# N3 CARRIER TELEPHONE SYSTEM
# DOUBLE-CHANNEL REGULATOR UNIT
# J99300AC AND J99300CA
# INSTALLATION PROCEDURES

* ALLOW 2 MINUTES REGULATION TIME FOR EACH UNIT

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## 1. GENERAL

**1.01** Procedures are provided in this section for installation of the J99300AC and J99300CA double-channel regulators used in N3 terminals and N3-L type C junctions. These procedures may also be used to check installation work prior to performing initial lineup tests.

**1.02** This section is reissued to include the J99300CA, List 9 and 10 regulators. Since this is a general revision, arrows normally used to show changes have been omitted. This reissue does not affect the Equipment Test List.

**1.03** The double-channel regulator unit does not contain a pick-off filter when shipped from the factory. The proper 659-type filter must be ordered separately and installed in the field. The list number and the regulator channel number are then written in the spaces provided on the front panel of the regulator. This work should be performed carefully because an error in the filter code or front-panel information could result in channels regulating from the wrong carrier frequency.

**1.04** A completely equipped terminal in an N3 system requires 12 double-channel regulators, six for each 12-channel group. A regulator unit has two signal outputs, serving adjacent odd and even numbered channels. The J99300AC, List 1 or 8 regulators and J99300CA, List 1 or 9 regulators can be used interchangeably in this application.

* SEE NOTE

**1.05** Channels 3 and 4 of a 12-channel group, connected between N and L carrier systems by an N3-L type A or C junction, cannot be regulated by the channel 4 carrier because of a spurious frequency originating in the L system. The N3 terminal for these groups must be equipped with three J99300AC, List 9 or J99300CA, List 2 or 10 regulators which have screw switches in the output circuit. Two units are set for three outputs, one to feed channels 1, 2, and 3 and the other to feed channels 4, 5, and 6. The unit in the regulator position for channels 3 and 4 has the switches set to terminate the output. The three other regulator positions (for channels 7 and 8, channels 9 and 10, and channels 11 and 12) can be equipped with either type of unit; however, the units specified in 1.04 are recommended.

**1.06** The L carrier spurious frequency does not affect a 12-channel group which is terminated at one end of an N line by an N3-L type C junction and by an N3 terminal at the other end. Therefore, the regulator units do not require output circuit switches in this application and the same regulators are used as in the N3 system (1.04).

## 2. PICK-OFF FILTER INSTALLATION

**2.01** The system application and the regulator position determine the J and list numbers of the double-channel regulator unit required. Check the J and list numbers stamped on the front panel of the regulator with the information in Table A to verify that the unit is the correct type.

**2.02** Refer again to Table A for the code of the pick-off filter required in this regulator position. Obtain the filter and install it in the regulator (see Fig. 1 or 2). Note that the leads from terminals E1 and E2 on the printed wire board should be connected to filter pins 1 and 2,

respectively. The mounting screws must be tight to connect the filter to electrical ground.

***Caution: The 659-type filters are fragile, crystal filters which should be handled carefully to avoid damage.***

**2.03** An additional list number, which identifies the code of the filter installed, and the regulated channel numbers are shown for each regulator and J number in Table B. Catalog numbers (659—) relating to regulator numbers are shown in Table A. The regulators are shown in Table B with corresponding J99300 list numbers. These list numbers differ with various double-channel regulators. Write the list and channel numbers in the space provided on the front panel of the regulator.

## 3. OUTPUT SCREW SWITCH SETTINGS

**3.01** The J99300AC, List 9 and J99300CA, List 2 or 10 double-channel regulators have screw switches in the output circuit. These switches should be set as shown in Table C.

### TABLE A

### FILTER CODE AND FREQUENCY, J AND LIST NUMBERS (REFERENCED TO REGULATOR POSITIONS)

| REGULATOR POSITION | PICK-OFF FILTER CODE | FILTER FREQUENCY | N3 TERMINAL IN N3-L SYSTEM | N3 TERMINAL IN N3 SYSTEM OR N3-L TYPE C JUNCTION |
|---|---|---|---|---|
| 1 | 659A | 152 kHz | J99300AC, List 9 or J99300CA, List 2 or 10 | See Note<br><br>J99300AC, List 1 or 8 or J99300CA, List 1 or 9 |
| 2 | 659B | 160 kHz | | |
| 3 | 659C | 168 kHz | | |
| 4 | 659D | 176 kHz | J99300AC, List 1 or 8 or J99300CA, List 1 or 9 | |
| 5 | 659E | 184 kHz | | |
| 6 | 659F | 192 kHz | | |

*Note:* The J99300AC, List 9 or J99300CA, List 2 or 10 units may be used in N3 terminal or N3-L type C junctions in position 4, 5, or 6 by setting switches S5, S6, S7, S8, and S9 to the closed position. These units should not be used in position 1, 2, or 3 in universally wired N3 terminal bays since channels will be double-fed by the third channel output.

