

TRANSLATOR, CONNECTOR, AND ROUTE GROUPING FRAMES 6-DIGIT TRANSLATION EQUIPMENT DESIGN REQUIREMENTS NO. 1 CROSSBAR AND PANEL SYSTEMS

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 3-digit individual and common translator frames, 3-digit translator connector frames, and route grouping frames in decoder panel and in No. 1 crossbar offices.

1.02 This specification is being reissued to add a new BSP division number 815-221-150, and to bring it into conformity with the general Plant Series plan.

Capacity

1.03 The frames have the following capacities.

- (a) Route Grouping Frame - four markers or decoders, each to four foreign areas.
- (b) 3-digit Translator Connector Frame - eight markers or decoders to two translators in each of two foreign areas.
- (c) 3-digit Common Translator Frame - three translators.
- (d) 3-digit Individual Translator Frame - two translators.

Description

1.04 Six-digit translation provides a means of handling 10-digit calls to other (usually adjacent) national areas without the use of auxiliary senders. It permits the continued use of existing route relays in the markers and decoders and the retention of existing trunking and charging arrangements.

1.05 The sender recycle and code compressor circuits examine the national area code to determine whether the call is to be routed from the area code only or from the combination of the area and office codes. If routing from the combination of area and office codes is required, a single-digit CC or compressed code is registered in the sender recycle circuit, the national area code is dropped from the sender A, B, and C registers, and no bid is made for an auxiliary sender. This frees the A, B, and C registers for storage of the office code in the sender. When

dialing of the office code has been completed, the compressed code and the office code are passed to the marker or decoder. In the marker or decoder, the CC relays select the proper translator required for the corresponding area.

1.06 The markers and decoders use translators as follows.

(a) The local or home area translator is the existing translator in the marker or decoder circuit. Cross connections on its code points provide translation for home office codes, X11 codes, and area codes for distant national areas. This translator also functions as a foreign area translator for minor area subscribers. For example, a marker or decoder is located in the 516 national area but serves some subscribers in the 212 area. The 212 or minor area subscribers use the local area (516) translator for a 516 (foreign area in respect to subscriber) call. This arrangement also uses the 3-digit individual translator frame, the connector for which is part of the marker or decoder circuit. The individual (212) translator in this case would be the home area translator for the 212 subscribers, and the foreign area translator for the 516 subscribers.

(b) The 3-digit individual translator is a new translator usually required near the boundary of two national areas. This translator provides access for its 800 code points to all route and preroute relays, service class, and other miscellaneous punchings, multiplied from the markers or decoders. The connector for this translator is part of the marker or decoder circuit.

(c) The 3-digit common translator provides control of up to 113 routes. The connector for this translator is mounted on the the 3-digit translator connector frame. The 800 code points in the common translator have access to the 113 route control points which are extended through the connector to the individual translator frame, if provided, or to the route grouping frame. Here they have access to all route and preroute relays, service class, and other miscellaneous punchings, multiplied from the markers or decoders.

(d) The R8 bay is an existing type of individual translator that provides 60 routes into a foreign area, and is

