

GENERAL AVIATION ELECTRONICS, INC.
4141 KINGMAN DRIVE, INDIANAPOLIS, INDIANA 46226

INSTALLATION MANUAL

PWI PROXIMITY WARNING INDICATOR

Please Note:

THIS UNIT MUST BE INSTALLED BY a properly certificated and authorized person in accordance with the Federal Aviation Regulations, Part 43. No responsibility for improper installation of this unit is either implied or assumed by the manufacturer. Units shown to be installed in violation of the FARs will not be covered by the warranty and will remove any and all responsibility from the manufacturer for such equipment.

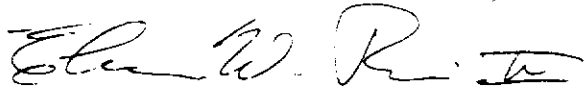
Warranty

Products bearing the trademark "GENAVE" or the trade name "GENERAL AVIATION ELECTRONICS, INC." have been fabricated by skillful technicians, under the strictest quality control conditions, using the finest materials and component parts available.

When properly adjusted and competently operated according to factory specifications and instructions, General Aviation Electronics, Inc. unconditionally guarantees and warrants all parts and bench service labor for one (1) full year from the date of the original installation.

This warranty shall not apply to malfunction, which in the opinion of General Aviation Electronics, Inc. is the result of abusive use, accident, willful destruction, improper or unauthorized repair or installation. All service under this warranty must be performed by an Authorized Genave Distributor, or by returning the unit or units, freight pre-paid, to the factory at Indianapolis, Indiana.

GENERAL AVIATION ELECTRONICS, INC.

By 
Elmore W. Rice, III, President

The Company offers no other guarantees or warranties expressed or implied

Proper Installation Will Assure Quality



The unit you are installing is a high quality, rugged, complex piece of electronic equipment. It has been manufactured under rigid quality control and has been fully tested and operated at high temperatures to stabilize the component parts.

Proper installation of the unit into your customer's aircraft is essential to complete the quality assurance program under which the unit was manufactured.

Specifications:

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WEIGHT:	2 lbs
DIMENSIONS:	7 $\frac{3}{8}$ long, 4 $\frac{5}{8}$ wide, 3 $\frac{7}{8}$ high
POWER:	.5 amps max @ 14 VDC or 28 VDC
TRANSISTORS:	31
INTEGRATED CIRCUITS:	2
DIODES:	20
RANGE:	Hi sens. 3 mi nominal lo sens. 1 $\frac{1}{2}$ mile nominal: (Based on 200 watt transponder power) Note: warning range may be field adjusted by authorized Genave distributor.
AUDIO OUT:	— 8 volts into 600 ohm load swept tone from 600 hz to 800 hz. Rate of sweep — 2 sweeps per sec. Flash rate of warning lamp — 2 flashes per sec. Duration of alarm — 2-4 seconds. Automatic reset after alarm.
SUPPRESSION PULSE:	—20 volts pulse 3.5 millisecond duration

Unpacking

CAREFULLY REMOVE the unit and its mounting accessories from the shipping container by removing the staples from the top of the carton and lifting the contents straight out. The carton should be saved until the installation is complete in the event that damage is discovered or return of the unit is necessary for some reason. Any damage due to shipping should be reported and a claim filed as soon as possible with the shipping company. (If it is necessary to re-ship, use our container which is specifically designed for that purpose.)

Pre-Installation Check

VISUALLY INSPECT the unit for any obvious external damage, such as dents, loose wires, etc. Any damage not related to shipping should be reported to General Aviation Electronics, Inc., 4141 Kingman Drive, Indianapolis, Indiana (46226), Area Code 317-546-1111, as soon as possible.

Damage due to shipping should be reported to and a claim should be filed promptly with the transportation company.

All units are shipped in perfect operating condition. However, a pre-installation electrical test may be performed to assure that the unit has suffered no internal damage during shipment. For a detailed test procedure, refer to the Maintenance Section of the Service Manual. DO NOT ATTEMPT to bench test the unit without proper equipment as specified in the Service Manual.

