

# PROMETHEUS

## PRO7/PRG CE

### Multi-Functional Kiln Instruction Guide

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Thank you for preferring **PROMETHEUS** Kilns. Our kilns are designed to give you best service for many years.

**Please read this Instruction Guide carefully.** This will answer your many questions to provide you the most enjoyment from your kiln without damaging your kiln and harming yourself.

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##### (1) TECHNICAL SPECIFICATIONS:

<b>Volts:</b>	230 V
<b>Amps:</b>	8,50 A
<b>Watts:</b>	1950W
<b>Temp. Control:</b>	8 Step, Digital
<b>Max. Temp:</b>	1150 °C
<b>Outer Dimensions:</b>	36.3 cm(W).x 37.4 cm(D).x 43.2 cm(H)
<b>Inner Dimensions:</b>	20.6 cm(W).x 23.1 cm(D).x 15.0 cm(H)
<b>Weight:</b>	22.0 Kg.

**PROMETHEUS PRO7/PRG** is a Multi-Functional Kiln for Hobbyists and Professionals as well. ENAMELLING; Firing SILVER CLAY and GOLD CLAY works, small articles of

CERAMICS; GLASS-FUSING, GLASS BEADS and GLASS MOULDING; ANNEALING and HARDENING of SILVER, GOLD, OTHER METALS are some of the fields **PRO7/PRG** can serve you.

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##### (2) WHEN YOU RECEIVE:

**Inspect Your Kiln:** Check the Bill of Lading number and be sure the number on the parcel you would take delivery of, is the same. Before signing the receipt document, check the carton for damage. (Ruptures, holes, crushed, etc.) If you see any damage on the carton, you can return by refusing the shipment or accept it with the drivers note, on the Bill of Lading and inform our company or our dealer who has delivered the parcel to you, by fax or e-mail. Inspect the outer surfaces of your kiln, open the kiln door and inspect the heating chamber. If you observe any damage, inform our company or our dealer who has delivered the parcel to you, by fax or e-mail.

**Save the Shipping Carton:** If you would take your kiln to vacation or seminars or return to factory for repairs, this carton will provide maximum protection during transportation. If you haven't save the carton, place your kiln, the door up, back side down, on a soft surface; support it at the sides. Vibration during travel may damage your kiln.

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##### (3) IMPORTANT SAFETY RULES

An Electric Kiln is as safe as your iron if these basic safety rules are followed:

- Locate your kiln in a good ventilated, sheltered place.
- Put your kiln on a fire-proof surface, minimum 30 cm away from doors, walls and apart from any curtains or combustible materials.
- Unplug your kiln, when not in use or before servicing.
- Do not touch hot surfaces.
- Avoid unsupervised children entering your work-shop.
- Keep the main cord away from the hot surfaces of your kiln.
- Do not touch heating element with anything. This may cause **SERIOUS ELECTRIC SHOCK!**
- Do not leave your kiln unattended while firing.
- Wear protective glasses when you look into hot kiln.
- **TURN OFF** the kiln before opening the kiln door, when loading or unloading.
- Wear thick work gloves when loading or unloading your kiln.
- Do not fire any material which you wouldn't know how it behaves at high temperatures. (Explosion, dangerous fumes, etc. can be caused.)
- Do not keep food at your working area.

## (5) SETTING UP:

**Electrical Installation:** Do not use an extension cord. If it is essential, use not thinner than 3 X 0.75 mm. and not longer than 500 cm. Variations at the voltage may decrease or increase the heating rate of kilns. If the voltage drops to low, the kiln may not even reach the desired temperature.

### Where to Locate:

- 1- Locate your kiln in a dry, good ventilated, sheltered place.
- 2- Do not keep any combustible materials in the kiln room. (paints, solvents, gasoline, etc.)
- 3- Place your kiln minimum 30 cm. away from the walls and far from curtains, window frames, etc.
- 4- Do not allow the temperature of your kiln room to exceed 25 °C. Use air conditioner or fans, to lower the temperature if necessary.
- 5- Although your kiln does not give dangerous heat to the surface it is located on, we recommend it to be sat on a fire proof plate about 50 X 50 cm., to provide a safe place to put hot articles remover from the kiln.
- 6- Keep the main cord apart from the kiln.

