Protrack® SCC and Protrack® Milk Product Guide

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System overview

Protrack® SCC and Protrack® Milk enable you to link your SCC and/or Milk sensor results to specific cow(s) and review the data and reports for optimum decision making on-farm. This document is intended for those that have purchased or are considering purchasing Protrack SCC and/or Protrack Milk. It also serves as a reference guide for those new to the system.

The document includes:
- A detailed description of the product in terms of hardware and features.
- Guidance on how to get the most out of each product.

Feature List

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<tr>
<td>• Any SCC result over 2M (red alert).</td>
<td>• Any result deemed to be in the top X% of the herd.*</td>
<td>• A milking plan providing a list of all animals requiring a treatment, animals in withholding and colostrum animals.</td>
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<tr>
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<td><strong>Reports</strong></td>
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</table>

* Top and bottom % thresholds can be changed in the Settings page.
Components

- Protrack SCC and/or Protrack Milk sensors
- The Protrack Hub contains a set of components that are common to all of LIC Automation’s new modular product range. The Hub is usually purchased with the first Protrack module that you buy.

The components in the Hub include:

- Industrial PC – runs the main application software and webserver.
- Router and wireless access point – enables communication for smart device, ID System and Sensors.
- Uninterruptible Power Supply (UPS) – protects your system should you have a power cut and/or power spikes.
- USB back up – enables recovery of your on farm databases in the unlikely event of a system failure.
- A connection to MINDA®. Changes to your herd performed in MINDA (cow numbers, EID numbers and birth IDs, etc.) and all events and group information from MINDA will be automatically synchronised with your Protrack SCC and/or Protrack Milk system and vice versa.
- Optional Optical Warning Lights (OWLs).*

The system does not include a touch screen but one can be purchased and installed separately. Most smart devices can run the app that displays your sensor results, allowing you to link the results to animals.

Protrack® SCC – How it works

1. Protrack SCC automatically tests 1mL of milk and determines the SCC result.
2. SCC results and any alerts can be viewed on your smart device (or optional touch screen).
3. The OWL will alert you to the position of the animal with a high SCC result.*
4. With Protrack ID, SCC results are automatically matched to the animal, or SCC results can be manually assigned using your smart device.
5. Review reports to make real-time decisions about your herd and manage mastitis and bulk SCC levels.

*OWL for herringbone application only.
Protrack® Milk – How it works

1. Protrack Milk detects the yield and milk solid levels as the milk flows through it.
2. Milk results and any alerts can be viewed on your smart device (or optional touch screen).
3. The OWL will alert you to the position of the animal with a problem.*
4. With Protrack ID, milk results are automatically matched to the animal, or milk results can be manually assigned using your smart device.
5. Review animal history and herd-level reports to make real-time decisions about your herd.

*OWL for herringbone application only (optional).

Device recommendations

Whilst any smart device can access and operate the system, we recommend using devices that meet the following minimum specification to provide a better user experience:

- Android or iOS running Chrome web browser
- 2GB Ram (not to be confused with internal storage). Use www.gsmarena.com/ to lookup total Ram. Typical range is 512MB to ~6GB (ANDROID)
- 4.8 inch screen with at least 720 x 1280 pixels (~306 ppi pixel density)

Recommended phones and accessories:

- Samsung Galaxy S6 or higher
- Apple iPhone 6 or higher
- Life proof/Otterbox case

Accessing the app on your phone

To connect your mobile device to the app, first connect your mobile device to the shed Wi-Fi network:

- **SSID**: Connected
- **Wireless Key**: Connected-<Your Supply Number>

Then, in your browser (e.g. Chrome or Safari) enter http://shed.licautomation.com Alternatively, a service agent/support specialist may have placed an icon on your home screen or created a bookmark.

**NOTE:** If it appears that the app is not updating then reload the page.
Feature description

Main Menu
The main Menu of the system is available via the following icon.

From here it is possible to navigate around the system. The following sections describe each of these areas.

Dashboard

The Dashboard provides you with an overview of your system for a milking. The tiles displayed are dependent on the Protrack modules that you have installed on your farm.

If you click on any of the tiles, you will be taken to the respective report.

With Protrack SCC, you will get the following:

- Milk info tile with the average SCC value calculated by the installed sensors for the current milking session.

With Protrack Milk, you will get the following:

- Milk info tile with the average yield and average milk solids calculated by the sensors for the current milking session.
- The plant issues tile is also displayed with milk sensors and alerts you to potential plant and wash performance issues.
Animals

Provides detailed information about any animal in your herd. The information is directly linked to MINDA and will automatically update as you make changes.

