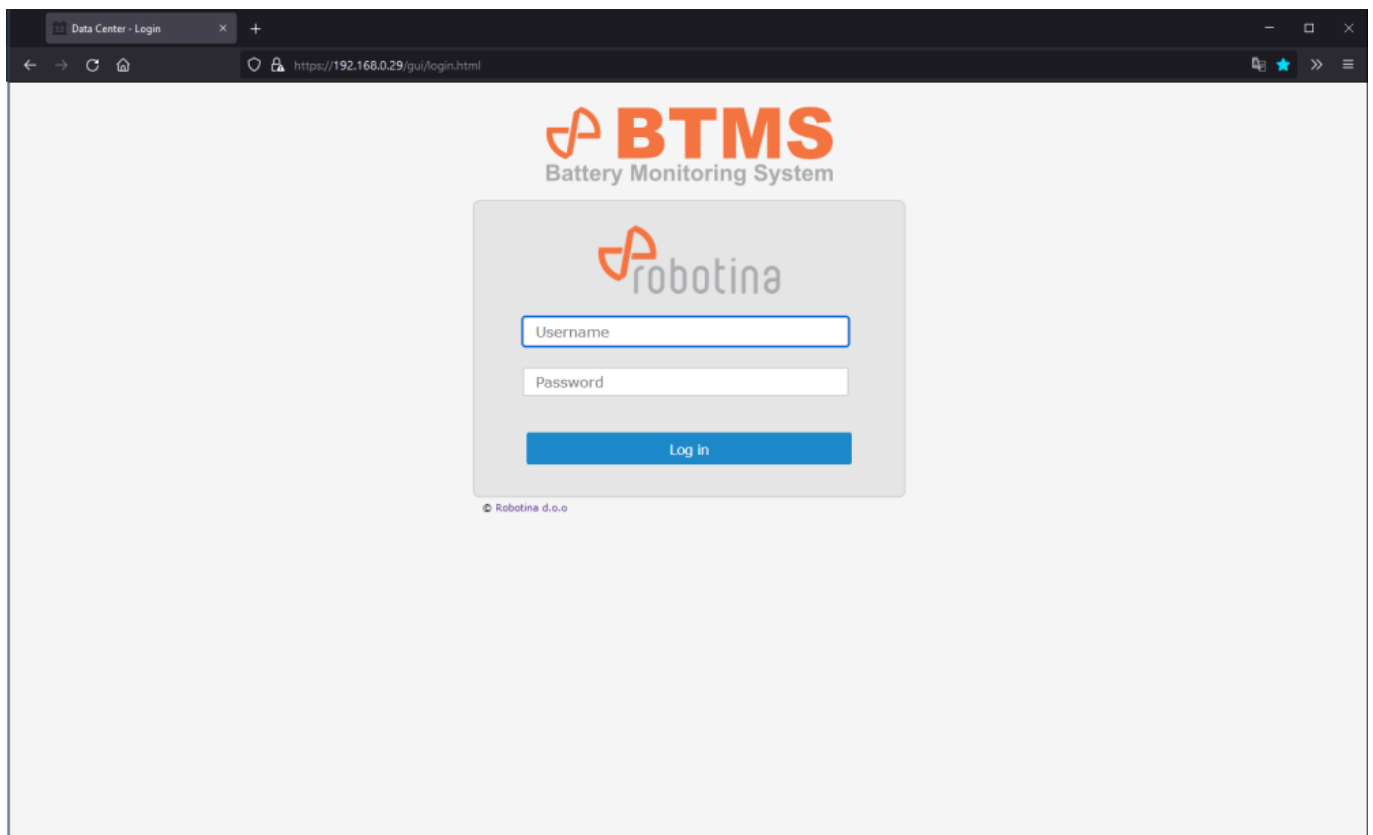


1. BM-GW WEB UI

- Demo: [BTMS BM-GW WEB UI demo](#)
- User: demo
- Pass: demo

1.1. Log-in



1st time log in:

- Connect Ethernet 2 port to facility LAN
- Connect PC to Ethernet 1 port (standard Ethernet cable between PC and BM-GW Ethernet 1 port)
- For PC Ethernet connection set fixed IP 192.168.10.200.
- Use the Internet browser to go to <https://192.168.10.1>
- Log in as:
 - user: admin
 - password: bmgw!admin
- Check the WAN IP address on the Data center - Settings page and set it if necessary

Robotina BTMS Battery Monitoring System

The Main Admin User

Real-time data History data Discharge data Alarm Settings

Data Center

- UPS 1
 - String 1/1

Network settings

Edit

Adapter	Mode	IP	Subnet	Gateway	DNS
LAN	fixed	192.168.10.1	255.255.255.0		
WAN	fixed	192.168.0.29	255.255.255.0	192.168.0.2	192.168.0.41, 192.168.0.71

NTP settings

Edit Sync now

Custom NTP

Host	Port	Enabled
		☒

Default NTP pools (ENABLED)

Host
ntp.ubuntu.com
0.ubuntu.pool.ntp.org
1.ubuntu.pool.ntp.org
2.ubuntu.pool.ntp.org

Time settings

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- Connect the PC to the facility LAN and go to the <https://IP> address of the WAN port

1.2. General description

Robotina BTMS Battery Monitoring System

The Main Admin User

Real-time data History data Discharge data Alarm Settings

Data Center

- UPS 1
 - String 1/1

Load

UPS	Status	Voltage	Current	SoC
#01	OK	217.89 V	0.00 A	100 %

Voltage

HIGH

LOW

0

#01

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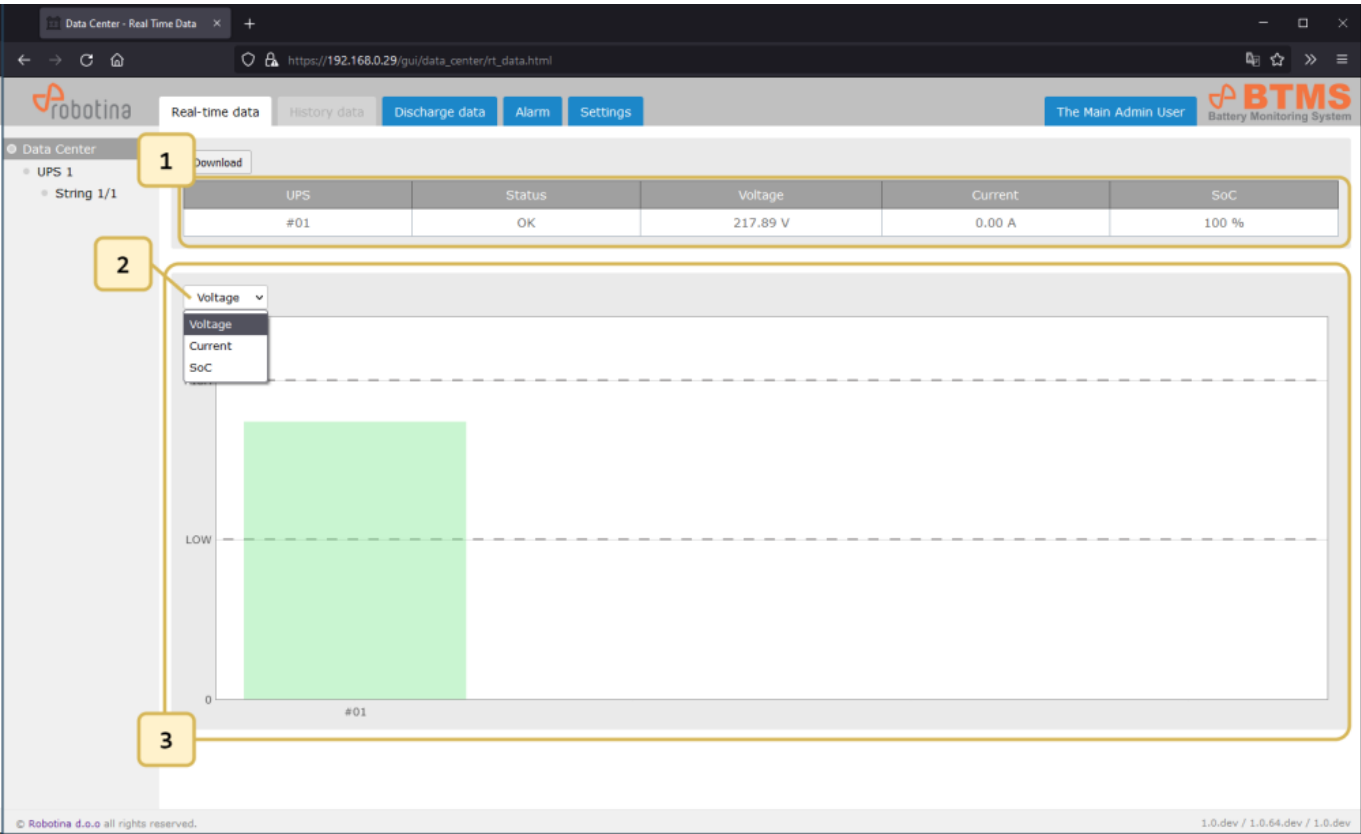
1

