Heating and drying ovens

COMMUNICATION. COMFORT. SIMPLY GREAT.
Drying, heating, ageing, testing, sterilising, burning-in, curing, storing. 100% AtmoSAFE.

From very small to very large! 32 litres or 1060 litres chamber volume? Standard applications or high demand for functionality, programming and documentation? In any case, all Memmert heating and drying ovens feature user-friendliness and state-of-the-art communication interfaces as a basic. Each individual appliance complies with the strict requirements of DIN 12880:2007-05 and is equipped with a maximum of safety functions. Each individual Memmert heating and drying oven is 100% AtmoSAFE.
Universal Oven UN and UF with SingleDISPLAY
Universal Oven UNplus and UFplus with TwinDISPLAY
Natural convection or forced ventilation
AtmoCONTROL software

Model sizes:
30 / 55 / 75 / 110 / 160 / 260 / 450 / 750 / 1060
+30 °C up to +300 °C

**UNIVERSAL OVEN U** The all-round genius among the
heating ovens covers a multitude of applications, ideally at
temperatures above +50 °C. Without compromises! Thanks to
two model variants and nine sizes, optionally with natural or
forced convection, industry, science and research institutes will
find a heating and drying oven which combines top precision and
safety with optimal operating comfort.
Defined and programme-controlled fan speed

Air exchange rates and air flap position can be controlled electronically at the ControlCOCKPIT. More inlet and outlet openings lead to a higher air exchange and reduced drying times. Various applications recommend or even require controlled ventilation. When drying powder, sand or corn, reducing the ventilation prevents undesired swirls.

Other applications like testing of wires or cables demand for defined air exchange rates. UFplus appliances feature easy programming of temperature and air exchange rates with the AtmoCONTROL software.

Fresh air is preheated

Temperature deviations caused by fresh air can influence sample characteristics or prolong drying. In Memmert universal ovens, the fresh air is therefore fed through a pre-heating chamber and introduced into the working chamber.

Intended purpose as a medical device:

Heating ovens UF (with extended overtemperature protection – option A6) and UFplus are applied for heating of non-sterile fabrics and covers.
**UNIVERSAL OVENS U**

according to DIN 12880:2007-05, EN 61010-1 (IEC 61010-1), 61010-2-010

Standard units are safety-approved and bear the test marks:

**Standard equipment**

**Interior:** Stainless steel, material 1.4301 (ASTM 304), with all-round deep-drawn ribs to integrate the large-area heating with ceramic-metal sheath

**Internals:** Stainless steel grids (sizes 30, 55 and 1060: 1 grid, sizes 75 – 750: 2 grids)

**Housing:** Textured stainless steel, rear zinc-plated steel, intuitively operated SingleDISPLAY or TwinDISPLAY (TFT colour display) with touchscreen (from size 450 two leaves)

**Fresh air:** Admixture of pre-heated fresh air by electronically adjustable air flap

**Connection:** Mains cable with plug (German type) CEE plug for 400 V

**Installation:** 4 feet; sizes 450, 750 and 1060 mounted on lockable castors

**Interfaces:**

- Ethernet
- LAN
- USB

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<table>
<thead>
<tr>
<th>Model sizes/Description</th>
<th>30</th>
<th>55</th>
<th>75</th>
<th>110</th>
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**Order No. Universal Ovens**

- **U** = Universal Oven
- **N** = Natural convection
- **F** = Forced air circulation
- **plus** = Model with TwinDISPLAY

- **UN30**
- **UN55**
- **UN75**
- **UN110**
- **UN160**
- **UN260**
- **UN450**
- **UN750**
- **UN30PLUS**
- **UN55PLUS**
- **UN75PLUS**
- **UN110PLUS**
- **UN160PLUS**
- **UN260PLUS**
- **UN450PLUS**
- **UN750PLUS**
- **UF30**
- **UF55**
- **UF75**
- **UF110**
- **UF160**
- **UF260**
- **UF450**
- **UF750**
- **UF1060**
- **UF30PLUS**
- **UF55PLUS**
- **UF75PLUS**
- **UF110PLUS**
- **UF160PLUS**
- **UF260PLUS**
- **UF450PLUS**
- **UF750PLUS**
- **UF1060PLUS**

