



Guardian

INSTALLATION INSTRUCTIONS

V1.1 February 2024

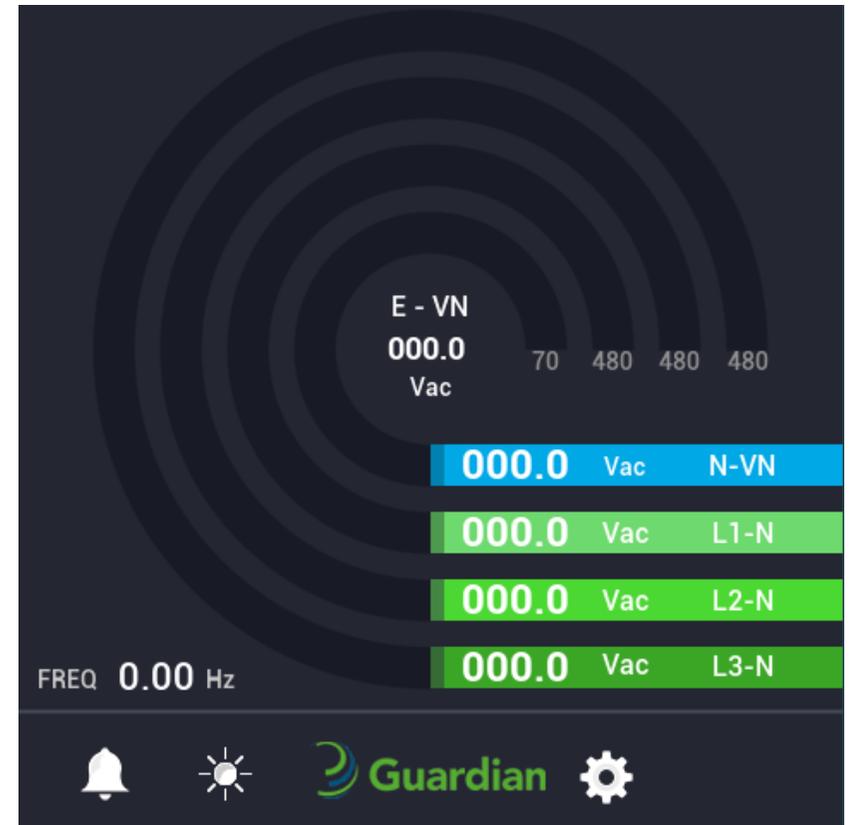


SET UP

Refer to the Instructions for the required Wiring configuration

Do not connect the relay contacts until set up has been completed.

Once the unit has been energised, parameters can be configured to specific values or left as default settings.



MAIN SCREEN

Relay 1 status: Relay 2 status:

Event	Trigger	Value	Unit	Source

Clear

1 2 3 4 5 6 7 8 9 10 11 12

Events screen

< Display settings

Backlight timeout enable/disable

Backlight timeout duration 5 min

Display brightness 100 %

Display settings



Guardian

Settings

- General
- Electrical network
- Alarm and event settings
- Network settings
- Cloud
- Modbus RTU
- Reset
- Contact information

Settings

SETTINGS SCREEN



The Settings menu is titled 'Settings' and includes the following options:

- General
- Electrical network
- Alarm and event settings
- Network settings
- Cloud
- Modbus RTU
- Reset
- Contact information

The 'Electrical network settings' screen displays the following configuration options:

Electrical network configure

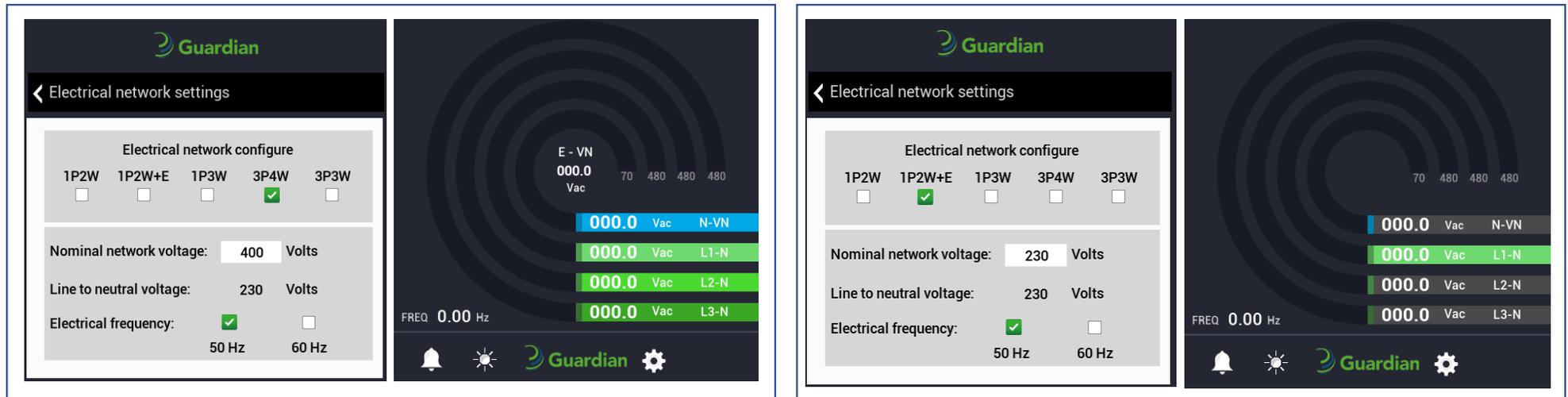
1P2W	1P2W+E	1P3W	3P4W	3P3W
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Nominal network voltage: 400 Volts

