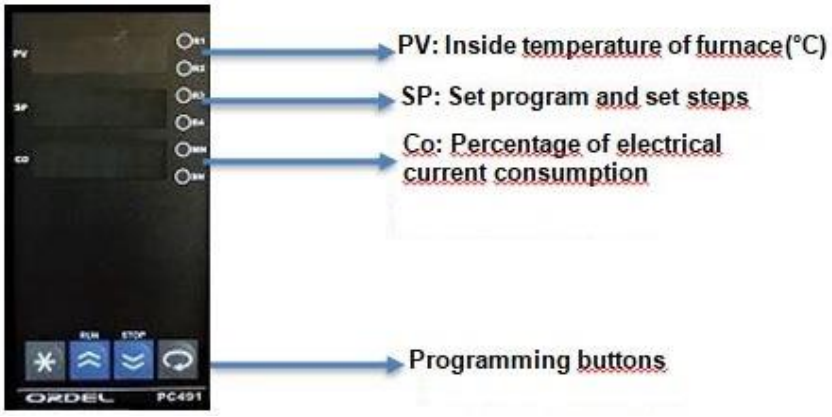
3.4.1 Temperature Controller (PID)

Phase : It's shown that there is energy in the system and is ready to be heated.

Service : High-temperature alarm.

Heat : Used to start the heating process.

On / Off : Used to turn on and off of the device.



- The furnace is to be energized by turning on of the ON/OFF button.
- "HEAT" button shall turn on. Phase warning lamp shall check. If it does not light green light please close the lid of the furnace.
- To set the heating program, the first button shall be pressed and button shall be pressed and keep pressed at the same time until C1 parameter seen on the screen. (approx.5 seconds)
- Button shall be pressed once and P1 seen on the PV line. The desired program shall set by buttons on SP line.
- button shall be pressed once and desired heat soaking program set.
- T01 should be seen on the screen which means time to be set to the desired temperature. Buttons are used to set desired time, and button shall be pressed once.

- **T01** is time to get to desired peak temperature. (min)
- **S01** is the first peak temperature. (°C)
- **T02** is time to get to desired 2nd temperature or is the dwell time at desired temperature. (min)
- **S02** is the desired 2nd temperature value. (°C)

Example: If we want to set 1100°C for 4 hours with 5°C/min heat soaking time. And cool with 3°C/min to 25°C.

- **T01 → 215 (the time for temperature from 25 to 1100°C)**
- **S01 → 1100**
- **T02 → 240 (dwell time)**
- **S02 → 1100**
- **T03 → 359 (the time for temperature from 1100 to 25°C)**
- **S03 → 25**
- **T04 → END (by pushing the down button)**

Note: Different programs with desired steps may be set with the same transaction.

- The program ends with the end sign on the screen by pushing button.
- By keep pushing button first stage of the program shall be seen on the screen. Every step of the program can be seen once again by button and readjustments may be done if needed.
- Return back to the main menu by pushing the button for 5 seconds.
- To run the furnace first button shall keep pushed and the button should be pushed one time.
- To stop the furnace first button shall keep pushed and the button should be pushed one time in any case during operation.

How To Choose Saved Programs

- Return back to the main menu by pushing the button for 5 seconds.
- and shall keep pushed.
- “PRG” will seen on the screen when the button is pushed.
- The desired program shall be chosen by buttons.
- “time” and “temperature” parameters can be seen by pushing button in the selected program.
- To run the selected program button shall push while button kept pushing.

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Parameter Definitions

- **APr :** It makes the furnace reach to maximum set temperature with maximum power. **(It is not recommended to be used.)**
- **HLd :** Keep the set temperature until command issued. To issue a command  button shall push while  button kept pushing.
- **End :** It is for ending the program.
- **dLy :** It is in order to delay the start. When the furnace ran program will start after waiting for the delay time.
- **rSt :** It shows how many minutes left to finish the operating step.
- **PSP :** It shows what the temperature should be theoretically on the operating step.
- **SEt2 :** Alarm set value for maximum temperature. It is recommended not to change this value. It is 1105ºC for this furnace.

Warning! Changing the parameters may cause usage errors.

Warning! Changes you make to your service page can't be undone and can cause problems.

Warning! The parameters on the service page mustn't be changed without contacting the MSE Technology service department. Enter the target temperature as shown on the Autotune operation service page and mark the two-step protection tics in order. Wait until the target temperature is reached.