

OUTGOING SENDER CONNECTOR FRAME AND ASSOCIATED EQUIPMENT UNITS 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 outgoing sender connector frame and outgoing sender connector units for relay rack mounting for use in the No. 1 Crossbar System.

Capacity

1.02 The capacities of the outgoing sender connector facilities are as follows:

OUT SDR CONN	CONNECTORS	TERM MKRS	OUT SDRS	OUT SDR GRPS
Frame	6	6 or 10	60	6
R.R. Unit	2	6 or 10	10 or 20	1 or 2

Description

1.03 The outgoing sender connector frame is a bulb-angle, double bay frame 11 feet 6 inches high and 4 feet 1-1/4 inches long arranged for mounting 23-inch mounting plates in each bay. (See Fig. 1.) The senders are divided into groups of ten, of a pulsing type, and are further divided into A and B subgroups of five each, dependent upon the levels they are assigned on an outsender link switch. Each group of senders must be assigned to two outgoing sender connectors; subgroups A to even-numbered and subgroups B to the next higher odd-numbered connector. In addition to the multi-contact relay connector equipment, used for passing signaling information, this frame contains units of "S" relays for independently connecting each of the 10 markers to each of the 60 senders. These relays along with units of

OSGA and OSGB sender subgroup relays are used to select a sender of the proper subgroup and to control and supervise its operation until it is connected to a trunk at the outgoing sender link frame. Each relay unit is equipped for 10 senders. A small cross-connection field is located on each unit to enable any sender relay to be assigned to any subgroup.

1.04 The outgoing sender connector units for relay rack mounting are 23-inches long. (See Fig. 2.) These units are designed to provide connector facilities in minimum quantities where only automatic intercept service is to be provided and direct in dialing service is not required and/or where floor space for new frames is extremely limited. Four assembly groups of equipment are required as follows:

- (1) One outgoing sender connector unit per J28158E is required for the multicontact relays or two connectors arranged for serving six or ten markers, and a test jack panel.
- (2) Two preference chain and transfer units per J28158H are always required, one for each connector.
- (3) Two sender subgroup units per J28158G are required for operation with each sender group and ten markers, one unit for markers 0-4, and one for markers 6-9.
- (4) One sender relay unit per J28158F required for operation with six or ten markers respectively and ten senders.
 - (a) Facilities for operation with ten additional senders may be obtained by repeating items 3 and 4.
 - (b) Items 3 and 4 are always mounted adjacent to facilitate making cross connections.

General Operation

1.05 Connectors are used to establish control paths between markers and outgoing senders which require temporary connection when setting up calls. Multicontact relays, each capable of closing 30 leads are used for this purpose.

1.06 The operation of the multicontact relays is controlled through associated control and preference circuits which consist mainly of general purpose wire spring relays.

1.07 Each connector will handle one call at a time. The marker sender control relays in the outgoing sender connector enable the marker to release the multicontact relay connection and maintain control until the trunk is properly connected to the calling line and sender. When several markers simultaneously bid for the same connector a preference circuit permits connection by one marker at a time and once connection is established insures that the connection will not be broken until the marker has released it. Preference circuits are provided in

duplicate with automatic and manual transfer arrangements.

1.08 The number of senders that may be assigned in each outgoing sender connector varies according to the traffic submitted by each sender and is limited by the call carrying capacity of the connectors. The assignments are also influenced by the permissible arrangements of strap wire multiple on the multicontact relays for the sender part of the outgoing sender connector circuit as described in the specification for the outgoing sender.

1.09 To avoid service interruption, a minimum of two outgoing sender connectors should be provided in each marker group. Each group of senders must be assigned to two outgoing sender connectors; subgroups A to even-numbered and subgroups B to the next higher odd-numbered connectors. When the minimum number of connectors is used, each should carry approximately the same traffic load. However, for larger numbers of connectors, there is no requirement that they shall be loaded evenly.

