

# ALARM AND TIMING EQUIPMENT UNITS ASSOCIATED WITH PERMANENT SIGNAL HOLDING TEST TRUNK SELECTING AND CONCENTRATING EQUIPMENTS EQUIPMENT DESIGN REQUIREMENTS NO. 5 CROSSBAR SYSTEM

## 1. GENERAL

### Scope

**1.01** This specification, together with the supplementary information listed herein, provides the design requirements for an alarm and timing unit. It also describes, in general, the associated common systems equipment required in No. 5 offices for the concentration of permanent signal holding trunks for the selection of these trunks, plugging-up lines, and line insulation test control circuits.

**1.02** This specification is reissued:

- (a) To arrange alarm and timing unit, J23060E, for connection to a maximum of 100 incoming announcement trunk units, in accordance with SD-25870-01, Issue 16D.
- (b) To add a new auxiliary timing unit, J23060G, which is arranged to accommodate a maximum of 400 incoming announcement trunk units in accordance with SD-25870-01, Issue 16D.

### Capacity

**1.03** The capacity of the various units listed herein is as follows:

| UNIT                  | CKTS<br>PER UNIT | 2-INCH MTG PLT<br>SPACES REQD<br>PER UNIT |
|-----------------------|------------------|-------------------------------------------|
| Concentrating Unit    | 1                | 8                                         |
| Test Trunk Unit       | 2                | 2                                         |
| Alarm and Timing Unit | 1                | 4                                         |
| Selector Shelf Unit   | 3                | 8                                         |

### Description

**1.04** The units listed herein are arranged to mount on 23-inch relay rack bays and, wherever possible, these units shall all be located on the same bay as shown in Fig. 1. They shall be fused at the Power, Ringing, and Tone distribution (PRTD) frame on a signal battery bus bar. Although only certain of the 48-volt supply leads for these units are restricted to signal battery for noise reasons, all fuses for these units shall be located on the PRTD frame to facilitate maintenance, except for the alarm circuits fuses of units J23060E and J23060F. These fuses shall be located on the relay rack bay mounting these units.

**1.05** *The alarm and timing unit arranged for permanent signal holding trunks, announcement trunks, and coin supervisory release circuits* consists of a framework arranged to mount two 206-type selectors, and three 17-1/2 inch mounting plates. This unit requires the vertical space of four 2-inch mounting plates and is local cable wired to terminal strips for external connection. (See Fig. 1) This unit, required once per marker group, provides a means for giving an alarm when a specified number of permanent signals occur simultaneously. It also provides a means of supplying timed intervals to a maximum of 80 permanent signal holding trunks, 100 announcement trunks and the coin supervisory release circuit. Permanent signal alarm circuits are provided, one per marker group for 2-wire and one per marker group for 4-wire, and one per marker group for WADS.

**1.06** *The concentrating unit for permanent signal holding trunks J99206AR* consists of a framework arranged to mount one 211-type selector, three 17-1/2 inch mounting plates, and four 23-inch mounting plates. This unit requires

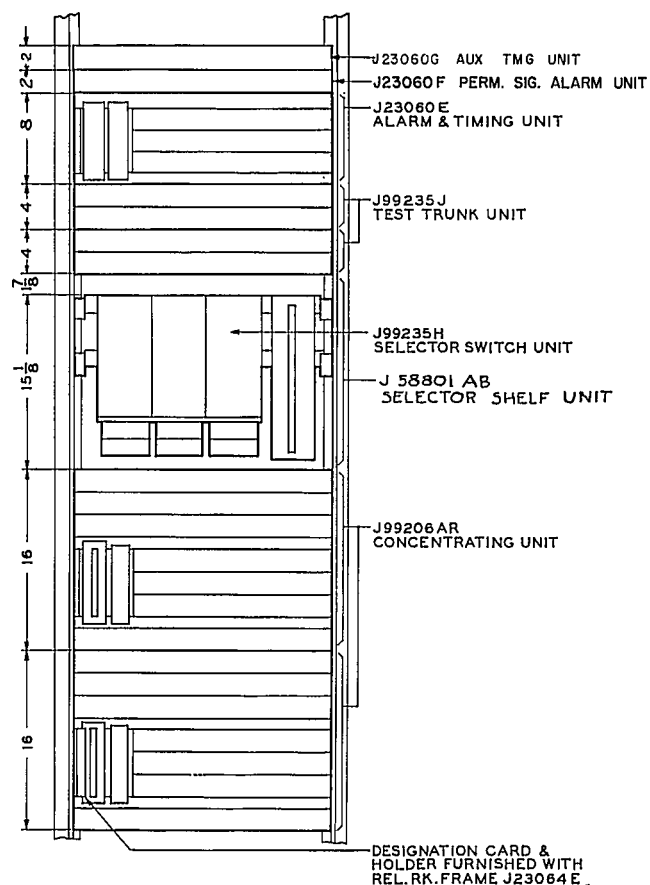
the vertical space of eight 2-inch mounting plates and is local cable wired to terminal strips for external connection. (See Fig. 1.) This unit, required once for each trunk to the "A" switchboard, permits a large number of Permanent Signal Holding (PSH) trunks to have access to a smaller number of trunks terminated at the "A" switchboard. For service reason the concentrating units will, in general, be furnished in pairs with each permanent signal holding trunk appearing on the banks of two selectors and having two outlets toward the "A" switchboard. The circuit is arranged, however, so that a group of 21 PWH trunks can appear on more than two concentrating switches and thus have more appearances at the "A" switchboard if traffic conditions warrant. If ten or less permanent signal holding trunks are provided, they may be multiplied at the "TK" terminal strip on the unit to have two or more appearances on the selector of

