memmert

# ADDITIONAL ACCESSORIES

MADE IN GERMANY.

www.memmert.com

## Manufacturer and customer service

Memmert GmbH + Co. KG
Willi-Memmert-Straße 90–96
D-91186 Büchenbach
Germany

Phone: +49 (0)9122 925-0
Fax: +49 (0)9122 14585
E-mail: sales@memmert.com
Internet: www.memmert.com

Customer service:
Service hotline: +49 (0)9171 9792 911
Service fax: +49 (0)9171 9792 979
E-mail: service@memmert.com

## Shipping address for repairs:

Memmert GmbH + Co. KG
Customer service
Willi-Memmert-Str. 90-96
DE-91186 Büchenbach
Germany

Please contact our customer service before sending appliances for repair or before returning equipment, otherwise, we have to refuse acceptance of the shipment.

© 2022 MEMMERT GmbH + Co. KG

D24124 | Date 04/2022

We reserve the right to make changes

# About this guide

## Purpose and target audience

This manual describes the optional additional accessories for Memmert Generation 2012 appliances. It is intended for use by trained personnel of the owner, who have the task of operating and/or maintaining the respective appliance. Due to individual configurations and sizes, illustrations in this manual may be slightly different to the actual appearance. However, the procedure is always the same.

### Other documents to be observed:

- the operating manual of the respective appliance
- For operation of the appliance with MEMMERT AtmoCONTROL, observe the separate software manual

# Safety regulations

**⚠ WARNING**

Danger to life due to electric shock!

After removing covers, live parts may be exposed. Touching these can lead to an electric shock.

► When maintenance work is undertaken by the customer, no covers may be removed.

**⚠ WARNING**

Danger of toppling over!

The appliance can topple over and cause serious crush injuries.

► Secure the appliance against tipping in accordance with the operating manual.

**⚠ CAUTION**

Danger of burns!

The chamber load and interior surfaces can become hot depending on the operation and can cause burns when touched.

► Before undertaking maintenance work, allow the appliance to cool back down to room temperature

# Content

Floating switching contact ALARM (opt. H6) 6

Freely programmable switching contact (A – D) 7

4–20-mA current loop interface 8

Temperature ..... 8
Humidity ..... 8

Electric door locking mechanism 9

Freely positionable Pt100 temperature sensor (option H8) 10

Compressed-air drying with HPPeco and ICH/ICHeco devices 11

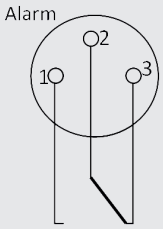
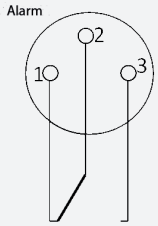
Gas flushing 13

Mobile Alert 14

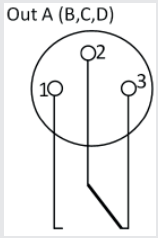
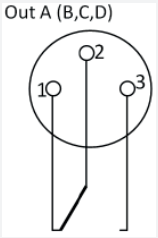
MobileAlertBox - C4 ..... 14
MobileAlertBox - C3 ..... 15

Change the intake air filter (R8) 16

# Floating switching contact ALARM (opt. H6)

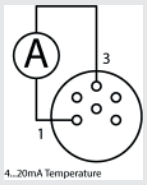
| Relay/ LED | Plug assignment | Functional description | Miscellaneous |
|---|---|---|---|
| Relay off<br><br>Test LED<br><br>red |  | Contact 2-3 is closed in case of the following errors:<br>▶ Loss of voltage<br>▶ Overtemperature<br>▶ Undertemperature (Plus controller only)<br>▶ Humidity alarm<br>▶ Mechanical Temperature limiter TB<br>▶ Fan speed alarm (only for optional fan speed monitoring)<br>▶ Error of sensor PT100 (Plus appliances: both sensors defective) | Switching capacity<br><br>max. 2 A<br><br>max. 24 V |
| Relay on<br><br>Test LED<br><br>green |  | Contact 1-2 is closed<br>▶ Appliance switched on and in order | Switching capacity:<br><br>max. 2 A<br><br>max. 24 V |

