

SINCE 1889



UNDERCOUNTER ULTRA LOW FREEZER

ULF SERIES


MODEL

ULF001UN / ULF101UN / ULF201UN

INSTRUCTION MANUAL

- FIRST EDITION –

- Thank you for purchasing ULF Series 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**

CONTENTS

◆ SYMBOLS AND STARTING INSTRUCTIONS	1
• MEANING OF ILLUSTRATED SYMBOLS.....	1
• STARTING INSTRUCTIONS.....	1
◆ UNIT REQUIREMENTS	2
• PRE-INSTALLATION INFORMATION.....	2
◆ GENERAL SPECIFICATIONS	3
• TEMPERATURE SPECIFICATIONS.....	3
• ELECTRICAL SPECIFICATIONS.....	3
◆ REFRIGERATION SPECIFICATIONS	4
◆ MAINTENANCE	5
◆ UNIT OPERATION	6
◆ TEMPERATURE CONTROL	7
◆ ALARM OPERATION	8
• ALARM SYSTEM.....	8
◆ CONTROL PROGRAMMING	9
• CUSTOM SETTINGS.....	9
• ADVANCED SETTINGS.....	10
• SERVICE SETTINGS.....	11
• ADVANCD SERVICE SETTINGS.....	11
◆ DATA DOWNLOAD	12
• DOWNLOAD.....	12
• UPLOAD.....	12
◆ WIRING DIAGRAM	13
◆ REPLACEMENT PARTS LIST	14
◆ AFTER SERVICE AND WARRANTY	15

SYMBOLS AND STARTING INSTRUCTIONS

Explanation

MEANING OF ILLUSTRATED SYMBOLS

ILLUSTRATED SYMBOLS

Various symbols are used in this safety manual in order to use the unit without danger of injury and damage of the unit. A list of problems caused by ignoring the warnings and improper handling is divided as shown below. Be sure that you understand the warnings and cautions in this manual before operating the unit.



CAUTION

BLACK WITH YELLOW BACKGROUND
LIGHTNING BOLT
CAUTION, RISK OF ELECTRICAL SHOCK



WARNING

BLACK WITH YELLOW BACKGROUND
EXCLAMATION POINT
CAUTION, REFER TO ACCOMPANYING DOCUMENTS

STARTING INSTRUCTIONS

1. Move the freezer to an indoor location and plug the freezer into an appropriate outlet with an adequate power supply. Consult your maintenance department for additional information on the proper electrical configuration for this unit.
2. Once plugged in, the compressor(s) will start to operate and pull down to the setpoint on the temperature control.
3. Allow the freezer to reach the setpoint temperature. Depending on the size of the unit, this may take up to 12 hours.
4. Product can now be loaded into the freezer for storage.

Unit Information

PRE-INSTALLATION INFORMATION

RANGE OF ENVIRONMENTAL CONDITIONS FOR WHICH THIS EQUIPMENT IS DESIGNED

1. Indoor use.
2. Altitude up to 2000m.
3. Ambient temperatures 15°C to 30°C (60°F TO 85°F)
4. Recommended humidity range of 30% to 90%.
5. Mains supply fluctuations up to -5% to +10% of the nominal voltage.
6. Transient over-voltages typically present on the mains supply (overvoltage category II). Pollution degree 1.



WARNING

THIS FREEZER IS PROVIDED WITH AN INPUT CIRCUIT PROTECTIVE DEVICE WHICH SHALL BE MAINTAINED AND SERVICED BY QUALIFIED PERSONNEL ONLY.



CAUTION

UNDER NO CIRCUMSTANCES USE EXTENSION LEADS OR ADAPTORS. CONNECT THE APPLIANCE DIRECTLY TO A FIXED INSTALLATION. IF THE APPLIANCE IS CONNECTED TO A LONG EXTENSION CABLE THERE IS A RISK THAT THE CABLE WILL BECOME HOT.



