

User manual

**Counting system  
SmartCounting**

Code No. 99-94-0979 GB

Edition: 11/2024



<b>1</b>	<b>About this manual</b>	<b>1</b>
<b>2</b>	<b>About SmartCounting</b>	<b>2</b>
<b>3</b>	<b>Precision</b>	<b>3</b>
<b>4</b>	<b>Initial setup</b>	<b>4</b>
4.1	Hardware setup	4
4.2	Software configuration	9
4.2.1	Create a new counting zone	10
4.2.2	Edit a counting zone	11
<b>5</b>	<b>Hardware interface</b>	<b>16</b>
5.1	Counting from the EIP	16
5.2	Live camera feed	19
5.3	Account status	20
5.4	Access the user manual	23
<b>6</b>	<b>SmartCounting app</b>	<b>24</b>
6.1	Accessing the SmartCounting web application	24
6.2	Homepage	24
6.3	Counting from the app	25
6.3.1	Start a counting session	25
6.3.2	Other information found in the homescreen	26
6.3.3	Stop a count	28
6.4	History page	29
6.4.1	Details of a specific count	31
6.5	Settings page	32
6.5.1	Counting zone	32
6.5.2	Storage page	32
6.5.3	Batch delete old videos manually	33
6.5.4	Automatically delete older videos	33
6.5.5	System	34
6.5.6	Email reporting	34
6.5.7	Help (?)	35
6.6	Users page	35
<b>7</b>	<b>Optimizing precision</b>	<b>36</b>
7.1	Usage compliance feature	38
<b>8</b>	<b>Advanced features</b>	<b>40</b>

---

<b>8.1</b>	<b>User management and permissions</b>	<b>40</b>
8.1.1	Log in/out as admin user.	40
8.1.2	Access the users page	41
8.1.3	Change your admin password	42
8.1.4	Give/remove permissions to users or groups of users	43
8.1.5	Add a new user / group of users	46
8.1.6	API	46
<b>9</b>	<b>Maintenance and updates</b>	<b>48</b>
<b>10</b>	<b>Troubleshooting</b>	<b>50</b>
10.1	Troubleshooting guide	50
10.2	Reporting to Ro-Main	51
<b>11</b>	<b>Product specifications*</b>	<b>53</b>
<b>12</b>	<b>Safety instructions and warnings</b>	<b>54</b>

## 1 About this manual

Observe the instructions in this manual to ensure correct and safe use of the system.

Keep this manual safe for future use.

All persons assembling, operating, cleaning and servicing this system must be familiar with the contents of this manual.

These persons must always have access to the manual. Keep this manual in the immediate vicinity of the system for this reason.

Observe the comprised safety instructions!

If this manual is damaged or lost, request a new copy from **Big Dutchman**.

This manual is protected by copyright. The information and drawings included in this manual may not be copied without the manufacturer's consent, nor may they be misused or disclosed to third parties.

The contents of this manual may be altered without prior notice.

If you find mistakes or unclear information in this manual, please do not hesitate to let us know.

All trademarks mentioned or shown in the text are trademarks of their respective owners and recognised as protected.

© Copyright 2024 by **Big Dutchman**

The Counting system SmartCounting was developed and manufactured by Ro-Main. **Big Dutchman** is the official distributor of this product. If you have any questions or problems, please contact our customer service.

**For further information please contact:**

Big Dutchman International GmbH, P.O. Box 1163, 49360 Vechta, Germany,

Phone: +49 4447 8014500, Fax: +49 4447 801237

Email: [smartcounting@bigdutchman.com](mailto:smartcounting@bigdutchman.com), internet: [www.bigdutchman.de](http://www.bigdutchman.de)

## 2 About SmartCounting

Congratulations on your brand-new acquisition, you have made a Smart choice! Your SmartCounting system on Edge Intelligence Platform (EIP) will allow you to be much more precise and productive in your operations by always having the right count.

SmartCounting automatically counts your pigs using a simple camera and cutting-edge artificial intelligence algorithms. A camera is installed to look straight down on an alleyway where you move pigs. The video feed is shared with the SmartCounting EIP unit, which analyzes it to return the count in real time directly on its built-in screen or on your smartphone, tablet, or computer.

What are you waiting to get started?



CAPTURES



ANALYZES



BROADCASTS

**99.9%**  
precision  
and over

GIVES YOU A  
PRECISE RESULT



**Big Dutchman**

Counting system SmartCounting  
Edition: 11/2024 99-94-0979 GB

### 3 Precision

The section of the alleyway where pigs are counted, and which is covered by the camera is called the **counting zone**. SmartCounting will count any pig moving across the counting zone with unrivaled accuracy, considering the pigs can be seen by the camera. Taking special care not to hide pigs and to avoid overcrowding under the camera is therefore essential to get the most out of your SmartCounting system. Observing very **simple usage guidelines** will help you not only optimize the accuracy of your counts but will also promote animal welfare and make your work more efficient. See chapter 7 "Optimizing precision" of this user manual for more information.

A minimum accuracy of 99.9% (maximum 1 miscount out of 1000 pigs) is guaranteed when all pigs can be seen by the camera. This accuracy rate can be expected on day one in more than 95% of use cases. If ever SmartCounting does not reach the expected accuracy on day one for you, our dedicated support team will guide you through a simple calibration until you get the minimum guaranteed accuracy. Please contact your local authorized dealer or send us an email at

**[smartcounting@bigdutchman.com](mailto:smartcounting@bigdutchman.com)**

if you have any questions.

## 4 Initial setup

### 4.1 Hardware setup

#### 1. Define the ideal location for the counting zone

Defining the best location of the counting zone is the most important step of a SmartCounting installation as it will help you optimize the accuracy of the counts. In fact, a well-chosen camera location will help you avoid the jamming of the animals in the counting zone.

The counting zone requires at least 1,27 meters (50 inches) of straight alleyway. Its location must be chosen such as **to prevent the pigs from jamming and piling up**. According to this principle, locate the counting zone where the pig flow can be steady and mostly unidirectional. **Avoid locations with sudden change of temperature, texture, floor inclination, or lighting, as such locations are known to scare pigs and impair the pig flow.**

Lighting should be sufficient in the counting zone. Although SmartCounting will work in low light conditions, the system will show its best results at 20 lux or more (measurement taken from the ceiling, pointing towards the floors).



#### NOTICE!

Avoid installing the camera where natural light can cause overexposure such as near a window or an outside door. If it is impossible to find such a location, seek the help of your authorized SmartCounting distributor.

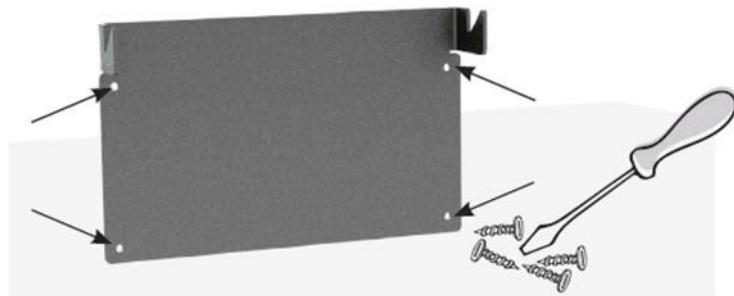
---

Your authorized SmartCounting distributor can help you determine the best location for the installation of your camera. Please do not hesitate to reach out to them for assistance.



## 2. Install the EIP

Locate from where you want to operate your counter and see your number of pigs. Most users prefer to position their counter near the camera. Install the mounting bracket of the EIP on the wall with the provided screws.



### NOTICE!

**IMPORTANT:** The provided screws will provide sufficient support in wood walls only. For installation on other wall types, use appropriate hardware.

## 3. Mount the EIP on the mounting bracket.



4. **Plug the camera and the Internet cable** connectors into the corresponding sockets on the EIP. Plug the power supply cord only into a socket outlet with a protective earthing connection.



**NOTICE!**

- The ethernet connectors ensure the ingress protection specific to this device. Push them firmly into place until they click. Always apply the plastic socket plug when a connector is not used.
- An **internet connection** is optional for operating SmartCounting, but mandatory for updating the device, validating the subscription, and for remote support.

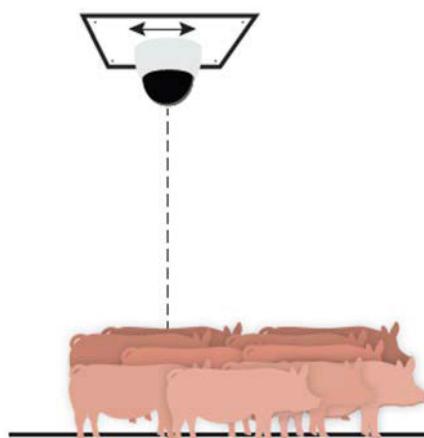
## 5. Install the camera

### NOTICE!

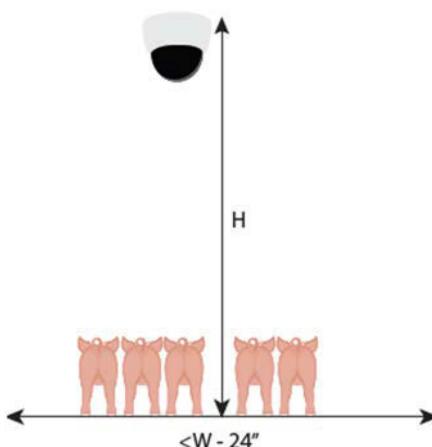
This section explains how to install the camera. For complete camera configuration, refer to chapter 4.2.2 "Edit a counting zone".

#### **Position**

The camera must be pointing perpendicularly to the floor and must be oriented such that the arrows on the camera bracket are pointing in the direction of the pig flow. If the "IN" arrow is pointing into the building, the system will by default count pigs positively when they enter the farm and negatively when they leave the farm. The counting direction can be always modified from the counting zones settings or on the counter page before starting a new count.

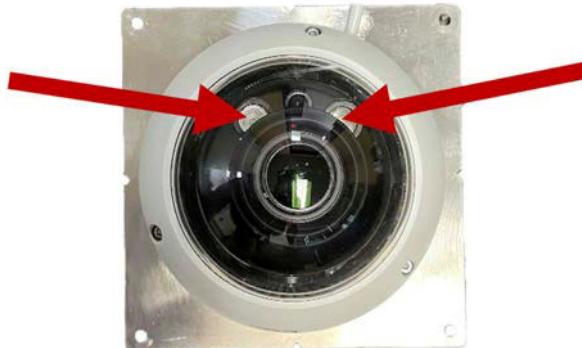


The camera must be installed between  $H = 2,133$  metres (7 feet) and  $H = 3,048$  metres (10 feet) from the ground for counting piglets or between  $H = 2,438$  metres (8 feet) and  $H = 4,572$  metres (15 feet) for counting bigger pigs. The width of the alleyway must be at least  $W = 0,609$  metres (24 inches) shorter than the height of the camera to ensure full coverage of the counting zone.

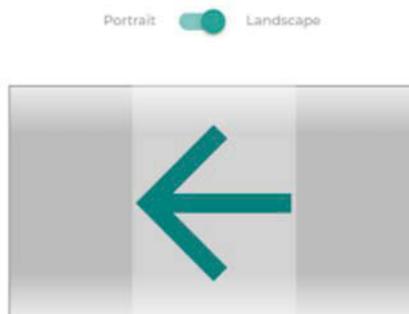


### Orientation

The SmartCounting camera can be used in landscape or portrait orientation. The camera has two infrared lights that can be used as an indicator of the orientation.



When the infrared lights are aligned with the alleyway, the camera is in **landscape orientation**.



When the infrared lights are perpendicular to the alleyway, the camera is in **portrait orientation**.



Landscape orientation is always recommended when the width of the alleyway allows it. If the alleyway is too wide for the landscape orientation, pigs walking along the walls of the counting zone may not be fully seen by the camera. The following table shows the recommended minimum ceiling height for different alleyway widths for a camera in recommended landscape orientation.

