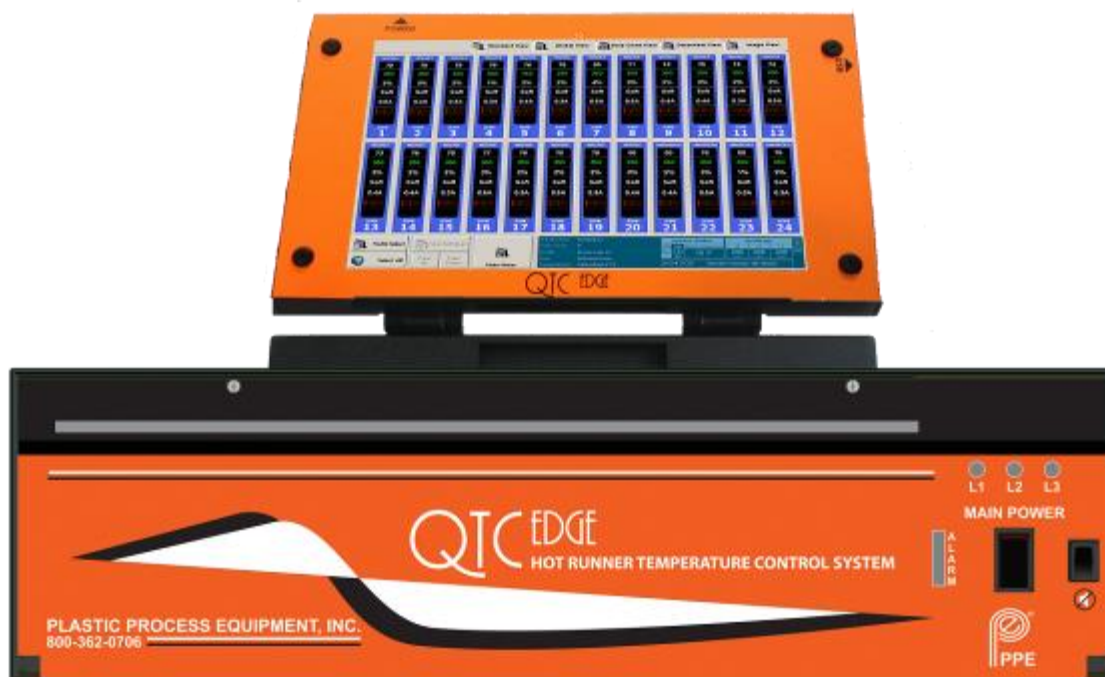




Plastic Process Equipment, Inc.

QTC EDGE

Temperature Control System
Installation and Quick Start Manual



Plastic Process Equipment, Inc.

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WARRANTY

PPE mainframes are warranted to be free of defective material and workmanship for a period of 90 days from date of sale unless otherwise noted. Warranty does not apply to normal maintenance or wear items. This Warranty will not extend to goods subjected to misuse, abuse, neglect, accident or improper installation or maintenance, or products or goods which have been altered, modified or repaired by anyone other than seller or its authorized and approved representatives.

LIABILITY

Plastic Process Equipment, Inc.'s liability arising from, or in any way connected with, the items sold shall be limited exclusively to repair or replacement, at seller's sole option. In no event shall seller be liable for any incidental, consequential or special damages of any kind or nature whatsoever. This includes, but is not limited to, lost profits arising from items sold, or in any way connected with this agreement. Here under, in tort (including without limitation, negligence, failure to warn, or strict liability).

INSTALLATION AND SERVICE SHOULD BE PERFORMED BY QUALIFIED PERSONNEL ONLY!

LOCATION:

The proper location is important for dependable service. The control systems should be located so as to allow free air movement into and out of the mainframe. Consideration should be given to allow the least exposure to heat, dust/dirt, moisture, and corrosive vapors. The front of the system must be readily accessible for set up and adjustment purposes.

It is recommended that a service disconnect switch be installed. This will provide a convenient means to completely disconnect all power from the temperature control system.

CONNECTING INPUT POWER:

1. Remove the input power access panel, located on the rear of the mainframe (Fig. 1a), by removing the 4 socket head screws. (7/64" hex wrench)
2. Select input cable size and configuration based on load requirements and local electrical codes. Feed the cable through the cable clamp of the panel. (Fig. 1b)
4. Strip wires and insert into the terminal block and tighten screws securely. (Label applied to the panel will indicate factory wiring setup Fig. 1b).
5. Replace the access panel.
6. Take up excess slack in the cable and secure with the strain relief clamp.
7. Route the AC input cable to a branch circuit (service) disconnect switch and connect to the fused side of the switch. Be sure the ground lead is attached to a proper earth ground.
8. Insert appropriate fuses for the main service fuse box.

