



PURA™

PURA 4 / 10 / 14 / 22 / 30



Water baths
Original operating manual
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1 Foreword

Congratulations!

You have made an excellent choice.

JULABO would like to thank you for the trust you have placed in our company and products.

This operating manual will help you become acquainted with the use of our units. Read the operating manual carefully. Keep the operating manual handy at all times.

2 About this manual

This manual is intended for the equipment specified on the cover page.

	NOTE Observe the safety instructions! Read the Safety section of this manual before using the equipment for the first time.
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2.1 Accessories

JULABO offers a wide range of accessories for the devices. Accessories are not described in this manual.

2.2 Warnings

The manual contains warnings to increase safety when using the device. Warnings must always be observed.

A warning sign displayed in signal color precedes the signal word. The signal word, highlighted in color, specifies the severity of the hazard.

	CAUTION This signal word designates a danger with a low level of risk which, if it not prevented, may result in minor to moderate injuries.
---	--

	WARNING This signal word designates a danger with a medium level of risk which, if it not prevented, may result in death or serious injuries.
---	--

	<i>DANGER</i> This signal word designates a danger with a high level of risk which, if it not prevented, will result in death or serious injuries.
	<i>NOTE</i> This signal word designates a possibly harmful situation. If it is not avoided, the system or objects in its vicinity may be damaged.

2.3 Symbols used

Various symbols are used throughout this manual to aid reading comprehension. This list describes the symbols used.

- ✂ Tools needed for the following approach
- ▶ Prerequisite to be met for the following procedure
- 1. Numbered action steps
- ↪ Interim result for individual action steps
- ☞ Additional note for individual action steps
- ✓ Final result of a procedure
- <> Terms in angle brackets denote control menu
- [] Terms in square brackets denote keys, softkeys and buttons

3 Intended use

This section defines the purpose of the unit so that the operator can operate the unit safely and avoid misuse.

JULABO water baths are intended for controlling the temperature of water. Samples in suitable vessels can be temperature-controlled in the water bath. These devices are not suitable for direct temperature control applications for food, other consumables, or pharmaceutical or other medical products. Do not use bath fluids other than water, as this is not in accordance with the device's intended use.

These devices are not suitable for use in explosive environments.

These devices are not intended for use in living areas. They may cause interference with radio reception.

4 Safety

4.1 General Safety Instructions for the operating company

This section outlines the General Safety Instructions that must be observed by the operator to ensure safe operation.

- The operator is responsible for the qualifications of its operating personnel.
- The operator must ensure that the operating personnel has been instructed in use of the device.
- The device operators must receive regular training about the dangers involved in their work and measures to prevent such dangers.
- The operator must ensure that persons entrusted with the operation, installation and maintenance have read and understood the operating manual.
- The device may only be configured, installed, maintained and repaired by trained personnel with appropriate qualifications.
- If hazardous substances or substances that may become hazardous are used, the device may only be used by personnel who are qualified to handle these substances and the device.
- The operator must ensure that the device is checked for safety and functionality at regular and usage-related intervals.
- The operator must ensure that the mains supply has a low impedance to prevent influencing other devices powered by the same supply.

4.2 General Safety Instructions for the operator

This section outlines the General Safety Instructions that must be observed by the user to ensure safe operation.

- Read the operating manual before initial operation
- The device may only be connected to mains power supply outlets with a protective earth (PE)
- The mains plug is a safe insulator from the power supply grid and must be freely accessible at all times
- Do not start the device if it has a damaged power cable
- Do not operate damaged devices
- Observe the safety symbols on the device
- Do not remove safety symbols
- Have all service and repair work carried out by authorized specialists only
- Protect device from dirt
- Protect device direct UV radiation

4.3 Safety symbols

There are safety symbols included with the device, which should be attached to the device before initial operation.

Safety symbols	Description
	Warning of a danger zone. Note operating manual
	Warning about hot surface
	Read operating manual before switching on

4.4 Safety function

Technical protective devices provide for safe operation. If a safety function is triggered, the operator is alerted with a message on the display and an acoustic signal.

Overheating protection

- Overheating protection triggers at 130°C and switches off the heating element. This prevents overheating. A continuous signal tone sounds. An error message appears on the display. A restart is required.

Dry-running protection

- Dry-running protection switches off the heating element automatically if there is too little bath fluid in the bath. This prevents overheating. A continuous signal tone sounds. An error message appears on the display. A restart is required.

