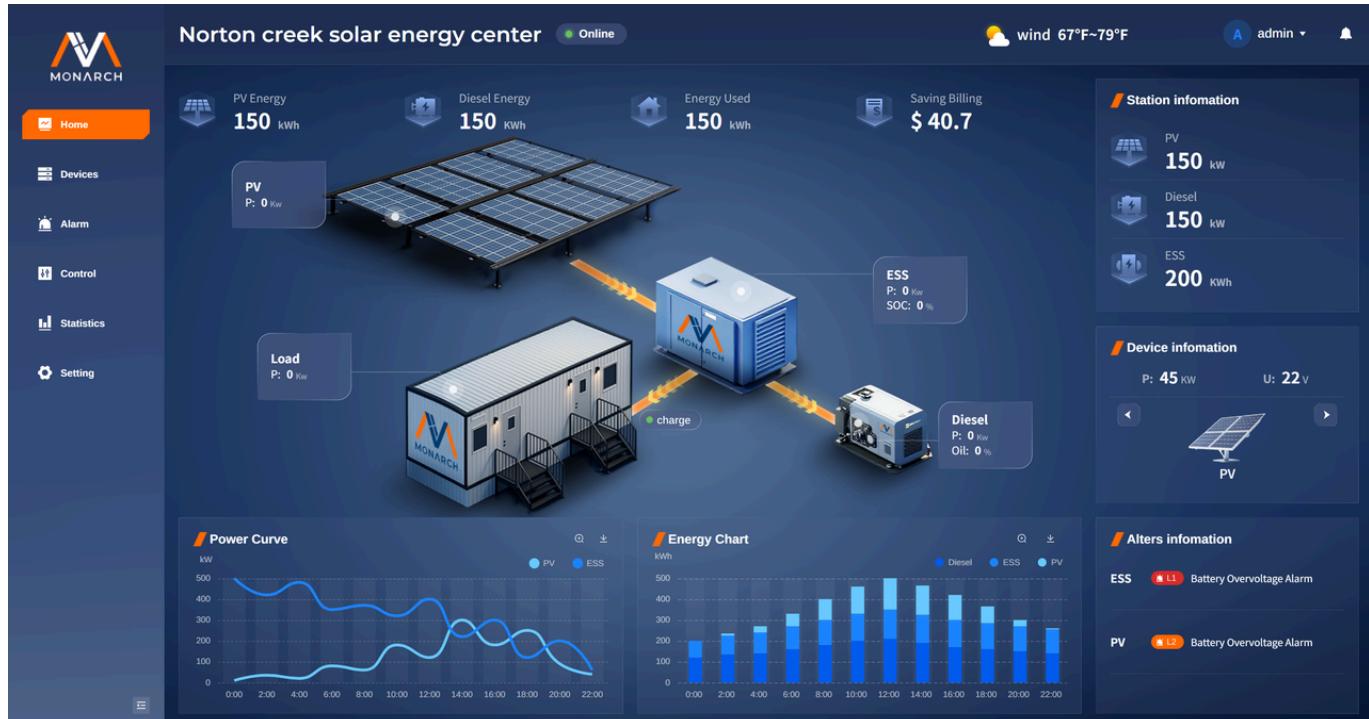


普通用户手册

平台介绍



Monarch Edge平台是一套面向边缘能源站点的综合监控与分析平台，旨在为用户提供清晰、统一、可视化的站点运行视图。平台覆盖发电、储能、用能及告警等关键业务场景，通过标准化的界面与一致的交互方式，帮助用户快速掌握设备状态、运行趋势与异常情况，提升日常运维效率与管理质量。平台主要能力包括：

- 站点总览：**集中展示能量概况、能量流向、功率/能量趋势及站点与设备摘要，便于快速判断运行健康度。
- 设备监控：**按设备类型（光伏、储能、电表、柴油机等）提供概览与值监控页面，支持实时数据与状态查看。
- 告警管理：**区分当前告警与历史告警，支持查询、筛选与导出，便于异常定位与追溯。
- 运行统计：**提供统计概览、曲线分析与运行/操作日志，支持运行数据复盘与趋势分析。



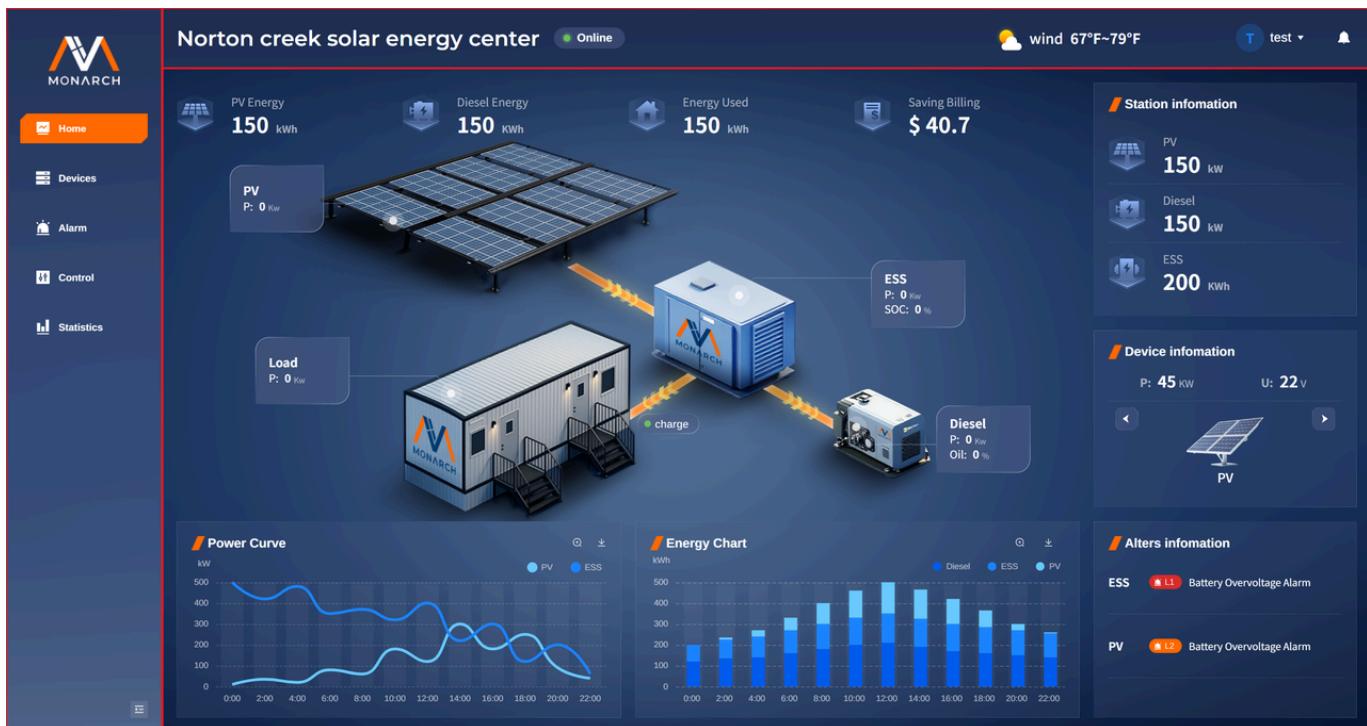
1450 Raleigh Road, Suite 208, Chapel Hill, NC 27517 USA