Animal Information

Selecting an animal from anywhere in the software will take you through to detailed information about that animal. This includes:

- Visibility of any alerts against the animal.
- Current milking session’s Protrack SCC and Protrack Milk data.
- All MINDA animal information (including health, reproduction and herd test production history), Milk and SCC sensor data (available through ‘Test history’).
- Recording events and drafting* an animal using the Quick Action button.

* Drafting option only available with Protrack Draft.
Groups
Through the Manage Groups control in the quick action menu it is also possible to change an animal’s group membership.
Any changes will be synchronised with MINDA.

NOTE: If your plant is powered down, the following message is displayed:
Sensor network is powered down
Turn it on to see sensor data

Milking
This is the main tab used for Protrack SCC and Protrack Milk sensor related activities. You will see a list of the bails in your shed with a SCC and/or milk sensor attached.

The screen will update in real time with the increasing yield (or milk solids), fat %, protein %, lactose % and the SCC result will appear on the bail as it becomes available.
Results display

The Milking Position is a constant display on the far left of the screen. Three white dots move across this column in the row when the Milk and/or SCC sensors are currently in milking.

Animal

If an animal number has not been entered, it will display a tag 🅱️. Once a result has been assigned, the animal number will appear instead.

SCC

Protrack SCC result*

- ⬤ ⬤ ⬤ ⬤ If the sensor result is not yet available, it is displayed in grey. Once it is available, it displays with a coloured alert level associated with it.
124 ⬤ ⬤ ⬤ ⬤ 0 to 200
124 ⬤ ⬤ ⬤ 201 to 400
124 ⬤ ⬤ 401 to 800
124 ⬤ 801 to 2000
124 2001 and above

Yield (L)

Protrack Milk Yield result*

16.0 ⬤ ⬤ ⬤ This displays either yield (L), or milk solids (kg) according to the current state of the yield. The yield thresholds are set in the Sensor Configuration settings.

Any high or low performer yield/milk solids results are highlighted in orange across the row on the milking screen. The yield/milk solids values are distinguished as per the table below:

<table>
<thead>
<tr>
<th>Low performer</th>
<th>Average performer</th>
<th>High performer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yield/ Milk solids</td>
<td>⬤ ⬤ ⬤ ⬤ ⬤</td>
<td>⬤ ⬤ ⬤</td>
</tr>
</tbody>
</table>

If the Sensor Configuration settings production alert is set to display as milk solids, the milk solids value will appear in kg.

0.68 ⬤ ⬤ ⬤ The example shows a 0.68kg final milk solids result, determined to be an average performer based on threshold settings.

Fat (%)

Protrack Milk Fat % result*
Displays and updates the calculated fat % result through the milk sensor in the milking position.

Protein (%)

Protrack Milk protein % result*
Displays and updates the calculated protein % result through the milk sensor in the milking position.

Lactose (%)

Protrack Milk lactose % result*
Displays and updates the calculated lactose % result through the milk sensor in the milking position.

* Results will stay on for that position until the sensor goes into milking again.
Assigning results
Tapping on the tag on the Milking screen enables you to assign an animal number to the sensor result.

**NOTE:** Assigning an animal number will stop the OWL flashing.

Tap the tag twice and select, or type in, an animal number.

Tapping on the animal in the drop down list will assign the result to the animal.

If you have assigned the result to the wrong animal, tapping the X will remove the result and the [123] will re-appear. Tapping on the animal number will take you to the Animal Information screen.
Sensor control

From the Milking screen, tap Sensors to display a list of commonly used sensor functions.

- **Sensor wash**: SCC sensors need to be washed once per milking. Start a wash here to put your SCC devices into wash mode.
  
  - Tap to put the sensors into wash manually.
  
  **NOTE**: This is required for a cold plant wash if only Protrack SCC sensors are installed, as Protrack SCC cannot automatically detect a cold wash.

  The wash starts after a minimum 10 second delay which can be adjusted in the Settings page. Once in progress, a message is displayed on all devices (Control Panel and Milking screen).

  To cancel the wash, tap Cancel wash.

- **Sensor sleep**: Enter sleep mode to stop the SCC sensors from performing tests during a milking
  
  - This puts the Protrack SCC sensors into Sleep mode - they remain powered on and will not perform any tests but will still go into Wash mode.
  
  **NOTE**: It is recommended to use this function if you have run out of SCC Gel, or to avoid testing milk from colostrum cows.

  Sleep mode start has a fixed delay of 10 seconds. Once the sensors are in Sleep mode, an In Sleep label displays where the SCC results would normally be on the Milking screen.

  To end Sleep mode, tap Wake.

- **Calibrate Milk Sensors**: Regularly calibrating your milk sensors against the tanker docket keeps your sensors accurate.
  
