

## Digital Temperature Controllers



Universal Temperature  
Controller – 0725RNT



Multiple Zone Temperature  
Controller – 0725PM



Rack Mount Temperature  
Controller – 0725R

### **User Manual Part # 0725RNT, 0725PM, 0725R**



Questions? Contact us at 800-223-3977 or online at

<http://www.cleanair.com/equipment/Express/main.html>

Serial Number \_\_\_\_\_

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**IMPORTANT!!!****BEFORE YOU BEGIN READ THIS!!!**

**READ AND UNDERSTAND ALL INSTRUCTIONS BEFORE USING THIS SYSTEM!**

**SAVE THESE INSTRUCTIONS!!!**

- **To Avoid Accidents...**
  - ✓ Keep your work area clean and well lit.
  - ✓ Keep bystanders away.
  - ✓ Exercise common sense.
- **Electrical Safety...**
  - ✓ Do not operate in combustible environments.
  - ✓ DO NOT operate these products when wet or in water.
  - ✓ ALWAYS be sure that the system is running with the correct voltage.
  - ✓ Never remove a grounding prong or modify a plug.
  - ✓ Do not abuse the power cord or plug. Remove by handling plug only.
- **Personal Safety...**
  - ✓ This system can be heated in excess of 500 degrees Fahrenheit. Use caution when handling your equipment during and after a test.
  - ✓ Stay alert and watch what you are doing.
  - ✓ Dress appropriately. Wear the appropriate personal safety devices.
- **Equipment Maintenance...**
  - ✓ Maintenance and repairs should be performed by one of Clean Air Express's trained technicians.

***Customer Feedback***

Clean Air Engineering takes pride in our quality products and services. We strive to provide the highest quality products and services in the industry. We realize the importance of end user input in the continual improvement of our products and services. Customer feedback is of paramount importance. **We encourage your feedback with any suggestions or problems that can help us improve our performance.** A customer feedback form is available online at <http://www.cleanair.com/About/feedback.html>. To emphasize our commitment to quality products and complete customer satisfaction, Clean Air Engineering's manufacturing division, CAE Express, offers what we feel is the best and most comprehensive warranty in the environmental industry.

## 1 Safety

Safety should always be considered first, and proper safety procedures should be followed.

### 1.1 Temperature

The digital temperature controllers are capable of heating equipment to very high temperatures. Exercise caution around the exterior of the box as well as the equipment it heats, as these can become very hot when the unit is working.

### 1.2 Electrical Shock

The HSLC is powered by a standard 120 VAC line, meaning potentially fatal shocks are possible. It is no more dangerous than many household appliances in this regard; however, care must be taken to avoid shock. Before performing any maintenance on this or an assembly containing it, **turn off** and **unplug all devices** from the 120 VAC line.



## 2 Principles of Operation

Maintaining a steady temperature is important so that moisture, acid gas, and other constituents of the gas stream do not condense within the sample lines. This can result in the damage to equipment as well as the loss of important data. These products are designed to ensure the accuracy of gas samples and protect equipment from unnecessary damage.

### 2.1 Models

All models feature a digital temperature controller, a circuit breaker, solid state relays, type K thermocouples, and a 3 pin Amphenol electrical connector.

- **Universal Temperature Controller** – utilizes a single circuit to control a heated sample line, oven, pump, filter, or probe. **(0725RNT)**
- **Multiple Zone Temperature Controller** – controls up to four different instruments simultaneously. **(0725PM)**
- **Rack Mount Temperature Controller** – can be adapted to control almost any type of heating load, rack mountable. **(0725R)**

### 2.2 System Components

#### 2.2.1 Digital Temperature Controller

Will maintain sample lines at a set temperature.

#### 2.2.2 Power Requirements

These temperature controllers run on 120 VAC or 240 VAC and up to 25 amps of current. They are protected from overload by a 25 amp manual circuit breaker.\*

\***NOTE:** Higher amperage may require a higher rated circuit breaker which is available upon request

## 2.3 System Operation


See the following page for pictures.

### 2.3.1 Getting Started

Insert the sample line connector (8) and the thermocouple plug (7) into the corresponding inputs at the back of the unit. Plug the temperature controller into the power source (120V) (see Figure 2). Press the green SEL key (3) to enter select mode and use the arrow keys (4) to select the desired temperature. When in select mode, the SV indicator light (1) will be on and the display (2) will read the temperature that has been selected. Pressing the SEL key (3) in this mode will exit select mode. The SV indicator light (1) will be off and the current temperature of the line will be displayed (see Figure 1).