5 Product description

5.1 Operating and functional elements

The following figure shows the operating and functional elements and their position on the unit.



Control and function elements

1	Drain screw (not for PURA 4)
2	Stainless steel bath tank
3	Keypad with display
4	Recessed grip, both sides (not for PURA 4)
5	Mains switch
6	Mains connection

5.1.1 Status LEDs

Status LEDs below the LED display show different operating states and settings.



Status LEDs

1	Heating
2	Warning symbol
3	Timer
4	Duration hour/minute
5	Temperature unit °F
6	Temperature unit °C

5.1.2 Key description

The device is operated using the key panel. This is used to control all menu functions and make entries.

Key	Function
	The [OK] key is used to start a temperature control application or to stop a running temperature control application. Press [OK] to enable a selected function, open a menu option, or confirm a set value.
	Use the arrow keys to select a function or set a value. Short press for single steps, press and hold for fast counting.
	The timer is operated with the [MENU] key.

5.2 Alarm messages

Alarms and warnings are indicated on the display using error codes. Important error code descriptions can be found in the appendix. If you are unable to rectify a fault, contact.

Alarm:

In the event of an alarm, the control LED lights up. The temperature control is stopped. At the same time, a continuous acoustic signal sounds and an error code is shown on the display. The acoustic signal can be deactivated by pressing the **[OK]** key. The fault causing the alarm must be remedied. A restart is required.

Warning:

In the event of a warning, the temperature control application is not interrupted. A signal tone is emitted at intervals. The display alternates between the actual temperature and the error code. The acoustic signal can be deactivated by pressing the **[OK]** key. If the underlying cause of the warning is remedied, the signal tone ceases. Depending on the cause, warnings may cease automatically after a period of time, e.g. when the device cools down.

5.3 Technical data

Temperature stability measured in accordance with DIN 12876 with water at 70°C. Performance specifications apply at an ambient temperature of 20°C.

Grouping of the device acc. to CISPR 11:

- The device is an ISM device of group 1, which uses high frequency for internal purposes
- Class A: Use in an industrial electromagnetic environment

In accordance with IEC 61010-1, the device is designed for safe operation under the following ambient conditions:

- Indoor use
- Altitude up to 2000 m above sea level
- Ambient temperature +5 ... +40°C
- Maximum relative humidity 80% for temperatures up to 31°C, decreasing linearly down to 50% relative humidity at 40°C
- Mains voltage fluctuations up to $\pm 10\%$ of the nominal voltage permissible if not otherwise specified
- Contamination level 2

Classified in accordance with DIN 12876-1:

- Class I

Protection class according to EN 60 529:

- Protection class IP21

Technical data		PURA 4/10/14/22/30
Working temperature range*	°C	+18 ... +99.9
Overheating protection, fixed setting	°C	130
Temperature stability**	°C	± 0.15
Temperature resolution	°C	0.1
Temperature setting		Digital
Temperature control		PID1
Display		LED
Bath tank, basic material		Stainless steel

**with counter-cooling and bath cover (accessories)*

** with bath cover (accessory)*

		PURA 4		PURA 10	
Dimensions (W x D x H)	cm	21 x 35 x 22		31 x 35 x 22	
Bath opening (W x L)	cm	12 x 27		22 x 27	
Bath depth	cm	14		14	
Fill weight (min ... max)	l	0.8 ... 4.5		1.4 ... 9.5	
Weight	kg	4.9		7.0	
Mains connection	V Hz	230 50/60	100-115 50/60	230 50/60	100-115 50/60
Current consumption	A	3	4/5	6	10/11
Heating capacity	kW	0.5	0.38 ... 0.5	1.2	0.9 ... 1.2

		PURA 14		PURA 22	
Dimensions (W x D x H)	cm	42 x 35 x 22		64 x 35 x 26	
Bath opening (W x L)	cm	33 x 27		55 x 27	
Bath depth	cm	14		18	
Fill weight (min ... max)	l	2.0 ... 14.0		3.4 ... 25.5	
Weight	kg	8.5		11.5	
Mains connection	V Hz	230 50/60	100-115 50/60	230 50/60	100-115 50/60
Current consumption	A	8	10/12	9	10/12
Heating capacity	kW	1.8	0.98 ... 1.3	2	0.98 ... 1.3

		PURA 30			
Dimensions (W x D x H)	cm	86 x 35 x 26			
Bath opening (W x L)	cm	77 x 27			
Bath depth	cm	18			
Fill weight (min ... max)	l	4.8 ... 36.0			
Weight	kg	14.5			
Mains connection	V Hz	230 50/60	100-115 50/60		
Current consumption	A	9	10/115		
Heating capacity	kW	2.0	0.98 ... 1.3		

6 Transport and installation

This section describes how to transport the unit safely.

