

Graco Trace[™] User Guide

Graco Trace is a cloud-based platform allowing customers to gather information from Graco's cellular-based automatic lubrication pumps, providing key insights into pump performance. Customers gain peace of mind by knowing that their pumps are performing to expectations, if pumps are low on lubricant and require filling, and when a malfunction may occur to proactively solve issues before potential equipment damage.

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Keywords

Organization

o A set of devices, users, Groups, and templates

User Account

- A user's personal account
- o Contains user's name, email address, phone number
- A user account can be associated with multiple Organizations

Group

- An assortment of devices and users
- Definition of Groups is up to the Admin that creates the Group

UID

- Unique ID linked to a device
- Commonly this is also the device's IMEI
- For Example, the G3 has this UID available in two places
 - On its physical label
 - In the menu SYSTEM -> CELLULAR -> VERSION INFO as IMEI

Roles

- A role is a permission level given to users on the Organization
- Each level has more permissions than the previous
 - User
 - Technician
 - Admin
 - Owner

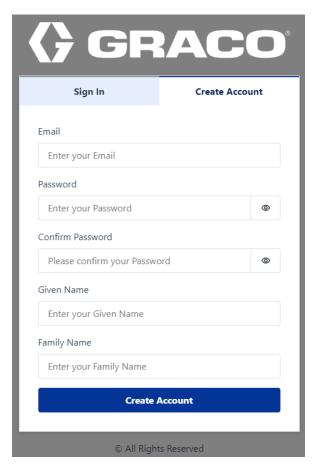
CSV

 Comma-Separated Value formatted file. This can be opened by any spreadsheet application for viewing.

Getting Started

Create User Account

Access **Graco Trace** at https://glc.gracotrace.com in your web browser. If you have not used **Graco Trace** before, you will need to create a new user account on the login page.



Note that phone number is not included in creating an account.

To add a phone number, navigate to User Settings after logging in.

IMPORTANT: The email address you enter cannot be changed after creating your account.

See Existing Organization Information

If you are trying to join an existing **Graco Trace** Organization, contact the owner or an admin for that organization and ask to be invited. If you belong to no Organization, your screen will look like the image below.

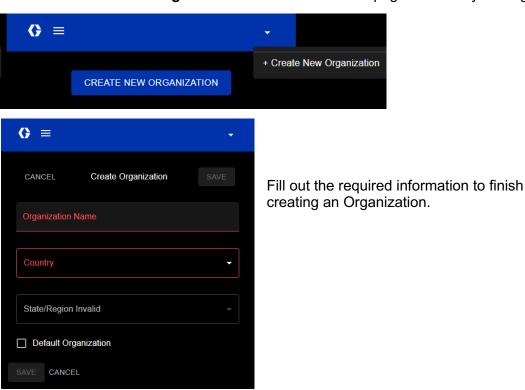


Organization Select is blank if user is not part of an Organization.

On this page you have the option to create a new Organization or receive instructions to be invited to an existing Organization.

Create Organization

Select the Create New Organization button on the main page to create your Organization.



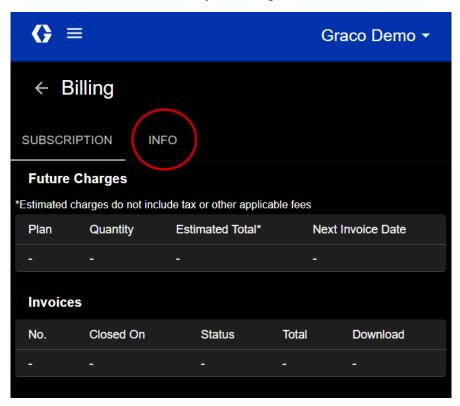
Setup Billing

IMPORTANT: Before devices can be added and activated on your Organization, billing must be setup.

Use the Menu button to access billing screen for your Organization.

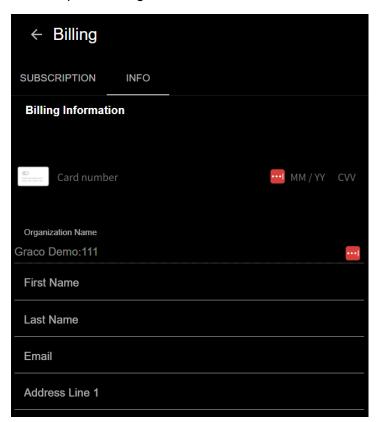


Click on the **INFO** tab to enter your billing information.