Line to neutral voltage: 230 Volts

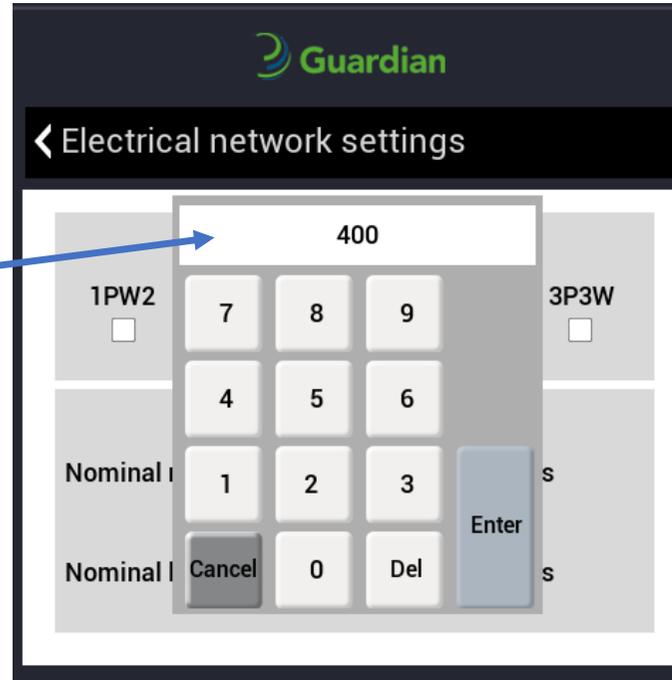
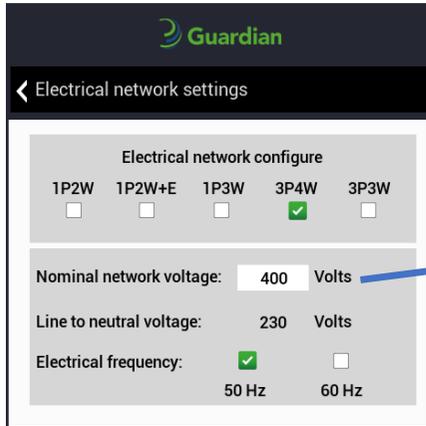
Electrical frequency: 50 Hz 60 Hz

ELECTRICAL NETWORK SETTINGS



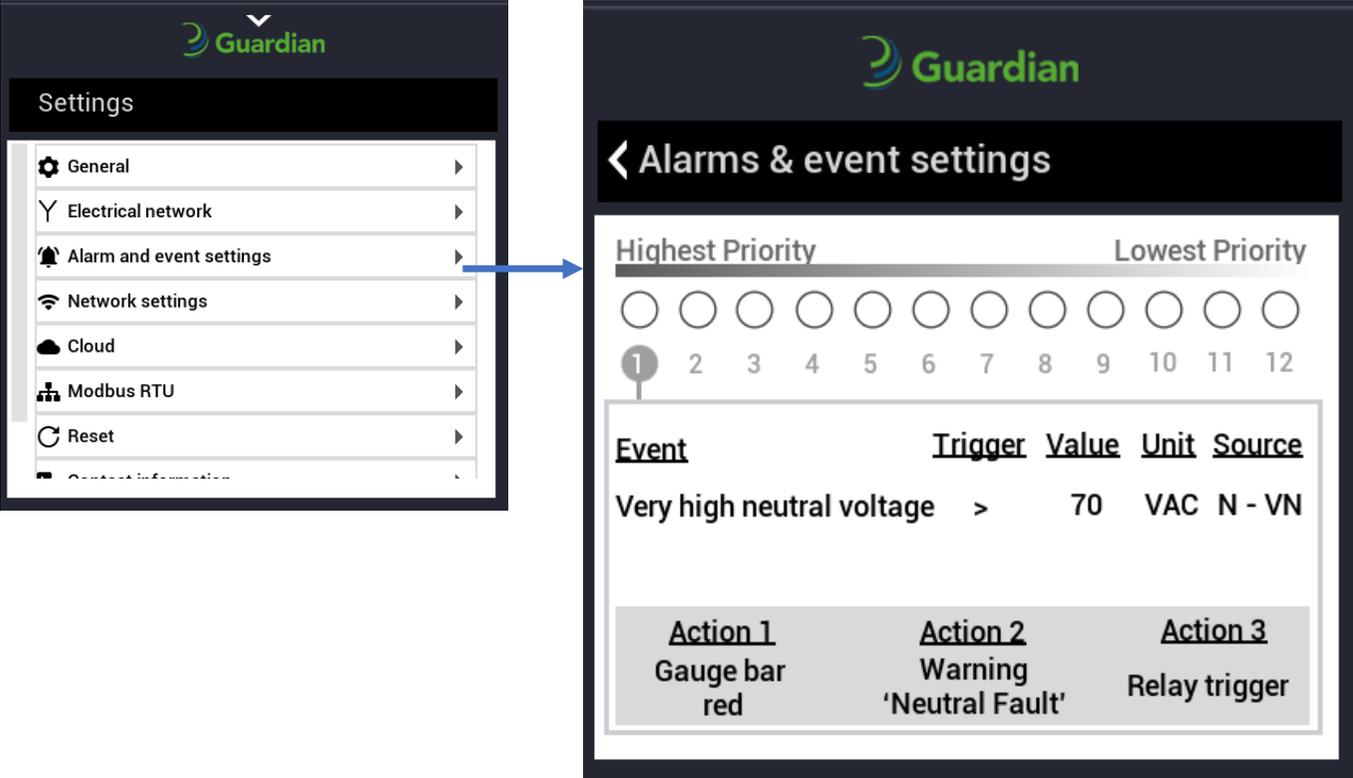
- Select system electrical network choice.
- Selecting an electrical network configuration will change the main screen display information.
- 1P2W will show L1 to Neutral only.
- 1P2W + E will show L1 to Neutral and Earth to Neutral.
- 1P3W will show L1 to N, L2 to N, N to VN and E to VN.
- 3P4W will show L1 to N, L2 to N, L3 to N N to VN and Earth to VN.
- 3P3W will show L1 to VN, L2 to VN, L3 to VN and Earth to VN.