each concentrating unit. Vacant A terminals on the unit TK terminal strip shall be grounded to decrease selector hunting time.

**1.07 The test trunk unit for selecting permanent signal holding trunks, plugging-up lines, and line insulation test control circuits J99235J** consists of two 2-inch mounting plates arranged to mount the apparatus of two circuits. (See Fig. 1 and 1.09.)

**1.08** The selector shelf unit J58801AB-5 that mounts the selector unit (J99235H) for selecting permanent signal holding trunks, plugging-up lines, and line insulation test control circuits consists of a framework, with banks and a terminal strip, designed to mount three step-by-step switches. The banks associated with each switch position are wired in multiple, and the 100 tip, ring, and sleeve terminals terminate on the terminal strip. The "T," "R," and "S" leads from the permanent signal holding trunks, plugging-up lines, and line insulation test control circuits are connected, as required, to this terminal strip by means of switchboard cable. (See Fig. 1.)

**1.09** The test trunk and its associated selector switch form a circuit entity which provides the local test desk with access to: (a) a maximum of 50 permanent signal holding trunks over selector levels 1 through 5; (b) a maximum of 40 plugging-up lines over selector levels 6 through 9; ten signaling paths to the line insulation test control circuit over top level (0). Access to a particular permanent signal holding trunk, plugging-up line, or line insulation test control path is obtained by dialing the number corresponding to its position on the selector switch. The PSH trunks are numbered 10 to 59, the PU lines 60 to 99, and the line insulation test control paths 00 to 09 to conform with their locations on the test selector switch. The appearances of the PSH trunks and the PU lines on the test selector are multiplied to the master test frame so that access to these circuits may be obtained directly from the maintenance center.



**Fig. 1 - Arrangement of Units Associated with Permanent Signal Holding Trunks**

## 2. SUPPLEMENTARY INFORMATION

AA128.006 — Checking List — General Equipment Requirements Sections  
J29259 (819-005-150) — General Outline —  
No. 5 Crossbar System

J58801 (AA355.002) — 701A and 711A PBXs — PBX Systems

J99206 (AA388.032) — Equipment Units — Relay Rack Mounted — Common Systems

J99235 (AA388.078) — Equipment Units — Relay Rack Mounted — Common Systems

### 3. DRAWINGS

WECo J drawings listed herein should be ordered by referring to the prefix and base number and requesting the highest suffix dash (—) number.

SD-25760-01 — Crossbar System No. 5

SD-25766-01 — Concentrating Circuit

SD-25767-01 — Test Trunk and Selector Circuit

SD-25870-01 — Timing Circuit

SD-26135-01 — Permanent Signal Alarm Circuit

J23060E-( ) — Alarm and Timing Unit Equipment

### 4. EQUIPMENT

***J23060E (AT&TCo Std) — Alarm and Timing Unit for Permanent Signal Holding Trunks, Coin Supervisory Release Circuits, and Announcement Trunks (See Notes G and I)***

Equipment — J23060E-( )

**List 1** — Assembly, equipment, and wiring for one alarm and timing unit in accordance with SD-26135-01, apparatus Fig. 1 and SD-25870-01, Fig. 1 (46-minute timed interval for PSH trunks). (See notes A, B, C, D, F, and G.)

**List 3** — Equipment and wiring required in addition to list 1 for second permanent signal alarm circuit per SD-26135-01, Fig. 1. (See notes A, B, C and I.)

