NÜVE SANAYİ MALZEMELERİ İMALAT VE TİCARET A.Ş.

EN 032/EN 055/EN 120

INCUBATORS

INSTRUCTION MANUAL

CE

Z14.K25 230 Rev.No: 03 Rev.Date: 01/2016

Dear Nüve User,

We would like to take this opportunity to thank you for preferring this Nüve product. Please read the operating instructions carefully and keep them handy for future reference.

Please detain the packing material until you see that the unit is in good condition and it is operating properly. If an external or internal damage is observed, contact the transportation company immediately and report the damage. According to ICC regulations, this responsibility belongs to the customer.

While you are operating the instrument please;

1. obey all the warning labels,
2. do not remove the warning labels,
3. do not operate damaged instrument,
4. do not operate the instrument with a damaged cable,
5. do not move the instrument during operation.

In case of a problem contact your Nüve agent for an authorized service or maintenance.

The validity of the guarantee is subject to compliance with the instructions and precautions described in this manual.

Nüve reserves the right to improve or change the design of its products without any obligation to modify previously manufactured products.

NÜVE
SANAYİ MALZEMELERİ
İMALAT VE TİCARET A.Ş.

Saracalar Mahallesi, Saracalar Kümeevleri No:4/2 Akyurt 06750 ANKARA
Ankara / TURKEY
Tel : (90.312) 399 28 30 (pbx)
Fax : (90.312) 399 21 97
Sales : sales@nuve.com.tr
Technical Service: service@nuve.com.tr

WARRANTY CERTIFICATE

1. Nüve warrants that the equipment delivered is free from defects in material and workmanship. This warranty is given 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 instrument.
3. Nüve does not accept any liability in 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, abuse, fire, liquid spillage, tampering or unauthorized repairs by any persons, use of defective or incompatible accessories, exposure to abnormally corrosive conditions, use of the product in non-standard environmental conditions, including but not limited to failure to meet requirements of ambient temperature, lubrication, humidity or magnetic field influences, from the defects in maintenance, negligence, bad functioning of auxiliary equipment, in the case of force majeure or accident and incorrect power supply.
5. Any injury, loss or damage caused; due to a failure resulting from negligence of the instructions given in this manual; is beyond the scope of the warranty conditions.

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

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

PLEASE REGISTER ONLINE TO VALIDATE YOUR WARRANTY:

To register your warranty online, please visit our webpage **www.nuve.com.tr** and fill in the **"Warranty Registration Form"**.

CONTENT

	Page
CONTENT	4
1. INTRODUCTION	5
1.1. USE AND FUNCTION	5
2. TECHNICAL SPECIFICATIONS	6
2.1. TECHNICAL SPECIFICATIONS TABLE	6
2.2. OPTIONAL ACCESSORIES	6
3. PRECAUTIONS AND LIMITATIONS ON USE	7
4. SYMBOLS	7
5. INSTALLATION	8
5.1. ENVIRONMENTAL CONDITIONS	8
5.2. HANDLING AND TRANSPORTATION	8
5.3. UNPACKING	8
5.4. MAINS SUPPLY	8
5.5. POSITIONING	8
5.6. GENERAL PRESENTATION	9
5.7. CONTROL PANEL	10
5.8. PRIOR TO OPERATION	10
6. OPERATING PRINCIPLES	11
6.2. COMPLETION OF THE WORK	12
7. PERIODIC MAINTENANCE AND CLEANING	12
7.1. PERIODIC MAINTENANCE	12
7.2. CLEANING	12
8. DISPOSAL MANAGEMENT CONCEPT	12
9. TROUBLESHOOTING	13
9.1. ERROR CODES	13
9.2. FUSE REPLACEMENT	13
10. ELECTRICAL CIRCUIT DIAGRAM	14
10.1. ELECTRICAL CIRCUIT DIAGRAM FOR EN 032	14
10.2. ELECTRICAL CIRCUIT DIAGRAM FOR EN 055 AND EN 120	14

1. INTRODUCTION

1.1. USE AND FUNCTION

The EN 032 incubator is designed to provide excellent incubation conditions for applications in biology and microbiology laboratories such as medical and veterinary fields; research and quality control examinations in pharmaceutical, food and cosmetics industries and biotechnology.