Alleyway width	Minimum ceiling height
2,13 m (7')	2,44 m (8')
2,44 m (8')	2,75 m (9')
2,75 m (9')	3,00 m (10')
3,00 m (10')	3,66m (12')



### NOTICE!

Portrait orientation provides a shorter counting zone than the landscape orientation. A shorter counting zone has a risk of lower counting accuracy than a longer one. Please contact your authorized dealer if you have any question regarding the orientation of your camera.

## 4.2 Software configuration

### 1. Turn on your EIP unit

Connect your EIP to the wall, the unit will automatically turn on.

### 2. Connect to the SmartCounting Web Application

Using your own monitoring device (Smartphone, Tablet or Personal Computer), proceed with the following steps:

- a) Open the Network and Internet Settings and go to the list of available internet connections.
- b) Connect to the "SmartCounting" WI-FI network.
- c) Open a web browser (Safari or Google Chrome) and in the URL address bar type **10.10.10.100**, then click **Enter**. Alternatively, scan the QR code located on the right side of your EIP, which will automatically open up your web browser and direct you to the URL 10.10.10.100.

**NOTICE!**

If you plan on using your SmartCounting in a single counting zone and with the camera in landscape orientation, no further software configuration is strictly needed. Skip the following section and go straight to chapter 5 "Hardware interface". Otherwise, follow the steps below to configure a counting zone.

**3. Login as administrator user**

- a) Click on Profile in the top-right menu.
- b) Enter the administrator credentials, then click **Submit**. By default, the administrator user has all the rights and can control the permissions granted to other users. See chapter 8 "Advanced features" of this manual for more information about **User Permissions**.

**NOTICE!**

Contact your authorized distributor if you do not remember the administrator credentials.

**4.2.1 Create a new counting zone**

1. In the top-right section of the home page, click on **Settings > Counting Zone > New Counting Zone**.
2. Continue with the steps described in chapter 4.2.2 "Edit a counting zone".

**NOTICE!**

If you are setting up a single counting zone system, there is no need to create a new counting zone on the software. You can use / edit the default counting zone.



## 4.2.2 Edit a counting zone

In the top-right section of the home page, click on **Settings > Counting Zone**, then click on the counting zone to edit.

Counting zone  
Mobile

Counting zone name  
Mobile

Owner

Owner mailing address

Additional information

Camera

Fixed  Mobile

10.10.10.10

CAPTURE

Duty camera verification

Directions

Portrait  Landscape

Name this direction: a

Name this direction: d

Count reporting

Selection mode  
Manual

Delete

SUBMIT

### 1. Enter counting zone information:

- Counting zone name (required)
- Owner (not required)
- Owner email address (not required)
- Additional information (not required)

## 2. Enter the type of camera



### NOTICE!

Any SmartCounting camera can be used as either of the two camera types. The way it is used is what will define its type.

- Stationary camera (default): This type of camera is assigned to one location only, i.e. to a single Counting Zone.

The stationary (fixed) camera mode should be used when a camera that is permanently installed in a unique counting zone. When this mode is selected, the system will associate the unique ID of the camera (MAC address) with the counting zone as soon as a first count is made. This will allow the system to automatically recognize the appropriate counting zone (and its associated settings) the next time it connects to that camera and select it automatically. Therefore, the user will not have to select the counting zone before starting a new count.

- Mobile Camera: This type of camera can be moved from one Counting Zone to the other and be assigned to multiple Counting Zones.

The mobile camera mode allows to associate a same camera to multiple counting zones. The mobile camera hardware (sold separately) allows to easily move and install the camera from farm to farm. To use a mobile camera, the mobile camera setting should be enabled in the settings of each counting zone to be used with this camera. When connected to a mobile camera associated with more than one counting zone, the user must choose from the dropdown menu from which counting zone he wants to start the count. This choice can be made from the EIP or from the web application. Only the zones associated with this camera can be selected.

## 3. IP address

The default IP address of the camera is **10.10.10.10**. If you have multiple counting zones on the same network, make sure that your other cameras have a different IP address (Example: 10.10.10.11, 10.10.10.12, etc.).

*Contact your authorized distributor for more information.*



#### 4. Define a Counting Zone

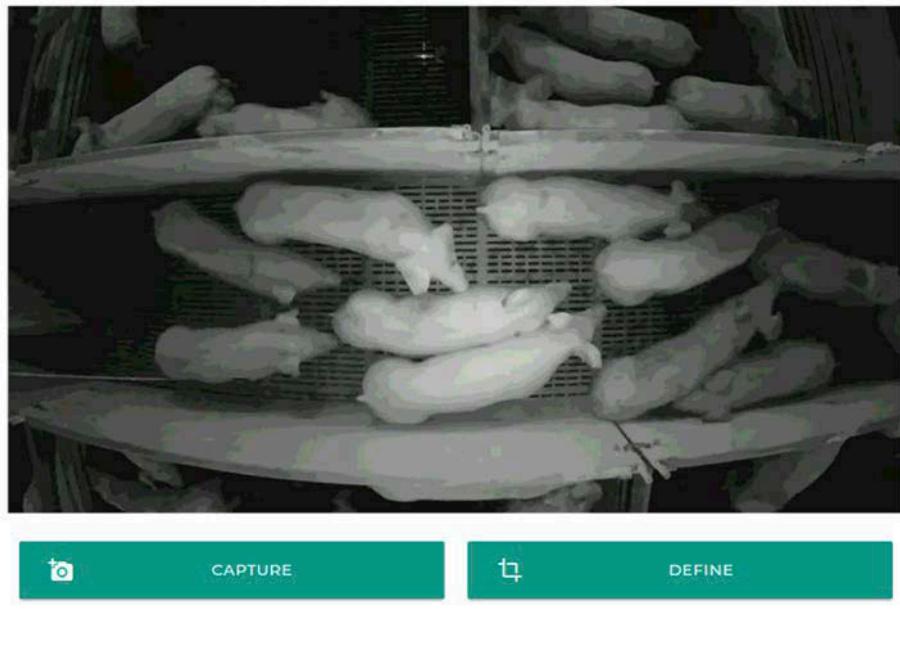
Adjusting the size of a counting zone allows to remove unwanted parts of the camera's field of view that could impact system usage and results. Note that any adjustment to the counting zone will apply only for this specific zone.

##### NOTICE!

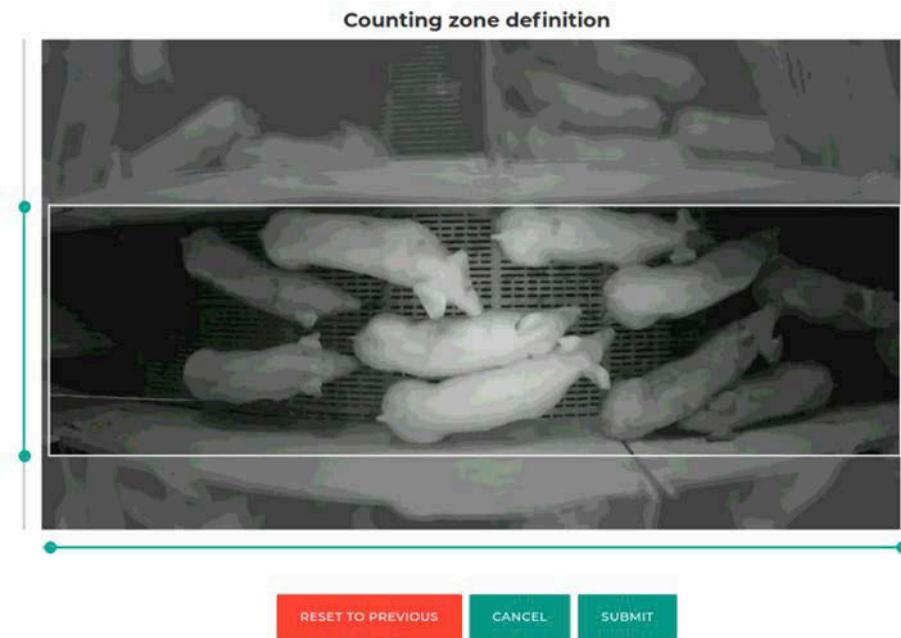
**IMPORTANT:** Only adjust the size of a counting zone if necessary, to avoid counting pigs that should not be counted. Reducing the camera's field of view for no reason can reduce the accuracy of the system. If you have any questions, please contact the technical service of your authorized SmartCounting distributor or **Big Dutchman**.

##### To define a counting zone:

- Click on **Capture > Define**

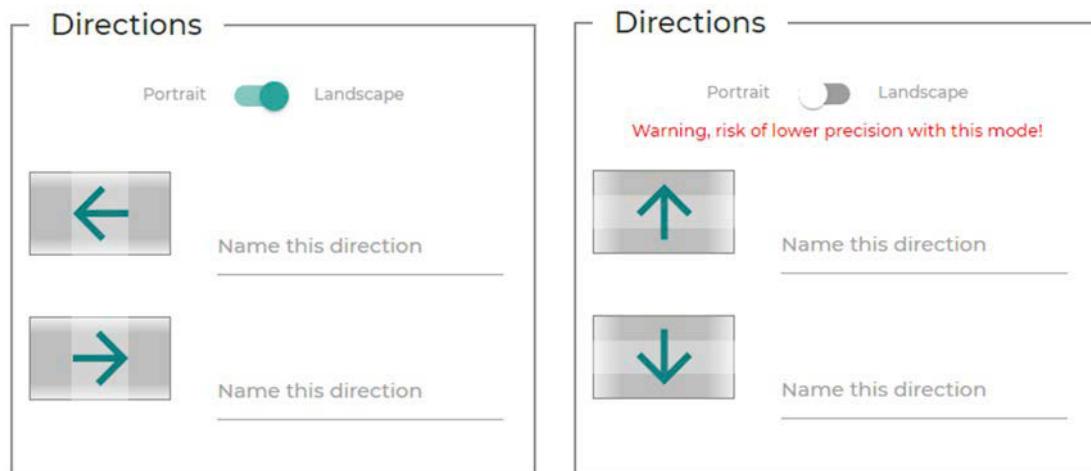


- Draw a rectangle around your counting zone by moving the sliders on the sides of the image, then click **Submit**. The rectangle must be as wide as possible while excluding locations where you do not want the system to detect pigs. It must be wide enough to entirely see the biggest pigs walking along the walls of the centre part of the counting zone. Avoid changing the length of the counting zone as it may have a direct impact on accuracy.



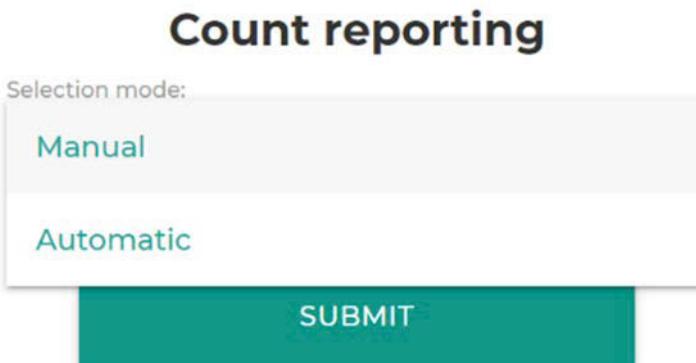
## 5. Setup Camera Direction

Choose the orientation of the counting zone according to the camera orientation setup in chapter 4.2.2 "Edit a counting zone" section of this manual. Giving meaningful names to the directions will help you differentiate them when working with the system in the barn (Example: In, Out, etc.).



## 6. Choose count reporting mode

Count reporting allows to share data with Ro-Main for calibration, troubleshooting or product improvement purposes.



- Manual mode (default): No counting data from this counting zone will be shared to Ro-Main unless the user manually selects the counts to be reported. Set count reporting to manual mode once the calibration is completed. See chapter 10 "Troubleshooting" of this manual for more information.
- Automatic mode: All counting data from this counting zone will be shared automatically with Ro-Main when the system will be connected to the internet. Set count reporting to automatic mode during calibration. See chapter 10 "Troubleshooting" of this manual for more information.



### NOTICE!

Count data shared with Ro-Main through the count reporting feature is not systematically analyzed by Ro-Main's technical team. By default, reported count data will be used to identify ways to improve the product only.

