

**1A1 KEY TELEPHONE SYSTEM**  
**440- AND 460-SERIES KEY TELEPHONE SETS**  
**STATION CONNECTIONS**

**1.00 GENERAL**

This section covers connections at the station for 440- and 460-series key telephone sets. It includes key cable, connecting block, cord conductor, and internal set connections.

**2.00 1A1 APPLICATION OF 440- AND 460-SERIES KEY TELEPHONE SETS**

**2.01** Only the 440- and 460-series key telephone sets shown in this section are arranged for use in the 1A1 key telephone system. These sets are equipped with an additional set of switchhook contacts (for A lead control) and are furnished shop-wired for use in the 1A key telephone system. *To use these sets in the 1A1 system, certain wires within the sets must be reterminated.*

**2.02** Key telephone set internal wiring changes and connections are covered in Tables 31.01 through 31.04. This includes ringer, buzzer, exclusion, and cutoff connections, as well as necessary wiring changes.

**3.00 KEY CABLE CONNECTIONS**

**3.01** The key cable, connecting block, and cord conductor connections shown in Table 31.05 of

this section are arranged to conform to the key cable, connecting block, and cord conductor connection pattern for 540- or 560-series key telephone sets.

**3.02** Key cable pairs should always be associated with a certain feature as designated in the tables of this section. If a certain feature is not furnished, that associated pair should be left vacant.

**3.03** Pair 12 in the key cable is designated for use as the common audible signal pair, dial selective intercom station signal pair, or buzzer system signal pair when the common signal, station signal, or buzzer signal is to be provided in the set.

**3.04** Pair 21 in the key cable is designated for use as the common audible signal pair, dial selective intercom station signal pair, or buzzer system signal pair when the common signal, station signal, or buzzer signal is to be provided external to the set.

**4.00 REFERENCES**

Reference information for this section is given in Section C71.355, 1A1 Key Telephone System, Connection Data, Description and Use.

**Internal Wiring Changes Which Must Be Made before Key Telephone Sets Can Be Used with 1A1 Key Telephone System**

**TABLE 31.01**

Color of Wire	Reterrminations	
	Disconnect Wire from Terminal	Connect Wire to Terminal
R-G	1B	N
R	N	R
Y	R	M
BK	M	N

TABLE 31.02

## Ringer and Buzzer Connections

Option		Tel Set	Induction Coil	Ringer Lead	Capacitor Lead	Buzzer Term.
		Terminal		Color		
Set Ringer Used as Line Ringer on Tip and Ring of Any Line except Private Line		R* T*		R	S-R Y	
		K		BK	S	
Ringer or Buzzer in Set Used as Common Audible Signal, Dial Selective Intercom Station Signal, or Signal-key and Buzzer System Signal	Ringer with Capacitor	A K		R	Y	
			L1	BK†	S S-R	
	Ringer without Capacitor	A K		R BK		
			L1		S-R	
	7-type Buzzer‡	A K				A or D C

\* Terminals are designated 1R and 1T for first line, 2R and 2T for second line, etc.

† Remove these leads from terminal K and connect at spare terminal or by means of a D161488 connector.

‡ If 152A capacitor is to be provided, connect spade-tipped capacitor leads to buzzer terminals A and D.

Exclusion Key in Set Used to Exclude Lines from Stations or to Cut Off Ringer or Buzzer in Set

TABLE 31.03

Feature	Exclusion Key Lead	Tel Set	Induction Coil	Ringer Lead	Capacitor Lead	Buzzer Term.	
	Color	Terminal		Color			
Exclusion of a Line from a Station	R-Y G-Y	R* T*					
	BK-W	E3—1B ↑ H*	M1W 5-1/2" Cord				
Exclusion Key Used to Cut Off Set Ringer Used as Line Ringer	R-Y G-Y	R* T*			S-R		
	BL W	E2† A		R	Y		
		K		BK	S		
Exclusion Key Used to Cut Off Ringer, to Cut Off Buzzer Used as Common Audible Signal, or to Cut Off Dial Selective Intercom Station Signal	Ringer with Capacitor	R-Y G-Y	A K				
		BL W	E2‡ E3‡ E4‡		R BK	Y	
			E4‡	L1		S S-R	
	Ringer without Capacitor	R-Y G-Y	A A				
			K K		BK	Y S	
		BL	E2†	L1	R	S-R	
	7-type Buzzer§	R-Y G-Y	A A				
			K K			Y S	C
		BL	E2†	L1		S-R	A or D

\* Terminals are designated 1R, 1T, and 1H for first line; 2R, 2T, and 2H for second line, etc.

† Remove cord conductor connected to this terminal and connect to terminal E1.

‡ Remove cord connectors from these terminals, tape spade-clip, and dress under block.