The incubator provides temperature range between the ambient temperature plus 5°C and 80°C and keeps temperature stable within given tolerances. EN 32 incubators have timer which can be programmed up to 99.9 hours including hold position and the incubators stop to operate after the set time is completed. Cross contamination risk is minimized by means of natural air circulation.

Stable and homogeneous temperature in the useful volume is provided by means of the forced air circulation through the stainless steel heaters placed onto the three outer surface of the useful volume.

The insulation proportional to the dimensions of the incubator not only provides a homogenous temperature distribution but also makes the operation of incubator economics. The incubator ensures reliable working conditions by the programmable microprocessor with high control accuracy. Adjustable safety thermostat offers an additional safety for your operations.

The EN 032 Incubators are manufactured according to the following standards
EN 61010-1, EN 61010-2-010, EN 61000-6-3, EN 50419, DIN 12880.

This device is in compliance with WEEE Regulation.

If mentioned warnings in this manual are not considered, NUVE will not be responsible from their results.

2. TECHNICAL SPECIFICATIONS

2.1. TECHNICAL SPECIFICATIONS TABLE

TECHNICAL SPECIFICATIONS	EN 032	EN 055	EN 120
Temperature Range	Ambient Temperature +5°C / 99.9°C		
Temperature Sensor	Fe-const		
Temperature Control System	Programmable Microprocessor PID		
Temperature Set and Display Sensitivity	0.1°C		
Temperature Variation (*at 37°C)	<± 0.5°C		
Temperature Variation (*at 56°C)	<± 1 °C		
Temperature Fluctuation (*at 37°C)	± 0.1°C		
Temperature Fluctuation (*at 56°C)	± 0.2°C		
Timer	1 minute-99.9 hours / Hold position		
Safety System	Safety Thermostat (0°C– 90°C)		
Useful Volume (liter)	32	55	120
Number of shelves (standard/maximum) pcs.	2/6	2/7	2/10
Power Consumption	300 W	350 W	400 W
Power Supply	230 V, 50/60 Hz.		
Internal Material	Stainless Steel		
External Material	Epoxy-polyester painted steel		
Internal Dimensions (W x D x H) mm	330 x 300 x 335	420 x 370 x 365	500 x 480 x 500
External Dimensions (W x D x H) mm	565 x 500 x 685	645 x 560 x 710	730 x 670 x 850
Packing Dimensions (W x D x H) mm	670x600x920	720 x 650 x 930	800 x 750 x 1070
Net / Packed Weight (kg)	38 / 42	46/49	57/66

*Closed ventilation hole, at 22°C ambient temperature

2.2. OPTIONAL ACCESSORIES

K 23 049 Shelf carrier (EN 032)
K 23 048 Shelf carrier (EN 055)
K 23 040 Shelf carrier (EN 120)
R 01 132 Mesh type shelf (EN 032)
R 01 127 Mesh type shelf (EN 055)
R 01 031 Mesh type shelf (EN 120)

☞ Shelf carriers should be ordered two pcs. for each shelf.

3. PRECAUTIONS AND LIMITATIONS ON USE

The user shall pay attention to the following:

- Do not operate the instrument for purposes other than its main purpose.
- The instrument should only be used by authorized and trained stuff after the instruction manual has been read carefully. Only authorized technical stuff can handle the product in case of a failure.
- Correctly grounded power supply should be used.
- Only original spare parts and original accessories supplied by Nüve should be used.
- There should not be any material that can damage to the device in the chamber.
- In necessary cases, the ventilation hole should be opened to discharge the gases and the vapors occurring during heating.
- The set temperature should not destroy the structure of the samples.
- Liquids are not heated in sealed containers.
- The boiling points of the samples should be higher than the set temperature.
- Liquids which may expand during heating should not overflow from their containers.
- The safety thermostat should be adjusted to the temperatures higher than the set temperature.
- Check that the vapors and gases generated during the operation are not harmful to human health and flammable or explosive.

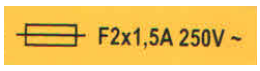
4. SYMBOLS

	Symbol in the operating instructions: Attention, general hazard area. This symbol refers to safety relevant warnings and indicates possibly dangerous situations. The non-adherence to these warnings can lead to material damage and injury to personal.
	Symbol in the operating instructions: This symbol refers to important circumstances.