6.1 Transporting the device

This section describes how to transport the device safely.

	CAUTION
	Risk of crushing by falling device! A device that is not secured appropriately can fall down during improper transport and cause crushing injuries. • Secure the device against tipping and falling during transport • Secure loose parts against falling during transport • Transport the device upright and with a suitable means of transport • Wear personal protective equipment

- ▶ The device is switched off and emptied.
- ▶ A suitable transport trolley is available.
- 1. Disconnect the mains cable from the device.
- 2. Lift the device by the recessed grips (PURA 4: on housing) and place it in the center of the transport trolley.
- 👉 See the technical data for weight information.
- 3. Place loose parts for the device, such as cables, on the transport trolley.
- ✓ The device is then ready for transport and can be safely transported to its installation location.

6.2 Install the device at the operating location

This section describes how the device is set up at the installation location.

- ▶ The device has been transported to the operation location.
- ▶ The size and infrastructure of the operation location are suitable for device operation.
- 1. Place the device on a level, smooth, non-flammable surface.
- 👉 Recommended minimum distance of 1 m to other devices, to prevent electromagnetic interference.
- ✓ The device is set up at the operation location.

7 Initial operation

7.1 Connect the device to the power supply

This section describes how to connect the device electrically using the mains plug.

- The device is at its installation location.
- 1. Insert the device power cable plug into the mains connection socket on the rear of the device.
- 2. Insert the mains cable plug into the power supply socket.
- ✓ The device is connected to the electricity.

7.2 Required water quality

Only water is permitted as a bath fluid. Follow the specifications on water quality to ensure long-term operation without issue.



NOTE

Risk of corrosion due to unauthorized bath fluid!

Unsuitable bath fluids not approved by JULABO can damage the device.

- Only water is permitted as a bath fluid
- JULABO recommends a water mixture of 70% softened/descaled water and 30% tap water
- Consult JULABO before using a bath fluid other than what is recommended

- Do not use water containing iron Corrosion also possible with stainless steel.
- Do not use water containing chlorine Pitting corrosion possible.
- Do not use distilled or deionised water Corrosion also possible with stainless steel.
- Do not use water containing calcium carbonate A high lime content leads to limescale formation in the bath.

7.3 Filling the water bath

Note the fill level limits filling the water bath:

- Maximum fill level: 20 mm below edge of bath
- Minimum fill level: 10 mm above adjustable platform

Note the minimum mark on the adjustable platform.

- The device is switched off.
1. Open the bath cover (accessory).
 2. Place the samples in the bath.
 3. Fill the bath with water.
- 👉 Note the minimum fill level and the maximum fill level.
- ✓ The water bath is filled.

8 Operation

8.1 Switch on the unit

This section describes how to switch on the device.

- ▶ The device is connected and ready for operation.
- 1. Switch the device on at the mains switch.
- ➔ The display shows `OFF`.
- ✓ The device is switched on and ready for operation.

8.2 Switch off the unit

This section describes how to switch off the device.

- ▶ The device is switched on.
- 1. Stop a running temperature control application.
- 2. Switch the device off at the mains switch.
- ✓ The device is switched off.

8.3 Start temperature control application

You can start a temperature control application right on the device, or program one using the timer.



CAUTION

Risk of burns from hot steam!

The temperature control process can generate very hot steam. Contact with hot steam can cause burns.

- Do not bend over the open water bath during operation
- Wear protective gloves and glasses
- Allow the device to cool to room temperature before opening the bath cover (accessory)

	NOTE Condensate forms from water vapor! The formation of water vapor during operation can cause condensation to build up in the immediate vicinity. • Ensure sufficient distance between the water bath and adjacent equipment • When using the bath cover (accessory): Do not close vent holes
	NOTE Oxidation from insert racks or non-ferrous metal samples! Insert racks or non-ferrous metal samples can cause electrochemical oxidation and damage the bath tank. • Do not use insert racks and samples made of non-ferrous metal • Only use original JULABO insert racks
	NOTE Falling bath fluid level! In the case of a prolonged temperature control application, the level of bath fluid in the bath tank can fall below the alarm limit due to evaporation. A low liquid level alarm is triggered and temperature control application stops. • In the event of a prolonged temperature control application, regularly check the fill level of bath fluid in the bath tank • If the level is low, refill the bath fluid