Tel: +1 919-391-9405 | Website: www.voltageenergy.com

The Voltage name and associated logos, in addition to other trademarks used herein, are owned exclusively by Voltage, LLC, and are registered with the U.S. Patent and Trademark Office. All rights reserved.

- **统一体验：**表格筛选、分页、更新时间提示等交互一致，降低学习成本。**本手册面向普通用户。**

通用界面结构以及功能说明



整个用户界面首页主要分为三个部分：

- 左侧：侧边栏菜单

- 用户可以点击想要跳转的功能模块页面进行跳转，其中Devices、Alarm、Control、Statistic都具有二级菜单。当前页面所对应的菜单会高亮。其菜单信息如下：
 - Home (首页)
 - Devices (设备)
 - PV (光伏)
 - Battery (电池/储能)
 - Diesel Generator (柴油发电机)



1450 Raleigh Road, Suite 208, Chapel Hill, NC 27517 USA

Tel: +1 919-391-9405 | Website: www.voltageenergy.com

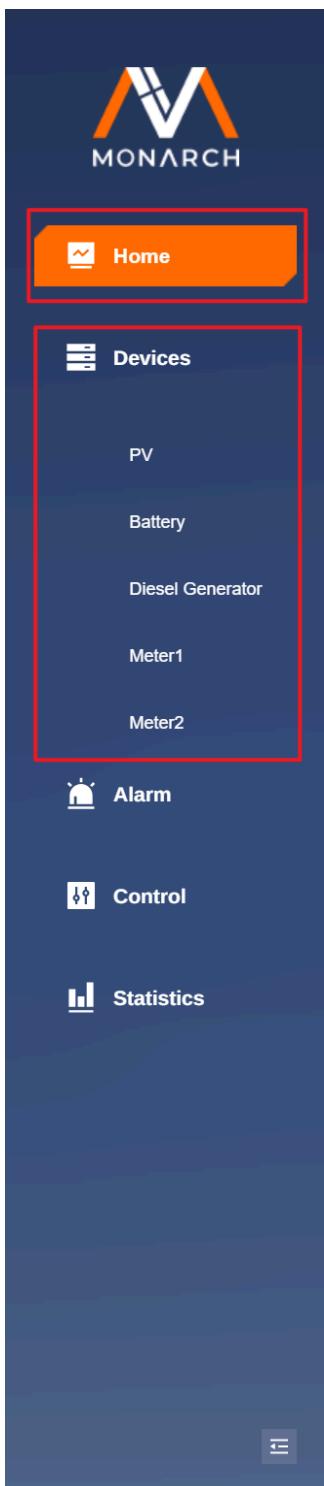
The Voltage name and associated logos, in addition to other trademarks used herein, are owned exclusively by Voltage, LLC, and are registered with the U.S. Patent and Trademark Office. All rights reserved.

- **Meter1** (电表1)
- **Meter2** (电表2)
- **Alarm** (告警)
 - **Current Records** (当前告警)
 - **History Records** (历史告警)
- **Control** (控制)
 - **Control Record** (控制记录)
- **Statistics** (统计)
 - **Overview** (概览)
 - **Curves** (曲线)
 - **Operation Log** (操作日志)
 - **Running Log** (运行日志)



1450 Raleigh Road, Suite 208, Chapel Hill, NC 27517 USA
Tel: +1 919-391-9405 | Website: www.voltageenergy.com

The Voltage name and associated logos, in addition to other trademarks used herein, are owned exclusively by Voltage, LLC, and are registered with the U.S. Patent and Trademark Office. All rights reserved.



- 用户可以通过侧边栏右下角的缩放图标按钮，进行菜单栏的宽度缩放。 |



1450 Raleigh Road, Suite 208, Chapel Hill, NC 27517 USA
Tel: +1 919-391-9405 | Website: www.voltageenergy.com

The Voltage name and associated logos, in addition to other trademarks used herein, are owned exclusively by Voltage, LLC, and are registered with the U.S. Patent and Trademark Office. All rights reserved.



1450 Raleigh Road, Suite 208, Chapel Hill, NC 27517 USA

Tel: +1 919-391-9405 | Website: www.voltageenergy.com

The Voltage name and associated logos, in addition to other trademarks used herein, are owned exclusively by Voltage, LLC, and are registered with the U.S. Patent and Trademark Office. All rights reserved.



