



# INSTRUCTION – AV/CABIN HEATER INSTALLATION

**Subject:** THP3094 Series AV/Cabin Heater

**Document No:** TN03094

**Revision:** G

**Date:** AUG-31-2020

## RECORD OF REVISIONS

*When updated, this document is changed in its entirety.*

REV	DATE	DESCRIPTION	BY	CKD
G	AUG-31-2020	Upper end wattage change and remove static rating	DNE	GDO
F	FEB-26-2019	Change CB4000 to TU03262 stud kit add Operation §	DNE	GDO
E	NOV-16-2018	Add CB4000E3CR14 stud correct narrative pg jump § 6.	DNE	GDO

Current revision approval: \_\_\_\_\_

### 1. PURPOSE

This instruction provides guidance for installation of the THP3094 Series AV/Cabin Heater and may be used to supplement higher level kit specific instructions.

### 2. DESCRIPTION

These heaters are small compact 100-240 VAC, 500W, self-contained forced air PTC heaters sized for compartment volume of 180 ft<sup>3</sup> / 5 m<sup>3</sup> (4 to 6 seat aircraft).

Part No: THP3094-500, configured for Occasional Use, with rubber feet and 6-ft Power Cord.

Part No: THP3094-001, configured for Permanent Installation, without feet or 6-ft Power Cord.

### 3. RATINGS

Output:	500W +20 / -10%
Dimensions:	6 x 5.75 x 2-inches (150 x 145 x 45 mm) Approximate
Weight:	1.3 lbs (0.6 Kg) Approximate (installation hardware not included)
Heater lead length:	6-inches (15 mm) Approximate
Voltage:	100-240 VAC
Current draw:	6A @ 100 VAC / 3A @ 240 VAC
Inrush:	115 VAC, 7.5A typical (9A below -10°C / 14°F)
Warranty:	3-yrs. (36 mo.) from the date of shipment.
Standards of Safety:	UL 60950-1 & CAN/CSA C22.2 No. 60950-1-07
UL:	CofC: 20150703-E239394, Flammability UL94V-0
CE:	R 50314338 P.1-4_CE, IP20(IEC60529), IEC 60068-2

### 4. OPERATION

Plugging and unplugging heater controls operation. For additional operating information refer to AV/Cabin Heater Operating Guide: TPG3094 and/or Operating Guide: TPG1000.

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## 5. INSTALLATION

**⚠ Caution:** **Do Not** use or locate in areas exposed to weather, fluids, or fuel vapors. Keep dry and free from Foreign Objects and Debris (FOD).

Technicians and users of this instruction are to be familiar with documents called out in this instruction and Installation Guide TNG1000.

### 5.1 Occasional Use

AV heater configured with rubber feet, VAC power plug and cabling installed on aircraft.

- a) Place heater feet down on floor of aircraft, maintaining minimum ducting clearance, and connect to dedicated AV heater cable, refer to Figure 7.7 and Operating Guide TPG3094.

### 5.2 Permanent Installation

Installation to be consistent AC 43.13-2, Ch 1 and 2. When not installed as subcomponent of higher-level kit, field approval (337) may be required.

Heater circuit: Configured per application or higher-level kit when applicable, for circuit options refer to Figure 7.5. and drawing: 03322.

- a) If heater is supplied with rubber feet, remove feet from corner mounting tabs and discard.
- b) Weigh heater and intended installation hardware. For additional Wt & BI requirements refer to Installation Guide: TNG1000.
- c) Select location that allows adequate ducting clearances and airflow, refer to Figure 7.2.
- d) Secure heater to mounting structure or bracket using all four mounting tabs. For hardware and bracket suggestions refer to Figures 7.8. through 7.12 and AC 43.13-2.
- e) Route heater cabling/circuit from heater to power source, secure and connect.
- f) Placard: When connecting with dedicated power plug, affix Placard p/n: TU03119-01 or equivalent stating Tanis AV/Cabin Heater, near plug.

### 5.3 Completion

Inspect: Visually inspect and verify components are connected and secure.

Check: Plug heater into VAC power. Listen for audible fan and check for warm air circulation. When equipped with thermostat cool below set point and verify operation.

Record: Pursuant 14 CFR part 43.9 or other procedures set in place, record installation in aircraft logs.

