Short user’s manual

VWR® Environmental Test Chamber ETC 9CF/25CF/36CF

NA cat. No. 76777-104 / 76777-106 / 76777-108

Important note

This Short user’s manual is only valid in conjunction with the operating manual. You can download it under www.vwr.com or contact your local VWR office.

The initial commissioning and usage of the VWR® Environmental Test Chamber (during the entire product life cycle) is only permitted with the operating manual. Read the operating manual completely before usage.

This Short user’s manual is not a replacement for the operating manual, as it only contains selected information.

Version 01 Issue 10/2023

Safety instructions

The following represents the hazards with the highest level of danger for people. Safety information with lower risk levels, and important detailed information about safety, can be found in the operating manual. It is very important that the operating manual is read completely before initial commissioning and usage.

The VWR® Environmental Test Chamber should only be operated by laboratory personnel especially trained for this purpose and familiar with all precautionary measures required for working in a laboratory. Observe the national regulations on minimum age of laboratory personnel. To avoid injuries and damage observe the safety instructions of the operating manual.

DANGER

Danger of explosion due to combustible dusts or explosive mixtures in the vicinity of the chamber or inside the chamber.

Serious injury or death from burns and / or explosion pressure.

Ø Do NOT operate the chamber in potentially explosive areas.

Ø KEEP explosive dust or air-solvent mixtures AWAY from the chamber.

Ø Do NOT introduce any substance combustible or explosive at working temperature into the chamber, in particular no energy sources such as batteries or lithium-ion batteries.

Ø NO explosive dust or air-solvent mixture in the inner chamber.

DANGER

Electrical hazard during live maintenance work.

Deadly electric shock.

Ø The chamber must NOT become wet during operation or maintenance.

Ø Do NOT remove the rear panel of the chamber.

➢ Disconnect the chamber before cleaning or conducting maintenance work. Turn off the main power switch and pull the power plug.

➢ Ensure all maintenance work is conducted by licensed electricians or experts authorized by the manufacturer.

WARNING

Danger of intoxication and infection through contamination of the chamber with toxic, infectious or radioactive substances.

Damages to health.

➢ Protect the interior of the chamber against contamination by toxic, infectious or radioactive substances.

➢ Take appropriate measures when bringing in or taking out toxic, infectious or radioactive substances.

Ø Do NOT introduce any substance which could lead to release of toxic gases

DANGER

Electrical hazard by water entering the chamber.

Deadly electric shock.

∅ The chamber must NOT become wet during operation, cleaning, or maintenance.

∅ Do NOT install the chamber in damp areas or in puddles.

➢ Set up the chamber in a way that it is splash-proof.

CAUTION

Danger of injury by freezing on when touching hot chamber parts during or after operation.

Local frostbite.

Ø Do NOT directly touch the inner surfaces or the loading material during operation.

WARNING

Danger of injury and damages by the chamber tipping over or breakaway of the protruding lower housing cover.

Injuries and damage to the chamber and the loading material

Ø Do NOT climb on the lower housing cover.

Ø Do NOT load the lower housing cover with heavy objects while the chamber door is open.

Intended use

The VWR® Environmental Test Chambers are equipped with a multifunctional microprocessor display controller with 2-channel technology for temperature and humidity plus a digital display accurate to one-tenth of a degree resp. 0.1% r.h. With its microprocessor-controlled humidifying and dehumidifying system the VWR® Environmental Test Chamber is a high-precision constant climate chamber. Furthermore, it permits simulating exactly and over long periods constant conditions for other applications such as sample conditioning for material testing of paper, textiles, plastics, building materials, etc.

The charging material shall not contain any corrosive ingredients that may damage the machine components made of stainless steel. Such ingredients include in particular acids and halides. Any corrosive damage caused by such ingredients is excluded from liability by VWR. None of the components of the charging material must be able to form an explosive mixture with air. Any component of the charging material must NOT be able to release toxic gases.

Other applications are NOT approved.

Details can be found in the operating manual in chapter 2.3. Any use of the chambers that does not comply with the requirements specified in the Operating Manual shall be considered improper use. Following the instructions in the operating manual and conducting regular maintenance work are part of the intended use.

