

Creating your MasterflexLive account

This guide will show you how to create an account and how to add devices.

Follow steps 1-5 to create an account.

Follow steps 6-9 to add a device.

Follow step 10 to access the pump controls.

1 Go to masterflexlive.coleparmer.com or download the app from the iTunes Store or Google Play.

2

Enter info and click **Create Account**

3

Enter info and click **Register**

4

Click **Back to Sign In**

5

Enter your details and click **Sign In**

Page Navigation

Click to view/hide the left hand menu bar

Select **Account Settings**, **My Profile** or **Sign Out** from the drop down menu

6

- 1) Plug in power cord.
- 2) Connect drive to an Internet-ready network using the RJ-45 connection port on the rear of your device.
- 3) Power on the drive—drive is now ready to connect to your account.

7



Before starting step 7, ensure your device is connected to the Internet via the Ethernet (RJ-45) port on the rear of your device.

8

Locate device ID (MAC address) on the back or top near back of unit. Example of address format: X8:80:39:EF:87:81

9

After completing steps 1 through 9 just click on the name of the pump that you wish to monitor or control and you will open the Control Panel. Toggle from Local Mode to Remote Mode to activate the pump control settings.

If you are unable to establish a connection to the device(s) added to your account, your local network may have a firewall preventing the pump from communicating to the Internet. If this is the case, you may need to have your IT department or network administrator modify the security settings in the network gateway or router, or open up these ports: 1883, 8883, and 31768. Consult FAQ document for additional information.

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Frequently Asked Questions

SYSTEM REQUIREMENTS

Web interface to cloud: Is there a recommended browser to be used?

Supports Chrome 55+, Safari 11.1.1, Firefox 58+, Edge, and Internet Explorer 11

Mobile app interface to cloud: What operating systems and versions are supported?

Supports iOS 10 forward and Android 6 forward

NETWORK AND DEVICE CONNECTIVITY

Network connection tips:

To get started, create an account with MasterflexLive™. Then register one or more pump drives (devices) to your account. The associated **Quick-Start Guide** provides step-by-step instructions for creating an account and registering devices to your account.

The MasterflexLive drives require a live external internet connection. You may simply need to connect your drive into your network using a standard CAT 5 ethernet network cable (do not connect the drive to a PC, it must be cabled directly into a network connection). You should then be able to access the pump remotely from the MasterflexLive website masterflexlive.coleparmer.com or the iOS or Android MasterflexLive apps.

If this does not work:

- Verify you have entered the Mac address correctly; the Mac address (also referred to as the Device ID) appears on a sticker on the top or back of the drive. The Mac address should be entered without colons and with all letters in upper case.
- Check if you have a network that requires an IP address to be manually given to the pump (uncommon; most are DHCP/Dynamic networks).
- Check if you have a network firewall preventing the pump from communicating with the MasterflexLive website.

To troubleshoot:

- Run the installer “MasterflexToolsInstaller-Windows-x86-v2.0.0.exe” included with the thumb drive.
- You will see three programs installed. Only run the MasterflexLive Network Tool v1.0.0.
- Open the tool and select the “Search Pumps” button.
 - a. If the pump is found, you should be able to connect to the Masterflex live website.
 - b. The pump uses Dynamic Host Configuration Protocol (DHCP) by default as its IP address assignment method. If your network gateway or router does not have DHCP



enabled, you need to change the IP assignment to Static, and manually enter an IP address. Changing DNS Server 1 and 2 will cause the pump to use public DNS servers.

- c. It is possible you have a firewall preventing the pump from communicating to the outside network. If this is the case, you may need to contact your IT department or network administrator to modify the security settings in the network gateway or router, or open ports 1883, 8883, and 31768.
- If the pump can't be found using the MasterflexLive Network Tool, an issue might be occurring with the drive or the network cable/junction you are connected to.

Can a device be manually configured with a static IP address?

Yes. Run the installer called MasterflexToolsInstaller-Windows-x86-v2.0.0 from the included flash drive or contact Cole-Parmer Technical Services at 1-800-323-4340 (International +1-847-549-7600) or email techinfo@coleparmer.com

The default Internet Protocol (IP) assignment method for the pump is Dynamic Host Configuration Protocol (DHCP). Once connected to a network, the pump will have its IP configuration assigned automatically, with the condition that the network gateway also has been DHCP enabled. By using the MasterflexLive Network Tool, the pump can be configured for networks that use static IP assignments.

Can MasterflexLive pumps be used on a wireless network?

The pump drives do not include built-in wireless capability however, they are compatible with universal wireless adapters designed to connect Ethernet enabled devices to a wireless network or hot spot. (Be sure that any model is compatible with your existing wireless network and includes a RJ45 ethernet port to connect to the MasterflexLive drive).

CLOUD/SECURITY

Where is data stored and protected?

Customer device data is stored in a SQL Azure database. Report data resides on the Microsoft Azure Platform. Login passwords are not stored in the database. Only an MD5 hash of the password is saved. No user credit card information is stored in any MasterflexLive databases. Payment method information is managed in PCI compliant databases maintained by our subscription management vendor, Zuora. For more information on Zuora security, go here: <https://www.zuora.com/2018/01/25/zuora-revpro-ups-ante-security-compliance-achieving-soc-1-compliance/>.

