

TB 9-6625-2362-35

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

CALIBRATION PROCEDURE FOR ANGLE POSITION INDICATOR NORTH ATLANTIC, MODELS 8810 AND 8810-F11

Headquarters, Department of the Army, Washington, DC
14 April 2005

Distribution Statement A: Approved for public release; distribution is unlimited.

REPORTING OF ERRORS AND RECOMMENDING IMPROVEMENTS

You can improve this manual. If you find any mistakes or if you know of a way to improve these procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to: Commander, US Army Aviation and Missile Command, AMSAM-MMC-MA-NP, Redstone Arsenal, AL 35898-5000. A reply will be furnished to you. You may also provide DA Form 2028 information to AMCOM via e-mail, fax, or the World Wide Web. Our fax number is DSN 788-6546 or Commercial 256-842-6546. Our e-mail address is 2028@redstone.army.mil. Instructions for sending an electronic 2028 may be found at the back of this manual. For the World Wide Web, use <https://amcom2028.redstone.army.mil>.

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**SECTION I
IDENTIFICATION AND DESCRIPTION**

1. Test Instrument Identification. This bulletin provides instructions for the calibration of Angle Position Indicator, North Atlantic, Models 8810 and 8810-F11. The manufacturers' manuals were used as the prime data sources in compiling these instructions. The equipment being calibrated will be referred to as the TI (test instrument) throughout this procedure.

a. Model Variations. None.

b. Time and Technique. The time required for this calibration is approximately 1 hour, using the physical technique.

2. Forms, Records, and Reports

a. Forms, records, and reports required for calibration personnel at all levels are prescribed by TB 750-25.

b. Adjustments to be reported are designated (R) at the end of the sentence in which they appear. When adjustments are in tables the (R) follows the designated adjustment. Report only those adjustments made and designated with (R).

3. Calibration Description. TI parameters and performance specifications which pertain to this calibration are listed in table 1.

Table 1. Calibration Description

Test instrument parameters	Performance specifications
Angle position	Range: 0 to 179.995° (option 01) 0 to 359.995° (standard) 0 to 359.999° (options 06 and 07) Accuracy: ±0.005° +1 lsb (option 01 and standard) Resolution: 0.005° (option 01 and standard) 0.001° (options 06 and 07)

**SECTION II
EQUIPMENT REQUIREMENTS**

4. Equipment Required. Table 2 identifies the specific equipment to be used in this calibration procedure. This equipment is issued with Secondary Transfer Calibration Standards Set AN/GSM-287 or AN/GSM-705. Alternate items may be used by the calibrating activity. The items selected must be verified to perform satisfactorily prior to use and must bear evidence of current calibration. The equipment must meet or exceed the minimum use specifications listed in table 2. The accuracies listed in table 2 provide a four-to-one ratio between the standard and TI. Where the four-to-one ratio cannot be met, the actual accuracy of the equipment selected is shown in parenthesis.

5. Accessories Required. The accessories required for this calibration are common usage accessories, issued as indicated in paragraph 4 above, and are not listed in this calibration procedure.

Table 2. Minimum Specifications of Equipment Required

Common name	Minimum use specifications	Manufacturer and model (part number)
CALIBRATOR	Range: 115 V ac at 400 Hz	Fluke, Model 5720A (5700A/EP) (p/o MIS-35947); w amplifier, Fluke 5725A/AR (5725A/AR)
SYNCHRO/RESOLVER STANDARD ¹	Range: 0 to 350.01° Accuracy: 0.00075°	Singer, Model DRS-3237

¹Issued to reference for use by transfer as required.

SECTION III CALIBRATION PROCESS

6. Preliminary Instructions

a. The instructions outlined in paragraphs 6 and 7 are preparatory to the calibration process. Personnel should become familiar with the entire bulletin before beginning calibration.

b. Items of equipment used in this procedure are referenced within the text by common name as listed in table 2.

c. Unless otherwise specified, verify the result of each test and, whenever the test requirement is not met, take corrective action before continuing with the calibration. Adjustments required to calibrate the TI are included in this procedure. Additional maintenance information is contained in the manufacturer's manual for this TI.

d. Unless otherwise specified, all controls and control settings refer to the TI.

7. Equipment Setup

WARNING

HIGH VOLTAGE is used or exposed during the performance of this calibration. DEATH ON CONTACT may result if personnel fail to observe safety precautions. REDUCE OUTPUT(S) to minimum after each step within the performance check where applicable.

a. Connect equipment as shown in figure 1.

b. Set calibrator output to 115 V at 400 Hz.