Enter Billing Information

Enter required billing information. Fill out all information.



Subscriptions

Graco Trace offers two subscriptions: Monthly, and Yearly. This will define how often you will get charged for access to your device(s) data. The subscription is per device. Please contact Graco Customer Service or your Graco Sales contact for current pricing information for **Graco Trace**.

Please note that once you select your subscription it can only be changed if you deactivate all devices.

You will not be charged until you activate devices for your Organization.

Navigation

Application navigation



Selecting the Organization Name will allow navigation between Organizations.

Pressing the menu button on the toolbar will bring up the navigation tab.

My Devices

List of all devices in the Organization in the same Group as you

Configurations

- o Create and manage configuration templates to be loaded onto a device
- Only available if you have technician permissions

Groups

- List of all Groups in the Organization
- Only available if you have Admin permissions

• Organization Management

- Manage all users and devices on the Organization
- Only available if you have Admin permissions

Billing

- Add or edit billing information
- Review subscription details, invoices, and credits

User Settings

Manage your personal user settings

Notifications

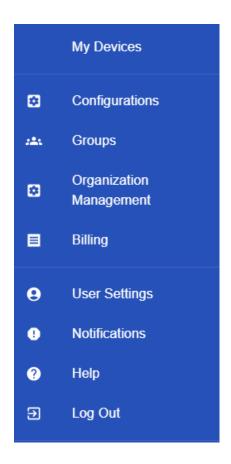
 Manage notification settings for all your Organizations

Help

Helpful links

Log out

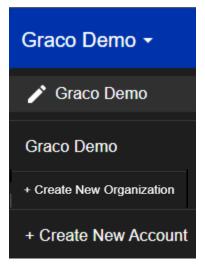
Logs out of user account



Organization Navigation

The Organization select dropdown will provide the following options:





Edit

- Change details of the Organization
- Only available if you are an Admin or Owner

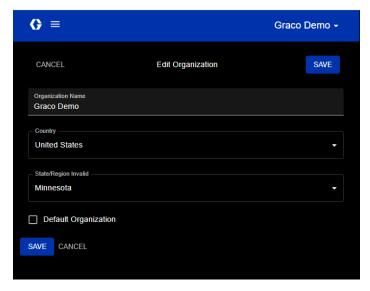
• Organization List

- A list of all Organizations you are part of
- Select an Organization to view it

• Create New Organization

- You can create a new Organization
- See Create Organization for details

Edit Organization

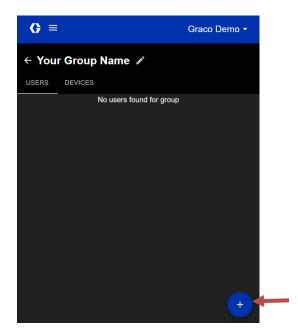


You can change the Organization's name, country, and state/region.

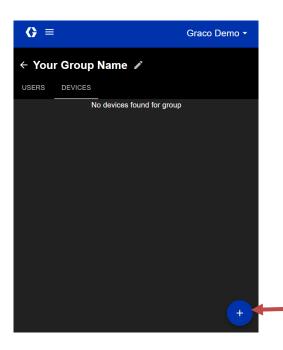
Computer VS Mobile

There are some key differences to the design of the website depending on if you are using a computer monitor or a mobile device. The main difference is the location of the **ADD** buttons on the Main page, Groups page, Group Users/Devices page, Organization Manage page, and Configuration Templates page. Instead of the button being in the toolbar at the top of the page, it will be a floating action button at the bottom of the page.

In the **Group Users/Devices** page, the button for add user and add device is in the same position, though on different tabs. It may appear as the same button but performs different actions.







Device List – Add Device

My Devices

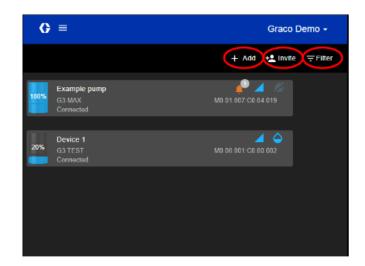
My Devices is the main view that gets loaded when you log into **Graco Trace**.

