Operation Manual

108A OTP1800

ON/OFF Main Power Switch

On/Off Alarm Switch

Digital Control Module

Grid Support

Alarm

Fuse 250 Volt 15 amp

Load Outlet

Sensor Input

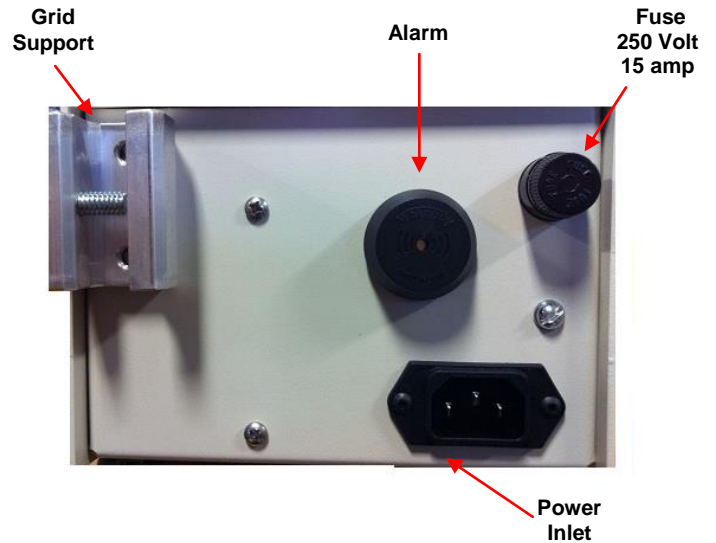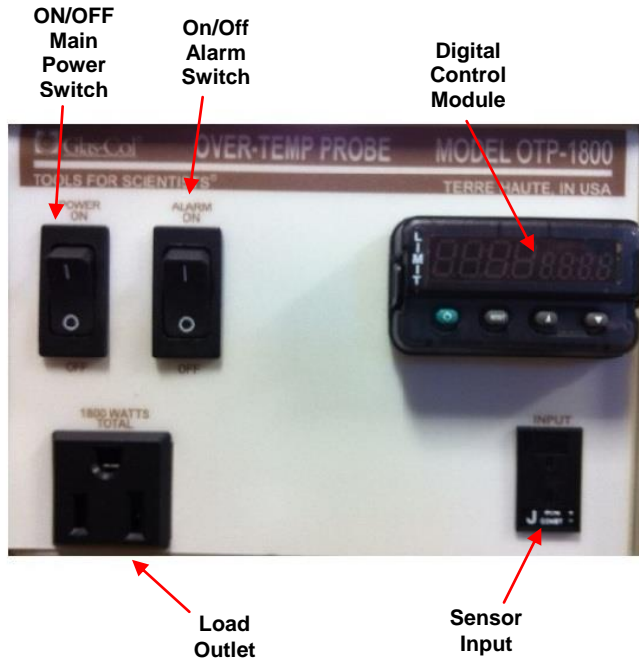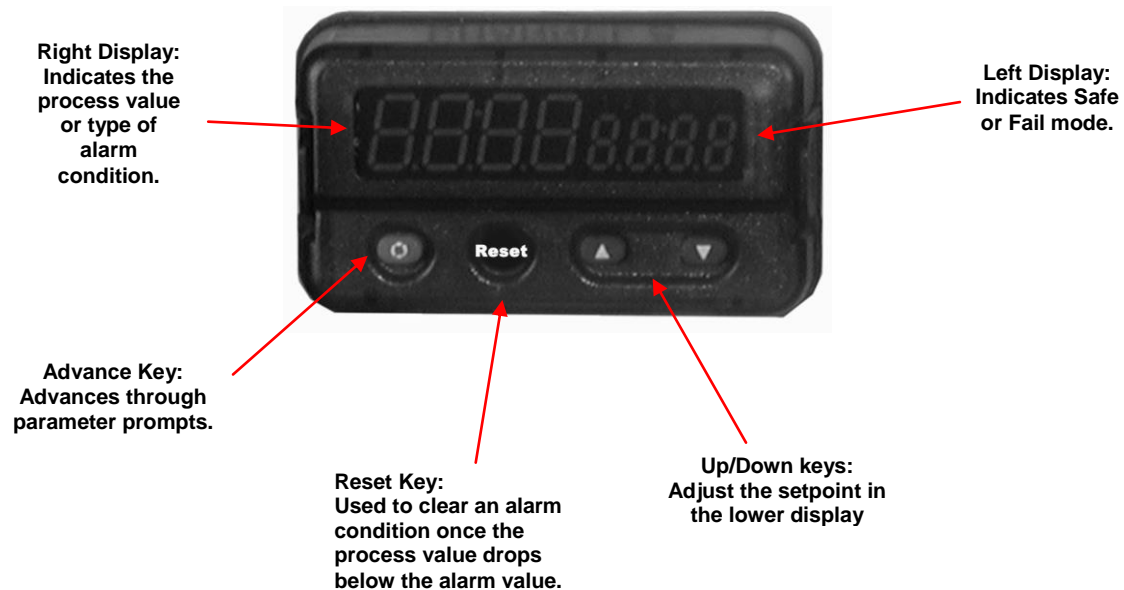**Power Inlet**

General Description

This control is a microprocessor-based, digital indicating, automatic temperature limit control with a single input and a single output. The control displays the process temperature and the condition of the control, either **Safe** or **Fail**. This unit comes with a 6' detachable power cord, grid support bracket, which is ideal for fume hood mounting to maximize bench space. This family of control accepts a type "J", "K", "T" thermocouples or RTD input depending on the model ordered.

