

memmert

Software manual



AtmoWEB

REST INTERFACE

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1. About this manual

Purpose and target group

AtmoCONTROL is the recommended tool to analyse and control the device data. Under some circumstances you may want to have your own programmatic access to the device. AtmoWEB provides a web based interface for that purpose.

If there is something you do not understand, or certain information is missing, ask your superior or contact the manufacturer. Do not do anything without authorisation.

Other documents that have to be observed

Please also read the user manual for the respective appliance or appliances to be operated with AtmoWEB and familiarise yourself with it.

Storage and resale

This manual should always be kept in a place where those working with the software have access to it. It is the responsibility of the operator to ensure that persons who work with or will work with the software are informed as to the whereabouts of this user manual. We recommend that it is always stored in a protected location close to the computer on which the software is running. Make sure that the manual is not damaged by heat or damp.

Address and Customer Service

Manufacturer's address

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If you have any queries, please always quote the product number on the nameplate.

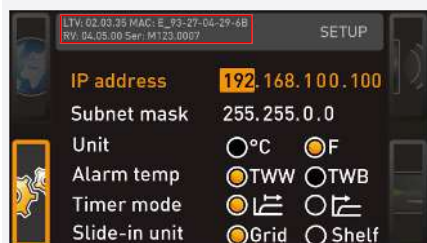
Shipping address for repairs

Memmert GmbH + Co. KG
Willi-Memmert-Straße 90-96 D-91186 Büchenbach Germany
Please contact our customer service before sending appliances for repair or before making returns, otherwise, we have to refuse acceptance of the shipment.

2. Requirements and Setup

2.1 Software Version of Device

This document describes the web based interface to Memmert generation 2012 climate chambers. To use that interface the firmware version of a device has to be at least 02.02.07.



Checking the version:

1. Push the button **MENU**.
2. Select **SETUP** on the device screen.
3. Check the entry "RV: xx.xx.xx" on top of the screen.
 - ⇒ The x denotes the 3 components of the software revision resp. version number. Example: **RV: 04.05.00**.



A device with such a version number has the web based interface enabled, as it is lexicographically greater than the minimal version.

2.2 IP Address of Device

You will also need the IPV4 address of the device.

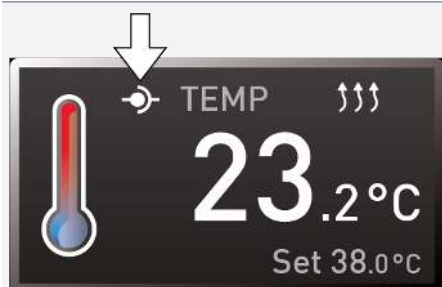


Displaying the IPV4 address:

1. Press the **MENU** Button.
2. Select **SETUP** to display the IP-address.
 - ⇒ It should be something like 192.168.100.100. The AtmoWEB service on the device is listening on port 80.

2.3 Enabling AtmoWEB on the Device

You may either control a device using the ControlCOCKPIT or via AtmoWEB, but not both. And if you have disabled remote control, you cannot use the web interface described in this document.



Enabling AtmoWEB on the device:

1. Push the Button **MENU**.
2. Select **SETUP**.
3. Use the universal wheel to scroll down to the entry "Remote Control" (resp. "Fernbedienung", "Télécommande", "Telecomando", "Obsługa zdalna", "Dálkové ovládání", "Távvezérlés", "Telecomando", according to your language).
4. Push the universal button and turn the wheel to select the permission level for remote control.
 - ⇒ If remote control is enabled, a symbol is shown on the temperature screen on the top left corner (see picture above).

Menu Entry	Permission shortcut	Description	Permission
Off	---	Remote control is disabled	No permission required
Read	r--	Only reading data from the device is allowed	Permission to read values
Write	rw	Reading and writing is allowed	Permission to read values and write setpoints
Write + Alarm	rwa	Reading, writing and controlling alarm settings is allowed	Permission to read values, write setpoints and write alarm limits

3. Description Syntax „Log.txt“

Read out log data with the following commands:

Request:

```
http://[Ip-Adresse]/Controller/Config/Log.txt
```

Line	Response:				
1	Device log V 2.0 SN=B420.0289				
2					
3	2020-02-19T13:35:56 Z	+	304	Door open	29831
4	2020-02-19T13:40:56 Z	-	304	Door open	29941
5	2020-02-25T11:23:15 Z	i	111	Restart 03.00.25	12827
6	2020-02-26T07:36:22 Z	i	801	Start: MyProgram	55509
7	2020-02-27T11:31:23 Z	+	408	Temp. max alarm	4079
8	2020-02-28T11:44:59 Z	i	803	End: MyProgram	44873

The logo data is a text file in ASCII coding.