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Installation Planning

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THE LOCATION of the unit in the aircraft should be carefully selected with due consideration to the following:

1. The unit generates only a very small amount of heat and, as such, does not require any type of cooling. However, the unit must NOT be mounted directly above a vacuum tube device or any other equipments that generate a large amount of heat unless such equipments have cooling provisions installed to keep the heat generated therein from coming in contact with other equipments mounted in close proximity to them.

MOUNTING THE UNIT DIRECTLY OVER UNCOOLED VACUUM TUBE EQUIPMENT OR IN THE HOT AIR BLAST OF ANY DEVICE, INCLUDING CABIN HEATERS, WILL AUTOMATICALLY VOID THE WARRANTY

2. The placement of the unit should be such that all controls are easily accessible.
3. **ANTENNA LOCATION:** The antenna supplied with the Proximity Warning Indicator will provide approximately omni directional coverage in the horizontal plane. The range of the PWI will be effected by the ground plane on which the antenna is located. As an example, if the antenna is mounted on the top of the aircraft fuselage, the primary detection area will be above the aircraft. If the antenna is mounted on the bottom of the fuselage, the primary detection area will be slightly below the aircraft. Protrusions on the ground plane in the vicinity of the antenna will cause reduced warning range in the direction of the protrusion. Therefore, the PWI antenna should be mounted as far as possible from all other antennas, strobe lights, the vertical stabilizer, landing gear, or other structures of the aircraft that could shield the antenna. In general, it is best to mount the PWI antenna in the center of a large unobstructed area on top of the cabin. It should be noted that some warning range will be provided in all directions but that the warning range in a given area will be drastically reduced by improper antenna location. The antenna must be mounted on a metal ground plane at least one foot in diameter and will not function correctly if mounted on a fabric aircraft without the ground plane.
4. **RECEIVER LOCATION:** The remote receiver may be mounted in any location, but in any case the coaxial line must not be longer than 10 feet when using RG 58 and 30 feet when using RG 8.

Installation

CONTROL PANEL ASSEMBLY

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1. Select a rear seat (if available) to have the hole drilled in the front panel selected in Step 1.

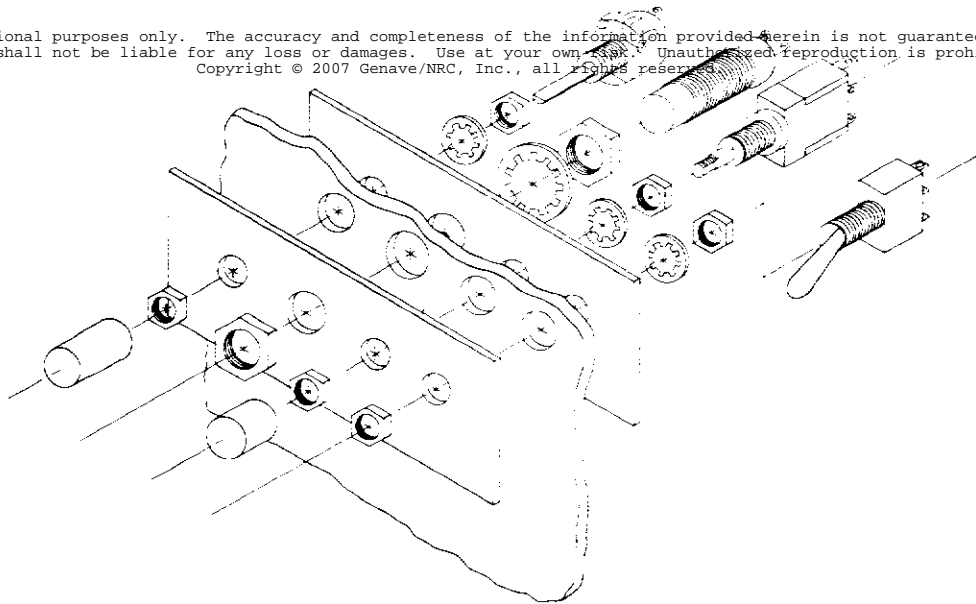
2. If holes are to be drilled in the aircraft panel, they should be spaced using the selected front or rear panel as a template.
3. Connect a wire of sufficient length to each terminal to reach between the lamps and the remote receiver. See Figure 1 for recommended color coding.
4. Mount the assembly in the prepared holes as shown in Figure 1. The threaded housings are used to secure the assembly to the aircraft panel.

