1. General information

1.1. INTRODUCTION

The L.F. generator produces sine and squarewave signals in the frequency range 9 Hz up to 110 kHz with very low harmonic distortion. The output voltage is continuously variable and an additional 20 dB attenuation may be set by means of a pushbutton switch. A second output delivers a squarewave signal which is TTL compatible.

This compact and lightweight instrument is extremely suitable for education and service purposes due to its simple operation, and because of its low distortion it is ideal for the servicing of HI-FI equipment.

1.2. TECHNICAL DATA

General information

The instrument has been designed and tested in accordance with IEC publication 348 for Class 1 instruments and has been supplied in a safe condition.
This instruction manual contains information and warnings which must be followed by the purchaser to ensure safe operation and to maintain the instrument in a safe condition.
Only properties expressed in numerical values, with tolerances stated, are guaranteed by the factory. All specifications will be met after a warming-up period of 30 minutes in a constant position.
If not stated otherwise, relative tolerances (in p.p.m. or %) relate to the adjusted value.

SPECIFICATIONS

Frequency

Nominal range	9 Hz to 110 kHz
Measuring range	10 Hz to 100 kHz, divided into four overlapping sub-ranges
Adjustment	dial with a half-logarithmic scale, and four range-selector switches; x10 Hz, x100 Hz, x1 kHz, x10 kHz
Setting error	± 5 % ± 1 Hz of the set value
Short-time drift, within 15 minutes	$< 500 \cdot 10^{-6}$
Long-term drift, within 7 hours	$< 1500 \cdot 10^{-6}$
Temperature coefficient	$< 500 \cdot 10^{-6}$/deg C (500 ppm/deg C)
Dependance on mains voltage (within nominal range)	$< 10 \cdot 10^{-6}$

Wave forms

Sinewave
Squarewave

Outputs

1. *Output Z_o 600 Ω*

Connector	BNC socket
Internal resistance	600 Ω
Maximum load	Short-circuit proof
Load resistance	
– nominal range	⩾ 100 Ω
– reference value	600 Ω

Sinewave mode

Open circuit voltage — nominal value	2 Vr.m.s.
Step attenuator	0 dB; 20 dB ± 0.3 dB
Amplitude control range	0 dB to > 40 dB
D.c. offset voltage	< 30 mV, ATTENUATOR in 0 dB position
Distortion (in position ▬⊣ LOW DISTORTION)	< 0.7 % in range 10 Hz to 100 kHz < 0.03 % in range 300 Hz to 20 kHz
Distortion (in position ▬⊣ FAST SETTLING)	< 1.5 % in range 10 Hz to 100 kHz < 0.5 % in range 100 Hz to 100 kHz
Amplitude response, referred to 1 kHz	< 2 %
Temperature coefficient	± 0.3 %/deg C
Dependance on mains voltage (within nominal range)	± 10^{-3}

Squarewave mode

Open-circuit voltage, nominal value	2 Vr.m.s. (≙ 4 Vp-p)
Step attenuator	0 dB; 20 dB ± 0.3 dB
Amplitude control range	0 dB to > 40 dB

When pushbutton ⊓⊔ is selected, a SQUARER is connected between the oscillator amplifier and the AMPLITUDE control.
The SQUARER also delivers a TTL-compatible squarewave signal via OUTPUT STAGE II to the ⊓⊔ OUT TTL socket, regardless of the waveform selected.
The POWER SUPPLY provides a stabilised d.c. voltage for the various circuits.

2. Directions for use

2.1. INSTALLATION

Before any other connection is made, the protective earth terminal must be connected to a protective conductor (see section 2.1.3. Earthing).

2.1.1. Safety Regulations (see IEC 348 or VDE 0411)

Before connecting the instrument to the mains, visually check the cabinet, controls and connectors etc., to ascertain whether any damage has occurred in transit. If any defects are apparent, do not connect the instrument to the mains.
Always disconnect the instrument from the mains before removing any protective covers.
Any maintenance and service work necessary with the instrument switched on, should only be performed by a qualified technician.