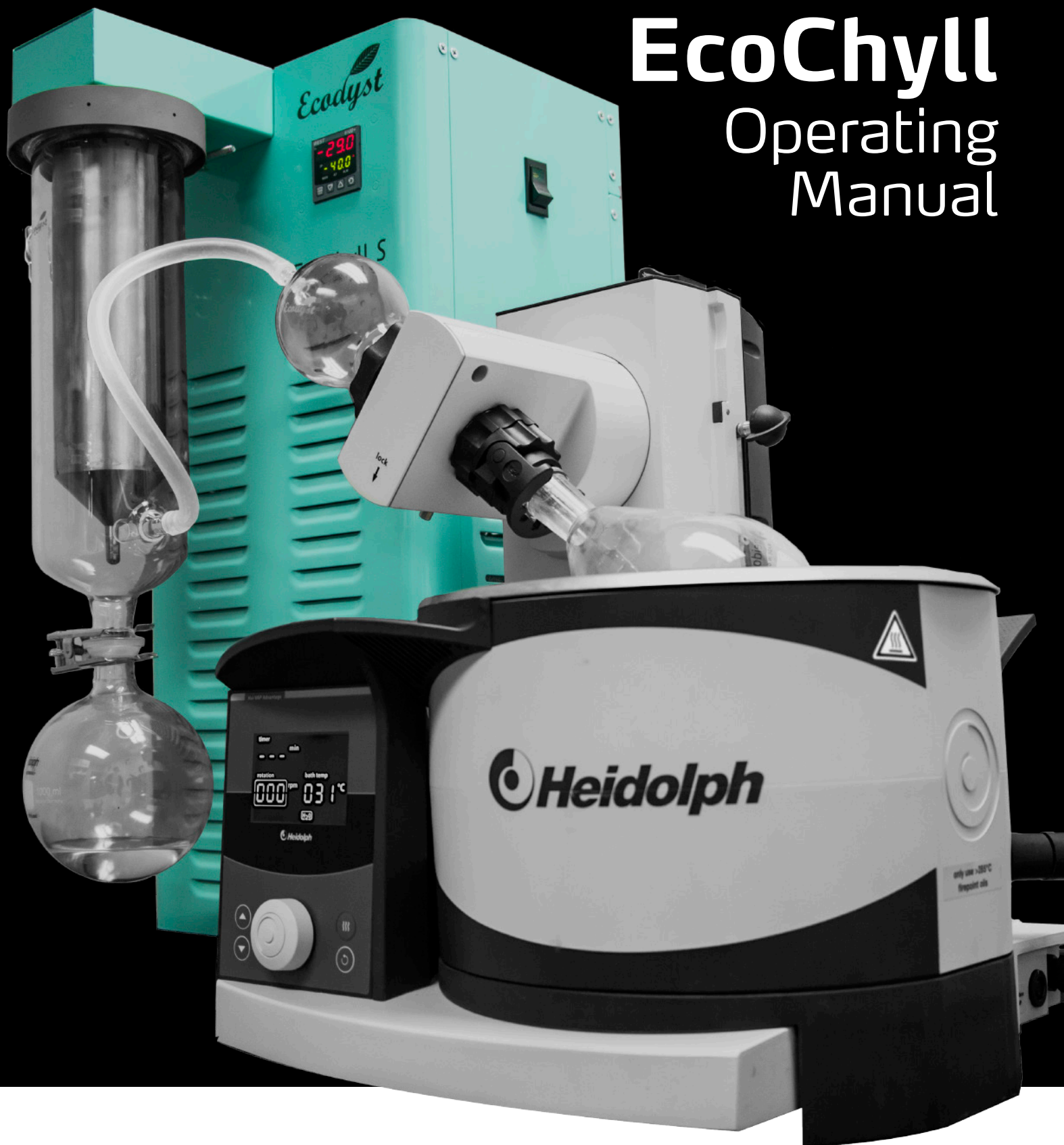


EcoChyll

Operating Manual



About this document.....	3
Version and Variants.....	3
About this Manual	3
Safety Instructions	4
General safety instructions	4
Intended use.....	4
Installation / Electrical safety	4
Personnel Qualification.....	4
Operating Company's Obligation.....	5
Installation Site	5
Changes to the Unit.....	5
Safety for the Personnel	5
Safety During Use	6
Disposal.....	6
Accessories and Spare Parts	7
Scope of Delivery	7
Device Description	8
Device Overview.....	8
Controller Overview	9
Technical Data	9
Assembly.....	10
Instillation.....	10
Operation.....	11
Controller Operation	11
LED Functions	12
Post Operation.....	13
Cleaning	13
Maintenance	13
Troubleshooting	13
Transportation and Storage	13
Support.....	14
Contact and Warranty.....	14
Service.....	15
Confirmation of Condition of Unit.....	15