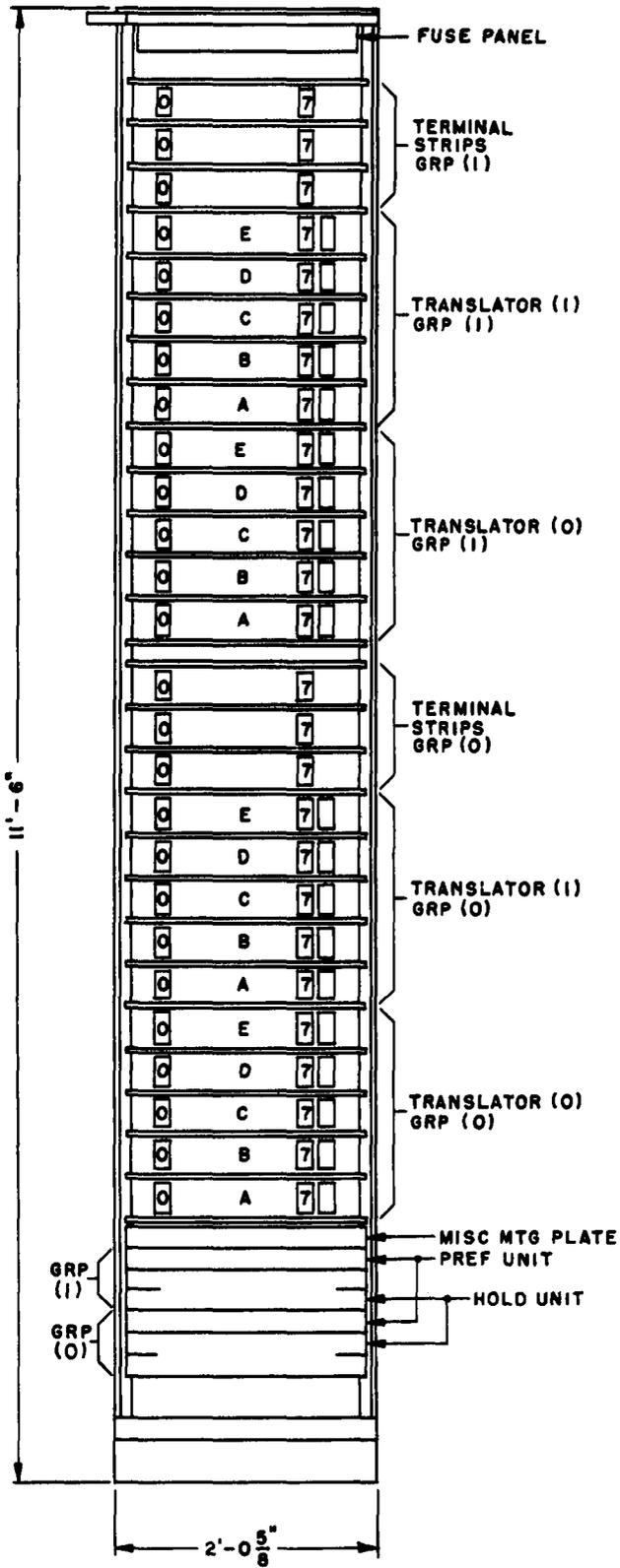


Fig. 1 - 3-digit Translator Connector Frame

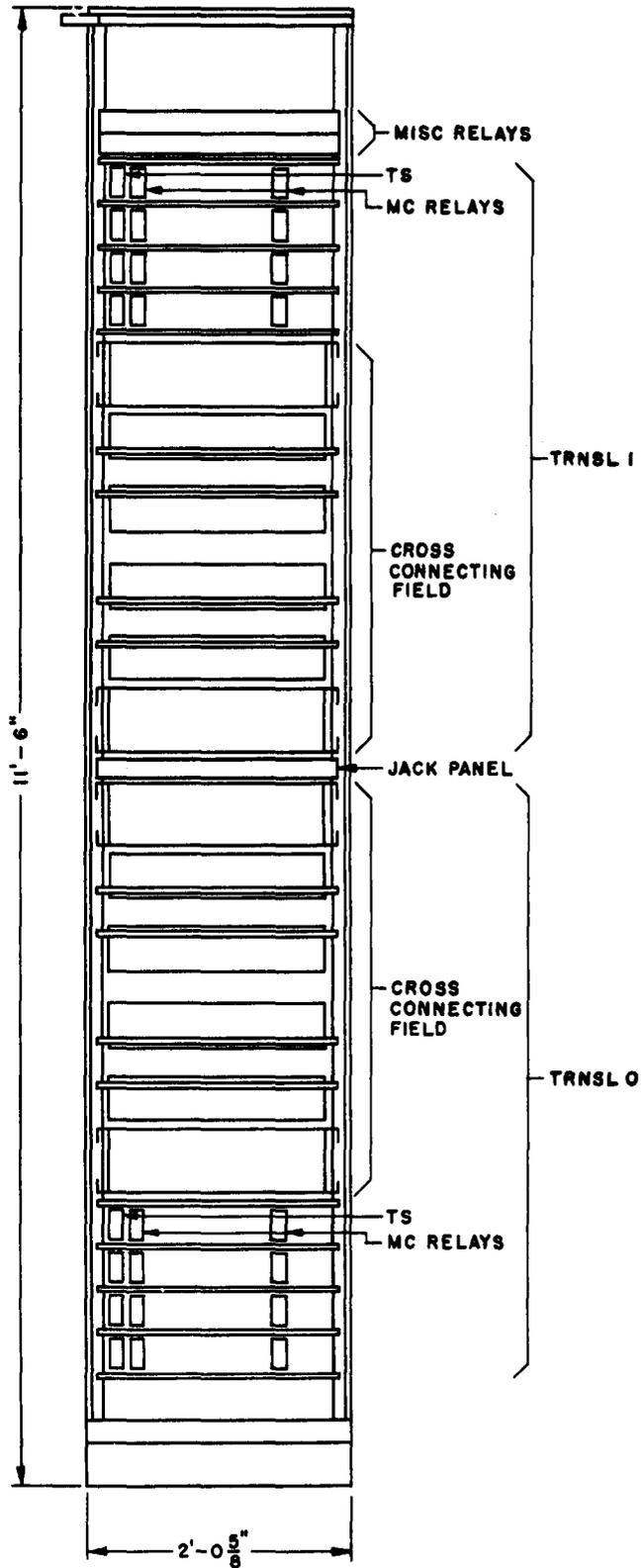


Fig. 2 - 3-digit Individual Translator Frame

used only in No. 1 crossbar offices. A cross connection enables the marker to select the R8 bay translator when either a 1-1 or compressed code signal is received. The 800 code points in this translator are cross-connected to route relays which are located on the R8 bay (and higher numbered bays for more than 60 routes) for foreign area traffic. This is in contrast to the 3-digit common and individual translators which use route relays on the R0 through R7 bays.

1.07 The route grouping frame is required only where the 3-digit individual translator is not used. It provides a cross-connection field for each of four markers or decoders. In each field, the 113 leads from the translator connectors for each of a maximum of four foreign areas have access to all route and preroute relays, service class, and other miscellaneous punchings, multiplied from the associated marker or decoder.

1.08 When the CC relays select the appropriate translator, the A, B, and C register relay contacts are extended through a connector to operate the translator relays. The translator represents the area, and the contacts of its translator relays represent the 3-digit office codes in that area. These code points appear on terminal punchings which are cross-connected as indicated in the descriptions of the various translators. In as much as the individual translators are individual per marker or decoder, the cross connections are made to terminal punchings which are cabled directly to the route relay windings. In the 3-digit common translator arrangement, the route control "RX" leads are extended through the connector for the marker or decoder requiring translation.

1.09 The translator connector frame provides the connector and control

relays to connect any combination of eight markers and decoders to two 3-digit common translators in each of two translator groups. Where more than eight markers and decoders have access to the same group of translators, the marker and the decoder connector equipment shall preferably be mounted on separate connector frames. In this case, the greater number of either markers or decoders shall be assigned to the first connector group.

