ORIGINATING MARKER CONNECTOR FRAME EQUIPMENT DESIGN REQUIREMENTS NO. 1 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 engineering, manufacture, and installation of the originating marker connector frame in No. 1 crossbar offices.

1.02 This section is reissued to incorporate previous appendix changes.

Capacity

1.03 The originating marker connector frame has a capacity of three connectors, each of which serves to connect any one of a maximum of ten subscriber senders, eight keypulsing senders, or a combination of eight subscriber and keypulsing senders to any one of a maximum of eight originating markers.

Description

1.04 The originating marker connector frame is used in conjunction with subscriber and keypulsing senders for the purpose of connecting these senders to originating markers.

1.05 The originating marker connector is a single-sided, single-bay steel structure 11 feet, 6 inches high and 3 feet, 10 inches long. The frame is arranged to mount the framework and equipment for three originating marker connectors.

1.06 The equipment for each originating marker connector circuit consists of two horizontal rows of 18 multicontact relays each, contact protection for these relays, and some 30 U-type relays which are used for control and alarm purposes. One 50- and one 40-contact capacity multicontact relay are required for each originating marker and each sender. The relays associated with an originating marker connector are mounted on a unit-type framework. The units required for a fully equipped frame are mounted one above the other in the center of the bay. The contact protection, for use with the multicontact relays, and the control and alarm equipment for the three originating marker connectors on a frame are mounted together at the bottom of the frame on 11 pairs of 20-1/2-inch by 1-31/32-inch mounting plates.

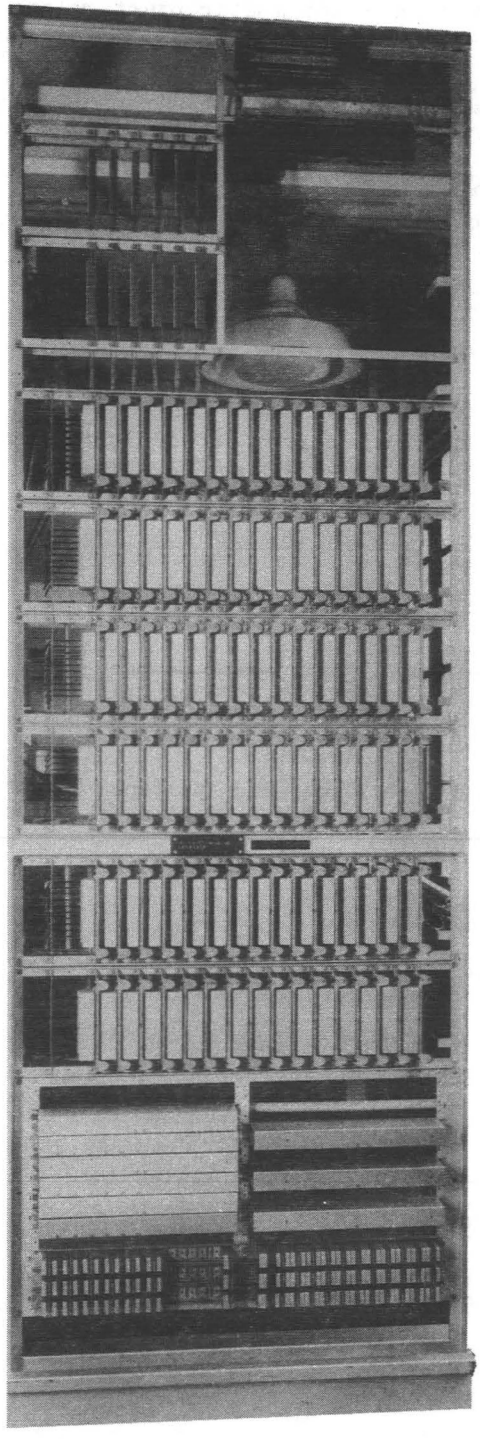

Fig. 1 - Originating Marker Connector Frame

1.07 With the exception of the alarm equipment, the equipment in an originating marker connector circuit is variable, consisting of a minimum of three and a maximum of eight pairs of originating marker connector multicontact relays with their associated contact protection and control relays and a maximum of ten pairs of sender connector multicontact relays with their associated contact protection and control relays. The originating marker connector relays are arranged on the frame so that the multiple wiring between these relays in each connector is in a vertical local cable form individual to each originating marker. These forms are not a part of the frame local cable and are omitted when originating marker relays are not equipped.

1.08 The apparatus side of each connector is enclosed in common can covers, individual to each relay in the case of multicontact relays and common to each mounting plate in the case of U-type relays.

