

## 1A1 KEY TELEPHONE SYSTEM POWER SUPPLY CONNECTIONS TO KEY TELEPHONE UNITS

### CONNECTION DATA

#### 1.00 GENERAL

**1.01** This section provides information on power lead connections to the most commonly used 1A1 key telephone system key telephone units (see Table A). Reference is also made to the power supply units for the 1A1 key telephone system.

**1.02** This section is reissued to:

- Include new key telephone units in Table A.
- Add information for selecting power supply equipment.

**1.03** Due to extensive changes marginal arrows have been omitted.

#### 2.00 POWER REQUIREMENTS

Operating voltages for 1A1 key telephone systems as shown on connection drawings are:

- Relay, 14 to 26 volts dc
- Lamps (51A), 9 to 11 volts dc or ac
- Ringer, 105 volts 20 cycles
- Buzzers or bells, 14 to 28 volts dc\* or 15 to 25 volts ac

\* Where dc source is used both for talking and signaling circuits, provide a noise suppression capacitor across the circuit connected as shown in section entitled Buzzers and Bells — Connections and Limitations.

#### 3.00 SELECTION OF THE POWER SUPPLY

**3.01** Power to operate relays and visual and audible signals of the 1A1 key telephone system can be supplied from the following:

- 101G (J86731A, List 4 or List 6, or J86731D, List 1) power plant
- 101J (J86471A, List 1, or J86471B, List 1) power plant
- Local battery (101A or 101E power plant)
- PBX battery
- Central office battery

**3.02** Supplemental power for 10-volt ac visual signals can be supplied from the following:

- 101G (J86731B, List 1) power plant
- 393A or B transformer

**3.03** Supplemental power for audible signals for ringers can be supplied from the following:

- 101G (J86731A, List 5, or J86731C, List 1) power plant
- Static ringing generator
- PBX ringing machine
- Central office generator

**TABLE A**  
**POWER SUPPLY CONNECTIONS TO KEY TELEPHONE UNITS**

KTU	14- to 26-Volt DC Power Supply				Audible Signal Supply (See Note)		Lamp Power Supply	
	Filtered		Unfiltered		Bat. or ±	Grd	Bat. or ±	Grd
	Bat.	Grd	Bat.	Grd				
202B	29	30			19	20	39	40
202C	26	27			9	25	29	30
202D	26	14			9	25	29	16
203A	15-38	16-40			36	37	31	30
204A	15-38	16-40			5-36	6-37	31	30
205A	15-38	16-40			5-36	6-37	31	30
207A	35	34	37	36	25	24	28	29
207B	9B	10B	19B	20B	39B	40B	29B	30B
207C	9B	10B	19B	20B	39B	40B	29B	30B
208A	39	40					28	29
209A	18B	20B						
210A	18	20						
211A	40	38			11-19	18-10-37	31	30
212A	29A	30A			19A	20A	39A	40A
213B	29A	30A			19A	20A	39A	40A
227A*								
229A	20	No. Term.						
229B	20	40						
230A	26A	27A			9A	25A	29A	30A
230B	26A	14A			9A, B, C, D	25A	29A	16A
232A	24-39	25			29		20-26 9-10-19	27
232B	24	25			29		9-10-19 20-26	27
233A†								
235A	34B	35B			29B	28B		
236A	34C	35C			29C	28C		
237A	19	20					9	10
237B	19	20					14	10
238A	See Table B							
239A	See Table C							
16A					7	1		
26B	2							
29A	7‡ 14§	15						
31A	3	1-12					7	5

**Note:** The 105-volt ringing supply from central office generator, static generator, or 101G power plant may be wired through the 11A or 211A KTU resistance lamp if local conditions warrant.

\* Various connection arrangements, see Section 518-310-401.

† Plug-connector type KTU, see Section 518-114-404.

‡ J option.

§ K option.

**4.00 FUSING AND RINGING LAMP**

**4.01** Power leads from power plants or transformers usually terminate on connecting blocks or directly on key telephone unit terminal strips. These power supplies have self-contained fuse blocks, and certain key telephone units have been equipped also with fuse blocks and screw terminals. However, separate fuse arrangements should be considered when number of lamps exceeds the allowable maximum and/or the power plants or transformers feed more than one system. Additional information on power requirements and fusing arrangements is covered in CD- and SD-69203-01.

**4.02** Operating conditions may warrant the use of generator resistance lamps for circuit protection:

- When using central office or PBX generator supplies.
- When a static generator or 101G (J86731A, List 5, or J86731C, List 1) power plant is used to feed more than one system.

**4.03** When dc power supply is used for lamps in key telephone systems or when 48-volt battery is used for lamp indicators, it is necessary to provide a resistor in each lamp to limit the lamp current. For more information refer to section entitled 1A1 Key Telephone Systems — DC Lamp Resistance Circuit — Connections.

**TABLE B**

**POWER SUPPLY CONNECTIONS FOR 238A KTU**

KTU	14- to 26-Volt DC Filtered		Audible Signal Supply		Lamp Power Supply	
	Bat.	Grd	Bat. or ±	Grd	Bat. or ±	Grd
<b>238A</b>						
Line Circuits	10A	9A	20A	18A	16F	
	10B	9B	40A	38A	17F	
	10C	9C	20B	18B	18F	
	10D	9D	40B	38B	19F	
	10E	9E	20C	18C	20F	
			40C	38C	30A	29A
			20D	18D	30B	29B
			40D	38D	30C	29C
			20E	18E	30D	29D
					30E	29E
Com Eq	10G	No Term.	30F	29F	40F 19G 9G 29G 39G	No Term.

**TABLE C**

**POWER SUPPLY CONNECTIONS FOR 239A KTU**

KTU	14- to 26-Volt DC Filtered		Audible Signal Supply		Lamp Power Supply	
	Bat.	Grd	Bat. or ±	Grd	Bat. or ±	Grd
<b>239A</b>						
Line Circuits	10A	9A	20A	18A	25G	29A
	10B	9B	40A	38A	26G	29B
	10C	9C	20B	18B	27G	29C
	10D	9D	40B	38B	28G	29D
	10E	9E	20C	18C	29G	29E
	10F	9F	40C	38C	30A	29F
			20D	18D	30B	
			40D	38D	30C	
			20E	18E	30D	
			40E	38E	30E	
			20F	18F	30F	
					30G	