CONTROL BOX
ProfiControl

OPERATOR MANUAL



PLEASE READ CAREFULLY BEFORE COMMISSIONING!

Original operating manual

Version: 1.1 EN; item number: 00603-3-123

TABLE OF CONTENTS

1 IDENTIFICATION OF THE IMPLEMENT 3

2 SERVICE 3

3 WARRANTY 3

4 COMMISSIONING 4
4.1 Scope of delivery and attachment 4
4.1.1 Assembly of the RAM C ball head 4
4.2 Electrical connection 5
4.2.1 Pneumatic seeder with electric or hydraulic fan 6
4.2.2 Pneumatic seeder PS 300 D Twin, electric fan plus 7
4.2.3 7-pin signal cable 7
4.2.4 InCab 8
4.3 Control box 9
4.4 Initial operation 11
4.5 Main display 11

5 FUNCTION DESCRIPTION 12
5.1 Settings 12
5.1.1 Date 12
5.1.2 Time 13
5.1.3 Daylight savings / standard time 13
5.1.4 Time (AM, PM / 24h) 13
5.1.5 Language 14
5.1.6 System of units 15
5.1.7 Decimal symbol 15
5.1.8 Display illumination 16
5.1.9 Keypad illumination 16
5.1.10 Max. audio volume 17
5.1.11 Button tone 17
5.1.12 UT entities 17
5.1.13 Updating the terminal software 18
5.1.14 Screen calibration 18
5.1.15 Clearing the IOP (object pool) 19
5.2 TECU Settings 20
5.2.1 Speed input 21
5.2.1.1 Forward speed calibration 21
5.2.1.2 APV software settings 22
5.2.2 Wheel speed input 22
5.2.2.1 Wheel speed calibration 23
5.2.2.2 APV software settings 23
5.2.3 Rear PTO shaft settings 24
5.2.4 Hitch settings (rear linkage) 25
5.2.4.1 APV software settings 25
5.3 AUX assignments 26
5.4 Information 27

6 ERROR MESSAGES 28
6.1 ECU connection error 28
6.2 Software update error 28

7 SOFTWARE UPDATE 29

1 IDENTIFICATION OF THE IMPLEMENT

The Control Box can be clearly identified by the following information on the type plate:
1: Bucher Automation serial number
2: Item number
3: Type
4: Hardware version

Position of the type plate
The type plate can be found on the rear of the Control Box.

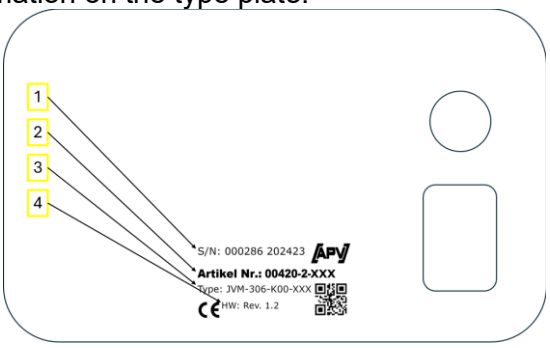


Figure 1

NOTE!
In cases of inquiries or warranty claims, please always tell us the serial number and software version of your control box.

2 SERVICE

Please contact our service address in the following cases:

- If you still have questions regarding the handling of this implement despite the information provided in this operating manual
- For questions regarding spare parts
- To order maintenance and servicing work

Service address:

APV - Technische Produkte GmbH
ZENTRALE
Dallein 62
A-3753 Hötzelsdorf
AUSTRIA

Telephone: +43 2913 8001-5500
Fax: +43 2913 8002
E-mail: service@apv.at
Web: www.apv.at

3 WARRANTY

Please check the control box for any transport damage immediately upon receipt. Later claims regarding transport damage can no longer be considered.
Based on the invoice, we grant a six-month factory warranty starting on the date of initial operation. This warranty is applicable for cases of material or construction faults and does not include parts that are damaged by normal or excessive wear.

The warranty expires

- if damage is caused by external forces (e.g. opening of the terminal).
- if the prescribed requirements are not met.
- if the implement is modified, expanded or equipped with third-party spare parts without our permission.

To be able to offer the best possible service, warranty activation must be performed for your implement after acquisition.
To activate the warranty for your implement, simply scan the QR code with your smartphone – you will then be taken directly to the warranty activation page.

You can also call up the warranty activation page through our website www.apv.at in the Service area.

4 COMMISSIONING

NOTE!
The items included can vary depending on the implement and its configuration!

4.1 SCOPE OF DELIVERY AND ATTACHMENT



Figure 2

1	Control Box with supplied RAM C ball head.

Fasten the RAM C ball head bracket on a RAM mount set.

CAUTION!
If possible, do not roll up the cable into a coil!

4.1.1 ASSEMBLY OF THE RAM C BALL HEAD

Screw the RAM C ball head onto the rear side of the Control Box using the supplied bolts.

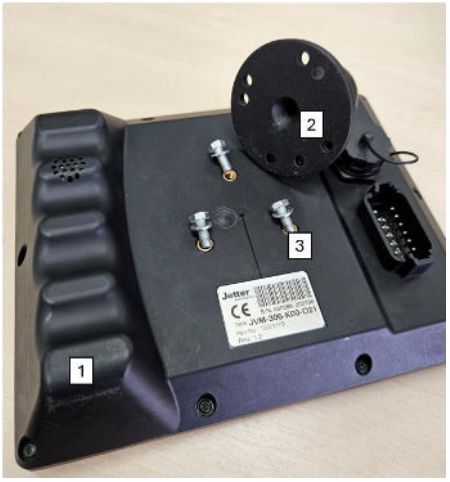


Figure 3

1	Control Box ProfiControl
2	RAM C ball head
3	Hexagonal bolt M5

4.2 ELECTRICAL CONNECTION

After use of the implement and for road transport, the control box must be disconnected again (for various safety-related reasons).

The following must be observed:

CAUTION!
The 12 volt power supply must NOT be connected to the socket for the cigarette lighter!

CAUTION!
If these instructions are not observed, damage may be caused to the control box!

CAUTION!
If your battery is charged by a charger that is in "Start" operating mode, there can be voltage peaks! These can cause damage to the electrical system of the control box if it is also connected when the battery is being charged!

There is a wide range of layout possibilities for the Control Box ProfiControl. A distinction is made between the following:



Figure 4

1	12-pin connector • Supply, terminal 30 +12V • Linkage position • CAN • Speed • Ignition
2	USB interface (software update)
3	RAM mount bracket
4	Type plate
5	Speaker

4.2.1 PNEUMATIC SEEDER WITH ELECTRIC OR HYDRAULIC FAN

Connect the supplied cable to the 12-pin connector on the rear of the terminal, then connect the 3-pin standard plug to the standard socket of your tractor.

The fuse (25 A) is located just after the 3-pin standard plug.

The standardised ISOBUS socket should be at the rear of the driver's cab. Here, the ISOBUS implement cable 00410-2-170 can then be connected.

Stow the excess cable in the driver's cab to avoid pinching.



1	12-pin connector, connection for Control Box
2	6-pin plug, connection for 7-pin signal socket
3	3-pin plug, connection for supply to the system
4	25 A fuse
5	ISOBUS socket

Order number:
00410-2-264

Figure 5

CAUTION!
With this cable, the system is not a standardised ISOBUS system.
When this cable is used, the TECU must be enabled under Point 5.2 TECU settings.

