10-BUTTON, ROTARY DIAL, WALL TELEPHONES
GENERAL DESCRIPTION

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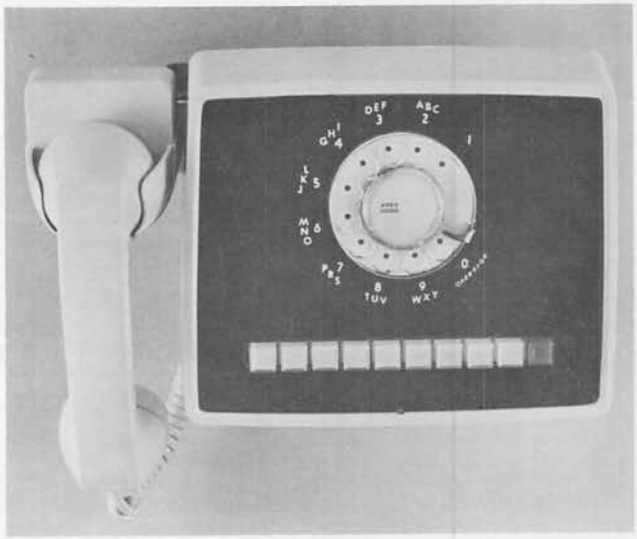

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Figure 1: 10-Button, Rotary Dial, Wall Telephone

1. GENERAL DESCRIPTION

1.01 This document covers the 10-button, rotary dial, wall telephone. (See Figure 1.) A general description plus information peculiar to 10-button, rotary dial, wall telephones is included.

1.02 Whenever this section is reissued, reason for reissue will be listed in this paragraph.

1.03 For additional information, refer to Section 50-854-101, Replacement Parts, and to Section 50-854-102, Circuit Labels. For information on installation, maintenance, and components or equipment, consult related documents of the ITT Telephone Apparatus Practices Manual.

1.04 The Model 854 wall telephones are 10-button, rotary dial, antisidetone type units that operate efficiently over a wide range of loop resistances and line impedances. These telephones are designed for use with key telephone systems, such as the ITT 1A2 System, where several telephones have access to the same lines, CO trunks, or intercom lines. All models are equipped with a mounting cord terminated in an Amphenol-type connector.

1.05 The Model 854 wall 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.

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

TABLE A

ORDERING INFORMATION – TELEPHONES

CODE NUMBERS

TELEPHONE CODE NUMBERS ARE FORMED IN SIX STEPS AS FOLLOWS:

854	15	O	BA	42	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
854	10-Button, Rotary Dial, Wall Telephone	00, 05, 13, 15, 44, and 45 (Available On All Models)	O	BA, LR	42, 76	M

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	DIALS
00	Black	O	Conventional	LR	Less Ringer	42	Equipped To Operate With External Speakerphone	M	Metropolitan (Letters & Numerals)
05	Moss Green								
13	Beige			BA	Straight Line	76	42 Combined With Automatic Exclusion And Release Button		
15	White								
44	Light Ash								
45	Cocoa Brown								

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

1.08 Variations in the Model 854 series telephones are briefly described below. Circuit label drawings for these models are contained in Section 50-854-102.

MODEL 854** ( ) 42

1.09 The Model 854** ( ) 42 is a standard 10-button, rotary dial, wall type, key telephone equipped to operate with an external speakerphone. A set of contacts in the dial assembly disconnects the handsfree speaker during dialing; also, contacts in the hookswitch assembly provides on/off control of the handsfree equipment. The Model 854** ( ) 42 is equipped with a 50-conductor mounting cord fitted with a 50-pin (25-pair) male connector.

MODEL 854** ( ) 76

1.10 The Model 854** ( ) 76 is the same as the Model 854** ( ) 42 with the addition of an automatic exclusion (privacy) circuit with a release button. This release button contains normally open contacts. Where this feature is used, all telephones in the key system must contain the exclusion circuit and a release button.

2. INSTALLATION

2.01 Since these telephones are equipped with a connector-terminated mounting cord, installation consists of inserting the connector into the jack at the station connecting block and pressing to engage. For specific wiring installation information, refer to the appropriate circuit label in Section 50-854-102. Cable connections for 10-button telephones with feature code 42 are listed in Table C.

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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Cable connections for 10-button telephones with feature code 76 that differ from those listed in Table C are listed in Table D. For general installation information and installation of repair parts, refer to the applicable section of the ITT Telephone Apparatus Practices Manual.

