

## **AtmoREMOTE**

---

Library description for remote control of Memmert Generation 2012 chambers



## CONTENT

<b>HISTORY</b>	<b>3</b>
<b>1. VALIDITY</b>	<b>4</b>
<b>2. IMPORTANT REFERENCE</b>	<b>4</b>
<b>3. GENERAL INFORMATION</b>	<b>4</b>
<b>4. DATA TRANSFER</b>	<b>5</b>
<b>5. ELECTRICAL CONNECTION</b>	<b>5</b>
<b>6. SOFTWARE REQUIREMENTS</b>	<b>5</b>
<b>7. AVAILABLE FUNCTIONS</b>	<b>5</b>
<b>8. AVAILABLE PROPERTIES</b>	<b>5</b>
<b>9. RETURN TYPES</b>	<b>7</b>
<b>10. DOCUMENTATION</b>	<b>7</b>
<b>11. SAMPLE PROJECT</b>	<b>7</b>

## History

Version	Date	Author	Comment
1.0	10.06.2014	Christian Bär	First release
1.1	16.07.2014	Christian Bär	Changed needed versions
1.2	22.07.2015	Christian Bär	Updated needed versions

## 1. Validity

It expressly is pointed out, that this library description only applies to the following MEMMERT cabinets:

- Single and Twin-Display controller with delivery since 2012

## 2. Important Reference

Please, read thoroughly the following references before initiation of your device to your own safety as well as for the reliability of the device.

- Always follow all warnings and references which are positioned on the device itself or which are recorded in the operating manual. In particular consider the rules of the operating instruction for connecting the interface.
- MEMMERT offers the possibility with the AtmoREMOTE library to connect to external devices (e.g. PERSONAL COMPUTER to control). The right connection and using, in particular the input, workmanship and forwarding of data lies exclusively in the responsibility and risk field of the user.
- In the case of own programming and system control unit through the user, mass is to be put by this in custody in particular and is to be checked. Unsuitable data transmission media or untested software can lead to inadmissibly high working temperatures and therefore to disadvantages at the loading property or for danger of the operating personnel.
- The company MEMMERT GmbH + Co.KG is not liable for damages or troubles which result through the combination of data processing and external software with the MEMMERT device.
- In the case of test and using of software, the over temperature controller TWW should always be used also as additional over temperature protection, because this is working independent of the interface and the working controller.
- For initiation or after a change of the system (control -, hard and software and MEMMERT cabinet), a test without loading is to be carried out first.
- Ensure that cable connection hinders nobody to the warming box.
- No part of this interface description may be reproduced or incorporated, duplicated or scattered making use of electronic systems in some form without the written permission of the company MEMMERT GmbH + Co.KG.

## 3. General Information

This description only contains the functions and properties relevant for controlling and read out of the controller.

During design of control software, it is advisable to receive a regular communication with the cabinet. As a result, mistakes can be recognized prematurely in the data transfer and consequential damages can be avoided (e. g. by over temperature).

#### 4. Data Transfer

Interface: Ethernet

Internal Transmission Protocols: HTTP (Port 80) and FTP (Port 21)

#### 5. Electrical Connection

Only via standard CAT 5 Ethernet cable.

#### 6. Software Requirements

Chamber Controller: Minimum 2.1.7

AtmoRemote.dll: Minimum 1.0.0.2

CelsiusNet.dll: Minimum 2.0.3.x

#### 7. Available Functions

Function Name in Device Class	Description
StartProgram(path)	Upload a program from the given local path and start it.
StartProgramOnDevice(name)	Start program on device with given name. Program must be present on device.
StopProgram()	Stops a running program, and activates idle mode.
DeactivateProgram()	Stops a running program, and activates manual mode.
DownloadProgramList()	Get list of names of available programs on chamber
SynchronizeTime()	Sets Daylightsavings, Timzone and DateTime on chamber with actual time on PC
UpdateData()	Reads all available parameters
RemotePossible()	If remote is enabled on chamber it will be true(Read, ReadWrite, ReadWriteAlarm)
CreateDevice(ip)	Setup of connection with given IP address.
UploadProgram(path)	Just uploads a given program.
GetTimeOnDevice(out DateTime)	Gets the actual DateTime of the chamber.
CanReadFromDevice()	Is reading allowed on chamber?
CanChangeAlarmLimitsOnDevice()	Is it possible to change alarm limits on chamber.
CanChangeValuesOnDevice()	Is it possible to change values on chamber.

#### 8. Available Properties

The following Column Headings "Read", "Write", and "Write Alarm" describe the authorization level needed for the property. For "Read" there is reading permission needed. For "Write" there is writing permission needed. For "Write Alarm" there is writing alarm permission needed. Please refer to the Manual to set the proper authorization level for your needs on the chamber.



Description	Read	Write	Write Alarm	Property AtmoREMOTE
Temp1 Real	x			T1Real
Temp2 Real	x			T2Real
Temp3 Real	x			T3Real
Temp4 Real	x			T4Real
Temp Set	x	x		TSet
SwitchA	x	x		SwitchA
SwitchB	x	x		SwitchB
SwitchC	x	x		SwitchC
SwitchD	x	x		SwitchD
Door	x			DoorState
Door Lock	x	x		DoorLock
Fan Real	x			FanReal
Fan Set	x	x		FanSet
Flap Set	x	x		FlapSet
CO2 Real	x			CO2Real
CO2 Set	x	x		CO2Set
O2 Real	x			O2Real
O2 Set	x	x		O2Set
RH Real	x			RHReal
RH Set	x	x		RHSet
Alarm CO2 High	x		x	AlarmCO2Low
Alarm CO2 Low	x		x	AlarmCO2High
Alarm RH High	x		x	AlarmRHHigh
Alarm RH Low	x		x	AlarmRHLow
Alarm Temp High	x		x	AlarmTempHigh
Alarm Temp Low	x		x	AlarmTempLow
Defrost Interval	x	x		DefrostInterval
Horn	x	x		Horn
Daylight	x	x		Daylight
UV Light	x	x		UvLight
LED Light	x	x		Led
Operation Mode	x			Operation

Controller Version	x			VersionOfDevice
Power Board Version	x			VersionOfPowerBoard
RH Board Version	x			VersionOfRHBoard
Remote Status	x			RemoteState
Info General	x			InfoGeneral
Info Temp	x			InfoTemperature
Info Humidity	x			InfoHumidity
Serial Number	x			SerialNumber
Range CO2	x			RangeCO2
Range O2	x			RangeO2
Range Temperature	x			RangeTemperature

## 9. Return Types

All Functions return the status as Type List<StatusMessage>. Each Message refers to one of the following codes.

E1 = Out of range

E2 = Parameter not available

E3 = Parameters don't match. 2 Commands contradict, e.g. Lower alarm limit greater or equal higher alarm limit

E4 = Program not found happens, if user tries to start a program which is not available.

E5 = Program should be stopped first happens, if user tries to start a program while a program is running.

E6 = Program is running, no parameter could be changed.

E7 = Parameter is locked by UserID

E8 = No Authorization to use parameter in this way

E9 = Program could not be activated

E10 = Parameter is not available

## 10. Documentation

For more specific details on data types, properties and function descriptions please use our class documentation delivered as **Compiled Help Module (\*.chm)** Files.

## 11. Sample Project

For some advice how to handle AtmoREMOTE, please refer to the included sample project.