TPC CASH1500

OPERATOR MANUAL

REV D
1/16

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NOTICE

THE INFORMATION IN THIS MANUAL HAS BEEN CAREFULLY CHECKED AND IS BELIEVED TO BE ACCURATE. HOWEVER, NO RESPONSIBILITY IS ASSUMED FOR INACCURACIES.

SAFETY GUIDELINES

Before operating, maintaining or servicing any integrated thermal system, please read all of the technical and safety literature provided for your product. Guidelines for set-up, operation, and maintenance are outlined in this manual; however, please refer to local electrical code as necessary. Also, see Chapter 6 of NFPA 33 for relevant sections as applies to mounting locations and hazardous environments.

GENERAL PRODUCT DESCRIPTION

The TPC-CASH1500 Compressed Air System Heating consists of a 1.5kW Cooler Touch heater + PD temperature control + flow switch + high-limit thermostat protection + SSR packaged in a convenient compact wall-mountable stainless steel enclosure.

This unique product takes the guesswork out of process heating applications which require a moderate amount of wattage and can be operated at 120V or 240V 1-PH power.

The heater is capable of airflows up to 70 SCFM and can operate in environments up to 120 psig. Maximum output temperature is 260°C (500°F) depending upon airflow.

Possible applications for this system include:

Automotive Painting	Heat Staking	Metallization
Adhesive Activation	Sterilization	Heat Shrinking
Air Drying	Web Drying	Hopper Drying
Solder Removal	Plastic Curing	

FEATURE DESCRIPTIONS

DUAL VOLTAGE

By flipping the flush switch on the right side of the heater below the power inlet, the heater can be switched to operate at either 120 or 240VAC.

LOW FLOW

The flow switch requires a minimum of 3 SCFM to operate correctly. If the air flow drops too low it will de-energize the heater circuit.

CONTROLS

Each unit includes a potentiometer dial control on the right side above the power connector of the stainless steel enclosure. The dial control allows for easy adjustment to reach desired output.

The potentiometer dial inputs to proportional derivative controls built into the temperature controller/SSR.

INDICATORS

An exterior red indicator illuminates when the correct amount of air flow is input into the inlet of the heater. Airflow will cause the flow switch to close and the safety relay to energize the temperature controller, thereby illuminating the indicator.

CONNECTION GUIDE

1) Connect INLET (supply line from compressed air or nitrogen system) to bottom ½" NPT Female fitting
2) Connect EXHAUST to top ½" NPT Female fitting
3) Ensure that the switch on front of the enclosure is 'OFF'
4) Connect IEC power cable into male POWER INLET connector on right side of unit.