Fig. 1a

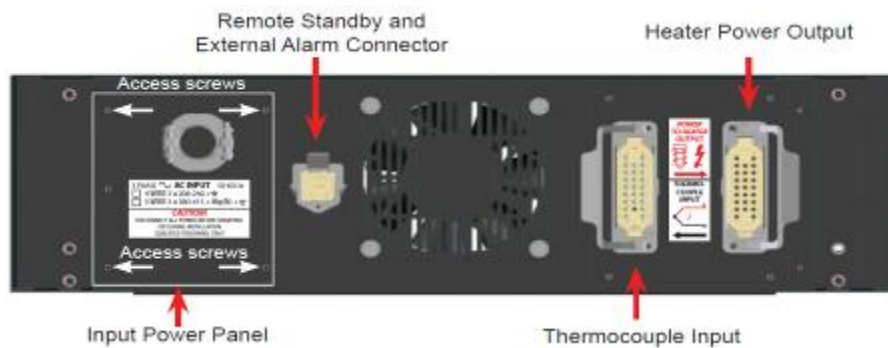
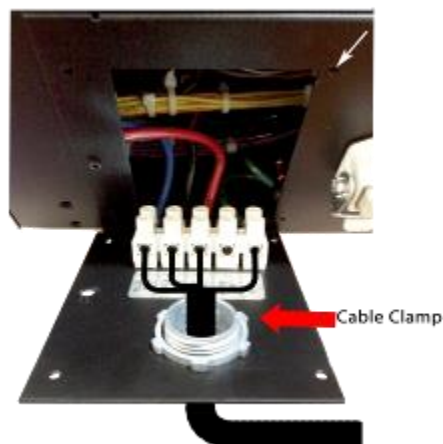


Fig. 1b



Power Input Requirements

Domestic: 240VAC 3 Phase 4-wire with Ground, 50 – 60Hz

Export: 380-415VAC 3 Phase 5-wire, with Neutral+ Ground, 50-60 Hz

| | | | | | | | | |
|------|------|-------|------|-----|------|-----|------|-----|
| Blue | T/L3 | Black | S/L2 | Red | R/L1 | NEU | Mp/N | GND |
|------|------|-------|------|-----|------|-----|------|-----|

Note:
 Domestic: L1, L2, L3+Ground
 Export: L1, L2, L3+NEU+Ground

Alarm/Relay Output & Remote Standby Input Connector

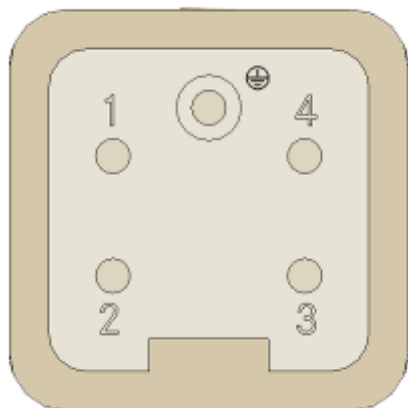


Figure 2

| Pin # | Function |
|-------|----------------------|
| 1 | Remote Standby Input |
| 2 | |
| 3 | Alarm/Relay Output |
| 4 | |

