



FEMS App REST/JSON Write Access

Version:2023.6.1

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1. Introduction

1. Introduction

Dear customer,

Thank you for choosing the "FEMS App REST/JSON Write Access". You are welcome to send us your suggestions so that we can further improve the quality of our products.

2. Installing the app

When you ordered the "FEMS App REST/JSON Write Access", you received a 16-digit license key. You can use this license key to redeem the app independently in the FEMS App Center.

Find instructions on how to proceed [here](#).

3. FEMS App REST/JSON Write Access

These instructions describe write access to an FENECON electrical energy storage system using the REST/JSON API. The functionality of the interface is then explained.

3.1. Prerequisites

The device accessing the electrical energy storage system (e.g. notebook/PC) must have direct access to the IP address of the FEMS — e.g. be connected to the same physical network.

3.2. REST/JSON basics

The REST/JSON interface enables access to the FEMS in the local network via an interface based on [REST W](#).

3.3. Write access

This app provides an interface based on [REST W](#) that can be used to describe data points in the system.



This app is **not** included in the standard scope of delivery of the FEMS. However, it can be retrofitted at any time. Please contact us if you would like a retrofit.



It is not possible to use write access through a guest login. Instead, a separate customer login is required. The password "owner" must be used for this. As with read access, the user name is up to your preference.

All write accesses must be sent as **POST** requests.

3.3.1. Timeout

This app has a configurable timeout. By default, this is configured to 60 seconds. It ensures that a default value remains active for 60 seconds. As soon as a new default value is written, the new value is used. If no new default value is written within 60 seconds, the controller reverts to the lower-priority controller — e. g. specification of a

"0" power or self-consumption optimization.

3.3.2. /channel endpoint

The endpoint `/channel` enables access to individual data points, so-called "channels", in the system.

The full address of the endpoint is:

`http://x:<PASSWORD>@<IP>:80/rest/channel/<COMPONENT>/<CHANNEL>`

- `<COMPONENT>` is the ID of the `component`.
- `<CHANNEL>` is the ID of the `channel`

3.3.3. Data points

The following data points of the component `_ess0` can be described:

| Data point | Description | Unit |
|--|---------------------------------------|---------------------------|
| <code>SetActivePowerEquals</code> | Default charging or discharging power | Watt [W] |
| <code>SetReactivePowerEquals</code> | Set reactive power specification | VoltAmpere Reactive [var] |
| <code>SetActivePowerLessOrEquals</code> | Set maximum discharge power | Watt [W] |
| <code>SetReactivePowerLessOrEquals</code> | Set maximum reactive power | VoltAmpere Reactive [var] |
| <code>SetActivePowerGreaterOrEquals</code> | Set maximum charging power | Watt [W] |
| <code>SetReactivePowerGreaterOrEquals</code> | Set minimum reactive power | VoltAmpere Reactive [var] |

Table 1. Data points of the component `_ess0`



The registers for reactive power specifications cannot currently be used for home systems.



You can find more information on the 'SetActivePowerEquals' channel and other channels for power setting at [Glossary](#).

3.3.4. Example 1 — Active power specification: Python

1. g. to specify a discharge power of 5 kW for the first electrical energy storage system (or electrical energy storage cluster), send a `POST` request to the address `http://192.168.0.23:80/rest/channel/ess0/SetActivePowerEquals` with the power specification in `JSON` format.

```
{
  "value": 5000
}
```

3.3. Write access



Positive values correspond to battery discharging — Negative values correspond to battery charging.