How long is data available?

Customer device data is available for the life of the account.



What security measures are in place?

The Azure platform has received numerous certifications for compliance with various security and data privacy standards. These certifications can be found at <https://azure.microsoft.com/en-us/support/trust-center/>.

On January 3, 2017, Microsoft announced that Microsoft Azure has received HITRUST CSF certification which incorporates healthcare specific security, privacy and regulatory requirements from existing regulations such as HIPAA/HITECH, PCI, ISO 27001 and MARS-E.1.

In addition to the security of the Azure platform, MasterflexLive:

- Implements additional security in that all communications between MasterflexLive devices or users and the cloud is encrypted using the HTTPS protocol
- Uses OWIN authentication
- Uses a role-based authorization scheme that restricts app users' access to functions based on their role (Admin/User)
- Data queries are partitioned by account ID, to ensure that no user will ever see data from another user account. Each MasterflexLive device is uniquely identified and validated by the cloud service for it to connect.

Is MasterflexLive data storage encrypted?

No. Data contained in the MasterflexLive data stores is not encrypted. However, all data communications between MasterflexLive, devices, and users are encrypted using SSL/TLS 1.2 under HTTPS. MasterflexLive uses SHA-2 encryption based on 2048-bit digital certificates.

Is data transmission also encrypted during transfer?

Yes. Data transmissions are secured via HTTPS using 2048-bit digital certificates and SSL/TLS 1.2 secure socket protocols.

Are emails and other electronic communications encrypted?

Emails sent from MasterflexLive are not encrypted because most email users do not use email encryption technologies like PGP. Similarly, the SMS messages sent by MasterflexLive are not encrypted. All communications between users/devices and the cloud service are encrypted via HTTPS.

What would prevent someone from hacking into the Cloud?

In addition to the security measures mentioned above, MasterflexLive devices, unlike the IoT devices that have been exploited in many recent security incidents, connect to Wi-Fi networks passively, making the device virtually impossible to compromise. See IoT Security post for more information.



What is the defined disaster plan?

The cloud services and associated infrastructure for MasterflexLive is geo redundant and can be spun up in any Azure data center worldwide in a matter of minutes. Microsoft also guarantees a 99.63% uptime as part of its Service Level Agreement on the weakest link in the MasterflexLive infrastructure. The SQL Azure database backups are retained for 35 days. Databases restore points can be from 5 minutes to 35 days back.

Does MasterflexLive use the same type of firewalls to protect users from unauthorized access?

MasterflexLive infrastructure is protected by industry-standard firewalls maintained and updated by Microsoft®. OAuth security protocol is used for authentication and authorization of users. Role-based authorization is employed in the service layer to prevent unauthorized users from accessing any account level administrative functions.

How are data storage and data transfer securely monitored?

Security monitoring is done using tools in the Azure Security Center. Learn more at <https://docs.microsoft.com/en-us/azure/security-center/security-center-monitoring>

What active protections/tools are used in the app background?

OAuth based authentication, role-based authorization, and security monitoring via Azure Security Center. Security alerts are sent to Admins for security events.

What quality reviews, alarms or corrective actions are in place in case a security breach occurs?

In the event of a security breach, the development team in conjunction with Microsoft® administrative personnel, will perform audits to determine the cause of the breach. In the event a system vulnerability is exposed via testing, hotfixes are deployed as soon as possible to mitigate any exposure.

How is data backed up or recovered?

Data is backed up via live backup features in SQLAzure. Data snapshots are available from five minutes to six weeks under our current service plan.

What safety procedures are in place for recovering customers' data?

Azure recently completed an ISO 27001 renewal audit to the 2013 version of the standard, following the ISO 27002 best practices for comprehensive information security and risk management. Learn more at <https://azure.microsoft.com/en-us/blog/microsoft-azure-reaches-new-industry-leading-cloud-compliance-milestones/>



Data sharing

Data storage in MasterflexLive is partitioned across account tenant boundaries to isolate customers' data, so data sharing across accounts is not possible. Access to data within an account is controlled by the account Admins.

ACCOUNT SET-UP/ LOGIN/USER PROFILE

Password instructions

Password must contain at least six characters, one lowercase, one numeric and one special character.

Company name instructions

Only one company entity is allowed. Duplicate company names will not be allowed. Contact the name of a MasterflexLive local administrator (Admin) in your company. They can add you as an Admin or User.

How do I add multiple Admins or Users to the company account?

The first user to set up an account for the company is the first Admin. They can add a new User to the company profile and designate them as an Admin or User role.

Who can add/delete devices?

Admins can make edits, deletions and changes. Only Admins can add/delete devices from an account. Users can edit their own profile but nothing else.