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## (6) FRONT PANNEL



On the Front Pannel, you see the Digital Controller and on its right side there is the 3-Position-Switch. Whenever you want to fire an object, you need to take the switch to HEATER position and then start your program. Your kiln will only heat when the switch is on the HEATER position.

When the switch is in the DISPLAY Position, the heating elements will not fire so you will only read the present temperature on the Digital Controller's screen .

The Present temperature is indicated at the upper line of the digital controller's screen and the Target Temperature is indicated at the bottom line.

For running the kiln, please refer to "Digital Controller and Programming Section".

**Starting To Heat:** The thermal isolation of your kiln contains some cellulose type bonding materials. During the initial heating, you will notice some fume or odor similar to burning paper. It is harmless, as you would expect but ventilate your place well and do not let persons with respiratory health problems in the room until the odor is completely finished.

**Firing Temperature and Hold Time:** The firing temperature and the hold time of any material you would use are under your responsibility. Refer to using instructions of the materials you would consume.

**Loading The Kiln:** Do not put any object to be fired, directly inside the firing chamber, but use some kind of ceramic tray to

avoid the object touching the heater chamber bottom. For example, you can use a ceramic fiber shelf, alumina bowls, etc., according to your works.

Every time, put your kiln to "OFF" position before opening the kiln door. Use protective glasses and work gloves. Put the objects to be fired on the ceramic tray, and place the tray into the kiln with tongs long enough to protect you from heat and close the door. Be sure that it is completely closed and turn the switch to "Heater" position. Do not leave the kiln door open longer than necessary and close it tightly. High heat which would escape from the gaps between the door and the front side of the heating chamber causes discoloration at the paints of the kiln.

Because of opening the kiln for a short time, the temperature of the heating chamber will fall some degrees which you would see on the indicator. You can make a program for your heating /cooling cycle or you can just heat your pieces freely.

**Unloading of Fired Objects:** Turn your kiln to "OFF" position. Put protective glasses and work gloves on. Hold the tongs, enameling tray, etc., open the kiln door, take the THE CERAMIC TRAY out, with the fired object on it and close the door. Leave it on the fire proof plate as it is and let it to cool. Note: Do not hurry while loading and unloading but do it in a short time. Do not leave the kiln door longer than necessary and close it tightly. High heat which would escape from the gaps between the door and the front side of the heating chamber causes discoloration at the paints of the kiln. When taking a break for a period, turn your kiln to "OFF" position. If you would be by your kiln and want to watch the kiln temperature, you may turn it to "DISPLAY" position where only shows the temperature but not heats. When you complete your study, turn your kiln to "OFF" position, unplug and leave it to cool the door closed. To leave your kiln door fully or partially open is not convenient. Heating chamber, ceramic surfaces can be damaged, the painted surfaces adjacent to door opening can be discolored, even burned.

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## (7) IMPORTANT POINTS

**Read the Instruction Guide:** Before operating your kiln read every page of this guide carefully.

**Maintenance:** Before any maintenance, be sure the kiln is unplugged and completely cold.



**Outer Surfaces of the Kiln:** Do not touch these hot surfaces with bare hands, may cause burns. Make the cleaning of these surfaces with slightly wet soft cloth, when the kiln is cold and unplugged. Do not use detergents, alcohol or any other chemicals or abrasives.



**Ceramic Surfaces:** The Heating Chamber, the front face of the kiln isolation, inner face of the door isolation are ceramic surfaces. Be aware of touching them with sharp or pointed instruments, you may damage them. Do not touch heating elements which are embedded under these ceramic surfaces. It may cause severe electric shock.

**Embedded Heating Elements:** The heating element of the kiln is embedded around the heating chamber. This protects you from an electric shock, if properly used. The surfaces of the heating chamber are strong enough to stand proper tasks. But never rub or scratch with inconvenient instruments. Do not apply mechanical forces to ceramic and outer surfaces of your kiln to avoid any undetectable damage which may cause serious risks.