Standby Input

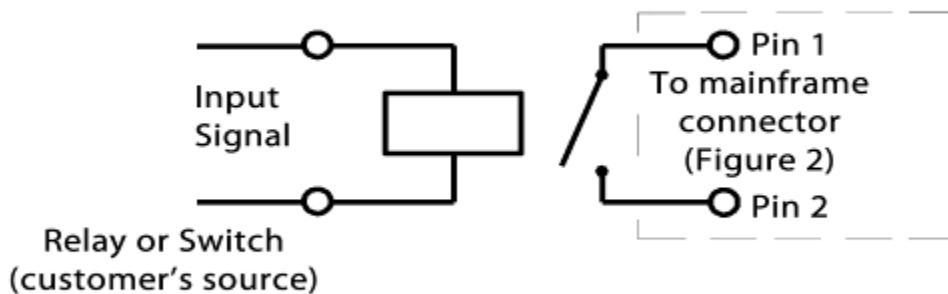


Figure 2a

Alarm/Relay Output

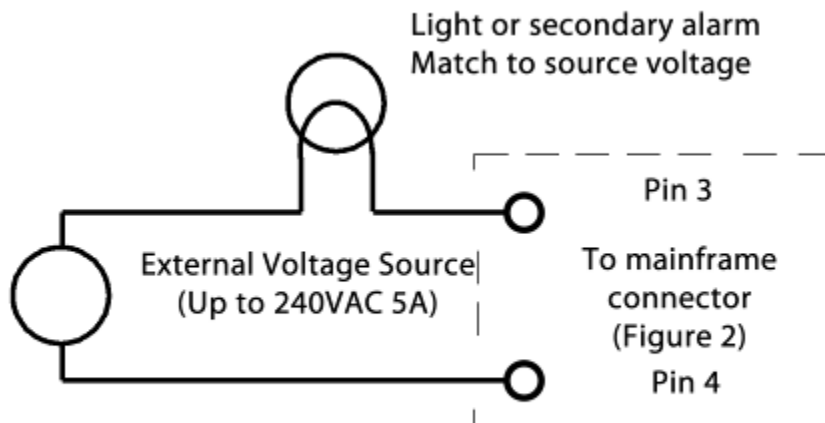
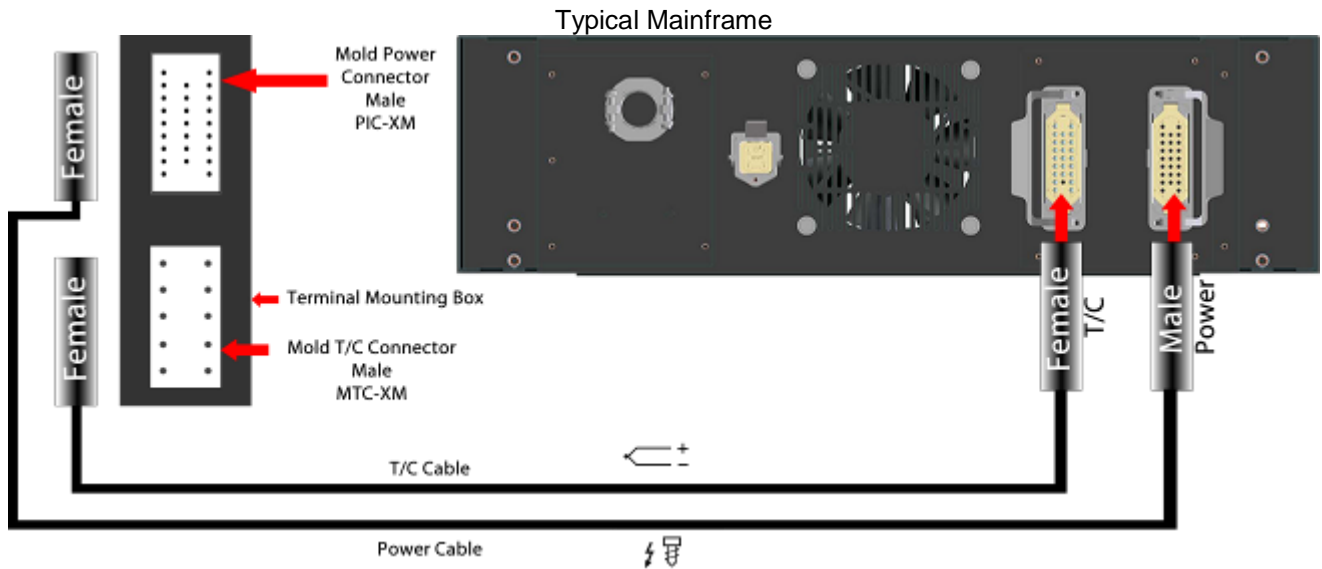
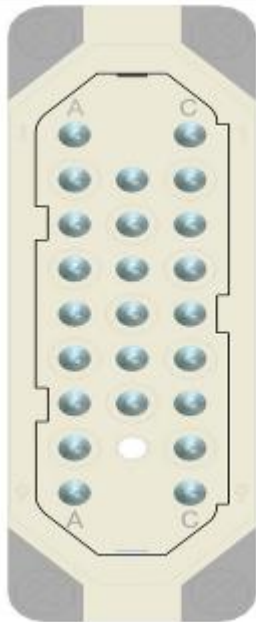


