

The GA-1000 is For Use On Experimental Aircraft Only!

The GA-1000 Is NOT For Continued Use In Known Icing Conditions!

Kit Contents:

GA-1000 Heated Pitot Tube
Electronic Control Module
LED Circuit Board with Multiconductor Cable attached
Pitot Tube Mounting Screw Packet (4 ea. 6-32x1/4" SS screws and lock washers)
Control Module Mounting Hardware Packet (3 ea. 6-32x1/2" screws, 3 ea. 6-32 Nutplates, 3 ea. Spacers, and 6 ea. 3-3.5 Rivets)
Installation Instructions (4 pages)

Additional parts needed: (to install the GA-1000 Pitot tube)

Gretz Aero heated Pitot tube mounting bracket kit for the GA-1000 Pitot

Additional parts needed from another source (for attaching Pitot tube to aluminum line)

1 each AN 815-4D Union for flared tubes
2 each AN 818-4D Nut
2 each AN 819-4D Sleeve

Additional wire needed:

Angus Aviation recommends installing 14 gauge wire for attaching Pitot tube heater to aircraft electrical system.

To fit the GA-1000 heated pitot tube to the mounting bracket kit, it may be necessary to grind the mounting end of the pitot tube down to the exact size of the mounting bracket. This is necessary because of the slight manufacturing inconsistency of the streamline tube used to make the mounting bracket. This is very easy and quick to do with a 3M composition wheel on your grinder. Also, the brass nut inserts will need to be smoothed to the surface of the pitot if they are not flush to allow for easy insertion into the mounting bracket. Just be careful and it will come out looking great.

When installing the four 6-32x1/4" pitot tube mounting screws and lock washers that fasten the pitot tube to the mounting bracket **be very careful to not over tighten the screws as this could loosen the nutserts in the pitot tube.** Tighten just enough to engage the lock washers. Start all four screws before tightening any one.

To plumb the tubing from the airspeed indicator to the pitot tube, the builder can use either the plastic type of instrument tube or aluminum tube. If the aluminum tube is used, note the "Additional parts needed" list at the top of this sheet. The builder will need to flair both the tube from the pitot and the tube coming from the panel. Connect these together by using the parts listed.

The GA-1000 heated pitot MUST be used with the electronic control module at all times.

The electronic control module must be mounted in an accessible location very close to the pitot tube. The wires from the pitot tube should not be lengthened to reach the electronic control module. The (+)12 volt wire from the aircraft electrical system should be 14 gauge as well as the (-)12 volt

wire going to a good aircraft grounding location. This grounding location should be checked for good conductivity back to the (-)12 battery terminal with a ohm meter. Connect the aircraft power wires and the pitot tube heater wires to the electronic control module as shown in figure #1. Use a 10 A circuit breaker or fuse at the (+)12 supply point. When mounting the control module, make sure that none of the circuit board traces are shorted. Use the hardware included in the control module mounting hardware packet.

The installation and use of the LED circuit board is recommended but is not necessary for the proper function of the pitot tube. Locate the preferred location of the LEDs on the panel. Locate and measure the center of the three LEDs. Mark your panel to correspond to the location of these LEDs. Measure the diameter of a LED to get the proper diameter of hole to drill in the panel. Once the holes are drilled in the panel, secure the LEDs to the panel with super glue or RTV glue. Provide an attachment of the multi-conductor cable to the panel close to the LED circuit board . This will provide a strain relief to protect the circuit board.

NOTE: Other locations of the LEDs could be utilized other than on the panel. For example, one could mount them in a visible location out on the wing in a very small fairing facing the pilot.

Route the multi-conductor LED cable back to the electronic control module that was installed close to the pitot tube. Connect the multi-conductor cable wires to the electronic control module as shown in figure #1.

The recommended labeling and the indication the LEDs represent is as follows:

<u>LED Color</u>	<u>Label</u>	<u>Indication</u>
Green	Pitot Temperature OK	Pitot temperature is above freezing and OK
Yellow	Pitot Heater ON	Module is providing power to the heater
Red	Pitot Temperature LOW	Pitot temperature is less than set point and calling for heat

- The SWITCHED ON indication, will always be one or more LEDs lit.
- There will be times when the Pitot tube is SWITCHED ON, and only the Green LED will be lit. It is a warm day and no heat is called for.
- On a cold day when SWITCHED ON, the Red and Yellow LEDs will both be lit for a short time. Upon reaching the critical temperature set point, the Red will go out, the Green LED will come on. The Yellow may stay on shortly as the temperature stabilizes. Thereafter, the Yellow will cycle on and off while the Green remains lit.