  - Tap to calibrate the Protrack Milk sensors. Fill in the information found mostly on your tanker docket, and click Start calibration. You will receive a confirmation when the calibration is successfully initiated. The calibration process will work silently over the next few days.

  **NOTE**: Ideally you should calibrate milk sensors monthly.
The Reports tab displays a list of the reports available to you, including sensor related reports.

Bulk Cell Count Graph
The Bulk Cell Count Graph displays a graph with the average of all Protrack SCC results (whether assigned or not to an animal) for each day, over time.

Input the Days of history and tap the Update button to change the time scale.
Last Milking

The Last Milking screen shows a complete view of a milking session. It shows the most recent (or current) milking by default.

Tap <Previous to view previous milking sessions chronologically.

The top of the report shows a summary of the Protrack SCC and/or Protrack Milk results. The pictograms show the number of results in each category, and what proportions of each category have been assigned to an animal.

The list of all sensor results for the milking session are sorted by time (default), but can be sorted by:

- SCC or conductivity,
- fat,
- milk solids,
- protein and
- yield.

Recorded Alerts

This gives a list of all the sensor results that have an animal number recorded against them, for a specific time period.

Cow numbers are listed in the first column. The Yield and Abnormal columns show milk sensor results (if they are present).
Yield 
This shows a representation of how many times the animal has had a high or low yield alert raised.

Abnormal 
Shows how many times the animal has had either an abnormal milk or a blood in milk alert. The coloured circle shows the proportion of each (blue for abnormal milk and red for blood in milk).

SCC 
Shows the number of times the animal has had an SCC alert. The coloured circle shows the proportion of each (according to the threshold set in the Settings tab) - orange for an orange alert and red for a red alert.

Recorded alerts can be sorted based on the data in any column by tapping on the column heading. Tap the column heading again to sort in reverse order.

- Tap on a row to see an animal’s sensor test history results.
- To change the time period shown in the report, tap Change >.

Select the desired option and tap Done. The report will change to display the new time period selected.
Milk info
The milk info report allows you to view your daily herd averages for SCC, yield and milk solids. A 7 day herd average is provided as well as daily historical herd averages for the last 7 days.

Plant issues
The plant issues report provides you with a list of bails with potential wash and/or milking plant issues. Clicking on an error (e.g. High Wash volume on bail 5) will provide more information on the error and how the Protrack Milk sensors have detected the potential issue.
Season recorded alerts report (email CSV)

This option allows you to send a CSV file of all assigned sensor results since the start of the season. Tap Add New Recipient to enter a name and email address to send emails to. Fill in the boxes and tap Done.

Email reports
All reports allow you to send them to email. Just view the report you’d like sent, tap Email, select the recipient and tap Send.

Settings
The Settings page allows you to configure settings for the system.

Email setup
Email setup show a list of the saved report email recipients.

- Tap Edit on any recipient to change their name or email address, or to delete them completely.
- Tap Add Recipient to enter a new name and email address to send emails to. Fill in the boxes and tap Done.
Milking times
Milking times set the times for your milking regime.

1. Tap the I milk drop down to indicate whether you milk once a day, twice a day, three times a day or every 16 hours.
2. Adjust the start time for each milking session on the page (which milking sessions appear will depend on your choice of how many times you milk a day).
3. Tap Save to confirm your choices, you will receive a confirmation that the settings have been saved successfully.

Sensor setup
This allows you to configure the settings for your Protrack SCC and/or Protrack Milk sensors.

SCC sensor settings

- Set your desired SCC alert threshold by selecting one of the three orange options (2, 3, or 4 orange dots).
- The wash routine delay allows you to put the SCC sensors into wash after a specified time delay. Set the wash cycle delay (in seconds) by tapping the up or down arrows and tapping Save. Use this function when your wash system has a delay before water comes through the milking plant.
Milk sensor settings

Measure and display milk production using:
- Yield
- Milk Solids

Mid milking alerts based on predicted animal yield
- Alert when predicted yield falls within the bottom percentile of your herd.
- Alert when predicted yield falls within the upper percentile of your herd.

*Yield alerts are predictions based on previous milking sessions and accuracy may vary

- Set how your Protrack Milk alerts are displayed by selecting either Yield or Milk Solids, and tapping Save.
- Set whether low yield or high yield alerts appear by ticking the appropriate check boxes and tap Save.
- Set the percentage of the herd that will be alerted as low performers by tapping the up or down arrows under Low Threshold, Alert on bottom %, and tapping Save.
- Set the percentage of the herd that will be alerted as high performers by tapping the up or down arrows under High Threshold, Alert on upper %, and tapping Save.
- To cancel any changes made, tap Cancel.