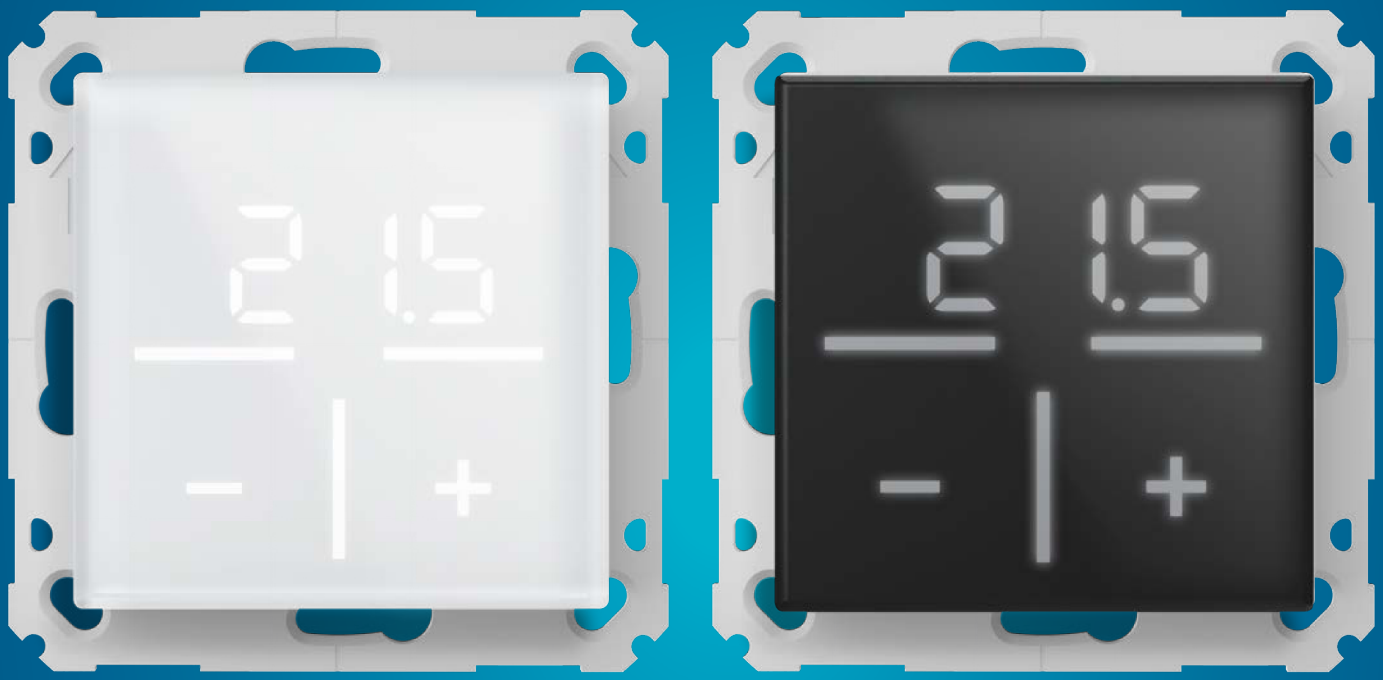
homematic IP

Glass Wall Thermostat with CO2 sensor

HmIP-WGTC, HmIP-WGTC-A



EN Installation and Operating Manual

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1 Package contents

1x Glass Wall Thermostat with CO2 sensor
1x Mounting module with relay
2x Screws 3,2 x 15 mm
Screws 3,2 x 25 mm
1x Operating manual

2 Information about this manual

Read this manual carefully before beginning operation with your Homematic<IP device. Keep the manual for later consultation. If you hand the device over to other persons for use, please ask them to read this manual.

Symbols used

This indicates a hazard.

This section contains important additional information.

3 Hazard information

We accept no liability for damage caused by use for other than the intended purpose, incorrect handling or failure to observe the hazard warnings. In such cases, all warranty claims are void. We accept no liability for consequential damage.

