



**NÜVE SANAYİ MALZEMELERİ İMALAT VE TİCARET A.Ş.**

**TK 120 / TK 252 / TK 600**

**CLIMATIC TEST  
CABINETS**

**USER'S MANUAL**

**CE**

**NÜVE SANAYİ MALZEMELERİ  
İMALAT VE TİCARET A.Ş.**

**Saracalar Mah. Saracalar Kümeevleri No: 4/2**

**Akyurt 06750 Ankara-TURKEY**  
**Tel : (00 90 312) 399 28 30 ( pbx )**  
**Fax : (00 90 312) 399 21 97**  
**TEL: + (32) 2.732.59.54**  
**e-mail: [sales@nuve.com.tr](mailto:sales@nuve.com.tr)**

**WARRANTY CERTIFICATE**

1. Nüve warrants that the equipment delivered is free from defects in material and workmanship. This warranty is provided for a period of two years. The warranty period begins from the delivery date.
2. Warranty does not apply to parts normally consumed during operation or general maintenance or any adjustments described in the operating instructions provided with the equipment.
3. Nüve does not accept any liability in the case where the goods are not used in accordance with their proper intent.
4. The warranty may not be claimed for damages incurred during the shipment, for damages resulting from improper handling or use, the defects in maintenance, negligence, bad functioning of auxiliary equipment, in the case of force majeure or accident and incorrect power supply.
5. In the event of failure, Nüve shall be under no liability for any injury, or any loss or damage as the result of the failure other than the guarantee conditions.

**BEFORE OPERATING THE INSTRUMENT THIS MANUAL SHOULD BE READ CAREFULLY.**

**INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF NÜVE. IT MAY NOT BE DUPLICATED OR DISTRIBUTED WITHOUT HIS PERMISSION.**

**THE VALIDITY OF THE GUARANTEE IS SUBJECT TO THE OBSERVATION OF THE INSTRUCTIONS AND PRECAUTIONS DESCRIBED IN THIS MANUAL.**

# CONTENTS

	PAGE
<b>SECTION 1 USE AND FUNCTION</b>	<b>3</b>
<b>SECTION 2 TECHNICAL SPECIFICATIONS</b>	<b>4</b>
2.1. Technical Specifications Table	4
2.2. Temperature – Humidity Graph	4
2.3. Optional Accessories	5
2.4. General Presentation	5
<b>SECTION 3 INSTALLATION PROCEDURE</b>	<b>6</b>
3.1. Lifting and Transport	6
3.2. Unpacking	6
3.3. Positioning	6
3.4. Prior to Operation	7
3.4.1. Precautions and Limitations of Use	7
3.4.2. Water Filling	7
<b>SECTION 4 OPERATING PRINCIPLES</b>	<b>8</b>
4.1. Switching On	8
4.2. Auxiliary Control Panel	8
4.3. Display and Control Panel	9
4.4. Setting and Operation Cycles	10
4.4.1. Setting the Language, Date and Time	10
4.4.2. Opening	11
4.4.3. Programming	11
4.4.4. Printer Settings	14
4.4.5. Pt 100 display	16
4.4.6. Illumination settings	16
4.5. Completion Of The Operation	17
<b>SECTION 5 PERIODIC MAINTENANCE AND CLEANING</b>	<b>18</b>
5.1. Every Month	18
5.2. Every three Months	18
5.3. Every Year	18
<b>SECTION 6 DISPOSAL MANAGEMENT CONCEPT</b>	<b>18</b>
<b>SECTION 7 TROUBLESHOOTING</b>	<b>19</b>
<b>SECTION 8 ELECTRICAL CIRCUIT DIAGRAMS</b>	<b>22</b>
<b>SECTION 9 LABELS</b>	<b>26</b>

## 1. SECTION

### USE AND FUNCTION

TK Series Climatic Cabinets are developed to simulate real environmental condition by controlling temperature, humidity and lighting cycles. TK Series Climatic Cabinets are used for different sectors such as electric and electronic industry, automobile industry, automobile supply industry, chemical industry, plastic industry, textile industry, pharmaceutical industry, food industry, packaging industry, plant growth, seed germination, incubation and rearing of insects.

TK Series Climatic Cabinets maintain temperatures from  $-10^{\circ}\text{C}$  to  $60^{\circ}\text{C}$  when the lights are off and from  $0^{\circ}\text{C}$  to  $60^{\circ}\text{C}$  when the lights are on, humidity from 20% to 95% for temperature range between  $10^{\circ}\text{C}$  and  $60^{\circ}\text{C}$ . It keeps the temperature and humidity stable within the given tolerances.

The homogeneity of the temperature and humidity is obtained by the help of the circulation fan that is located at the upper part of the chamber.

The chamber is made of stainless steel. Fluorescent lamps, starters and other electrical parts are kept outside of the chamber for easy cleaning of the chamber. The outer body including the door is made of epoxy-polyester powder coated stainless steel to resist high humidity levels.

Heating is carried out by using heaters that are located at the upper back side of the chamber, cooling is carried out by the help of the evaporator which refrigerant gas passes through and the humidifying is carried out by a humidity generator.

The chamber of TK Series Climatic Cabinets is illuminated from one side by the lamps placed inside the door. Lighting can be programmed depending on the requirement separately and two different illumination periods can be programmed. When all the lights are on the light intensity is about 6000 lux  $\pm 10\%$  for TK 120, 12000 lux  $\pm 10\%$  for TK 252 and 13000 lux  $\pm 10\%$  for TK 600.

Temperature and humidity can be observed on the LC display located on the door.

The humidity is measured by the humidity sensor. The temperature is measured by PT-100 sensor. As the advantage of the system, the recovery time is fast and humidity measurement sensitivity is  $1\%$  Rh and temperature sensitivity is  $0.1^{\circ}\text{C}$ . The heating is controlled by PID while cooling is controlled by proportional system.

The control system also contains a comprehensive self-diagnostic system to provide the information regarding any system malfunction. The self-diagnostic system warns the user in case of overheating, heater failure, cooling system failure, low water level, full reserve tank.