3.1 First line

Head of log.txt

```
Device log V [serial number 2-digit] SN=[serial number]
```

3.2 Second line

Blankline

3.3 Third line until end

Data lines

Each row contains 5 columns. The columns are separated by tabs.

First column

Date and time

► For devices from serial number 030025: Date and time in UTC

```
[year] , - ` [month] , - ` [day] , T ` [hour] , : ` [minute] , : ` [second] , Z `
```

► For devices before this version, the date and time are in local time

```
[day] , . ` [month] , . ` [year] , , [hour] , : ` [minute] , : ` [second]
```

Example for older log.txt logs:

24.10.2019	21:11:11	i	211	Restauration Failed	2356
------------	----------	---	-----	---------------------	------

It may be that there is no date. This can occur if errors occur before the real-time clock is initialized.

Second column

Type of entry

Possible values:

Identifier	Meaning
i	Information
+	event occurred
-	event finished

Third column

Event code

For numbers and meaning, see the AtmoCONTROL or AtmoCONTROL FDA operating instruction, chapter 8 „event codes of the log file Log.txt“

Fourth column

Information, partly with parameters

Fifth column

Line checksum

4. Using AtmoWEB commands

4.1 Basics



Be careful changing device settings!



Be sure not to have sensitive objects stored in the device while experimenting.

Typically, you will not enter or query the device settings using a browser, but you may want to write your own application to do it. Such an application is outside the scope of this document. This document shows only the principles of operation.

1. Connect your PC or network to the device using an Ethernet cable.
2. In the command line of your favourite web browser, enter the following line (for the correct IP address see the setup information above):

Request:

```
http://192.168.100.100/atmoweb?TempSet=20.1&Temp1Read=
```

3. Push the return key.

⇒ The device should now have set value 20.1 and the current temperature should match the Temp1Read value. Generally, the input format is:

Request:

```
http://[IP address of device]/atmoweb?  
[key1]=[value1]&[key2]=[value2]...
```

After the *atmoweb* keyword and a question mark, any count of key-value pairs may be entered, separated by an ampersand (&). The keys should be from the tables on the next pages and the values are used to change settings on the device. If the values are omitted, the current device settings remain unchanged but are returned.

The device answers with set and current values. The returned text is in JSON like format (Javascript Object Notation) for easy automated processing. If a value returned does not match the transmitted value, it may be outside the valid range, it may have been adjusted to the appropriate precision or the permissions on the device forbids writing setpoint or alarm values.

4.2 Special Answers

Response :	Description:
N/A	Indicates missing support by your device
N/D	Not defined internally.
null	No value .
PermissionDenied	No permissions for remote control
..._Range	Valid range (min/max) for setpoint values, read-only Returned automatically when using setpoint values

4.3 Setpoint

Setpoints can only be set if the manual mode is activated. As soon as a setpoint is set, the oven starts running automatically. With the following command, the current mode can be found out:

Request:
<code>http://[IP address]/atmoweb?CurOp=</code>

There are four different CurOp:

- Program: When a program is running. On the controller, the triangle in the upper right display.
- Idle: Usually at the end of a program, but can also be set manually on the controller. The square must be selected on the top right display of the controller.
- Timer: When a timer is set or when it has run through and has not yet been reset to --hh:--mm.
- Manual: When the manual mode is set. On the controller in the upper right display, it is the hand with the index finger extended.

4.4 Temperature

Parameter / Key	Description	Required permission	Extra information
TempSet	Temperature setpoint	r-, rw	
TempSet_Range	Valid range of temperatures		
Temp1Read	Temperature measurement value from temperature sensor 1, which is the main temperature sensor. For vacuum devices, this is the current temperature of heating shelf 1	r--	
Temp2Read	Additional temp. sensor or heating shelf 2	r--	
Temp3Read	Analogous to Temp2Read	r--	
Temp4Read	Analogous to Temp2Read	r--	
AlTempLo	Minimal temperature alarm	rwa	
AlTempLo_Range	Range for temperature alarm		
AlTempHi	Maximal temperature alarm	rwa	
AlTempHi_Range	Range for temperature alarm		

4.5 Humidity

Parameter / Key	Description	Required permission	Extra information
HumSet	Humidity setpoint in %rh	r-, rw-	
HumSet_Range	Allowed humidity range in %rh		
HumRead	Current humidity in %rh	r--	
AlHumLo	Min alarm	rwa	
AlHumLo_Range	Alarm range		
AlHumHi	Max alarm	rwa	
AlHumHi_Range	Alarm range		

