Modern

8-valve Superheterodyne Communication Receiver

Elektromekano Type M 88

70 – 540 kc/s.
1.5 – 25.0 Mc/s.

Built-in switch for changing between mains operation and emergency-battery operation

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ELEKTROMEKANO's Receiver Type M 88 is a highly efficient 8-valve superheterodyne receiver covering the frequency ranges 70 kc/s. to 540 kc/s. and 1500 kc/s. to 25 Mc/s. The frequencies are clearly indicated on an illuminated full-vision scale. Rapid tuning is provided by means of a combined coarse and fine tuning knob.

Its appropriate design and sturdy construction together with its easy operation and dependable service make the receiver well fitted for use in all ships, irrespective of size.

Specifications.

Design: The receiver, which is equipped with a built-in loudspeaker, is completely contained within a sturdy steel cabinet, attractively finished in grey Hammertone enamel.

All component parts have special insulation or impregnation for tropical and arctic service.

The cabinet is fitted with anti-vibration mountings. The antenna and ground are connected to the receiver through a set of coaxial-cable connectors and a ground terminal on the left-hand side, while the external wiring cables for power supply etc. are led through the bottom of the cabinet to a terminal strip inside.

Circuit: The receiver utilizes an 8-valve superheterodyne circuit comprising one radio-frequency amplifying stage, one frequency changing stage, two intermediate-frequency amplifying stages, one audio-frequency amplifying stage and one output stage. Furthermore, the receiver is equipped with a noise limiting valve and a B. F. O. valve.

Types of Reception:

Unmodulated telegraphy	A1
modulated telegraphy	A2
and telephony	A3

Frequency Ranges: The frequency ranges 70 kc/s. to 540 kc/s. and 1500 kc/s. to 25 Mc/s. are covered by six bands as follows:

Band 1: 70 kc/s. to 220 kc/s.
Band 2: 220 kc/s. to 540 kc/s.
Band 3: 1500 kc/s. to 3700 kc/s.
Band 4: 3.7 Mc/s. to 9.0 Mc/s.
Band 5: 7.5 Mc/s. to 17.5 Mc/s.
Band 6: 17.2 Mc/s. to 25.0 Mc/s.

Tuning Scale: The tuning scale is calibrated in kc/s. and Mc/s. and is divided in 100 degrees for logging purposes. The frequencies most generally used are clearly marked.

Accuracy of Adjustment: At 500 kc/s. one millimeter main-scale division is equal to a 1-kc/s. change of frequency.

At 23 Mc/s. one millimeter main-scale division is equal to a 35-kc/s. change of frequency.

Sensitivity: For an output of 5 mW the required input voltage is 0.2 to 4.0 μV.

Bandwidth: The selectivity of the I. F. amplifier is variable in three steps. The bandwidth for a 6-dB attenuation and for a 30-dB attenuation is as follows:

	6 dB	30 dB
Wide:	8.0 kc/s.	15.0 kc/s.
Medium:	5.4 kc/s.	10.6 kc/s.
Narrow:	3.2 kc/s.	9.0 kc/s.

Image Protection: At 1900 kc/s. the image signal is attenuated 60 dB.

Automatic Gain Control: A. G. C. bias is applied to three valves. An increase in the input voltage from 10 μV to 10^4 μV (60 dB) produces an increase in the output voltage of 10 dB. A switch is provided for changing between "normal" and "slow" A. G. C. operation.

Muting: Means are provided for muting the receiver during the "key-down" periods of the sender by the aid of a built-in break-in relay.

Output Impedances: 3.2 Ω for loudspeaker.
300 Ω for headphones.

Valve Complement: One EF 85 (6BY7), one ECH 81 (6AJ8), four EBF 80 (6N8), one ECL 80 (6AB8), and one EB 91 (6AL5).

Power Requirements: The receiver is designed to operate directly from the ship's 220-volt or 110-volt D. C. mains or from a 24-volt or 30-volt emergency battery. When operated directly from a 24-volt or 30-volt battery the receiver still complies with the applicable requirements of the International Convention for the Safety of Life at Sea, London 1948, for emergency receivers on 500 kc/s., the sensitivity being better than 100 μV. If normal sensitivity is required the receiver must be operated from the battery via a motor generator. A switch is provided on the front panel for changing between mains and battery operation.

The receiver may be operated from a 220-volt or 110-volt A. C. power source via a rectifier.

Power Consumption:

220-volt D. C. mains operation:	approx. 80 W
110-volt D. C. mains operation:	approx. 40 W
24-volt or 30-volt battery operation, direct operation:	approx. 30 W
operation via motor generator Type EO 8:	approx. 85 W
220-volt A.C. mains operation:	approx. 80 W

Dimensions:

Height:	37 cm
Width:	49 cm
Depth:	36 cm

Weight: 25 kg

(All data are subject to possible alterations of design)

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