4.2.2 PNEUMATIC SEEDER PS 300 D TWIN, ELECTRIC FAN PLUS

Connect the supplied cable to the 12-pin connector on the rear of the terminal, then connect the 3-pin standard plug to the standard socket of your tractor.
For additional power, you can connect to another 3-pin standard socket in your tractor via the 3-pin standard socket and an additional 5.X power supply cable.

The two fuses (25A) are located just after the 3-pin standard plug or the 3-pin socket.
The standardised ISOBUS socket should be at the rear of the driver's cab. Here, the ISOBUS implement cable 00410-2-170 can then be connected.

Stow the excess cable in the driver's cab to avoid pinching.



1	12-pin connector, connection for Control Box
2	6-pin plug, connection for 7-pin signal socket
3	3-pin plug, connection for supply to the system
4	25 A fuse for 3-pin plug
5	3-pin socket, connection for additional supply to the system
6	25 A fuse for 3-pin socket
7	ISOBUS socket

Order number:
00410-2-265

Figure 6

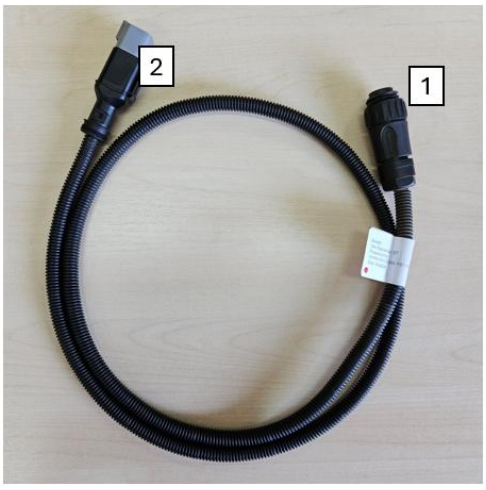
CAUTION!
With this cable, the system is not a standardised ISOBUS system.
When this cable is used, the TECU must be enabled under Point 5.2 TECU settings.

4.2.3 7-PIN SIGNAL CABLE

To be able to read in the signals from the 7-pin signal socket, the "7-pin signal cable" is required.

Connect the 6-pin plug to the 6-pin mating plug of your cable.

Stow the excess cable in the driver's cab to avoid pinching.



1	7-pin connector, signal socket
2	6-pin plug

Order number:
00410-2-266

Figure 7

4.2.4 INCAB

When the Control Box is installed on an already existing ISOBUS system, connection via an InCab cable is sufficient. With the InCab cable, the terminal can be used as a second ISOBUS terminal. The ISOBUS functionalities can be used.

Connect the 12-pin connector to the rear side of the terminal. Connect the other end to the InCab socket of your tractor.

Stow the excess cable in the driver's cab to avoid pinching.



1	12-pin connector, connection for Control Box
2	9-pin InCab plug

Order number:
00600-5-805

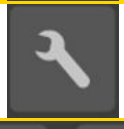
Figure 8

4.3 CONTROL BOX



1	TFT touchscreen

Figure 9

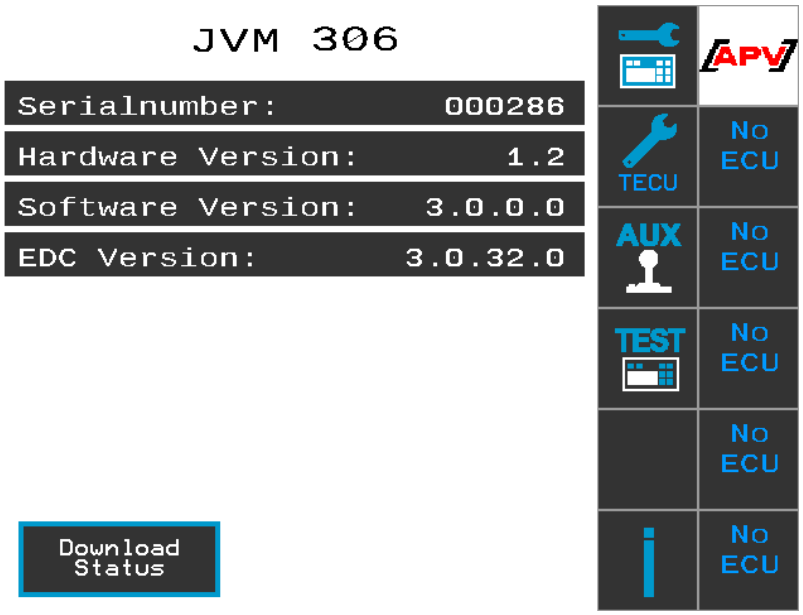
Button	Designation	Function
	On/Off button	Switches the implement on and off. A signal tone is issued when switching on. The button must be pressed for **2 s**.
	ISB button	Puts the ISOBUS system in a safe state and disables selected implement functions. (emergency stop) The functionality depends on the device manufacturer!
	Home button	Navigates to the main display of the Control Box.
	Settings button	Navigates to the Settings menu.
	Special function buttons	These buttons have **no** function.
	ESC button	With the ESC button, you always go back one menu level up to the main display menu.
	Arrow buttons Up arrow button (+) Down arrow button (-)	Navigates through the menu points.
	OK button	Confirms the selection.

Button	Designation	Function
	Function button	Controls the respective function on the terminal. A more detailed description of each button can be found in the ISOBUS operating manual.

4.4 INITIAL OPERATION

During initial operation and after performing an update, the APV logo is shown when starting the Control Box.

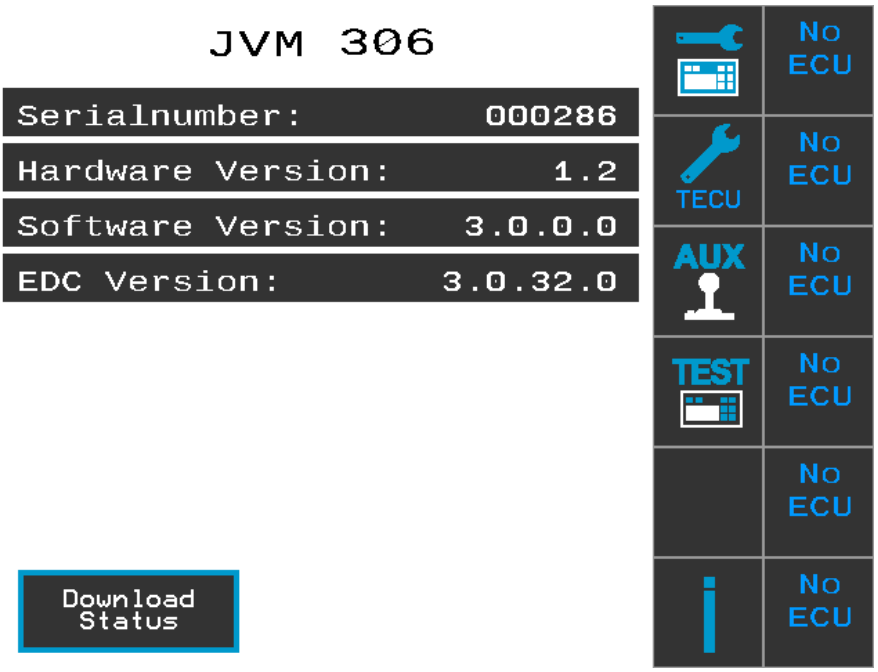
If an APV implement is connected, the APV icon can be seen in the top right corner of the display after a waiting period of **5 minutes**.