► If you need help to solve an immediate problem, please report the count data and contact your authorized dealer or Ro-Main's technical service.

## 5 Hardware interface

The Edge Intelligence Platform (**EIP**) hardware allows you to access the most important features of SmartCounting without needing a smartphone, tablet, or computer. Below are the features available from the hardware interface.

### 5.1 Counting from the EIP

When you turn on the unit you will be presented with the main page, which allows you to start counting right away.

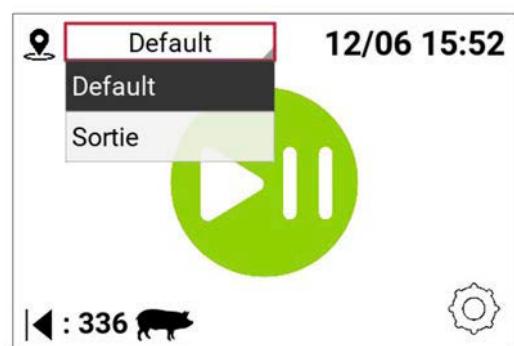
1. **Select the Counting Zone** from which a count will be started (for multiple counting zones only; if there's only one counting zone, skip to step b) "Start Counting")

If more than a single counting zone exists on the device, a dropdown menu to choose the zone to count from will be shown in the top left corner of the screen. The dropdown menu will show a list of the available counting zones depending on the camera type (see chapter 4.2.2 "Edit a counting zone"):

- a) If the Counting Zone is assigned to a Stationary (fixed) camera type, the counting zone will be selected automatically and shown in the dropdown menu.



- b) If the Counting Zone is assigned to a Mobile Camera, all possible counting zones associated for this camera will be shown and the right counting zone must be selected manually prior to starting the count.



## 2. Start Counting

a) Press Start/Pause (Green play physical button at the right of the display) to start a counting session.



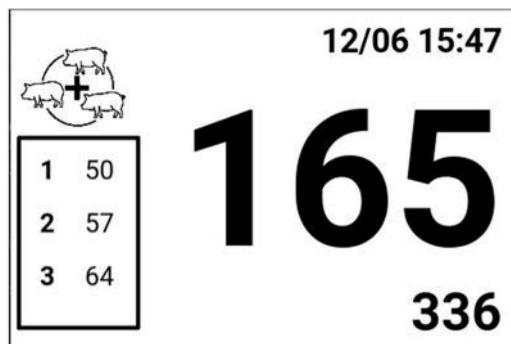
b) When "0" or "- " appears on the display, the system is counting. Move the pigs across the counting zone while ensuring that all of them always stay visible. Refer to chapter 7 "Optimizing precision" to optimize the counting accuracy.



## 3. Make groups (optional)

SmartCounting lets you create groups within a count, generating partial totals for every group you make, always keeping the general count as the final result. The main counter will show the current group's count, on the bottom right corner you will see the general counter, and on the left, the detail of the last 4 groups' counts. There is no limit to the number of groups that can be created within a counting session.

a) Push the "Group" button (right arrow key) on the EIP to record subcounts while keeping track of the total. There is no limit to the number of groups that can be made within a counting session.



#### 4. Add or discount pigs manually (optional)

smaRt Counting lets you add or discount pigs manually during a counting session. Each pig added or discounted manually will create a group within the count report. There is no limit to the number of pigs you can manually add or discount within a session (negative numbers are allowed).

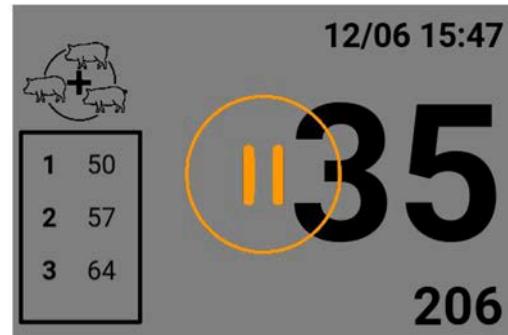
- If the current count is higher than "0", push the "Group" button as described previously and then push the "+1" or "-1" button.
- If the current count is "0", push the "+1" or "-1" button.

#### 5. Pause Counting

- Press the Start/Pause button to pause counting



- Resume counting by pressing the Start/Pause button again.



#### 6. Stop Counting

When the count session is stopped, you will see the count result on the "Finish" page. The color of the count result represents the "Usage Compliance Level" and the interval inside the brackets is the "Impact of Usage Compliance". The hidden pig icon indicates that usage compliance was sub-optimal (see SmartCounting).

- Press the red "Stop" button to stop the count



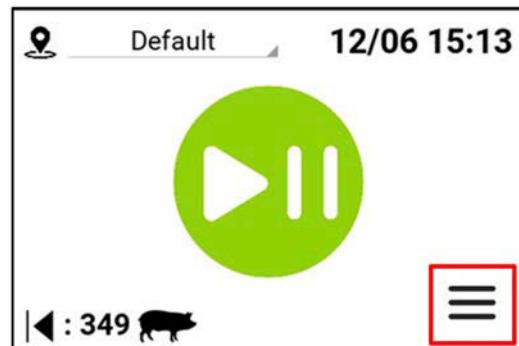
b) Press "**OK**" to return to the main page and start a new count.



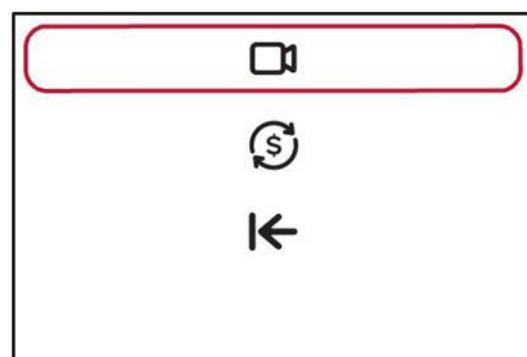
## 5.2 Live camera feed

Whether for checking the appearance of the counting zone or the cleanliness of the camera, it's always good practice to verify the camera's live feed before you start a count.

a) From the main page, use the arrow keys to navigate to the "Menu" icon in the bottom right corner of the screen, until highlighted with a red rectangle and then press on the "**OK**" button to enter the menu.



b) Make sure the "Camera" icon is selected and press the "**OK**" button to see the live feed of the camera.



c) Press the "**OK**" button to return to the menu. With the arrow keys, select the "Return" icon and press the "**OK**" button to return to the counter's home page.

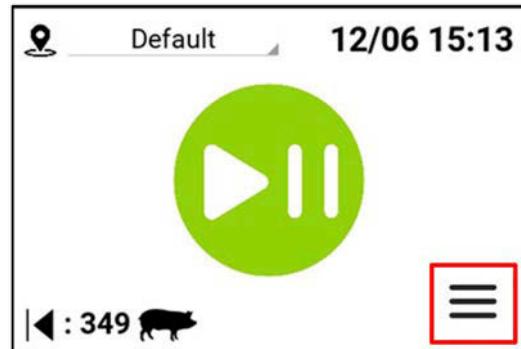


## 5.3 Account status

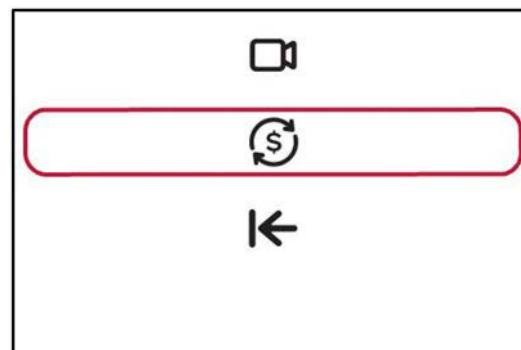
The "Account status" page gives important information regarding your SmartCounting Contract, so that you can make sure your EIP unit is always active and able to perform counts.

### 1. Accessing the Account Status page

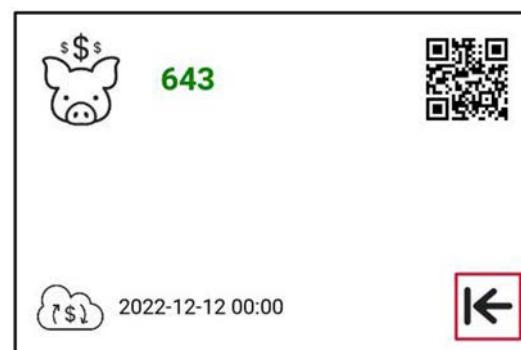
- a) From the main page, use the arrow keys to navigate to the "Menu" icon in the bottom right corner of the screen, until highlighted with a red rectangle and then press on the "**OK**" button to enter the menu.



- b) Navigate to the "Account Status" icon that represents the account status. When selected, press the "**OK**" button to access the **Account Status** page.



- c) Navigate down to the "Return" icon on the bottom right corner and press the "**OK**" button to return to the menu page.



### 2. Account status page content

- a)  Pig icon (pay-per-use clients) /  Farm icon (subscription clients) with a green number, top left corner of the screen:

Displays the remaining counting credits (pig icon) or the number of days remaining for the current subscription billing period (farm icon).

b) QR code, top right corner of the screen:

Link to a website with information for purchasing new counting credits or paying your subscription.

c)  Cloud icon with date and time, bottom left corner of the screen:

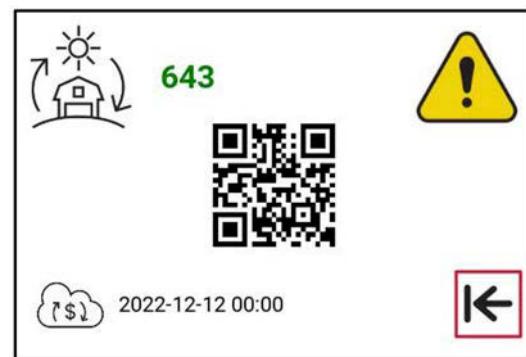
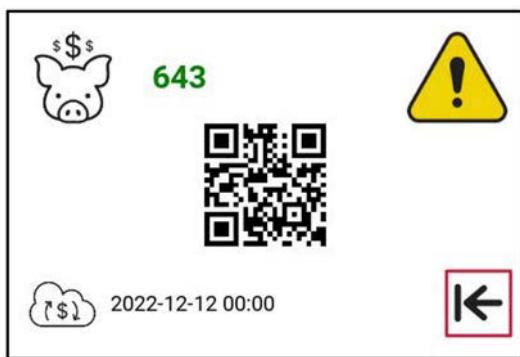
Indicates the last time the counting credits/subscription status was updated (last time the EIP was connected to the internet). Note that the system will sync with the cloud every 5 minutes when connected to the internet. Alternatively, synchronization is forced by pressing **OK** while the cloud icon is highlighted.

d) Arrow icon, bottom right corner of the screen:

"Return" button to go back to the previous page.

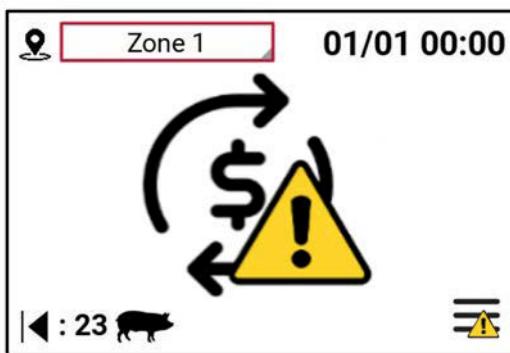
### 3. Warning that EIP deactivation is approaching

When your subscription billing period or contract has 30 days or fewer remaining, or when the system estimates that you have only 30 days' worth of counting credits left based on your average monthly credit usage over the past three months, a warning symbol will appear above the menu icon on the main screen, as well as above the "Account Status" icon in the counter's menu and at the upper right corner of the account status screen. This warning prompts you to take immediate action to prevent automatic deactivation of your EIP unit, thereby ensuring continued counting capability.