This page displays a list of all devices you have permission to view in the current Organization. The list is made up of cards displaying information about each device. Selecting a card will navigate you to that device's details page.

Here you can add a device to the Organization and invite others to the Organization.

Card Info:

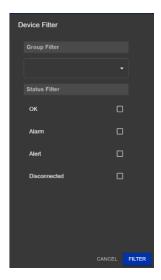
- Tank Level
- Device Friendly Name
- Device Type
- Connection Status
- Alert/Alarm state
- Number of alerts/alarms
- Signal Strength
- Firmware Version



Filtering

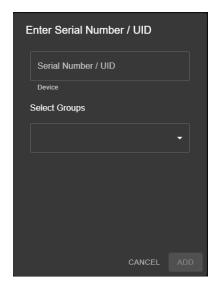
Devices can be filtered by

- Groups
- Device Status
 - OK Devices functioning normally and connected
 - Alarm Devices that are in an alarm state
 - Alert Devices that have an alert state
 - Disconnected Devices that are disconnected



Add Device

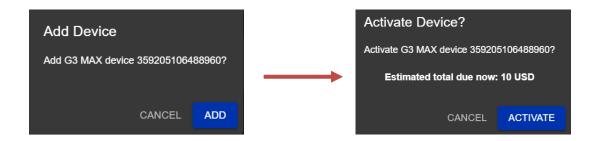
IMPORTANT: Billing Information must be provided prior to adding devices to your Organization. Selecting **ADD** will prompt you to add a device to the Organization.



Enter the device's UID and select which Groups to add them to. The UID of a device is found on the product serial label.

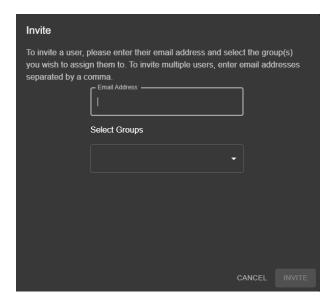
You can only add a device to an Organization if it is not already part of another Organization.

IMPORTANT: If your user account is a member of multiple Organizations, be sure to select the correct Organization from the top right corner of the screen before adding the device.



Invite User

Selecting **INVITE** will prompt you to invite a user to the Organization or Group.



You can enter an email address of a user either not in the Organization, or currently in the Organization. If the user is not in the Organization, they will be added to the Organization. Otherwise, they will be added to the selected Groups.

You must have **INVITE** permissions to a Group to invite users to it.

You can invite multiple users at once by separating them with a comma (e.g. user1, user2, user3, ...).

Device Details

This screen displays various information about the device. Some of the information includes tank level, status, certain configuration settings, device name/UID, and firmware version



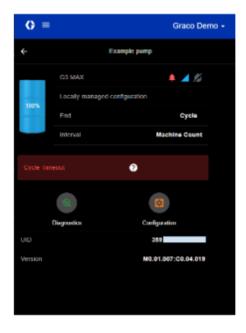
This depicts a device that is operating normally.

The **Diagnostics** button will display the metrics and events of the device.

The **Configurations** button will display the configuration settings on the device.

On **Alerts and Alarms**, select the Info icon ("?") for more information.

In Alert



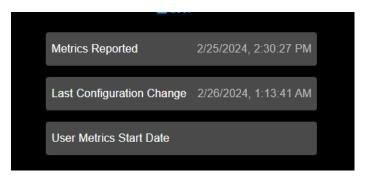
In Alarm



Diagnostics

View operation metrics and events for a device.

Metrics



Metrics show a detailed list of statistics related to the device. This includes number of lubrication events, number of alerts/alarms, and temperature.

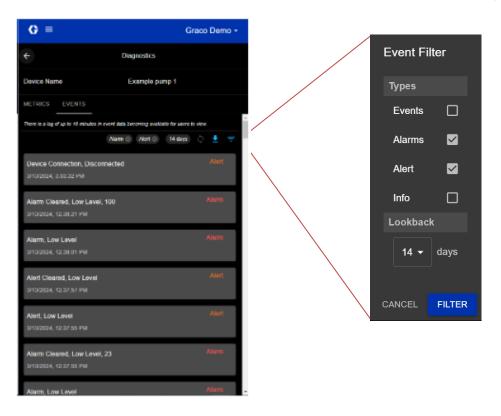
See Metrics Definition for more information about individual metrics.

