

17-Hz DETECTOR UNIT UN20/18

General

The UN20/18 is a subunit normally fitted in telephone panels in the Type-D range, for example in the panel PA8/308. It detects the incoming 17-Hz ringing current and energises a GE1/8A tone generator for the period of the ring, and lights the call lamp.

The unit is constructed on a printed circuit card with dimensions of 4 by 2 inches.

drive circuit. D9 is fitted to maintain the switching voltage at terminal 7 if the call lamp should fail, and R6, D7 and D8 provide bias for the anode of CSR1 to guard against false operation.

When the call is answered pin 10 is connected to 0 volt, TR1 is cut off, the call lamp circuit is broken and the thyristor reverts to its non-conducting state ready for the restoration of the answer key on conclusion of the call.

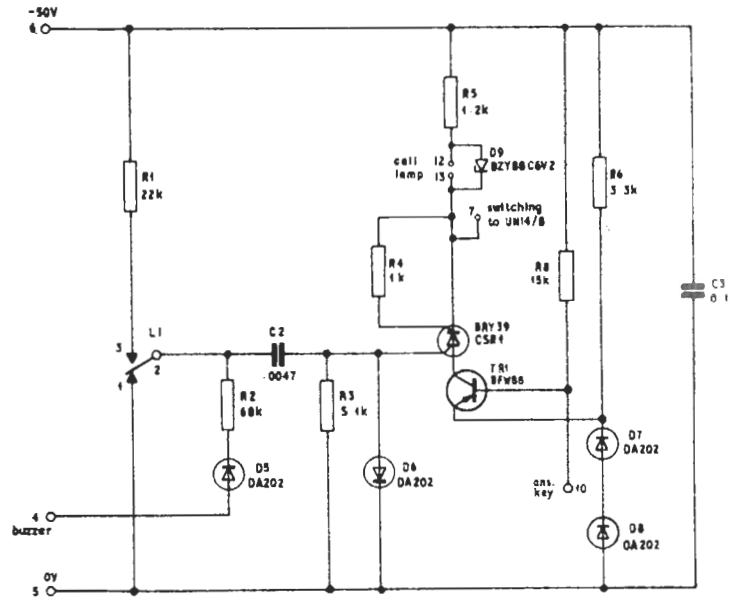
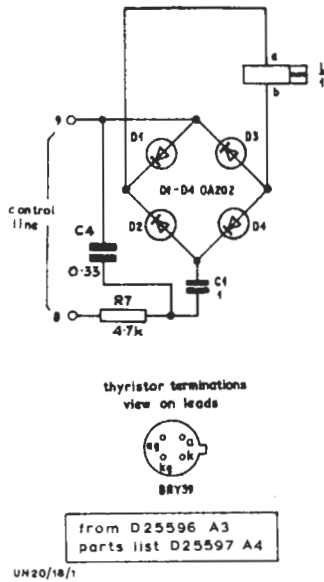


Fig. 1. Circuit of the UN20/18

Circuit Description (Fig. 1)

The unit operates from the normal 50-volt supply, and has a consumption of 15 mA on standby and 52 mA when a call is received.

Incoming ringing current is rectified in the bridge D1-D4 and operates the high-speed relay L. Contact L1 completes the circuit from the battery through R1, R2 and D5 to operate the generator GE1/8A, and through the circuit C2, R3 and D6 applies a d.c. step to the anode gate of the thyristor CSR1. C2 and R3 differentiate the d.c. step into a negative pulse which trips the thyristor into conduction. D6 suppresses the positive pulse when L1 releases.

When the thyristor conducts, the call lamp circuit is completed through D7, D8, the answer key and R5. The voltage at terminal 7 (the switching output) changes from -50 volts through 1200 ohms to about -3 volts, and this voltage is used to switch the throwback delay unit UN14/8, and white pilot relay

Test Procedure

Apparatus Required:

- 50-volt d.c. supply
- 17-Hz ringing supply
- 6-volt P.O. No. 2 lamp
- Meter, f.s.d. 1 mA

1. Connect the 50-volt supply to terminals 5 and 6 (negative).
2. Connect the 6 volt lamp to terminals 12 and 13 and the meter between terminals 4 and 5 (positive).
3. Apply the 17-Hz supply temporarily to terminals 8 and 9. The milliammeter should read between 0.5 and 0.6 mA during the period of the ring. The lamp should light and remain alight after the ringing current is removed.
4. Connect terminals 10 and 5 together. The lamp should go out. Removing the link should not cause the lamp to relight.