Pages tabs

2	Data center tree structure
3	Page data

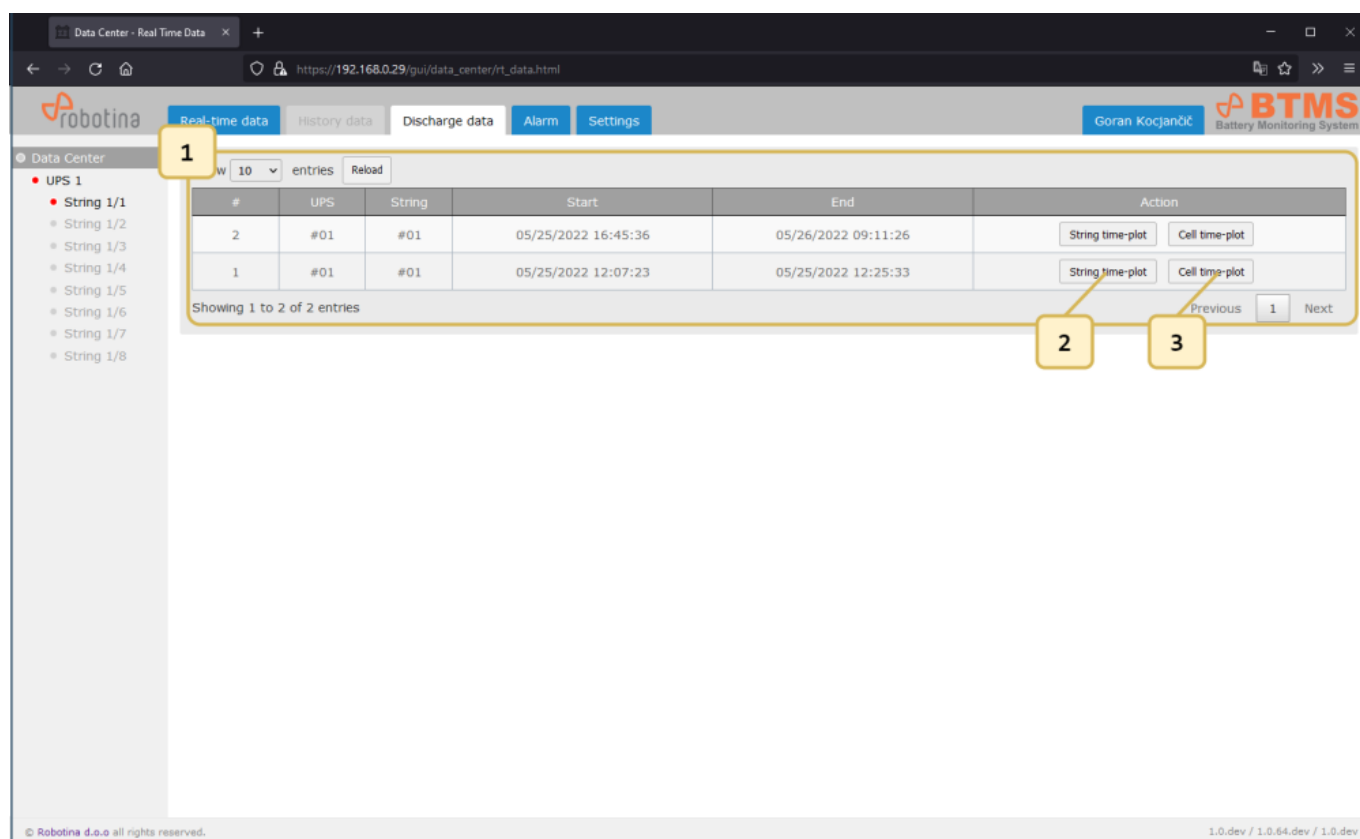
1.3. Data center

1.3.1. Real-time data



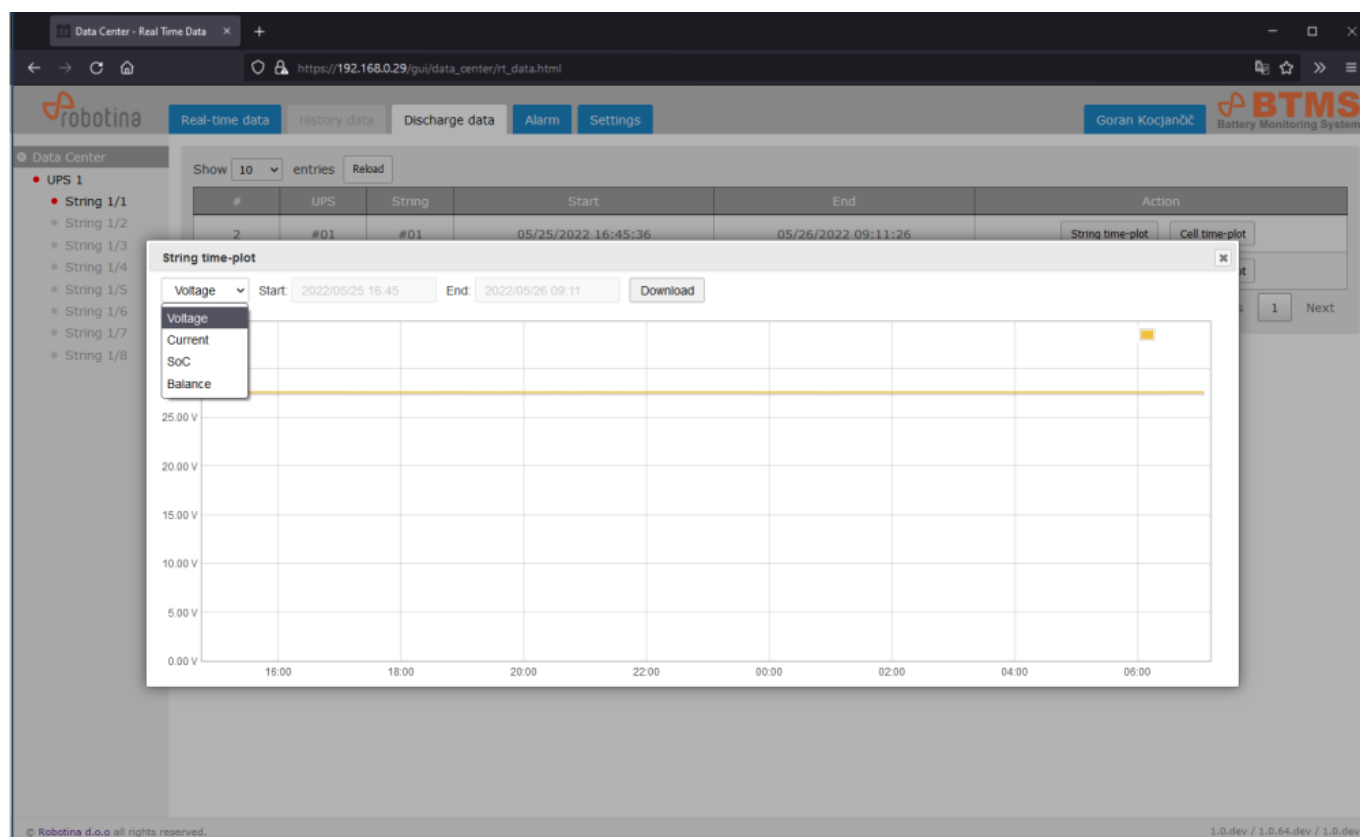
1	Tabular display of data for the Data Center
2	Select a parameter for the graphic display
3	Graphic bar-graph data display for the data center

1.3.2. Discharge data

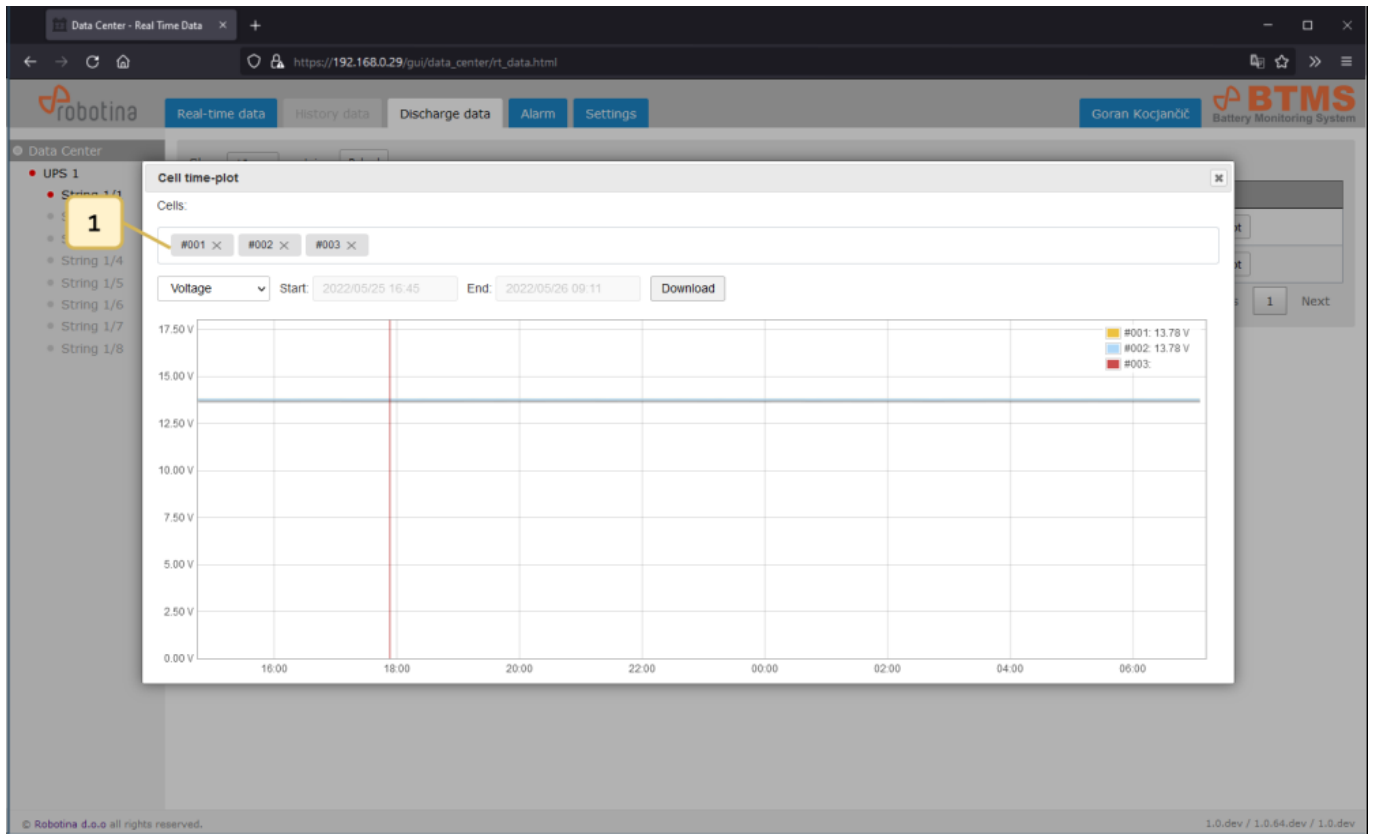


- | | |
|---|--------------------------------------|
| 1 | Discharge events table |
| 2 | String time-plot for discharge event |
| 3 | Cell time-plot for discharge event |