**TK Series Climatic Cabinets are manufactured according to EN 61010-1, EN 61000-4-2, EN 50419 and EN 55014-1 standards.**

**This device is in compliance with WEEE Regulation.**

## 2. SECTION

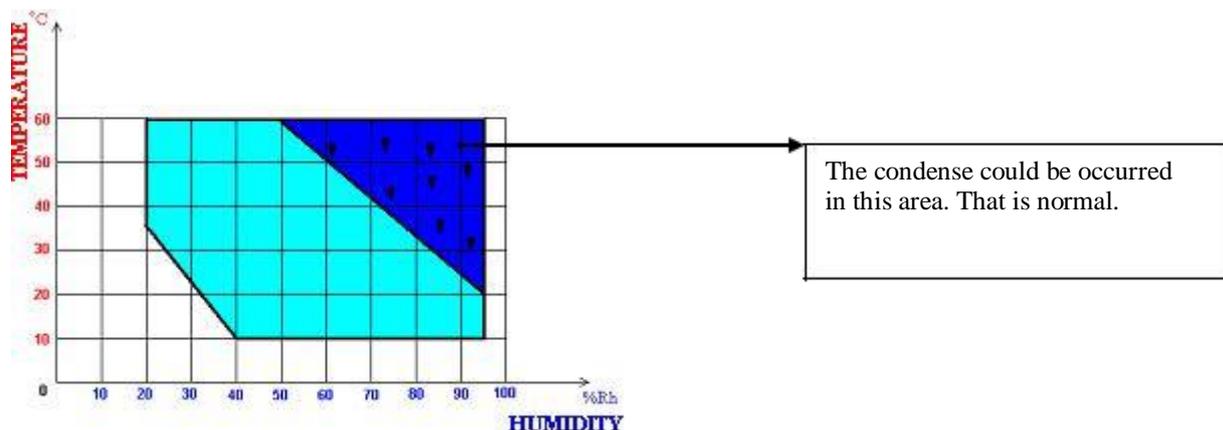
### TECHNICAL SPECIFICATIONS

#### 2.1. Technical Specifications Table

TECHNICAL SPECIFICATIONS	TK 120	TK 252	TK 600
Temperature Range without humidity	-10°C / +60°C (lights off)		
	0°C / +60°C (lights on)		
Temperature Range with humidity	+10°C / +60°C		
Temperature sensor	Pt-100		
Humidity sensor	4 – 20 mA		
Temperature set and reading sensitivity	0.1°C		
Humidity set and reading sensitivity	%1 Rh		
Humidity range (temperature 10°C / 60°C)	%20 - %95 RH		
Program Timer	0 – 999 hours and 59 minutes + Hold position		
Safety Thermostat	Heating: Gas expansion thermostat (0°C – 90°C) Cooling: Pressure switch		
Defrost	Automatic		
Memory	32 Kb		
No of program memory	10		
No of steps	9		
Refrigerant	R 134a		
Useful volume	120 Lt	252 Lt	600 Lt
Internal material	Stainless steel		
Power Consumption	1400 W	2000 W	3000 W
External material	Epoxy-Polyester Powder Coated Stainless Steel		
Power Supply	230V, 50 Hz		
Internal Dimensions	475x540x480	475x540x990	740x650x1315
External Dimensions	675x810x1150	690x820x1855	985x910x1995

\* The ambient temperature should not exceed 22°C for the perfect performance at –10°C

