

INTERRUPTER FRAMES EQUIPMENT DESIGN REQUIREMENTS PANEL SYSTEMS

1. GENERAL

Scope

1.01 This specification together with the supplementary specifications, keysheets, drawings, and circuit descriptions, listed herein, covers the equipment design requirements for the framework, equipment, and circuits to be used in the manufacture and installation of the Line Finder, Miscellaneous, District and Tandem interrupter frames in panel offices.

1.02 This specification is reissued to change the rating from "AT&TCo Standard" to "A&M Only."

Capacity

1.03 The interrupter frames have a capacity of 30 interrupters or sequence switches, but due to the limitations of the motor, shafts, couplings and bearings the number mounted on this frame shall be limited to 24 except in the case of the Line Finder interrupter frame which is limited to 17 because of the large number of 166 type interrupters which it accommodates.

Description

1.04 The interrupter frame is a steel structure of a type known as a single sided frame with a motor drive and arranged to mount 165, 166, and similar type interrupters that cannot be readily accommodated on the frames with which they are associated. Sequence switches, due to their identical mounting requirements, may be mounted in the interrupter positions to serve circuits located on frames or relay racks not provided with power drives. In order to establish a standard framework for all interrupter frames, no provision is made for mounting relays or other mounting plate apparatus. Because of the variable number of interrupters required for different installations and the relatively small

amount of wiring between interrupters no local cable is provided for the frame. The switchboard cables, therefore, terminate directly on the apparatus terminals.

1.05 The Line Finder interrupter frame consists of the standard interrupter framework with a capacity of 4, 165 and 13, 166 type interrupters for the Line Finder trip and start circuits. One bay has sufficient capacity to accommodate the interrupters for a 10,000 line office with 26 line groups.

1.06 The miscellaneous interrupter frame is similar in construction to the line finder interrupter frame, but the circuits served are not directly associated with any particular group of frames or equipment. Generally, two bays are required for the average local office, however, in some areas where the "A" switchboard and "B" switchboard traffic is heavy a third frame may be necessary. To facilitate installation and maintenance one frame is, in general, associated with the originating equipment and the other with the terminating equipment.

1.07 The district interrupter frame is required only in offices where modifications are made subsequent to the initial installation to provide zone and overtime registration. It is also required in new ground on the cut-off relay offices arranged for the multiple registration feature. In new battery on the cut-off relay offices some of the interrupters required for this feature are mounted on one of the miscellaneous interrupter frames and the others are mounted on the district selector frames with which the interrupters are associated.

1.08 The tandem interrupter frame is essentially a miscellaneous interrupter frame equipped with interrupters required by tandem circuits.

