MidContinent™
INSTRUMENTS+AVIONICS
Wichita, Kansas USA

Service Bulletin

SB 4305-150-01

REMOTE DIRECTIONAL GYRO

4305-150 Series
Modification 1
Provides an isolated 26vac output

1. PLANNING INFORMATION

A. Effectivity

This service bulletin is applicable to 4305-150 Series Remote Directional Gyro manufactured by the General Design Division of Mid-Continent Instrument Corp, Inc. It applies to units manufactured with serial numbers prior to 0721xxxx.

All units manufactured after serial numbers beginning 0821xxxx will have this service bulletin incorporated during the manufacturing process.

B. Reason

1. In some aircraft installations it is desirable to be able to change the phasing of the 26vac output. This output was provided for use as synchro excitation or for a reference signal as needed.

2. Prior to this modification the 26vac could not be reversed.

3. This service bulletin is optional based on individual owner request. All units returned to the factory for service will have this service bulletin performed.

C. Description

This service bulletin applies to the Remote Gyro base unit only. The transformer circuit board has one printed circuit trace cut and a jumper wire added for connection to the main circuit board. The main circuit board has two printed circuit traces cut and two jumper wires added. In addition, one diode is removed and replaced with a jumper wire.

D. Approval

FAA and TSO approval not affected

E. Manpower

This service bulletin may be accomplished and unit tested in approximately 2.0 man-hours.

F. Material – Cost and Availability

The parts and materials necessary to accomplish this service bulletin are available form Mid-Continent Instruments. Refer to Section 3, Material Information, for part numbers. Check for current pricing.

G. Tooling

No special tooling is required to perform this service bulletin. Normal ESD procedures should be followed.

H. Weight and Balance

No change.

I. Electrical load data

No change.

J. Other Publications affected

None.

2. ACCOMPLISHMENT INSTRUCTIONS

A. Remove lower half of the electronic assembly from the gyro assembly by removing 8ea. 4-40x3/16 screws. Do not remove the gyro assembly from the upper half of the base assembly cover.

B. Disconnect the braided grounding cable from the base assembly lower half.

C. Carefully unplug the connector on the gyro assembly from the base electronic assembly. Set the gyro assembly in a protected area to avoid damage.

REMEMBER:
Remember that all gyro assemblies contain precision bearings and are easily damaged by rough handling. Always set the gyro assembly on a padded surface and avoid all shock impacts to the gyro. Handle the gyro assembly like eggs!

WARNING:
All electronic work must be performed at an Electrostatic protected work station. Grounding of all tools and personnel must be observed.

D. Remove the 4ea 4-40x1/4 round head screws securing the main circuit board assembly to the lower half of the base assembly.

E. Remove the 2ea 4-40x3/16 flat head screws securing the transistor mounting block to the rear plate of the base assembly.

F. Remove the 3ea 4-40X3/16 flat head screws securing the connector plate to the lower half of the base assembly.

G. Remove the main circuit board assembly from the lower base half. Use caution removing the main circuit board assembly from the transformer assembly to prevent damage to the connector connecting the two circuit boards.

H. On the non-component side of the main circuit board assembly locate and cut one circuit trace in two places. Refer to figure 1.

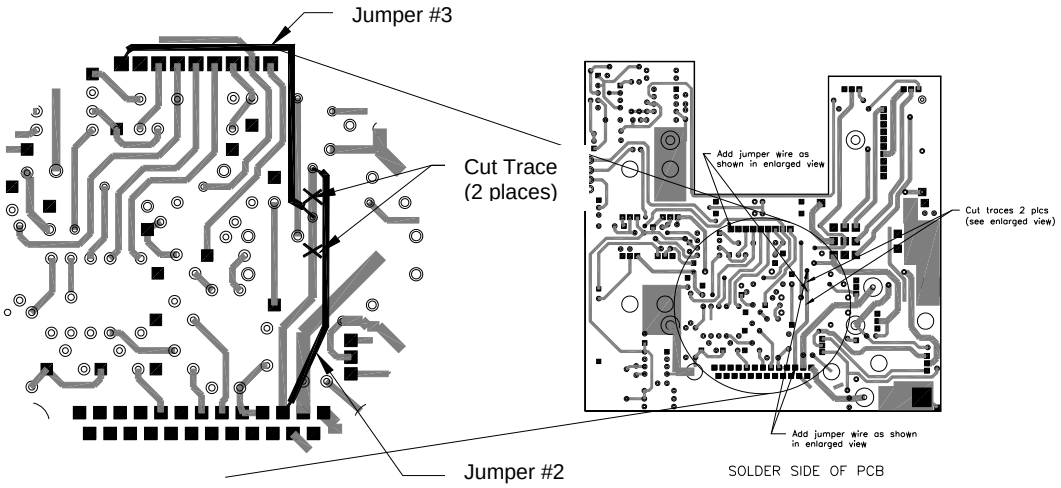


Figure 1.

