

°PLAATO PRO

User Manual

V0.7 - 28.08.2023

Model:v4.0.1



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1 Product description

1.1 About

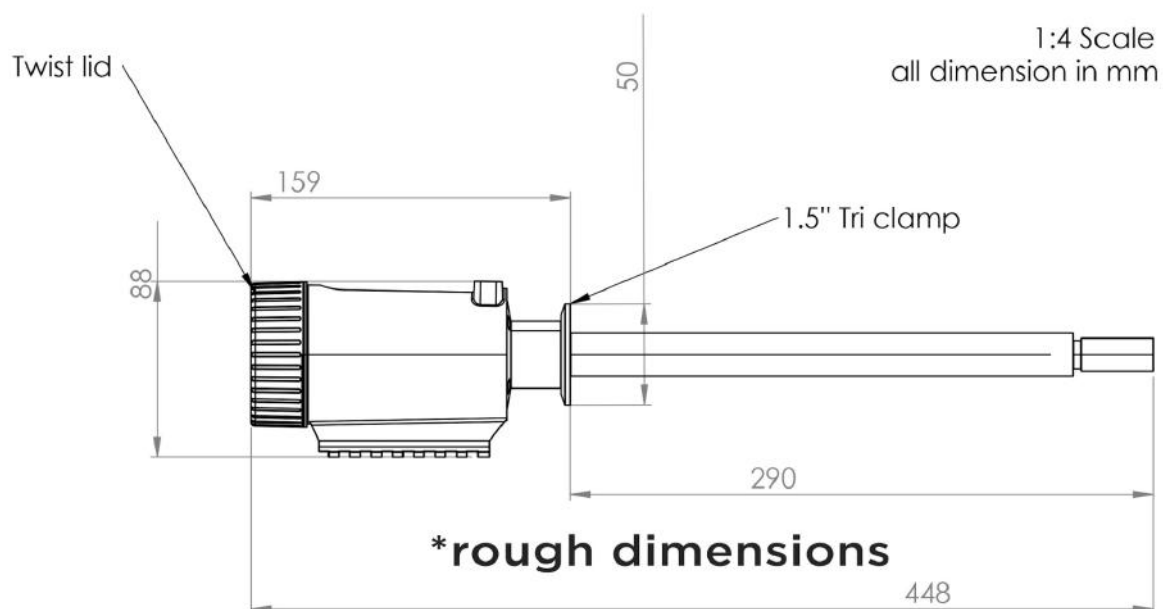
Basics

The PLAATO Pro is a brewing instrument that measures liquid density and temperature, and transmits data to the PLAATO Cloud. Both real-time data and historical data is available in the PLAATO-app, in addition to a range of other functionalities.

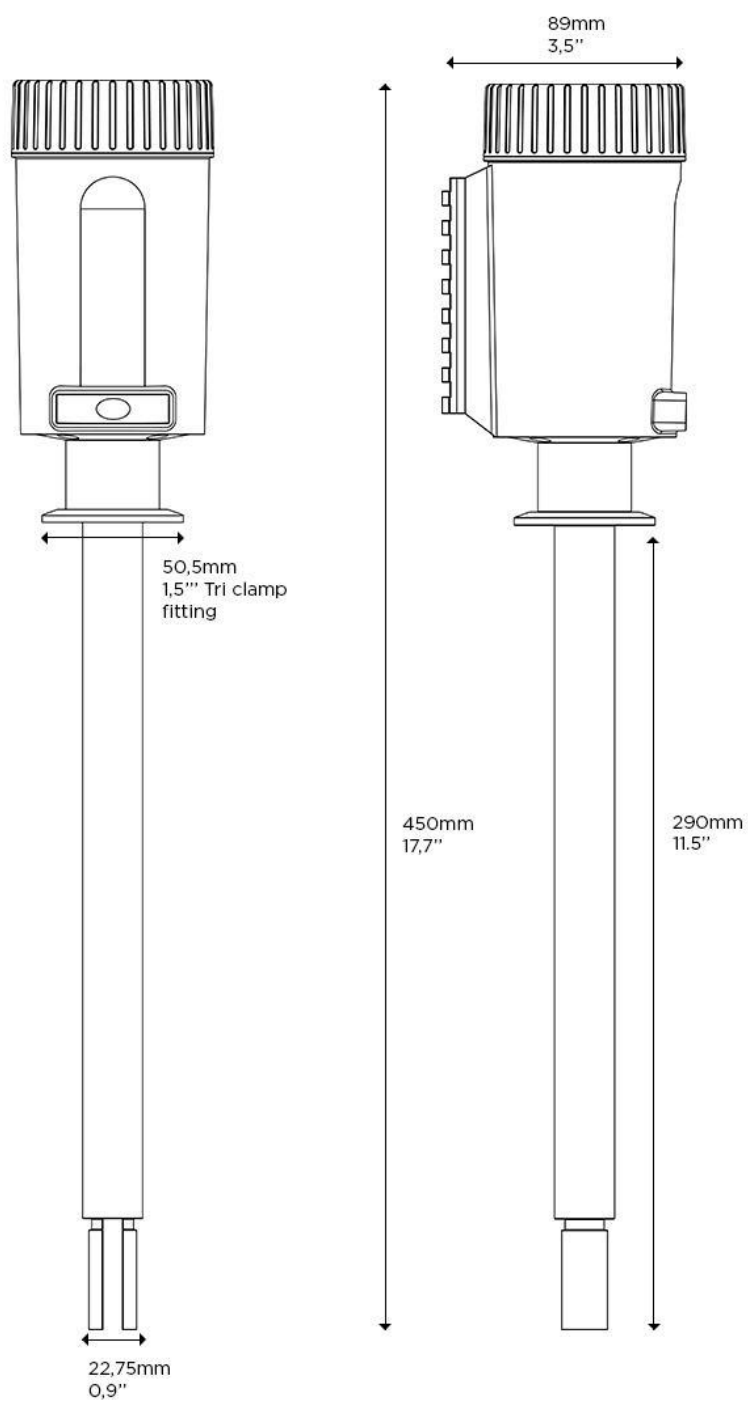
Vibrating fork density meter

The PLAATO Pro operates based on the principle of a vibrating fork density meter. This device utilizes the proportional relationship between the frequency of the vibrating tines and the density of the liquid, with a denser liquid resulting in a lower frequency. By measuring the frequency of the tines, the Specific Gravity and degrees Plato are calculated.

For accurate measurements, it is crucial to fully submerge the tines and stem of the device. Partial submersion may result in incorrect measurements.



1.2 Product design



1.3 PLAATO Cloud

The PLAATO Pro employs WiFi technology to establish a wireless connection to the cloud, providing robust range and connectivity in challenging brewery environments.

This cloud-based feature offers the user the ability to remotely access fermentation data, enabling streamlined process monitoring from any location.



2 Getting started

2.1 Important Notes

Correct installation and use is important to achieve the best results possible.

Please carefully assess the steps below.

1. **Install the Pro in a port that ensures minimum 50cm / 20" of liquid above the probe**
 - a. Insufficient head pressure due to low liquid levels above the Pro can result in CO₂ bubbles, which can affect the probe and generate noisy data.
 - b. Can also be solved by adding at least 8 psi head pressure using a spunding valve.
2. **PLAATO Pro must be leveled using the built in spirit level** to limit bubbles and particles to hit the tines while passing.
3. **The minimum distance to objects**, such as walls, cooling coils and tubes is 10cm / 4" to avoid interference affecting the SG readings.
4. **Only horizontal or angled ports on the cone are suitable.** The Pro cannot be installed vertically from a top- or bottom positioned port
5. **Avoid installing the Pro too close to the bottom parts** of the fermenter where trub can interfere and cause inaccurate readings

2.2 How to get the best possible readings

Fermenting liquids can pose measurement challenges due to the presence of particles, yeast, bubbles, and rapid temperature fluctuations. These factors may result in inaccuracies and spikes, highlighting the significance of proper usage and installation to achieve accurate results.