ADMIN/USER-LEVEL ACCESS MATRIX

View Account	All Users	Add Group	All Admins	
Register Account	All Admins	Change Group Name		
Change Account Subscription Options		Delete Group		
Update Account Info		View Groups	All Users	
Deactivate Account				
Change Editable Pump Attributes (e.g. Group ID)	All Admins	Add User		
Add Pump	All Users	Delete User (Other)	All Admins	
Change Pump Operating Properties from Control Panel		Update User (Other)		
View Pump Non-editable Pump Attributes (e.g. MAC address, model info)		Update User (Self)	All Users	
Change Pump Operating Properties from Control Panel		Delete User (Self)		
View Notifications				
View Pumps			Update Program	All Admins
View Pump Status on Control Panel			Delete Program	All Users
			Create Program	
		View Program		
		Run Program		
		View Data History	Premium Admins	
		Request History Report	Admins	

ADDING A DEVICE (PUMP)

How can the device ID be found?

The Device ID is the pump's MAC address. The MAC address is on a label affixed to the top or rear of the pump drive.

How should I enter the MAC address?

The MAC address should be entered without colons or spaces. Also use uppercase letters.

Is there a defined PM (preventative maintenance) procedure?

See the operator's manual on the included flash drive for any required PM.

BASIC-LEVEL FEATURES AND FUNCTIONS

NOTIFICATIONS

How do I access notifications?

Notifications are controlled from the My Profile screen for each individual user. My Profile is accessed by clicking on your name in the upper right corner of the screen. You can choose to receive notifications or alerts via e-mail, push notification, or SMS text message. Any one or all of these can be selected.

PUMP USER	
Role	
<input checked="" type="radio"/> User <input type="radio"/> Admin	
User Information	
First Name *	Last Name *
Pump	User
Email *	
pumpuser@company.com	
Country Code	Phone Number
United States +1 ▾	(555)-555-5555
Alerts	
<input checked="" type="checkbox"/> Email <input type="checkbox"/> Push <input checked="" type="checkbox"/> SMS	

What operations or conditions will I be notified about? You will be notified about:

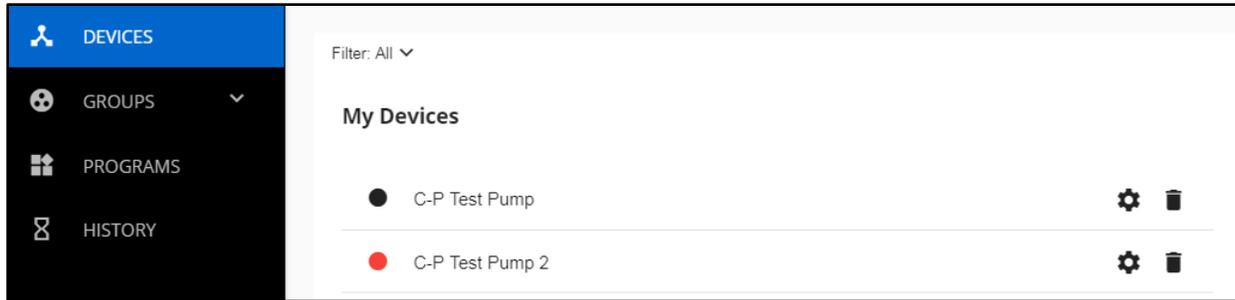
- Dispense on/ Dispense off (Start/Stop)
- Power interruption
- Front sensor trigger (activated either when pump head is opened or a leak detector senses fluid)
- Pump offline

GROUPING

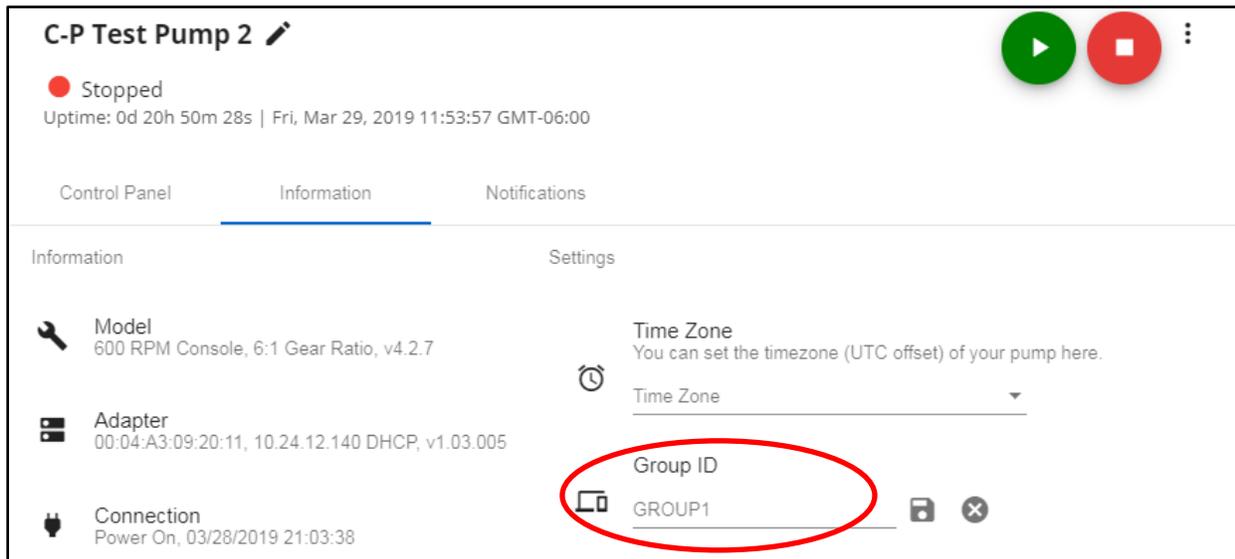
Grouping of devices or pumps gives you the option of controlling multiple pumps simultaneously under identical operating parameters. Once the pumps within a group are synchronized any change made to one pump in the synchronized group is immediately inherited by the other pumps in the group.