Do not use the device if it has visible damage or a malfunction. If you have any doubts, have the device checked by a qualified expert.

For safety and licensing reasons (CE), unauthorised conversions to and/or modification of the device are not permitted.

The device is not a toy – do not allow children to play with it.

Plastic film, plastic bags, polystyrene parts, etc. can be dangerous for children. Keep the packaging material out of the reach of children and dispose of it immediately.

Clean the device using a soft and clean lint-free cloth. Do not use any detergents containing solvents for cleaning purposes.

Do not expose the device to moisture, vibrations, constant solar or other heat radiation, excessive cold or mechanical loads. The device must only be operated indoors.

Improper use of the device with a load greater than the specified rated current or greater than the specified rated power (overload) will cause the device to switch off automatically after a short delay. The safety switch-off is indicated by an error message in the app. In the event of a fault, contact a qualified electrician to have the overload rectified. The device is automatically ready for operation again after a waiting time of approx. 30 minutes.

Overloading the device can lead to the destruction of the device, to a fire or to an electrical accident. Before connecting a load, check the technical data, in particular the maximum permissible connected load and the type of load to be connected (load types) in accordance with the instructions. Load the device only up to the specified power limit.

Loads connected to the output terminals require sufficient insulation.

The device may only be installed in the following device boxes:

- in commercially available switch sockets (device boxes) in accordance with DIN 49073-1
- In Legrand Batibox switch boxes


Failure to observe the installation instructions may result in fire or a danger of electric shock. The device is part of the building installation. Observe the relevant national standards and directives during planning and installation.

The device may only be operated on a 230<V~/50 Hz AC mains power supply. Work on the 230<Vmains may only be carried out by a qualified electrician (in accordance with VDE 0100).

Observe the permissible cable types and conductor cross sections when connecting to the device terminals.

The circuit to which the device is connected must be protected by a circuit breaker in accordance with DIN EN 60898-1 (tripping characteristic B or C, max. 16 A rated current, min. 6 kA interrupting rating, energy limiting class 3). The installation regulations in accordance with VDE 0100 and HD384 or IEC 60364 must be observed. The circuit breaker must be easily accessible to the user and marked as the disconnecting device for the actuator.

The device is suitable for use only in residential environments.

4 General system information

This device is part of the Homematic<IP Smart Home System and communicates via the Homematic<IPWireless protocol. All devices in the system can be conveniently and individually configured via the Homematic<IPApp. Operation requires connection to a Homematic<IP Access Point or a Central Control Unit. Further information about the system and how to combine it with other Homematic IP devices is to be found in the Homematic<IP *User guide*.

All technical documents and updates are to be found at *www.homematic-ip.com*.

5 Function and device overview

The Homematic<IPGlass Wall Thermostat with CO2 sensor can be integrated perfectly into anyone's living environment thanks to its contemporary design and 55<mm frame dimensions. It has two touch surfaces, separated visually from each other by light strips, to enable the temperature to be adjusted conveniently. In addition to the temperature, the relative humidity and the CO2 concentration can also be shown on the display.

The glass wall thermostat enables conventional 230 V actuators, Homematic<IP Underfloor Heating Controllers and conventional radiators with Homematic<IP Radiator Thermostats to be time-controlled. As a part of this, the temperature and humidity in the room are measured cyclically so that the room temperature can be adjusted precisely to individual needs.

The Homematic IP Mounting Module with switching output (HmIP-MMR), installed in a switch box, is used as the base for the Glass Wall Thermostat with CO2 sensorGlass Push-button.

