FINAL SELECTOR TEST FRAME
EQUIPMENT DESIGN REQUIREMENTS
PANEL SYSTEMS

1. GENERAL

Scope

1.01 This specification, together with the supplementary specifications, keysheets, drawings, equipment, explanations, and circuit descriptions listed herein, covers the engineering requirements for the framework, equipment, and circuits to be used in the manufacture and installation of the automatic routine final selector test frame in panel offices. This specification covers equipment for testing final selectors.

1.02 This specification is reissued to incorporate previous appendix changes.

Capacity

1.03 The final selector test frame has a capacity of one final selector test circuit with seven connector switches, sequence switches, providing for 21 test selectors (three per connector switch) and six directing switches (206-type selectors). Each directing switch has a capacity of 20 tests, making a total capacity of 120 test groups for the frame.

General

1.04 The final selector test frame is a steel structure of a type generally known as a single-sided frame consisting of a single bay. It is designed for mounting the apparatus required to gain access to all the terminals on the incoming frame multiple banks that terminate as final selectors. It is then possible to exercise all these selectors in rotation as a matter of periodical routine or to reach any one selector, or any group of selectors, for making individual tests.

1.05 One final selector test frame is furnished for each unit having 300 or more final selectors. In offices having less than 300 final selectors, the final selectors are tested by a manually operated test wagon. The word "test" as applied herein means the ability of the circuit to operate the test selector over one or more consecutive group terminals in any one multiple bank of an incoming frame.

1.06 The test circuit gains access to the final selectors through control of incoming selectors. These incoming selectors are known as final test selectors and, when connected to the test circuit, can be made to select any or all of the terminals in the multiple banks of the incoming frames on which they are located, reaching in this manner all the final selectors in the office.

1.07 The test selectors are so assigned on the various incoming frames as to reach all subgroups of all the groups in the multiple of these frames which terminate as final selectors.

2. SUPPLEMENTARY INFORMATION

815-000-000 — Panel System Index

AA128.006 — List of General Engineering Requirement Specifications

X-61400 — List of Engineering Requirement Specifications, Offices Having Battery on the Cutoff Relay

Current Drain Data — SD-21300-01 — Panel Office — Battery Cutoff (Not Available for Panel Offices — Ground Cutoff)

3. DRAWINGS

Keysheets

SD-21300-01 — Panel System — Battery Cutoff Office

SD-21680-01 — Panel System — Ground Cutoff Office

Framework

ED-20081-01 — Hinged Sequence Switch Shaft Guards
ED-20087-01 — Assembly of Relay Casing
ED-20150-01 — Framework Limits
ED-20275-01 — Assembly Key Panel Cover
ED-20294-01 — Design of Sequence Switch Bars
ED-20329-01 — Location of Anchor Bolts
ED-20468-01 — Assembly of Frame
ED-20509-01 — Assembly of Fuse Panel
ED-20522-01 — Assembly of Key and Lamp Panel
ED-20588-01 — Charts
ED-20660-01 — Assembly of Writing Shelf

Circuits

SD-20043-01 — Final Selector Test Circuit
SD-21232-01 — Miscellaneous Circuit

Equipment

ED-20033-01 — Apparatus Designation Chart
ED-20469-01 — Equipment of Frame
J24401A-( ) — Final Selector Test Frame

Wiring and Cabling

ED-20253-01 — Local Power Cable
ED-20471-01 — Switchboard Cabling Plan
ED-20472-01 — Local Cabling Plan
ED-20622-01 — Method of Running and Supporting Frame Battery and Ground Leads

4. EQUIPMENT

J24401A (A&M Only) — Final Selector Test Frame

Equipment — J24401A-( )

List 1 — Final selector test frame with all wiring and equipment.

	WIRE	EQUIP	SEE NOTES
Writing Shelf, ED-20660-01, Item 2		1	
Final Selector Test Framework, ED-20468-01		1	A
Key and Lamp Panel, ED-20522-01		1	
Key Panel Cover, ED-20275-01, Item 7		1	
Relay Casing, ED-20087-01, Item 26		1	
Fuse Panel, ED-20509-01, Item 11		1	
Final Selector Test Frame Equipment, ED-20469-01		1	
Final Selector Test Circuit, SD-20043-01	1	1	B,C
Miscellaneous Circuit, SD-21232-01, Fuse Alarm Circuit			
Fig. 1	1	1	
Fig. 4, Motor Transfer	1	1	
Fig. 5, Test Line Transfer Key	When Req		D
Fig. 6, Frame Line Circuit	1	1	
Fig. 7, Frame Test Battery Circuit	1	1	
Fig. 8, Spare Jack Circuit	1	1	

List 2 — Equipment per SD-20043-01, Fig. G. BC option, required in addition to list 1 when connection to recorder test frame is required. (See note E.)

