

POWER SYSTEMS  
800 TYPE PLANTS  
SIGNALING CIRCUIT  
HOWLER INTERRUPTER  
KS-15547 MACHINE  
J86726E

CHANGES

B. Changes in Apparatus

B.1 Superseded

Superseded By

Sprague Electric Co. -  
47P8 Hypass Capacitor or  
Cornell Dubilier  
NF EXP 215,  
0.02 $\mu$ F, 600 Vdc

KS-14658,L4  
Capacitor

D. Description of Changes

D.1 In Fig. 1,2, and 3, the KS-14658,L4 capacitor  
is added on a no-record basis.

D.2 Circuit Note 106 was added.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT 2211-JGS-JHW

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Page 1  
1Page

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CHANGES

A. CHANGED AND ADDED FUNCTIONS

A.1 Alternative arrangements are added for 230 volt single phase power service.

B. CHANGES IN APPARATUS

B.1 In Fig. 1, the (HSl) relay is changed from KS-5722 List 8 to KS-5483 List 85, and the (HLR) interrupter is changed to add KS-15547 List 2 as an option to List 1.

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 "X" and "Y" options are added; "X" was part of the circuit.

D.2 The (HSl) contact protection in Note 105 was 160 ohms and 1 microfarad.

D.3 Detailed record of Issue 1 not kept as no equipment will have been manufactured from it.

All other headings, no change.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 5740-JKM-JMD-MN

POWER SYSTEMS  
800 TYPE PLANTS  
SIGNALING CIRCUIT  
HOWLER INTERRUPTER  
KS-15547 MACHINE  
J86726E

1. PURPOSE OF CIRCUIT

- 1.1 To furnish howler tone as required for the connecting graduated howler tone equipment.

2. WORKING LIMITS

- 2.1 Central Office Battery 45-52 volts.  
2.2 60 Cycle single phase A-C 115V.  
± 10%.

3. FUNCTIONS

- 3.1 To produce interrupted battery and filtered return leads for howler by means of a motor-driven interrupter.  
3.2 To provide fuses and terminals for distributing these leads to the connecting graduated howler circuits.  
3.3 To provide means of starting the interrupter under control of a key at the switchboard equipment.  
3.4 To provide a fuse alarm for the distributing fuses.  
3.5 To suppress radio frequency and very high frequency interference caused by the interrupter.

4. CONNECTING CIRCUITS

Power Service Ckt.

Howler Ckts.

SD-81061-01 Power Audible Alarm Ckt.

SD-80729-01 Power Audible Alarm Ckt.

5. DESCRIPTION OF OPERATION

In Fig. 1, howler tone is produced by means of a motor-driven howler interrupter (HLR). The motor is started under control of a key in the switchboard equipment which places ground on the HS lead. A manual start key (MAN ST) is also provided for maintenance. This key, when operated, places ground on the HS lead and lights the (GD) lamp.

Ground on the HS lead through the back contact on relay (HS) operates relay (HS1) which connects the motor to the AC service. At the same time, ground is connected from the HS lead through thermistor (A) to operate relay (HS) after a short delay of about 2 seconds to permit the motor to come up to full speed. Relay (HS) locks up to the HS lead over its top front contacts; transfers the winding of the (HS1) relay from the HS lead to solid ground; short circuits thermistor (A) permitting it to cool off; and connects battery through filter coils (F) and (A) to the common slip ring (C) on the interrupter.

Interrupted battery at about 460 pulses per second from (BR1) on the (HLR) interrupter is fed through resistor (A1), coil (A), and fuses (HT2) to the connecting circuit. Each HT2 lead to the connecting circuit is paired with an HLR lead which is connected to ground through filter coil (HLR) and resistor (B). The HLR lead is also connected to filtered battery through a network consisting of capacitor (C) in series with resistor (C) when the (HS) relay is operated.

Filtering is provided as follows:  
(1) A filter consisting of coil (F) and capacitor (F) prevents tone from being introduced into the central office battery. (2) A radio frequency interference filter consisting of a winding on coil (A) and a section of capacitor (B), and a very high frequency interference filter consisting of resistor (A1) and feed-through capacitor (A1) is connected in series with each interrupter brush (no resistor is used for the common battery feed brush).

In Figs. 2 and 3, when furnished, additional RF and VHF filtering fuses, and (HLR) lead apparatus is provided, similar to that in Fig. 1, for the (BR2) and (BR3) interrupter brushes.

The fuse alarm studs in Figs. 1, 2 and 3 are connected through resistor (HF) to the winding of relay (HF) in parallel with capacitor (HF). If an

(HT2) fuse blows while the interrupter is running, the interrupted battery will operate relay (HF) to bring in audible and visual alarms by means of the connecting alarm circuit. Relay (HF) also lights the (HF) lamp and places a holding ground on the HS lead to keep the interrupter running, thus locking in the

alarm. Capacitor (HF) prevents the (HF) relay from buzzing due to its interrupted battery supply.

When ground is removed from the HS lead, relay (HS) releases, removing battery from the interrupter, and in turn releasing relay (HS1) to stop the motor.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 5740-JKM-CHA-Z1