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	TITLE	CIRCUIT DRAWING	EQUIPMENT DRAWING
J28158A	AT&TCo Std	Out Sdr Conn Fr	SD-27759-01 SD-27760-01 SD-27768-01	J28158A-()
J28158B	AT&TCo Std	Sdr Relay Unit	SD-27759-01	J28158B-()
J28158C	AT&TCo Std	Sdr Subgrp Rel Unit	SD-27759-01	J28158C-()
J28158D	AT&TCo Std	Pref Chain Transfer Unit	SD-27760-01	J28158D-()
J28158E	AT&TCo Std	Out Sdr Conn Unit (RR Mtd)	SD-27759-01 SD-27768-01	J28158E-()
J28158F	AT&TCo Std	Sdr Rel Unit (RR Mtd)	SD-27759-01	J28158F-()
J28158G	AT&TCO Std	Sdr Subgrp Rel Unit (RR Mtd)	SD-27759-01	J28158G-()
J28158H	AT&TCo Std	Pref Chain & Transfer Unit (RR Mtd)	SD-27760-01	J28158H-()
J28158J	AT&TCo Std	Outgoing Sdr Conn Fr Fuse Pan Unit	SD-27768-01	J28158J-()

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
 Floor Plant Data — Section 9.1 Sheet 85

3. DRAWINGS

For additional drawings forming a part of this specification, see listings under Subdivisions of Equipment and Detailed Index.

Keysheet

SD-25000-01 — Crossbar System No. 1

Framework

ED-25278-30 — Jack Panel
 ED-92744-01 — Frame Details

Circuits

SD-27759-01 — Outgoing Sender Connector Circuit, Marker Part
 SD-27760-01 — Preference Control Circuit for Outgoing Sender Connector
 SD-27768-01 — Miscellaneous Circuit for Outgoing Sender Connector Frame (for use with LLP)

Wiring and Cabling

ED-25346-14,-15 — Method of Running Power Feeders
 ED-27670-10 — Outgoing Sender Connector Frame — Switchboard Cabling Details
 ED-27686-10 — Outgoing Sender Connector Units Relay Rack Mounted Switchboard Cabling Details

4. EQUIPMENT

J28158A (AT&T Co Std) — Outgoing Sender Connector Frame

Equipment — J28158A-()

List 1 — Framework, assembly, wiring, and common equipment for one outgoing sender connector frame arranged, but not

equipped with 6 connectors for operation with a maximum of 10 markers, 6 outgoing sender groups and 60 outgoing senders.

	WIRE	EQUIP	SEE NOTES
Out Sdr Conn Ckt, SD-27759-01:			A
Sdr Grp Rels, Fig. 1	60	0	B,E
Mkr Sdr Cont Rels, Fig. 2	600	0	B,G
Mkr Con Rels, Fig. 3	20	0	B
Pref Cont Ckt, SD-27760-01:			
Pref Chain Tr Ckt, Fig. 1 & 3	6	0	
Pref Chain Ckt, Fig. 2	60	0	
Alarm Release, Fig. 4	1	1	
Misc Ckt for OSC Fr, SD-27768-01:			
Fig. 1, 2, and 3	1	1	

List 2 — Marker multiple local cable and one terminal strip required in addition to list 1 for each marker position equipped. (See note C.)

List 3 — Framework, assembly, equipment, and strap wire multiple required for each connector equipped. (See note D.)

	WIRE	EQUIP	SEE NOTES
MTG Bars, P40B657		2	
BT6ATS In Pos. 1			
99A App Blanks, Pos 2 thru 11		As Req	
Strap Wire Mult, SD-27759-01, CAD 1	1	0	

List 4 — Equipment per SD-27759-01, Fig. 3 required in addition to each list 3 for each marker position equipped. Omit 2 apparatus blanks. (See note D.)

Notes

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

1. SD-27759-01, "Z" option, required when automatic intercept service is provided.
2. SD-27759-01, "Y" option, required when direct in dialing is provided.
3. SD-27760-01, "Z" option, required when alarm sending is not provided.

- B. The wiring specified in list 1 is included in the frame local cable except for surface wiring on units.
- C. The wiring in list 2 includes all leads designated marker MULT LC in the CADs of SD-27759-01.
- D. The OSC frame shall be equipped with two, four, or six connectors. One list 3 shall be provided for each connector equipped on the frame in the order 0 to 5. One list 4 shall be provided in each connector per list 3 for each marker position equipped in the order 0 through 9. A preference chain unit per J28158D shall be equipped on each OSC frame.
- E. Provide one sender subgroup relay unit, J28158C, for each sender group and markers 0-4 and one for each fender group and markers 5-9.
- F. The sender relay unit, J28158B, is equipped for ten senders and two markers. One of these units should be provided for each two markers and ten senders.