CAUTION

UNPLUG FREEZER BEFORE ANY TECHNICAL SERVICE IS PERFORMED ON THE UNIT.



WARNING

DO NOT POSITION EQUIPMENT SO IT IS DIFFICULT TO DISCONNECT FROM THE POWER SUPPLY.

GENERAL SPECIFICATIONS

Specifications

TEMPERATURE SPECIFICATIONS


OPERATIONAL TEMPERATURE RANGE

-40°C TO -85°C

ELECTRICAL SPECIFICATIONS

ELECTRICAL PLUG

- Plug the freezer into the proper outlet with an adequate power supply.
- This unit requires a **Dedicated Electrical Line**.

MODEL	VOLTAGE	AMPERAGE	PLUG
ULF001UN ULF101UN ULF201UN	115 VOLTS 60 HERTZ 1 PHASE	15 AMP DEDICATED LINE	 NEMA 5-15



WARNING

ONLY PLUG THIS UNIT INTO THE PROPER OUTLET. DO NOT ATTEMPT TO MODIFY PLUG IN ANY WAY. IMPROPER USE OF THE ELECTRICAL PLUG WILL VOID WARRANTY



CAUTION

FAILURE TO GROUND THE EQUIPMENT MAY CAUSE PERSONAL INJURY OR DAMAGE TO THE EQUIPMENT. ALWAYS CONFORM TO THE ELECTRICAL CODES.

REFRIGERATION SPECIFICATIONS

REFRIGERATION SPECIFICATIONS

MODEL	CU. FT.	REFRIGERATION SYSTEM	REFRIGERANT
ULF001UN	0.25	3/8 HP REFRIGERATION SYSTEM	EP88 – 6.10 OZ.
ULF201UN	2	3/8 HP REFRIGERATION SYSTEM	EP88 – 6.88 OZ.
ULF301UN	3	3/8 HP REFRIGERATION SYSTEM	EP88 – 6.90 OZ.

PREVENTATIVE MAINTENANCE

BEFORE PERFORMING MAINTENANCE

To reduce the risk of fire, electric shock or injury to persons using this freezer, read all instructions and follow basic safety precautions.



CAUTION

DISCONNECT THIS UNIT FROM THE POWER SUPPLY BEFORE PERFORMING MAINTENANCE ON THE UNIT.

CLEANING PROCEDURE

- Wipe down the exterior of the freezer with a soft cloth and spray type polish.
- If frost builds up in the chamber, a bucket and ice-scraper can be used to remove the ice.
- If excessive ice builds up, the unit can be defrosted (see below).

DEFROST PROCEDURE

1. Remove any product in the freezer and store it in a back-up freezer or elsewhere.
 2. Unplug the freezer and open the freezer front door / lid.
 3. Use a cloth to protect the control from dripping water.
 4. Air out the freezer for at least 12 hours, allowing the unit to reach room temperature.
 5. Take a rag and wipe up all the excess water in the unit (melted frost).
 6. Plug the unit in and set your temperature to the desired setpoint
 7. Once the desired temperature is reached, add product back into the unit.
-
-



WARNING

IT IS RECOMMENDED TO SLOWLY RE-ADD YOUR PRODUCT INTO THE FREEZER TO PREVENT AN EXTREME LOAD ON THE COMPRESSORS, WHICH COULD SHORTEN FREEZER LIFE EXPECTANCY.

GENERAL OPERATION

- The freezer should be located in a dry, cool place without direct sunlight.
- To start the freezer, set the digital thermometer at the temperature required. It will now take about 6-10 hours before the set temperature is reached.
- The freezer should be cooled down empty.



WARNING

WHEN FILLING THE UNIT WITH RACKS/BOXES, MAKE SURE TO PRE-COOL THEM IN ORDER NOT TO AFFECT THE INSIDE TEMPERATURE OF THE UNIT.



WARNING

THE INNER DOORS SHOULD BE USED AT ALL TIMES. MAKE SURE TO CLOSE THEM TIGHTLY.