If an APV implement is not connected, this logo is then not shown.

4.5 MAIN DISPLAY

In the main display, you can find information on the serial number, hardware version, software version and EDC version.

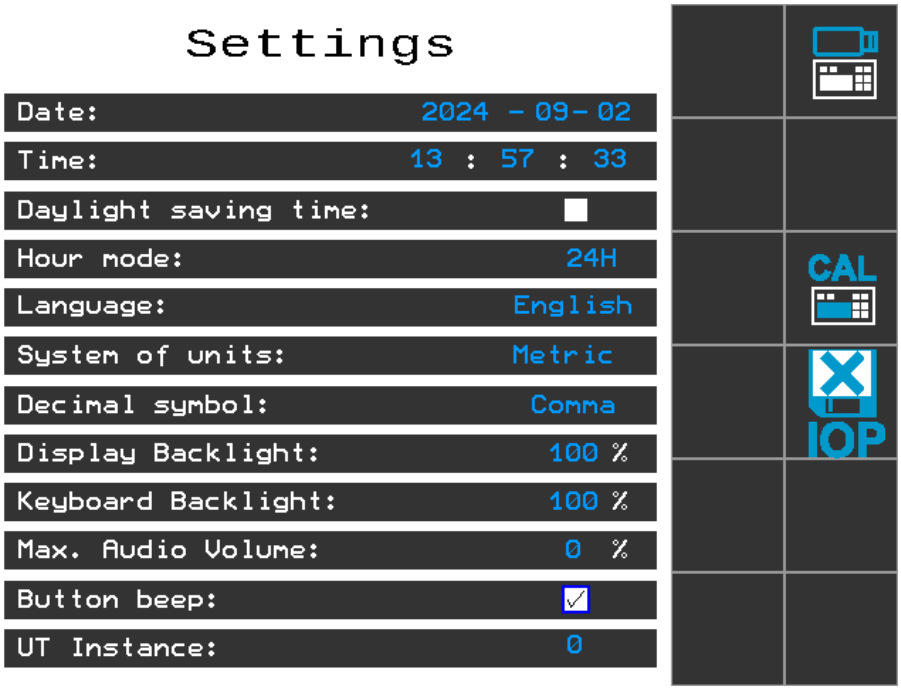


The other menu points can be reached from the main display.

5 FUNCTION DESCRIPTION

5.1 SETTINGS

In the Settings menu, general settings for the terminal are made.



5.1.1 DATE

By clicking on the respective blue number, the year, month and day can be set using the number pad.



5.1.2 TIME

By clicking on the respective blue number, the time (hours, minutes and seconds) can be set using the number pad.



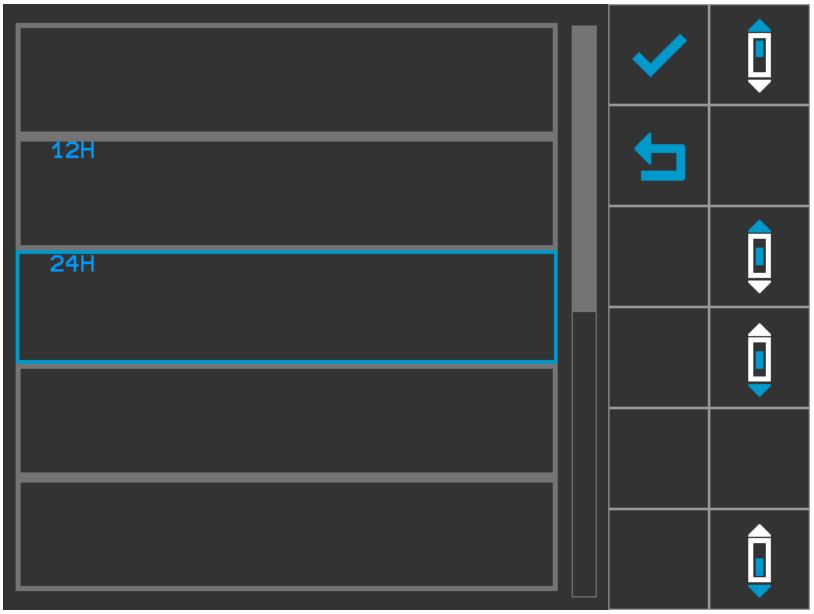
5.1.3 DAYLIGHT SAVINGS / STANDARD TIME

You can choose between daylight savings and standard time by setting or removing the checkmark.



5.1.4 TIME (AM, PM / 24H)

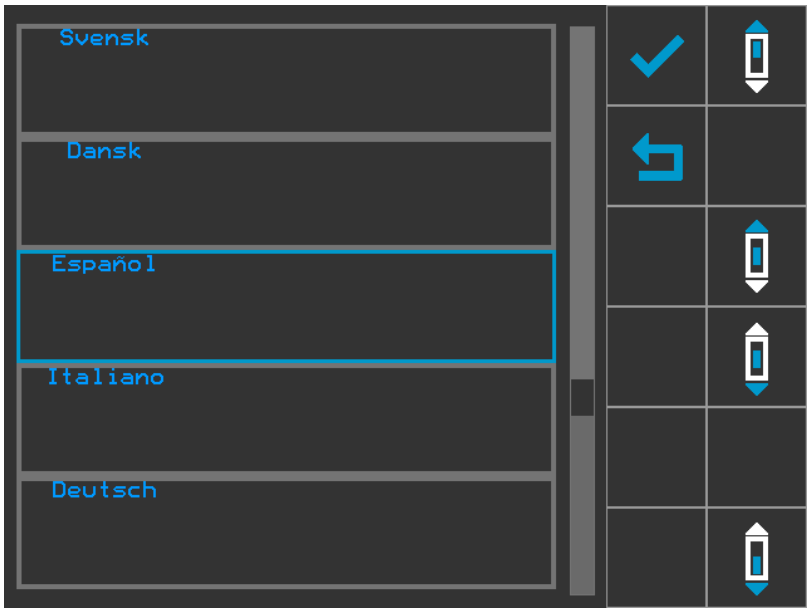
In the point, the time display can be selected. You can choose between 12 h or 24 h.



5.1.5 LANGUAGE

Here, the language for the terminal can be selected. The following languages are available:

- English
- Dutch (Nederlands)
- French (Français)
- German (Deutsch)
- Italian (Italiano)
- Spanish (Español)
- Danish (Dansk)
- Swedish (Svenska)
- Bulgarian (български)
- Czech (Česky)
- Finnish (Suomi)
- Hungarian (Magyar)
- Norwegian (Norske)
- Polish (Polski)
- Portuguese (Português)
- Rumanian (Romana)



If the language is changed, the Control Box must be **restarted**.

5.1.6 SYSTEM OF UNITS

Here, the system of units can be selected. You can choose between US/Imperial and the metric system.