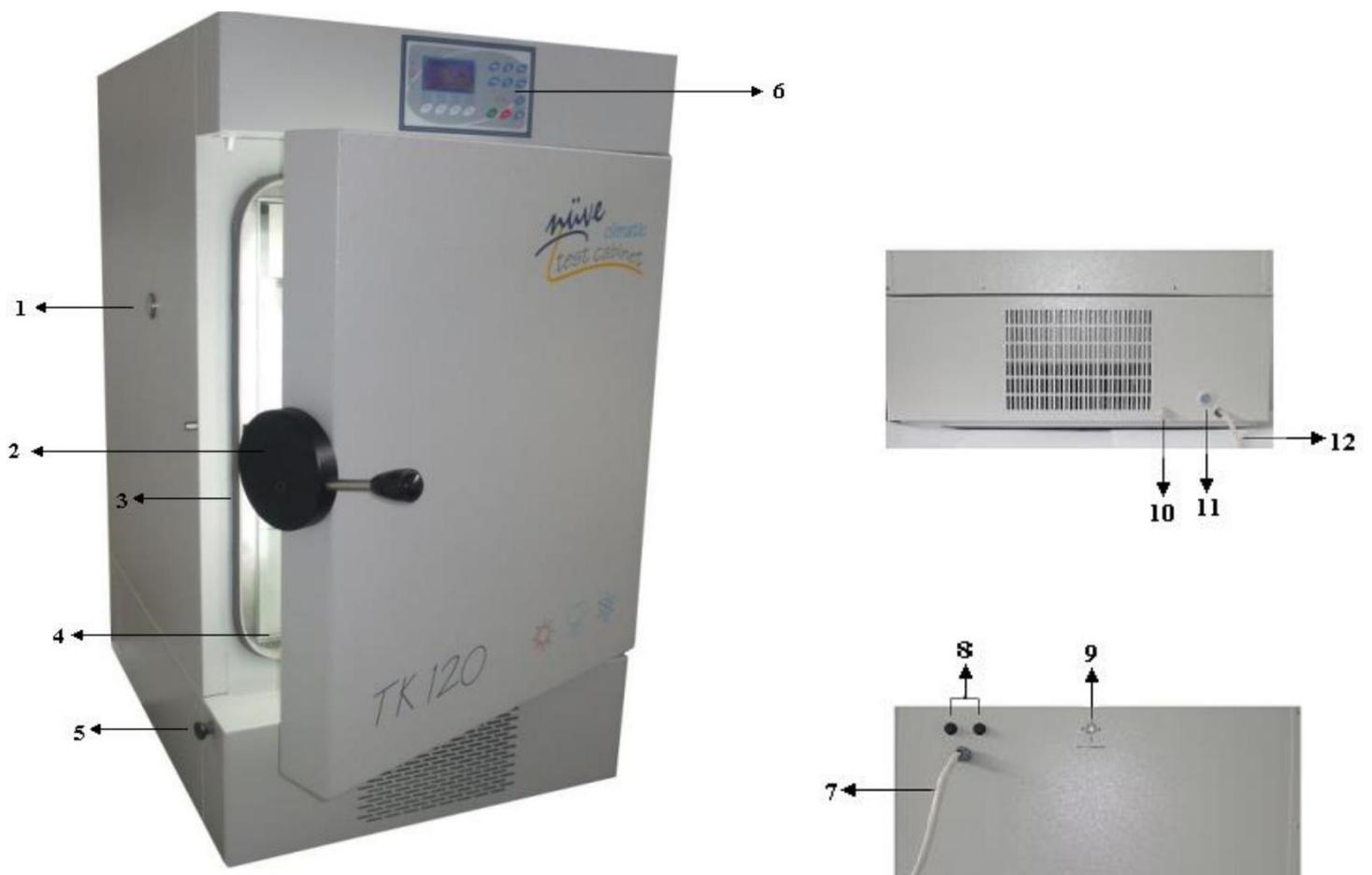
#### 2.2 Temperature – Humidity Graph



## 2.3. Optional Accessories

- A 08 099 Water supply unit
- K 13 018 NuveClimate data control software and RS 232 interface
- E 05 073 256 KB memory
- R 01 139 Shelf for TK 120/252
- K 23 040 Shelf carrier for TK 120/252 (Should be ordered 2 pcs. for each shelf)
- R 01 146 Shelf for TK 600
- K 23 040 Shelf carrier for TK 600 (Should be ordered 2 pcs. for each shelf)

## 2.4. General Presentation



1. External Sensor Hole
2. Door Handle
3. Chamber Gasket
4. Glass Door
5. Water Filling Line
6. Control and Display Panel

7. Main Supply Cable
8. Fuses
9. Safety Thermostat
10. Water Tank Discharge Tap
11. Automatic Water Filling Outlet (Optional)
12. Waste Water Outlet

### **3. SECTION**

#### **INSTALLATION PROCEDURE**

##### **3.1. Lifting and Transport**

All lifting and transport must be carried out by using proper handling equipment. The equipment must be supported from underneath and never be turned over.

##### **3.2. Unpacking**

Remove the packing box and the second nylon packing around the instrument. The below written items are provided with the equipment, please check them;

- User's Manual
- 2 shelves (standard)
- 4 shelf carriers
- Warranty Certificate
- Funnel
- 60 cm. waste water hose

##### **3.3. Positioning**

Check that,

- No damage has occurred during transport.
- The proposed site is suitable for users.
- The operator can follow up the test cabinet easily.
- The test cabinet does not occupy the utilization space of other instruments or does not damage them.
- There is enough space from the cooling unit ventilation. Leave at least 30 cm (50 cm. recommended) on the back side of the instrument.

#### **ATTENTION!!!**

Please pay special attention to the followings,

- Indoor use only
- Room temperature from 5°C to 30°C
- The maximum performance is obtained at the temperature of 22°C and humidity rate of 80%.
- Maximum altitude 2000 m.
- Please make sure that the supplied mains match the required power ratings.
- Always plug the instrument to correctly grounded sockets.
- The height of waste water outlet from ground should not exceed 15 cm.

**A supply fitted with a circuit breaker should be used for protection against indirect contact in case of an insulation fault.**

### 3.4. Prior to Operation

#### 3.4.1. Precautions and Limitations of Use

Check that,

- There is no sample that can harm the chamber surface when heated,
- Liquids that may be dilate or samples that may be melt are not heated in sealed containers,
- The boiling point of the samples are higher than the set temperature,
- The freezing points of the samples are lower than the set the temperature,
- The liquids which may expand during heating do not overflow from their containers,
- The set temperature does not destroy the structure of the samples,
- The vapour and gases which are generated during the operation are not harmful to human health or flammable or explosive,
- Make sure that the safety thermostat is adjusted to the temperatures which are higher than the set temperature,
- The samples are not put on the chamber floor but on the shelves.

#### 3.4.2. Water Filling

For the humidity functions **DISTILLED WATER** should be used in order to protect the materials and the heaters of the instrument. The water filling should make from water filling inlet (see figure) or the optional automatic water supply system can be used.



## 4. SECTION

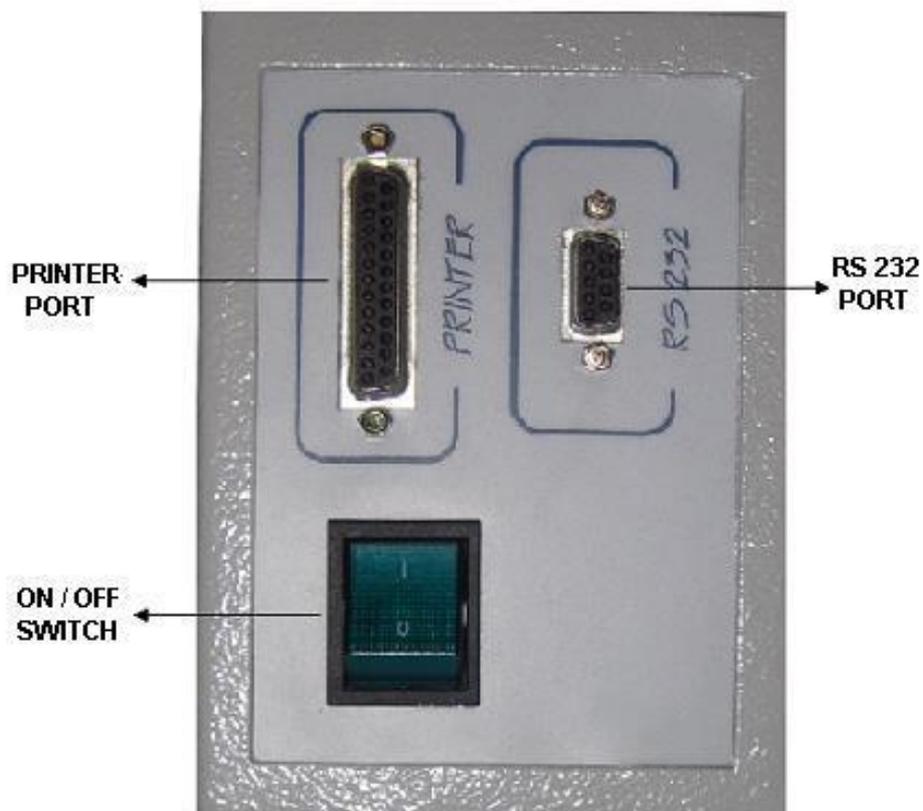
### OPERATING PRINCIPLES

#### 4.1. Switching On

- Turn on the unit by using the On-Off switch (Section 4.2)
- See that display activates.
- Learn the functions of display and control panel (Section 4.3)
- Set the program according to Section 4.3.2 then operate.