- 右上方：顶部栏



1450 Raleigh Road, Suite 208, Chapel Hill, NC 27517 USA

Tel: +1 919-391-9405 | Website: www.voltageenergy.com

The Voltage name and associated logos, in addition to other trademarks used herein, are owned exclusively by Voltage, LLC, and are registered with the U.S. Patent and Trademark Office. All rights reserved.

顶部右侧有“铃铛”

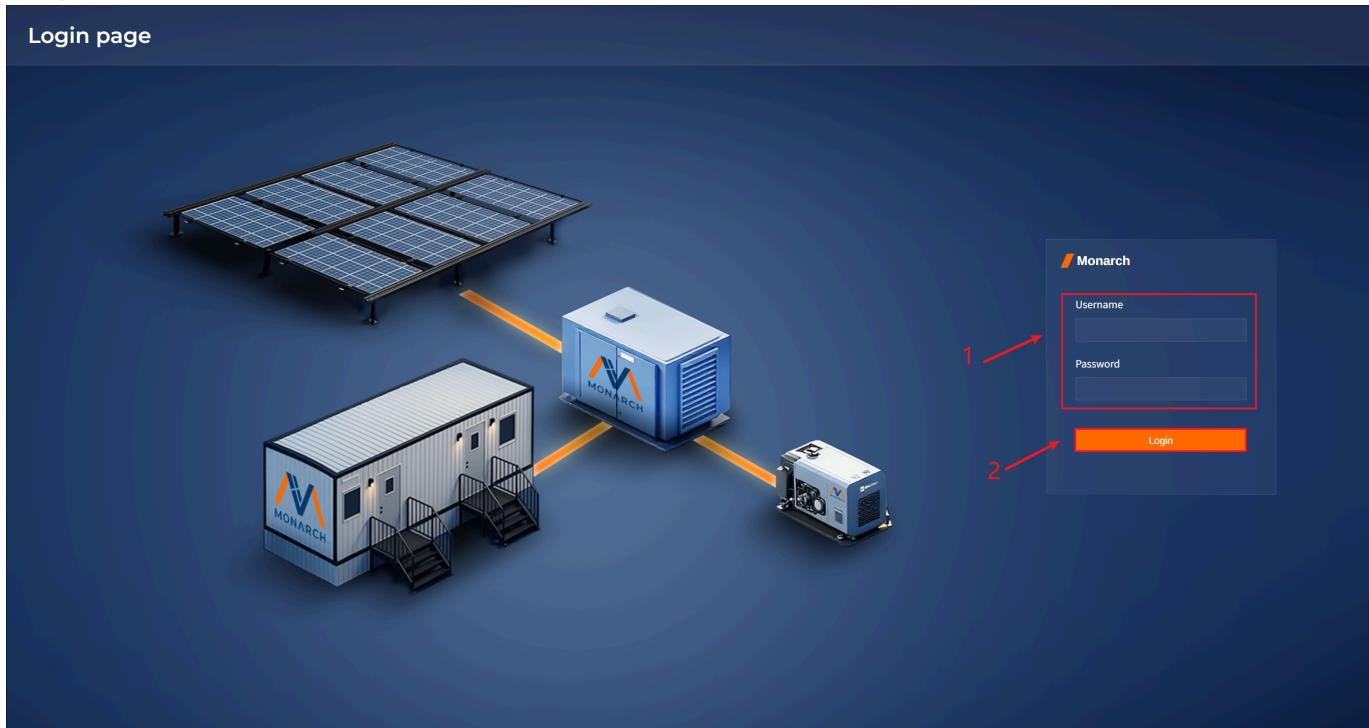


(Notice)"入口:

- 有红色数字角标时表示“当前告警数量”
- 点击后会跳转到 Alarm > Current Records (当前告警)
- 右下方: 主内容区
 - 展示当前页面数据

页面使用说明

Login 页面



1. 打开系统后进入登录页 (Log in page)



1450 Raleigh Road, Suite 208, Chapel Hill, NC 27517 USA

Tel: +1 919-391-9405 | Website: www.voltageenergy.com

The Voltage name and associated logos, in addition to other trademarks used herein, are owned exclusively by Voltage, LLC, and are registered with the U.S. Patent and Trademark Office. All rights reserved.

2. 输入：

- **Username**：用户账号的的用户名
- **Password**：用户账号的密码

3. 点击 **Log in** 按钮登录

4. 登录成功后默认会进入Home页面。

Home 页面

Home页面主要展示站点以及具体设备的关键数据，并且随着设备状态实时进行数据刷新。



- 第一部分为站点的能量概览卡片，主要有对 **PV Energy**、**Diesel Energy**、**Energy Used**、**Saving Billing** 的统计数据。
- 第二部分为微电网系统的拓扑图，其展示了能量的流动方向（设备充放电情况），同时展示了各个设备的核心数据：
 - **PV**: P (当前功率)



1450 Raleigh Road, Suite 208, Chapel Hill, NC 27517 USA

Tel: +1 919-391-9405 | Website: www.voltageenergy.com

The Voltage name and associated logos, in addition to other trademarks used herein, are owned exclusively by Voltage, LLC, and are registered with the U.S. Patent and Trademark Office. All rights reserved.