Device overview

A) Display for showing temperature, humidity and CO2 concentration

B) Frame (available separately)

C) Touch surface

D) Connecting terminal for 1 (switching output (normally open))

E) Connecting terminal for L (phase conductor)

F) Connecting terminal for N (neutral conductor)

G) Connection terminal for S1 (without function)

H) System button (device LED)

Display overview

°C	Setpoint/current temperature
%	Humidity
	Open window symbol
	Operating lock
MANU	Manual mode
BOOST	Boost function
SET	Setpoint temperature
ppm	CO2 concentration

Further information on the display symbols can be found under *(Flash codes and displays), page 11*.

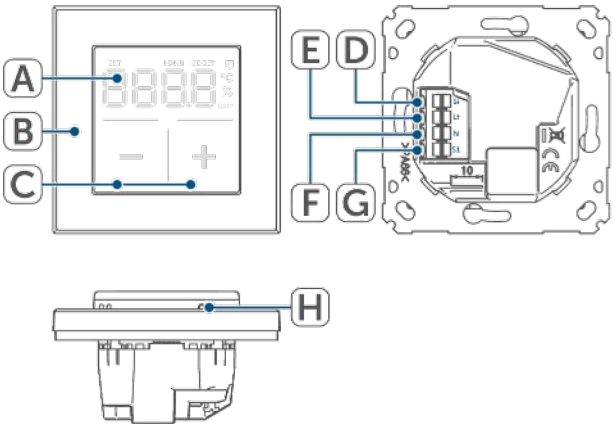


Figure 3

6 Start-up

6.1 Installation instructions

Read this section completely before starting installation.

Make a note of the device number (SGTIN) and the installation location of the device before installation to make it easier to identify the device later. The device number can also be found on the enclosed QR code sticker.

Please observe the hazard warnings during installation *see (Hazard information), page 3*.

Please note the insulation stripping length of the conductor being connected, as indicated on the device.

The installation may only be carried out in commercially available switch boxes (device boxes) in accordance with DIN 49073-1 or Legrand Batibox switch boxes.

If changes to or work on the house installation are necessary (e.g. extension, bypass of switch or socket inserts) or to/on the low-voltage distribution system for mounting or installing the device, the following safety instructions must be observed:

The installation may only be carried out by persons with the relevant electrical engineering knowledge and experience!*

Incorrect installation can endanger

- your own life,
- and the lives of other users of the electrical system.

Incorrect installation also means that you are running the risk of serious damage to property, e.g. due to fire. You risk personal liability for personal injury and property damage.

Consult an electrician!

***Specialist knowledge required for installation:**

The following specialist knowledge is particularly important during installation:

- The “5 safety rules” to be used:
  - Disconnect from mains
  - Secure against restart
  - Check for absence of voltage
  - Earth and short circuit
  - Cover or cordon off neighbouring live parts
- Selection of suitable tools, measuring equipment and, if necessary, personal protective equipment;
- Evaluation of measuring results;

- Selection of electrical installation material for safeguarding shut-off conditions;
- IP protection types;
- Installation of electrical installation material;
- Type of supply network (TN system, IT system, TT system) and the resulting connection conditions (classic zero balancing, protective earthing, required additional measures, etc.).

Permitted cable cross sections for connecting to the device are:
rigid and flexible cable, 0,75 -2,5 mm^2

6.2 Installation

Install the device as follows:

- Switch off the fuse of the power circuit.
- Remove the cover of your existing wall thermostat.

Use a flat pointed object, e.g. a flat-blade screwdriver, to make disassembly easier.

- Disconnect the wiring and remove the existing wall thermostat.
- Connect the phase conductor to connecting terminal L of the mounting module.
- Connect the neutral conductor to connecting terminal N of the mounting module.
- Connect the cable of the valve drive of to connecting terminal 1 of the mounting module.
- Place the mounting module in the switch box and fasten it to the switch box using the screws supplied.
- Place the frame of your installation onto the mounting module.
- Fit the device to the mounting module by fully engaging the connecting pins in the holder provided in the mounting module.