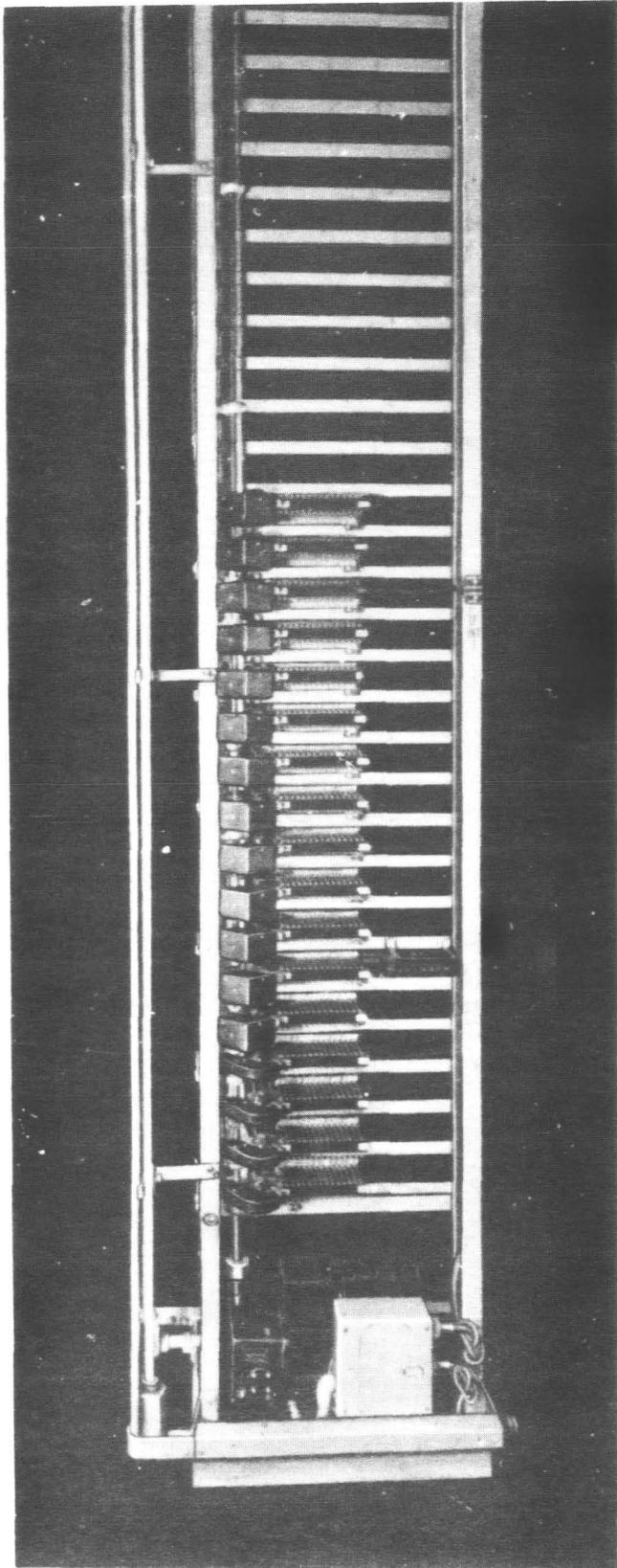


Fig. 1 - Interrupter Frame

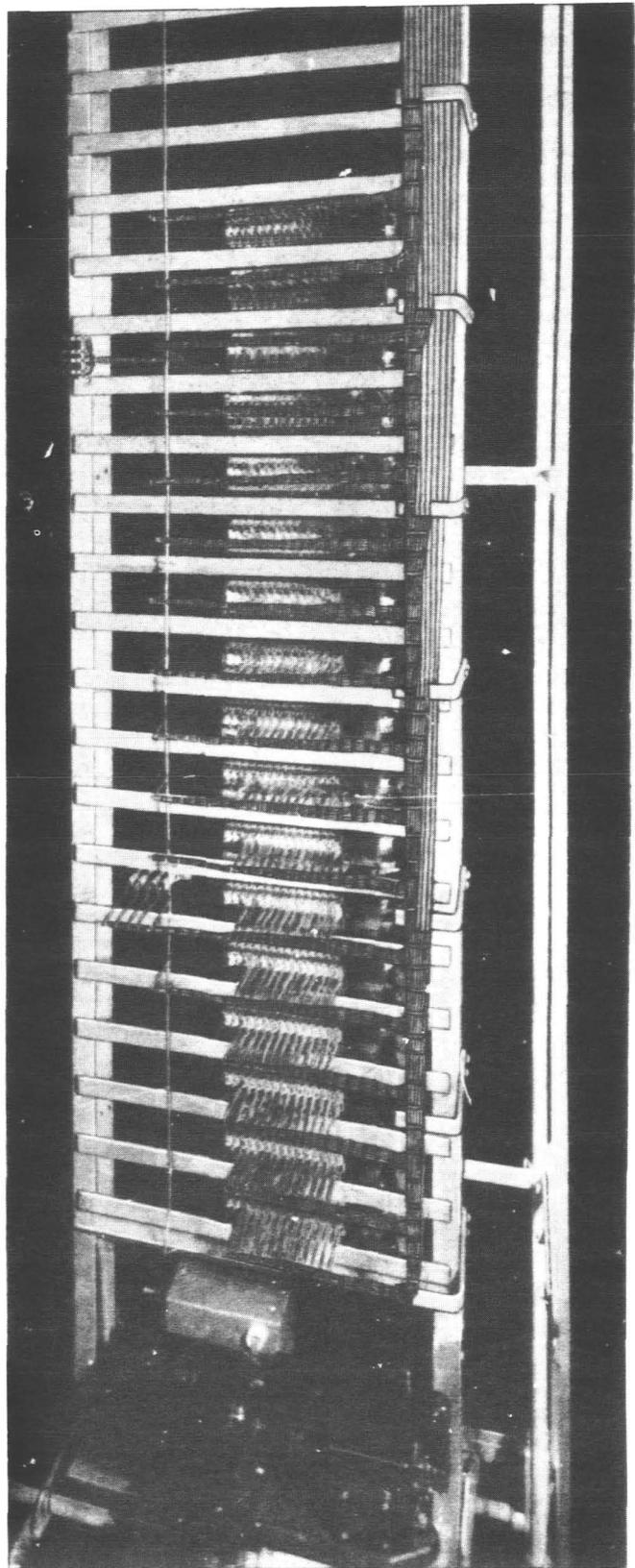


Fig. 2 - Interrupter Frame Rear of Frame Showing Switchboard Cables

Subdivisions of Equipment

ED-20030-01 — Interrupter Frame Assembly

2. SUPPLEMENTARY INFORMATION

815-000-000 — Panel Systems Index

AA128.006 — List of General Engineering Requirement Specifications

X-61500 — List of Engineering Requirement Specifications Tandem Offices

X-61400 — List of Engineering Requirement Specifications Battery on the Cut-Off Relay

X-61200 — List of Engineering Requirement Specifications Ground on the Cut-Off Relay

Floor Plan Data — Section 4.2, Sheet 3

3. DRAWINGS**Keysheets — Panel Offices**

SD-21300-01 — Battery on Cut-Off Relay

SD-21680-01 — Ground on Cut-Off Relay

SD-21301-01 — Sender Tandem Office

Framework

ED-20030-01 — Interrupter Frame Assembly

ED-20150-01 — Framework Limits

ED-20081-01 — Sequence Switch Framework Details

ED-20182-01 — Oil Guards for Motor Couplings

ED-20672-01 — Guard Rail Details

Equipment

ED-20483-01 — Line Finder Interrupter Frame Equipment

ED-21666-01 — Miscellaneous Interrupter Frame Equipment

ED-20621-01 — District Interrupter Frame Equipment

ED-20512-01 — Tandem Office Interrupter Frame Equipment

Cabling

ED-20029-01 — Switchboard Cabling Plan

ED-20622-01 — Frame Battery and Ground Leads

ED-20252-01 — Schematic Layout

4. FLOOR PLAN REQUIREMENTS

4.01 Due to the close association between the line finder frames and the line finder interrupter frame the latter should be located near the line finders to facilitate maintenance and so as to require minimum length cable runs. The preferable location is adjacent to a column near the center or one end of the group of line finder frames. The frame will conveniently fill out a lineup where the left over space is too limited to accommodate another of the main group of frames.

4.02 The same consideration may be applied to the district interrupter frame with preference given to the main group of district frames but located on the side nearest the district timing and message register connector frames. Where more than one bay is required in an office, they should be located in the same lineup or as near together as possible.

4.03 Wherever possible one of the two miscellaneous interrupter frames should be located near the originating equipment and the other near the terminating equipment. Where a third bay is furnished it should be located adjacent or as near as possible to the one of the other two frames that is filled to capacity. The important consideration is that the frames be located near the equipment requiring the greatest number of interrupter contacts. In most cases the bay associated with the originating equipment will be located near the "A" switchboard relay racks and the bay for terminating equipment will be in the vicinity of the final and incoming selector frames. In offices served by switchboards in a distant exchange the location of the terminating frame may be near the equipment whose function it is to concentrate the intercepted service trunks. Offices having centralized operating rooms should be treated in the same manner as offices with local operating rooms. An interrupter frame may be furnished solely for use with local test desk centers, in which case, it should be located in the most accessible location with respect to the test desk relay rack equipment.

4.04 In tandem offices, the frame or frames should be placed in the vicinity of the equipment requiring the major portion of the contacts, which will generally be the outgoing trunk test board.