Labels on the device:

Hot Surface

Topraklı Priz



EN 032 Fuses

(2x1,5 A)

EN 055 Fuses

(2 x 2 A)

EN 120 Fuses

(2 x 3 A)

5. INSTALLATION

5.1. ENVIRONMENTAL CONDITIONS

The instrument is design to operate safely under the following conditions:

- Indoor use only
- Ambient temperature: 5°C to 40°C
- Maximum relative humidity for temperature up to 22°C: 80%
- Maximum altitude: 2000 m
- Temperature for maximum performance: 15°C / 25°C

The instrument is designed to operate in 20°C (±5°C) laboratory conditions. The efficiency of the unit may decrease if the ambient temperature exceeds the limits.

5.2. HANDLING AND TRANSPORTATION

All handling and transportation must be carried out by using proper equipment and experienced staff. The instrument must be supported underneath and never be turned upside down.

5.3. UNPACKING

Remove the cardboard box packing and the second nylon wrapping around the instrument. The below mentioned are provided with the instrument, please check them;

- 1 ea. user's manual and warranty
- 1 ea. electrical connection cable
- 2 ea. shelves
- 4 ea. shelf carriers

5.4. MAINS SUPPLY

The instrument requires 230V, 50/60 Hz.

Please make sure that the supplied mains matches the required power ratings which are written on the name of plate of the instrument located at the back of the incubator.

Always plug-in the instrument to correctly grounded sockets.

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

5.5. POSITIONING

- Check that no damage has occurred during transportation.
- Check that the positioning is suitable for the users.
- Check that the instrument is stable on its four feet. If necessary, provide stable standing by adjusting the pedestal heights.
- Check that the user will be able to follow up the operation even when he deals with something else.
- Check that the positioning of the device prevents interference with other equipment in the near surrounding.

- Leave at least 20 cm free space between the equipment and wall.

