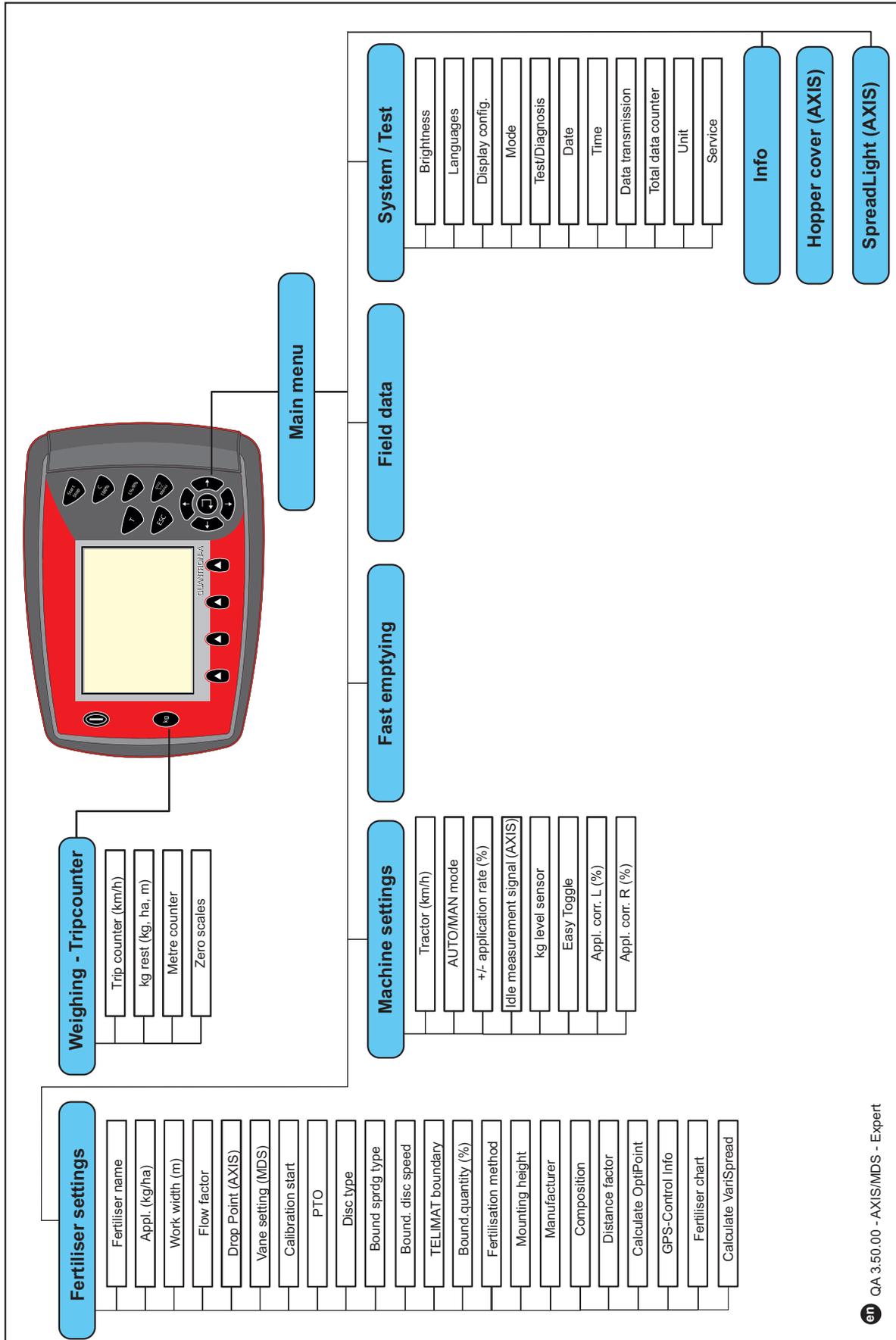
## 2.6 Structural overview of Easy Mode menu

Setting the mode is described in section [4.10.3: Mode, page 78](#).



2.7 Structural overview of Expert Mode menu

Setting the mode is described in section [4.10.3: Mode, page 78](#).



## 2.8 WLAN module

You can communicate the fertiliser charts to your control unit wirelessly with the help of the WLAN modules (special equipment) and the FertChartApp on a smartphone.

In this respect, please also refer to the WLAN module manufacturer's assembly instruction manual. Contact your dealer to install the FertChartApp on your control unit.

The WLAN password is **quantron**.



## 3 Attachment and installation

### 3.1 Requirements for the tractor

Before installing the control unit, check to make sure your tractor meets the following requirements:

- A minimum voltage of **11 V** is essential **at all times**, even if multiple loads are connected simultaneously (e. g. air conditioning system, lights).
- The PTO speed can be set to **540 rpm** and must be maintained (basic requirement for correct working width).

#### NOTICE

On tractors without load-switchable gears, the forward speed must be selected by using the correct gear ratio in such a way that it corresponds to a PTO speed of 540 rpm.

- A 7-pin socket (DIN 9684-1/ISO 11786). The control unit receives the pulse for the current forward speed through this socket.

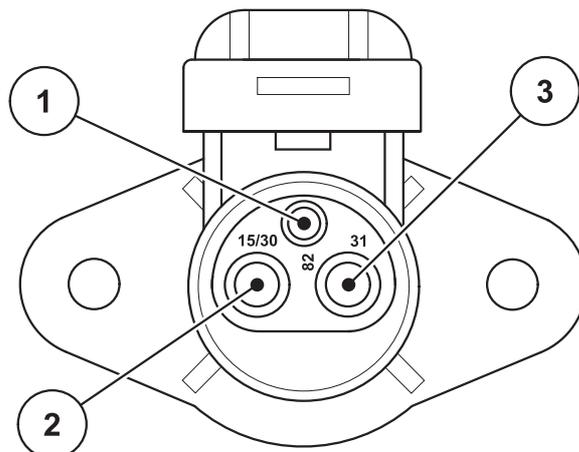
#### NOTICE

The 7-pin socket for the tractor and the forward speed sensor can be obtained as an expansion kit (option), see chapter Special Equipment.

### 3.2 Connections, sockets

#### 3.2.1 Power supply

The control unit is supplied with power from the tractor via the 3-pin power supply socket (DIN 9680/ISO 12369).

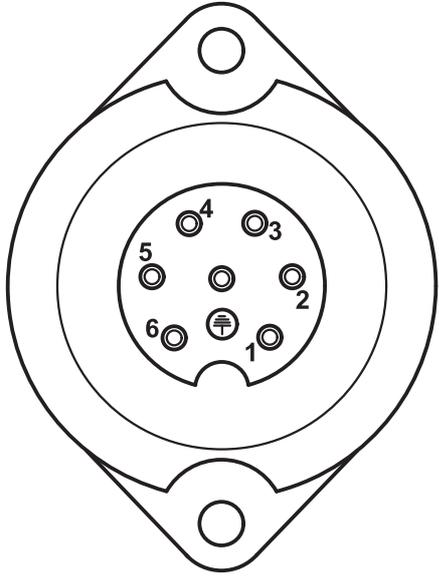


- [1] PIN 1: not required
- [2] PIN 2: (15/30): +12 V
- [3] PIN 3: (31): mass

**Figure 3.1:** PIN assignment of power socket

#### 3.2.2 7-pin plug connector

The control unit receives the pulses for the current forward speed via the 7-pin plug connector 9684-1/ISO 11786). For this purpose, the 7-pin to 8-pin cable (accessory) is connected to the forward speed sensor at the plug connector.



- [1] PIN 1: actual forward speed (radar)
- [2] PIN 2: theoretical forward speed (e. g. gear-box, wheel sensor)

**Figure 3.2:** PIN assignment for 7-pin plug connector

### 3.3 Connecting the control unit

#### NOTICE

After the control unit QUANTRON-A has been switched on, the display shows the machine number for a short time.

#### NOTICE

##### **Note the machine number**

The control unit QUANTRON-A is factory-calibrated for the fertiliser spreader with which it has been delivered.

##### **Only connect the control unit to the correct fertiliser spreader.**

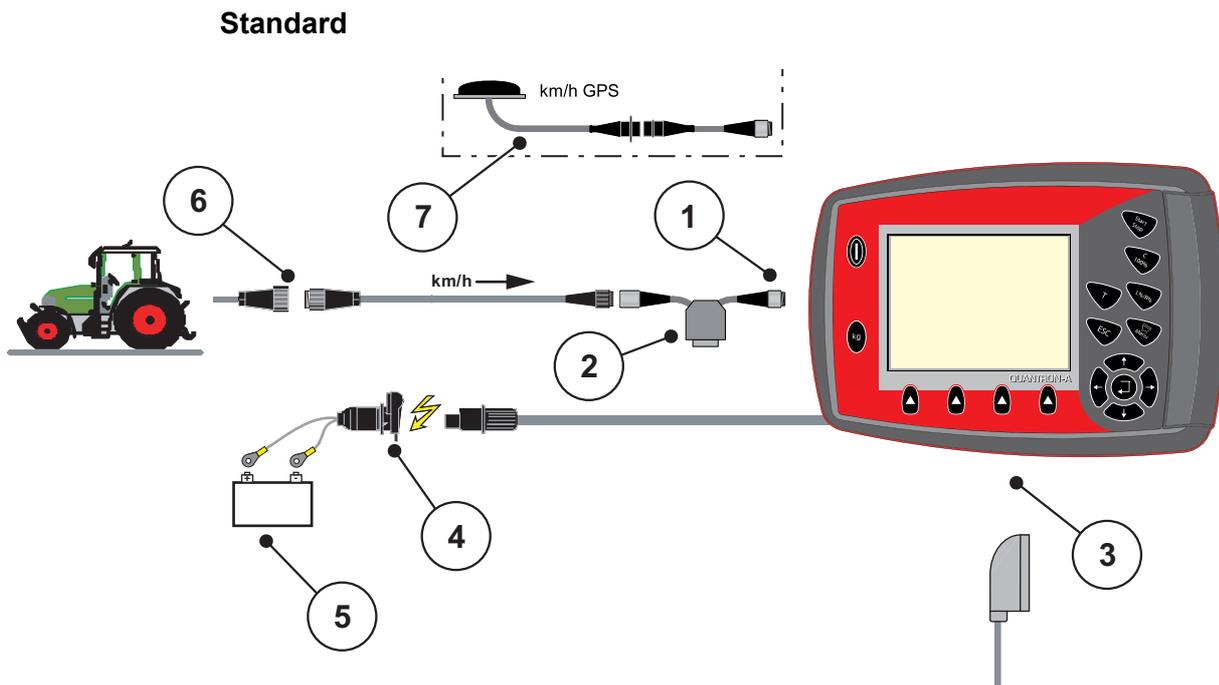
Depending on the equipment, there are different methods of attaching the control unit to the fertilizer spreader.

- The schematic overview of the tractor connection can be found at [page 24](#).
- The schematic overview of the machine connection can be found at [page 27](#).

Proceed in the following order:

- Select a suitable position in the tractor cabin (within **the driver's field of vision**) to fix the control unit.
- Fix the control unit by means of **brackets** in the tractor cabin.
- Connect the control unit to the 7-pin socket or to the forward speed sensor (depending on configuration).
- Connect the control unit to the machine actuators using the 39-pin machine cable.
- Connect the control unit to the tractor's power supply using the 3-pin plug connector.

#### 3.3.1 Overview of tractor connections



**Figure 3.3:** Schematic connection diagram QUANTRON-A (standard)

- [1] Serial interface RS232, 8-pin plug connector
- [2] Optional: Y-cable (V24 RS232 interface for storage medium)
- [3] Connection for 39-pin machine plug (rear)
- [4] 7-pin plug connector conforming to DIN 9684
- [5] Battery
- [6] 3-pin plug connector conforming to DIN 9680 / ISO 12369
- [7] Optional: GPS cable and receiver

Wheel sensor

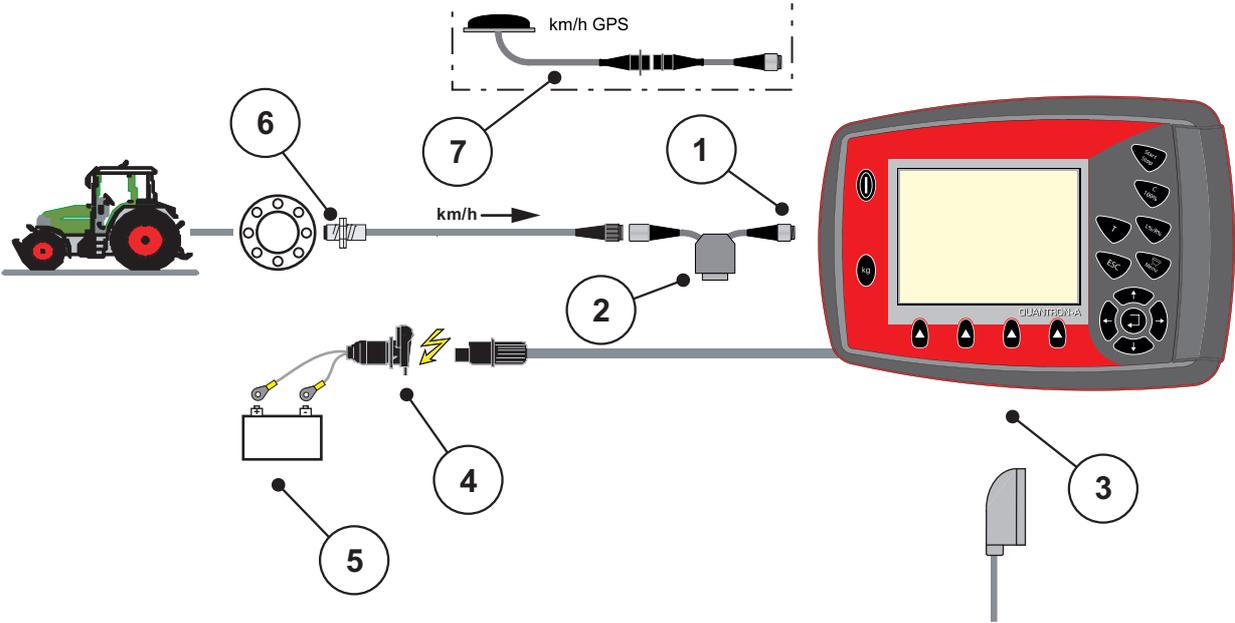
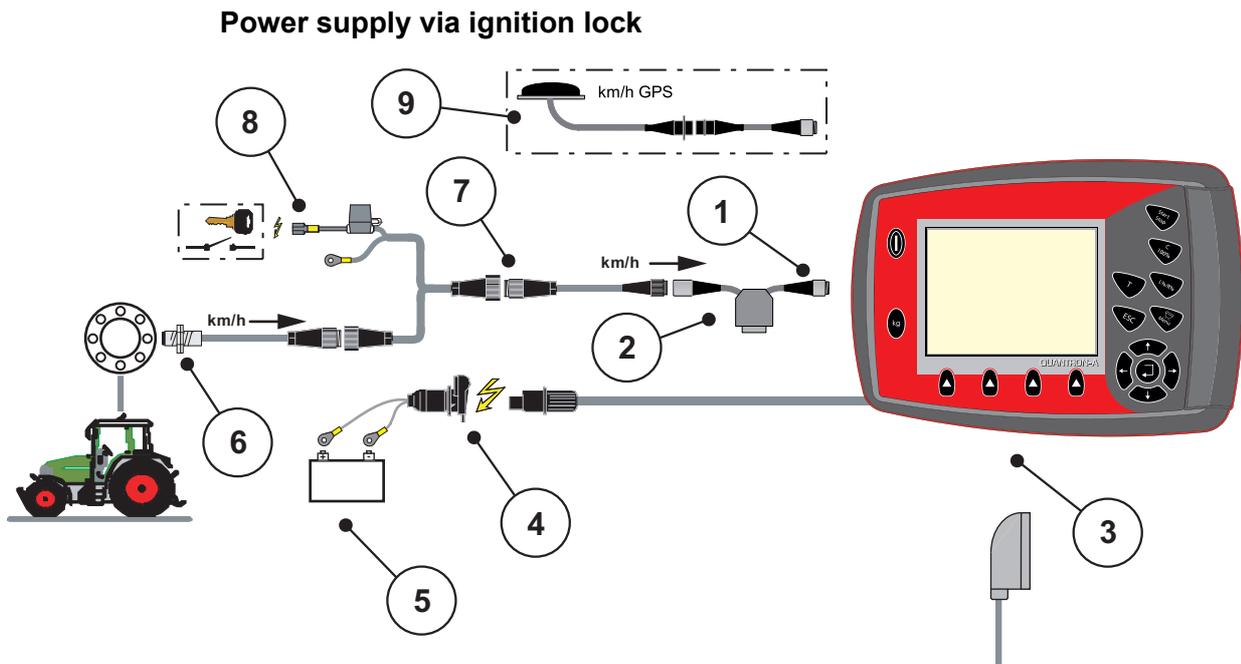


Figure 3.4: Schematic connection diagram QUANTRON-A (wheel sensor)

- [1] Serial interface RS232, 8-pin plug connector
- [2] Optional: Y-cable (V24 RS232 interface for storage medium)
- [3] Connection for 39-pin machine plug (rear)
- [4] 3-pin plug connector conforming to DIN 9680 / ISO 12369
- [5] Battery
- [6] Forward speed sensor
- [7] Option: GPS cable and receiver



**Figure 3.5:** Schematic connection diagram QUANTRON-A (power supply via ignition lock)

- [1] Serial interface RS232, 8-pin plug connector
- [2] Optional: Y-cable (V24 RS232 interface for storage medium)
- [3] Connection for 39-pin machine plug (rear)
- [4] 3-pin plug connector conforming to DIN 9680 / ISO 12369
- [5] Battery
- [6] Forward speed sensor
- [7] 7-pin plug connector conforming to DIN 9684
- [8] Optional: QUANTRON-A power supply via ignition lock
- [9] Optional: GPS cable and receiver

3.3.2 Overview of connections at the machine

MDS

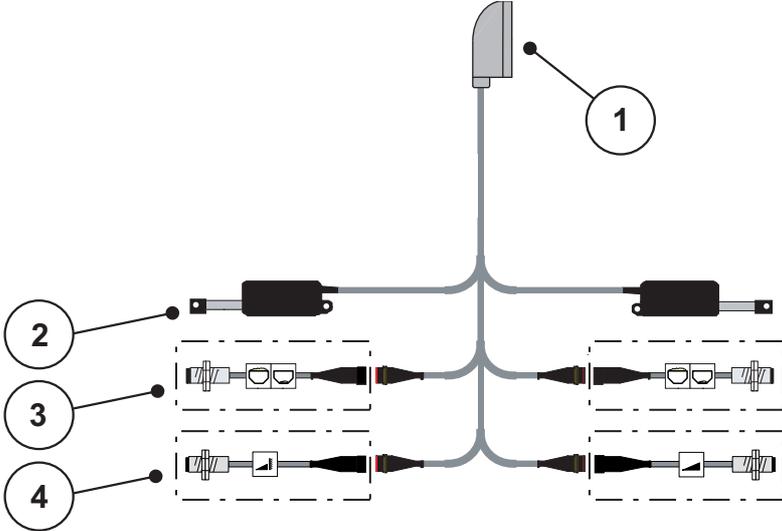


Figure 3.6: Schematic connection diagram QUANTRON-A

- [1] 39-pin machine plug
- [2] Metering slide actuator left/right
- [3] Option (level sensor left/right)
- [4] Option (TELIMAT sensor top/bottom)