- Load: P (当前功率)
- ESS: P (当前功率)、SOC (电池荷电状态)
- Diesel: P (当前功率)、Oil (当前柴油油量百分比含量)
- 第三部分为功率统计曲线，针对PV、ESS的功率进行统计。
- 第四部分为能量柱状图，针对Diesel、ESS、PV的能量情况进行统计。
- 第五部分为当前站点信息统计，对PV、Diesel的当前的功率进行统计，对ESS的充/放电情况进行统计。
- 第六部分为站点设备信息统计，分布对PV、ESS、Diesel Generator的P (当前功率)、U(当前电压)进行统计。用户可以通过点击左右的切换按钮进行设备的切换。



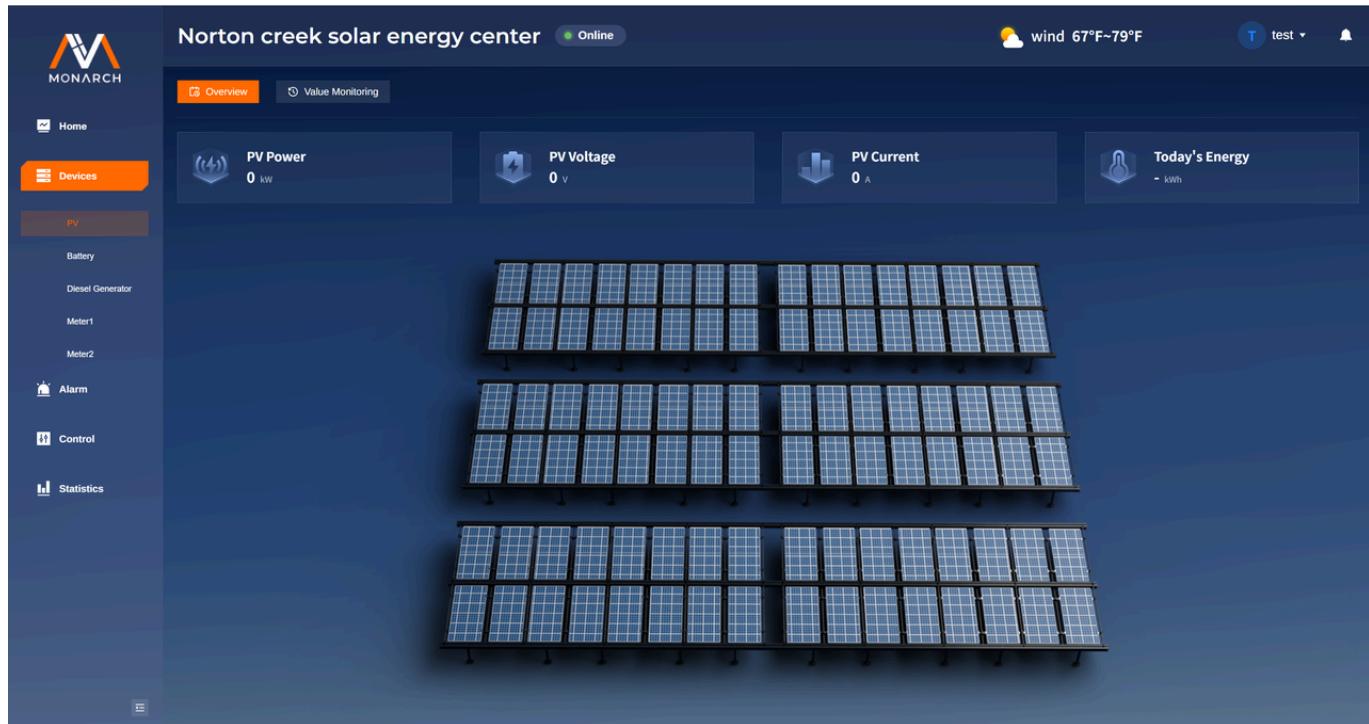
- 第七部分为站点告警信息，展示当前的告警信息，从左向右依次为：
 - 告警设备
 - 告警等级（按照紧急度排序为：L1>L2>L3） |
 - 告警信息



1450 Raleigh Road, Suite 208, Chapel Hill, NC 27517 USA
Tel: +1 919-391-9405 | Website: www.voltageenergy.com

The Voltage name and associated logos, in addition to other trademarks used herein, are owned exclusively by Voltage, LLC, and are registered with the U.S. Patent and Trademark Office. All rights reserved.

Devices 页面



Devices 包含多个设备类型，包括：**PV**、**Battery**、**Diesel Generator**、**Meter1**、

Meter2。 每个设备的页面中通常有：

- **Overview (概览)** : 设备关键指标卡片/概览展示
- **Value Monitoring (值监控)** : 实时点位的表格展示，展示的是与真实设备绑定的通道中Telemetry、Signal的相关数据。