> Version and Variants

This manual describes the function, operation and maintenance of the EcoChyll


Version	Alteration date
1.0	11/2016

Variants

The units are available in different configurations. Certain features and functions apply to Specific configurations only. The varieties are documented in this manual.

> About this Manual

This operating manual is a component of the device described here.

Version	Alteration Date
	<ul style="list-style-type: none">• Please read this manual carefully and obey all safety and warning notices.• Ensure that every operator reads this manual.• Ensure that this manual is accessible for every operator.• Pass on the operating manual to the subsequent owner.

In addition please observe the regional regulations.

General Safety Instructions

The device has been constructed according to state-of-the-art technology and recognized safety regulations. However, risks may still arise during installation, operation and maintenance.

Please ensure the operating manual is available at all times.

The device may only be used under the following circumstances:

- Only operate the device, if it is in full working order.
- Ensure all operators of the device possess the necessary safety and risk awareness.
- Operate the device according to the instructions stipulated in this manual only.
- If there is something you do not understand, or certain information is missing, ask your manager or contact the manufacturer.
- Do not do anything on the device without authorization.
- Only use the device according to its intended use.

Intended use

The device is intended for use by trained and authorized personnel only.

The device is suitable for the following use:

-
- Economical cooling as alternative to tap water systems
 - Research application
-

Improper use

Any use which deviates from the device's intended use is considered to be improper. The manufacturer does not accept liability for any damages resulting from non-permitted uses. The risk is carried by the operator alone.

Installation / Electrical Safety

- The device may only be connected when the mains voltage corresponds to the information on the type plate of the unit.
- The mains connection must be accessible at all times.
- Repairs may only be performed by a qualified electrician.
- Never operate the unit with a damaged power cord.
- Always turn the unit OFF and disconnect mains power before performing any maintenance or service.

Personnel Qualification

- The device may only be operated by qualified persons.
- The device may only be operated by individuals who have been instructed in its proper use by qualified persons.
- The device may only be operated and maintained by persons who are of legal age.
- Other personnel may only work with the unit under continuous supervision of an experienced qualified operator.
- This manual must be read and understood by all persons working with the device.
- The personnel must have received special safety instructions in order to guarantee responsible and safe work procedures.

➤ Operating Company's Obligations

Installation Site

- The device must be positioned in a suitable location.
- The device must be installed sufficiently stable on a strong and level surface.
- All screw connections must be securely tightened.
- The device should be located as close as possible to the process requiring cooling.
- The device should not be installed closer than 1.4 meters (4 feet) to a heat-generating source, such as heating pipes, boilers, etc.
- If possible, the device should be located near a suitable drain to prevent flooding in the event of leaks.
- Do not place the device where corrosive fumes, excessive moisture, excessive dust, or high room temperatures are present.
- The site must have an 80% relative humidity and temperature between 5 - 35 °C
- Adequate clearance should be allowed on the front, sides, top, and rear of the device for access to connections and components.
- The front and side vents of the device must be a minimum of 21 cm (8 inches) away from walls or vertical surfaces so air flow is not restricted.

Changes to the Unit

- No unauthorized changes may be made to the unit.
- No parts may be used which have not been approved by the manufacturer.
- Unauthorized changes result in the EC Declaration of Conformity losing its validity, and the appliance may no longer be operated.
- The manufacturer is not liable for any damage, danger or injuries that result from unauthorized changes or from operating the unit other than described in this manual.

Safety for the Personnel

Ensure that only qualified personnel operate the device. Observe the following regulations:

- Laboratory guidelines
- Accident prevention regulation
- Ordinance on Hazardous Substances
- Other generally accepted rules of safety engineering and occupational health
- Local regulations

Safety During Use

- Wear the appropriate protective clothing when working on the device (clothing, protective glasses and if necessary, safety gloves).
- Do not use the device in potentially explosive areas. The device is not protected against explosion. There is no explosion or ATEX protection available.
- Do not operate or assemble devices in the vicinity which are emission or radiation sources (electromagnetic waves) for the frequency range (3×10^{11} Hz to 3×10^{15} Hz).
- Avoid putting pressure on the display when you do not operate the device.
- Eliminate errors immediately.
- Do not use abrasive material to clean the glass surfaces. Only wipe with damp cloths.
- Always switch the device off after use.