Dec-2015
### Options

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<th>Voltage 115 V, 50/60 Hz</th>
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- Extended overtemperature protection by additionally integrated Pt100 sensor for independent temperature monitoring for models UN/UF: **A6**
- Full-sight glass door (4-layer insulating glass) – temperature-range up to max. 250 °C: **B0**
- Chamber modification for the application of reinforced perforated stainless steel shelves or stainless steel grids (bearing rails mounted in the working chamber) – includes replacement of 2 standard grids by 2 reinforced grids: **K1**
- Fresh-air filter (filtration efficiency 80 %) mounted at the bottom (for UF/UFplus) (for sizes 30 – 260 castor frame or subframe necessary — see page 29): **R8**
- Interior lighting for observing the load: **R0**
- Interior socket (can only be ordered with limited temperature-range – max. +70 °C) current carrying ampacity 230 V, 2.2 A can be switched off with the On/Off switch, cannot be switched individually (option A8 necessary — see page 28): **R3**
- Interior nearly gastight: **K2**
- Ditto, with possibility for gas inlet/outlet through 2 tubes with ball valves: **K3**
- Entry port, 23 mm clear diameter, for introducing connections at the side, can be closed by flap, standard positions: **F0, F1, F2, F3**
- Entry port, 23 mm clear diameter, for introducing connections, can be closed by flap in special positions (please, state location): **F4, F5, F6**
- Entry port, 14 mm clear diameter, can be closed by flap, in special positions at the back (please, state location): **D6**
- Entry port, 38 mm clear diameter, can be closed by flap, in special positions at the back (please, state location): **F7**
- Entry port, 57 mm clear diameter, can be closed by flap, in special positions at the back (please, state location): **F8**
- Entry port, 100 mm clear diameter, can be closed by flap, in special positions at the back (please, state location): **F9**
- 4 – 20 mA current loop interface (0 to +310 °C & 4 – 20 mA): **V3, V6**
- Fan speed monitoring with switching off the heating and with alarm in case of failure – optional for UFplus only: **V4**
- Works calibration certificate for 3 temperatures: +100 °C, +160 °C, +220 °C: **D00128**
- Standard works calibration certificate (measuring point chamber centre) at +160 °C: **B32550**

### Accessories

<table>
<thead>
<tr>
<th>Stainless steel grid (standard equipment)</th>
<th>30</th>
<th>55</th>
<th>75</th>
<th>110</th>
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</table>

- Additional reinforced stainless steel grid, max. loading 60 kg; from size 450 with guide bars and fixing screws (only in connection with option K1): **B32190**
- Perforated stainless steel shelf: **B29727, B03916, B00325, B29725, B00328, B32549**
- Additional reinforced stainless steel shelf, max. loading 60 kg; with guide bars and fixing screws (only in connection with option K1): **B32191**
- Stainless steel slide-in drip tray, 15 mm rim (may affect the temperature distribution) – cannot be used in connection with option K1: **B02070, B02072, B02073, E29726, E02075**
- Max. loading per slide-in drip tray (kg): 1.5, 3, 4, 8: **B32599**
- Stainless steel slide-in drip tray, 15 mm rim, with guide bars and fixing screws (can be used only in connection with option K1): **B32763**
- Stainless steel bottom drip tray, 15 mm rim (may affect the temperature distribution) – cannot be used in connection with option K1: **B04356, B04358, B04359, B29722, B04362**
- Max. loading per bottom drip tray (kg): 1.5, 3, 4, 8: **B34055**
- Stainless steel bottom drip tray, 15 mm rim (can be used only in connection with option K1): **B34055**
- Wall bracket for wall mounting: **B29755, B29756, B29757, B29758, B29759**
- Guarantee extension by 1 year: **GA1Q5, GA2Q5**

Further options/accessories see pages 28 - 30
**PASS-THROUGH OVEN UF TS**
Pass-through ovens UF TS are based on a standard heating oven and feature all technological highlights like product specific heating and perfectly adjusted control technology. Thanks to an additional side feed-through, curing of lead frames and adhesive bonds or tempering of components can be controlled automatically within a running production process.