How do I create a group?

1. Click on the Devices tab on the left-hand side of the screen.
2. You will then see a listing of devices. To the right of the device name, you will see a cog. Left click on the cog. This will take you to the device's information tab. See screen on next page.



3. You can now assign a name to the Group that you would like the device to be a part of and enter this under the Group ID field.



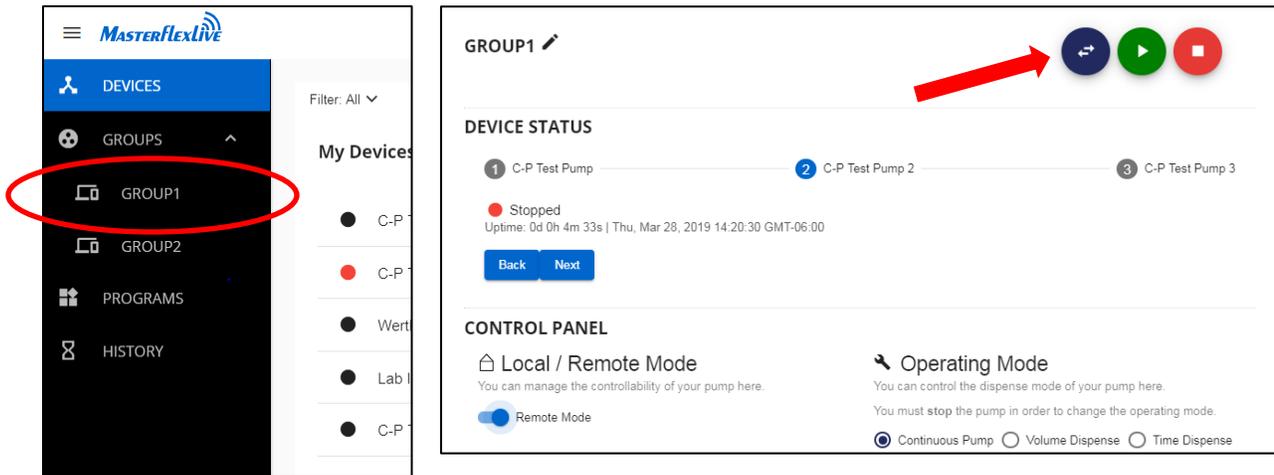
4. Once the Group ID is entered, click on the Save Icon to save. Follow the same procedure for other devices that you would like to add to this group. Please ensure that the Group ID is entered identically for each device. Additional groups can be added by simply adding a different Group ID name and assigning the same Group ID to those drives.

- A group requires at least two devices.
- A specific device can only be assigned to one group.
- Once the group is established, the group name(s) will appear under the Groups heading in the left sidebar

How do I transfer settings from one pump in a group to others in the group?

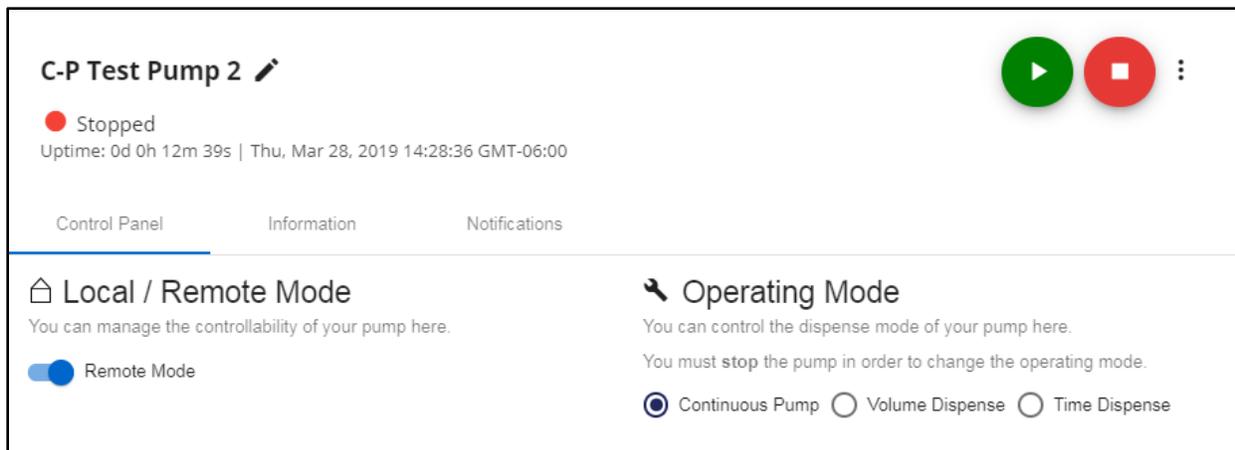
Once a group has been established, at any time go to the Groups menu in the left sidebar and click on the group you want to access. This will take you to the Group Control Panel. Select the pump you want to use as the “master” and click on the blue Sync button (with bidirectional arrows, adjacent to Stop/Start buttons). This will activate the sync between all the pumps in the

group. With the sync function activated, any change made to a pump in the group will be inherited by the others. The pumps can then be simultaneously controlled.