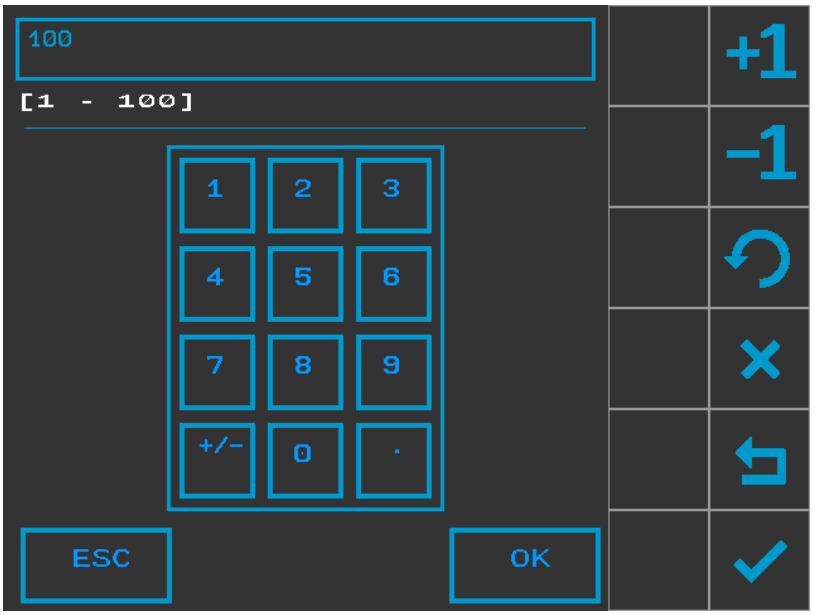
5.1.7 DECIMAL SYMBOL

With this setting point, the representation of the decimal symbol can be selected. You can choose between point and comma.



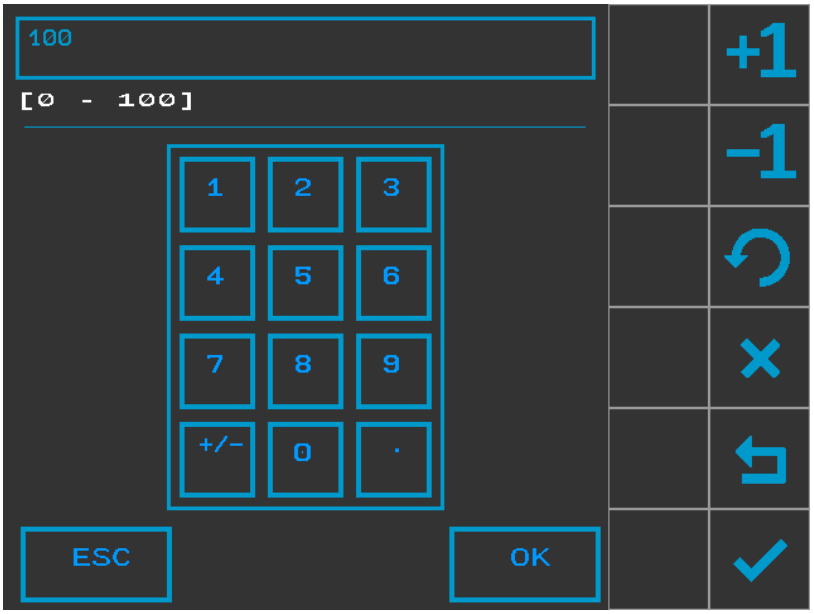
5.1.8 DISPLAY ILLUMINATION

In this setting point, you can change the brightness of the display. It can be set between 1 – 100%.



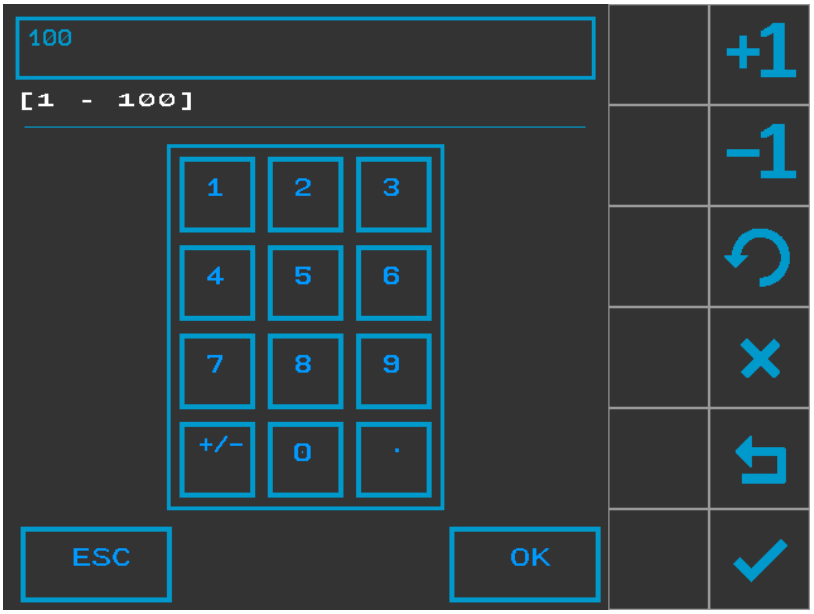
5.1.9 KEYPAD ILLUMINATION

In this setting point, you can change the brightness of the buttons. The brightness can be set between 0 – 100%.



5.1.10 MAX. AUDIO VOLUME

In this setting point, you can change the volume of the terminal. The volume can be set between 1 – 100%.



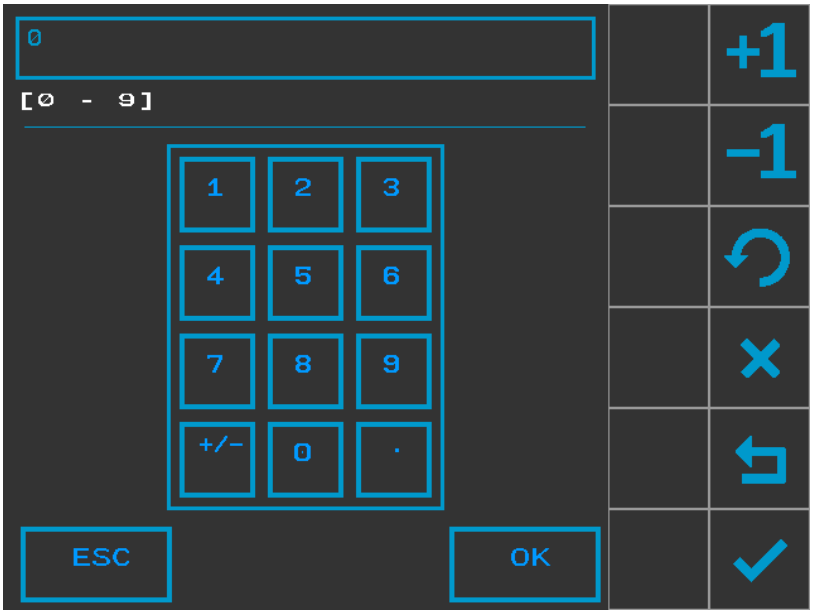
5.1.11 BUTTON TONE

In the point, you can select whether the buttons should emit a signal tone when they are pressed.



5.1.12 UT ENTITIES

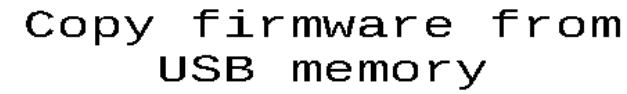
In this point, you can set the display (primary (0); secondary (1-9)) as which the terminal logs in on the BUS. This is necessary if multiple displays are used on one tractor. If the terminal is used as a second terminal, the UT entity for this terminal must be changed

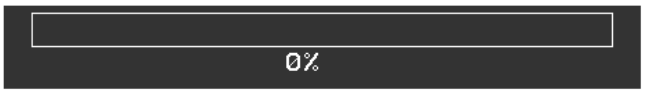


5.1.13 UPDATING THE TERMINAL SOFTWARE



If a USB flash drive is connected at the rear of the terminal, an update can be automatically performed by pressing this button.
When the update is complete, the terminal performs a restart.