Figure 2b

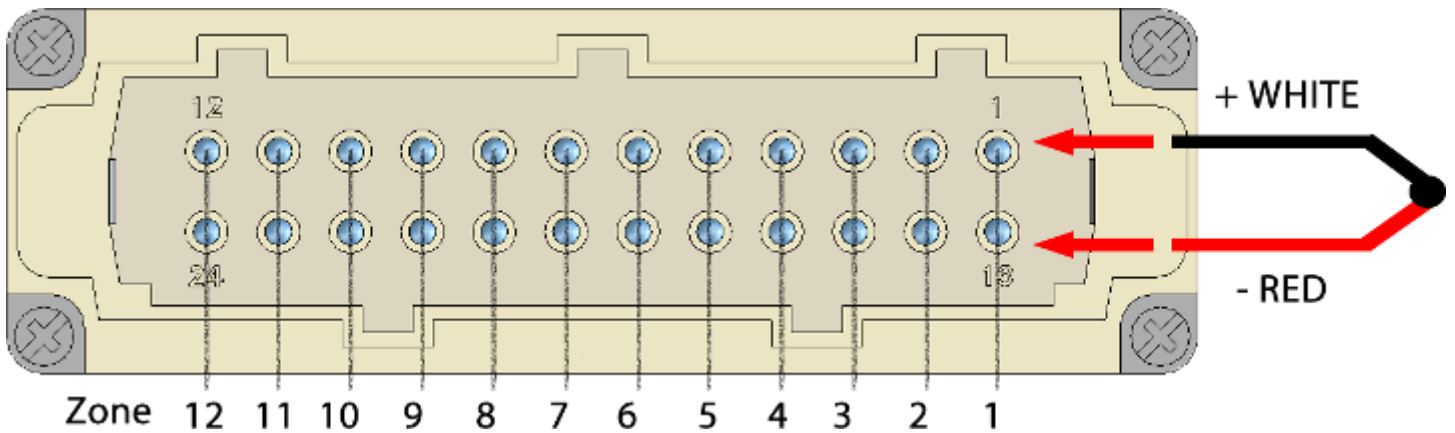


Power Output Connector Pinout



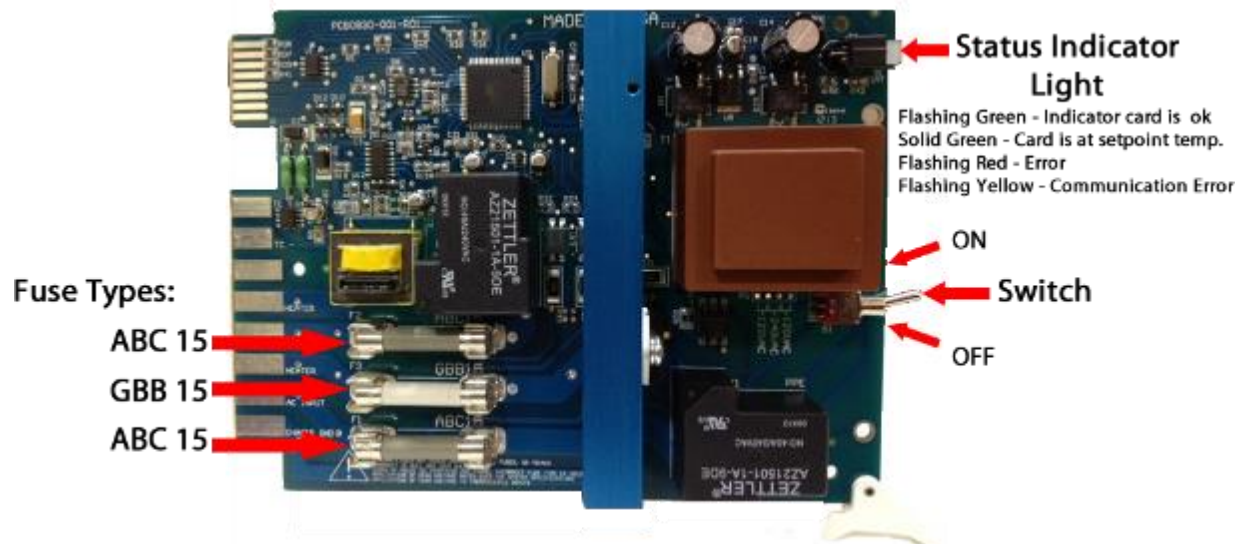
| Pin | Zone | Pin | Zone | Pin | Zone |
|-----|---------|-----|--------|-----|---------|
| A1 | Zone 1 | | | C1 | Zone 8 |
| A2 | | B2 | Zone 5 | C2 | |
| A3 | Zone 2 | B3 | | C3 | Zone 9 |
| A4 | | B4 | Zone 6 | C4 | |
| A5 | Zone 3 | B5 | | C5 | Zone 10 |
| A6 | | B6 | Zone 7 | C6 | |
| A7 | Zone 4 | B7 | | C7 | Zone 11 |
| A8 | | B8 | | C8 | |
| A9 | Zone 12 | | | C9 | Zone 12 |

Thermocouple Input Pinout (Mold Side)



Installing Controller Cards in the Mainframe

1. If controller cards are not pre-installed in the mainframe, follow directions below.



Powering Up the System



1. Unscrew the two screws to open the front door.
2. Slide cards in and make sure they are properly inserted.
3. Turn the card switches to the ON position.
4. Close the front door and secure the screws.
5. Turn Main Breaker on.
6. Turn the display on by pressing the marked power button on the top left for a few seconds. The computer will boot and the welcome page will appear after a few seconds.
7. From factory, the sample profile "EDGE_{xx}" is provided.
8. Press **START** on the welcome screen, the screen will go to the standard view.
9. Press "Select All." Quick Settings window will appear. Enter your required setpoint.
10. Press "Auto"
11. Press **OK**
12. Controllers will start in Soft Start mode if the temperature is below 212°F and will go into Auto Mode after the soft start duration time.