Can I operate pumps within a group independently?

Exit the Group control panel and go to the Individual Device Level control panel in order to operate that pump independently. Settings changed at the Individual Device Level will not be inherited by other pumps within the group. To reestablish synchronization, go to the Group control screen and click on the Sync button.



If I am in the Group control screen with pump #2 selected, and pump #1 experiences a front sensor trigger condition, will I see a warning?

No, you would need to have pump #1 selected in the Group screen or be at the Device Level control panel for pump #1. Notifications for the front sensor trigger will be sent to any user who has selected this option.

Can I run more than one group at a time?

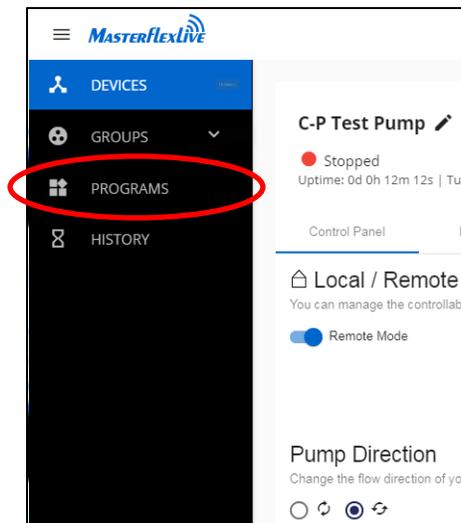
Yes, you can run multiple groups simultaneously.

If one pump in a group experiences a power interruption or front sensor trigger will all pumps in a group stop?

No, only the pump that experiences the power interruption or front sensor trigger will stop. The other pumps in the group will continue to operate. The stopped pump will need to be restarted once power is restored or the sensor condition is cleared.

PROGRAMMING

Operation of the pump device is accessed by selecting a specific pump from the Devices screen. This will take you to the Control Panel for that pump. Basic operations of the pump are controllable via this screen. Any changes to operating parameters in this screen will override previous settings. MasterflexLive gives you the option to create, save, edit, and recall programs or recipes through the Programs screen—selectable from the left sidebar.

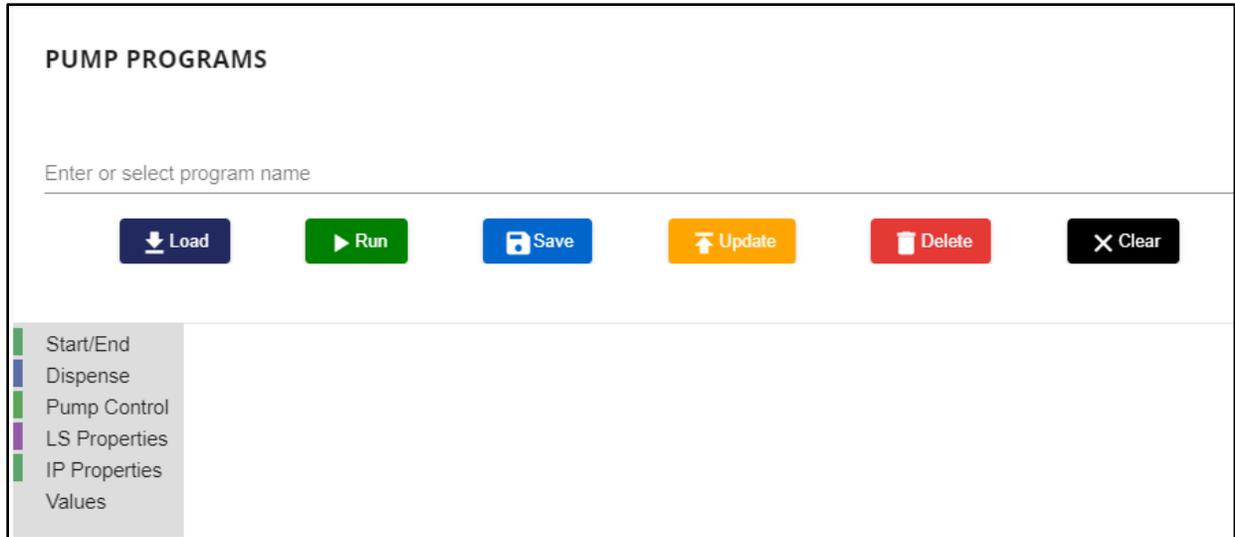


Where is the program window? Can I access via the web or mobile app?