1.3.2.1. String time-plot for discharge event



1.3.2.2. Cell time-plot for discharge event



1

Cell selection

1.3.3. Alarm

Alarms

Show 10 entries Reload Download

#	UPS	String	Cell	From	To	Alarm	Status
14	#01	#01	#001	06/07/2022 14:22:20		Temperature high	active
13	#01	#01		06/06/2022 13:35:56	06/06/2022 13:38:24	Current low (discharging)	gone
12	#01	#01		06/06/2022 13:29:16	06/06/2022 13:38:24	Current high (charging)	gone
11	#01	#01		06/06/2022 13:14:48	06/06/2022 13:28:41	Voltage low	gone
10	#01	#01		06/06/2022 13:14:48	06/06/2022 13:28:41	Voltage high	gone
9	#01	#01		06/06/2022 13:14:48	06/06/2022 13:28:41	Current low (discharging)	gone
8	#01	#01		06/06/2022 13:14:48	06/06/2022 13:28:41	Current high (charging)	gone
7	#01	#01		06/06/2022 13:00:19	06/06/2022 13:00:51	Voltage low	gone
6	#01	#01		06/06/2022 12:43:25	06/06/2022 13:00:51	Voltage high	gone
5	#01	#01		06/06/2022 12:43:25	06/06/2022 13:00:51	Current low (discharging)	gone

Showing 1 to 10 of 14 entries

Previous 1 2 Next

1	Alarms sub-page selection
2	Alarms table

1.3.3.1. E-mails

The screenshot shows the 'Data Center - Sent E-mails' page. The top navigation bar includes 'Real-time data', 'History data', 'Discharge data', 'Alarm', and 'Settings'. The 'Alarm' tab is selected. The left sidebar shows 'Data Center' and 'UPS 1' with 'String 1/1' selected. The main content area has tabs for 'Alarms', 'E-mails', and 'SMS'. The 'E-mails' tab is active, displaying a table of sent emails.

#	UPS	String	Cell	Alarm	Time	Contact	Status	Error
6	#01	#01		current low (discharging)	06/06/2022 13:40:49	The Main Admin User / razvoj@3-port.si	failed	SMTP server not configured
5	#01	#01		current low (discharging)	06/06/2022 13:40:39	Uroš Marušič / uros.marusic@3-port.si	failed	Couldn't connect to host, port: localhost, 25; timeout -1
4	#01	#01		3 events from 2022-06-06T13:14:48+02:00 to 2022-06-06T13:29:16+02:00	06/06/2022 13:32:05	The Main Admin User / razvoj@3-port.si	failed	Couldn't connect to host, port: localhost, 25; timeout -1
3	#01	#01		3 events from 2022-06-06T13:14:48+02:00 to 2022-06-06T13:29:16+02:00	06/06/2022 13:32:05	Uroš Marušič / uros.marusic@3-port.si	failed	Couldn't connect to host, port: localhost, 25; timeout -1
2	#01	#01		3 events from 2022-06-06T13:00:51+02:00 to 2022-06-06T13:14:48+02:00	06/06/2022 13:17:06	The Main Admin User / razvoj@3-port.si	failed	Couldn't connect to host, port: localhost, 25; timeout -1
1	#01	#01		3 events from 2022-06-06T13:00:51+02:00 to 2022-06-06T13:14:48+02:00	06/06/2022 13:17:05	Uroš Marušič / uros.marusic@3-port.si	failed	Couldn't connect to host, port: localhost, 25; timeout -1

Showing 1 to 6 of 6 entries

1.3.3.2. SMS

The screenshot shows the 'Data Center - Sent SMS' interface. The top navigation bar includes 'Real-time data', 'History data', 'Discharge data', 'Alarm', and 'Settings'. The left sidebar shows 'Data Center' with 'UPS 1' and 'String 1/1'. The main content area has tabs for 'Alarms', 'E-mails', and 'SMS'. The 'SMS' tab is active, displaying a table of SMS events.

#	UPS	String	Cell	Alarm	Time	Contact	Status	Error
6	#01	#01		2 events from 2022-06-06T13:29:16+02:00 to 2022-06-06T13:38:24+02:00	06/06/2022 13:40:39	Uroš Marušič / uros.marusic@3-port.si	failed	Connection refused (Connection refused)
5	#01	#01		3 events from 2022-06-06T13:14:48+02:00 to 2022-06-06T13:29:16+02:00	06/06/2022 13:32:05	Uroš Marušič / uros.marusic@3-port.si	failed	Connection refused (Connection refused)
4	#01	#01		2 events from 2022-06-06T13:00:51+02:00 to 2022-06-06T13:14:48+02:00	06/06/2022 13:17:06	Uroš Marušič / uros.marusic@3-port.si	failed	Connection refused (Connection refused)
3	#01	#01		2 events from 2022-06-06T12:43:25+02:00 to 2022-06-06T13:00:51+02:00	06/06/2022 13:03:59	Uroš Marušič / uros.marusic@3-port.si	failed	Connection refused (Connection refused)
2	#01	#01		2 events from 2022-06-06T07:38:22Z to 2022-06-06T10:43:25Z	06/06/2022 12:47:57	Uroš Marušič / uros.marusic@3-port.si	failed	Connection refused (Connection refused)
1	#01	#01		2 events from 2022-06-06T07:35:55Z to 2022-06-06T07:38:22Z	06/06/2022 09:42:23	Uroš Marušič / uros.marusic@3-port.si	failed	Connection refused (Connection refused)

Showing 1 to 6 of 6 entries

1.3.4. Settings

1.3.4.1. Network settings, NTP settings

The screenshot shows the 'Data Center - Settings' interface. The top navigation bar includes 'Real-time data', 'History data', 'Discharge data', 'Alarm', and 'Settings'. The left sidebar shows 'Data Center' with 'UPS 1' and 'String 1/1'. The main content area has tabs for 'Network settings', 'NTP settings', and 'Time settings'. The 'Network settings' tab is active, displaying a table of network configurations.

Adapter	Mode	IP	Subnet	Gateway	DNS
LAN	fixed	192.168.10.1	255.255.255.0		
WAN	fixed	192.168.0.29	255.255.255.0	192.168.0.2	192.168.0.41, 192.168.0.71

NTP settings

Custom NTP

Host	Port	Enabled
		☒

Default NTP pools (ENABLED)

Host
ntp.ubuntu.com
0.ubuntu.pool.ntp.org
1.ubuntu.pool.ntp.org
2.ubuntu.pool.ntp.org

1.3.4.2. Time settings, Users

The screenshot shows the 'Settings' tab in the Robotina BTMS interface. The left sidebar shows 'Data Center' > 'UPS 1' > 'String 1/1'. The main content area has two sections:

Time settings

Buttons: Edit

Time	Date
18:10:09	06/07/2022

Buttons: Edit

Timezone: Europe/Ljubljana

Users

Buttons: Add, Edit, Delete

User	Full name	Administrator	Phone number	E-mail
admin	The Main Admin User	☒		razvoj@3-port.si
goran	Goran Kocjancic	☒	041379313	goran.kocjancic@robotina.com
devid	Devid Palcic	☒		

SMTP settings

Buttons: Edit

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1.3.4.3. SNMP settings, SMS notifications, Project settings, Data export

The screenshot shows the 'Settings' tab in the Robotina BTMS interface. The left sidebar shows 'Data Center' > 'UPS 1' > 'String 1/1'. The main content area has four sections:

SMTP settings

Buttons: Edit

Host	Port	From E-mail	Security	Username

SMS notifications

Buttons: Test SMS

Your user does not have an associated phone number.