## 6. MAINTENANCE AND SERVICE

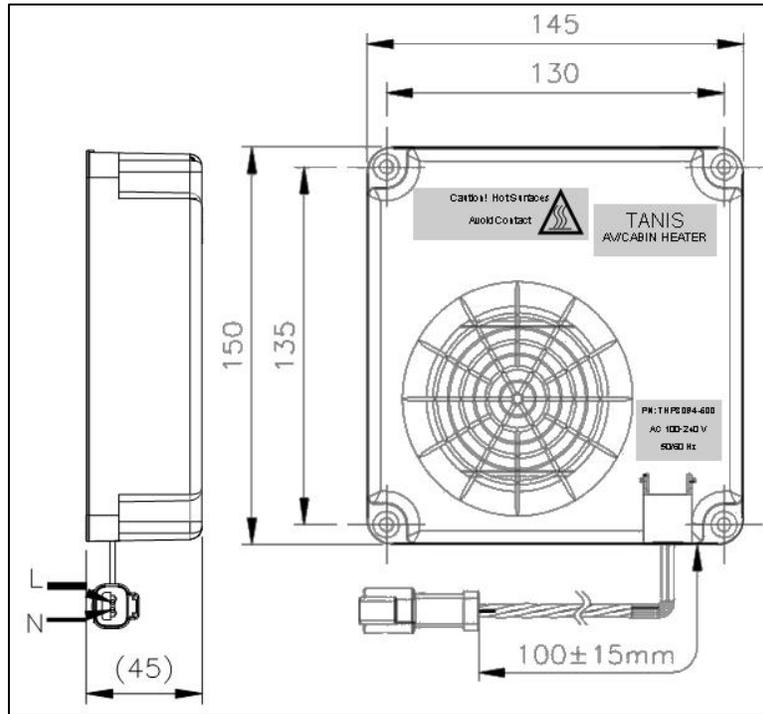
**Do Not** open-up or modify heater beyond removing rubber feet for installation.

There are no authorized repair procedures. Should a malfunction be detected, disconnect from power and refer to Tanis ICA: TCA1000 and/or contact Tanis engineering.

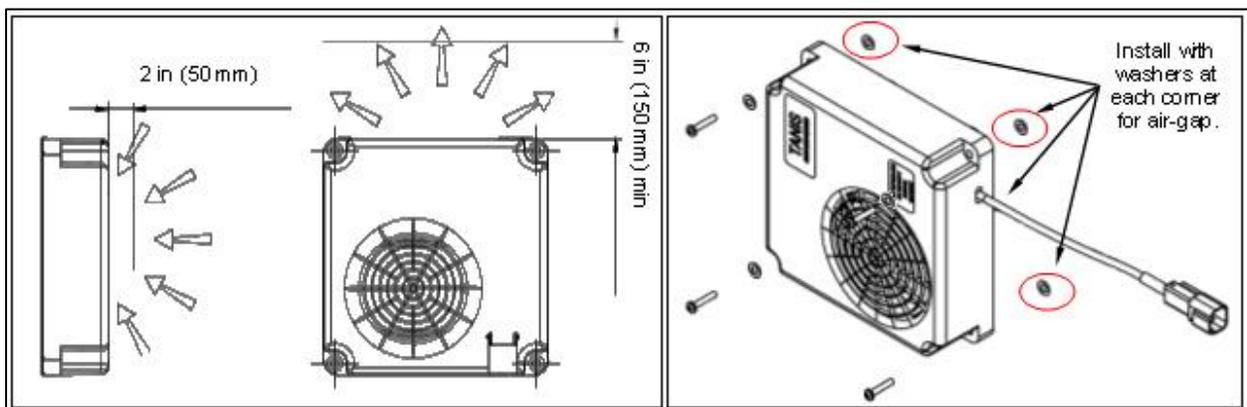
- Keep dry and free from Foreign Objects and Debris (FOD).
- Annually inspect security of attachment, air intake and outlet ports for FOD and obstructions, and verify operation.

## 7. FIGURES

Examples in section are for reference. Actual configuration and installations may vary by application and/or kit specific instruction.

