# Orton Autofire® Express
# OEM Configuration Instructions

OEM Configuration settings are found in the hidden OEM options menu. This menu is displayed by pressing and holding the Middle (Increase) key for 7 seconds while the controller display shows **IdLE**. After 7 seconds, the controller display will show **CFG**. Press the Left (Program) Button when the display shows **CFG** to view the current Configuration number alternating with the **CFG** prompt.

The Configuration number represents the type of Programs that will be available to the operator after OEM configuration is complete. Use the Middle (Increase) or Right (Decrease) Buttons to change the configuration number. The available selections are 1-6;

## 1 CFG

| OEM CFG | Model | |
|---|---|---|
| 1 | Speed Programs | Default |
| 2 | Jewelry Programs | |
| 3 | Cone Programs | |
| 4 | OEM / User Programs | |
| 5 | Alternate Speed Programs | |
| 6 | PMC Programs | |
| 7 | Dental | |

**Speed Programs – CFG #1**

| CFG # 1 | | Program | Rate | Target | Hold |
|---|---|---|---|---|---|
| SPd1 | Default | Speed 1 | 200F(111C)/hour | 1112F(600C) * | 00.00 * |
| SPd2 | | Speed 2 | 500F(278C)/hour | 1112F(600C) * | 00.00 * |
| SPd3 | | Speed 3 | 1000F(555C)/hour | 1112F(600C) * | 00.00 * |
| SPd4 | | Speed 4 | 1500F(833C)/hour | 1112F(600C) * | 00.00 * |
| SPd5 | | Speed 5 | Full | 1112F(600C) * | 00.00 * |
| Pr01 | | User | | | |
| Pr02 | optional | User | | | |
| Pr03 | optional | User | | | |
| Pr04 | optional | User | | | |

**Jewelry Programs – CFG #2**

| CFG # 2 | | Program | Rate | Target | Hold |
|---|---|---|---|---|---|
| 5Hr | Default | 5 Hour | 300F(167C)/hour<br>101F(56C)/hour<br>700F(389C)/hour<br>450F(250C)/hour | 300F(149C)<br>351F(177C)<br>1350F(732C)<br>900F(482C) * | 00.20<br>00.10<br>01.30<br>99.59 |
| 8Hr | | 8 Hour | 300F(167C)/hour<br>101F(56C)/hour<br>349F(194C)/hour<br>301F(167C)/hour | 300F(149C)<br>351F(177C)<br>1350F(732C)<br>900F(482C) * | 01.00<br>00.30<br>01.30<br>99.59 |
| 12Hr | | 12 Hour | 300F(167C)/hour<br>101F(56C)/hour<br>211F(117C)/hour<br>225F(125C)/hour | 300F(149C)<br>351F(177C)<br>1350F(732C)<br>900F(482C) * | 01.00<br>00.30<br>03.00<br>99.59 |
| Pr01 | | User | | | |
| Pr02 | optional | User | | | |
| Pr03 | optional | User | | | |
| Pr04 | optional | User | | | |

**Cone Programs – CFG #3**

| CFG # 3 | | Program |
|---|---|---|
| COnE | Default | Cone 022 - Cone 10 |
| Pr01 | | User |
| Pr02 | optional | User |
| Pr03 | optional | User |
| Pr04 | optional | User |

**OEM/User Programs – CFG #4**

| CFG # 4 | | Program | Rate | Target | Hold |
|---|---|---|---|---|---|
| Pr01 | 8 segment | OEM/User | Undefined | Undefined | Undefined |
| Pr02 | 8 segment | OEM/User | Undefined | Undefined | Undefined |
| Pr03 | 8 segment | OEM/User | Undefined | Undefined | Undefined |
| Pr04 | 8 segment | OEM/User | Undefined | Undefined | Undefined |
| Pr05 | 8 segment | OEM/User | Undefined | Undefined | Undefined |
| Pr06 | 8 segment | User | | | |
| Pr07 | 8 segment | User | | | |
| Pr08 | 8 segment | User | | | |
| Pr09 | 8 segment | User | | | |