REMOTE UNIT

1. Install the remote unit in the aircraft using a minimum of two mounting holes in opposite sides of the unit. Use the receiver itself for a template, and drill the selected holes with a 5/32" drill. Use the #8-32 hardware supplied to attach the unit to the aircraft.
2. Fabricate the power and signal cable using the connector socket supplied. A wiring diagram is shown in Figure 2.
3. Fabricate the RF Cable as illustrated in Figure 3, using 50 ohm coax, such as RG-58A/U
4. If there is a transponder aboard the aircraft, the suppression out on the PWI must be connected to the transponder suppression input using RG-58A/U or equivalent.
5. Connect the three cables just fabricated to the appropriate points in the aircraft's electronic system. Mechanically secure the cables at appropriate support points.
6. Connect the cables to the receiver.
7. Update appropriate logs and papers of the aircraft.
8. Fill in the necessary information required by the warranty card.
9. Be sure the remainder of the warranty card is filled in by your customer and returned to the Factory. The Warranty Card must be completed and returned to Genave for the warranty to be in effect.

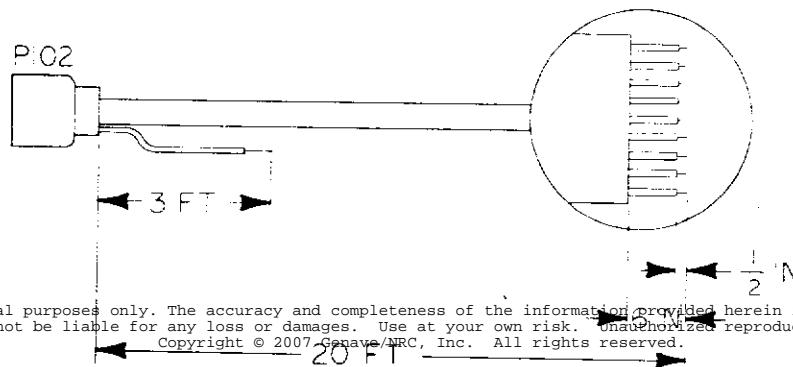
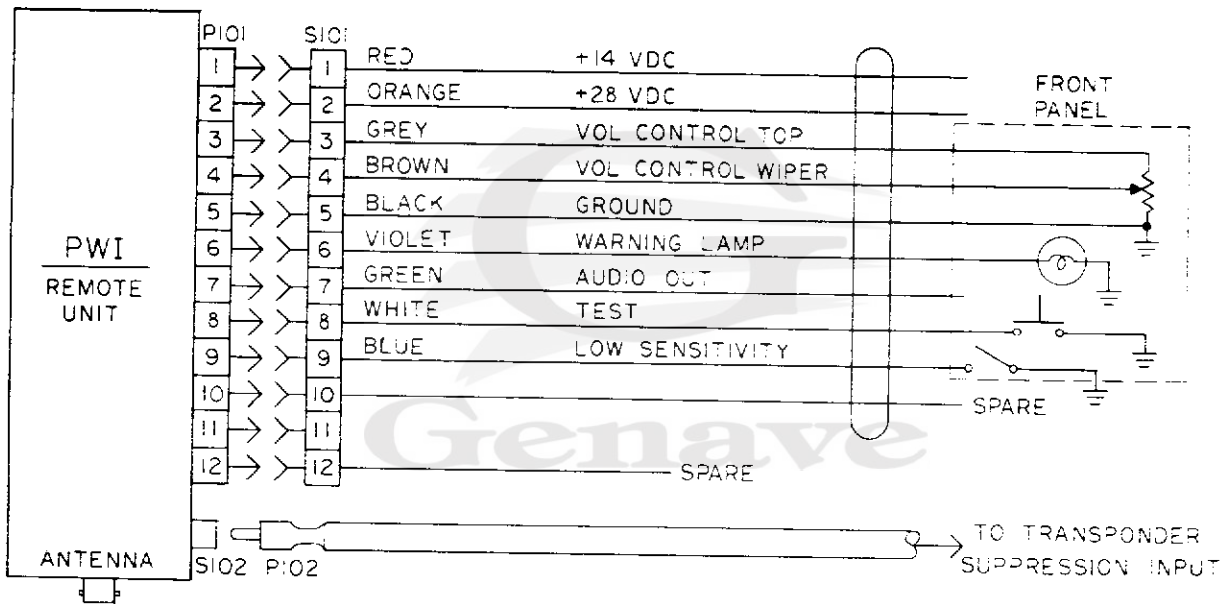
Mounting