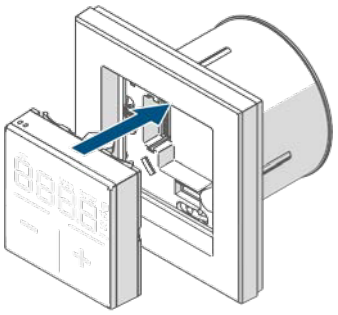


Figure 4

- Switch the fuse of the power circuit on again *see (Installation instructions), page 6* to activate the device pairing mode.

6.3 Pairing with a control unit

Read this entire section before starting the pairing procedure.

Set up your Homematic IP Central Control Unit via the Homematic IP App so that you can use Homematic IP devices in the system. Detailed information on this is to be found in the operating manual for the Central Control Unit..

Proceed as follows to pair the device with your control centre:

- Open the Homematic<IPApp.
- Tap on **...More** inn the homescreen.
- Tap on **Pair device**.
- Connect the power supply.
- The pairing mode is active for 3 minutes.

You can manually start the pairing mode for another 3 minutes by pressing the system button shortly.

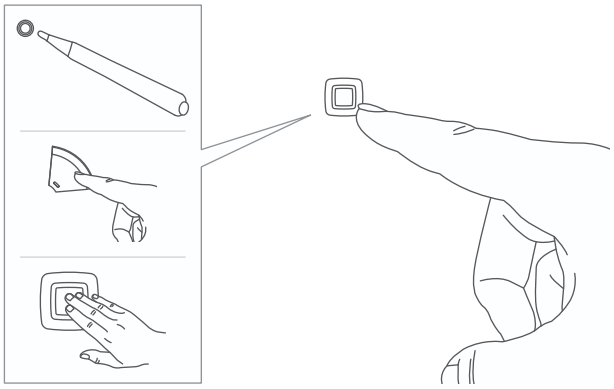


Figure 5

The type of system button depends on your device. Further information is to be found in the device overview.

- Your device will automatically appear in the Homematic<IPApp.
- Enter the last four digits of the device number (SGTIN) in your app or scan the QR code. The device number can be found on the sticker supplied or attached to the device.
- Wait until pairing is completed.
- If pairing was successful, the device LED lights up green.
- The device is now ready for use.

If the device LED lights up red to, please try again *(Flash codes and displays), page 11*.

- Finally, follow the instructions in the Homematic<IPApp.

6.4 Behaviour after switching on the mains voltage

If the device has not yet been paired, pairing mode will be active during the first 3 minutes after the mains voltage has been switched on. You will find further information about connecting your device in the next section.

The device is in Start mode during the first 10 minutes after the mains voltage has been switched on. During this time, the relay is being triggered.

During the following 20 minutes, the relay is operated via two-point control. If the temperature falls below the setpoint temperature, the relay is switched on. If the temperature rises above the setpoint temperature, the relay is switched off. After 20 minutes, the relay is operated via PI control with PWM output (normal operation).

7 Operation

If the device is in standby mode, you must press the touch panel once to activate it before it can be operated.

Ventilate at least once a week to ensure correct measurement of the CO2 concentration.

After set-up, simple operations are available directly on the device.

- **Temperature**: Press the “+” or “-” touch fieldPress the “+” or “-” button to change the temperature manually. In automatic mode, the manually set temperature will remain the same until the next point at which the schedule changes. Afterwards, the defined heating schedule will be enabled again. During manual mode, the temperature remains activated until the next manual change.

