

OPERATING INSTRUCTIONS

SureHeat® JET/ SureHeat® JET CONTROL

12/1/2004

PRODUCTS

SureHeat JET HEATER 3KW	P/N F074718	240V~ 1Φ 50/60 Hz	12.5A
SureHeat JET HEATER 8KW	P/N F074719	240V~ 1Φ 50/60 Hz	33.3A
SureHeat JET CONTROL *	P/N F074722	240V~ 1Φ 50/60 Hz	35A

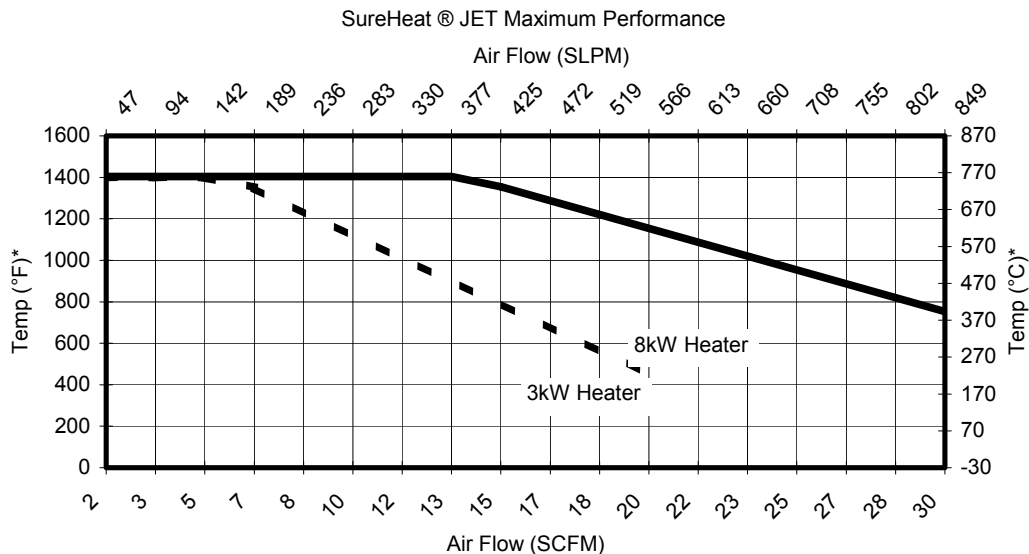
*Note JET CONTROL is sold separately. Use with either F074718 or F074719)

SPECIFICATIONS

Max. Exit Air Temp:	1400°F (760°C)
Max. Inlet Air Temp:	200°F (93°C)
Air Source	Compressed Air or Regenerative Blower
Max. Air Pressure:	60 PSI (4BAR)
Control Method	Phase angle fired SCR or "Zero-Cross" Solid State Relay (JET CONTROL is Solid State Relay)
Operating Voltage	240V~ 1Φ 50/60 Hz
Exit Connection:	1" NPT
Inlet Connection:	3/4" NPT
Safety Approvals:	CE, UL
Control/limit sensors:	Dual type K isolated TC's: S1 measures Exit temp S2 measures Inlet temp
Exit Temp Control (for S2)	Athena 16C 1/16 DIN Digital Controller Sylvania P/N F074829 Set to 1400°F (760°C) max.
Inlet Temp Control (for S1)	Athena 88 Analog Controller Sylvania P/N F074831 Set to 300°F (150°C) max.