Pass-through oven UF TS
TwinDISPLAY
Forced convection
AtmoSAFE standard software

Model sizes:
160 / 260 / 450 / 750
+30 °C to +300 °C
High feed-through thanks to in-line capability

Temperature control processes in a Memmert pass-through oven can be controlled fully electronically. The synchronised loading of parts is done by means of belt input and output at the side. To increase the feed-through for endless loading, turn pulleys can be installed in the chamber on request. Windows at the front and rear enable simple loading by hand, and also allow the temperature control process to be permanently observed. Another advantage not to be missed out: constant temperatures inside the temperature-control chamber as it does not have to be opened for loading.

Customer-specific solutions myAtmoSAFE

In the position of an expansion of the R&D departments of customers, the customisation department at Memmert provides support for complex applications and finds tailor-made solutions. Many customers are supported from development to production.
PASS-THROUGH OVENS UF TS
according to DIN 12880:2007-05

Standard equipment
Interior: Stainless steel, mat. 1.4301 (ASTM 304), with all-round deep-drawn ribs to integrate the large-area heating with ceramic-metal sheath
Internals: 2 stainless steel grids
Housing: Textured stainless steel, intuitively operated TwinDISPLAY (TFT colour displays) with touchscreen, fully insulated stainless steel door on both sides (from model size 450 two leaves), pass-through version
Fresh air: Admixture of pre-heated fresh air by electronically adjustable air flap
Connection: Mains cable with plug (German type) (CEE plug for 400 V)
Installation: 4 feet
Interfaces: Ethernet, USB, LAN

Model sizes/Description

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<tr>
<th></th>
<th>160</th>
<th>260</th>
<th>450</th>
<th>750</th>
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<td>Volume</td>
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<td>256</td>
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<td>Width (A) mm</td>
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<td>Height (B) mm</td>
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<td>Max. loading of chamber kg</td>
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Order No. Pass-Through Ovens
UF160TS UF260TS UF450TS UF750TS

Dec-2015
### Optionen

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### Accessories

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<td></td>
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</tr>
<tr>
<td>Perforated stainless steel shelf</td>
<td>B00325</td>
<td>B29725</td>
<td>B00328</td>
<td></td>
</tr>
<tr>
<td>Additional reinforced perforated stainless steel shelf, max. loading 60 kg; with guide bars and fixing screws (only in connection with option K1). Please consider max. loading of chamber</td>
<td>–</td>
<td>B32191</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stainless steel slide-in drip tray, 15 mm rim (may affect the temperature distribution) – cannot be used in connection with option K1</td>
<td>E02073</td>
<td>E29726</td>
<td>E02075</td>
<td></td>
</tr>
<tr>
<td>Max. loading per slide-in drip tray (kg)</td>
<td>3</td>
<td>4</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Stainless steel slide-in drip tray, 15 mm rim, with guide bars and fixing screws (can be used only in connection with option K1)</td>
<td>–</td>
<td>B32763</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stainless steel bottom drip tray, 15 mm rim (may affect the temperature distribution) – cannot be used in connection with option K1</td>
<td>B04359</td>
<td>B29722</td>
<td>B04362</td>
<td></td>
</tr>
<tr>
<td>Max. loading per bottom drip tray (kg)</td>
<td>3</td>
<td>4</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Stainless steel bottom drip tray, 15 mm rim (can be used only in connection with option K1)</td>
<td>–</td>
<td>B34055</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flush-fit unit set (stainless steel frame covering gap between oven and wall opening), without air slots – technical clarification required</td>
<td>B33204</td>
<td>B33205</td>
<td>B33206</td>
<td>B33207</td>
</tr>
<tr>
<td>Guarantee extension by 1 year</td>
<td>GA1Q5</td>
<td>GA2Q5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Further options/accessories see pages 28 - 30
Drag, drop & go!

