

STATION SYSTEMS  
EQUIPMENT UNITS

0. CHANGES

0.1 CHANGED AND ADDED FUNCTIONS

None.

0.2 CHANGES IN APPARATUS

Added:

ED-91929-01, G33 Equipment Unit (189D  
Repeating Coil), Fig. 55

| <u>Apparatus</u> | <u>Superseded</u> | <u>Superseded by</u> |
|------------------|-------------------|----------------------|
| Repeating Coil   | 94G               | 189D                 |

0.3 CHANGES IN CIRCUIT REQUIREMENTS  
(Not Associated with 0.2 Above)

None.

0.4 DESCRIPTION OF CIRCUIT CHANGES

- (a) Fig. 37 had G10 designation added to ED number.
- (b) Mechanical requirements of UA46 relay, G7, changed to show changes in armature travel and current flow. Armature travel is now 35 mils (reduced from 41 mils), and test value for operation is changed from 26.5 ma to 25.0 ma, and readjust values from 25 ma to 23.5 ma. The test value of the P/S winding is changed from 17 ma to 16 ma with the readjust value deleted.
- (c) Fig. 55 is added to equipment units chart for ED-91929-01, G33 to show 189D repeating coil which supersedes 94G repeating coil of Fig. 45 now rated Mfr Disc.

1. PURPOSE OF CIRCUIT

This circuit provides internal wiring information for the standard equipment units which are covered on ED-91929-01 and ED-91938-01.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT 5113-GEB-LHA

STATION SYSTEMS  
EQUIPMENT UNITS

Drawings for SD-69160-01 have been converted to 8-1/2 by  
11 inch handbook size.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT 5335-WFBW-PBF

STATION SYSTEMS  
EQUIPMENT UNITS

CHANGES

D. Description of Changes

D.1 This circuit is reissued to bring the figure numbers into agreement with figure numbers on prior issues of this drawing and related drawings.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT 5335-GRT-PBF

# SHEET INDEX

| FIG.                                                                                                                       | CONTENTS                                           | SHEET NO.                                                                                      | ISSUE NO. |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | OLD SHEET NO. |
|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|------------------------------------------------------------------------------------------------|-----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|---------------|
|                                                                                                                            |                                                    |                                                                                                | 19        | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |               |
|                                                                                                                            | SHEET INDEX<br>SUPPORTING INFORMATION              | A1                                                                                             | 19        | 20 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |               |
|                                                                                                                            |                                                    | A2                                                                                             | 19        | 20 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |               |
|                                                                                                                            |                                                    |                                                                                                |           |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |               |
|                                                                                                                            | APPARATUS INDEX                                    | A3                                                                                             | 19        | 20 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |               |
|                                                                                                                            |                                                    |                                                                                                |           |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |               |
|                                                                                                                            | CIRCUIT NOTES<br>INFORMATION NOTES<br>OPTION INDEX | B1                                                                                             | 19        | 20 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |               |
|                                                                                                                            |                                                    |                                                                                                |           |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |               |
|                                                                                                                            | GROUP                                              |                                                                                                |           |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |               |
| 1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12                                                                | ED-91929-01                                        | 1<br>2 (MD)<br>3<br>4<br>5<br>6<br>7<br>8 (MD)<br>9 (MD)<br>10<br>11 (MD)<br>12                | C1        | 19 | 20 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |               |
|                                                                                                                            |                                                    |                                                                                                |           |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |               |
| 13<br>14<br>15<br>16<br>17<br>18<br>19<br>20<br>21<br>22<br>23<br>24<br>25                                                 | ED-91929-01                                        | 13<br>14<br>15 (MD)<br>16<br>17<br>18 (MD)<br>19<br>20<br>21 (MD)<br>22<br>23<br>24<br>25 (MD) | C2        | 19 | 20 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |               |
|                                                                                                                            |                                                    |                                                                                                |           |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |               |
| 35<br>36<br>37<br>38<br>39<br>40<br>41<br>42<br>43<br>44<br>45<br>46<br>47<br>48<br>49<br>50<br>51<br>52<br>53<br>54<br>55 | ED-91929-01                                        | 26<br>27<br>28<br>29<br>30<br>31<br>32<br>33                                                   | C3        | 19 | 20 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |               |
|                                                                                                                            |                                                    |                                                                                                |           |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |               |
| 17<br>18<br>19<br>20<br>21<br>22<br>23<br>24<br>25<br>26<br>27<br>28                                                       | ED-91938-01                                        | 1<br>2<br>3<br>4 (MD)<br>5 (MD)<br>6<br>7<br>8                                                 | C4        | 19 | 20 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |               |
|                                                                                                                            |                                                    |                                                                                                |           |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |               |

