

**AUTOMATIC
RANGE EXTENSION
TEST FRAME
NO. 5 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 Automatic Range Extension Test Frame (ARET). This frame is required in all No. 5 crossbar offices arranged for the range extension feature.

1.02 The relay units mounted on this frame are covered in Part 4 and Table A of this specification.

Capacity

1.03 The ARET frame provides for testing range extenders associated with one marker group having as many as 60 2-wire line link frames.

Description

1.04 The ARET frame provides the following functional tests:

Operational

- (1) To verify that the range extender is cut-in when required.
- (2) To check that the ringing detector in the range extender is functioning properly.
- (3) To check that the supervisory relay of the range extender is operating within the operate and release limits.

Transmission

- (1) To measure the gain of the range extender amplifier (in both directions) by use of the instrument relay (meter) and produce a trouble record card on all failures.

1.05 A control panel provides mounting arrangements for the instrument relay, progress, identification, busy and alarm lamps, and control keys and switches.

1.06 The frame consists of a single bay arranged for 23-inch mounting plates. It is equipped with frame terminal strip, various relay units, a jack, key and lamp panel, a cross-connection field, and a fuse panel.

SUBDIVISIONS OF EQUIPMENT AND DETAILED INDEX

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

EQUIPMENT CODE	RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING	CKTS PER UNIT	MTG PLATES PER UNIT
J23264A	AT&TCo Std	Auto Range Ext Tst Fr	J23264A-()	SD-27831-01- SD-25574-01	Frame	—
J23264B	AT&TCo Std	Channel Selecting Unit	J23264B-()	SD-27831-01	1	3
J23264C	AT&TCo Std	Retrial Counting Unit	J23264C-()	SD-27831-01 SD-94820-01	1	2

EQUIPMENT CODE	RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING	CKTS PER UNIT	MTG PLATES PER UNIT
J23264D	AT&TCo Std	"F" Relay Unit	J23264D-()	SD-27831-01	1	1
J23264E	AT&TCo Std	Test Unit	J23264E-()	SD-27831-01 SD-94820-01	1	5
J23264F	AT&TCo Std	Selector and Cut-Through Unit	J23264F-()	SD-27831-01	1	4
J23264G	AT&TCo Std	Control Unit	J23264G-()	SD-27831-01 SD-94820-01	1	4

2. SUPPLEMENTARY INFORMATION

819-000-000 — No. 5 Crossbar System Index

AA128.006 — List of General Equipment Requirements

AA610.003 — Gauge and Insulation of Wire

J29259 (819-005-150) — General Outline — No. 5 Crossbar System

Floor Plan Data — Section 11.1

Current Drain Data Sheet — SD-25760-02

ED-26528-01 — Frame Appliance Outlets and Connections

ED-26567-01 — Jack Mounting and Spare Fuse Holder

ED-26920-01 — Fuse Panel Connections

ED-26981-01 — Fuse Panel Assemblies

ED-27511-01 — Fuse Panel Assembly

3. DRAWINGS

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

Keysheet

SD-25760-01 — Crossbar System No. 5

Circuits

SD-25574-01 — Miscellaneous Circuit for All Frames

SD-94820-01 — Time Delay Control Circuit

Framework

ED-92271-70 — Jack, Key, and Lamp Panel Assembly

ED-26524-01 — Sheet Metal Frame — Single Bay

Equipment

ED-25889-01 — Fuse Alarm Lamps and Test Points

Wiring and Cabling

ED-26589-01 — Miscellaneous Circuit Switchboard Cabling Details

ED-26589-12 — Power, Ringing and Tone Distributing Frame Switchboard Cabling Details

ED-27716-() — Automatic Range Extension Test Frame Local Cable

ED-27717-() — Automatic Range Extension Test Frame Switchboard Cable Details

4. EQUIPMENT**J23264A (AT&TCo Std) — Automatic Range Extension Test Frame**

Equipment — J23264A-()

List 1 — Framework, assembly, common equipment, and local cable for one automatic range extension test frame. (See Table A.)