#### 4. Deactivated EIP unit

When counting credits are depleted, the subscription billing period is overdue, or the subscription contract has lapsed, a grace period allows you to continue counting while promptly purchasing more credits or renewing your subscription. However, failure to do so or neglecting to connect your unit to the internet for Account status updates before the grace period expires will result in automatic deactivation of the EIP unit. Upon deactivation, a prominent warning sign overlapping the "Account Status" icon will appear in the center of the home page whenever you push the "Play" button to start a count. After a few seconds, you will be redirected to the Account status page, where a stop sign will be displayed in the top right corner of the screen to symbolize that the EIP has been deactivated.



#### 5. Updating the Account status

When new counting credits are acquired or the subscription is paid or renewed, it's necessary to connect the EIP unit to the internet for updating credit or subscription information. The counter synchronizes with the cloud every 5 minutes when internet-connected.

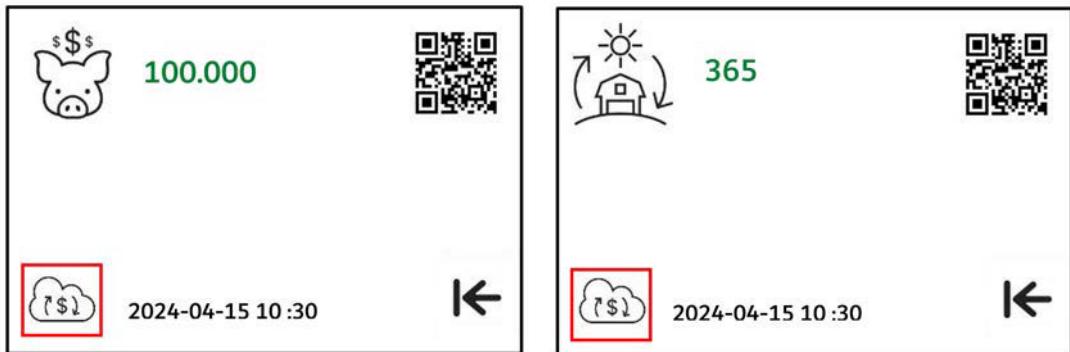


It is advisable to connect your EIP unit to the internet at least once a month. This practice ensures your Account status remains up-to-date (including new counting credits and paid subscriptions) and through the smaRt Counting web application, you will be able to verify if there are software updates available.

- a) A router or network switch with internet connection and an ethernet cable will be required.
- b) Connect an ethernet cable coming from your router or network switch to the ethernet port located on the left side of the EIP, indicated with the "world" icon.
- c) With the arrow keys, navigate to the "Menu" icon and then to the "Account status" icon.



- d) When in the Account status page, navigate to the "Cloud update" icon and press **"OK"**. This will force the synchronization.
- e) The updated number of counting credits or days in subscription should appear in the top left of the screen, and the current date and time should be displayed next to the "Cloud" icon.



#### NOTICE!

If new credits have been purchased or the subscription has been paid/renewed but the Account status doesn't change after several minutes, verify internet connectivity, and restart your EIP. If there are still no changes to the Account status, please contact your local distributor or **Big Dutchman** for troubleshooting.

## 5.4 Access the user manual

### Access the User Manual

Press the "?" button to show a QR code. Scan the code to access the user manual.



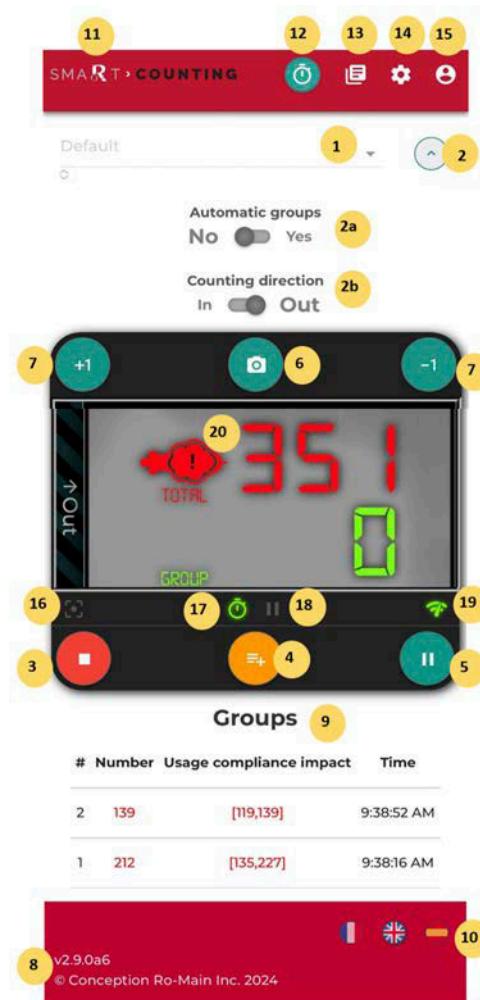
## 6 SmartCounting app

### 6.1 Accessing the SmartCounting web application

To access the SmartCounting application, follow the instructions described in chapter 4.2 "Software configuration".

### 6.2 Homepage

The main interface of the SmartCounting web application is its homepage, serving as the counter interface. Here, you'll find the live feed of the selected counting zone prominently displayed at the center of the screen, allowing you to initiate counting immediately with the click of a button. Additionally, there are a few customizable options available to suit your preferences. While navigating different sections of the SmartCounting app, you can easily return to the homepage by clicking on the "counter" icon situated in the red bar at the top of the screen.



## 6.3 Counting from the app

The following step numbers correspond to the items numbered in the previous page.

### 1. Select counting zone (if using a Stationary Camera, proceed to step 2.)

Click on the arrow to display the drop-down list of counting zones available. Select the counting zone where you want to count your pigs. If using a Stationary Camera, only the counting zone assigned to the connected camera will be displayed.



#### NOTICE!

If your SmartCounting system is connected to a Mobile Camera, or a network camera on which more than one camera are available, the last used counting zone will be selected automatically. In these cases, make sure proper counting zone is selected.

### 2. More options\*

Click "**More options**" to access advanced options for this counting zone.

- **Automatic groups:** Enable "automatic groups" if you want a secondary and independent counter that automatically resets its total to zero no pig is being detected under the camera for 2 seconds. Every counter reset will generate a group in the final report of the count.
- **Counting direction:** The counter will add or remove pigs depending on a chosen counting direction. Choose the direction in which you will move your pigs. This option can also be changed by clicking on the name of the counting direction that appears in the bar to the left or to the right of the video stream.

\* SmartCounting **will remember the last used options for each counting zone.**

### 6.3.1 Start a counting session

#### 3. Start/Stop button

Click this button to start or to stop a count. Clicking this button while pigs are detected will raise a warning message. Starting/stopping a count while pigs are in the counting zone can cause miscounts and should be avoided.

#### 4. Manual groups (optional)

Click this button to record a group and to reset the secondary counter. Clicking this button while pigs are detected will raise a warning message. Creating a group while pigs are in the counting zone can cause miscounts in the group counts.

**5. Pause button**

Click this button to pause the count. When a count is paused, pigs can cross the counting zone without affecting the results. Click a second time to resume the count.

Clicking this button while pigs are detected will raise a warning message. Pausing a count while pigs are in the counting zone can cause miscounts and should be avoided.

**6. Instant count button**

Click this button to get an instant count of all the pigs detected in the image.

**7. +1/-1**

Manually add or discount 1 pig to the total value of the count. Every click will generate a (+1) or (-1) group in the final report of the count. These options are available only when a group (automatic or manual) has a zero (0) value.

**6.3.2 Other information found in the homescreen****8. Version info**

Indicates the version of the software.

**9. Recorded groups**

List of all the groups generated during the count (Manual & Auto).

**10. Languages**

Click the desired flag to change language of the web app.

**11. SmartCounting**

Click the "SmartCounting" logo to access the main counter page.

**12. Counter button**

Click the "Counter" icon to access the main counter page.

**13. History button**

Click the "History" icon to access the count history. Reports and videos can only be downloaded when logged in as administrator.

**14. Settings**

Click the "Settings" icon to access the system settings. Settings can only be edited when logged in as administrator.

## 15. Profile

Click in order access the login page. When logged in, click again to log out.

## 16. Pig detection indicator

Red if pigs are currently detected under the camera. Grey if no pig is detected under the camera.

## 17. Counter indicator

Green if a count is in progress. Grey if system is not counting.

## 18. Pause indicator

Green when the count is paused. Grey when the count is running.

## 19. Wi-Fi indicator

Green if the network connection between the monitoring device and the server is good. Red if the Wi-Fi signal is too poor to stream the video correctly (video is disabled). Grey if the Wi-Fi signal was lost.

## 20. Usage Compliance

Black when usage compliance is high, no significant misuse detected. Orange when usage compliance is medium, misuse detected. Red when usage compliance is low, very important misuse detected. Refer to chapter 7.1 "Usage compliance feature" for more details.



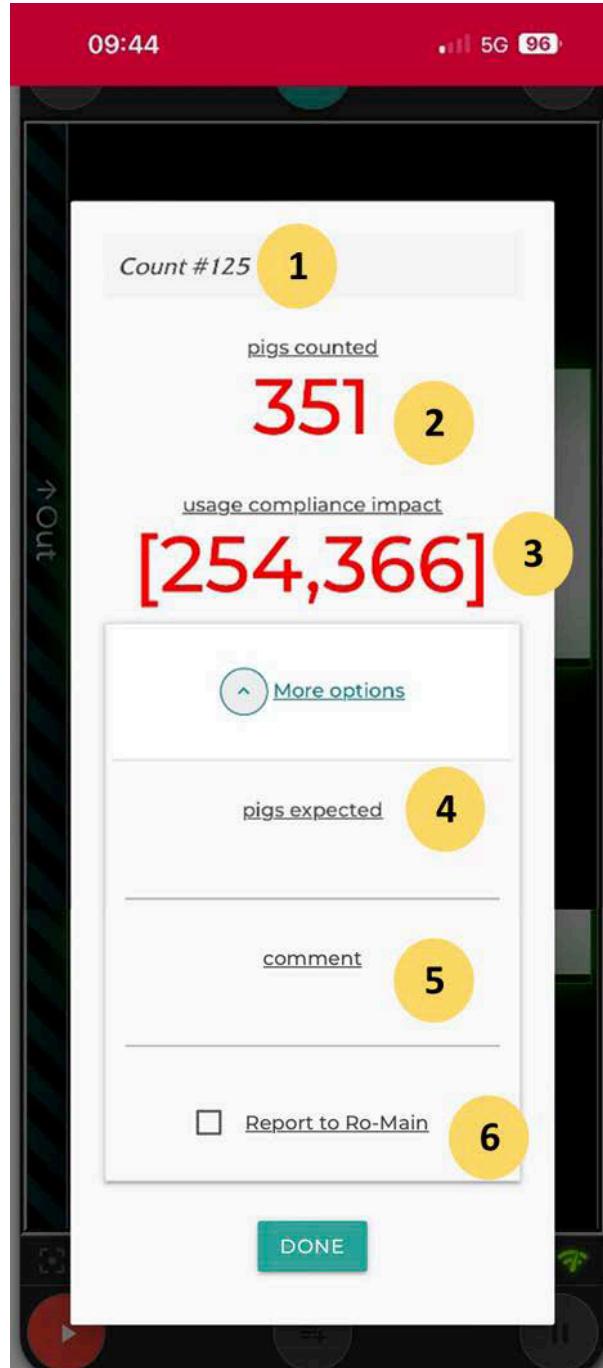
### NOTICE!

Your Wi-Fi signal was lost during a count? Do not worry, SmartCounting is still counting without problem! Simply connect back to the SmartCounting Wi-Fi network and take control again.

### 6.3.3 Stop a count

After stopping a count, a window including basic information of the count appears. This window allows to add information to the count or to report the count to Ro-Main if needed.

1. **Count number** generated by the system. The color of the number represents the Usage Compliance Level (see chapter 7.1 "Usage compliance feature").
2. Total **pigs counted** by the counter during the last counting session.
3. **Usage Compliance Impact**, showing only in case of sub-optimal usage compliance. The interval in brackets is a statistically likely interval for the real count number in the form of [lower likely count, higher likely count].
4. Total pigs expected by the user. Value to be added by the user.
5. Comment to be added by the user. Comments can be used as a research filter in the count history. See chapter 6.4 "History page" for more information.
6. "Report to Ro-Main" checkbox. Check to select the count for reporting.