Numerical and graphic programming of complex processes is a thing of the past. Today, programming is done via AtmoCONTROL by means of the mouse or touchpad on your notebook. Even the most complex ramp programmes are created within minutes. Simply drag & drop the graphical symbols for the desired parameters to the input field and change the values according to your wishes with a mouse click.

Programme functions

SingleDISPLAY and TwinDISPLAY

- Reading out, managing and organising the data logger
- Saving the log memory in various formats
- Online monitoring of up to 32 connected appliances
- Optical alarms when the alarm limits individually set at the ControlCOCKPIT are exceeded
- Automatic alarm to one or several e-mail addresses

Additional functions

TwinDISPLAY

- Intuitive programming and archiving of ramps and programme sequences
- Synchronous visualisation of the created programme sequence during programming
- Application-specific repeat functions (loops) can be inserted within a temperature control programme in any place
- Simple creation of repeating weekly programmes
- Programming, managing and transferring programmes via Ethernet interface or USB port

SPECIAL EQUIPMENT FOR MODELS U, UF TS, UNpa, S, I, ICO, ICP, IPP, IPS, HPP, ICH

Options for models Modelle U, UF TS, UNpa, S, I, ICO, ICP, IPP, IPS, HPP, ICH | 30 | 55 | 75 | 110 | 160 | 260 | 450 | 750 | 1060 | 50 | 105 | 150 | 240
---|---|---|---|---|---|---|---|---|---|---|---|---|---
Door with lock (safety lock); for models UF TS per side; standard with SN/SF and SNplus/SFplus 450 and 750 (not for models ICO) |  |  |  |  |  |  | B6 |  |  |  |  |  |  |
Door hinged on the left; for models UF TS per side |  |  |  |  |  |  | B8 |  |  |  |  |  |  |
Potential-free contact (24 V/2 A) with socket to NAMUR NE 28 for external monitoring (indicates when setpoint is reached); models ICO; when set points of temperature and CO₂ are reached |  |  |  |  |  |  |  |  |  |  |  |  |  |
Potential-free contact for combination error message (e.g. supply failure, sensor fault, fuse) |  |  |  |  |  |  |  |  |  |  |  |  |  |
Potential-free contact (24 V/2 A) with socket to NAMUR NE 28, for signal generation, controlled by programme segment, for free-selectable functions to be activated (e.g. activation of audible and visual signals, exhaust motors, fans, stirrers, etc.). Only for units with TwinDISPLAY; max. 2 contacts on 1-phase appliances; max. 4 contacts on 3-phase appliances (not for models ICO) |  |  |  |  |  |  |  |  |  |  |  |  |  |
Process-dependent door lock (only for units with TwinDISPLAY); for models UF TS see page 11; not for models ICO |  |  |  |  |  |  |  |  |  |  |  |  |  |
Door-open-recognition (only for units with TwinDISPLAY); for models UF TS per side; standard with ICO, ICH C, ICH L |  |  |  |  |  |  |  |  |  |  |  |  |  |
Flexible Pt100 for positioning in chamber or in load with socket, 4-pin, according to NAMUR NE 28, for external temperature recording (load temperature) max. 3 sensors; not for models ICO |  |  |  |  |  |  |  |  |  |  |  |  |  |
Flexible Pt100 temperature sensor, positioned flexibly in chamber or load, for local temperature measurement (up to 3 additional sensors are possible). The measured temperature can, if required, be indicated on the display, recorded in the integral data store, and can be documented via the AtmoCONTROL software. Not for models ICO |  |  |  |  |  |  |  |  |  |  |  |  |  |
MobileALERT, notification by SMS in case of any error or alarm of the device. Requires option H6 “floating contact for alarm” |  |  |  |  |  |  |  |  |  |  |  |  |  |
MobileALERT for up to 4 alarm notifications; standard: temperature and CO₂ alarm, additionally humidity alarm (when equipped with option K7) and O₂ alarm (when equipped with option T6) |  |  |  |  |  |  |  |  |  |  |  |  |  |
Temperature restriction (for UN/UF/UNplus/UFplus and models UF TS) Temperatures: +60, +70, +80, +95, +100, +120, +160, +180, +200, +220 or +250 °C (Please, indicate upon ordering) |  |  |  |  |  |  |  |  |  |  |  |  |  |
Castor frame (2-part), height 140 mm (not for models UF TS, ICF, ICH, ICH L, ICH C, ICO) |  |  |  |  |  |  |  |  |  |  |  |  |  |

