



## 10 cm-band Transmitter/Receiver (800—900 kW) Type SR 800

TYPE SR 800 contains in a single compact unit, a transmitter and receiver fulfilling both civil and military needs.

A version of the transmitter having a higher pulse repetition frequency than the standard model is available for use as a target acquisition radar associated with a fire-control system. A further version can be supplied for use with radars employing an MTI system.

### Features

- Automatic operation, with push-button control of starting and stopping.
- Remote control facilities permit unattended operation.
- Compact design; completely self-contained with the exception of a small air compressor.
- Dependable operation ensured by robust construction and generously rated high-quality components.
- Built-in test facilities, including waveform monitor, minimize maintenance time.

### CONSTRUCTION

The complete equipment, with the exception of a small air compressor for pressurizing the waveguide, is mounted in a single cabinet of clean design. This has two front-doors, interlocked for safety with the power-supply circuits, and is mounted upon eight shock absorbers.

### CIRCUITS

**Transmission.** The modulator circuits can be triggered by an external pulse, square wave or sine wave signal, or by an internal free-running 500 or 250 c/s oscillator. The triggering pulse fires a thyatron which operates a high-level modulation circuit. A conventional 8 kV DC charging circuit is used to charge a pulse-forming network. The pulse from this network is passed via the pulse transformer to the magnetron, which oscillates for the duration of the pulse.

The magnetron output pulse is launched straight into the waveguide feed to the aerial system.

**Reception.** The received echo signals pass from the aerial through the T/R system to a Dahl pre-tuned crystal mixer. The local oscillator is a reflex klystron to which AFC can be applied. The 45 Mc/s IF signal is

taken through a five-stage amplifier to the 70-ohm coaxial output socket. Swept gain circuits are incorporated, with local or remote control of range.

### Data Summary

- Frequency band:** 2960–3040 Mc/s.
- Peak power output:** Between 800 and 900 kW.
- Pulse recurrence frequency:**
  - 250 or 500 p.p.s. (internally triggered).
  - 160 to 550 p.p.s. (externally triggered).
  - 500 or 1000 p.p.s. on the high-PRF version.
- Pulse length:** 2  $\mu$ s (on the high-PRF version, 0.9  $\mu$ s).
- Overall noise factor:** 11 dB.
- AFC:** Pull-in range  $\pm 5$  Mc/s.  
Hold-in range  $\pm 8$  Mc/s.
- Intermediate frequency:** 45 Mc/s (on the MTI version, 13.5 Mc/s).
- Receiver bandwidth:** 0.9 or 3.5 Mc/s, switched.

**Receiver output signal:** Approx. 1.4 V max. at 45 Mc/s, 1 mV noise.

**Transmitter output waveguide:** Size 10 ( $3 \times 1\frac{1}{2}$  in.— $7.62 \times 3.81$  cm).

**Max. ambient temperature range:**  $-20^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$ .

**Power supplies:** 230 V ( $\pm 6\%$ ), 50 or 60 c/s ( $\pm 4\%$ ), single-phase AC.

**Power consumption:** 6 kVA at 0.9 power factor.

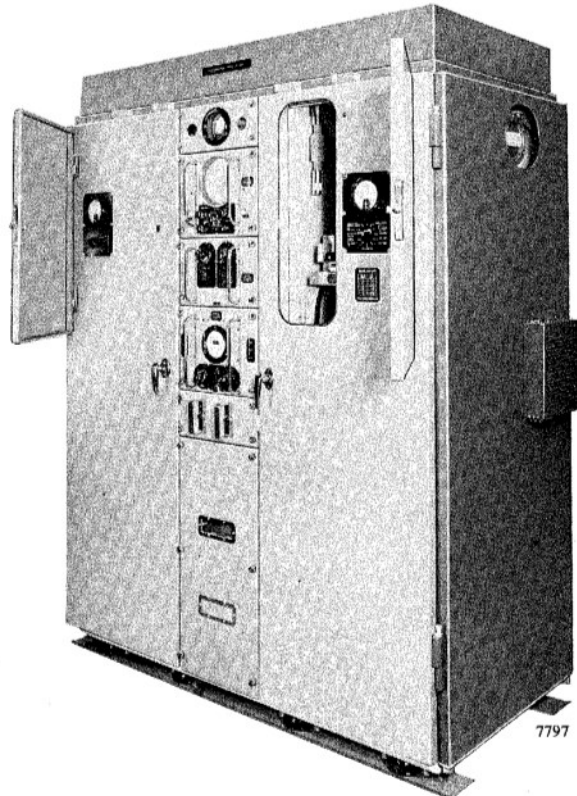
**Dimensions (excluding external air compressor):**

Height 6 ft 6 in. (198 cm)

Width 5 ft (152 cm)

Depth 2 ft 9 in. (80 cm)

Weight 2800 lb (1270 kg)



### Marconi

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