I. Add jumpers 2 and 3 as shown in figure 1.

J. On the component side of the circuit board locate Diode CR2. Refer to figure 3. Remove CR2 and replace with a length of buss jumper wire.

K. Clean all flux residue from the circuit board. Recoat the circuit board with conformal coating part number 9011933 or equivalent.

L. Set the main circuit board assembly aside for reassembly in a later step.

M. On the lower base half locate the transformer circuit board assembly. Remove the 4ea 4-40 nuts securing the transformer circuit board assembly to the lower base half.

N. On the non-component side of the transformer circuit board cut the trace going to pin 11 of the transformer. Refer to figure 2.

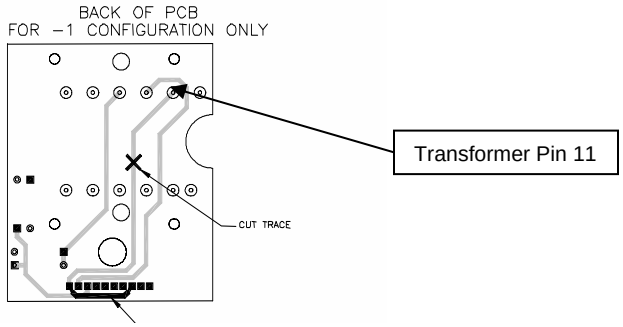


Figure 2

O. Solder a 5 inch long piece of 26 gage Teflon coated stranded wire to pin 11 of the transformer. The other end will be soldered to the main circuit board assembly in a later step.

P. Clean all flux residue from the circuit board. Recoat the circuit board with conformal coating part number 9011933 or equivalent.

Q. Reinstall the transformer assembly to the lower half of the base using the 4 nuts removed earlier.

R. Reinstall the main circuit board assembly using the 4 round head screws and the 2 flat head screws removed earlier.

S. Locate pin 15 of the main connector and gently cut it loose from the main electronic circuit board assembly. Refer to figure 3.

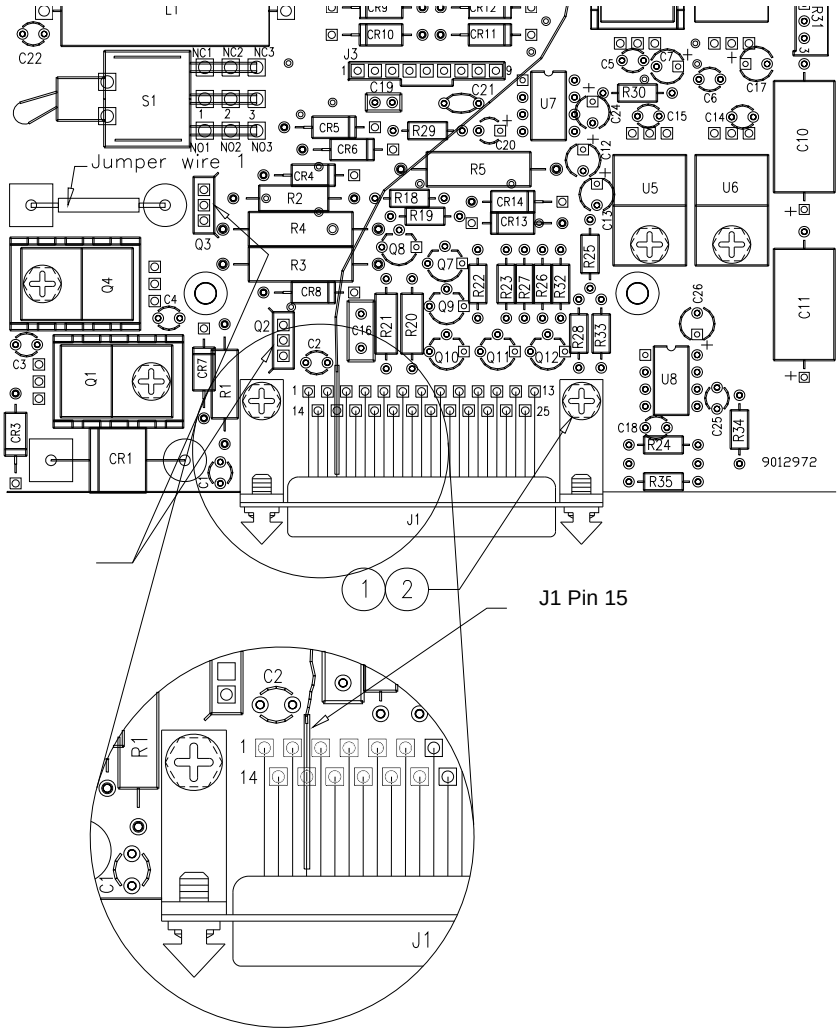


Figure 3

T. Gently bend pin 15 up from the circuit board.

U. Locate the wire attached to the transformer circuit board in step M. Slide a 1.5 inch length of 3/32 inch heat shrink tubing over the wire.

V. Solder the wire from the transformer assembly to pin J1-15. Slide the heat shrink tubing over the connection and shrink to fit.