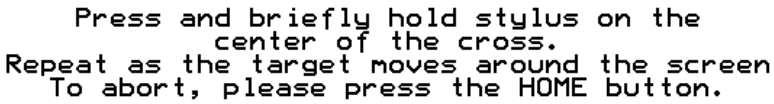


5.1.14 SCREEN CALIBRATION

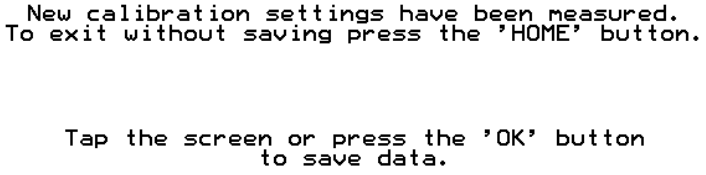


In this menu point, the touch operation of the terminal can be calibrated. After selecting this point, follow the instructions on the terminal and press the crosshairs in each corner of the screen.





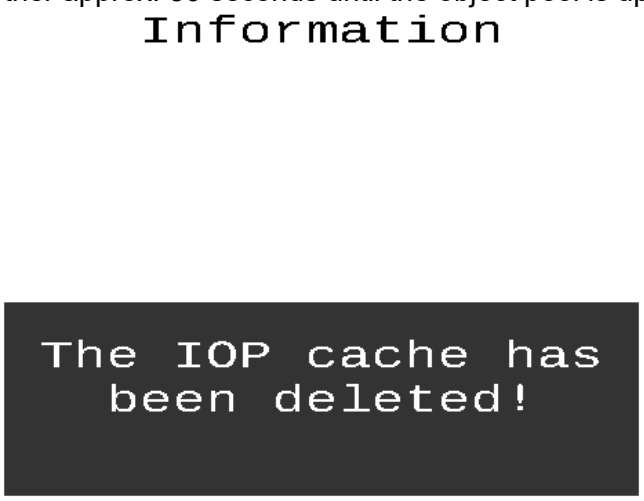
When the calibration is complete, the settings can be adopted with OK.



5.1.15 CLEARING THE IOP (OBJECT POOL)

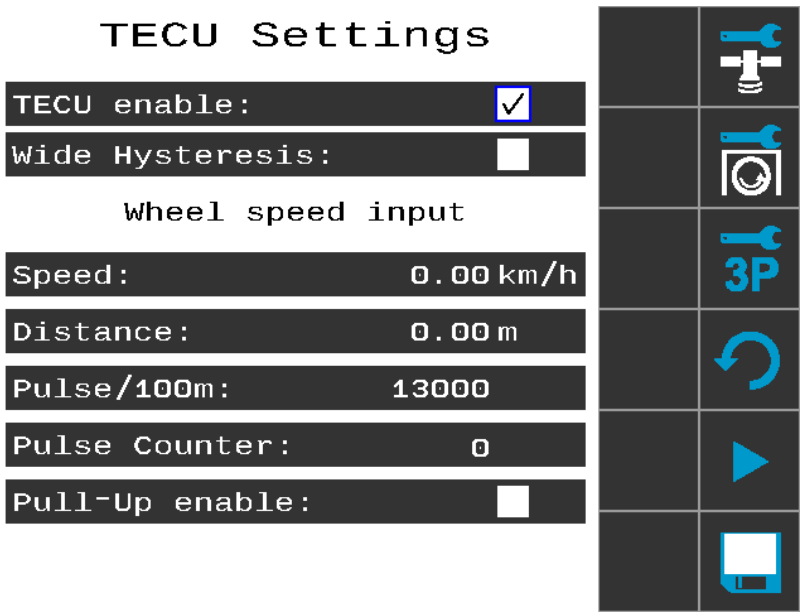


Up to 3 IOP files can be uploaded simultaneously on the terminal. By pressing this button, all of the object pools on the terminal are automatically deleted. When the object pool is cleared, it takes another approx. 30 seconds until the object pool is uploaded again.



5.2 TECU SETTINGS

In the TECU settings menu, special settings for the linkage, speed and PTO shaft signals can be made.



Navigation in the menu takes place with the buttons on the right of the screen. By pressing the buttons, you can switch between forward speed input, wheel speed input, rear PTO shaft and hitch settings.

CAUTION!

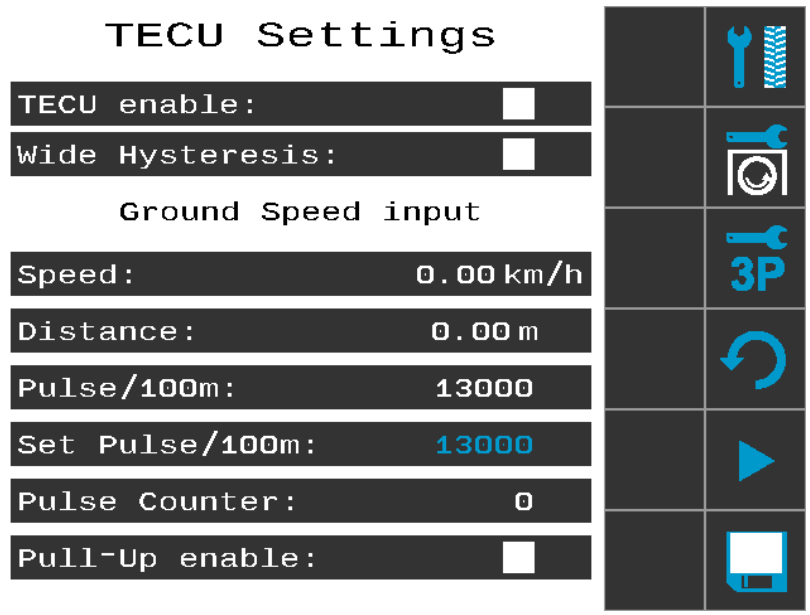
On every screen, the TECU (tractor ECU) can be enabled or disabled with the checkmark. If the tractor's 7-pin signal socket should be used to import the speed and linkage signals directly from the tractor, the checkmark must be set for "TECU enable". Cable 00410-2-266 is needed for this. See chapter 4.2.3

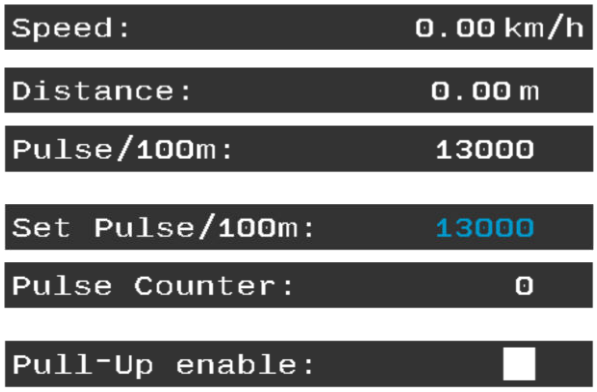
Under the point Wide Hysteresis, you can set different levels depending to the tractor. By selecting this point, the detection range gets bigger. Depending on the tractor, the 7-pin signal sockets can have different voltage levels for the speed. The normal hysteresis works 90% of the time. If the signal cannot be received, the hysterisis (range) can be enlarged. If the signal is still too weak, an additional pull-up resistor can be added.