13. For detailed setup, follow instructions below, or in the QTC Edge Help screen on the computer.
Welcome / Login Screen



Upon starting the system, the user will see the Welcome screen first. This is where a user will log in/ log out. If a profile is pre-loaded, it will be listed on the page along with the system run status.

Factory defaulted user profile is:

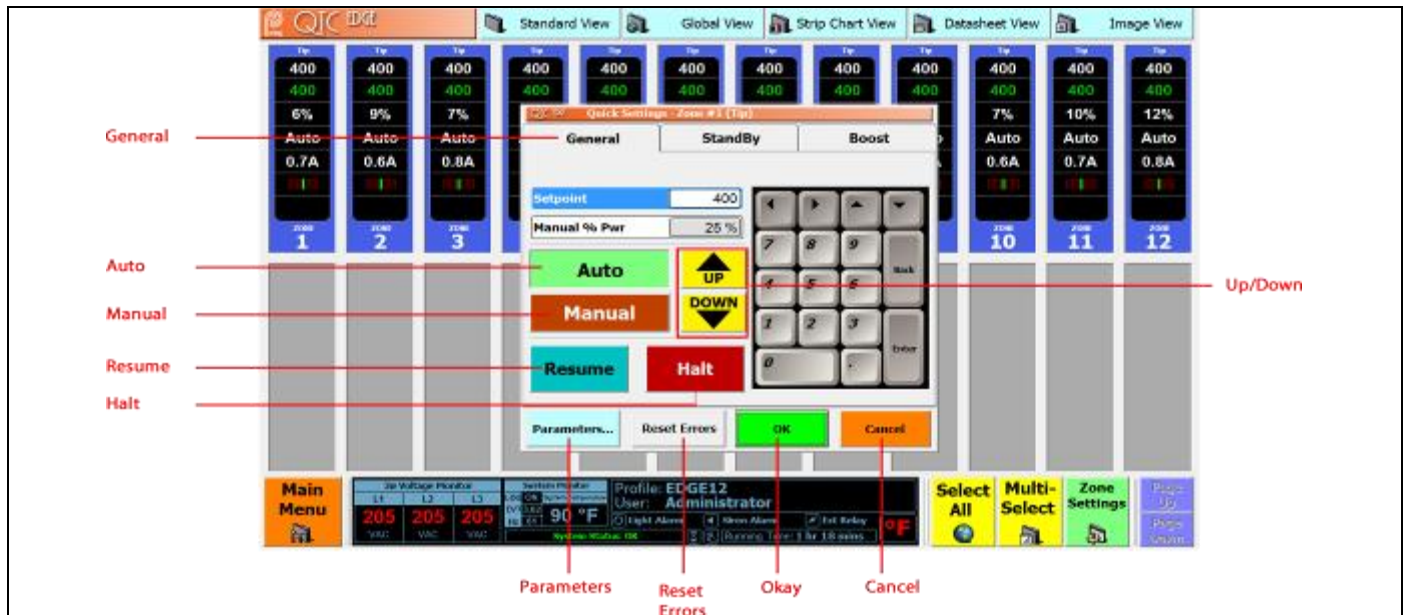
Username: Administrator

Password: admin

Only accounts with administrator access can create/delete new users and set restrictions.

The administrator account can only be deleted if another account exists with administrator access. See the QTC-Edge Help screen for more details.