§ If 152A capacitor is to be provided, connect spade-tipped capacitor leads to buzzer terminals A and D.

TABLE 31.04

Internal Connections for 440-  
and 460-series Key Telephone Sets  
Equipped with Cutoff Keys

Feature	Lead to Cutoff Line or Ext Sta or Ringer or Listening-in Line Ckt or Receiver	Lead to Apparatus Cabinet	Cut-off Key Lead	Tel Set	Induction Coil	Ringer Lead	Capacitor Lead	Buzzer Term.	
									Desig
Cutoff Set Ringer Used as Line Ringer			R-W G-W	R* T*			S-R		
				CR CT		R	Y		
			BK-W	K X		BK	S		
Cut Off Set Ringer, Buzzer Used as Common Audible Signal, or Dial Selective Intercom Station Signal	Ringer with Capacitor	R1 B1	G-W	A K			Y		
			R-W	CR CT		BK R	S		
			BK-W	X	L1		S-R		
	Ringer without Capacitor	R1 B1	G-W	A K		BK	S		
			R-W	K CT CR		R	Y		
			BK-W	X	L1		S-R		
	7-type Buzzer†	R1 B1	G-W	A K			Y	C	
				CT K			S	A or D	
			R-W BK-W	CR X	L1		S-R		
	Cut Off Line, Extension Station, Ringer, or Listening-in Line Circuit	R T			CR CT				
				R-W G-W BK-W	R* T* X				
Cut Off Extension Station and Transfer Line Ringer	R T			CR CT					
			G-W R-W	R* T*			S-R Y		
			BK-W	X K		R BK	S		

(Table 31.04 continued on page 5.)

\* Terminals are designated 1R and 1T first line, 2R and 2T for second line, etc.

† If 152A capacitor is to be provided, connect spade-tipped capacitor leads to buzzer terminals A and D.

Internal Connections for 440-  
and 460-series Key Telephone Sets  
Equipped with Cutoff Keys

TABLE 31.04 (Contd)

Feature	Lead to Cutoff Line, Ext Sta, Ringer, or Listening-in Line Ckt or Receiver	Lead to Apparatus Cabinet	Cut-off Key Lead	Tel Set	Induction Coil	Ringer Lead	Capacitor Lead	Buzzer Term.
Cut Off Common Ringer or Buzzer at Another Station and Transfer Common Ringer or Buzzer to Set	Ringer with Capacitor	R1 B1	R-W G-W	A K		R		
				CR CT X			Y	
				BK-W		L1	BK*— S	S-R
	Ringer without Capacitor	R1 B1	R-W G-W	A K		R	Y	
				K CR CT			S	
			BK-W	X	L1	BK	S-R	
	7-type Buzzer†	R1 B1	R-W G-W	A K			Y	A or D
				K CR CT			S	
			BK-W	X	L1		S-R	C
	Cutoff Head Receiver Used as Listening-in Set	R G			CR CT			
				R-W G-W BK-W	X	R G		

\* Connect these leads at spare terminal or by means of a D161488 connector.

† If 152A capacitor is to be provided, connect spade-tipped capacitor leads to buzzer terminals A and D.

Key Cable, Connecting Block Terminals,  
Set Terminals, and Cord Conductor Colors  
440- and 460-series Sets