ELECTRICAL NETWORK SETTINGS



- Select the nominal network voltage to edit the value.
- If number > 480 VAC “Out of range” will be displayed.
- Press cancel, to not make a change.
- Press enter to confirm change.
- The nominal line voltage will then be updated.
- Events related to the nominal network voltage, will update.

ALARMS AND EVENTS SETTINGS



- 12 event settings.
- Select the number to access the event of interest.
- The event with highest priority will trigger over lower priority.

CONFIGURABLE EVENTS

Event 2 - High neutral voltage (20v) **Range from 1-65v N-VN** No Relay/Relay Trigger

Event 4 - High earth voltage (20v) **Range from 1-60v N-VN** No Relay/Relay Trigger

Event 8 - Very high line voltage (115%) **Range from 110-115%** Relay Trigger

Event 9 - Very low line voltage (85%) **Range from 85-90%** Relay Trigger

Event 10 - High line voltage (110%) **Range from 105-110%** No Relay Trigger

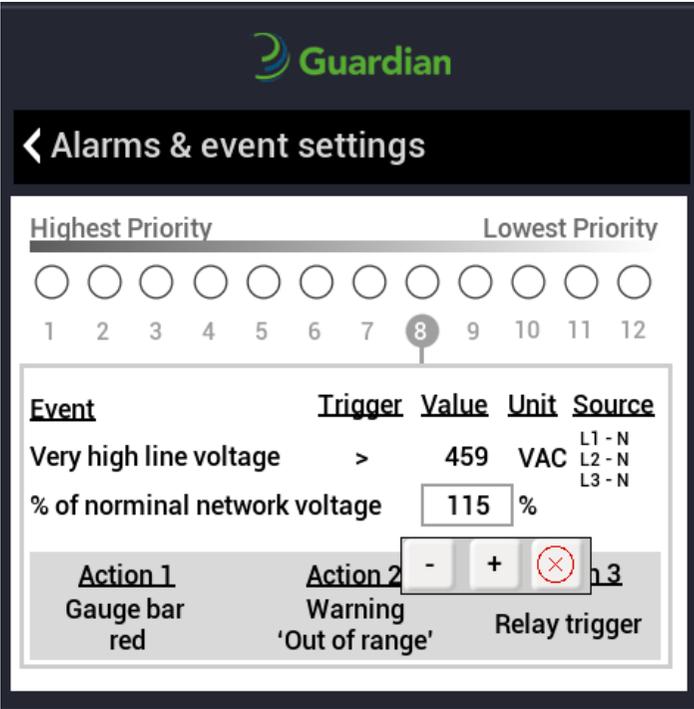
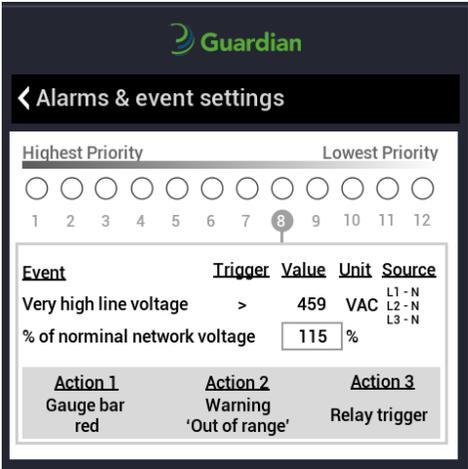
Event 11 - Low line voltage (90%) **Range from 85-90%** No Relay Trigger

Event 12 - Frequency out of range (0.5hz) **Range from 0-19.9hz** No Relay/Relay Trigger

Please note, some events may not appear depending on your supply electrical network.