Connect the multi-conductor cable from the LED board (red, black, green, & white wires) to the small terminal block on the control module. Refer to Figure 1. Also connect the two small wires (both white) coming from the Pitot tube imbedded thermistor, to **either** of the thermistor terminals on the small terminal block. Connect the large wires from the Pitot tube to their respective terminals on the large terminal block. Connect the aircraft (+)12v and (-)12v 14 gauge wires to the large terminal block.

Refer to figure 2, 3, 4, and 5 and attach a short wire to the shield, then connect the shield wire to a local ground close to the control module.

Release of Liability:

Through the purchase, installation, and use of Angus Aviation Pty Ltd products, the Buyer agrees to hold Seller harmless from, and Buyer hereby assumes the entire responsibility and liability for, any and all damage or injury of any kind or nature whatever, including death, as to all persons, whether Buyer's employees, agents or otherwise, and as to all property, including Buyer's own property, caused by, resulting from, arising out of, or occurring in connection with, the use by Buyer himself or any other person, of Angus Aviation Pty Ltd products. Angus Aviation Pty Ltd and its owners and/or representatives are not liable in any way for the improper installation, or use of Angus Aviation Pty Ltd products, or for poor pilot operational judgment relating to any Angus Aviation Pty Ltd.

Warranty:

Your Angus Aviation Pty Ltd GA-1000 heated pitot tube and electronic control module are thoroughly checked for proper function before shipping to buyer(s). Once the Angus Aviation Pty Ltd GA-1000 heated pitot tube and electronic control module are connected to your aircraft electrical system, or other power source, warranties are VOID.

Thanks for purchasing this Angus Aviation Pty Ltd product.

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Fig. 1

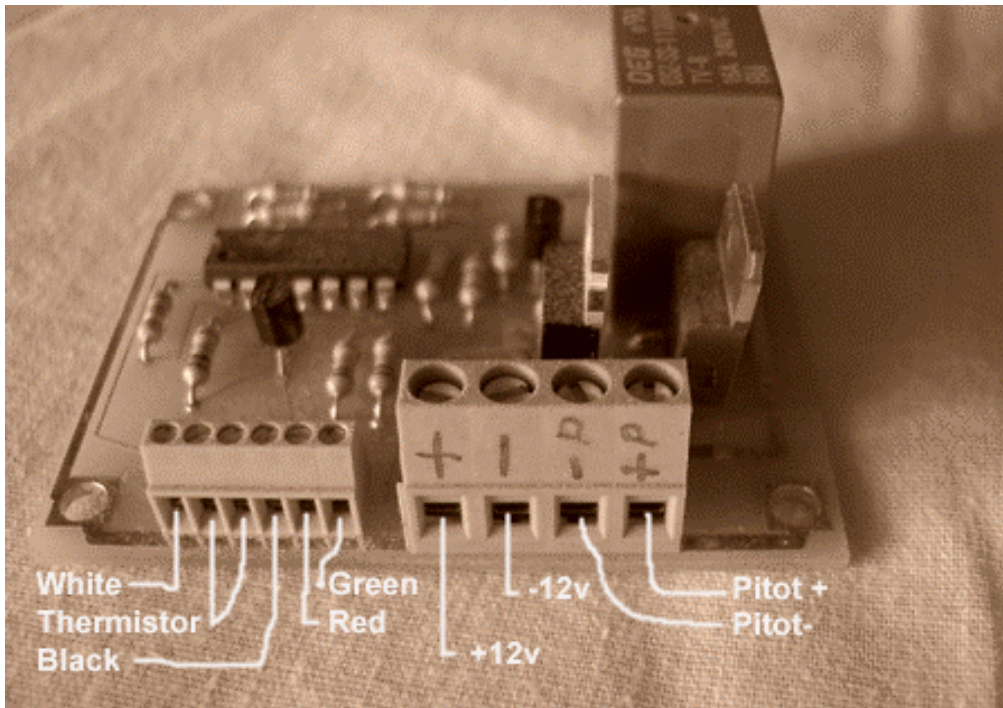


Fig. 2



Fig. 3



Fig. 4

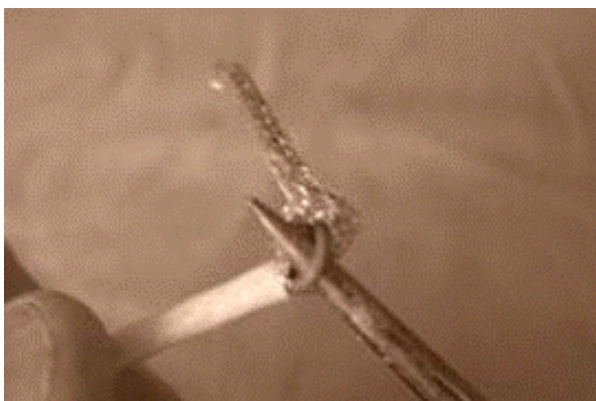


Fig. 5