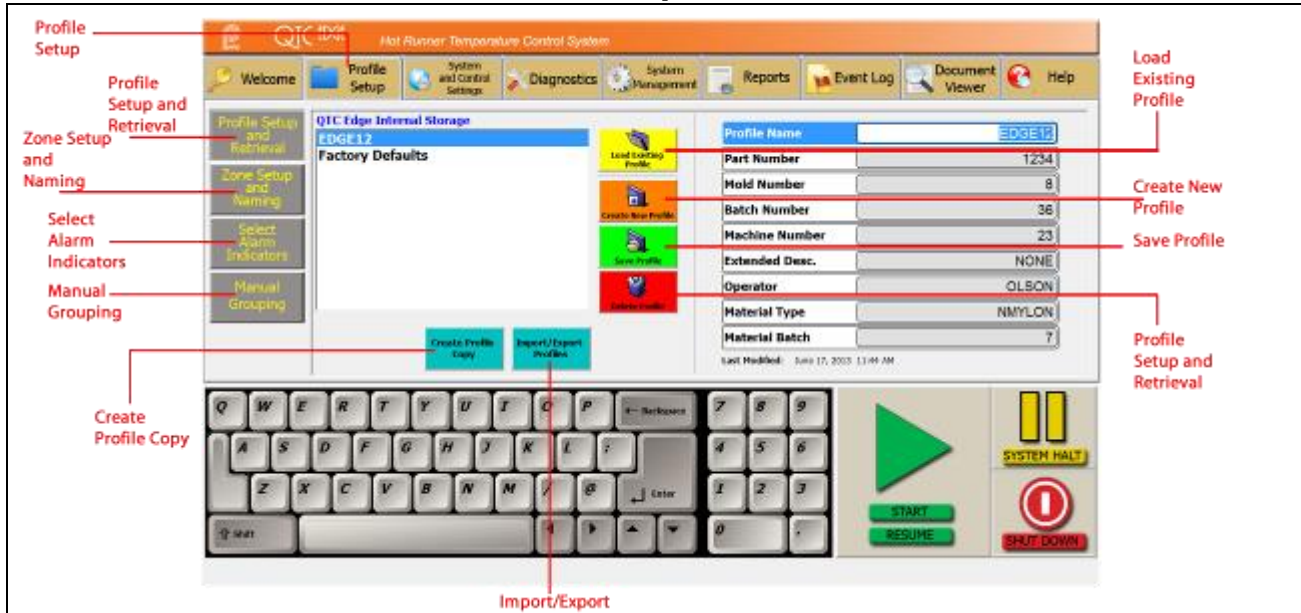
Quick Settings



The quick settings gives access to the most common functions available for the controller including:

- Auto Setpoint Temperature
 - Make sure the “**Auto**” button is pressed. Press the “**Setpoint**” window and enter the setpoint using the keypad (if only a minor adjustment is needed, press the “**UP**” or “**DOWN**” keys), then press “**OK**”.
- Manual Percentage Power
 - Press the “**Manual**” button. Press the “**Manual & Pwr**” window and enter the % power using the keypad (if only a minor adjustment is needed, press the “**UP**” or “**DOWN**” keys), then press “**OK**”.
- Boost Mode
 - Press the controller you want to put into boost, the quick settings box will appear.
 - Press the “**Boost**” tab.
 - If the controller is in auto mode, input the temperature to increase by, and the duration time. If the controller is in manual mode, input the manual boost power to increase by, and the duration time.
 - Press the “**Boost**” button.
 - Press “**OK**”
- Standby Mode
 - Press the controller you want to put into standby, the quick settings box will appear.
 - Press the “**Standby**” tab.
 - If the controller is in auto mode, input the standby temperature. If the controller is in manual mode, input the manual standby % power.
 - Press the “**Standby**” button.
 - Press “**OK**”
- Reset Controller Errors
 - Once the problem has been repaired, press “**Reset Errors**”
- Access to controller parameters (only a user with Power User or Administrator Privileges has access).
- Halt : Press “**Halt**”, then press “**OK**” to put the controllers into Halt Mode.