AXIS-M Q

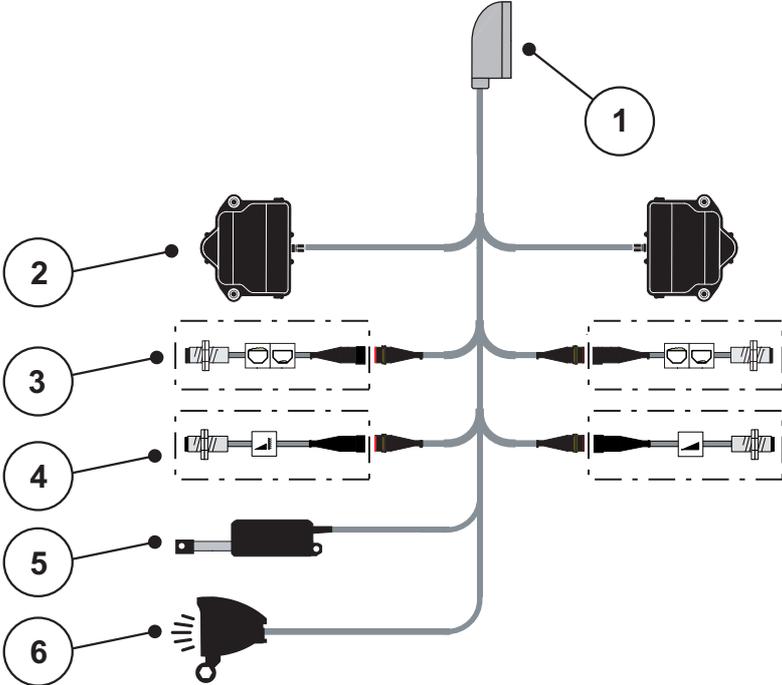
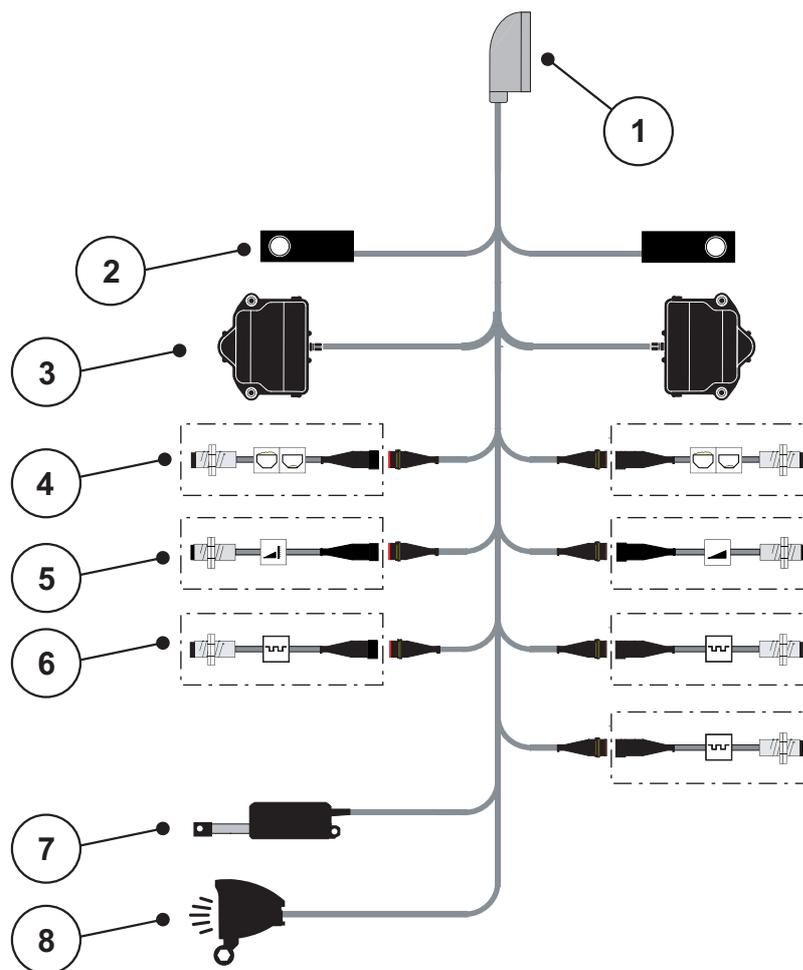


Figure 3.7: Schematic connection diagram QUANTRON-A

- [1] 39-pin machine plug
- [2] Metering slider rotary drive, left/right
- [3] Option (level sensor left/right)
- [4] Optional TELIMAT sensor or GSE sensor, top/bottom
- [5] Hopper cover
- [6] Optional: SpreadLight

AXIS-M EMC V8



**Figure 3.8:** Schematic connection diagram QUANTRON-A

- [1] 39-pin machine plug
- [2] Weigh cells, left/right (machines with weigh frame only)
- [3] Metering slider rotary drive, left/right
- [4] Optional: Filling level sensor, left/right
- [5] Optional: TELIMAT sensor or GSE sensor, top/bottom
- [6] M EMC sensors (left, right, centre)
- [7] Hopper cover
- [8] Optional: SpreadLight

AXIS-M EMC VS pro

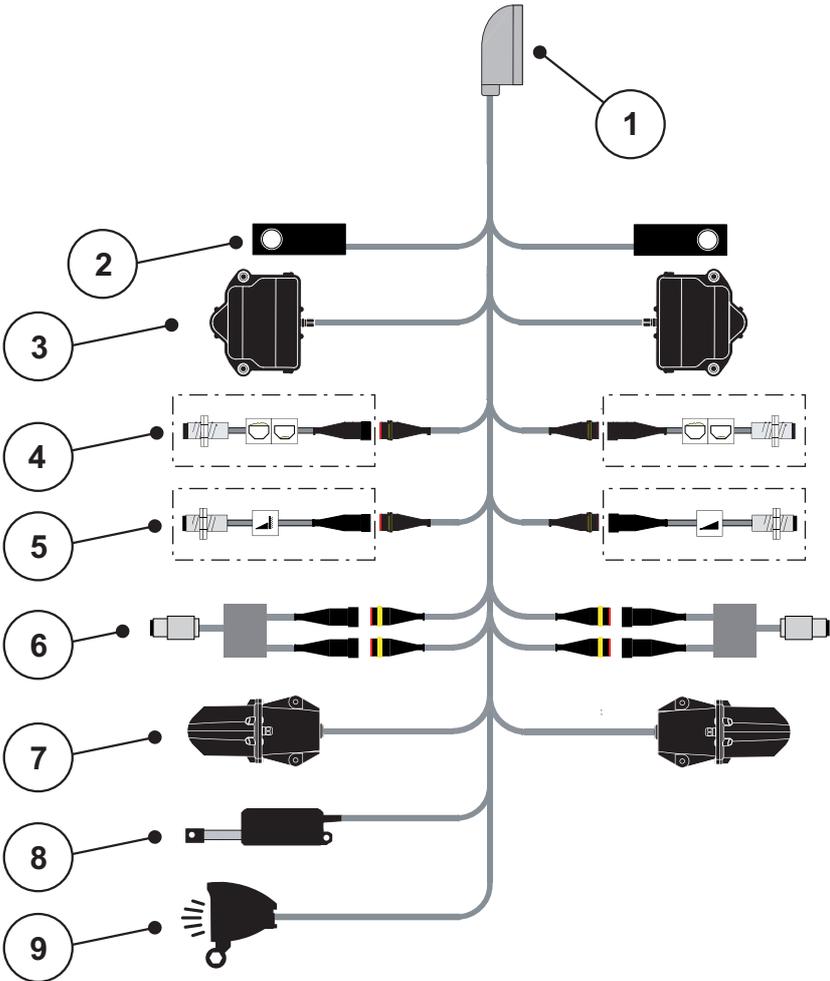


Figure 3.9: Schematic connection diagram QUANTRON-A

- [1] 39-pin machine plug
- [2] Weigh cells, left/right (machines with weigh frame only)
- [3] Metering slider rotary drive, left/right
- [4] Optional: Filling level sensor, left/right
- [5] Optional: TELIMAT sensor or GSE sensor, top/bottom
- [6] Torque/speed sensor, left/right
- [7] Drop point adjustment, left/right
- [8] Hopper cover
- [9] Optional: SpreadLight

#### 3.4 Metering slide preparation

The fertiliser spreaders AXIS Q, AXIS-M EMC and MDS Q are fitted with an electronic metering slide actuator for setting the spreading volume.

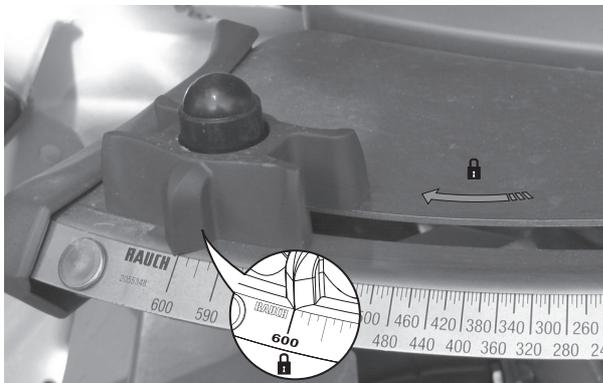
#### ⚠ CAUTION



#### Check the position of the metering slides on the AXIS fertiliser spreader

The actuators being operated by the QUANTRON-A can cause damage to the machine's metering slides if the stop levers are incorrectly positioned.

- ▶ Always clamp the stop levers at the maximum scale position.



**Figure 3.10:** Preparing the AXIS metering slide (example)

#### NOTICE

Follow the fertiliser spreader's operating manual.

---

## 4 Operation QUANTRON-A

### ⚠ CAUTION



#### Risk of injury due to ejected fertiliser

In the case of a fault, it is possible that the metering slide will open unexpectedly during road transportation to the spreading location. There is a risk of slipping and personal injury due to ejected fertiliser.

- ▶ **Before leaving for the spreading location**, the electronic control unit QUANTRON-A must always be switched off.

### NOTICE

#### AXIS-M EMC (+W) only

The settings in the individual menus are very important for optimal automatic **mass flow control**.

Make sure you observe the following menu entries in particular:

- In the **Fertiliser settings** menu
  - Spreading disc., see [Page 52](#).
  - PTO speed, see [Page 51](#).
- In the **Machine settings** menu
  - AUTO/MANUAL operation, see [Page 63](#) and chapter [\[5\]](#).

### 4.1 Control unit activation

#### Requirements:

- The control unit is connected properly to the mineral fertiliser spreader and the tractor (for an example, see chapter [3.3: Connecting the control unit, page 23](#)).
- A minimum voltage of **11 V** is guaranteed.

### NOTICE

The operator's manual describes the functions of the QUANTRON-A control unit **as of software version 3.50.00**.

**Activation:**

1. Actuate the **ON/OFF switch [1]**.
  - ▷ After a few seconds, the control unit **start-up screen** appears.
  - ▷ Shortly after, the control unit will display the **activation menu** for a few seconds.
2. Press the **Enter key**.
  - ▷ The **start diagnosis** will be displayed for a few seconds.
  - ▷ The **operating screen** is then displayed.



**Figure 4.1:** Start QUANTRON-A

[1] ON/OFF switch

## 4.2 Menu navigation

### NOTICE

Important notes regarding the display and navigation between menus are provided in chapter [1.2.5: Menu hierarchy, keys and navigation, page 3](#).

#### Accessing the main menu

- Press the **Menu key**. See [2.3: Control elements, page 8](#).
  - ▷ The main menu is displayed.
  - ▷ The black bar indicates the first sub-menu.

### NOTICE

Not all parameters are displayed simultaneously in one menu window. The **Arrow keys** enable switching to the next or previous windows.

#### Accessing a sub-menu:

1. Move the bar up and down with the **arrow keys**.
2. Select the desired sub-menu with the bar on the display.
3. Access the highlighted sub-menu by pressing the **Enter key**.

Windows appear prompting various actions.

- Text input
- Value input
- Settings made in further sub-menus

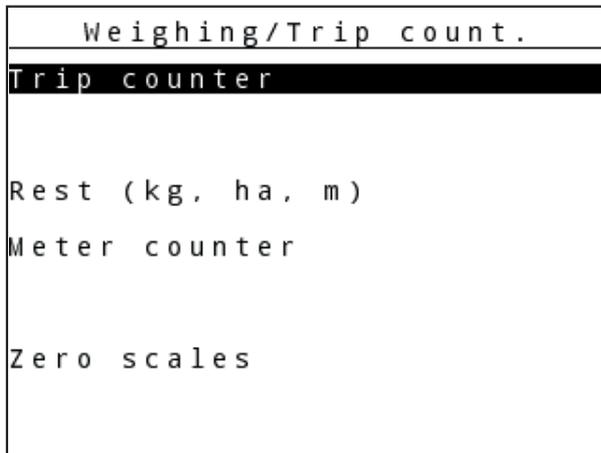
#### Exiting the menu

- Confirm settings by pressing the **Enter key**.
  - ▷ The **previous menu** is displayed.or
- press ESC key.
  - ▷ The previous settings are maintained.
  - ▷ The **previous menu** is displayed.
- **Press the Menu key**.
  - ▷ The **operating screen** is displayed again.
  - ▷ Press the **Menu key** once more to return to the menu that you left.

### 4.3 Weighing trip counter

This menu provides values regarding the spreading work carried out as well as functions for weighing operation.

- Press the **kg** key on the control unit.
  - ▷ The **weighing trip counter** menu is displayed.



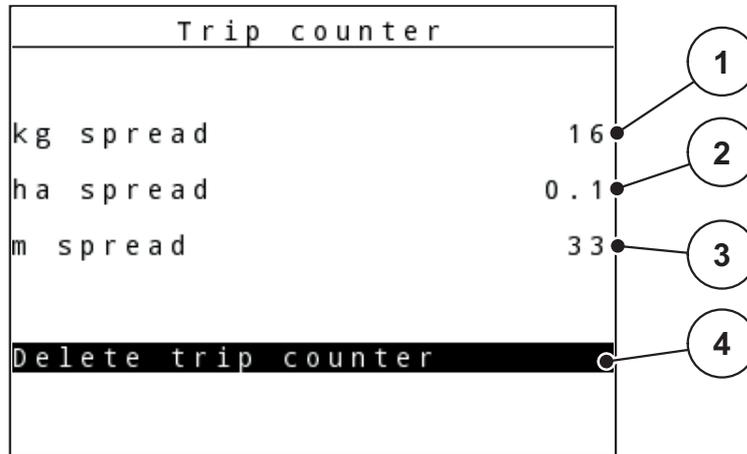
**Figure 4.2:** Weighing trip counter menu

| Sub-menu         | Meaning  | Description                                    |
|------------------|--|--|
| Trip counter     | Applied spreading quantity, applied area and applied distance display.           | <a href="#">Page 35</a>                        |
| Rest (kg, ha, m) | Remaining spread quantity, area and distance display.                            | <a href="#">Page 36</a>                        |
| Metre counter    | Display showing the distance travelled since the meter counter was last reset.   | Reset (zero) by pressing the <b>C 100%</b> key |
| Zero scales      | <b>With AXIS weigh cells only:</b> The weight for empty scales is set to "0 kg". |  |

### 4.3.1 Trip counter

This menu provides the following values:

- spread quantity (kg)
- spread area (ha)
- spread distance (m)



**Figure 4.3:** Trip counter menu

- [1] Display showing spread quantity since the last reset
- [2] Display showing spread area since the last reset
- [3] Display showing spread distance since the last reset
- [4] Clearing the trip counter: all values to 0

#### Clearing the trip counter:

1. Open the **Weighing/Trip counter > Trip counter** sub-menu.
  - ▷ The values for spreading quantity, area and distance determined **since the last deletion** are displayed.

The **Delete trip counter** field is highlighted.
2. Press the **Enter** key.
  - ▷ All of the trip counter values are reset to 0.
3. Press the **kg** key.
  - ▷ You are taken back to the operating screen.

#### Checking the trip counter during spreading:

During spreading, i.e. when the slides are open, the **Trip counter** menu can be opened to display the current values.

#### NOTICE

If you wish to continuously monitor the values during spreading, freely selectable operating screen display fields may also be assigned the **kg Trip**, **ha Trip** or **m Trip** values, see chapter [4.10.2: Display configuration, page 77](#).

### 4.3.2 Displaying the remaining quantity

In the **Rest (kg, ha, m)** menu, you can request or input the **residual quantity** within the hopper.

The menu shows the possible **area (ha)** and **distance (m)** which can still be spread using the remaining fertiliser quantity. Both displays are calculated based on the following values:

- Fertiliser settings,
- Entry in the **residual quantity** input field,
- Application rate,
- working width.

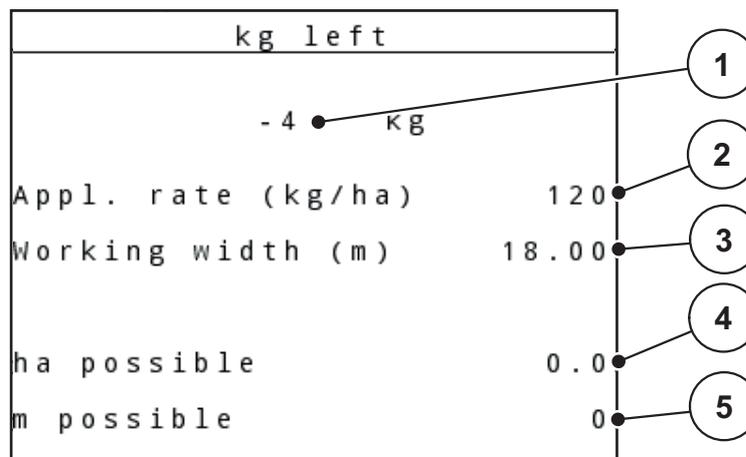
**NOTICE**

For **weighing spreaders** the current loading weight can only be determined by weighing.

With all other spreaders, the residual fertiliser quantity is calculated from the fertiliser and machine settings as well as from the drive signal, and the filling quantity is to be entered manually (see below).

The **Application rate** and **Working width** values cannot be changed in this menu. They are for information purposes only.

---



**Figure 4.4:** Rest (kg, ha, m) menu

- [1] Residual quantity input field
- [2] Application rate (display field from fertiliser settings)
- [3] Working width (display field from fertiliser settings)
- [4] Display of possible area which can be spread with the residual quantity
- [5] Display of possible distance which can be spread with the residual quantity

**Entering the residual quantity when refilling:**

1. Open the **Weighing/Trip counter > Rest (kg, ha, m)** menu.
  - ▷ The residual quantity from the last spreading process is displayed.
2. Fill the hopper.
3. Enter the new total weight for the fertiliser in the hopper.
  - Also see chapter [4.14.2: Entering values with the cursor keys, page 90](#).
4. Press the **Enter key**.
  - ▷ The device calculates the values for the possible spread area and the possible spread distance.
5. Press the **kg** key.
  - ▷ **You are taken back to the operating screen.**

**Requesting the residual quantity during spreading:**

During spreading, the residual quantity is continuously recalculated and displayed. See chapter [5: Spreading operation with the QUANTRON-A control unit, page 93](#).

**4.3.3 Tare the scales (AXIS with weigh cells only)**

In this menu, the weight for the empty hopper is to be set to 0kg.

The following requirements have to be fulfilled for zeroing the scales:

- the hopper is empty,
- the machine is at a standstill,
- the PTO shaft is switched off,
- the machine is in a horizontal position and off the ground,
- the tractor is at a standstill.

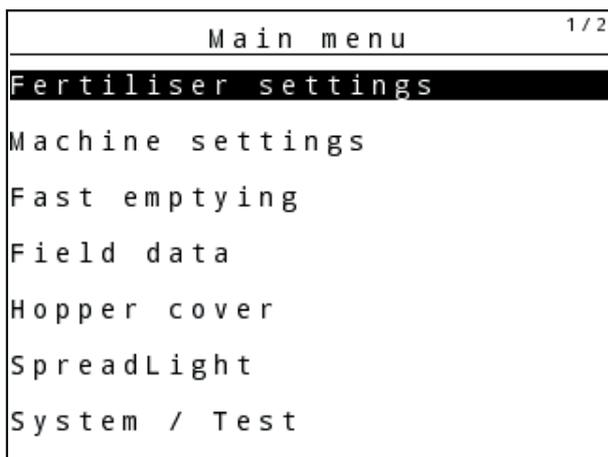
**Taring the scales:**

1. Open the **Weighing/Trip counter > Zero scales** menu.
2. Press the **Enter key**.
  - ▷ **The weighed value for the empty scales is now set to 0 kg.**
  - ▷ **The Weighing trip counter menu is displayed.**

**NOTICE**

Zero the scales before each use in order to ensure that the residual quantity is calculated correctly.

4.4 Main menu



**Figure 4.5:** QUANTRON-A main menu  
The main menu displays the following sub-menus.

**NOTICE**

Not all parameters are displayed simultaneously in one menu window. The **arrow keys** enable switching to the next or previous windows.

| Sub-menu            | Meaning  | Description             |
|---------------------|--|-------------------------|
| Fertiliser settings | Fertiliser and spreading operation settings.                           | <a href="#">Page 41</a> |
| Machine settings    | Tractor and fertiliser spreader settings.                              | <a href="#">Page 59</a> |
| Fast emptying       | Direct access to the menu for fast fertiliser spreader emptying.       | <a href="#">Page 68</a> |
| Field data          | Opens the menus for selecting, creating or deleting field data.        | <a href="#">Page 70</a> |
| Hopper cover        | <b>AXIS only:</b> Opening/closing the hopper cover (special equipment) | <a href="#">Page 86</a> |
| SpreadLight         | <b>AXIS only:</b> Operating lights (Optional equipment)                | <a href="#">Page 85</a> |
| System/test         | Settings and diagnosis of the control unit.                            | <a href="#">Page 74</a> |
| Info                | Machine configuration display.   | <a href="#">Page 84</a> |

### 4.5 Fertiliser settings in Easy mode

The mode settings are described in section [4.10.3: Mode, page 78](#).