PV

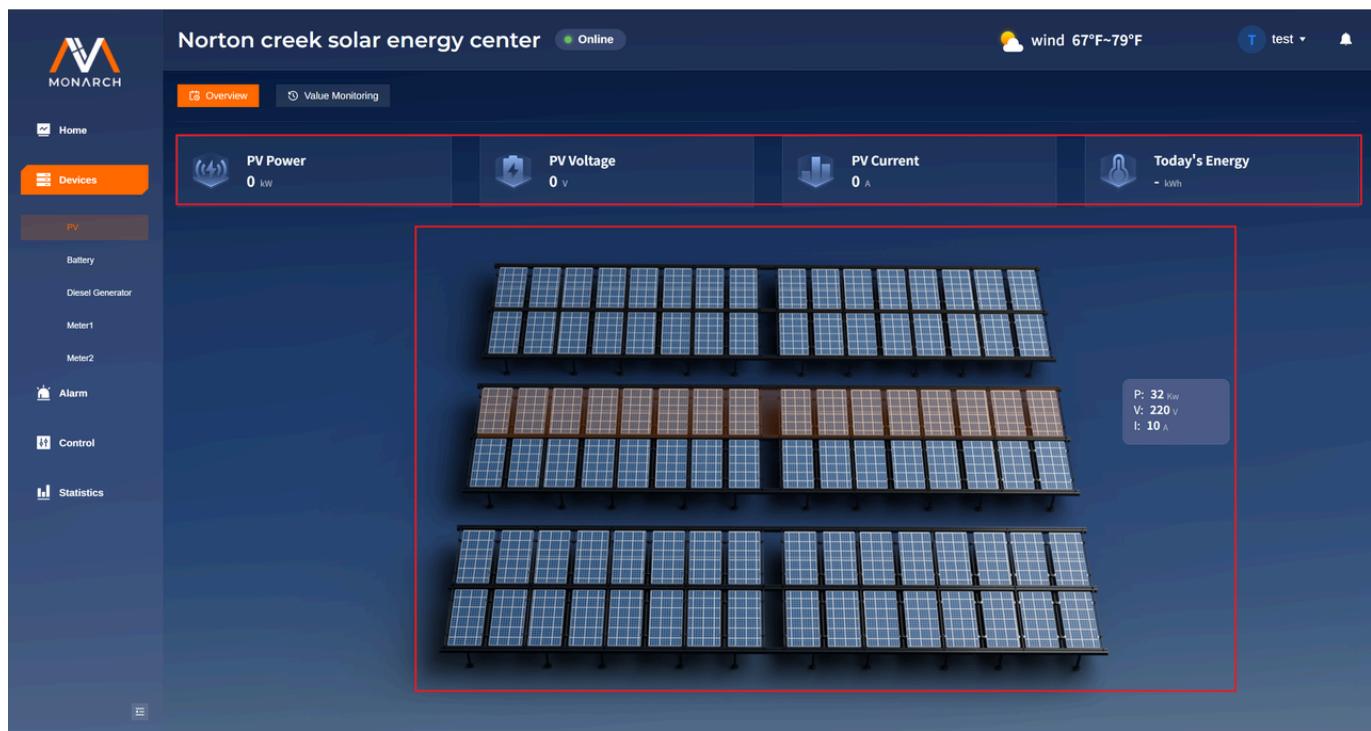
Overview



1450 Raleigh Road, Suite 208, Chapel Hill, NC 27517 USA

Tel: +1 919-391-9405 | Website: www.voltageenergy.com

The Voltage name and associated logos, in addition to other trademarks used herein, are owned exclusively by Voltage, LLC, and are registered with the U.S. Patent and Trademark Office. All rights reserved.



- 顶部为PV的4个指标卡片：
 - **PV Power**: 光伏当前功率
 - **PV Voltage**: 光伏当前电压
 - **PV Current**: 光伏当前电流
 - **Today's Energy**: 光伏今日发电量
- 中间为 PV 背景示意区域，鼠标悬停在行区域会显示该串光伏板的数据：
 - **P**: 所选这串光伏板的功率
 - **V**: 所选这串光伏板的电压
 - **I**: 所选这串光伏板的电流

Value Monitoring



1450 Raleigh Road, Suite 208, Chapel Hill, NC 27517 USA

Tel: +1 919-391-9405 | Website: www.voltageenergy.com

The Voltage name and associated logos, in addition to other trademarks used herein, are owned exclusively by Voltage, LLC, and are registered with the U.S. Patent and Trademark Office. All rights reserved.

| Name | Value | Unit |
|-------------------------|-------|--------|
| grid_line_voltage_vab | - | V |
| grid_line_voltage_vbc | - | V |
| grid_line_voltage_vca | - | V |
| grid_phase_voltage_va | - | V |
| grid_phase_voltage_vb | - | V |
| grid_phase_voltage_vc | - | V |
| grid_phase_angle_ab | - | Degree |
| grid_phase_angle_bc | - | Degree |
| grid_phase_angle_ca | - | Degree |
| grid_frequency | - | Hz |
| grid_current_ia | - | A |
| grid_current_ib | - | A |
| grid_current_ic | - | A |
| grid_earth_current | - | A |
| grid_unbalance_current | - | A |
| grid_a_active_power | - | kW |
| grid_b_active_power | - | kW |
| grid_c_active_power | - | kW |
| grid_total_active_power | - | kW |

| Name | Status |
|------|--------|
|------|--------|

- 顶部显示 Update Time，为最新获取到数据的时间。
- 下方是两张表：
 - 左面的表为通道的Telemetry表，包含 Name、Value、Unit 信息。
 - 右面的表为通道的Signal表，包括 Name、Status 信息。

Battery Overview



1450 Raleigh Road, Suite 208, Chapel Hill, NC 27517 USA

Tel: +1 919-391-9405 | Website: www.voltageenergy.com

The Voltage name and associated logos, in addition to other trademarks used herein, are owned exclusively by Voltage, LLC, and are registered with the U.S. Patent and Trademark Office. All rights reserved.

The screenshot shows the 'Overview' tab of the 'Norton creek solar energy center' monitoring interface. On the left, a sidebar lists 'Home', 'Devices' (selected), 'PV', 'Battery' (highlighted in orange), 'Diesel Generator', 'Meter1', 'Meter2', 'Alarm', 'Control', 'Statistics', and 'Setting'. The main area displays a large blue battery unit with the 'MONARCH' logo. To the right, a grid of nine cards provides real-time data:

| | | |
|--------------------------------|------------------------------|-------------------------|
| Charge Discharge Status 0 | SoC 0 % | SoH 0 % |
| Voltage 0 v | Current 0 A | Power 0 kW |
| Max Cell Voltage 0 v | Min Cell Voltage 0 v | Avg Cell Voltage 0 v |
| Cell Voltage Difference 0 v | Avg Cell Temperature 0 °c | |

该页面以卡片列表形式展示电池关键指标：

- **Charge/Discharge Status:** 电池充放电状态
- **SoC:** 电池电量百分比
- **SoH:** 电池健康度
- **Voltage:** 电池当前电压
- **Current:** 电池当前电流
- **Power:** 电池当前功率
- **Max/Min/Avg Cell Voltage:** 电池Cell的最大/最小/平均电压
- **Cell Voltage Difference:** 电池Cell最大电压差
- **Avg Cell Temperature:** 电池Cell平均温度

