

User Guide



IMPORTANT SAFETY INSTRUCTIONS SAVE THESE INSTRUCTIONS

This manual contains important instructions that you should follow during installation and maintenance of the UPS and batteries. Please read all instructions before operating the equipment and save this manual for future reference.

CONSIGNES DE SÉCURITÉ IMPORTANTES – CONSERVER CES INSTRUCTIONS

Ce manuel comporte des instructions importantes que vous êtes invité à suivre lors de toute procédure d'installation et de maintenance des batteries et de l'onduleur. Veuillez consulter entièrement ces instructions avant de faire fonctionner l'équipement et conserver ce manuel afin de pouvoir vous y reporter ultérieurement.



IMPORTANT

To ensure you have the most up-to-date content and information for this product, please review the latest manual revision on our website,

<https://www.eaton.com/us/en-us/catalog/backup-power-ups-surge-it-power-distribution/eaton-predictpulse—na.html>.

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Eaton House,
30 Pembroke Road,
Dublin 4,
D04 Y0C2,
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Table of Contents

Eaton® PredictPulse™ User Guide	1
Welcome to PredictPulse Remote Monitoring Service.....	1
How to Contact Eaton	1
User Interface.....	1
Navigation	1
Login Screen.....	3
Overview Screen	4
Device List Screen	8
Device Detail Screen.....	9
Invite User Screen.....	11
Monthly Reports	11
Alarms, Events, and Notifications.....	14
Lost Communication/Partial Telemetry.....	18
User Enrollment and Activation.....	19
Activating Devices	22
Troubleshooting	25
Glossary	26

Eaton® PredictPulse™ User Guide

Welcome to PredictPulse Remote Monitoring Service

Eaton PredictPulse is a cloud-based subscription service for data center power infrastructure devices that allows Eaton to remotely monitor and manage system health 24x7, as well as to notify users to events and critical alarms with an expedited response. This user help guide will introduce you to this innovative application interface, key features and a glossary of terms.



NOTE

PredictPulse is an Eaton service offered with and without advanced features like predictive analytics (PredictPulse Insight). This user help guide describes PredictPulse remote monitoring service without predictive capabilities. Advanced features will be described in future documents.

How to Contact Eaton

Getting started with PredictPulse is quick and easy, and Eaton is ready to help you with any questions (**USA call 800.843.9433, option 2, option 5 or email predictpulseoperations@eaton.com**).

User Interface

PredictPulse includes a simple set of summary and detailed views of your connected devices. You can view PredictPulse with either a computer browser, like Chrome, or any mobile device. Eaton uses a progressive web application (PWA) technology instead of native apps, so the same application can run on most browsers and mobile devices and adapt based on your device and screen size. Most features will work on either computer browsers and mobile with two exceptions: phone calls can only be made from mobile devices and device activation (wizard) can only be run from a computer on the device's network.



NOTE

You may need to occasionally clear your browser cache, click your reload button to refresh the PredictPulse app, or adjust your browser resolution settings. New features and updates will be released over time and clearing the browser cache or adjusting the browser resolution settings often corrects login or data visibility issues.



NOTE

The internet browsers supported include Chrome, Firefox, Edge, and Safari. Do not use Microsoft Internet Explorer.

The layout of information will adapt to your device's screen. PredictPulse uses scrolling to view more information and expanding/collapsing menu selections. PredictPulse includes five screens:

- [Login Screen](#) – New enrollment, password reset
- [Overview Screen](#) – At-a-glance summary view of all devices
- [Device List Screen](#) – Navigation buttons (overview, invite-user, user, devices, help)
- [Device Detail Screen](#) – More details views (expand/collapse)
- [Invite User Screen](#) – Invite new users or view current users

Navigation

Navigation within PredictPulse includes scrolling up and down (mobile) to view more information, clicking on a device or icon to drill down to a specific device, and using the back arrow or sidebar menu icon for preferences.

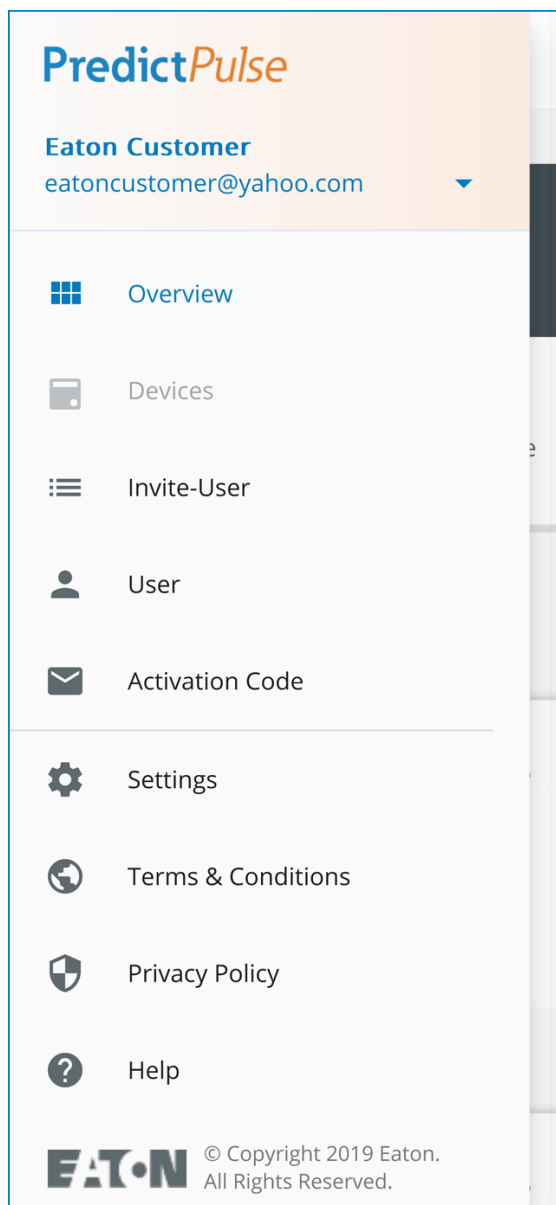
Screens may include navigation buttons on the bottom for common screens (see [Figure 1](#)).

Figure 1. Navigation Buttons



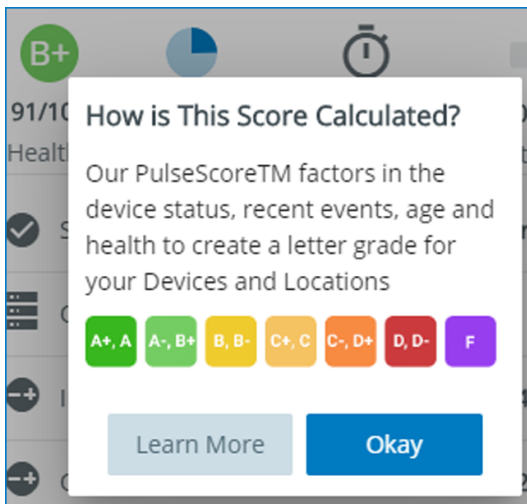
Click the icon in the top left corner of the screen to display the sidebar menu (see [Figure 2](#)). The sidebar menu is used to access user functions such as setting notification preferences, editing user information, and activating devices.

Figure 2. Sidebar Menu



Many of the icons in PredictPulse include pop-up *tool-tip* explanations, which are displayed by clicking the icon. The example shown in [Figure 3](#) can be viewed by clicking the **PulseScore** letter grade (B+ in [Figure 3](#)). Click **Learn More** for more details.

Figure 3. Pop-up Tool-Tip



Login Screen

[Figure 4](#) shows the PredictPulse login screen as viewed on an internet browser; [Figure 5](#) shows the login screen as viewed on a mobile device. From the login screen the user can enter a new enrollment, reset the password, or log in to open the overview (home) screen (see [Overview Screen](#)).