ALARMS AND EVENTS SETTINGS



- Select the boxed value to edit the threshold.
- The threshold has been limited to 5% change.
- Press the “X” button to close the keypad.
- Events 8, 9, 10 and 11 are effected by the electrical network nominal voltage.

When all the configurable values have been checked or amended from default, connect the relays.

EVENTS EXPLANATION

- Event 1 - Very high neutral voltage (Relay Trigger)
- Event 2 - High neutral voltage (Range from 1-65v N-VN No Relay/Relay Trigger)
- Event 3 - Very high earth voltage (Relay Trigger)
- Event 4 - High earth voltage (Range from 1-60v N-VN No Relay Trigger)
- Event 5 - Voltage overline range (Relay Trigger)
- Event 6 - Loss of Phase (Relay Trigger)
- Event 7 - Frequency out of range (Relay Trigger)
- Event 8 - Very high line voltage (Range from 110-115% Relay Trigger)
- Event 9 - Very low line voltage (Range from 85-90% Relay Trigger)
- Event 10 - High line voltage (Range from 105-110% No Relay Trigger)
- Event 11 - Low line voltage (Range from 85-90% No Relay Trigger)
- Event 12 - Frequency out of range (Range Margin from 0-19.9hz No Relay/Relay Trigger)

Please note, some events may not appear depending on your supply electrical network.

EVENTS SCREEN EXAMPLE

Relay 1 status:  Relay 2 status: 

Event	Trigger	Value	Unit	Source
1	Very high neutral voltage	>	70	VAC N-VN
3	Very high earth voltage	>	65	VAC E-VN
8	Very high line voltage	>	265	VAC L1 - N
9	Very low line voltage	<	196	VAC L3 - N
10	Frequency out of range	<>	66	Hz F1

Clear

1 2 3 4 5 6 7 8 9 10 11 12



Events that have been triggered

Relay 1 status:  Relay 2 status: 

Event	Trigger	Value	Unit	Source
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Clear

1 2 3 4 5 6 7 8 9 10 11 12



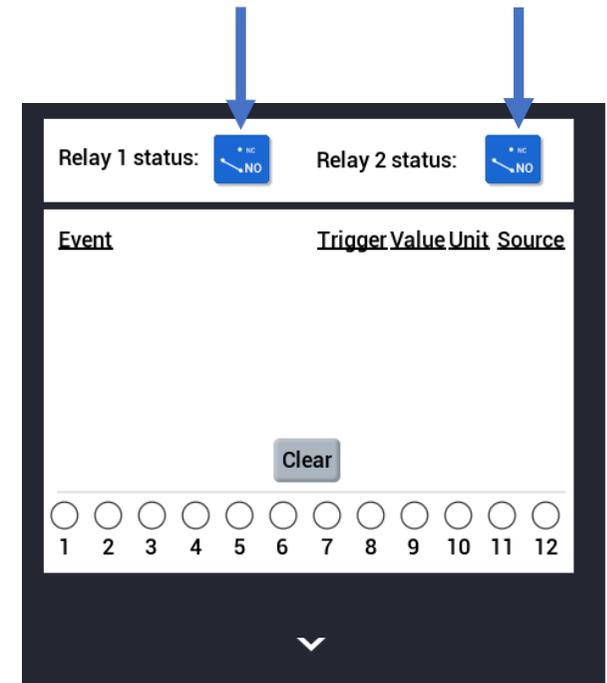
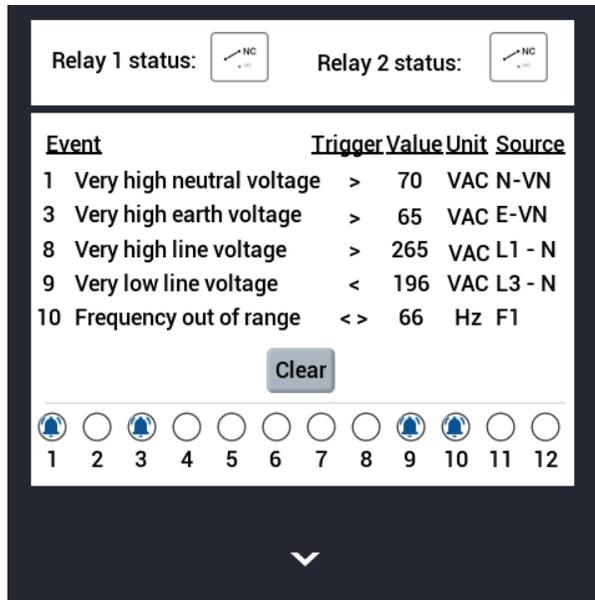
Events can be cleared here