## SHEET INDEX NOTES

1. WHEN CHANGES ARE MADE IN THIS DRAWING, ONLY THOSE SHEETS AFFECTED WILL BE REISSUED.
2. THIS SHEET INDEX WILL BE REISSUED AND BROUGHT UP TO DATE EACH TIME ANY SHEET OF THE DRAWING IS REISSUED, OR A NEW SHEET IS ADDED.
3. THE ISSUE NUMBER ASSIGNED TO A CHANGED OR NEW SHEET WILL BE THE SAME ISSUE NUMBER AS THAT OF THE SHEET INDEX.
4. SHEETS THAT ARE NOT CHANGED WILL RETAIN THEIR EXISTING ISSUE NUMBER.
5. THE LAST ISSUE NUMBER OF THE SHEET INDEX IS RECOGNIZED AS THE LATEST ISSUE NUMBER OF THE DRAWING AS A WHOLE.
6. "OLD SHEET NO." REFERS TO SHEET NO. PRIOR TO ISSUE: 19D

## SUPPORTING INFORMATION

| CATEGORY       | NO.                        |
|----------------|----------------------------|
| EQUIPMENT DWGS | ED-91929-01<br>ED-91938-01 |

SD- 69160-01

STATION SYSTEMS  
EQUIPMENT UNITS

AT&TCO  
STANDARD

SD- 69160-01-A1  
SHEET INDEX  
11 SHEETS

BELL TELEPHONE LABORATORIES  
INCORPORATED

DWG. SIZE  
35

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| DWG<br>ISS | CD<br>ISS | DWG<br>ISS     | CD<br>ISS      | DWG<br>ISS  | CD<br>ISS |
|------------|-----------|----------------|----------------|-------------|-----------|
| 1          | 1         | 2D             | 2D             | 3D          | 3D        |
| 4A         | 4A        | 5D             | 5D             | 6D          | 6D        |
| 7A         | 7A        | 8A             | 8A             | 9D          | 9D        |
| 10D        | 10D       | 11D            | 11D            | 12D         | 12D       |
| 13D        | 13D       | 14D            | 14D            | 15D         | 15D       |
| 16D        | 16D       | 17D            | 17D            | 18D         | 18D       |
| DWG<br>ISS | CD<br>ISS | DATE<br>ISSUED | DESIGNED<br>BY | APP'D<br>BY |           |
| 19D        | 18D       | 4-28-64        | RGR            | WFBH        |           |
|            | APP'D     |                | DHC            | JAH         |           |
| 20D        | 18D       | 8-28-64        | GRT            | PBF         |           |
|            | APP'D     |                | DHC            | JAH         |           |

**DRAWING  
ISSUE**

|     |                   |
|-----|-------------------|
| 19D | REC<br>DHC<br>ARM |
| 20D | DHC<br>ARM        |

35

# APPARATUS INDEX

DRAWING

ISSUE

19D

20D

19D

20D

| EQUIPMENT UNITS |         |                                                                 |
|-----------------|---------|-----------------------------------------------------------------|
| FIG NO.         | GRP NO. | APPARATUS USED                                                  |
| 1               | 1       | 307P OR 274AH INDUCTOR                                          |
| 2               | 2       | 178B INDUCTION COIL (MD)                                        |
| 3               | 3       | 139C OR 439C CAPACITOR<br>33A OR 33L VARISTOR                   |
| 4               | 4       | 161A OR 189A REP COIL                                           |
| 5               | 5       | MTG ONLY WITH 9 TERMINALS DRILLED<br>FOR FOUR 19-TYPE RESISTORS |
| 6               | 6       | 18AE RESISTOR                                                   |
| 7               | 7       | UA46 RELAY                                                      |
| 8               | 8       | D-159797 INDUCTION COIL (MD)                                    |
| 9               | 9       | MALLORY FPS122 CAPACITOR 40UF (MD)                              |
| 10              | 10      | 18HP OR 18KM RESISTOR<br>TWO 19SH RESISTORS                     |
| 11              | 11      | 137A CAPACITOR (MD)                                             |
| 12              | 12      | B1129 RELAY                                                     |
| 13              | 13      | 85G INDUCTOR                                                    |
| 14              | 14      | U1023 RELAY                                                     |
| 15              | 15      | 33A VARISTOR (MD)                                               |
| 16              | 16      | U815 RELAY                                                      |
| 21              | 17      | U6107 OR UA129 RELAY                                            |
| 23              | 18      | 178F INDUCTION COIL (MD)                                        |
| 25              | 19      | KS-13486 CAPACITOR<br>18DJ RESISTOR                             |
| 29              | 20      | 18CN RESISTOR<br>TWO 18BA RESISTORS                             |
| 30              | 21      | 13N RESISTANCE LAMP (MD)                                        |
| 31              | 22      | 18CN RESISTOR<br>18G RESISTOR<br>TWO 18DS RESISTORS             |
| 32              | 23      | TWO 19PJ RESISTORS                                              |
| 33              | 24      | 441A CAPACITOR                                                  |
| 34              | 25      | 271A RELAY (MD)                                                 |
| 35              | 26      | 33L VARISTOR                                                    |
| 36              | 27      | 439A CAPACITOR                                                  |
| 43              | 28      | 1C PAD                                                          |
| 46              | 29      | TWO 439A CAPACITORS                                             |
| 47              | 30      | 439C CAPACITOR                                                  |
| 51              | 31      | TWO 19AM RESISTORS                                              |
| 49              | 32      | 181B INDUCTION COIL                                             |
| 55              | 33      | 189D REP COIL                                                   |

