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User information

1000FW Basic Refrigerated Bath Units

Intended use

The basic refrigerated bath units can be combined with JULABO circulators from the CORIO CD, CORIO CP, DYNEO DD, and MAGIO MS product series. When combined with these circulators, they are designed to control the temperature of liquid media recommended by JULABO.



How to use the basic refrigerated bath unit is described in the circulator operating instructions.



⚠ WARNING

Danger from mains voltage!

Risk of injury from electric current.

- Compare the mains voltage and frequency with the details on the model plate.
- Only connect the unit to a fused mains connection via a FI circuit breaker ($I_a=30\text{ mA}$).
- The unit may only be connected to mains power outlets with a protective contact (PE)!
- The mains plug is a safe isolator from the power supply network and must be freely accessible at all times.
- Do not start the device if it has a damaged power cable.
- Check the mains cable regularly for signs of damage.
- We cannot accept any liability for incorrectly connecting to the power supply.

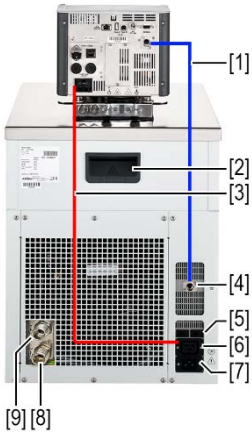


⚠ CAUTION

Cold or hot unit surfaces

Risk of frostbite, burns

- Device part surfaces can become very cold or hot
- Before draining the device, temper it to room temperature
- Wear personal protective equipment (gloves, safety shoes, goggles).



- 1 CAN bus cable for connecting to the circulator.
- 2 Recessed grip
- 3 Mains extension cable, cooling machine – circulator
- 4 CAN connector
- 5 Mains fuses
- 6 Mains connection for circulator power supply
- 7 Mains connection for cooling machine
- 8 Cooling water outlet, G3/4 AG
- 9 Cooling water inlet, G3/4 AG
- 10 Recessed grip
- 11 Removable ventilation grid (behind drain valve)

Included in delivery

- Mains cable and mains extension cable (N5/15)
- CAN bus connection cable

Technical data

Refrigeration basic units		1000FW					
Working temperature range	°C	-40 ... 200					
Cooling capacity (ethanol medium)	°C	20	0	-10	-20	-30	-40
	kW	1.00	0.98	0.75	0.53	0.27	0.13
Refrigerant		R449A					
Cooling water pressure inlet, max.	bar	6					
Cooling water differential pressure, min.	bar	0.3					
Cooling water consumption, min.	l/min	1.1					
Dimensions (WxDxH)	cm	42 x 49 x 70					
Useful bath opening (WxD)	cm	22 x 15					
Bath depth	cm	15					
Filling volume, from ... to	l	5.0 ... 7.5					
Weight	kg	48.5					
Protection class according to IEC 60529		IP21					
Ambient temperature range	°C	5 ... 40					
Mains connection	V/Hz	230 ±10% /50					
Power consumption (230 V)	A	Nom. 6 / Tot. 16					
CH model (at 230 V)	A	Nom. 6 / Tot. 10					
UK model (at 230 V)	A	Nom. 6 / Tot. 13					
Mains connection	V/Hz	208-230 ±10% /60					
Current consumption	A	Nom. 6 / Tot. 16					
Mains connection	V/Hz	115 ±10% / 60					
Current consumption	A	Nom. 9 / Tot. 16					
Mains connection	V/Hz	200 -5%; + 10% /50/60					
Current consumption	A	Nom. 11 / Tot. 15					


All data refers to rated voltage and rated frequency. Ambient temperature 20°C. Subject to technical changes.

Material of parts that come into contact with the medium

Part	Material
Bath tank and drain cock	1.4301/304H
Bath tank/bath cover gasket	FKM Viton®
O-ring, drain cock	FKM Viton®

Cooling water

Check the quality of the cooling water before connecting the device to a cooling water supply.

	NOTE
<p>Corrosion and calcification caused by inadequate cooling water quality</p> <p>Inadequate cooling water quality can lead to calcification or corrosion of important system components and thus to failure of the device.</p> <ul style="list-style-type: none"> Observe the recommended cooling water quality Avoid hard water, water that contains iron or chlorine, distilled or de-ionized water, seawater or water that comes from cooling towers or rivers 	

Recommended cooling water quality:

Parameter	Permissible value
pH value	7.5 to 9.0
Sulfate [SO ₄ ²⁻]	< 100 ppm
Hydrogen carbonate [HCO ₃ ⁻] / sulfate [SO ₄ ²⁻]	> 1 ppm
Hardness [Ca ²⁺ , Mg ²⁺] / [HCO ₃ ⁻]	> 0.5 dH
Alkalinity	60 ppm < [HCO ₃ ⁻] < 300 ppm
Conductivity	< 500 µs / cm
Chloride (Cl ⁻)	< 50 ppm
Phosphate (PO ₄ ³⁻)	< 2 ppm
Ammoniac (NH ₃)	< 0.5 ppm
Free chlorine	< 0.5 ppm
3-valent iron ions (Fe ³⁺)	< 0.5 ppm
2-valent manganese ions (Mn ²⁺)	< 0.05 ppm
Carbon dioxide (CO ₂)	< 10 ppm
Hydrogen sulfide (H ₂ S)	< 50 ppm
Oxygen content	< 0.1 ppm
Algae growth	not permissible
Suspended solids	not permissible

- Recommended cooling water temperature range: 10°C ... 15°C
- Permissible cooling water temperature range: 5°C ... 30°C

If the recommended cooling water temperature range is exceeded, performance restrictions are to be expected. If the cooling water temperature is low, condensation may occur on the cooling circuit.

Connect cooling water to the device

The cooling water lines are mounted directly on the thread of the cooling water connections.



NOTE

Environmental damages due to leakage in the cooling water circuit

If there is a leak in the cooling water circuit, oil from the refrigerant cycle can get in to the cooling water and lead to environmental damages.

- Observe the legal regulations applicable at the place of operation
- If there is leakage in the cooling water circuit, shut down the device and repair the fault.

- ▶ The device is switched off.
 1. Connect the cooling water line to the cooling water inlet.
 2. Connect the cooling water return to the cooling water outlet.
 3. Route the line connected to the cooling-water outlet to the on-site drain or return flow.
- ✓ Cooling water is connected. After start-up, check all hose connections for leaks.

Warranty

JULABO provides a warranty that the device will function perfectly as long as it is connected and used correctly and as described in the operating manual. The warranty period is one year from the invoice date.

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 no way 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.