You can access the programming feature by going to the Programs section from the main menu as pictured. The Programming feature is not currently available on mobile apps, but full functionality is available using the web app at masterflexlive.coleparmer.com, which can be accessed via a mobile device.

What types of programs can I create?

Program options include Continuous run, Time dispense, and Volume dispense. Programmable parameters are identical to those that are programmable via the drive interface (keypad).



What specific functions do the programming screen buttons perform?

Load calls up the program selected in the text field above.

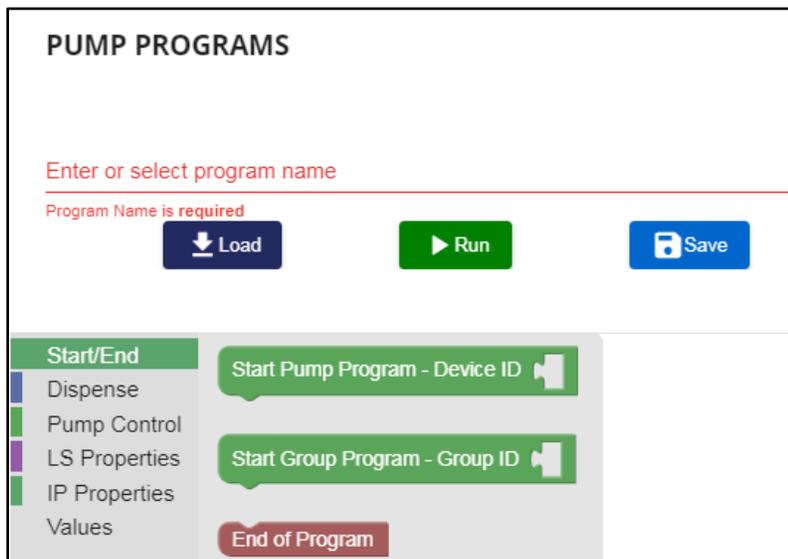
Run initiates the program that is currently on the screen.

Save allows you to save a new program.

Update saves changes you to make to an existing program.

Delete deletes the program currently loaded.

Clear removes all blocks or programs off of the screen.

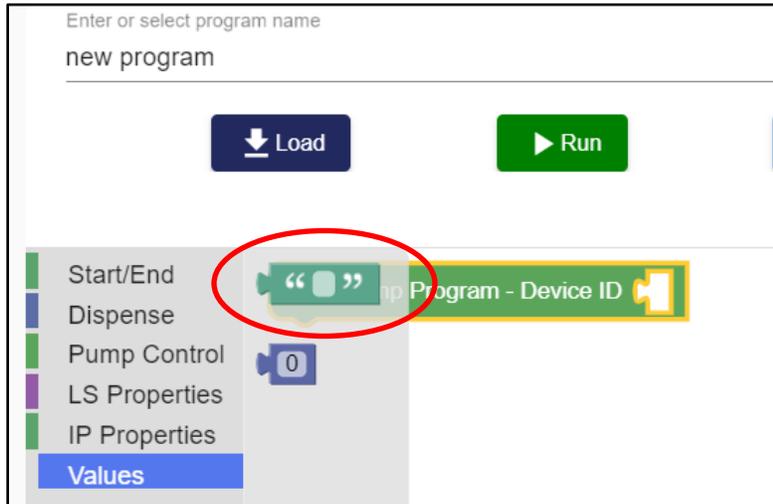


How do I create a program?

In the programming window, click on the “Enter or select program name” line and type in a name for your program. As you create and save programs, they will be accessible in a drop-down menu you will see when clicking on this same line.

Programs are built with a sequence of step/parameter blocks. Every program must have a start block and an end block in order to function. You

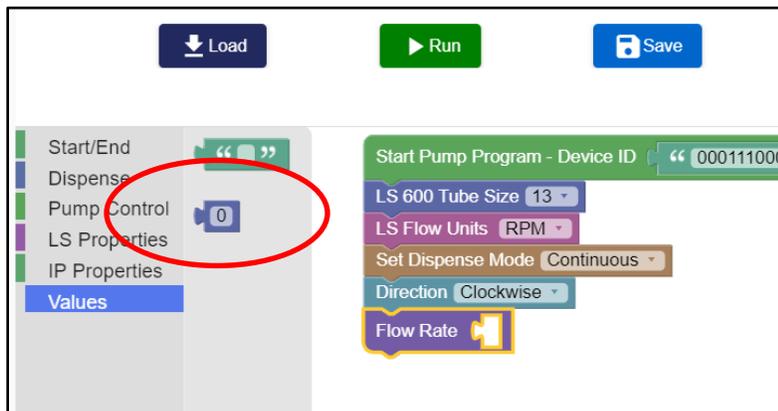
have the option of creating programs to control an individual pump or an entire group of pumps. Under Start/End click on either Start Pump Program—Device ID to create a program for an individual pump, or on Start Pump Program—Group ID to create a program for a pump group. When you click on a block, it will appear in the program field.



Complete the start block by clicking on Values and click on the green puzzle piece. Drag this to the window on the right side of the start block. It will drop into place. Enter the Device ID into this window between the quotation marks.