1.10 A connector group consists of all the connector equipment necessary to connect any combination of eight markers and decoders to all translator groups.

1.11 A translator group consists of two to four translators for one foreign area. A maximum of three connector groups may have access to a translator group.

1.12 All of the new frames are 11 feet 6 inches high and 2 feet 0-5/8 inch long, except for the route grouping frame which is 2 feet 2-5/8 inches long. All frames have a sheet metal base 10 inches wide.

Floor Plan Arrangements

1.13 The preferred location of each frame is as follows.

- (a) 3-digit individual translator (3-DIT), route grouping (RG), near their associated markers or decoders.
- (b) 3-digit translator connector (3-DTC), 3-digit common translator (3-DCT), near their associated 3-digit individual translator (3-DIT) or route grouping (RG) frames.

The frames may be located adjacent to others with guardrails of different width. This will necessitate provision of appropriate junction details.

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.

<u>Circuit Drawing</u>	<u>Equipment Code</u>	<u>Rating of Unit</u>	<u>Title</u>	<u>Equipment Drawing</u>	<u>No. of 2- by 23-in. Mtg Plts</u>
SD-96529-01	J95112A	AT&TCo Std	3-digit Translator Connector Frame	J95112A-()	-
SD-96529-01	J95112C	AT&TCo Std	Group Preference Unit	J95112C-()	1
SD-96529-01	J95112D	AT&TCo Std	Translator Connector Hold Unit	J95112D-()	2
SD-96530-01	J95112E	AT&TCo Std	3-digit Common Translator Frame	J95112E-()	-

<u>Circuit Drawing</u>	<u>Equipment Code</u>	<u>Rating of Unit</u>	<u>Title</u>	<u>Equipment Drawing</u>	<u>No. of 2- by 23-in. Mtg Plts</u>
SD-96530-01	J95112G	AT&TCo Std	Route Grouping Frame	J95112G-()	-
SD-96535-01	J95112F	AT&TCo Std	3-digit Individual Translator Frame	J95112F-()	-
SD-96542-01	J95112B	AT&TCo Std	Fuse Panel	J95112B-()	-

2. SUPPLEMENTARY INFORMATION

815-000-000 - Panel Systems Index
816-000-000 - No. 1 Crossbar System Index
Floor Plan Data
Section 7.1
Sheet 56 - Route Grouping
Sheet 57 - 3-digit Individual Translator
Sheet 58 - 3-digit Translator Connector
Sheet 59 - 3-digit Common Translator