1. **During the initial 60 minutes after the fermenter is filled, variations in temperature between the PLAATO Pro and the liquid may lead to inaccuracies and spikes in data.** However, once the probes have equilibrated with the liquid temperature, the readings will stabilize.
2. **Cold crashing can lead to SG-changes of up to +0.006 SG** due to fine particulate sediments on the probe.
3. **Rapid temperature changes** due to f.ex additions of wort or other additions can cause temporary SG-inaccuracies.
4. **The use of T-connectors in-between the Pro and the fermenter** can cause inaccuracies in both temperature and SG. If a T-connector is needed for a sample port, please contact PLAATO and we'll supply you with an extra short version.
5. **Dry hopping can cause SG-spikes**, but should not affect the overall accuracy. Remember that dry hopping can slightly change the actual SG of the liquid.
6. **The moment the fermentation kicks in** one can see unstable readings, especially when oxygen is added to the wort.
7. **Carbonation can cause the actual SG of the liquid to increase** with up to 0.0004 SG / 0.1°P.

2.3 Quick Installation

What's in the box

- 1x PLAATO Pro
- 1x PLAATO Connector
- 1x Power cable
- 1x Ethernet cable
- 2x C-cell batteries

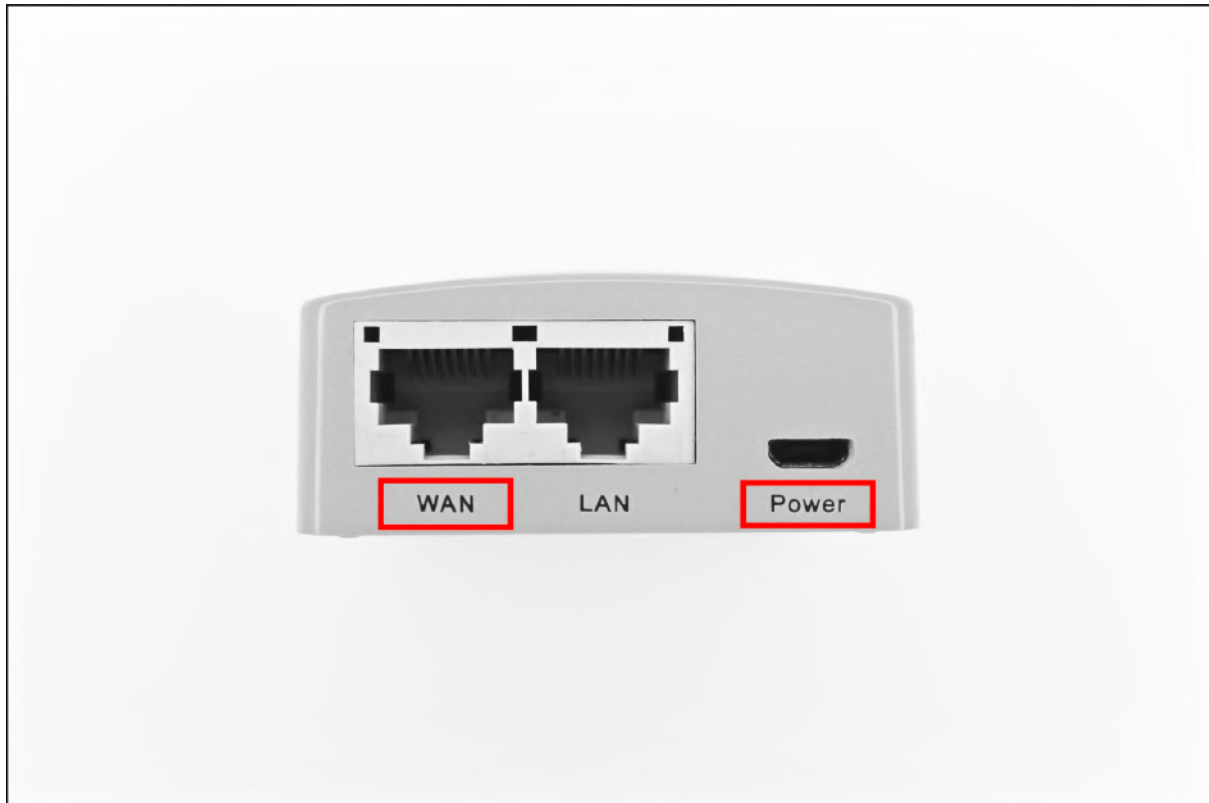


1. Create your Plaato Pro Account

Follow the steps in the "Account Creation Email" you've received from the PLAATO onboarding team to register your account.

2. Install the Pro Connector

The Pro connector acts as a bridge between the PLAATO Pro and the PLAATO Cloud.



To set up the Pro Connector, connect it to power using the provided USB cable. Then, connect one end of the Ethernet cable to the "WAN" port on the Pro Connector and the other end to your WiFi router. The LED light on the Pro Connector should illuminate immediately.

Once connected, the three white LED lights on the Pro Connector should come on within 20-60 seconds, indicating a successful connection.

It is important to keep the Pro Connector powered on and connected to your WiFi router at all times while the Plaato Pro device is in use. The Pro Connector is pre-programmed for seamless automatic connection to the Plaato Pro, so there is no need to manually activate or press any buttons.

3. Insert your batteries

Before turning on your Plaato Pro, you will need to insert the supplied batteries.

- Unscrew the lid on the Pro
- Take out the batteries from the side pockets of your Plaato Pro bag
- Use the "pull ribbon" to pull out the battery holder
- Insert the batteries into the empty battery holder
- Gently slide the battery holder back into your device

4. Turn the device ON

With the lid unscrewed, toggle the power switch button to "ON". You will see the LEDs turning on and a high pitched tone.

5. Add your device to your Plaato Pro Account

Prior to adding your PLAATO Pro device to your account, ensure that you have:

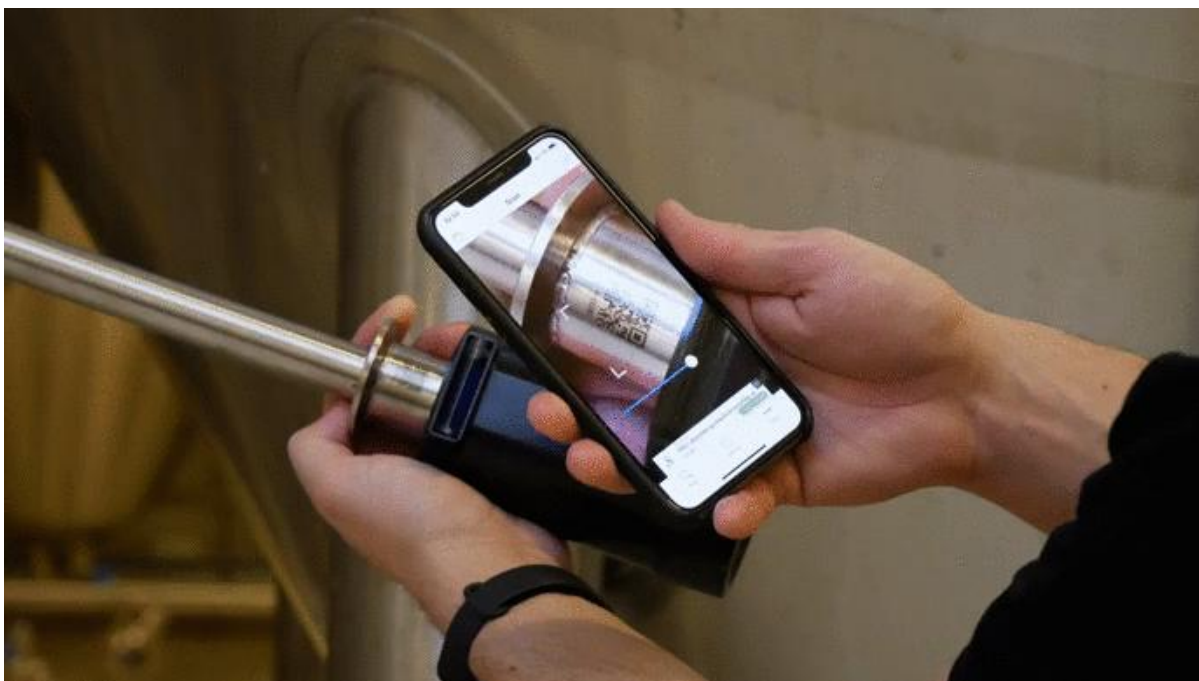
1. Connected your PLAATO Pro to the cloud using the Pro Connector
2. Powered on your PLAATO Pro

To add your PLAATO Pro device to your account:

1. Download the PLAATO Pro App for iOS or Android from the Apple App Store or Google Play Store.
2. Log into the mobile app using your PLAATO Pro account credentials.
3. Tap on "Devices > My PLAATO Pro has arrived".
4. Scan the QR code located on your PLAATO Pro.