| EQUIPMENT UNITS |         |                                                                                    |
|-----------------|---------|------------------------------------------------------------------------------------|
| FIG NO.         | GRP NO. | APPARATUS USED                                                                     |
| 17              | 1       | U235 RELAY                                                                         |
| 18              | 2       | U6107 OR UA129 RELAY<br>TWO 139A OR 439A CAPACITOR<br>111A RESISTOR                |
| 19              | 3       | U112 RELAY                                                                         |
| 20              | 4       | D-159797 INDUCTION COIL<br>307N INDUCTOR (MD)<br>18AJ RESISTOR                     |
| 22              | 5       | 178F INDUCTION COIL (MD)<br>307N INDUCTOR (MD)<br>18CK RESISTOR                    |
| 24              | 6       | UA13 RELAY<br>18DA RESISTOR<br>33D VARISTOR                                        |
| 27              | 7       | UA46 RELAY                                                                         |
| 28              | 8       | 94F REP COIL                                                                       |
| 26              | 9       | 8B THERMISTOR<br>TWO 13P RESISTANCE LAMPS<br>19CB RESISTOR<br>19LA RESISTOR        |
| 37              | 10      | 120H OR 120HS REP COIL                                                             |
| 38              | 11      | 120K OR 120KS REP COIL                                                             |
| 39              | 12      | 120L OR 120LS REP COIL                                                             |
| 40              | 13      | U902 RELAY                                                                         |
| 41              | 14      | 149E INDUCTOR                                                                      |
| 42              | 15      | U612 RELAY                                                                         |
| 44              | 16      | 94E REP COIL                                                                       |
| 45              | 17      | 94G REP COIL (MD)                                                                  |
| 48              | 18      | 120P REP COIL                                                                      |
| 50              | 19      | 19HP RESISTOR<br>19JB RESISTOR<br>19GC RESISTOR<br>19SM RESISTOR<br>439A CAPACITOR |
| 52              | 20      | 181B INDUCTION COIL<br>274L INDUCTOR                                               |
| 53              | 21      | 425B NETWORK                                                                       |
| 54              | 22      | U1078 RELAY                                                                        |

STATION SYSTEMS

EQUIPMENT UNITS

SD-69160-01-A3

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3S

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## CIRCUIT NOTES:

101.

| DESIG          | FUSE<br>AMP | POTENTIAL     | ONE PER |
|----------------|-------------|---------------|---------|
|                |             |               |         |
| BATTERY SYMBOL |             | VOLTAGE RANGE |         |

102.

| FEATURE OR OPTION | PROVIDE |                  |          |
|-------------------|---------|------------------|----------|
|                   | FIG.    | APP<br>OR<br>WRG | QUANTITY |
|                   |         |                  |          |

103.

