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**ORIGINATING SENDER TEST 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 sender test connector units in No. 1 crossbar offices.

**1.02** This specification is reissued:

- (a) To make provision for operation with stuck sender tracing in accordance with SD-25221-01, Issue 103B. J27952A List 41 and J27952B List 2 added.
- (b) To make provision for operation with directory assistance charging in accordance with SD-25221-01, Issue 105B. J27952A Lists 42, 43, 44, 45, and 46 added and J27952H List 6 added.
- (c) To provide equipment information for the Sender Test Connector Control Circuit SD-28102-01, Issue 1. J27952M, J27952N, J27952P, J27952Q, J27952R, and J27952S added.
- (d) To provide provisions to automatically perform eleventh and twelfth TOUCH-TONE® button test on wire spring senders, SD-27810-01. This change is in accordance with SD-25221-01, Issue 102D.
- (e) To provide miscellaneous corrections and clarifications.

**CAPACITY**

**1.03** The originating sender test frame has a capacity of 20 keypulsing and subscriber sender test subgroups. This capacity may be increased to 30 subgroups by means of an auxiliary originating sender test connector unit mounted on a sender test connec-

tor frame. A subscriber sender test subgroup consists of a maximum of ten senders, and a keypulsing sender test subgroup consists of a maximum of five senders; these agree with a number of senders in the respective link subgroups. The sender subgroups associated with a test frame may be in two marker groups, providing the marker groups are not arranged for AMA. Provision is also made for testing subscriber senders arranged for direct distance dialing and the auxiliary senders associated with them.

**DESCRIPTION**

**1.04** The originating sender test frame is composed of a 2-bay, single-sided framework, 11 feet 6 inches high and 5 feet 4 1/4 inches long. The frame is arranged to mount all of the sender test equipment required for testing a maximum of 20 subgroups of keypulsing or subscriber senders, except the MS relays required as a connector to the senders for AMA tests. For offices requiring a maximum of not more than 200 senders, the MS relays are mounted on the miscellaneous frame. Provision is made so, when required, the test frame may be associated with ten additional subgroups of senders by means of an auxiliary sender test connector frame. In such offices, the MS relays for AMA are also mounted on this frame.

**1.05** The left-hand bay is equipped with all of the relays required for the testing of subscriber senders, while the right-hand bay is equipped with a key and lamp panel, a ticket receptacle and writing shelf, the relays associated with the testing of keypulsing senders, and the relay-type interrupter circuit. The connector equipment is located at the top of the bays to facilitate cabling. The relay-type interrupter is located in the lower portion of the right-hand bay to facilitate maintenance and to provide a location least subject to vibration.

**1.06** The originating sender test circuit is arranged to automatically test subscriber and keypulsing senders. Access to the senders is obtained by means of two connector circuits on the test frame and, when

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required, an auxiliary connector circuit located on the sender test connector frame. Each connector is arranged to connect to ten sender subgroups consisting of ten subscriber or five keypulsing senders each. After checking a sender, the test circuit is automatically connected to the next sender and so on until a trouble is encountered, which will stop the test circuit and bring in an alarm.

**1.07** When desired, particular circuits may be selected for test. Should it be desired to make repeated tests on a sender to locate a trouble, these tests can be made on a particular circuit until a trouble is encountered or the test circuit is stopped by the testing employee.

**1.08** The connector consists of a 10-by-20 crossbar switch, 60-contact multicontact relays, and U relays. One level on the crossbar switch and one each of the SM multicontact relays and supplementing A and B relays are required per subgroup of senders. Where the frame is arranged for testing AMA features, a further connector MS relay is required, consisting of a half-multicontact relay per subgroup.

**1.09** The preferred location for the sender test frame is in the maintenance center, near the sender make-busy frame and the originating trouble indicator.

**1.10** The circuits used for the originating sender test frame are arranged on a circuit unit basis; that is as far as practical, each separate function of the test circuit is in a separate, self-contained circuit unit. The equipment arrangement follows the circuits except for the selectors, connector switches, and multicontact relays which must be arranged to facilitate mounting and cabling. While the equipment is arranged by circuit units, terminal strips and a separate local cable have not been provided for each circuit except for those units used in connection with the testing of senders arranged for direct distance dialing. These particular units are mounted on a relay rack bay. The control portion of these units is, however, located on the originating sender test frame.

**1.11** In offices arranged for AMA, the added equipment on the sender test frame includes five numerical keys on which the line equipment number can be set up. By routing the test call to the maintenance recorder and the associated teletypewriter, a printed record is obtained as a check of the correct transmission from the sender to the transverter. The entry includes the transverter and sender numbers followed

by the line switch vertical number; if a detailed billed call is simulated, the called number and office code are recorded. By routing the call to a regular recorder, the line identification path is checked through to a particular recorder. Any sender or transverter can be selected for these tests. All the equipment required for testing the AMA features is mounted on the sender test frame, except the MS multicontact relays. These relays for G0 and G1 are mounted in the upper part of the miscellaneous frame, except in offices requiring G2, where they are mounted on the auxiliary originating sender test connector frame.

**1.12** The frame contains the following circuits with test features as indicated:

(a) **Connector Circuit:** This circuit controls the connection of the sender and transverter under test to the test circuit and determines the class of test to be made. The circuit is arranged to pass busy senders and to make an audible test of dial tone and disconnect tone furnished by timed release senders.

(b) **Code Keys and Dial Pulsing Circuit:** This circuit generates the dial pulses for dialing into the subscriber senders and controls the code and numbers used for pulsing into keypulsing senders. Provision is made to simulate the maximum and minimum line, pulse speed, and percentage break conditions.

(c) **Route Keys and Revertive Pulsing Circuit:** This circuit is used to send revertive pulses to the sender, to check the number of pulses sent, to pass by office selections when not required, to test by means of slow revertive pulses, and to provide compensating resistances for the fundamental loop.

(d) **Full Selector Dial Pulse Control Circuit:** This controls the dialing of the code and number when testing full selector calls, tests the coin and register relays in the sender, tests for office selections, and tests the ability of the sender to control the district selectors.

(e) **Incoming and Final Selection Control Circuit:** This circuit tests the sender for incoming and final selections, simulates the functions of an incoming selector on an abandoned call, makes synchronizing tests, and tests the TG and MTG sender relays for operate and nonoperate.

(f) **PCI Dial Pulse Control Circuit:** This circuit controls the dialing of the code and number during the test of a panel call indicator class of call on subscriber senders. It also tests the station delay feature, coin features, office selections, and district control of the subscriber senders.

(g) **PCI Register Circuit:** This circuit registers and checks the panel call indicator pulses from the sender.