Project settings

Buttons: Edit, Delete logo

Project name	Company	URL	Owner

Data Export

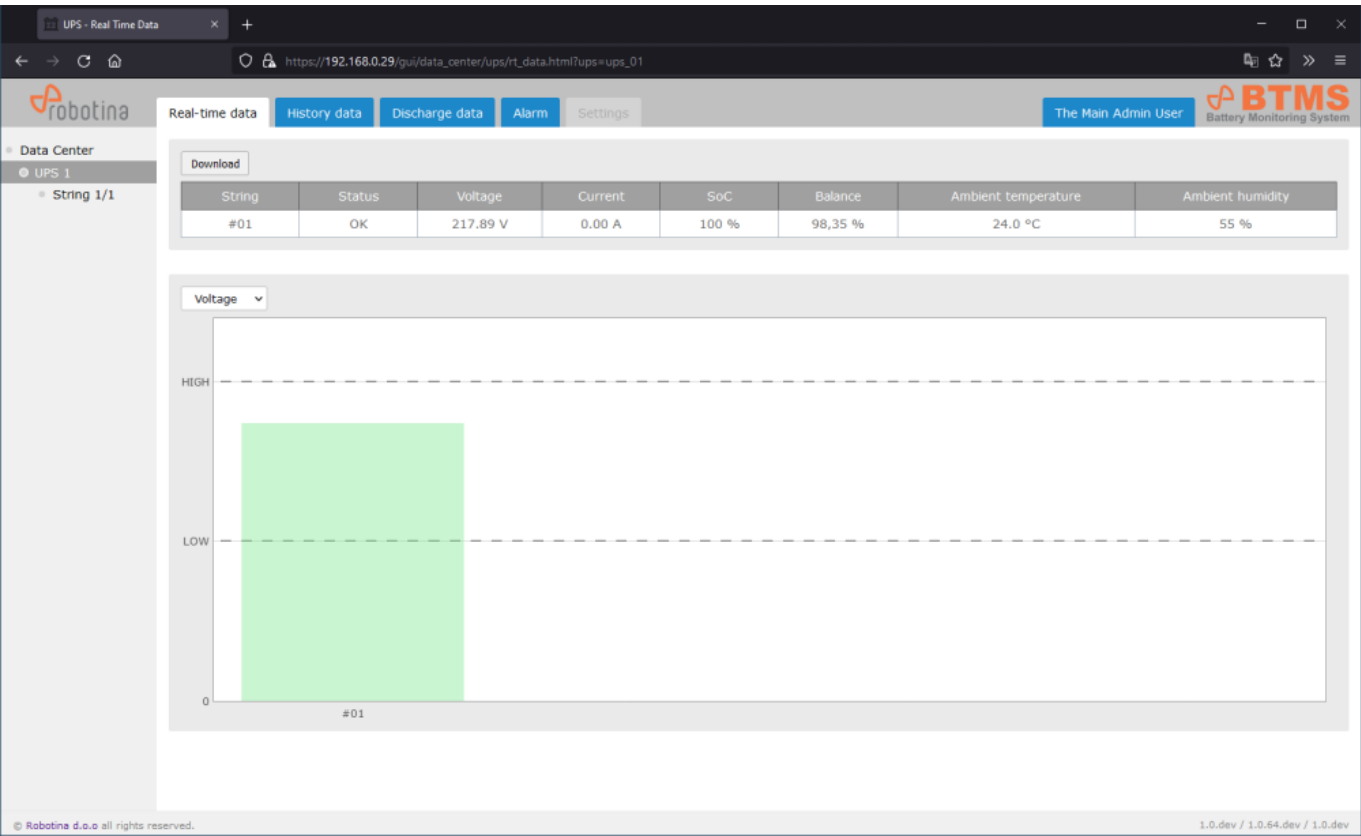
Buttons: New data export

File	Size	Time
No data exports available		

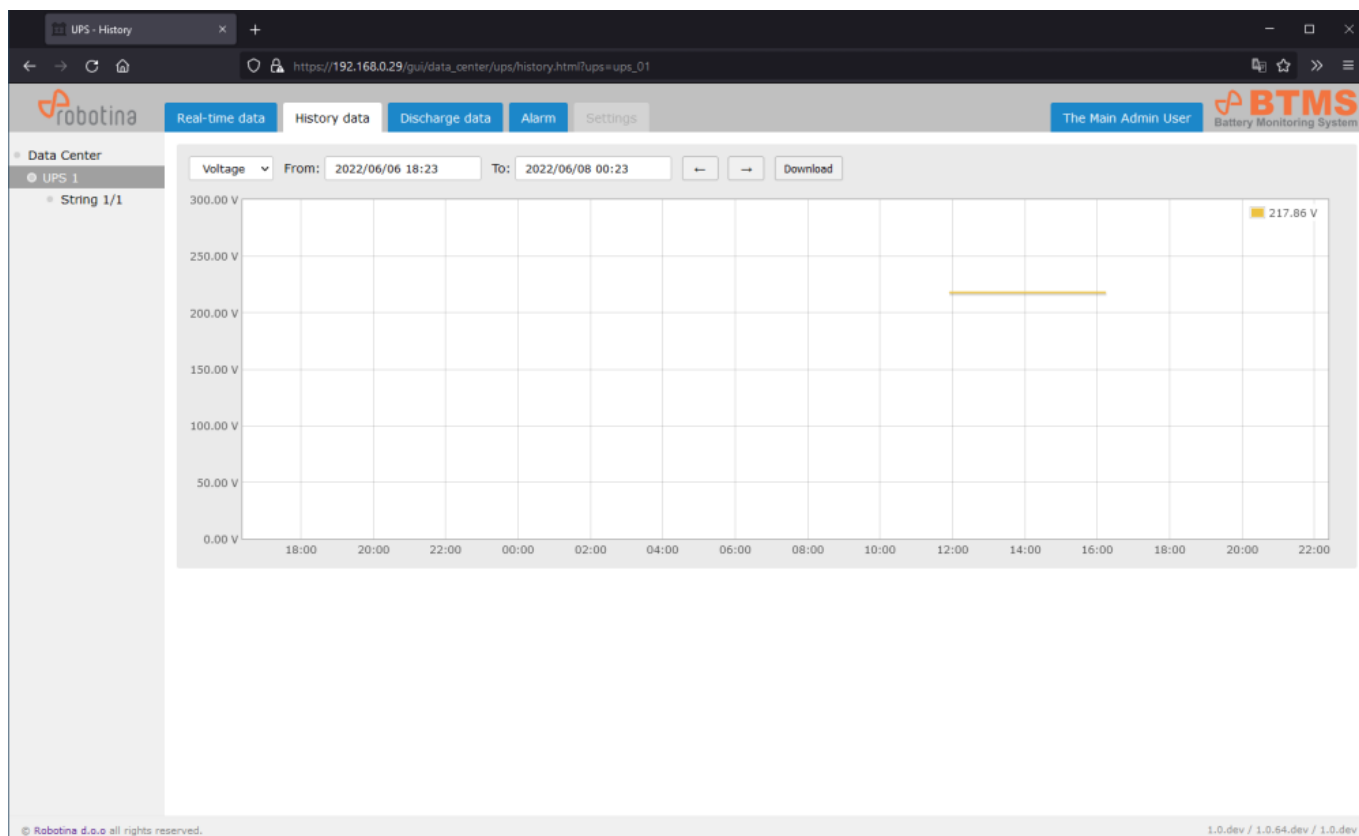
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1.4. UPS