| RECORD OF FIGURES, WIRING, AND APPARATUS CHANGES |                                        |                               |             |                                                          |     |                           |
|--------------------------------------------------|----------------------------------------|-------------------------------|-------------|----------------------------------------------------------|-----|---------------------------|
| CHANGED<br>ON ISS                                | IF JOB<br>RECORDS<br>DO NOT<br>SPECIFY | THIS<br>OPTION<br>WAS<br>FURN | SEE<br>NOTE | USE IN CIRCUIT                                           |     |                           |
|                                                  |                                        |                               |             | STD                                                      | A&M | MD                        |
| 3D                                               |                                        |                               |             |                                                          |     | FIG.9                     |
| 5D                                               |                                        |                               |             | FIG.14                                                   |     |                           |
| 6D                                               |                                        |                               |             | FIG.15,<br>16,17,<br>18,19,<br>20                        |     |                           |
| 9D                                               |                                        |                               |             | FIG.21                                                   |     |                           |
| 10D                                              |                                        |                               |             | FIG.22                                                   |     | FIG.20                    |
| 11D                                              |                                        |                               |             | FIG.23                                                   |     | FIG.8                     |
| 12D                                              |                                        |                               |             | FIG.24                                                   |     |                           |
| 12D                                              |                                        |                               |             | FIG.25,<br>26,27,<br>28                                  |     |                           |
| 13D                                              |                                        |                               |             | FIG.29,<br>30,31,<br>32                                  |     |                           |
|                                                  | Y OR Z                                 | Z                             |             | Y                                                        |     | Z                         |
| 14D                                              |                                        |                               |             | FIG.33,<br>34,35,<br>36,37,<br>38,39,<br>40,41,<br>42,43 |     |                           |
| 15D                                              |                                        |                               |             | FIG.44,<br>45,46,<br>47                                  |     |                           |
|                                                  | W OR X                                 | X                             |             | W                                                        |     | X                         |
|                                                  | U OR V                                 | V                             |             | U                                                        |     | V                         |
| 16D                                              |                                        |                               |             | FIG.48,<br>49,50,<br>51,52,<br>53                        |     |                           |
|                                                  |                                        |                               |             |                                                          |     | FIG.2,<br>15,22,<br>23,34 |
|                                                  | T OR S                                 | S                             |             | T                                                        |     | S                         |
|                                                  | Q OR R                                 | R                             |             | Q                                                        |     | R                         |
|                                                  | N OR P                                 | P                             | 104         | N,P                                                      |     |                           |
|                                                  | K OR M                                 | M                             | 104         | K,M                                                      |     |                           |
|                                                  | H OR J                                 | J                             | 104         | H,J                                                      |     |                           |
|                                                  | F OR G                                 | G                             |             | F                                                        |     | G                         |
|                                                  | D OR E                                 | E                             |             | D                                                        |     | E                         |
| 17D                                              |                                        |                               |             | FIG.54                                                   |     |                           |
| 18D                                              |                                        |                               |             | FIG.55                                                   |     | FIG.45                    |

104. USE OPTIONS N, K, AND H ONLY IF REQUIRED BY GOVERNMENT MATERIAL RESTRICTIONS ON OPTIONS P, M, AND J RESPECTIVELY.

## CIRCUIT NOTES: (CONT)

105.

| NETWORK VALUES |      |                       |                      |
|----------------|------|-----------------------|----------------------|
| NETWORK        |      | RESISTANCE<br>IN OHMS | CAPACITANCE<br>IN UF |
| NO.            | CODE |                       |                      |
|                |      |                       |                      |

## INFORMATION NOTES:

301. UNLESS OTHERWISE SPECIFIED:  
RESISTANCE VALUES ARE IN OHMS,  
CAPACITANCE VALUES ARE IN MICROFARADS,  
VALUES PRECEDED BY THE SYMBOL + (PLUS)  
OR - (MINUS) ARE IN VOLTS..

## OPTION INDEX

| APP<br>OR<br>WRG | LOCATION |
|------------------|----------|
| Z                | C1       |
| Y                |          |
| X                |          |
| W                |          |
| V                | C4       |
| U                | C4       |
| T                | C2, C4   |
| S                | C2, C4   |
| R                | C1       |
| Q                | C1       |
| P                | C5       |
| N                |          |
| M                |          |
| K                |          |
| J                | C1       |
| H                |          |
| G                |          |
| F                |          |
| E                |          |

STATION SYSTEMS  
EQUIPMENT UNITS

SD-69160-01-B1

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3S

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DRAWING  
ISSUE19D DHC  
ARM20D DHC  
ARM

FIG. 1

ED-91929-01, G1

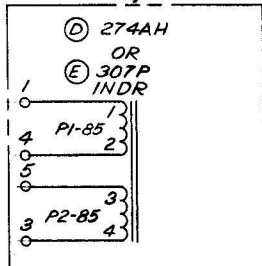


FIG. 2 (MFR DISC)