- ▶ The device is ready for use.
- 1. Switch the device on at the mains switch.
- 2. Press **[OK]**.
- ➡ The actual temperature is displayed.
- 3. Set the desired setpoint temperature using the arrow keys.
- 4. Press **[MENU]**.
- ✓ The setpoint temperature is saved. The display flashes briefly. The device starts the temperature control application at once. An acoustic signal sounds at 0.5°C before the setpoint temperature. The temperature control application can be stopped with the **[OK]** key.
- 👉 For temperature control applications near or below the ambient temperature: Use a cooling coil or JULABO immersion cooler.

8.4 Setting the timer

The timer can be used to program the duration of a temperature control application from 0 to 999 minutes. The setpoint temperature is maintained for the programmed time. After the set duration has elapsed, the device switches to standby mode.

- ▶ The device is switched on.
- 1. Press **[MENU]**.
- ↪ The status LED "T" flashes.
- 2. Use the arrow keys to select the menu option **<ON>** and confirm with **[OK]**.
- 3. Press **[OK]** again.
- 4. Use the arrow keys to select the behavior after the timer expires: **<RUN>** or **<STOP>**.
- 👉 With **<RUN>**, a double signal tone will sound after the timer expires. The temperature control application is continued.
- With **<STOP>**, a double signal tone sounds after the timer elapses and the temperature control application is stopped.
- 5. Use the arrow keys to set the duration and confirm with **[OK]**.
- ✓ The status LED "T" illuminates. The timer is programmed and active.

The display alternates between showing the actual temperature and the set duration until the setpoint temperature is reached. The timer starts once the setpoint temperature has been reached. The actual temperature and remaining operating time are now displayed in turns.

A double signal tone sounds when the specified time elapses. The device switches to the mode set previously: **<RUN>** or **<STOP>**.

8.5 Stopping the timer

The active timer can be stopped at any time.

- ▶ The timer is active.
- 1. Press **[MENU]**.
- ↪ The status LED "T" starts to flash.
- 2. Use the arrow keys to select the menu option **<OFF>** and confirm with **[OK]**.
- ✓ The timer is stopped.

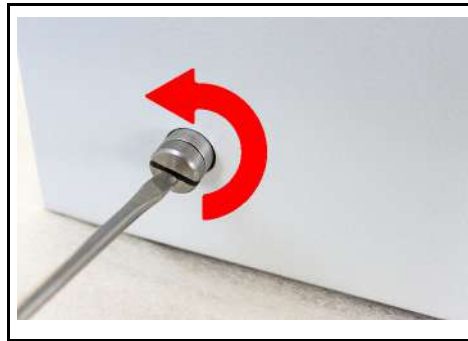
8.6 Emptying the water bath

Drain the water to clean inside the water bath or to change samples.

	CAUTION
	Risk of burns from hot bath fluid! Bath fluid can become very hot during a temperature control process. Contact with hot bath fluid can cause scalding. • Before draining the device, let it cool to room temperature • Avoid direct contact with hot bath fluid • Wear protective gloves

✖ Slotted screwdriver, size 3

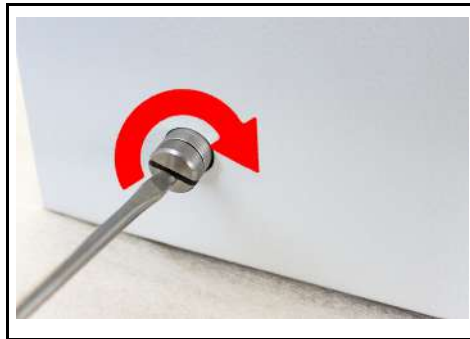
- The device is switched off and cooled to room temperature.
 - 1. Disconnect the power cable.
 - 2. PURA 4: The water bath can now be poured into a suitable container.
- All other PURA models:
- 3. Place a container suitable for collecting the bath fluid underneath the drain screw.



- 4. Unscrew the drain screw.



5. Empty the water bath completely into the container provided.



6. Close the drain opening with the drain screw.
✓ The water bath is emptied.

9 Maintenance

9.1 Replace detachable power cord

The device is equipped with a detachable power cord.