If you have paired the device with a Homematic<IPCentral Control Unit, additional configurations are available in the device settings:

- **Operating lock**: You can activate or deactivate the operating lock to prevent settings from being changed unintentionally, e.g. by accidentally touching them.
- **Switch actuator function**: Select the use of the switching output.
  - Switches any devices (light, electric heating, ...)
  - Switches (thermoelectric) underfloor heating valves
- **Backlighting**: You can link and control the backlighting of the device with a time profile.
- **Display mode**: You can select which information should be shown on the display.
  - Setpoint temperature
  - Current temperature
  - Current temperature/humidity
  - Humidity
  - CO2 concentration
  - Current temperature / humidity / CO2 concentration
- **Drive type**: Select the drive type of the actuator used.
  - Normally open
  - Normally closed
- **Frost protection temperature**: The frost protection function prevents the system from freezing.
- **Internal switching output**: You can activate the internal switching output if the device is to control a thermoelectric actuator or deactivate it if the device is used as a radio wall thermostat.
- **Temperature offset**: You can configure a temperature offset for each thermostat installed in the room within a range of +/- 3.5°C. Use the temperature offset if the measured temperature deviates from the temperature in the room.
- **Type of control**: Select whether the control method should be pulse width modulation (e.g. thermal ac-

tuator) or two-point control (e.g. electric heating).

- **Global heating functions**: With this setting, you can connect the device to a Multi IO Box or switching actuator for heating systems even without an additional underfloor heating controller.
- **Quick action**: Quick action describes the simultaneous pressing of all buttons with the palm of the hand. The function is deactivated by default. Once activated, the quick action is another configurable channel in groups.

8 Troubleshooting

8.1 Command not confirmed

If at least one receiver does not confirm a command, the device LED lights up red at the end of the failed transmission process. The reason for the failed transmission may be radio interference. This may be caused by the following: *see (General information about wireless operation), page 12*

- Receiver cannot be reached.
- Receiver is unable to execute the command (load failure, mechanical blockage, etc.) or
- Receiver is faulty.

8.2 Duty cycle

The duty cycle is a legally regulated limit of the transmission time of devices in the 868 MHz range. The aim of this regulation is to safeguard the operation of all devices working in the 868 MHz range. In the 868 MHz frequency range we use, the maximum transmission time of any device is 1% of an hour (i.e. 36 seconds in an hour). Devices must cease transmission when they reach the 1% limit until this time restriction ends. Homematic<IP devices are designed and produced with 100% conformity to this regulation. During normal operation, the duty cycle is not usually reached. However, repeated and radio-intensive pairing processes mean that it may be reached in isolated instances during start-up or initial installation of a system. If the duty cycle is exceeded, this is indicated by three slow red flashes of the device LED, and may manifest itself in the device temporarily working incorrectly. The device will start working correctly again after a short period (max. 1 hour).

8.3 Flash codes and displays

Flash code/display	Meaning	Solution
1x orange and 1x green light	Test display	You can continue once the test display has stopped.
Short orange flashes (every 10 s)	Pairing mode active	Enter the last four digits of the device number (SGTIN) in your app or scan the QR code.
Short orange flashes	Transmission of configuration data	Wait until the transmission is completed.
Brief orange flashing (followed by a steady green light)	Transmission confirmed	You can continue operation.
Brief orange flashing (followed by a steady red light)	Transmission failed or duty cycle limit reached	Please try again *see (Command not confirmed), page 10* or *see (Duty cycle), page 10*.
6x long red flashes	Device defective	Please see the display on your app for error messages or contact your retailer.
Alternating long and short orange flashing	Software update (OTAU)	Wait until the update is completed.
	Operating lock activated	Deactivate the operating lock via the app.
E12	Overload detected	Disconnect the unit and the load from the power supply and eliminate the overload. Then switch the device on again.
E23	Mounting module not recognised	Check whether the device is mounted on the correct mounting module (HmIP-MMR).

9 Restoring factory settings

The factory settings of the device can be restored. If the device is paired with a Central Control Unit, the configurations are automatically restored. If the device is not paired with a Central Control Unit, all the settings are lost.

Proceed as follows to restore the factory settings of the device:

- Press and hold the system button for 4 seconds *(Fig. 6)*
- The device LED starts flashing orange quickly.
- Release the system button.
- Press and hold the system button for 4<s
- The device LED lights up green.
- Release the system button to finish restoring the factory settings.