# Freely programmable switching contact (A – D)

| Relay/ LED | Plug assignment | Functional description | Miscellaneous |
|---|---|---|---|
| Relay off<br><br>Test LED<br><br>red |  | Programming of the freely programmable switching contacts is done using the AtmoCONTROL software.<br><br>Up to 4 (for single-phase appliances max. 2) floating switching contacts can be switched programme dependently.<br><br>For switch setting "open"<br><br>▶ Contact 1-2 open<br><br>▶ Contact 2-3 closed<br><br> | Switching capacity<br><br>max. 2 A<br><br>max. 24 Volt |
| Relay on<br><br>Test LED<br><br>green |  | For switch setting "close"<br><br>▶ Contact 1-2 closed<br><br>▶ Contact 2-3 open<br><br> | Switching capacity:<br><br>max. 2 A<br><br>max. 24 V |

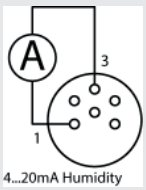
# 4–20-mA current loop interface

## Temperature

| Plug assignment | Appliance | Range | 4 mA | 12 mA | 20 mA |
|---|---|---|---|---|---|
|  | IN / IF | 0 … + 90 °C | 0 °C | 45 °C | 90 °C |
| | IN$^{PLUS}$/IF$^{PLUS}$ (with Steri function) | 0 … + 90 °C | 0 °C | 45 °C | 90 °C |
| | SN / SF | 0 … + 260 °C | 0 °C | 130 °C | 260 °C |
| | UN / UF | 0 … + 310 °C | 0 °C | 155 °C | 310 °C |
| | IPP / HPP | −10 … + 80 °C | − 10 °C | 35 °C | 80 °C |
| | ICP / ICH | −20 … + 70 °C | − 20 °C | 25 °C | 70 °C |
| | CTC | −50 … + 200 °C | − 50 °C | 75 °C | 200 °C |
| | HCP | 0 … + 100 °C | 0 °C | 50 °C | 100 °C |
| | Optional | 0 … + 70 °C | 0 °C | 35 °C | 70 °C |
| | Optional | 0 … + 80 °C | 0 °C | 40 °C | 80 °C |
| | Optional | 0 … + 100 °C | 0 °C | 50 °C | 100 °C |
| | Optional | 0 … + 300 °C | 0 °C | 150 °C | 300 °C |
| | Optional | 20 … + 90 °C | 20 °C | 55 °C | 90 °C |
| | Optional | 20 … + 100 °C | 20 °C | 60 °C | 100 °C |
| | Optional | 20 … + 200 °C | 20 °C | 110 °C | 200 °C |
| | Optional | 20 … + 260 °C | 20 °C | 140 °C | 260 °C |
| | Optional | 20 … + 300 °C | 20 °C | 160 °C | 300 °C |
| | Optional | 20 … + 310 °C | 20 °C | 165 °C | 310 °C |

R resistance: max. 2,5 V@20 mA = 125 Ohm | For errors 0 mA output.

## Humidity

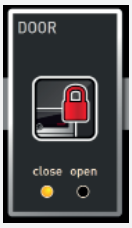
| Plug assignment | Functional description | Miscellaneous |
|---|---|---|
|  | Current loop interface 4-20 mA<br>Range: 0…100 % rh; 4 mA: 0 % rh; 12 mA: 50 % rh; 20 mA: 100 % rh | R resistance:<br>Max. 2.5V@20mA = 125 Ohm |

# Electric door locking mechanism

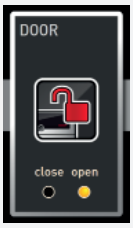
## Functional description

Programming of the electric door locking mechanism is done using the software AtmoCONTROL or the timer function on the TwinDISPLAY. The locking mechanism can be activated via the programming in the AtmoCONTROL at any stage of the program. The door is locked via the TwinDISPLAY by activating the timer. When the timer is activated, the door lock closes and cannot be opened until the time has elapsed. To set the timer, refer to the user manual for the respective device.

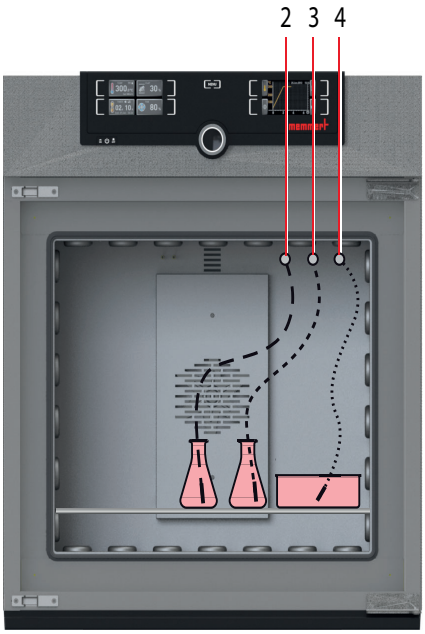
Setting "close":
Door locking mechanism
electrically locked