## 6.4 History page

Access your counting history by clicking on the "History" icon on the top-right menu. The counting history includes all counting sessions completed by your SmartCounting unit to date. The list of counting sessions will be classified in chronological order, starting with the most recent at the top.

### 1. Counting Zone filter

Select a counting zone to display only counts related to that specific zone, then click "**Search**".

### 2. Date filter

Select a date range to display only the counts related to that specific date range, then click "**Search**".

### 3. Comments filter

Access the comments filter by clicking the " ^ " button located next to the "Search" button. Type in a comment or part of a comment to display only the counts for which that specific comment was recorded, then click "**Search**".

### 4. Summary

- Total number of counts in the counting history research.
- Total number of pigs counted in the counting sessions that appear in the history research.

### 5. Download History

Click this button to download the content of your history page with applied filters. The content will be downloaded to your device in CSV format.

The image shows the SmartCounting History page. At the top, there is a red header bar with the 'SMART COUNTING' logo and several icons. Below the header, the word 'History' is displayed in a large, bold, black font. The main area is a search form with the following fields and controls:

- Select counting zone:** A dropdown menu labeled 'All Counting Zones'.
- From:** A date input field showing '31 May 2023'.
- To:** A date input field showing '24 Jan 2024'.
- Comment:** A text input field with a placeholder 'Comment' and a 'SEARCH' button with a magnifying glass icon.
- Summary:** A summary card showing '122' counts, a green checkmark icon, '266,239' total counts, and a 'CSV' download button.
- Filters:** A row of buttons labeled 'Counting Zone', 'Count', 'Usage', 'compliance', 'Date', 'Report', and 'Consu'.
- Search Results:** A table with four rows of data, each with a 'Default' column, a count value, a date and time column, and a 'PDF' download button.

Numbered callouts point to specific elements:

- 1: Select counting zone dropdown.
- 2: From date input field.
- 3: Comment input field.
- 4a: Counting Zone filter button.
- 4b: Summary card.
- 5: CSV download button.
- 6: Counting Zone filter button.
- 7: Count filter button.
- 8: Usage filter button.
- 9: compliance filter button.
- 10: Date filter button.
- 11: Report filter button.

**6. Counting Zone**

Name of the counting zone in which this count was done.

**7. Count**

Total number of pigs.

**8. Usage Compliance Impact**

See chapter 7.1 "Usage compliance feature".

**9. Date**

Date and time of the beginning of the count.

**10. Report**

"Report to Ro-Main" status of the count. There are 4 possible statuses:

- **Not reported:** the count data was not selected for reporting.
- **Uploading:** the count data was selected for reporting and is currently uploading.
- **Reported:** the count data was successfully reported to Ro-Main.
- **Failed to report:** a problem occurred while reporting.

**11. Consult**

Click on the icon next to a count to download its complete report. The report will be downloaded to your device in PDF format.



### 6.4.1 Details of a specific count

From the history page, click anywhere on the line of a count to visualize its details. The following page specific to that counting session will show.

#### 1. Report to Ro-Main

Click to select the counting session for reporting to Ro-Main. Data will be transferred to Ro-Main connecting your SmartCounting unit to the internet.

#### 2. Download

Click to download a PDF copy of the counting report. The report will be downloaded to your device.

#### 3. Edit (admin only)

Click to edit information such as the name of the counting zone, the expected total, and the comments.

#### 4. Add/subtract a group

Click to manually add or remove pigs from the count total. This addition/subtraction will be recorded as a new group added by the user. Write down the number of pigs to add/subtract in the field "**Enter the number of pigs**". You can add a reason in the field "**Enter a label**". In order to subtract pigs, put a minus sign "-" in front of the number.

#### 5. Delete group (admin only)

Click on the delete button next to a group added by the user to permanently delete this group. This action is irreversible.

#### 6. Download (admin only)

Click on the yellow download button to download the video of the counting session. The video will be downloaded to your device.

#### 7. Delete video (admin only)

Click on the delete button in the video section in order to permanently delete a counting video.



### Count #125

▽ Count:	
Total counted	351
Counted by	smaRt Counting 351
Usage compliance impact	[254, 366]
Added by user	0
Comments	None
▽ Details:	
Date (duration)	Jan. 24, 2024, 2:37 p.m. (6m44s)
Counting zone	Default
Report status	Not reported
Actions	
3	Edit
2	Download
1	Report to Ro-Main

≡ Groups (smaRt Counting)			
Automatic groups: No			
Group	Number	Usage compliance impact	Time
1	212	[135, 227]	14:38:16
2	139	[119, 139]	14:38:52
Actions			
4	Add group	5	

Videos:			
Time	Size (Mo)	Download	Delete
a_2024...	14:37:37 33.43	6	7
		8	



## 8. Delete (admin only)

Click the delete button to permanently delete the count from the history. This action permanently deletes all count information and video. This action is irreversible.

## 6.5 Settings page

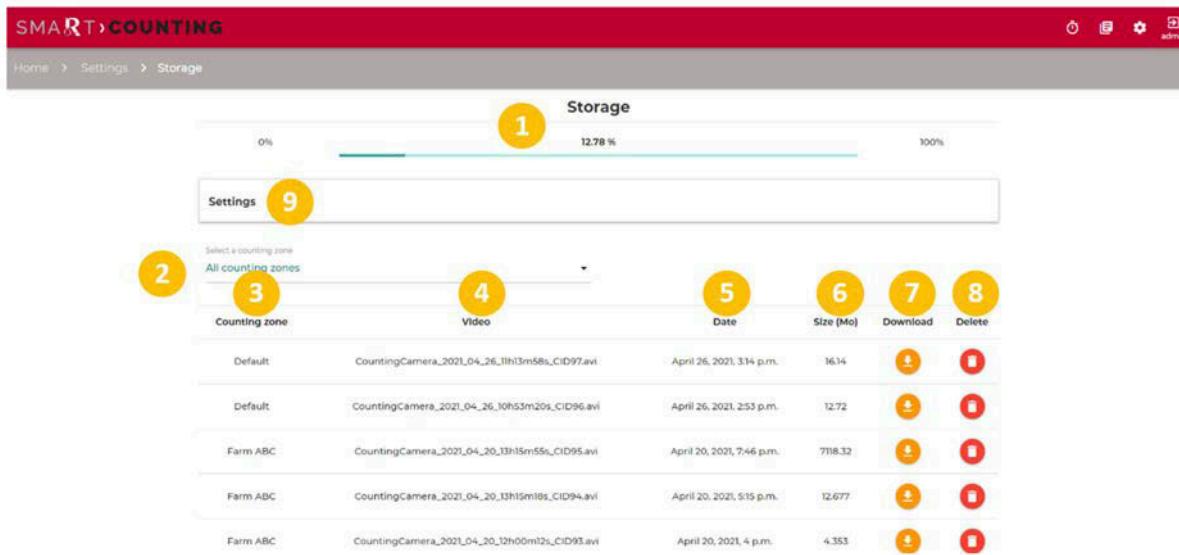
Click on the **Settings** icon on the top-right menu to access the settings menu.

### 6.5.1 Counting zone

Consult, create, or edit a counting zone. Please refer to chapter 4.2.2 "Edit a counting zone" for more information.

### 6.5.2 Storage page

This page allows you to view the available disk space of your system and to free up space if required. It also allows you to navigate through your videos without having to go through the history page.



1. Percentage of total storage used on the disk.
2. Filter the list of videos by counting zone.
3. Counting zone of the video
4. Name of the video
5. Creation date of the video
6. Size of the video

7. Click on the download icon to download the video (admin only).
8. Click on the delete icon to delete the video (admin only).
9. Expand Settings to manage the automatic deletion of older videos.



### NOTICE!

By default, download and delete features require administrator rights. Please see chapter 8.1 "User management and permissions" of this manual for more information.

#### 6.5.3 Batch delete old videos manually

The system will not let you start counting if there is not enough space to record the video proof. Upon starting a new count when disk space is saturated, the system will ask you to confirm that you want to batch delete the oldest videos stored on your system. Erasing videos will not erase counting session information.

#### 6.5.4 Automatically delete older videos

It is possible to set a time limit to video storage such that videos older than the set number of days are automatically deleted without the intervention of the user. Expand the *Settings* pane of the *Storage* page, enable *Limit video storage*, input a numerical value for *Days limit*, and click on *Update*.

The screenshot shows the 'Storage' page of the SmartCounting app. At the top, there is a progress bar indicating '12.78 %' of storage usage. Below the progress bar, the 'Settings' pane is open, showing a checked checkbox for 'Limit video storage' and a 'Days limit' input field set to '30'. There is a 'UPDATE' button below these settings. Below the settings pane, there is a dropdown menu for 'Select a counting zone' with 'All counting zones' selected. The main table below lists two video files: 'CountingCamera\_2021\_04\_26\_11h13m58s\_CID97.avi' and 'CountingCamera\_2021\_04\_26\_10h53m20s\_CID96.avi'. Each row in the table includes a 'Download' button (represented by an orange icon with a person) and a 'Delete' button (represented by a red icon with a trash can).

## 6.5.5 System

View / edit the system information.

### 1. UUID

Unique system identification. Cannot be edited. May be asked by a service technician for support purposes.

### 2. System version

### 3. Counter version

### 4. Time zone (admin only)

Set the time zone to your local time to display the correct time in the report and history. Changing the time zone modifies the displayed time only and not the data.



#### NOTICE!

Editing the time zone requires administrator rights (see chapter 8.1 "User management and permissions").

## 6.5.6 Email reporting

When enabled, the email reporting feature sends a file containing the information from all the counts since the last email report in the form of a CSV file. The file format is the same as what can be manually exported from the history page.

If Internet is available and at least one new count was done, the system will generate an email report every 15 minutes or every day at midnight depending on the chosen frequency.



### 6.5.7 Help (?)

Click on the **Help (?)** icon to download the user manual.

## 6.6 Users page

Refer to information in chapter 8 "Advanced features".

## 7 Optimizing precision

Taking special care not to hide pigs and to avoid overcrowding under the camera is essential to get the best possible accuracy out of your SmartCounting system. While not being a problem per se for your SmartCounting system, overcrowding and jamming increases the risk of pigs piling up and hiding one another. The following tips will help you avoid hiding pigs from the camera that could result in miscounts.

### **Mark down the counting zone.**

The counting zone is where the counting happens. Identify the counting zone and mark down the area on the floor or on the walls. Make sure that everyone who will be handling pigs knows that extra caution is required in this area.

### **Always stand upstream of the pig flow.**

Pigs are easily distracted. Seeing moving objects or people can cause balking or frighten pigs. Standing upstream of the pig flow make you a facilitator of the pig flow, while standing somewhere downstream of the flow makes you a potential source of distraction, balking or fright, which can in turn result in overcrowding and pigs piling up.

### **Do not walk through a pig group.**

Walking through a pig group will likely result in partial obstruction of the camera view, thus in hidden pigs and miscounts. This behaviour should be avoided at all costs.

### **Find your ideal group size.**

If your pigs tend to pile up in the counting zone, try reducing the group size until the flow of pigs is consistently good. Reducing group size until a desirable pig flow is achieved will not only make your counts more accurate, but it will also make your job easier and your animal movements faster.

### **Walk upright.**

Leaning forward or extending your arms in front of your body can hide a significant portion of the floor where small piglets might be running, thus resulting in miscounts. Avoid reaching out for pigs ahead of you while in the counting zone.

### **Keep tools close to your body.**

May it be noise makers or panels, we all use tools to help us handle the pigs. Keep those tools as close to your body as possible while in the counting zone to avoid hiding pigs from the camera.



## Avoid caps.

Your head being the closest part of your body to the camera, it has the biggest impact on the visibility of what is below. Cap visors can extend in front of your head and hide a significant portion of the floor where small piglets might be running, thus resulting in miscounts.