Figure 4. Login Screen from Browser

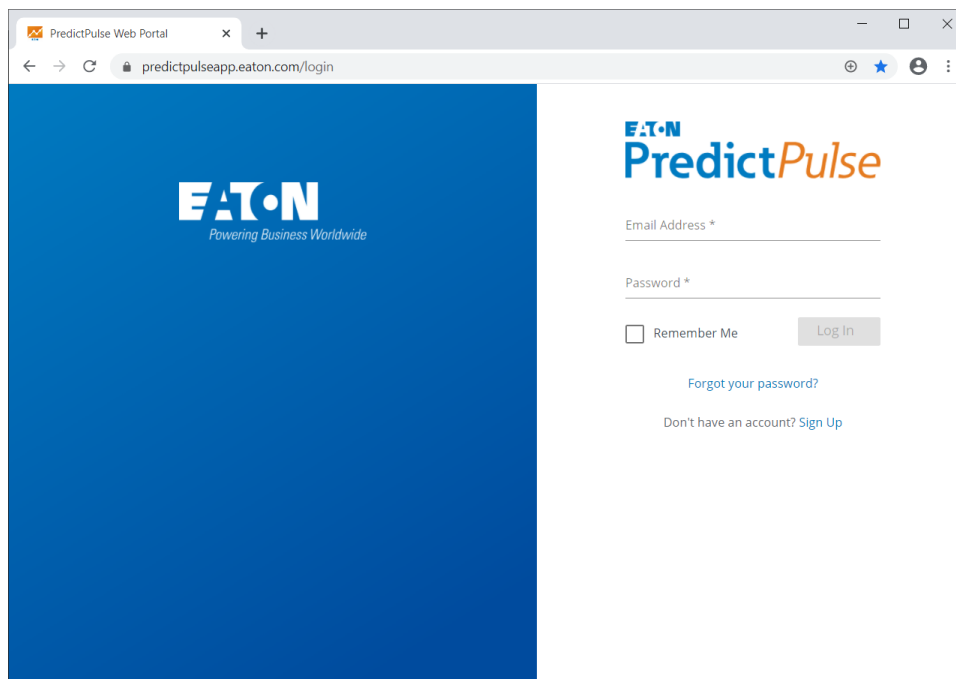


Figure 5. Login Screen from Mobile Device

EATON
PredictPulse

Email Address *

Password *

Remember Me

[Forgot your password?](#)

Don't have an account? [Sign Up](#)

Overview Screen

The overview screen (see [Figure 6](#)) provides an at-a-glance status summary of all devices. The overview screen shows the overall number of devices, alarms, events, predictions and overall health score (*PulseScore*).

- **Devices** are UPS systems actively subscribed and sending data to PredictPulse. A parallel UPS would equal two devices since each UPS can be monitored separately.
- **Alarms** come from a device and may be informational or urgent. PredictPulse assigns alarms to categories such as *On Battery*, *Internal Fault Detected*, and so on. The Eaton monitoring team places a call to the customer point of contact for urgent alarms.
- **Events** are informational and do not come from a device. Lost communications, high temperature, and alarm acknowledgments are examples of events.
- **Predictions** are predictive alerts for PredictPulse Insight subscribers. A prediction indicates that the health conditions of one or more components need attention and that an Eaton analyst will be in contact to discuss or arrange a site verification visit.
- **PulseScore** is a summary of device conditions, including operational status, recent alarms (taking into consideration the alarm criticality), component health, age, and service history. When viewing multiple devices, the average of all devices is displayed as an overall score and letter grade (A+ to F). The health score scale is 1 – 100, is dynamic and can change at any time. [Table 1](#) lists the factors that determine the health score.

Figure 6. Overview Screen

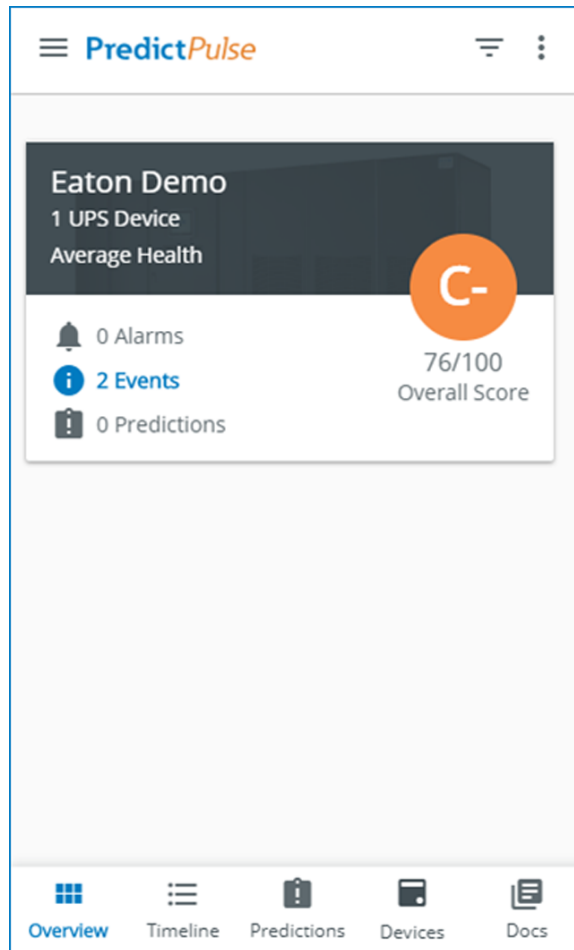


Table 1. Health Score Factors

Letter Grade	Value	Points
Healthy	A+	100
Healthy	A	96-100
Healthy	A-	93-95
Healthy	B+	90-92
Healthy	B	87-89
Healthy	B-	84-86
Average Health	C+	81-83
Average Health	C	78-80
Average Health	C-	75-77
Poor Health	D+	72-74
Poor Health	D	69-71
Poor Health	D-	66-68
Poor Health	F	65 or below
Device Parametric Data	Value	20 Points
Load % overall	> 81%	-10
Load % overall	> 91%	-15
Temperature	< 64 °F (18 °C)	-5
Temperature	> 79 °F (27 °C)	-2
Temperature	> 84 °F	-4
Temperature	> 89 °F	-6
Temperature	> 95 °F	-12
Relative Humidity	< 40%	-5
Relative Humidity	> 60%	-5
Service History	Value	15 Points
Battery age	< 3 years	0
Battery age	4 years	-2
Battery age	5 years	-5
Battery age	6 years +	-6
Capacitor age	> 5 years	-3
Capacitor age	NA	0
Capacitor age	> 7 years	-6
Emergency SR's in last year	> 0	-5
Emergency SR's in last year	0	0
Configuration	Value	2 Points
Parallel redundant	NOT	-2

Table 1. Health Score Factors (Continued)