J28158B (AT&TCo Std) — Sender Relay Unit

Equipment — J28158B-()

- List 1** — Assembly, equipment and wiring for one sender relay unit per SD-27759-01, Fig. 2 equipped for ten senders and two markers.

J28158C (AT&TCo Std) — Sender Subgroup Relay Unit

Equipment — J28158C-()

- List 1** — Assembly, equipment, and wiring for one sender group (subgroups A and B) relay unit per SD-27759-01, five Fig. 1 arranged for operation with five markers 0-4 or 5-9.

J28158D (AT&TCo Std) — Preference Chain Unit

Equipment — J28158D-()

- List 1** — Assembly, equipment, and wiring for one preference chain transfer unit per SD-27760-01, Fig. 1 and Fig. 3 (TR0 relay), for operation with two connectors and maximum six markers.

- List 2** — Assembly, equipment, and wiring required in addition to list 1 per SD-27760-01, Fig. 1 and Fig. 3 (TR0 relay), for operation with two additional connectors (maximum six connectors total).

- List 3** — Assembly, equipment, and wiring required in addition to list 1 and 2 per SD-27760-01, Fig. 3 (TR1 relay) for two connectors when seven to ten markers are required.

- List 4** — Mounting plate required for each marker equipped.

- List 5** — Assembly and equipment required in addition to each list 4 for each two connectors equipped per SD-27760-01, Fig. 2 (maximum three required per list 4).

J28158E (AT&TCo Std) — Outgoing Sender Connector Unit for Relay Rack Mounting

Equipment — J28158E-()

- List 1** — Assembly, equipment, and wiring for one outgoing sender connector unit per SD-27759-01, Fig. 3, equipped for two connectors for operation with six markers (0-5), equipment and wiring per SD-27760-01, Fig. 4, AR key, and equipment and wiring per SD-27768-01, Fig. 1. B and F jacks only.

- List 2** — Assembly, equipment, and wiring per SD-27759-01, Fig. 3 required in addition to list 1 for operation with markers 6, 7, 8, and 9.

J28158F (AT&TCo Std) — Sender Relay Unit Relay Rack Mounting

Equipment — J28158F-()

- List 1** — Assembly, equipment, and wiring for one sender relay unit per SD-27759-01, Fig. 2 equipped for ten senders and six markers 0-5 (4 mounting plates).

- List 2** — Assembly, equipment, and wiring per SD-27759-01, Fig. 2 required in addition to list 1 for operation with markers 6, 7, 8, and 9 (2 mounting plates).

J28158G (AT&TCo Std) — Sender Subgroup Unit Relay Rack Mounting

Equipment — J28158G-()

List 1 — Assembly, equipment, and wiring for one sender group (subgroups A and B) unit per SD-27759-01, five Fig. 1 arranged for operation with five markers 0-4 or 5-9 and one sender group.

J28158H (AT&TCo Std) — Preference Chain and Transfer Unit Relay Rack Mounting

Equipment — J28158H-()

List 1 — Assembly, equipment, and wiring for one preference chain and transfer unit per SD-27760-01, six Fig. 2, one Fig. 1, and one Fig. 3 (TR0 relay) for one connector and six markers (minimum equipment required — two units).

List 2 — Assembly, equipment, and wiring required in addition to list 1 per SD-27760-01, four Fig. 2 and one Fig. 3 (TR1 relay) when seven to ten markers are used.

J28158J (AT&TCo Std) — Outgoing Sender Connector Frame Fuse Panel Unit

Equipment — J28158J-()

List 1 — Assembly and equipment for one outgoing sender connector frame fuse panel unit per SD-27768-01, Fig. 2 and 3.