Jun-2016
### Model Variants

<table>
<thead>
<tr>
<th>SingleDISPLAY</th>
<th>TwinDISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ControlCOCKPIT with one TFT display</strong></td>
<td><strong>ControlCOCKPIT with two TFT displays</strong></td>
</tr>
</tbody>
</table>

#### Available Appliances

- UN / UF / IN / IF / SN / SF / IPP / IPS
- UNplus / UFplus / UF TS / UNpa / INplus / IFplus / SNplus / SFplus / ICO / IPPplus / ICP / HPP / ICH

#### SingleDISPLAY

- One high-resolution TFT colour display with touch-sensitive buttons for selection of functions
- Available parameters on the ControlCOCKPIT: Temperature (Celsius or Fahrenheit), fan speed, exhaust air flap position, programme time
- One temperature sensor Pt100 DIN class A in a 4-wire circuit
- AtmoCONTROL software for reading out, managing and organising the data logger via Ethernet interface (temporary trial version can be downloaded). USB stick with AtmoCONTROL software available as accessory (on demand)
- Ethernet interface on the rear of the appliance for reading out the protocol log and for online logging
- Double overtemperature protection: Electronic temperature monitoring with freely adjustable monitoring temperature, for models U, I, S with option A6 TWW/TWB (protection class 3.1 or 2), mechanical temperature limiter TB acc. to DIN 12880

#### TwinDISPLAY

- Two high-resolution TFT colour displays with touch-sensitive buttons for selection of functions
- Available parameters on the ControlCOCKPIT: Temperature (Celsius or Fahrenheit), fan speed, exhaust air flap position, programme time, relative humidity, illumination, CO₂
- Two Pt100 sensors DIN class A in a 4-wire circuit for mutual monitoring, taking over functions in case of an error
- HeatBALANCE function for application specific adjustment of heat output distribution (balance) between the upper and lower heating groups in an adjustment range between -50 % and +50 % (not valid for models 30, HPP110, IPP110plus, ICP, ICH)
- AtmoCONTROL software on a USB stick for programming, managing and transferring programmes via Ethernet interface or USB port
- ControlCOCKPIT with USB port for uploading programmes, reading out protocol logs, activating the User-ID function
- Multiple overtemperature protection: Electronic temperature monitoring TWW/TWB (protection class 3.1 or 2 resp. 3.3 for units with active cooling) and mechanical temperature limiter TB (protection class 1) acc. to DIN 12880, AutoSAFETY automatically adjusts to the set value within a freely adjustable tolerance range. Setting individual MIN / MAX values for over/undertemperature alarm and also for all other parameters such as relative humidity, CO₂

#### Common Features

- PID microprocessor control with integrated auto-diagnostic system
- Structured stainless steel housing, scratch-resistant, robust and durable; rear of zinc-plated steel
- High-temperature connectors on the rear of the appliance for single-phase power connection according to country specific systems and IEC standards
- Internal data logger with a storage capacity of at least 10 years
- German, English, French, Spanish language settings available on the ControlCOCKPIT
- Digital backwards counter with target time setting, adjustable from 1 minute to 99 days
- The SetpointWAIT function guarantees that the process time does not start until the set temperature is reached at all measuring points – optional for temperature values recorded by the freely positionable Pt100 sensors inside the chamber
- Adjustment of three calibration values for temperature and additional appliance specific parameters directly at the ControlCOCKPIT