MESSAGE REGISTER RACK (UNIT TYPE) AND MESSAGE TIMING FRAME EQUIPMENT DESIGN REQUIREMENTS TANDEM CROSSBAR SYSTEM

1. GENERAL

Scope

1.01 This specification, together with the supplementary information listed herein, covers the equipment design requirements for the framework, equipment, and circuits to be used in the manufacture and installation of the message register rack and message timing frame. ***This specification is applicable to the following systems and appears under the Plant Series numbers listed:***

NO. 1 CROSSBAR SYS *816-025-150*
TANDEM CROSSBAR SYS *817-045-150*

1.02 This section is reissued to incorporate previous appendix changes.

Capacity

1.03 ***The capacity of the message register rack*** is 1000 message registers per rack. The message registers are mounted on mounting plates, 10 message registers per mounting plate and the framework and cabling are so designed that one mounting plate at a time may be moved forward for the purpose of inspecting or cleaning the mechanism of the message registers. The message timing frame is a single bay wired for 200 circuits and may be equipped in multiples of 20 circuits.

Description

1.04 In No. 1 crossbar offices, the message register rack contains the message registers associated with the subscriber line circuits. In crossbar tandem offices arranged for PBX outdialing, the register rack contains message registers associated with trunks to PBX.

The message timing frame is a 2-foot, 2-1/16 inch wide, 11-foot, 6-inch high, sheet-steel framework mounting 23-inch equipments. The frame includes:

(a) Optional front and rear enclosing covers with a locking device.

(b) 22-volt ac power supply unit.

(c) No voltage alarm unit for the 22-volt ac supply.

(d) Fuse panels, 22 volts ac and 48 volts, located at the bottom of the frame.

(e) Frame local cable.

(f) Frame terminal strip.

1.05 Space below the casing is used for mounting call through test line, message register test, talking line, and buzzer equipment.

1.06 ***Casings:*** The message register rack is arranged to be furnished with or without casings. Where casings are furnished it is standard practice to furnish two complete casings for each rack, one for the lower and one for the upper portion of the rack. Each casing is composed of a front half and rear half. The two halves of the casing are similar except that the rear portion has a slot at the top and bottom for the cables to pass through and the sliding doors of the front half are equipped with glass while the rear doors have metal panels substituted for the glass.

Recording

1.07 ***Visual recording*** is performed by a reader who is in communication with a recording clerk over a recorders talking line. The front covers on the message timing frame are transparent plastic and need not be unlocked or opened in order to read the timing meters.

1.08 *Photographic Recording:* The registers of each rack are mounted and cabled so that it is possible to photograph the 500 registers in the left half of the two casings consecutively without moving the sliding doors. After the sliding doors are moved from the right side to the left side the 500 registers mounted in the right half of the two casings may then be photographed consecutively. The timing meters are mounted in groups of 50 and are spaced behind 8-inch high frame covers. The frame covers can be opened individually, making openings which will accept the message register camera, similar to KS-14593 L1, to photograph the message timing meters.

Guard Rails and End Guards

1.09 Sheet metal ladder guard rails and cabinet type end guards are provided. When the registers are equipped with casings, 1'-0" guard rails are used. In those cases where casings over the registers are not furnished, guard rails 10" wide should be provided. Where the message register rack is to be installed in an existing lineup of frames or racks having angle type guard rails the message register rack should be equipped with angle type guard rails and associated open type end guards.

Power Supply Panel

1.10 The message timing meter contains a synchronous (clock) motor driven from a 60-cps 22-volt ac power supply. The total quantity of message timing meters which can be operated from the 22-volt ac regulated power supply, PEC 2749, is limited by the traffic over the message timing circuits. This regulated power supply limits the traffic capacity to 7200 ccs (that is, 200 erlangs). Thus, traffic permitting, this power supply can accommodate two message timing frames each containing 200 timing circuits.

Message Timing Test Line Equipment

1.11 Test line multiple jacks and associated lamp appearance are provided on the front of each message timing frame and are multipled to a message register frame or message timing frame. Each frame is also equipped with a buzzer.

2. SUPPLEMENTARY INFORMATION

816-000-000 — No. 1 Crossbar System Index
817-000-000 — Tandem Crossbar System Index
J20150 (816-015-150) Switchboard Power Cabling
J25552 (816-017-150, 817-037-150) — Frame Lighting and Appliance Outlets
J86724 — AC Power Supply — Power Systems
Floor Plan Data — Section 9.2, Sheet 12

3. DRAWINGS

Keysheet

SD-25000-01 — Keysheet — No. 1 Crossbar System
SD-25352-01 — Miscellaneous Circuit — For Message Register and Message Timing Frame
SD-25435-01 — Keysheet — Tandem Crossbar System
SD-27602-01 — Message Timing Circuit
SD-80929-01 — Power System 22V-AC Supply

