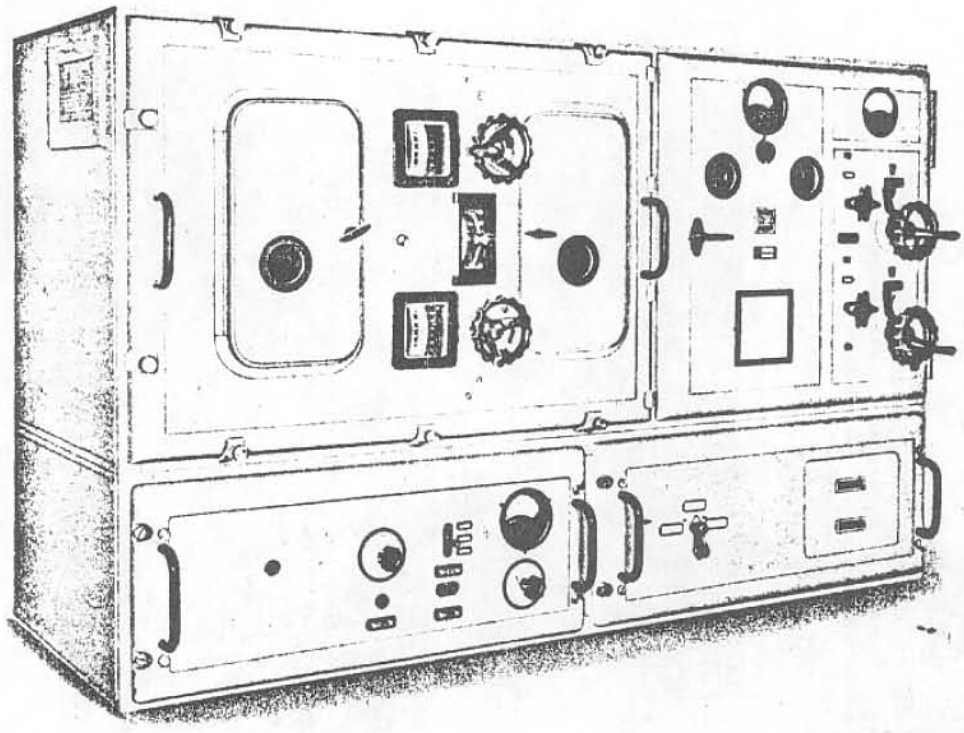
TELEFUNKEN



1·0 kW Short Wave Transmitter

Type: S 486 F

Wave range: 40—100 m and 50—120 m

3,0-7,0 MHz u. 2,5-6 MHz

Application:

Particularly suitable for use as a fixed or mobile aerodrome ground station for communicating with aircraft, where rapid change of wavelength between two pre-set spot wavelengths is an essential requirement.

Special features:

Compact and robust construction.
Readily installed in vehicles.
Two separate sets of tuning devices, hence very rapid wavelength changing by means of a single change-over switch.
Perfect constancy of frequency due to very stable high-grade oscillating circuits.

Dimensions and weight:

Height 900 mm (2′ 11½″)
Width 1465 mm (4′ 9⅝″)
Depth 730 mm (2′ 4¾″)

Weight 365 kg. (800 lbs.).

Code word: vczli.

5.38

Technical data.

Frequency and wavelength ranges: The transmitter has two separate sets of tuning devices for the frequency bands of 3—7·5 megacycles (100—40 m) and 2·5—6 megacycles (120—50 m). Tuning adjustments can be made for any two predetermined frequencies within the band of 3—6 Mc/s (100—50 m) and for one predetermined frequency within the bands of 6—7·5 Mc/s (50—40 m) and 2·5—3 Mc/s (120—100 m); changing-over of the transmitter stages being effected by means of a single switch.

Power output: When working on "C. W. telegraphy" the power in the aerial circuit is 1·0 kW. The carrier power for "telephony" and "M. C. W. telegraphy" is about 250 watts. For the two last-mentioned types of service the transmitter can be adjusted for a degree of modulation up to 80% .

Electrical design: The transmitter has three stages, viz., a self-excited master oscillator stage, a frequency doubler stage, and a push-pull power stage. The monitoring device and the carrier suppression system for telephony working are arranged in the modulation part of the transmitter. It is further possible to regulate the energy in three steps in a 1:3:10 ratio.

Accuracy of frequency: The frequency stability is 2×10^{-4} at the most unfavourable frequency.

Valve complement:

1 valve RS 291 in the master oscillator,
1 valve RS 291 in the frequency doubler stage,
2 valves RS 284 in the power output stage,
1 valve NF 2 as rectifier,
1 valve NF 4 as microphone amplifier and tone generator,
6 valves NF 4 in the modulation amplifier,
1 valve NF 4 for carrier suppression.

Operation: Adjustment to the desired frequencies in both ranges by reference to calibration tables and by means of a single knob controlling the 3 transmitter stages simultaneously. Coupling and tuning of the aerial by means of two other control knobs. Changing over from the operating frequency to a preset frequency is effected by merely throwing the frequency band switch.

Aerial: The most suitable aerial for the mobile station is a telescopic mast about 15 m (50 ft.) in length, with a natural wavelength of 50 m, working as a vertical radiator with six counterpoise wires each 20 m (65 ft.) long.
For stationary operation the type of aerial to be chosen depends on local conditions and will be determined according to circumstances.

Current sources:

(a) 20 HP petrol engine with three-phase generator 380 V, 9 kVA.
(b) Operation from electric mains of 500, 250 or 220 V, 50 cycles, requires a three-phase mains transformer supplying a power of 9 kVA and a secondary voltage of 380 V.

A mains rectifier of the same power output can be furnished on request.

Mechanical design: The transmitter is arranged in a cast light metal cabinet, the different transmitter stages being carefully shielded from each other. After removing the front plates all stages are easily accessible and can be drawn out of the cabinet. Only high-grade ceramic material has been used for assembling the oscillating circuits. The whole equipment is of a very robust construction ensuring maximum resistance to strong mechanical stresses to which the apparatus is usually subjected when installed in vehicles. The transmitter is suitable for use in tropical climate.