W. Reassemble the lower half of the electronic base assembly to the gyro and upper half using 8ea 4-40x3/16 Ph Hd screws. Connect the braided ground wire to the ground terminal on the base lower half.

X. Using an ohmmeter check that there is no continuity from J1-15 to J1-14, 16, or 17.

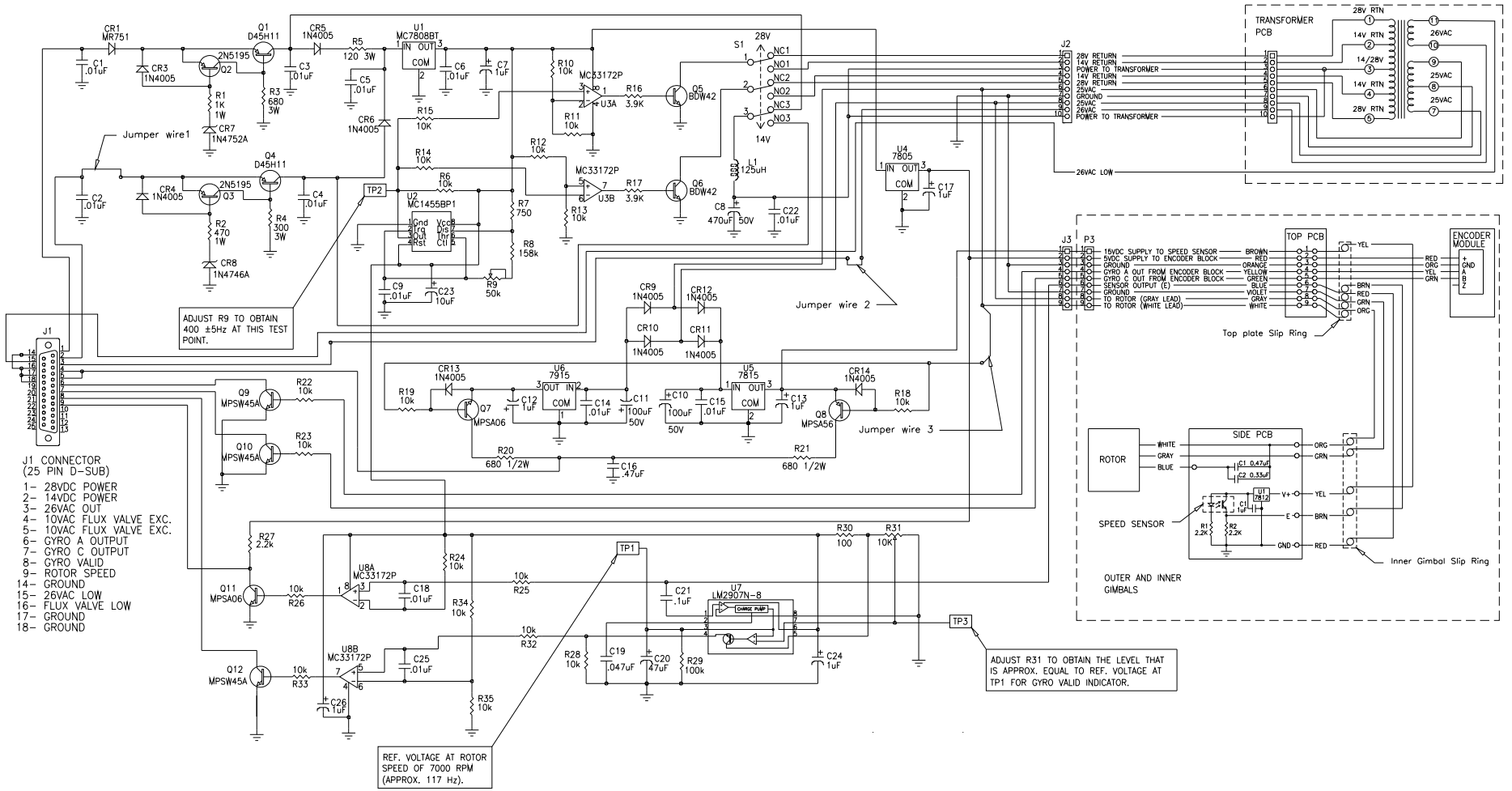
Y. Perform a complete functional test on the unit to insure proper operation.

Z. Add a modification label near the nameplate on the electronic base assembly. Mark out the number 1 on the modification label.

3. MATERIAL INFORMATION

A. Parts

P/N	Qty.	Description
5049-26-666-050	1	Wire, 26 GA., 5 inch
8014060	1	Modification Label
9011933	1	Conformal Coating
9012238-200	1.5 inch	Heat shrink tubing, 3/32 inch
72-24-99	5 inch	Wire, 24GA, White, Solid conductor, Teflon Insulated



NOTES:
1) Unless otherwise specified: All resistors are 1/4W specified in ohms & all capacitors are in uF.
2) Components in dashed lines are not located on PCB.

4305-150 Schematic after SB1