4.6 Vacuum

Parameter / Key	Description	Required permission	Extra information
VacSet	Vacuum setpoint in mbar	r-, rw-	
VacSet_Range	Allowed vacuum range in mbar		
VacRead	Current vacuum in mbar	r--	
AlVacLo	Minimal alarm	rwa	
AlVacLo_Range	Alarm range		
AlVacHi	Maximal alarm	rwa	
AlVacHi_Range	Alarm range		

4.7 CO₂

Parameter / Key	Description	Required permission	Extra information
CO2Set	Setpoint in %CO ₂	r-, rw-	
CO2Set_Range	Possible range for setpoints		
CO2Read	Current CO ₂ level in %CO ₂	r--	
AlCO2Lo	Lower alarm limit	rwa	
AlCO2Lo_Range	Current alarm limits		
AlCO2Hi	Upper alarm limit	rwa	
AlCO2Hi_Range	Current alarm limits		

4.8 O₂

Parameter / Key	Description	Required permission	Extra information
O2Set	Setpoint in %O ₂	r-, rw-	
O2Set_Range	Possible range for setpoints		
O2Read	Current O ₂ level in %O ₂	r--	
AlO2Lo	Lower alarm limit	rwa	
AlO2Lo_Range	Current alarm limits		
AlO2Hi	Upper alarm limit	rwa	
AlO2Hi_Range	Current alarm limits		

4.9 Fan

Parameter / Key	Description	Required permission	Extra information
FanSet	Fan rotation speed in 10 % steps	r-, rw-	
FanRead	Current fan rotation speed in rpm	r-	
FanSet_Range	Allowed limits for fan rotation in %		

4.10 Switches

Parameter / Key	Description	Required permission	Extra information
SwASet	Current state of switch A	r-, rw-	0 (open), 1 (closed)
SwBSet	Current state of switch B	r-, rw-	0 (open), 1 (closed)
SwCSet	Current state of switch C	r-, rw-	0 (open), 1 (closed)
SwDSet	Current state of switch D	r-, rw-	0 (open), 1 (closed)

4.11 Flap

Parameter / Key	Description	Required permission	Extra information
FlapSet	Flap position in 10 percent steps	r-, rw-	

4.12 Door

Parameter / Key	Description	Required permission	Extra information
DoorOpen	Indicator for open door.	r-, rw	0=closed 1=open
DoorLock	Door locked or lock/unlock door	r-, rw-	0=unlocked 1=locked

4.13 Light

Parameter / Key	Description	Required permission	Extra information
LightDay	Gets or sets daylight lamps	r-, rw-	0=off, 1=on
LightUV	Gets or sets UV lamps	r-, rw-	0=off, 1=on
LightLED	Sets dimmer or gets it in 1 % steps	r-, rw-	0=off, 100=bright

4.14 Horn

Parameter / Key	Description	Required permission	Extra information
HornSet	Gets or sets state of alarm sound	r-, rw-	0= off 1= on

4.15 Programming Related

Parameter / Key	Description	Required permission	Extra information
CurOp	Current program state	r--	„Program“, „Idle“, „Timer“, „Manual“
InfoTemp	Current temperature ramp name	r--	
InfoHum	Current humidity ramp name	r--	
InfoVac	Current vacuum ramp name	r--	
InfoMsg	Programmed message	r--	
Info	Name of running program	r--	
ProgStart	Name of program to start	rw-	
ProgStop	Stop current program	rw-	
ProgExit	Exit currently running program Sets device into manual mode	rw-	
ProgCurrent	Returns the currently active program	r--	
ProgDelete	Deletes a program	rw-	
ProgDuration	ProgDuration Returns the total duration of the currently active program	r--	Return [days] [hours]:[min]:[sec] if no program loaded “-00:00:01” is returned
ProgList	List programs on SD card	r--	“ProgList”: [“Test100”]
ProgLoad	Loads a program to allow program info requests (e.g. duration)	r--	
ProgRemain	Returns the rest runtime duration of the currently active program	r--	See ProgDuration

4.16 Miscellaneous

Parameter / Key	Description	Required permission	Extra information
Defrost	Device is defrosting	r--	
Time	ISO 8601 compliant device time	r--	
TimeZone	Time zone of device	r--	
TimeDST	Daylight saving time	r--	
SWRev	Software version of device	r--	
SN	Serial number of device	r--	
DevType	Device Type	r--	
RC	Remote control permissions as configured in device settings menu	---	r=read, w=write, a=alarm
GasType	If available, current gas type used		Possible answers: “InertGas”, “FreshAir”, “N/A”