ED-91929-01, G2

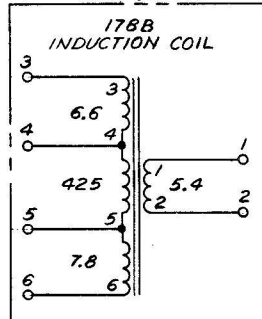


FIG. 3

ED-91929-01, G3

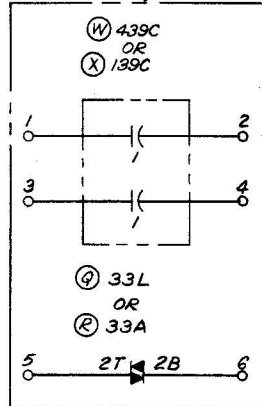


FIG. 4

ED-91929-01, G4

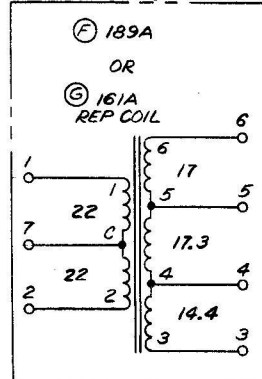


FIG. 5

ED-91929-01, G5

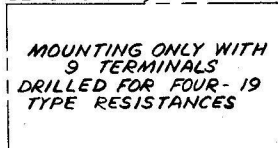


FIG. 6

ED-91929-01, G6

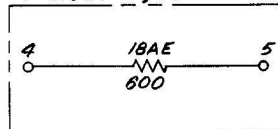


FIG. 7

ED-91929-01, G7

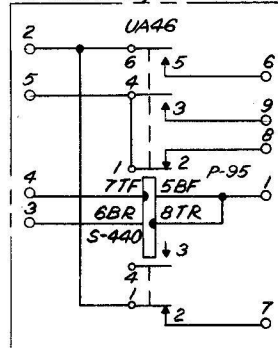


FIG. 8 (MFR DISC)

ED-91929-01, G8

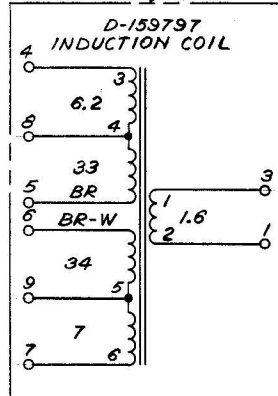


FIG. 9 (MFR DISC)

ED-91929-01, G9

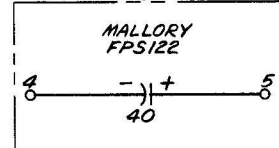


FIG. 10

ED-91929-01, G10

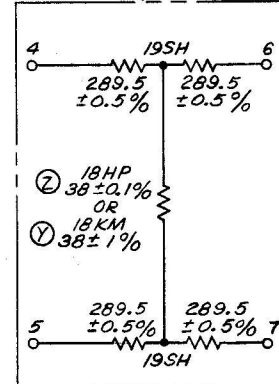


FIG. 11 (MFR DISC)

ED-91929-01, G11

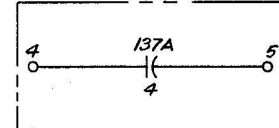


FIG. 12

ED-91929-01, G12

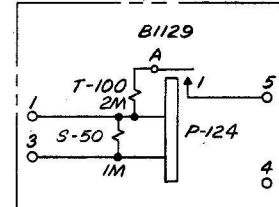


FIG. 13

ED-91929-01, G13

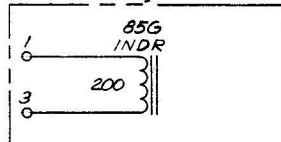


FIG. 14

ED-91929-01, G14

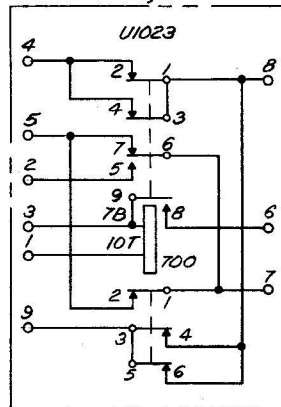


FIG. 15(MFR DISC)

ED-91929-01, G15

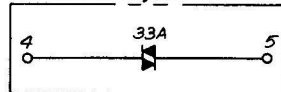


FIG. 16

ED-91929-01, G16

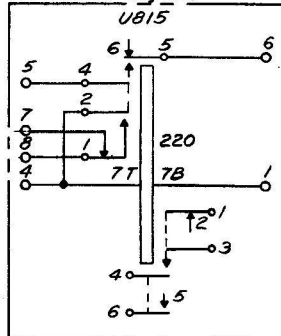


FIG. 21

ED-91929-01, G17

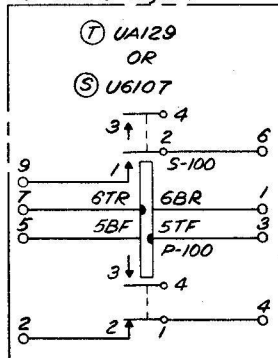


FIG. 23(MFR DISC)

ED-91929-01, G18

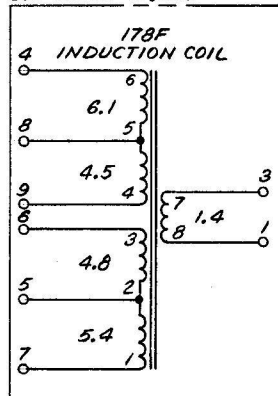


FIG. 25

ED-91929-01, G19

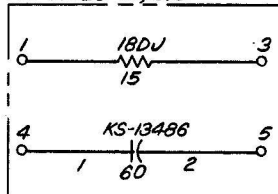


FIG. 29

ED-91929-01, G20

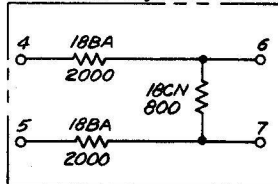


FIG. 30(MFR DISC)