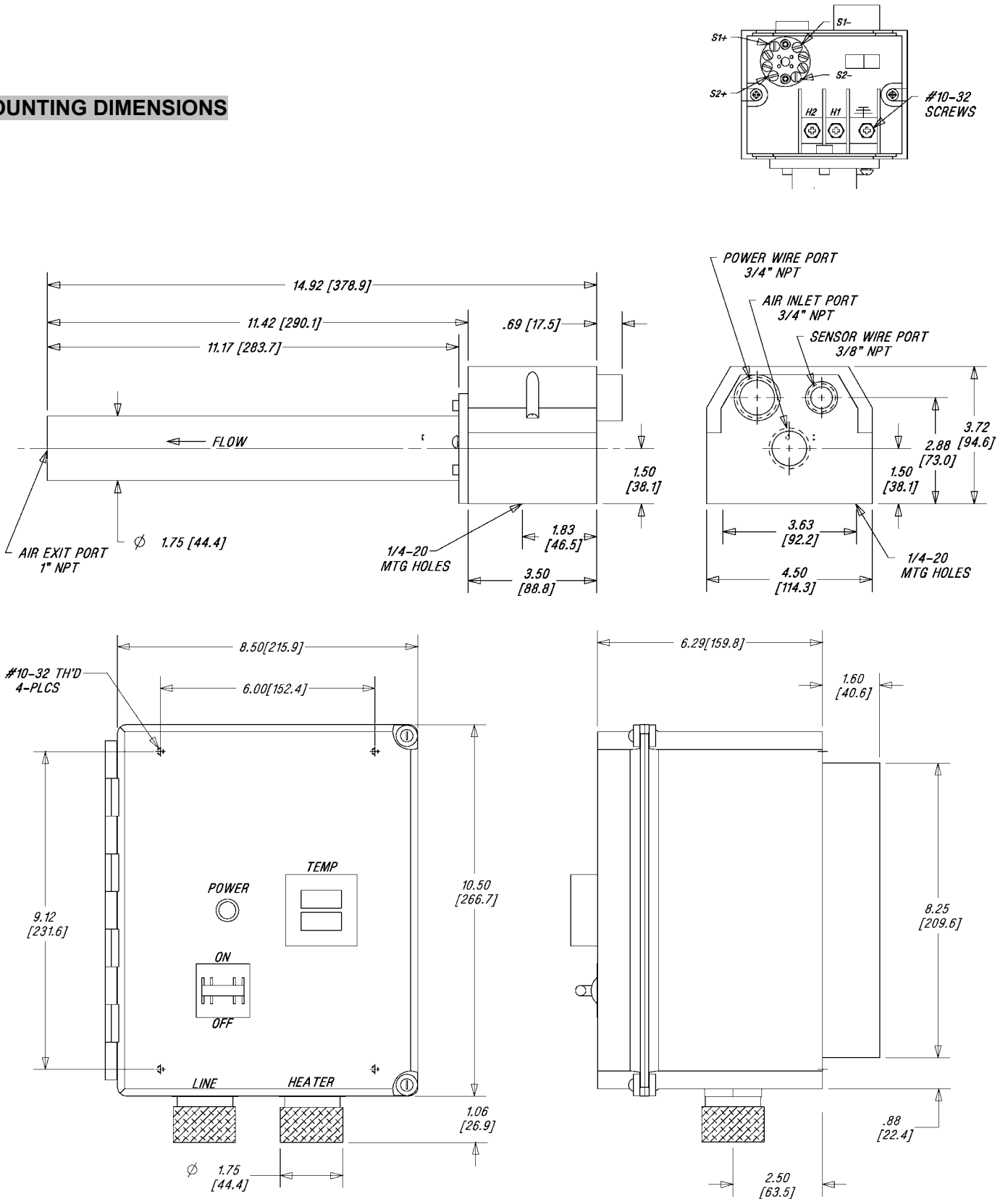
PERFORMANCE



* Temp as measured by internal "K" thermocouple.