Framework

ED-25208-01 — Modification of ED-90569-01
ED-90568-01 — Casing Assembly
ED-90569-01 — Frame Assembly
ED-90697-01 — End Guard Details
ED-90838-01 — End Guard
ED-91265-01 — Method of Mounting Frame Designation Signs
ED-91423-01 — Cabinet Type End Guards for Use With 10" Guard Rails
ED-91591-01 — Sheet Metal Guard Rails — 10" Wide
ED-91659-01 — Cabinet Type End Guards for Use With 1'-0" Guard Rails

Subdivisions of Equipment and Detailed Index

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

EQUIPMENT CODE	RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING	CKT PER UNIT
J27050A	AT&TCo Std	Message Timing Fr	J27050A-( )	SD-27602-01 SD-80929-01	Frame

ED-91679-01 — Sheet Metal Guard Rails — 1'-0" Wide
ED-99016-01 — Cabinet Type End Guard Details

Equipment

ED-25209-01 — Equipment of Rack
ED-25209-15 — Tandem Office — Message Register Rack Assembly and Equipment
J27050A-( ) — Message Timing Frame

Wiring and Cabling

ED-90587-01 — Cabling Arrangement

4. EQUIPMENT

ED-25208-01 — Assembly Modification

Group 1 — Mounting plate adapters

Group 2 — Shim and dialing recorders subset mounting panel

Group 3 — Buzzer mounting plate

Group 4 — Jack mounting support bar including 6 jack mounting supports

Group 5 — 1" x 1/4" ground bus bar for one rack

ED-25209-15 — Tandem Office — Message Register Rack Assembly and Equipment

Group 1 — Message register rack assembly and miscellaneous details, including frame and message register ground bars. Specify one group per frame.

Group 2 — Casing assembly, padlock, keys, and 12-inch sheet metal type guardrails for frames with casings. Specify one group per 500 registers. (Two groups maximum per frame.)

Group 3 — Jack mountings and jacks per SD-27075-01, Fig. 1 and 3 on even-numbered message register racks. Specify one group per even-numbered rack.

Group 4 — Direct recorder talk line equipment per SD-27075-01, Fig. 4 on mounting plate and mounting plate adapters required on the first message register rack associated with the tandem office. Specify one group per office.

Group 5 — Message registers per ten Fig. 2, SD-27067-01, and one No. 232B mounting plate for each ten registers required. (Maximum 100 groups 5 per frame)

J27050A (AT&TCo Std) — Message Timing Frame — No. 1 Crossbar System

Equipment — J27050A-( )

List 1 — Framework, assembly, wiring, and common equipment for one message timing frame, wired for 200 message timing circuits in accordance with SD-27602-01, Fig. 1 and 2, and wired and equipped for one miscellaneous circuit in accordance with SD-25352-01, Fig. 4, 5, 6, 11, 21, 22, 23, 38, and 40.

List 2 — Assembly and equipment required in addition to list 1 to provide 20 message timing circuits in accordance with SD-27602-01, Fig. 1 and 2.

List 3 — Assembly, equipment, and wiring for 22-volt ac power supply and alarms in accordance with SD-80929-01, Fig. 1, 2A, 3, and B with "X" and "Z" options. (See notes A and C.)

List 4 — Front and rear frame covers with locks.

List 5 — Equipment and wiring to provide for 22-volt ac fuse alarm on second message timing frame when associated 22-volt ac supply is multipled from first message timing frame and both frames are located in same aisle, in accordance with SD-80929-01, Fig. 2B. (See note A.)

List 6 — Equipment and wiring to provide for 22-volt ac fuse alarm on second message timing frame when associated 22-volt ac supply is multipled from first message timing frame and located in different aisle than first frame in accordance with SD-80929-01, Fig. 2D.

Notes

A. The capacity of the PEC 2749 22-volt ac power unit is a traffic load of 200 erlangs or 7200 ccs. Thus, when a second message timing frame is furnished, the traffic load will

dictate whether the associated 22-volt ac supply will multiple from the first frame or a separate 22-volt ac power unit will be required. When the 22-volt ac power unit, PEC 2749, is multipled to a second frame, the maximum total loop lead length shall be 426 feet using 8-gauge cable for both the battery and ground feeders.

B. It is recommended that this sheet-metal frame be located at the end of a frame line-up. If this frame is located in the middle of a line-up, the frame ground shall be bonded across this frame in a manner similar to ED-91210-51, Fig. 9.