5. EQUIPMENT

- ED-20030-01, G1 — Line Finder and District
Interrupter Frames
ED-20030-01, G3 — Tandem Interrupter Frame
ED-20030-01, G4 — Miscellaneous Interrupter
Frame

Note: The standard framework is provided for each interrupter frame covered by this specification, but the equipment is furnished as required for the particular installation and arranged in accordance with the equipment layout for each type of frame.

6. EQUIPMENT NOTES

General

- 6.01** One motor and the associated drive mechanism shall be furnished for each interrupter frame. To prevent a possible service reaction the drives of two or more adjacent frames shall not be driven by the same motor.
- 6.02** The interrupter cams shall be staggered to produce a uniform motor load.
- 6.03** Interrupters with the maximum number of spring nests that are available shall be furnished and contacts shall be assigned as required by job conditions. As many circuits as desirable may be served by one interrupter but spare contacts should be provided for circuits which may require additions.
- 6.04** The arrangement of interrupters on a frame should follow as closely as possible the layout shown on the equipment drawings. No deviations should be made from the layout shown for the line finder interrupter frame, and where intermediate line groups are not equipped the spare positions on the bay shall be reserved for future additions. Interrupters on the miscellaneous frames serving major groups of equipment such as the "A" switchboard, final and incoming selector test frames, etc., shall be grouped together as much as possible without using additional interrupters. Contacts used to interrupt tone have been located on the upper portion of each bay to prevent inductive disturbances in other circuits. Circuits requiring a small number of contacts may be shifted from the originating to the terminating frame and vice-versa to utilize spare contacts. The least deviation from the loca-

tion specified in the table of interrupter contacts is the most desirable from the standpoints of installation and maintenance. Where the separation between contacts for originating and terminating equipment can be accomplished without duplicating too many codes on the two frames and thereby exceeding the capacity of a frame it is desirable to furnish the extra codes to expedite maintenance and to save cabling. The most feasible of such deviations are shown in the equipment layout and the shift in location is noted in the table of interrupter contacts.

6.05 Contacts required for the intercepting trunk finder frame and other equipment associated with a distant "A" switchboard shall be located on the terminating interrupter frame as indicated in the table of contacts on the miscellaneous interrupter frame equipment drawing.

6.06 Contacts of No. 1 or extra heavy No. 1 metal may be assigned on platinum contact interrupters, and No. 1 on extra heavy No. 1 metal interrupters in cases where, after growth has been provided for, sufficient contacts are available on the superior metal interrupters to warrant this procedure.

6.07 Where sequence switches are required for the outgoing trunk test board circuits, guard details shall be furnished as required in accordance with Fig. C of the framework drawing. A guard per ED-20081-01 shall be furnished on the tandem interrupter frame for the sequence switches required for the tandem outgoing trunk test board test circuit. The upper guard support hole shall be drilled as required for the particular installation.

7. WIRING AND CABLING

General

7.01 The switchboard cables shall be butted at the nearest cable bracket above the interrupters that the cables serve. Where the major portion of a cable serves a group of interrupters and a small number of leads are required for contacts on a higher level, the cable should be butted at the lower bracket and the few leads run in the sewed cable form to the interrupters above.

7.02 Where one, two, or three leads are run to the interrupter frame #20 gauge single or paired wire may be used.

Tone Leads

7.03 In general, interrupted tone leads should not be combined in the same cable with the tone supply lead. The same applies to leads carrying high or low tone or different timing intervals. A number of tone leads from the same source of supply at the fuse board as well as interrupted tone leads from the same reciprocating bar interrupter may each be run in the

same cable. Due to the staggered cam arrangement leads carrying the same interrupted tone but from different interrupters on the frame should be run in separate cables to prevent disturbance during the open intervals.

To Fuse Board

7.04 One or more switchboard cables with #20 gauge conductors shall be run between the interrupter frame and the nearest fuse board to provide battery, high resistance ground, and tone for interrupters and for the frame test battery supply.

Bell Telephone Laboratories, Incorporated

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