CONTROL UNIT CU/20

Introduction

The CU/20 is used on certain disk reproducers where the disk is started and stopped while the turntable is rotating. Its functions are:

(*a*) To introduce a capacitor in series with a running turntable motor so that torque is increased while the motor takes the load of starting a disk.

(*b*) To provide attenuation muting the programme chain of the reproducer, and to remove it, when the disk has reached steady playing speed.

(*c*) To supply a peaky waveform for the operation of a stroboscope neon.

(*d*) To provide a supply for relays and indicator lamps.

The unit is assembled on a chassis which occupies an area of about 5 by 9 in. and its overall height over components is about 8 in.

Circuit

The circuit of the CU/20 is shown in Fig. 1. Plug PL3 is connected to sets of switch contacts in the turntable unit of the disk reproducer. When the disk is stationary, these switch contacts join pins 3 and 4 and pins 3 and 7, but when the disk is started they join pins 4 and 5 instead. As a result, C2 is charged and relay PUM is energised from the rectifier bridge until a disk is started, when C2 discharges through relay MB, energising it for a short time. This time can be adjusted by R4, in parallel with the winding of relay MB.

While contacts MB1 are operated, C3 and R3 are inserted in series with the motor. The capacitance cancels some of the inductive reactance of the motor windings and the terminal voltage of the motor is thereby increased. The resistor limits the current when the relay contacts subsequently close as the disk reaches full speed.

During the same period, contacts MB2 short-circuit pins 3 and 7 on PL3, which are disconnected externally when the disk is started. Therefore relay PUM remains energised over the period during which relay MB is operated.

While relay PUM is energised, both when the disk is stationary and also during the operation of relay MB, the contacts of PUM introduce an attenuation network in the programme chain of the reproducer if this is routed through the CU/20 via connectors 1, 2, 3 and 4 on SK2. When the disk is up to speed and relay MB deoperates, the contacts of PUM bypass the attenuation network.

A neon stroboscope lamp may be fed from connectors 4 and 6 on SK4. The network R5, C4, R6 gives a peaky waveform to enable a more sharply defined stroboscope position to be obtained than is possible with the mains voltage applied directly to the lamp.

References

Turntable Units TTU/8 and TTU/8A.
Disk Reproducers DRD/5 and DRD/5B.

DPEB 5/70

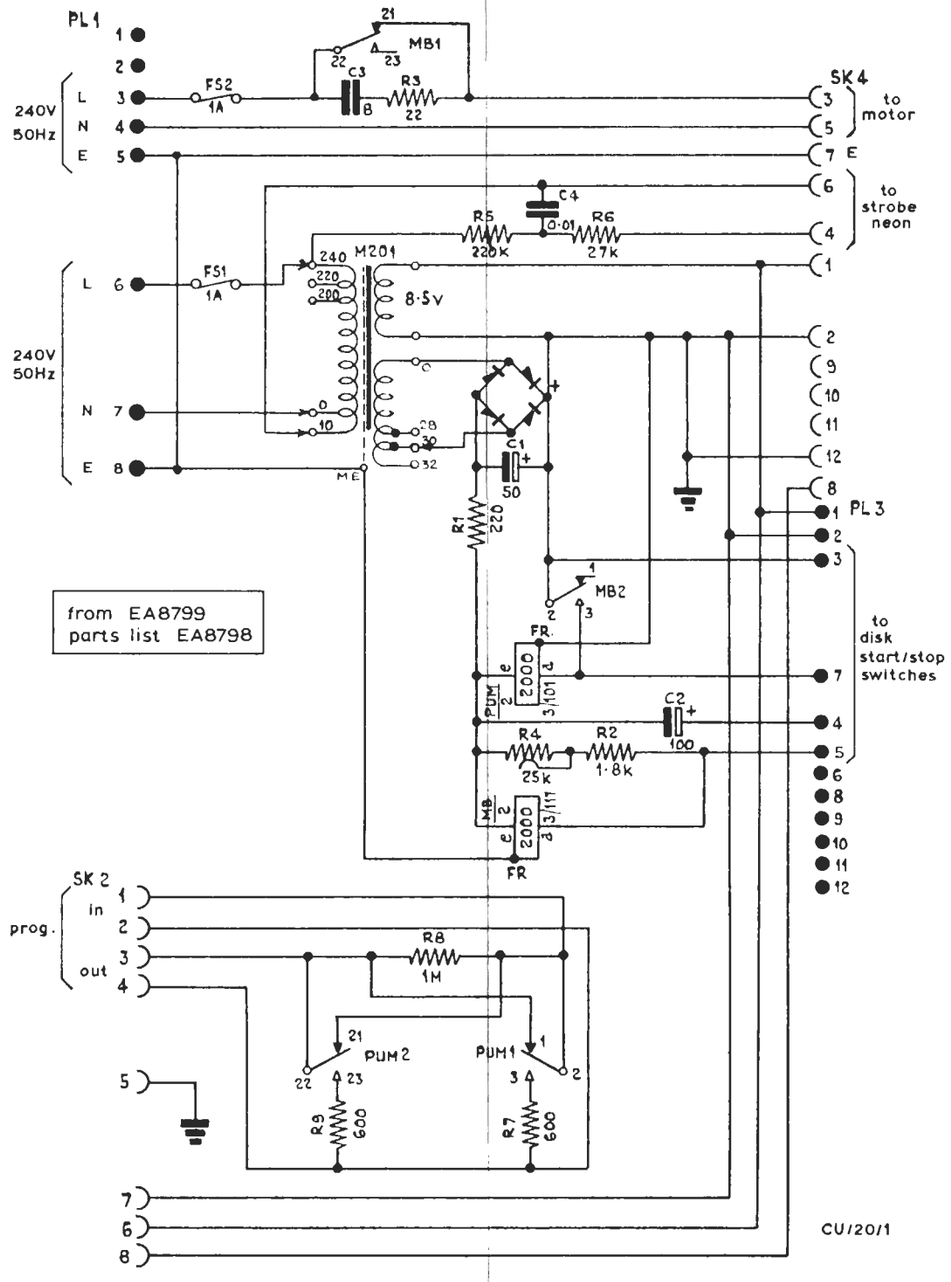

Fig. 1. Circuit of the CU/20