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MOUNTING DIMENSIONS



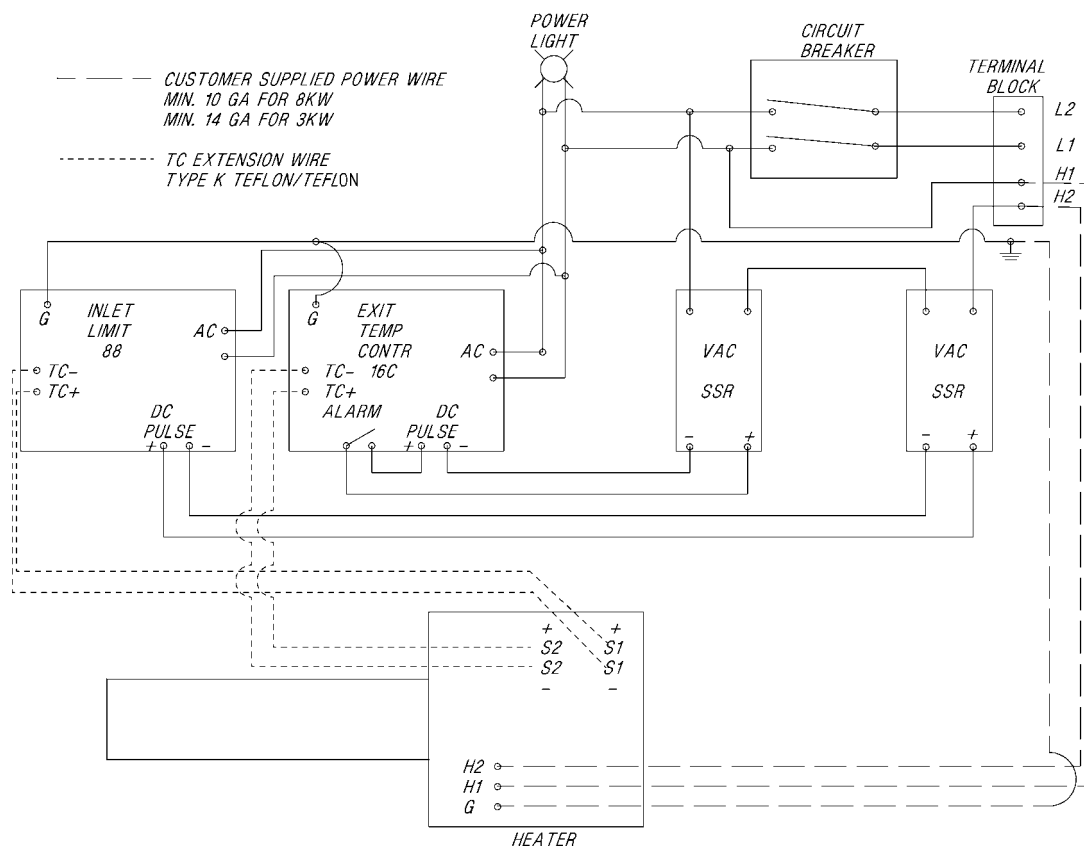
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SAFETY

- **SHOCK HAZARD** Only qualified individuals should install this heater and related controls. Follow all applicable electrical codes and use proper wiring.
- **BURN/FIRE/EXPLOSION HAZARD** Do not use with or near explosive or reactive gases. Avoid contact with the side, or exposure to the exit-end, during or soon after operation. **DO NOT USE NEAR VOLATILE OR COMBUSTIBLE MATERIALS.**
- **USE FILTERED AIR.** Avoid grease, oil, or oil vapors, corrosive or reactive gases that will damage heater.



WIRING

1. Wire heater according to diagram above. Follow applicable electrical codes when mounting and wiring system.
2. Note that customer is responsible to supply wiring for A) HEATER TO CONTROL, and B) CONTROL TO MAIN POWER:
 - A) HEATER TO CONTROL (G, H1, H2) and (S1, S2)
 - a. "K" THERMOCOUPLE WIRES must be Teflon Coated and Teflon Insulated, note RED is NEGATIVE.
 - i. S1 SENSOR on heater connects to INLET LIMIT controller. SYLVANIA sets INLET TEMP LIMIT to 300°F.
 - ii. S2 SENSOR on heater connects to EXIT TEMP controller. SYLVANIA sets EXIT TEMP LIMIT to 1400°F.
 - b. HEATER TO CONTROL (G, H1, H2) POWER WIRES are standard 10 or 14 Gauge, 3 wire (H1, H2, Ground) electrical cable.
 - B) CONTROL TO MAIN POWER (L1, L2, GND)
 - c. MAIN POWER WIRES are standard 10 or 14 Gauge, 3-wire (H1, H2, Ground) electrical cable.
 - d. MAIN POWER WIRE fuses must be sized based on maximum heater current. (3kW – 15A, 8kW – 35A)

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OPERATION

START-UP

1. Connect air source to heater.
2. Turn on air and set pressure or flow to desired operating level.
3. Energize MAIN POWER line, and turn on JET CONTROL circuit breaker
4. Using the UP/DOWN arrows, set desired temperature on EXIT TEMP controller.