Metrics Definition

Metric Name	Definition
Lubrication Events	The number of times a lubrication event was completed successfully.
Lubrication Run Time	The total amount of time the system has spent lubricating.
Cycle Alarms	Count of Cycle Timeout alarms.
Pressure Alarms	Count of pressure timeout alarms.
Low Level Alarms	Count of low level alarms.
Low Level Alerts	Count of low level alerts.
Other Alarms	Count of alarms without a unique counter.
Alarm Time	The amount of time spent in alarm.
Powered Up Count	The number of times powering up.
Pump Activated	The number of times a lubrication event started.
Manual Lubrication Event – UI	The number of times a lubrication event was started from the front panel.
Manual Lubrication Event – Remote	The number of times a lubrication event was started by a remote manual run button.
Average Lubrication Time	The average time in seconds for a lubrication event to complete.
Average Duty Cycle %	The average duty cycle across multiple lubrication intervals.
Max Duty Cycle %	The maximum duty cycle observed.
Pump On Current	Measured current from last lubrication event.
Motor Current Average	The average motor current across multiple lubrication events.
Motor Current Max	The max motor current observed.
Supply Voltage	The latest supply voltage measurement.
Temperature	Latest internal temperature reading.
Temperature Min	Lowest internal temperature reading observed.
Temperature Max	Highest internal temperature reading observed.
Temperature <range>, Hr</range>	Used to create temperature histogram. Represents the number of hours spent at a given temperature range.
Pump Current <range>, Hr</range>	Used to create motor current histogram. Represents the number of hours spent at a given temperature range.

Events

Events show a detailed list of alarms, alerts, and state changes. You can filter the list by event, alert, alarm, or info. You can download the list of events as a CSV format (.csv) file.



Configurations

You can remotely manage the settings on the device if it is set to be managed by cloud. Otherwise, configuration settings must be modified on the device.

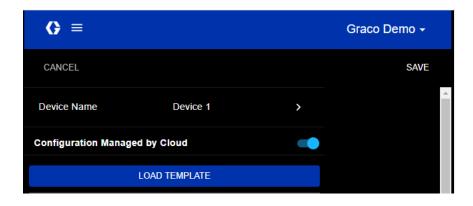
Viewing



With Group **WRITE** permission, or Organization technician permission, you may edit the configurations or name. Selecting the pencil icon will bring you to editing view.

Editing

If the device is set to be managed by cloud, you may modify the configuration settings remotely, or load a pre-constructed template. After loading a template, you are still able to make manual changes before saving.



Settings

Lock Code	PIN Code protects the modification of settings at the device. 0000-9999
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Interval

Interval Mode: Machine Count

Count	The machine count before device takes an action
Enable Timeout	Is there a timeout before machine count begins
Timeout	How long is the timeout
Action	What action does the device do after timeout occurs

Interval Mode: Timer

Mode Length of timer

Lubrication

Lubrication Mode: Timer

Time	Length of time device runs
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Lubrication Mode: Cycle

Count	Cycle count before lubrication ends
Timeout	Length of timeout

Lubrication Mode: Pressure Switch

Input type	Switch
Timeout	Length of timeout

Lubrication (continued)

Lubrication Mode: Pressure Sensor

Input type	Select sensor voltage range
Fullscale	The full-scale pressure value of the sensor. For example, a 5000 PSI sensor would set this value to 5000.
Units	Pressure units used to describe Full Scale and Target pressure. For the example above, you would select "PSI."
Target Pressure	Target pressure that ends lubrication event
Timeout	Length of timeout

Low Level

Note: the G3 Max comes pre-programmed from the factory for the correct level sensor. Graco recommends that you do not change the default settings.

Input Type: Sensor

Sensor Type	The voltage range of the sensor
Use Alert Threshold	Enable or disable Alert Threshold
Alert Threshold	Triggers Alert when fluid level goes below this percentage.
Use Alarm Threshold	Enable or disable Alarm Threshold
Alarm Threshold	Triggers Alarm when fluid level goes below this percentage.