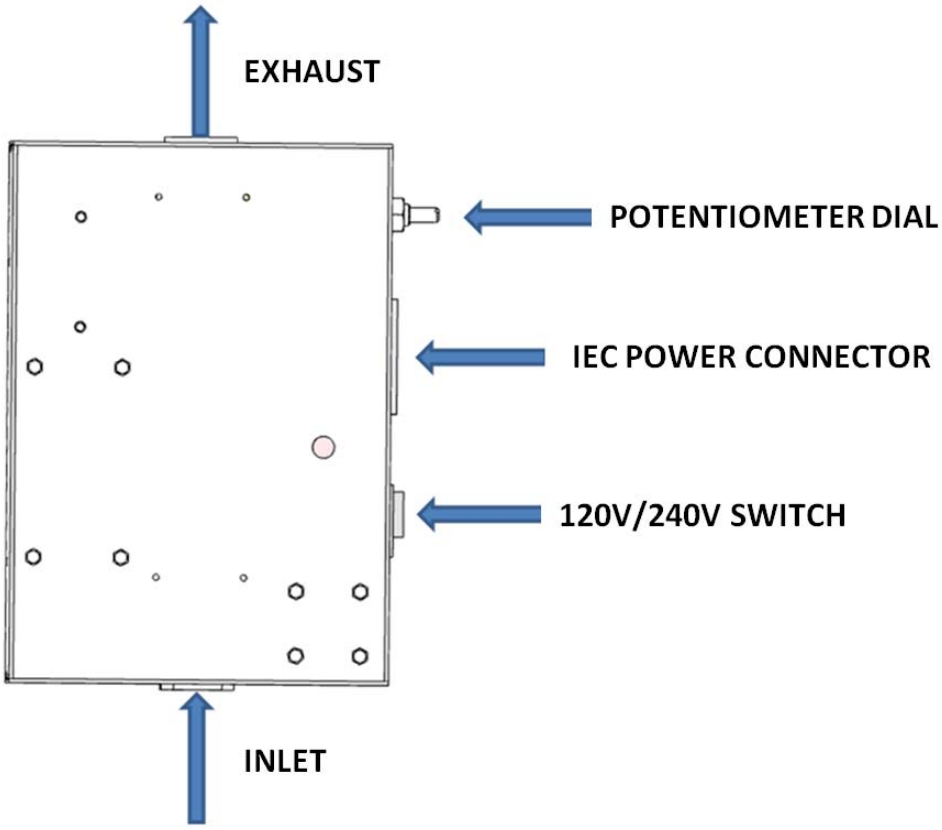

Figure 1: Connection Diagram

MOUNTING LOCATION

Mount the TPC-CASH1500 enclosure vertically to an appropriate surface where ambient temperature is approximately room temperature (to aid in heat dissipation). The unit should not be located near other heat producing equipment such as ovens or steam pipes.

WARNING: The TPC-CASH1500 should be mounted in an area that is not in danger of fire or explosion. Please refer to Chapter 6 of NFPA 33 for details on hazardous environments