5.2.1 SPEED INPUT



By pressing the button, you can switch to the forward speed input screen.





Display of the current forward speed.

Display of the driven distance.

Here, the currently used calibration value or the pulses/100 m is shown.

Here, the pulses/100 m can be set.

Counts the pulses that are generated during the speed calibration.

Here, an additional pull-up resistor can be connected to the speed input of the terminal.

5.2.1.1 FORWARD SPEED CALIBRATION



By pressing the button, the calibration procedure is started. Now drive a distance of 100 m with your tractor.



With this button, you can save the calibration value after driving the 100 m distance.

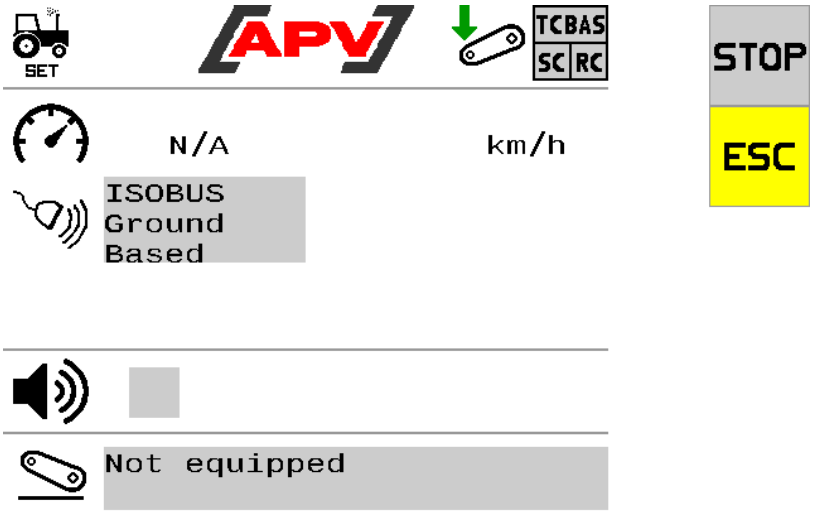


If an error occurs during this procedure, you can reset the value here.

When the procedure is completed, the calibration value should be saved and displayed on the terminal.

5.2.1.2 APV SOFTWARE SETTINGS

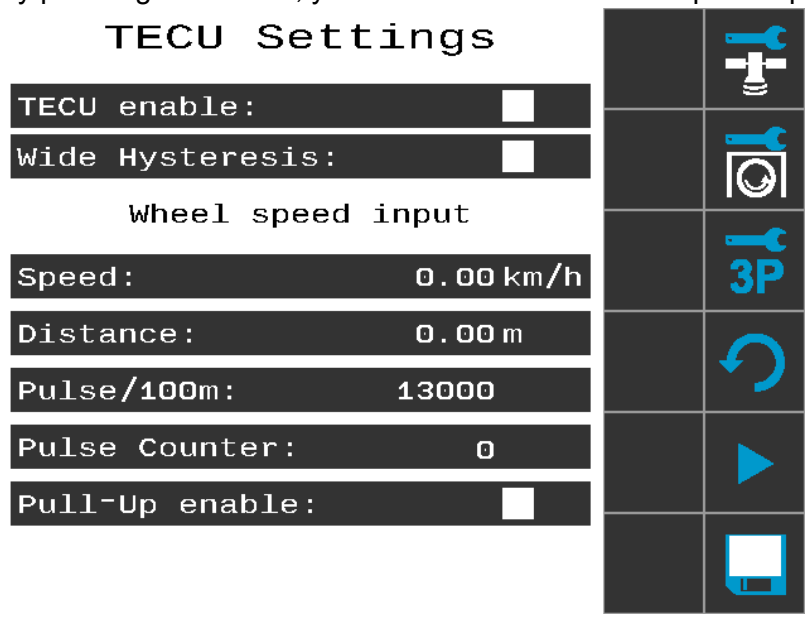
In the APV software, **ISOBUS Ground Based** must be selected as the speed signal in the Tractor settings menu.

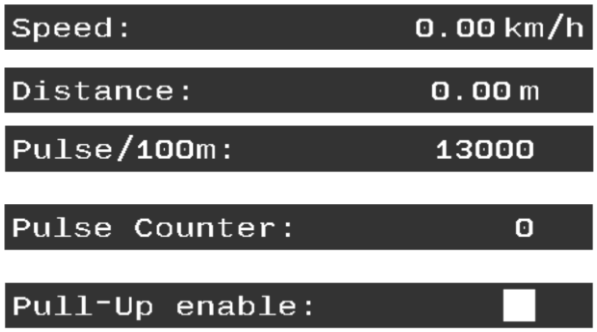


5.2.2 WHEEL SPEED INPUT



By pressing this button, you can switch to the wheel speed input screen.





Display of the current forward speed.

Display of the driven distance.

Here, the currently used calibration value or the pulses/100 m is shown.

Counts the pulses that are generated during the speed calibration.

Here, an additional pull-up resistor can be connected to the speed input of the terminal.

5.2.2.1 WHEEL SPEED CALIBRATION



By pressing the button, the calibration procedure is started. Now drive a distance of 100 m with your tractor.



With this button, you can save the calibration value after driving the 100 m distance.

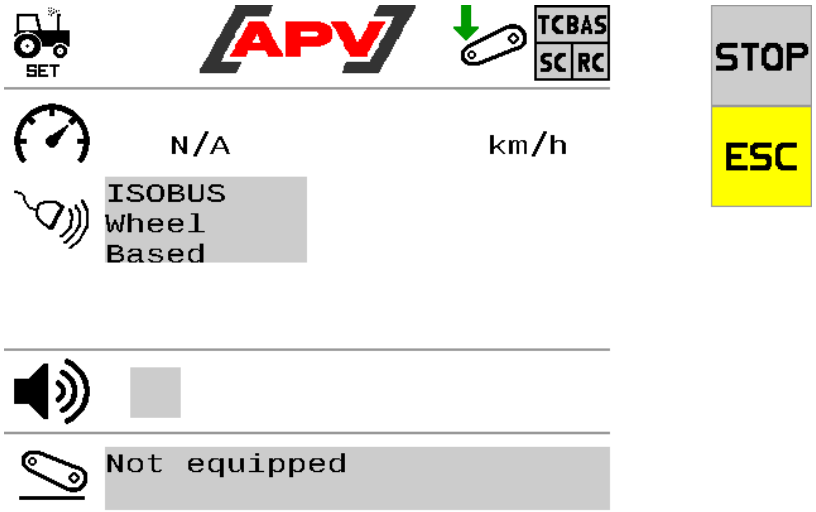


If an error occurs during this procedure, you can reset the value here.

When the procedure is completed, the calibration value should be saved and displayed on the terminal.

5.2.2.2 APV SOFTWARE SETTINGS

In the APV software, **ISOBUS Wheel Based** must be selected as the speed signal in the Tractor settings menu.