(h) **Overflow Control Circuit for Subscriber Senders:** This controls the dialing and the check of office and incoming selectors. It tests the sender overflow relay for speed of operation and for operation through high resistance.

(i) **Attendant Class Control for Subscriber Senders:** This circuit tests the following attendant class calls:

Zero Attendant

Full Selector Calls to 3-Digit Attendant

Restricted Code

Blank Code

Permanent Signal—With or Without AMA

Tests are also made for sender operation under various other service and trouble conditions.

(j) **Keypulsing Circuit:** This circuit performs the functions of the A switchboard keyset when testing keypulsing senders, applies current flow tests to KRA and KC relays, and applies speed tests to the sender register relays.

(k) **Office Selection Control Circuit for Keypulsing Senders;** This circuit performs the functions of the office selectors and checks the senders on released calls.

(l) **Overflow Control Circuit for Keypulsing Senders:** This circuit checks the sender for overflow conditions, tests the advance of the sender from the trunk test position, imposes speed tests on the sender overflow relay, and checks certain other sender functions.

(m) **Operator Class Control Circuit for Keypulsing Senders:** This feature controls

the testing of the routing of the call, simulates the conditions of trunk test corresponding to the kind of trunk seized, and tests for minimum trunk test closure.

(n) **Sender Group Test Circuit:** This circuit tests the sender group circuit common to ten subscriber or five keypulsing senders, tests for opens and crosses, and operates the major alarm if the tests are not complete in a specified time.

(o) **Code Test Circuit:** This circuit records and checks the information which the sender under test transmits to the marker.

(p) **Automatic Message Accounting Check:** This circuit checks the AMA features of the senders, transverter connectors, and transverters which are not checked on a service call. The circuit also makes operate and nonoperate tests on the cold cathode tubes in the translator frames by controlling the ac surge through the coil windings; provision is included for testing the overflow feature in the translator frames. By routing the test call to the maintenance recorder, a printed record is obtained as a check of the correct operation of the circuits.

(q) **Auxiliary Sender Area Code Circuit:** This circuit is used to permit dialing of the three digits of the area code (X-0-X or X-1-X) preceding the directory number when testing the auxiliary sender through the subscriber sender. This circuit also supplies the signals, covering the proper setting of the selector switches of circuits covered in (r) and (s), when only seven digits are to be dialed or outpulsed from the subscriber sender when used with the auxiliary sender.

(r) **Auxiliary Sender Dial Pulse and Code Check Control Circuit:** This circuit unit controls the dialing into the subscriber sender for calls involving the use of the auxiliary sender, and also causes elimination of the usual code check. This is done to speed up the testing, since a code check is not needed when all digits can be pulsed forward and checked against the digits dialed.

(s) **Auxiliary Sender Multifrequency Pulse Check Control Circuit:** This circuit is designed to work with other units of the originating sender test frame to provide facilities for checking the auxiliary sender multifrequency pulsing. In conjunction with a multifrequency receiver circuit, this circuit checks that the digits pulsed

forward are the same as the digits dialed into the sender.

(t) **TOUCH-TONE Test Circuit:** This circuit tests the capability of the sender, TOUCH-TONE to dial pulse converter, and TOUCH-TONE calling receiver circuits to accept legitimate TOUCH-TONE digit frequencies (one high and one low) and the capability of the sender to register the digits outputted by the test circuit.

(u) **Sender Select Unit for Testing Combination TOUCH-TONE and Rotary Dial Sender Subgroups:** This circuit enables the sender test frame to automatically select subscriber senders equipped with TOUCH-TONE features in offices partially converted to TOUCH-TONE calling.

(v) **Sender Identifying Unit:** This circuit allows the sender test frame to recognize sender circuits per SD-27810-01. This in turn enables the test frame to cancel tests not required by the SD-27810-01 senders and test the balanced PCI feature and the dial pulsing requirements.

## 2. SUPPLEMENTARY INFORMATION

800-600-000—Checking List—General Equipment Requirements  
816-000-000—No. 1 Crossbar System Index  
J21555—816-303-150—Sender Test Connector Frame Floor Plan Data—Section 9.3, Sheet 3

## 3. DRAWINGS

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

### Keysheet

SD-25000-01—No. 1 Crossbar Systems

### Equipment

ED-25417-11—Sender Test Connector Frame

### Wiring and Cabling

ED-25175-10—Switchboard Cabling Details  
ED-25258-10—Frame Local Cable  
ED-25346-14 } —Method of Running Power Feeders  
ED-25346-15 }  
ED-25422-01—Unit Local Cable

ED-91601-01—Horizontal Local Cable Wiring  
ED-91603-01—Local Cable Wiring for Unit Having 206-Type Selectors Mounted in Line With Short Mounting Plates  
ED-92224-01—Typical Cabling Drawing for Angle Relay Rack

## 4. EQUIPMENT

### J27952A—AT&TCo Std—Originating Sender Test Frame

List 1—Framework, assembly, wiring, and common equipment for an originating sender test frame.

	WIRE	EQUIP	NOTES
Framework, ED-25259-50,G3		1	
Key and Lamp Panel Assembly, ED-91722-70,G5		1	
Pigeonholes and Writing Shelf, ED-25506-70,G1		1	
Relay Casings, ED-90978-01:			
G3020 (front casing only)		2	
G3010 (front casing only)		1	I
Miscellaneous Frame Ckt, SD-25174-01:			
Fig. 2, 3, 6, 7, & 8	1	1	
Fig. 9	4	0	R
Originating Sender Test Ckt, SD-25221-01:			
Connector Ckt, Fig. 1	1	1	A, J, O
Connector Ckt, Fig. 1A, 1B, & 1C	1	0	K
Connector Ckt, Fig. Q, With VF Wiring of Fig. 1	1	0	
Connector Ckt, Fig. 2	2	0	A, S, 5.01
Code Keys and Dial Pulsing Ckt, Fig. 3, 4, A, B, & AB	1	1	B, AC, AD
Route Keys and Revertive Pulsing Ckt, Fig. 5 & 6	1	1	P, Q
Full Selector Dial Pulsing Control Ckt, Fig. 7 & L	1	1	C
Incoming and Final Selector Control Ckt, Fig. 8 & B	1	1	D, Q