In this menu, the fertiliser and spreading operation settings can be changed.

- Open the **Main menu > Fertiliser settings** menu.

**NOTICE**

For the **M EMC** function, the mode is automatically set to Expert

**NOTICE**

The **Fertiliser settings** menu is different for the AXIS and MDS fertiliser spreader.

| Fertiliser settings <span style="float: right;">1/4</span> |       |
|--|-------|
| 8.ABC.....   |       |
| Appl. rate (kg/ha)   | 100   |
| Working width (m)  | 36.00 |
| Flow factor  | 1.00  |
| Drop point   | 0.0   |
| Start calibration  |       |

**Figure 4.6:** AXIS fertiliser settings menu, Easy mode

| Fertiliser settings |       |
|---------------------|-------|
| 1.ABC               |       |
| Appl. rate (kg/ha)  | 100   |
| Working width (m)   | 18.00 |
| Flow factor         | 1.00  |
| Vane setting        | ----- |
| Start calibration   |       |

**Figure 4.7:** MDS fertiliser settings menu, Easy mode

| Sub-menu                           | Meaning/possible values  | Description   |
|------------------------------------|--|---|
| Fertiliser name                    | Selected fertiliser.   |   |
| Appl. rate (kg/ha)                 | Target value entry for the application rate in kg/ha.  | <a href="#">Page 44</a>                                 |
| Working width (m)                  | Determination of the working width to be spread.   | <a href="#">Page 44</a>                                 |
| Flow factor                        | Input of flow factor of the fertiliser used  | <a href="#">Page 45</a>                                 |
| Drop point<br><b>(AXIS only)</b>   | Input of the drop point. The display is for information purposes only.<br><b>For AXIS with electrical drop point actuators:</b> Drop point adjustment. | Follow the operating manual for the fertiliser spreader |
| Vane settings<br><b>(MDS only)</b> | Entering spreader vane settings. The display is for information purposes only.   | Follow the operating manual for the fertiliser spreader |
| Start calibration                  | Open the sub-menu to execute the calibration.  | <a href="#">Page 48</a>                                 |

## 4.6 Fertiliser settings in Expert mode

The mode settings are described in section [4.10.3: Mode, page 78](#) .

**NOTICE**

For the **M EMC** function, the mode is automatically set to Expert

In this menu, the fertiliser and spreading operation settings can be changed. In contrast to Easy mode, this menu contains further setting pages as well as the fertiliser chart.

- Open the **Main menu > Fertiliser settings** menu.

**NOTICE**

The **Fertiliser settings** menu is different for the AXIS and MDS fertiliser spreader.

For AXIS-M EMC (+W) consider:

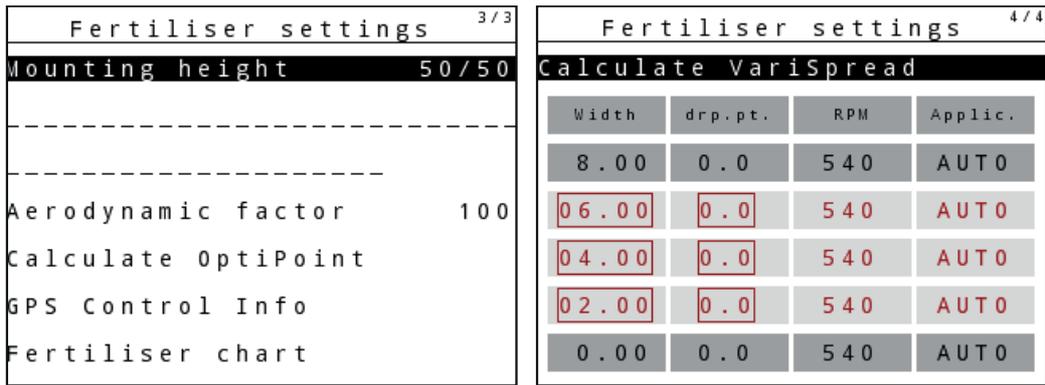
- The entries in the **Spreading disc** and **Power take off** menu items must comply with your machine's actual settings.

| Fertiliser settings <sup>1/4</sup> | Fertiliser settings <sup>2/4</sup> |
|------------------------------------|------------------------------------|
| 8.ABC.....                         | PTO 540                            |
| Appl. rate (kg/ha) 100             | Spreading disc 54                  |
| Working width (m) 36.00            | Bound. sprd.type Limited bd        |
| Flow factor 1.00                   | Bound. disc speed 0                |
| Drop point 0.0                     | TELIMAT Limited bd 000             |
| Start calibration                  | Grenzstr.Menge (%) - 0             |
|                                    | Fertilisation Normal               |

**Figure 4.8:** AXIS fertiliser settings menu, page 1 and 2

| Fertiliser settings <sup>1/3</sup> | Fertiliser settings <sup>2/3</sup> |
|------------------------------------|------------------------------------|
| 1.ABC                              | PTO 540                            |
| Appl. rate (kg/ha) 100             | Spreading disc M1                  |
| Working width (m) 18.00            | Bound. sprd.type Limited bd        |
| Flow factor 1.00                   | Bound. disc speed 0                |
| Vane setting -----                 | TELIMAT Limited bd -----           |
| Start calibration                  | Grenzstr.Menge (%) - 0             |
|                                    | Fertilisation Normal               |

**Figure 4.9:** MDS fertiliser settings menu, page 1 and 2



**Figure 4.10:** Fertiliser settings menu, page 3 (AXIS/MDS)

The main menu displays the following sub-menus.

| Sub-menu                      | Meaning/possible values  | Description   |
|-------------------------------|--|---|
| Fertiliser name               | Fertiliser selected from the fertiliser chart.   | <a href="#">Page 56</a>   |
| Application rate (kg/ha)      | Target value entry for the application rate in kg/ha.  | <a href="#">Page 44</a>   |
| Working width (m)             | Determination of the working width to be spread.   | <a href="#">Page 44</a>   |
| Flow factor                   | Entering flow factor of the fertiliser used.   | <a href="#">Page 45</a>   |
| Drop point (AXIS only)        | Input of the drop point. The display is for information purposes only.<br><b>For AXIS with electrical drop point actuators:</b> Drop point adjustment. | Follow the operating manual for the fertiliser spreader   |
| Vane settings (MDS only)      | Entering spreader vane settings. The display is for information purposes only.   | Follow the operating manual for the fertiliser spreader   |
| Start calibration             | Open the sub-menu to execute the calibration.  | <a href="#">Page 48</a>   |
| PTO shaft                     | Factory setting: 540 rpm   | <a href="#">Page 51</a>   |
| Spreading disc<br><b>AXIS</b> | Selection list: <ul style="list-style-type: none"> <li>● S1</li> <li>● S2</li> <li>● S4</li> <li>● S6</li> <li>● S8</li> </ul>                         | Selection with <b>Arrow keys</b><br>Confirmation with the <b>Enter key</b><br><a href="#">Page 52</a> |
| Spreading discs<br><b>MDS</b> | Selection list: <ul style="list-style-type: none"> <li>● M1C</li> <li>● M1XC</li> <li>● M2</li> </ul>  | Selection with <b>Arrow keys</b><br>Confirmation with the <b>Enter key</b>                            |

| Sub-menu                    | Meaning/possible values  | Description  |
|-----------------------------|--|--|
| Boundary spreading type     | Selection list: <ul style="list-style-type: none"> <li>• Boundary</li> <li>• Border</li> </ul> | Selection with <b>Arrow keys</b><br>Confirmation with the <b>Enter key</b> |
| Bound. disc speed           | Presetting the RPM in the boundary spreading mode  | To be entered in a separate input window                                   |
| TELIMAT limited/full border | Saving the TELIMAT settings for boundary fertilisation.  | For fertiliser spreaders with TELIMAT sensor only.                         |
| Bound. quantity (%)         | Quantity reduction pre-setting for boundary spreading.   | <a href="#">Page 53</a>  |
| Fertilisation method        | Selection list: <ul style="list-style-type: none"> <li>• Normal</li> <li>• Late</li> </ul>     | Selection with <b>Arrow keys</b><br>Confirmation with the <b>Enter key</b> |
| Mounting height             | Input in cm,<br>Selection list: 0/6, 40/40, 50/50, 60/60, 70/70, 70/76                         | Selection with <b>Arrow keys</b><br>Confirmation with the <b>Enter key</b> |
| Manufacturer                | Entry of the fertiliser manufacturer.  |  |
| Composition                 | Percentage content of chemical composition.  |  |
| Distance factor             | Entering the distance factor from the fertiliser chart. Required for OptiPoint calculation     |  |
| Calculate Opti-Point        | <b>AXIS only</b><br>Enter the GPS control parameters   | <a href="#">Page 54</a>  |
| GPS control info            | GPS control parameter information display.   | <a href="#">Page 55</a>  |
| Fertiliser chart            | Management of fertiliser charts.   | <a href="#">Page 56</a>  |
| Calculate VariSpread        | Calculation of values for adjustable sections  | <a href="#">Page 58</a>  |

### 4.6.1 Application rate

In this menu, you can enter the desired target value for the application rate.

#### Entering the application rate:

1. Open the **Fertiliser settings > Application rate (kg/ha)** menu.
  - ▷ The **currently applied** application rate is displayed.
2. Enter the new value in the input field.  
See Chapter [4.14.2: Entering values with the cursor keys, page 90](#).
3. Press the **Enter key**.
  - ▷ **The new value is saved in the control unit.**

### 4.6.2 Working width

You can set the working width (in meters) in this menu.

1. Open the **Fertiliser settings > Working width (m)** menu.
  - ▷ The **currently set** working width is displayed.
2. Enter the new value in the input field.  
See Chapter [4.14.2: Entering values with the cursor keys, page 90](#).
3. Press the **Enter key**.
  - ▷ **The new value is saved in the control unit.**

### 4.6.3 Flow factor

The flow factor ranges between **0.2** and **1.9**. With constant basic settings (km/h/ , working width, kg/ha), the following applies:

- If the flow factor is **increased**, the application rate is **decreased**.
- If the flow factor is **decreased**, the application rate is **increased**.

An error message is displayed if the flow factor is outside the preset range. See [6: Alarm messages and possible causes, page 107](#). If spreading organic fertiliser or rice, the minimum factor has to be reduced to 0.2. Otherwise the error message will be displayed constantly.

If the flow factor is known from earlier calibration tests or from the fertiliser chart, it can be entered **manually** in this menu.

#### NOTICE

Via the **Calibration** menu, the flow factor can be determined and entered using the QUANTRON-A control unit. See Chapter [4.6.5: Calibration, page 48](#).

The **M EMC function** determines the flow factor specifically for each spreading side. Therefore, no manual input is required.

#### NOTICE

The flow factor calculation depends on the operating mode used. For further information on the flow factor, refer to chapter [4.7.2: AUTO/MAN mode, page 63](#).

#### Entering the flow factor:

1. Open the **Fertiliser settings > Flow factor** menu.
  - ▷ The **currently set** flow factor is displayed.
2. Enter the new value in the input field.

See Chapter [4.14.2: Entering values with the cursor keys, page 90](#).

#### NOTICE

If your fertiliser is not listed in the fertiliser chart, then enter a flow factor of **1.00**.

In the **AUTO km/h** and **MAN km/h** operating modes, we highly recommend carrying out a **calibration test** in order to be able to accurately determine the flow factor for this fertiliser.

3. Press the **Enter key**.

▷ **The new value is saved in the control unit.**

#### NOTICE

#### AXIS-M EMC (+W) only

We recommend displaying the flow factor in the operating screen. This allows you to monitor the mass flow control during spreading. Refer to chapter [4.10.2: Display configuration, page 77](#) and chapter [4.7.2: AUTO/MAN mode, page 63](#).

**Minimum factor**

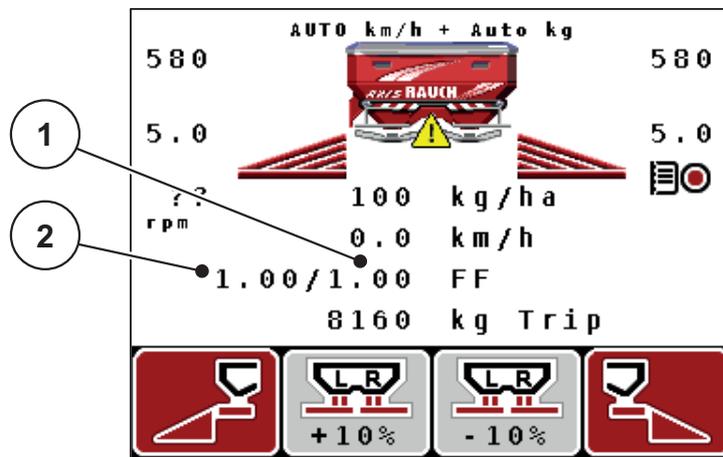
The machine control unit automatically sets the minimum factor to one of the following values in accordance with the entered flow factor value:

- The minimum factor is 0.2 if the input value is smaller than 0.5.
- The minimum factor is reset to 0.4 as soon as you enter a value exceeding 0.5.

**Displaying the flow factor with the M EMC function (AXIS only)**

Enter a value for the flow factor in the **Flow factor** sub-menu as standard. However, during spreading and when the **M EMC function** is enabled, the control unit controls the left and the right metering slide separately. Both values are shown on the operating screen.

When pressing the **Start/Stop** key, the display updates the flow factor display with a slight delay. The display is updated at regular intervals.



**Figure 4.11:** The left and right flow factors are controlled separately (M EMC function activated).

- [1] Flow factor for the right metering slide opening
- [2] Flow factor for the left metering slide opening

#### 4.6.4 Drop point

##### AXIS-M Q V8

### NOTICE

Entering the drop point for machines with the **Q variant** is merely informative and does not affect the settings for the fertiliser spreader.

In this menu, you can enter the drop point for information purposes.

1. Open the **Fertiliser settings > Drop point** menu.
  2. Determine the position for the drop point using the fertiliser chart.
  3. Enter the determined value in the input field.  
See Chapter [4.14.2: Entering values with the cursor keys, page 90](#).
  4. Press the **Enter key**.
- ▷ **The Fertiliser settings window with the new drop point is displayed.**

##### AXIS-M VS pro

With the AXIS EMC VS pro mineral fertiliser spreader, the drop point is set using the electrical drop point adjustment.

1. Open the **Fertiliser settings > Drop point** menu.
  2. Determine the position for the drop point using the fertiliser chart.
  3. Enter the determined value in the input field.
  4. Press **OK**.
- ▷ **The Fertiliser settings window with the new drop point is displayed.**

If the drop point is blocked, alarm 17 is displayed; see Chapter [6: Alarm messages and possible causes, page 107](#).

### ▲ CAUTION



#### Risk of injury due to automatic drop point adjustment

By pressing the **Start/Stop** function key, the drop point is automatically moved to the pre-set value by means of electrical servomotors (SpeedServos). This may cause injury.

- ▶ Before pressing **Start/Stop**, ensure that nobody is present in the danger zone of the machine.
- ▶ Acknowledge the “Move to drop point” alarm message by pressing start.

### 4.6.5 Calibration

#### NOTICE

The **Calibration** menu is locked for the **M EMC function** and in the **AUTO km/h + AUTO kg** operating mode. This menu item is inactive.

---

In this menu, you can determine the flow factor based on a calibration and save it in the control unit.

Carry out the calibration test:

- before spreading for the first time.
- If the fertiliser quality has changed significantly (moisture, high dust content, cracked grain).
- if a new fertiliser type is used.

The calibration test must be carried out with engaged PTO shaft at a standstill or during travel over a test section.

- Remove both spreading discs.
- Set the drop point to calibration position (AGP 0).

#### Entering the working speed:

1. Open the **Fertiliser settings > Start calibration** menu.
2. Enter the average working speed.  
This value is required to calculate the slide position during the calibration.
3. Press the **Enter key**.
  - ▷ The new value is saved in the control unit.
  - ▷ The **Move to drop point (AXIS only)** alarm message appears in the display.

#### ▲ CAUTION



#### Risk of injury due to automatic drop point adjustment

With machines equipped with electrical drop point actuators, the **Move to drop point** alarm message appears. When the **Start/Stop** function key is pressed, the drop point automatically moves to the pre-set value using the electrical servomotors (SpeedServos). This can cause personal injury and property damages.

- ▶ Before pressing **Start/Stop**, ensure that **nobody** is present in the danger zone of the machine.
- 

4. Press the **Start/Stop** key.
  - ▷ The drop point is activated.
  - ▷ The alarm is cleared.
  - ▷ The **Prepare calibration test** operating screen is displayed.



**Selecting the section:**

5. Determine which spreader side the calibration will be carried out on.
    - Press the **F1** function key to select **left** spreading side.
    - Press the **F4** function key to select **right** spreading side.
- ▷ The symbol indicating the selected spreader side will be lit with a red light.

**Running the calibration:****▲ WARNING****Risk of injury during the calibration**

Rotating machine components and ejected fertiliser may cause injury.

- ▶ **Before starting** the calibration, ensure that all requirements have been met.
- ▶ Read the **Calibration** chapter in the operator's manual for the machine.

6. Press the **Start/Stop** key.
  - ▷ The metering slide of the previously selected section opens and the calibration starts.
  - ▷ The **Run calibration** operating screen is displayed.

**NOTICE**

The calibration can be stopped at any time by pressing the **ESC key**. The metering slide is closed and the **Fertiliser settings** menu is displayed.

**NOTICE**

The calibration time is not relevant when it comes to the accuracy of the results. However, **a minimum of 20 kg** must be spread during the calibration.

7. Press the **Start/Stop** key once more.
  - ▷ The calibration ends.
  - ▷ The metering slider closes.
  - ▷ The display shows the **Input collected weight** menu.

### Recalculating the flow factor

#### ▲ WARNING



#### Risk of injury due to rotating machine parts

Contact with rotating machine components (universal drive shaft, hubs) may cause bruises, abrasions and crushing injuries. Body parts or objects may be caught or drawn in.

- ▶ Switch off the tractor motor.
- ▶ Switch off the PTO shaft and secure it against unauthorised activation.

- 
8. Weigh the collected weight (taking into account the empty weight of the collecting vessel).
  9. Input collected weight.  
See Chapter [4.14.2: Entering values with the cursor keys, page 90](#).
  10. Press the **Enter key**.
    - ▷ The new value is saved in the control unit.
    - ▷ The **Flow factor calculation** menu is displayed.

#### NOTICE

The flow factor must be between 0.4 and 1.9.

---

11. Determine the flow factor.
  - For taking over the **newly calculated** flow factor, press the **Enter key**.
  - For confirming the **previously saved** flow factor, press the **ESC key**.
  - ▷ **The flow factor is saved.**
  - ▷ **The Fertiliser settings menu is displayed.**

#### 4.6.6 PTO shaft

##### NOTICE

For an **optimal idle measurement**, check that the information in the **Fertiliser settings** menu is correct.

- The entries in the **Spreading disc** and **PTO shaft** menu items must match the actual settings of your machine.

The specified PTO speed is preset in the control unit to 540 rpm as a standard factory setting. If you want to set a different PTO speed, you must change the value stored in the control unit.

1. Open the **Fertiliser settings > PTO** menu.
  2. Enter the RPM.  
See Chapter [4.14.2: Entering values with the cursor keys, page 90](#).
  3. Press the **Enter key**.
- ▷ **The display shows the Fertiliser settings window with the new PTO speed.**

##### NOTICE

Please observe chapter: [Mass flow control with the M EMC function, page 98](#).

### 4.6.7 Spreading disc type

#### NOTICE

For an **optimal idle measurement**, check that the information in the **Fertiliser settings** menu is correct.

- The entries in the **Spreading disc** and **PTO shaft** menu items must match the actual settings of your machine.

---

The mounted spreading disc type is factory pre-programmed in the control unit. If you have mounted different spreading discs on your machine, you must ensure that the correct type is entered in your control unit accordingly.