ED-95117-10 - 3-digit Translator Connector Frame - Switchboard Cabling Details
ED-95118-10 - 3-digit Common Translator Frame - Switchboard Cabling Details

3. DRAWINGS

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

Key Sheets

SD-21300-01 - Panel System - Battery Cutoff Office
SD-21680-01 - Panel System - Ground Cutoff Office
SD-25000-01 - Crossbar System No. 1

Framework

ED-25278-30 - Jack, Key, and Lamp Panel
ED-25529-70 - Guardrail Junctions
ED-92744-01 - Bulb-angle Frame Assembly
ED-92925-11 - Fuse Panel Assembly

Wiring and Cabling

ED-20622-01 - Method of Running Battery and Ground Leads - Single-sided Frame - Panel Systems
ED-25346-14
ED-25346-15 - Method of Running Power Feeders
ED-25346-16
ED-27114-01 - Table of Wire Gauges and Types of Insulation - No. 1 Crossbar

Equipment

ED-25212-01 - Designation Cards
ED-95115-10 - RG Frame - Switchboard Cabling Details
ED-95116-10 - 3-digit Individual Translator Frame - Switchboard Cabling Details

4. EQUIPMENT

J95112A (AT&TCo Std) - 3-digit Translator Connector Frame

Equipment - J95112A-()

List 1 - Framework, assembly, wiring, and common equipment for one 3-digit translator connector frame arranged to connect one connector group of eight markers or decoders to two translators in each of two translator groups. (See notes A and B.)

Wire Equip

Trans Conn Ckt, SD-96529-01:

Fig. 1	16	0
Fig. 2	32	0
Fig. 3	4	0
Fig. 4	2	0
Fig. 5	32	0
Fig. 6	4	0
Fig. 7	2	0

Misc Ckt, SD-96542-01:

Fig. 1	1	1
Fig. 3	21	0
Fig. 6	2	2

List 2 - Framework, wiring, and equipment required in addition to list 1 to connect the first marker or decoder to one translator SD-96529-01, Fig. 5. (See note E.)

List 3 - Apparatus required in addition to lists 1 and 2 to connect each additional marker or decoder to one translator SD-96529-01, Fig. 5.

List 4 - Equipment and wiring required in addition to lists 1, 2, and 3 per marker or decoder per translator group. (See notes B and D.)

List 5 - Wiring required in addition to lists 1, 2, 3, and 4 for each marker or decoder. (See note B.)

List 3 - Wiring and equipment required in addition to list 1 for each preference unit in the first connector group SD-96529-01, Fig. 7.

Notes

A. Units per J95112C (group preference unit), a fuse panel J95112B, and a hold unit J95112D, are ordered, as required, and are mounted on the frame and connected in the shop as shown on the frame equipment drawing J95112A.

Note

A. A group preference unit is required on the first connector frame for each translator group, for each connector group of eight markers and decoders.

B. List 1 includes the frame local cable for that part of the frame wiring which is external to the surface-wired units, except for the vertical multiple cables A and B which are part of lists 4 and 5, respectively.

J95112D (AT&TCo Std) - Translator Connector Hold Unit

Equipment - J95112D-()

C. A group preference unit J95112C is required for each translator group of two to four translators per connector group of eight markers and/or decoders. It is mounted on the first frame of each translator group in each connector group. Sketch D mounting plate is provided on all other frames.

List 1 - Assembly, wiring, and equipment for one translator connector hold unit arranged for eight markers or decoders and two translators in one translator group equipped for one marker or decoder and two translators SD-96529-01, two Fig. 2 and two Fig. 3.

D. List 4 contains the three terminal strips and the vertical local cable multiple A for one marker or decoder. In cases where only one translator connector is equipped, the multiple wires shall be looped and not cut at the unequipped position.

List 2 - Wiring and equipment required in addition to list 1 for each additional marker or decoder SD-96529-01, two Fig. 2.

E. List 2 includes the five terminal strips and banjo wiring for one translator.

List 3 - Wiring and equipment required in addition to list 1 required on the first hold unit for a translator SD-96529-01, two Fig. 6. (See note A.)

Note

A. List 3 is required on each hold unit in the first connector group of eight markers or decoders having access to a translator.

J95112B (AT&TCo Std) - Fuse Panel

Equipment - J95112B-()

List 1 - Assembly, equipment, and wiring for one 3-digit translator connector frame fuse panel arranged for two areas equipped for one area SD-96542-01, Fig. 2 and 11 Fig. 3.

List 2 - Apparatus and wiring required in addition to list 1 for the second area on frame SD-96542-01, Fig. 5, and ten Fig. 3.