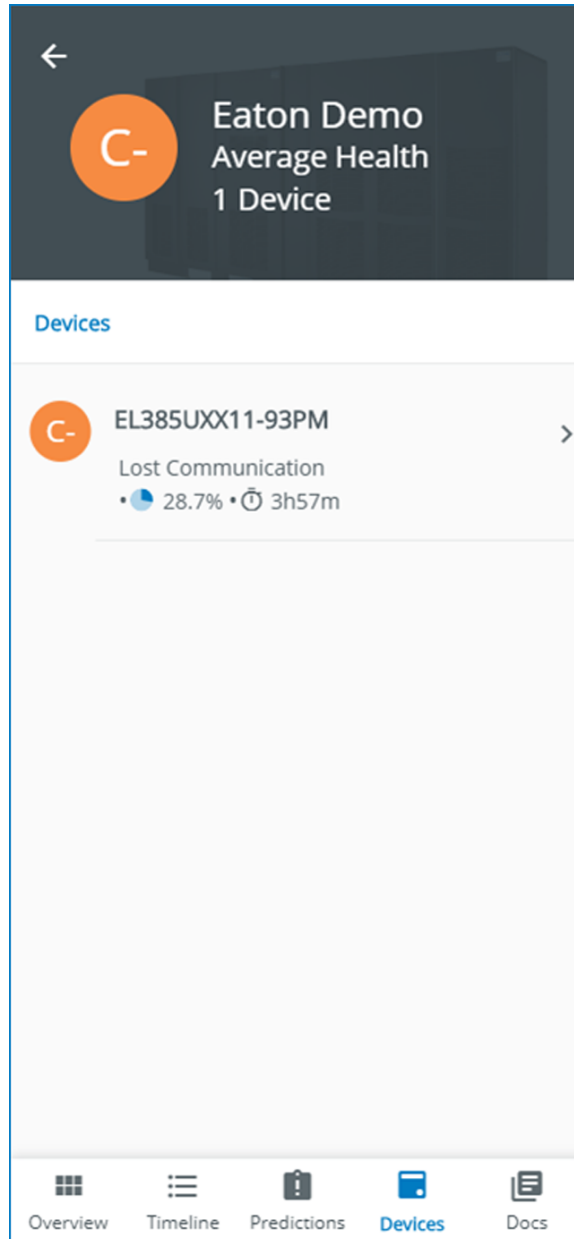
Device Age	Value	5 Points	
Less than 5 years		0	
Between 5 and 10 years		-1	
Between 11 and 15 years		-2	
Between 16 and 20 years		-4	
Best Practices – Extra Credit	Value	3 Points	
ESS/VMMS mode	ON	1	
OEM Service	Eaton	1	
Load less than 90%	< 90%	1	
Device Status	Status	30 Points	
Status must be one state	Shutdown/ Offline	-20	
	On Battery	-5	
	Online VMMS	0	
	Online ESS	0	
	Default	Online - Double Conversion	0
		On Bypass	-5
		Lost Communications	-15
Alarms/Events Within Past 24 Hours	Severity	25 Points	
Default	Null	0	
1 or more	Critical	-10	
1 or more	Major	-5	
1 Critical + 3 > Minor	Critical + Minor	-12	
1 Critical + 1 Major	Critical + Major	-15	
1 Major + 3 > minor	Major + Minor	-10	
3 or more	Minor	-3	
	Informational	0	

Device List Screen

Click the **Devices** icon to open the device list (see [Figure 7](#)). Each device associated with the organization's account is displayed based on the health or alarms, in descending order from worst health to best health.

Click a specific device to open a detail view for that device (see [Device Detail Screen](#)).

Figure 7. Device List Screen



Device Detail Screen

The device detail screen (see [Figure 8](#) through [Figure 11](#)) show all details for the selected device.

Each *key performance indicator (KPI)* icon at the top of the device detail view includes a pop-up tool-tip aid, or direct to the detailed information, to explain what the icon represents.

Figure 8. Device Detail Screen

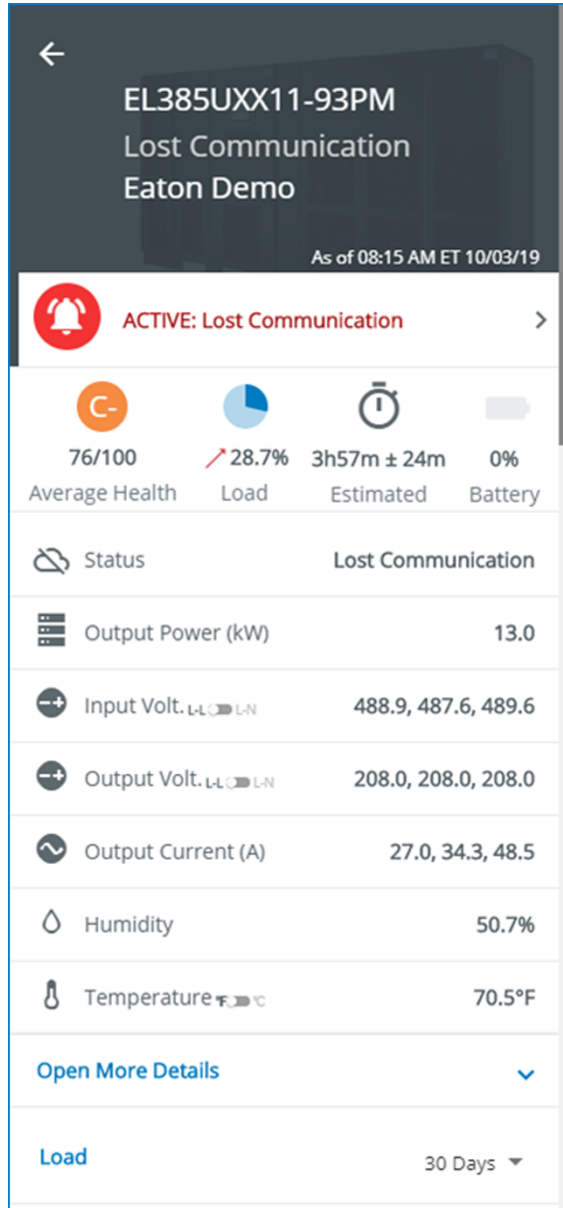


Figure 9. Device Detail Screen – More Details

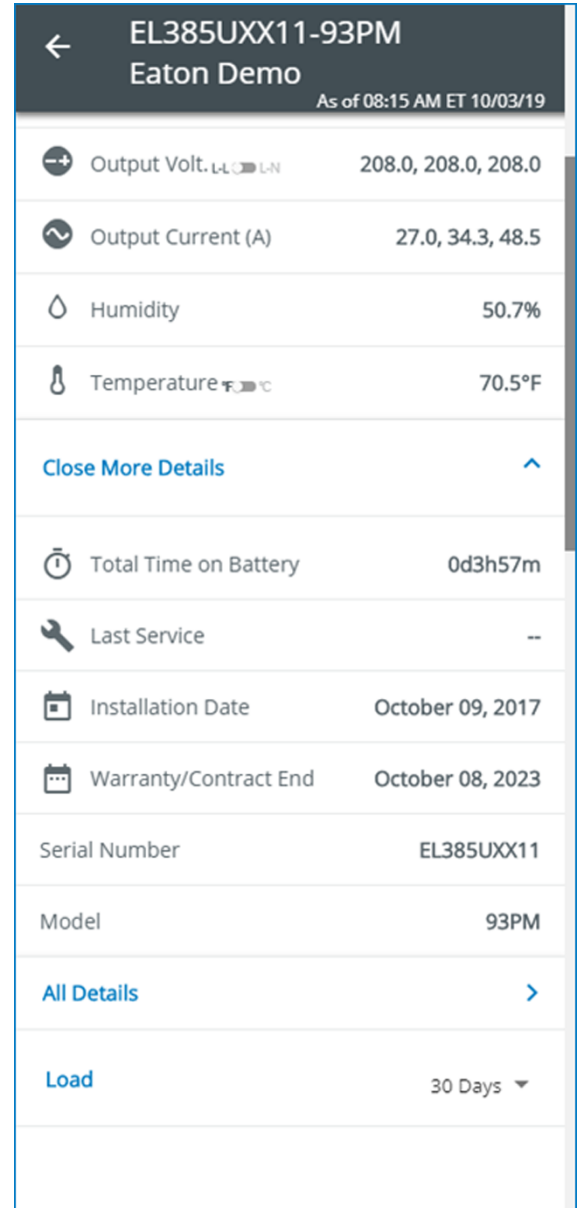


Figure 10. Device Detail Screen – Components, Connected Loads, Timeline, All Events