THE MANUFACTURER IS NOT RESPONSIBLE FOR DAMAGE TO THE FREEZER CAUSED BY FAILURE TO DO SO.



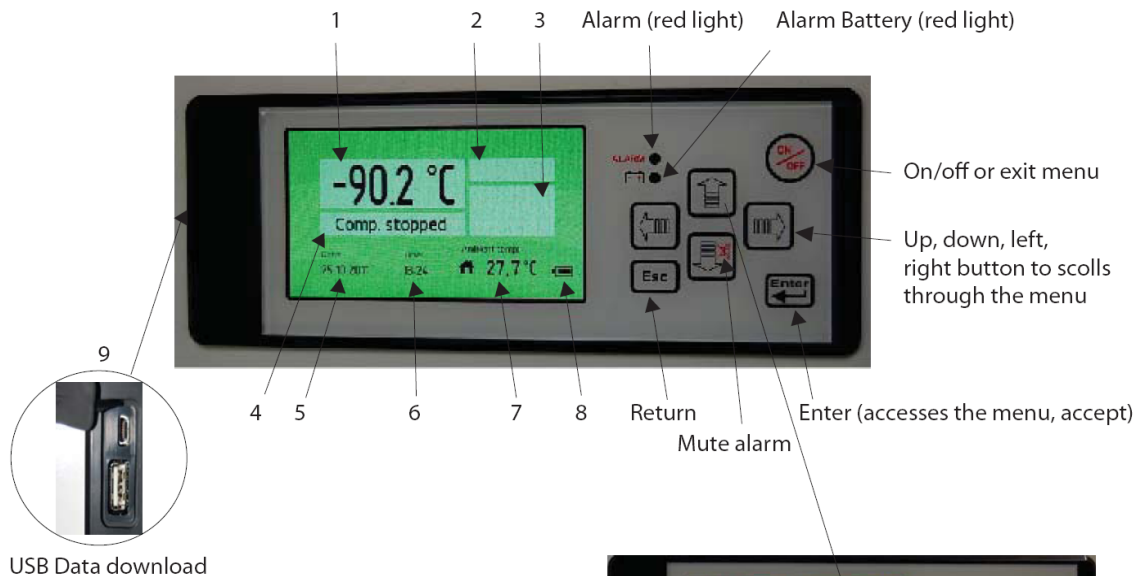
WARNING

CLEAN THE FREEZER BOTH INSIDE AND OUT USING A DAMP, WRUNG OUT CLOTH. DRY WITH A DRY CLOTH.

THE SMELL FROM THE PLASTIC PARTS IN THE FREEZER WILL DISAPPEAR ONCE THE FREEZER HAS BEEN COOLED DOWN.

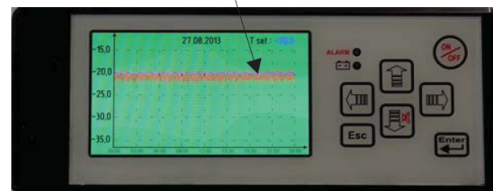
G-214 CONTROLLER

CONTROL DISPLAY



Control Panel Description

1. Temperature indicator
2. Alarm indicator
3. Alarm-icons
4. Compressor indication
5. Date indication
6. Hour indication
7. Ambient temperature indicator
8. Battery level
9. USB-Connection



Push the **UP** button in order to generate a graph.

Push the **LEFT** button in order to return up to 10 days back.

Push the **Esc** button in order to exit the menu.

ALARM OPERATION

ALARM SYSTEM

Alarms on display



Alarm icons



Door open alarm

The **Door open alarm** indicate, that the door is not correct closed



High temp. alarm

The **High temperature alarm** indicate, that the temperature inside the unit is higher than permitted from setting of the unit.



Low temp. alarm

The **Low temperature alarm** indicate, that the temperature inside the unit is lower than permitted from setting of the unit.



Probe eeprom failure

The **Probe eeprom failure** alarm indicate, that the probe is not working.