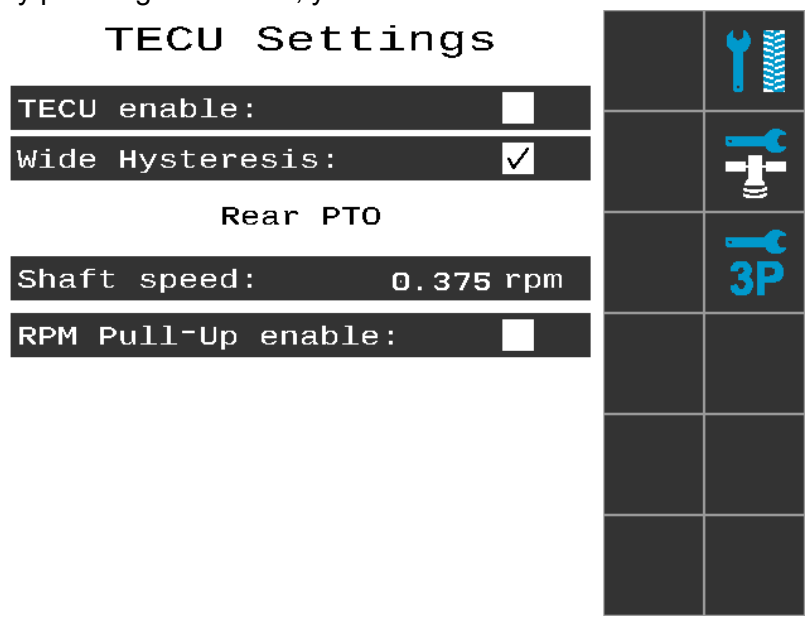


A more detailed description of the setting can be found in the ISOBUS operating manual.

5.2.3 REAR PTO SHAFT SETTINGS



By pressing this button, you can switch to the rear PTO shaft settings.





Display of the current rear PTO shaft speed.

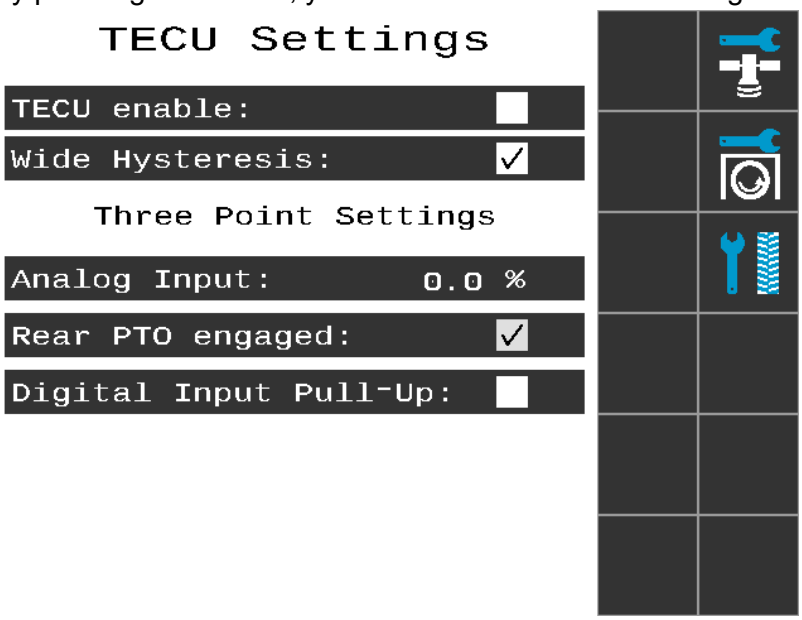


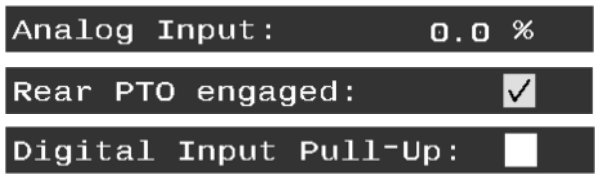
Here, an additional speed pull-up can be added.

5.2.4 HITCH SETTINGS (REAR LINKAGE)



By pressing this button, you can switch to the hitch settings.





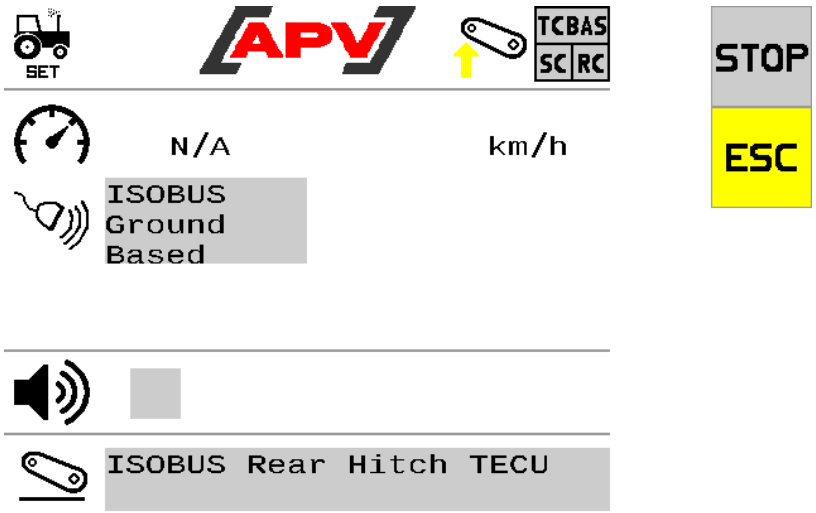
Display of the current linkage position in %.

Here, the rear PTO shaft can be engaged.

Here, an additional pull-up resistor can be connected on the digital input.

5.2.4.1 APV SOFTWARE SETTINGS

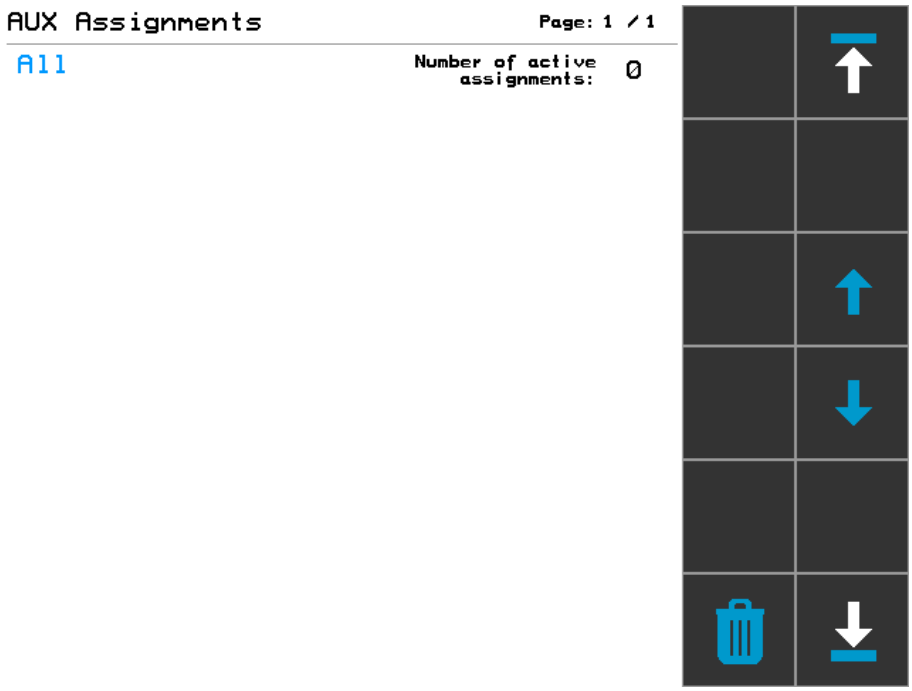
In the APV software, to be able to receive the digital linkage signal, **ISOBUS rear hitch TECU** must be selected in the tractor settings menu.