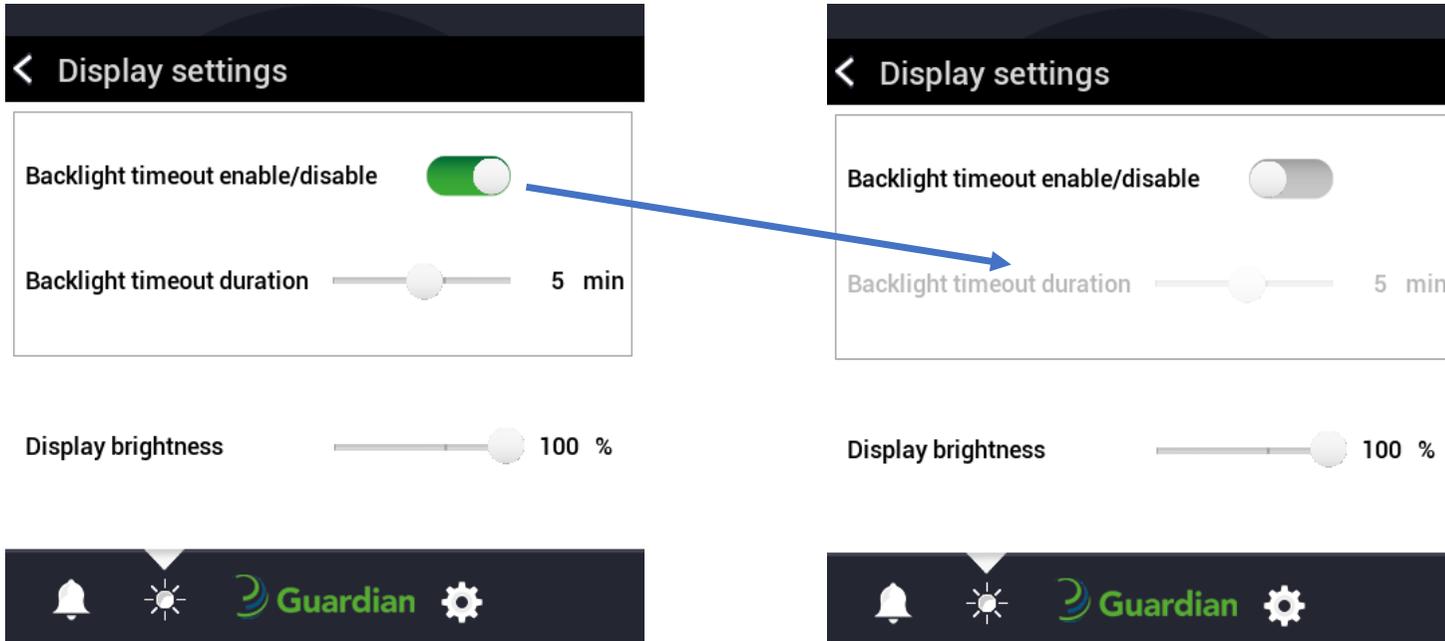
FAULT CONDITIONS

When a fault has been detected the Guardian will Switch both relays to the NC state, in turn switching The connected contactor or UV Device off.

Once a detected fault has cleared, the Guardian will wait a further 3 minutes before changing the Relay status to NO state.



DISPLAY SETTINGS



- Backlight timeout switch will enable or disable access to the time duration.
- Drag the scroll bars to change the settings.

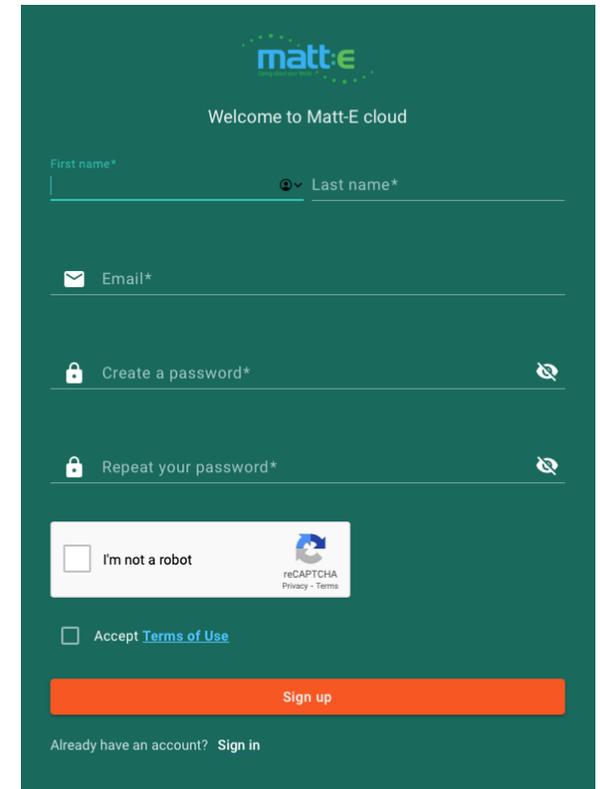
Claiming a device

Create an account on the sign up page of the cloud.

cloud.matt-e.com/login is the URL, click on the sign up button on this page.