5.6. GENERAL PRESENTATION

Figure 1

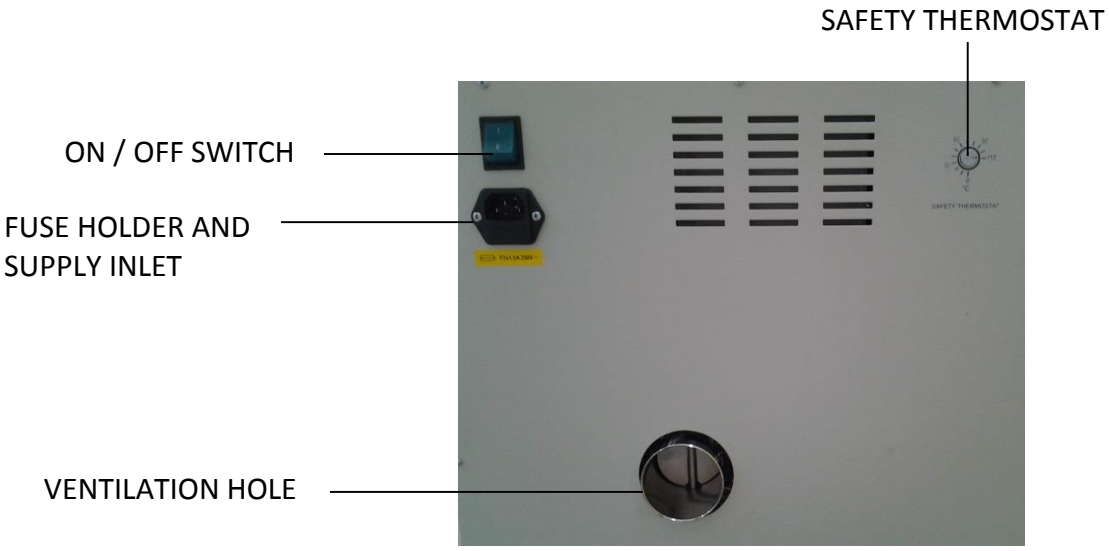


Figure 2

5.7. CONTROL PANEL

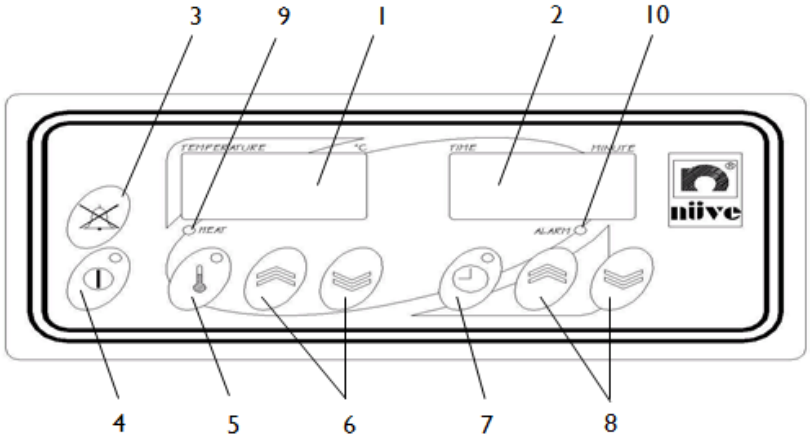


Figure 3

1- **Heating Process Display:** This display shows the chamber temperature during the operation and the set temperature value during programming. The error codes are also shown on this display.

2- **Time Display**: This display shows the elapsed time during the operation and the set time value during programming.

3- **Alarm Mute Key**: It is a button used to mute the audible alarm in case of error and the completion of operation time.

4- **Start / Stop Key**: This key is pushed to start the program or to stop the running program manually.

5- **Temperature Set Key**: This key is used to adjust the temperature value.

6- **Temperature Value Increase and Decrease Keys**: These keys are used to increase or decrease the values on the temperature display.

7- **Time Set Key**: This key is pushed to set the time. (1 minute – 99.9 hours and Hold position).The each decimal point shows 6 times of the minute. (Ex. 17.5 = 17 hours 30 minutes)

8- **Time Value Increase and Decrease Keys**: These keys are pushed to increase or decrease the values on the time display.

9- **Heat Led**: This led flashes during heating process.

10- **Alarm Led**: It is a lamp flashing when the program ends and when any failure occurs during the operation.

5.8. PRIOR TO OPERATION

- Push the On/Off switch. See that the on/off lamp is turn on.
- See that the microprocessor control system activates.
- Learn the function of the control panel (See 5.7).
- Check that the safety thermostat value is higher than the set temperature.

At most 70% of the surface area of the shelves should be used in order to obtain a uniform temperature distribution.	

6. OPERATING PRINCIPLES

6.1. PROGRAMING

	Push the temperature set key.
	Set the temperature by pushing the value increase and decrease keys on the temperature adjustment side.
	Push the temperature set key again to save the temperature value settings.
	Push the time set key.
	“t ın” will appear on the temperature display. Set the time value by pushing the value increase and decrease keys on the time adjustment side. (1 minute to 99.9 hours, Hold)
	Push the time set key again to save the set values.
	“dly” will appear on the temperature display. Set the delay time, after which the program starts, by pushing the value increase and decrease keys on the time display (1 minute to 99.9 hours or Hold)
	Push the time set key again to save the settings.
	Push the start / stop key to start the program.

☞	The timer starts to count after the device reaches the set temperature.

Before operation starts, check that the safety thermostat value is higher than the temperature set value.

6.2. COMPLETION OF THE WORK

- Observe that the program is over.
- Stop the operation by pushing the “start/stop” button.
- Take the samples out.
- You may leave the incubator at the stand-by position or switch it off.

If the instrument is in START position in case of the open door, it will keep operating and the heaters will be over-heated. Therefore, the heaters and other components may be defected. Please be careful.

Be careful while handling the samples after the operation as they can be hot.

7. PERIODIC MAINTENANCE AND CLEANING

7.1. PERIODIC MAINTENANCE

The incubator does not require any periodical maintenance.

7.2. CLEANING

- Clean the incubator and at room temperature after disconnecting the power cable.
- Clean the incubator with a wet cloth to remove dirt and dust.
- Use liquid detergent to remove tough dirt.
- Take precautions handling chemical cleaners. Please be aware of the undesirable effects of the chemicals and be careful while applying them.
- Check the external condition of the device regularly and ensure any rust spots that may develop are removed.