ED-91929-01, G21

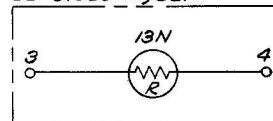


FIG. 31

ED-91929-01, G22

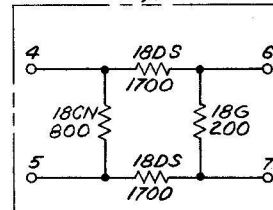


FIG. 32

ED-91929-01, G23

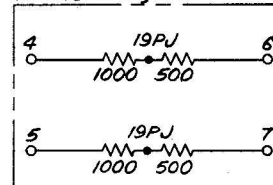


FIG. 33

ED-91929-01, G24

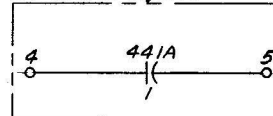
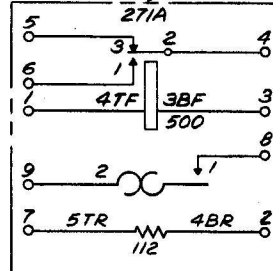


FIG. 34(MFR DISC)

ED-91929-01, G25



STATION SYSTEMS

EQUIPMENT UNITS

BELL TELEPHONE LABORATORIES  
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FIG. 35

ED-91929-01, G26

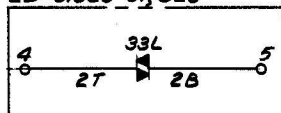


FIG. 36

ED-91929-01, G27

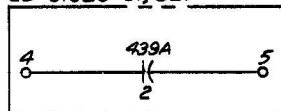


FIG. 43

ED-91929-01, G28

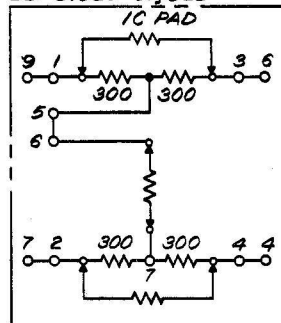


FIG. 46

ED-91929-01, G29

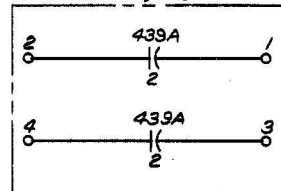


FIG. 47

ED-91929-01, G30

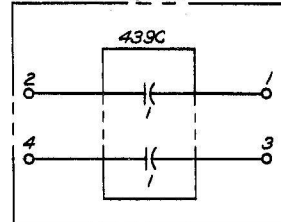


FIG. 51

ED-91929-01, G31

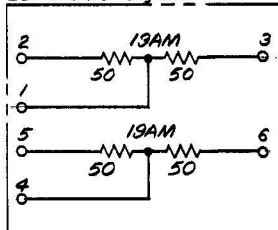


FIG. 49

ED-91929-01, G32

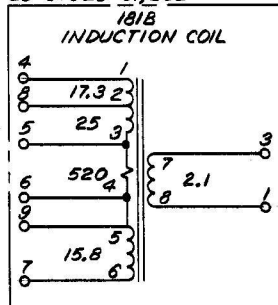


FIG. 55

ED-91929-01, G33

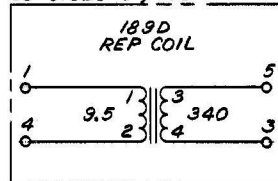


FIG. 17

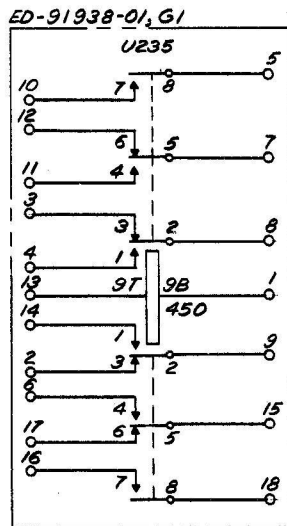


FIG. 20 (MFR DISC)

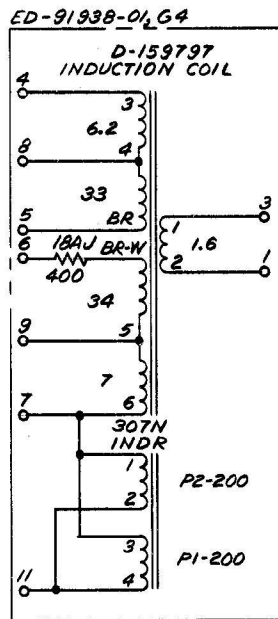


FIG. 22 (MFR DISC)