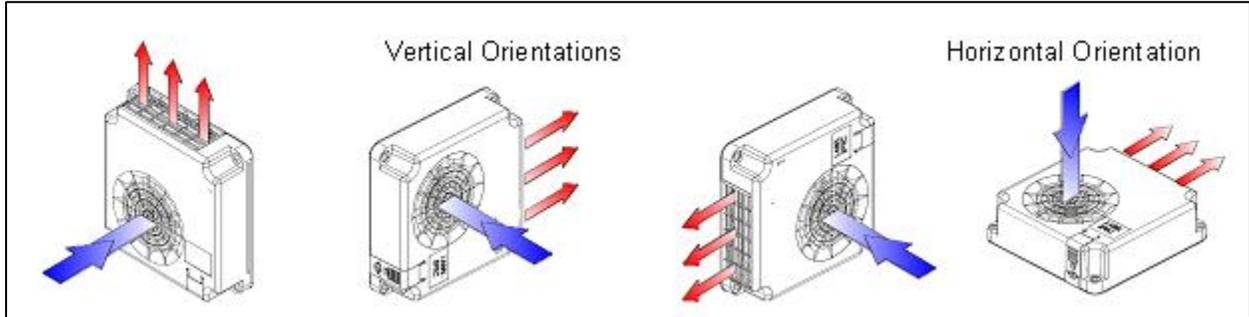


**Figure 7.1.** Outline Dimensions: 6 x 5.75 x 2-inches (150 x 145 x 45 mm) with mounting tabs located at corner. Weight: 1.3 lbs (0.6 Kg) approximate

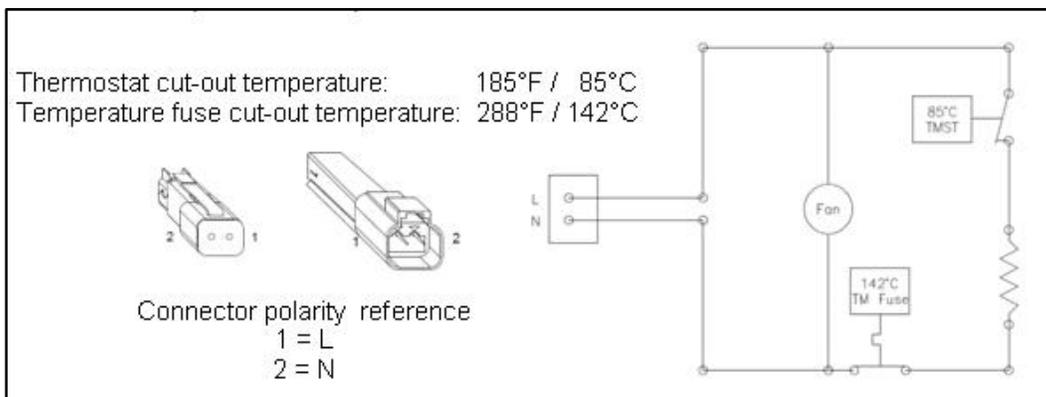


**Figure 7.2.** Ducting clearances: To avoid warm air standstill and overheating maintain minimum clearances or greater.

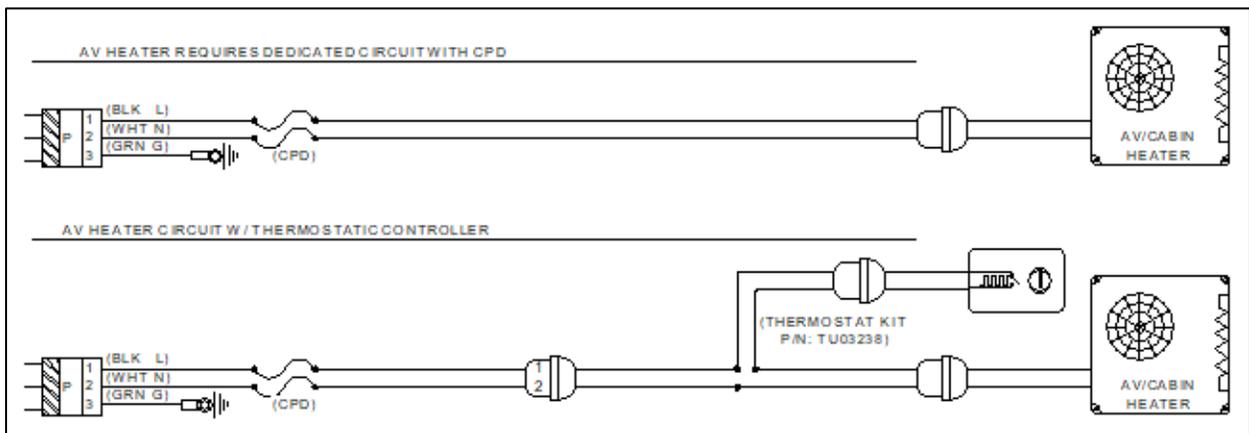
**Note:** Requires 0.032-inch (0.8 mm) min airgap between heater and mounting surface.