Input Type: Paddle

Use Alert Threshold	Enable or disable Alert Threshold
Alert Threshold	A paddle count that triggers Alert. Highly recommend using default (10).
Use Alarm Threshold	Enable or disable Alarm Threshold
Alarm Threshold	A paddle count that triggers Alarm. Highly recommend using default (80).
Alarm Auto-Clear	Auto clear alarm state

Input Type: Float

Туре	Configure float to trigger Alert or Alarm
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Outputs

Vent Valve Output

Dwell Time	Seconds: Vent Valve will be held closed after the Lubrication Event ends. Intended to allow pressure to propagate through the lubrication system where needed. If the Vent Valve Output is being used with an air solenoid for a spray nozzle, the dwell time allows extra air to clean the nozzle after the fluid flow from the pump is stopped.

DIN Relay Output

Туре	Alarm, Alert, or both
Pulse Alarm State	Only used when Type is Alert & Alarm. Alert: Steady active output Alarm: Turns on and off once every second Example: If this output controls a light, the light is on for an Alert and flashing for an Alarm.

CPC Signal Output 1

or o orginar	CFC Signal Output 1		
Trigger	System Status, Level Status, Motor State		
Output	Active Low or High		
Туре	Alarm, Alert, or both		
Pulse Alarm State	Only used when Type is Alert & Alarm. Alert: Steady active output Alarm: Turns on and off once every second Example: If this output controls a light, the light is on for an Alert and flashing for an Alarm. Please Note: this example is for explanation purposes only, the CPC Signal output is low power and unlikely to be able to power a light or other alarm signaling device. Always refer to your hardware manual for installation.		

Outputs (continued)

CPC Signal Output 2

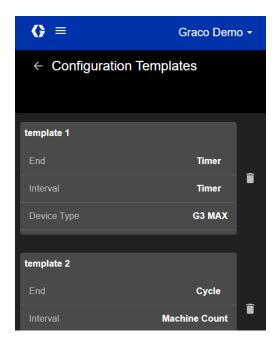
Trigger	System Status, Level Status, Motor State
Output	Active Low or High
Туре	Alarm, Alert, or both
Pulse Alarm State	Only used when Type is Alert & Alarm. Alert: Steady active output Alarm: Turns on and off once every second Example: If this output controls a light, the light is on for an Alert and flashing for an Alarm. Please Note: this example is for explanation purposes only, the CPC Signal output is low power and unlikely to be able to power a light or other alarm signaling device. Always refer to your hardware manual for installation.

Advanced

Prelube Enabled	Start lubrication event at power on
Startup delay Enabled	Delay pump from running at power on
Startup Delay	Length of startup delay. Ignored if Startup Delay is not enabled.
Lubrication Retry	How many lubrication events the device tries prior to entering an Alarm state. For example, when retry is set to 3. If a cycle lubrication event times out, the device will enter Idle and retry the lubrication event at the next interval. If it has failed to finish the lubrication event 3 times in a row, it will enter an alarm state. A successful lubrication event resets the count.

Configuration Templates

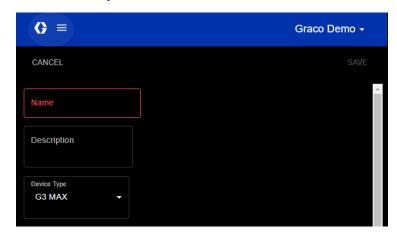
If you are a technician in the Organization, you can create configuration templates used to load premade configurations onto a device. Templates are limited by the selected device type (only such devices can load the specific template).



Template cards display basic information about a template, such as the template name, description of the template, end setting, interval setting, and the device types able to load the template.

View configuration settings at **Settings**.

Add Template



To create a new template you must enter a name, description, and device type.

By default, G3 Max is the selected device type.

See <u>Settings</u> in <u>Configurations</u> to see settings option. Note there are more options on the device configurations page than in the templates page.

Groups

A Group is an organized assortment of users and devices. It defines who can see what devices, and who can modify devices in the Group. As for what defines a Group, it is up to the creator of the Group. The Group could represent a location of users and devices, the name of a supervisor managing users and devices, or a specific machine with a pump and a user that manages it. There is an endless variety of ways to define a Group.