During operation, with constant airflow, the exit temperature will vary only a few degrees from set point. Although the heater will not burn out with zero airflow, if the heater is operated in a vertical downward position and an airflow of 2 CFM or below is run through the heater, the inlet temperature of the heater will exceed 300°F and the low limit controller will begin to limit power to the heater.

SHUT-DOWN

1. Turn off JET CONTROL circuit breaker, or disconnect MAIN POWER line.
2. Allow air to continue to flow for a minimum of 1 minute or until exit air temperature is 150°C or less for safety. Continue airflow longer as necessary to prevent burn hazard to personnel.
3. Turn off air to the system.

TROUBLESHOOTING AND REPLACING HEATERS

1. NOTE THAT "TYPICAL" ELEMENT LIFE IS APPROX. 5000 hours. This is based on heater element operating at or below temperatures shown on PERFORMANCE CURVE. In addition to normal end of life, elements can fail due to mechanical damage, or problems with the control system.
2. If an element has failed prematurely, it should be inspected to determine the cause of the element failure.
3. When replacing or troubleshooting heaters, turn off power to the system and be sure to follow lock-out/tag-out procedures.
 - a. FOR TROUBLESHOOTING HEATER
 - i. Use multi-meter to check continuity between:
 1. Power terminals H1 and H2.
 2. S1+ and S1-
 3. S2+ and S2-
 - ii. If there is continuity on all three tests, check system wiring:
 1. Crossed thermocouple wires.
 2. Reversed thermocouple wire polarity – note RED is NEGATIVE.
 3. Verify inlet air temp is below set point on INLET TEMP controller.
 - iii. If there is no continuity on any test, then contact your local SYLVANIA representative for assistance.
4. **Remove entire heater assembly from system. Internal components are not replaceable.**
5. Reconnect sensor (S1, S2), power (H1, H2) and ground (G) wires to new heater.
6. Attach cover and operate heater as normal.

WARRANTY

OSRAM SYLVANIA warrants that all products to be delivered hereunder will be free from defects in material and workmanship at the time of delivery. OSRAM SYLVANIA's obligation under this warranty shall be limited to (at its option) repairing, replacing, or granting a credit at the prices invoiced at the time of shipment for any of said products. This warranty shall not apply to any such products which shall have been repaired or altered, except by OSRAM SYLVANIA, or which shall have been subjected. OSRAM SYLVANIA shall be liable under this warranty only if (A) OSRAM SYLVANIA receives notice of the alleged defect within sixty (60) days after the date of shipment; (B) the adjustment procedure hereinafter provided is followed, and (C) such products are, to OSRAM SYLVANIA's satisfaction, determined to be defective.

THE WARRANTY SET FORTH IN THE PRECEDING PARAGRAPH IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR OF MERCHANTABILITY.

The information contained in this manual is based on data considered to be true and accurate. Reasonable precautions for accuracy has been taken in the preparation of this manual, however OSRAM SYLVANIA assumes no responsibility for any omissions or errors, nor assumes any liability for damages that may result from the use of the product in accordance with the information contained in this manual.

Please direct all warranty/repair requests or inquiries to the place of purchase, and provide the following information, in writing:

- (A) Order number under which products were shipped
- (B) Model/Serial Number of product
- (C) Reason for rejection

PRODUCTS CANNOT BE RETURNED TO OSRAM SYLVANIA WITHOUT AUTHORIZATION.

Replacement, repair, or credit for products found to be defective will be made by the place of purchase. All products found to be not defective will be returned to the Buyer; transportation charges collect or stored at Buyers expense.