BLOCK DIAGRAM

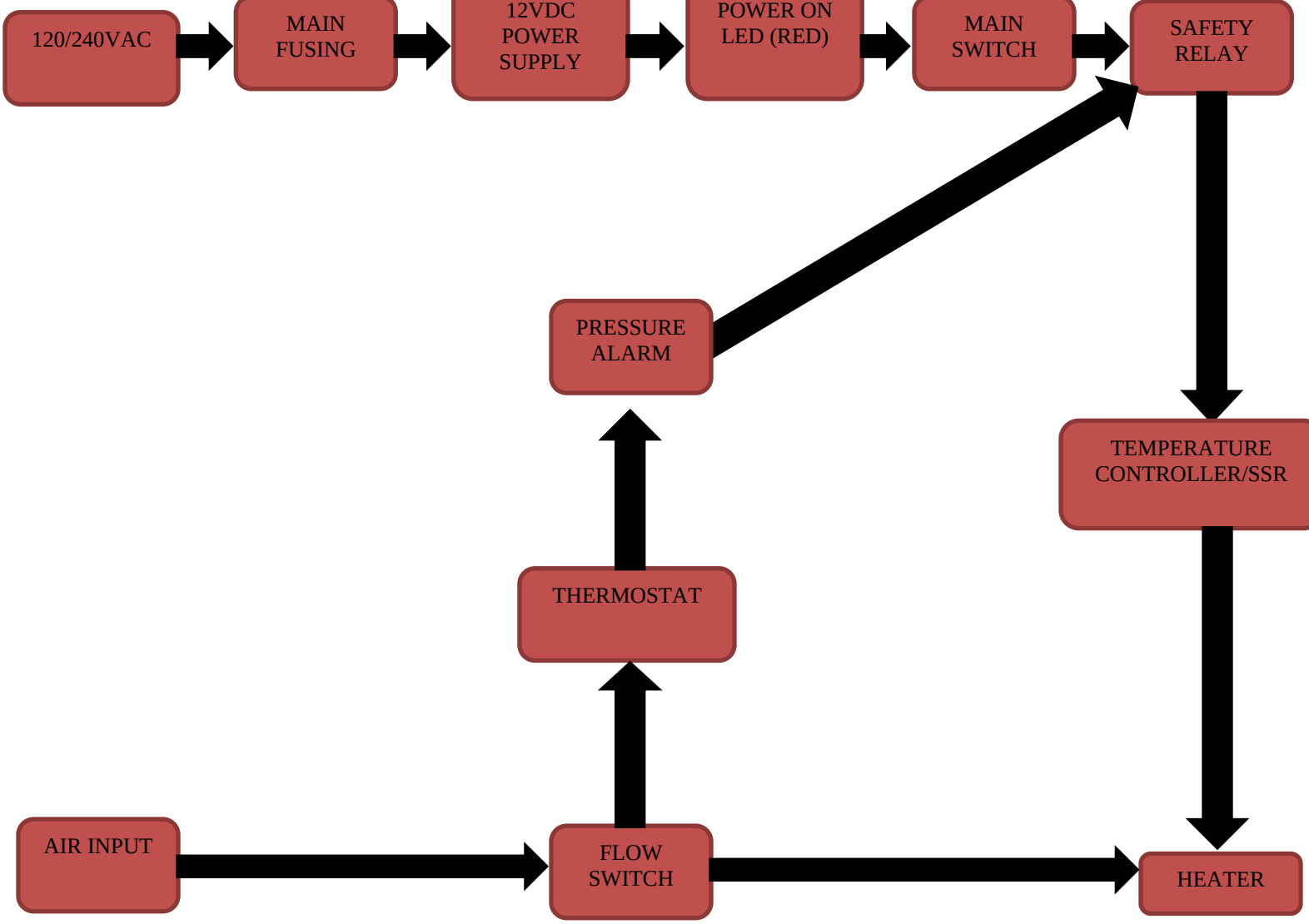

Figure 2: Functional Block Diagram

OPERATION

1. Be sure that the inlet ambient air temperature is approximately 70 degrees Fahrenheit.

2. After airflow is established, plug IEC cord into male connector and wall outlet, flip the switch on the side of enclosure to 'ON'. Red LED indicator should illuminate.

3. Adjust the dial on the right side of the unit to reach desired temperature output.

SPECIFICATIONS

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Incoming Power	120 OR 240 VAC @ 15A, 50-60 Hz
Maximum Heater Rating	1500W, 120 OR 240 VAC, 1Ø
Maximum Operating Pressure	120 PSIG
Inlet Air Connection	1/2" NPT Female
Exit Air Connection	1/2" NPT Female
Enclosure	9.25" L X 11.13" W X 2.24" H
Enclosure Material	Stainless Steel
Heater Material	Stainless Steel
Weight	7 lbs
Maximum Airflow	70 SCFM
Thermal Feedback	Type K thermal couple
Process Control	PD
Output Temperature Range	100˚F – 500°F

Figure 3: Specifications and Operating Range

TROUBLESHOOTING

There is no heat output, what could be the problem?

First, check power input to unit. If power is on, there are a couple of reasons for no heat output. Check the following:

1. Open Fuse

2. Inadequate air supply causing flow switch to remain open – preventing safety relay from being energized.

Open fuses must be replaced with the same type fuse. If possible, try to determine the cause of the failure to prevent future problems.

MAINTENANCE

Keep unit in a dry location. The enclosure is rated for NEMA 1 indoor use only.
If the heater needs to be removed, first make sure the air supply has been locked off. Ensure the power to the unit has been turned off and that the heater, tubing, and fittings are cool enough to touch. Only then should the heater be removed. Contact Farnam Custom Products for a replacement heater.

REVISIONS PAGE

Revision #	Eng. #	Revision Made	Date
REV 01	TPCCASH1500	Origination	5/5/14
REV 02	TPCCASH1500	Updated	8/25/15
REV 03	TPCCASH1500	Change NEC to NFPA33	1/21/16
REV D	TPCCASH1500	Change revision levels to alphabetic for consistency	1/26/16

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LIMITED WARRANTY

WARRANTY: **FARNAM** WARRANTS ITS NEW PRODUCTS TO BE FREE FROM DEFECTS IN MATERIALS AND WORKMANSHIP UNDER THE SERVICE FOR WHICH THEY ARE INTENDED. THIS WARRANTY IS EFFECTIVE FOR TWELVE MONTHS FROM THE DATE OF SHIPMENT.

EXCLUSIONS: THIS WARRANTY IS **IN LIEU OF** ANY OTHER WARRANTY EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF **MERCHANTABILITY** OR FITNESS FOR A PARTICULAR PURPOSE.

FARNAM IS NOT LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.