Your device will now be successfully added to your PLAATO App.

Note: To add an additional PLAATO Pro device, tap on "Devices > Add a new device".

**Important**

Please make sure you install “PLAATO PRO” and not the “PLAATO” App.

6. Install the Pro in a fermenter

Install the Pro as described in the next section, “4 Installation”.

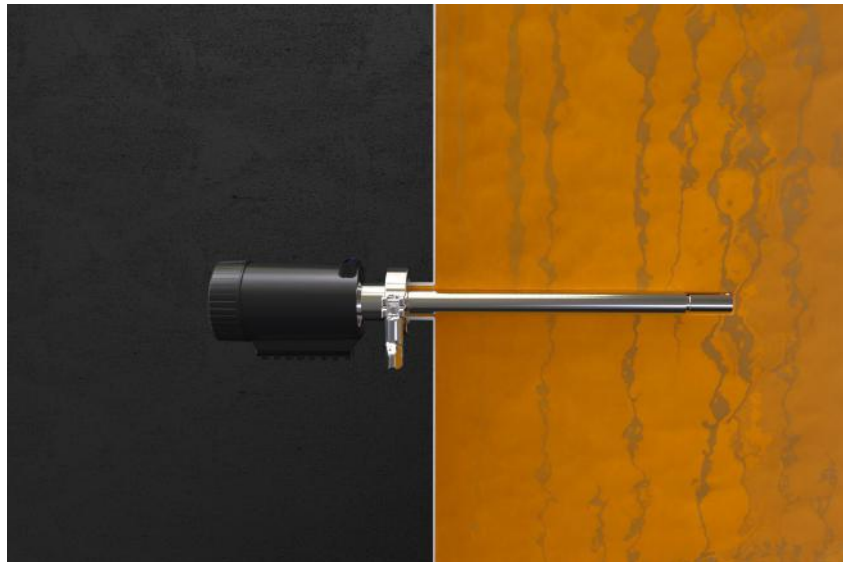
To maintain the accuracy of your device, it is recommended to follow the following steps for cleaning and sanitizing before installation begins:

1. Clean the wetted parts with an alkaline solution and gently brush.
2. Sanitize using an acid, chlorine or ethanol solution.
3. Install the device in a spare Tri Clamp port, adhering to the guidelines outlined in section 2.2 “PLAATO Pro - How to get the best possible readings”.

4 Installation

4.1 Placement on fermenter

We recommend installing PLAATO Pro in a spare 1.5" Tri Clamp port on the fermenter, as shown below:



The following criteria must be met when selecting a Tri Clamp port for installation of the PLAATO Pro:

1. The inner diameter of the port must be a minimum of 23mm (0.9").
2. The device should be installed horizontally or at a maximum angle of 45 degrees if installed in a cone.
3. To avoid interference from trub, the device should not be installed too close to the lower parts of the fermenter.
4. The probe must be fully submerged in the liquid and have a minimum of 50cm/20" of liquid above it.
5. The minimum distance from the probe tip to the inner wall of the fermenter should be 12cm.
6. The device cannot be installed in a pipe due to the potential for pockets of gas and particles affecting readings.

4.2 Cleaning and sanitizing before installation

Procedure for Cleaning Wetted Components:

1. Apply a caustic or oxidizing cleaning agent to the stainless steel parts
2. Gently scrub the device using a sponge
3. Rinse thoroughly with clean water
4. Sanitize using acid, chlorine, or ethanol.

For further details regarding maintenance and cleaning of the PLAATO Pro, see chapter 6 Maintenance.

4.3 Alignment

When installing the device in the fermenter, it is important to level the built-in spirit level to ensure that the tines are correctly positioned, allowing for unimpeded passage of sedimentation and bubbles.



4.4 Use of T-connectors

In the event that only a single Tri Clamp port is available on the fermenter and a sampling port is required, a T-connector can be installed between the PLAATO Pro and the fermenter.

It is crucial to note that only T-connectors provided by PLAATO should be utilized. The use of normal T-connectors can result in insufficient insertion depth and inaccurate readings of specific gravity and temperature.

4.5 Tri Clamp adapters

Adapters can be used in-between the Pro and the fermenter if a 1.5" Tri-Clamp port is not available.

DIN11851 adapters

PLAATO has the following adapters available for purchase.

- 1.5" TC - DN25
- 1.5" TC - DN32
- 1.5" TC - DN40

Tri Clamp adapter

- 1.5" TC - 2" TC*

*TC-TC connectors are not provided by PLAATO, but are available from most suppliers of sanitary connections. Please reach out to PLAATO if you are having challenges with the adapters or connectors.

5 Operation

5.1 LEDs

During normal operation the LEDs on the PLAATO Pro will run through a LED-sequence every 30 minutes during the measurement & transmit process.

5.2 Reset-button

Force new reading

A single push will wake up the Pro and a new reading will be sent to the Cloud.

5.3 Battery change

The expected battery life is 3-6 months.

To replace the batteries in the device, follow these steps:

1. Unscrew the lid on the device.
2. Using the "pull ribbon," remove the battery holder.
3. Discard the old batteries according to local recycling guidelines.
4. Insert new alkaline C-batteries into the empty battery holder.
5. Carefully insert the battery holder back into the device, ensuring that the pull ribbon is outside of the casing.

5.4 Over The Air Updates

The PLAATO Pro undergoes regular, remotely-conducted over-the-air (OTA) updates by our engineering team. These updates are announced in advance and aim to enhance accuracy, battery life, and introduce new features. The OTA process takes approximately two minutes and does not affect the recorded fermentation data. No intervention is required from the end user during the OTA.

6 Maintenance

6.1 How to clean and sanitize

The Main body

The main body of the device is designed to be splash-resistant, and it is important not to submerge it in water or any other liquids, as this may cause damage. If necessary, the casing can be cleaned using a damp cloth.

Wetted Components

The stem and tines are constructed from stainless steel (SS304), which is compatible with the chemicals commonly used for cleaning and sanitizing fermenters, such as alkaline solutions, ethanol, and chlorine.

Procedure for Cleaning Wetted Components:

5. Apply a caustic or oxidizing cleaning agent to the stainless steel parts
6. Gently scrub the device using a sponge
7. Rinse thoroughly with clean water
8. Sanitize using acid, chlorine, or ethanol.

Note: Avoid submerging the PLAATO Pro in water or any other liquids.

6.2 Beer stone

Beer stone is a precipitate that can form on stainless steel surfaces, including the wetted parts of the PLAATO Pro.

How to remove beer stone

1. Rinse the device with ambient-temperature water.
2. Use a phosphoric/nitric acid mixture (maximum 60°C) for 15-30 minutes and don't rinse.
3. Use a non-caustic alkaline cleaner. Clean for 15-30 minutes, depending on conditions. Alternatively let the device's tines sit in a bucket with the liquid only covering the wetted stainless steel parts.
4. Rinse with ambient-temperature water until the pH of the rinsing water is the same pH as the tap water coming in.