**List 4** — Equipment and wiring required in addition to list 1 for operation with 1-100 announcement trunks in accordance

with SD-25870-01 Fig. 3 (2-minute timed interval). (See notes B, E and J.)

### Notes

A. In addition, there are options involving wiring only, as follows:

1. Wiring required in addition to list 1 when the alarm sending circuit is not provided in accordance with SD-26135-01, "S" option.
2. Wiring required in addition to list 1 for operation with outgoing line auxiliary circuit for public emergency reporting service in accordance with SD-25870-01, "N" option. (See note H.)

B. Job records need not be maintained for SD-26135-01, "T," "V," "W," "X," "Y," and "Z" options and SD-25870-01, "S," "X," "Y," and "Z" options.

C. "T," "V," "W," "X," "Y," and "Z" wiring shall be provided or omitted by the installer in accordance with note 102 of SD-26135-01, depending upon the number of permanent signals required for operating the alarm circuit.

D. "Y" and "Z" wiring shall be provided or omitted by the installer in accordance with note 102 of SD-25870-01, depending upon the timing interval required by the permanent signal holding trunks.

E. "X" wiring shall be provided or omitted by the installer in accordance with note 102 of SD-25870-01, depending upon the timing interval required for announcement trunks.

G. All fuses for this unit shall be located on the PRTD frame and connected to 48-volt signal battery except for the 1-1/3 ampere alarm fuse (in accordance with SD-26135-01, Fig. 1, undesignated battery) which shall be located on the relay rack mounting this unit. This fuse is mounted near its associated equipment to minimize the voltage drop in the supply lead.

H. When an outgoing line auxiliary unit for public emergency reporting service, SD-26164-01, is installed in an office that has a timing circuit manufactured prior to issue 12D of SD-25870-01, "N" option must be furnished.

I. When permanent signal alarms are provided one alarm unit is required for each type of switching 2W, 4W, or WADS in a marker group. The first and second alarm units are provided by lists 1 and 3 respectively in J23060E-( ). A third alarm unit is provided in list 1 of J23060F-( ).

J. For more than 100 announcement trunks see J23060G.

**J23060F (AT&TCo Std) — Alarm Unit for Permanent-Signal Holding Trunks (See Note D)**

Equipment — J23060F-( )

**List 1** — Equipment and wiring required for third permanent signal alarm circuit per SD-26135-01, Fig. 1. (See notes B and C.)

**Notes**

- A. Reserved.
- B. "T," "V," "W," "X," "Y," and "Z" wiring shall be provided or omitted by the installer in accordance with note 102 of SD-26135-01 and job records need not be maintained.
- C. The 1-1/3 ampere alarm fuse (SD-26135-01, Fig. 1, undesignated battery) shall be located on the relay rack mounting this unit. This unit is mounted on the same frame as the unit to minimize the voltage drop in the supply lead.
- D. When permanent signal alarms are provided, one alarm unit is required for each type of switching 2W, 4W, or WADS in a marker group. The first and second alarm units are provided by lists 1 and 3 respectively of J23060E, and the third alarm unit is provided by list 1 of J23060F. In offices in which the first alarm unit is provided by

J23060C "Mfr Disc.", list 1 of J23060F may be specified to provide additional alarm units.

**J23060G (AT&TCo Std) — Auxiliary Timing Unit for Announcement Trunks**

Equipment — J23060G-( )

**List 1** — Common equipment for one auxiliary timing unit.

**List 2** — Equipment and wiring required in addition to list 1 for operation with 100 announcement trunks per SD-25870-01, Fig. 4 (maximum of four).

**Notes**

- A. Reserved.
- B. Reserved.
- C. Unit is surface wired.
- D. This unit is an auxiliary to J23060E and should be mounted directly above J23060E whenever possible.

**5. GENERAL NOTES**

**List of "A&M Only" and "Mfr Disc." Equipment**

The following equipment has been replaced as indicated. Where "A&M Only" items appear, the issue numbers shown are those of the issue in which the rating was first applied.

| EQUIPMENT   | RATING    | DETAILS<br>LAST SHOWN<br>IN ISSUE | REPLACING<br>EQUIPMENT |
|-------------|-----------|-----------------------------------|------------------------|
| J23060A     | Mfr Disc. | 2                                 | J99206AR               |
| J23060B     | Mfr Disc. | 2                                 | J99235J                |
| J23060C     | Mfr Disc. | 3                                 | J23060E                |
| J23060D     | Mfr Disc. | 2                                 | J99235H                |
| J23060E, L2 | Mfr Disc. | 5                                 | J23060E, L4            |

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