SECTION 19

STANDARD LEVEL PANEL SLP/3

General Description

Standard Level Panel SLP/3 is used on A.C. Test Bay AC/55 to provide facilities for the accurate measurement of tone level at +10 dB or +20 dB. It is basically a lamp resistance bridge which is adjusted on test before the unit is issued to balance when an input level of +10 dB is applied direct or when an input level of +20 dB is applied via an internal 10-dB attenuator.

The only controls provided are U-links on the front of the panel to connect the attenuator in or out of circuit.

The unit is assembled on a 19″ × 3½″ panel and the input and output are wired to jacks on the bay jackfield. The A.C. Test Meter ATM/1 which is mounted on the bay, is used to indicate when the bridge is balanced, i.e., the output is zero.

Circuit Description

As shown in Fig. 29 the input tone is fed through U-links either direct or through a 10-dB attenuator to a lamp resistance bridge via a repeating coil CL4137-33 which has been tested for winding and capacity balance to close limits. The two halves of the secondary winding of the repeating coil form two arms of the bridge, the other two arms consisting of the lamp LPR and the resistance R1. The output of the bridge is connected via the transformer LL/27SA to the output tags.

Bridge balance (i.e. zero output) is obtained when the resistance of the lamp is equal to R1, and since the resistance of the lamp depends upon the current through it balance will only occur at one particular value of applied voltage which is determined by the value of R1. On test the value of R1 is chosen so that balance is obtained when the voltage applied to the repeating coil is 2·45 volts, i.e. a level of +10 dB.

The lamp used is a P.O. No. 2, 6V, which has been aged and selected on test for resistance and stability. The resistance of R1 is in the neighbourhood of 40 ohms and the precise value required is determined on test to within 0·01 ohm and is provided by a wire-wound non-inductive resistor shunted by a stabilised carbon resistor Erie type 108.

The resistor R2 is made up on test from Erie Type-108 stabilised carbon resistors to make the input impedance of the bridge equal to 600 ohms as accurately as possible.

The 10-dB attenuator pad is constructed from Muirhead Type-A70 resistors which have values within ±0·1% of those given in Fig. 29.

Performance

Each individual SLP/3 is issued with calibration information showing its actual performance. The specified performance and allowable limits for all models are as follows:—

(*a*) *As a Voltage Indicator* (10-*dB Position*)

Frequency	*Balance Volts* (*dB*)
1000 c/s	+10 ±0·1
30 c/s to 8 kc/s	+10 ±0·1
15 kc/s	+10 ±0·5
20 kc/s	+10 ±0·75

(*b*) *As a Calibrating Device for a* 600-*ohm Sending Circuit* (10-*dB Position*)

Frequency	*Source Voltage in Series with* 600 *ohms Relative to* 4·9 *volts at Bridge* *Balance*
1000 c/s	±0·1 dB
50 c/s	±0·2 dB
90 c/s to 10 kc/s	±0·1 dB
30 c/s to 20 kc/s	±0·5 dB

(c) *Input Impedance* (10-*dB Position*)

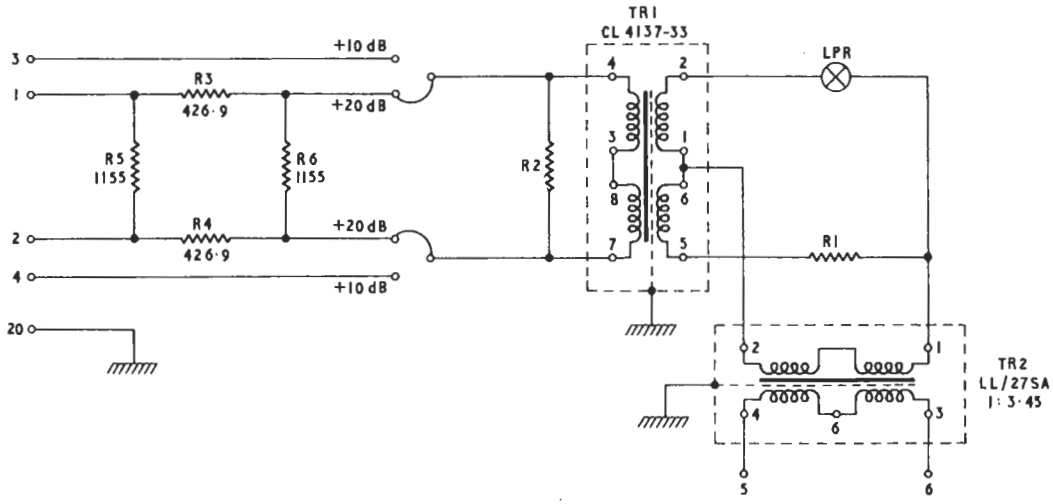
Frequency	*Modulus Ohms*	*Argument*
50 c/s	600 ± 20	≯ 8°
100 c/s, 250 c/s, 10 kc/s	600 ± 12	≯ 8°
1000 c/s	600 ± 3	≯ 1·5°

(d) *Sensitivity*

The output level at balance should be not greater than −65 dB and for a change of 0·1 dB in input level from the balance level the output level should be between −35 dB and −45 dB.

(e) 20-*dB Input Position*

With the U-links in the 20-dB and 10-dB positions the corresponding input levels for bridge balance should differ by 10 ± 0·02 dB.



NOTE: R1 & R2 WIRED AND ADJUSTED ON TEST
LPR & TR1 TO BE SELECTED ON TEST.

STANDARD LEVEL PANEL SLP/3 : CIRCUIT

FIG. 29