

SINCE 1889




ULTRA LOW TEMPERATURE FREEZER YK205ULT

MODEL

INSTRUCTION MANUAL

- FIRST EDITION –

- Thank you for purchasing YK205ULT Ultra Low Freezer of Yamato Scientific.
- To use this unit properly, read this "Instruction Manual" thoroughly before using this unit. Keep this instruction manual around this unit for referring at any time.

 **WARNING:** Carefully read and thoroughly understand the important warning items described in this manual before using this unit.

**Yamato Scientific America Inc.
Santa Clara, CA**



YK205ULT

130L / 5 ft³

IMPORTANT:

Your unit is preprogrammed

Place your unit in the desired location. Plug the unit in and allow it to cool and become stable for a minimum of 24 hours before logging temperature or stocking products.

Be careful when setting or changing temperatures

WARNING: Changing some controller parameters can damage your unit and/or result in a loss of product. Yamato will not be held responsible for losses due to unauthorized parameter changes.



Changing advanced parameters may damage the unit or void your warranty. Please contact Yamato before attempting to change advanced parameters.

Unfamiliar with the operation of a controller?

Call us for assistance with special parameters.

Some units can be changed from Celsius to Fahrenheit. We do not recommend changing your unit to Fahrenheit. Your controller has operational parameters that rely on data in Celsius to maintain proper function.

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1 Warnings



Important operating and/or maintenance instructions. Read the accompanying text carefully.



Hot surface(s) present which may cause burns to unprotected skin or to materials which may be damaged by elevated temperatures.



Potential electrical hazards. Only qualified persons should perform procedures associated with this symbol.



Extreme temperature hazards, hot or cold. Use special handling equipment or wear special, protective clothing.

Safety Information

- All internal adjustments and maintenance must be performed by qualified service personnel.
- Do not use this appliance for other than its intended use.
- Do not cover the front grille or block the rear air entry by placing object up against the cabinet. Ensure adequate ventilation.
- If the main supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified and skilled persons in order to avoid hazard.
- Do not store explosive substances, such as aerosol cans with flammable propellant.
- Do not use mechanical devices or other means to accelerate the defrosting process.
- Disconnect the main power supply before attempting any cleaning, removal of any covers, or maintenance work.

2 Installation and Operation

Assembly

- Remove the appliance from the packaging and peel off any protective film from all surfaces.
- Ensure that this product is positioned on a level surface, so as to allow the door(s) to shut and seal correctly, as well as to allow proper drainage from the evaporator tray, to prevent any overflow.

Ventilation

- All models must have clear and unobstructed ventilation from the entire surface area of the front grille.

3 Temperature Controller



SET

- Enter a parameter setting
- Switch between menu and parameter



- Adjust menu and parameters
- After 3s, parameter setting uploads



- Clear alarm
- The mandatory cooling mode will be activated for 10s

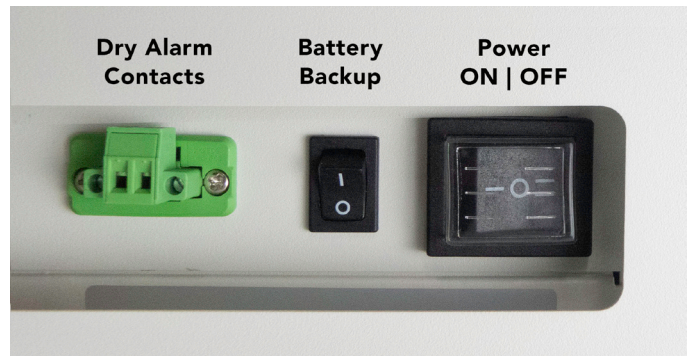


- Adjust menu and parameters
- After 3s, parameter setting downloads





RST

- Exit from parameter settings
- Press for 3s to force stop capillary heating output

3 Power and Contacts



Indicator light status description

Symbol	Status	Meaning
Set	ON	Parameter setting
	OFF	Status of temperature measuring and controlling
	ON	Compressor high temperature limit alarm (compressor is running)
	OFF	Compressor high temperature limit alarm (compressor is not running)
	FLASH	Compressor high temp. limit alarm reached, unit shut compressor off to cool
	ON	Compressor low temperature limit alarm (compressor is running)
	OFF	Compressor low temperature limit alarm (compressor is not running)
	FLASH	Compressor low temp. limit alarm reached, unit shut compressor off to thaw
	ON	Capillary heating starts
	OFF	Capillary heating is closed
E2H	ON	High temperature alarm of secondary system condenser
E2P	ON	High temperature protection of secondary system condenser
Erd	ON	Door open alarm
	ON	Grid power supply anomaly
	OFF	Normal power supply