	WIRE	EQUIP	SEE NOTES
Auto. Range Ext Tst Ckt SD-27831-01:			
Control Panel Ckt, Fig. 1	1	1	
Selecting Ckt, Fig. 2 with Y & Z options	1	0	A
Retrial Counting Ckt, Fig. 3	1	0	
Control Ckt, Fig. 4	1	0	
Selector Ckt, Fig. 5	1	0	
Frame Translation Ckt, Fig. 6	60	0	
Test Ckt, Fig. 7	1	0	
Cut Through Ckt, Fig. 8	1	0	
Misc Ckt SD-25574-01:			
48V Fuse Ckt, Fig. 3, with ZK option	1	1	
Fuse Alm Ckt, Fig. 4	1	1	
Grd Feeder Ckt, Fig. 10	1	1	
48V Frame Tst Bat. Ckt, Fig. 13	1	1	
Frame Line Tel Jk Ckt, Fig. 17	1	1	

Notes

- A. In addition there are options involving wiring only which shall be connected as specified in Note 102 of SD-27831-01.
- B. The local cable for the frame shall contain the interunit wiring, battery, and ground supply leads, wiring to the key, lamp, and switch panels, wiring looped at unequipped apparatus positions, and wiring between units and the frame terminal strips for all units listed in Table A, including list 1 of this J code.
- C. All units to be mounted on this frame shall be provided as required in accordance with Table A.

J23264B (AT&TCo Std) — Channel Selecting Unit

Equipment — J23264B-()

List 1 — Assembly, wiring and equipment for one channel selecting unit per SD-27831-01, Fig. 2, less Y apparatus.

List 2 — Equipment required in addition to list 1 when the line link frame tens digit is identified on a 2-out-of-4 basis per SD-27831-01, Fig. 2, Y option only.

J23264C (AT&TCo Std) — Retrial Counting Unit

Equipment — J23264C-()

List 1 — Assembly, wiring and equipment for one retrial counting unit per SD-27831-01, Fig. 3, and timer per SD-94820-01, Fig. 3.

J23264D (AT&TCo Std) — Frame Translation — F Relay Unit

Equipment — J23264D-()

List 1 — Mounting Plate only for mounting a maximum of ten F relays per SD-27831-01, Fig. 6. (See Note B.)

List 2 — Wiring and equipment for one F relay and network for each line link frame equipped for range extension per SD-27831-01, Fig. 6 (a maximum of ten List 2 per List 1.)

Notes

- A. Reserved.
- B. One List 1 is required for each group of ten line link frames (0-9, 10-19, 20-29, 30-39, 40-49, or 50-59) having one or more frames equipped for range extension (a maximum of six List 1 per automatic range extension test frame). The functional letter "F" and its tens digit are stamped on the frame upright.

J23264E (AT&TCo Std) — Test Unit

Equipment — J23264E-()

List 1 — Assembly, wiring and equipment for one test unit per SD-27831-01, Fig. 7, and timer per SD-94820-01, Fig. 2.

J23264F (AT&TCo Std) — Selector and Cut-Through Unit

Equipment — J23264F-()

List 1 — Assembly, wiring, and equipment for one selector and cut-through unit per SD-27831-01, Fig. 5 and 8.

J23264G (AT&TCo Std) — Control Unit

Equipment — J23264G-()

List 1 — Assembly, wiring, and equipment for one control unit per SD-27831-01, Fig. 4, and timer per SD-94820-01, Fig. 3.

5. GENERAL NOTES**Wiring**

5.01 All J-coded relay units covered by this specification shall be surface wired and interconnected by the frame local cable.

5.02 For the gauge and insulation of wire to be used in the manufacture of the frame and units herein, see Section AA610.003.

Cabling

5.03 The codes of the switchboard cables and loose wires ordinarily used in cabling to this frame are shown on ED-27717-().