NO PERSON OTHER THAN AN OFFICER IS AUTHORIZED TO GIVE ANY OTHER WARRANTY OR ASSUME ANY LIABILITY.

REMEDIES: THE PURCHASER'S SOLE AND EXCLUSIVE REMEDY SHALL BE: (1) THE REPAIR OR REPLACEMENT OF DEFECTIVE PARTS OR PRODUCTS, WITHOUT CHARGE. (2) AT THE OPTION OF **FARNAM**, THE REFUND OF THE PURCHASE PRICE.

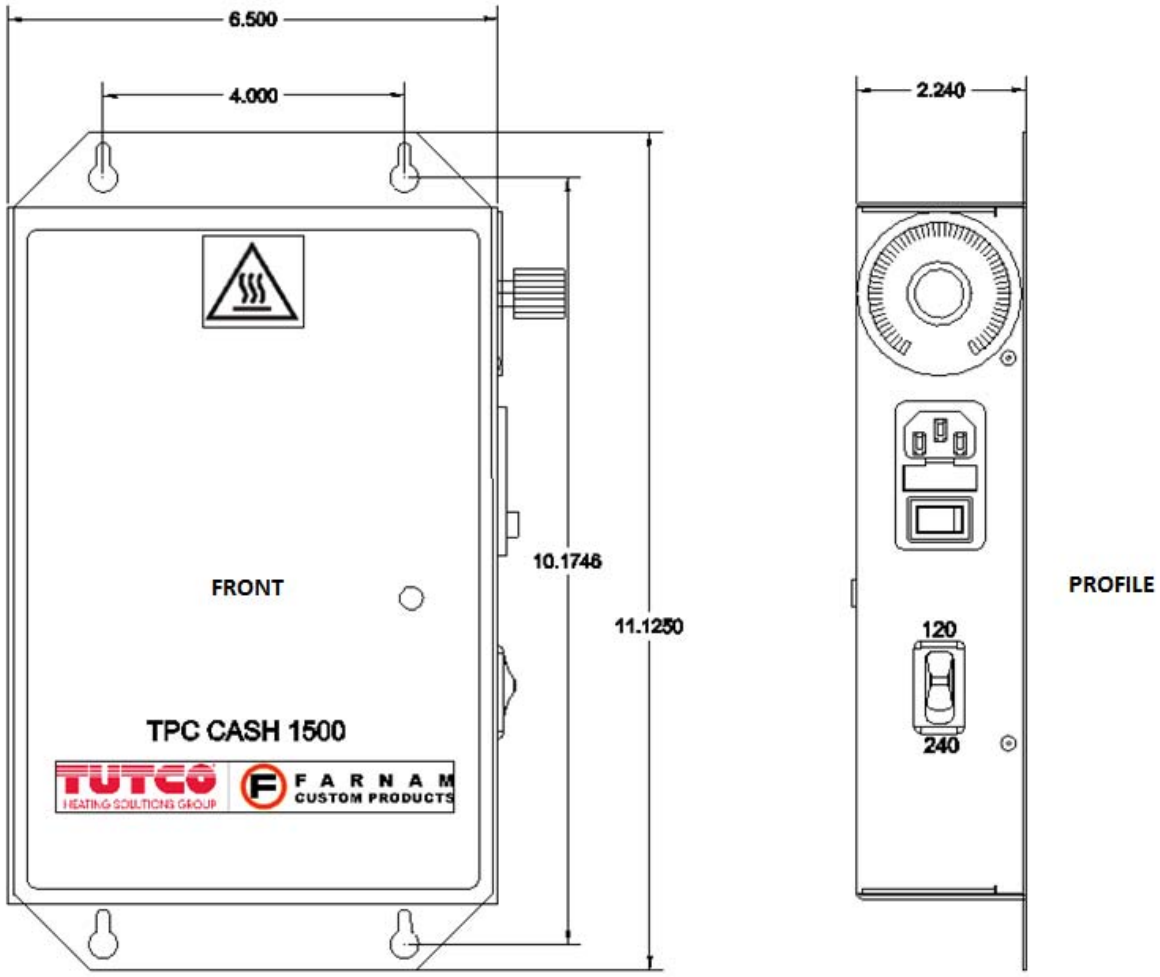

Figure 4: TPC-CASH1500 MOUNTING

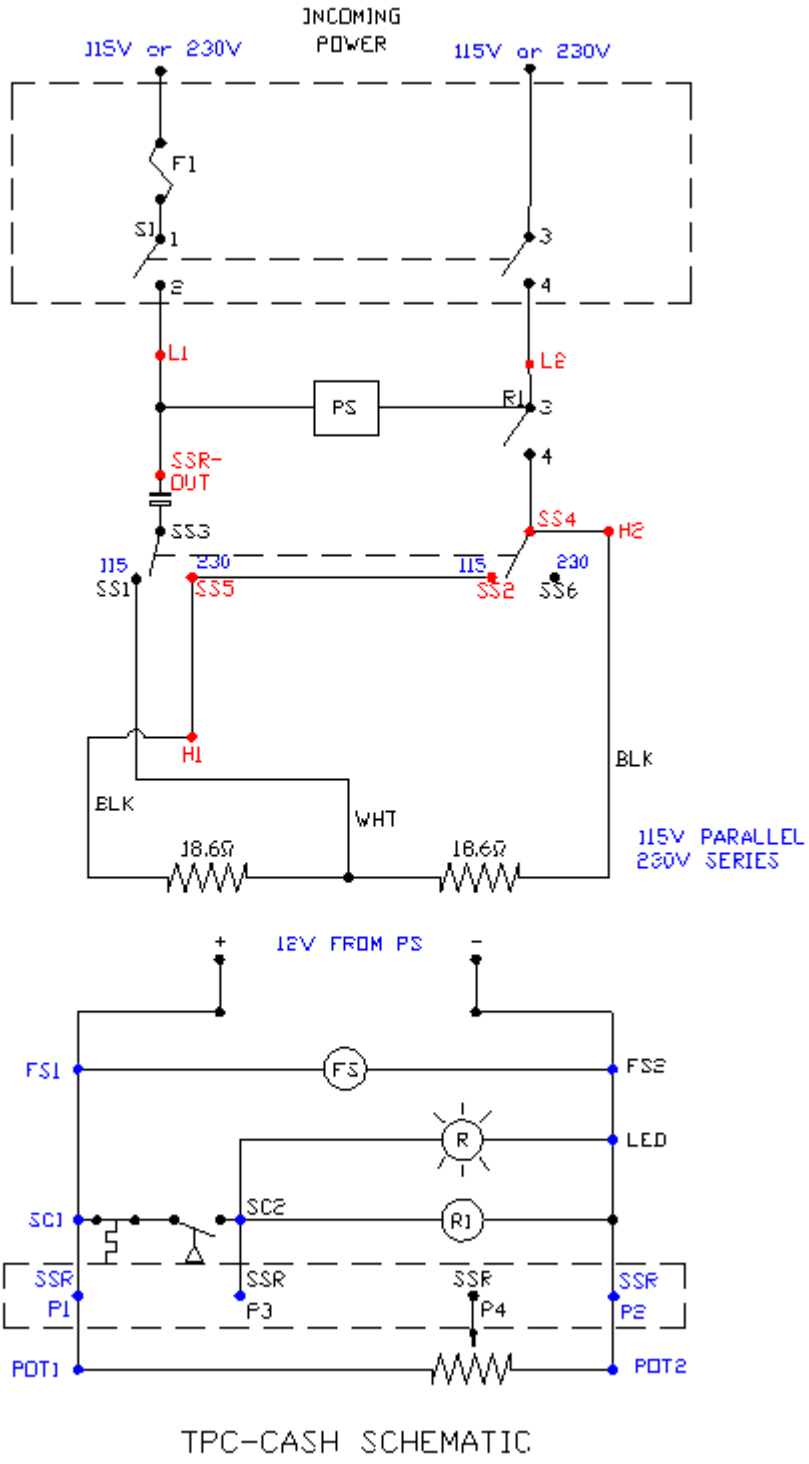

Figure 5: TPC-CASH1500 CIRCUIT DIAGRAM