**Protect Your Kiln From Harmful Materials:** Avoid the heating chamber contaminating with any other material not recommended by our company for any purpose. Water, oils, solvents, silica and silica involving substances, alumina hydrate, enamel powders, glaze and glass can be absorbed by the ceramic parts of the kiln and ruin the heating elements and ceramic parts as well. Do not place glazed ceramics, glass and enameling directly on the Firing Chamber bottom. Protect the chamber from contamination of these, by using ceramic shelves under your works. If such a contamination occurs, unplug the kiln and carefully scrape the contaminant off the surface with a knife and vacuum the residues. Be careful not to damage the ceramic surfaces.

**Cleaning the Heating Chamber:** Unplug and cool your kiln to room temperature. Take out any residues with a soft brush without leaving any hairs. If any contaminants left, carefully scrape it with a knife and take it out. Vacuuming is also recommended for inner cleaning.

**Check the Thermo-couple:** When you open your kiln's door you will see a small rod in the back wall of the Firing Chamber. This is called the thermo-couple and senses the minimal voltage differentials under temperature changes, passes it to the Temperature Controller, which interprets and simply controls the heating element. If this rod is pushed out of the Firing Chamber, the Temperature controller will assume that the firing chamber is cold and this will cause over heating. To avoid this, before firing the kiln, make sure that the tip of this rod extends to the firing chamber about 1 cm.

**Optional View Glass:** Do not exceed 900°C for firing temperature, other wise, and the glass will be damaged.

**Note:** Wear protective glasses when you look into hot kiln, directly or through a view glass.

**Electrical Data Plate:** On this plate, on the back side of your kiln, important notes are recorded. When ordering spare parts or corresponding with your dealer or our company about your kiln, please include this information.



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## (8) DO NOT WORRY NEEDLESSLY

The ceramic parts of your kiln expand and contract every time it is heated and cooled. At the inner surface of the door isolation and the front surface of the Firing Chamber, small cracks may appear. Don't be concerned, these will not affect your kilns performance. Also, eventually, discolorisation on the painted surfaces of your kiln, around the door will be seen. This is due to the heat, coming out when the door is opened. This is not a problem for your kilns performance too. To minimize this discoloration, do not open the door over 780°C, do not leave it open longer than necessary and be sure it is tightly closed when you close it. Do not hurry while loading and unloading but do it in a short time.

<div style="border: 1px solid black; padding: 2px; display: inline-block;">rnrP</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">50A</div>	<b>Program Parameters and Setting Step Values</b>
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<div style="border: 1px solid black; padding: 2px; display: inline-block;">r5E9</div>	<b>Program Selection Parameter</b> One program with 8 steps or two different programs with 4 steps can be defined.
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<div style="border: 1px solid black; padding: 2px; display: inline-block;">0000</div>	First program between 1-4 steps
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<div style="border: 1px solid black; padding: 2px; display: inline-block;">0001</div>	Second program between 5-8 steps
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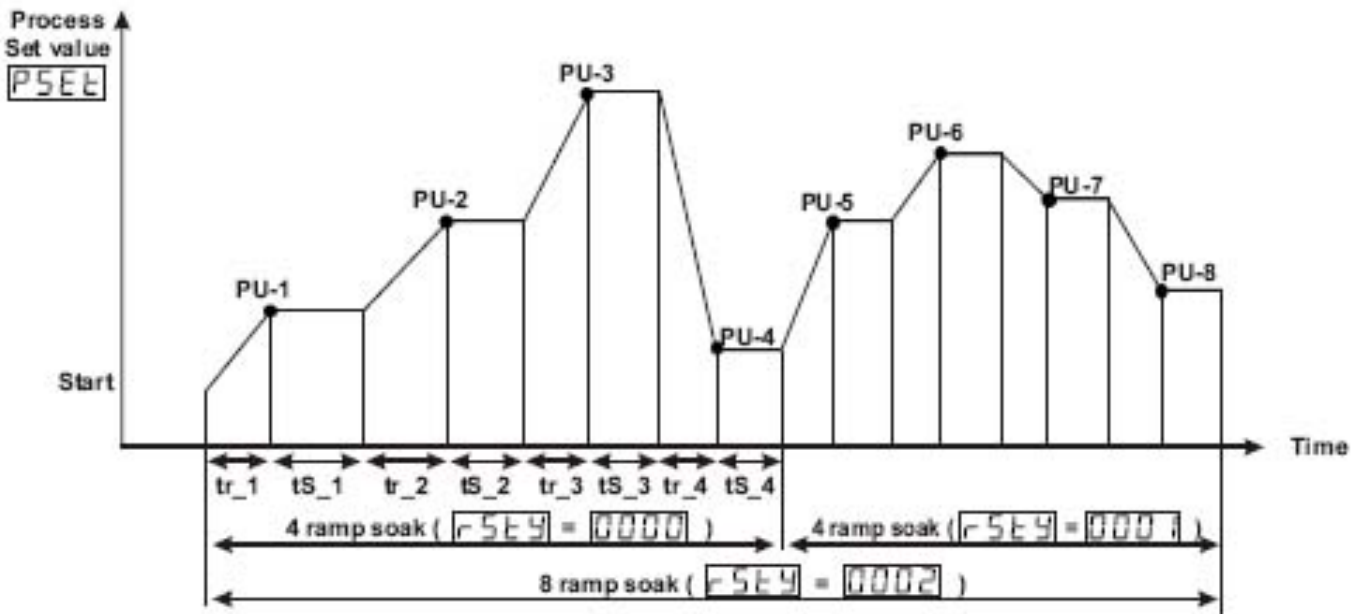
<div style="border: 1px solid black; padding: 2px; display: inline-block;">0002</div>	Steps between 1-8 is used as one program.
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A "step" is a combination of tr(ramp time) for temperature PV(process value), and ts(soak time at that temperature; the process value(PV)).