Power failure

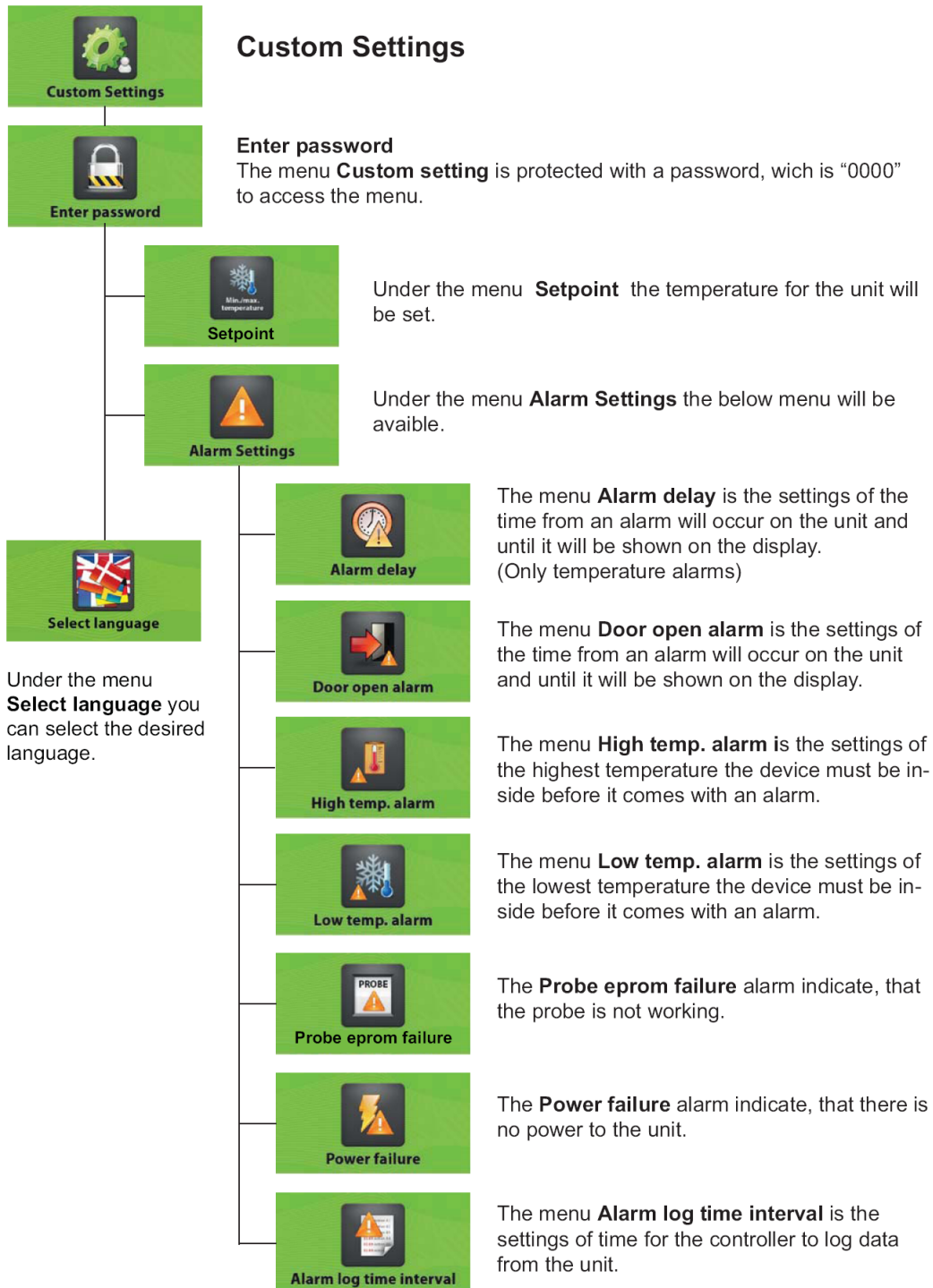
The **Power failure** alarm indicate, that there is no power to the unit.