4Parameters

Temperature parameter setting

Parameters	Description	Min	Max	Unit	Default
St	Temperature set value	C13	C14	°C/°F	-80
A8	Over temperature alarm upper deviation	0.1	20	°C/°F	10
A9	Over temperature alarm lower deviation	0.1	20	°C/°F	10
C13	Set Minimum temperature	-95	C14	°C/°F	-90
C14	Set Maximum temperature	C13	85	°C/°F	-50
C1	Temperature difference	0.1	20	°C/°F	0.4

Setting the Temperature

- Press Set key for 3 seconds. it display the code St.
- Press Set key again to display the temperature SETPOINT.
Modify by pressing the UP or DOWN keys.

Changing Parameters - Enter Admin Section

- Press Set key for 3 seconds, it will display the code St.
- Press DOWN arrow to Po. Press Set - 00.
- Press DOWN arrow to password (55). Press Set.
- Choose parameter by scrolling with UP or DOWN arrows.
Select parameter by pressing Set.
- Change parameter settings with the UP and DOWN arrow
- When finished changing parameters press Set.

Parameter	Description	Setting scope	Default
User menu			
St	Set cabinet temperature point	LS to US	-80
Administrator menu			
Po	Administrator menu password	(The password is 55 and cannot be changed)	55
C8	Cabinet temp. probe calibration when below 0° Use this parameter to match temp display with datalogger	-15.0~15.0	0
C9	Condenser probe calibration (High-temp. compressor loop)	-15.0~15.0	0
C10	Ambient temp. probe calibration	-15.0~15.0	0
C11	High-temp. evaporator probe calibration	-15.0~15.0	0
C13	The Minimum set temp. of cabinet	-95.0~C14	-86
C14	The Maximum set temp. of cabinet	C13~50.0	-40
C15	Maximum temp. of high-temp. evaporator when low-temp. compressor turned off	C7~10.0	-12
H1	The cycle time of capillary heating wire	1~300	108
H2	The working time of capillary heating wire	1~90	3
H3	Maximum delay time of capillary heating	1~90	60
A3	Alarm output delay after opening cabinet door	0~60	1
A4	Alarm ringback time when the alarm is not cleared	0~60	10
A5	Maximum temp. of over-temp. alarm of ambient (A5>A6)	A6~70.0	40
A6	Minimum temp. of over-temp. alarm of ambient (A6<A5)	-10.0~A5	5
A7	Delay time of over-temp. alarm of ambient	0~60	10
do1	Door switch controls output	0:Cancel door switch 1:Alarm when the door open	0
do2	Whether a buzzer response is required when the door is open	0:No 1:Yes	1
Cd1	High temperature alarm starting value of condenser	30.0~Cd3	38

5 Product Description

	Model	YK205ULT
Technical Data	Cabinet Type	Chest
	Climate Class	N
	Cooling Type	Direct cooling
	Defrost Mode	Manual
	Refrigerant	CFC-Free
Performance	Cooling Performance	-86°C
	Temperature Range	-40°C ~ -86°C
Control	Controller	Microprocessor
	Display	LED
Material	Interior	Stainless steel
	Exterior	Galvanized steel powder coating
Dimensions	Capacity	130L / 5 ft ³
	Interior Dimensions (WxDxH)	24.75 x 17.375 x 18.5 in.
	Exterior Dimensions (WxDxH)	33.5 x 28.75 x 39.5 in.
	Thickness of Cabinet Foamed Layer	90 mm
	Thikness of Door	90 mm
Power Supply	115V 60Hz	
Controller Functions	Display: Large digital display & adjusting keys	
	High/Low Temperature	
	Hot Condenser	
	Power Failure	
	Sensor Error	
	Low Battery	
	High Ambient Temp	
	Alarm Mode: Sound and light alarm, remote alarm terminal	
Included Accessories	Caster	
	Probe Port	
	Door Locking Device	
	Handle	
	Pressure Balance Hole	
Optional Accessories	Data Logger	
	Racks and Boxes	