Alternatively use specific chemicals made for removing beer stone.

7 Safety and Usage Considerations

7.1 Handling

Please handle the device with care. The fork / tines are sensitive, and must be protected from impacts.

- Avoid bend the fork
- Avoid holding the fork with your hands
- Avoid impacts between fork and other surfaces, such as the TC-port during installation

Impact to the fork or wrong handling might offset calibration values, and can require a new calibration procedure.



7.2 Designated use

The device described in Product Description may only be used as a density meter for liquids. Incorrect use may pose a hazard.

7.3 Product safety

This device is designed in accordance with good engineering practice to meet current safety requirements, and has left the factory in a condition in which it is safe to use. It meets general safety standards and legal requirements, including FCC, CE and FDA.

8 Technical data

8.1 Environment

Storage temperature range	-20 to +55°C (5 to 131 °F)
Ambient temperature range	0 to +55°C (32 to 131 °F)
Degree of protection	• Protected against water jets • Complete protection against dust
Reverse polarity protection	Battery connection has reverse polarity protection
Humidity	Up to 100%. Keep the lid closed when in use.
CIP	Suitable for CIP cleaning at temperatures below 45°C (113°F)
Mechanical stress	Please handle the device with care. The fork / tines are fragile, and must be protected from impacts.

8.2 Process

Measured process variables	• Specific Gravity • Temperature
Calculated process variables	• Extract (°Plato) • Alcohol content (ABV%) • Rate of fermentation (%)
Accuracy	• Specific Gravity: ± 0.002 SG • Temperature: ± 0.1 °C
Process temperature range	0 -to +45 °C (32 to 113 °F)
Process pressure range	0 to 4 bar (0 to 58 psi)
Density	0.950 to 1.200 g/cm³
Medium state	Liquid

8.3 Technology

WiFi	802.11b/g/n, 2.4GHz
Certifications	FCC/CE
Medium state	Liquid
Supply voltage	3V
Avg current consumption	10 mA
Wetted materials	Stainless steel 304
Battery	2x Alkaline, C-type (R14), 1.5V
Measuring- and transmission rate	Every 30th minute

9 PLAATO Apps

9.1 The PLAATO Pro Apps

The PLAATO Pro fermentation data can be accessed through the PLAATO mobile applications and the Web App, which both use the same login credentials.

The mobile apps are designed for monitoring data remotely and responding to process-critical notifications.

The Web App provides comprehensive information and features, such as batch comparison, for a full operational overview while in the brewery.



9.2 Customize the PLAATO Pro Apps

Here is how to set your brewing data preference

Temperature and Density Unit

- Launch your Plaato Pro App (Mobile App)
- Tap **Account** > **App Settings**. Select "**Celsius**" or "**Fahrenheit**"
- Tap **Account** > **App Settings**. Select "**Plato**" or "**Specific Gravity**"

WebApp

- Open PLAATO Cloud on your Web browser and log in
- Tap on your account name at the top right of your screen and select "**Account**"

Rename your Device

To personalize your Plaato Pro by giving them unique names, follow the steps below.

- Launch your app, tap on **Devices** and select the device you want to rename
- Tap the "**Pen**" icon at the top right corner of the device you want to rename
- Tap in on the existing name field, enter the new name of the device.
- Tap on "**Save Device Name**" to save

Experimental Features

To try out features that are currently under development on the Plaato Pro App, toggle on "**Experimental Feature**" in your Account Settings.

1. Launch your Plaato Pro App/Web App
2. Tap **Account** > **App Settings** > Toggle on "**Experimental Features**"

Please note that these features are still in Beta.

9.3 Create a Recipe

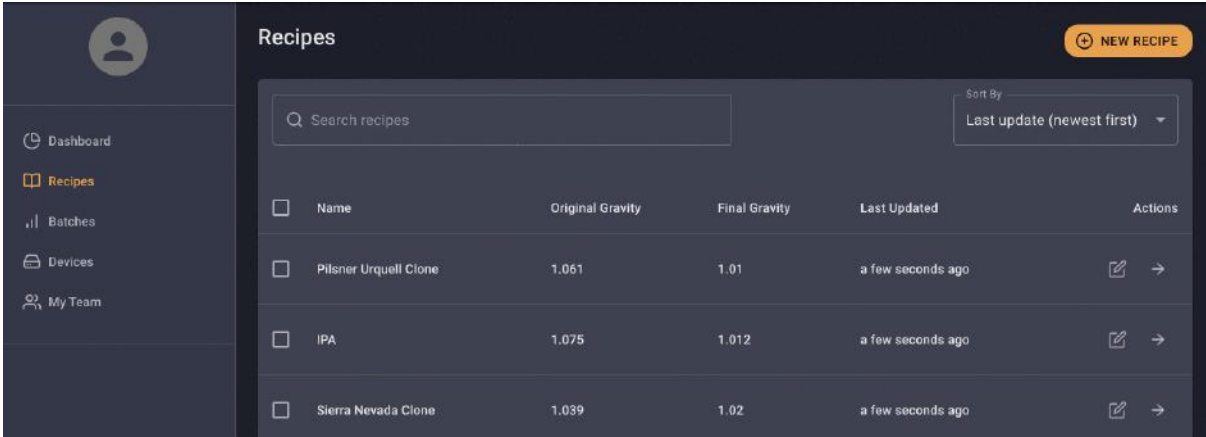
Store all of your brewing recipes in one place and access it wherever you are, at any time with Plaato Pro's Recipe. To create your Recipes, follow the steps below.

Plaato Pro Mobile App (iOS and Android)

1. Launch your Plaato Pro App
2. Tap on "**Recipes > Add Recipe**"
3. Add your "**Recipe Name**," "**Author Name**," "**Original Gravity**," "**Final Gravity**"
4. Tap on "**Add Recipe**" to save it.

Plaato Pro Web App

1. Log into <https://app.plaato.cloud/login>
2. Click on "**Recipes**" on the left navigation menu
3. Click "New Recipe" to create and add your new recipe
4. Add your "**Recipe Name**" "**Original Gravity**" "**Final Gravity**" and "**Description**"
5. Click on "**Create Recipe**" to save it.



The screenshot shows the 'Recipes' page in the Plaato Pro web application. On the left is a dark sidebar with navigation links: Dashboard, Recipes (highlighted), Batches, Devices, and My Team. The main content area has a 'Recipes' header with a '+ NEW RECIPE' button. Below the header is a search bar and a 'Sort By' dropdown menu set to 'Last update (newest first)'. A table lists three recipes with columns for Name, Original Gravity, Final Gravity, Last Updated, and Actions. Each row includes a checkbox and edit/delete icons.

☐	Name	Original Gravity	Final Gravity	Last Updated	Actions
☐	Pilsner Urquell Clone	1.061	1.01	a few seconds ago	
☐	IPA	1.075	1.012	a few seconds ago	
☐	Sierra Nevada Clone	1.039	1.02	a few seconds ago	