	WIRE	EQUIP	NOTES
PCI Dial Pulsing Control Ckt, Fig. 9	1	1	E
PCI Regulating Ckt, Fig. 10, 10A, & 10B	1	1	F
Office Control Circuit Subscriber Senders, Fig. 11	1	1	
Operator Class Control Ckt, Fig. 12B	1	1	
Keypulsing Ckt, Fig. 13	1	0	G, L
Office Selector Control Ckt, Keypulsing, Fig. 14 & F	1	0	G
Office Control Ckt, Keypulsing Fig. 15	1	0	G
Operator Class Control Ckt, Fig. 16	1	0	G
Sender Group Test Ckt, Fig. 17	1	1	M
Code Test Ckt, Fig. 18 & B	1	1	G, K, N, Q
Digit Control Ckt, Fig. 29	1	1	U
TOUCH-TONE Signaling Generator Ckt, Fig. 30	1	1	U
TOUCH-TONE Signaling Oscillator Ckt, Fig. 31	1	1	U
Single-, 2-, and 3-, Frequency Test Ckt, Fig. 32	1	1	U
Coin Service Improvements (Dial-Tone-First) Test Ckt, Fig. 49, 50, and Option QD	1	0	

**List 2**—Wiring only per SD-25221-01, Fig. 8, option VP only, and Fig. 19, 20, 21, and 22, and all options, required in addition to list 1 for AMA operation. (See Notes S, W, and X.)

**List 3**—Equipment per SD-25221-01, Fig. 8, option VP only, and Fig. 19, 20, 21, and 22, and all options, required in addition to list 1 for AMA operation. (See Notes S, W, and X.)

**List 4**—Equipment per SD-25221-01, Fig. Q, and VF wiring connected, required in addition to list 1 when this circuit is required to test senders that are arranged to divert restricted PBX traffic on extra charge calls.

**List 5**—Wiring and equipment per SD-25221-01, Fig. 23A, 23B, and 23C, plus all lamps in Fig. 23, 24, and 25, required in addition to list 1 when this circuit is required to test senders that are arranged for direct distance dialing or MF pulsing on 7-digit calls.

**List 6**—Wiring and common equipment, per SD-25174-01, Fig. 10, required in addition to J27952G for testing particular auxiliary senders. This list includes wiring for testing ten particular auxiliary senders with key equipment for testing four auxiliary senders. (See Note T.)

**List 7**—Equipment, per SD-25174-01, Fig. 10, PAS key only, required in addition to list 6 for each auxiliary sender, over four, that is required. (See Note T.)

**List 8**—Wiring and equipment, per SD-25221-01, Fig. 28 and options TW, UI, and UP, required in addition to list 1 when this circuit is required to test subscriber senders that are arranged for intersender timing. (See Note V.)

**List 9**—Wiring and equipment, per SD-25221-01, Fig. 20, options UR and US, required in addition to list 2 and 3 in local AMA offices that are equipped for direct distance dialing.

**List 10**—Equipment and wiring, per SD-25174-01, Fig. 13, less options Q and R, required in addition to list 1 when two auxiliary sender groups are to be tested.

**List 11**—Equipment and wiring, per SD-25174-01, Fig. 13, option Q, required in addition to list 1 and 10 when three auxiliary sender groups are to be tested.

**List 12**—Equipment and wiring, per SD-25174-01, Fig. 13, option R, required in addition to list 1, 10, and 11 when four auxiliary sender groups are to be tested.

**List 13**—Wiring and equipment per SD-25221-01, option TC in Fig. 1, 2, 6, 18, 23, and 23B and option TI in Fig. 3 and 24A, required in addition to list 1 to provide for testing senders arranged for 6-digit translation (sender recycle).

**List 14**—Wiring and equipment, per SD-25221-01, Fig. 33 and 34, less option TY, and Fig. 3, option TV only, required in addition to list 1 when senders are arranged for prefix digits 0 and 1 and 11X codes. (See Notes S, X, and AC.)

**List 15**—Wiring and equipment, per SD-25221-01, Fig. 35, required in addition to list 14 when sender recycle feature is provided.

- List 16**—Wiring and equipment, per SD-25221-01, Fig. 34, option TY only, required in addition to list 14 when KP senders require testing.
- List 17**—Wiring and equipment, per SD-25221-01, option SG in Fig. 10, required in addition to list 1 when provision for connection to an amplifier and associated pen register is required to observe PCI pulse quality.
- List 18**—Wiring per SD-25221-01, option SK in Fig. 1, required in addition to list 1 and 6 to permit the selection of a particular auxiliary sender on recycle test calls.
- List 19**—Wiring and equipment, per SD-25221-01, Fig. 37 and option SI in Fig. 33 and 34, required in addition to list 14 to test the outpulsing of the directory number feature in LAMA subscriber senders.
- List 20**—Wiring and equipment, per SD-25174-01, Fig. 44, required when testing the automatic identified outward dialing features in local AMA offices.
- List 21**—Wiring and equipment per SD-25221-01, options SN and VS required in addition to list 1 to permit automatic selection of TOUCH-TONE or coin service improvements (dial-tone-first) senders when either rotary dial and TOUCH-TONE or coin service improvements and noncoin service improvements senders are in the same subgroup.
- List 22**—Wiring and equipment, per SD-25221-01, Fig. 42, 43, and option SR, required in addition to list 9 and 14 for testing senders arranged for information code 411 in LAMA offices. (See Notes W, X, and Y.)
- List 23**—Wiring and equipment, per SD-25221-01, Fig. 43 and option ST, required in addition to list 9 and 14 for testing senders arranged for interchangeable codes in LAMA offices. (See Notes W and Y.)
- List 24**—Wiring and equipment, per SD-25221-01, Fig. 40, 41A, and option ST, required in addition to list 1, 5, and 14 for testing senders arranged for interchangeable codes. (See Note Y.)
- List 25**—Wiring and equipment, per SD-25221-01, option RB, required in addition to list 1 when testing senders per SD-27810-01.
- List 26**—Wiring and equipment required in addition to list 24 for offices equipped with senders per SD-27810-01 when interchangeable code is provided per SD-25221-01, Fig. 40, T and U, option RE only.
- List 27**—Wiring and equipment, per SD-25174-01, Fig. 13, option P required in addition to list 12 for the fifth group of auxiliary senders. (See Note AB.)
- List 28**—Wiring and equipment, per SD-25174-01, Fig. 13, option N, required in addition to list 27 for the sixth group of auxiliary senders. (See Note AB.)
- List 29**—Wiring and equipment, per SD-25174-01, Fig. 13, option M, required in addition to list 28 for the seventh group of auxiliary senders. (See Note AB.)
- List 30**—Wiring and equipment, per SD-25174-01, Fig. 13, option K, required in addition to list 29 for the eighth group of auxiliary senders. (See Note AB.)
- List 31**—Equipment, per SD-25221-01, Fig. AK (MT lamp and CT key only) and option RJ, required in addition to list 1 when speed testing of the ability of the TOUCH-TONE to dial pulse converter to process 10 or 11-digit TOUCH-TONE calls is required.
- List 32**—Wiring and equipment, per SD-25221-01, Fig. 45 and option RM, required in addition to list 1 when testing senders per SD-27810-01 and SD-25012-01.
- List 33**—Wiring and equipment, per SD-25221-01, Fig. 47 and option RN, required in addition to list 1 when testing senders per SD-27810-01 only.
- List 34**—Wiring and equipment, per SD-25221-01, Fig. 48 and option RU, required when subscriber senders subgroups are partially converted to TOUCH-TONE operation and/or coin service improvements (dial-tone-first) operation and the preference control circuit is arranged for the automatic distribution of sender usage.
- List 35**—Apparatus, per SD-25221-01, Fig. 49, required in addition to list 1 to test subscriber senders arranged for the coin service improvements (dial-tone-first) feature.
- List 36**—Apparatus, per SD-25221-01, option QD, required in addition to list 35 when multifrequency outpulsing is required.
- List 37**—Apparatus, per SD-25221-01, Fig. 50, required in addition to list 35 when coin failure announcement routing requires office selections.
- List 38**—Equipment, per SD-25221-01, Fig. AL and AN, required in addition to list 20 to provide for operation with the PBX-AIOD type A1 system (do not specify list 39).
- List 39**—Equipment, per SD-25221-01, Fig. AL and AM required in addition to list 20 to provide