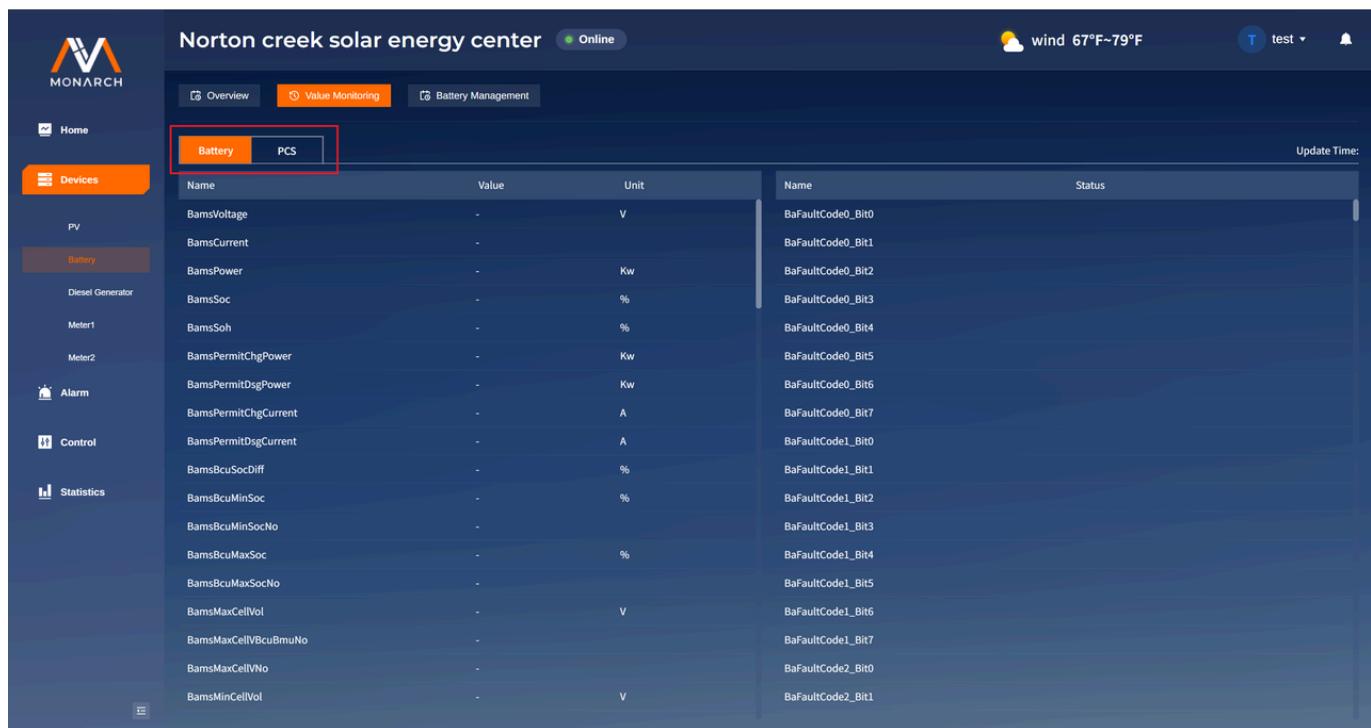
Value Monitoring



1450 Raleigh Road, Suite 208, Chapel Hill, NC 27517 USA

Tel: +1 919-391-9405 | Website: www.voltageenergy.com

The Voltage name and associated logos, in addition to other trademarks used herein, are owned exclusively by Voltage, LLC, and are registered with the U.S. Patent and Trademark Office. All rights reserved.



The screenshot shows the 'Battery Management' tab selected in the top navigation bar. The interface is divided into two main sections: a left panel with device lists and a right panel with two tables.

Left Panel:

- Home
- Devices (selected)
- PV
- Battery (selected)
- Diesel Generator
- Meter1
- Meter2
- Alarm
- Control
- Statistics

Right Panel:

Top Bar: Norton creek solar energy center (Online), wind 67°F~79°F, test, Update Time: [empty]

Tab Selection: Overview, Value Monitoring, Battery Management (selected), Battery, PCS (highlighted with a red box).

Table 1 (Battery):

| Name | Value | Unit |
|-----------------------|-------|------|
| BamsVoltage | - | V |
| BamsCurrent | - | |
| BamsPower | - | Kw |
| BamsSoc | - | % |
| BamsSoh | - | % |
| BamsPermitChgPower | - | Kw |
| BamsPermitDsgPower | - | Kw |
| BamsPermitChgCurrent | - | A |
| BamsPermitDsgCurrent | - | A |
| BamsBcuSocDiff | - | % |
| BamsBcuMinSoc | - | % |
| BamsBcuMinSocNo | - | |
| BamsBcuMaxSoc | - | % |
| BamsBcuMaxSocNo | - | |
| BamsMaxCellVol | - | V |
| BamsMaxCellIVBcuBmuNo | - | |
| BamsMaxCellIVNo | - | |
| BamsMinCellVol | - | V |

Table 2 (PCS):

| Name | Status |
|-------------------|--------|
| BaFaultCode0_Bit0 | |
| BaFaultCode0_Bit1 | |
| BaFaultCode0_Bit2 | |
| BaFaultCode0_Bit3 | |
| BaFaultCode0_Bit4 | |
| BaFaultCode0_Bit5 | |
| BaFaultCode0_Bit6 | |
| BaFaultCode0_Bit7 | |
| BaFaultCode1_Bit0 | |
| BaFaultCode1_Bit1 | |
| BaFaultCode1_Bit2 | |
| BaFaultCode1_Bit3 | |
| BaFaultCode1_Bit4 | |
| BaFaultCode1_Bit5 | |
| BaFaultCode1_Bit6 | |
| BaFaultCode1_Bit7 | |
| BaFaultCode2_Bit0 | |
| BaFaultCode2_Bit1 | |

