

CIRCUIT DESCRIPTION

CD-31975-01  
Issue 5-D  
Appendix 1-D  
Dwg. Issue 12-D

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STEP BY STEP SYSTEMS  
NO. 355A, 360A OR 35-E-97  
MISCELLANEOUS ALARM CIRCUIT  
PREPAY COIN TRUNK ALARM AND  
COIN BATTERY FUSE ALARM

CHANGES

D. DESCRIPTION OF CIRCUIT CHANGES

- D.1 Revised title in Figs. 1 and 2 to include "One per fuse panel (360A)" or a "no record" basis.
- D.2 Replaced "Z" option by "ZB" option in Fig. 2 and rated "ZB" option M.D. on a "no record" basis.

D.3 Added "ZC" option in Fig. 2 on a "no record" basis.

D.4 Added Note 108.

D.5 Spring number 2T of relay (C1), Fig. 6, was indicated.

All other headings, no change.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT. 2335-AH-FBB-ML

STEP BY STEP SYSTEMS  
NO. 355A, 360A OR 35-E-97  
MISCELLANEOUS ALARM CIRCUIT  
PREPAY COIN TRUNK ALARM AND  
COIN BATTERY FUSE ALARM

## CHANGES

## B. CHANGES IN APPARATUS

B.1	Superseded	Superseded By
	U1251 (CS) Relay "T" option in Fig. 1 18DH Resistor "Z" option in Fig. 2	U512 (CS) Relay "A" option in Fig. 1 KS-8512, L2A-7150 Resistor - "ZB" option in Fig. 2

## D. DESCRIPTION OF CIRCUIT CHANGES

- D.1 Rated Figs. 1 and 2 Mfr. Disc. for 355A and 35-E-97 offices.
- D.2 Added A and B option in Figs. 1  
A option to be used in 360 office and  
B option for 355A and 35-E-97 office.  
Added ZA option in Fig. 3.
- D.3 Revised Notes 102, 103 and 107 to re-  
flect above changes.
- D.4 In Fig. 2, the 18DH resistor, 700  
ohms, "Z" option, is replaced by  
KS-8512, L2A resistor, 715 ohms, "ZB" option.

All other headings under Changes, no change.

## 1. PURPOSE OF CIRCUIT

1.1 This circuit is for use in detecting  
coin battery fuse operation and to  
provide interruptions to coin trunks for  
application of coin battery, and to detect  
stuck coin magnet conditions.

## 2. WORKING LIMITS

2.1 None.

## 3. FUNCTIONS

- 3.1 To light alarm lamps.
- 3.2 To transfer alarm conditions to  
alarm control circuit and aisle  
pilot lamps.
- 3.3 To provide interruptions to coin  
trunks.
- 3.4 To detect stuck coin magnet conditions.

3.5 To provide transfer of coin trunk  
from one interrupter relay equipment  
to another.

## 4. CONNECTING CIRCUITS

Where this circuit is shown on a  
keysheet, the connecting information thereon  
is to be followed.

- 4.1 Discharge Circuit - SD-80634-01.
- 4.2 Miscellaneous Alarm Circuit (Alarm  
Control) - SD-31980-01.
- 4.3 Miscellaneous Alarm Circuit (Aisle  
Pilots) - SD-31970-01.
- 4.4 Power Ringing Circuit - SD-80780-01.
- 4.5 Coin Trunk Circuit - SD-31592-02.
- 4.6 Coin Trunk Release Circuit -  
SD-31861-01.
- 4.7 Power Shelf Terminal Block H-62707.
- 4.8 Misc. Alarm Circuit - SD-31209-01.

## DESCRIPTION OF OPERATION

5. FUSE ALARM FOR COIN BATTERY - FIGURES 1  
AND 2

When + coin battery is connected to  
lead + or - coin battery is connected to  
lead - through the (CCP) or (CCN) resis-  
tances, respectively in Figure 2 relay (CS)  
will operate and connect battery through  
the (CS) lamp to lead "FA" or "CS1" to bring  
in a minor alarm, except in 360A offices  
where this relay lights a lamp in the Misc.  
Alarm Circuit while the office is attended  
and by grounding lead "AL", brings in an  
alarm.

## 6. FUSE ALARM - FIGURE 3

When a fuse in the coin battery supply  
circuit operates, it causes either relay  
(CP) or (CN) to operate and connect the (CF)  
lamp to lead "DF", "G" or "ENG. FUSE" to  
cause a major alarm, except in 360A offices  
where these relays light a lamp in the Misc.  
Alarm Circuit while the office is attended,  
and by grounding lead A, bring in an alarm.

7. PREPAYMENT COIN TRUNK ALARM EQUIPMENT -  
FIGURES 4 AND 5

Whenever an (HH) relay in one of the associated coin control trunk circuits operates, the "CT" and "CT1" leads are connected together causing the (C1) relay to operate. The (C1) relay grounds the "MS" lead to the power ringing circuit and closes the 60 IPM lead through to the (C) relay. The (C) relay operates and releases intermittently under control of the 60 IPM interruption of the power ringing circuit. The operation of this relay furnishes one-half second ground interruption alternately on the "P" and "I" leads to the coin control trunk with which it is associated. This function is used in the coin control trunk to insure the application of coin control battery to the subscriber's line for an interval sufficiently long to operate the coin magnet at the subscriber's station.

If the coin control trunk fails to dispose of a coin the (D) relay remains operated and keeps ground on the "PC" lead through lamp (CB) until an alarm comes in.

8. PREPAY COIN TRUNK ALARM EQUIPMENT  
FIGS. 4-6 & 7

With Fig. 5, the ringing machine and relay (C) both operate continuously as long as there is a call in progress on any coin trunk in the office. Fig. 5 is replaced by Figs. 6 and 7 to make this unnecessary,

and to remove leads CT and CT1, thus eliminating the possibility of tying up coin trunks in case of a cross of these leads with battery. The operation is as follows. When a calling subscriber connected to a coin trunk disconnects, battery over lead A operates relay (D) and in turn (C1), which (a) grounds the motor start lead, (b) grounds alarm lead "AL", and (c) connects 60 IPM ground to relay C, which follows the interruptions and functions as described in Paragraph 7. If the trunk fails to dispose of the coin, ground thru the (CB) lamp will cause an alarm after a predetermined interval. Blowing of the ground fuse will also bring in an alarm by operating relay (C1). This will keep the ringing machine and relay (C) operating thus permitting coin trunks to dispose of coins.

Where "K" option is used, (C1) is locked to (C), released, thus insuring an additional operation of (C) after lead "A" is opened in the coin trunk. This releases a relay locked to lead "I" in the coin trunk. (C1) is slow release to insure time for releasing the relay of the coin trunk,

9. TRANSFER KEY

The (TR) key of Figure 4 is used to remove one set of interrupter equipment per Figures 5 or 6 from service and replaces it with the duplicate set of such equipment.

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