Examples of typical causes of counting errors can be found below:

### ***Jamming Pigs***



Some pigs are not visible by the camera due to stacking.

This kind of situation may increase the possibility of miscounts and must be avoided.

### ***Hidden Pigs***



Some pigs are hidden by the worker.

This scenario also contributes to a higher chance of miscounts and should be avoided.

### **Loitering pigs**

Optimizing the results of SmartCounting involves maintaining a consistent flow of pigs within the counting zone. When the pig flow is irregular, it is referred to as loitering. While the system usually manages these situations effectively, loitering elongates the counting sequence and increases the potential for counting errors.

## **7.1 Usage compliance feature**

The **Usage compliance feature** of SmartCounting is designed to automatically identify misuse cases that could negatively affect the accuracy of the count and evaluate their impact on the count immediately after each group of pigs.

The feature can detect misuse cases such as dirty camera, hidden pigs, jamming pigs, and loitering pigs. Every time the system does not see pigs for two consecutive seconds, usage compliance is evaluated, and feedback is given both on the screen of the EIP and on the web application. This feedback appears as the count number changing colors as follows:

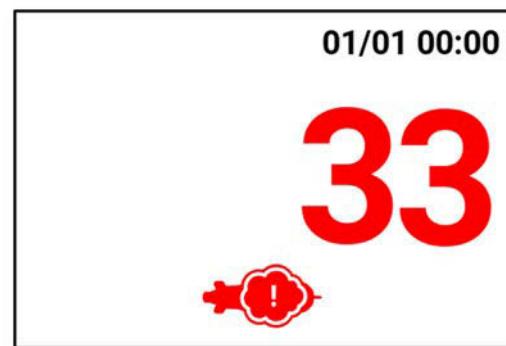
**Black:** Usage compliance is high, no significant misuse detected.



**Orange:** Usage compliance is medium, misuse detected.



**Red:** Usage compliance is low, very important misuse detected.



Once the count is stopped and usage compliance is medium or low, an interval showing a statistically likely interval for the real count number is presented in the form of [lower likely count, higher likely count]. While the most likely value is the one presented by SmartCounting, the confidence that this number is real is lower, and the real number has a good probability to fall in the presented interval.



This feature can be used in multiple ways to help users optimize their experience with SmartCounting.

It allows users to get **immediate feedback** about how they use SmartCounting, thus allowing them to **learn quickly how to better use it** and identify what actions can potentially impact the count.

It also allows the user to **take immediate corrective action in case of a human error** while counting a specific group of pigs. For example, pigs from a group that had a human error could be recounted immediately while they are still near the counter.

Additionally, it **provides transparency about the confidence on the count** in case of human error while counting.

Finally, it provides an **indication of animal welfare** while handling the pigs in the counting zone.

## 8 Advanced features

### 8.1 User management and permissions

SmartCounting features an advanced user permission management system allowing you to control who can use what features of your SmartCounting system. If you want your everyday workers to have the ability to just start and stop counting sessions, you can restrict their ability to do just that. If, on the other hand, you want to give them the possibility to use the SmartCounting software to its full potential, you can grant them full permission. Finally, if you want to pick and choose what features are available to what user, we also have you covered.

By default, SmartCounting comes with 2 user groups: *Basic* and *Administrator*.

The **Basic** user group does not require authentication and is usually used by people who start and stop counts on the floor.



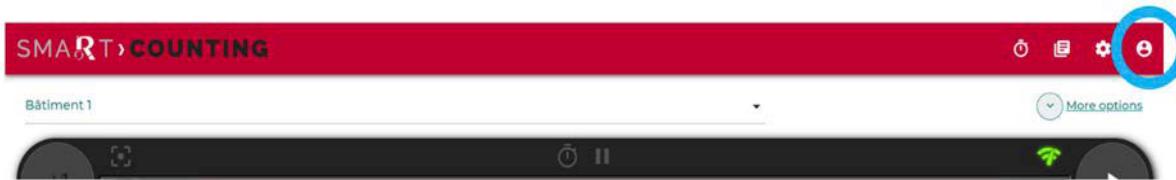
#### NOTICE!

Your brand-new SmartCounting system can thus be used out-of-the-box without authentication, but some features will not be available without logging in as admin (Administrator group of users).

The **Administrator** user requires authentication and has the right to give permissions to other users. It can add or remove permissions to the *Basic* user group and can add new custom users or user groups and give them desired permissions.

#### 8.1.1 Log in/out as admin user

1. Click on **Profile** in the top-right menu.



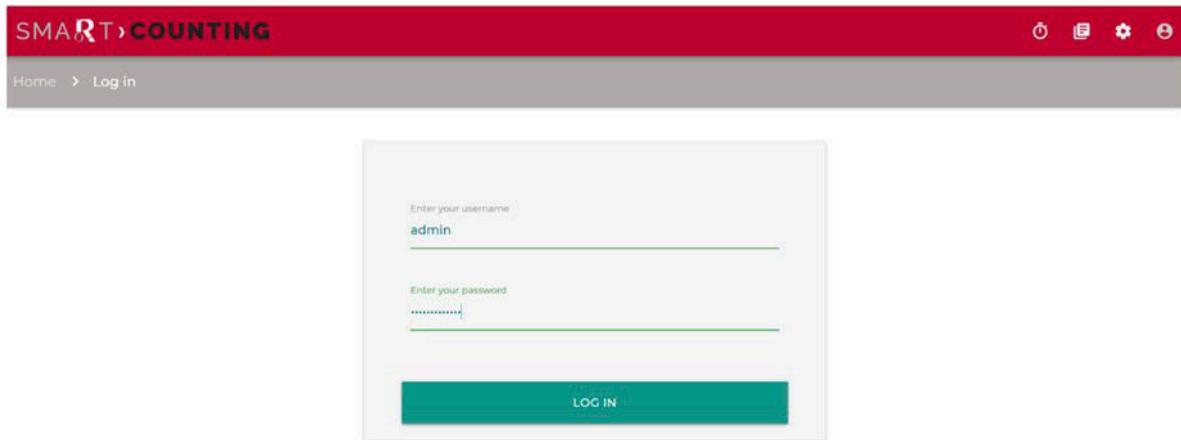
2. Enter the administrator credentials, then click **Submit**. By default, the *admin* credentials are the following:

**Username:** admin

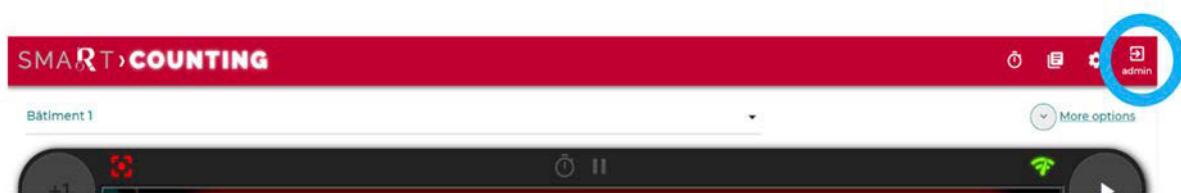
**Password:** Smartcounting

**NOTICE!**

It is highly recommended to change the admin credentials upon using your SmartCounting system for the first time and to keep your password securely.



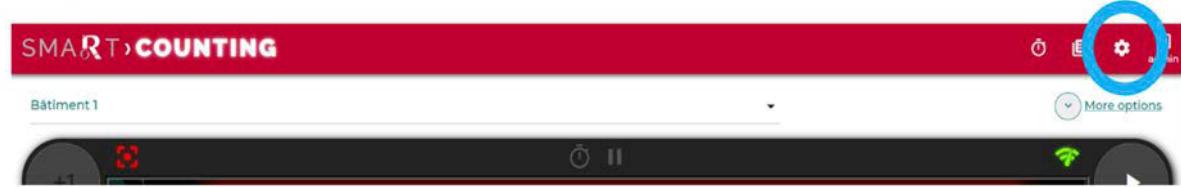
3. You are now signed in as *admin*. By default, the administrator user has all the rights and can control the permissions granted to other users. See chapter 8 "Advanced features" of this manual for more information about "**User permissions**".
4. To log out, simply click on the sign out icon.



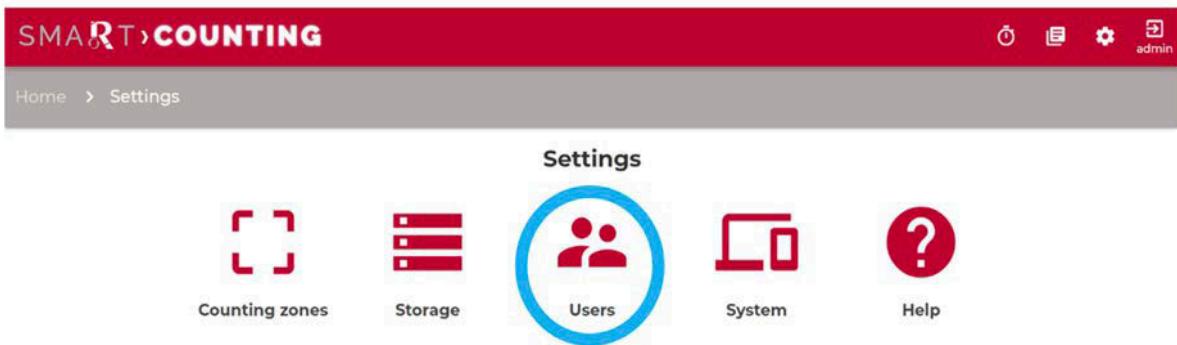
### 8.1.2 Access the users page

User and permissions can be managed in the Users page of the Settings section of the application when logged in as admin.

1. Click on the Settings icon in the top-right menu.



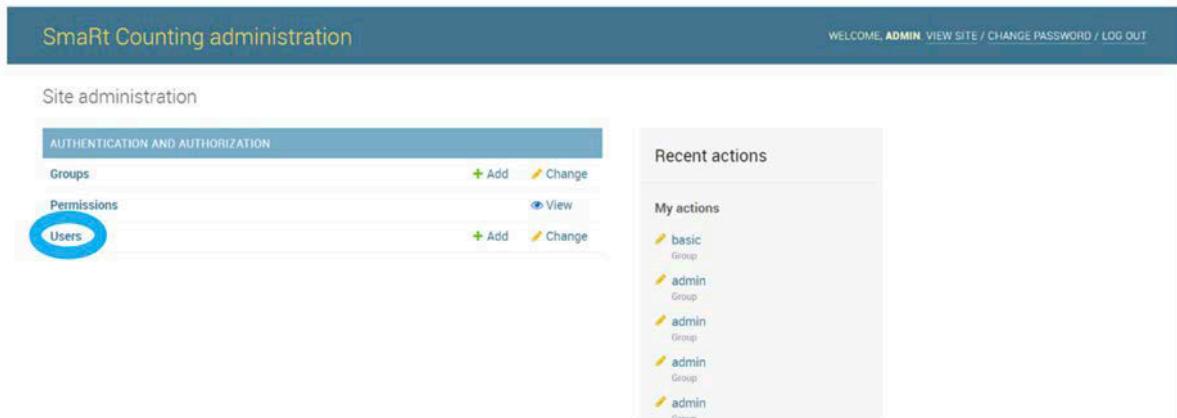
2. Click on **Users**.



3. You are now in the SmartCounting Administration page where users and permissions can be managed.
4. To return to the app, click on View Site in the top-right menu or close this tab in your browser and re-open the app as you normally do.

### 8.1.3 Change your admin password

1. In the SmartCounting Administration page, click on *Users*.



2. Click on *Admin*.

The screenshot shows the 'Users' page of the SmaRt Counting administration. At the top, there is a search bar and a 'FILTER' sidebar with options for 'By staff status' (All, Yes, No) and 'By superuser status' (All, Yes, No). The main table lists one user: 'admin' with 'admin' in both the first and last name fields, and a green checkmark in the 'STAFF STATUS' column. The 'EMAIL ADDRESS' column shows a partially obscured hash value. The 'USERNAME' column has a checkbox next to 'admin', which is also highlighted with a blue circle.