1.09 Interconnections between this and other frames are made by means of switchboard cable.

2. SUPPLEMENTARY INFORMATION

816-000-000 - No. 1 Crossbar System Index
J20150 (816-015-150) - Switchboard Power Cabling
J25551 (816-040-150) - End Guards, Aisle Pilot Lamp and DPTS Supports, Fuse Record Book and Holder, and Spare Fuse Mountings
J25552 (816-017-150) - Frame Lighting (Incandescent Type) and Appliance Outlets
J85505 - Central Office Lighting (Fluorescent Type)
Floor Plan Data - Section 9.1, Sheet 10

3. DRAWINGS

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

Key Sheet

SD-25000-01 - Crossbar System

Framework

ED-25020-01 - Fuse Panel, Terminal Strip, Switch Mounting Details, and Cable Brackets
ED-25023-01 - Frame Details
ED-25083-30 - Assembly of Originating Marker Connector Frame

Equipment

J28750A-( ) - Equipment of Frame

Wiring and Cabling

ED-25085-01 - Frame Local Cable
ED-25163-10 - Switchboard Cabling Details

Miscellaneous

ED-25021-53 - Assembly of Jack, Key, and Lamp Panels
ED-25025-58 - Assembly of Fuse Panel
ED-25130-10 - Schematic of Marker Multiple Cabling to frame Connectors
ED-25346-14 & -15 - Method of Running Power Feeders
ED-91187-01 - Assembly of End Guards

4. EQUIPMENT

J28750A (AT&TCo Std) - Originating Marker Connector Frame

Equipment - J28750A-( )
Local Cable - ED-25085-01

List 1 - Framework, assembly, wiring, and common equipment arranged for three originating marker connectors with a maximum of eight originating markers and ten senders, less the multiple wiring for the originating marker relays and the horizontal strapping on these and the sender connector relays.

	Wire	Equip	See Notes
Framework, ED-25083-30, G1		1	
Fuse Panel, ED-25025-58, G1		1	
Jack, Key, and Lamp Panel, ED-25021-53, G8		1	
Originating Marker Connector Ckt, SD-25035-01:			
Figs. 2 & 11 (A&M Only) and 3, 5, 6, 8, & 12	3	0	A,B, C,E
Fig. 4	24	0	A
Fig. 7	18	0	A
Misc Frame Ckt, SD-25247-01:			
Figs. 2, 3, 4, 6, & 8	1	1	
Fig. 7	3	3	

List 2 - Framework, assembly, horizontal strapping, and equipment required in addition to list 1 to equip one originating marker connector for one alarm circuit, three originating markers, and one sender. (See note D.)

	Wire	Equip	See Notes
MC Relay Mtg Assembly, P-423785		1	5.01
Originating Marker Connector Ckt, SD-25035-01:			
Fig. 3	1	1	F
Figs. 6, 7, & 8	1	1	F
Figs. 2, 11 (A&M Only), & 12	0	1	E

List 3 - Assembly and equipment per SD-25035-01, Fig. 7 required in addition to lists 1 and 2 to equip an originating marker connector for one additional originating marker up to and including the seventh originating marker. (See notes G and J.)

List 4 - Assembly and equipment per SD-25035-01, Fig. 4 required in addition to lists 1 and 2 to equip an originating marker connector for one additional sender. (See notes I and J.)

List 5 - Assembly, wiring, and equipment required in addition to list 1 to provide multiple wiring for one originating marker relay in all originating connectors on same frame. (See note K.)

	Wire	Equip	See Notes
(DM) Terminal Strips per J28750A-( ), Fig. 1	0	1	L
Originating Marker Connector Ckt, SD-25035-01, Fig. 6, 7, or 8	3	0	L,M

List 6 - Assembly and equipment per SD-25035-01, Fig. 8 required in addition to lists 1 and 2 to equip an originating marker for the eighth originating marker. (See note H.)

List 7 - Wiring and equipment per SD-25035-01, Fig. 13, and "ZU" option, required in addition to list 2 when the office is arranged for local AMA and the "0" and "1" access code feature is required.

Notes

A. The wiring to be furnished as a part of this list shall be for the SS, DS, and CB relays; the DM resistances and condensers; the CB resistances; the C resistances and condensers and the leads to the multicontact relays which are run in the frame local cable.

B. Wiring and equipment per SD-25035-01, Fig. 1 and the wiring and equipment for the CB and DB jacks and the OM fuse in Fig. 9 shall be furnished as part of the originating trouble indicator frame.

C. With the exception of the OM fuse, wiring and equipment per SD-25035-01, Fig. 9 shall be furnished as part of the originating marker frame.

D. One set of equipment per this list shall be provided for each originating marker connector equipped on the frame.

E. Figs. 2, 11, and 12 of SD-25035-01 are universally wired. Figs. 2 and 11 shall be specified in existing offices where the originating marker and trouble indicator frames are not arranged for traffic regulation. The C lamp in Fig. 2 or 12 shall be furnished as part of the originating trouble indicator frame. The CA interrupters shall be mounted on the office interrupter frame. The contacts of the CA interrupters shall be distributed over the interrupter frames in such a manner that in the event of a motor failure on any one frame, not more that 25 per cent of the total number of originating marker connectors would be affected.