**Alternate Speed Programs – CFG #5**

*Requires Factory reset to clear*

| CFG # 5 | | Program | Rate | Target | Hold |
|---|---|---|---|---|---|
| SPd1 | Default | Speed 1 | 200F(111C)/hour | 1112F(600C) * | 00.00 * |
| SPd2 | | Speed 2 | 500F(278C)/hour | 1112F(600C) * | 00.00 * |
| SPd3 | | Speed 3 | 1000F(555C)/hour | 1112F(600C) * | 00.00 * |
| SPd4 | | Speed 4 | 1500F(833C)/hour | 1112F(600C) * | 00.00 * |
| SPd5 | | Speed 5 | Full | 1112F(600C) * | 00.00 * |

**PMC Programs – CFG #6**

| CFG # 6 | | Program | Rate | Target | Hold |
|---|---|---|---|---|---|
| Pr01 | Default | PMC + Fast | FULL | 1650°F(899°C) | 00.10 |
| Pr02 | | PMC + Slow | 1500°F(833°C)/hour | 1470°F(799°C) | 00.30 |
| Pr03 | | PMC3 Slow | 1500°F(833°C)/hour | 1110°F(599°C) | 00.45 |
| Pr04 | | PMC | FULL | 1650°F(899°C) | 02.00 |
| Pr05 | | PMC Gold | FULL | 1290° F(699°C) | 01.30 |
| Pr06 | | User | | | |
| Pr07 | optional | User | | | |
| Pr08 | optional | User | | | |
| Pr09 | optional | User | | | |

**Dental Programs – CFG #7**

***Password Required***

*Requires Factory reset to clear*

| CFG # 6 | | Program | Rate | Target | Hold |
|---|---|---|---|---|---|
| Pr01-20 | 3 segment | User | | | |

## 2 tC

After selecting the configuration number, Press the Left (Program) Button to advance to the tC option. The controller can be configured for one of two thermocouple types by changing the tC setting.

The display alternates the thermocouple setting with the tC prompt. Use the Middle (Increase) or Left (Decrease) Buttons to change the tC setting. The available selections are;

| tC setting | Thermocouple Type |
|---|---|
| **H** | Type K (Default) |
| **n** | Type N |

## 3 CHG-

After selecting the Thermocouple Type, Press the Left (Program) Button to advance to the CHG- option. The controller can be configured for Degree F or Degree C temperature units by changing the CHG- setting.

The display alternates the temperature units setting with the CHG- prompt. Use the Middle (Increase) or Left (Decrease) Buttons to change the setting. The available selections are;

| CHG- setting | Units |
|---|---|
| **F** | Degrees Fahrenheit (Default) |
| **C** | Degrees Celsius |

## 4 PId

After selecting the temperature units, Press the Left (Program) Button to advance to the PId option. The controller can be configured for one of two kiln types by changing the PId setting. Separate PID tuning constants are stored in the controller for optimum performance with the kiln insulation type.

The display alternates the PId setting with the PId prompt. Use the Middle (Increase) or Right (Decrease) Buttons to change the PId setting. The available selections are;

| PID setting | Max Temp | Kiln Type |
|---|---|---|
| **FIbr** | 1100C<br>2012F | For FIBER insulation. |
| **brCH** | 1315C<br>2400F | For BRICK insulation. |

For Fiber Kiln selection only, a special operating mode can be selected to reduce overshoot during FULL heating ramps. The special mode will stop FULL power heating 3 minutes prior to reaching the programmed target temperature and start cycling the relays at a controlled rate

After selecting the FIbr setting, the SPCL option appears. The controller can be configured for activating or disabling the Special operating mode.

The display alternates the Special setting with the SPCL prompt. Use the Middle (Increase) or Right (Decrease) Buttons to change the SPCL setting. The available selections are;

| SPCL setting | Full heating Ramp operation |
|---|---|
| **OFF** | Full power to setpoint |
| **ON** | Full power to setpoint – 3 minutes |

# 5 SAFt

After selecting the PID setting, Press the Left (Program) Button to advance to the **SAFt** option. The maximum programmable firing temperature can be limited by adjusting the Safety Temperature.