**WARNING: WHEN THE TEMPERATURE AND HUMIDITY LEVELS ARE HIGH INSIDE THE CHAMBER, DO NOT OPEN THE DOOR. IT MAY CAUSE BURNS ON HANDS AND FACE.**

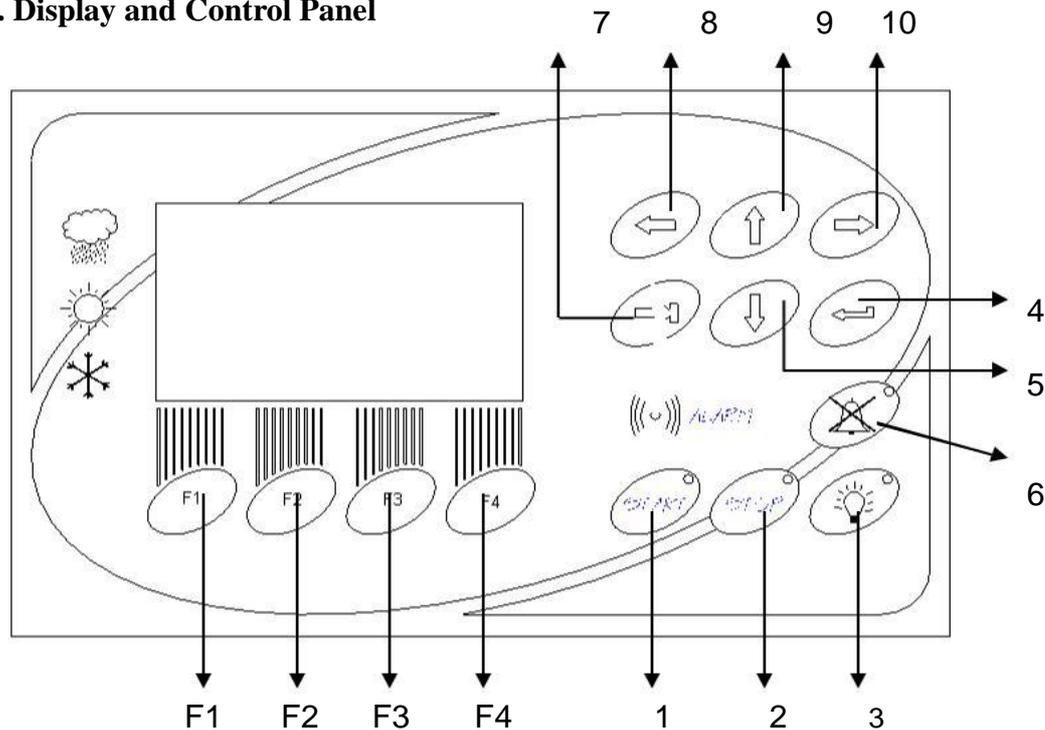
#### 4.2. Auxiliary Control Panel



- **RS 232 PORT (OPTIONAL):** This serial port is used for communicating with PC.
- **PRINTER PORT:** This port is used for dot matrix printer.

**IF THE PRINTER WILL BE USED, MAKE SURE THAT IT IS CONNECTED TO THE PRINTER PORT BEFORE STARTING THE PROGRAM.**

### 4.3. Display and Control Panel



F1, F2, F3, F4: Function keys that are used to perform the functions that correspond to those places.

1. **START KEY:** The program can be started to run by pushing START key. The LED of this key is on during the operation and flashes when the program is completed.
2. **STOP KEY:** It stops the running program manually. The LED of this key is on when the stop key is pressed for 5 seconds and during the stand-by position.
3. **ILLUMINATION CONTROL KEY:** It is used to reach illumination settings page.
4. **ENTER KEY:** It is used to validate and save the parameters during programming.
5. **VALUE DECREASE (↓) KEY:** It is used to decrease the set values in the related display.
6. **ALARM MUTE BUTTON:** It is used to mute the audible alarms. The LED of this key is on when the key is pressed.
7. **TAB KEY:** It is used to pass between the lines of program parameters during programming.
8. **BACK (←) KEY:** It is used to turn back to the previous screen during programming.
9. **VALUE INCREASE (↑) KEY:** It is used to increase the set values in the related display.
10. **NEXT (→) KEY:** It is used to go to the next screen during programming

## 4.4. Setting and Operation Cycles

### 4.4.1. Setting the Language, Date and Time

- Switch on the cabinet.
- While there is “NUVE” logo on the screen, push “F1” to set language, date and time.



- Push “TAB” key to select language.
- Change the value by using “INCREASE” and “DECREASE” keys
- Push “ENTER” key to save the choice.



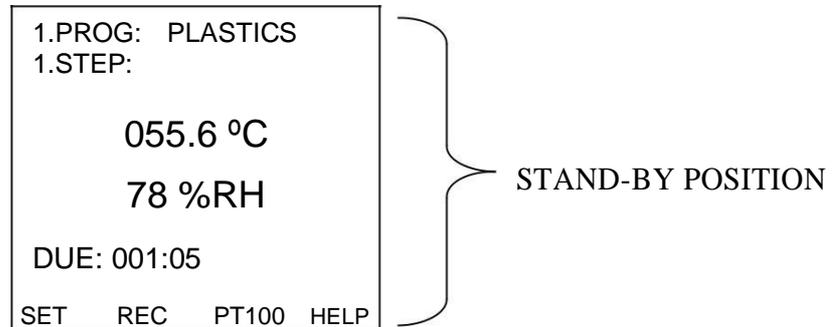
- Push “TAB” key to select language.
- Change the value by using “INCREASE” and “DECREASE” keys
- Push “ENTER” key to save the choice.