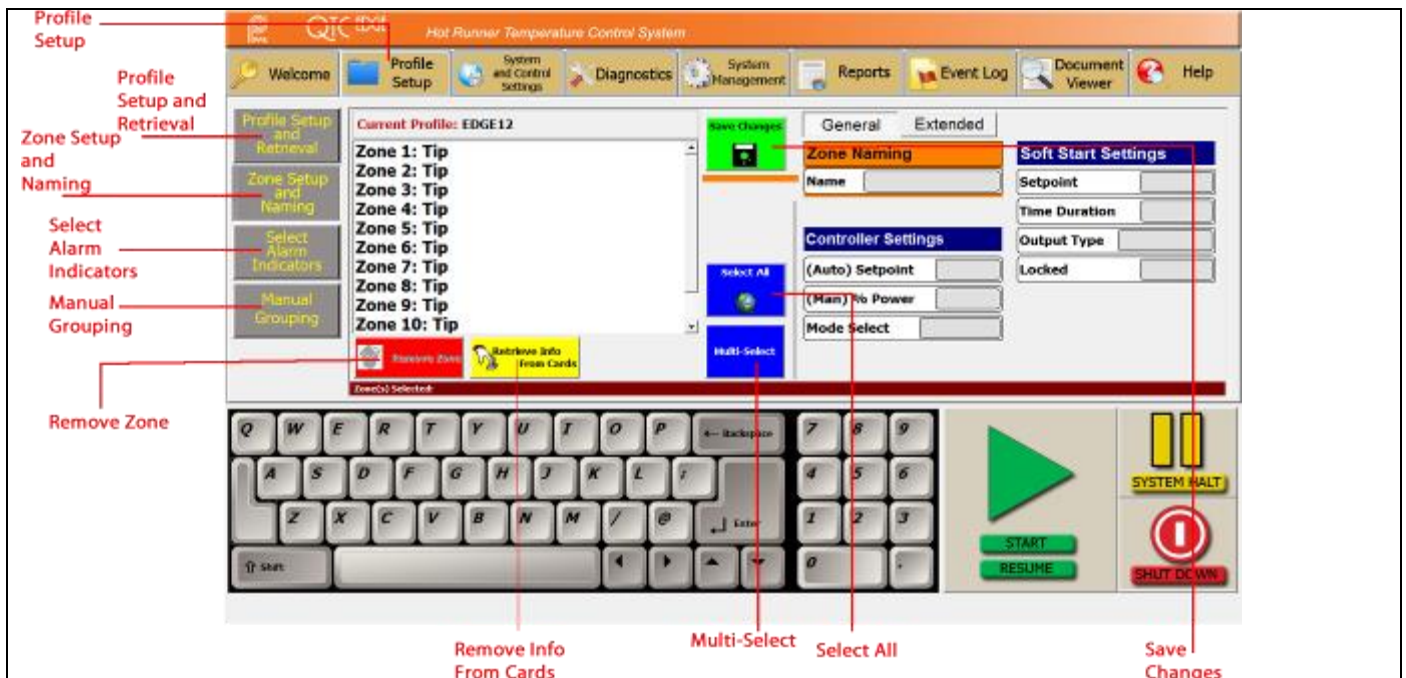
Mold Setup/Profiles



Profile Creation

To create a new mold profile:

- Press "**Create New Profile.**" In the menu, "**NEW PROFILE**" will appear, make sure it is highlighted (in blue).
- On the right side, give the profile a unique name, and fill in the various job details as needed.
- When finished, press "**Save Profile**"
 The "**Save Profile**" button must be pressed everytime you make a change to the profile details. When finished, the next step is to goto "Zone Setup and Naming" to set up the controllers in the profile.



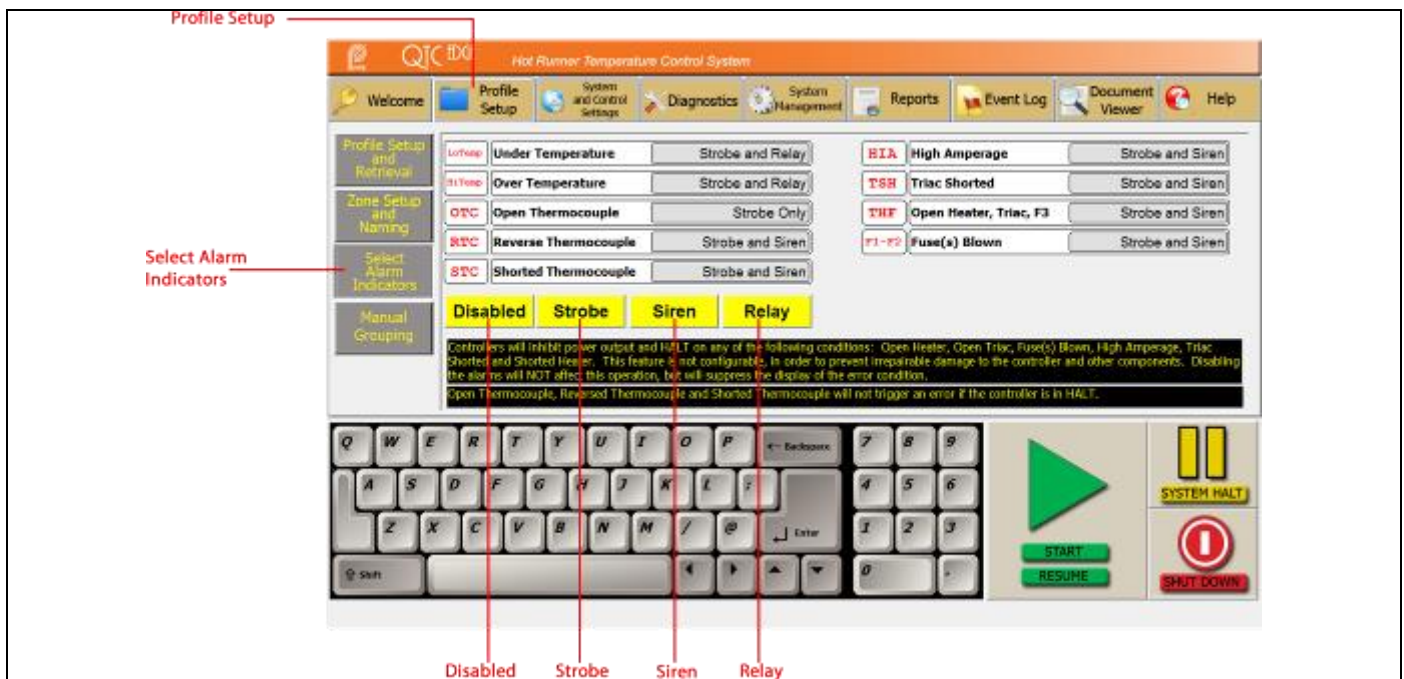
Zone Setup and Naming

Upon creating a new profile, there are no zones setup by default, and is indicated by "none" on the zone listing.

