



Radio Telephone Terminal Type HW 21

JOINT MARCONI-SIEMENS PRODUCT



THE INTERCONNECTION of HF radio circuits with line or cable circuits presents many problems, the majority of which arise as a result of the unstable conditions on the radio portion, and it is therefore necessary to employ rather elaborate equipment if a satisfactory junction of the two transmission media is to be achieved.

This equipment, commonly known as 'radio-telephone terminal equipment', has the primary function of ensuring that the radio circuit is operative in one direction only at any one instant, thus preventing the instability which would otherwise arise due to the inherently high gain provided in the radio link. The terminal equipment also includes facilities for controlling the signal levels to the line or to the radio transmitters, for discriminating against line and radio noises and, where required, for rendering conversation unintelligible to unauthorised listeners.

The Type HW 21 Terminal (previously known as the Type B Terminal) has been developed to meet these requirements and is built in the form of a compact rack-mounted self-contained assembly.

FEATURES

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| Semi-automatic operation. | Radio calling facilities. |
| Two-wire or four-wire line connection. | Centralised test and monitoring. |
| Electronic VF switching. | Self-contained for AC mains supply. |
| Provision for privacy working. | |

FACILITIES

- Provision is made for the connection to either a two- or four-wire exchange system; alternative balances for open wire and cable terminations may be strapped in as required.
- Both send and receive legs can be monitored and three order wires provide telephone facilities from the terminal to the exchange and to the transmitting and receiving stations.
- Automatic signal and noise differentiation circuits cut out high background noise and ensure adequate signal amplification when reception is poor.
- Both transmit and receive levels may be manually controlled.

Simple privacy equipment can be incorporated in the bay and consists of a frequency inverter, together with its associated oscillator.

The terminal is fitted with an alarm system which automatically operates on the removal of a cover or the failure of any supply. Safety circuits are also incorporated.

The functions of the terminal may be placed at the disposal of a technical operator for testing.

The terminal is then disconnected from the exchange and gives facilities for the following:

- (a) Ringing over the radio link.
- (b) Speaking over the radio link.
- (c) Transmitting MCW over the link (morse or continuous tone).
- (d) Measurement of transmission level and losses.

DATA SUMMARY

Impedance: 600 Ω at all access points.

Frequency response: For a tone of -10 dBm, flat to within ± 1 dB, relative to the output obtained at 1 kc/s, over the range 100 c/s to 6 kc/s.

Transmission level: With inputs of between -30 dBm and $+3$ dBm output does not vary by more than $+1$ dB relative to a predetermined level, e.g., 0 dBm for -15 dBm input.

Noise level: With no signal into the terminal, less than -50 dBm.

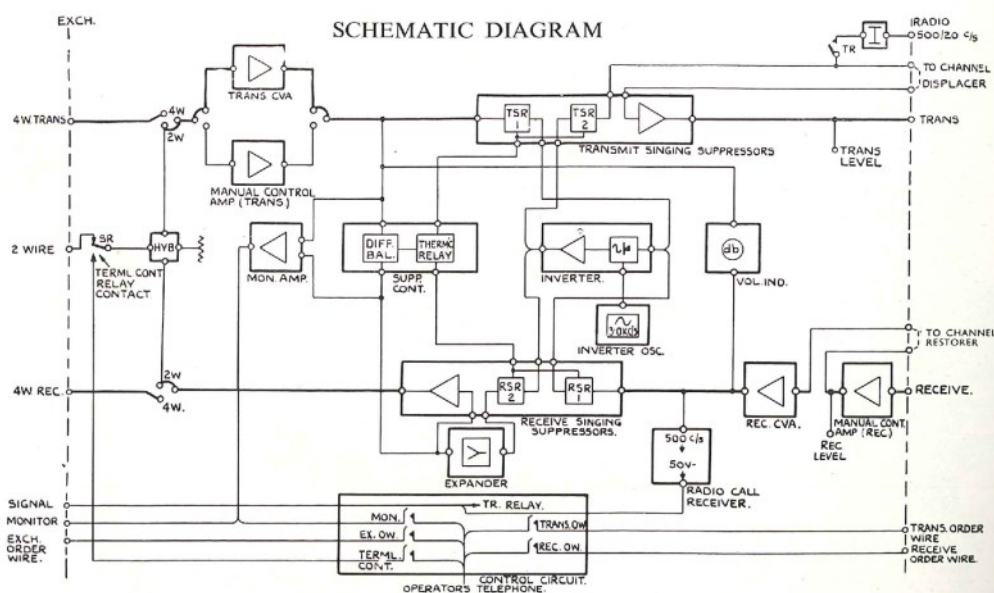
Signal level: Output of TCVA must not be less than -28 dB with reference to 0.775 V at 1000 c/s.

Power supply: 100–130 V or 200–250 V 50–60 c/s single-phase AC mains.

Power consumption: 130 W approximately.

Dimensions:

Height	Width	Depth	Weight
8 ft 6 in.	1 ft 8½ in.	1 ft 2½ in.	7 cwt
(259 cm)	(52 cm)	(37 cm)	(356 kg)



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