6-BUTTON, ROTARY DIAL, KEY TELEPHONES

GENERAL DESCRIPTION

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1. GENERAL DESCRIPTION

1.01 This document covers the 6-button, rotary dial, key telephone. (See Figure 1.) A general description as well as information that is peculiar to 6-button, rotary dial, key telephones is included.

1.02 This section supersedes all previous documents covering a general description of 6-button, rotary dial, key telephones. For additional information, refer to Section 50-565-101, Replacement Parts and to Section 50-565-102, Circuit Labels. For information on installation, maintenance, and components or equipment, consult related documents of the ITT Telephone Apparatus Practices Manual.

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Figure 1: 6-Button, Rotary Dial, Key Telephone

1.03 The Models 564/565, 566/567 key telephones are 6-button, rotary dial, anti-sidetone type units that operate efficiently over a wide range of loop resistances and line impedances. They are designed to be used with key telephone systems such as the ITT 1A2 System where several telephones have access to the same lines, CO trunks, or intercom lines.

1.04 The Models 564/565, 566/567 key telephones are identified by a code number stamped in ink on the bottom of the base plate. Refer to ordering information in Table A for an explanation of each code number. The Model 564 type 40 telephone is the standard 6-button, rotary dial, desk type, key telephone. The Model 565 type 40 telephone is similar to the Model 564 type 40 with the addition of an exclusion switch. The Model 566 type 40 telephone is similar to the Model 564 type 40 with the addition of the hookswitch restoration feature. The Model 567 type 40 telephone is similar to the Model 565 type 40 with the addition of the hookswitch restoration feature. A description of

TABLE A

ORDERING INFORMATION - TELEPHONES

CODE NUMBERS

TELEPHONE CODE NUMBERS ARE FORMED IN SIX STEPS AS FOLLOWS:

565 15 O BA 40 M

(1) Type of Instrument (See Part 1)
(2) Color (See Part 2)
(3) Version (See Part 3)
(4) Ringer (See Part 4)
(5) Special Feature (See Part 5)
(6) Dial (See Part 6)

PART 1 TYPE OF INSTRUMENT

CODE	DESCRIPTION	COLOR OFFERED	VERSION OFFERED	RINGER OFFERED	FEATURE OFFERED	DIAL OFFERED
564	6-Button Rotary Dial	00, 05, 09, 13, 15, 44, and 45 (Available On All Models)	O	BA, LR	40, 41	M, R
565	6-Button Rotary Dial W/Exclusion		O	BA, LR	40, 41, 42	M, R
566	6-Button Rotary Dial W/Hookswitch Restoration		O	BA, LR	40, 41	M, R
567	6-Button Rotary Dial W/Exclusion & Hookswitch Restoration		O	BA, LR	40, 41, 42	M, R

REFER TO INDIVIDUAL UNIT DESCRIPTION FOR COMPLETE DESCRIPTION OF FEATURE COMBINATIONS

PART 2 COLORS		PART 3 VERSIONS		PART 4 RINGERS		PART 5 SPECIAL FEATURES		PART 6 DIALS	
CODE	COLORS	CODE	VERSIONS	CODE	RINGERS	CODE	SPECIAL FEATURES	CODE	DIAL
00	Black	O	Conventional	LR	Less Ringer	40	No Special Features	M	Metropolitan (Letters & Numerals)
05	Moss Green								
09	Ivory			BA	Straight Line	41	40 Combined with Push-button for Grounding	R	Regular (Numerals Only)
13	Beige								
15	White					42	40 Combined with "Handsfree" Operation		
44	Light Ash								
45	Cocoa Brown								

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these telephones and the features available on each is given in the following paragraphs. All models are equipped with a mounting cord terminated in an Amphenol-type plug.

1.05 Five pushbutton keys on the telephone are used for line, trunk, or intercom selection. The red key on the far left is a hold key and allows any selected line or trunk to be placed in a hold position. All remaining keys may be used as line keys. The two keys on the right may be wired as either intercom lines or signal keys.

