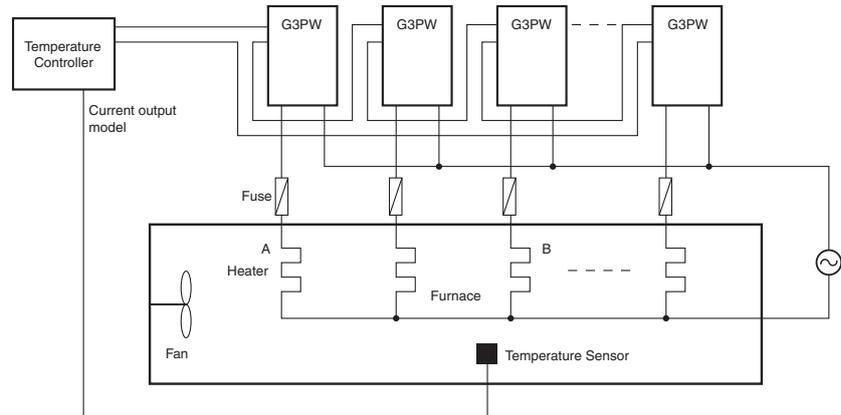


## ■ Connection Examples of G3PW and Temperature Controller

- The soft-start time is adjusted between 0 and 99.9 s, thus enabling the heaters to withstand long use.
- If a single Temperature Controller is in control of more than one heater, by making a proper duty setting, the difference in temperature between the heaters can be improved.

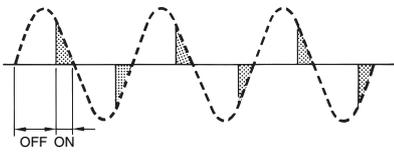
**Note:** The temperature at point B can be higher than that at point A due to thermal interference. In that case, make the duty set value for heater B smaller than that for heater A so that there will be no difference in temperature between points A and B.



# Power Controller Glossary

## Phase Control

- Output is varied at half-phase intervals, which enables highly accurate temperature control.



- Changes in the current output from the Temperature Controller between 4 and 20 mA are used for analog control of the output power. The more-detailed control resists disturbance better and results in less heat shock, which can also lengthen the life of heaters.

## Duty Setting

As shown in the following graph, changes in the output can be adjusted with key operations or with an external variable resistor.

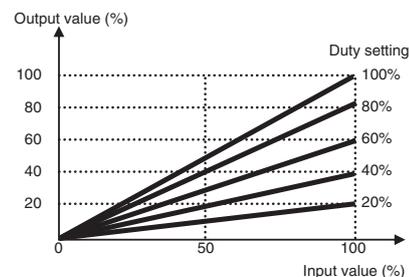
In the case of an electric oven, overshooting may result by using a heater with a capacity that is excessively high for the size of the oven.

By adjusting the duty-setting variable resistor, the overshooting can be suppressed.

For example, if a duty of 60% is set for a 5-kW heater, a maximum of 3 kW will be input into the heater. Thus, it operates as a 3-kW heater.

### Duty Setting All G3PW Models

Duty Setting (in all G3PW Models)



## Monitoring the Total Operation Time

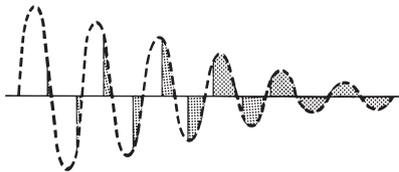
The time that power is supplied to the G3PW is totaled and a warning is output if the preset time is exceeded.

This is useful for the management of maintenance according to the life of the load.

## Soft-start

This function suppresses the inrush current that is caused when the load is turned ON, thus ensuring smooth starting of the load.

This function is especially effective for loads that involve high inrush current, such as halogen lamps.



## Base-up

This function briefly keeps the output of the G3PX turned ON after heating when the input signal is OFF.

This is effective for a smooth start of equipment that is slow in initial heating operation.

## Output Limit

The output range is limited by an upper limit and a lower limit.

This feature functions for the control input. It does not suppress inrush current.

Use the soft start to suppress inrush current.

## Constant Current (for Constant Current Models Only)

The constant current function automatically suppresses the inrush current when it is too large to be sufficiently suppressed by the soft start function, thus protecting the heater and system from damage.

## Load Current Limit (for Constant Current Models Only)

The load current is measured by a built-in CT to adjust the output phase angle and suppress the load current.

The response time from measurement to suppression is 500 ms max. To suppress inrush current, use the soft start together with the load current limit.