### 2.3.2 System Operation

As the temperature controller is warming up, the indicator light C1 (1) will be solid green. It will eventually start to blink on and off, and the closer the actual temperature gets to the target temperature the less the light will blink.

 **CAUTION!!** – If the light does not blink when it gets near the target temperature, overheating is likely!

**NOTICE** – Only the indicator lights SV and C1 should light up at any point in time.

**NOTICE** – In the event of an overload, the circuit breaker (5) will pop out. Simply push it in to reset.



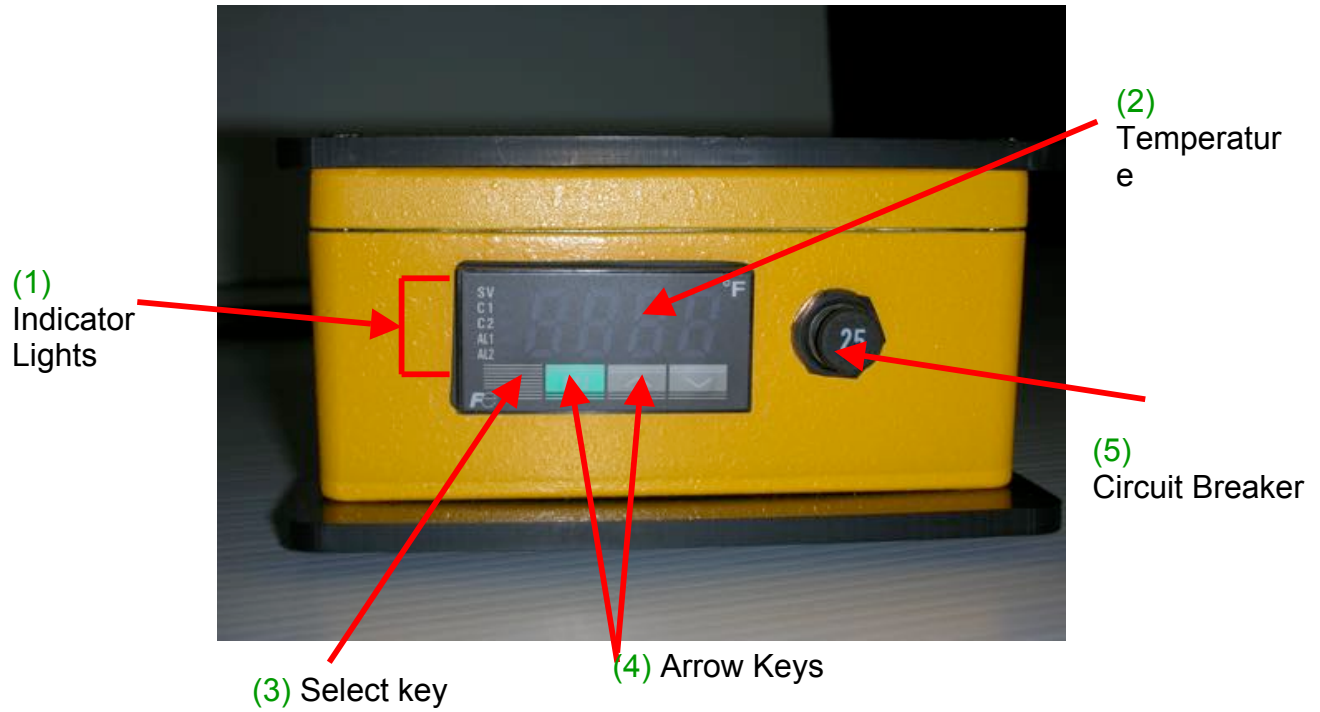


Figure 1

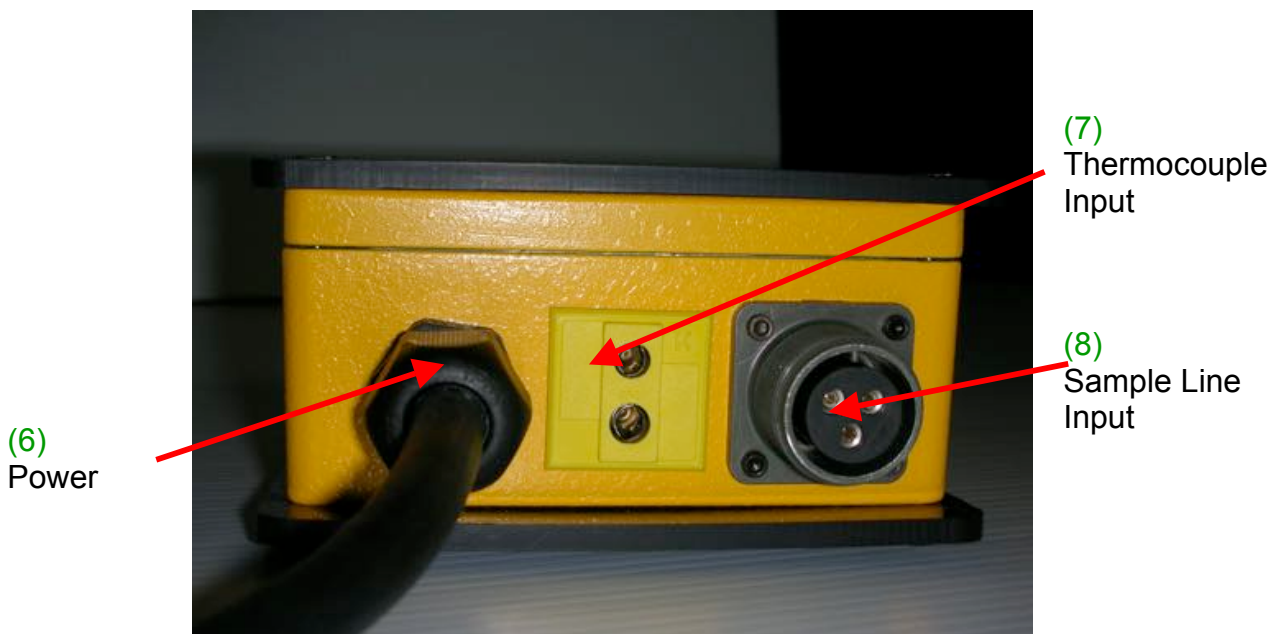



Figure 2

(Appearance will vary depending on model)

### 3 Maintenance and Inspection

 **CAUTION!!!** – Do NOT disassemble this product! For maintenance contact Clean Air Express.