1.06 A signal lamp beneath each of the five line keys indicates status of the associated line. (See Table B.)

TABLE B

LINE KEY SIGNALS

CONDITION	LAMP INDICATION
Idle	Lamp extinguished
Busy	Lamp Lit
Hold	Lamp Winking
Call Incoming	Lamp Flashing

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1.07 Variations in Models 564/565, 566/567 are briefly described below. Circuit label drawings for these models are shown in Section 50-565-102.

MODEL 564( ) 40**

1.08 The Model 564**( ) 40 is a standard 6-button, rotary dial, desk type, key telephone that can be modified to accept various features. It is equipped with a 34-conductor mounting cord fitted with a 50-pin (25-pair) male connector.

MODEL 564( ) 41**

1.09 The Model 564**( ) 41 is identical to the Model 564**( ) 40 with the addition of a grounding pushbutton switch, required in some PABX applications for transferring calls, originating calls during a power failure, and other special functions.

MODEL 565( ) 40**

1.10 The Model 565**( ) 40 is a standard 6-button, rotary dial, desk type, key telephone that can be modified to accept various features. It is equipped with a manual exclusion switch in the left-hand cradle plunger. Lifting the plunger disconnects any other telephone on one of the lines for confidential conversations. This model is equipped with a 42-conductor mounting cord fitted with a 50-pin (25-pair) male connector.

MODEL 565( ) 41**

1.11 The Model 565**( ) 41 is identical to the Model 565**( ) 40 with the addition of a grounding pushbutton switch, required in some PABX applications for transferring calls, originating calls during a power failure, and other special functions.

MODEL 565( ) 42**

1.12 The Model 565**( ) 42 provides for the addition of an external handsfree speaker arrangement. It includes an additional set of contacts in the dial to disconnect the handsfree speaker during dialing and an additional set of contacts in the hookswitch assembly for on/off control of the handsfree equipment. This model is also equipped with an exclusion plunger but does not have an exclusion switch. The number 79971 exclusion switch can be added. The Model 565**( ) 42 is equipped with a 50-conductor mounting cord fitted with a 50-pin (25-pair) male connector.

MODEL 566( ) 40**

1.13 The Model 566**( ) 40 is the same as the Model 564**( ) 40 with the addition of a hookswitch restoration feature. This hookswitch restoration feature will release any operated line key when the cradle plunger is pressed. Therefore, a method other than flashing the hookswitch must be used to signal the operator. An operator recall button containing normally closed contacts is installed for this purpose. This operator recall button (located just forward of the handset cradle) is also used to obtain dial tone when momentarily pressed.

MODEL 566( ) 41**

1.14 The Model 566**( ) 41 is the same as the Model 566**( ) 40 with the addition of a grounding pushbutton switch, required in some PABX applications for transferring calls, originating calls during a power failure, and other special functions.

MODEL 567( ) 40**

1.15 The Model 567**( ) 40 is the same as the Model 565**( ) 40 with the addition of a hookswitch restoration feature. This hookswitch restoration feature will release any operated line key when the cradle plunger is pressed. Therefore, a method other than flashing the hookswitch must be used to signal the operator. An operator recall button containing normally closed contacts is installed for this purpose. This operator recall button (located just forward of the handset cradle) is also used to obtain dial tone when momentarily pressed.

MODEL 567( ) 41**

1.16 The Model 567**( ) 41 is the same as the Model 567**( ) 40 with the addition of a grounding pushbutton switch, required in some PABX applications for transferring calls, originating calls during a power failure, and other special functions.

MODEL 567( ) 42**

1.17 The Model 567**( ) 42 is the same as the Model 565**( ) 42 with the addition of a hookswitch restoration feature that restores any operated line button when the hookswitch is pressed. An operator recall button is provided for operator signaling as in the Model 567**( ) 40.