List 3 — Equipment per SD-20043-01, Fig. H, required in addition to list 1 when connection to timing test set is required.

List 4 — Equipment per SD-20043-01, BA option, required in addition to list 1 when test frame is to detect over-stepping of final selectors.

List 5 — Equipment per SD-20043-01, BE option, required in addition to list 4. When any final selectors are not equipped with B648, B649, D176052, or D176053 sequence switches.

List 6 — Equipment per SD-20043-01, Fig. K and BG option, required in addition to list 1 when recognition of line busy tone and line busy flash is required, and when the final selectors tested are arranged to trip ac-dc ringing. (See notes F, H, and J.)

List 7 — Equipment per SD-20043-01, Fig. L and BG option, required in addition to list 1 when recognition of line busy tone and line busy flash is required and when the final selectors tested are arranged to trip superimposed ringing. (See notes F and G.)

Notes

A. The drive and motor equipment shall not be furnished as part of the lists, but shall be furnished separately.

B. The final selector test frame shall be wired for the ultimate of the frame and equipped as required.

C. The first selector circuit on each incoming frame is equipped with the necessary test leads for employing it as a test selector for the automatic rountine testing of final selectors. Two-wire incoming selectors may be used as test selectors but must be excluded from regular service and for this reason should only be used when the 3-wire type is not available. It is necessary to install a wire between the sleeve of the chosen selector at the district or office multiple bank and the test frame.

D. Since the test line transfer key per SD-21232-01 will very seldom be required, the wiring for this key shall be superimposed on the regular local cable by the installer in case two test frames are installed.

E. This list requires changing the code of certain lamps and keys and wiring changes.

F. Furnish tone detector unit J93020AH when list 6 or 7 is specified.

G. Furnish converter unit J87230A when list 7 is specified.

H. Provide BH wiring and converter unit J87230A in addition to list 6 in offices which require ac-dc negative-battery ringing.

J. Provide BJ wiring in addition to list 6 in offices which require ac-dc positive-battery ringing.

5. GENERAL NOTES

5.01 Incoming test selectors used as test selectors can be used by the regular traffic when not in use by the test circuit, provided they are employed for handling calls from district or office multiples in the same building. However, if it is necessary to use as test selectors incoming selectors not connected to district or office multiples in the same building, including B switchboard incoming selectors, they must be assigned for testing purposes exclusively.

5.02 The incoming frames chosen for locating test selectors shall be so situated in the lineup of the entire equipment of incoming frames to permit the test circuit to have access to all subgroups in the incoming frame multiple. Each test selector will then have access to a particular group or groups of trunks that cannot be reached by the test selectors on the other frames. In complying with the above it may happen that certain groups of trunks can be reached by more than one test selectors. Where this occurs, only one of the test selectors will be arranged to select such groups, controlled by the cross connections at the directing switches.

5.03 Each test selector used in connection with the automatic routine test of final selectors shall be known as final test selectors. On the test frame equipment these test selectors will be numbered consecutively from one up for identification purposes.

5.04 The directing switches (206-type selectors) govern the connector switches in their selection of the test selectors and also the manipulation of the test selectors in their selection of the various groups in the multiple banks. This control is made flexible by wiring the arcs of the directing switches to terminal strips so that cross connections can be established as local conditions require to regulate these features.

5.05 One directing switch shall be furnished for each 20 tests. Each time the test circuit is compelled to raise a test selector and return it to normal, it shall be considered as one test. After a test selector has been placed in operation, there are two conditions under which

it must return to normal and make a new brush and group selection before proceeding with the test.

(a) The test selector has selected all the groups of trunks to be tested in one multiple bank and is prepared to enter the next multiple bank, which of course, necessitates the use of another brush on the test selector that can only be tripped by the selector returning to normal.

(b) While the circuit is arranged to operate the test selector over two or more consecutive groups of trunks in a bank, it cannot test at one operation, two groups which are separated by one or more groups which are not to be tested. In such cases the test selector must be returned to normal and another group selection made to reach the other group, thus requiring another test.

List of "A&M Only" and "Mfr Disc." Equipment

The following equipment has been replaced as indicated. Where "A&M Only" items appear, the numbers shown are those of the issue in which the rating was first applied.

EQUIPMENT	RATING	DETAILS LAST SHOWN IN ISSUE	REPLACING EQUIPMENT
J24401	A&M Only	1	—

Bell Telephone Laboratories, Incorporated

Dept 5653