#### 3.1 *Maintenance Issues*

For any other maintenance issues, concerns, or questions, please contact Clean Air Express at (800)-223-3977. Clean Air Express can also be reached by mail at 212 N. Woodwork Lane Palatine, IL 60067; by fax at (847)-991-8924 or on the web at <http://www.cleanair.com/equipment/Express/main.html>

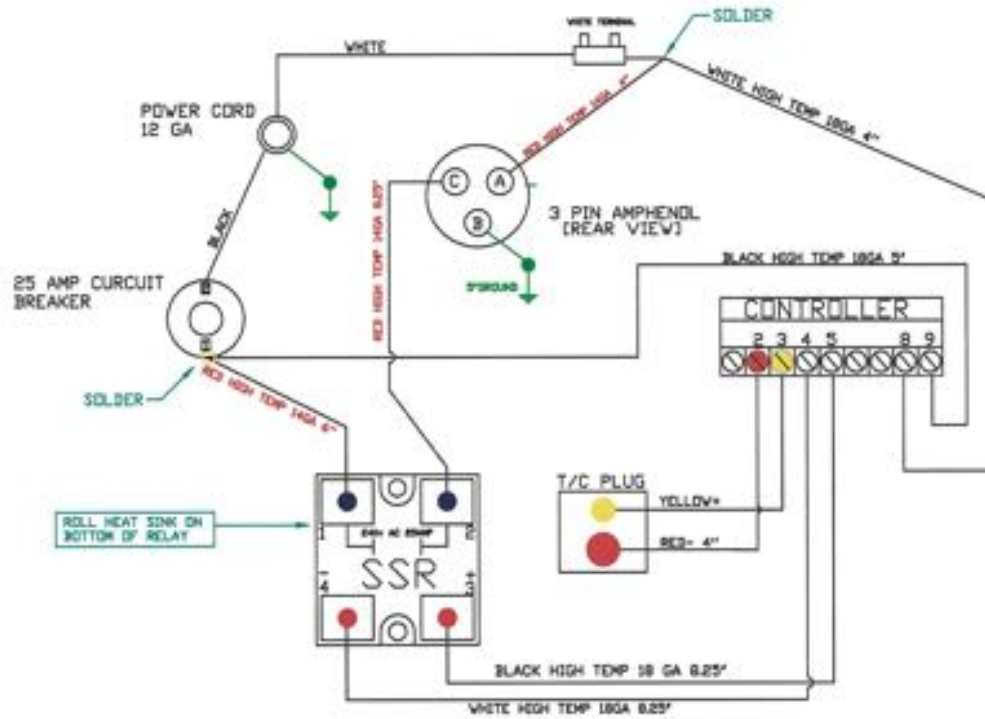


## 4 Troubleshooting

- **Heated Sample Line Controller not heating the sample lines**

There is no easy way to repair/replace a burned-out probe heater or heated sample line in the field. However, the source of failure is often not a burned-out heater, but a bad connector. Check the connectors for a broken or bent pin, and repair/replace as necessary. If the connectors and pins are fine, check to make sure the breaker is not tripped. Reset the breaker if it has tripped. If resetting the breaker fails, or immediately trips again, unplug the assembly and look for shorts in the circuit. Do NOT disassemble the controller; contact Clean Air Express for maintenance.
- **Overheating**