Select a zone to adjust. The screen will switch over to the naming screen automatically. Choose a name from the list or create a new name. Make sure the name you want is highlighted and press "**Apply Name**". You should see the name appear in the "**Name**" box to the right.

- Adjust controller settings on the right of the screen as needed in both "**General**" and "**Extended**".
- When finished, press "**Save Changes**" to save the settings.

Profile Alarm Setup



Setting the Alarms

Error conditions can trigger one of three types of alarm indicators.

- Strobe: flashing indicator light.
- Siren: audible siren alarm.
- Relay: external relay where a light or alarm can be connected.

To change which alarm indicators are triggered:

- Choose the error condition to change.
- Press the "Relay", "Siren", or "Strobe" buttons to enable/disable as preferred. To prevent all alarms from triggering, choose "Disable"

Mold Setup / Profiles



Zone Grouping for Thermocouple Slaving

Thermocouple slaving requires controllers to be placed into groups. When an open thermocouple error occurs, if the zone is in a group, it will "slave" from a zone in the same group to control temperature. If it cannot find a zone to slave from, the controller will switch to APO (average power output) mode to control temperature.

Creating Groups

- Press "Create New Group Name"
- Type in a name for the group.
- Press "Save Group Name"
- Create as many groups as necessary
- Choose a group from the dropdown list
- The "Select Zones for Groupings" list will populate with the controllers that can be put into groups. Press the zones you wish to add to the selected group. The zone will highlight when pressed.
- When finished, press "Add Zones to Group" and the zones will move to the "Grouped Zones" list.
- Press "Save Group or Changes" to save.

Auto Grouping

If the "Enable Auto Grouping" checkmark is checked (in System and Control Settings), while the system is running, it will automatically put the controllers into groups based on the Setpoint temperature, max current of the heaters, and PID settings. If changes need to be made to the groups, or you still want to create your own groups, you may do so in the **Manual Grouping** page.

When grouped, the controller display will have a color to identify which group they are in. If the controller is not grouped, the display will have the standard blue color while running.

For more details, go to the QTC-Edge Help screen

Parameters

| Parameter Name | Description | Min | Max | Units |
|--------------------------|--|-----|--------|--------------------|
| Zone Name | A descriptive name can be assigned to each zone and saved to the profile | | | Text |
| (Auto) Setpoint | Setpoint value for Automatic Mode (<i>Closed Loop</i>) operation | 212 | 1250 | °C or °F |
| (Man) % Power | Percent power for Manual Mode (<i>Open Loop</i>) operation | 0 | 100 | % |
| Operating Mode | Automatic or Manual Mode Operation | | | Select |
| (Auto) Boost Temp | Additive value to setpoint | 30 | 300 | °C or °F |
| (Auto) Boost Time | Duration of the Boosted Setpoint | 0 | 1 hour | Time |
| (Man) Boost % Pwr | Additive value to Percent Power | 0 | 100 | % |
| (Man) Boost Time | Duration of the Boosted Percent Power | 0 | 1 hour | Time |
| Alarms Enabled | Enable or Disable individual zone alarms | | | Enabled / Disabled |
| Over Temperature | Over temperature alarm limit | 5°F | 30°F | °C or °F |
| Under Temperature | Under temperature alarm limit | 5°F | 30°F | °C or °F |
| Current Max | Over current detection (HiA Alarm) | 0 | 16 | Amps |
| Shorted Thermocouple | Shorted thermocouple detection (STC Alarm) | 1 | 1200 | 0 = OFF seconds |
| (Standby) Setpoint | Setpoint value for Standby | 212 | 1250 | °C or °F |
| (Standby) % Power | Percent Power for Standby | 0 | 100 | % |
| (Soft Start) Setpoint | Setpoint value for Soft Start | 212 | 350 | °C or °F |
| (Soft Start) Output Mode | Burst Mode, Full Cycle, Half Cycle, Phase Angle | | | Select |
| (Soft Start) Duration | Length of time of the soft start routine | 5 | 20 | Mins |
| (Soft Start) Rate | Rate at which the routine will reach full power | 5 | 20 | Mins |
| (Soft Start) Locked | Prevents user from over-riding Auto Soft Start Mode | | | Enabled / Disabled |
| (Soft Start) Output Mode | Burst Mode, Full Cycle, Half Cycle, Phase Angle | | | Select |

Standard Shutdown Procedure

If you require the system to start with the controllers in HALT mode

Press **SELECT ALL**, then **HALT**, then press **OK**. The controllers will halt. Press **MAIN MENU**, then press **SHUT DOWN**.

If you require the system to start with controllers in AUTO or MAN modes (last running mode)

Press **MAIN MENU**, then **SHUT DOWN**. The computer will still send the halt command to the controllers, but the next time the system is started, it will start in the last mode it was running in (AUTO/MANUAL).

After either procedure has been done, wait for the computer to shut down completely, then you may switch the breaker to the **OFF** position.