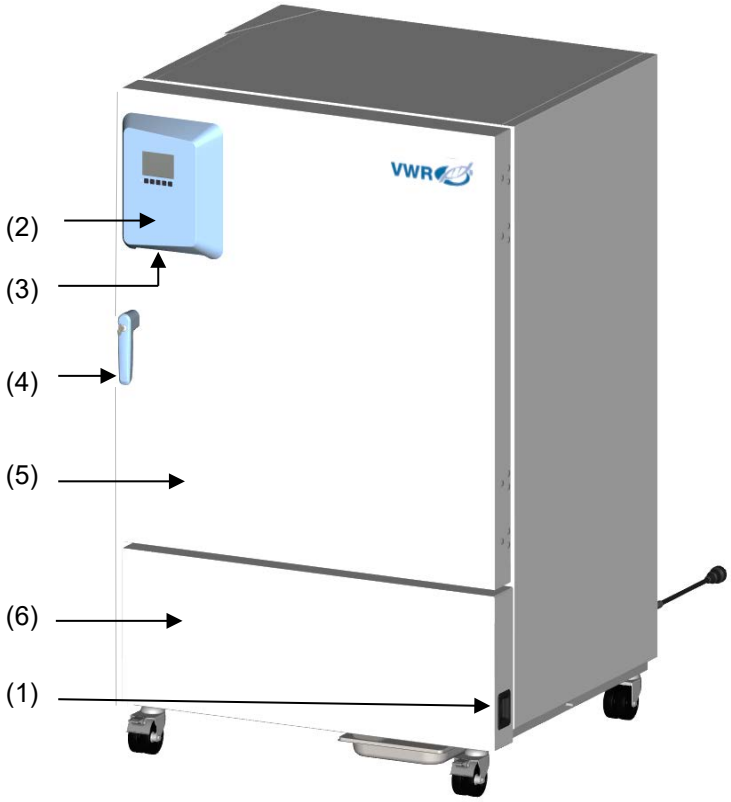
You may not make any modifications to the device yourself, as these may limit proper usage.

The chamber must only be operated using only original accessories or accessories / components from third-party suppliers authorized by the manufacturer. The user is responsible for any risk arising from using unauthorized accessories

VWR is responsible for the safety features of the chamber only, provided skilled electricians or qualified personnel authorized by the manufacturer perform all maintenance and repair, and if components relating to chamber safety are replaced in the event of failure with original spare parts. The user is responsible for any risks arising from using unauthorized accessories/components.

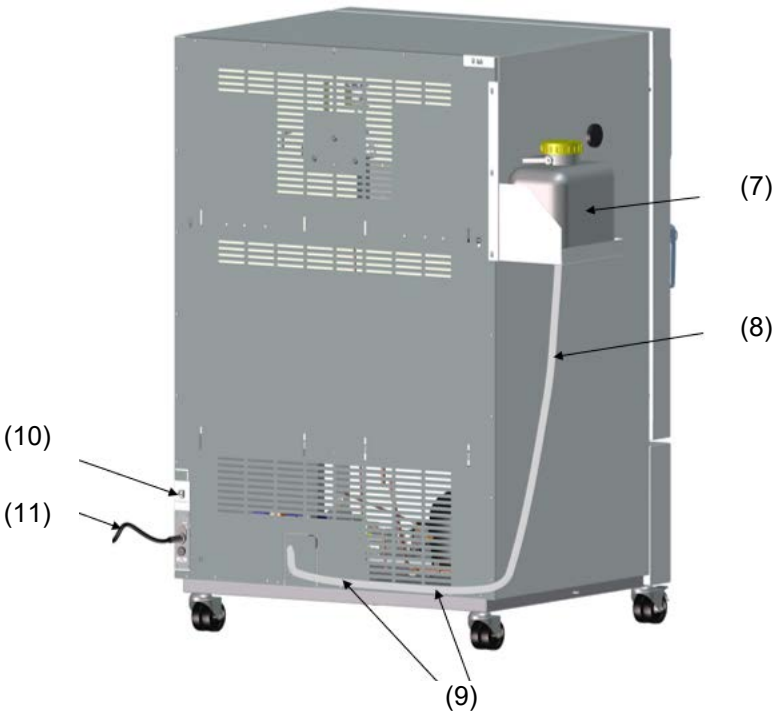
Components

Front view



(1) Main power switch
(2) Instrument panel with RD4 chamber controller and USB interface
(3) USB interfaces
(4) Door handle
(5) Chamber door
(6) Location of Peltier modules and humidity generation system

