

REALIZATION CONCEPT

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Brief description

This document contains the description of the power control direct marketer interface.

Contents

| | |
|---|----------|
| 1 List of figures | 3 |
| 2 Description | 4 |
| 2.1 Activation of the interface | 4 |
| 2.2 Communications process | 4 |
| 2.2.1 Reading system power and specified values | 4 |
| 2.2.2 Setting active power reduction | 5 |
| 2.2.3 Error message | 6 |
| 3 Change history | 7 |

1 List of figures

Figure 1 - Communications process..... 4

2 Description

2.1 Activation of the interface

The permanent activation of the interface is done by placing a key code in the WEB'log. The key code is linked to the device code and the functionality to be activated.

The key code is placed via the web interface.

2.2 Communications process

The communications process is done via the web server of the WEB'log. Authentication or SSL encryption will not be supported by WEB'log for system-related reasons. The WEB'log also does not support VPN.

The direct marketer can inquire about the system's current performance by using a GET request and will receive the current value in XML form.

With the help of another GET request, the control value for active power limitation covering a specific period of time can be set. Confirmation will also be sent by the WEB'log in XML form.

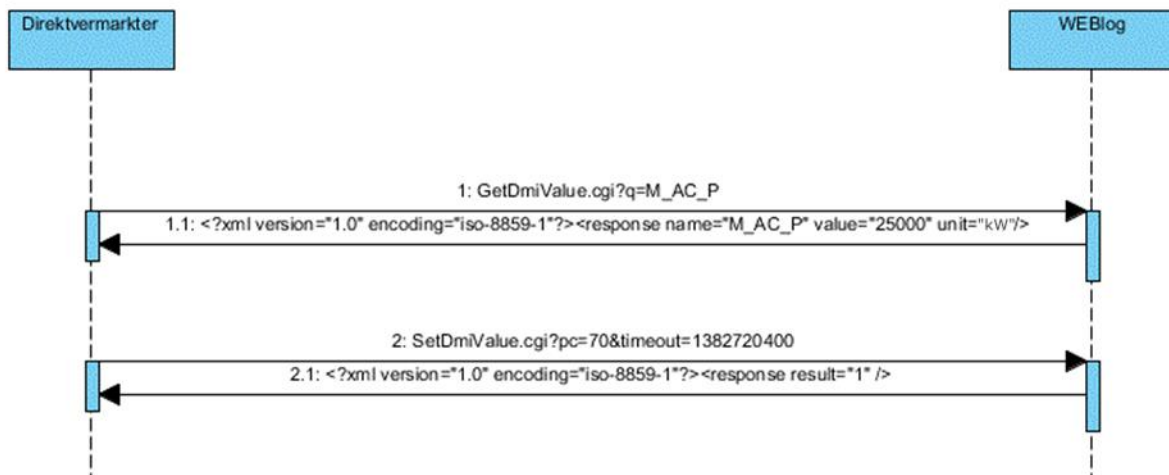


Figure 1 - Communications process

2.2.1 Reading system power and specified values

Via the CGI function GetDmiValue.cgi, the current system power can be read using a HTTP-GET request. You are expected to enter the parameter q with the abbreviation of the system power M_AC_P. Other abbreviations may be requested as well. A "+" should be placed in front of every following abbreviation.

The reply will be provided by the WEB'log in XML form. The parameter will be supplied as an abbreviation along with the current value and the physical unit.

The following abbreviations are available:

| | | |
|-------------------------|--|----------|
| M_AC_P | Current system power (grid feed-in) | Required |
| PC_P_PERC_ABS | Current active power limitation in percent | Optional |
| PC_P_PERC_GRIDOP | Active power limitation set by the grid operator | Optional |
| PC_P_PERC_DMI | Active power limitation set by the direct marketer | Optional |