3. MAINTENANCE

3.01 For general maintenance information, refer to the maintenance section of the ITT Telephone Apparatus Practices Manual. For a pictorial view and parts list, refer to Section 50-854-101.

4. SPEAKERPHONE

4.01 An external speakerphone may be installed on 10-button telephones. Most speakerphones provide the following additional features:

(a) Handsfree telephone operation. (Handsfree talking and dialing.)

(b) On-hook dialing.

(c) Automatic switching from speakerphone to handset operation.

(d) Transmitter muting for private conversation.

(e) Visual indication when system is in use.

(f) Cutoff of common ringer or other signaling devices when desired.

5. BUTTON CONVERSIONS

5.01 Any line key may be converted to signaling mode by removing the slotted head pin from the plunger shank. The slotted head pin is removed by turning clockwise. (On earlier models of the 10-button telephone the pin is removed by turning counterclockwise.)

6. BUZZER INSTALLATION

6.01 A buzzer may be installed as the signaling device of a telephone receiving an intercom call. The buzzer may be either installed on the dial mounting bracket or mounted externally. For telephones with feature code 42, buzzer leads must be connected to the OR-YL and YL-OR leads inside the telephone. These leads are spare and can be found taped and stored inside the telephone. For telephones with feature code 76, a lamp ground lead is used instead of the OR-YL lead (provided the proper station cross-connections are made). Buzzers selected for this use must operate at 18 VAC, 60 Hz. (See Figure 2.)

6.02 A buzzer may also be used in place of the ringer. A 105 VAC buzzer must be provided. The ringer leads are removed and replaced by the buzzer leads.

7. DESIGNATION TABS

7.01 Designation tabs are included with each telephone. These tabs are installed by removing the cap from each key, placing the tab in the cap, and reinstalling the cap. The caps are removed by squeezing the sides and lifting. Note that locking surfaces are located on each of the caps and keys. These locking surfaces must properly align when reinstalling.

8. GROUNDING PUSHBUTTON

8.01 Modifications are made to line 9 of the telephone if a grounding pushbutton is required. A grounding pushbutton is required in some PABX applications for transferring calls, originating calls during a power failure, or other special functions. To convert line 9 to a grounding pushbutton, the following modifications should be made:

TABLE C

CABLE CONNECTIONS FOR 10-BUTTON

TELEPHONES

(FEATURE CODE 42)

LINES 1 THROUGH 5				LINES 6 THROUGH 9			
TELEPHONE TERMINAL	LEAD COLOR	LEAD DESIG.	CONNECTOR TERMINAL	TELEPHONE TERMINAL	LEAD COLOR	LEAD DESIG.	CONNECTOR TERMINAL
Line 1 (Blue Plug)	WH-BL	T	26	Line 6 (White Plug)	YL-BL	T	41
	BL-WH	R	1		BL-YL	R	16
	WH-OR	A	27		BN-BK	A or S	14
	WH-GN	LG	28		YL-GN	LG	43
	GN-WH	L	3		GN-YL	L	18
Line 2 (Orange Plug)	WH-BN	T	29	Line 7 (Red Plug)	YL-BN	T	44
	BN-WH	R	4		BN-YL	R	19
	WH-SL	A or S	30		BL-BK	A or S	11
	RD-BL	LG	31		VI-BL	LG	46
	BL-RD	L	6		BL-VI	L	21
Line 3 (Green Plug)	RD-OR	T	32	Line 8 (Black Plug)	VI-OR	T	47
	OR-RD	R	7		OR-VI	R	22
	RD-GN	A or S	33		GN-RD	A or S	8
	RD-BN	LG	34		VI-BN	LG, P3 or 1R	49
	BN-RD	L	9		BN-VI	L, P4 or 1T	24
Line 4 (Ivory Plug)	RD-SL	T	35	Line 9 (Yellow Plug)	VI-SL	T	50
	SL-RD	R	10		SL-VI	R	25
	BK-BL	A or S	36		SL-WH	A or S	5
	BK-OR	LG	37		VI-GN	LG or T1	48
	OR-BK	L	12		GN-VI	L or R1	23
Line 5 (Slate Plug)	BK-GN	T	38	10	OR-WH	A1	2
	GN-BK	R	13	G	YL-SL	B or B1	45
	BK-BN	A or S	39	A	SL-YL	R or R1	20
	BK-SL	LG	40	15	YL-OR	BL, AG or Spare	42
	SL-BK	L	15	6	OR-YL	SG, LK or Spare	17

NOTES:

1. All lamp ground leads are common.
2. Lead designations P3, P4, LK, T1, R1, AG and A1 are for speakerphone connections.
3. The YL-OR and OR-YL leads are spare leads and are taped and stored inside the telephone.
4. The designation S indicates that the lead provides an individual signal ground.