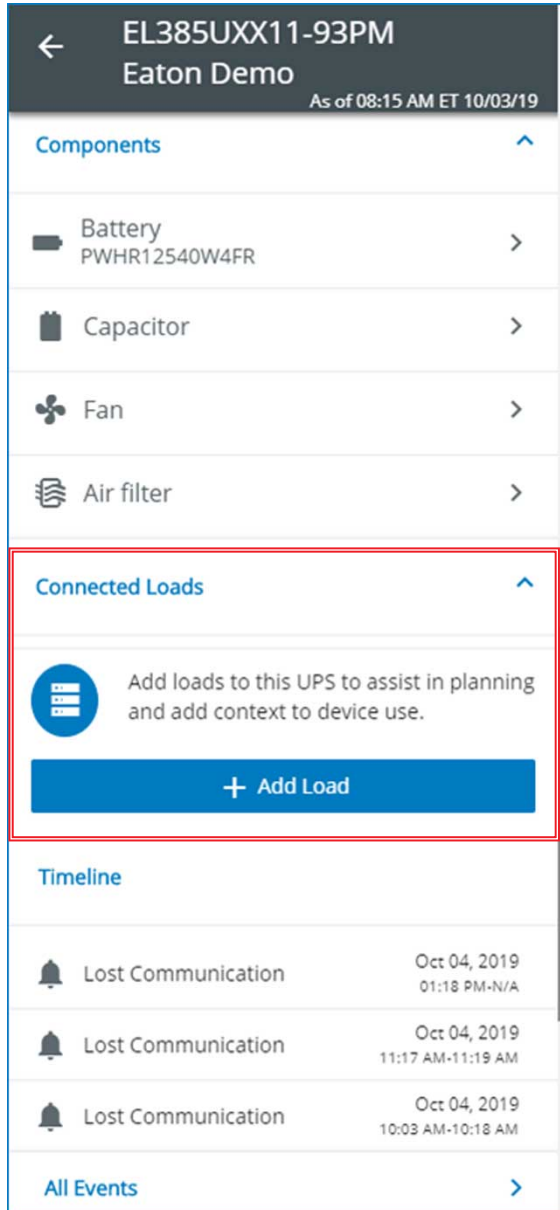
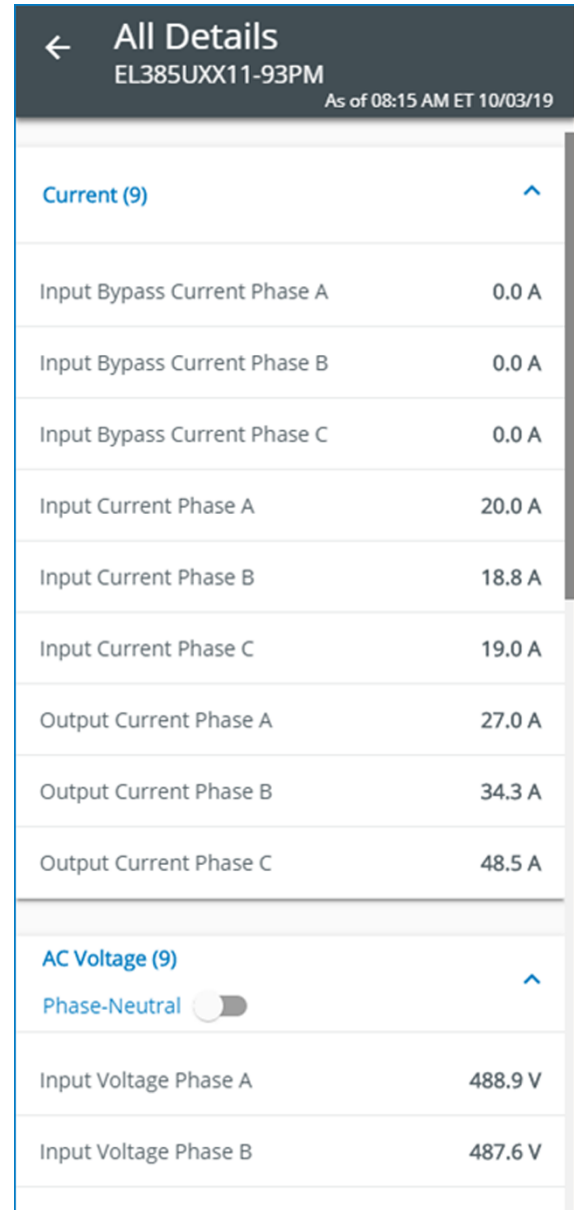


Figure 11. Device Detail Screen – All Details (scroll to view all values)



The **Connected Loads** section of the device detail screen (highlighted in [Figure 10](#)) displays the downstream loads (such as servers) associated with the selected device. This is user-entered optional information.

To add new information, click **+ Add Load** to display the **Add Load Device** screen (see [Figure 12](#)). Enter the load name, asset tag, load type, and notes (optional), and click **Save**. Once saved, all users with access can view this information. To edit or delete a connected load, click the saved connected load name.

Figure 12. Add Load Device Screen

Invite User Screen

Administrators can invite other users or coworkers to enroll in PredictPulse either as a user or as an administrator. To invite another user, click **Invite-Users** from the navigation buttons (see [Figure 1](#)) or sidebar menu (see [Figure 2](#)). You will be prompted for the name, email address, and role (administrator or user). When the invited user has completed their enrollment and has access to the account, their status will display as *Registered*. Users that have not completed enrollment will be displayed as *Invited*.

If you are not an administrator but want other coworkers to have access to your PredictPulse account, either contact your administrator and have them invite the user(s) or contact Eaton PredictPulse support to have the user(s) invited. The customer's administrators ultimately have authority to manage, control, invite and delete all users. Once new users are enrolled, they can view all device data associated with the account.

Monthly Reports

Monthly summary and details reports are automatically sent to all users (see [Figure 13](#) and [Figure 14](#)).



NOTE

If an F letter grade is returned and/or there is no current data displayed for a device, verify the communication status of the device.