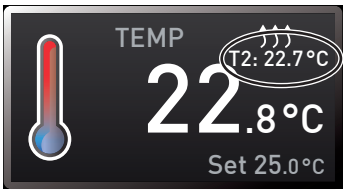

Setting "open":
Door locking mechanism
electrically unlocked



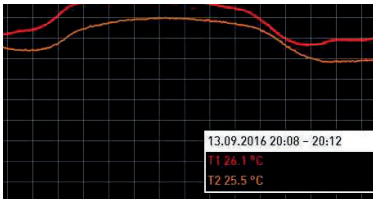
# Freely positionable Pt100 temperature sensor (option H8)




The Pt100 temperature sensor can be flexibly positioned in the interior or in the chamber load to measure temperatures locally (a maximum of 3 additional sensors is possible). The individual temperatures measured are logged in the integrated data logger and shown on the ControlCOCKPIT di play (T2, T3, etc.):




In the AtmoCONTROL software, the temperature sensor values are represented as additional coloured lines, also designated as T2, T3, etc.:



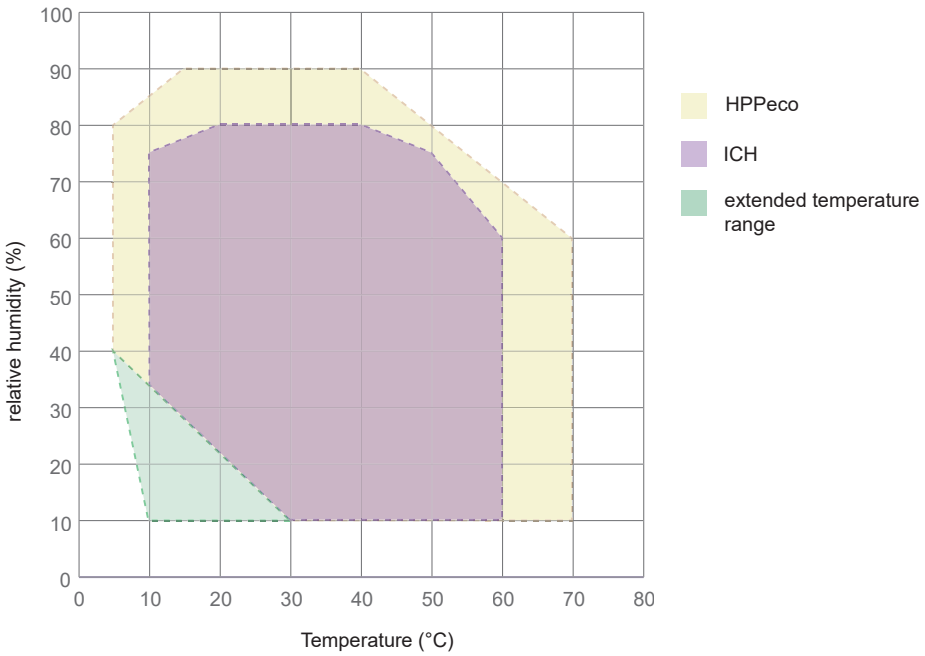
# Compressed-air drying with HPPeco and ICH/ICHeco devices

## Scope of application of compressed-air drying

By using compressed-air drying under favourable outdoor conditions, the temperature-humidity working range can be extended with HPP and ICH devices. When used optimally, dehumidification can be achieved in the range of 10% RH at 10°C.

**NOTICE**

Due to the varying environmental conditions at the respective installation site, the setting values may differ from the guide values.




## Influence factors dehumidification

The operating pressure for compressed-air drying set in the factory is 0.2 bar. This is enough to achieve a certified dehumidification of 10% humidity at 10°C under laboratory conditions. After a test under operating conditions with the desired parameters, the operating pressure of the compressed-air drying can be adjusted individually to the operating conditions.

- The operating pressure to be set depends on:
- the composition of the temperature-humidity parameters
- the dehumidification rate
- the humidity content of the chamber load
- the temperature and moisture content of the incoming air

**NOTICE**

If 10% humidity is not reached at 10°C, the compressed air is not, or not sufficiently, pre-dehumidified. In this case, it is possible to de-humidify the compressed air with an upstream maintenance unit. To attain the desired parameters, evaluate the temperature/humidity development on the ControlCOCKPIT and readjust the pressure on the compressed-air drying unit if necessary.

## Connecting compressed-air drying

At the back of the device is the compressed-air drying connection.