for operation with PBX-AIOD type A2 system (do not specify list 38).

- List 40**—Equipment and wiring per SD-25221-01, Fig. AT and option PB (Fig. 24 and Fig. 18), less relays, required in addition to list 1 when eleventh and twelfth TOUCH-TONE button sender test is provided.
- List 41**—Wiring and equipment per SD-25221-01, option PF, required in addition to list 1 when stuck sender tracing is provided.
- List 42**—Wiring and apparatus per SD-25221-01, Fig. 25 option PH only (DAC-ODN key and DAO lamp only), required in addition to list 5 to provide for the testing of directory assistance charge ODN calls.
- List 43**—Wiring and apparatus per SD-25221-01, Fig. 25 option PK only, required in addition to list 5 to provide for the testing of directory assistance charge ODN calls that are routed straightforward.
- List 44**—Wiring and apparatus per SD-25221-01, Fig. 33 option PL only, required in addition to list 14 to provide for the testing of directory assistance charge 411 calls routed MF (LAMA or ANI) or routed straightforward in LAMA offices. (J27952G, List 6 is required with this feature.)
- List 45**—Wiring and apparatus per SD-25221-01, Fig. 1, 18, and 42 option PM only, required in addition to list 22 to provide for testing directory assistance charge transverter local record calls which are routed straightforward.
- List 46**—Wiring and apparatus per SD-25221-01 Fig. 42 option PN only, required in addition to list 22 when list 45 is not required.

#### Notes

A. The connectors are each arranged for a maximum of ten subgroups of a maximum of ten senders each. A 200-point crossbar switch and the associated 0 through 9 and CO relays are required for each 100 or less senders to be tested. One SM relay and its associated A and B relays and contact protection is required for each sender subgroup tested. Since not less than three subgroups will be furnished in an office, the connector circuit for Group 0 shall be equipped in all cases for three subgroups. This equipment consists of the G0 crossbar switch; the 0 through 9 and CO relays; SM relays 0 through 2; and the A and B relays 0 through 2; and the associated contact

protection. The SM, A, and B relays 3 through 9 and the contact protection shall be furnished in steps of one subgroup in order to complete G0.

1. When testing facilities are required for 11 through 20 sender subgroups, the connector switch, multicontact relay mounting detail, multicontact relay terminal strip, and the 0 through 9 and CO relays shall be furnished, and the SM, A, and B relays and associated apparatus shall be furnished as required.
  2. When testing facilities are required for 21 to 30 sender subgroups, an auxiliary originating sender test connector unit, covered herein, shall be provided and located on the sender test connector frame. Provision for this unit is made at the test frame by furnishing optional wiring in the local cable and by extending the common leads to the C terminal strip. The connector circuit shall be wired for testing keypulsing and coin senders. The apparatus shall be furnished as required for these features.
  3. When testing facilities are required for AMA, one MS relay and associated contact protection shall be furnished for each sender subgroup. The MS relays are mounted on auxiliary test connector units as covered herein.
- B. The code keys and dial pulsing circuit shall be wired for all conditions and shall be equipped for 2-digit sender operation. The apparatus for all other conditions shall be furnished as required.
- C. The full selector dial pulse control circuit shall be wired to test coin senders and shall be equipped to test noncoin senders. The apparatus for testing coin senders shall be furnished as required.
- D. The incoming and final selections control circuit shall be wired for both subscriber and keypulsing senders and shall be equipped for testing subscriber senders only. The apparatus for the testing of keypulsing senders shall be furnished as required.
- E. The PCI dial pulse control circuit shall be wired for testing both coin and noncoin senders. The coin sender test shall be equipped when required.
- F. The PCI register circuit shall be wired for testing 2- and 3-digit senders, keypulsing senders, and senders arranged for 2-stage PCI. The circuit