**Figure 7.3.** Mounting orientations with ducting flow. To avoid warm air standstill, overheating of heater and/or items near outflow, maintain minimum clearances, 2-inches inlet and 6-inches outflow, or greater refer to Figure 7.2.

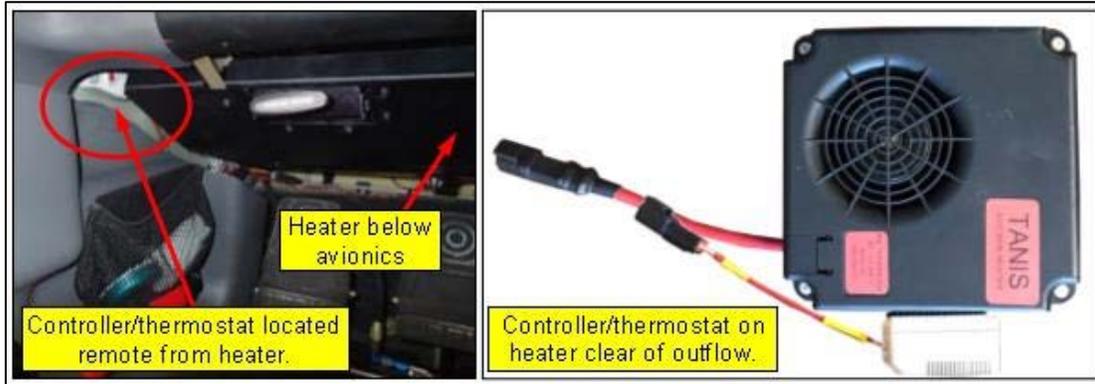


**Figure 7.4.** Heater connector polarity and circuit showing internal failsafe, self-setting over temp protection and thermostatic fuse.

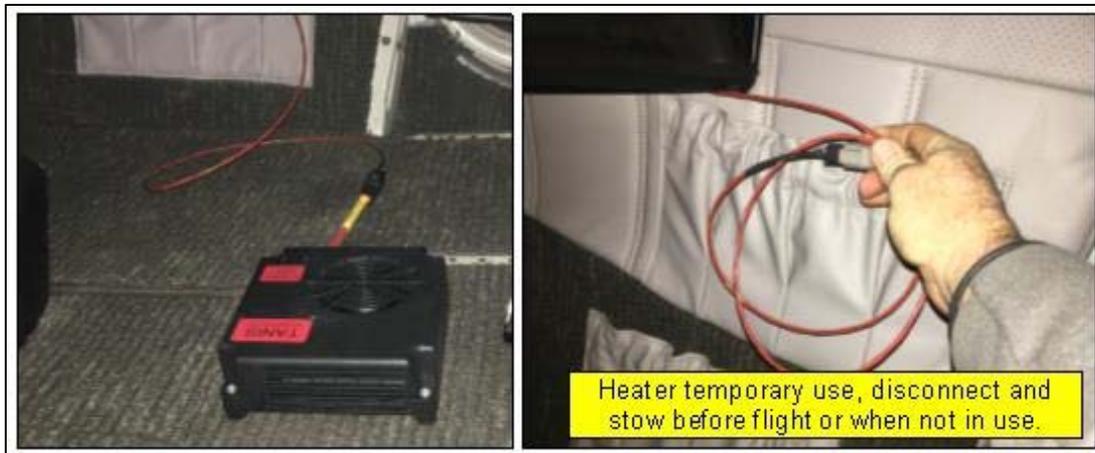


**Figure 7.5.** Installed heater requires dedicated circuit protection device (CPD). Thermal controller optional or supplied through NHA. For available options refer to drawing: 03322 and Installation Guide: TNG1000.

