Installation Engineering Handbook 269
Western Electric Company, Incorporated
Northern Illinois Works

Section **162**
6-3-77
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NO. 3 ESS
MISCELLANEOUS FRAME
POWER VERIFICATION TESTS

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1. GENERAL INFORMATION

1.1 Description

1.11 This section provides a method of verifying that power with proper voltages and polarities appears at the No. 3 ESS Miscellaneous Frame. It also provides a method for verifying the operation of the fuse alarm circuits on the Miscellaneous (M) Frame.

1.12 The Miscellaneous Frame is a single bay frame which requires two -48V (one from each bus) and two +24V (one from each bus) power feeders. Only the -48V feeders have filters at the Miscellaneous Frame.

1.13 -48V power is supplied directly from the -48V Power Frame while +24V power is supplied from converters on the Miscellaneous Power Frame.

1.2 Sequence

1.21 Refer to Handbook 269, Section 1 for test sequence information.

1.22 The -48V Power Plant and the +24V and +48V Converters on the Miscellaneous Power Frame must be operational prior to the performance of this test. Handbook 21, Sections 211 and 399 ← provide test procedures for the 151A Power Plant and Miscellaneous Power Frame, respectively.

1.23 Since Miscellaneous Frames are required to share +24V Bus Power with a Control Frame, it is required that power verification tests be performed on the associated Control Frame per Handbook 266, Section 160 prior to applying power to any Miscellaneous Frame.

1.3 References

1.31 The following documents will be useful as references during the performance of this test:

Document	Title
SD-3H205-01	Dial Tone First Coin Line Circuit
SD-3H903-01	Miscellaneous Frame Circuit
SD-3H905-01	Miscellaneous Power Circuit
SD-3H907-01	DC Power Distribution Circuit

1.4 Records

1.41 The results of these tests should be recorded on forms SD-97-1313 and SD-97-1315. Information regarding the completion of these forms appears in Handbook 3, Section 6B.

2. TEST EQUIPMENT

2.1 Test Sets

2.11 The following test sets will be required for the performance of these tests:

Amt.	ITE	Description
1	5632	Digital Multimeter

2.2 Accessories

2.21 The following accessories are required for the performance of these tests:

Amt.	ITE	Description	With ITE
1	4715	Capacitor Forming Tool	*5653
1	5590	70 Type Fuse Alarm Verification Test Set	*5653

* No. 3 ESS Test Accessory Set.

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3. TEST PREAPARATION

   3.1 Remove base covers from the
        Miscellaneous (M) Frame.

   3.2 At the Power Frame, remove the
        -48V A and B Bus fuses supplying
the Miscellaneous Frame.

   3.3 If the Miscellaneous Frame is
        equipped with one or more Dial
Tone First Coin Line (J3H001EE) Units, re-
move the +48V and -48V fuses from the fuse
blocks on these units.

4. TEST PROCEDURE

   4.1 False Ground Check

   4.11 Set up ITE-5632 Digital
         Multimeter for resistance
measurement.

   4.12 At the Power Frame, measure the
         resistance between the ground
bus at the rear of the Power Frame and the
load terminal of the -48V Bus A (15 Amp)
fuse supplying the Miscellaneous Frame by
connecting the positive meter lead to the
ground bus and the negative lead to the
load terminal.

   4.13 This resistance should read
         infinite ohms after the plates
of the electrolytic capacitor have formed.

   4.14 Repeat 4.12 and 4.13 for the
         -48V Bus B fuse supplying the
Miscellaneous Frame.

   4.2 -48V Distribution

   4.21 At the Power Frame, insert ITE-
         4715 Capacitor Forming Tool in
the alarm fuse socket of the -48V Bus A
(15 Amp) fuse supplying the Miscellaneous
Frame. Leave the tool in the socket until
the lamp extinguishes indicating the filter
capacitor is fully charged.

   4.22 Replace the -48V Bus A (15 Amp)
         fuse supplying the Miscellaneous
Frame.

   4.23 At the Miscellaneous Frame,
         measure the voltage between the
terminals of filter capacitor C2 at the
bottom of the Miscellaneous Frame. This
voltage should read between -42.75 and
-52.5 volts DC.

   4.24 At the Power Frame, insert ITE-
         4715 Capacitor Forming Tool in
the alarm fuse socket of the -48V Bus B
(15 Amp) fuse supplying the Miscellaneous
Frame. Leave the tool in the socket until
the lamp extinguishes, indicating the
filter capacitor is fully charged.