After 5 seconds the LCD display goes to stand-by position with a short signal.

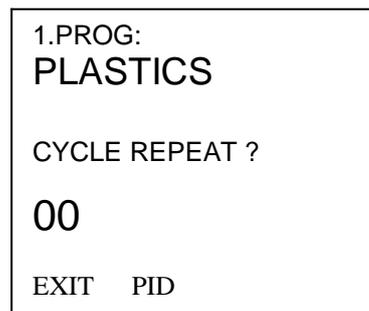
#### 4.4.2. Switching On

- Switch on the cabinet.
- “NUVE” logo will be on the screen for 5 seconds and display will go to stand-by position.



#### 4.4.3. Programming

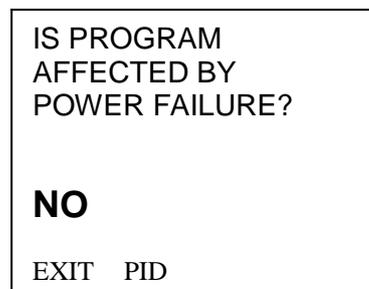
- Push “BACK” and “NEXT” keys to select the program number.
- Push “F1” key to “SET” the program.



The name of the program's name and repetition of cycle number can be selected by using “TAB” key and selected parameter's value can be changed by using “INCREASE – DECREASE” keys. After setting the parameters;

- Save changes to memory by pressing “ENTER” key
- or Pass to the next window without saving the changes by pressing “NEXT” key.
- or Pass to the previous window without saving the changes by pressing “BACK” key.

The next window asks you if the program will keep running or stop in case of power failure. If you choose “YES” it stops the operation, if you choose “NO” it continues the program in case of power failure.



Select by using “TAB” key and selected parameter can be changed by using “INCREASE – DECREASE” keys between “YES” or “NO”. After setting the parameters;

- Save changes in memory by pressing “ENTER” key
- or Pass to the next window without saving the changes by pressing “NEXT” key.
- or Pass to the previous window without saving the changes by pressing “BACK” key.

The next window is the window that you choice the condition of time counting.

TIME STARTS TO  
COUNT BY ?

**START**

EXIT PID

Select by using “TAB” key and selected parameter can be changed by using “INCREASE – DECREASE” keys between “START” or “AFTER SET”. After setting the parameters;

- Save the changes in memory by pressing “ENTER” key
- or Pass to the next window without saving the changes by pressing “NEXT” key.
- or Pass to the previous window without saving the changes by pressing “BACK” key.

The next window asks you if you would like to save the whole process to the memory or not.

SAVE RUNNING  
PROGRAM IN  
MEMORY?

**YES**

EXIT PID

Select by using “TAB” key and selected parameter can be changed by using “INCREASE – DECREASE” keys between “YES” or “NO”. After setting the parameters;

- Save the changes in memory by pressing “ENTER” key
- or Pass to the next window without saving the changes by pressing “NEXT” key.
- or Pass to the previous window without saving the changes by pressing “BACK” key.

The next window asks you if you will use humidity during the process or not.

IS HUMIDITY USED  
WHEN PROGRAM IS  
RUNNING ?

**YES**

EXIT PID

Select by using “TAB” key and selected parameter can be changed by using “INCREASE – DECREASE” keys between “YES” or “NO”. After setting the parameters;

- Save the changes in memory by pressing “ENTER” key
- or Pass to the next window without saving the changes by pressing “NEXT” key.
- or Pass to the previous window without saving the changes by pressing “BACK” key.

The next window permits to adjust the temperature and humidity alarm periods.

ALARM PERIODS	
TEMPERATURE	10 °C
HUMIDITY	20 %RH
EXIT	PID

Select by using “TAB” key and selected parameter can be changed by using “INCREASE – DECREASE” keys. After setting the parameters;

- Save the changes in memory by pressing “ENTER” key.
- or Pass to the next window without saving the changes by pressing “NEXT” key.
- or Pass to the previous window without saving the changes by pressing “BACK” key.

The temperature alarm period can be adjusted between 2°C and 10°C. The humidity alarm period can be adjusted between 5% and 20% RH. (For example temperature alarm period is chosen 2°C and if the temperature exceeds  $\pm 2^\circ\text{C}$ , the alarm will be seen on the display. ‘!’ will blink in front of temperature value.)

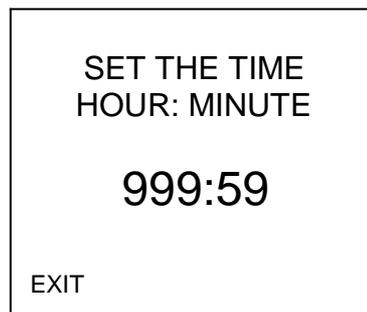
The next window permits to adjust the temperature and humidity values.

1 STEP:
TEMPERATURE
040.6 °C
HUMIDITY
78 %RH
EXIT

“STEP NO” can be adjusted between 1 and 9, “TEMPERATURE” can be adjusted between - 20°C and 60°C, and “HUMIDITY” can be adjusted between 20% RH and 95% RH. The parameters are selected by using “TAB” key and selected parameter can be changed by using “INCREASE–DECREASE” keys. After setting the parameters;

- Save the changes in memory by pressing “ENTER” key
- or Pass to the next window without saving the changes by pressing “NEXT” key.
- or Pass to the previous window without saving the changes by pressing “BACK” key.

The next window permits to set the time.



“TIME” can be adjusted between 0 to 999 hours 59 minutes or as “HOLD” position. At “HOLD” position, program works until the stop key pressed manually. The parameters are selected by using “TAB” key and selected parameter can be changed by using “INCREASE – DECREASE” keys. After setting the parameters;

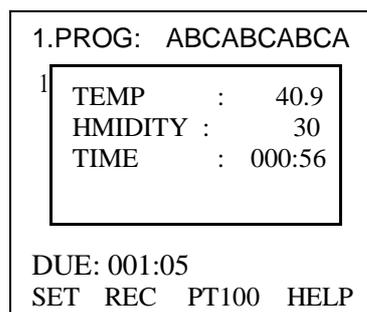
- Save the changes in memory by pressing “ENTER” key
- or Pass to the next window without saving the changes by pressing “NEXT” key.
- or Pass to the previous window without saving the changes by pressing “BACK” key.