The overheating of this product or the assembly it is contained in is most often a result of either a thermocouple or temperature controller problem. If a thermocouple's insulation is compromised and the bare wires allowed to come in contact with a surface, it will report the temperature at that point, rather than at its tip. This can fool a temperature controller into keeping a heater on continuously. If none of the thermocouples have failed, it means that the temperature controller itself has failed and needs to be replaced. This could be due to disengagement of the temperature sensor or a locked switch.



**CLEAN AIR ENGINEERING  
 PARTS LIST  
 UNIVERSAL TEMPERATURE CONTROLLER**

May 15, 2008

Parent Part #: 0725RNT

Type: F

COMPONENT	DESCRIPTION	QTY	UM	TYPE
-----	-----	-----	-----	-----
9930N	CAST ALUMINUM BUD BOX-NEMA 4 UNPAINTED ALUMINUM FINISH	1.0	EA	R
9110A	12/3 SERVICE CORD .430 OD NEOPRENE RUBBER JACKET	2.0	FT	R
9402E	3 PIN PANEL MOUNT AMPHENOL WATER PROOF	1.0	EA	R
9110SR	PLASTIC POWER CORD STRAIN RELIEF AND NUT - BLACK	1.0	EA	R
0316SM	PANEL MOUNT THERMOCOUPLE STD TYPE K SNAP IN	1.0	EA	R
91301	FUJI 32ND DIN TEMP CONTROLLER	1.0	EA	R
9129	SOLID STATE RELAY- CRYDOM	1.0	EA	R
000021	BLACK PLASTIC CAP 1"X1/2"	1.0	EA	R
91282	14GA RED HOOK UP WIRE	1.0	FT	R
912810	14GA BLACK HOOK UP WIRE	1.0	FT	R
91351	PLUG GROUNDED 15A 125V AC	1.0	EA	R
9125A	25 AMP CIRCUIT BREAKER 115VAC 28VDC 1500VAC	1.0	EA	R
0725P	HSL CONTROLLER PROTECTOR BLACK HIGH IMPACT PLASTIC	2.0	EA	R

CLEAN AIR ENGINEERING  
 PARTS LIST  
 MULTIPLE ZONE TEMPERATURE CONTROLLER

May 16, 2008

Parent Part #: 0725PM

Type: F

COMPONENT -----	DESCRIPTION -----	QTY -----	UM -----	TYPE -----
0316SM	PANEL MOUNT THERMOCOUPLE STD TYPE K SNAP IN	4.0	EA	R
91301	FUJI 32ND DIN TEMP CONTROLLER PXR3-RCY1-4VA01	4.0	EA	R
9129	SOLID STATE RELAY- CRYDOM	4.0	EA	R
91282	14GA RED HOOK UP WIRE	2.0	FT	R
912810	14GA BLACK HOOK UP WIRE	2.0	FT	R
9144	115 VOLT RECEPTICLE 3 WIRE GROUNDED STRAIGHT BLADE	4.0	EA	R
9110	14 GAUGE POWER CORD 7'	2.0	EA	R
91251	25 AMP CIRCUIT BREAKER SWITCH TOGGLE	4.0	EA	R
9110SR	PLASTIC POWER CORD STRAIN RELIEF AND NUT - BLACK	2.0	EA	R