Low battery

The **Low battery** alarm indicate, that the power on the battery is to low.

CUSTOM SETTINGS

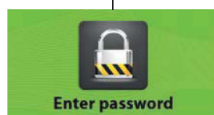


ADVANCED SETTINGS



Advanced Settings

Advanced Settings



Enter password

Enter password

The menu **Advanced Settings** is protected with a password which is "0000" to access the menu.



Calibration

The menu **Calibration** is the settings for offset of the temperature in the display.



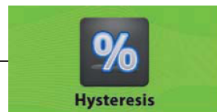
Automatic defrost

The menu **Automatic defrost** is the setting of the time where a defrost automatic will be performed on the unit.



Manual defrost

Under the menu **Manual defrost** the defrost can be started immediately.



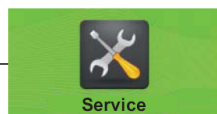
Hysteresis

The menu **Hysteresis** is the setting of the different from the setpoint where the compressor will start and stop.



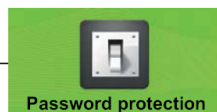
Temp. range limits

The menu **Temp. range limits** is the settings of the maximum and minimum temperature the unit can be used for.



Service

→ **Service**
See Page 10



Password protection

The menu **Password protection** is the setting of the protection for the unit not to be turn off and is protected with a password.



Set date / time

The menu **Set date / time** is the setting of date and time.



Ambient temp. settings

The menu **Ambient temp. settings** is the adjustment of the ambient temperature.

CONTROL PROGRAMMING

SERVICE SETTINGS



Service

Service Settings

Under the menu **Service**, there is information about the unit, which is important for service on the unit.



Compressor hours

The menu **Compressor hours** shows, how many hours the compressor has run.



Fan hours

The menu **Fan hours** shows, how many hours the fan has run.



Probe

Under the menu **Probe** the temperature for the sensor mounted in the unit is displayed.



Probe inside unit

Under the menu **Probe inside unit** the temperature of the sensor mounted inside the unit is displayed. There is mounted a sensor as standard in the unit, but it is possible to mount 3 sensors inside the device. (Controller version)



Probe Compressor

Under the item **Probe Compressor** the temperature of the sensor mounted on the compressor is displayed. (Not all models)



Probe evaporator

Under the point **Probe evaporator** the temperature of the sensor, that is located on the condenser, is displayed.

ADVANCED SERVICE SETTINGS



Advanced Service Settings

Advanced Service Settings

This menu is only used by the service department at the manufacturer.

DOWNLOAD

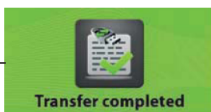
Download Data



Place the USB pen drive in the connection on the display and press the button right for **read data** from the unit to the USB pen.



The **Read data** will be shown in the display when the data is loading to the USB pen drive.



The **Transfer complete** will be shown on the display when the loading is finished and the USB pen can be removed from the display.

Open the 2 files:
data00 and **param00**
on a computer in Excel or similar.

UPLOAD

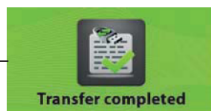
Upload Data (Only for new settings from the manufactory)



Turn-off the display before start.
Place the USB pen drive in the connection on the display and press the button left for upload parameters from the USB pen to the unit.