1. Open the **Fertiliser settings > Spreading disc** menu item.
2. Highlight the disc type with the bar in the selection list.
3. Press the **Enter key**.
  - ▷ The selected disc type is marked with a tick.
4. Press the **ESC** key
  - ▷ **The Fertiliser settings window with the new spreading disc type is displayed.**

#### 4.6.8 Boundary spreading quantity (%)

You can set the quantity reduction (as a percentage value) for the TELIMAT boundary spreading unit in this menu. This setting is used for the activation of the boundary spreading function via the TELIMAT sensor or the **T key**.

#### **NOTICE**

We recommend reducing the quantity on the boundary spreading side by 20%.

#### **Entering the boundary spreading quantity:**

1. Open the **Fertiliser settings > Boundary quantity (%)** menu.
  2. Enter the value in the input field.  
See Chapter [4.14.2: Entering values with the cursor keys, page 90](#).
  3. Press the **Enter key**.
- ▷ **The fertiliser settings window with the new TELIMAT quantity is displayed.**

4.6.9 Calculate OptiPoint (AXIS only)

In the **Calculate OptiPoint** menu, you can enter the parameters to calculate the optimum switch-on and switch-off distances **in the headlands**.

It is very important to enter the distance factor of the fertiliser used to obtain an exact calculation.

**NOTICE**

The range index number for the fertiliser used can be taken from the fertiliser chart of the machine.

1. Enter the prescribed value in the **Fertiliser settings > Distance factor** menu.
2. Open the **Fertiliser settings > Calculate OptiPoint** menu.
  - ▷ The first page of the **Calculate OptiPoint** menu is displayed.

**NOTICE**

The indicated forward speed refers to the forward speed in the area of the switching positions! See chapter [5.8: GPS Control, page 103](#).

3. Enter the **average forward speed** in the range of switching positions.
4. Press **OK**.
5. Press the **Enter key**.
  - ▷ The third page of the menu is displayed.

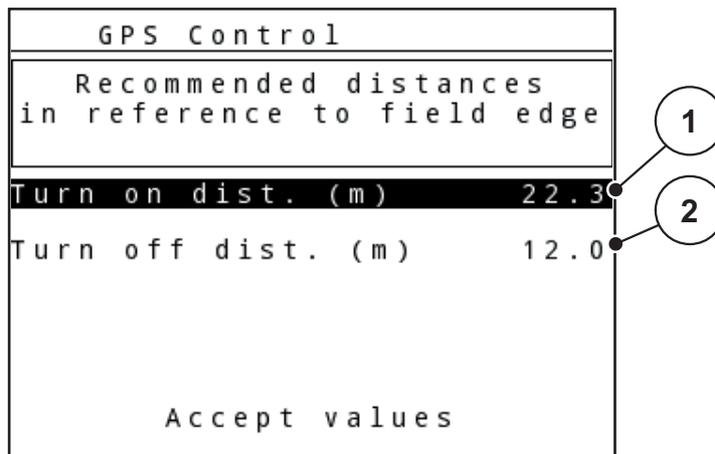


Figure 4.12: Calculate OptiPoint, page 3

| Number | Meaning  | Description              |
|--------|--|--------------------------|
| 1      | Distance (in meters) in relation to the field border at which the metering slides open.      | <a href="#">Page 105</a> |
| 2      | Distance (in meters) in reference to the field border from which the metering sliders close. | <a href="#">Page 106</a> |

**NOTICE**

On this page, you can manually adjust the parameters. See Chapter [5.8: GPS Control, page 103](#).

---

**Changing the values**

6. Highlight the selected input.
7. Press the **Enter key**.
8. Enter the new values.
9. Press the **Enter key**.
10. Highlight the **Accept values** menu item.
11. Press the **Enter key**.
  - ▷ The **GPS Control Info** menu is displayed.
  - ▷ **The OptiPoint has been calculated.**
  - ▷ **The control unit changes to the GPS Control Info window.**

**4.6.10 GPS control information**

The **GPS Control Information** menu provides information on the calculated values set in the **Calculate OptiPoint** menu.

Depending on the terminal used, 2 distances (CCI, Müller Elektronik) and/or 1 distance and 2 time values (John Deere, ...) are displayed.

- With most ISOBUS terminals, the values displayed here are **automatically** applied to the corresponding settings menu on the GPS terminal.
- With some terminals, however, a **manual** entry is required.

**NOTICE**

- Observe the operator's manual for your GPS terminal.
-

4.6.11 Fertiliser chart

In these menus, you can create and manage your own **fertiliser charts**.

**NOTICE**

The selection of a fertiliser chart has an effect on the fertiliser settings, the control unit and the mineral fertiliser spreader. The set application rate is overwritten by the stored value from the fertiliser chart.

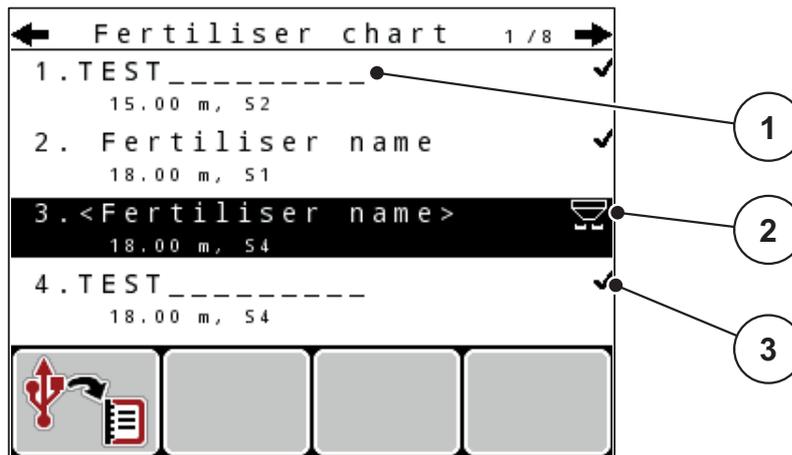
**NOTICE**

You can automatically manage fertiliser charts and transfer them to your control unit. For this, you need a WLAN module (special equipment) and a smartphone (see [2.8: WLAN module, page 19](#)).

**Creating a new fertiliser chart**

The control unit can store up to **30** fertiliser charts.

1. Open the **Fertiliser settings > Fertiliser chart** menu.



**Figure 4.13:** Fertiliser chart menu

- [1] Fertiliser chart name field
- [2] Display of active fertiliser chart
- [3] Display of the fertiliser chart filled with values

2. Highlight the **name field** of an empty fertiliser chart.
3. Press the **Enter key**.
  - ▷ The selection window is displayed.
4. Highlight the **Open element...** option.
5. Press the **Enter key**.
  - ▷ The **Fertiliser settings** menu is displayed and the selected element is loaded into the fertiliser settings as **Active fertiliser chart**.
6. Highlight the **Fertiliser name** menu item.
7. Press the **Enter key**.
8. Enter a name for the fertiliser chart.

**NOTICE**

We recommend naming the fertiliser chart after the fertiliser. This makes it is easier to assign fertilisers to the fertiliser chart.

9. Edit the parameters of the **fertiliser chart**.

See Chapter [4.6: Fertiliser settings in Expert mode, page 41](#).

**Selecting a fertiliser chart:**

1. Open the **Fertiliser settings > Fertiliser chart** menu.
2. Select the required fertiliser chart.
3. Press the **Enter key**.
  - ▷ The selection window is displayed.
4. Highlight the **Open element...** option.
5. Press the **Enter key**.
  - ▷ **The Fertiliser settings menu is displayed and the selected element is loaded into the fertiliser settings as the active fertiliser chart.**

**NOTICE**

When selecting an existing fertiliser chart, all values in the **Fertiliser settings** menu will be overwritten using the stored values obtained from the selected fertiliser chart, including the drop point and the PTO speed.

- **Machine with electrical drop point actuators:** The machine control unit will move the actuators of the drop point to the value stored in the fertiliser chart.

**Copying an existing fertiliser chart**

1. Select the required fertiliser chart.
2. Press the **Enter key**.
  - ▷ The selection window is displayed.
3. Highlight the **Copy element** option.
4. Press the **Enter key**.
  - ▷ **A copy of the fertiliser chart is now on the first free position of the list.**

**Deleting an existing fertiliser chart**

1. Select the required fertiliser chart.
2. Press the **Enter key**.
  - ▷ The selection window is displayed.
3. Highlight the **Delete element** option.
4. Press the **Enter key**.
  - ▷ **The fertiliser chart is deleted from the list.**

4.6.12 Calculate Varispread

The Varispread section assistant automatically calculates the section steps in the background. Your inputs for the working width and the drop point in the first page of the **Fertiliser settings** menu provide the basis for this.

**NOTICE**

Editing the Varispread table requires specialist knowledge. If you want to change the settings, please contact your dealer.

| Fertiliser settings <span style="float: right;">4 / 4</span> |         |     |         |
|--|---------|-----|---------|
| Calculate Varispread   |         |     |         |
| Width  | drp.pt. | RPM | Applic. |
| 8.00   | 0.0     | 540 | AUTO    |
| 06.00  | 0.0     | 540 | AUTO    |
| 04.00  | 0.0     | 540 | AUTO    |
| 02.00  | 0.0     | 540 | AUTO    |
| 0.00   | 0.0     | 540 | AUTO    |

**Figure 4.14:** Varispread calculation, example with 8 sections (4 on each side)

- [1] Adjustable section settings
- [2] Predefined section settings

**Transmission of values to the GPS terminal**

Transmission of values from the Varispread table to the GPS terminal is done automatically on machines with Varispread pro. On machines with Varispread V8, it depends on the GPS terminal.

## 4.7 Machine settings

**NOTICE**

The **Machine** menu. The **Fertiliser settings** menu is different for the fertiliser spreader AXIS and MDS.

The tractor and machine settings can be configured in this menu.

- Open the **Machine settings** menu.

| Machine settings <span style="float: right;">1/2</span> |     |
|---|-----|
| Tractor (km/h)  |     |
| AUTO/MAN mode   |     |
| +/- appl. rate (%)                                      | 20  |
| Idle measurement signal                                 | ✓   |
| lbs level sensor  | 331 |
| Easy toggle   |     |

**Figure 4.15:** Machine settings menu (example)

| Sub-menu                    | Meaning   | Description             |
|-----------------------------|---|-------------------------|
| Tractor (km/h)              | Determining or calibrating the speed signal.  | <a href="#">Page 60</a> |
| AUTO / MAN mode             | Setting automatic or manual operating mode.   | <a href="#">Page 63</a> |
| +/- appl. rate              | Pre-setting the quantity reduction for the different spreading types.   | <a href="#">Page 66</a> |
| Signal for idle measurement | AXIS-M EMC only: Activation of the signal tone when starting the automatic idle measurement   |                         |
| kg level sensor             | Entering the residual quantity to trigger an alarm message via the weigh cells.   |                         |
| Easy toggle                 | Restricts the L%/R% toggle key to two conditions.   | <a href="#">Page 67</a> |
| Application corr. L/R (%)   | Correction of the deviations between the entered application rate and the actual application rate. <ul style="list-style-type: none"> <li>● Correction in percent either on the right or left side</li> </ul> |                         |

4.7.1 Forward speed calibration

The forward speed calibration is the basic requirement for an exact spreading result. Factors such as tyre size, a different tractor, four-wheel drive, slippage between tyres and ground, ground characteristics and tyre pressure influence the speed measurement and, therefore, the spreading result.

**Preparing the forward speed calibration:**

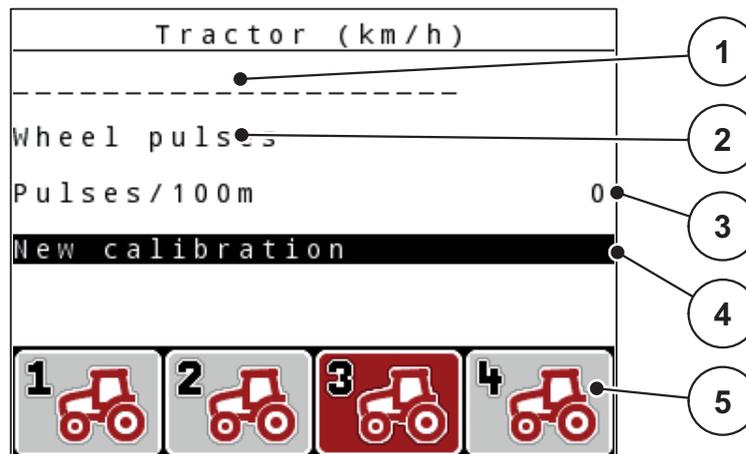
The exact calculation of the number of speed pulses over 100m is very important for the precise discharge of the fertiliser quantity.

- Conduct the calibration on the field. This reduces the influence of the ground characteristics on the calibration result.
- Determine a **100 m** long reference track as precisely as possible.
- Switch on four-wheel drive.
- Fill only half of the machine, if possible.

**Opening the forward speed settings:**

In the QUANTRON-A control unit, up to **4 different profiles** for the type and number of pulses can be saved. You can assign names to these profiles (e.g. tractor name).

Before spreading, check that the correct profile is opened in the control unit.



**Figure 4.16:** Tractor calibration menu

- [1] Tractor designation
- [2] Transducer display for the speed signal
- [3] Display of number of pulses over 100 m
- [4] Tractor calibration sub-menu
- [5] Icons for memory locations of profiles 1 to 4

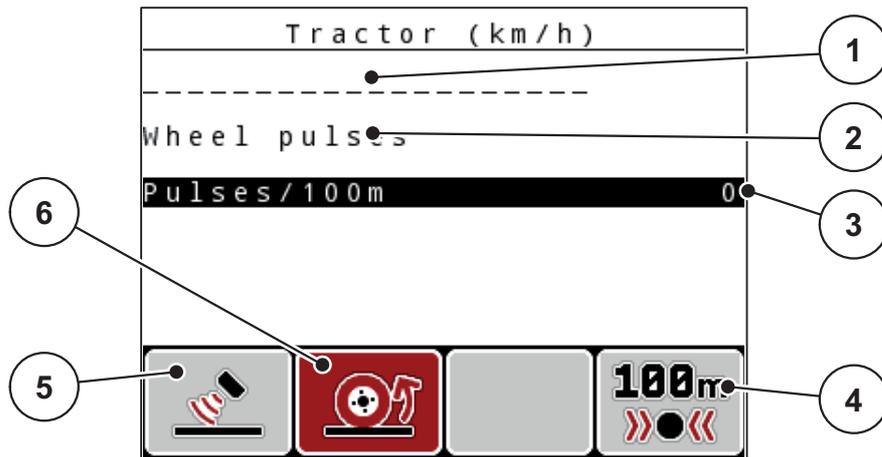
1. Open the **Machine settings > Tractor (km/h)** menu.  
The displayed values for name, origin and number of pulses refer to the profile highlighted in black.
2. Press the function key (**F1-F4**) under the memory location symbol.

**New calibration of the forward speed signal:**

You can either overwrite an existing profile or create a profile in an empty memory location.

1. Select the desired memory location in the **Tractor calibration** menu using the function key below.
2. Select the **New calibration** field.
3. Press the **Enter** key.

▷ **The Tractor (km/h) calibration menu is displayed.**



**Figure 4.17:** Tractor (km/h) calibration menu

- [1] Tractor name field
- [2] Display of origin of speed signal
- [3] Display of number of pulses over 100 m
- [4] Automatic calibration sub-menu
- [5] Radar pulse transducer
- [6] Wheel pulse transducer

4. Highlight the **Tractor name field**.
5. Press the **Enter** key.
6. Enter the name of the profile.

**NOTICE**

The input of the name is restricted to **16 characters**.

We recommend using the name of the tractor for ease of understanding.

Entering text into the control unit is described in section [4.14.1: Text input, page 88](#).

7. Select the pulse transducer for the forward speed signal.
    - For **Radar pulses** press the **F1** function key.
    - For **Wheel pulses** press the **F2** function key.
- ▷ **The display shows the pulse transducer.**

The number of pulses of the speed signal must still be specified below. If the exact pulse count is known, it can be entered directly:

8. Call up the **Tractor (km/h) > New calibration > Imp/100m** menu item.

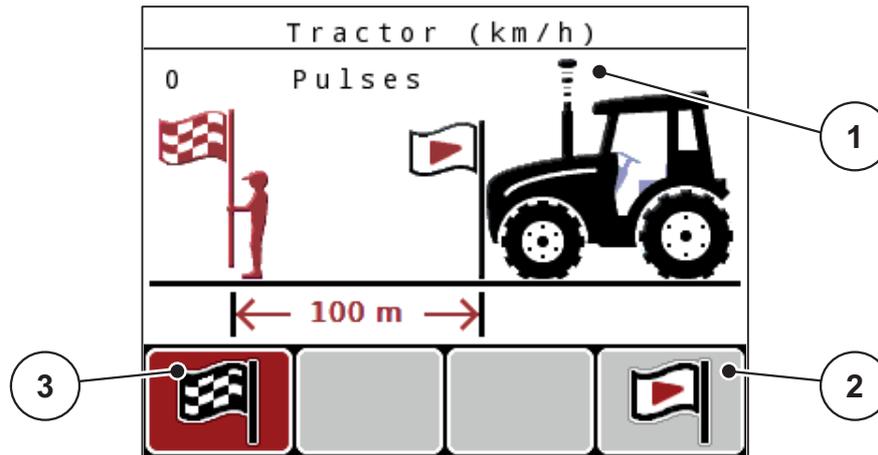
▷ **The Pulses menu for manual pulse count input is displayed.**

Entering values into the control unit is described in section [4.14.2: Entering values with the cursor keys, page 90](#).

If the exact pulse count **is unknown**, start a **calibration run**.

9. Press the **F4 (100 m AUTO)** function key.

▷ The calibration run operating screen is displayed.



**Figure 4.18:** Calibration run speed signal operating screen

- [1] Pulse display
- [2] Start recording pulses
- [3] Stop recording pulses

10. Press the **F4** function key at the starting position of the reference distance.

- ▷ The pulse display is now zero.
- ▷ The control unit is ready for counting pulses.

11. Drive along a 100 m long reference track.

12. Stop the tractor at the end of the reference track.

13. Press the **F1** function key.

- ▷ The number of received pulses is displayed.

14. Press the **Enter** key.

- ▷ **The new pulse count is saved.**
- ▷ **The calibration menu is displayed again.**

### 4.7.2 AUTO/MAN mode

The default operating mode is **AUTO**. The control unit automatically controls the actuators based on the speed signal.

The **manual** mode is only applied in the following cases:

- there is no speed signal (radar or wheel sensor not available or defective),
- application of slug pellets or seeds (fine seeds).

**NOTICE**

To ensure regular spreading of the spreading material in manual operating mode, it is imperative that you work at a **constant forward speed**.

| Menu                | Meaning  | Description              |
|---------------------|--|--------------------------|
| AUTO km/h + AUTO kg | <b>AXIS only:</b> Selecting automatic mode with automatic weighing | <a href="#">Page 63</a>  |
| AUTO km/h           | Selection of automatic mode  | <a href="#">Page 100</a> |
| MAN scale           | Metering slide adjustment for manual mode                          | <a href="#">Page 102</a> |
| MAN km/h            | Adjustment of forward speed for manual mode                        | <a href="#">Page 101</a> |

#### Operating mode selection

1. Switch on the QUANTRON-A control unit.
  2. Open the **Machine settings > AUTO/MAN mode** menu.
  3. Select the required menu item.
  4. Press the **Enter key**.
  5. Follow the instructions on the screen.
- You can find important information about the use of the different operating modes for spreading operations in Chapter [5: Spreading operation with the QUANTRON-A control unit, page 93](#).

**NOTICE**

The specified operating mode is displayed in the operating screen.

#### **AUTO km/h + AUTO kg: automatic operation with automatic mass flow control:**

The **AUTO km/h + AUTO kg** operating mode continuously controls the fertiliser quantity during spreading operation according to the forward speed and the flow behaviour of the fertiliser. This optimises the metering of the fertiliser.

### AUTO km/h: Automatic operation

#### NOTICE

In order to achieve an optimum spreading result, a calibration test should be carried out before spreading.

---

1. Switch on the QUANTRON-A control unit.
  2. Open the **Machine settings > AUTO/MAN mode** menu.
  3. Highlight the **AUTO km/h** menu item
  4. Press the **Enter key**.
  5. Configure the fertiliser settings:
    - Application rate (kg/ha)
    - Working width (m)
  6. Refill the hopper with fertiliser.
  7. Carry out a calibration to determine the flow factor  
or  
determine the flow factor using the provided fertiliser chart.
  8. Enter the flow factor manually.
  9. Press the **Start/Stop** key.
- ▷ **The spreading starts.**

### MAN km/h: manual operation

1. Switch on the QUANTRON-A control unit.
2. Open the **Machine settings > AUTO/MAN mode** menu.
3. Select **MAN km/h** in the menu.
  - ▷ The **Forward speed** input window is displayed.
4. Enter the value for the forward speed during spreading.
5. Press the **Enter key**.