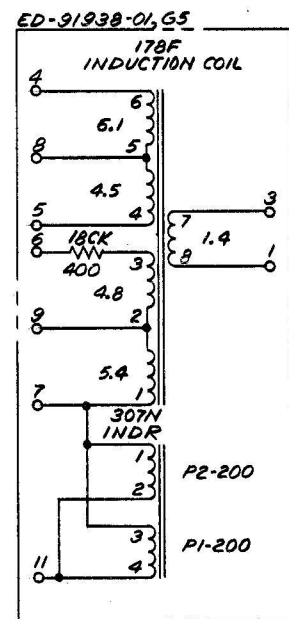


FIG. 18

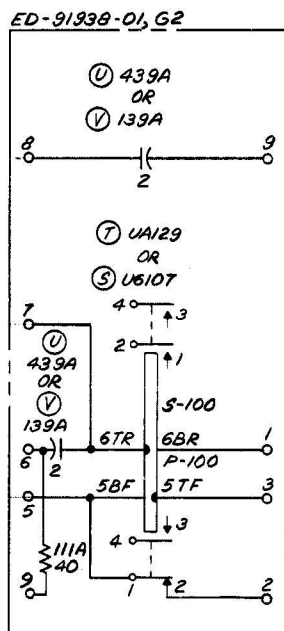


FIG. 24

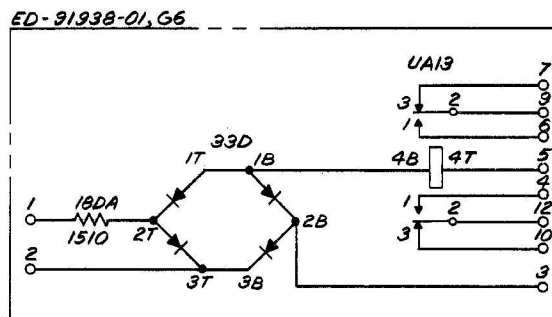


FIG. 27

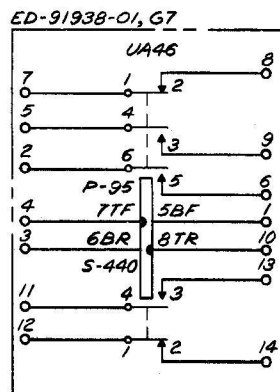


FIG. 28

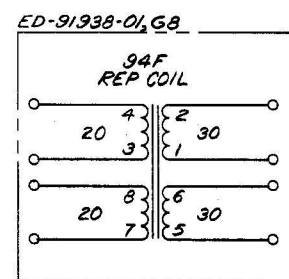
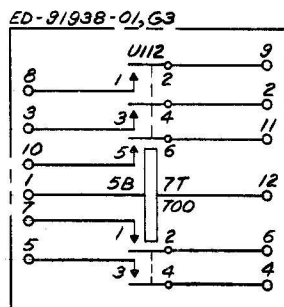