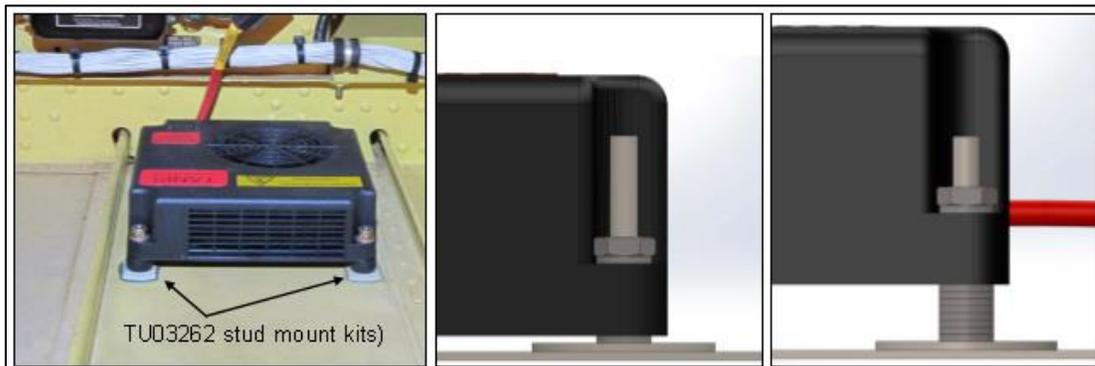
Note: Circuit load requirement refer to § 3. Ratings.



**Figure 7.6.** Example of heater with controller. Location of controller TBD by installing technician or NHA instruction, refer to Figure 7.5.



**Figure 7.7.** Example of heater configured for Occasional Use using Cable kit p/n: TC03164 in place of supplied Power Cord. Cabling is installed, not the heater, by terminating with engine preheat system in single plug and routing into cabin, refer to Figure 7.5.



**Figure 7.8.** Example of heater located with Stud Mount Kits p/n: TU03262 (4-each heater). Use additional spacers and/or washer as required.

Stud Mount Kits include one stud mount, lock nut, and 2-flat washers. Requires Adhesive Mix Kit p/n: CB92 (1-kit per 4-stud mounts) or CB200 acrylic adhesive, refer Click Bond™ Data Sheet: CB200 for site preparation and adhesive application.



**Figure 7.9.** Example of heater located horizontally with 1 x 2-inch Dual Lock™ Strips p/n: TU03239-02 (8-each heater).

Surface preparation: Lightly abrade glossy surfaces with scotch bright to improve the adhesive bond. Just prior to locating strips clean contact surfaces of mounting site and heater with Solvent Wipe p/n: CB911, rubbing alcohol, or heptane. To prevent redistribution of contaminants, dry with a clean dry cloth before solvent evaporates.

**Do Not** use shop towel, rags or paper wipes contaminated with oil, soap, or reclaimed solvents.

Without touching adhesive remove liner from strip adhesive and firmly press strip in place. To insure 100% of adhesive strip is in contact, especially around perimeter, press in place with down force pressure of 5 to 10 lbs. Be sure not to damage re-closable fastener stems.