- shall be equipped for testing 2-digit subscriber senders arranged for the final heavy positive pulse. The apparatus for testing 3-digit senders, keypulsing senders, and senders arranged for 2-stage PCI shall be furnished as required. The 2-stage PCI shall be furnished as required. The 2-stage PCI feature is rated Mfr Disc.
- G. The keypulsing sender test feature shall be wired, but shall only be equipped when required.
- H. The code test circuit shall be equipped for testing 2-digit senders and an office containing ten or less district frames. The equipment for testing 3-digit senders, and for a group of district frames numbering from 10 through 19, shall be furnished as required.
- I. The relay causing, ED-90978-01,G3010, shall be furnished in list 1 only when the frame is arranged to test keypulsing senders.
- J. One R2BR cord 5 feet 6 inches long equipped with a 718A receiver shall be furnished as a part of the originating sender test circuit per SD-25221-01, Fig. 1.
- K. Connector circuit Fig. 1A, 1B, and 1C shall be furnished as required; Fig. 1A, 1B, and 1C to serve G0, G1, and G2 in the order named.
- L. The keypulsing circuit shall be wired for offices of over 10,000 lines and party letters. These features shall be equipped when required.
- M. The sender group test circuit shall be wired to test senders arranged to serve district frames numbered from 10 through 19, subscriber senders equipped for 24 classes of service, and keypulsing senders. The apparatus for these features shall be furnished as required.
- N. The code test circuit shall be wired to function with markers arranged for two code groups. Apparatus for this feature shall be furnished as required.
- O. Wiring shall be provided for six end-of-group (EG) keys. These keys shall be equipped as specified.
- P. The route keys and revertive pulsing circuit shall be wired for testing senders arranged to register six to nine pulses for incoming group selection.
- The apparatus required for this feature shall be provided when required.
- Q. M wiring and apparatus shall be provided only where senders to be tested are arranged to reroute call to special code OFF-9300. When required, M wiring shall be added to the regular local cable.
- R. One Fig. 9, per SD-25174-01, shall be provided for each routine test frame whose TA lamp is multiplied to the originating sender test frame.
- S. Wiring for AMA, per list 2, shall be furnished as part of the local cable, per list 1, on all new sender test frames; that is, new frames shall be arranged and wired for both message register and AMA operation. Equipment for AMA, per list 3, shall be furnished as specified.
- T. The particular auxiliary sender test feature shown on SD-25174-01, Fig. 10, is limited at present to a maximum of ten auxiliary senders in one group. Eventually it is planned to add grouping relays under control of the connector switch to provide for making this test on more than one group (ten senders maximum per group) of auxiliary senders. If an order is received for an originating sender test frame to be arranged to make particular auxiliary sender tests on more than one group before the provision for this feature has been added on the circuit, the matter should be referred to the Bell Telephone Laboratories, Incorporated, for recommendations.
- U. Equipment and wiring specified in list 1 for SD-25221-01, Fig. 29, 30, 31, and 32, includes the T-T lamp in Fig. 29, the LGP, PSS, and SLP keys in Fig. 30, the LLV/HLV key in Fig. 31, and the FCA and FCB switches in Fig. 32 only. Equipment for these figures not specified herein is included in TOUCH-TONE test unit J27952J.
- V. Key IST2, option TU, Fig. 28, is provided as part of key IG5, Fig. 5, in list 1.
- W. Figure A (Mfr Disc.) is provided in the AMA check circuit for apparatus ann wiring required for the OT feature and previously furnished in Fig. 20. Figure A must be removed, if provided, when Fig. 43 is required. Figure B is required when neither Fig. A nor Fig. 43 is required.
- X. Option SR in Fig. 1, 3, and 33 is required for testing senders arranged for information code 411.

- Y. Option SR in Fig. 40 is required for testing senders arranged for information code 411 in offices arranged for interchangeable codes.
- Z. Option SZ required when TOUCH-TONE and/or coin service improvements (dial-tone-first) features are not provided.
- AA. Provide wiring, per SD-25221-01, option TO, when senders are equipped with TOUCH-TONE feature.
- AB. Wiring for list 27, 28, 29, and 30 is included in supplementary local cable ordered in list 10.
- AC. Provide SD-25221-01, option RH, when Fig. AK is not provided. Provide RK option when Fig. AK is not provided but Fig. 33 is provided. Provide option RL when Fig. AK and 33 are provided.
- AD. All lists include the associated after-date Standard figures and options. All feature options, which consist of wiring only, are provided as required.

**J27952B—AT&TCo Std—Auxiliary Originating Sender Test Connector Unit**

**List 1**—Framework, assembly, wiring, and common equipment for an auxiliary originating sender test connector unit.

	WIRE	EQUIP	NOTES
Framework, ED-25028-01, Item 69		1	
Originating Sender Test Ckt, SD-25221-01, Fig. 2	1	1	A, B, C 5.01

**List 2**—Wiring and equipment per SD-25221-01, option PF, required in addition to list 1 when stuck sender tracing is provided.

**Notes**

- A. The connector unit is arranged to connect to a maximum of ten subgroups of a maximum of ten senders each. A 200-point crossbar switch and the associated 0 through 9 and CO relays shall always be furnished. The SM, A, and B relays 0 through

9 and the associated contact protection shall be furnished as required, one set for each subgroup.

- B. The auxiliary originating sender test connector unit shall be mounted on the sender test connector frame covered in J21555.
- C. Battery and ground supply for the auxiliary originating sender test connector unit is obtained from the originating sender test frame over 24-gauge leads in the L cable between the test frame and the unit. Since only one sender at a time will be cut through to the associated test frame, 24-gauge leads will, in general, be satisfactory for the battery and ground supply. If on a particular job the auxiliary originating sender test connector unit is located more than 75 feet from the originating sender test frame, the battery and ground leads shall be doubled up so that the resistance in each of these leads does not exceed 2 ohms.

**J27952C—AT&TCo Std—Auxiliary Originating Sender Test Connector Unit for AMA**

**List 1**—Framework, assembly, wiring, and equipment for one auxiliary connector unit for AMA, G0, or G1.

	WIRE	EQUIP	NOTES
Framework, ED-25022-01, Item 2		1	
Originating Sender Test Ckt, SD-25221-01, Fig. 2A	1	0	A

**Notes**

- A. The connector unit is arranged to connect to a maximum of ten subgroups of a maximum of ten senders each, G0 or G1. One MS relay and its associated contact protection is required for each subgroup. This unit is designed to mount on the miscellaneous frame ED-25106-01.
- B. Battery for magnets of MS multicontact relays 0 through 9 can be obtained from the originating sender test frame over a 24-gauge lead in the Y cable. If these relays are more than 75 feet from

the test frame, several 24-gauge leads shall be used so that the resistance is less than 2 ohms.

**J27952D—AT&TCo Std—Auxiliary Originating Sender Test Connector Unit for AMA**

**List 1**—Framework, assembly, wiring, and equipment for one auxiliary connector unit for AMA, G0, and G1.

	WIRE	EQUIP	NOTES
Framework, ED-25022-01, Item 16		1	
Originating Sender Test Ckt, SD-25221-01, Fig. 2A	2	0	A

**Notes**

- A. The connector unit is arranged to connect to 20 subgroups of senders having a maximum of 10 senders each, G0 and G1. One MS relay and associated contact protection is required for each subgroup. This unit is designed to mount on the auxiliary originating sender test connector frame ED-25417-01.
- B. Battery for magnets of MS multicontact relays 0 through 9 can be obtained from the originating sender test frame over a 24-gauge lead in the L cable. If these relays are more than 75 feet from the test frame, several 24-gauge leads shall be used so that the resistance is less than 2 ohms.

**J27952E—AT&TCo Std—Auxiliary Originating Sender Test Connector Unit for AMA**

**List 1**—Framework, assembly, wiring, and equipment for one auxiliary connector unit for AMA for G2.

	WIRE	EQUIP	NOTES
Framework, ED-25022-01, Item 16		1	
Originating Sender Test Ckt, SD-25221-01, Fig. 2A	1	0	A

**Notes**

- A. The connector unit is arranged to connect to ten subgroups of senders, each having a maximum of

ten senders, G2. One MS relay and associated contact protection is required for each subgroup. This unit is designed to mount in the auxiliary originating sender test connector frame ED-25417-01.