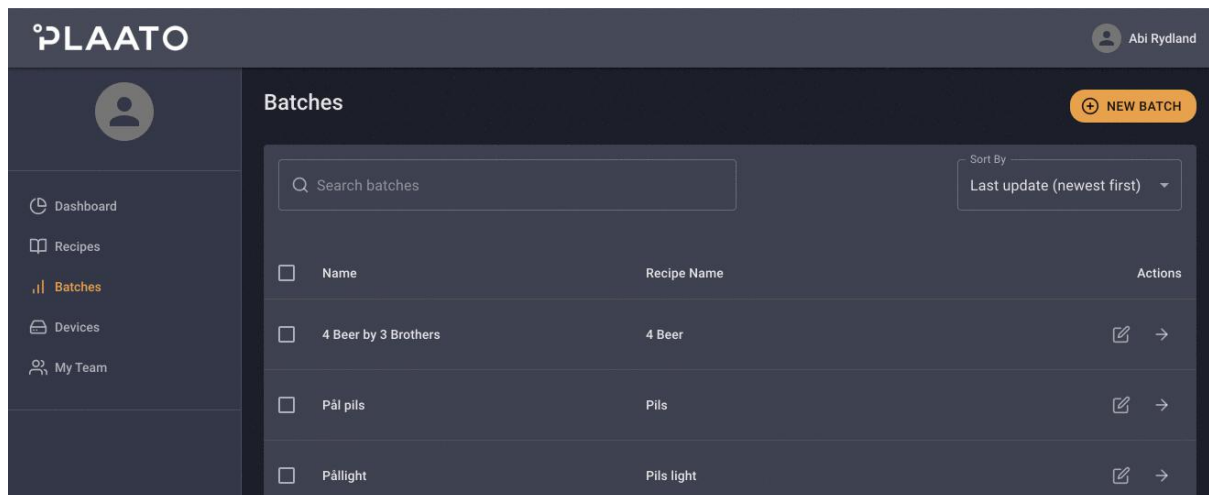
9.4 Create a Batch

Achieving the recipe of your dreams takes some practice, and monitoring your data over time. The Batches feature on Plaato Pro enables you to:

- Create and monitor multiple batches.
- Connect each batch to a Recipe.
- Monitor the progress of your batch from start to end date

Plaato Pro Web App

1. Log into <https://app.plaato.cloud/login>
2. Click on "**Batches**" in the left navigation menu
3. Click on "**New Batch**"
4. Enter in the "**Batch Name**" and any additional notes
5. "Click on "**Create Batch**" to save your batch.



Plaato Pro for Mobile (iOS and Android)

1. Launch your Plaato Pro App
2. Tap on "**Batches > Create new batch**"
3. Link the Batch to a Recipe. Click [here](#) to learn how to create a Recipe.
4. Give your batch a name
5. Enter the start date and time, and your projected end date and time for the batch
6. Tap on "**Create Batch**"
7. Go back to "**Batches**" and select the Batch you just created.

Click on "**Add a device**" select a device and click on "**Add Device**" to link the right Plaato Pro device to the current batch.

Editing a Batch

1. Launch your Plaato Pro App
2. Tap on "**Batches**" and select the batch you want to edit
3. Tap on the "Pen" icon at the top of your screen
4. Edit the batch and tap on "**Save**"

9.5 Compare Batches

The PLAATO Pro Batch Comparison feature allows you to overlay the data from several batches and compare the data.

Select up to 4 fermentation batches and layer the fermentation graphs over each other to compare and to learn what worked best during the batches, or what could be improved upon for your next batch.

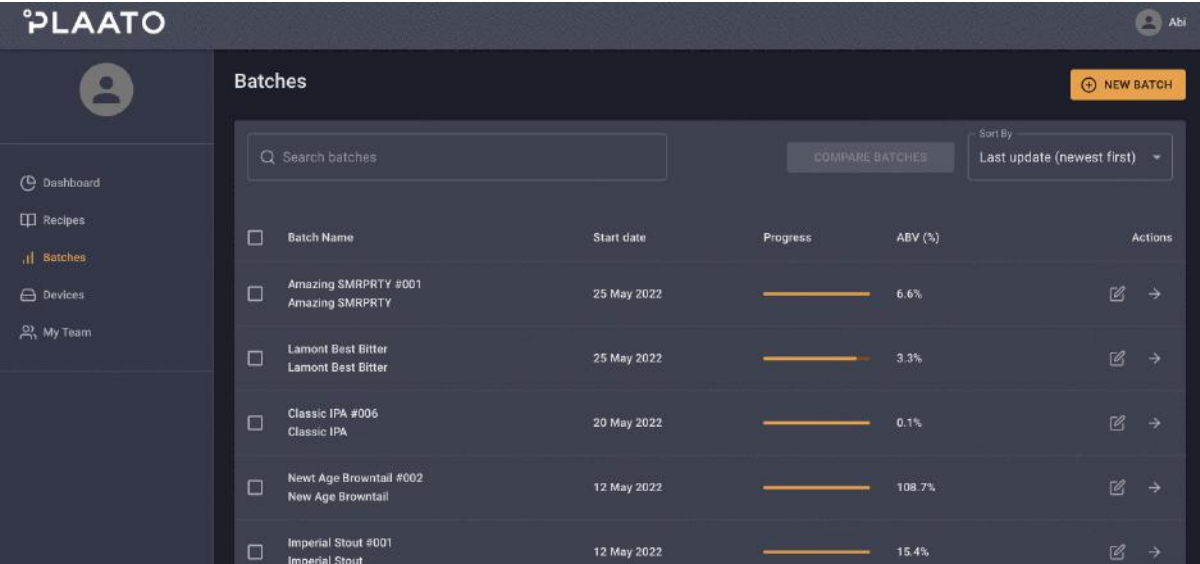
Important: You will need to have first create a [batch](#) to use Batch Comparison

Set up Batch Comparison

Note: Batch Comparison is only currently available on the Plaato Pro [WebApp](#)

1. Log into Plaato Pro [WebApp](#)
2. Click on “**Batches**” on the left menu navigator
3. In the **Batches** list select up to four batches. The “**Compare Batches**” button will be highlighted at the top left. (You must select at least 2 batches)

Click “**Compare Batches**” and the Batch Comparison screen will load.

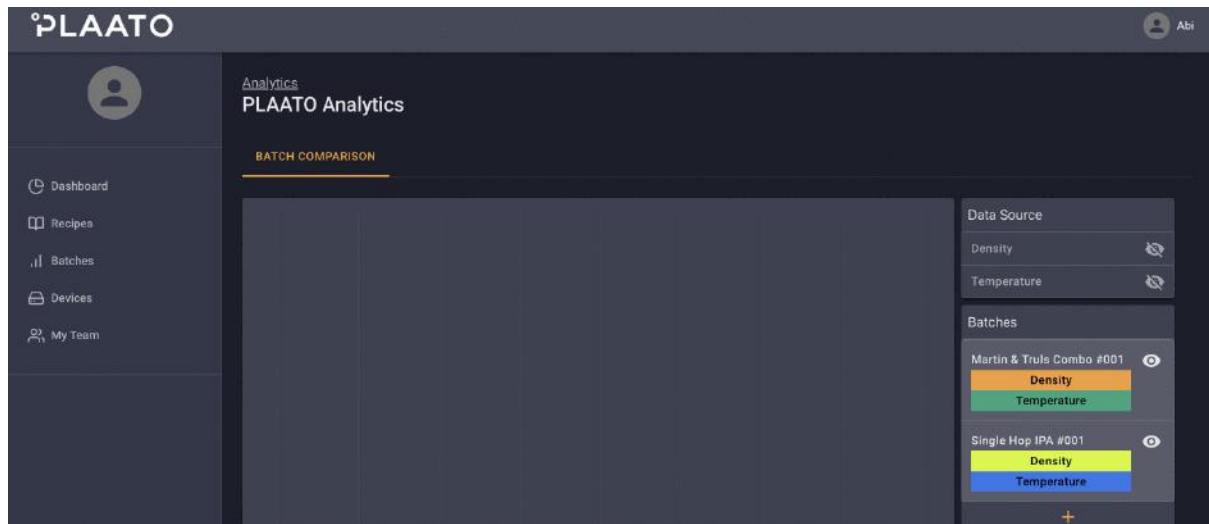


☐	Batch Name	Start date	Progress	ABV (%)	Actions
☐	Amazing SMRPRTY #001 Amazing SMRPRTY	25 May 2022		6.6%	
☐	Lamont Best Bitter Lamont Best Bitter	25 May 2022		3.3%	
☐	Classic IPA #006 Classic IPA	20 May 2022		0.1%	
☐	Newt Age Browntail #002 New Age Browntail	12 May 2022		108.7%	
☐	Imperial Stout #001 Imperial Stout	12 May 2022		15.4%	

Filtering (Data Source)

You have the option to select what unit to compare on the graphs.