C. The no-voltage alarm unit J86724C-( ), associated with the 22-volt ac power supply, is furnished as part of list 3.

ED-90568-01 — Casing Assembly

Group 1 — One casing assembly

ED-90569-01 — Message Register Rack Assembly

Group 1 — Framework for one rack

Group 2 — 1'-0" guard rails and support for one rack

Group 6 — Ground supply details for one rack

Group 9 — 1'-0" guard rail support required for originating end of lineup

ED-90697-01 — End Guard Details — Open Type

Group 3 — Universal bar for mounting frame designation sign and aisle pilots

ED-90838-01 — End Guard Assemblies — Open Type

Group 5 — End guard for either end of a message register rack equipped with 1'-0" angle guard rails

ED-91423-01 — Cabinet Type End Guards For 10" Guard Rails

Group 1 — End guard complete

Group 2 — Aisle pilot lamp mounting

ED-91591-01 — Sheet Metal Guard Rails — 10" Wide

Group 1 — One set of guard rails

ED-91659-01 — Cabinet Type End Guards for 1'-0" Guard Rails

Group 4 — End guard complete for message register rack

ED-91679-01 — Sheet Metal Guard Rails — 1'-0" Wide

Group 1 — One set of guard rails

Message Register Rack Equipment

4.01 Message register equipment as specified shall be located as shown on the associated equipment drawings.

Message Register Test Line Equipment

4.02 Test line multiple jacks and associated lamps are mounted on alternate frames below the register casing. The relays, condensers, and resistances of the test line circuit are mounted on a mounting plate located in the left hand bay below the register casings and is common to a single or double line of register racks. Only one buzzer, located centrally in the line-up, is necessary unless the audible range is exceeded, in which case a multiple buzzer may be provided.

Talking Line Equipment

4.03 Frame talking line multiple jack appearances are provided on the front of alternate message register frameworks for the use of the switchman. This equipment is mounted in the right bay below the metal casing.

Battery and Ground Supply

4.04 A supply jack (A) is to be located on alternate frames and is mounted in a spare jack position on the talking line jack mounting.

Recorders Talking Lines

4.05 Talking line equipment is furnished on the message register rack, when required for use between the message register rack and the traffic recorders desk with dialing or direct line features. The direct line provides a talking circuit but no means of signaling. Since the recorder and reader must make their connection by appointment use of this direct line is largely restricted to districts where the message register rack and the recorders desks are in the same building.

4.06 For districts where the message register rack and the recorder's desk are not located in the same building, and the circuit capabilities of the direct line would be exceeded or where the Telephone Company wishes to provide signaling facilities, a dialing line offering the same facilities to both the reader and the recorder as provided by an ordinary subscriber telephone is available.

4.07 Provision is made in No. 1 crossbar offices for three recorder talking lines for each 10,000 rate lines, or about one for each three message register frames. Operator's telephone jacks are located in each of the 3 frames associated with one circuit. For the dialing line, a hand telephone set is provided with each talking circuit. This telephone set is located on the frame nearest the originating end of the line up and is mounted between the center and right-hand uprights of the frame below the registers.

4.08 ***Operators' telephone sets*** associated with talking line circuits, are furnished only when specifically requested by the Telephone Company.

5. GENERAL NOTES

5.01 ***End Guards and Ladder Guard Rails:*** For register racks equipped with casings, furnish end guards per ED-91659-01, group 4 and 1'-0" ladder guard rails per ED-91679-01, Group 1. When the racks are not equipped with casings, furnish end guards per ED-91423-01, Group 1, and 10" ladder guard rails per ED-91591-01, Group 1. For register racks to be installed in existing lineups having angle type guard rails furnish ladder guard rails and supports as covered by Group 2 of assembly drawing ED-90569-01.

5.02 ***Padlocks and Keys:*** Two padlocks should be furnished with each casing, one for the front pair of doors and one for the rear pair of doors. These locks should be Yale & Towne No. 771 padlocks with key change No. 17 or approved substitutes. Two brass keys should be furnished in each office for the sliding door locks in the line message register racks.

5.03 ***Growth:*** The line message register rack may grow from either left to right or right to left.

Cabling

5.04 Connection of the register leads from the LDF terminal strips to the message register terminals on the rack shall be made with 24 gauge 258L cables, each serving 100 registers. The 258L, oval in shape, has a special color arrangement designed for general use in the crossbar system. The cabling shall be located as shown on the cabling drawing.

5.05 Ground from a ground bar in local crossbar offices is connected to a second terminal on each of the message registers by means of 1450 type switchboard cables, each cable providing the ground to 100 registers. A strap wire is run between these ground terminals on the registers. A loop wire, connecting to this strap between the fifth and sixth position on each mounting plate, makes the ground lead of the cable common to 2 plates of registers. This feature, together with the forming of wires with the 258L cable to the center of each plate, permits moving the mounting plates forward for maintenance.

5.06 A common ground bar is provided at the top of the message register rack, spanning both bays of the rack. Ground bar junctions are provided to make this a continuous ground bar for a line-up similar to the continuous ground bar provided for each line-up of crossbar frames. The main ground feeder is connected to this bar at the first frame of the line-up. When register racks and crossbar frames are in the same line-up, the ground bars for the two groups of frames should be bonded together.

5.07 A No. 4 BRC lead is run down inside the first upright of each message register rack in a line-up. This lead is connected to the bay ground bar at the bottom of the rack and at the top to the common ground bar by means of approved connectors. In the case of message register racks to be installed in existing lineups having a ground feeder cable the No. 4 BRC lead should be connected to the ground feeder by means of an approved connector.

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