Figure 13. Monthly Summary Report

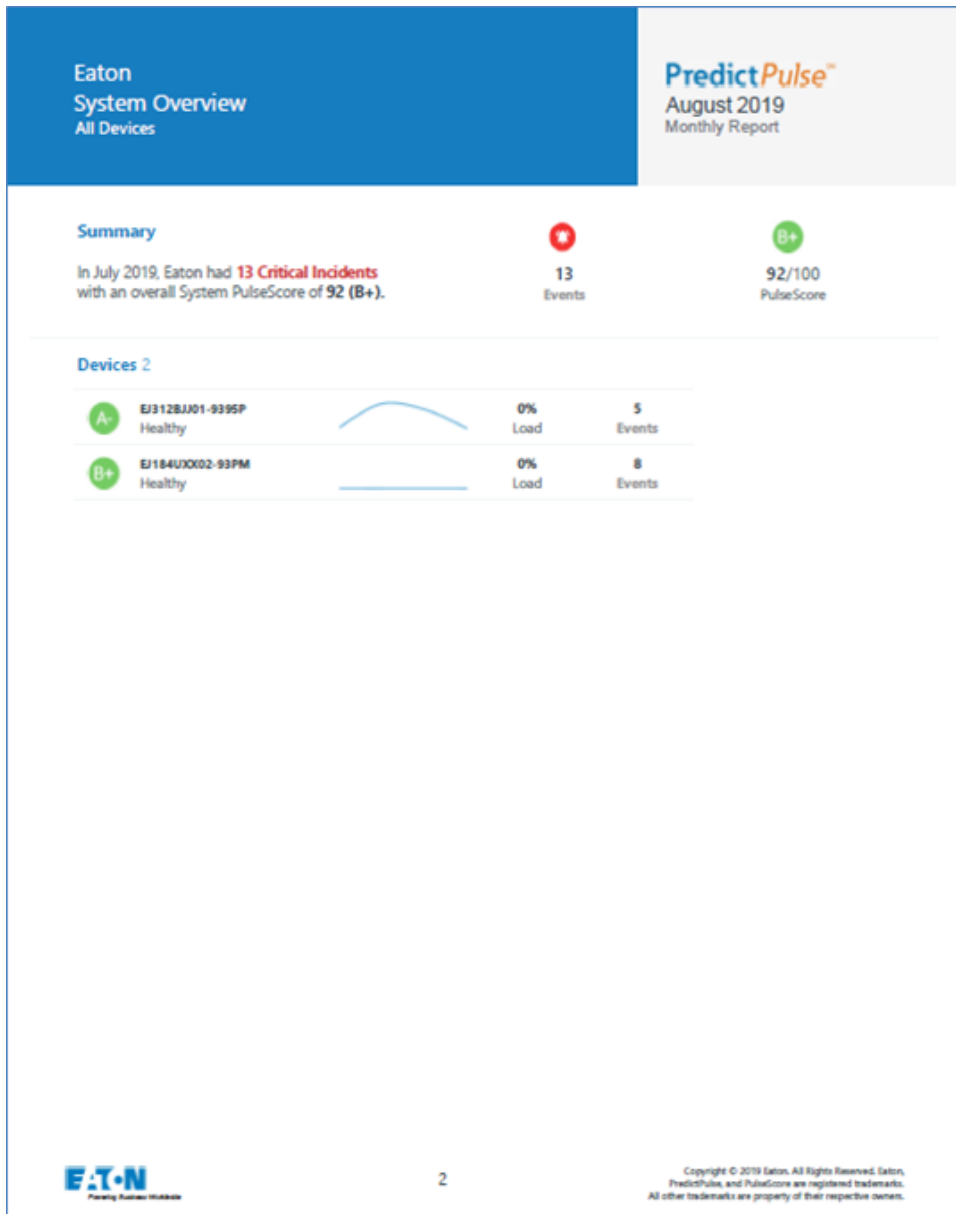
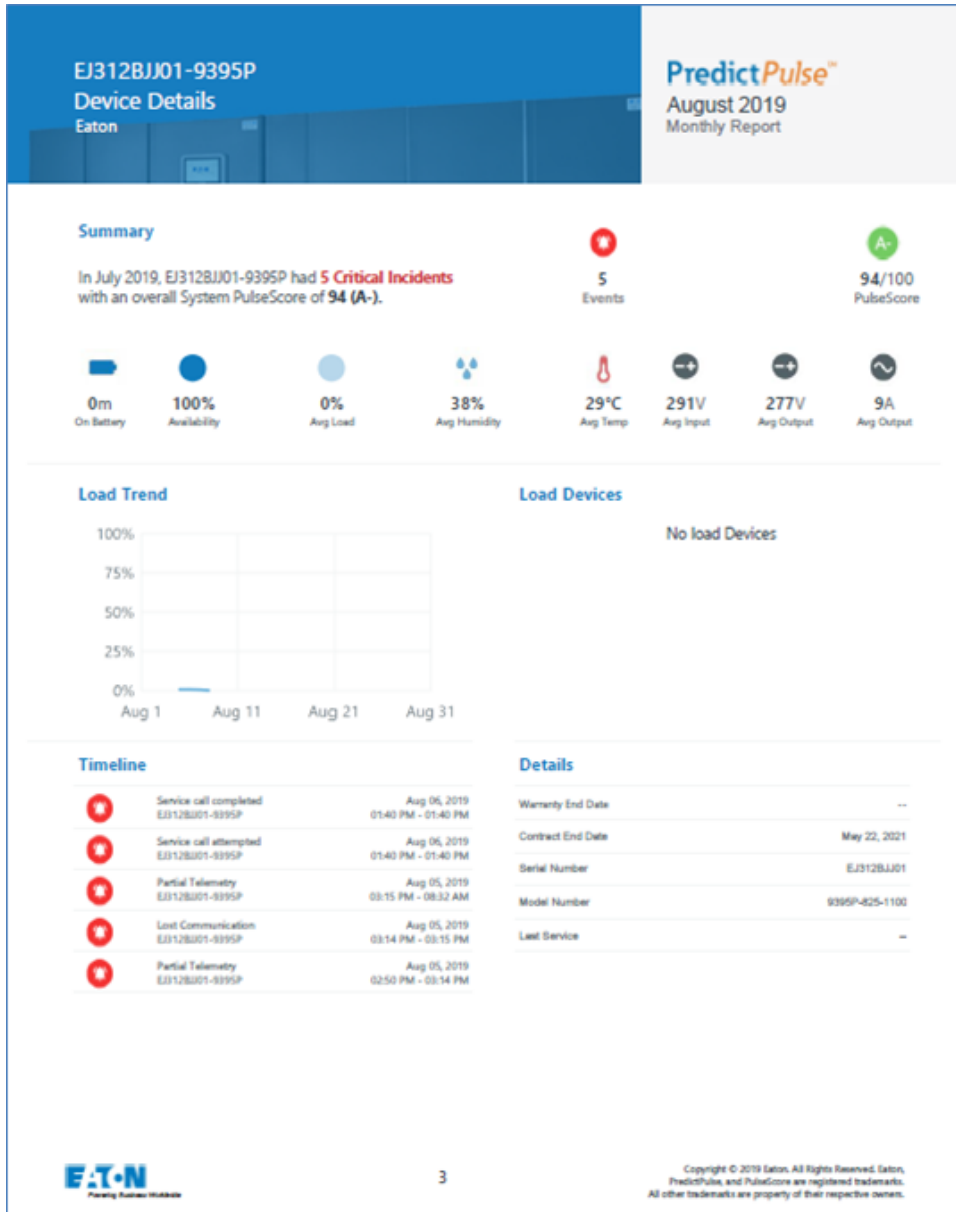


Figure 14. Monthly Details Report



Alarms, Events, and Notifications

Alarms come from a device and may be informational or urgent. PredictPulse assigns alarms to categories such as *On Battery*, *Internal Fault Detected*, and so on. The Eaton monitoring team places a call to the customer point of contact for urgent alarms. Alarms are sent with approximately a one-minute latency.

Events are non-critical alerts, status change events and informational notices. Lost communications, high temperature, and alarm acknowledgments are examples of events.

Notifications can be self-managed using the sidebar menu **Settings** button (see [Figure 15](#)). The default setting is every notification ON.

[Table 2](#) lists the alarms and events that will trigger a notification phone call from Eaton to the customer.