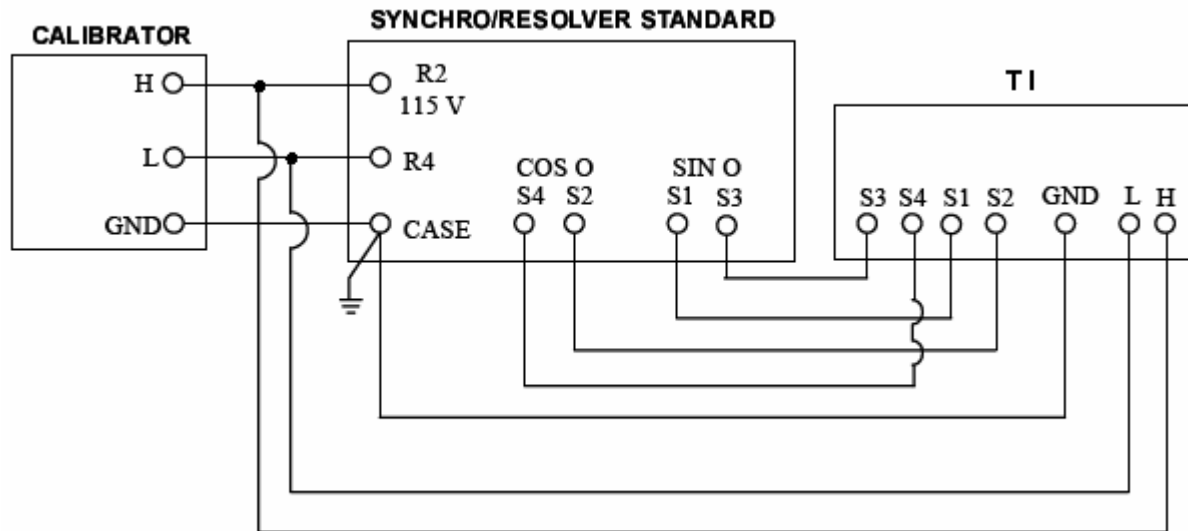


Figure 1. Resolver accuracy equipment setup.

8. Resolver Accuracy

a. Performance Check

- (1) Set synchro/resolver standard E_s (MAX) OUTPUT switch to 11.8 V, decade control switches to 000.0000 degrees, and type switch to resolver position.
- (2) Press RES pushbutton and verify that TI 11.8 LED illuminates.

NOTE

Tolerances for resolver and synchro accuracies for options 06 and 07 are shown in parenthesis.

- (3) Adjust synchro/resolver standard decade control switches until TI display indicates 10.000 degrees. Synchro/resolver standard will indicate between 009.010 (009.006) and 010.010 (010.004) degrees.
- (4) Repeat technique of (3) above for indications listed in table 3. Synchro/resolver standard will indicate within limits specified.

b. Adjustments. No adjustments can be made.

Table 3. Angular Accuracy

Test instrument indications (degrees)	Synchro/resolver standard indications (degrees)			
	Min		Max	
20.000	019.990	(019.996)	020.010	(020.004)
30.000	029.990	(029.996)	030.010	(030.004)
40.000	039.990	(039.996)	040.010	(040.004)
50.000	049.990	(049.996)	050.010	(050.004)
60.000	059.990	(059.996)	060.010	(060.004)
70.000	069.990	(069.996)	070.010	(070.004)
80.000	079.990	(079.996)	080.010	(080.004)
90.000	089.990	(089.996)	090.010	(090.004)
100.000	099.990	(099.996)	100.010	(100.004)
170.000	169.990	(169.996)	170.010	(170.004)
171.000	170.990	(170.996)	171.010	(171.004)
172.000	171.990	(171.996)	172.010	(172.004)
173.000	172.990	(172.996)	173.010	(173.004)
174.000	173.990	(173.996)	174.010	(174.004)
175.000	174.990	(174.996)	175.010	(175.004)
176.000	175.990	(175.996)	176.010	(176.004)
177.000	176.990	(176.996)	177.010	(177.004)
178.000	177.990	(177.996)	178.010	(178.004)
179.000	178.990	(178.996)	179.010	(179.004)
179.100	179.090	(179.096)	179.110	(179.104)
179.200	179.190	(179.196)	179.210	(179.204)
179.300	179.290	(179.296)	179.310	(179.304)
179.400	179.390	(179.396)	179.410	(179.404)
179.500	179.490	(179.496)	179.510	(179.504)
179.600	179.590	(179.596)	179.610	(179.604)
179.700	179.690	(179.696)	179.710	(179.704)
179.800	179.790	(179.796)	179.810	(179.804)
179.900	179.890	(179.896)	179.910	(179.904)
200.000 ¹	199.990	(199.996)	200.010	(200.004)
300.000 ¹	299.990	(299.996)	300.010	(300.004)

¹Options 06 and 07.