J95112C (AT&TCo Std) - Group Preference Unit

Equipment - J95112C-()

List 1 - Assembly, wiring, and equipment for one group preference unit arranged for eight markers or decoders, equipped for one marker or decoder SD-96529-01, Fig. 1 and 4. (See note A.)

List 2 - Wiring and equipment required in addition to list 1 for each additional marker or decoder SD-96529-01, Fig. 1.

J95112E (AT&TCo Std) - 3-digit Common Translator Frame

Equipment - J95112E-()

List 1 - Framework, equipment, assembly, and wiring for a 3-capacity, 3-digit common translator frame equipped with the first translator. (See notes A, D, and E.)

Wire Equip

3-DCT Ckt, SD-96530-01, Fig. 1	3	1
Misc Ckt, SD-96542-01:		
Fig. 1	1	1
Fig. 4	3	1
Fig. 6	2	2

List 2 - Framework, equipment, assembly, and wiring per SD-96530-01, Fig. 1 and SD-96542-01, Fig. 4 required in addition to list 1 for each of the second and third translators. (See notes A, B, and C.)

Notes

- A. The wiring furnished in list 1 includes all wiring for three translators except that between the H-- relays and code points C200 to C999 for the second and third translators and the associated H-- relay strap wire multiples. This wiring is furnished in list 2.
- B. The code point wiring for the second translator may be included in the frame local cable when this translator is equipped initially. It will otherwise be furnished as a separate local cable.
- C. The code point wiring for the third translator is always furnished as a separate local cable. The frame local cable would overhang the frame upright if it included this wiring.
- D. Frame local cable wiring to the M terminals in the cross-connecting field is connected at the rear through fanning strips to avoid interference with installer wiring.
- E. On jobs using two translators for each of two foreign areas, those for one area are located on the first frame and those for the other area are located on the second frame. Otherwise, translators are equipped in numerical order.

J95112F (AT&TCo Std) - 3-digit Individual Translator Frame

Equipment - J95112F-()

List 1 - Framework, equipment, assembly, and wiring for a 2-capacity, 3-digit individual translator frame equipped with the first translator. (See note A.)

	<u>Wire</u>	<u>Equip</u>
3-DIT Ckt, SD-96535-01, Fig. 1	2	1
Misc Ckt, SD-96542-01:		
Fig. 1	1	1
Fig. 6	2	2

List 2 - Framework, equipment, assembly, and wiring per SD-96535-01, Fig. 1 required in addition to list 1 for the second translator. (See notes A and B.)

Notes

- A. The wiring furnished in list 1 includes all wiring for two translators except that between the H-- relays and code points C200 to C999 for the

second translator and the associated H-- relay strap wire multiples. This wiring is furnished in list 2.

- B. The code point wiring for the second translator may be included in the frame local cable when list 2 is furnished initially. It will otherwise be furnished as a separate local cable.

J95112G (AT&TCo Std) - Route Grouping Frame

Equipment - J95112G-()

List 1 - Framework, equipment, assembly, and wiring for a 4-marker or decoder capacity route grouping frame wired and equipped for the first marker or decoder. (See note A.)

List 2 - Framework, equipment, assembly, and wiring required in addition to list 1 for each of the second, third, and fourth markers or decoders. (See note A.)

Notes

- A. The equipment for each marker or decoder consists of a cross-connecting field. The shop wiring involved consists of strapping between the strips of terminals in the code grouping fields, and a 12-wire local cable multiplying the upper and lower code grouping strips per SD-96530-01, CAD 6.

5. GENERAL NOTES

Wiring and Cabling

5.01 ED-27114-01 covers the types and gauges of all wire and cable used in the manufacture and installation of the various frame equipment covered herein.

5.02 The code numbers of the switchboard cables used in cabling the various frames are shown on the switchboard cabling drawings. These drawings and the CAD figures on the circuits identify the leads involved and their destinations.

5.03 On frames requiring fuse panels, battery and ground feeders shall be provided in accordance with the battery and ground feeder drawing listed for the system with which these feeders are to be associated.

Cross Connections

5.04 Marker-type cross connections are required on the 3-DCT, RG, and 3-DIT frames. In general, wire colors should be used for these cross connections as determined by the termination of each in the associated terminal strip having individual terminals. These colors are: white for

rows 1 and 6; black for rows 2 and 7; red for rows 3 and 8; brown for rows 4 and 9, and green for rows 5 and 10, counting from the bottom up. Where both ends of a cross connection involve terminal strips having individual terminals, the strips nearer the code grouping strips shall be controlling.

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