该页面包含 Tab：

- **Battery:** 电池
- **PCS:** 储能变流器/功率变换系统

每个 Tab 都是“Update Time + 左右表格”的形式，同PV的Value Monitoring页面。

Battery Management



1450 Raleigh Road, Suite 208, Chapel Hill, NC 27517 USA

Tel: +1 919-391-9405 | Website: www.voltageenergy.com

The Voltage name and associated logos, in addition to other trademarks used herein, are owned exclusively by Voltage, LLC, and are registered with the U.S. Patent and Trademark Office. All rights reserved.



本页面主要监控所有**Battery Cell**的**Voltage**和**Temperature**的情况。

- 左侧：显示所有Cell的电压情况
 - 模块上方分别显示最大Cell电压和最小Cell电压。
 - 模块下方以卡片形式列出 #1~#N (Battery Cell) 的电压值
- 右侧：显示所有Cell的温度情况
 - 模块上方分别显示最大Cell温度和最小Cell温度。
 - 模块下方以卡片形式列出 #1~#N (Battery Cell) 的温度值

Diesel Generator Overvie



1450 Raleigh Road, Suite 208, Chapel Hill, NC 27517 USA
Tel: +1 919-391-9405 | Website: www.voltageenergy.com

The Voltage name and associated logos, in addition to other trademarks used herein, are owned exclusively by Voltage, LLC, and are registered with the U.S. Patent and Trademark Office. All rights reserved.



顶部指标卡片：

- Power (功率)
- Oil (当前油含量)
- Voltage (电压)
- Coolant Temp (冷却液温度)

Value Monitoring



1450 Raleigh Road, Suite 208, Chapel Hill, NC 27517 USA

Tel: +1 919-391-9405 | Website: www.voltageenergy.com

The Voltage name and associated logos, in addition to other trademarks used herein, are owned exclusively by Voltage, LLC, and are registered with the U.S. Patent and Trademark Office. All rights reserved.

Norton creek solar energy center Online

Value Monitoring

| Name | Value | Unit |
|-------------------------|-------|--------|
| grid_line_voltage_vab | - | V |
| grid_line_voltage_vbc | - | V |
| grid_line_voltage_vca | - | V |
| grid_phase_voltage_va | - | V |
| grid_phase_voltage_vb | - | V |
| grid_phase_voltage_vc | - | V |
| grid_phase_angle_ab | - | Degree |
| grid_phase_angle_bc | - | Degree |
| grid_phase_angle_ca | - | Degree |
| grid_frequency | - | Hz |
| grid_current_ia | - | A |
| grid_current_ib | - | A |
| grid_current_ic | - | A |
| grid_earth_current | - | A |
| grid_unbalance_current | - | A |
| grid_a_active_power | - | kW |
| grid_b_active_power | - | kW |
| grid_c_active_power | - | kW |
| grid_total_active_power | - | kW |

结构同 **PV** 的 **Value Monitoring** 页面。

Meter1

Meter1直接展示Value Monitoring信息，其结构同PV的 Value Monitoring页面。

Norton creek solar energy center Online

Value Monitoring

| Name | Value | Unit |
|-------------------------|-------|--------|
| grid_line_voltage_vab | - | V |
| grid_line_voltage_vbc | - | V |
| grid_line_voltage_vca | - | V |
| grid_phase_voltage_va | - | V |
| grid_phase_voltage_vb | - | V |
| grid_phase_voltage_vc | - | V |
| grid_phase_angle_ab | - | Degree |
| grid_phase_angle_bc | - | Degree |
| grid_phase_angle_ca | - | Degree |
| grid_frequency | - | Hz |
| grid_current_ia | - | A |
| grid_current_ib | - | A |
| grid_current_ic | - | A |
| grid_earth_current | - | A |
| grid_unbalance_current | - | A |
| grid_a_active_power | - | kW |
| grid_b_active_power | - | kW |
| grid_c_active_power | - | kW |
| grid_total_active_power | - | kW |
| grid_reverse_power | - | kW |



1450 Raleigh Road, Suite 208, Chapel Hill, NC 27517 USA

Tel: +1 919-391-9405 | Website: www.voltageenergy.com

The Voltage name and associated logos, in addition to other trademarks used herein, are owned exclusively by Voltage, LLC, and are registered with the U.S. Patent and Trademark Office. All rights reserved.

Meter2

Meter2直接展示Value Monitoring信息，其结构同PV的 Value Monitoring页面。

| Name | Value | Unit |
|-------------------------|-------|--------|
| grid_line_voltage_vab | - | V |
| grid_line_voltage_vbc | - | V |
| grid_line_voltage_vca | - | V |
| grid_phase_voltage_va | - | V |
| grid_phase_voltage_vb | - | V |
| grid_phase_voltage_vc | - | V |
| grid_phase_angle_ab | - | Degree |
| grid_phase_angle_bc | - | Degree |
| grid_phase_angle_ca | - | Degree |
| grid_frequency | - | Hz |
| grid_current_ia | - | A |
| grid_current_ib | - | A |
| grid_current_ic | - | A |
| grid_earth_current | - | A |
| grid_unbalance_current | - | A |
| grid_a_active_power | - | kW |
| grid_b_active_power | - | kW |
| grid_c_active_power | - | kW |
| grid_total_active_power | - | kW |
| grid_reverse_power | - | kW |

| Name | Status |
|------|--------|
| | |

Alarm 页面

Alarm页面为告警记录页面，用户可以通过该模块对当前的告警信息以及历史告警信息进行查看。

Current Records

表格字段介绍：

- Name: 规则/告警名称
- Channel ID: 通道 ID
- Level: 告警等级图标
- Start Time: 触发时间 筛选操作： 用户可以对右上角的选择框进行告警等级的选择，以对当前告警记录进行筛选。

History Records



1450 Raleigh Road, Suite 208, Chapel Hill, NC 27517 USA

Tel: +1 919-391-9405 | Website: www.voltageenergy.com

The Voltage name and associated logos, in addition to other trademarks used herein, are owned exclusively by Voltage, LLC, and are registered with the U.S. Patent and Trademark Office. All rights reserved.