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TABLE D

SPECIAL CABLE CONNECTIONS FOR

10-BUTTON TELEPHONES (FEATURE CODE 76)

TELEPHONE TERMINAL	LEAD COLOR	LEAD DESIG.	CONNECTOR TERMINAL
Line 6 (White Plug)	WH-RD	A or S	14
Line 7 (Red Plug)	RD-WH	A or S	11
Line 8 (Black Plug)	BL-SL	A or S	8
Line 9 (Yellow Plug)	SL-BL	A or S	5
17	OR-YL	-24 VDC	17

NOTE:

1. This table lists those connections that differ from the connections for feature code 42 telephones shown in Table C.

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(a) Modify button to non-locking operation by removing the interlock pin from line 9 plunger.

(b) Ground is provided on the WH-SL (A1) lead by the key system. (No cross-connect is necessary for this lead.)

(c) Cross-connect from the SL-WH lead to the PABX connection for the desired function.

9. CONNECTING 174B CALL ANNOUNCER

9.01 A 174B call announcer is used to provide tone and voice signaling to, and handsfree answerback from, an intercom station. The 174B call announcer connects to 10-button telephones as follows:

(a) Connect BK (-24 VDC) lead of call announcer, together with VI-BL lead of telephone, to terminal 17 of terminal board.

(b) Connect YL (GND) lead of call announcer, together with YL-OR lead of telephone, to terminal 27 of terminal board.

(c) Connect RD (CA RST) lead of call announcer, together with VI-BN lead of telephone, to terminal 21 of terminal board.

(d) Connect GN (CA RT) lead of call announcer, together with VI-GN lead of telephone, to terminal 13 of terminal board. (The VI-GN lead must be moved from RR on network.)

10. BUSY LAMP CONNECTIONS

10.01 Busy lamp connections may vary depending on the type of key system being used. Modifications for the 10-button wall telephones with feature code 42 should be as follows: (Refer to Figure 3.)

(a) Remove GN-WH lead from terminal 22 and connect to terminal 16 on the telephone terminal board.