1.4.1. Real-time data



1.4.2. History data

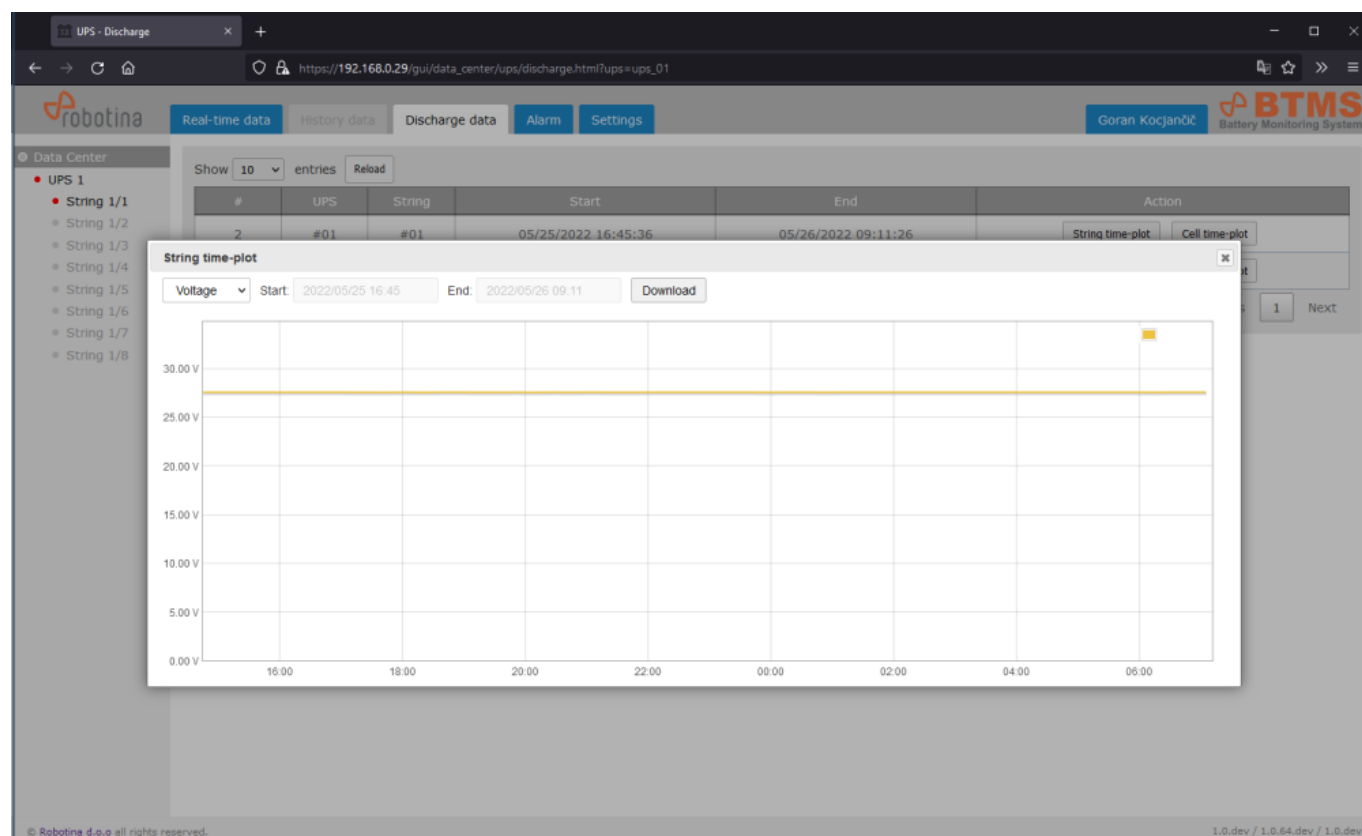


1.4.3. Discharge data

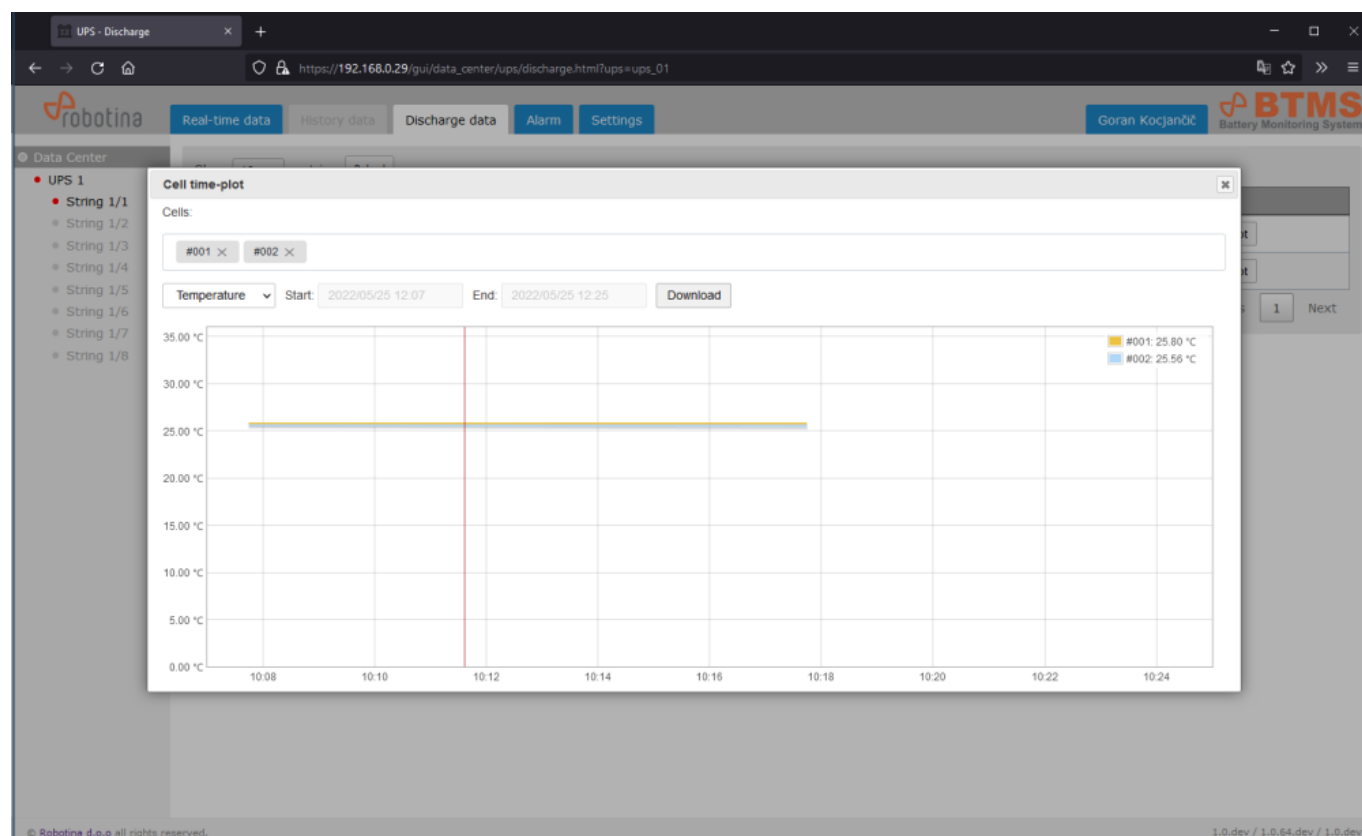
The screenshot shows the 'Discharge data' tab. It features a table with columns: #, UPS, String, Start, End, and Action. The table contains two entries. The 'Action' column contains buttons for 'String time-plot' and 'Cell time-plot'. Below the table, it says 'Showing 1 to 2 of 2 entries' and includes 'Previous' and 'Next' navigation buttons.

#	UPS	String	Start	End	Action
2	#01	#01	05/25/2022 16:45:36	05/26/2022 09:11:26	String time-plot Cell time-plot
1	#01	#01	05/25/2022 12:07:23	05/25/2022 12:25:33	String time-plot Cell time-plot

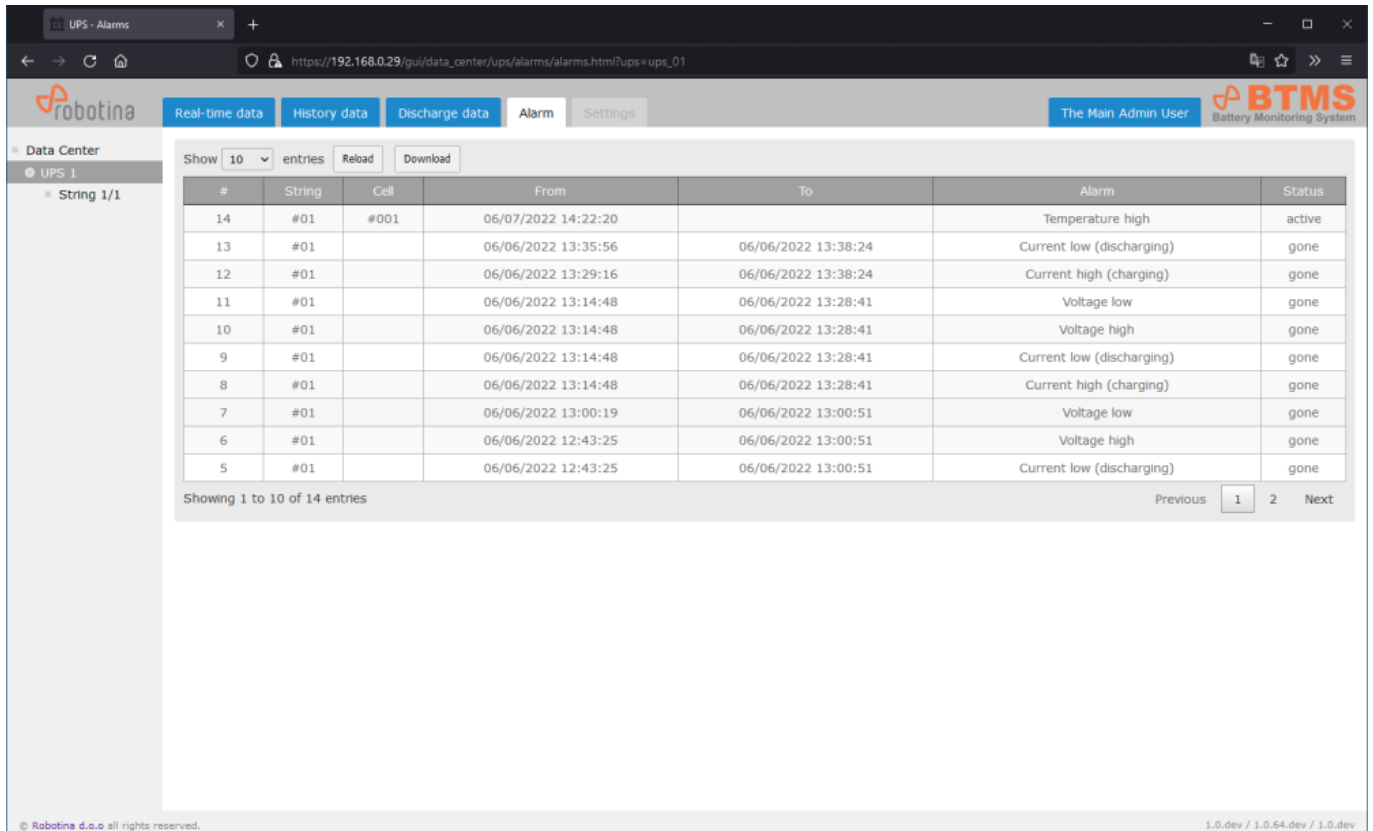
1.4.3.1. String time-plot



1.4.3.2. Cell time-plot



1.4.4. Alarm



UPS - Alarms

https://192.168.0.29/gui/data_center/ups/alarms/alarms.html?ups=ups_01

robotina BTMS Battery Monitoring System

The Main Admin User

Real-time data History data Discharge data Alarm Settings

Data Center

UPS 1

String 1/1

Show 10 entries Reload Download

#	String	Cell	From	To	Alarm	Status
14	#01	#001	06/07/2022 14:22:20		Temperature high	active
13	#01		06/06/2022 13:35:56	06/06/2022 13:38:24	Current low (discharging)	gone
12	#01		06/06/2022 13:29:16	06/06/2022 13:38:24	Current high (charging)	gone
11	#01		06/06/2022 13:14:48	06/06/2022 13:28:41	Voltage low	gone
10	#01		06/06/2022 13:14:48	06/06/2022 13:28:41	Voltage high	gone
9	#01		06/06/2022 13:14:48	06/06/2022 13:28:41	Current low (discharging)	gone
8	#01		06/06/2022 13:14:48	06/06/2022 13:28:41	Current high (charging)	gone
7	#01		06/06/2022 13:00:19	06/06/2022 13:00:51	Voltage low	gone
6	#01		06/06/2022 12:43:25	06/06/2022 13:00:51	Voltage high	gone
5	#01		06/06/2022 12:43:25	06/06/2022 13:00:51	Current low (discharging)	gone