The next window shows the temperature and humidity values of the next step to set. After setting the parameters of the 9<sup>th</sup> step if the “ENTER” or “NEXT” key is pressed the window returns to the stand-by position.

Every program has 9 steps, only the program zero has 1 step.

If you would like to leave the programming press “F1” button below “EXIT” on the display at any time when “EXIT” appears.

After setting the program as explained, press “START” key to start operation. While the program is running it is possible to observe the set value of the relevant step on the display by pressing “F1” below the “SET” expression.



The observation window returns by pressing this key again.

**Note:** For 9-step programs, you can provide to pass any step without working when you set the time of that step as “0” but you should enter the time of the first step.

#### 4.4.4. Printer Settings

While the window is on stand-by position, if you press “F2” key below “REC” expression to reach printer settings the window below will be displayed.

```
YOU CAN PRINT
PREVIOUS PROGRAM
OR
ADJUST PRINTING
SETTINGS

PREV  PRNT  EXIT
```

Press “F1” key that corresponds to “PREV” expression the window below will be displayed.

```
1.Prog:  19/01/06  11:30

CONNECT THE PRINTER
THEN PRESS F1 TO
START

START      SET  EXIT
```

Press “F3” key below “SET” expression you observe the following window.

```
LOGGING INTERVAL

      01 MIN

EXIT
```

Logging interval can be selected by using “TAB” key and the value can be changed between 1 minute and 60 minutes by using “INCREASE – DECREASE” keys. After adjusting the parameter, you can save the changes to memory by pressing “ENTER” key. You will see the previous window again.

```
1.PROG:  PLASTICS

PRESS F2 TO STOP
PRINTING

STOP  SET  EXIT
```

You can stop printing by pressing “F2” key below “STOP” expression. Then following window appears,

```

1.PROG:  PLASTICS

      PRINTING
      STOPPED

START          SET  EXIT

```

On this window, press “F1” key to start printing or press “F3” key to set the printing interval or press “F4” key to turn back previous window.

**4.4.5. PT 100 Display:** While PT-100 expression is present above “F3” key, it is possible to observe the temperature of PT-100 sensors on the display after pressing the “F3” key.

```

PT-CHAMBER°C  PT-RH°C
  24.8°C       22.1°C

                EXIT

```

Press F3 button to turn back to the previous window.

#### 4.4.6. Illumination Settings

When the illumination control key on the control panel is pressed during stand-by position or while the program is running the following window appears on the LC display,

```

      WELCOME TO
      ILLUMINATION CONTROL

      LIGHT IS OFF

START          SET  EXIT

```

Press “F3” key that corresponds to “SET” expression the window below will be displayed.

```

TIME 1
  START 00:00
  STOP  00:00  OFF

TIME 2
  START 00:00
  STOP  00:00  OFF

DOOR OPEN      OFF
                EXIT

```

Above window, which allows adjustment of 5 pieces of the lamp at the door and have been symbolized by the “TIME 1” and “TIME 2”, is opened. “TIME 1” and “TIME 2”; At different times during the day to arrange the lighting to be active provides the starting and ending time periods.

By using “TAB” key and “VALUE INCREASE-DECREASE” keys the start and stop periods are set as a daily period that uses the real time clock of the instrument and “ENTER” key is pressed to save the settings for each page. ‘ON’ is chosen to light on the lamps, ‘OFF’ is chosen to light off the lamps.

The same adjustments are performed for the “TIME 2”.

The illumination can be activated when the door open. ‘ON’ is chosen to light on the lamps, ‘OFF’ chosen to light off the lamps.

After programming, the illumination can be activated by using the “F1” key below ‘START’ expression and can be quitted from the illumination setting menu by using the “F4” key below the ‘EXIT’ expression.

The program and illumination can be performed separately.

**WARNING:** If the illumination is at “START” position, date and time can not be changed.

#### **4. 5. Completion of the Operation**

- See that the program is over.
- If the printer was used during the run and if there is no need to print stand-by values stop printing. (see 4.4.4)
- Take the samples out. Be careful while handling the samples after the operation as they can be very hot or cold.
- Wipe the chamber surface if needed while the chamber is at room temperature.
- You may leave the equipment at the stand-by position or switch it off.

**WARNING: DO NOT OPEN THE DOOR WHEN THE TEMPERATURE AND HUMIDITY LEVELS ARE HIGH INSIDE THE CHAMBER. THIS MAY CAUSE BURNS ON HANDS AND FACE.**

## 5. SECTION

### PERIODIC MAINTENANCE

Protect the chamber against rust coming from outside.

#### 5.1. Every Month

Cleaning

- Clean the chamber while it is at room temperature, after unplugging the equipment.
- After removing the shelves, wipe down the chamber surface to remove any undesirable effects of the operations.
- Mild detergent use is recommended to remove difficult dust and dirt.
- Please be aware of the undesirable effects of the chemicals and be careful while applying them.

**WARNING: DO NOT SPRAY WATER OR OTHER LIQUIDS DIRECTLY ON ANY PART OF EQUIPMENT. OTHERWISE THIS MAY CAUSE SERIOUSLY ELECTRICAL DAMAGE.**

#### 5.2. Every Three Months

The cooling performance decreases if the condenser is dusty. Clean the condenser by vacuum machine quarterly. (The period depends on the operating hours of the equipment and the dust level of the working place.)

**Note:** In order to clean the condenser; open the right and left cover sheet with the key.

**WARNING: SPRAYING WATER OR OTHER LIQUIDS DIRECTLY MAY CAUSE SERIOUS DAMAGES.**

#### 5.3. Every Year

The electrical and mechanical components are extremely reliable and do not need periodic maintenance. It is advisable to be checked the temperature and humidity calibrations, the cooling system performance, alarm system's reliability by authorized technicians once a year.