表格字段介绍：

- Name: 规则/告警名称
- Channel ID: 通道 ID
- Level: 告警等级图标
- Start Time: 告警触发时间
- End Time: 告警处理结束时间 筛选操作： 用户可以通过以下筛选条件进行筛选：
- Warning Level: L1/L2/L3
- Start Time: 开始时间
- End Time: 结束时间 用户点击Search按钮，可以针对筛选的条件进行搜索；点击Reload按钮，重置所有的筛选条件并搜索。 列表信息导出： 用户点击Export按钮可以导出历史告警的excel文件，其表头如下：

Control

Viewer 通常只具备“查看控制记录”的权限，不具备下发控制的权限。

Control Record

表格字段介绍：

- Name: 规则/告警名称
- Channel ID: 通道 ID
- Level: 告警等级图标
- Start Time: 触发时间 筛选操作： 用户可以对右上角的选择框进行告警等级的选择，以对当前告警记录进行筛选。

Statistics

Statistics 顶部有 4 个页签：



1450 Raleigh Road, Suite 208, Chapel Hill, NC 27517 USA
Tel: +1 919-391-9405 | Website: www.voltageenergy.com

The Voltage name and associated logos, in addition to other trademarks used herein, are owned exclusively by Voltage, LLC, and are registered with the U.S. Patent and Trademark Office. All rights reserved.

- Overview (概览)
- Curves (曲线)
- Operation Log (操作日志)
- Running Log (运行日志) 【截图占位: Statistics 四个页签 (Overview/Curves/Operation Log/Running Log)】

Overview

页面内容 该页以图表为主，通常包含：

- Energy consumption (能耗概览卡片)
- Energy Distribution (能源分布：环形图)
- Power Trend (功率趋势：折线图)
- Energy Chart (能量柱状图) 常用操作
- 切换时间范围：点击右侧时间按钮
 - 6 Hour / 1 Day / 1 Week / 1 Month
- 查看图表提示
 - 鼠标移到图表上，可看到某时间点的值 (tooltip) 【截图占位: Statistics Overview (时间按钮+图表区)】

Curves

Curves 页与 Overview 类似，也以图表为主，操作方式相同：

- 选择筛选条件 (Select filter condition)
- 切换时间范围 (6h/1d/1w/1m)
- 查看图表提示与趋势变化 【截图占位: Statistics Curves (筛选+时间按钮+图表)】

Operation Log

页面内容 表格列通常包含：



1450 Raleigh Road, Suite 208, Chapel Hill, NC 27517 USA
 Tel: +1 919-391-9405 | Website: www.voltageenergy.com

The Voltage name and associated logos, in addition to other trademarks used herein, are owned exclusively by Voltage, LLC, and are registered with the U.S. Patent and Trademark Office. All rights reserved.

- User (用户)
- Role (角色)
- Action (动作)
- Device (对象/设备)
- Result (结果)
- Time (时间)
- IP Address (IP) 支持分页。【截图占位: Operation Log (表格+分页)】

Running Log

页面内容 该页以“日志文本流”的方式展示系统运行信息：顶部通常有 Export (导出) 按钮。

常见问题 (FAQ) 与排障

1. 页面一直没有数据、设备 Update Time 不更新 请按顺序自查：
 2. 刷新页面 (F5)
 3. 切换到别的菜单再切回来
 4. 看顶部是否能正常跳转告警页 (验证基础路由正常)
 5. 让管理员检查：
 - 后端服务是否正常
 - WebSocket 推送源是否正常
 - 设备/通道是否在线 建议你向管理员提供：
 - 发生问题的页面 (例如: Devices > PV > Value Monitoring)
 - 当时的时间点
 - 是否所有设备都无数据，还是某一类无数据



1450 Raleigh Road, Suite 208, Chapel Hill, NC 27517 USA
Tel: +1 919-391-9405 | Website: www.voltageenergy.com

The Voltage name and associated logos, in addition to other trademarks used herein, are owned exclusively by Voltage, LLC, and are registered with the U.S. Patent and Trademark Office. All rights reserved.

2. 登录后又被跳回登录页 可能原因：

- 账号已过期/密码错误
- Token 刷新失败 建议：
 - 重新登录一次
 - 仍失败请联系管理员重置账号

术语表

- Viewer：只读用户，主要查看数据与记录
- Channel（通道）：采集/通信的逻辑通道（例如 Modbus 通道）
- Point（点位）：具体的测点/信号（例如某路电压/电流）
- Telemetry（遥测）：连续量（一般为数值 + 单位）
- Signal（遥信）：状态量（一般为 0/1 或状态码）
- SoC: State of Charge, 电量百分比
- SoH: State of Health, 健康度
- Update Time: 当前页面数据最近一次刷新/推送的时间



1450 Raleigh Road, Suite 208, Chapel Hill, NC 27517 USA
Tel: +1 919-391-9405 | Website: www.voltageenergy.com

The Voltage name and associated logos, in addition to other trademarks used herein, are owned exclusively by Voltage, LLC, and are registered with the U.S. Patent and Trademark Office. All rights reserved.