Showing 1 to 10 of 14 entries

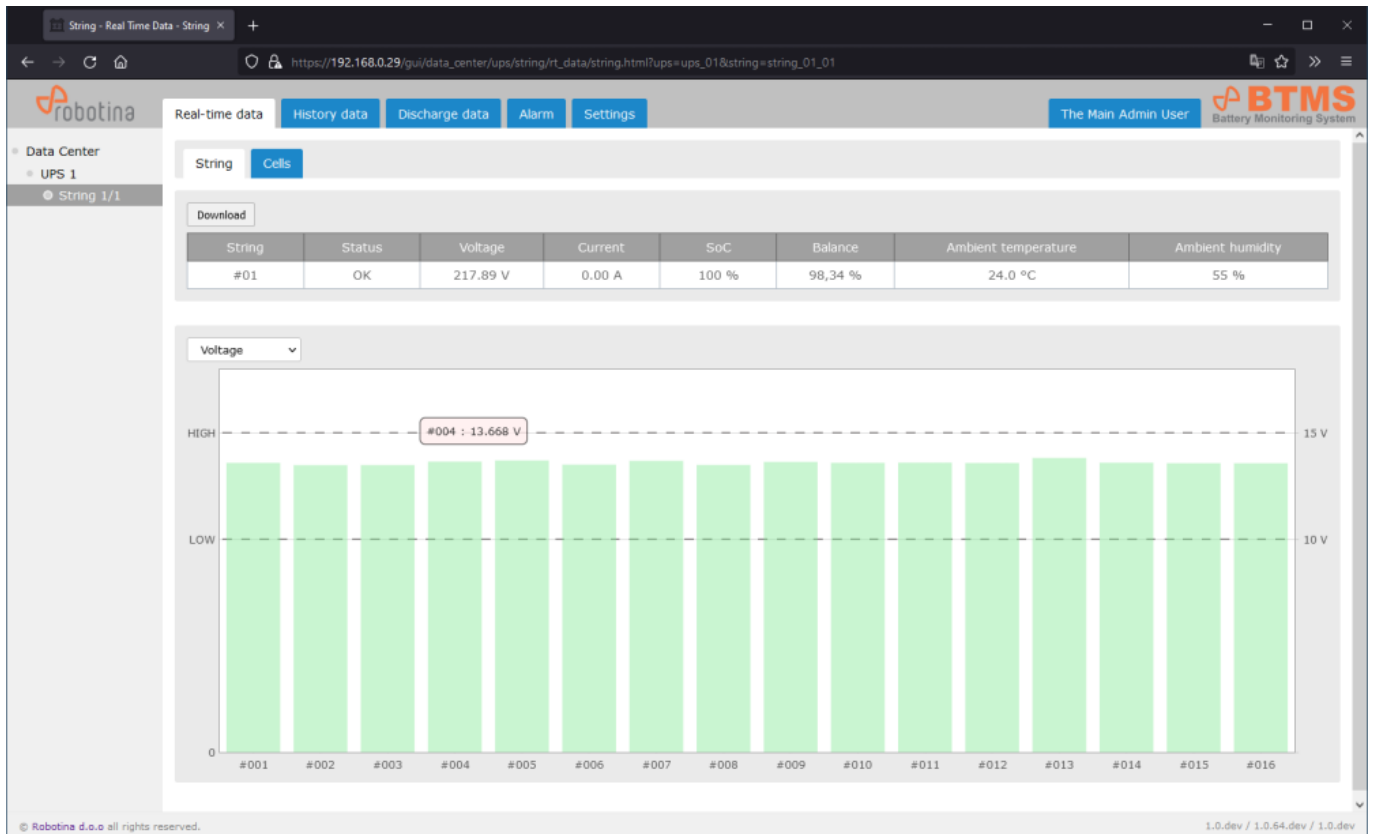
Previous 1 2 Next

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1.5. String

1.5.1. Real-time data

1.5.1.1. String



1.5.1.2. Cells

String - Real Time Data - Cells

https://192.168.0.29/gui/data_center/ups/string/rt_data/cells.html?ups=ups_01&string=string_01_01

Robotina BTMS Battery Monitoring System

The Main Admin User

Real-time data | History data | Discharge data | Alarm | Settings

String | Cells

Show 10 entries | Download

Cell	Status	Voltage	Resistance	Temperature	SoC	SoH
#001	OK	13.611 V	18.036 mΩ	300.0 °C	100 %	76 %
#002	OK	13.502 V	16.718 mΩ	300.0 °C	100 %	79 %
#003	OK	13.506 V	16.674 mΩ	300.0 °C	100 %	79 %
#004	OK	13.666 V	15.875 mΩ	300.0 °C	100 %	81 %
#005	OK	13.725 V	15.655 mΩ	300.0 °C	100 %	82 %
#006	OK	13.529 V	15.439 mΩ	300.0 °C	100 %	82 %
#007	OK	13.703 V	15.058 mΩ	300.0 °C	100 %	83 %
#008	OK	13.512 V	18.096 mΩ	300.0 °C	100 %	76 %
#009	OK	13.655 V	15.747 mΩ	300.0 °C	100 %	82 %
#010	OK	13.611 V	15.647 mΩ	300.0 °C	100 %	82 %