- B. Battery for magnets of MS multicontact relays 0 through 9 can be obtained from the originating sender test frame over a 24-gauge lead in the L cable. If these relays are more than 75 feet from the test frame, several 24-gauge leads shall be used so that the resistance is less than 2 ohms.

**J27952F—AT&TCo Std—Auxiliary Sender Area Code Sender Test Unit**

**List 1**—Framework, assembly, wiring, and equipment for one auxiliary sender area code sender test unit. (See 5.03.)

	WIRE	EQUIP	NOTES
Unit Mounting Bars, P-424404		2	
Originating Sender Test Ckt, SD-25221-01: Fig. 23, Less All Lamps, Wiring Only for Option VL	1	1	5.04

**List 2**—Equipment, per SD-25221-01, Fig. 23, option VL only, required in addition to list 1 to permit dialing 7-digit calls which use the auxiliary sender as an outpulser only and checking of 4 or 5 digits.

**List 3**—Equipment, per SD-25221-01, Fig. 23, option UW, required in addition to list 1 for testing a particular auxiliary sender when the auxiliary sender is used as an outpulser only.

**List 4**—Wiring and equipment, per SD-25221-01, Fig. 23, option TC, required in addition to list 1 to provide for testing senders arranged for 6-digit translation (sender recycle).

**List 5**—Wiring, per SD-25221-01, option SK in Fig. 23 and 23B, required in addition to list 1, 3, and 4 to permit the selection of a particular auxiliary sender on recycle test calls.

**List 6**—Wiring, per SD-25221-01, option SI in Fig. 23, required in addition to list 1 to provide for the testing of the outpulsing of the directory number feature in LAMA subscriber senders.

**List 7**—Wiring and equipment, per SD-25221-01, Fig. 41, and option SD in Fig. 23 and 23B, required in addition to list 3 for testing senders arranged for interchangeable codes.

**Note**

A. The unit is required when this circuit is used to test subscriber senders arranged for direct distance dialing or MF pulsing on 7-digit calls.

**J27952G—AT&TCo Std—Auxiliary Sender Dial Pulse and Code Check Control Sender Test Unit**

**List 1**—Framework, assembly, wiring, and equipment for one auxiliary sender dial pulse and code check control sender test unit. (See Notes C, G, and 5.03.)

	WIRE	EQUIP	NOTES
Framework, ED-92243-70, G32		1	
Terminal Strip Mounting Bar per ED-25108-01, Item 29		1	
Unit Mounting Bars, P-424406		2	
Originating Sender Test Ckt, SD-25221-01, Fig. 24, T, and AD, Less Lamps		1	5.04

**List 2**—Wiring and equipment, per SD-25221-01, Fig. 26 and U, with option VZ, required in addition to list 1 to provide for testing the sender wipe-out and time-out control features. (See Note A.)

**List 3**—Equipment, per SD-25221-01, Fig. Y, required in addition to list 1 when 7-digit MF is used for first alternate routes for initial revertive routes.

**List 4**—Wiring and equipment, per SD-25221-01, Fig. 24, option TC, required in addition to list 1 to provide for testing senders arranged for 6-digit translation (sender recycle).

**List 5**—Wiring, per SD-25221-01, option SI in Fig. 24, required in addition to list 1 to provide for the testing of the outpulsing of the directory number feature in LAMA subscriber senders.

**List 6**—Wiring and equipment per SD-25221-01, Fig. 39, and option SR in Fig. 24, required in addition to list 1 for testing senders arranged for information code 411. (See Note D.)

**List 7**—Wiring and equipment, per SD-25221-01, Fig. 24, option SW, required in addition to list 1 to provide for the testing of senders on 7-digit multifrequency test calls when the start signal to a particular auxiliary sender is sent after dialing of units digit. (See Note E.)

**List 8**—Equipment, per SD-25221-01, Fig. AK (less MT lamp and CT key), required in addition to list 1 when speed testing, of the ability of the TOUCH-TONE to dial pulse converter to process 10- or 11-digit TOUCH-TONE calls, is required.

**List 9**—Equipment and wiring per SD-25221-01, option PB, less lamp, required in addition to list 1 when eleventh and twelfth TOUCH-TONE button sender test is required.

**Notes**

A. When list 2 is provided, Fig. T, option RN should be replaced by Fig. U.

B. This unit is required when this circuit is used to test subscriber senders arranged for direct distance dialing or MF pulsing on 7-digit calls.

C. Provide options ST and TV in Fig. 24, Fig. AF, and in Fig. T or U, required for testing senders arranged for interchangeable codes.

D. Provide option ST in Fig. 39, required for testing senders in offices arranged for both information code 411 and interchangeable codes.

E. Provide option SV in Fig. 24 for testing senders on 7-digit multifrequency test calls when the start signal to a particular auxiliary sender is sent after dialing of the tens digit.

F. Provide wiring, per SD-25221-01, option RA, when senders per SD-27810-01 are not furnished; provide option TN when senders are not equipped for TOUCH-TONE, otherwise provide option TU; provide option RB when office is equipped with senders per SD-27810-01.

G. Provide Fig. AJ when Fig. AK is not provided. Provide option RL when Fig. AK and 33 are provided.

**J27952H—AT&TCo Std—Auxiliary Sender Multifrequency Pulse Check Control Sender Test Unit**

**List 1**—Framework, assembly, wiring, and equipment for one auxiliary sender multifrequency pulse check control sender test unit. (See Note B and 5.03.)

	WIRE	EQUIP	NOTES
Framework, ED-92243-70, G32		1	
Terminal Strip Mounting Bar, ED-25108-01, Item 29		1	
Unit Mounting Bars, P-424410		2	
Originating Sender Test Ckt, SD-25221-01, Fig. 25, and Option RG, Less Lamps		1	5.04

**List 2**—Wiring and equipment, per SD-25221-01, Fig. 27, with option VZ, required in addition to list 1 to provide for testing the sender wipe-out, time-out, and reverse trunk auxiliary control features.

**List 3**—Wiring and equipment, per SD-25221-01, Fig. 25, option SB only, required in addition to list 1 when senders are arranged for 0 prefix code.

**List 4**—Wiring and equipment, per SD-25221-01, Fig. 36 and wiring per option SI in Fig. 25, required in addition to list 1 to provide for the testing of the outpulsing of the directory number feature in LAMA subscriber senders. (See Note C.)

**List 5**—Equipment, per SD-25221-01, option QH (omit option QG) when the transistorized MF signaling receiver, per SD-99493-01, is provided.