To be able to import the analogue linkage signal, **ISOBUS rear hitch** must be selected in the APV software.
A more detailed description of the setting can be found in the ISOBUS operating manual.

5.3 AUX ASSIGNMENTS

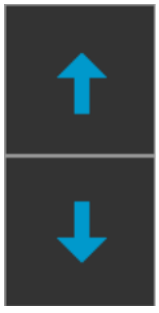
In the AUX assignments menu point, all of the additional control elements are listed, such as joysticks, etc.



Navigation in the menu takes place with the buttons on the right of the screen.



By pressing the button, AUX control elements can be deleted.



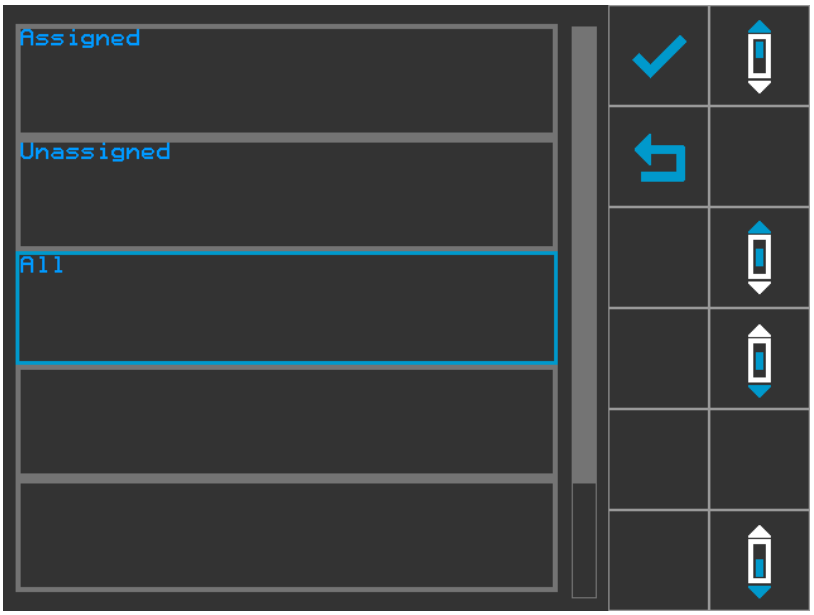
With these buttons, you can scroll up and down in the list.



By pressing this button, you can jump all the way to the bottom of the list.



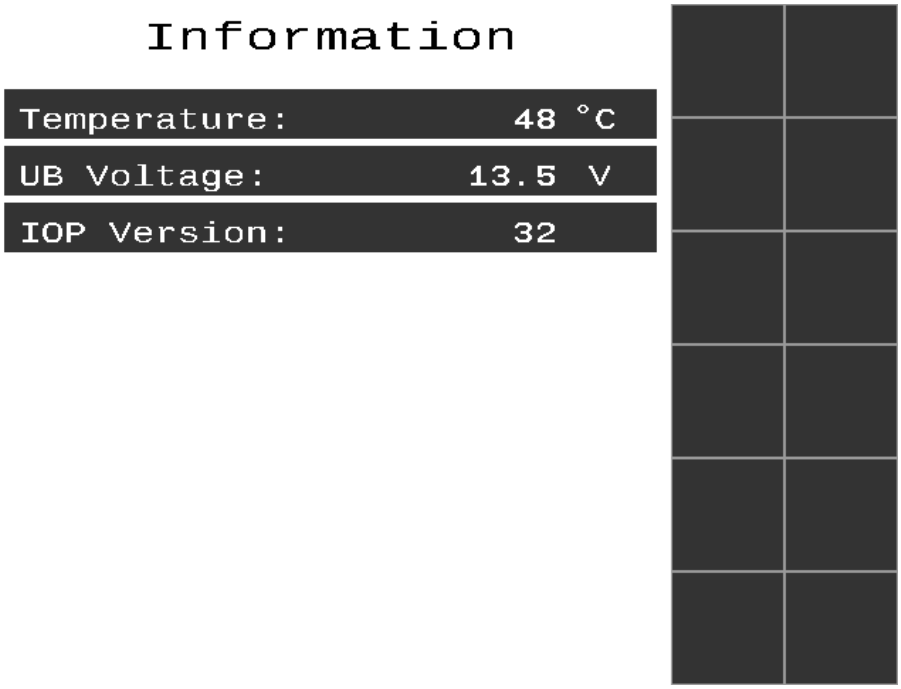
By pressing this button, you can jump all the way to the bottom of the list.



By clicking on ALL at the top left corner of the screen, you can apply a filter. The possible filters are Assigned, Unassigned and All.
APV software currently does not have any AUX functions.

5.4 INFORMATION

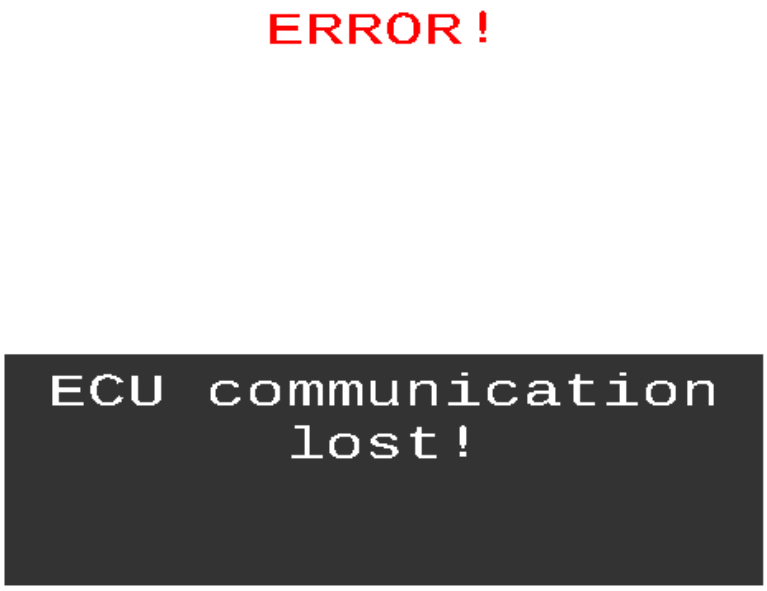
In the Information menu point, you can obtain information on the temperature of the terminal, operating voltage applied on the terminal and IOP version.



6 ERROR MESSAGES

6.1 ECU CONNECTION ERROR

Display	Cause	Solution
ECU communication lost!	• The ECU was disconnected during operation.	• Check the plugs.



6.2 SOFTWARE UPDATE ERROR

Display	Cause	Solution
Error with the USB update!	• Incorrect procedure during the update. • The USB flash drive has the wrong file or was not properly inserted.	• Check the connection of the USB flash drive. • Check the file on the USB flash drive. (EDC file)



7 SOFTWARE UPDATE

For a software update, please contact Service at APV, the contact data can be found under Point 2.

NOTES

NOTES

APV – Technische Produkte GmbH
Zentrale: Dallein 62
AT - 3753 Hötzelsdorf

Tel.: +43 2913 8001
office@apv.at
www.apv.at