CLEAN AIR ENGINEERING  
 PARTS LIST  
 RACK MOUNT TEMPERATURE CONTROLLER

May 17, 2008

Parent Part #: 0725R

Type: F

COMPONENT	DESCRIPTION	QTY	UM	TYPE
94021E	3 PIN PANEL MOUNT AMPHENOL	1.0	EA	R
0316SM	PANEL MOUNT THERMOCOUPLE STD TYPE K SNAP IN	1.0	EA	R
9402	3 PIN BOX RECEPTICAL	1.0	EA	R
9110SR	PLASTIC POWER CORD STRAIN RELIEF AND NUT - BLACK	1.0	EA	R
9148	PANEL MOUNT FUSE HOLDER	1.0	EA	R
9129	SOLID STATE RELAY- CRYDOM	1.0	EA	R
91251	25 AMP CIRCUIT BREAKER SWITCH TOGGLE	1.0	EA	R
9110	14 GAUGE POWER CORD 7'	1.0	EA	R
91301	FUJI 32ND DIN TEMP CONTROLLER PXR3-RCY1-4VA01	1.0	EA	R
0725R1	TEMPERATURE CONTROLLER BACK PLATE	1.0	EA	R
0725R2	TEMPERATURE CONTROLLER FACE PLATE	1.0	EA	R
970625	FUSE 1 1/4" FAST-ACTING 25 AMPCERAMIC ABC TYPE	1.0	EA	R
007111	RITTAL 3U SIDE MEMBER 220 DEEP2	2.0	EA	R
007112	RITTAL PERF. COVER 14 HP X 220 DEEP	2.0	EA	R
007115	RITTAL COLLAR SCREW / SLEVE	4.0	EA	R
007116	RITTAL M2.5 X 11 SCREW	4.0	EA	R
0076	RITTAL PLASTIC GUIDE RAILS	4.0	EA	R

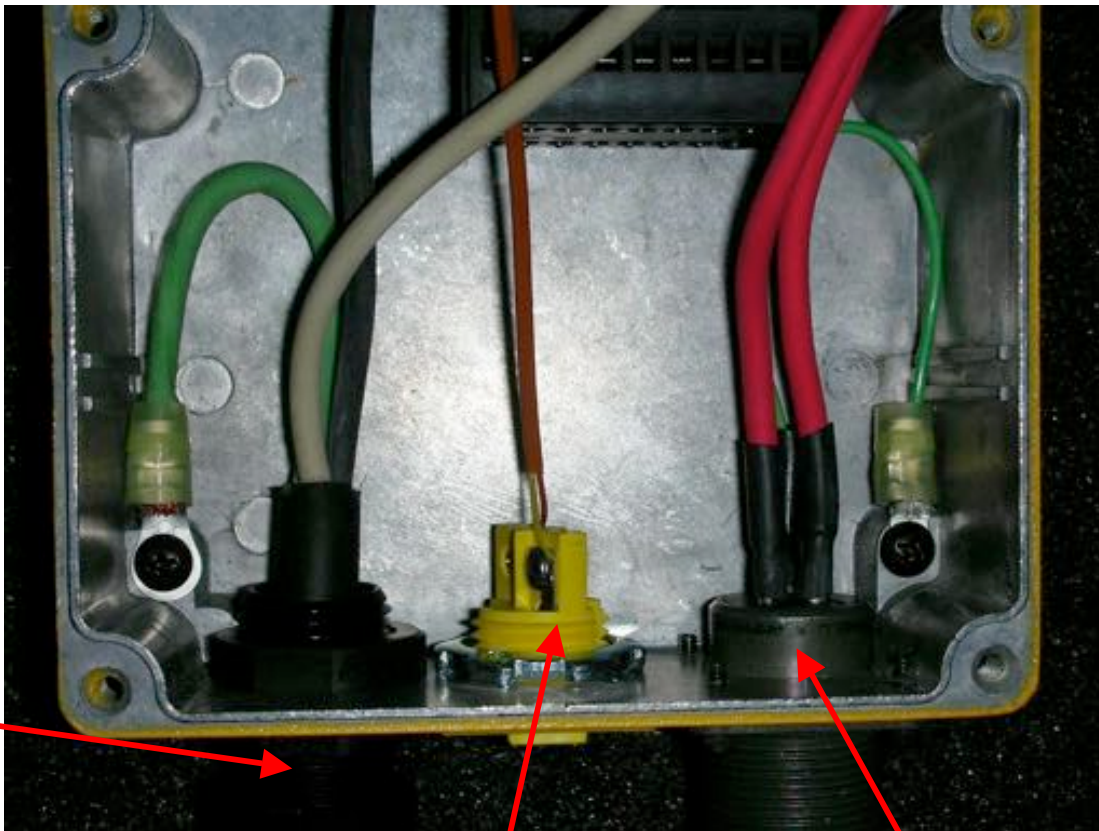
Digital  
Temperature  
Controller  
**91301**



25 Amp Circuit  
Breaker **9125A**

Relay  
**9129**

Power  
Cord  
**9110**



Thermocouple Input  
**0316SM**

3 Pin Amphenol  
**94021E**



**Our Guarantee**

Clean Air Engineering warrants products to be free from defects and workmanship for a period of one year after delivery date. The sole and exclusive remedy for defective goods shall be repair or replacement of defective parts or payment price of the goods for which damages are claimed, at Clean Air Engineering's option.

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