Programming data validation:
The Device ID (MAC address) entered into the Start Pump Program—Device ID block must match the Device ID for a device added under the operating account. Entry is without punctuation and is case-sensitive.

added under the operating account. Entry is without punctuation and is case-sensitive.



Continue to build the program by clicking on blocks under the various options in the left sidebar. Be sure to link each successive block to the previous block as shown.

The flow rate block requires the purple puzzle piece under Values for value entry.

Program types and examples

As noted, program types include Continuous, Time dispense, and Volume dispense; examples of each type appear on the next page. Note the specific blocks and their sequence used to build each type of program.

Load Run Save

- Start/End
- Dispense
- Pump Control
- LS Properties
- IP Properties
- Values

```

Start Group Program - Group ID "GROUP1"
Direction Counterclockwise
LS 600 Tube Size 18
Set Dispense Mode Continuous
LS Flow Units mL/min
Flow Rate 500
End of Program
    
```

Example of a Continuous run program.

Load Run Save

- Start/End
- Dispense
- Pump Control
- LS Properties
- IP Properties
- Values

```

Start Pump Program - Device ID "000111000111"
LS 600 Tube Size 15
LS Flow Units mL/hr
Set Dispense Mode Time
Dispense On (sec.) 4
Dispense Off (sec.) 2
Batch Count 2
Direction Clockwise
Flow Rate 100
End of Program
    
```

Example of a Time dispense program.

Load Run Save

- Start/End
- Dispense
- Pump Control
- LS Properties
- IP Properties
- Values

```

Start Pump Program - Device ID "000111000111"
LS 600 Tube Size 16
LS Flow Units mL/min
Set Dispense Mode Volume
Dispense Volume 10
Interval Time (sec.) 2
Batch Count 4
Direction Counterclockwise
Flow Rate 100
End of Program
    
```

Example of a Volume dispense program.



Can I create and run programs at the group level? Programs can be created and run at either the device level or the group level. For a group program, you just select the Group ID start block rather than the Device ID start block. Group names are case-sensitive in the programming screen.

Can I Start/Stop programs via the Pump Programs screen? You can modify, update and start (run) programs from the Program Window, however active programs cannot be paused or stopped via the Programs screen. When running programs, we suggest opening a second window for the Device control panel. The control panel will give you visibility to program status/progress and give you the ability to stop and restart a program. Alternatively, you can stop a program via the blue start/stop key on the drive keypad.

Are programs stored on the device? Programs are only stored in the cloud and accessible via the MasterflexLive web and mobile apps. Programs are Not stored on the pump.

PREMIUM LEVEL (subscription-based) FEATURES AND FUNCTIONS

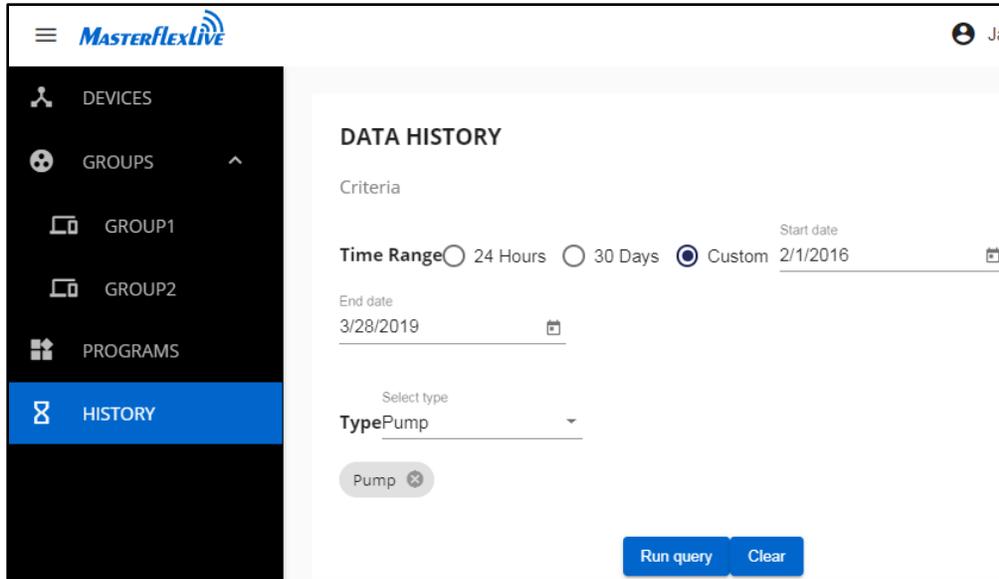
HISTORY

In compliance with 21 CFR Part 11 and EU Annex 11, the data historian records all operational changes to all pumps/devices in your account as well as any changes to the account and to user profiles within the account. All records are date/time stamped.

Does the Premium level function at the account level or at the device level?

You subscribe to Premium level functionality at the account level and will be billed proportionally to how many devices are registered under that account. When you add an additional device, you will be prompted with a reminder that additional charges will apply.

Where can I access historical data? First, ensure that you have an active Premium account as historical data storage on the MasterflexLive cloud is not standard with a Basic account. Once enabled, historical data will show under the History tab of the main menu as shown on the next page.