5.04 Codes J23264H through J23264Y are unassigned.

TABLE A**AUTOMATIC RANGE EXTENSION TEST FRAME****J23264A**

(Units Shall Be Equipped and Connected in the Positions Specified in this Table)

FRAME POS NO.	UNIT		QUANTITY TO BE PROVIDED		DESCRIPTION OF OPTION
	J-CODE	LIST	ALWAYS	FOR OPTION INDICATED	
2	J23264B	1	1		
		2		1	When LLF tens digit ident. 2-out-of-4 basis
5	J23264C	1	1		
7	J23264D	1		1	LL Frs 50-59
8					" " 40-49
9					" " 30-39
10					" " 20-29
11					" " 10-19
12					" " 00-09
7-12		2		1	Having one or more LL Frs equipped for range extension
29	J23264E	1	1		For each LL Fr equipped for Range Extension (Max. 10 List 2 per List 1)
34	J23264F	1	1		
38	J23264G	1	1		

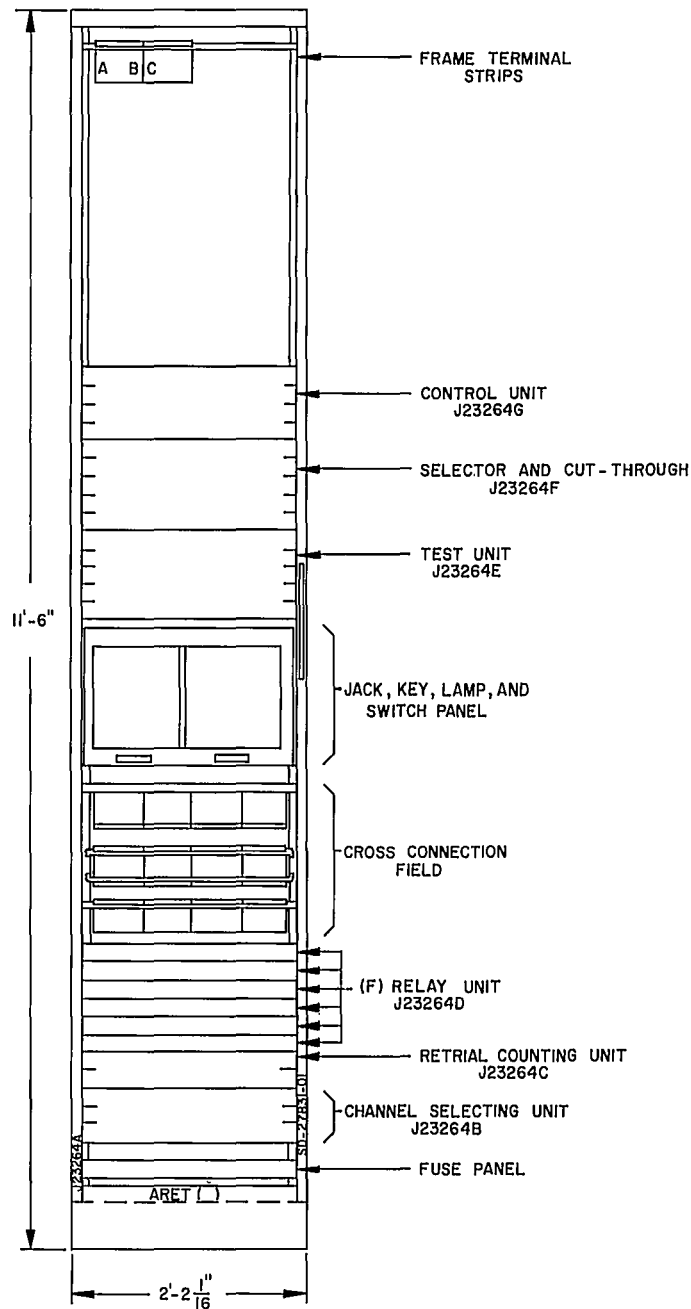


Fig. 1 – Automatic Range Extension Test Frame

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