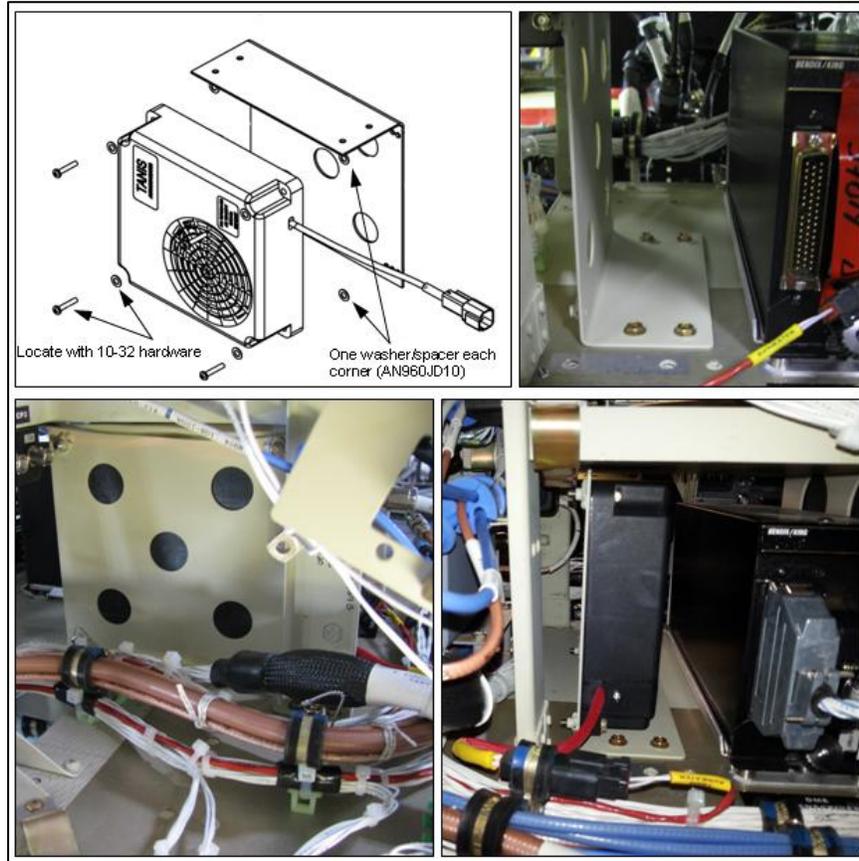
For additional application procedures refer to 3M Dual Lock™ Application Guide.



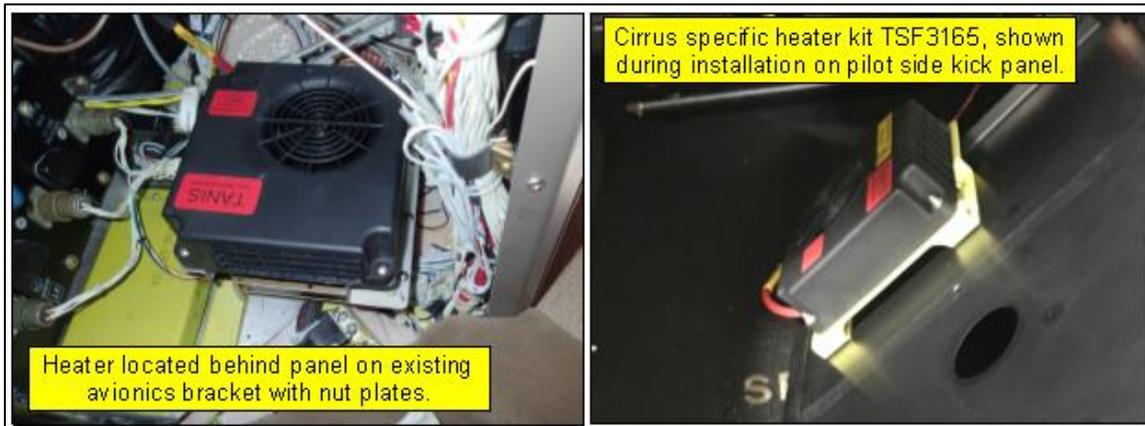
**Figure 7.10.** Examples of AV heater installations.

Left: AV heater mounted on avionics plate/shelf secured with # 8 fastener hardware and nut plates.

Right: AV heater mounted on firewall with #10 through bolts and hardware.



**Figure 7.11.** Example of heater located on existing avionics shelf using Bracket p/n: TU03143. Bracket configured with 10-32 nutplates, composite shelf fitted with 4-each p/n: 80-005-2 threaded inserts in shelf (size accordingly based on shelf thickness) or locate with appropriate through bolt hardware. When locating on composite panel/shelf, pot-holes with Hysol p/n: EA934NA (299-974-100 Type II Class 2), or p/n: EA9309NA (299-974-125 Type I) or equivalent OEM approved sealant.



**Figure 7.12.** Examples of heater located behind and below avionics panel. When locating in restricted area position with outflow pointing away from avionics and maintain minimum ducting clearances.

\*\*\*\*\* NOTHING FOLLOWS \*\*\*\*\*