Key Cable			Set Conn	Dial Sets		440EG	440FG	440GG	441EG	444EG	444FG	445EG	460GG	
				Manual Sets		440EE	440FE	440GE	441EE	444EE	444FE	445EE	460GE	
				Features		HPPP	HPPS	HPPC	HPPP-E	HPPP-L	HPPS-L	HPPP-L-E	HPPPPP	
Pair No.	C Type	D Type	Term. Desig	Fab Cords Mod		D14G	D14A	D12A	D12A	D18C	D18C	D16B	D22B	
	Color			Vinyl Cords		D17A	D17A	D17A	D27A	D18G	D17A	D27A	D23C	
				Term.	No.									
1	BL W	BL W	1R 1T	1 2	1	R G	R G	R G	R G	R G	R G	R G	R G	
2	O W	O W	1B 1H	4 5		Y BK	Y BK	Y BK	Y BK	Y BK	Y BK	Y BK	Y BK	Y BK
3	G W	G W	2R 2T	6 7		BL W	BL W	BL W	BL W	BL W	BL W	BL W	BL W	BL W
4	BR W	BR W	2H	9 10		(BR-R) BR-G	(BR-R) BR-G	(BR-R) BR-G	(BR-R) BR-G	(BR-R) BR-G	(BR-R) BR-G	(BR-R) BR-G	(BR-R) BR-G	(BR-R) BR-G
5	S W	S W	3R 3T	3 8		BR-Y BR-BK	BR-Y BR-BK			BR-Y BR-BK	BR-Y BR-BK	BR-Y BR-BK	BR-Y BR-BK	BR-Y BR-BK
6	BL-W W	BL R	3H-S	1 2	2	(BR-BL) BR-W	(BR-BL) BR-W	BR-W	BR-Y	(BR-W)	(BR-BL) BR-W	(BR-BL) BR-W	(BR-BL) BR-W	R-G
7	BL-O W	O R	4R 4T	4 5										R-G R-Y
8	BL-G W	G R	4H-S	6 7						(R-BL)			(R-BL)	(R-BK) R-BL
9	BL-BR W	BR R	5R 5T	9 10										R-W G-Y
10	BL-S W	S R	5H-S	3 8						(G-BL)			(G-BL)	(G-BK) G-BL
11	O-W W	BL BK	G	1 2	3		G-W	BR-BK	(G-W)	(G-W)		G-W	R-Y (BR-BK)	
12	O-G W	O BK	A K	4 5		Y-BL Y-W	R-G R-Y	Y-BL Y-W	BR-BL BR-W	Y-BL Y-W	BR-BL BR-W	Y-BL Y-W	R-W G-Y	Y-BL Y-W
13	O-BR W	G BK	E1 E2	6 7						BK-BL BK-W	R-G R-Y		BK-BL BK-W	R-W G-Y
14	O-S W	BR BK	E3 E4	9 10						BL-W S	R-BK R-BL		BL-W S	G-BK G-BL
15	G-W W	S BK	CR CT	3 8			(S-R) (S-G)		S-R S-G	BR-Y BR-BK	(S-R) (S-G)		(S-R) (S-G)	(S-R) (S-G)
16	G-BR W	BL Y	L1 LG	1 2	4		(S-Y) (S-BK)		(S-Y) (S-BK)		(S-Y) (S-BK)	S-Y S-BK	R-Y R-G	
17	G-S W	O Y	L2 *	4 5			(S-BL)		(S-BL)		(S-BL)	S-BL	R-BK	S-BL
18	BR-W W	G Y	L3 *	6 7						(S-W)		S-W	R-BL	S-W
19	BR-S W	BR Y		9 10										
20	S-W W	S Y		3 8										

Note: Parentheses ( ) around color combinations indicate that conductors are not terminated in set.

\* Lamp ground leads. Strap to terminal 2 (LG) of fourth block.

(Table 31.05 continued on page 7.)

TABLE 31.05 (Contd)

Key Cable, Connecting Block Terminals, Set Terminals, and Cord Conductor Colors 440- and 460-series Sets

Key Cable			Set Conn	Dial Sets		460HG	464GG	464HG	465GG	465HG	465KG	465LG	
				Manual Sets	460HE	464GE	464HE	465GE	465HE	465KE	465LE		
				Features	HPPPPS	HPPPPP-L	HPPPPS-L	HPPPPP-L-E	HPPPPS-L-E	HPPPPC-L-E	HPPPPC-L-E		
Pair No.	C Type	D Type	Term. Desig	Fab Cords Mod		D20B	D29A	D26B	D32A	D29A	D29A	D26B	
				Vinyl Cords		D23C	D28C	D25B	D35A	D35A	D35A	D27A	
Color			Term.	No.									
1	BL W	BL W	1R 1T	1 2	1	R G							
2	O W	O W	1B 1H	4 5		Y BK	Y BK						
3	G W	G W	2R 2T	6 7		BL W	BL W						
4	BR W	BR W	2H	9 10		(BR-R) BR-G	(BR-R) BR-G						
5	S W	S W	3R 3T	3 8		BR-Y BR-BK	BR-Y BR-BK						
6	BL-W W	BL R	3H-S	1 2	2	(BR-BL) BR-W							
7	BL-O W	O R	4R 4T	4 5		R-G R-Y	R-G R-Y						
8	BL-G W	G R	4H-S	6 7		(R-BK) R-BL	R-BL R-G						
9	BL-BR W	BR R	5R 5T	9 10		(R-W) (G-Y)	R-W G-Y	R-W G-Y	R-W G-Y	R-W G-Y	(R-W) (G-Y)	(R-W) (G-Y)	
10	BL-S W	S R	5H-S	3 8		(G-BK) G-BL	R-W G-BL	(G-BK) G-BL	(G-BK) G-BL	G-BL R-W	(G-BK) G-BL	(G-BK) G-BL	G-W (G-BL)
11	O-W W	BL BK	G	1 2	3	G-W	G-Y	(Y-BK)	G-W	G-Y (G-BK)	(G-W)	G-W Y-BK	
12	O-G W	O BK	A K	4 5		Y-BL Y-W	G-BK G-BL	Y-BL Y-W	Y-BL Y-W	Y-BL Y-W	BK-W BL-W	Y-BL Y-W	Y-BL Y-W
13	O-BR W	G BK	E1 E2	6 7						BK-BL BK-W	G-W Y-BK	BK-BL BK-W	R-W G-Y
14	O-S W	BR BK	E3 E4	9 10						BL-W S	Y-BL Y-W	BL-W S	G-BK G-BL
15	G-W W	S BK	CR CT	3 8						(S-R) (S-G)		(S-R) (S-G)	S-R S-G
16	G-BR W	BL Y	L1 LG	1 2	4		S-Y S-BK	BL-W BK-W	S-Y S-BK	Y-BK G-W	S-Y S-BK	S BK-BL	
17	G-S W	O Y	L2 *	4 5			S-BL	BK-BL	S-BL	Y-BL	S-BL	BR-S	S-BL BK-BL
18	BR-W W	G Y	L3 *	6 7			S-W	S	S-W	Y-W	S-W	R-S	S-W S
19	BR-S W	BR Y	L4 *	9 10			S-BR	BR-S	S-BR	G-BL	S-BR	G-S	S-BR BR-S
20	S-W W	S Y	L5 *	3 8			BR	G-W			BR	Y-S	(BR) (BR)