2. INSTALLATION

2.01 Since these telephones are equipped with a plug-terminated mounting cord, installation consists of inserting the plug into the station connecting block and pressing to engage. For specific wiring installation information, refer to the appropriate circuit label in Section 50-565-102 and to Table C of this document. For general installation information and installation of repair parts, refer to the particular section of the ITT Telephone Apparatus Practices Manual for the required part.

3. MAINTENANCE

3.01 For general maintenance information, refer to the general maintenance section of the ITT Telephone Apparatus Practices Manual. For a pictorial view and parts list, refer to Section 50-565-101.

4. PUSHBUTTON KEY CONVERSIONS

4.01 Pushbutton keys 4 and 5 (from the left) may be converted from line to signaling keys by turning the slot-headed pin about six revolutions CCW from the plunger, then changing key leads as shown in Table D. Table D also shows wiring for intercom using line key number 5 as a common signaling key.

5. BUZZER INSTALLATION

5.01 When a key is converted to signaling mode, a buzzer may be installed as the signaling device of the telephone to be signaled. The buzzer may be installed on the dial mounting bracket inside the telephone or mounted externally. Buzzer installation for signaling between two telephones (using buzzers operating at 18 VAC, 60 Hz) should be as follows. (Refer to Figure 2.)

(a) Connect the signal buzzer leads to terminal 3 and terminal 4 of the telephone terminal board. (Do this for each telephone to be signaled.)

(b) Move the BN-BK lead from terminal X to terminal SG of the telephone terminal board. (This is for each telephone that will be initiating a signal.)

(c) Cross-connect from the YL-OR lead at the station block of the signaled telephone to the BK-BN lead at the station block of the signaling telephone.

(d) Cross-connect from the BK-BN lead at the station block of the signaled telephone to the YL-OR lead at the station block of the signaling telephone.

(e) Cross-connect from the power supply and ground to the OR-YL lead and BN-YL lead respectively at the station block for each telephone.

5.02 A buzzer may also be installed to replace a ringer. This can be accomplished in the following manner. Refer to the circuit diagram in Figure 3.