#### NOTICE

In order to achieve an optimum spreading result, a calibration test should be carried out before spreading.

---

**MAN scale: manual operation with scale value**

1. Open the **Machine settings > AUTO/MAN mode** menu.
2. Select **MAN scale** in the menu.
  - ▷ The display shows the **metering slide opening** menu.
3. Enter the scale value for the metering slide opening.

4. Press the **Enter key**.

Refer to [4.14.2: Entering values with the cursor keys, page 90](#).

- ▷ **The operating mode setting is saved.**

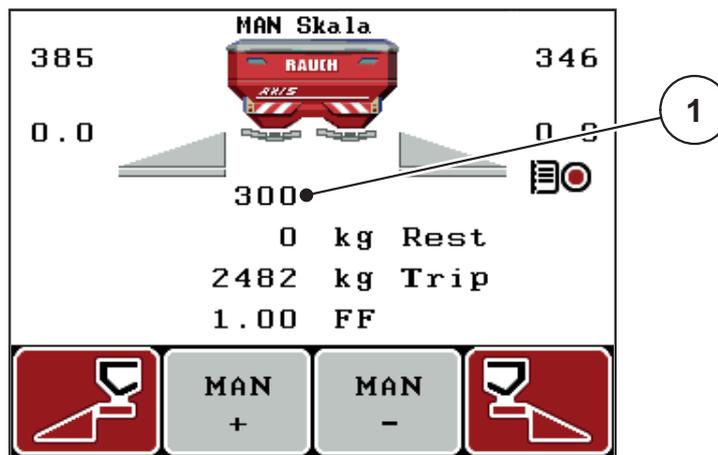
**NOTICE**

In order to achieve an optimum spreading result even in manual mode, we recommend using the values for metering slide opening and forward speed provided in the fertiliser chart.

The **MAN scale** operating mode enables manual adjustment of the metering slide opening during the spreading operation.

**Requirement:**

- The metering slides are open (activation with the **Start/Stop** key).
- In the **MAN scale** operating screen, the icons for sections are filled in red.



**Figure 4.19:** MAN scale operating screen

[1] Display of current metering slider scale position

5. For changing the metering slide opening press **F2** or **F3**.
  - F2: MAN+** to increase the metering slide opening
  - F3: MAN-** to reduce the metering slide opening.

### 4.7.3 +/- application rate

In this menu, an **Application rate adjustment** percentage for standard spreading can be specified.

The base (100%) is the pre-set value for the opening of the metering slide.

#### NOTICE

During operation, you can use the **F2/F3** function keys to change the application rate by the **+/- quantity** factor at any time.

You can restore the default settings with the **C 100 % key**.

---

#### Determine the quantity reduction:

1. Open the **Machine settings > +/- appl. rate (%)** menu.
2. Enter the percentage by which you want to adjust the spreading quantity.  
See Chapter [4.14.2: Entering values with the cursor keys, page 90](#).
3. Press the **Enter key**.

### 4.7.4 Signal for idle measurement

Here you can activate or deactivate the signal tone for the accomplishment of the idle measurement.

1. Highlight the **Idle measurement signal** menu item.
2. Activate the option by pressing the **Enter key**.
  - ▷ The display shows a tick.
  - ▷ There is an acoustic signal for each start of an automatic idle measurement.
3. Deactivate the option by pressing the **Enter key** once more.
  - ▷ The tick disappears.

### 4.7.5 Easy Toggle

Here, you can limit the toggle function of the **L%/R%** key to 2 conditions of the **F1** to **F4** function keys. By doing so, you can avoid unnecessary toggling action in the operating screen.

1. Highlight the **Easy Toggle** sub-menu
2. Press the **Enter key**.
  - ▷ The display shows a tick.
  - ▷ The option is active.
  - ▷ In the operating screen, the **L%/R%** key may only alternate between the quantity change (L+R) and section management (VariSpread) functions.
3. Press the **Enter key**.
  - ▷ The tick disappears.
  - ▷ You can switch between the 4 different conditions by means of the **L%/R%** key.

| Assignment of function keys   | Function   |
|---|--|
|    | Quantity change on both sides  |
|  | Quantity change on the right side<br><b>Hidden if the Easy toggle function is active</b> |
|  | Quantity change on the left side<br><b>Hidden if the Easy toggle function is active</b>  |
|  | Increase or reduce sections  |

### 4.8 Fast emptying

To clean the machine after spreading or to quickly empty residual spreading material, select the **Fast emptying** menu.

Before storing the machine, we recommend **completely opening** the metering slides using fast emptying and switching off the QUANTRON-A in this state. This prevents a build-up of moisture in the hopper.

**NOTICE**

**Before starting** the fast emptying process, it is to be ensured that all preconditions have been met. Observe the operator's manual for the fertiliser spreader (emptying of residual quantities).

1. Open the **Main menu > Fast emptying** menu.

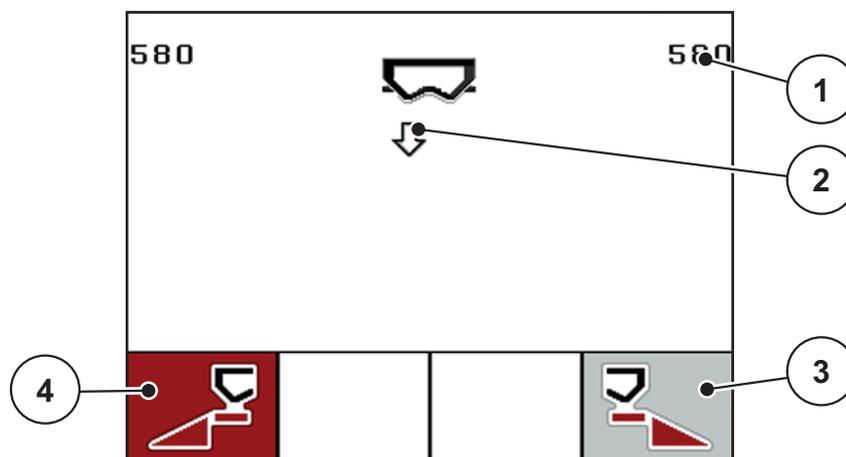
**⚠ CAUTION**



**Risk of injury due to automatic adjustment of the drop point!**

With machines equipped with electrical drop point actuators, the **Move to drop point** alarm message appears. When the **Start/Stop** key is pressed, the drop point automatically moves to the pre-set value using the electrical servomotors (SpeedServos). This can cause personal injury and property damages.

- ▶ Before pressing **Start/Stop**, ensure that **nobody** is present in the hazard zone of the machine.



**Figure 4.20:** Fast emptying menu

- [1] Metering slide opening display
- [2] Symbol for fast emptying (here: left side selected, but not yet started)
- [3] Fast emptying of right section (here: not selected)
- [4] Fast emptying of left section (here: selected)

2. Press the **Function key** to select the section for which the fast emptying function is to be carried out.
  - ▷ The selected section is shown as an icon in the display.
3. Press the **Start/Stop key**.
  - ▷ The fast emptying process starts.
4. Press the **Start/Stop key** again.
  - ▷ The fast emptying process ends.

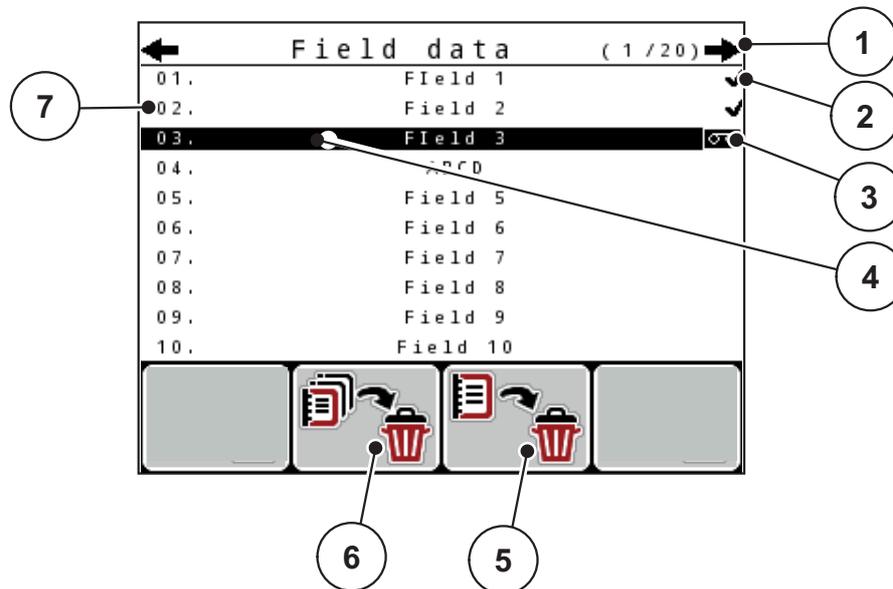
With machines equipped with electrical drop point actuators, the **Move to drop point** alarm message appears.

5. Press the **Start/Stop key**
  - ▷ The alarm is acknowledged.
  - ▷ The electrical actuators are activated at the pre-set value.
6. Press the **ESC key** to return to the **main menu**.

## 4.9 Field data

In this menu, you can create and manage up to **200 field datas**.

- Open the **Main menu > Field data** menu.



**Figure 4.21:** Field data menu

- [1] Page number display
- [2] Display of filled field data
- [3] Display of active field data
- [4] Name of field data
- [5] F3 function key: Deleting field data
- [6] F2 function key: Deleting all field data
- [7] Display of disc space

### 4.9.1 Selecting a field data

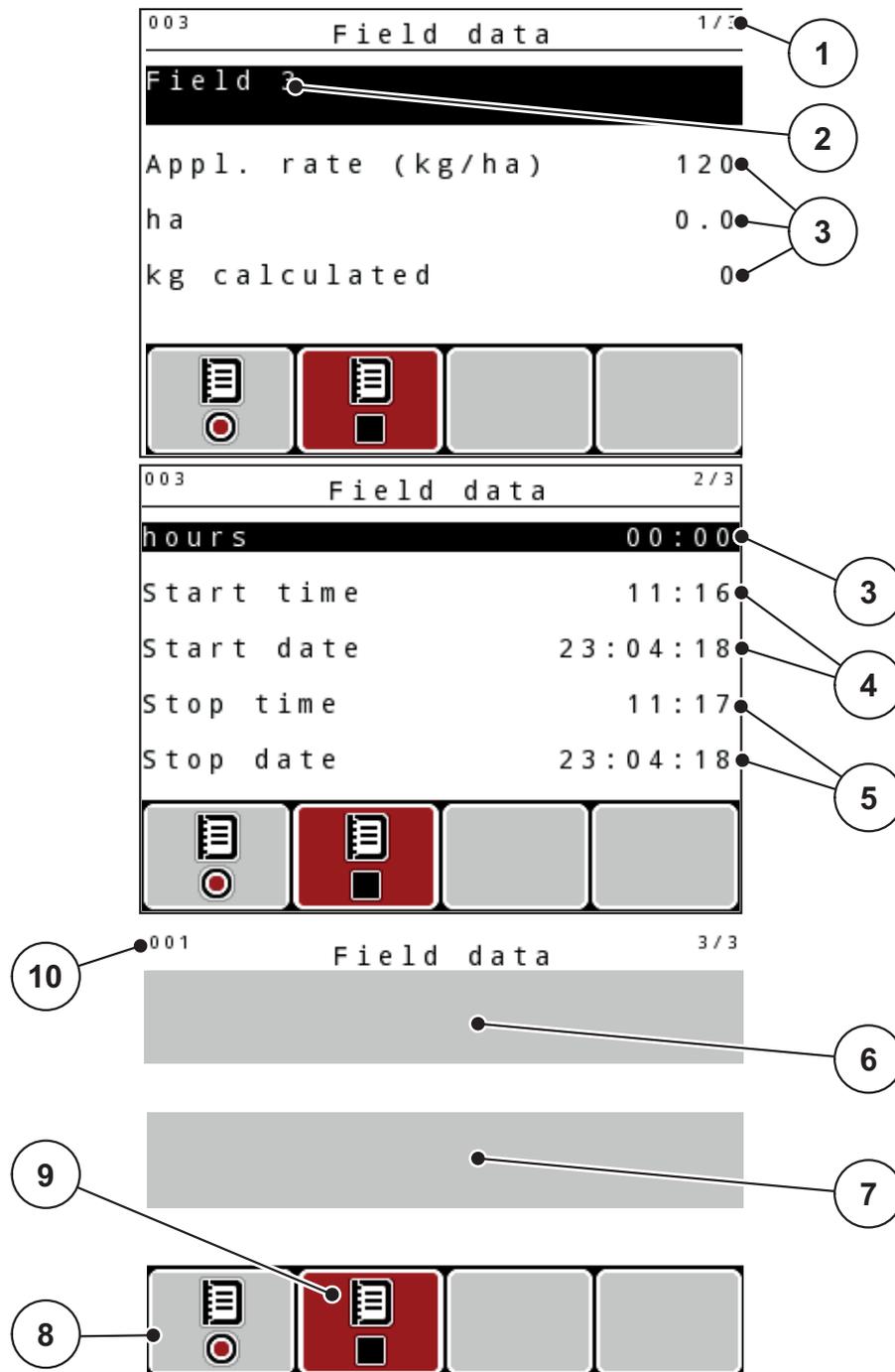
Already saved field data files can be selected and processed again. The data already saved in the field data are **not overwritten**, but instead the new values are **added**.

#### NOTICE

With the **left/right arrow keys** you can jump forward and back through the pages in the **Field data** menu.

1. Select the required field data.
2. Press the **Enter key**.
  - ▷ The first page of the current field data is displayed.

4.9.2 Starting the recording



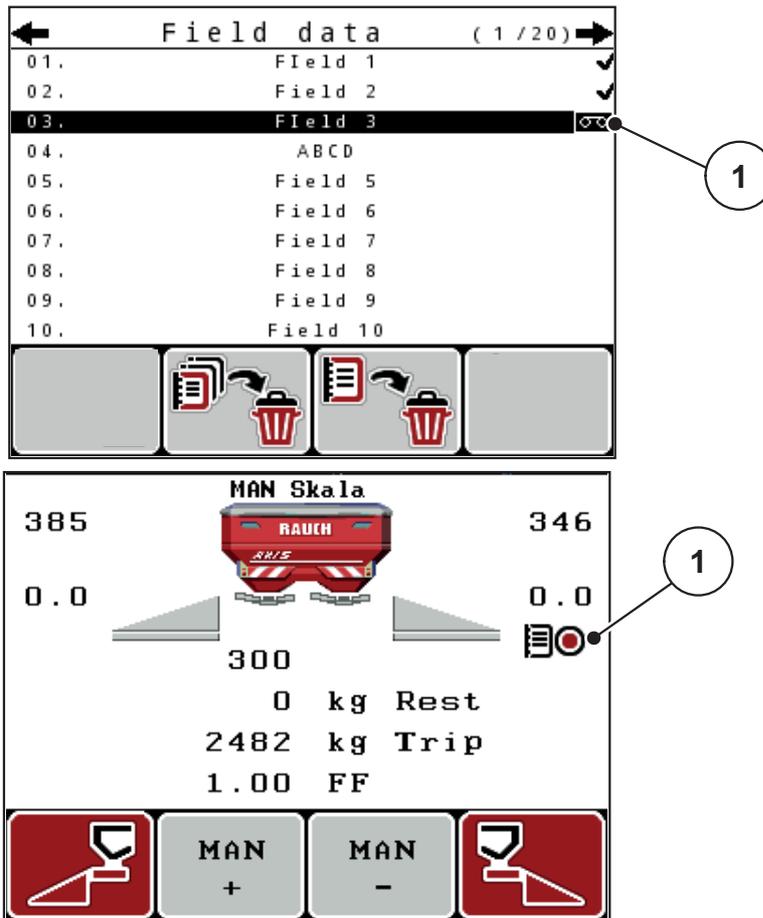
**Figure 4.22:** Display of current field data

- [1] Display of the page number
- [2] Name field of field data
- [3] Value fields
- [4] Display of the start time/date
- [5] Display of the stop time/date
- [6] Name field of fertiliser
- [7] Name field of fertiliser manufacturer
- [8] Function key Start
- [9] Function key Stop
- [10] Display of disc space

3. Press the **F1** function key under the start icon.
  - ▷ The recording starts.
  - ▷ The **Field data** menu displays the **recording icon** for the current field data.
  - ▷ The **operating screen** displays the **recording symbol**.

**NOTICE**

If a different field data file is opened, the current field data file is stopped. The active field data file cannot be deleted.



**Figure 4.23:** Recording symbol display

[1] Recording symbol

### 4.9.3 Stopping the recording

1. Open the 1st page of the active field data in the **Field data** menu.
2. Press the **F2** function key below the stop symbol.
  - ▷ The recording is stopped.

### 4.9.4 Deleting field data

The control unit QUANTRON-A facilitates the deletion of recorded field data.

#### NOTICE

Only the content of the field data will be deleted, the field data name will still be displayed in the name field!

#### Deleting field data

1. Call up the **Field data** menu.
2. Select field data from the list.
3. Press the **F3** function key below the **Delete** icon (see [Figure 4.21](#)).
  - ▷ The selected field data has been deleted.

#### Deleting all field data

1. Call up the **Field data** menu.
2. Press the **F2** function key below the **Delete all** icon (see [Figure 4.21](#)).
  - ▷ A message appears indicating that all data will be deleted (see [6.1: Alarm message meanings, page 107](#)).
3. Press the **Start/Stop** key.
  - ▷ All field data are deleted.

4.10 System/test

Use this menu for the system and test settings of the control unit.

- Open the **Main menu > System / Test** menu.

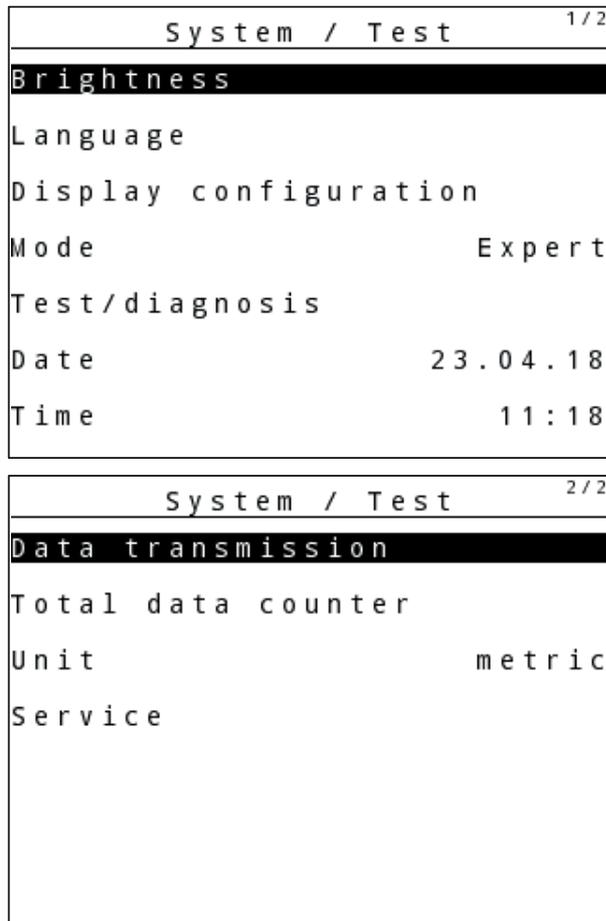


Figure 4.24: System/test menu

| Sub-menu              | Meaning   | Description   |
|-----------------------|---|---|
| Brightness            | Display settings  | The settings can be adjusted with the function keys + or -. |
| Language              | Language setting for menu navigation.   | <a href="#">Page 76</a>                                     |
| Display configuration | Determining the displays on the operating screen.   | <a href="#">Page 77</a>                                     |
| Mode                  | Settings of current mode<br>For the <b>EMC</b> function, the mode is automatically set to <b>Expert</b> . | <a href="#">Page 78</a>                                     |
| Test/diagnosis        | Checking the actuators and sensors.   | <a href="#">Page 79</a>                                     |

| Sub-menu           | Meaning   | Description  |
|--------------------|---|--|
| Date               | Setting the current date.   | Selection and modification of the settings by means of the <b>Arrow keys</b> ; confirmation using the <b>Enter key</b> |
| Time               | Setting the current time.   | Selection and modification of the settings by means of the <b>Arrow keys</b> ; confirmation using the <b>Enter key</b> |
| Data transmission  | Menu for data exchange and serial protocols   | <a href="#">Page 83</a>  |
| Total data counter | Display of the total <ul style="list-style-type: none"> <li>● spread quantity in kg</li> <li>● spread area in ha</li> <li>● spread time in h</li> <li>● distance travelled in km</li> </ul> |  |
| Unit               | Value display in the selected unit system: <ul style="list-style-type: none"> <li>● metric</li> <li>● imperial</li> </ul>   | <a href="#">Page 84</a>  |
| Service            | Service settings  | Password-protected; only accessible for service personnel  |

### 4.10.1 Setting the language

In the QUANTRON-A control unit, **several languages** can be set. The language package for your country is pre-set at the factory.