   4.25 Replace the -48V Bus B (15 Amp)
         fuse supplying the Miscellaneous
Frame.

   4.26 At the Miscellaneous Frame,
         measure the voltage between the
terminals of filter capacitor C1 at the
bottom of the Miscellaneous Frame. This
voltage should read between -42.75 and
-52.5 volts DC.

   4.3 Fuse Alarm Circuit Check

   4.31 Replace the LP fuse in the
         Miscellaneous Frame fuse panel.

   4.32 Insert ITE-5590, 70 Type Fuse
         Alarm Verification Test Set, in
fuse position A0 (-48VA SIG SM) and verify
the FA lamp on the fuse panel is lit.

   4.33 Remove ITE-5590 and verify the
         FA lamp is extinguished.

   4.34 Repeat 4.32 and 4.33 for the
         following fuse positions:

         A12 (-48VA SIG SM)
         B0 (-48VB SIG SM)
         B12 ("   "   ")
         A0 (-48VA TALK TM)
         A8 ("   "   ")
         B0 (-48VB TALK TM)
         B8 ("   "   ")
         A0 (+24VA SIG)
         A2 ("   ")
         B0 (+24VB SIG)
         B2 ("   ")

   4.35 Replace all fuses in the
         Miscellaneous Frame fuse panel
and verify no fuse alarms occur.

   4.36 Repeat paragraphs 4.11 through
         4.35 for each remaining Miscel-
laneous Frame in the office before
proceeding to 4.4.

   4.4 +48V Distribution

   NOTE: The following procedures are
          to be performed only for
   Miscellaneous Frames equipped with
   Dial Tone First Coin Line Units
   (J3H001EE).

   4.401 At the Miscellaneous Power
          Frame, verify +48V DF0(0),
DF0(1), DF1(0), and DF1(1) fuses are re-
moved from the +48V and +130V Converter
Unit.

   4.402 Set up ITE-5632 Digital Multi-
          meter for resistance
measurement.

4.403   At the MP Frame, measure the resistance between the ground bus bar and the load terminal of the +48V DFO (0) fuse by connecting the negative meter lead to the ground bar and the positive meter lead to the load terminal.

> NOTE: This resistance reading will vary depending on the number of J3H001EE units multipled on this fuse. To determine the correct resistance divide 10,000 by the number of J3H001EE units multipled to this fuse.

4.404   Repeat 4.403 for the +48V DF1(0), DFO(1), and DF1(1) fuses.

4.405   At the MP Frame, insert ITE-4715 Capacitor Forming Tool into the socket of the +48V DFO(0) fuse. Leave the tool in the socket until the lamp extinguishes indicating the filter capacitor is fully charged.

> NOTE: The lamp normally glows very dimly and rapidly extinguishes.

4.406   Repeat 4.405 for the +48V DF1(0), DFO(1), and DF1(1) fuses.

4.407   At the MP Frame, replace the +48V DFO(0) fuse.

4.408   At the Miscellaneous Frame containing the J3H001EE Unit associated with the DFO(0) fuse, measure the voltage between the +48V A Bus and ground bars at the rear of the J3H001EE Unit. This voltage should read between +48.0 and +52.0 volts DC.

4.409   Repeat 4.408 for each remaining J3H001EE Unit associated with DFO(0) fuse.

4.410   At the MP Frame, replace the +48V DF1(0) fuse.

4.411   At the Miscellaneous Frame containing the J3H001EE Unit associated with the DF1(0) fuse, measure the voltage between the +48V B Bus and ground bars at the rear of the J3H001EE Unit. This voltage should read between +48.0 and +52.0 volts DC.

4.412   At the MP Frame, replace the +48V DFO(1) fuse.

4.413   Repeat 4.408 and 4.409 for J3H001EE Units associated with DFO(1) fuse.

4.414   At MP Frame, replace the +48V DF1(1) fuse.

4.415   Repeat 4.411 and 4.412 for J3H001EE Units associated with DF1(1) fuse.

4.416   At the Miscellaneous Frame insert ITE-5590 in fuse position AO (-48DCA) on Dial Tone First Coin Line Unit and verify the FA lamp on the fuse panel at the bottom of the Miscellaneous Frame is lit.

4.417   Remove ITE-5590 and verify the FA lamp is extinguished.

4.418   Repeat 4.416 and 4.417 for each of the following fuse positions.

BO (-48DCB)

AO +48(0)

BO +48(1)

4.419   Replace all +48V and -48V fuses in the fuse blocks on the J3H001EE unit and verify no fuse alarms occur.

4.420   Repeat 4.416 through 4.419 for each J3H001EE unit provided in the office.

➤ Arrows indicate new or changed information.

Manager, ESS Installation & Field Engineering

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Reason for Reissue:
   Circuit Design Change.