1. Hover your mouse to the right of your graph to Data Source
2. Click on the eye icon to select or deselect Temperature or Density



Aligning the Batches (Graph)

Using the sliders beneath the chart you also have the option to adjust and align the Start/End time of the Datasets across your selected batches

1. Hover your mouse over Graph Alignment
2. Click and drag the slider to adjust



9.6 Create Batch Alerts

Create a Batch Alert - PLAATO App (iOS & Android)

1. Turn on Push Notifications on your mobile device
2. Launch your Plaato Pro App and tap on "Batches".
3. Select the batch you are interested in
4. On the "Batch Details" screen, tap on "Alerts > Add Alert"
5. Customize the alert message you want to receive in the "Alert Message" field
6. Select Density or Temperature in the "Notify When" drop down menu
7. Tap on the "Select Comparator" to set up your conditions
8. Enter your Temperature or Density
9. Tap Create Alert to complete and save it.

Note

Your Batch Alerts will send once when the set threshold is hit or crossed during the fermentation batch only.

FAQ - Batch Alerts

Can you create an alert for a recipe?

No, alerts can only be created and linked to Batches

Can I set up multiple alerts on a batch?

Yes, you can create multiple alerts on a batch

Can I mute a batch alert?

No, you can only delete a batch alert

Can I create a user specific batch alert?

No, everyone on your account will receive the notification

Can Batch Alerts control the fermentation?

No, alerts do not perform actions on your batch

Are notifications history saved?

No, notification history is not stored

Can I create group batch alerts?

No, you can only create an alert for a single batch each time

Can I create an alert per device?

No, you can only create an alert for a batch

Can I use an alert template across batches?

No, an alert will only work for the batch it is created in

9.7 Rename your PLAATO Pro device

Changing the name of your Plaato Pro Device is super quick and easy. Here is how:

Plaato Pro Mobile App (iOS and Android)

1. Launch your Plaato Pro App
2. Go to "Devices"
3. Click on the Plaato Pro device you want to export data from
4. Scroll to the bottom of the page
5. Click on "Export Data"

Your fermentation data will be sent to your registered email address immediately.

Plaato Pro Web App

1. Log into <https://app.plaato.cloud/login>
2. On the left navigation menu, click on "**Batches**"
3. Select the batch you are looking to export data from
4. Click on "**More Options**" the three-dotted ellipsis button at the top right corner of the Density chart
5. Click on "**Export**" to export your data

9.8 Export PLAATO Pro data

Plaato Pro Mobile App (iOS and Android)

1. Launch your Plaato Pro App
2. Go to "**Devices**"
3. Click on the Plaato Pro device you want to export data from
4. Scroll to the bottom of the page
5. Click on "**Export Data**"

Your fermentation data will be sent to your registered email address immediately.

Plaato Pro Web App

1. Log into <https://app.plaato.cloud/login>
2. On the left navigation menu, click on "**Batches**"
3. Select the batch you are looking to export data from
4. Click on "**More Options**" the three-dotted ellipsis button at the top right corner of the Density chart
5. Click on "**Export**" to export your data

9.9 Teams

To use this feature please toggle on "Experimental Features" in your Plaato Pro Mobile App.

To invite a Team member head over to your Mobile App (Account Admin privilege only)

- Launch your Plaato Pro App
- Tap on "**Account**"
- Tap on "**My Team**"
- Tap on "**Invite Team**" (Scroll to the bottom of the page to find this)
- Enter your team member's email
- Tap on "**Send Invite**" to invite your teammate.

Important: Please make sure you are not already a member of a different team or company on Plaato Cloud. If you are, please contact support@plaato.io, or write in through the messenger app at the bottom of this page.

9.10 Add manual measurements

If the readings from your Plaato Pro device is off by a few points when compared to manual measurement readings, you can add the manual measurements to your Plaato Pro App for reference purposes.

Here is how to add manual measurements

1. Launch your Plaato Pro App
2. Go to Devices and select the device on the batch
3. Scroll to the bottom of your device page to find "Add Manual Measurement"
4. Add the "Date" and "Time" you took the sample measurement
5. Select the "Unit" of measurement
6. Enter the manually measured value
7. Click on "Add Manual Measurement" to save.

9.11 PLAATO and Brewman: Integration

Please note:

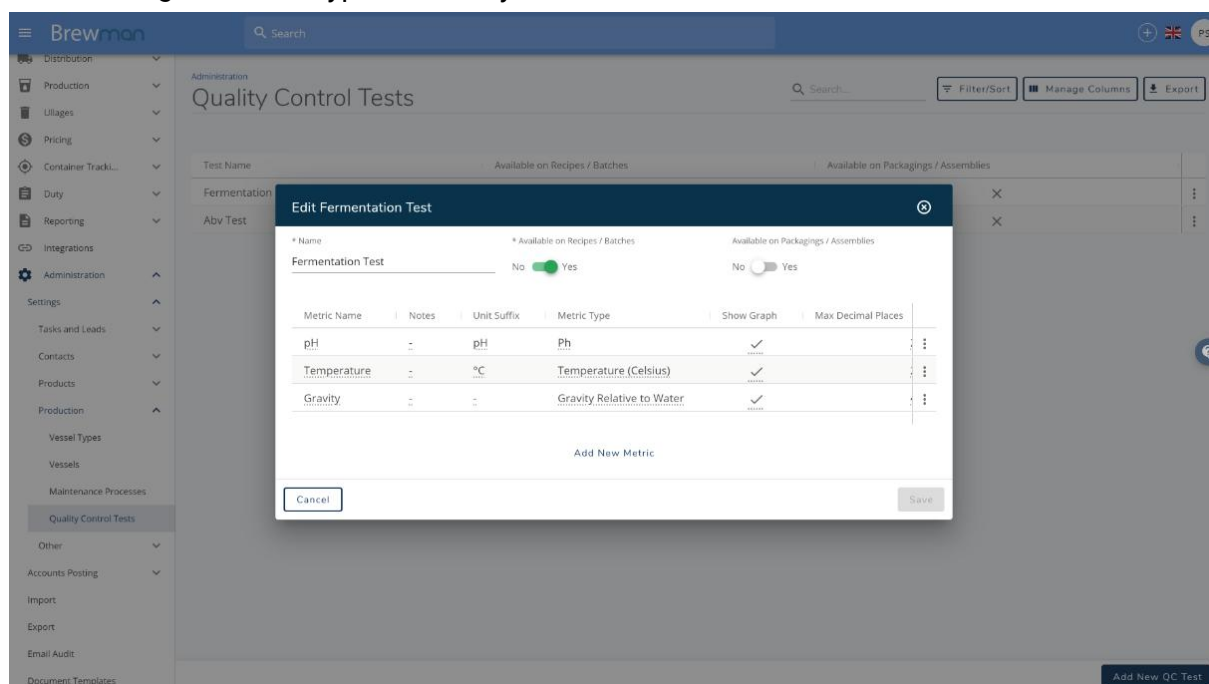
- This integration is only available for Plaato Pro users.
- To activate it, you will need to be the Plaato Account Admin.

Brewman provides a platform for breweries to manage production, distribution and other aspects of their business effectively. To learn more about Brewman click [here](#)

The Plaato and Brewman integration sends SG and Temperature from your Plaato Pro account to your Brewman account with no manual effort from you.