The *requests* library, which must be imported at the beginning, can be used for this:

```
import requests

url = 'http://192.168.0.23:80/rest/channel/ess0/SetActivePowerEquals'

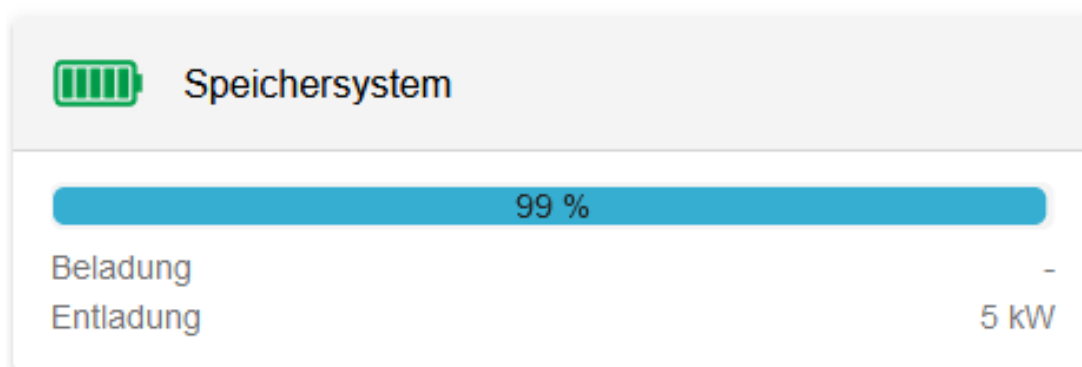
user = 'x'
password = 'owner'

session = requests.Session()
session.auth = (user, password)

data = {"value": 5000}

response = session.post(url, json = data)
response.raise_for_status()
```

The correct execution of the request can be checked via a subsequent **GET** request or via Online Monitoring (see below).



3.3.5. Example 2 — Active power specification: Talend API Tester

Talend API Tester is an extension for Google Chrome that allows to test REST APIs.

First, an *Authorization* header must be added:

Authorization

Type
Authorization

Username

Password

☒ show password

Cancel
Set

The **POST** request can then be executed.

METHOD
POST

SCHEME // HOST [: PORT] [PATH ["?" QUERY]]
http://192.168.0.23:80/rest/channel/ess0/SetActivePowerEquals

Send

QUERY PARAMETERS

HEADERS

☒ Authorization
Basic b3duZXI6b3duZXI=

Add header
Add authorization

BODY

1 { 'value': 5000 }

Text JSON XML HTML
Format body
☒ Enable body evaluation
length: 15 bytes

Response

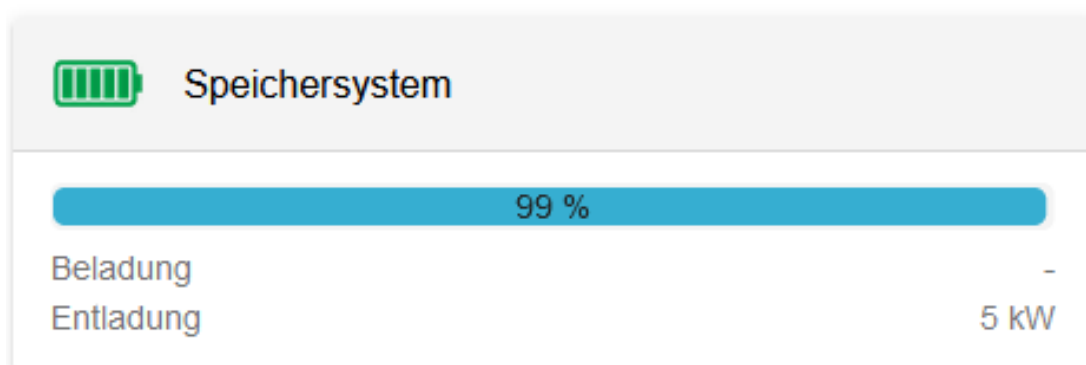
200 OK

HEADERS
pretty
Server:
nginx/1.14.2
Date:
Mon, 11 Oct 2021 07:58:16 GMT

BODY
pretty

Top Bottom Collapse Open 2Request Copy Download

The correct execution of the request can be checked via a subsequent **GET** request or via Online Monitoring (see below).



4. Contact

4. Contact

For support, please contact:

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Gewerbepark 6
94547 Iggenbach

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E-Mail — Service: service@fenecon.de

5. Directories

5.1. List of illustrations

5.2. List of tables

5.2. List of tables

Table 1. Data points of the component `_ess0`