1. Open the **System/Test > Language** menu.
  - ▷ The display shows the first of four pages.

| Sprache - Language |    | 1/4 |
|--------------------|----|-----|
| deutsch            | DE | ✓   |
| Français           | FR |     |
| English            | UK |     |
| Nederlands         | NL |     |
| Italiano           | IT |     |
| Español            | ES |     |
| русский            | RU |     |

**Figure 4.25:** Language sub-menu, page 1

2. Select the language for the menus.

#### NOTICE

The languages are listed in several menu windows. The **arrow keys** enable switching to the next or previous windows.

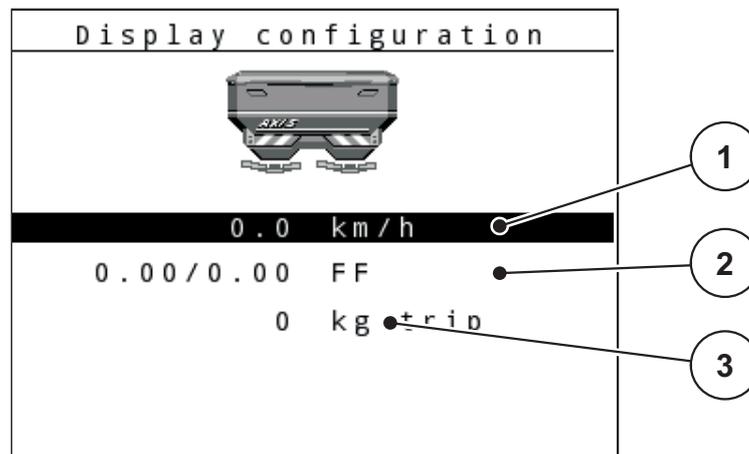
---

3. Press the **Enter key**.
  - ▷ **The selection is confirmed.**
  - ▷ **The QUANTRON-A control unit restarts automatically.**
  - ▷ **The menus are displayed in the selected language.**

## 4.10.2 Display configuration

The display fields in the operating screen of the control unit can be configured as desired. You can assign the three display fields with the following values if desired:

- Forward speed
- Flow factor (FF)
- Time
- ha trip
- kg trip
- m trip
- residual kg
- m left
- residual ha
- Idle time



**Figure 4.26:** Display configuration menu

- [1] Display field 1
- [2] Display field 2
- [3] Display field 3

### Select display

1. Open the **System/test > Display configuration** menu.
2. Select the required **display field**.
3. Press the **Enter key**.
  - ▷ The available options are listed on the display.
4. Select the new value which is to be assigned to the display field.
5. Press the **Enter key**.
  - ▷ The **operating screen** is displayed. The respective **display field** displays the new value.

### 4.10.3 Mode

In the QUANTRON-A control unit, **2 different modes** are possible:  
The **Easy** mode or the **Expert** mode.

#### **NOTICE**

For the M EMC function, the mode is automatically set to Expert

---

- In the **Easy** mode, only the parameters of the fertiliser settings required for spreading can be accessed: It is not possible to create or manage fertiliser charts.
- In **Expert** mode, all available parameters can be accessed in the Fertiliser settings menu.

#### **Selecting a mode**

1. Highlight the **System/Test > Mode** menu entry.
2. Press the **Enter key**.

▷ **The active mode is displayed.**

You can switch between the two modes by pressing the **Enter key**.

#### 4.10.4 Test/diagnosis

The **Test/diagnosis** menu enables function monitoring and checking of specific sensors/actuators.

#### NOTICE

This menu is for information purposes only.

The list of sensors depends on the machine configuration.

| Sub-menu               | Meaning   | Description              |
|------------------------|---|--------------------------|
| Slide test points      | Test for moving to the various position points of the sliders.      | Checking the calibration |
| Metering slide         | Moving to the left and right metering slide                         | <a href="#">Page 80</a>  |
| Voltage                | Checking the operating voltage.                                     |                          |
| Level sensor           | Checking the level sensors  |                          |
| Weigh cells            | Checking the weigh cells.   |                          |
| M-EMC                  | Checking the sensors for the M EMC function.                        |                          |
| Drop point test points | Test for approaching the various position points of the drop point. | Checking the calibration |
| Drop point             | Moving to the drop point.   |                          |
| Linbus                 | Checking the assemblies registered via LINBUS.                      |                          |
| TELIMAT sensor         | Checking the TELIMAT sensors  |                          |
| GSE sensor             | Checking the sensors for the boundary spreading unit.               |                          |
| Hopper cover           | Checking the actuators.   |                          |
| SpreadLight            | Checking the working headlights                                     |                          |

Example metering slide

**⚠ CAUTION**

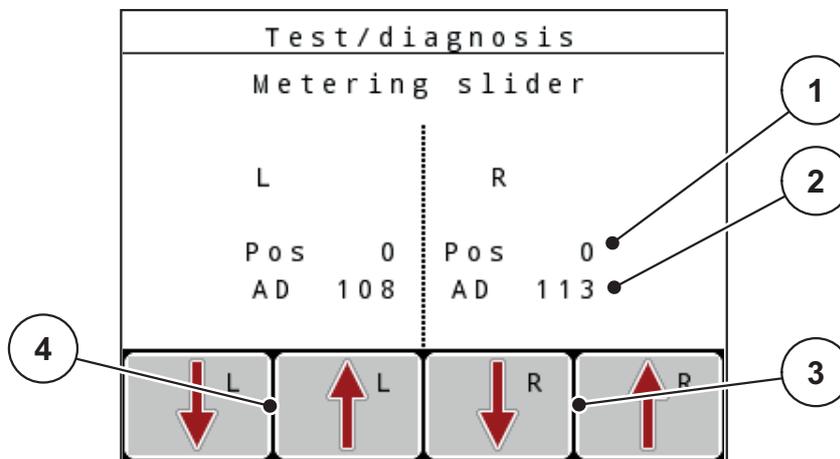


**Risk of injury due to moving machine parts.**

During the tests, machine parts may start to move automatically.

- ▶ Before carrying out the test, ensure that nobody is present in the danger zone of the machine.

1. Open the **System/test > Test/diagnosis** menu.
2. Select the **metering slide** menu item.
3. Press the **Enter** key.
  - ▷ The status of the actuators/sensors is displayed.



**Figure 4.27:** Test/diagnosis; example: Metering slide

- [1] Position display
- [2] Signal display
- [3] Function keys for right actuator
- [4] Left actuator function keys

The status of the signal for the left and right hand side is displayed separately by means of the **signal** display.

The actuators can be extended and retracted by pressing the **F1 - F4** function keys.

**Linbus example**

1. Open the **System/test > Test/diagnosis** menu.
2. Highlight the **Linbus** menu item.
3. Press the **Enter** key.
  - ▷ The actuator/sensor status is displayed.

|              | Ver       | Mfr | Fnc | Stat    |
|--------------|-----------|-----|-----|---------|
| DP right     | 0 . 0 . 0 | 0   | 0   | ● _ _ _ |
| DP left      | 0 . 0 . 0 | 0   | 1   | _ _ _   |
| TELIMAT      | 0 . 0 . 0 | 0   | 0   | _ _ _   |
| Hopper cover | 0 . 0 . 0 | 0   | 0   | _ _ _   |

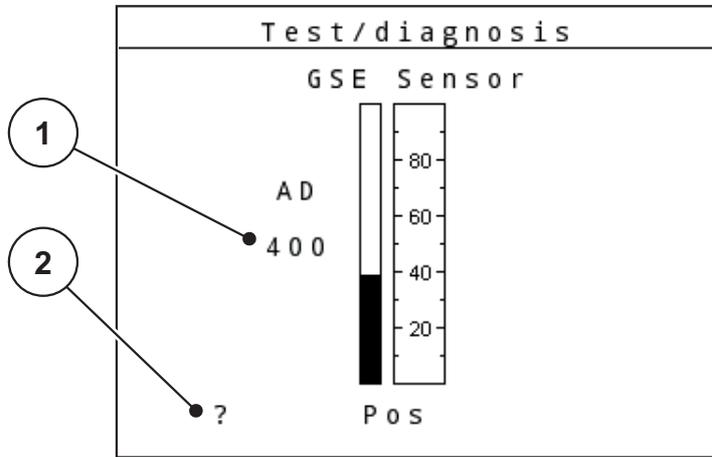
Start self-test

**Figure 4.28:** Test/diagnosis; example: Linbus

- [1] Status display
- [2] Start self-test
- [3] Connected actuators

**GSE sensor example**

1. Open the **System/test > Test/diagnosis** menu.
2. Select the **GSE sensor** menu item.
3. Press the **Enter** key.
  - ▷ The display shows the sensor status.



**Figure 4.29:** Test/diagnosis; example: Linbus

- [1] Status display
- [2] Display of sensor position

**Display of sensor position**

The sensors report the position of the limited border spreading unit:

- O = Top; the limited border spreading unit is inactive
- U = Bottom; the limited border spreading unit is in the working position
- ? = The limited border spreading unit has not yet reached its end position.

**⚠ CAUTION**



**Risk of injury due to moving machine parts.**

During the tests, machine parts may start to move automatically.

- ▶ Before carrying out the test, ensure that nobody is present in the danger zone of the machine.

#### 4.10.5 Data transmission

Data transmission is carried out using various data protocols.

| Sub-menu        | Meaning   |
|-----------------|---|
| ASD             | Automatic field documentation; transmission of field data to a PDA and/or Pocket PC via Bluetooth   |
| LH5000          | Serial communication e.g. spreading using application cards   |
| GPS Control     | Protocol for the automatic section control with an external terminal  |
| VRA GPS control | VRA Variable Rate Application Protocol for the automatic transmission of the target application rate  |
| TUVR            | Protocol for automatic section control and application rate adjustment for specific sub-areas with an external Trimble Terminal   |
| GPS km/h        | <p><b>Only possible with TUVR protocol and Trimble Terminal.</b></p> <ul style="list-style-type: none"> <li>● Can be activated/deactivated</li> </ul> <p>If activated, the speed signal of the GPS device is used as signal source for the <b>AUTO km/h</b> operating mode.</p> <ol style="list-style-type: none"> <li>1. Mark menu item with bar.</li> <li>2. Press the Enter key. <ul style="list-style-type: none"> <li>▷ A check mark appears on screen.</li> <li>▷ <b>GPS km/h is active.</b></li> <li>▷ <b>The speed signal of the GPS device is used as signal source for the AUTO km/h operating mode.</b></li> </ul> </li> </ol> |

#### 4.10.6 Total data counter

In this menu, all of the spreader's counter readings are displayed.

- spread quantity in kg
- spread area in ha
- spread time in h
- distance travelled in km

**NOTICE**

This menu is for information purposes only.

### 4.10.7 Change unit system

The system of units has been preset at the factory. However, the system can be changed from metric to imperial units at any time.

1. Open **System/test** menu.
  2. Select the **Unit** menu.
  3. Press the enter key to switch between **imperial** and **metric**.
- ▷ **All values of the various menus are converted.**

| Menu/value             | Conversion factor<br>metric to imperial |
|------------------------|---|
| kg left                | 1 x 2.2046 lb.-mass (lbs rest)          |
| ha rest                | 1 x 2.4710 ac (ac rest)                 |
| Working width m        | 1 x 3.2808 ft                           |
| Application rate kg/ha | 1 x 0.8922 lbs/ac                       |
| Mounting height cm     | 1 x 0.3937 in                           |

| Menu/value              | Conversion factor<br>imperial to metric |
|-------------------------|---|
| lbs rest                | 1 x 0.4536 kg                           |
| ac rest                 | 1 x 0.4047 ha                           |
| Working width ft        | 1 x 0.3048 m                            |
| Application rate lbs/ac | 1 x 1.2208 kg/ha                        |
| Mounting height in      | 1 x 2.54 cm                             |

### 4.10.8 Service

**NOTICE**

An input code is required to adjust the settings in the **Service** menu. These settings can only be modified by authorised service personnel.

As a general rule, we recommend that all settings in this menu are carried out by authorized service personnel.

---

### 4.11 Information

Information on the machine control can be obtained from the Info menu.

**NOTICE**

This menu provides information on the configuration of the machine.

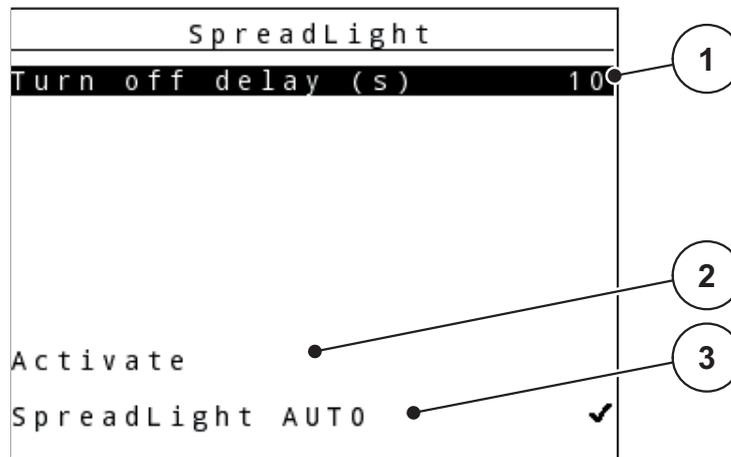
The information list depends on the equipment of the machine.

---

## 4.12 SpreadLight operating lights (AXIS only, special equipment)

In this menu, the SpreadLight function can be activated and the spreading pattern can be monitored even in night mode.

The operating lights are switched on and off via the machine control unit when in automatic and manual mode.



**Figure 4.30:** SpreadLight menu

- [1] Turn off delay
- [2] Manual mode: Switch on operating lights
- [3] Activate automatic mode

### Automatic mode:

In the automatic mode, the operating lights are switched on as soon as the metering sliders open and the spreading process starts.

1. Open the **Main menu > SpreadLight** menu.
2. Tick the check box in the **SpreadLight AUTO** [3] menu item.
  - ▷ The operating lights are switched on when the metering sliders open.
3. Enter a turn off delay [1] in seconds.
  - ▷ The operating lights will switch off after the entered delay when the metering sliders are closed.
    - Range from 0 to 100 seconds.
4. Untick the check box in the **SpreadLight AUTO** [3] menu item.
  - ▷ Automatic mode is deactivated.

### Manual mode:

In the manual mode, the operating lights can be switched on and off.

1. Open the **Main menu > SpreadLight** menu.
2. Tick the check box in the **Activate** [2] menu item.
  - ▷ The operating lights are switched on and remain on until the check box is unchecked or the menu is exited.

4.13 Hopper cover (AXIS only, optional equipment)

**▲ WARNING**



**Danger of crushing and shearing due to components operated by an external force**

The hopper cover will move without warning and can cause personal injury.

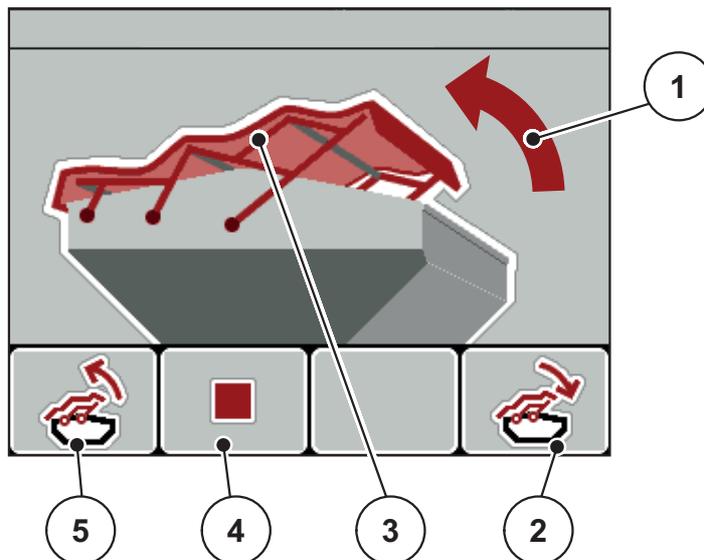
- ▶ Ensure that nobody is present in the hazard zone.

The AXIS-H EMC machine is equipped with an electrically operated hopper cover. During the refilling process at the end of the field, the hopper cover can be opened and/or closed via the control unit and 2 actuators.

**NOTICE**

The menu is used for activating the actuators for opening and/or closing the hopper cover exclusively. The QUANTRON-E2 control unit does not detect the exact position of the hopper cover.

- Monitor the movements of the hopper cover.



**Figure 4.31:** Hopper cover menu

- [1] Display of opening process
- [2] F4 function key: Close hopper cover
- [3] Static display of hopper cover
- [4] F2 function key: Stop process
- [5] F1 function key: Open hopper cover

**▲ CAUTION****Material damage due to insufficient clearance**

Opening and closing the hopper cover requires a sufficient clearance above the hopper. If the clearance is insufficient, the hopper cover may tear. The hopper cover lever may be damaged and the hopper cover may damage the environment.

- ▶ Ensure that a sufficient clearance above the hopper cover is given.

**Moving the hopper cover**

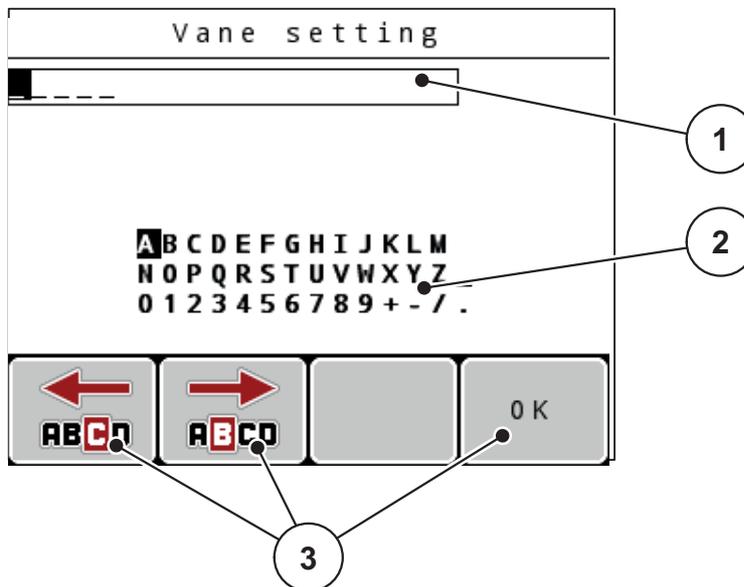
1. Press the **Menu** key.
2. Open the **Hopper cover** menu.
3. Press the **F1** function key.
  - ▷ During the movement, an arrow is displayed which indicates that the cover is **OPENING**.
  - ▷ The hopper cover will open entirely.
4. Fill with fertiliser.
5. Press the **F4** function key.
  - ▷ During the movement, an arrow is displayed which indicates that the cover is **CLOSING**.
  - ▷ The hopper cover will be closed.

If required, you can stop the movement of the hopper cover by pressing the **F2** function key. The hopper cover remains in the intermediate position until you close or open it fully.

## 4.14 Special functions

### 4.14.1 Text input

In some menus, freely editable text can be entered.



**Figure 4.32:** Text input menu

- [1] Input field
- [2] Character field, display of available characters (language-dependent)
- [3] Function keys for navigation within the input field

#### Entering text:

1. Switch from the higher menu to the **Text input** menu.
2. Use the **Function keys** to move the cursor to the position of the character to be written first in the input field.
3. Use the **arrow keys** to highlight the character to be written in the character field.
4. Press the **Enter key**.
  - ▷ The highlighted character appears in the input field.
  - ▷ The cursor jumps to the next position.

Continue until you have entered the entire text.

5. To **confirm** your input, press the **OK** function key.
  - ▷ The control unit saves the text.
  - ▷ The display shows the previous selection window.