TABLE C

CONNECTION CHART FOR 564 AND 565 TELEPHONE SETS

CIRCUIT FEATURE		TERMINAL IN SET	MOUNTING CORDS			CONNECTOR PIN NUMBER	CONNECTING CABLE
			50-Cond.	42-Cond.	34-Cond.		
LINE	LEAD DESIG.	636 KEY	565/42 PHONES	565/40 PHONES	564/40 PHONES	AMPHENOL CONNECTOR	50-Cond.
1	T	1T	WH-BL	WH-BL	WH-BL	26	WH-BL
	R	1R	BL-WH	BL-WH	BL-WH	1	BL-WH
	A	1H	WH-OR	WH-OR	WH-OR	27	WH-OR
	A1	1B	OR-WH	OR-WH	OR-WH	2	OR-WH
	LG	LG	WH-GN	WH-GN	WH-GN	28	WH-GN
	L	L1	GN-WH	GN-WH	GN-WH	3	GN-WH
2	T	2T	WH-BN	WH-BN	WH-BN	29	WH-BN
	R	2R	BN-WH	BN-WH	BN-WH	4	BN-WH
	A	2H	WH-SL	WH-SL	WH-SL	30	WH-SL
	A1	- - -	SL-WH	SL-WH	SL-WH	5	SL-WH
	LG	LG	RD-BL	- - -	- - -	31	RD-BL
	L	L2	BL-RD	BL-RD	BL-RD	6	BL-RD
3	T	3T	RD-OR	RD-OR	RD-OR	32	RD-OR
	R	3R	OR-RD	OR-RD	OR-RD	7	OR-RD
	A	3H	RD-GN	RD-GN	RD-GN	33	RD-GN
	A1	- - -	GN-RD	GN-RD	GN-RD	8	GN-RD
	LG	LG	RD-BN	RD-BN	RD-BN	34	RD-BN
	L	L3	BN-RD	BN-RD	BN-RD	9	BN-RD
4	T	4T	RD-SL	RD-SL	RD-SL	35	RD-SL
	R	4R	SL-RD	SL-RD	SL-RD	10	SL-RD
	A	4H	BK-BL	BK-BL	BK-BL	36	BK-BL
	A1	- - -	BL-BK	BL-BK	BL-BK	11	BL-BK
	LG	LG	BK-OR	- - -	- - -	37	BK-OR
	L	L4	OR-BK	OR-BK	OR-BK	12	OR-BK
5	T	5T	BK-GN	BK-GN	BK-GN	38	BK-GN
	R	5R	GN-BK	GN-BK	GN-BK	13	GN-BK
	A	5H	BK-BN	BK-BN	BK-BN	39	BK-BN
	A1	- - -	BN-BK	BN-BK	BN-BK	14	BN-BK
	LG	LG	BK-SL	- - -	- - -	40	BK-SL
	L	L5	SL-BK	SL-BK	SL-BK	15	SL-BK
AUX. SIGS.		6	YL-BL	YL-BL	- - -	41	YL-BL
		5	BL-YL	BL-YL	- - -	16	BL-YL
		4	YL-OR	- - -	YL-OR	42	YL-OR
		3	OR-YL	- - -	OR-YL	17	OR-YL
HOLD LAMP		LG	YL-GN	- - -	YL-GN	43	YL-GN
		LH	GN-YL	- - -	GN-YL	18	GN-YL
BZ LP		L2	YL-BN	YL-BN	YL-BN	44	YL-BN
PB SIG		SG	BN-YL	BN-YL	BN-YL	19	BN-YL
B-B1		RT	YL-SL	YL-SL	YL-SL	45	YL-SL
R-R1		RR	SL-YL	SL-YL	SL-YL	20	SL-YL
EXCL. CKT.	T	ET	VI-BL	VI-BL	- - -	46	VI-BL
	R	ER	BL-VI	BL-VI	- - -	21	BL-VI
	A	EH	VI-OR	VI-OR	- - -	47	VI-OR
	A1	EB	OR-VI	OR-VI	- - -	22	OR-VI
SPEAKER PHONE	T1	RR	VI-GN	VI-GN	- - -	48	VI-GN
	R1	9	GN-VI	GN-VI	- - -	23	GN-VI
	P4	8	VI-BN	VI-BN	- - -	49	VI-BN
	P3	7	BN-VI	BN-VI	- - -	24	BN-VI
	AG	N	VI-SL	VI-SL	- - -	50	VI-SL
	LK	L1	SL-VI	SL-VI	- - -	25	SL-VI

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TABLE D

LINE/SIGNAL KEY CONVERSIONS FOR 6-BUTTON SETS

NO. OF LINE KEYS	NO. OF SIG. KEYS CONVERTED FROM LINE KEYS	NO. OF PRIVATE & INTERCOM LINES WITH COMMON SIG. KEY	KEY LEADS			
			YL-BN	BN	SL-RD	BN-BK
5			M	M	M	X
4	1		M	M	M	SG
3	2		M	M	SG	X
4	1	2	M	X	5H	SG
4	1	3	X	X	5H	SG