6 Maintenance

Fault	Probable Cause	Action
The appliance is not working	The unit is plugged in correctly	Check the unit is plugged in correctly
	Plug or lead is damaged	Call our agent or qualified technician
	Power supply	Check power supply
	Internal wiring fault	Call our agent or qualified technician
The appliance turns on, but the temperature is too high or too low	Filter or condenser blocked with dust	Clean filter or condenser
	Doors are not shut properly	Check doors are shut and seals are not damaged
	Appliance is located near a heat source or air flow to the condenser is being interrupted	Move the appliance to a more suitable location
	Ambient temperature is too high	Increase ventilation or move appliance to a Low Temperature Freezer position
	Insufficient airflow to the fans	Remove any blockages to the fans
	Appliance is overloaded	Reduce the amount stored in the appliance
	Factory default parameters adjusted	Call our agent or qualified technician
The LED lights not working	Led light short Leaded damage	Call our agent or qualified technician
The appliance is unusually loud	The appliance is touching a neighboring object	Check installation position and change if necessary
	The appliance has not been installed in a level or stable position	Check installation position and change if necessary

Alarm Code

Alarm code	Fault Description
E1	Tank temperature sensor failure
E2	Condensing sensor fails
E3	Ring temperature sensor failure
E4	Evaporator sensor failure
E1H	Tank temperature super high temperature alarm
E1L	Tank temperature super Low temperature alarm
E3H	Ring temperature and ultra high temperature alarm
E3L	Ring temperature and ultra low temperature alarm
E2H	High temperature alarm of condenser
E2P	High temperature protection of condenser
Erd	Door open alarm

7 Temperature Logging

When storing vaccines you may be required to perform a field validation test. A NIST calibrated external data logger may be used for this purpose. A logger with text, email or online access is an added layer of protection for your product load in the event of a temperature excursion. Yamato offers NIST calibrated data loggers to match your unit at a very affordable rate.

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8 Warranty Information

Yamato Scientific America warrants, from the date of shipment from warehouse in Charlotte, North Carolina, U.S.A., for a period of one (1) year. All products, parts and materials shall be free of defects in material and workmanship under normal use consistent with the product instructions. This product warranty does not apply to products purchased from unauthorized resellers/distributors.

Yamato reserves the right to inspect the product under claim before having an obligation to repair or replace the defective unit covered by this warranty. All costs of shipping to Yamato for inspection shall be borne solely by the purchaser. Products repaired or replaced under the terms of the warranty may be refurbished or new product will be provided at the discretion of Yamato.

Warranty Conditions

This warranty shall have force and effect only if all items are used with proper circuits, voltages, and frequencies and the operation thereof is in accordance with instructions furnished by the manufacturer.

This warranty shall not extend to such parts as refrigerants, finishes, belts, and dryers.

This warranty shall not extend to ordinary wear and tear, or ordinary refrigeration service and refrigeration adjustments, unless specifically included in the equipment purchase contract.

This warranty does not apply to equipment or parts which fail because of abuse, accident, alteration, misuse, erosion, improper installation, or improper replacement of a repaired item.

The buyer assumes all risks for results obtained from these products, whether used alone or in combination with other items. It is expressly understood that we are not responsible and will not be held liable for damage and/or injury caused using our products.

Product Return Policy

If you are not satisfied with your purchase and wish to make a return, contact our customer service to inquire about a Return of Merchandise Authorization Number (RMA). Merchandise returned without an RMA number will not be accepted and will be returned to the sender. Return requests must be made within 15 days of the customer's receipt of the merchandise.

All returns must be unused and in unopened original packaging and include all items and manuals originally shipped.

The purchaser is responsible for the shipping cost of return shipment. Insurance on the return shipment is required. Damage or loss of merchandise during shipping is the responsibility of the sender. Returned shipments that arrive damaged will be returned to the sender, and credit will not be rendered.

All returned products, parts and materials are subject to a 25% restocking fee. Shipping and handling cost are non-refundable. All retrofitted, customized and special order item sales are final and non-returnable.

In Case of Request for Repair

If the failure occurs, stop the operation, turn OFF the power switch, and unplug the power plug. Please contact the sales agency that this unit was purchased, or Yamato Scientific's sales office.

< Check following items before contact >

- ◆ Model Name of Product
- ◆ Serial Number
- ◆ Purchase Date
- ◆ Issue (as detailed as possible)

Responsibility

Please follow instructions in this document when using this unit. Yamato Scientific has no responsibility for accidents or breakdown of device due to failure to comply. Never conduct what this document forbids as unexpected accidents or breakdown may result.

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