<div style="border: 1px solid black; padding: 2px; display: inline-block;">PU-1</div> : <div style="border: 1px solid black; padding: 2px; display: inline-block;">PU-8</div>	<b>PV(process value)</b> Is the final temperature determined for each step. Maximum temperature for PRO7/PRG Kilns is 1150deg.C.
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<div style="border: 1px solid black; padding: 2px; display: inline-block;">tr-1</div> : <div style="border: 1px solid black; padding: 2px; display: inline-block;">tr-8</div>	<b>Ramp time</b> Is the time determined for the kiln to reach the (PV) process value, for each step. It can be adjusted 0 to 99 hours 59 minutes.  <i>Note: If it is set to 0, kiln heats up to PV with full power.</i>
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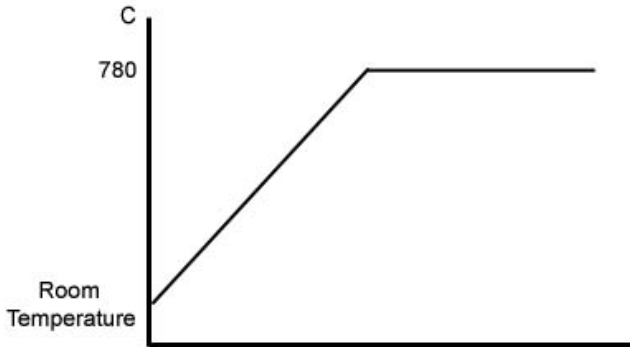
<div style="border: 1px solid black; padding: 2px; display: inline-block;">tS-1</div> : <div style="border: 1px solid black; padding: 2px; display: inline-block;">tS-8</div>	<b>Soak time</b> Is the determined time, process value is constant, for each step. It can be adjusted 0 to 99 hours 59 minutes.
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# Sample Operations

## Operation : 1

“I want my kiln to heat up to 780 deg C., stay there constantly.”



Take the switch to On Position. Press SET button for 6 seconds until you see P.Set , this is where you adjust the firing temperature. Adjust it to 780 with “up” and “down” arrows. After adjusting, press SET button and now your kiln will start to fire to 780C and stay at that temperature constantly.