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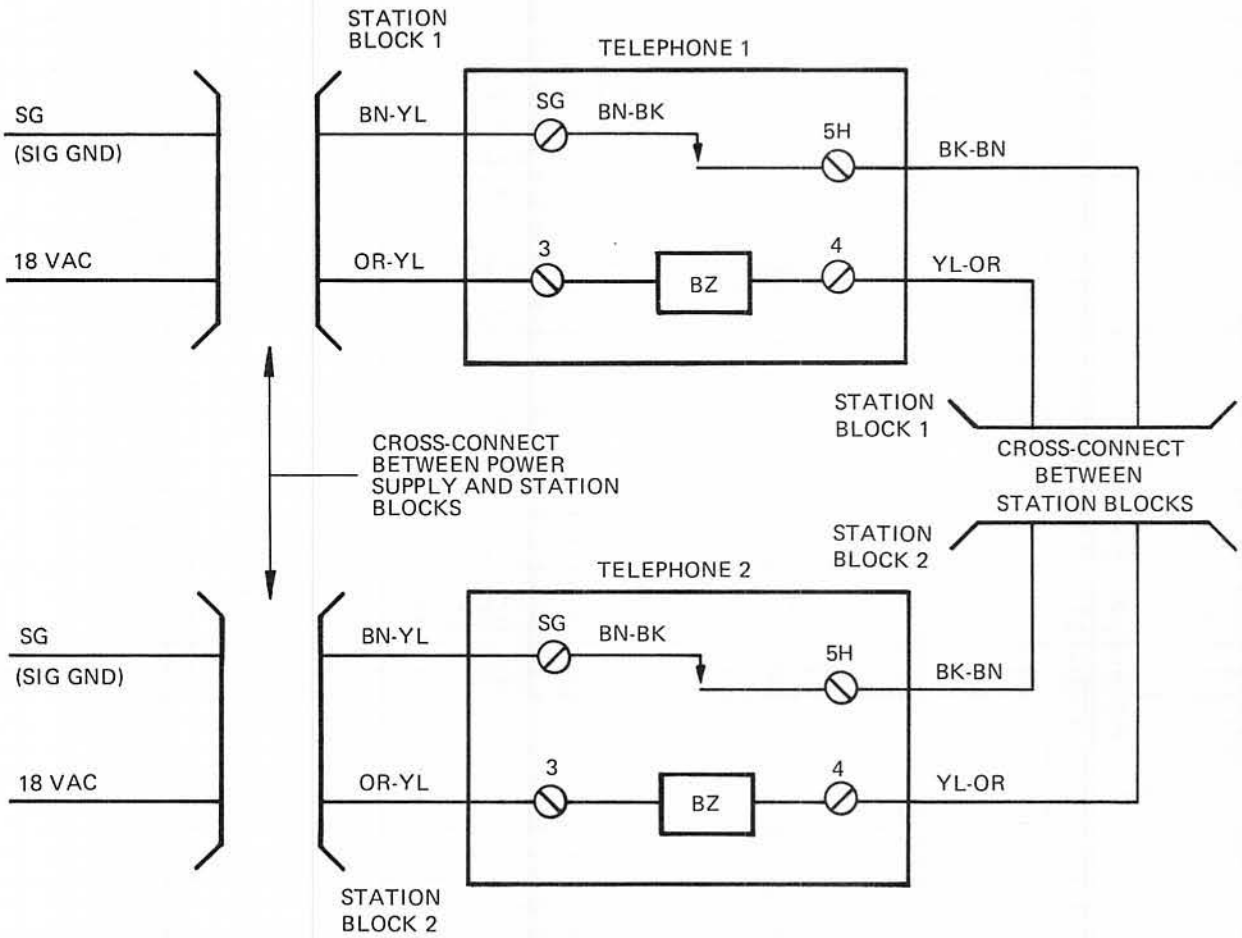

NOTE: MOVE THE BN-BK LEAD FROM TERMINAL X TO TERMINAL SG INSIDE EACH TELEPHONE.

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Figure 2: Circuit Diagram For Signal Buzzer