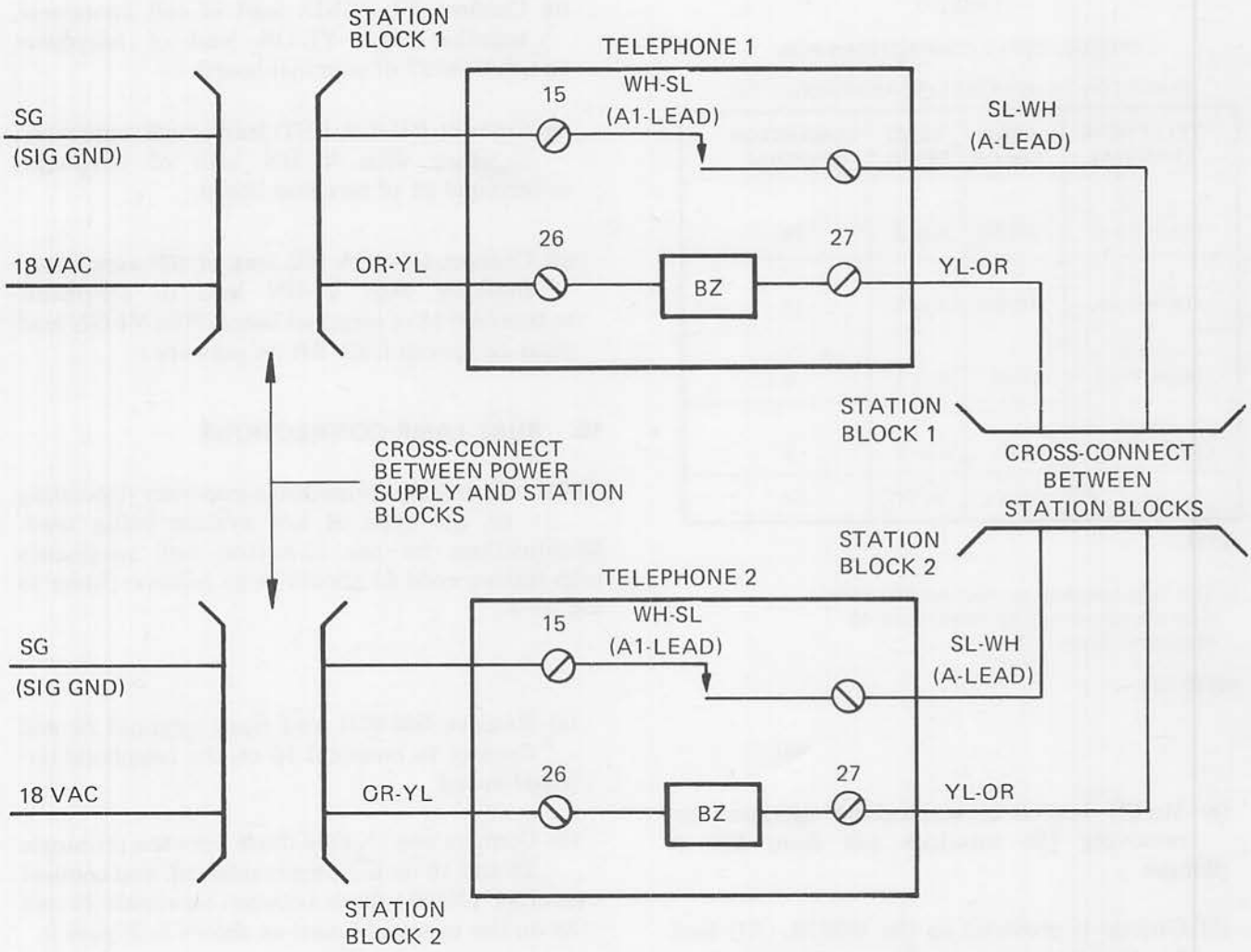
(b) Connect one 1N4004 diode between terminals 22 and 16 on the terminal board, and connect another 1N4004 diode between terminals 22 and 28 on the terminal board as shown in Figure 3.

(c) Connect OR-YL mounting cord lead to terminal 28 of terminal board.

10.02 Modifications for the 10-button wall telephones with feature code 76 should be as follows: (Refer to Figure 4.)

(a) Connect one 1N4004 diode from terminal 22 to terminal 28 on telephone terminal board as shown in Figure 4.

(b) Connect any "LG" lamp ground lead to terminal 28 on the telephone terminal board. (Proper station cross-connections must be made to allow the use of an LG lead.)



NOTES:

1. THE ARRANGEMENT SHOWN IS USING LINE 9 OF A TELEPHONE WITH FEATURE CODE 42 AS AN EXAMPLE. IF ANOTHER LINE IS USED, SUBSTITUTE THE APPROPRIATE A1 AND A-LEADS FOR THAT LINE.

2. IN THE 10-BUTTON TELEPHONE, GROUND IS CONNECTED TO TERMINAL 15 (WH-SL LEAD). NO CROSS-CONNECT IS NECESSARY FOR THIS LEAD.

3. FOR TELEPHONES WITH FEATURE CODE 76, A LAMP GROUND LEAD IS USED INSTEAD OF THE OR-YL LEAD (PROVIDED THE PROPER STATION CROSS-CONNECTIONS ARE MADE).

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Figure 2: Circuit Diagram For Signal Buzzer