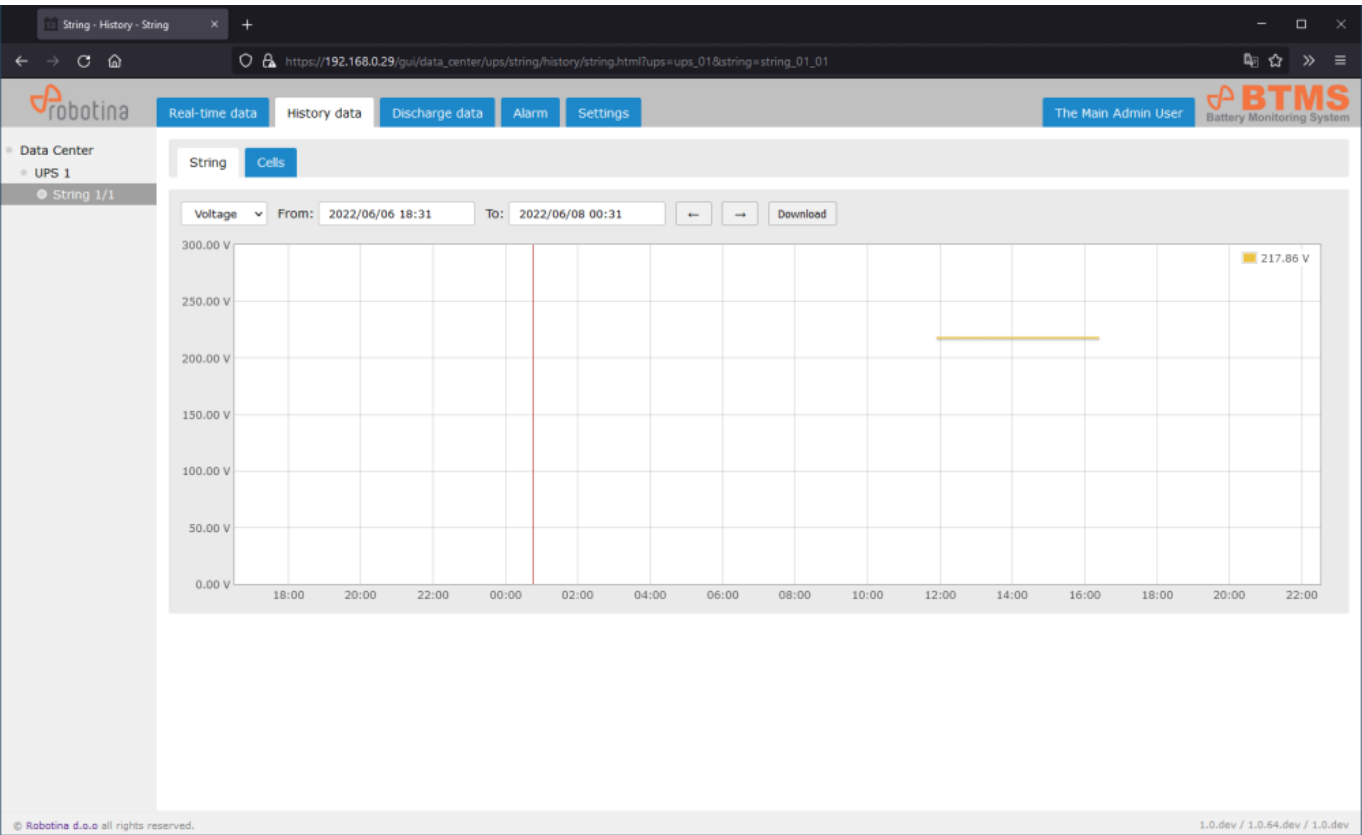
Showing 1 to 10 of 16 entries

Previous 1 2 Next

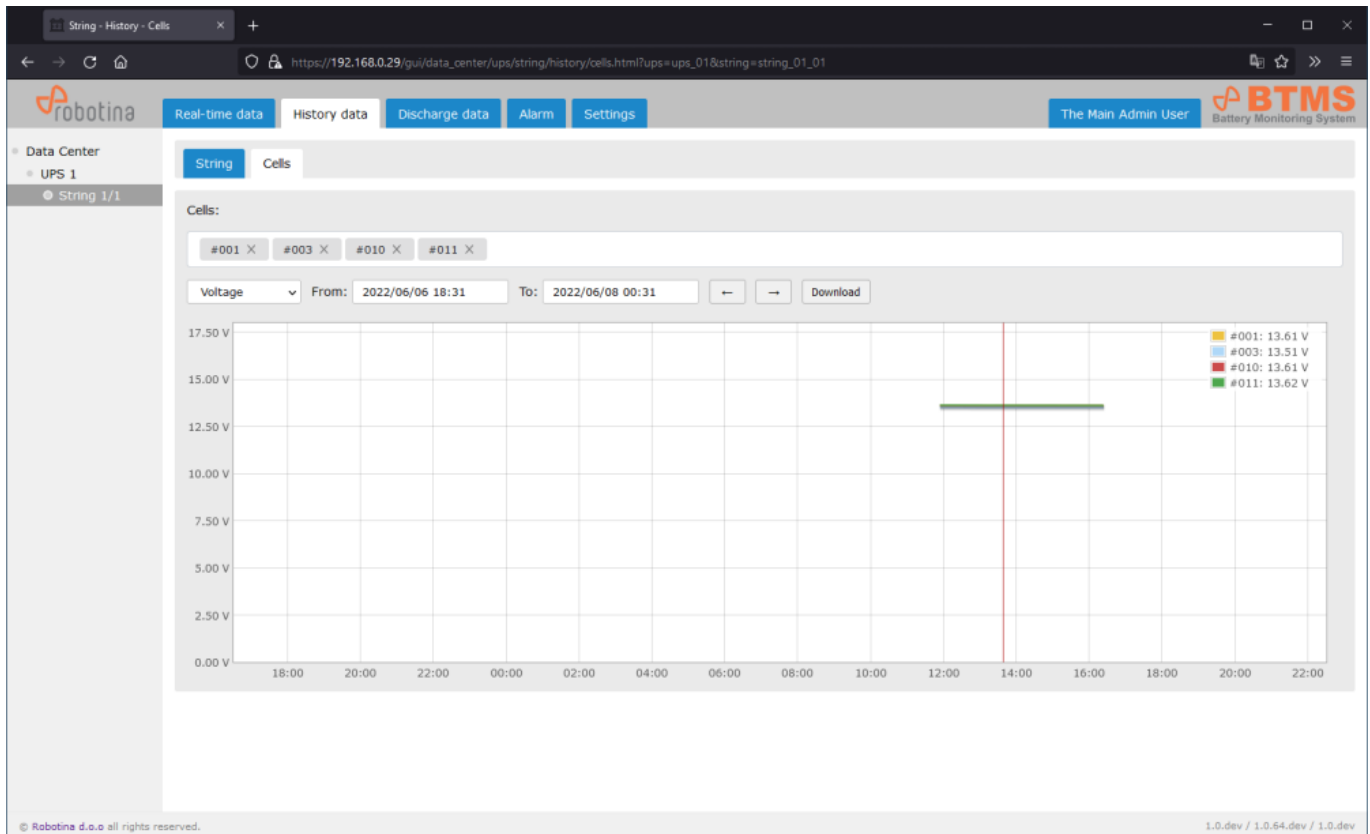
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1.5.2. History data

1.5.2.1. String



1.5.2.2. Cells



1.5.3. Discharge data

String - Discharge

https://192.168.0.29/gui/data_center/ups/string/discharge.html?ups=ups_01&string=string_01_01

Robotina BTMS Battery Monitoring System

Goran Kocjančič

Real-time data History data Discharge data Alarm Settings

Data Center

UPS 1

String 1/1

String 1/2

String 1/3

String 1/4

String 1/5

String 1/6

String 1/7

String 1/8

Show 10 entries

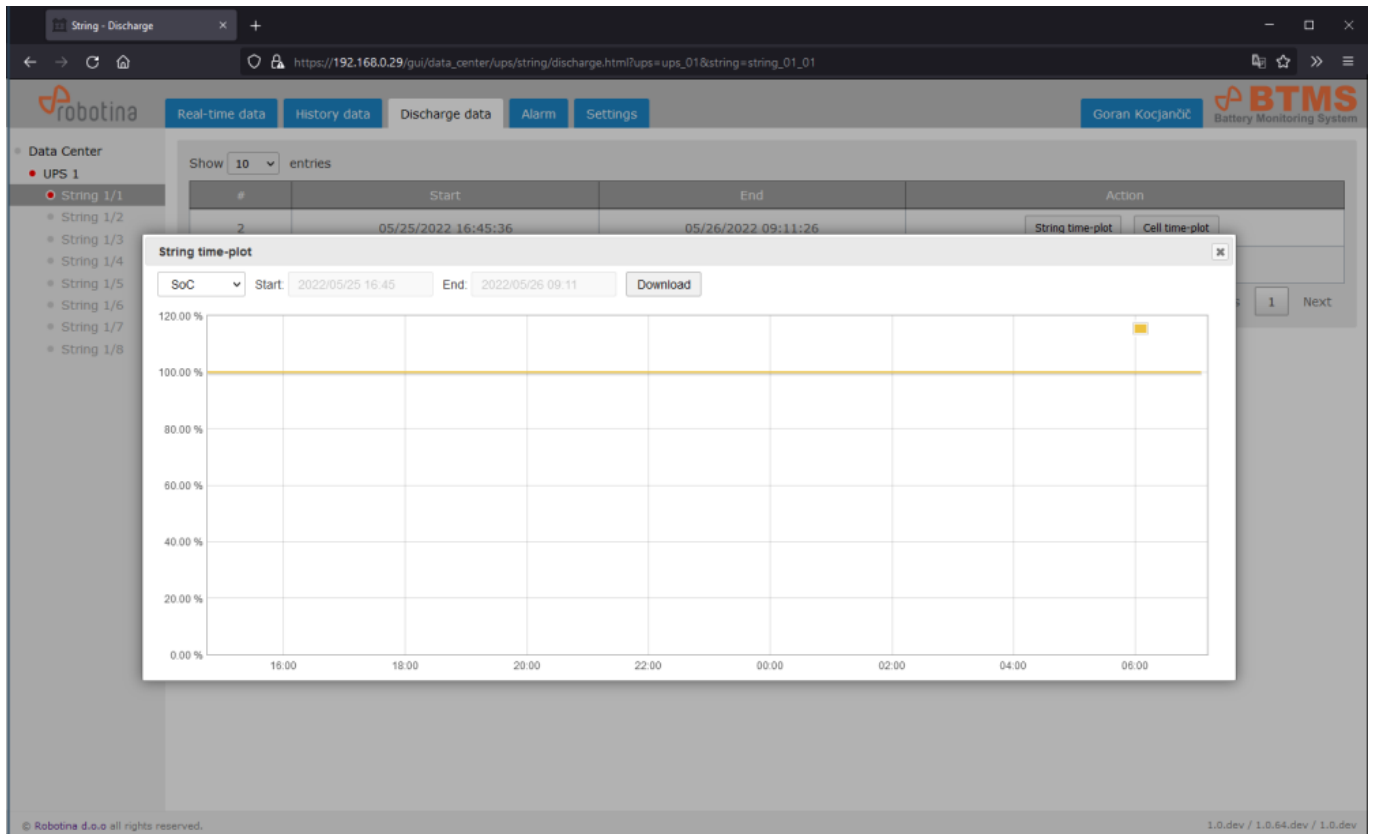
#	Start	End	Action
2	05/25/2022 16:45:36	05/26/2022 09:11:26	String time-plot Cell time-plot
1	05/25/2022 12:07:23	05/25/2022 12:25:33	String time-plot Cell time-plot