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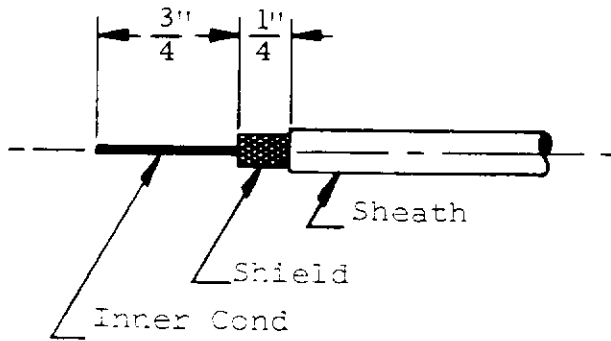
Post Installation Check

UPON COMPLETION OF THE INSTALLATION a test is desirable to insure that the PWI is operating properly. A practical test can be performed by depressing the TEST button on a transponder of a nearby aircraft (not in the same aircraft because the PWI and the transponder are cross-suppressed).



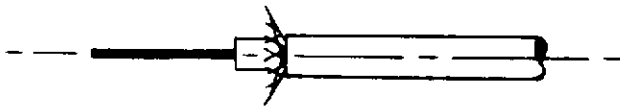
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Connector Assembly



1

Cut and strip RG-58 A/U Coax as shown.



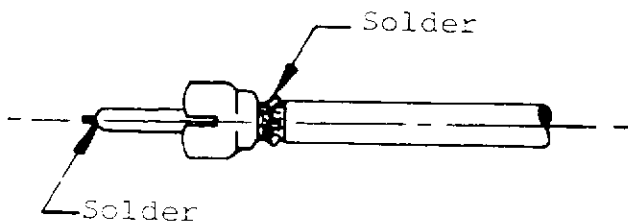
2

Spread shield. Do not Pigtail.



3

Press connector onto wire and against shield.



4

Fold shield over connector and solder all around. Flow solder into connector tip to secure inner conductor. Cut off tip of inner conductor which protrudes from connector.

FIGURE 3

Antenna Connector Assembly

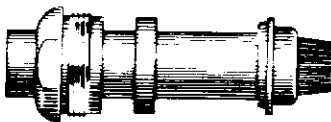
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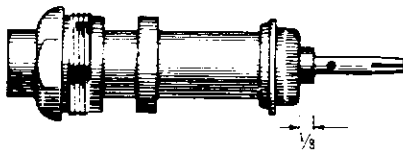
Place nut and gasket, with "V" groove toward clamp, over cable and cut jacket to dimension shown.



Comb out braid and fold out. Cut cable dielectric to dimension shown. Tin center conductor, using minimum amount of heat.