 **NOTE** SMS text messages may result in charges per text message.

Figure 15. Notifications Settings Menu

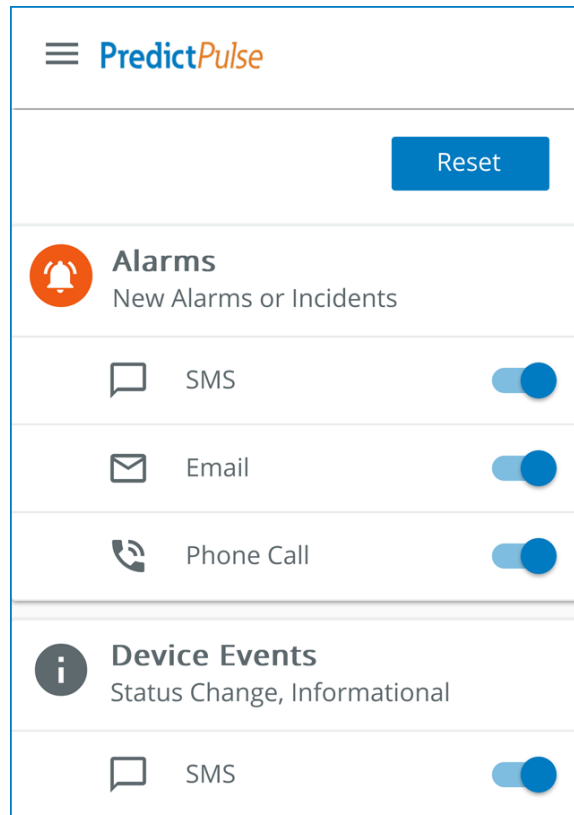


Table 2. Alarms and Events that Trigger a Customer Call from Eaton

Event Description	Customer Message	Notes
Abnormal Output Voltage At Startup	Internal Fault Detected	Possible STSW short
Ambient OverTemperature	Ambient OverTemperature	The room is hot, have the customer check
Ambient UnderTemperature	Ambient UnderTemperature	The room is cold, have the customer check
Batteries Disconnected	Batteries Disconnected	
Battery Over Temperature	Battery Over Temperature	The battery is above recommended temperature
Battery Voltage High	Internal Fault Detected	Possible Sensing failure, indicates something may be wrong.
Bypass Phase Rotation	Bypass Source Out of Tolerance	Bypass phases are rotated.
Charger Over Temperature	Internal Over-Temperature	
Charger Over Voltage Or Current	Internal Fault Detected	
Charger Tripped	Internal Fault Detected	The Charger shutdown due to an alarm
Check Backfeed Switchgear	Internal Fault Detected	The backfeed contactor or breaker did not close or open as expected.
Check Battery	Check Battery	The battery should be checked.
Check Battery Ground	Internal Fault Detected	This alarm indicates that Battery acid may have leaked and is creating a path to ground.
Check Battery Switchgear	Internal Fault Detected	The battery contactor or breaker did not close or open as expected.
Check Bypass	Internal Fault Detected	The Bypass is not operating as expected.
Check Bypass Switchgear	Internal Fault Detected	The bypass contactor or breaker did not close or open as expected. Most UPS's do not have this device.
Check Charger	Internal Fault Detected	The charger is not working as expected
Check Fan	Internal Fault Detected	A Fan has failed
Check Fuse	Internal Fault Detected	A blown fuse has been detected.
Check Heatsink Temperature Sensor	Internal Fault Detected	A temperature sensor is reading invalid temperatures.
Check Input Switchgear	Internal Fault Detected	The Input contactor or breaker did not close or open as expected.
Check Inverter	Internal Fault Detected	The Inverter cannot re-start.
Check Inverter Switchgear	Internal Fault Detected	The Inverter contactor or breaker did not close or open as expected.
Check Inverter Temperature Sensor	Internal Fault Detected	The sensor reading is out of range.
Check Logic Power Supply	Internal Fault Detected	A logic power supply has failed.
Check Parallel Board	Internal Fault Detected	Board Failure

Table 2. Alarms and Events that Trigger a Customer Call from Eaton (Continued)

Event Description	Customer Message	Notes
Check Power Supply	Internal Fault Detected	A logic power supply has failed.
Check Precharge	Internal Fault Detected	The pre-charge circuit did not charge the DC Link as expected.
Check Rectifier	Internal Fault Detected	The rectifier has locked out. This could be due to many outages or a failure
Check Rectifier Temperature Sensor	Internal Fault Detected	
Check Static Switch	Internal Fault Detected	The static switch is not operating as expected.
Configuration Error	Internal Fault Detected	Typically occurs during servicing.
DC Link Over Voltage	Internal Fault Detected	This alarm could occur during transient condition or could be an indication of failure.
DC/DC Converter Tripped	Internal Fault Detected	The DC/DC converter shutdown due to an alarm
Emergency Shutdown Command	Emergency Shutdown	
External Communication Failure	Internal Fault Detected	A failure in the external CAN network was detected
Input Phase Rotation Error	Input Source Out of Tolerance	Site issue, possibly sensing failure.
Internal Communication Failure	Internal Fault Detected	CAN Communications failed
Inverter A/D Converter Self-Test Failed	Internal Fault Detected	Board Failure
Inverter AC Over Voltage	Internal Fault Detected	Could be due to a load transient or inverter failure
Inverter Control Board Failed Self-Test	Internal Fault Detected	Board Failure
Inverter CPU Self-Test Failed	Internal Fault Detected	Board Failure
Inverter L1 Current Limit	High Output Current	This could be due to a load transient or failure
Inverter L2 Current Limit	High Output Current	This could be due to a load transient or failure
Inverter L3 Current Limit	High Output Current	This could be due to a load transient or failure
Inverter Output Failure	Internal Fault Detected	The Inverter cannot generate output voltage
Inverter Output Over Current	High Output Current	
Inverter Over Temperature	Internal Over-Temperature	
Inverter Over Temperature Trip	Internal Over-Temperature	
Inverter Overload	Output Overload	
Inverter Startup Failure	Internal Fault Detected	The Inverter could not start
Inverter Tripped	Internal Fault Detected	The inverter shutdown due to an alarm
Inverter Under Or Over Frequency	Internal Fault Detected	This should never happen unless there is a failure

Table 2. Alarms and Events that Trigger a Customer Call from Eaton (Continued)

Event Description	Customer Message	Notes
L1 Overload	Output Overload	
L1 Overload (Extreme Level)	Output Overload	
L1 Overload (High Level)	Output Overload	
L2 Overload	Output Overload	
L2 Overload (Extreme Level)	Output Overload	
L2 Overload (High Level)	Output Overload	
L3 Overload	Output Overload	
L3 Overload (Extreme Level)	Output Overload	
L3 Overload (High Level)	Output Overload	
Load Dumped (Load Power Off)	Load Power Off	
Loss Of Sync Bus	Internal Fault Detected	Internal digital signal failure
Low Battery Shutdown	Battery Totally Discharged	The Inverter was shut down when on battery due to totally discharging the battery
MBB Failure	Internal Fault Detected	This alarm is likely due to a failure to open or close the maintenance bypass breaker (MBB)
Network Not Responding	Internal Fault Detected	The internal network has lost communications
Non-Volatile Memory Failure	Internal Fault Detected	The NVRAM battery requires replacement
Output AC Over Voltage	Output Voltage Out of Tolerance	This could be a high bypass or failure
Output AC Under Voltage	Output Voltage Out of Tolerance	
Output DC Over Voltage	Internal Fault Detected	The Inverter AC voltage has a large DC component.
Output Load Over 100%	Output Overload	
Output Overload	Output Overload	
Output Short Circuit	High Output Current	A load short was detected
Output Under Or Over Frequency	Output Voltage Out of Tolerance	
Output Watts Overload	Output Overload	
Program Checksum Failure	Internal Fault Detected	
Program Stack Error	Internal Fault Detected	Board Failure
Rectifier OverTemperature	Internal Over-Temperature	
Rectifier Over-Temperature Trip	Internal Over-Temperature	
Rectifier Tripped	Internal Fault Detected	The Rectifier shutdown due to an alarm
Redundancy Loss Due To Overload	System Not Redundant	

Table 2. Alarms and Events that Trigger a Customer Call from Eaton (Continued)

Event Description	Customer Message	Notes
Selective Trip Of Module	Internal Fault Detected	
Shutdown Imminent	Shutdown Imminent	
Site Wiring Fault	Check Neutral Connection	The Neutral wire may be disconnected
Software Incompatibility Detected	Internal Fault Detected	This should only occur when flashing the code
Static Switch Over Temperature	Internal Over-Temperature	
System Not Redundant	System Not Redundant	
Transformer OverTemperature	Internal Over-Temperature	
Unable To Charge Batteries	Internal Fault Detected	A fault was detected, and the battery cannot be charged
UPS Cabinet OverTemperature	Internal Over-Temperature	

Lost Communication/Partial Telemetry

A Power Xpert Gateway card that is configured for 15-minute heartbeats will enter a lost communication state if a heartbeat is not received within 40 minutes.

A Gigabit Network (Network-M2) card that is configured for 24-hour heartbeats will enter a lost communication state if a heartbeat is not received within 49 hours.

Typical resolutions for a lost communication state include upgrading to current connectivity card firmware, verifying no changes have occurred on the network connected to PredictPulse, or a simple reboot of the card.

A device will enter a partial telemetry state if it is missing an environmental monitoring probe or has missing or invalid data.

Typical resolutions for partial telemetry include upgrading to current connectivity card firmware, verifying that an environmental monitoring probe is attached to the connectivity card, or verifying the connectivity card is appropriately configured for PredictPulse.