Enter your information to create an account in the relative fields to sign up.

Verify your email address from your chosen email platform.



The screenshot shows the sign-up page for Matt-E cloud. At the top, the Matt-E logo is displayed with the tagline "Caring about your World". Below the logo, the text "Welcome to Matt-E cloud" is centered. The form consists of several input fields: "First name*" and "Last name*" (with a dropdown arrow), "Email*" (with an envelope icon), "Create a password*" (with a lock icon and a "show" icon), and "Repeat your password*" (with a lock icon and a "show" icon). Below these fields, there is a reCAPTCHA widget with the text "I'm not a robot" and a checkbox. Underneath the reCAPTCHA, there is another checkbox labeled "Accept Terms of Use" with a link to "Terms of Use". At the bottom of the form, there is a prominent orange "Sign up" button. Below the button, the text "Already have an account? Sign in" is displayed.



MATT-E CLOUD HUB



DEVICE LIST

Status	Name ↑	Last Update Time
No entities found		

Items per page: 10 1 - 0 of 0

Welcome
to the **Guardian** cloud



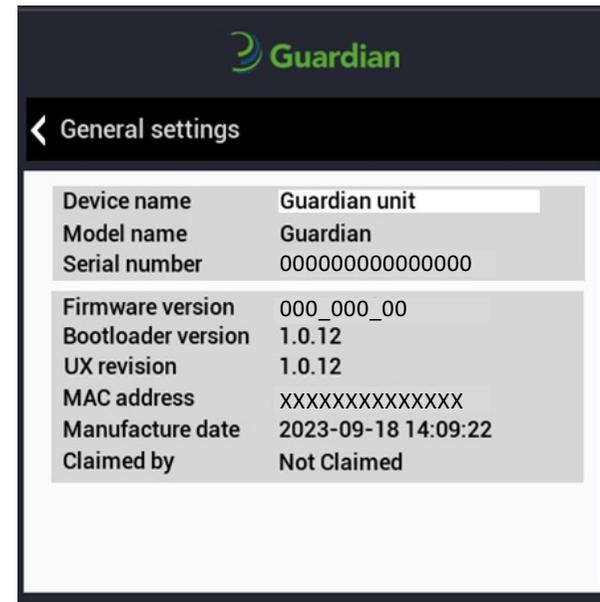
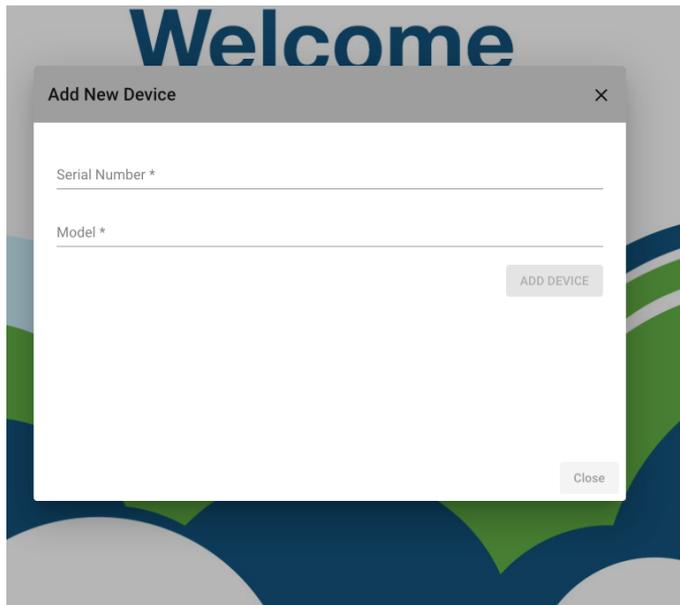
Guardian v1



CLAIM THE DEVICE

To claim a device, click on the + icon in the device list. You will be asked to enter a serial number and a model. The model will always be 'Guardian' (case sensitive)

The serial numbers can be taken from the device (on the device, go to settings > general settings)



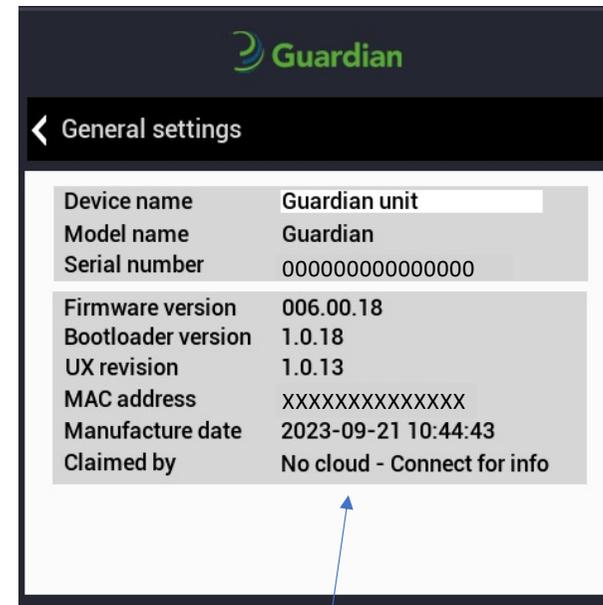
Guardian	
General settings	
Device name	Guardian unit
Model name	Guardian
Serial number	0000000000000000
Firmware version	000_000_00
Bootloader version	1.0.12
UX revision	1.0.12
MAC address	XXXXXXXXXXXXXX
Manufacture date	2023-09-18 14:09:22
Claimed by	Not Claimed