8. 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.

All parts which may comprise potentially infectious materials have to be disinfected by suitable validated procedures (autoclaving, chemical treatment) prior to disposal. 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 dismounted from electric/electronic parts and disposed off in accordance with applicable local regulations.

9. TROUBLESHOOTING

If the incubator fails to operate, check the followings,

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

If the incubator does not heat, check the followings,

- The program is started.
- The safety thermostat value is adjusted higher than set temperature value.

9.1. ERROR CODES

In case of failure during the operation, the alarm is activated and the following error codes appear on the temperature display.

OFL: The chamber temperature is higher than 105 °C or the temperature sensor endings are broken. Turn the device off and contact to the authorized service.

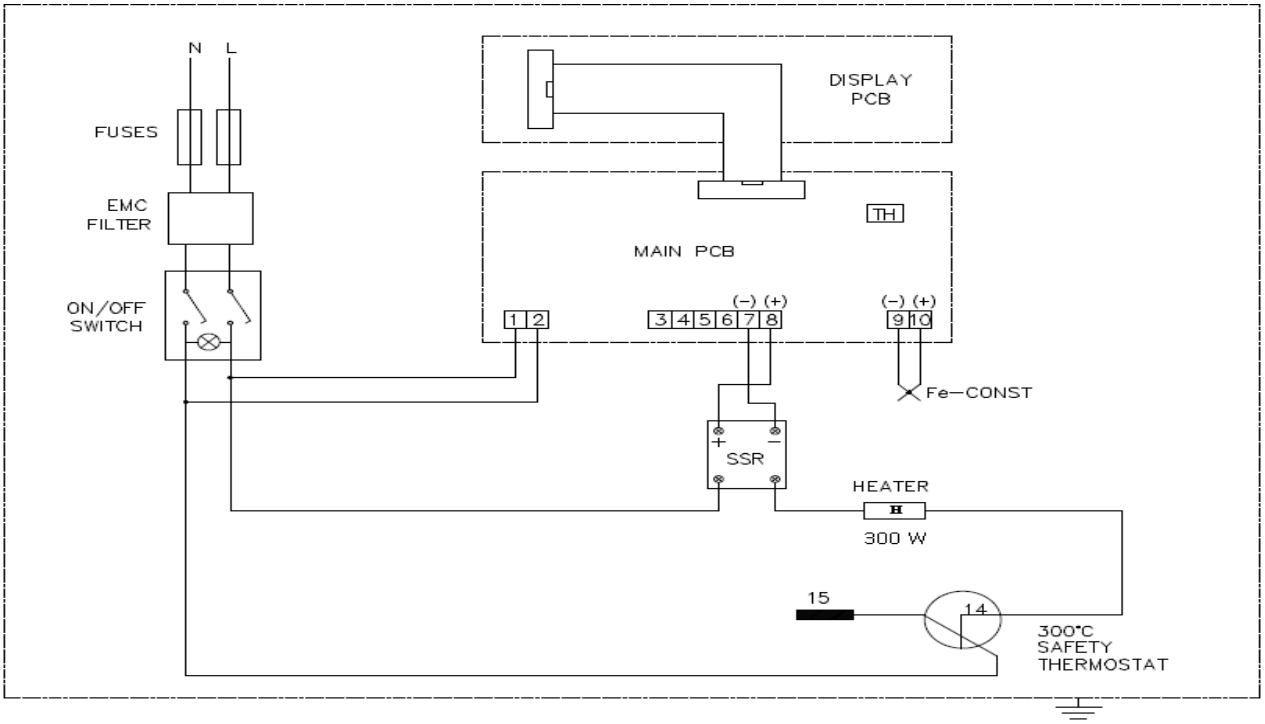
If an error occurs, please contact to an authorized Nüve agent to seek technical help.

9.2. FUSE REPLACEMENT

The fuses shall be always be replaced by the authorized personnel.

10. ELECTRICAL CIRCUIT DIAGRAM

10.1. ELECTRICAL CIRCUIT DIAGRAM FOR EN 032



10.2. ELECTRICAL CIRCUIT DIAGRAM FOR EN 055 AND EN 120