## 6. SECTION

### DISPOSAL MANAGEMENT CONCEPT

The currently valid local regulations governing disposal must be observed. It is in the responsibility of the user to arrange proper disposal of the individual components. Applicable local regulations for disposal have to be carefully observed.

The instruments and electronic accessories (without batteries, power packs etc.) must be disposed off according to the regulations for the disposal of electronic components.

Batteries, power packs and similar power source have to be dismantled from electric/electronic parts and disposed off in accordance with applicable local regulations.

## 7. SECTION

### TROUBLESHOOTING

If the instrument fails to operate, check the followings:

- The plug is plugged-in properly,
- The on / off switch is on,
- The plug is not defective,
- The mains supply is present.
- Fuses are sound,
- The installation of the plug is not defective,

If the instrument does not heat, check the followings:

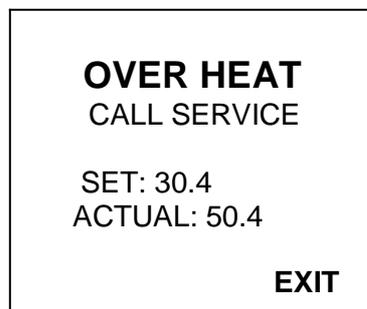
- The program is started,
- The safety thermostat is adjusted to a temperature higher than set temperature.
- Temperature value is set correctly.
- The chamber is not overloaded.
- The door is closed properly.
- The ambient temperature is suitable.

If the instrument does not reach the set humidity level, check the followings:

- The set value is set correctly.
- The chamber is not overloaded.
- The door is closed properly.

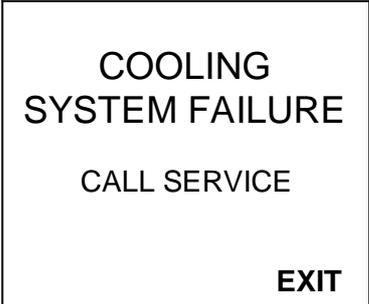
### Errors Recognised By The Control System

**Over heat:** If the temperature inside the chamber exceeds the set temperature over 20°C “!” warning appears beside the temperature value. In this case, press “F4” key that corresponds to “HELP” the expression to see explanation of the error.



The window turns back to stand-by position if you wait for 15 seconds or press “F4” key that corresponds to “EXIT” expression.

**Cooling failure:** While the program is running, if the compressor is failed or there is a problem about the cooling system “!” warning appears beside the temperature and humidity value. In this case you press “F4” key that corresponds to “HELP” expression to see the explanation of the error.



The window turns back to stand-by position if you wait for 15 seconds or press “F4” key that corresponds to “EXIT” expression.

**Communication error:** If there is a problem about the communication between the display and main PCB, “COMMUNICATION ERROR” appears on the display.



The window turns back to stand-by position as soon as the problem is overcome.

**Power failure:** If the setting ‘IS PROGRAM AFFECTED BY POWER FAILURE?’ is set as ‘YES’ during programming, the program is cancelled because of the power failure and “POWER FAILURE” warning appears on the display after the electricity comes back.



If the “STOP” key is pressed the window turns to stand-by position.

**Broken sensor:** In any position if the temperature sensor endings are broken or loose “SBR” appears on relevant sensor’s value. In this case you press F4 key that corresponds to HELP expression to see the explanation of the error.



The window turns back to stand-by position if you wait for 15 seconds or press “F4” key that corresponds to “EXIT” expression.

**Water is insufficient:** If the water level inside the reserve tank is at minimum level “!” warning appears beside the humidity value. In this case, press “F4” key that corresponds to “HELP” expression to see the explanation of the error.

WATER IS  
UNINSUFFICIENT

ADD DISTILLED  
WATER

EXIT

The window turns back to stand-by position if you wait for 15 seconds or press “F4” key that corresponds to “EXIT” expression.

**Water tank is full:** If the water level of the water tank reaches to its maximum level, this warning appears. In this case you press “F4” key that corresponds to “HELP” expression to see the explanation of the error. If you see this warning, stop the water filling.

