

INCOMING SELECTOR TEST FRAME EQUIPMENT DESIGN REQUIREMENTS PANEL SYSTEMS

1. GENERAL

Scope

1.01 This specification, together with supplementary information listed herein, covers the equipment and circuits to be used in the engineering, manufacture, and installation of the incoming selector test frame in panel offices.

1.02 This specification is reissued to incorporate previous appendix changes.

Capacity

1.03 The Incoming Selector Test Frame has a capacity of one incoming selector test circuit with eight connector switches (sequence switches) providing for 24 test selectors (3 per connector switch) and eight pairs of directing switches. Each pair of directing switches (206-type selector) has a capacity of 20 tests, making a total capacity of 120 test groups for the frame.

Description

1.04 The incoming selector test framework is a steel structure of a type generally known as a single-sided frame. It is designed for mounting the apparatus required to gain access to all the terminals on the district and office multiple banks that terminate as panel incoming selectors in the same office or in distant offices. It is then possible to exercise all those 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 The test circuit gains access to the incoming selectors through control of district and office selectors. These district and office selectors are known as incoming 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 district or office frames on which they are located, reaching in this man-

ner the incoming selectors in the same office or in distant offices which are associated with this multiple.

2. SUPPLEMENTARY INFORMATION

815-000-000 — Panel Systems Index

AA128.006 — List of General Equipment Requirements Sections

J20102 (815-030-150) — Switchboard Power Cable

Floor Plan Data — Section 4.3, Sheet 18

3. DRAWINGS

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

Keysheets — Panel Systems

SD-21300-01 — Panel Systems — Battery Cutoff Relay Office

SD-21301-01 — Panel Systems — Sender Tandem Office and Office Selector Tandem

SD-21680-01 — Panel Systems — Ground Cutoff Relay Office

Framework

ED-20081-01 — Hinged Sequence Switch Shaft Guards

ED-20150-01 — Framework Limits

ED-20294-01 — Design of Sequence Switch Bars

ED-20329-01 — Location of Anchor Bolts

ED-20509-53 — Assembly of Fuse Panel

ED-20522-50 — Assembly of Key and Lamp Panel

T-590460 — Assembly of Incoming Selector Test Frame

T-600393 — Assembly of Relay Casing

Equipment

ED-20033-01 — Apparatus Designation Chart
J24301A-() — Incoming Selector Test Frame

Wiring and Cabling

ED-20253-01 — Local Power Cable
ED-20481-01 — Local Cabling Plan
ED-20482-01 — Switchboard Cabling Plan
ED-20622-01 — Method of Running and Supporting Frame Battery and Ground Leads

4. EQUIPMENT**J24301A (A&M Only)—Incoming Selector Test Frame**

Equipment — J24301A-()
Local Cable — ED-20482-01

List 1 — Framework, assembly, wiring, and equipment for one incoming selector test frame (less variable apparatus).

	WIRE	EQUIP	SEE NOTES
Incoming Selector Test Framework, T-590460, G2		1	
Relay Casing Assembly, T-600393, G1		1	
Incoming Selector Test Circuit, ES-20042-01	1	1	5.01
Fuse Panel Assembly, ED-20509-53		1	
Key and Lamp Panel Framework, ED-20522-50		1	
Miscellaneous Frame Circuit, SD-21230-01, Figs. 1 and 4 to 7 each	1	1	

List 2 — Wiring and equipment per SD-20042-01, Fig. U required in addition to list 1 to bypass incoming trunks to crossbar offices when making brush continuity test and to automatically insert the higher value of relay "L" nonoperate test resistance when testing crossbar trunks thus making the cross connection unnecessary.

List 3 — Wiring and equipment per SD-20042-01, "AZ" option required in addition to list 1 to provide for testing repeating incoming selectors whose trunk loops have less than 1000-ohm resistance.

List 6 — Apparatus per SD-20042-01, "BG" option required in addition to list 1 to provide for operation with recorder test frame. (See note A.)

List 7 — Equipment per SD-20042-01, Fig. Z required in addition to list 1 to provide for operation with the timing test set.

List 8 — Apparatus and wiring per SD-20042-01, Fig. AB, required in addition to list 1 when testing busyback tones as well as busyback flash.

Note

A. "BG" option consists of changing the code of the frame lamps, brush lamps, tens lamps, units lamps, and EC and BD lamps from 2G to 2Y.

J24301B (A&M Only) — By-pass Unit for use With Incoming Selector Test Frame

Equipment — J24301B-()

List 1 — Framework, assembly, and common equipment for one by-pass unit. (See Note A.)

List 2 — Wiring and equipment per SD-20042-01, Fig. W, required in addition to list 1 to bypass unequipped terminals when testing with APB key normal.

List 3 — Wiring and equipment per SD-20042-01, Fig. Y and "BD" option required in addition to list 1 to bypass crossbar tandem trunks on all but continuity and polarity tests. (See note B.)