**List 6**—Wiring and apparatus per SD-25221-01, Fig. 25, option PH only (DAC-ODN relay only) required in addition to list 1 to provide for the testing of directory assistance charge ODN calls.

#### Notes

- A. This unit is required when this circuit is used to test subscriber senders arranged for direct distance dialing or MF pulsing on 7-digit calls.
- B. Provide option SR in Fig. 25, required for testing senders arranged for information code 411.
- C. Provide option SU in Fig. 36, required for testing senders arranged for emergency code 0-0.

- D. Provide option QX when operation with an MF pulsing receiver per SD-99493-01 is required, otherwise provide QW option.

#### J27952J—AT&T Co Std—TOUCH-TONE Test Unit

**List 1**—Assembly, wiring, and equipment for one TOUCH-TONE test unit per SD-25221-01, Fig. 29, 30, 31, and 32, less T-T lamp, LGP, PSS, SLP, and LLV/HLV keys, and FCA, FCB, and FCC switches. (See Note A and 5.03.)

**List 2**—Equipment and wiring per SD-25221-01, Fig. AT, less switch and keys, required in addition to list 1 when eleventh and twelfth TOUCH-TONE button sender test is required.

#### Notes

- A. The key equipment omitted from this unit is furnished in J27952A, List 1.
- B. Provide wiring, per SD-25221-01, option RB, when senders per SD-27810-01 are provided.

#### J27952K—AT&T Co Std—Sender Select Unit (for Testing Sender Subgroups with TOUCH-TONE and Rotary Dial or Coin Service Improvements and Noncoin Service Improvements Senders)

**List 1**—Wiring and equipment, per SD-25221-01, Fig. 38 (three relays), required for the automatic selection of senders in sender groups which are partially equipped with senders modified for TOUCH-TONE signaling and/or coin service improvements (dial-tone-first) operation.

**List 2**—Wiring and equipment per SD-25221-01, Fig. 38A required for first list 1 only.

**List 3**—One additional P- relay and associated wiring, per Fig. 38, required for each of more than three sender subgroup preference arrangements per sender group. Maximum of three additional P- relays per list 1 may be provided.

#### Notes

- A. A minimum of three P- relays per Fig. 38 is furnished to serve the ten subgroups of senders in each sender group. All subgroups of senders with the same sender preference shall be assigned to the same P- relay.

- B. When more than one sender group is provided, one list 1 is required for each sender group including any in which senders modified for TOUCH-TONE calling and/or coin service improvements (dial-tone-first) do not appear. A multiple of the P- relay operating terminals of all list 1 appears on the T-T terminal strip of each list 1, permitting any P- relay of any list 1 to serve the subgroups of any sender group. Subgroups of any sender group but with the same sender preference may therefore be assigned to the same P- relay.
- C. Terminals on the T-T terminal strip associated with the contacts of each P- relay are cross-connected to provide the following functions:
1. To indicate the positions within the subgroup of senders arranged for rotary dial traffic only to permit the test frame to pass by these senders when testing TOUCH-TONE and/or coin service improvements (dial-tone-first) features.
  2. To indicate the preference of the senders within the subgroup to test the advance of the sender preference in the sender select circuit.

**J27952L—AT&TCo Std—Sender Identifying Unit**

- List 1**—Assembly, wiring, and equipment for ten SD-25221-01, Fig. 46, required when testing senders per SD-27810-01 and SD-25012-01. (See Note A.)

**Note**

- A. This unit serves one sender group (connector switch) and requires 2 inches of relay rack space in a 23-inch bay.

**J27952M—AT&TCo Std—Sender Test Connector Control Preference Unit**

- List 1**—Assembly, wiring, and equipment for one sender test connector control preference unit arranged to operate with the first 20 subscriber sender subgroups served by the associated originating sender test frame and equipped for the first subscriber sender subgroup per SD-28102-01, Fig. 5, 9, 12, and 15

and SD-94820-01, Fig. 2. (See Note A and General Note 5.06.)

- List 2**—Wiring and equipment per SD-28102-01, Fig. 5 and 9 required in addition to list 1 for each of the second to twentieth subscriber sender subgroups—maximum of 19 list 2.

- List 3**—Wiring and equipment per SD-28102-01, Fig. 15 required in addition to lists 1 and 2 for the second subscriber sender group served by this unit.

**Note**

- A. This unit should be located so that there is ready access to the key panel by the central office personnel.

**J27952N—AT&TCo Std—Sender Test Connector Control and Alarm Unit**

- List 1**—Assembly, wiring, and equipment for one sender test connector control and alarm unit per SD-28102-01, Fig. 6, [3] SD-94820-01, Fig. 2, and [2] SD-94820-01, Fig. 3. (See General Note 5.06.)

- List 2**—Wiring and equipment per SD-28102-01, Fig. 13 required in addition to list 1 when an alarm on subgroup lockout is required.

**J27952P—AT&TCo Std—Sender Test Connector Control Hold and Select Magnet Registration Unit**

- List 1**—Assembly, wiring, and equipment for one sender test connector control hold and select magnet registration unit per SD-28102-01, Fig. 1. (See General Note 5.06.)

- List 2**—Wiring and equipment per SD-28102-01, Fig. 3 required in addition to list 1 to provide for operation with a second originating marker group.

- List 3**—Wiring and equipment per SD-28102-01, Fig. 4 required in addition to list 1 to provide for operation with the third subscriber sender group.

**J27952Q—AT&TCo Std—Sender Test Connector Control Release Unit**

- List 1**—Assembly, wiring, and equipment for one sender test connector control release unit arranged for seven subscriber sender subgroups and equipped for one subscriber sub-

group per SD-28102-01, Fig. 7. (See Note A and General Note 5.06.)

**List 2**—Wiring and equipment per SD-28102-01, Fig. 7 required in addition to list 1 for each additional subscriber sender subgroup, maximum 6 list 2.

**Note**

A. Each CTR- relay is associated with a particular subscriber sender subgroup. Relays CTR0 to CTR9 are associated with the first sender group, relays CTR10 to CTR19 are associated with the second sender group and relays CTR20 to CTR29 are associated with the third sender group. The association of these relays with subscriber sender group and subgroup must agree with the assignment of senders on the originating sender test connector switches and on the sender make-busy frame.

**J27952R—AT&TCo Std—Sender Test Connector Control Stuck Sender Unit**

**List 1**—Assembly, wiring, and equipment for one sender test connector control stuck sender unit arranged for 20 subscriber senders and equipped for two per SD-28102-01, Fig. 2 and 14. (See Note A and General Note 5.06.)