Click "Add Device"

CLAIMED DEVICE



Confirmation of a claimed unit



Confirmation of a claimed unit but
The connection has been lost

VIEW DEVICES

Once logged in the home page lists the connected devices on the left hand side.

status	Enabled	Name ↑	Last Update Time
ALARM	YES	Guardian 1	24/04/2023,11:31:16
ON	YES	Guardian 2	24/04/2023,11:31:04
ON	YES	Guardian 3	24/04/2023,11:31:04

Welcome
to the Guardian cloud



DEVICE HOME SCREEN

Click on one of the connected devices to see the measured values.

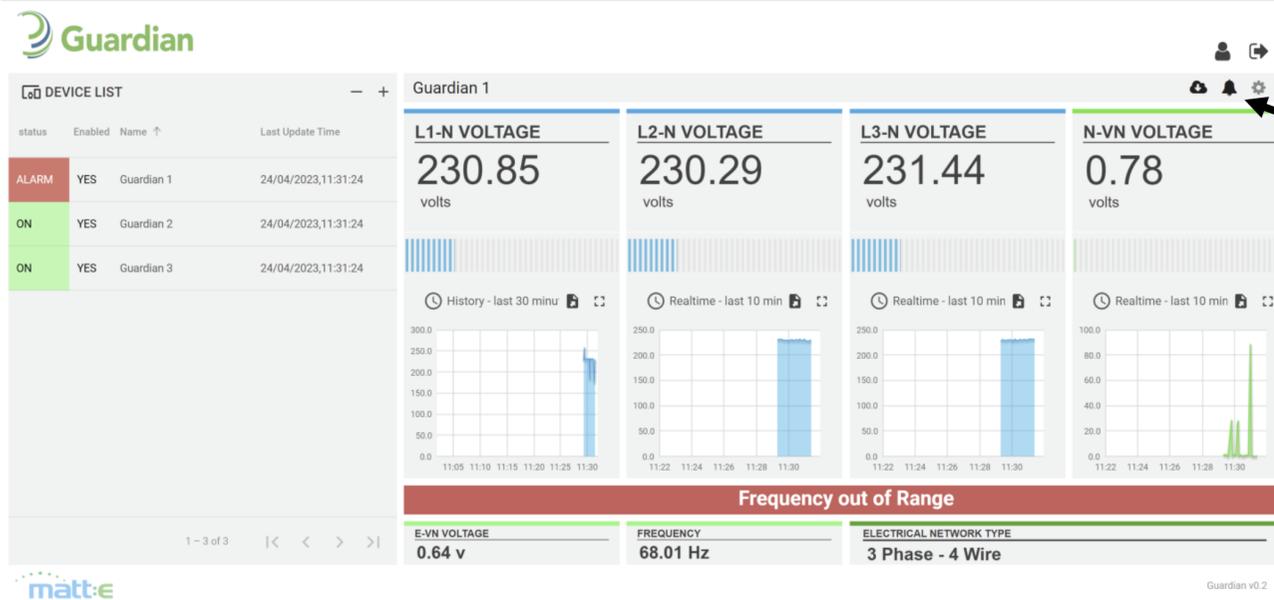
The screenshot displays the Guardian device home screen for 'Guardian 1'. On the left, a 'DEVICE LIST' table shows three devices: Guardian 1 (ALARM), Guardian 2 (ON), and Guardian 3 (ON). The main area features four voltage gauges (L1-N, L2-N, L3-N, N-VN) and three real-time graphs. A red banner at the bottom indicates 'Frequency out of Range'. The bottom row shows E-VN Voltage (0.64 v), Frequency (68.01 Hz), and Electrical Network Type (3 Phase - 4 Wire). The Guardian logo is at the top left, and the matt:e logo is at the bottom left. The version 'Guardian v0.2' is at the bottom right.

status	Enabled	Name ↑	Last Update Time
ALARM	YES	Guardian 1	24/04/2023,11:31:24
ON	YES	Guardian 2	24/04/2023,11:31:24
ON	YES	Guardian 3	24/04/2023,11:31:24

Measurement	Value
L1-N VOLTAGE	230.85 volts
L2-N VOLTAGE	230.29 volts
L3-N VOLTAGE	231.44 volts
N-VN VOLTAGE	0.78 volts

Measurement	Value
E-VN VOLTAGE	0.64 v
FREQUENCY	68.01 Hz
ELECTRICAL NETWORK TYPE	3 Phase - 4 Wire

EVENTS LOG



Click on the bell icon to show the event log as below.