Example 1

- Graco
 - Engineers 1
 - John (WRITE, INVITE)
 - Sam (WRITE, INVITE)
 - Pump 1
 - Pump 4
 - o Lab 1
 - Sam (WRITE)
 - Smith (WRITE)
 - Pump 2
 - Pump 3
 - Testers 1
 - John
 - Smith
 - Pump 1
 - Pump 2

In this example, the Organization is Graco, and it has three Groups: Engineers 1, Lab 1, and Tester 1. John can see pumps 1, 2, and 4 but can only modify pumps 1 and 4; Sam can see pumps 1,2,3,4 and can modify each of them; and Smith can see pumps 1, 2 and 3, but can only modify 2 and 3. In this example, John and Sam also have INVITE permissions for Group Engineers 1. Meaning they can invite other users to the Organization, but only to the Engineers 1 group.

Example 2

- Graco
 - Factory 1
 - John (WRITE, INVITE)
 - Pump 1
 - Pump 2
 - Machine Press
 - Smith (WRITE)
 - Pump 1
 - Compressor
 - Sam (WRITE)
 - Pump 2

In this example the Organization is Graco, and it has three Groups in it. Factory 1 represents a section of the overall factory with John as its supervisor, and it contains all devices in his section. Machine Press is one of the machines in the factory and is managed by the worker Smith and has Pump 1 on it. Since Smith is running the machine, he has WRITE permission to Pump1, so he can manage the device on the machine. Compressor is another machine in the factory that is managed by Sam, so he can manage the device on the machine.

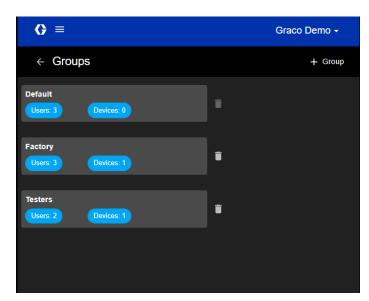
Example 3

- Graco
 - West Plant
 - All devices in the west plant
 - All users in the west plant
 - o East Plant
 - All devices in the east plant
 - All users in the east plant
 - North Plant
 - All devices in the north plant
 - All users in the north plant
 - South Plant
 - All devices in the south plant
 - All users in the south plant

In this example, the Organization is Graco, and each Group represents different plants in the Organization. Each Plant Group has all the devices and users located in the respective plant.

Groups Page

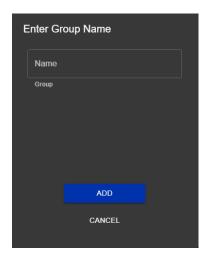
A list of all Groups in the Organization. You can only view this page if you are assigned as an Admin or owner in the Organization. The Group Details Card shows the name of the Group, and the number of users and devices in the Group. All Organizations have a "default" Group that can't be deleted. Select a Group to view more of its details.



You are only able to view devices on the **My Devices** page if the devices are in your Group. This applies regardless of your role in the Organization.

Create Group

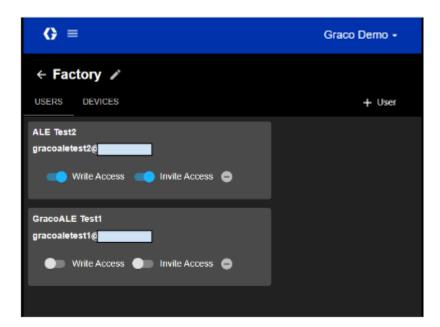
Selecting + Group will prompt you to create a new Group.



Group names need to be unique, as you will not be able to create a Group with an existing name.

Creating a new Group does not add you to it by default. You will need to add yourself manually.

Group Users

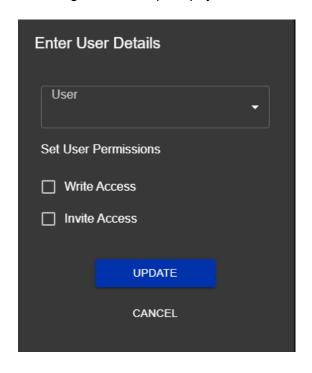


Here an Admin can modify the permissions a user has in the Group and Organization.

WRITE permission lets the user modify device name and configurations.

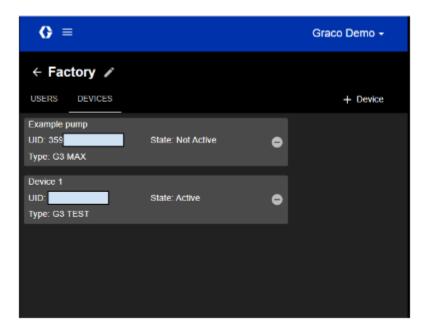
INVITE permission lets the user invite people to the Organization, and the Group.