Connect a 6-mm-wide PU duct here.

**NOTICE**

Due to the components fitted in the cabinet, only oil-free compressed air with a max. pressure of 5 bar and a minimum input flow rate 6.5 l/min can be supplied to the cabinet.

## Starting compressed-air drying

Compressed-air drying starts automatically as soon as the device dehumidifies.

## Adjusting compressed-air drying

A solenoid valve adjusts the required air flow for the desired dehumidification via the device software. Manual adjustment of the compressed-air drying unit is necessary only under extreme process conditions.

Use the ControlCOCKPIT or the AtmoControl software to track the relative humidity in the appliance. Compressed-air drying is optimally set if the actual humidity value shows a slight fluctuation around the set nominal value.

At the back of the compressed-air drying unit, the pressure can be set manually on the knob:

- To increase the pressure: turn anticlockwise
- To reduce the pressure: turn clockwise

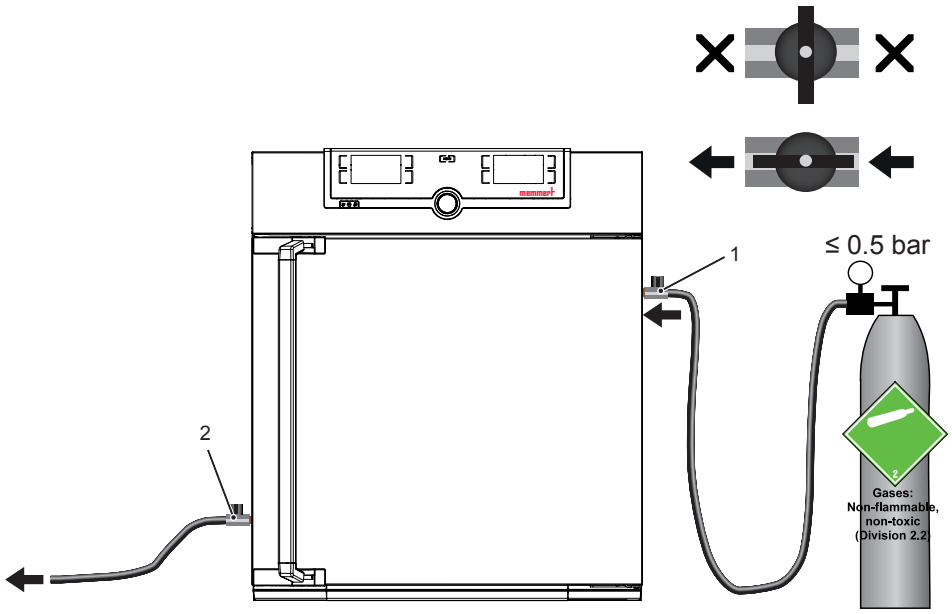
**NOTICE**

Increasing or reducing the pressure can lead to a positive or negative change depending on the process. The device does not automatically dehumidify more effectively the more pressure is set. When the pressure changes, the unit must first run for 15 minutes under modified conditions to properly record the adjustments.

# Gas flushing

When equipped with gas flushing, gas can be flushed through the appliance. The gas flows in through a ball valve on the upper right and is channelled out through a second ball valve on the bottom left. The ball valves have a 3/8”internal thread to connect them to the system.

At the inlet valve (1), standard gas bottles with pressure-relief valve can be connected (maximum connection pressure 0.5 bar). Open the outlet valve (2) before injecting gas. Ensure that there is no overpressure in the appliance. The released gas must be channelled out.




*Appliance with gas flushing (schematic diagram)*
*1 gas inlet*
*2 gas outlet*

Observe the following special precautionary measures and safety regulations for appliances with gas flushing:

**⚠ WARNING**

Danger of explosion and poisoning!

- Only inject non-combustible, non-flammable, non-explosive, non-toxic and non-corrosive gases into the appliance.
- Always close the pressure-relief valve at the gas bottle and ball valves if the appliance is not in operation.
- Do not leave the appliance door open while gas is flowing in.
- Always keep the outlet valve open while injecting gas.
- Do not operate the appliance without ventilation at the outlet valve.
- Read the safety notes and instructions of the gas supplier.