Notes

A. The J24301B unit is to be furnished in addition to J24301A unit and consists of mounting plates and a terminal strip.

B. List 3 is furnished when J24301A, List 2 is equipped.

5. GENERAL NOTES

5.01 The incoming selector test frame shall be fully wired for eight connecting switches (24 test selectors) and eight pairs of directing switches and equipped as required. The variable apparatus shall be wired for all cases, but shall be equipped as required for each particular job.

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

5.03 The word "test" as applied herein means the ability of the circuit to operate the test selector over one or more consecutive groups of terminals in any one multiple bank of a district or office frame.

5.04 In furnishing incoming selector test frames it must be taken into consideration that in multioffice areas the greater part of the testing will be done over outgoing trunks, appearing as panel incoming selectors in distant offices. For this reason the test frame is located near the outgoing trunk testboard and the furnishing of one or more frames is based on the number of trunks to panel incoming selectors, outgoing from one or more units associated with a single outgoing trunk testboard.

5.05 One incoming selector test frame shall be furnished for one or more office units arranged with a common outgoing trunk testboard for each 1200 outgoing trunks to panel incoming selectors unless otherwise specified. In event that no data is available regarding the number of outgoing trunks to panel incoming selectors, it will be sufficiently accurate to assume that this number is equal to the number of panel incoming selectors from distant offices furnished for these units. When two or more frames are furnished, each frame shall be arranged to test all the incoming selectors involved. A separate test selector will have to be assigned to each test frame as the test circuit will not permit the use of the same test selector by two test circuits.

5.06 No panel incoming automatic test frame shall be provided if there are only 100 or less outgoing trunks to panel incoming selectors. In this case, the incoming selectors will be tested by manually operated test sets.

5.07 "B" switchboard incoming selectors (incoming selectors associated with the "B" switchboard) are not tested by the incoming selector test frame, but are tested by manually operated test sets. It should also be noted from the above that an incoming selector test frame does not test all the incoming selectors in the office in which it is located. The interoffice in-

coming selectors originating on the district or office frame multiple in some distant office are tested by the incoming test frame in that distant office.

5.08 The test circuit gains access to the incoming selectors through control of district and office selectors. These district and office selectors are known as incoming 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 district or office frames on which they are located, reaching in this manner the incoming selectors in the same office or in distant offices which are associated with this multiple.

5.09 The test selectors shall be so assigned on the various district and office frames as to reach all subgroups of all the groups in the multiple of these frames, except groups on the district frames terminating as office selectors and those groups reserved for special purposes, such as permanent signal holding lines. The test circuit will then have access to every terminal in these multiple banks that terminate as an incoming selector in the same office or in distant offices.

5.10 The number of test selectors required on the district frames for each incoming selector test circuit is equivalent to the number of subgroups in that group of the district multiple having the greatest number of subgroups. The group accepted, however, as having the greatest number of subgroups must be a group, on which outgoing trunks to the same office or distant offices will terminate. Groups that are reserved for special purposes such as permanent signal holding lines, lines to desks or test lines, should not be considered in this case. The same procedure shall be followed in determining the number of test selectors to be furnished on the office frames for testing incoming selectors.

5.11 In all cases test selectors shall be located so as to make a continuity test of as much of its associated multiple as possible.

5.12 The first selector circuit on each district and office frame is equipped with the necessary test leads for employing it as a test selector for the automatic routine testing of office or incoming selectors in the same or distant offices. Dialing district selectors must be removed from service when used as test selectors. For this

reason they should not be employed as test selectors unless there are groups of trunks to be tested which cannot be reached by other types of districts on the same frame or adjacent frames. Where a dialing district selector must be used as a test selector, the installer shall be instructed to inform the telephone company that the associated jack in the "A" switchboard will have to be left spare.

5.13 The district and office frames chosen for locating test selectors shall be so situated in the line-up of the entire equipment of district and office frames as to permit the test circuit to have access to all subgroups in the district and office 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 so happen that certain groups of trunks can be reached by more than one test selector. Where this occurs, only one of the test selectors shall be arranged to select such groups; this being governed by the cross connections at the directing switches.

5.14 Where two incoming test frames or an incoming test frame and an office test frame are provided in the same unit, a separate test selector is required for each test circuit. In general, it will be possible to locate these test selectors on different district frames and still gain access to all the groups in the district multiple to be tested.

5.15 Each test selector used in connection with the automatic routine test of incoming selectors shall be known as an "Incoming Test Selector". On the test frame equipment, these test selectors shall be numbered consecutively from one up for identification purposes.

5.16 The directing switches, 206-type selectors, govern the connector switches in their selection and also the manipulation of the test se-

lectors 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.

5.17 One pair of directing switches shall be furnished for each twenty 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 new brush and group selection before proceeding with the test.

(1) 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.

(2) 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 issue numbers shown are those of the issue in which the rating was first applied.

EQUIPMENT	RATING	DETAILS	
		LAST SHOWN IN ISSUE	REPLACING EQUIPMENT
J24301A,L4	Mfr Disc.	2	J24301B,L1&L2
L5	Mfr Disc.	2	J24301B,L1&L3

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