3. In the *Password* section of the page, click on **> Change**.

The screenshot shows the 'Change user' page for the 'admin' user. The 'Username' field is set to 'admin'. The 'Password' field contains a hash value starting with 'algorithm: pbkdf2\_sha256 iterations: 120000 salt: QteajG.....'. Below the password field is a 'Change' button, which is highlighted with a blue circle. The 'Personal info' section shows the 'First name' and 'Last name' fields both set to 'admin', and an empty 'Email address' field.

4. Enter your new password twice and click on **Change Password**.

#### **NOTICE!**

Contact **Big Dutchman** if you do not remember your admin credentials. We will be able to help you reset your credentials.

#### 8.1.4 Give/remove permissions to users or groups of users

A list of all available permissions and their description is available by clicking on Permissions in the "SmartCounting Administration" page. The table below also shows a list of all available permissions and their description.

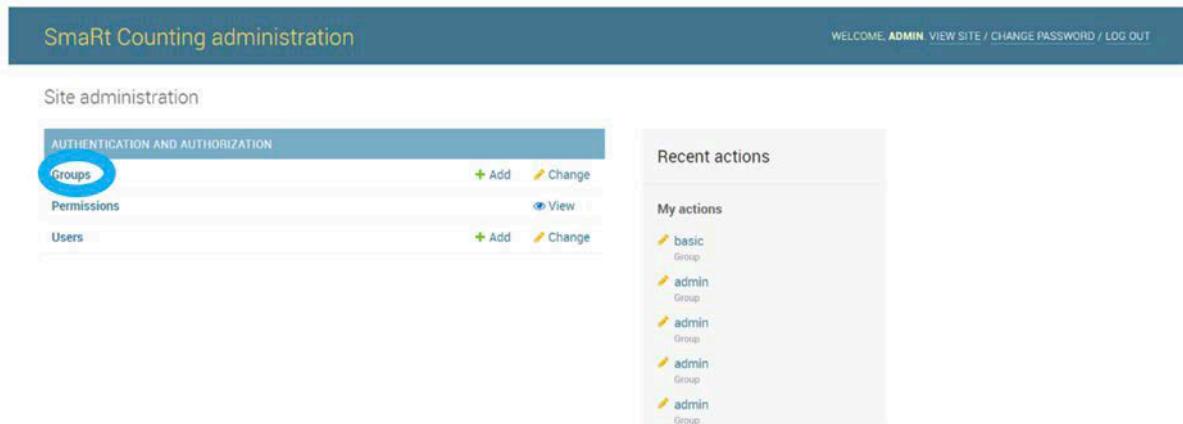
Note that most features can be accessed on specific pages of the application. Users granted with the privilege to use those features must also be granted all required privileges to access those pages. For example, a user who can edit counting zones must also have the right to view counting zones.

Permission	Description
API   Perform queries	Permission to perform queries to the GraphQL API. This permission gives access to the whole API without regard to other permissions granted to the user.
Counter   Create change total with +1/-1 groups during a counting session	Permission to adjust the current number of pigs with the +1/-1 buttons from the counter page
Counter   Get instant count	Permission to get the number of pigs visible by the camera at the time of clicking the instant count button
Counter   Perform counts	Permission to use the counter (start/stop/pause/make groups)
Counter   Watch video stream	Permission to see the live stream from the camera while counting
History   Create groups after a counting session	Permission to add or remove pigs manually from the total after a count
History   Delete counts	Permission to delete a count and all its data
History   Delete manually created groups	Permission to delete manually created groups (pigs that were added or removed manually)
History   Edit counts	Permission to edit count information
History   Report counts	Permission to report a count to Ro-Main. Reporting a count will upload the video and all count information to Ro-Main's servers when your system will be connected to the internet.
History   View counts	Permission to view the history of counts and count details
Network settings   View network settings	Permission to view network information like IP addresses and MAC addresses. Users with counting zone creation and edition permissions can view/set network settings for counting zones.
System settings   Edit system settings	Permission to edit general system settings
System settings   View system settings	Permission to view general system settings
Video storage   Delete video	Permission to delete videos
Video storage   Download videos	Permission to download videos
Video storage   Edit video storage settings	Permission to view video storage settings
Video storage   View video storage settings	Permission to edit video storage settings
Video storage   View videos	Permission to view video information
Counting zone   Create counting zones	Permission to create a new counting zone
Counting zone   Delete counting zones	Permission to delete a counting zone
Counting zone   Edit counting zones	Permission to edit a counting zone
Counting zone   View counting zones	Permission to see the list of counting zones and details

Specific permissions can be given to specific users or groups of users. To change permissions to a user or a group of users, first access it through the *Groups* or *Users* section of the SmartCounting Administration page.

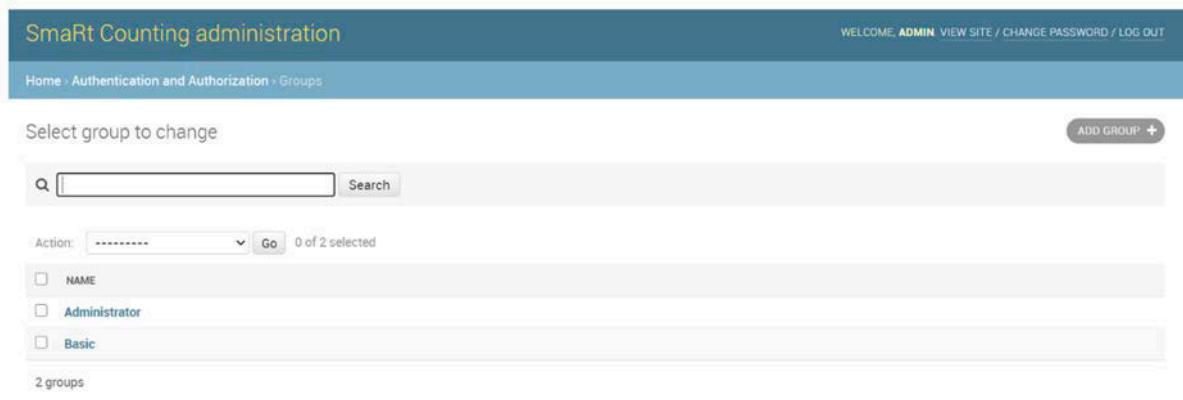
An example will be shown below to change permissions to the *Basic* user group.

1. Click on **Groups**.



The screenshot shows the 'SmaRt Counting administration' interface. In the top right, it says 'WELCOME: ADMIN VIEW SITE / CHANGE PASSWORD / LOG OUT'. The main area is titled 'Site administration' and has a sidebar titled 'AUTHENTICATION AND AUTHORIZATION' with 'Groups' (circled in blue), 'Permissions', and 'Users' listed. Below this are buttons for '+ Add', 'Change', 'View', and '+ Add' for users. To the right, a 'Recent actions' sidebar lists actions: 'basic Group', 'admin Group', 'admin Group', 'admin Group', and 'admin Group'. The main content area is currently empty.

2. Click on **Basic**.



The screenshot shows the 'SmaRt Counting administration' interface, specifically the 'Groups' section. The top navigation bar shows 'Home > Authentication and Authorization > Groups'. The main area is titled 'Select group to change' and includes a search bar with a magnifying glass icon and a 'Search' button. Below the search bar is a table with a header 'Action: ----- Go 0 of 2 selected'. The table has three columns: a checkbox column, a 'NAME' column, and a 'Administrator' column. The 'NAME' column contains 'NAME', 'Administrator', and 'Basic'. The 'Administrator' column contains 'Basic'. At the bottom of the table, it says '2 groups'.

3. The permissions given to this user or group of users are listed in the right box (**Chosen Permissions**) while the permissions denied are listed in the left box (**Available Permissions**). Select a permission and click on the arrows to move it from one category to the other. After choosing the permissions, click on Save at the bottom of the page.

### 8.1.5 Add a new user / group of users

You can add new users and groups of users by clicking on +Add next to Groups or Users on the SmartCounting Administration page. Follow the instructions to create a new user or a group of users and assign the desired permissions as explained above.

### 8.1.6 API

SmartCounting features a public API that can be used for integration with third-party systems. All past count information, videos, and real-time information for a counting zone are accessible via the API. The API also allows to perform basic actions on the system such as starting or stopping a count, and erase data.

#### Permissions

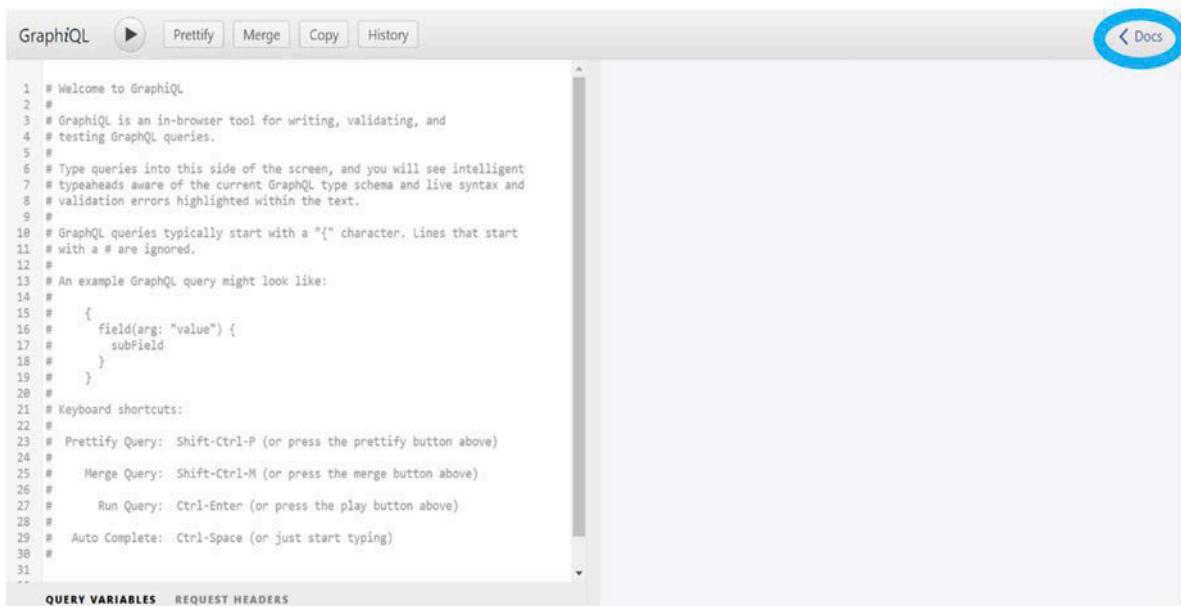
Using the API requires being granted the permission "API | Perform queries". By default, this permission is not assigned to any user. You can manage users and permissions from the admin account through the user permission management system.

## Location of the API

The API is located under the URL: project-url/API/graphql/. If using the default 10.10.10.100 IP address of the system, you can therefore access the API with the following URL: 10.10.10.100/API/graphql/.

## API general information

Most of the API is based on GraphQL. To help the user build a valid query, the system provides a graphical interface that also holds the documentation of the API. This user interface can be accessed from a browser using the GraphQL API URL providing that the required permissions are granted.



```
1 # Welcome to GraphQL
2 #
3 # GraphQL is an in-browser tool for writing, validating, and
4 # testing GraphQL queries.
5 #
6 # Type queries into this side of the screen, and you will see intelligent
7 # typeahead aware of the current GraphQL type schema and live syntax and
8 # validation errors highlighted within the text.
9 #
10 # GraphQL queries typically start with a "{" character. Lines that start
11 # with a # are ignored.
12 #
13 # An example GraphQL query might look like:
14 #
15 #   {
16 #     field(arg: "value") {
17 #       subField
18 #     }
19 #   }
20 #
21 # Keyboard shortcuts:
22 #
23 # Prettify Query: Shift-Ctrl-P (or press the prettify button above)
24 #
25 # Merge Query: Shift-Ctrl-M (or press the merge button above)
26 #
27 # Run Query: Ctrl-Enter (or press the play button above)
28 #
29 # Auto Complete: Ctrl-Space (or just start typing)
30 #
31 #
```

If you are not familiar with GraphQL, please consult documentation at

<https://graphql.org/learn>.