**List 2**—Wiring and equipment per SD-28102-01, Fig. 2 required in addition to list 1 for each two subscriber senders, maximum 9 list 2.

**List 3**—Wiring and equipment per SD-28102-01, Fig. 14 required in addition to lists 1 and 2 for the second subgroup of subscriber sender served by this unit.

**Note**

A. The assignment of these relays must agree with the subscriber sender assigned on the originating sender test connector switches. The 3-digit relay designation (ie, 137) corresponds to the connector switch number, select and hold magnet number, respectively.

**J27952S—AT&TCo Std—Sender Test Connector Control Auxiliary Preference Unit**

**List 1**—Assembly, wiring, and equipment for one sender test connector control auxiliary preference unit required for operation with the third group of subscriber senders, arranged for 10 subgroups of subscriber

senders and equipped for one per SD-28102-01, Fig. 5, 9, 10, and 15. (See Note A and General Note 5.06.)

**List 2**—Wiring and equipment per SD-28102-01, Fig. 5 and 9 required in addition to list 1 for each of the second to tenth subscriber sender subgroup served by this unit, maximum of 9 list 2.

**Note**

A. This unit should be located so that there is ready access to the key panel by the central office personnel.

**5. GENERAL NOTES AND INDEXES**

**Equipment**

**5.01** The senders to be tested are assigned to the levels of the connector switches by subgroups and in accordance with Note 108 on the circuit. The subscriber senders are ordinarily assigned first and then the keypulsing senders. If additional subscriber senders are furnished, it is not necessary to move the keypulsing senders because the test circuit will operate with keypulsing and subscriber senders interspersed. Where desirable, space levels may be left between the subscriber senders and the keypulsing sender to provide for growth. Connector switch levels accommodate a maximum of ten senders per subgroup. A level used for a keypulsing sender subgroup of a partially equipped subscriber sender subgroup shall not be filled out with senders in another link subgroup. Auxiliary senders are tested with their associated subscriber sender when arranged for direct distance dialing. Provision is also made at the originating sender test frame for testing a particular auxiliary sender.

**5.02** A designation chart, per ED-25280-01, Fig. 3, filled out in accordance with the job equipment layout, shall be mounted on a 7-1/2 inch by 1-foot 3-inch fiber or masonite board and provided for use at the test frame. When an auxiliary originating sender test connector unit is provided, an additional chart, per ED-25280-01, Fig. 3, designated G2 instead of G0, shall be provided and mounted on the back of the board on which the chart for G0 and G1 is mounted.

**5.03** Auxiliary sender test units J27952F, J27952G, and J27952H, the TOUCH-TONE test unit per J27952J, the sender select unit for testing combination TOUCH-TONE and rotary dial sender subgroups

per J27952K, the sender identifying unit per J27952L, shall be located on a relay rack bay as near the originating sender test frame as possible. The multifrequency pulsing receiving unit per J99337A shall be located on the multifrequency pulsing receiver frame, J25151A. On a job basis this unit and its associated miscellaneous equipment may be located on a miscellaneous relay rack as near as possible to the auxiliary sender multifrequency pulse check control sender test unit.

**5.04** If the 130-volt plate battery supply that is required for the multifrequency pulsing receiver unit associated with this test frame is not available in the office, a rectifier, such as J86265B or as specified by the telephone company, shall be furnished for this purpose.

**5.05** The lamps and jacks shown on SD-25221-01, Fig. 23A, 23B, 23C, 23, 24, and 25 are located with the basic equipment on the originating sender test frame and are ordered per J27952A, List 5.

**5.06** When the automated stuck sender tracing feature is required, provide one J27952M, J27952N, and J27952P unit. Provide one J27952Q unit for each seven subgroups of subscriber senders and one J27952R unit for each two subgroups of subscriber senders. Provide one J27952S unit for the third group of subscriber senders served by the associated originating sender test frame. These units should be located on the same miscellaneous relay rack bay for cabling economy and as close as possible to the associated originating sender test frame and sender make-busy frame.

#### **Wiring and Cabling**

**5.07** Wiring shall be included in the local cable for all circuit options, and the optional wiring shall be connected as required for the particular job.

**5.08** The local cable shall be composed of 24-gauge, type BU wire, except the battery and ground leads which shall be 22-gauge, type BU wire.

## SUBDIVISIONS OF EQUIPMENT AND DETAILED INDEX

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

EQUIPMENT CODE	AT&T RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING
J27952A	Std	Originating Sender Test Frame	J27952A-( )	SD-25174-01 SD-25221-01
J27952B	Std	Auxiliary Originating Sender Test Connector Unit	J27952B-( )	SD-25221-01
J27952C	Std	Auxiliary Originating Sender Test Connector Unit for AMA	J27952C-( )	SD-25221-01
J27952D	Std	Auxiliary Originating Sender Test Connector Unit for AMA	J27952D-( )	SD-25221-01
J27952E	Std	Auxiliary Originating Sender Test Connector Unit for AMA	J27952E-( )	SD-25221-01
J27952F	Std	Auxiliary Sender Area Code Sender Test Unit	J27952F-( )	SD-25221-01
J27952G	Std	Auxiliary Sender Dial Pulse and Code Check Control Sender Test Unit	J27952G-( )	SD-25221-01
J27952H	Std	Auxiliary Sender Multifrequency Pulse Check Control Sender Test Unit	J27952H-( )	SD-25221-01
J27952J	Std	TOUCH-TONE Test Unit	J27952J-( )	SD-25221-01
J27952K	Std	Sender Select Unit for Testing Combination TOUCH-TONE and Rotary Dial Sender Subgroups	J27952K-( )	SD-25221-01
J27952L	Std	Sender Identifying Unit	J27952L-( )	SD-25221-01
J27952M	Std	Sender Test Connector Control Preference Unit	J27952M-( )	SD-28102-01
J27952N	Std	Sender Test Connector Control and Alarm Unit	J27952N-( )	SD-28102-01
J27952P	Std	Sender Test Connector Control Hold and Select Magnet Registration Unit	J27952P-( )	SD-28102-01

EQUIPMENT CODE	AT&T RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING
J27952Q	Std	Sender Test Connector Control Release Unit	J27952Q-()	SD-28102-01
J27952R	Std	Sender Test Connector Control Stuck Sender Unit	J27952R-()	SD-28102-01
J27952S	Std	Sender Test Connector Auxiliary Preference Unit	J27952S-()	SD-28102-01

**Circuit Schematic Index**

CIRCUIT DRAWING	J27952 EQUIP CODE
SD-25174-01	A
SD-25221-01	A, B, C, D, E, F, G, H, J
SD-28102-01	M, N, P, Q, R, S

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