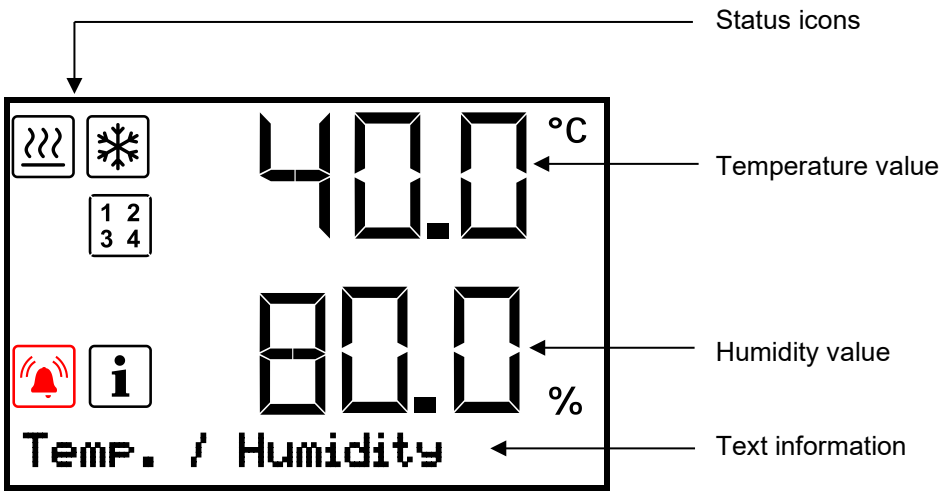
Rear view



(7) Freshwater can with can support
(8) Hose leading to the freshwater can
(9) Hose fixing devices
(10) Ethernet interface
(11) Power cable
(12) Condensate collection pan

Controller overview

Normal display of the chamber controller (sample values)



Status icons in the controller display

Icon	Signification
	Heating active
	Refrigeration active

Icon	Signification
	Information
	Collective alarm
1 2 3 4	Display of activated special controller functions. 3 = Service setpoint active

Functional controller keys

Icon	Signification	Function
	Arrow-up button	• Navigate between menus, submenus, other functions • In the setting menu: change setting, increase value
	Arrow-down button	• Navigate between menus, submenus, other functions • In the setting menu: change setting, decrease value
OK	***OK button***	• Select menu, submenu, function • In the setting menu: Confirm entry
	Back button	Back to previous menu level
	Standby button	no function

Lifting and transporting the chamber

- Unlock the front castors before moving the Environmental Test Chamber
- Do NOT lift or transport the chamber using the door, the door handle, the controller housing or the lower housing.
- Transport the chamber in its original packaging only.
- Secure the chamber with transport straps.
- Lift chambers size 9CF at the four lower corners with the aid of 6 people or with a fork lifter. Lift the chambers sizes 25CF and 36CF using technical devices (fork lifter). Set the fork lifter only from the front or rear in the middle of the chamber. Do NOT set the fork lifter from the chamber side.

Requirements for the location of installation

- Installation inside a building on a non-flammable, flat and even surface, free from vibration
- Do NOT set up chambers in non-ventilated recesses. Ensure sufficient ventilation for dispersal of the heat.
- Permissible ambient temperature range during operation: +18 °C up to +32 °C / *89.6 °F*.
- Permissible ambient humidity: 70 % r.h. max., non-condensing
- Installation height: max. 2000 m / *6562 ft.* above sea level.
- Do not install or operate the chamber in potentially explosive areas.
- Lateral distances between chambers: 250 mm / *9.84 in* minimum between each chamber.
- Wall distances: rear 100 mm / *3.9 in*, sides 160 mm / *6.29 in*, top 100 mm / *3.9 in*.
- Maximum load of the top of the housing: 15 kg / *33 lb*. The chambers are NOT intended for stacking
- Power supply fluctuations must not exceed +/- 10 % of the nominal voltage