This control automatically stores all information in a non-volatile memory.

Control Features
1. On/Off switch.
2. 15-amp output.
3. Circuit protection (fuse)
4. Low profile housing.

Right Display:
Indicates the
process value
or type of
alarm
condition.

Left Display:
Indicates Safe
or Fail mode.

Advance Key:
Advances through
parameter prompts.

Reset Key:
Used to clear an alarm
condition once the
process value drops
below the alarm value.

Up/Down keys:
Adjust the setpoint in
the lower display

Figure 3. Digital Control Module Detail

How to Setup and Operate

First, connect the load and the sensor to the receptacles on the front panel. Next, plug the control line cord into an appropriate 3-wire grounded power receptacle. Push the power switch to the "ON" position. Wait five seconds for the control unit to energize.

The control is shipped from the factory with the display reading in degrees C. If a display in degrees F is desirable, press the **UP/DOWN** arrow keys simultaneously for three seconds to access the Setup Page. Press the **Advance** key until the Celsius_Fahrenheit parameter [C-F] is shown in the lower display. Press the **UP** arrow key to change from C to F.

After changing the display, press the **Reset** key to display the set point temperature and the process temperature (temperature at the sensor).

Press the **Advance** key to set the lower and upper limit:
Limit Low Value: **LLS** (factory set to 0)
Limit High Value: **LHS** (factory set to 100)

Under normal operations, **Safe** will appear in the lower display.

If an alarm condition occurs, **Fail** and the type of alarm will alternate on the display.

An audible alarm will sound if an alarm condition occurs and can be switch off by turning off the alarm switch. Once the process temperature fall within the low and high limit values, you will need to press the reset button on the control module to turn the load receptacle back on.

Control Sensor

Proper placement of the sensor can eliminate many problems in the total system. The probe should be placed so that it can detect any temperature change with little thermal lag. In a process that requires fairly constant heat output, the probe should be close to the heater. In processes where heat demand is variable, the probe should be close to the work area. Some experimenting with probe location can be tried to provide optimum results.

Specifications

Control Mode
 - Microprocessor-based, single input, single output.

Operator Interface
 - **Advance, Reset, Up and Down** keys and ON/OFF switch.
 - Dual, four digit LED displays.
 - Thermocouple receptacle or (RTD) and 3-wire load receptacle.

Input
 - Type J, K , T thermocouple or (RTD): input grounded or ungrounded.
 - Automatic cold junction compensation and break protection for sensor.
 - Degrees F or degrees C display; user selectable (preset for degrees C)

Range Type J:	-200°C to 1200°C
Range Type K:	**-200°C to 1370°C**
Range Type T:	**-200°C to 400°C**
Range Type RTD:	**-200°C to 800°C**

Primary Output (Heating or Cooling)
 - 15 Amp, 120 Volts.

Accuracy
 - Calibration accuracy: 0.1% of span.
 - Temperature stability: 0.2 $^\circ$F / $^\circ$F rise in ambient maximum.
 - Voltage stability: 0.01% of span / % of rated line voltage.

Power
 - 50/60 Hz   5%
 - Data retention upon power failure via nonvolatile memory.

Operating Environment
 -    32 to 149 $^\circ$F / 0 to 65 $^\circ$C; 0 to 90% RH, non-condensing.

Error Code Definitions and Actions:

Responding to a Displayed Message

An active message will cause the display to toggle between the normal settings and the active message in the upper or left display and `Attn` in the lower or right display.

Your response will depend on the message and the controller settings. If the message is generated by a latched alarm or limit condition, the message can be silenced `SiL` or cleared `CLr` by simply pushing the reset key `RESET` when the condition no longer exists.

`ALL 1` Alarm 1 Low (sensor input below low alarm set point)

`ALh 1` Alarm 1 High (sensor input above high alarm set point)

Alarm Error 1

`ALE 1` Alarm 1 Error (alarm state cannot be determined due to lack of sensor input)

`Er.i 1` Error Input 1 (sensor is not providing a valid signal to the control)

`L iL 1` Limit Low 1 (sensor input below low limit set point)

`L ih 1` Limit High 1 (sensor input above high limit set point)

`L iE 1` Li mit Error 1 (limit state cannot be determined due to lack of sensor input, limit will trip

Maintenance
Simple preventative maintenance steps include keeping the controller clean. Protect it from overload, excessive dirt, oil and corrosion.

Cleaning
If cleaning is necessary, using only a damp cloth with only water, wipe only the exterior of the control chassis.

Replacement Parts:

Power cord:
If the power cord supplied with the control would become missing or damaged, replace only with the appropriate rated power cord noted by the description below.
    SJT-3 14 AWG, 15 Amp, 125 VAC, less than 3 meters in length (120volt controls only)

Fuse:
Use only 250Volt fuse, 15 amp rating (120volt controls only)

Calibration
Contact Glas-Col for more information about calibration.

Warranty

See the current Glas-Col warranty policy located under the General Sales Policy on the Glas-Col website at www.glascol.com.

Glas-Col products are intended only for legal and legitimate purposes in commercial laboratory and industrial settings.

Glas-Col reserves the right to make product refinements without prior notice.

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