F. The horizontal bare wire strapping for the maximum of eight pairs of originating marker and ten pairs of sender connector multicontact relays shall be furnished as a part of this list. When these relays are only partially equipped, this strapping shall be continued beyond the last unequipped position of each of the pair and supported at that position and insulated as illustrated in the cabling and wiring specification.

G. One set of equipment per this list shall be provided initially in each originating marker connector for each marker over three equipped on the frame up to and including the seventh originating marker. For additions to existing equipment, one set of equipment per this list shall be provided in each originating marker connector equipped on the frame for each additional originating marker, up to and including the seventh.

H. One set of equipment per this list shall be provided in each originating marker connector when the eighth originating marker is equipped.

I. One set of equipment per this list shall be provided initially in each originating marker connector for each sender over one to be equipped. For additions to existing equipment, one set of equipment per this list shall be provided for each additional sender to be equipped in an originating marker connector.

J. The local cable leads to these relays are provided in list 1 and the multiple wiring for the originating marker relays is provided in list 5.

K. One set of wiring and equipment per this list shall be provided initially on an originating marker connector frame for each originating marker relay equipped. For additions to existing equipment, one set of wiring and equipment per this list shall be provided on each originating marker connector frame for each originating marker added.

L. The multiple wiring per this list is in a vertical cable form which is individual to and the same for each originating marker whether it is the first, intermediate, or last in the connector. One end of this form shall be soldered to the correspondingly numbered multicontact relay-type terminal strips which are mounted directly above the originating marker relays on framework which is furnished as part of list 1.

M. On an originating marker connector frame equipped with less than three originating marker connectors, the multiple leads to the unequipped originating marker relays shall be looped but not cut at the positions of these relays in unequipped originating marker connectors.

5. GENERAL NOTES

Equipment

5.01 It is desirable that, wherever possible, the subscriber senders assigned to an originating marker connector circuit shall be in one subscriber sender link subgroup.

5.02 The multicontact relay mounting units are treated as an equipment item rather than as part of the frame assembly. It is considered desirable to mount the relays as required on the auxiliary framework and strap them as a separate assembly.

5.03 The originating marker relays in each connector shall be equipped from right to left and the sender connector relays equipped from left to right in order to provide the best arrangement for the extension of the horizontal bare strapping past the unequipped positions and facilitate changes in the multiple on additions.

5.04 Each originating marker connector will serve a maximum of ten subscriber senders, a maximum of eight keypulsing senders, or a maximum of eight subscriber and keypulsing senders. Subscriber senders are cabled to the originating marker connectors on a sender frame basis (five senders per cable). The keypulsing senders are cabled to the originating marker connectors on a unit basis. A connector will normally serve the two subscriber sender frames mounting the senders of one link subgroup, or one subscriber sender frame and one, two, or three keypulsing sender units. In the latter case, the two subscriber sender frames of the link subgroup involved will be served by different connectors.

5.05 To assure continuation of service in the event of frame failure, a minimum of two originating marker connector frames shall be furnished for each office. Where the subscriber senders are arranged in three link subgroups, three associated connectors shall be furnished; where they are arranged in five link subgroups, five associated connectors shall be furnished. These are minimum requirements and may be increased if required by the demands of keypulsing senders. The latter shall be distributed over a minimum of four connectors unless only three connectors are furnished; in which case they shall be distributed over all three. If in the case of three subscriber sender link subgroups there is any inequality in subgroup sizes, the connector frame serving only one subgroup shall serve the larger sender subgroup.

Wiring

5.06 Where originating marker and sender connector multicontact relays are partially equipped, the horizontal multiple strapping shall be prepared for extension as shown in the cabling and wiring specification.

5.07 No. 24 gauge type "DCL" wire shall be used for all local cable wiring except in the case of battery and ground distributing leads which shall be No. 22 gauge type "DCL" wire.

5.08 Two types of local cables are provided on the originating marker connector frame; Originating marker multiple local cable and frame local cable. There is a minimum of three and a maximum of eight multiple local cables, each of which is individual to one originating marker relay in each originating marker connector. These forms are run vertically in back of the originating marker multicontact relays and are omitted when these relays are not equipped. The frame local cable contains all of the other wiring (except the bare horizontal strapping) for eight originating marker relays and ten sender relays, their associated contact protection and control relays; the wiring for three alarm circuits and the equipment common to the frame.

5.09 The local cable wiring for the sender control relays shall be arranged so that any sender may be used as a first, intermediate, or last sender in an originating marker connector circuit. The wiring for the originating marker control relays shall be arranged so that relays 2 to 8 may be

used as intermediate or last relays in an originating marker connector circuit.

Cabling

5.10 The code numbers of the switchboard cables, ordinarily used in cabling the various circuits, are shown on the switchboard cabling drawing. The circuits should, however, be checked to insure that the proper codes are specified to meet the latest circuit requirements. The cross-connecting information of the circuit shows what groups of leads are to be combined in the same cables.

5.11 The arrangement of the switchboard cables between the originating marker connector frames and the originating marker frames and the originating marker multiple between connector frames shall be in accordance with ED-25130-10.

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