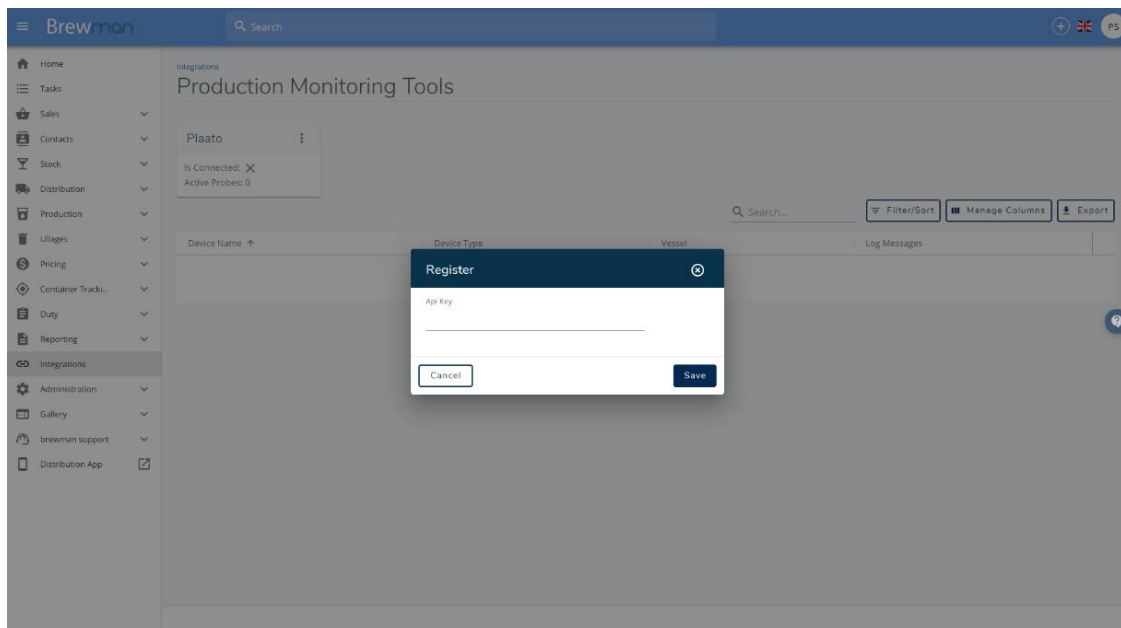
Setting up your Plaato Pro and Brewman Integration

1. Assign a Metric Type inside of your QC Tests



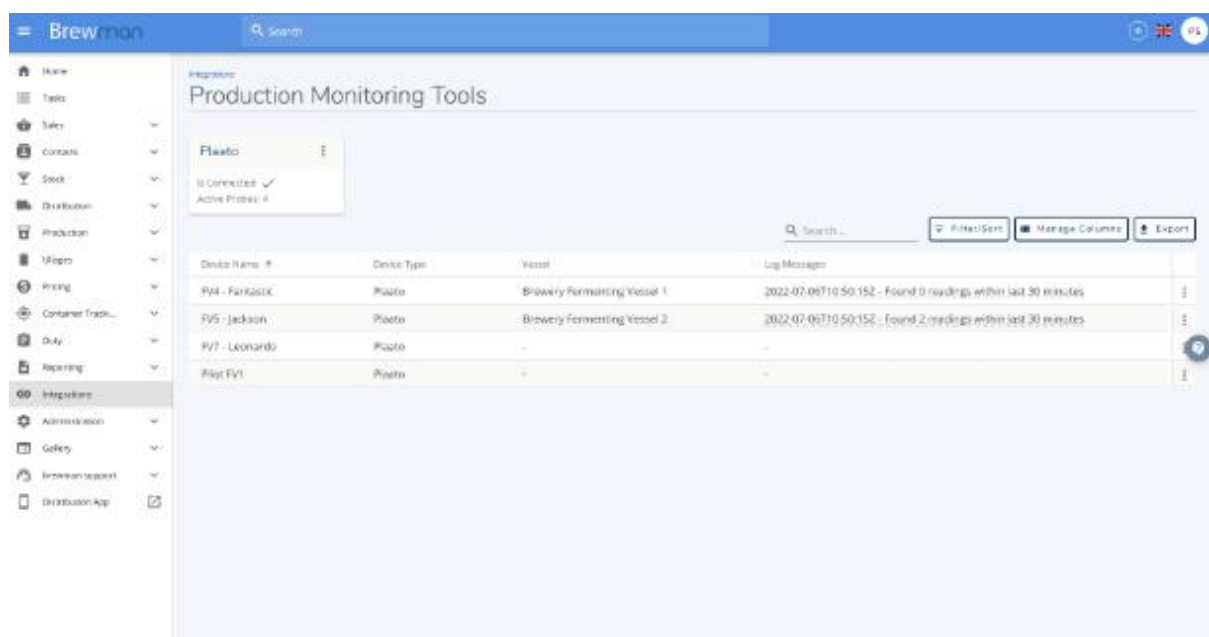
2. Sign into your Brewman Account and go to Administration > Settings > Production > Quality Control Tests.
3. Assign a Metric Type inside of your QC Tests from the dropdown options, then click Save.

Activate the integration

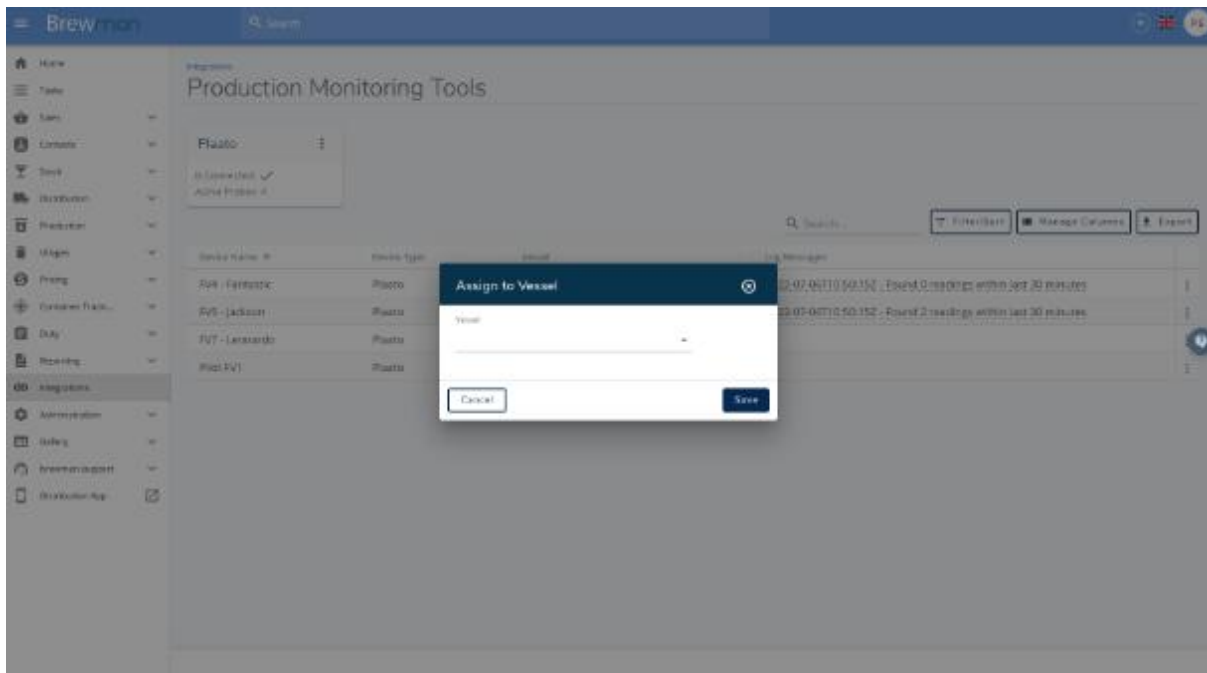


1. Go to Integrations > Plaato and click
2. On the next screen, there will be a box titled Plaato. **Click the Ellipsis button (3 Dots)** followed by **Register**. A prompt will appear asking for your **API Key** from the **Plaato API**. You should access the Plaato API by signing into your Plaato Account and following this path: **Sign into Plaato > Account > API Tokens > Generate API Tokens** (Only users with Admin privileges would be able to generate an API Token)
3. Input that API Token/Key and click **Save**.