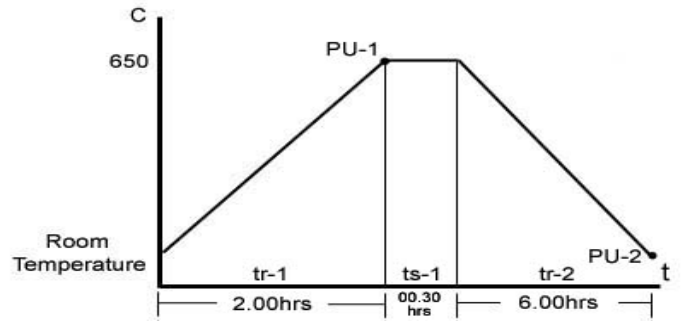
*Note that, you can only set the P.SET parameter when the controller displays P.End on its screen.*

**IMPORTANT**.....  
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**Now, you setted the P.Set to 780C and this means whenever the kiln powers on(Heater Position only) or whenever a program ends(“P.end” display on the screen), the kiln will directly fire to 780C. Please keep in mind the P.Set, while running a program.**

## Operation : 2

“I want my kiln to heat up to 650 deg C., in 2 hours, stay there 30 minutes and cool down to room temperature in 6 hours.”



Press MENU button once and see **PU-1**. Adjust it to **650** , with “up” and “down” arrows. Press “set”, then see **Er-1** . Adjust it to **02.00**.

Press “set”, then see **ES-1** . Adjust it to **00.30**.

Press “set” then see **PU-2**. Adjust it to **0000**.

Press “set” then see **Er-2**. Adjust it to **6.00** and press “set”.

Press “menu” button once, “ Operation Screen” displays.

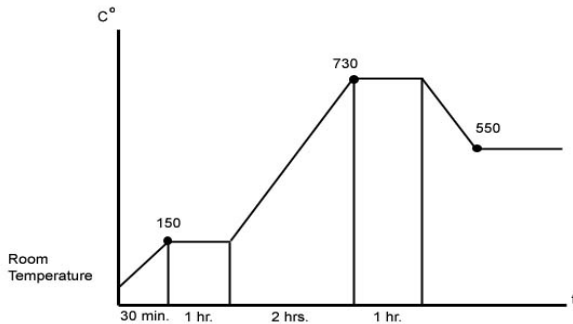
Finally you have completed your program no:1 !

Now to run this program:

Press UPPER ARROW button and the program starts running.

### Operation : 3

**“I want my kiln to heat up to 150 deg.C. in 30 min., and stay there for 1 hour; then raise to 730 deg.C. in 2 hours, and stay there for 1 hour; finally fall to 550 deg.C. and keep the temperature there for 2 hours and then cool down.**



Now let's program the steps starting from the PU-5 and let's learn how to run the program no:2.

Press MENU button once and then press “set” 13 times and you reach to **PU-5**. Adjust it to **150**, with “up” and “down” arrows.

Press “set”, then see **Er-5**. Adjust it to **00.30**.

Press “set”, then see **ES-5**. Adjust it to **01.00**.

Press “set”, then see **PU-6**. Adjust it to **730**.

Press “set”, then see **Er-6**. Adjust it to **2.00**.

Press “set”, then see **ES-6**. Adjust it to **1.00**.

Press “set”, then see **PU-7**. Adjust it to **550**.

Press “set”, then see **Er-7**. Adjust is to **00.00**.

Press “set”, then see **ES-7**. Adjust it to **02.00** and press “set” again.

Press “set”, then see **PU-8**. Adjust it to **0000**.

Press “set”, then see **Er-8**. Adjust is to **00.00**.

Press “set”, then see **ES-8**. Adjust it to **00.00** and press “set” again.

Now, you have adjusted the second 4 steps which is between the 5-8 steps. To run this new program, first you need to select it by following to instructions below.

See the “Operation Screen”, press “Menu” button for 9 seconds. Displays,	<b>PASS</b> <b>oPEr</b>
Press “set” and enter the pass(111) using UP and DOWN arrows.	
Press “set”. Displays,	<b>SET</b> <b>LISE</b>

Press “down arrow”. Displays,

**rnrA**  
**SoA**

Press “set” 3 times, **SErA** ; **rSEo** ; **rSEY** values are seen. Adjust **rSEY** value to 0001 by using “up” and “down” arrows and press SET button. This means that you are *going to run your pogram no:2* which is in the limits of 5 to 8 steps. If you change the value to 0000, this means that you are *making your pogram no:1* which is in the limits of 1 to 4 steps. (Remember, you can define 8 steps to the digital controller. By easily changing the value at **rSEY**, you can choose the part you want to run.) Press MENU button several times to reach the main screen. After reaching the main screen, just press UPPER ARROW to run the program no.2

# DIGITAL CONTROLLER