The device will perform a restart.

If the device LED lights up red to, please try again *(Flash codes and displays), page 11*.

10 Maintenance and cleaning

The device is maintenance-free for you. Leave any maintenance or repair to a specialist.

Clean the device using a soft, clean, dry and lint-free cloth. The cloth can be slightly dampened with lukewarm water to remove more stubborn marks. Do not use any detergents containing solvents for cleaning purposes. They could corrode the plastic housing and label.

11 General information about wireless operation

Radio transmission is performed on a non-exclusive transmission path, which means that there is a possibility of interference occurring. Interference can also be caused by switching operations, electrical motors or defective electrical devices.

The range inside buildings can differ greatly from that in open air. Besides the transmitting power and the reception characteristics of the receiver, environmental factors such as humidity in the vicinity play an important role, as do on-site structural/screening conditions.

Declaration of conformity

eQ-3 AG, Maiburger Str. 29, 26789 Leer, Germany, hereby declares that the wireless system type Homematic<IPHmIP-WGTC, HmIP-WGTC-A complies with Directive 2014/53/EU. The full text of the EU declaration of conformity can be found at: *www.homematic-ip.com*

12 Disposal

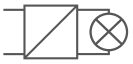
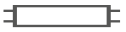
This symbol means that the device must not be disposed of as household waste, general waste, or in a yellow bin or a yellow sack. For the protection of health and the environment, you must take the product and all electronic parts included in the scope of delivery to a municipal collection point for waste electrical and electronic equipment to ensure their correct disposal. Distributors of electrical and electronic equipment must also take back waste equipment free of charge. By disposing of it separately, you are making a valuable contribution to the reuse, recycling and other methods of recovery of old devices. Please also remember that you, the end user, are responsible for deleting personal data on any waste electrical and electronic equipment before disposing of it.

CE The CE mark is a free trademark that is intended exclusively for the authorities and does not imply any assurance or guarantee of properties.

If you have any technical questions about the appliance, please contact your specialist dealer.

13 Technical specifications

Short description	HmIP-WGTC, HmIP-WGTC-A
Supply voltage	230 V/50 Hz
Degree of protection	IP20
Ambient temperature	-5 - +40°C
Weight	114 g
Dimensions without frame (W x H x D)	HmIP-MMR: 71 x 71 x 36 mm HmIP-WGTC-F: 54.5 x 54.5 x 29 mm
Current consumption	6 A
Max. switching capacity	1380 W
Standby power consumption	0.4 W
Relay	1x NO contact
Cable type and cross section	rigid and flexible cable, 0.75 - 2.5 mm^2
Installation	Only in normal commercial switch boxes (device boxes) in accordance with DIN 49073-1., Only in Batibox-type switch boxes from Legrand
Measuring range temperature	-9.9 - +60°C
Measuring range humidity (relative)	0 - 100 %
Measuring range CO2 concentration	0 - 9995 ppm
Typical Open area RF range	130 m
Radio frequency band	868.0-868.6 MHz / 869.4-869.65 MHz
Duty cycle	< 1% per h / < 10% per h
Receiver category	SRD category 2
Maximum radiated power	10 dBm

Load type		Relay
Resistive load		6 A
Light bulb test		1000 W
Self-ballasted lamps (LED/compact fluorescent lamp)		200 W
HV halogen lamps		1000 W
Electronic transformers for LV halogen lamps		1000 W
Iron core transformers for LV halogen lamps		1000 W
Fluorescent lamps (uncompensated)		1000 W
Fluorescent lamps (parallel compensated)		
Electric radiators and other electric heating systems (ohmic load)		3,5 A (200.000 switchting cycles)
Motor load		2,2 A

Subject to modifications.

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Bevollmächtigter des Herstellers:
Manufacturer's authorised representative:

eQ-3

eQ-3 AG
Maiburger Straße 29
26789 Leer / GERMANY
www.eQ-3.de