DOWNLOAD EVENTS

The screenshot displays the Guardian web interface. On the left, there is a 'DEVICE LIST' table with columns for status, Enabled, Name, and Last Update Time. It lists three Guardian devices (Guardian 1, Guardian 2, Guardian 3) with their respective statuses (ALARM, ON, ON) and update times. On the right, the 'Guardian 1' section shows 'EVENT LOGS' for the last 30 minutes. The event logs table has columns for Priority, source, Status, details, Created time, and Cleared time. A red arrow points to a download icon (represented by a document with a downward arrow) located in the top right corner of the event logs section.

status	Enabled	Name	Last Update Time
ALARM	YES	Guardian 1	24/04/2023,11:31:24
ON	YES	Guardian 2	24/04/2023,11:31:24
ON	YES	Guardian 3	24/04/2023,11:31:24

Priority	source	Status	details	Created time	Cleared time
11	Frequency	Triggered	Frequency out of Range	2023-04-24 11:31:24	
9	L1	Cleared	Very Low Line Voltage	2023-04-24 11:31:16	2023-04-24 11:31:24
1	N-VN	Cleared	Very High Neutral Voltage	2023-04-24 11:30:59	2023-04-24 11:31:04
3	E-VN voltage	Cleared	Very High Earth Voltage	2023-04-24 11:30:38	2023-04-24 11:30:40
9	L1	Cleared	Very Low Line Voltage	2023-04-24 11:30:26	2023-04-24 11:30:29
2	N-VN	Cleared	High Neutral Voltage	2023-04-24 11:30:11	2023-04-24 11:30:16
11	Frequency	Cleared	Frequency out of	2023-04-24 11:30:03	2023-04-24 11:30:01

This log can be downloaded here as an excel file

SET UP USER DETAILS

The screenshot displays the Guardian web interface. On the left, a 'DEVICE LIST' table shows three devices: Guardian 1 (ALARM), Guardian 2 (ON), and Guardian 3 (ON). The main area is titled 'Account settings' and contains an 'Add new user' form with fields for 'New User Email', 'New User First Name', and 'New User Last Name', along with an 'Admin' checkbox. Below the form is a table of 'All users' with columns for First name, Last name, Email, and User level. The table lists one user: Terry Gould (tg@oemnorth.com, Read-only). In the top right corner of the account settings panel, there is a user icon (a person silhouette) which is highlighted by a black arrow pointing to a callout box.

status	Enabled	Name	Last Update Time
ALARM	YES	Guardian 1	24/04/2023,11:31:24
ON	YES	Guardian 2	24/04/2023,11:31:24
ON	YES	Guardian 3	24/04/2023,11:31:24

First name	Last name	Email	User level
Terry	Gould	tg@oemnorth.com	Read-only

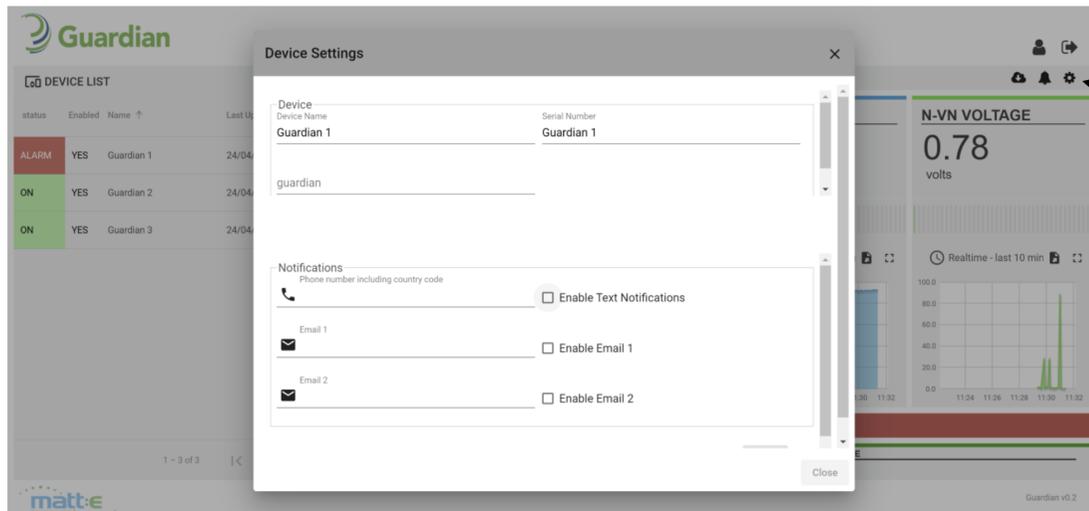
The user icon allows you to set a new user. Enter the contact name and email address. You can also select if you want them to be admin or read only email

DEVICE NOTIFICATION SET UP

To receive notification of the events via text and/or email enter your details in the Device Settings

Ensure to select the “Enable” box to the right.

For the text alerts ensure to use the country code. +44 (UK) for example.



Click on the cog to enter the device settings page. Here you can enter the details for the contact in the event that a fault is detected.

EVENT NOTIFICATIONS