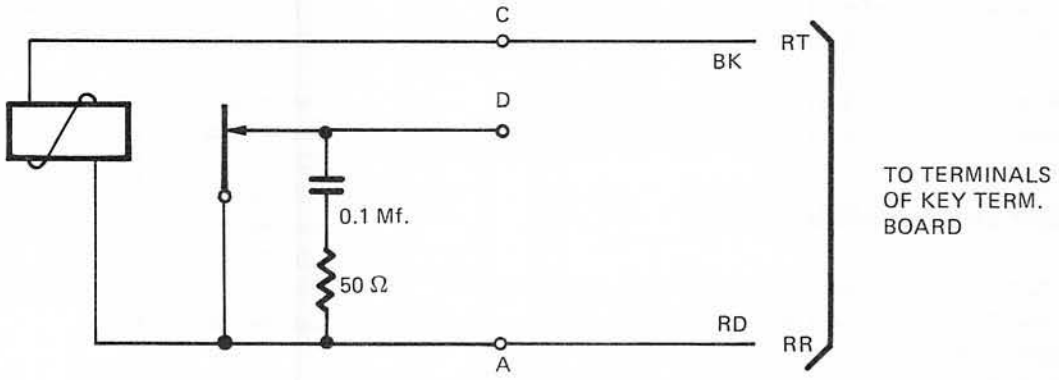

Figure 3: Circuit Diagram For Buzzer Replacing Ringer

(a) Connect the BK lead from the buzzer connection C to terminal RT on the key terminal board of the telephone.

(b) Connect the RD lead from the buzzer connection A to terminal RR on the key terminal board of the telephone.

6. BIASED RINGER WIRING

6.01 The biased ringer option allows for selective ringing of only those lines which are designated as such and gives an added convenience feature to the system. (Lines can also be selectively "common audibled" at the key system so one ringer can serve from one to five lines if desired.) Wiring for biased ringing should be as follows. Refer to circuit diagram in Figure 4.

(a) Connect the BK lead from the ringer to the T terminal of the selected line on the key terminal board.

(b) Connect the SL lead from the ringer to the K terminal of the network.

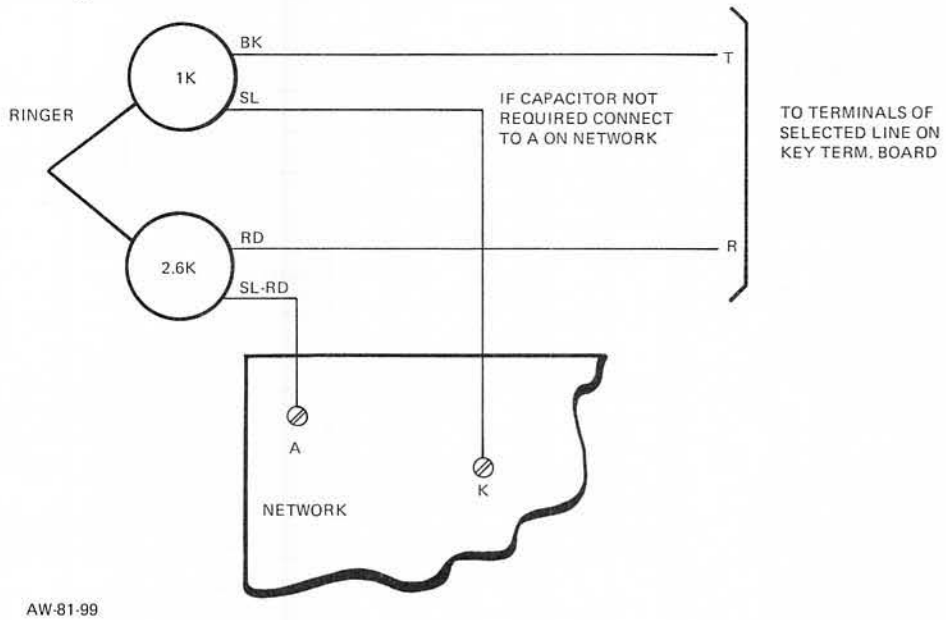

Figure 4: Circuit Diagram For Biased Ringer

(c) Connect the SL-RD lead from the ringer to the A terminal of the network.

(d) Connect the RD lead from the ringer to the R terminal of the selected line on the key terminal board.

7. BUSY LAMP CONNECTIONS

7.01 Busy lamp connections are dependent on the type of key system being used. Connections according to the 1A2 systems should be as follows. Refer to the circuit diagram in Figure 5.

(a) With station busy lamp

(1) Connect the SL-WH lead from contact e of the cradle switch to terminal 1B of the key terminal board.