What is the time range for which I can retrieve data?

The time range for generating reports is selectable for 24 hours, 30 days, or custom. The custom option allows you to enter a start date and end date for whichever range you need.

What types of reports can I run?

Report types include Account, Pump, User, and Program

Can I run a query on multiple types?

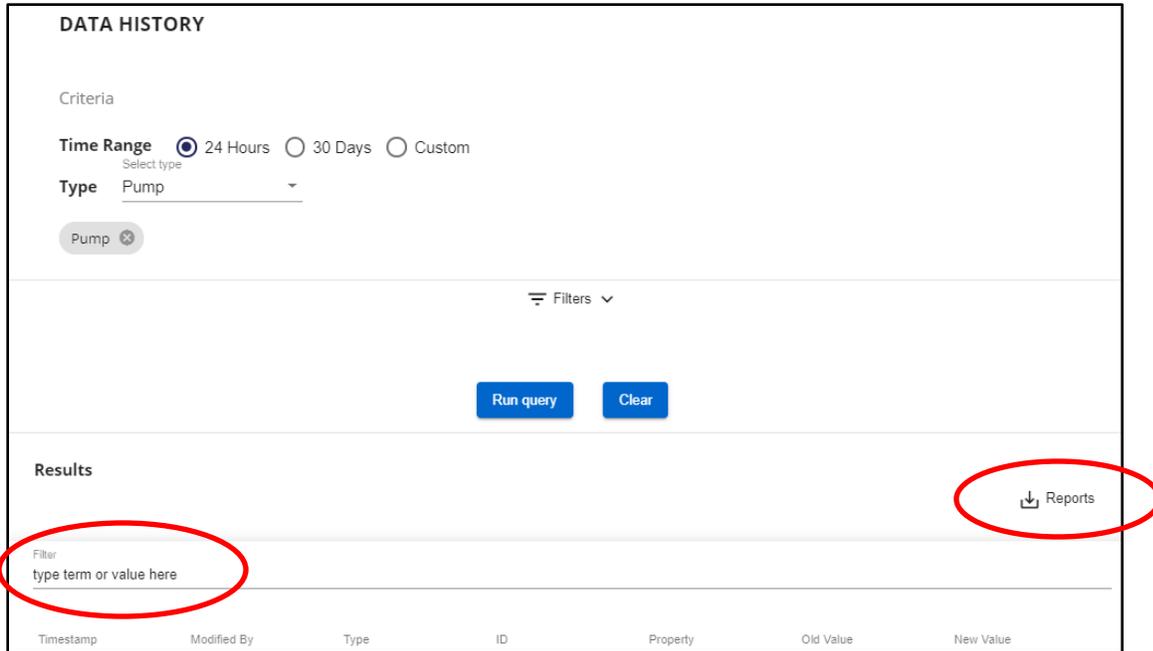
Yes, if those types have overlapping data (common to all filters). Each filter is limiting, meaning that it will exclude all results that don't match that data type exactly.

How do the “and” “or” rules work in the History filters?

In the data Historian under Filters you can set up a logic statement where results will fit the either/or conditions that you establish. For example, adding a specific user and a specific device will give results of all common operations. Filtering on a specific user or a specific device will give results of all common and unique operations.

Is there a fast way to filter my results by text?

Yes, simply type any value you want to search in the Filter Text Field, which appears just below the Results heading and directly above your query results. See the screen on the next page.

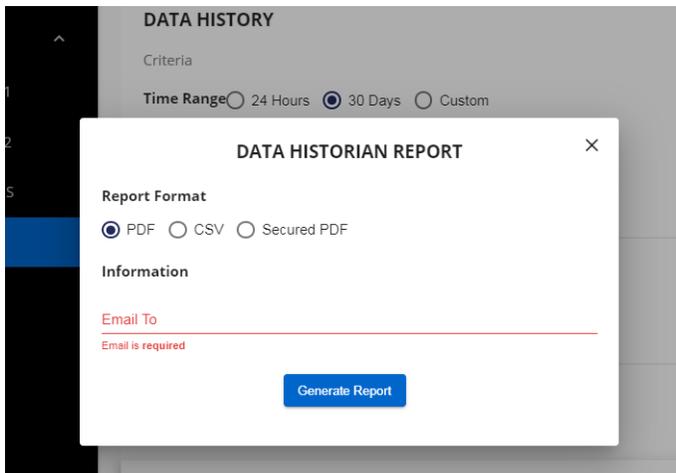


How long will my data be stored in the cloud?

As long as you have an active Premium account, your historical data will be stored indefinitely. If or when you close your account, data is maintained for a three-year period.

Can data be deleted from the cloud?

No, you can delete devices from an account, but no data associated with an account or device can be deleted.



Can I export data and in what formats?

Generate reports by clicking on the Reports icon in the lower right of the history screen.

You can export data in pdf, csv, and secure pdf* formats from the Historian filter as shown. Data is sent from the MasterflexLive server to an email address of your choosing at time of export.

*Secure PDF requires a password to be created at time of download that will be required anytime someone tries to access the data from the secure pdf file.