If the power cord needs to be replaced, ensure that the new one is at least dimensioned for the device power requirements. Insufficiently dimensioned power cords must not be used. See type plate for mains voltage and current value.

We recommend only using original JULABO spare parts.

9.2 Check safety symbols

The safety labels affixed to the device must be clearly legible at all times. Their condition must be checked every two years.

1. Check the safety signs on the device for legibility and completeness.
 2. Replace defective or missing safety markings.
- 👉 Safety signs can be reordered from JULABO.
 - ✓ The safety signs on the device have been checked.

9.3 Clean device

Clean the device regularly to ensure that it operates without issue over the long-term.

- ✂ Lint-free cloth
- ✂ Mild cleaning agent
- ✂ Limescale cleaner



NOTE

Damage to the electronics due to water penetration!

Ingress of water can damage electronic components of the device and thus lead to failure of the device.

- Clean the outside of the device with a damp cloth only
- Prevent water from entering the device

1. Clean the surface of the device with a damp cloth.
- ✎ Use a little dish soap for cleaning. If in doubt, ask Technical Service about alternative cleaning agents.
2. Remove residue in the bath using a diluted soap-based cleaning solution. To do so, fill the device with your diluted cleaning solution and temper to 60°C for several hours. Then empty the bath and wipe it with a cloth.
3. Regularly remove limescale deposits on the bathtub bottom using a limescale cleaner.
- ✓ The device has now been cleaned.

9.4 Device storage

Take your device out of operation if you have not used it for a long time or, for example, it is to be sent to Technical Service for repair. Follow the procedure described to ensure that your device continues to function reliably even after being stored for a long period.

- The device is switched off.
- 1. Empty the water bath completely.
- 2. Disconnect the device from the power supply.
- 3. Clean the inside and outside of the water bath.
- 4. Close the drain valve (not for PURA 4).
- 5. Store the device in a dust-free, dry and frost-free location.
- ✓ The water bath is taken out of operation and stored away. It can be put into operation again as needed.

9.6 Warranty

The following Warranty Provisions shall apply to products sold in North America by Julabo ("Seller") to the entity shown as buyer ("Buyer") on Seller's invoice.

Initial Warranty

Upon Seller's receipt of payment in full for the products and subject to Buyer's compliance with the terms of sale and any other agreement with Seller relating to the products, Seller warrants to the Buyer that the products manufactured by the Seller are free from defects in material and workmanship for a period not to exceed two (2) years of operation from the date the product is shipped by Seller to Buyer (the "Initial Warranty").

EXCLUSION OF ALL OTHER EXPRESS WARRANTIES; EXCLUSION OF ALL IMPLIED WARRANTIES.

OTHER THAN THE INITIAL WARRANTY, NO OTHER EXPRESS WARRANTIES ARE MADE. ALL IMPLIED WARRANTIES OF EVERY TYPE AND KIND, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, ARE EXCLUDED IN ALL RESPECTS AND FOR ALL PURPOSES. SELLER DISCLAIMS AND MAKES NO IMPLIED WARRANTIES WHATSOEVER.

Exclusions

The Initial Warranty does not include damage to the product resulting from accident, misuse, improper installation or operation, unauthorized or improper repair, replacement or alteration (including but not limited to repairs, replacements, or alterations made or performed by persons other than Seller's employees or authorized representatives), failure to provide (or use of improper) maintenance, unreasonable or unintended use or abuse of the product, or failure to follow written installation or operating instructions.

Buyer must return the product's record of purchase to the Seller or one of Seller's authorized representatives within thirty (30) days of the date the product is shipped by Seller to Buyer in order to make a claim under the Initial Warranty. Notwithstanding anything contained herein to the contrary, all glassware, including but not limited to reference thermometers, are expressly excluded from the Initial Warranty.