The display alternates the **SAFt** message with the Safety Temperature. Use the Middle (Increase) or Right (Decrease) Buttons to change the **SAFt** setting. The Temperature ranges available for the Safety are dependent on the previously selected Configuration number and PId settings. The ranges are;

| OEM CFG | Model | SAFt Range Fiber | SAFt Range Brick |
|---|---|---|---|
| 1 | Speed | 1112°F(600°C) - 2012°F(1100°C) | 1112°F(600°C) - 2400°F(1316°C) |
| 2 | Jewelry | 1350°F(732°C) - 2012°F(1100°C) | 1350°F(732°C) - 2400°F(1316°C) |
| 3 | Cone | 1112°F(600°C) - 2012°F(1100°C) | 1112°F(600°C) - 2400°F(1316°C) |
| 4 | OEM / User | 500°F(260°C) - 2012°F(1100°C) | 500°F(260°C) - 2400°F(1316°C) |
| 5 | Alt. Speed | 1112°F(600°C) - 2012°F(1100°C) | 1112°F(600°C) - 2400°F(1316°C) |
| 6 | PMC | 1830°F(999°C) - 2012°F(1100°C) | 1830°F(999°C) - 2400°F(1316°C) |
| 7 | Dental | 500°F(260°C) - 2012°F(1100°C) | 500°F(260°C) - 2400°F(1316°C) |

**Application note for Cone Configuration #3**

The Safety Temperature setting determines the number of Cone-Fire programs that will be available to the operator. If the Safety temperature is set lower than the final target temperature of a Cone Program, the Cone programs with a higher target temperature will not appear to the operator.

# 6 USr

After setting the Safety temperature, Press the Left (Program) Button to advance to the **USr** option. The number of optional User programs can be selected by the OEM. This option only appears if the Configuration number previously set is 1, 2, 3 or 6.

The display alternates the **USr** message with the number of 8 segment User Programs. Use the Middle (Increase) or Right (Decrease) Buttons to change the **USr** setting. The available selections are 1, 2, 3 or 4.

# 7 J2-3

After setting the User Programs option, Press the Left (Program) Button to advance to the **J2-3** option. The function of the Auxiliary Output relay utilizing pins J2-2 and J2-3 can be selected by the OEM.

The display alternates the **J2-3** message with the default setting for the auxiliary output as a secondary heater relay output. Use the Middle (Increase) or Right (Decrease) Buttons to change the **J2-3** setting. The optional setting is for a Safety relay function which activates theJ2-3 relay output only once per firing; relay on at start of firing sequence and relay off at completion.

| J2-3 setting | Relay Function |
|---|---|
| **HEAt** | Heater |
| **SAFr** | Safety |

# 8 dELA

After setting the J2-3 option, Press the Left (Program) Button to advance to the **dELA** option. The operation mode of the delay start function can be selected by the OEM.

The display alternates the **dELA** message with the default setting for the delay start modet. Use the Middle (Increase) or Right (Decrease) Buttons to change the **dELA** setting. The optional setting are;

| dELA setting | | Delay Start Function |
|---|---|---|
| **dFLt** | default | Delay time resets to zero after each firing |
| **ALL** | | Delay time is saved for next firing |
| **OFF** | | Delay start option is unavailable |

# 9 Return to Idle

Press the Left (Program) Button to complete the OEM configuration. The display will return to **IdLE**. Power off the controller unless you have selected Configuration #4 and wish to set OEM Preset programs. If you have selected Configuration #4 and wish to have 9 User programs available to the operator. Proceed with turning the controller off to end the OEM configuration.

# 10 OEM Programs

When the controller display returns to Idle, the OEM can specify 1-5 preset programs or choose to have 9 User programs. All preset programs can be as long as 8 segments.

Before turning off the controller, Press the Left (Program) Button to display Pr01. Continue pressing the Left (Program) Button to step thru all the preset program parameters while making the desired entries at each program segment. At the end of each firing program, Enter zero for the next available heating rate and the controller display will return to the program prompt; like Pr01.

To Enter a 2$^{nd}$ Preset program, Press the Middle (Increase) Button while the controller is displaying Pr01, this will advance the display to Pr02 and the same steps for each program segment can be repeated as before with Pr01.

Repeat the same process for as many as 5 preset programs (Pr01-Pr05) any programs that are not programmed at this time will be available to the operator as standard User Programs.