9. Synchro Accuracy

a. Performance Check

- (1) Connect equipment as shown in figure 2.
- (2) Press **SYN** pushbutton.
- (3) Set synchro/resolver standard **E_s (MAX) OUTPUT** switch to **90 V**, decade control switches to 000.0000 degrees and type switch to synchro operation. Verify that **TI 90 V LED** illuminates.

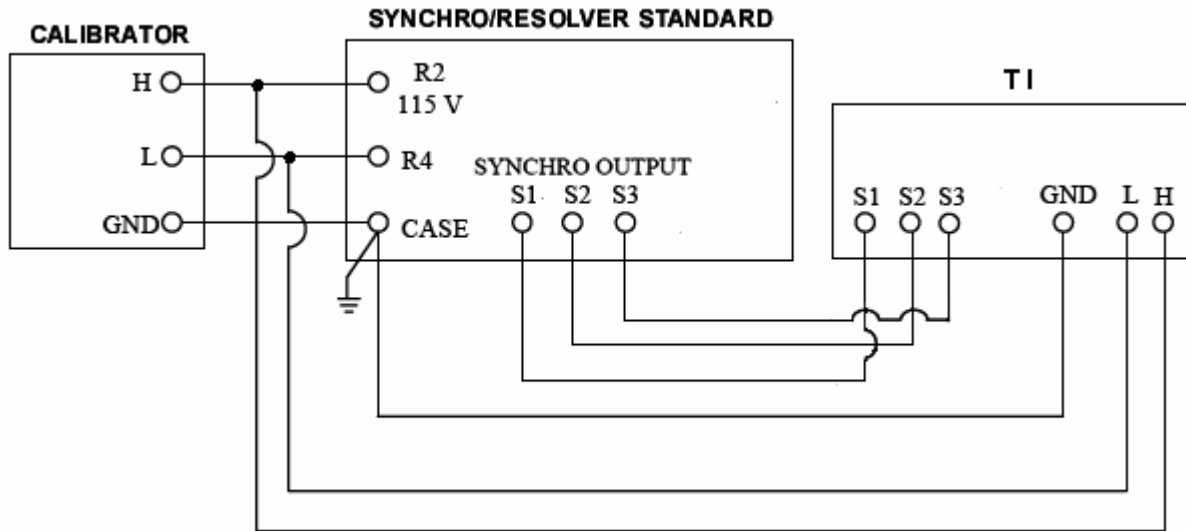


Figure 2. Synchro accuracy equipment setup.

(4) Adjust synchro/resolver standard decade control switches until TI display indicates 10.000 degrees. Synchro/resolver standard will indicate between 009.010 (009.006) and 010.010 (010.004) degrees.

(5) Repeat technique of (4) above for indications listed in table 3. Synchro/resolver standard will indicate within limits specified.

b. Adjustments. No adjustments can be made.


10. Final Procedure

- a. Deenergize and disconnect all equipment and reinstall protective cover on TI.
- b. Annotate and affix DA label/form in accordance with TB 750-25.

By Order of the Secretary of the Army:

Official:

PETER J. SCHOOMAKER
General, United States Army
Chief of Staff


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0504701

Distribution:

To be distributed in accordance with the initial distribution number (IDN) 344812, requirements for calibration procedure TB 9-6625-2362-35.

Instructions for Submitting an Electronic 2028

The following format must be used if submitting an electronic 2028. The subject line must be exactly the same and all fields must be included; however, only the following fields are mandatory: 1, 3, 4, 5, 6, 7, 8, 9, 10, 13, 15, 16, 17, and 27.

From: "Whomever" whomever@redstone.army.mil
To: <2028@redstone.army.mil

Subject: DA Form 2028

1. **From:** Joe Smith
2. **Unit:** home
3. **Address:** 4300 Park
4. **City:** Hometown
5. **St:** MO
6. **Zip:** 77777
7. **Date Sent:** 19-OCT -93
8. **Pub no:** 55-2840-229-23
9. **Pub Title:** TM
10. **Publication Date:** 04-JUL-85
11. **Change Number:** 7
12. **Submitter Rank:** MSG
13. **Submitter FName:** Joe
14. **Submitter MName:** T
15. **Submitter LName:** Smith
16. **Submitter Phone:** 123-123-1234
17. **Problem:** 1
18. **Page:** 2
19. **Paragraph:** 3
20. **Line:** 4
21. **NSN:** 5
22. **Reference:** 6
23. **Figure:** 7
24. **Table:** 8
25. **Item:** 9
26. **Total:** 123
27. **Text**

This is the text for the problem below line 27.