5. GENERAL NOTES

Wiring and Cabling

5.01 The wire gauge and type of insulation to be used in the manufacture and installation of the outgoing sender connector frame and the associated units described in this specification shall be as follows:

USE	GAUGE	TYPE
Surface Wire	24	BW
Loose Wire	24	BU
Cross Conn	24	BU
Local Cable	24	BU
Switchboard Cable	24	BU

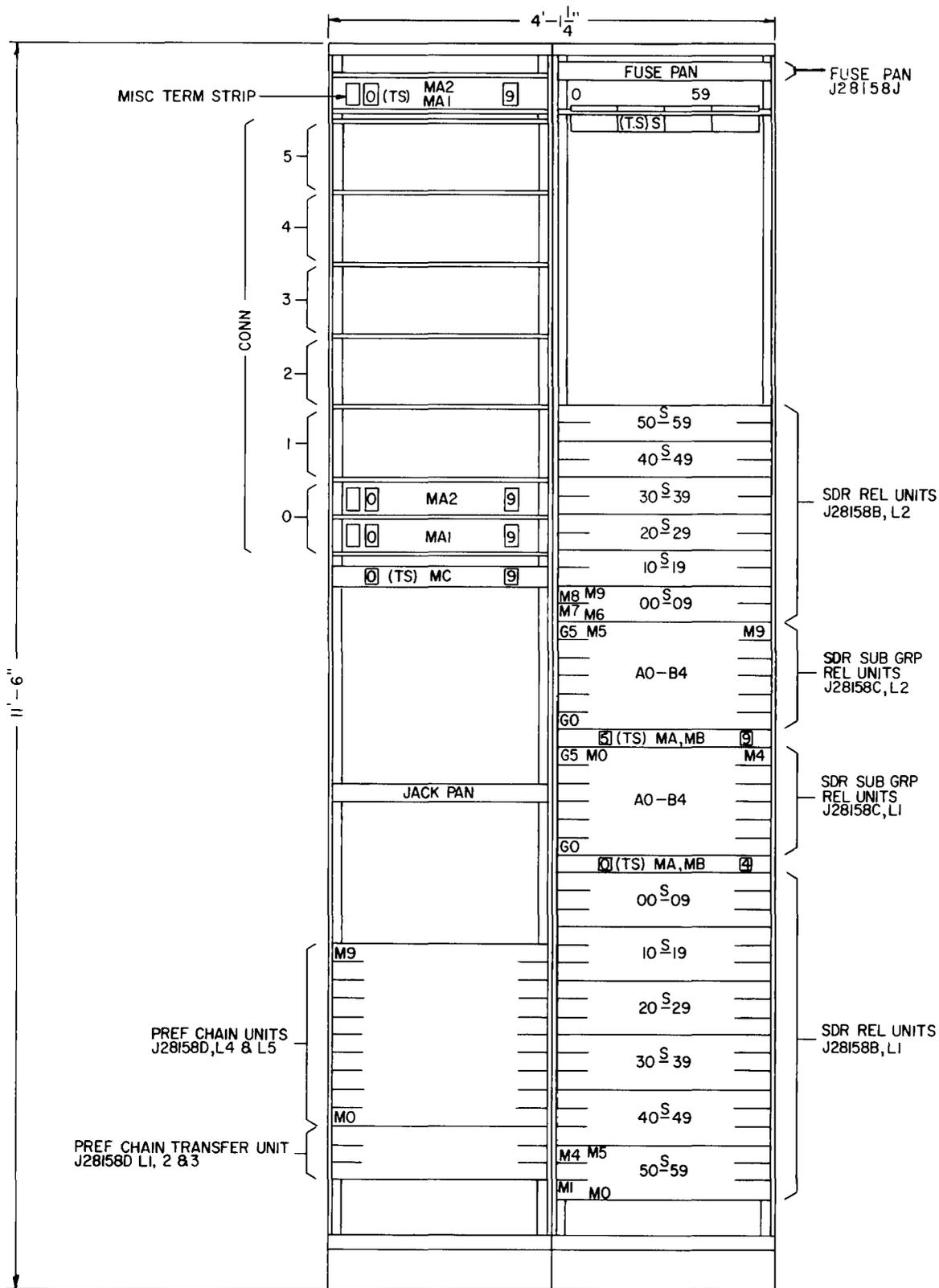


Fig. 1 - Outgoing Sender Connector Frame J28158A

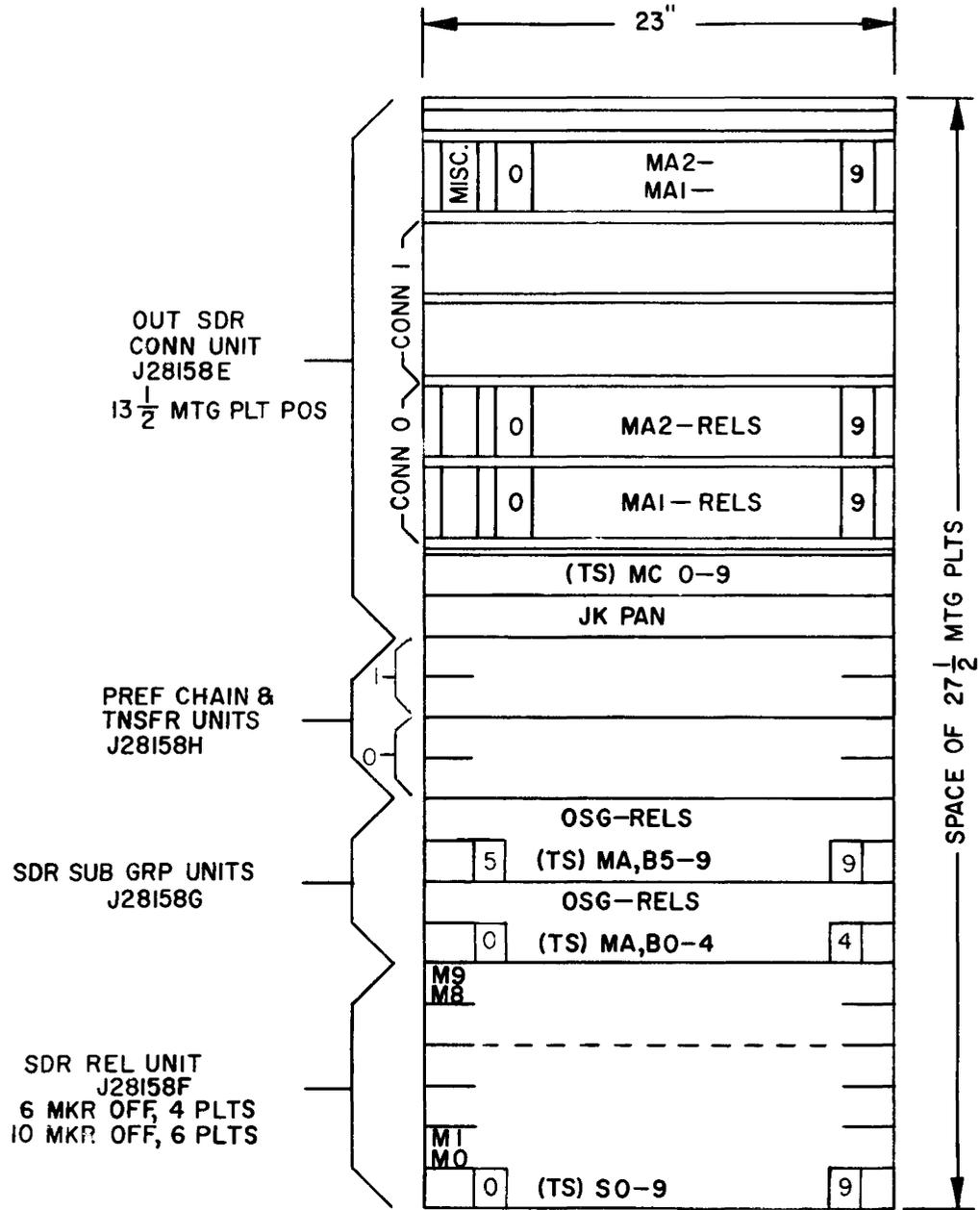


Fig. 2 - Typical Equipment Layout for Relay Rack Moulder Outgoing Sender Connector for 2 OSC, 10 SCRS, 6 or 10 MKRS (FIRST-(0)SDR GRP)

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