Selecting + User will prompt you to add users to the Group.



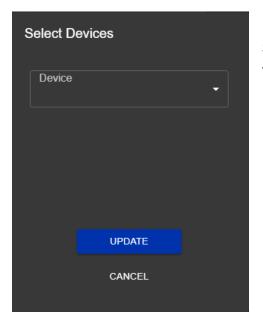
Select any number of Users in the Organization to add to the Group and provide them the permissions they require.

Group Devices



All the devices in the Group. You can only view devices that are in the same Group as you.

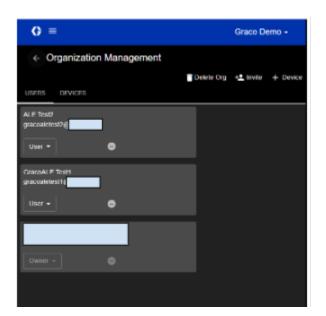
Selecting + Device will prompt you to add devices to the Group.

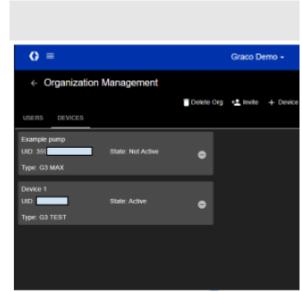


Select any number of devices in the Organization to add to the Group.

Organization Management

Here Admins and Owners can manage all the users and devices in the Organization. The role of the user can be modified, and users and devices can be removed from the Organization. Note that Admins are unable to modify the role of an Owner.





See <u>Invite User</u> for information on how to invite a user to the Organization. See <u>Add Device</u> for information on how to add a device to the Organization.

The "Delete Org" option is only available the Owner(s) of each Organization. You delete the Organization only after you have removed all Groups (except default), all other users, and all devices from the Organization.

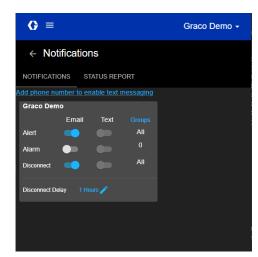
Organization Roles

There are 4 levels of roles for a user.

- User
 - o Access to view the device list and device details
 - o Can modify device settings if they have WRITE permissions in the Group
- Technician
 - Access to view and create configuration templates
- Admin
 - Access to view and create Groups
 - Can assign/remove Users and devices to Groups
 - Access to view Organization details
 - Can modify User role
- Owner
 - Access to Organization billing
 - Can delete the Organization

Notifications

Setup notifications that you wish to receive for your viewable devices. Here you can manage how you want to receive notifications for all Organizations you are members of. There are four kinds of notifications a user can get: Alerts, Alarms, Disconnects, and Status Reports.



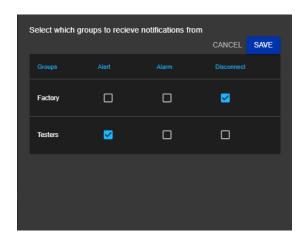
Alerts, Alarms, and Disconnects Notifications

When a device enters an alert or alarm state it will send notifications to anyone that wants to receive them. When a device disconnects it will notify users after the set delay time. The purpose of the delay is to let the device try to restart before trying to send a notification to the user.

Users can choose how they will receive notifications. The disconnect delay determines when the User will receive a

notification after a device is disconnected. Delay can be set to 1, 4, 6,12, 24, 48, or 72 hours.

You can only receive text messages if you enter a phone number. Selecting the reminder text will navigate you to the user settings page to enter a phone number.



Users can further filter how to receive notifications by Group. Only devices in the Groups selected will send notifications to the user.

Example Alert and Alarm Notification:

Hello <user name>,

Organization <Organization Name> pump <Pump Name> has an <alarm/alert> <alert/alarm name>

Log into <u>Graco Trace</u> for more details.

Thank you!

Disconnect Notification Example:

Hello <user_name>,

<Organization Name> detected the following pumps disconnected:

<Pump Name 0>

...

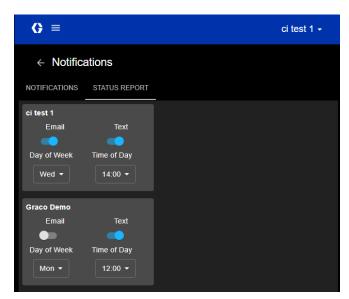
<Pump Name N>

Log into Graco Trace for more details.