Disposal

- Check the device components for hazardous substances and solvents.
- Clean all components before disposal.
- Dispose of the device according to the valid national legal regulations.
- Dispose of the packaging material in accordance to the valid national legal regulations.
- Have refrigerant emptied before disposal

> Scope of Delivery

Component	Quantity	Product Number
Ecodyst EcoChyll	1	048900001
Condenser Clamp	1	048900100
Seal G5 Silicone o ring	1	036210700
1000ml Receiving flask	1	036301170
Pinch clamp	1	048900101
Ecodenser glassware	1	EC-180S
Eco adapter 100ml	1	DC-1
Tubing	1	036294800
Operating Manual	1	
Warranty Card	1	

Glassware:

1000 ml Evaporating Flask	1	036302350
3000 ml Receiving Flask	1	036302590
5000 ml Evaporating Flask	1	036305000
Vapor Tube	1	036301110

> Device Overview

Ecodenser

Controller

Condenser Clamp

Power Switch

Eco Adapter

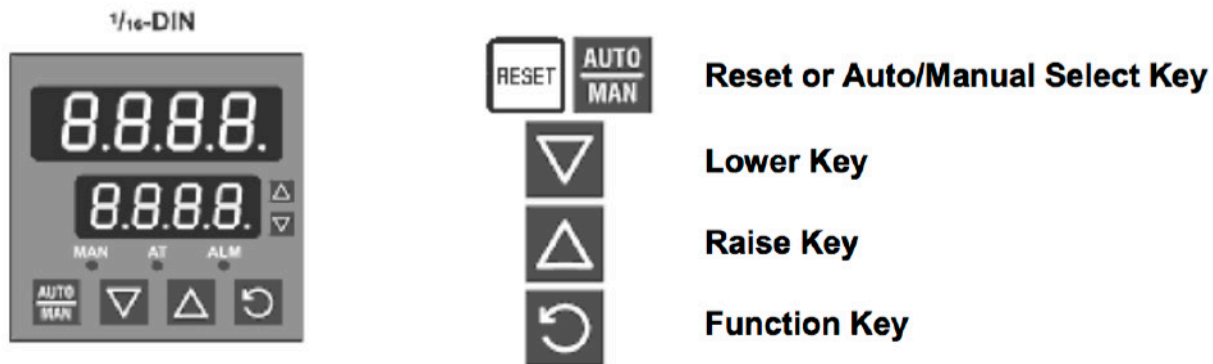
Evaporating Flask

Pinch Clamp

Receiving Flask



> Controller Overview



> Technical Data

Standard Supply Voltage	115V, 15 amp, 60 Hz
Power Supply (W)	656
Default Set Temperature	-40
Temp stability of cold finger	+/- 0.1
Operating Temperature Range (C)	-5....-40
Cooling time:	(-20, 1 minute) (-35, 3 minutes)
Weight (lbs)	85
Material	Glass condenser, Chemically resistant metallic alloy ecodenser, powder coated sheet metal body
Side Vents	Vents must be unblocked for proper cooling transfer
Dimensions (in) (W x D x H)	12 x 17.5 x 27.25
Shipping weight (lbs)	175
Shipping Dimensions (in)	26.5 x 22.5 x 34.5

Evap Temp	Cooling Capacity +/- 5%	Power Consumption +/- 5%
-40 °C	182 W	220 W
-35 °C	245 W	259 W
-30 °C	327 W	300 W
-25 °C	427 W	343 W
-20 °C	544 W	388 W
-15 °C	680W	434 W
-10 °C	833 W	482 W