## Schema file

Free tools exists if you want to start building your GraphQL queries and testing your system integration before receiving your SmartCounting unit. Please contact **Big Dutchman** for more information.

## API authentication

The API uses basic access authentication method.

## 9 Maintenance and updates

### Maintenance

SmartCounting maintenance must be done in respect of the following schedule.

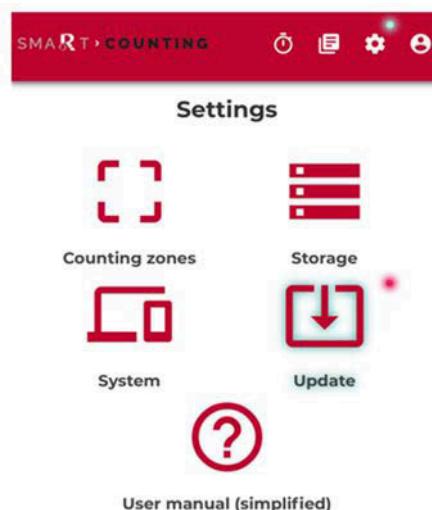
Component	Maintenance	Frequency
Camera	Clean	Make sure the camera is clean <b>before every counting session.</b>
Software updates	Connect to internet	Monthly (or when updates available)
SmartCounting unit	Reboot	Monthly (Only for systems running 24/7)

### Updates

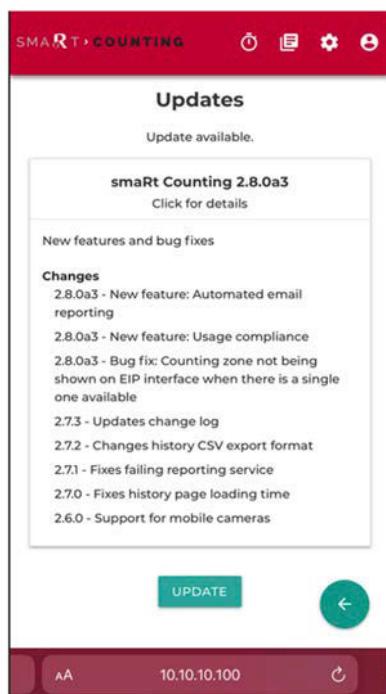
It is recommended to keep your system up to date to take advantage of the newest features, counting algorithm improvements, bug fixes, and security updates.

To update your system, connect your system to the internet and power it on. **Log into the web application as administrator.** If an update is available, a green notification signal will show on the Settings icon at the top right of the web application.

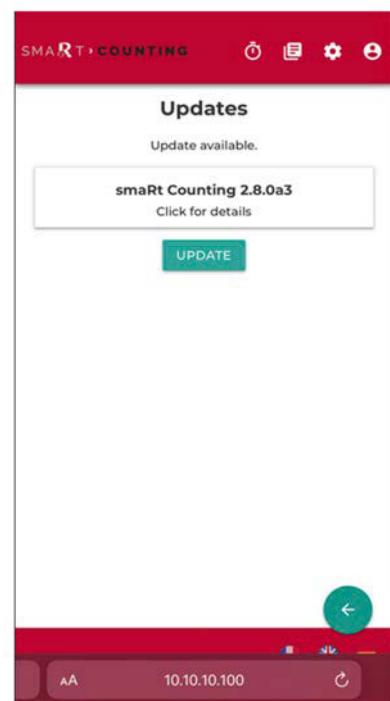
Click on the Settings icon and then on the Update icon.



Once on the Update page, click on "**Click for details**" to see the content of the update.



Click on **UPDATE** and wait until the update is complete. The update can take several minutes to be completed. The duration of the process is dependent on the nature of the update and on your internet connection.



## 10 Troubleshooting

### 10.1 Troubleshooting guide

The following table shows a list of the most common problems and solutions.

Issue	Cause	Solution
The count doesn't match with the expected number of pigs.	The camera might have missed some pigs because it was dirty.	Review the video of your count to identify any potential causes, such as blurry spots. Ensure the camera is clean before each count.
	The camera might have missed some pigs due to overcrowding in the counting zone.	Review the count video to pinpoint potential causes for miscounts, especially watching for pigs stacking on top of each other. Adapt operational methods as detailed in chapter 7 "Optimizing precision".
	The camera might have missed some pigs due to obstruction by the operator.	Review the count video to identify potential causes for miscounts, especially checking if pigs were hidden by the operator. Adapt operational methods as specified in chapter 7 "Optimizing precision" of this manual.
	The expected total is incorrect.	Counting pigs can be challenging for humans, often resulting in errors. Reviewing the video, even in slow motion, can help confirm if the mistake is due to SmartCounting or human error.
	The system might not have detected some pigs accurately.	SmartCounting should maintain a minimum accuracy of 99.9%. If you suspect more than 1 mistake per 1,000 pigs counted, use the report feature through the Web app and contact your local <b>Big Dutchman</b> dealer for assistance, referring to chapter 1 "About this manual" of this user manual.
	The pig count is higher than expected due to incorrect cropping of the counting zone.	The camera is intended to count pigs in an alley but occasionally captures pigs in nearby pens. To resolve this, accurate image cropping is necessary, ensuring the camera only captures pigs within the alley. Consult chapter 4.2.2 "Edit a counting zone" in this manual for guidance.
Nothing appears on the EIP screen at all.	The unit is not receiving power.	Examine the electrical distribution circuit breaker and all intermediate connections, especially the extension cords. Verify the conditions of electrical outlets and all switches for any issues.
The system isn't connecting to the camera.	The camera has not been assigned to a counting zone.	This could occur when a new camera is connected and hasn't been assigned to a counting zone (refer to chapter 4.2.2 "Edit a counting zone").
	The camera is still in the booting process.	Please wait. The camera requires approximately 30 seconds to complete its booting process.
	The camera is connected to the wrong port on the EIP.	The camera port is located on the upper left side of the EIP.
	The camera connector isn't properly inserted into the EIP's camera socket.	Ensure the connector is firmly pushed into the socket until it clicks.
	The connectors are dirty.	Inspect the connectors for any signs of corrosion or dirt.
	The cabling is damaged.	Check for any damage to the camera cabling.
Counting session interrupted (Warning Alert)	Poor connection with the camera.	Make sure to firmly push the connector into the socket until it clicks. Also, carefully inspect the cabling for any signs of damage and examine the connectors for issues such as corrosion or dirt.



Issue	Cause	Solution
<b>Unable to establish a connection with the app.</b>	Wi-Fi connection is not established.	Activate Wi-Fi on your smart device. Locate and select the appropriate network. (The SSID should appear as "SmartCounting (ID Number)").
	Incorrect URL entered in the browser.	Input the correct IP Address: 10.10.10.100.
<b>The app is unresponsive or frozen.</b>	The mobile device is too far from the EIP.	Move your mobile device within the Wi-Fi coverage area of the EIP.
	There might be interference from another network.	Another network configured to automatically connect to your smart device might be interfering and preventing the proper connection to the counting device network. Turn off the auto-connect option for that network.
<b>Unable to access advanced functionalities.</b>	User doesn't have the necessary Admin rights for access.	Login as an administrator using the following credentials: <b>Username:</b> Admin <b>Password:</b> Smartcounting

### **NOTICE!**

Ensure that your SmartCounting unit is up-to-date before proceeding with troubleshooting.

If operational issues arise with the SmartCounting system, remote service and enhanced support are available with a reliable internet connection. It's recommended to keep the system operational when issues occur and connect the EIP controller to internet access promptly.

If you need to relocate the EIP controller for internet access, disconnect it from the power source in the counting zone area and reconnect it within a 2-minute window to prevent shutdown.

The troubleshooting table aids pig counting operators in resolving common issues. For any other concerns, contact your dealer or supplier's technical support using the information provided in chapter 1 "About this manual" of this manual.

## 10.2 Reporting to Ro-Main

Your SmartCounting system includes a software feature to simplify the sharing of your counting session data with Ro-Main for calibration, troubleshooting, and improvement purposes. Once a count is selected for reporting, connect the SmartCounting unit to the internet. This will start the upload of your selected counts onto the cloud server. You can follow the reporting status of your counts in the details of the counts from the history. Here are the 3 methods to report a count.

### Method 1: Automatic reporting

This reporting method automatically selects every new count from a specific counting zone for reporting. This method is used to calibrate SmartCounting for a specific counting zone.

### Method 2: Instant Reporting

Manually select a count for reporting immediately after stopping the count. When the count is over, click **Stop > More options > Report to Ro-Main**.

### Method 3: History Reporting

Manually select a count for reporting from the details page of the count from the history section. Go in **History**, then click on the count to be reported, then click on **Report to Ro-Main**.



#### NOTICE!

Count data shared with Ro-Main through the count reporting feature is not systematically analyzed by Ro-Main's technical team. By default, reported count data will be used to identify ways to improve the product only.

If you need help to solve an immediate problem, please report the count data and contact your authorized dealer or Ro-Main's technical service.



## 11 Product specifications\*

General	
Height	147 mm
Width	254 mm
Depth	130 mm
Weight	3,2 kg
Environmental limits	
Ambient temperature range	0 °C - +40 °C
Operating ambient humidity range	95 %
Operating altitude range (m)	2.000 m
Ingress protection	IP65
Electrical data	
Rated Voltage / Frequency	120V - 240V ~ /50/60Hz Tolerance of +/- 10% on voltage
Fuse rating (A)	1
Power Chord Length	1,2 m
Fitted 3 pin plug	Yes
Total Power Load (W)	75 W
Ethernet ports	
Standard	10/100 Mb - 10/100/1000 Mb POE
POE specifications	48 VDC, 15 W
Connector types	RJ45 (CAT6E)
Maximum ethernet cable length	25 m
Standard	10/100 Mb - 10/100/1000 Mb POE
Certifications	
EN IEC 61326-1 :2021	
FCC 47 CFR Part 15, Subpart B - Verification, Title 47	
ICES-003 Issue 7 October 2020	
ICES-Gen Issue 1 July 2018	
ETSI EN 301 489-1 V2.2.3 (2019-11)	
IEC 61010	
IP65	

\* Equipment is designed for Overvoltage Category II, and pollution degree 2.

## 12 Safety instructions and warnings

- This device does not have a power switch. When installing the device, add an accessible, ready-to-use disconnect device to the fixed wiring, or plug the power cord into an easily accessible power outlet near the device. If a fault occurs while using the device, operate the disconnect device to cut off the power, or unplug the power cord.
- Use only the power cord supplied with the device. Never use a power cord that appears damaged or frayed. Do not substitute the type of plug fitted to your power cord.
- DO NOT position the equipment so that it is difficult to operate the disconnecting device (pulling the plug on the power supply cord).
- Plug the power supply cord only into a socket outlet with a protective earthing connection.
- Protect all wiring and cabling from mechanical damage and rodent.
- Check the total charge level when using extension cords or power strips.
- This equipment is intended to be installed indoor.



### WARNING!

This device has been designed and manufactured with the highest priority on safety. However, **IMPROPER HANDLING OR USE CAN RESULT IN A RISK OF ELECTROCUTION OR FIRE.**

Please handle this device with care. If damaged, turn off the power and unplug the cord from the unit. Contact **Big Dutchman**'s technical service or your authorized SmartCounting distributor to have it repaired.

- This device does not contain any user-serviceable parts. Do not unscrew or remove any covers.
- The enclosure contains dangerous voltages. Turn off the power and unplug the cord before moving the device.

### Cleaning recommendations

- Always switch off the device and unplug the device from the mains before cleaning it.
- Plug the camera cable into a Protective Wall Socket (sold separately) when not connected to the device to avoid corrosion of the plug.



- Do not power wash the equipment: use a soft and damp cloth to clean the device and the camera.
- Do not use aggressive cleaning agents for cleaning the device and the camera.
- If the device is not in use for an extended period, turn it off and unplug it from the wall outlet.



### NOTICE!

**The product warranty does not cover damage resulting from the non-compliance with the above measures.**