Buyer's sole remedies; Limitations on Seller's Liability

Buyer's sole and exclusive remedy under the Initial Warranty is strictly limited, in Seller's sole discretion, to either: (i) repairing defective parts; or (ii) replacing defective parts. In either case, the warranty period for the product receiving a repaired or replaced part pursuant to the terms of the Initial Warranty shall not be extended. All repairs or replacements performed by Seller pursuant to these Warranty Provisions shall be performed at one of the Seller's facility in Allentown, Pennsylvania, U.S.A. or at the facility of an authorized representative of Seller, which location shall be determined by Seller in its sole discretion; provided, however, that Seller may, in its sole discretion perform such repairs or replacements at Buyer's facility in which case Buyer shall pay Seller's travel, living and related expenses incurred by Seller in performing the repairs or replacements at Buyer's facility. As a condition precedent to Seller's obligation to repair or replace a product part under the Initial Warranty, Buyer shall (i) promptly notify Seller in writing of any such defect; (ii) shall have returned the product's record of purchase to Seller or to Seller's authorized representatives within thirty (30) days of the date the product is shipped by the seller; and (iii) assist Seller in all respects in its attempts to determine the legitimacy and basis of any claims made by or on behalf of Buyer including but not limited to providing Seller with access to the product to check operating conditions. If Buyer does not provide such written notice to Seller within the Initial Warranty period or fails to return the product's record of purchase as set forth above, Seller shall have no further liability or obligation to Buyer therefor. In no event shall Seller's liability under the Initial Warranty exceed the original purchase price of the product which is the subject of the alleged defect.

THE REMEDIES PROVIDED IN THE INITIAL WARRANTY ARE THE SOLE AND EXCLUSIVE REMEDIES AVAILABLE TO THE BUYER. NOTWITHSTANDING ANYTHING TO THE CONTRARY CONTAINED HEREIN, AND EVEN IF THE SOLE

AND EXCLUSIVE REMEDIES FAIL OF THEIR ESSENTIAL PURPOSE FOR ANY REASON WHATSOEVER, IN NO EVENT SHALL SELLER BE LIABLE FOR BUYER'S MANUFACTURING COSTS, LOST PROFITS, GOODWILL, OR ANY OTHER SPECIAL, INDIRECT, PUNITIVE, INCIDENTAL OR CONSEQUENTIAL DAMAGES TO BUYER OR ANY THIRD PARTY AND ALL SUCH DAMAGES ARE HEREBY DISCLAIMED.

Assignment

Buyer shall not assign any of its rights or obligations hereunder without the prior written approval of Seller; provided, however, that if Buyer is a distributor of Seller, the rights and obligations of Buyer under these Warranty Provisions shall inure to the benefit of and be binding upon Buyer's customers who provide the product's proof of purchase to Seller pursuant to the terms set forth herein. Seller may assign any or all of its rights or obligations hereunder without Buyer's prior consent.

Governing Law

The Warranty Provisions and all questions relating to their validity, interpretation, performance, and enforcement shall be construed in accordance with, and shall be governed by, the substantive laws of the Commonwealth of Pennsylvania without regard to its principles of conflicts of law.

Waiver

Any failure of the part of Seller to insist on strict compliance with the Warranty Provisions shall not constitute a waiver of such right. No claim or rights arising out of a breach of the Warranty Provisions by Buyer may be discharged in whole or in part by a waiver of the claim or right, unless the waiver is in writing signed by an authorized representative of Seller. Seller's waiver or acceptance of any breach by Buyer of any provisions of the Warranty Provisions shall not constitute a waiver of or an excuse for nonperformance as to any other provision of the Warranty Provisions nor as to any prior or subsequent breach of the same provision.

Freight

Seller will arrange and pay for shipping and handling for the return of the unit to the Buyer.

Out of Box Failure (OBF)

An Out of Box Failure (OBF) is defined as a product failure immediately following unpacking and installation of a newly delivered product. JULABO provides a 14-day grace period after the date of shipment, during which time the delivered product must be checked for defect. The same exclusions that apply to the regular warranty also apply to OBF classification. For example, JULABO will not be liable for transport damage, damage inflicted by the customer or any other party, or defects arising from improper installation or usage.

10 Disposal

10.1 Device disposal

When disposing of the device, the applicable country-specific guidelines must be observed.

1. Empty the unit completely.
2. Contact an authorised disposal company for disposal of the unit.
 - ➔ It is not permissible to dispose of the unit in household waste or similar facilities intended for collecting household waste.
 - ✓ The unit can be disposed of properly.

11 Appendix

11.1 Alarms and Warnings

Alarm and warning messages are described in the table.

If a displayed error code is not described in the table or the error is still pending after switching off and on again, please contact.

Error code	Description	Solution
-05	The cable for the working temperature sensor has broken or short-circuited.	• Contact.
-14	The set protective temperature has been exceeded.	• Check the bath fill level. If necessary, refill water. • Bath tank bottom is calcified. Remove limescale.
-57	The bath temperature rises too quickly.	• Check the bath fill level. If necessary, refill water.