FIG. 19



STATION SYSTEMS  
EQUIPMENT UNITS

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BELL TELEPHONE LABORATORIES  
INCORPORATED

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FIG. 26

ED-91938-01,G9

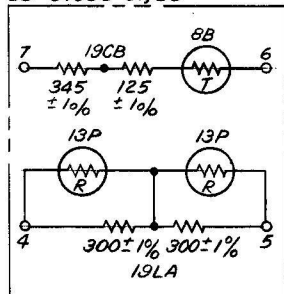


FIG. 37

ED-91938-01,G10  
SEE NOTE 104

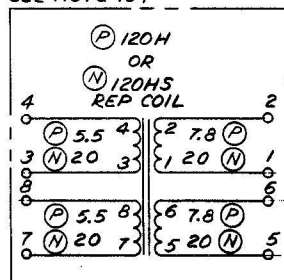


FIG. 38

ED-91938-01,G11  
SEE NOTE 104

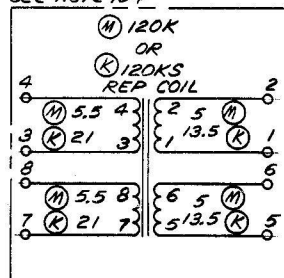


FIG. 39

ED-91938-01,G12  
SEE NOTE 104

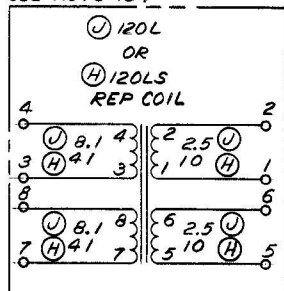


FIG. 40

ED-91938-01,G13

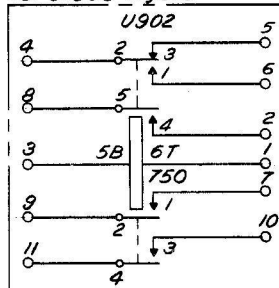


FIG. 41

ED-91938-01,G14

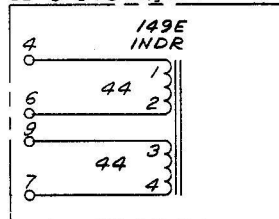


FIG. 42

ED-91938-01,G15

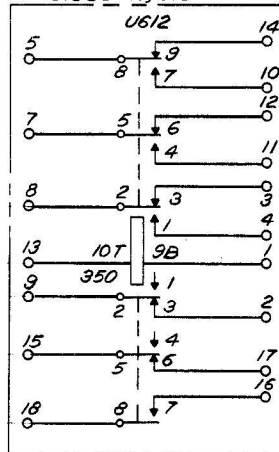


FIG. 44

ED-91938-01,G16

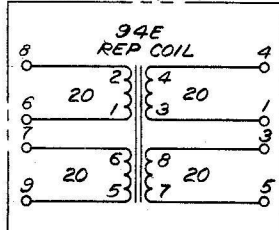


FIG. 45(MFR DISC)

ED-91938-01,G17

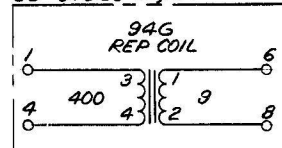


FIG. 48

ED-91938-01,G18

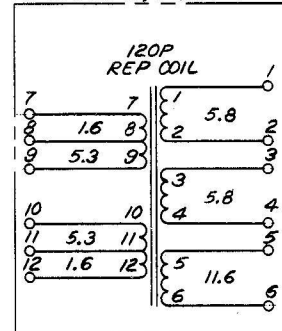


FIG. 50

ED-91938-01,G19

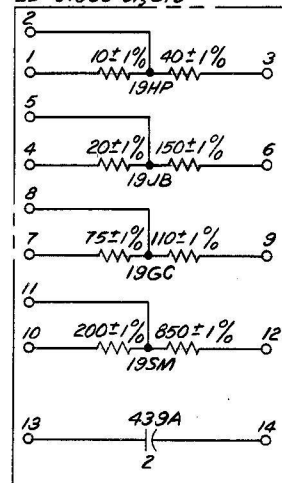


FIG. 52

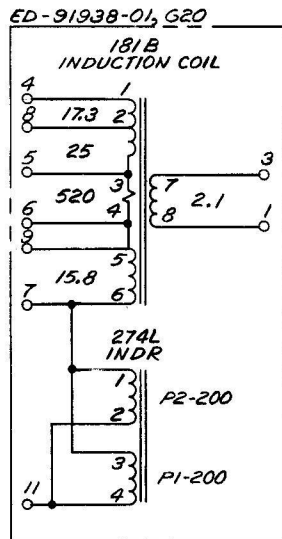


FIG. 53

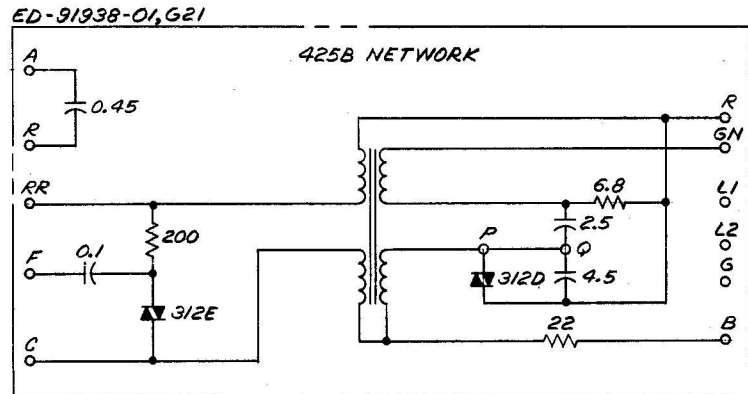
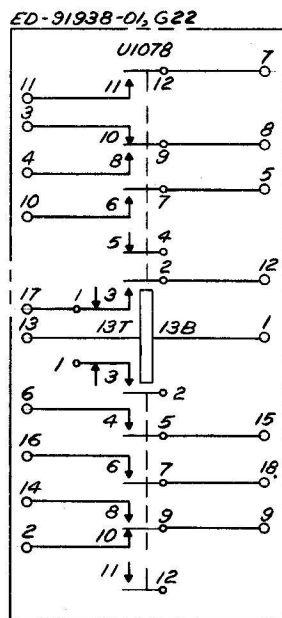


FIG. 54



STATION SYSTEMS  
EQUIPMENT UNITS

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BELL TELEPHONE LABORATORIES  
INCORPORATED

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