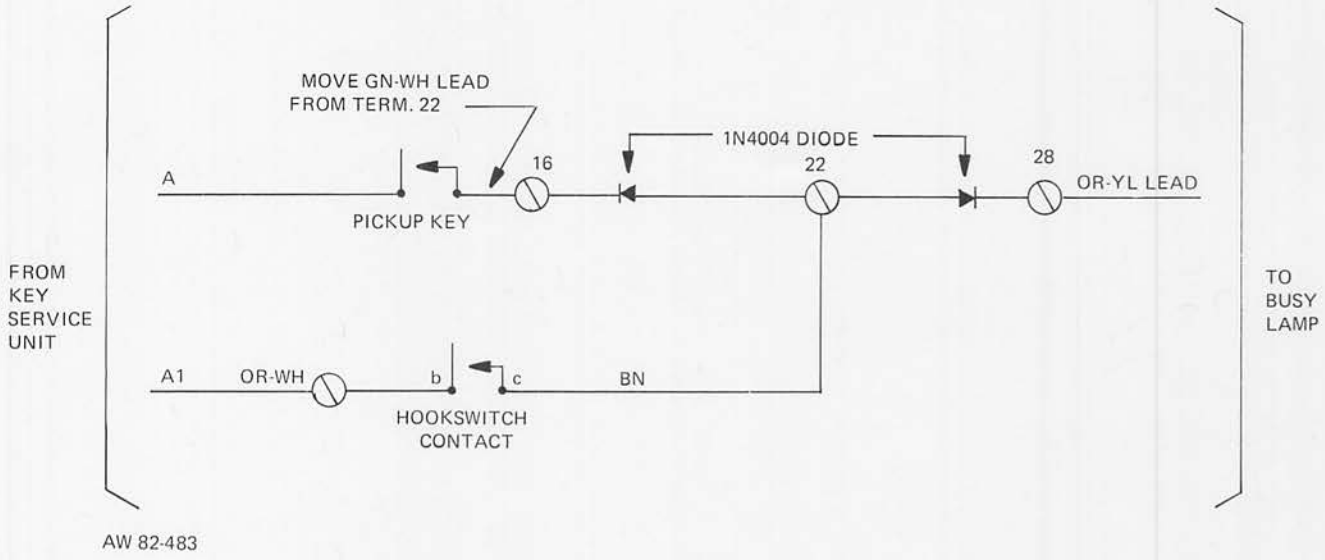

Figure 3: Busy Lamp Connections For 10-Button Telephones with Feature Code 42

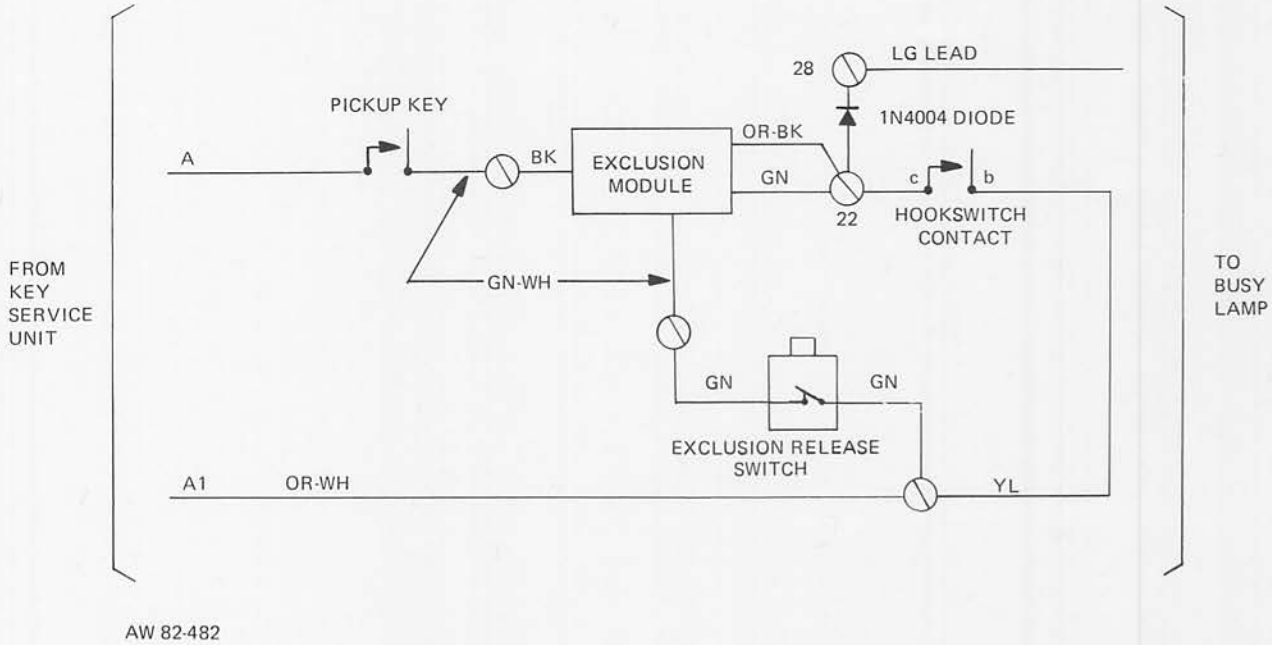

Figure 4: Busy Lamp Connections For 10-Button Telephones with Feature Code 76