TABLE B

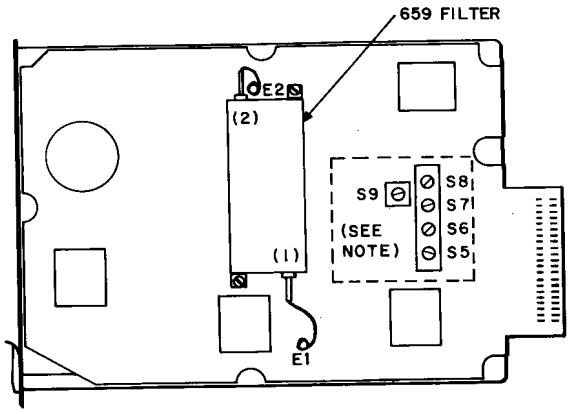
REGULATED CHANNEL AND LIST NUMBERS
(REFERENCED TO REGULATOR POSITIONS)

| REGULATOR POSITION | J99300AC, L1 or 8 | | J99300AC, L9 | | J99300CA, L1 or 9 | | J99300CA, L2 or 10 | |
|---|---|---|---|---|---|---|---|---|
| | REG CHAN | LIST | REG CHAN | LIST | REG CHAN | LIST | REG CHAN | LIST |
| 1 | 1,2 | 2 | 1,2,3 | 2 | 1,2 | 3 | 1,2,3 | 3 |
| 2 | 3,4 | 3 | — | 3 | 3,4 | 4 | — | 4 |
| 3 | 5,6 | 4 | 4,5,6 | 4 | 5,6 | 5 | 4,5,6 | 5 |
| 4 | 7,8 | 5 | 7,8 | 5 | 7,8 | 6 | 7,8 | 6 |
| 5 | 9,10 | 6 | 9,10 | 6 | 9,10 | 7 | 9,10 | 7 |
| 6 | 11,12 | 7 | 11,12 | 7 | 11,12 | 8 | 11,12 | 8 |

TABLE C

SCREW SWITCH SETTINGS FOR N3-L SYSTEMS

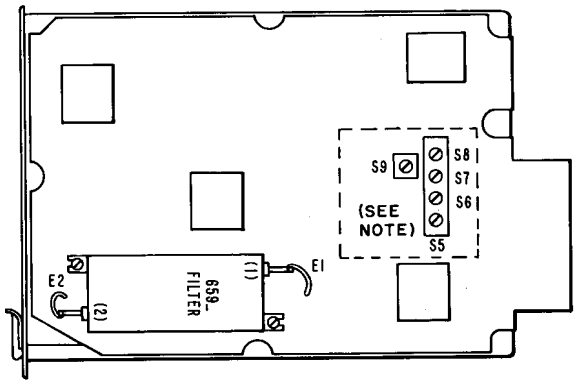
| J99300AC, LIST 9 OR J99300CA, LIST 2 OR 10 DOUBLE-CHANNEL REGULATORS | | |
|---|---|---|
| REGULATOR POSITION | SCREW SWITCH SETTINGS | |
| | OPEN (UP) | CLOSED (DOWN) |
| 1 | S9 | S5, S6, S7, S8 |
| 2 | S5, S6, S7, S8 | S9 |
| 3 | S9 | S5, S6, S7, S8 |
| 4 | — | S5, S6, S7, S8, S9 |
| 5 | — | S5, S6, S7, S8, S9 |
| 6 | — | S5, S6, S7, S8, S9 |




NOTE:
SWITCHES S5 THROUGH S9 ARE ON LIST 9 UNITS ONLY.

**Fig. 1—J99300AC Double-Channel Regulator—Side View**

ALLOW AT LEAST 2 MINUTES FOR UNIT TO REGULATE WHEN REPLACING UNITS




NOTE:
SWITCHES S5 THROUGH S9 ARE ON LIST 2 OR 10 UNITS ONLY.

**Fig. 2—J99300CA Double-Channel Regulator—Side View**