Showing 1 to 2 of 2 entries

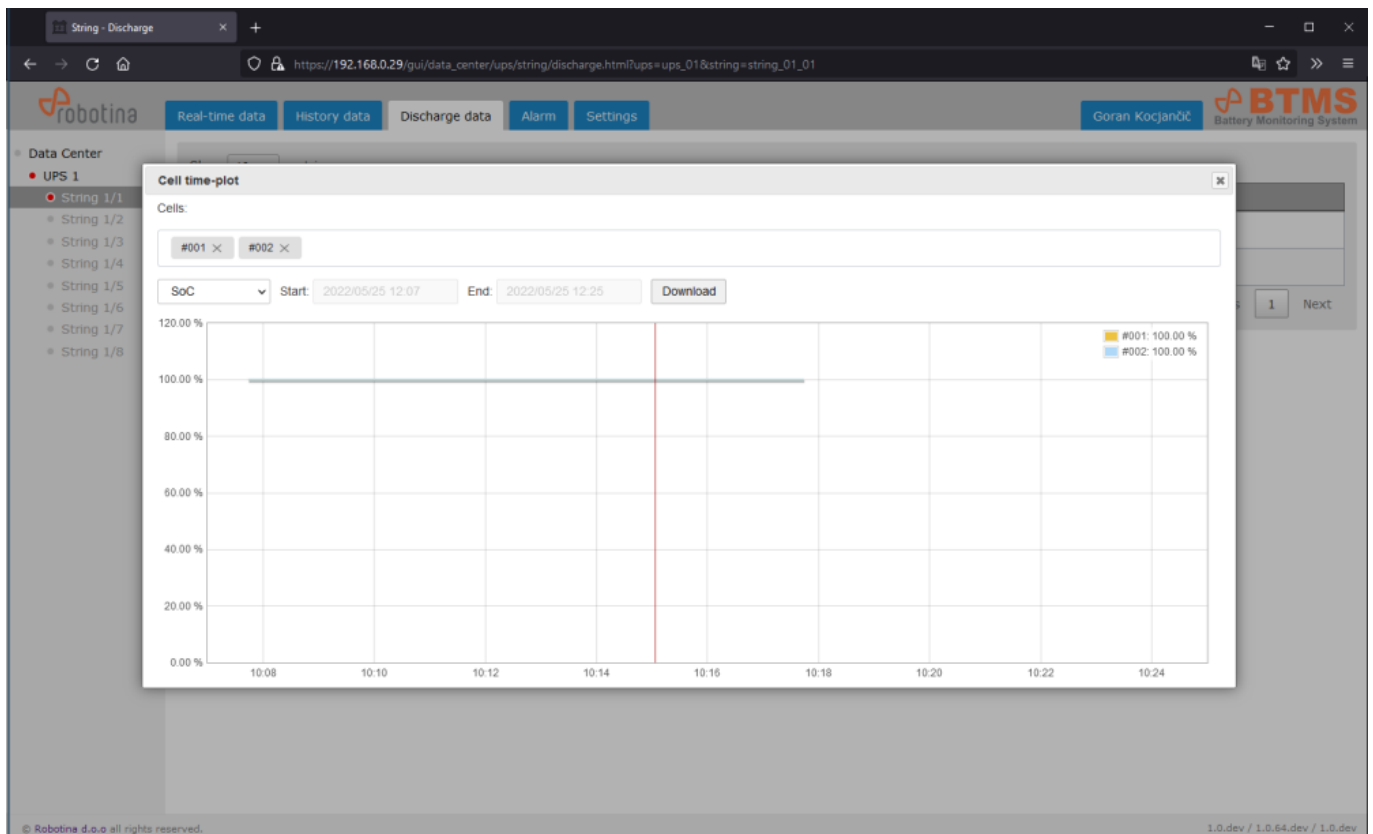
Previous 1 Next

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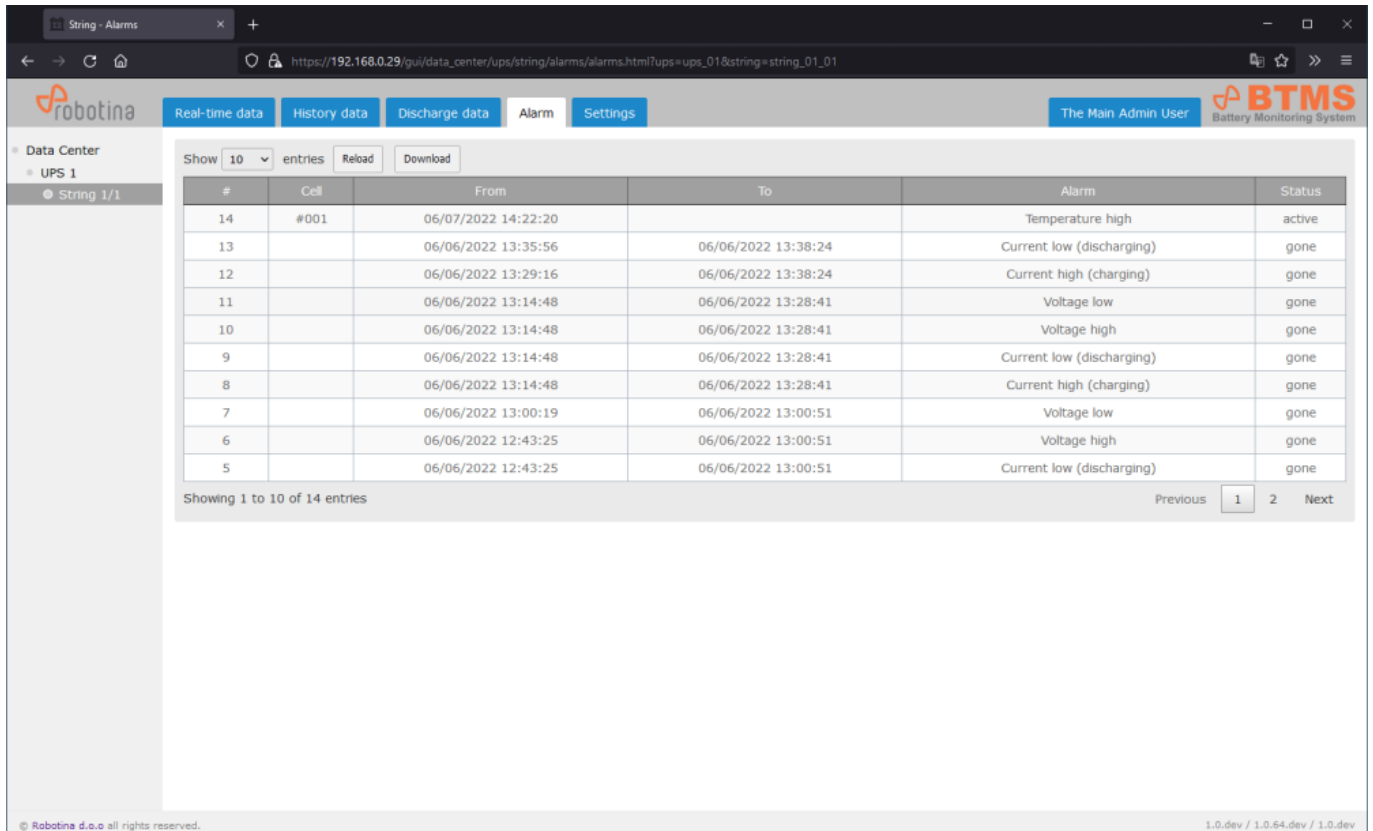
1.5.3.1. String time-plot



1.5.3.2. Cell time-plot



1.5.4. Alarm



String - Alarms

https://192.168.0.29/gui/data_center/ups/string/alarms/alarms.html?ups=ups_01&string=string_01_01

robotina BTMS Battery Monitoring System

The Main Admin User

Real-time data History data Discharge data Alarm Settings

Data Center
UPS 1
String 1/1

Show 10 entries Reload Download

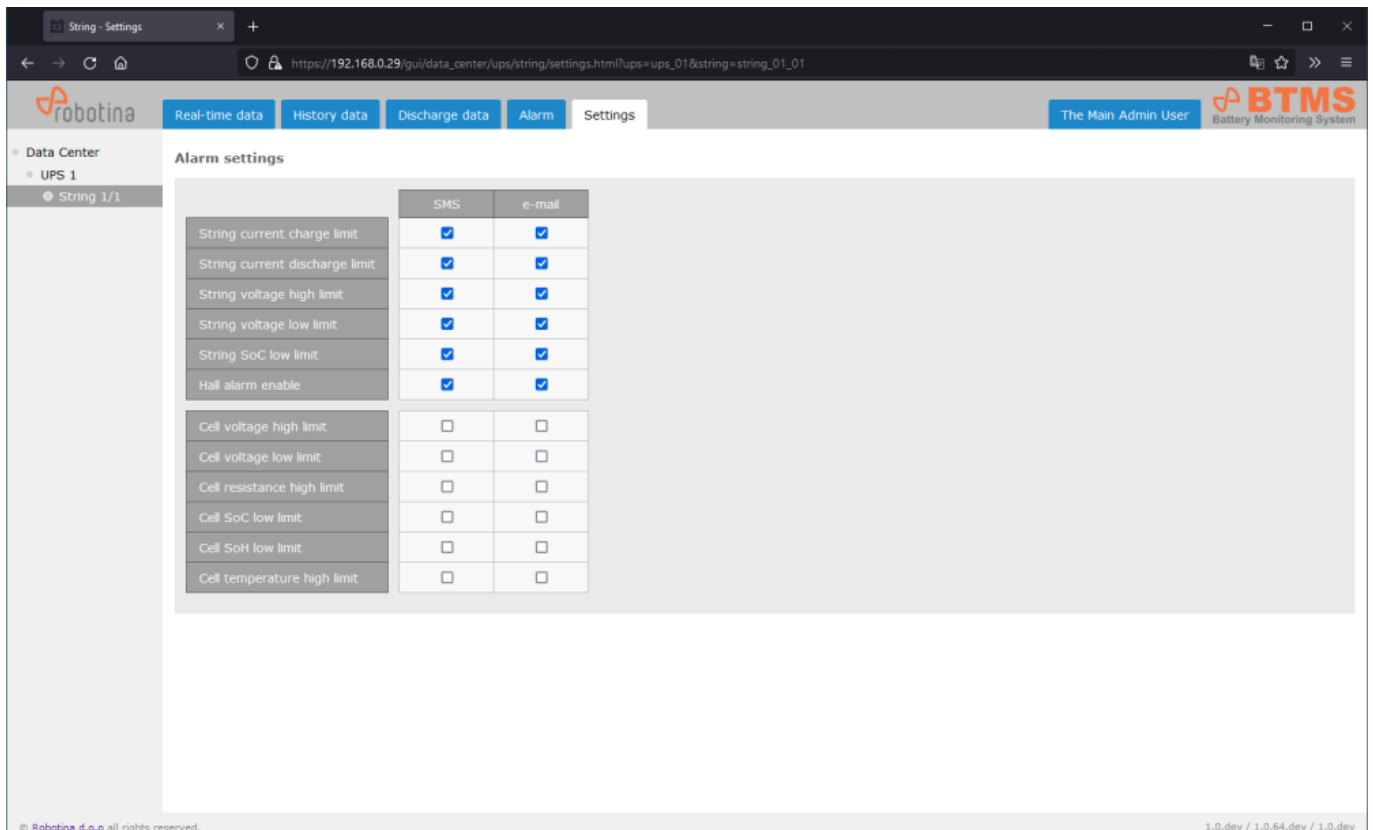
#	Cell	From	To	Alarm	Status
14	#001	06/07/2022 14:22:20		Temperature high	active
13		06/06/2022 13:35:56	06/06/2022 13:38:24	Current low (discharging)	gone
12		06/06/2022 13:29:16	06/06/2022 13:38:24	Current high (charging)	gone
11		06/06/2022 13:14:48	06/06/2022 13:28:41	Voltage low	gone
10		06/06/2022 13:14:48	06/06/2022 13:28:41	Voltage high	gone
9		06/06/2022 13:14:48	06/06/2022 13:28:41	Current low (discharging)	gone
8		06/06/2022 13:14:48	06/06/2022 13:28:41	Current high (charging)	gone
7		06/06/2022 13:00:19	06/06/2022 13:00:51	Voltage low	gone
6		06/06/2022 12:43:25	06/06/2022 13:00:51	Voltage high	gone
5		06/06/2022 12:43:25	06/06/2022 13:00:51	Current low (discharging)	gone

Showing 1 to 10 of 14 entries

Previous 1 2 Next

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1.5.5. Settings



String - Settings

https://192.168.0.29/gui/data_center/ups/string/settings.html?ups=ups_01&string=string_01_01

robotina BTMS Battery Monitoring System

The Main Admin User

Real-time data History data Discharge data Alarm Settings

Data Center
UPS 1
String 1/1

Alarm settings

	SMS	e-mail
String current charge limit	☒	☒
String current discharge limit	☒	☒
String voltage high limit	☒	☒
String voltage low limit	☒	☒
String SoC low limit	☒	☒
Hall alarm enable	☒	☒
Cell voltage high limit	☐	☐
Cell voltage low limit	☐	☐
Cell resistance high limit	☐	☐
Cell SoC low limit	☐	☐
Cell SoH low limit	☐	☐
Cell temperature high limit	☐	☐

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Enable for which alarm SMS / e-mail will be sent.