Thank you!

Status Report

A status report details how many devices in the Organization are operating normally ("OK"), in Alert, in Alarm, or Disconnected. The report will also have a CSV format (.csv) file containing more details about each device.



Users can select how to receive status reports, and when they will receive them.

Status report notification looks like the following:

Hello <user>

Organization <organization name> status report attached

<number> Total devices

<number> devices OK.

<number> in Alert.

<number> in Alarm.

<number> Disconnects

Log into Graco Trace for more details.

Thank you

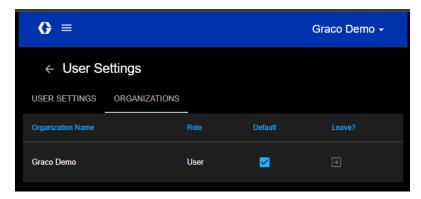
User Settings

User Profile

Includes the User's email address, password, first and last name, phone number (optional), preferred language, and whether daylight saving is enabled. You are not able to edit your email address after creating your user account.

Organization details

A list of all Organizations to which you belong. Displays the Organization's name, your role in the Organization, the option to make the Organization default, and the option to leave the Organization

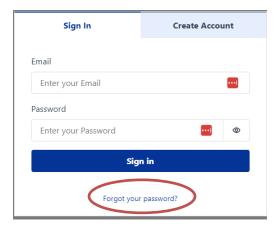


You are not able to leave an Organization that is set to your default, or if you are the only owner in an Organization.

Troubleshooting

Unable to login

• Use the Forgot your password? method at the bottom of the login screen



Can't See My Device

- Confirm the device is added to the Organization (Organization Management Page)
- Ensure that the device and your user account share at least one Group (Groups Page)

Device connection

- Confirm that the device is added to your Organization and activated
- Check for a configuration mismatch on device details page
 - Set to locally managed to continue troubleshooting
- Check the device physically for cellular connection
 - Try to improve cellular service in the location of the device by installing a cellular signal booster
- Power cycle the device
 - o This will allow the device to reconnect to cellular and re-sync to the cloud
- Check coverage map for cellular coverage (https://aeris.cellmaps.com/?map=104
 only select LTE-M)
 - Coverage in the area doesn't prevent the environment from interfering with the signal
 - If the device is indoors or in an enclosed space it may have weaker signal than outdoors with line of site to a tower

Configuration Mismatch

- Set the device configuration to locally managed and allow the device to sync (only requires a few seconds if currently connected). Then attempt to set the pump to the desired settings
 - This should clear out any mismatch settings that may be preventing the device from syncing correctly

My Configuration Template Isn't Available

- The configuration template may not be compatible for the device you are using
 - Example. Your configuration is using a pressure sensor, but the targeted device does not support pressure sensors
 - o Create a new, compatible template, or configure the device directly

Can't Edit Device Configuration

 You must have write access to the Group, or Technician or higher access to the Organization. Contact the Organization Admin or Owner to get access

Can't get to Configuration Templates

 You must have Technician or higher access to the Organization. Contact the Organization Admin or Owner to get access

Firmware Update

- It is recommended to run the latest available firmware for both the cellular and main subsystems of your device
- If Over the Air updates are not working correctly, review the device's manual or contact Graco Technical Assistance for alternate update methods
 - o For example, the G3 has a method to update firmware with a USB Flash drive

Status Report Time

- Review your User Settings, if you live in an area that observes daylight savings ensure that the feature that handles daylight savings is enabled
- Navigate to Notifications -> Status Report, edit and save your report settings again
 - This will overwrite whatever the previous settings were utilizing the current time zone detected by the browser

Missed Notification

- Check your junk mail, and consider whitelisting email from app@gracotrace.com
- Confirm your phone number is correct in your User Settings
- If you have received multiple notifications within 5 minutes, the system will start to throttle messages to you. This is intended to prevent an overwhelming number of messages to be sent
 - If you get an alert or alarm notification, it is highly recommended you review the details at https://glc.gracotrace.com as soon as possible.

Can't Delete Organization

- Check groups and confirm that only the "default" group remains
- Check Organization Management, deactivate and remove all devices
- Check Organization Management, remove all other users
- If all these tasks are complete, try to delete the Organization again