## Handling

*Operation*

1. Put the appliance into operation
2. Open the outlet valve (2) on the bottom left of the appliance
3. Open the gas bottle (max. 0.5 bar)
4. Open the inlet valve (1)

*Ending operation*

1. Close the gas bottle
2. Close the inlet valve (1)
3. Close the outlet valve (2)
4. Switch off the appliance
5. Ventilate the appliance (open the door)

# Mobile Alert

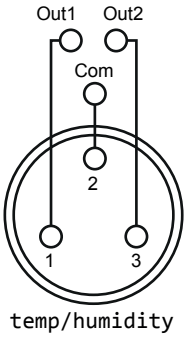
## MobileAlertBox - C4

Available for appliance series:

- Constant climate chamber HPPeco
- HCP humidity chamber
- CO2 incubator ICO
- Vacuum drying oven VO

A MobileAlertBox can be used to send an individual error message to a mobile phone via SMS. The appliance features a separate potential-free switching output that triggers the MobileAlertBox for each parameter.

### There is one switching contact each for temperature and humidity (HPPeco, HCP, ICO):



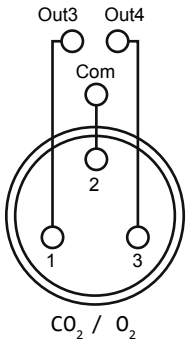

The “Out 1” switching contact for SMS messaging sends an SMS in the event of the following errors:

- Set maximum value for temperature exceeded
- Set minimum value for temperature not reached
- Automatic ATM tolerance band left
- Mechanical temperature limiter triggered
- Temperature sensor PT100 defective

The “Out 2” switching contact for SMS messaging sends an SMS in the event of the following errors:

- Set maximum value for humidity exceeded
- Set minimum value for humidity not reached
- Humidity sensor defective

### Switching contact for CO2 and O2 (only possible for ICO appliance series):



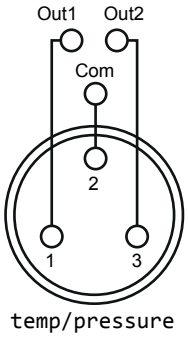

The “Out 3” switching contact for SMS messaging sends an SMS in the event of the following errors:

- Set maximum value for CO2 exceeded
- Set minimum value for CO2 not reached
- CO2 sensor defective

The “Out 4” switching contact for SMS messaging sends an SMS in the event of the following errors (only for appliances with O2 regulation):

- Set maximum value for O2 exceeded
- Set minimum value for O2 not reached
- O2 sensor defective

There is one switching contact each for temperature and pressure (only possible for VO appliance series)




The “Out 1” switching contact for SMS messaging sends an SMS in the event of the following errors:

- Set maximum value for temperature exceeded
- Set minimum value for temperature not reached
- Automatic ATM tolerance band left
- Mechanical temperature limiter triggered
- Temperature sensor PT100 defective

The “Out 2” switching contact for SMS messaging sends an SMS in the event of the following errors:

- Set maximum value for pressure exceeded
- Set minimum value for pressure not reached
- Pressure sensor defective

## MobileAlertBox - C3

Available for all appliance series (excluding medical devices and water baths).

A MobileAlertBox can be used to send an error message to a mobile phone via SMS. The appliance provides a potential-free switching output that triggers the MobileAlertBox.

### Switching contact for alarm notifications:

Contact 1-2 is closed

- Appliance switched on and in order

Contact 2-3 is closed

- for each appliance error message

# Change the intake air filter (R8)

The intake air filter in the appliance base cleans the air flowing into the appliance. Depending on the operation of the appliance, the filter needs to be replaced.

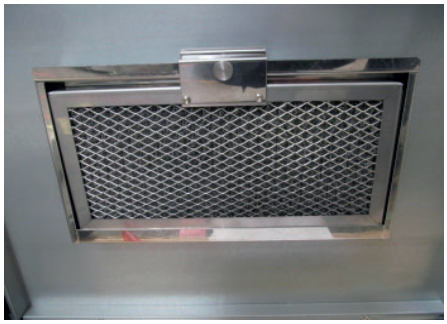
**NOTICE**

Once the packaging has been opened, the filter begins absorbing particles from the air. When installing HEPA filters, only open the airtight packaging immediately before commencing installation!

1. Remove the old filter

▶ Reach under the appliance and unscrew the thumb screw

▶ Take the old filter out the cassette



2. Insert the new filter

▶ Unpack the new filter and insert it in the cassette in the appliance base

▶ Attach the filter to the cassette with the thumb screw

memmert

# Additional accessories

D24124 | Date 04/2022
englisch

Memmert GmbH + Co. KG
Postfach 1720 | D-91107 Schwabach
Tel. +49 9122 925-0 | Fax +49 9122 14585
E-Mail: sales@memmert.com
facebook.com/memmert.family