**Overwriting characters:**

A single character can be overwritten by another character.

1. Use the **function keys** to move the cursor to the position of the character to be deleted first in the input field.
2. Use the **arrow keys** to select the character to be written in the character field.
3. Press the **Enter key**.
  - ▷ The character is overwritten.
4. To **confirm** the input, press the **OK** function key.
  - ▷ The text will be saved to the control unit.
  - ▷ The previous menu is displayed.

**NOTICE**

Individual characters can only be deleted by replacing them with blank spaces (underline at the end of the first 2 character lines).

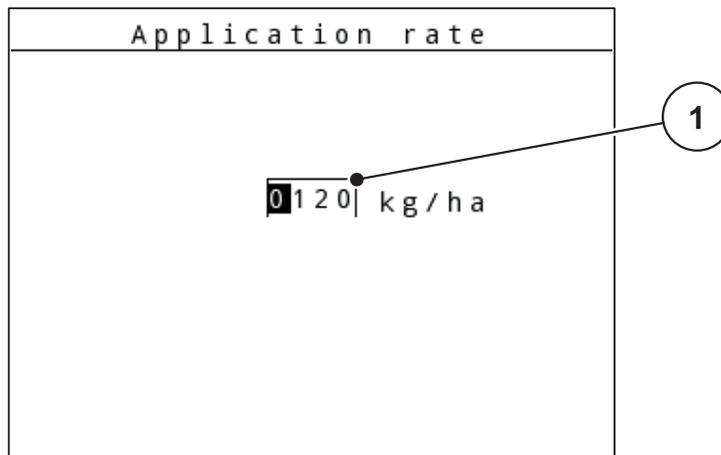
**Deleting an input:**

The complete entry can be deleted.

1. Press the **C 100 % key**.
  - ▷ The complete input has been deleted.
2. Enter new text, if necessary.
3. Press the **OK** function key.

#### 4.14.2 Entering values with the cursor keys

In some menus, numerical values can be entered.



**Figure 4.33:** Input of numerical value (example application rate)

[1] Input field

##### **Precondition:**

You are already in the menu in which you can enter numerical values.

1. Use the **horizontal arrow keys** to move the cursor to the position of the numerical value to be written first in the input field.
2. Use the vertical **arrow keys** to enter the required numerical value.  
**Arrow up:** Value increases.  
**Arrow down:** Value decreases.  
**Arrow left/right:** Cursor moves to the left/right.
3. Press the **Enter key**.

##### **Deleting an input:**

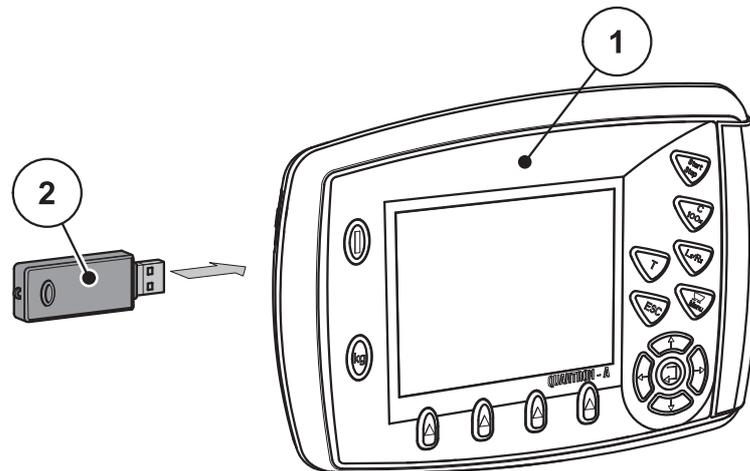
The complete entry can be deleted.

- Press the **C 100 % key**.
  - ▷ The complete input has been deleted.

### 4.14.3 Creating screenshots

With every software update, data will be overwritten. We recommend always storing your settings as screenshots (screen copy) on a USB stick before implementing a software update.

- Use a USB stick with an illuminated status indicator (LED).
- 1. Remove the cover from the USB port.
- 2. Insert the USB stick into the USB port.



**Figure 4.34:** Insert USB stick

[1] Control unit

[2] USB stick

3. Open the **Main menu > Fertiliser settings** menu.
  - ▷ The first page of the fertiliser settings is displayed.
4. Press the **T** key and the **L%/R%** key **simultaneously**.
  - ▷ The status indicator of the USB stick flashes.
  - ▷ The control unit beeps twice.
  - ▷ An image is stored as a bitmap on the USB stick.
5. Store all fertiliser settings pages as screenshots.
6. Open the **Main menu > Mach. settings** menu.
  - ▷ The first page of the machine settings is displayed.
7. Press the **T** key and the **L%/R%** key **simultaneously**.
  - ▷ The status indicator is flashing.
8. Store both pages of the **Mach. settings** as screenshots.
9. Store all screenshots on your PC.
10. After the software update, open the screenshots and enter the settings into control unit QUANTRON-A using the screenshots.
  - ▷ **The QUANTRON-A control unit is ready to operate with these settings.**



## 5 Spreading operation with the QUANTRON-A control unit

The control unit QUANTRON-A supports you in setting up your machine before you start your work. During spreading, control unit functions are also active in the background. The quality of the fertiliser spreading can be monitored using these.

### 5.1 TELIMAT

#### ▲ CAUTION



#### Risk of injury due to the automatic adjustment of the TELIMAT!

By pressing the **T key**, the unit automatically moves to the boundary spreading position by means of an electrical servomotors (SpeedServos). This can cause personal injury and property damages.

- ▶ Before pressing the **T key**, make sure that no one is in the machine's hazard zone.

#### NOTICE

The TELIMAT option is pre-configured for the control unit at the factory!

#### TELIMAT with hydraulic remote control

The TELIMAT is hydraulically moved to its working or idle position. The TELIMAT can be activated or deactivated by pressing the **T key**. Depending on the position, the display shows or hides the **TELIMAT icon**.

#### TELIMAT with hydraulic remote control and TELIMAT sensors

If TELIMAT sensors are connected and activated, the **TELIMAT icon** is shown on the display of the control unit as soon as the TELIMAT has been hydraulically brought to the operating position. If the TELIMAT is moved back to the idle position, the **TELIMAT icon** is hidden. The sensors monitor the TELIMAT adjustment and activate or deactivate the TELIMAT automatically. The **T key** has no function for this option.

If the status of the TELIMAT unit cannot be detected for a period of more than 5 seconds, Alarm 14 will appear; see Chapter [6.1: Alarm message meanings, page 107](#).

### 5.2 GSE sensor (AXIS only)

If a sensor for the GSE 30/GSE 60 boundary spreading unit is connected and activated, the **GSE icon** is shown on the display of the control unit as soon as the boundary spreading unit has been hydraulically brought to the operating position; see [figure 2.3](#). If the boundary spreading unit is moved back to the resting position, the **GSE icon** is hidden again.

During configuration, a ? symbol is displayed on the machine control unit. It disappears once the working position has been reached.

The sensor monitors the position of the GSE boundary spreading unit.

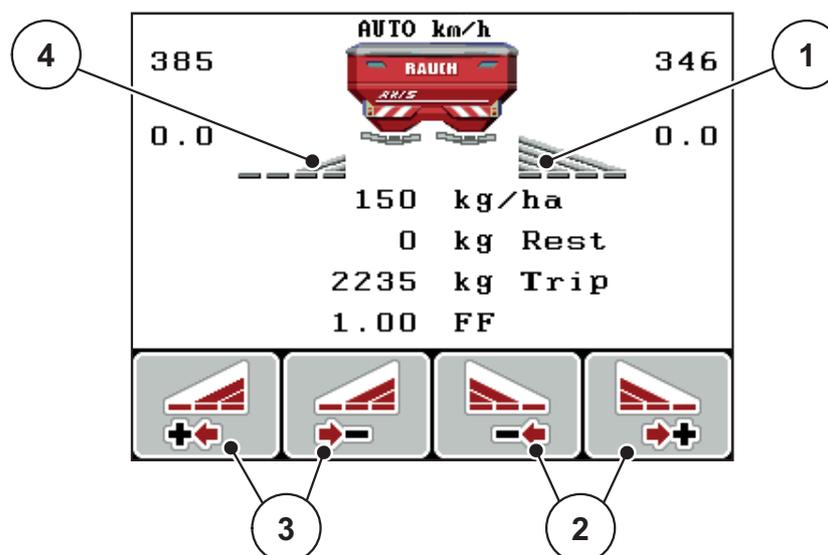
If the status of the boundary spreading unit cannot be detected for a period of more than 5 seconds, Alarm 94 will appear; see Chapter [6.1: Alarm message meanings, page 107](#).

## 5.3 Working with sections

### 5.3.1 Spreading with reduced sections

Spreading can be realized with sections on one or both sides to adapt the full spreading width to the field requirements. Each spreading side can be adjusted in 4 (VariSpread 8) steps or continuously (VariSpread pro).

- Refer to [2.1: Overview of the supported versions, page 5](#).
- Press the **L%/R%** key until the desired function keys are displayed.



**Figure 5.1:** Operating screen for spreading operation with sections

- [1] Right section will spread to the entire half
- [2] Function keys for increasing or reducing the spreading width on the right
- [3] Function keys for increasing or reducing the spreading width on the left
- [4] Left section is reduced to 2 steps

#### NOTICE

Each section can be gradually reduced or increased in 4 steps or continuously.

1. Press the **Reduce left spreading width** or the **Reduce right spreading width** function key.
  - ▷ The section of the spreading side will be reduced by one step.
2. Press the **Increase left spreading width** or the **Increase right spreading width** function key.
  - ▷ The section of the spreading side is increased by one step.

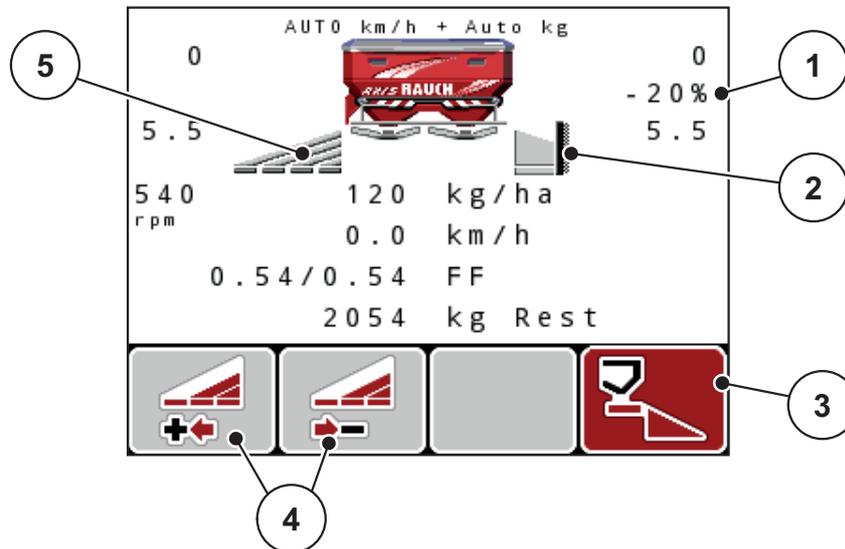
#### NOTICE

The sections are not rated proportionally. You can set the spreading widths via the VariSpread spreading width assistant.

- Refer to [4.6.12: Calculate Varispread, page 58](#).

### 5.3.2 Spreading operation with one section and in boundary spreading mode (AXIS-M V8, MDS V8)

During the spreading operation, the sections can be changed gradually and the boundary spreading can be activated. The figure below shows the operating screen with activated boundary spreading and activated sections.



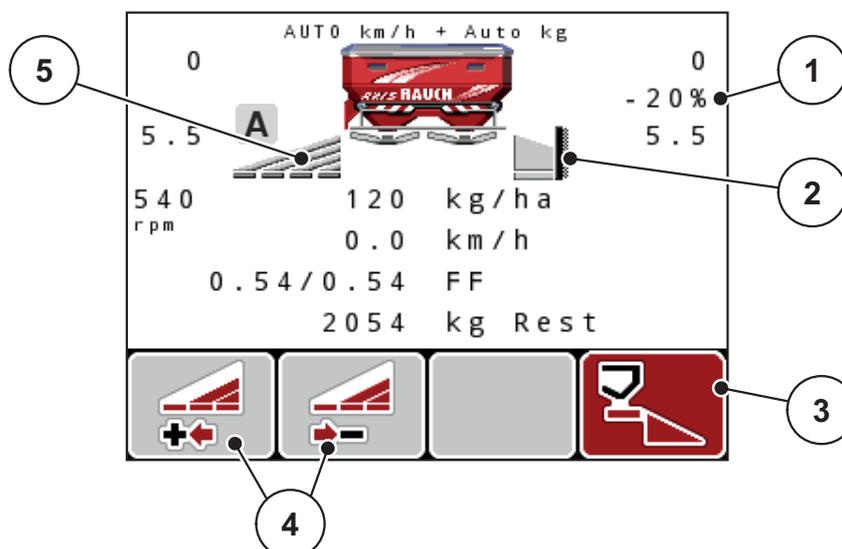
**Figure 5.2:** Operating screen, one section on the left, boundary spreading side on the right

- [1] Quantity change in boundary spreading mode
- [2] Spreading side on the right in the boundary spreading mode
- [3] Right spreading side is activated
- [4] Reduce or increase left section
- [5] Left section adjustable in 4 steps (VariSpread 8)

- The spreading quantity on the left is set to the full working width.
- The **boundary spreading right** function key has been pressed, boundary spreading is active and the spreading volume is reduced by 20%.
- Press the **Reduce left spreading width** function key in order to reduce the section by one step.
- By pressing the **C/100%** key, full working width is reapplied immediately.
- For TELIMAT versions without sensor only: By pressing the T key, boundary spreading is deactivated.

### 5.3.3 Spreading operation with one section and in boundary spreading mode (AXIS-M VS pro)

During spreading operation, the sections can be changed gradually and boundary spreading can be deactivated. The figure below shows the operating screen with activated boundary spreading and activated section.



**Figure 5.3:** Operating screen, one section on the left, boundary spreading side on the right

- [1] Quantity change in boundary spreading mode
- [2] Spreading side on the right in the boundary spreading mode
- [3] Right spreading side is activated
- [4] Reduce or increase left section
- [5] Left section continuously adjustable (VariSpread pro)

- The spreading quantity on the left is set to the full working width.
- The **boundary spreading right** function key has been pressed, boundary spreading is active and the spreading volume is reduced by 20%.
- **Reduce left spreading width** function key.
- By pressing the **C/100%** key, full working width is reapplied immediately.
- For TELIMAT versions without sensor only: By pressing the T key, boundary spreading is deactivated.

#### NOTICE

The boundary spreading function is also possible in automatic mode with GPS-Control. The boundary spreading side must always be operated manually.

- Refer to [page 103](#).

5.4 Spreading with automatic operating mode (AUTO km/h + AUTO kg)

**Mass flow control with the M EMC function**

Mass flow is measured separately on both spreading disc sides. Thus deviations to the specified application rate can be immediately corrected.

The M EMC function requires the following machine data for mass flow control:

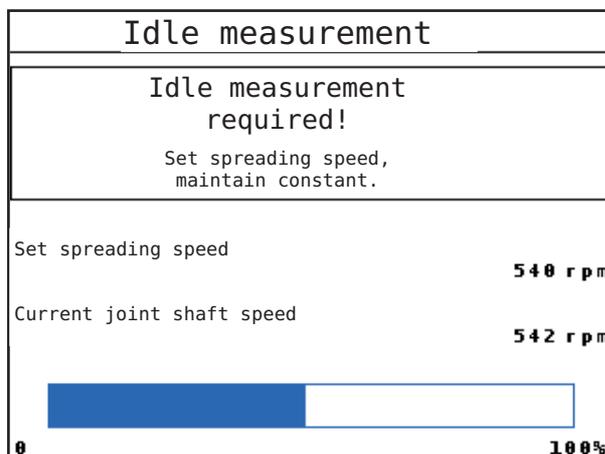
- PTO speed
- Spreading disc type

A PTO speed between 360 and 390 rpm is possible.

- **The desired speed should remain constant during spreading (+/- 10 rpm).** High control quality can therefore be ensured.
- Idle measurement is **only** possible if the actual PTO speed deviates by **max. +/- 10 rpm** from the entry in the **PTO** menu. Outside of this range, idle measurement is not possible.

**Prerequisites for spreading:**

- The **AUTO km/h + AUTO kg** operating mode is active (refer to [4.7.2: AUTO/ MAN mode, page 63](#)).
1. Fill the hopper with fertiliser.
  2. Configure the fertiliser settings:
    - Application rate (kg/ha)
    - Working width (m)
  3. Enter the PTO speed in the corresponding menu.  
[See also “PTO shaft” on page 51.](#)
  4. Select the spreading disc type used in the corresponding menu.  
[See also “Spreading disc type” on page 52.](#)
  5. Switch on PTO shaft.
  6. Set PTO shaft to the PTO speed entered.
    - ▷ The **Idle measurement** screen is displayed.



**Figure 5.4:** Idle measurement information screen

7. Wait until the progress bar has entirely passed through.

- ▷ Idle measurement is finished.
- ▷ Idle time is reset to 20 min.

8. Press the **Start/Stop** key.

▷ **The spreading starts.**

As long as the PTO shaft is operating, a new idle measurement will automatically start after the expiration of the idle time every 20 minutes.

Under certain conditions, idle measurement is required to capture new reference data before you continue spreading.

As soon as idle measurement during spreading is required, the information screen will appear.

#### NOTICE

As soon as the metering slides close (e.g. in the headlands or by pressing the **Start/Stop** key), the **M EMC function** will start an idle measurement in the background (without information screen).

- To this end, the PTO speed must remain at the preset value during idle measurement!

#### NOTICE

If you want to monitor the time until the next idle measurement, you can also assign the freely selectable display fields in the operating screen with **Idle time**, see chapter [4.10.2: Display configuration, page 77](#).

#### NOTICE

When starting the disc, changing the PTO speed and after disc type change, a new idle measurement is mandatory!

In case of unusual flow factor changes, the idle measurement must be started **manually**.

#### Requirement:

- Spreading is stopped (Start/Stop key or both sections deactivated).
- The operating screen is displayed.
- The PTO speed is at least 360 rpm.

1. Press the **Enter** key.

- ▷ The display shows the idle measurement screen.
- ▷ The idle measurement starts.

2. Adjust the PTO speed, if necessary.

▷ **The bar shows the progress.**

### 5.5 Spreading in the AUTO km/h operating mode

In AUTO km/h operating mode, the control unit automatically controls the actuator depending on the speed signal.

1. Configure the fertiliser settings:
  - Application rate (kg/ha)
  - Working width (m)
2. Fill with fertiliser.

#### **NOTICE**

In order to achieve an optimum spreading result in the AUTO km/h operating mode, a calibration is to be carried out before starting the spreading work.

---

3. Carry out a calibration to determine the flow factor  
or  
Obtain the flow factor from the fertiliser chart.
  4. Enter the flow factor manually.
  5. Press the **Start/Stop** key.
- ▷ **The spreading starts.**

## 5.6 Spreading in the MAN km/h operating mode

If there is no forward speed signal, the MAN km/h operating mode is active.

1. Switch on the QUANTRON-A control unit.
2. Open the **Machine settings > AUTO/MAN mode** menu.
3. Select **MAN km/h** in the menu.
4. Enter the forward speed.
5. Press **OK**.
6. Configure the fertiliser settings:
  - Application rate (kg/ha)
  - Working width (m)
7. Fill with fertiliser.

### NOTICE

In order to achieve an optimum spreading result in the MAN km/h operating mode, a calibration is to be carried out before starting the spreading.

8. Carry out a calibration to determine the flow factor  
or  
Obtain the flow factor from the fertiliser chart.
  9. Enter the flow factor manually.
  10. Press the **Start/Stop** key.
- ▷ **The spreading starts.**

### NOTICE

Always observe the set speed during spreading.

5.7 Spreading in the MAN scale operating mode

The **MAN scale** operating mode enables the metering slide opening to be manually adjusted during spreading operation.

**Manual** mode is only used:

- if there is no speed signal (radar or wheel sensor not available or defective),
- when spreading slug pellets or fine seeds.