WATER TANK  
FULL

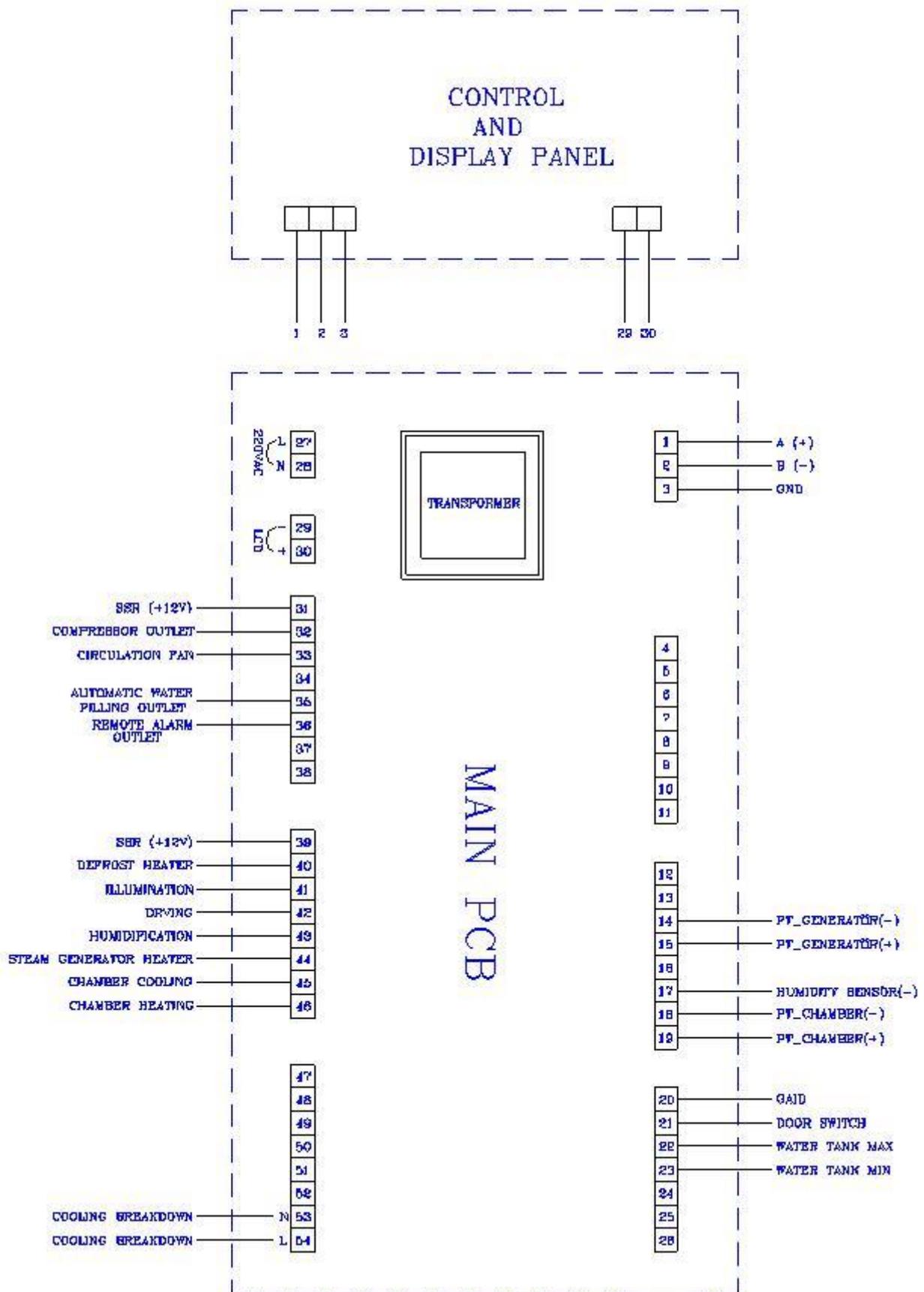
HUMIDITY OFF

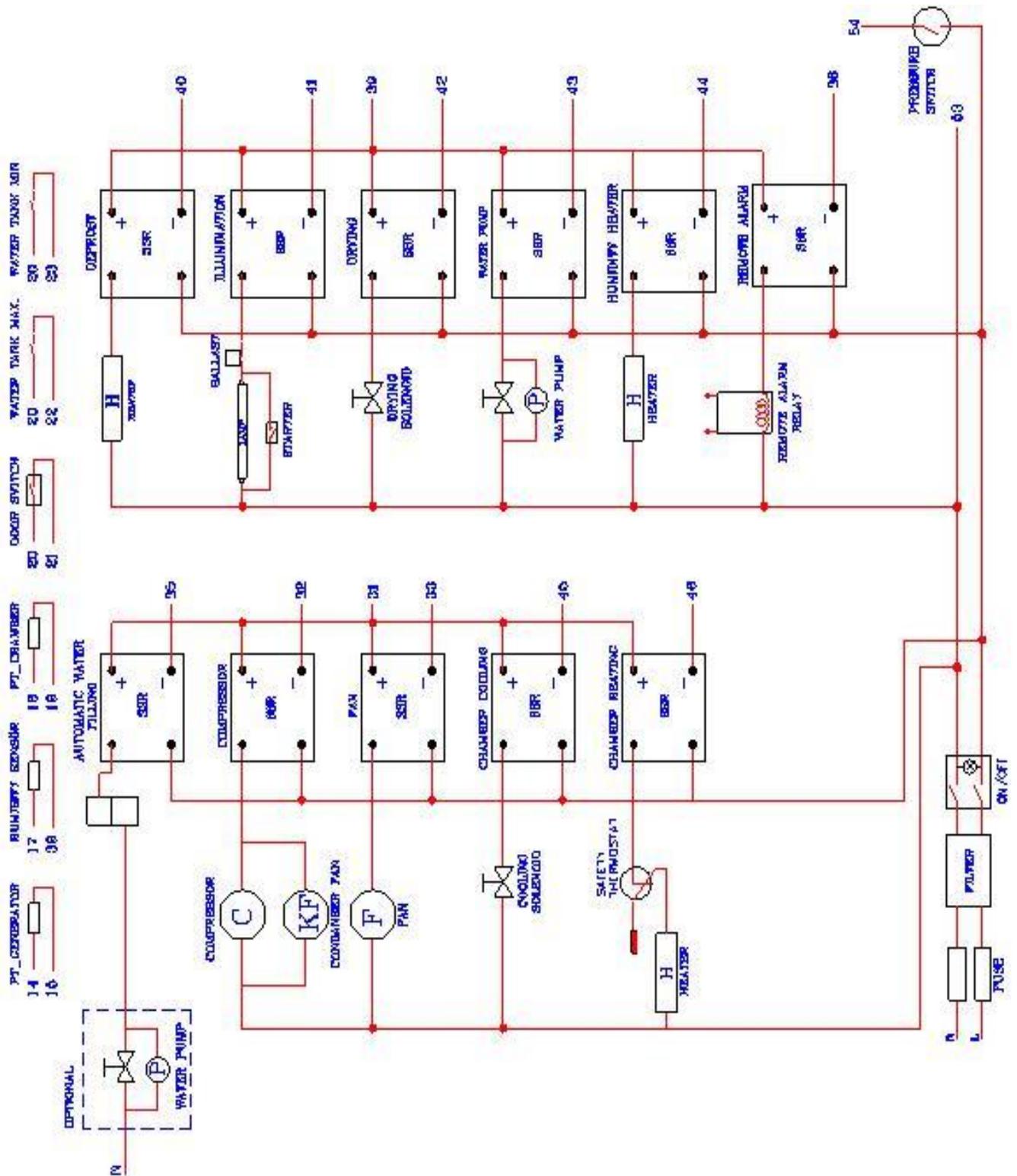
EXIT

The window turns back to stand-by position if you wait for 15 seconds or press “F4” key that corresponds to “EXIT” expression.

**PLEASE CALL AN AUTHORISED NUVE SERVICE FOR THE ERRORS**

## 8. SECTION ELECTRICAL CIRCUIT DIAGRAMS







## 9. SECTION

### LABELS