(2) Connect the SL-GN lead from contact d of the cradle switch to terminal L2 of the network.

(3) Connect the SL-YL lead from contact b of the cradle switch to terminal 9 of the key terminal board.

(4) The YL lead from the hold key is connected to terminal M of the key terminal board.

Additional wiring is required for station busy lamp with the 1A2 system. A 1N4004 diode must be placed in series between terminals G and L2 on the network. A strap is placed between G on the network and N on the key terminal board. A 1N4004 diode is also placed between terminals L2 and L1 on the network.

(b) No station busy lamp

(1) Connect the SL-WH lead from contact e of the cradle switch to terminal 1B of the key terminal board.

(2) Connect the SL-GN lead from contact d of the cradle switch to terminal N of the key terminal board.

(3) Connect the SL-YL lead from contact b of the cradle switch to terminal 9 of the key terminal board.

(4) The YL lead from the hold key is connected to terminal M of the key terminal board.

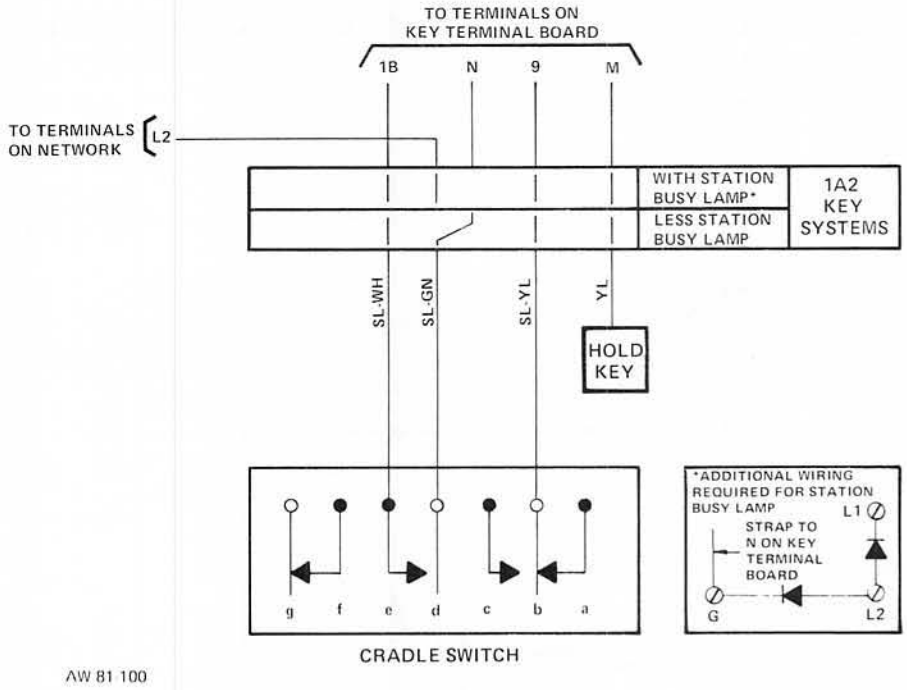

Figure 5: Circuit Diagram, Busy Lamp

8. CONNECT 174B CALL ANNOUNCER TO 6-BUTTON TELEPHONES

8.01 A 174B call announcer is used to provide tone-and-voice signaling to an intercom station and handsfree answerback from an intercom station. The 174B call announcer connects to 6-button telephones as follows:

(a) Connect the BK (-24 VDC) lead of the call announcer together with the VI-BL lead of the telephone to ET of the terminal board.

(b) Connect the YL (GND) lead of the call announcer together with the YL-OR lead of the telephone to terminal 4 of the terminal board.

(c) Connect the RD (CA RST) lead of the call announcer together with the VI-BN lead of the telephone of terminal 8 of the terminal board.

(d) Connect the GN (CA RT) lead of the call announcer together with the VI-GN lead of the telephone to terminal 1 of the terminal board. (The VI-GN lead will have to be moved from RR on the network.)