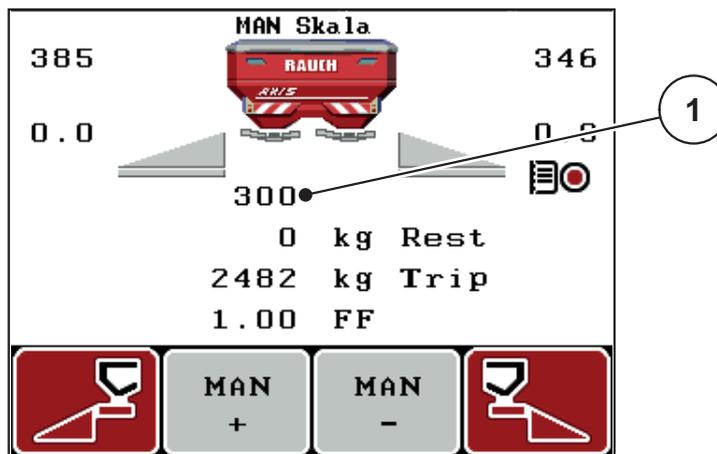
The operating mode **MAN scale** is suitable for slug pellets and fine seeds since the automatic mass flow control cannot be activated due to the low weight reduction.

**NOTICE**

To ensure regular spreading of the spreading material in manual operating mode, it is imperative that you work at a **constant forward speed**.

**Requirement:**

- The metering slides are open (activation with the **Start/Stop key**).
- In the **MAN scale** operating screen, the icons for sections are filled in red.



**Figure 5.5:** MAN scale operating screen

[1] Display of current metering slider scale position

11. To change the dosing slide opening, press the **F2** or **F3** function key.

**F2: MAN+** to increase the metering slide opening or

**F3: MAN-** to reduce the metering slide opening.

**NOTICE**

In order to achieve an optimum spreading result in manual mode as well, it is recommended to apply the metering slide opening and forward speed values provided in the fertiliser chart.

## 5.8 GPS Control

The QUANTRON-A control unit can be combined with GPS-compatible devices. Various data is exchanged between both devices to automate the control.

### NOTICE

We recommend using our CCI 800 control unit in combination with QUANTRON-A.

- Please contact your dealer for further information.
- Observe the operator's manual for the CCI 800 GPS Control.

The **OptiPoint** function (AXIS only) calculates the optimal switching-on and switching-off point for spreading in the headlands on the basis of the settings in the control unit; see [4.6.9: Calculate OptiPoint \(AXIS only\), page 54](#).

### NOTICE

To use the GPS Control functions of QUANTRON-A, the serial communication must be activated.

- Activate the **GPS Control** sub-menu item in the **System / Test > Data transmission** menu.

### NOTICE

**AXIS with VariSpread pro:** depending on the GPS terminal used, the machine control unit can reduce the number of sections. Please contact you dealer for this.

### NOTICE

If application cards are also used, the serial communication must be activated.

- Activate the **GPS Control + VRA** sub-menu item in the **System / Test > Data transmission** menu.

The application card target quantity from the GPS terminal is then automatically processed in the QUANTRON-A.

The symbol **A** next to the spreading wedges indicates that the automatic function is enabled. The control unit opens and closes the individual sections depending on the respective position in the field. The spreading starts only after pressing **Start/Stop**.

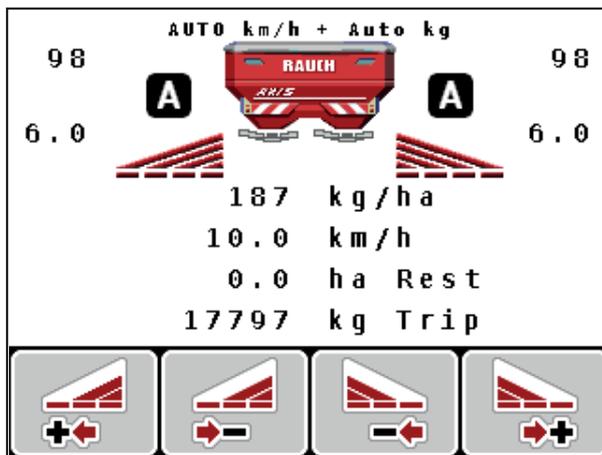
**▲ WARNING**



**Risk of injury due to ejected fertiliser**

The GPS Control function starts the spreading operation automatically, without warning. Ejected fertiliser may lead to injury of the eyes and nasal mucous membrane. There is also a risk of slipping.

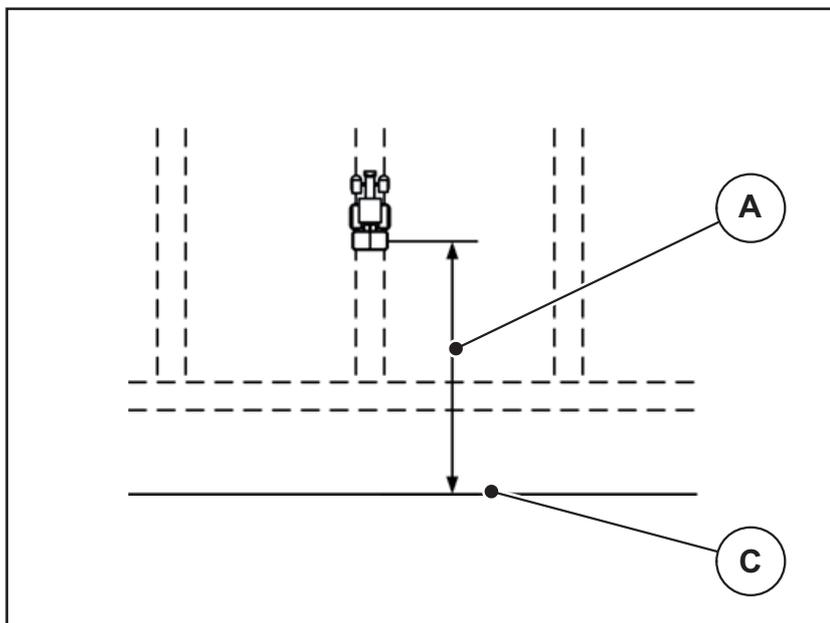
- ▶ Ensure that nobody is present in the danger zone during spreading operation.



**Figure 5.6:** Spreading operation display on the operating screen with GPS Control

**Switch-on distance (m)**

**Switch-on distance** refers to the switch-on distance (figure 5.7 [A]) relating to the field border (figure 5.7 [C]). At this position in the field, the metering slides start to open. This distance depends on the type of fertiliser and represents the ideal switch-on distance for optimised fertiliser distribution.



**Figure 5.7:** Switch-on distance (relating to field border)

[A] Switch-on distance

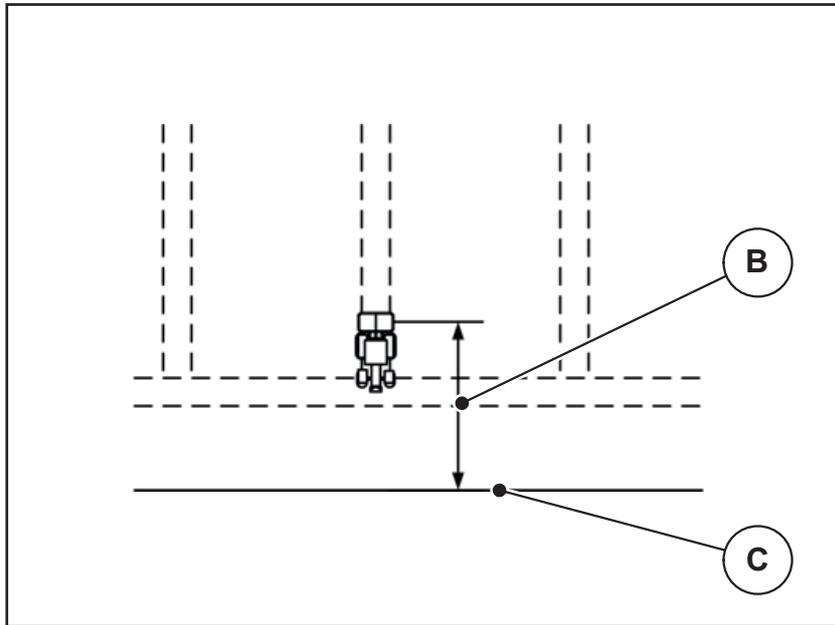
[C] Field border

If the switch-on position in the field is to be changed, the **switch-on distance** has to be adjusted.

- A lower distance value means that the switch-on position is closer to the field border.
- A greater value means that the switch on position is closer to the centre of the field.

**Switch-off distance (m)**

**Switch-off distance** refers to the switch-off distance (figure 5.8 [B]) relating to the field border (figure 5.8 [C]). At this position in the field, the metering slides start to close.



**Figure 5.8:** Switch-off distance (relating to field border)

- [B] Switch-off distance
- [C] Field border

If you wish to turn beyond the headland track, enter a greater distance in **Switch-off distance**.

Here, the adjustment must be as low as possible so that the metering slides close as soon as the tractor enters the headland track. An adjustment of the switch off distance may lead to an insufficient fertilisation in the area of the switch off position in the field.

## 6 Alarm messages and possible causes

Various alarm messages can be displayed on the QUANTRON-A control unit display.

### 6.1 Alarm message meanings

| No. | Message on display  | Meaning<br>● Possible cause   |
|-----|---|---|
| 1   | Fault in dosing system. Stop!                                 | The metering system actuator cannot reach the target value.<br>● Blockage<br>● No position feedback   |
| 2   | Maximum outlet reached!<br>Speed or application rate too high | Metering slider alarm<br>● The maximum metering opening is reached.<br>● The set application rate (+/- quantity) exceeds the maximum metering opening.                                    |
| 3   | Flow factor is outside limits.                                | The flow factor must lie within a range of <b>0.40 - 1.90</b> .<br>● The newly calculated or entered flow factor is outside the range.  |
| 4   | Hopper left empty.  | The left level sensor reports "empty".<br>● The left hopper is empty.   |
| 5   | Hopper right empty.   | The right level sensor reports "empty".<br>● The right hopper is empty.   |
| 7   | Data will be deleted!<br>Delete = START<br>Cancel = ESC       | Safety alarm to prevent the unintentional deletion of data.   |
| 8   | Min. quantity (150 kg) not achieved, old factor valid.        | Flow factor calculation not possible.<br>● The application rate is too low to calculate the new flow factor when the remaining quantity is weighed.<br>● The old flow factor is retained. |
| 9   | Application rate<br>Min. setting = 10<br>Max. setting = 3000  | Reference to the value range of the <b>Application rate</b><br>● Entered value is not permitted.  |
| 10  | Working width<br>Min. setting = 2.00<br>Max. setting = 50.00  | Reference to the value range of the <b>Working width</b> .<br>● Entered value is not permitted.   |

| No. | Message on display  | <b>Meaning</b><br><ul style="list-style-type: none"> <li>● <b>Possible cause</b></li> </ul>   |
|-----|---|---|
| 11  | Flow factor<br>Min. setting = 0.40<br>Max. setting = 1.90 | Reference to the value range of the <b>flow factor</b> .<br><ul style="list-style-type: none"><li>● Entered value is not permitted.</li></ul>   |
| 12  | Transmission fault. No RS232 connection                   | An error has occurred during data transmission to the control unit.<br>The data have not been transmitted.  |
| 14  | Error by setting TELIMAT.                                 | Alarm for the TELIMAT sensor.<br>This error message is displayed if the TELIMAT status cannot be detected for more than 5 seconds.  |
| 15  | Memory full. Delete one private fertiliser chart.         | A maximum of 30 fertiliser charts can be saved.<br><ul style="list-style-type: none"><li>● No additional saving possible</li></ul>  |
| 16  | Approach drop point<br>Yes = Start                        | <b>For machines with electrical drop point actuators:</b> Safety query before the drop point is automatically approached.<br><ul style="list-style-type: none"><li>● Drop point can be set in the <b>Fertiliser settings</b> menu.</li><li>● Fast emptying.</li></ul> |
| 17  | Error by setting drop point.                              | The actuator for the drop point setting cannot reach the target value to which it is to be moved.<br><ul style="list-style-type: none"><li>● Blockage.</li><li>● No position feedback.</li></ul>  |
| 18  | DP error  | Actuator overloaded.  |
| 19  | Defect by setting drop point.                             | Actuator defective.   |
| 20  | Error on LIN bus participant: [Name].                     | Communication problem.<br><ul style="list-style-type: none"><li>● Remove actuator.</li><li>● Cable breakage.</li></ul>  |
| 21  | Spreader overloaded!                                      | The mineral fertiliser spreader is overloaded.<br><ul style="list-style-type: none"><li>● Too much fertiliser in the hopper</li></ul>   |
| 23  | Error by setting TELIMAT                                  | The TELIMAT setting actuator cannot reach the target value it is to be moved to.<br><ul style="list-style-type: none"><li>● Blockage.</li><li>● No position feedback.</li></ul>   |
| 24  | Error by setting TELIMAT                                  | Actuator overloaded.  |
| 25  | Defect by setting TELIMAT                                 | TELIMAT actuator defective.   |

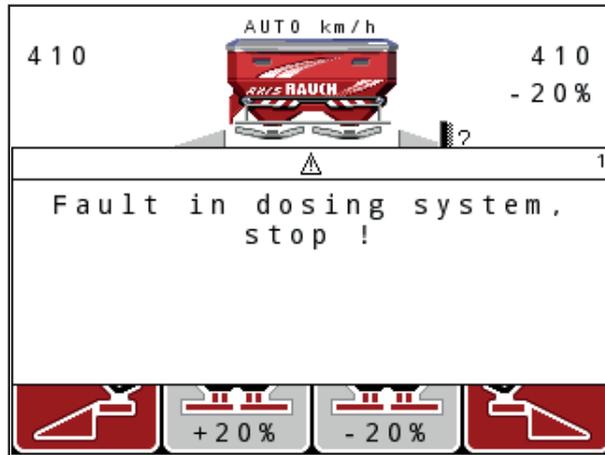
| No. | Message on display  | Meaning<br>● Possible cause  |
|-----|---|--|
| 32  | Externally controlled parts may move. Risk of injury through squeezing and shearing!<br>Direct ALL persons out of the danger zone. Read the instruction manual.<br>Confirm with ENTER | If the machine control unit is activated, components may move unexpectedly.<br>● Follow the displayed instructions only if all risks have been eliminated.     |
| 34  | The spreader is set to reduced disc speed. The idle measurement cannot be started; Confirm this alarm to set the machine back to normal spreading mode.                               | The flow factor must lie within a range of <b>0.50 - 1.80</b> .<br>● The newly calculated or entered flow factor is outside the range.                         |
| 36  | Weighing quantity impossible. Machine must stop.  | Alarm message during weighing.<br>● The <b>Weigh quantity</b> function can only be carried out if the machine is at a standstill and in a horizontal position. |
| 45  | Error M-EMC sensors. EMC control deactivated!   | The sensor does not send any signals<br>● Cable breakage<br>● Defective sensor   |
| 46  | Spreading speed error. Observe spreading speed of 3900..650 rpm!  | The PTO speed is outside the range for the M EMC function.   |
| 47  | Left dosing error, hopper empty, outflow blocked!   | ● Hopper empty<br>● Outlet blocked   |
| 48  | Right dosing error, hopper empty, outflow blocked!  | ● Hopper empty<br>● Outlet blocked   |
| 49  | Idle measurement implausible. EMC control deactivated!  | ● Defective sensor<br>● Defective transmission   |
| 50  | Idle measurement impossible. EMC control deactivated!   | PTO speed not permanently stable   |
| 51  | Hopper empty.   | The kg level sensor emits an "empty" notification. The entered value is undercut.  |
| 52  | Error at hopper cover   | Actuator overloaded  |
| 53  | Defect at hopper cover  | Defective TELIMAT actuator   |
| 54  | Change TELIMAT position   | The TELIMAT position does not correspond to the state notified by GPS Control.   |
| 72  | Erro no participante bus LIN: SpreadLight   | Power supply is too high; the operating lights are switched off  |

| No. | Message on display   | Meaning<br>● Possible cause   |
|-----|--|---|
| 73  | Error at SpreadLight   | Overload  |
| 74  | Defect at SpreadLight  | Connection error<br>● Defective cable<br>● Loose plug connection  |
| 75  | This disc type requires a modification on the TELIMAT device. Please follow the-mounting instructions! | S1 disk is mounted and the machine is equipped with TELIMAT. Spreading errors possible during boundary spreading.<br>● This disk type facilitates TELIMAT apparatus mounting. |
| 94  | GSE setup error  | Alarm for the GSE sensor.<br>This error message is displayed if the GSE status is not detected for more than 5 seconds.   |

## 6.2 Clearing an error/alarm

### 6.2.1 Acknowledging an alarm message

Alarm messages are highlighted on the display and displayed with a warning symbol.



**Figure 6.1:** Alarm message (e.g. metering device)

#### Acknowledging an alarm message:

1. Rectify the cause of the alarm message.

See the operator's manual for the fertiliser spreader and section [6.1: Alarm message meanings, page 107](#).

2. Press the **C/100 %** key.

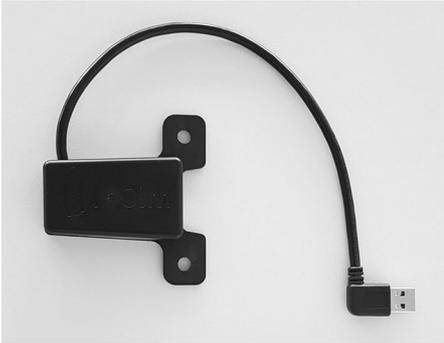
▷ **The alarm message is cleared.**



## 7 Special equipment

| No. | Illustration  | Designation  |
|-----|---|--|
| 1   |    | Level sensor for AXIS/MDS                                  |
| 2   |   | Forward speed sensor for QUANTRON-A                        |
| 3   |  | Y cable RS232 for data exchange (e.g. GPS, N sensor, etc.) |
| 4   |  | System tractor cable set for QUANTRON-A<br>AXIS 12 m       |

**7 Special equipment**

| No. | Illustration   | Designation                     |
|-----|--|---------------------------------|
| 5   |  <p>A black cable with a white rectangular receiver unit. The unit has the text 'AccoSat' and a left-pointing arrow, along with the website 'www.map-technik.de' and a QR code.</p> | GPS cable and receiver          |
| 6   |  <p>A black cable with a blue connector at one end and a black connector at the other. A small white label with the number '23' is attached to the cable.</p>                       | TELIMAT sensor AXIS             |
| 7   |  <p>A metal bracket with a central slot and a vertical rod passing through it. The bracket has two mounting holes on the left side.</p>   | Universal holder for QUANTRON-A |
| 8   |  <p>A black rectangular module with a USB connector at one end and a small antenna-like structure on the other.</p>   | WLAN module                     |

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## Terms/conditions of warranty

RAUCH units are manufactured with modern production methods and with the greatest care and are subject to numerous inspections.

Therefore RAUCH offers a 12-month warranty subject to the following conditions:

- The warranty begins on the date of purchase.
- The warranty covers material and manufacturing faults. Our liability for third-party products (hydraulic system, electronics) is limited to the warranty of the manufacturer of the equipment. During the warranty period, manufacturing and material faults are corrected free of charge by replacement or repair of the affected parts. Other rights extending beyond the above, such as claims for conversion, reduction or replacement for damages that did not occur in the object of supply are explicitly excluded. Warranty services are provided by authorised workshops, by RAUCH factory representatives or the factory.
- The following are excluded from coverage by the warranty: natural wear, dirt, corrosion and all faults caused by improper handling and external causes. The warranty is rendered void if the owner carries out repairs or modifications to the original state of the supplied product. Warranty claims are rendered void if RAUCH original spare parts were not used. Therefore, the directions in the operating manual must be observed. In all cases of doubt contact our sales representatives or the factory directly. Warranty claims must be submitted to the factory by 30 days at the latest after occurrence of the problem. The date of purchase and the serial number must be indicated. If repairs under the warranty are required, they must be carried out by the authorised workshop only after consultation with RAUCH or the company's appointed representatives. The warranty period is not extended by work carried out under warranty. Shipping faults are not factory faults and therefore are not part of the warranty obligation of the manufacturer.
- No claims for compensation for damages that are not part of RAUCH machines themselves will be accepted. This also means that no liability will be accepted for damage resulting from spreading errors. Unauthorised modifications of RAUCH machines may result in consequential damage, for which the manufacturer will not accept any liability. The manufacturer's liability exclusion will not apply in case of wilful intent or gross negligence by the owner or a senior employee, and in cases where – according to the product liability law – there is liability for personal injury or material damage to privately used objects in the event of defects in the supplied product. It will also not apply in the event that assured properties are absent, if the purpose of the assured properties was to protect the purchaser against damage that does not involve the supplied product itself.

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<http://www.rauch-community.de/streutabelle/>



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