Here is an example that shows how system power can be read using the Firefox web browser.

```
GET /GetDmiValue.cgi?q=M_AC_P HTTP/1.1
Host: 192.168.10.99
User-Agent: Mozilla/5.0 (Windows NT 6.1; WOW64; rv:16.0) Gecko/20100101 Firefox/16.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8
Accept-Language: de-de,de;q=0.8,en-us;q=0.5,en;q=0.3
Accept-Encoding: gzip, deflate
Connection: keep-alive
```

```
HTTP/1.1 200 Document follows
Connection: Close
Content-type: text/xml
Content-length: 92
```

```
<?xml version="1.0" encoding="iso-8859-1"?><r name="M_AC_P" value="25000.0" unit="kW"></r>
```

Here is another example that shows how the system power and the specified values for the active power limitation are read using the Firefox web browser. In the response to the web browser, line breaks that are not sent by the data logger were included to enhance readability.

```
GET /GetDmiValue.cgi?q=M_AC_P+PC_P_PERC_ABS+PC_P_PERC_GRIDOP+PC_P_PERC_DMI HTTP/1.1
Host: 192.168.10.99
User-Agent: Mozilla/5.0 (Windows NT 6.1; WOW64; rv:16.0) Gecko/20100101 Firefox/16.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8
Accept-Language: de-de,de;q=0.8,en-us;q=0.5,en;q=0.3
Accept-Encoding: gzip, deflate
Connection: keep-alive
```

```
HTTP/1.1 200 Document follows
Connection: Close
Content-type: text/xml
```

```
<?xml version="1.0" encoding="iso-8859-1"?>
<r name="M_AC_P" value="25000.0" unit="kW">
  <a name="PC_P_PERC_ABS" value="100.0" unit="%" />
  <a name="PC_P_PERC_GRIDOP" value="100.0" unit="%" />
  <a name="PC_P_PERC_DMI" value="100.0" unit="%" />
</r>
```

2.2.2 Setting active power reduction

With the CGI function SetDmiValue.cgi, the active power reduction can be set with a HTTP GET request. The parameter pc specifies the integer of the control value for active power limitation in percent. The timeout parameter sets the time at which the active power specifications of the grid operator go back into effect if the specified value and the expiration time have not been renewed. For the point in time, UTC (GMT -0:00) is expected as the unix timestamp.

In response, the WEB'log will send a confirmation in XML form.

Here is an example that shows how the value can be set using the Firefox web browser.

```
GET /SetDmiValue.cgi?pc=70&timeout=1382720400 HTTP/1.1
Host: 192.168.10.99
User-Agent: Mozilla/5.0 (Windows NT 6.1; WOW64; rv:16.0) Gecko/20100101 Firefox/16.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8
Accept-Language: de-de,de;q=0.8,en-us;q=0.5,en;q=0.3
Accept-Encoding: gzip, deflate
Connection: keep-alive
```

```
HTTP/1.1 200 Document follows
Connection: Close
Content-type: text/xml
Content-length: 61
```

```
<?xml version="1.0" encoding="iso-8859-1"?><r v="1" />
```

The final transmitted control value will be stored in the system, securely saved even in the event of a reset, and will be available following a reboot.

2.2.3 Error message

If the direct marketer interface is not activated or the license key is not valid, an error message will appear instead of the requested system power reading or during the setting of a new specified value:

```
HTTP/1.1 200 Document follows  
Connection: Close  
Content-type: text/xml  
Content-length: 54
```

```
<?xml version="1.0" encoding="iso-8859-1"?><r v="0" />
```

3 Change history

| Version | Date | Initials | Remarks |
|---------|------------|----------|--|
| 0.01 | 10/24/2013 | OLU | First draft |
| 0.02 | 11/21/2013 | OLU | <ul style="list-style-type: none">- Changes in the XML responses- New subchapter "Error message"- Setting at GMT -0:00 for the UTC timestamp |
| 0.03 | 12/4/2013 | CCO | <ul style="list-style-type: none">- Unnecessary directories/pages have been removed |
| 1.00 | 12/5/2013 | MCA | Authorization |
| 1.01 | 5/15/2014 | OLU | Expansion of the interface to request current values |
| 1.02 | 8/18/2016 | TWU | Unit W changed to kW for the GetDmiValue.cgi? from figure 1. |
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