Electrical connection data and installation

- The chambers come with a fixed power connection cable. Cable length: 1800 mm / *70.87 in*. Only use original connection cables according to the specification given in the Operating Manual.
- Pollution degree (acc. to IEC 61010-1): 2. Over-voltage category (acc. to IEC 61010-1): II. Housing protection (acc. to 60529): IP 20
- The domestic socket must also provide a protective conductor. Make sure that the connection of the protective conductor of the domestic installations to the chamber's protective conductor meets the latest technology. The protective conductors of the socket and plug must be compatible!
- When connecting, please observe the regulations specified by the local electricity supply company as well as the local or national electrical regulations. We recommend the use of a residual current circuit breaker.
- Prior to connection and start-up, check the power supply voltage. Compare the values to the specified data located on the chamber's type plate.
- To completely separate the chamber from the power supply, you must disconnect the power plug. Install the chamber in a way that the power plug is easily accessible and can be easily pulled in case of danger.

Chamber size			**9CF**	**25CF**	**36CF**
Nominal voltage (+/-10%)	at 60 Hz power frequency	V	120	120	120
Current type			1N~	1N~	1N~
Power plug		NEMA	5-20P	5-20P	5-20P
Nominal current		A	8.4	13.4	13.4
Nominal power		kW	1.0	1.6	1.6
Over-current release category B, 2 poles		Amp	16	16	16

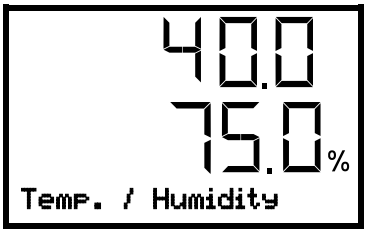
Installation of the freshwater supply

- Fill the freshwater can and establish the hose connection to the freshwater can
- Attach the can support mounting plate at the left side of the climatic chamber and attach the can support to the can support mounting plate
- Insert the freshwater can from above into the can support. NEVER place the freshwater can outlet on or above the rear panel of the chamber!
- Mount the hose holders and fix the hose
- During operation. do not firmly close the lid of the freshwater can to allow air to enter the freshwater can.

Installation of the condensate collection pan

- Place the condensate collection pan with the magnetic holders on the bottom of the chamber. Insert the pan in a way that it is flush with the front edge of the chamber. Distance to the right edge of the chamber: 18 +/- 2 cm

Temperature setpoint entry

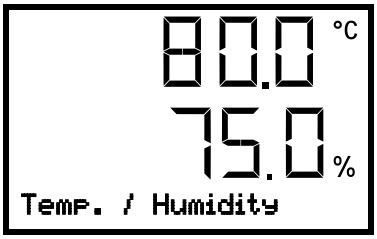


Normal Display (example image)

Change to Setpoints menu

Change to Temperature submenu

Enable setting



Enter the set-point.
Setting and control range: -50 ºC / *-58 °F* up to -86 °C / *-122.8 °F*

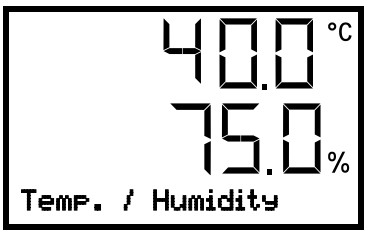
Confirm the entry

Go back to Normal Display

Setting the overtemperature safety controller class 3.1

- Regularly check the settings of the safety controller mode and value.
- Set the safety controller value by approx. 5 °C above the desired temperature set-point.
- Check and/or adjust the safety controller following any change of the temperature set-point

First step: Setting the safety controller mode



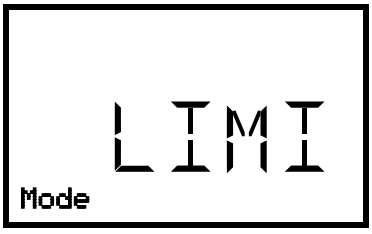
Normal Display (example image)

▽ Change to Setpoints menu

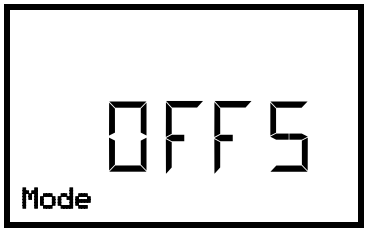
OK ▽ ▽ ▽ Change to Safety controller menu

OK Change to Mode menu

OK Enable setting



△ ▽



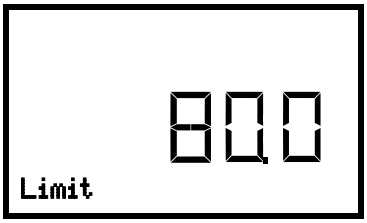
Select the mode LIMI (Limit) or OFFS (Offset)

OK Confirm the entry

▽ Proceed to next step

Next step: Setting the safety controller value

Depending on the mode setting, one of the following setting menus will appear.