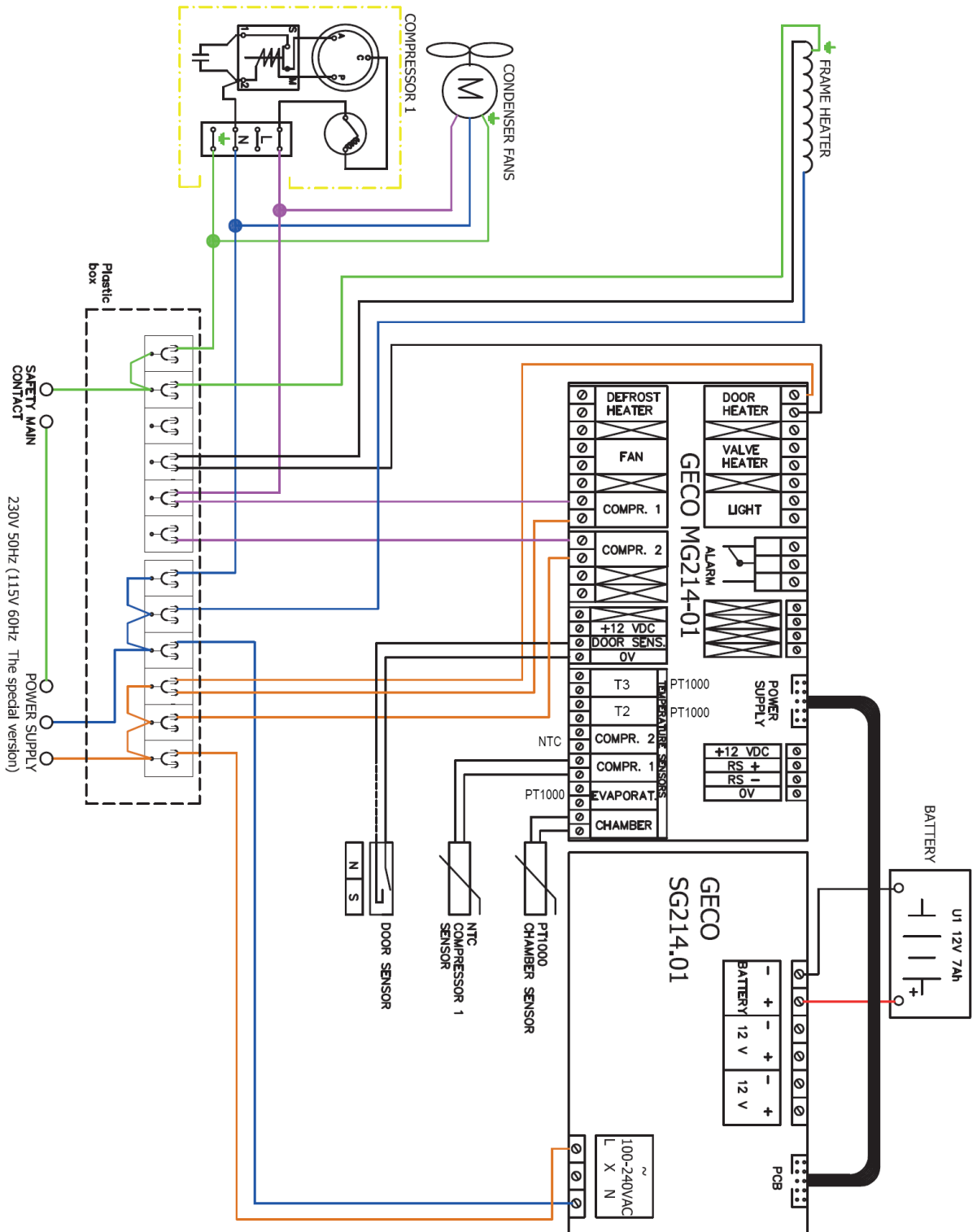


The **Data upload** will be shown in the display when the data is loading to the unit.



The **Transfer complete** will be shown on the display when the loading is finished and the USB pen can be removed from the display.

WIRING DIAGRAM



AFTER SERVICE AND WARRANTY

WARRANTY POLICY

Yamato Scientific America warrants, from the date of shipment from warehouse in Cincinnati, Ohio, 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.

WARRANTY POLICY CONTINUED

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.

Yamato Scientific America Inc.
925 Walsh Ave, Santa Clara, CA 95050
Tel: 1-800-292-6286 / 408-235-7725
<http://www.yamato-usa.com>

For customer service:
Email: customerservice@yamato-usa.com
For technical support:
Email: technical@yamato-usa.com