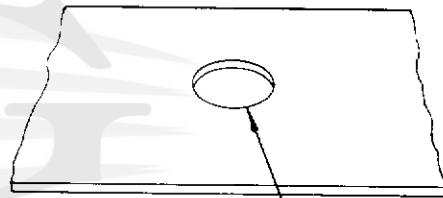
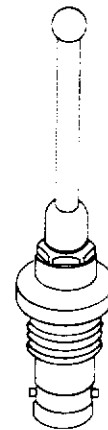


Pull braid wires forward and taper toward center conductor. Place clamp over braid and push back against cable jacket.



Fold back braid wires as shown, trim to proper length and form over clamp as shown. Solder contact to center conductor, avoiding excessive heat which might swell cable dielectric.

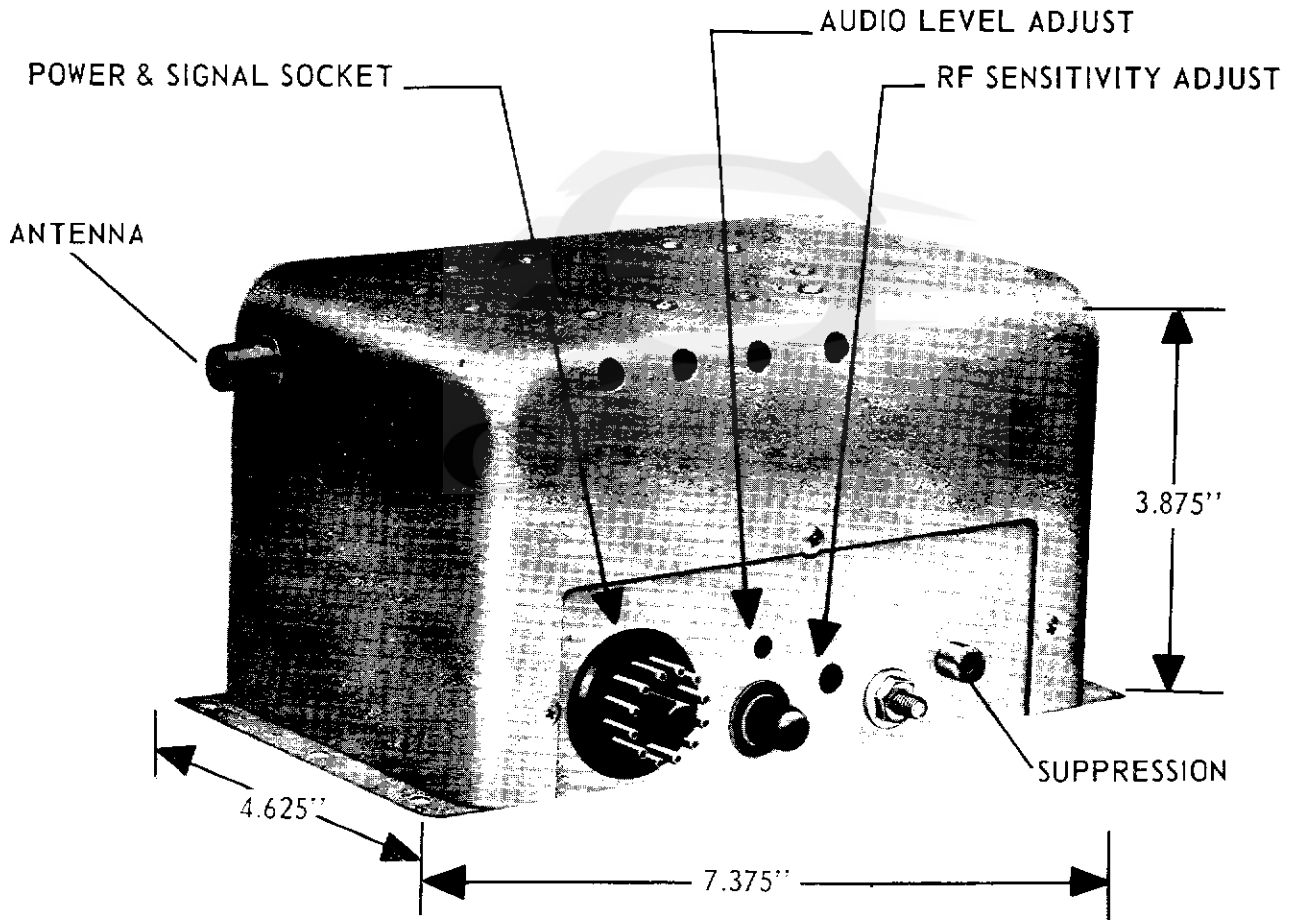
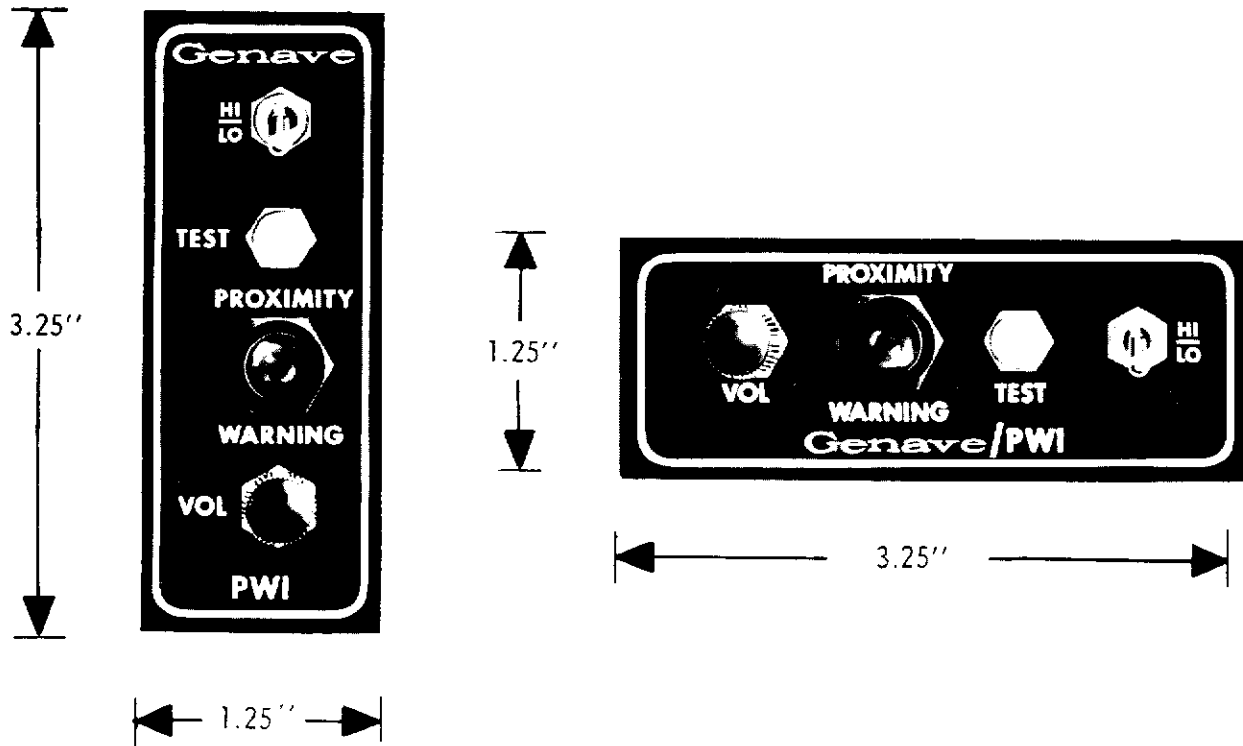
PWI ANTENNA INSTALLATION



1/2" DIA. HOLE OR USE GREENLEE CHASSIS PUNCH NO. 733 (1/2") "D" HOLE



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