When a Lost Communication or Partial Telemetry alarm occurs, all users at a site who have their email and/or SMS notification preference turned ON will receive an email and SMS advising them of the alarm. This notification will only be sent when the alarm first occurs, however, within the PredictPulse portal, the banner of the device will remain gray and the Lost Communication or Partial Telemetry alarm will show as active until the alarm is cleared.

Figure 16. Device Banner with Lost Communication State

When communication with the device has resumed or the partial telemetry has cleared, the alarm will automatically clear and the status will update accordingly on the dashboard.

User Enrollment and Activation

New users enroll online at <https://predictpulseapp.eaton.com> using a two-step authentication process for security. A valid email address, mobile (or phone) number, and unique password are required for enrollment. After submitting the initial user enrollment request, a verification email is sent enabling you to complete your enrollment.

The first user enrolled is designated as an *administrator* for the account and can invite any number of other *users*. Administrators have special privileges, including the ability to manage other users, add and delete devices, and manage overall account security. Users can manage their own preferences, activate new devices, and edit their personal contact information, but cannot invite other users or change devices.

There can be an unlimited number of administrators, but every account must have at least one administrator capable of managing other approved users. If an administrator leaves the company or no longer wants to be an administrator, any authorized user can contact Eaton PredictPulse support to have another user designated as an administrator.

To enroll as a new user:

1. From your computer or smart phone, go to the PredictPulse web portal login screen, <https://predictpulseapp.eaton.com> (see [Figure 4](#) or [Figure 5](#)).


NOTE

The internet browsers supported include Chrome, Firefox, Edge, and Safari. Do not use Microsoft Internet Explorer.


NOTE

If there are already activated devices for your account, your PredictPulse administrator should invite you to that account instead of creating a new account.

2. Click **Sign Up** to go to the **New User Registration** page (see [Figure 17](#)).

Figure 17. New User Registration Page

Eaton PredictPulse

New User Registration

To sign up for PredictPulse access, enter the required information below.
You will need to verify your email address to continue registration.

First Name * Last Name *

Email Address * Confirm Email Address *

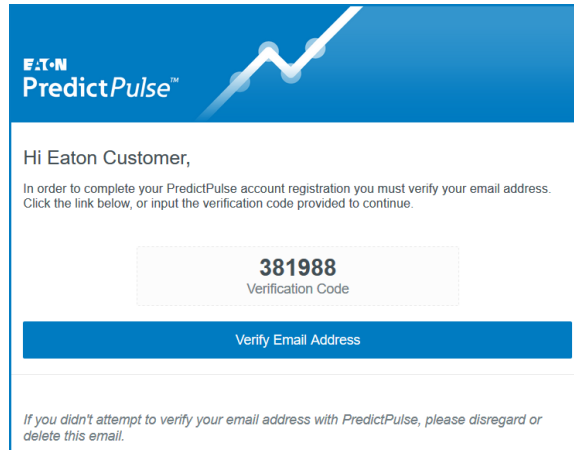
Already have an account? [Log In](#)

NEXT

3. Enter your name and email address and click **NEXT**.

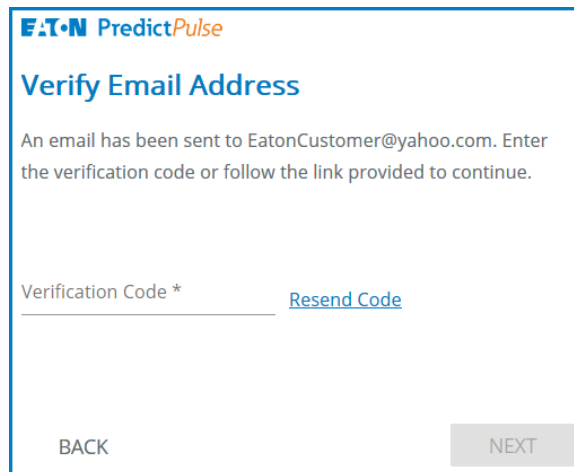
4. Review and accept *Eaton's PredictPulse Terms and Conditions*.
5. You will receive an email with a verification code for your email address (see [Figure 18](#)).

Figure 18. PredictPulse Verification Code



6. Click **Verify Email Address** to display the **Verify Email Address** page (see [Figure 19](#)).

Figure 19. Verify Email Address Page



7. Enter the verification code from the email and click **NEXT** to display the **Create User** page (see [Figure 20](#)).

Figure 20. Create User Page

Eaton PredictPulse

Create User

To complete your PredictPulse User registration, enter the required information below.

First Name * Last Name *

Title/Role

Country Code * Mobile Phone *

Password * Confirm Password *

Show Password

▲ Password Criteria

- One uppercase character
- One lowercase character
- One number
- One special character
- At least 8 characters

NEXT

8. Enter the required information and click **NEXT** to return to the web portal login page. Enter your email address and password to display the PredictPulse overview screen (see [Figure 6](#)).

Activating Devices



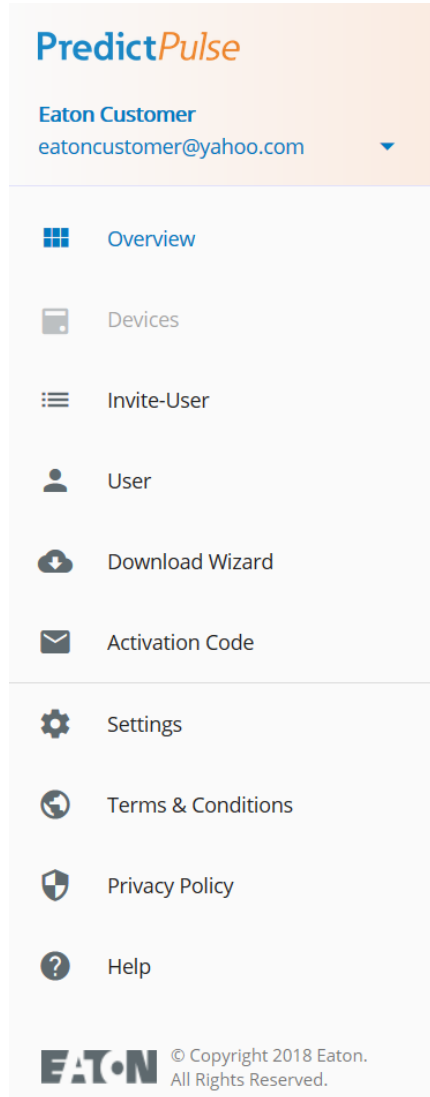
NOTE

Activation must be performed using a Windows device and cannot be done from a mobile phone.

To activate a device, download and run the PredictPulse Wizard tool as follows:

1. From your computer's internet browser, open the web portal sidebar menu (see [Figure 21](#)).

Figure 21. Web Portal Sidebar Menu

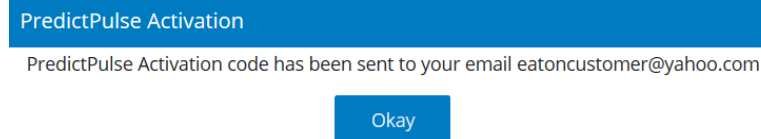


2. Click **Download Wizard**. The wizard executable file (ActivatePredictPulse.exe) downloads and a PredictPulse organization code is sent to your email address (see [Figure 22](#)).