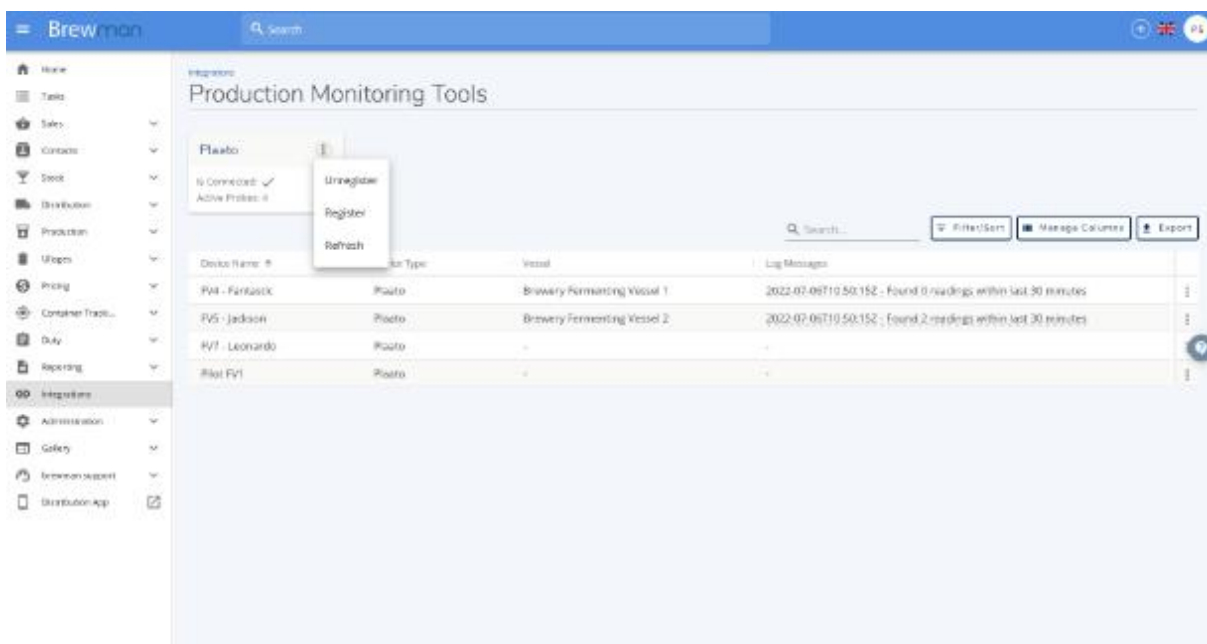
After your API Key is entered, this will take you to a page that lists your active Plaato Pros and list them on the grid.



On this Plaato screen, you can assign the probes you have to specific vessels within BrewMan. Click on the **Action button (3 dots)** and click **Assign to Vessel**. Now choose the vessel you wish this probe to be linked to.



Any assemblies in vessels linked to probes will then update every 15 minutes with any readings taken by Plaato Pro. The data will be found under **Quality Control Tests**. The test data can only be seen in the quality tests once a vessel is linked to a probe, not retrospectively. All of your information will also be recorded on your Plaato portal. If you have **Added** or **Removed** probes, click on the **Action button (3 dots)** and click **Refresh**. This will unlink any probes that have since been removed or add more probes that have been added to your Plaato portal.



9.12 PLAATO Pro API

Plaato Pro provides a rest API that can be used to connect it to third party applications. To learn more about our available Plaato Pro API, please view our documentation [here](#)

Generate an API Authentication Token/Key

Please note: To generate a Plaato Pro API Authentication Token/Key, you will need to have admin user privileges on your account.

1. Log into your Plaato Pro Account
2. Click on your profile image on the top right corner of your screen and select **"Accounts"**
3. Go to API Tokens and click on **"Generate API Token"**

10 Troubleshooting

10.1 General troubleshooting

Problem	Actions
PLAATO Pro doesn't turn on	1. Replace the batteries 2. Turn the device OFF and press and hold reset for 20 seconds 3. Try turning the device back on If the actions above fail, please contact PLAATO.
The Specific Gravity is not accurate	Ensure the steps in section "1.1 How to get accurate readings" are followed. Contact PLAATO if the problems persist.
Data is missing from the Cloud	Contact PLAATO support
Lost connection to Cloud	Connector 1. Ensure that the 3 LEDs are lit on the Connector 2. Check that the ethernet cable is connected to the WiFi router 3. Ensure that the WiFi router has connection to the internet 4. Restart the Connector by disconnecting the power chord for 30 seconds 5. Move the Connector closer to the Pro Pro 1. Ensure that Pro is turned on and that the batteries are not empty
Inaccurate temperature readings	The use of long (normal) T-connectors can cause the temperature to be inaccurate. Please contact PLAATO to purchase shorter T-connectors.
Calibration is needed	Please contact PLAATO support if a calibration is needed. Some adjustments to the calibration constants can be remotely updated if needed.
Device serial number identification	The QR-code engraved on the steel is the device serial number.

PLAATO support is available at support@plaato.io

10.2 LED modes

Type	Error	Description	Picture
WiFi	No SSID	This error will be displayed by the device if it is not able to find the SSID of the Plaato Connect. Potential Issue: • Plaato Connect to far away from the Plaato PRO • Plaato Connect not setup correctly • Plaato Connect does not have correct SSID	
WiFi	Wrong Password	There are multiple reasons for the device to unexpectedly disconnect from the WiFi access point. Potential Issues: • Plaato Connect to far away from the Plaato PRO • Plaato Connect does not have correct password credentials	

10.3 Current firmware version

PLAATO Apps on mobile

1. Open "Devices"
2. Choose your device
3. Press the gear-symbol in the top right corner
4. Firmware version is listed, together with Battery level, WiFi Strength, and barcode.

PLAATO Web App

1. Open "Devices" and "List Devices"
2. Select the device
3. Press "Details" in the top bar
4. Firmware version together with other device data is available in the list

10.4 Troubleshooting the Pro Connector

Verify connection to Cloud

1. Launch your Plaato Pro App
2. Tap on "Devices"
3. All devices still connected to Plaato Cloud will display this WiFi Favicon. It will be displayed right by the battery level icon.
4. Devices that have lost connection to Plaato Cloud will have a "No WiFi connection" symbol, as displayed here.

WiFi strength

Low WiFi strength can cause readings to not be transmitted to the Cloud and the battery consumption to increase.

1. The WiFi strength can be found in the PLAATO App:
Devices -> Choose Device -> Gear symbol in top right corner -> WiFi strength is listed
2. WiFi strengths above 50% is satisfactory

How to increase the WiFi strength

1. Move the Connector closer to the fermenters / Pro's
 - a. Change to a longer ethernet cable if the supplied one is of insufficient length
2. Remove cables and electronic equipment in close proximity to the Connector
3. Install the Connector 50cm / 20" higher up. Small changes in installation location can increase the WiFi strength significantly

Reset the connection

Disconnect and reconnect the power to the Pro Connector and check if the Pro reconnects. If the issue persists, please write to us at support@plaato.io.

11 Other

11.1 Repair and return

The device may only be repaired by PLAATO Technologies. Please get in touch with a representative for more information.

11.2 Disposal



This marking on the product or on its packaging illustrates that, under European Directive 2012/19/EU governing used electrical and electronic appliances, this product may not be disposed of with normal household waste. You are responsible for disposal of this equipment through a designated waste electrical and electronic equipment collection. To determine the locations for dropping off such waste electrical and electronic, contact your local government office, the waste disposal organization that serves your household or contact PLAATO to learn more.

11.3 Return

Please contact a PLAATO representative for guidelines on how to return the device.

11.4 Trademarks

Tri-Clamp® is a registered trademark of Ladish & Co., Inc., Kenosha, USA.

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IC Caution:

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

- (1) This device may not cause interference; and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

To maintain compliance with RF exposure guidelines, this equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Pour maintenir la conformité aux directives d'exposition aux radiofréquences, cet équipement doit être installé et utilisé avec une distance minimale de 20 cm entre le radiateur et votre corps.

FCC WARNING

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

To maintain compliance with FCC's RF Exposure guidelines, This equipment should be installed and operated with minimum distance between 20cm the radiator your body: Use only the supplied antenna.