△ ▽ Enter the desired limit value. Setting range: -20 °C to -110 °C. (example image)

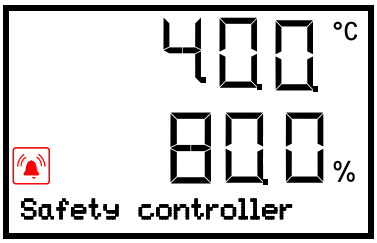
Or

△ ▽ Enter the desired offset value. (example image)

OK Confirm the entry

↩ ↩ ↩ ↩ Go back to Normal Display

Troubleshooting in the event of overtemperature alarm



Overtemperature alarm (example image)

- Check whether the door was open for a long time or is not closed properly.
- Check the setting of the safety controller. If necessary, adjust the relevant value.
- Check whether samples were inserted into the chamber that may release heat.
- Check the ambient conditions. Protect the chamber from direct sunlight. Ensure sufficient ventilation.
- If these points do not reveal the source of the fault, it may be that the chamber is faulty. Please contact Avantor Services.

Cleaning and decontamination

With every cleaning method, always use adequate personal safety controls.

Clean the door handle, door hinges and the locking counterpart at least once a year.

DANGER

Electrical hazard by water entering the chamber.

Deadly electric shock.

Ø Do NOT spill water or cleaning agents over the inner and outer surfaces.

Ø Do NOT put ANY cleaning aids (cloth or brush) into slots or openings on the chamber.

➢ Before cleaning, turn off the chamber at the main power switch and disconnect the power plug.

➢ Completely dry the chamber before turning it on again.

CAUTION

Danger of chemical burns through contact with skin or ingestion of the neutral cleaning agent and through eye contact with the disinfectant spray

Skin and eye damage.

Ø Do not ingest the neutral cleaning agent. Keep it away from food and beverages.

➢ Wear protective gloves (butyl or nitrile rubber, penetration time >480 minutes) and sealed protective goggles.

➢ Avoid skin contact with the neutral cleaning agent.

- For cleaning, wipe the surfaces with a moistened towel or use cleaning agents and disinfectants.
- Do not use cleaning or decontamination agents that may cause a hazard due to reaction with components of the Environmental Test Chamber or the loading material. If there is doubt regarding the suitability of cleaning products, please contact Avantor Services.
- For surface protection, perform cleaning as quickly as possible.
- After cleaning completely remove cleaning agents from the surfaces with a moistened towel. Allow the chamber to dry.
- Following use of disinfectants: allow the chamber to dry, and aerate it sufficiently.

Suitable agents for cleaning

Exterior surfaces, inner chamber, racks, door gaskets	Standard commercial cleaning detergents free from acid or halides. Alcohol-based solutions. Recommended for cleaning: neutral cleaning agent
Instrument panel	Standard commercial cleaning detergents free from acid or halides. Recommended for cleaning: neutral cleaning agent
Zinc coated hinge parts rear chamber wall	Standard commercial cleaning detergents free from acid or halides. Do NOT use a neutral cleaning agent on zinc coated surfaces.

Suitable agents for disinfection

Inner chamber	Standard commercial surface disinfectants free from acid or halides. Alcohol based solutions.

Maintenance

Ensure regular maintenance work is performed at least once a year and that the legal requirements are met regarding the qualifications of service personnel, scope of testing and documentation. All work on the refrigeration system (repairs, inspections) must be documented.

Have conducted regular maintenance work on the steam humidifier at least once a year. The operating behavior and the maintenance intervals of the humidifier essentially depend on the available water quality and the amount of steam produced in the meantime

We recommend cleaning the condensers at least twice a year. A qualified technician must perform cleaning

With an increased amount of dust in the ambient air, clean the condenser fan (by suction or blowing) several times a year.