**NOTE**

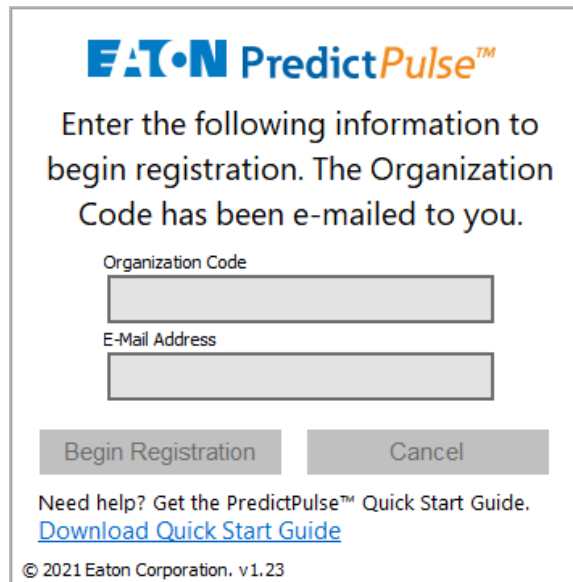
If **Download Wizard** does not appear in the sidebar menu, ensure that the internet browser is maximized and/or adjust the browser resolution settings.

Figure 22. PredictPulse Organization Code



3. Run the wizard. A popup window displays (see [Figure 23](#)).

Figure 23. PredictPulse Wizard Popup Window



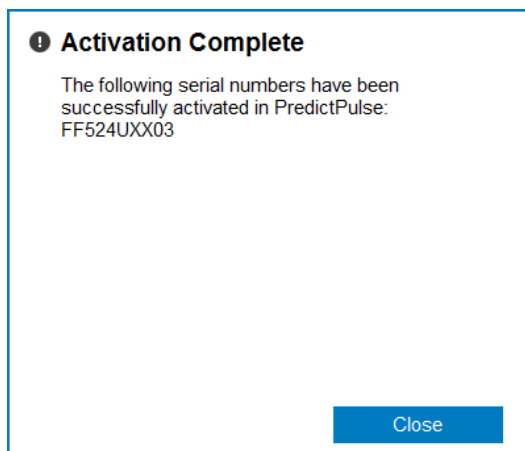
- Retrieve the email containing the PredictPulse organization code. Enter the organization code and your email address and click **Begin Registration**. The **PredictPulse Device Activation** page displays (see [Figure 24](#)).

Figure 24. PredictPulse Device Activation Page

- Enter the IP address for the device to be found and click **+Add UPS** or press the **Tab** or **Enter** key. The wizard attempts to connect to a device at that IP address. If successful, the wizard determines if the device is a UPS, identifies the connectivity card being used, reads the serial number, and validates the connectivity card firmware.
 - If a firmware upgrade is required, a pop-up window displays showing the current and required revisions, along with a link to the firmware download page.
 - If the required firmware version is present, the wizard displays the serial number and a window to enter another IP address. Repeat this step for each IP address.

6. When all IP addresses have been found, click **Finish**.
 - The PredictPulse wizard activates each card. Upon completion, the wizard displays a confirmation message (see [Figure 25](#)). If the user is running Microsoft Outlook, an activation email is sent automatically to Eaton's PredictPulse servers. If the user is not running Outlook, the email components are saved in the user's *My Documents* folder and instructions are provided for sending the activation email manually.

Figure 25. Device Activation Complete Confirmation



Troubleshooting

Data or visibility issues – You may need to occasionally clear your browser cache, click your reload button to refresh the PredictPulse app, or adjust your browser resolution settings. New features and updates will be released over time and clearing the browser cache or adjusting the browser resolution settings often corrects login or data visibility issues.

Cannot see Activation Wizard – This feature is only displayed on browsers (computer) where the screen size is 1024 x 926 or higher; mobile devices cannot see this feature.

Greyed out selections – In several screens, buttons may be grey and nonfunctional. Certain features will be added or turned on or off based on your subscription. Activation wizard will only appear on a computer browser and schedule service > call Eaton will only work on a mobile device.

Missing load trend chart – New devices with no history will display a blank or “missing load trend” until data has been collected over at least two days. If a device stops sending data, a trend chart may have a gap indicating missing data.

Lost communication – Devices will occasionally miss sending an email to PredictPulse. After two consecutive missed heartbeats, or telemetry emails, PredictPulse will automatically display a status of Lost Communication. Once a device sends an email, the status will revert to normal or its condition. Typically, this issue is due to a customer communication network change beyond the control of Eaton. A lost communications restored email will be sent upon restoration.

Partial telemetry – Occasionally a device will send an email and one of the required data attachments is incomplete, incorrect, or missing a value. PredictPulse will display valid information but certain values may be null or displayed as “—”. Check if you have the latest firmware by going to eaton.com/networkconnectivity. Select your connectivity card, click **Resources**, then scroll down and expand the **Software, firmware, and applications** section. Download the current firmware and update your connectivity card.

PulseScore – Occasionally a PulseScore may be missing from a device or display an F grade in the portal and/or monthly report. Verify that an Environmental Monitoring Probe (EMP) is connected to the device's network

card and that communication to the card has not been lost. If an EMP is missing, contact the Eaton monitoring team for replacement.

Email Edits – User email addresses are not editable fields. To change a user's email address, invite the new email address to the account. The old email address may then be deleted as a user.

Questions? In the US, call 800-843-9433, option 2, option 5 or email predictpulseoperations@eaton.com.

Glossary

Activation wizard: An executable tool downloaded from computer sidebar to configure a UPS device to send data to PredictPulse

Administrators: Administrators can invite, using the sidebar, other users or coworkers to enroll in PredictPulse either as a user or as an administrator.

Alarms: Come from a device and may be informational or urgent. PredictPulse assigns alarms to categories such as *On Battery*, *Internal Fault Detected*, and so on. The Eaton monitoring team places a call to the customer point of contact for urgent alarms.

Battery state of charge: Indicator of battery charge. 100% battery indicates the batteries are fully charged.

Battery Time Remaining: Estimated battery run time available based on current load and battery charge. Based on UPS data.

Devices: Infrastructure equipment (Eaton UPSs) capable of being monitored by PredictPulse, with an IP address, network card, and access to a SMTP email network or wireless broadband network (4G/LTE). A parallel UPS would equal two devices since each UPS can be monitored separately.

Device list view: List view screen viewed after clicking on home page; displays all subscribed devices

Device Detail view: Most detailed view of a single device, scroll to view all related information, alarms and health

EULA: End user license agreement, terms of use and terms and conditions

Events: Non-device information. Lost communications, high temperature, and alarm acknowledgments are examples of events.

GDPR: Global data privacy regulations

Load: Percentage of available UPS power protecting connected loads. A 60% load percentage indicates that 60% of the UPS is being used and another 40% is available.

Lost communication: Devices will occasionally miss sending an email to PredictPulse. After two consecutive missed heartbeats, or telemetry emails, PredictPulse will automatically display a status of Lost Communication. Once a device sends an email the status will revert to normal or its condition. Typically, this issue is due to a customer communication network change beyond the control of Eaton. A lost communications restored email will be sent upon restoration.

Users: Users can manage their own preferences and contact information but cannot invite other users or change devices.

Organization: A single account with users and devices. Enrolled and registered users will all see the same information.

Organization Code: PredictPulse assigns a unique organization code upon initial account set-up to maintain multi tenancy data privacy. Only users enrolled within the same organization code can see data from an account.

Overview screen: Home or main screen viewed after logging in

Partial telemetry: Occasionally a device will send an email and one of the required data attachments is incomplete, incorrect, or missing a value. PredictPulse will display valid information but certain values may be null or displayed as “—”. Check if you have the latest firmware by going to eaton.com/networkconnectivity. Select your connectivity card, click **Resources**, then scroll down and expand the **Software, firmware, and applications** section. Download the current firmware and update your connectivity card.

Predictions: Predictive alerts for PredictPulse Insight subscribers. This will indicate one or more components health conditions need attention and an Eaton analyst will be in contact to discuss or arrange a site verification visit.

Privacy policy: Policy that defines personal data privacy rules

PulseScore: A summary of device conditions, including operational status, recent alarms (taking into consideration the alarm criticality), component health, age, and service history. When viewing multiple devices, the average of all devices is displayed as an overall score and letter grade (A+ to F). The health score scale is 1 – 100, is dynamic and can change at any time. [Table 1](#) lists the factors that determine the health score.

SMS: Short text messaging system



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