> Instillation



1. Remove EcoChyll from packaging. Save or dispose of packaging material.
2. Place unit in intended work space.
3. Place O-ring in the Ecodenser groove.
4. Open clamp and put over ecodenser flange.
5. Slide ecodenser over Ecochyll cold finger.
6. Secure clamp and tighten with flat head screwdriver.
7. If you have existing rotary evaporator, remove the condenser and replace with the eco adapter.
8. Put coupling and coupling spring on eco adapter and secure to the drive head.
9. Attach supplied tubing that has been cut to desired length from eco adapter to ecodenser hose connector.
Hose connector is found on bottom right of glassware.
10. Attach receiving flask to ecodenser with pinch clamp.
11. Plug in Ecochyll and turn the switch to one located on the right hand side of unit.
12. Ecochyll display will light with 8.8.8.8 for start up period.
13. Ecochyll is pre set to -50C.
14. Bottom display bar will show the set temperature and the top display will show the actual temperature of the cold finger. You will begin to see the temperature dropping.
15. Within 3-4 minutes you will see the display reaching lower than -30C
16. Check all ports for vacuum leaks, tighten clamps and adapters as needed. If further leaks occur see recommendations in troubleshooting section.

Navigate to our Youtube channel (Heidolph North America) for a complete video demonstrating the set up of EcoChyll with Hei-VAP.

➤ Controller Operation

Entry into the Configuration Mode:

Configuration is entered from Select Mode.




Hold down  and press  to force the controller into the Select Mode.

Press  or  to navigate to the Configuration Mode option, then press .

Scrolling through Parameters and Values

Press  to scroll through the parameters (parameters are described below).

Changing Parameter Values

Press  to navigate to the required parameter, then press  or  to set the value as required. The value will revert back if not confirmed within 10 seconds.

Press  to accept the change.

Press  to reject the change and to move onto the next parameter.

Hold down  and press  to return to Select Mode.

LED functions

LED	Function
On	Indicates the Setup Mode has been entered (This LED is labeled SET on indicator models)
Flashing	Indicates the manual mode has been entered (On indicator models this LED is labeled SET and flashes when in Configuration Mode)
On	Indicates that Controller Self Tune mode is engaged
Flashing	Indicates that Controller Pre-Tune mode is engaged
Flashing	Indicates that an alarm condition is present
Flashes	In unison with Time Proportioning Primary outputs, or for Current Proportioned outputs, ON indicates primary power is >0% (On indicators this lights when the stored Max PV value is displayed)
Flashes	In unison with Time Proportioning Secondary outputs, or for Current Proportioned outputs, ON indicates primary power is >0% (On indicators this lights when the stored Max PV value is display

> Cleaning

Recommended to clean condenser glass after use and replace tubing as needed.

> Maintenance

The unit is maintenance-free. Any necessary repair must be performed by an authorized Heidolph distributor. Please contact Heidolph or your local Heidolph distributor

> Troubleshooting

Loss of Vacuum	Asses and tighten clamps on various components Check vacuum seal on rotary evaporator
Ice Build Up on Ecodenser	Ensure EcoChyll is not left on for long periods without Condensing

> Transportation and Storage

- Store and transport the unit and its components only if they were emptied and cleaned in the original packing material.
- Alternatively store and transport the unit in a container which prevents damages during transportation.
- Seal the packing carefully against unauthorized or mistaken opening.
- Store the unit in a dry place.

> Contact and Warranty

Ecodyst Inc.

Phone: 1-919-599-4963 E-mail: info@ecodyst.com
www.ecodyst.com

Heidolph Instruments North America

Phone: 1-866-650-9604 E-mail: service@heidolph.com www.heidolphNA.com

Warranty

Ecodyst provides a 1-year warranty for the products described here (excluding glass and wearing parts) if you register using the warranty card enclosed or online (www.heidolphna.com). The warranty is valid from the point of registration. The serial number is also valid without registering. The warranty covers part and manufacturing defects.

(Serial number on back top corner of EcoChyll)

Questions / Repair work

If any aspect of installation, operation or maintenance remains unanswered in the present manual, please contact us. For repairs please call Heidolph Instruments or your local authorized Heidolph distributor.

> Confirmation of Condition of Unit

In the case of repair, copy and complete the Confirmation of condition of unit and send it to Heidolph Instruments.

Product number

Serial number

Reason for repair

Has the device been cleaned, decontaminated/sterilized?

_____ Yes _____ No

Is the unit in a condition which does not represent any health threats for the staff of our service department?

_____ Yes _____ No

If not, which substances has the unit come into contact with?

Legally binding declaration

The customer is aware of being legally liable to Heidolph Instruments for any damages arising from incomplete and incorrect information.

Signature:

Date:

Please note The shipper is responsible for the return of the goods in well packed condition, suitable for the mode of transport.

Last name, first name

Company

Department, research group

Street

Zip code, city

Country

E-mail