5. Returning all Parameters

Request:

```
http://[IP address]/commands.cgi
```

Example:

```

„AlCO2Hi“: „N/A“,
„AlCO2Lo“: „N/A“,
„AlHumHi“: „N/A“,
„AlHumLo“: „N/A“,
„AlO2Hi“: „N/A“,
„AlO2Lo“: „N/A“,
„AlTempHi“: 210.0,
„AlTempHi_Range“: {
„min“: 10.0,
„max“: 210.0
},
„AlTempLo“: 10.0,
„AlTempLo_Range“:
{„min“: 10.0,
„max“: 210.0
},
„AlTR“: 23.1,
„AlVacHi“: 1100.0,
„AlVacHi_Range“: {
„min“: 5.0,
„max“: 1100.0
},
„AlVacLo“: 1.0,
„AlVacLo_Range“: {
„min“: 5.0,
„max“: 1100.0
},
„HyRh2“: „N/A“,
„HyT1“: „N/A“,
„HyT2“: „N/A“,
„InA“: „N/A“,
„InB“: „N/A“,
„Info“: null,
„InfoHum“: null,
„InfoMsg“: null,
„InfoTemp“: null,
„InfoVac“: null,
„CO2Read“: „N/A“,
„CO2Set“: „N/A“,
„CurOp“: „Manual“,
„Defrost“: „N/A“,
„DevType“: „VO101“,
„DoorLock“: „N/A“,
„DoorLock_Range“: {
„min“: 0,
„max“: 1
},
„DoorOpen“: „N/A“,
„FanRead“: „N/A“,
„FanSet“: „N/A“,
„FanSet_Range“: {
„min“: 0,
„max“: 100
},
„FlapSet“: „N/A“,
„FlapSet_Range“: {
„min“: 0,
„max“: 100
},
„GasType“: „N/A“,
„HornSet“: „N/A“,
„HumRead“: „N/A“,
„HumSet“: „N/A“,
„HyRh1“: „N/A“,
„Temp2Read“: „N/A“,
„Temp3Read“: „N/A“,
„Temp4Read“: „N/A“,
„TempSet“: 30.2,
„TempSet_Range“: {
„min“: 20.0,
„max“: 200.0
},
„Time“: „2019-04-
01T15:14:59+01:00“,

```

Example	
<pre> „LightDay“: „N/A“, „LightLED“: „N/A“, „LightUV“: „N/A“, „O2Read“: „N/A“, „O2Set“: „N/A“, „ProgCurrent“: „N/A“, „ProgDuration“: „N/A“, „ProgList“: [„Prog1“, „Prog2“], „ProgRemain“: „N/A“, „ProgExit“: 0.0, „ProgStart“: null, „ProgStop“: null, „RC“: „rwa“, SN“: „S618.0005“, „SwASet“: „N/A“, „SwBSet“: „N/A“, „SwCSet“: „N/A“, „SwDSet“: „N/A“, „SWRev“: „02.04.23“, „TemplRead“: 23.1, </pre>	<pre> „TimeDST“: 0.0, „TimeZone“: „+01:00“, „VacRead“: 966.9, „VacSet“: 999.0, „VacSet_Range“: { „min“: 5.0, „max“: 1100.0 }, </pre>

6. Examples

6.1 Read Values

Read current temperature and set value:

Request:

```
http://[IP address]/atmoweb?Temp1Read=&TempSet=
```

Response:

```
„Temp1Read“: 64.4,  
„TempSet“: 65,  
„TempSet_Range“: {  
„max“: 70.0,  
„min“: 0.0  
},
```

6.2 Write Values

Write TempSet and read Temp1Read:

Request:

```
http://[IP address]/atmoweb?TempSet=37.0&Temp1Read=
```

Response:

```
„TempSet“: 37.0,  
„Temp1Read“: 64.3,  
„TempSet_Range“: {  
„max“: 70.0,  
„min“: 0.0  
},
```

6.3 Start a program

Starts a program, please enter the program name:

Request:

```
http://[IP address]/atmoweb?ProgStart=MyProgram
```

Response:

```
{ „ProgStart“: „MyProgram“ }
```


6.4 Stop a program

Stops current program, please enter the program name:

Request:

```
http://[IP address]/atmoweb?ProgStop=MyProgram
```

Response:

```
{ „ProgStop“: „MyProgram“ }
```

6.5 Exit a program

Exit currently running program (sets device into manual mode):

Request:

```
http://[IP address]/atmoweb?ProgExit=
```

Response:

```
{ „ProgExit“: 1 }
```


REST INTERFACE

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