Note: Parentheses ( ) around color combinations indicate that conductors are not terminated in set.

\* Lamp ground leads. Strap to terminal 2 (LG) of fourth block.

(Table 31.05 continued on page 8.)

Key Cable, Connecting Block Terminals,  
Set Terminals, and Cord Conductor Colors  
440- and 460-series Sets

TABLE 31.05 (Contd)

Key Cable			Set Conn	Dial Sets		460MG	464MG	465MG	465NG				
				Manual Sets		460ME	464ME	465ME	465NE				
				Features		HPPSS	HPPSS-L	HPPSS-L-E	HPPSS-L-E				
Pair No.	C Type	D Type	Term. Desig	Fab Cords Mod			D18C		D22B		D26B		D22B
				Vinyl Cords		D23C		D25B		D27A		D27A	
	Conn Block												
	Term.	No.											
1	BL W	BL W	1R 1T	1	1	R	R	R	R	R	R	R	R
	W	W	1H	2		G	G	G	G	G	G	G	G
	O	O	2R	4		Y	Y	Y	Y	Y	Y	Y	Y
	W	W	2T	5		BK							
	G	G	2H	6		BL							
W	W	3R	7	W	W	W	W	W	W	W	W		
W	W	3T	8			(BR-R) BR-G							
2	BL-W W	BL R	3H-1S	1	2	(BR-Y) BR-BK							
	W			2		(BR-BL) BR-W	BR-Y						
	BL-O W	O R		4		(R-G) (R-Y)		(R-G) (R-Y)					
	W			5		(R-BK) R-BL	R-G	(R-BK) R-BL	R-W	R-BL	R-G	R-BL	BR-BL
	BL-G W	G R	1S-2S	6		(R-W) (G-Y)							
W			7	(G-BK) G-BL	R-BK	G-BL	G-BK	G-BL	R-BK	G-BL	BR-W		
BL-BR W	BR R		9										
W			10										
BL-S W	S R	2S-3S	3										
W			8										
3	O-W W	BL BK	G	1	3	G-W	R-Y (R-BL)	G-W	G-Y (G-BL)	G-W	R-Y (R-BL)	G-W	BR-BK (R-BL)
	W		A	2		Y-BL	R-W	Y-BL	G-W	Y-BL	BK-W	Y-BL	G-W
	O-G W	O BK	K	4		Y-W	G-Y	Y-W	Y-BK	Y-W	BL-W	Y-W	Y-BK
	W			5									
	O-BR W	G BK	E1 E2	6							BK-BL	R-W	BK-BL
W			7						BK-W	G-Y	BK-W	G-Y	
4	O-S W	BR BK	E3 E4	9	4					BL-W	G-BK	BL-W	G-BK
	W			10						S	G-BL	S	G-BL
	G-W W	S BK		3							(S-R)		(S-R)
	W			8							(S-G)		(S-G)
	G-BR W	BL Y	L1 LG	1				S-Y	R-Y	S-Y	Y-BK	S-Y	R-Y
W			2			S-BK	R-G	S-BK	G-W	S-BK	R-G		
5	G-S W	O Y	L2 *	4	4			S-BL	R-BK	S-BL	Y-BL	S-BL	R-BK
	W		*	5									
	BR-W W	G Y	L3 *	6				S-W	R-BL	S-W	Y-W	(S-W)	
	W		*	7									
	BR-S W	BR Y		9				(S-BR)					
W			10										
20	S-W W	S Y		3									
	W			8									

Note: Parentheses ( ) around color combinations indicate that conductors are not terminated in set.

\* Lamp ground leads. Strap to terminal 2 (LG) of fourth block.