TECHNICAL INSTRUCTIONS

B4
664

F.M. TUNERS. INSTALLATION.

TYPES FMT.1. AND FMT.1Q

1. GENERAL

All Tuners are of the same basic design and performance. They are designated as follows:—

FMT.1.	Standard Tuner.
FMT.1Q.	Standard Tuner, incorporating variable interstation noise suppression.
FMT.1M.	Standard Tuner fitted with multiplex decoding for sterophonic reproduction.
FMT.1MQ.	Standard Tuner, incorporating variable interstation noise suppression and multiplex decoding.

FMT.1 and FMT.1Q Tuners only, are described in this instruction. FMT.1M and FMT.1MQ Tuner installation details will be published in TI.-B4A to be issued later.

2. REAR TERMINATIONS AND CONTROLS

1. Mains Connections

The Tuner is suitable for use on A.C. supplies of 110/140 volts and 200/250 volts 50/60 c/s. A flexible cable is provided for the supply connection. Tuners are despatched set for 240 volts mains input. If the supply voltage is different from this, adjustment is necessary.

2. Voltage Range Selection

To adjust the voltage range to 100/140 volts from 200/250 volts it is necessary to remove the rectangular plate securing the slide switch. After adjusting the switch for the correct range the rectangular plate should be refitted to prevent accidental change. Do not adjust the range switch when the equipment is connected to the supply mains.

Voltage selection within the range is effected with the voltage selector switch marked "pull to change". The voltage connection required should be set opposite the arrow on the rear panel.

3. Mains Fuse

The mains fuses recommended are: For 100/140 volts input, 0.5 amp., for 200/250 volts input, 0.25 amps.

4. Aerial (Antenna) Input

The receiver input is designed for use with balanced 300-ohm transmission lines, or unbalanced 75–ohm transmission lines.

1. *Terminal Input Model.* A panel with 3 terminals is provided, the centre one being earthy. If a 300-ohm transmission line is used it must be connected to the outer terminals. If a 75-ohm unbalanced (coaxial) cable is used *the outer screen must be connected to the earthy terminal*, and the inner conductor to one of the outer terminals.
2. *Socket Input Model.* 2 terminations are fitted. The standard coaxial type for 75-ohms cable and the twin type for 300-ohms cable. Plugs are provided for connection to the aerial cable.

5. Audio Output Sockets

An audio output of 3 volts maximum is available at the Chan. 1. output socket for a 100% modulated signal. As the modulation of some transmitters averages only 30%, the input sensitivity of the pre-amplifier used should be approximately 200/500 millivolts.

6. Output Level Control (Chan. 1)

An output level control is provided. This should be adjusted to permit normal full listening level to be obtained at position 7 on the main volume control on the tuner or pre-amplifier.

An additional output socket and sensitivity control (Chan. 2) are provided but not wired. These are required for stereophonic operation when the multiplex decoding facility is fitted.

7. Local Distance Switch

This is for use in extremely hign signal strength areas where overloading of the converter may cause spurious responses. This will rarely be required.

3. PANEL CONTROLS

1. Tuning

The tuner covers the band of frequencies from 88 to 108 Mc/s. A bar type indicator is provided to show when the receiver is correctly tuned. The tuning control should be adjusted until the illuminated bars show the maximum closure. At this point the receiver will have minimum distortion and maximum interference suppression.

2. Mains ON/OFF

A mains ON/OFF switch is fitted on the front panel to enable the tuner to be independently switched off when not in use.

3. Audio Volume Control (Standard Model FMT.1)

A volume control is fitted for adjustment of the reproducing level as required. This may be used in conjunction with the volume control in the control unit.

The FMT.1 has a relatively high sensitivity and the background noise produced by impulsive interference in city and suburban areas can produce a considerable audio output when a carrier is not being received to operate the grid limiting. The volume control should be used to alleviate this when tuning between stations.

4. Quieting Control

(Fitted to Model FMT.1Q only instead of the Audio Volume Control.) To obviate the need for controlling the audio output manually to suppress interstation noise, a circuit is incorporated in this model which mutes the audio frequency circuits in the absence of a carrier wave. The 'Quieting' control adjusts the level at which the incoming signal will operate the receiver. It is set by tuning to a carrier of the minimum desired field strength (with the control in the OFF position) and adjusting the control until the carrier is suppressed. The control should be then turned back a little until the carrier is again received. Stations or noise below this adjusted field strength will not be audible.

When tuning over the frequency band with the interstation noise suppressor in operation the tuning should be carried out slowly in order to avoid a 'thump' as the receiver is tuned through a carrier. Also, a carrier may be missed if the receiver is tuned too quickly.

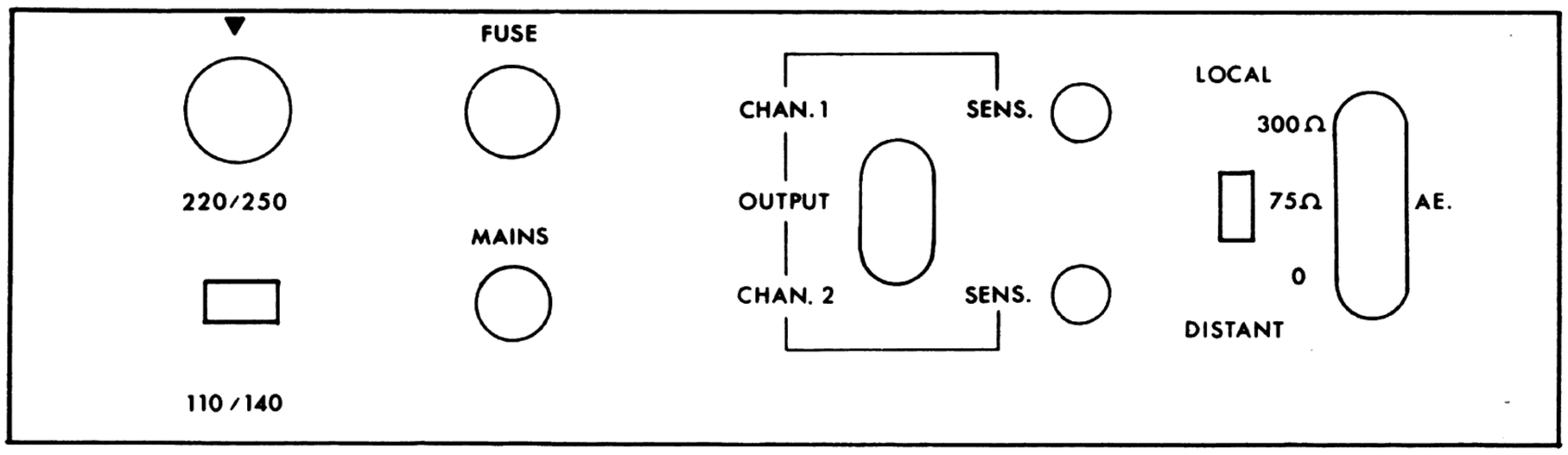
4. HUM

All Radford equipment is designed to have a hum level so low as to be inaudible. If hum is apparent when various units are connected together to complete a system, it may be due to the introduction of a 'hum loop' between the separate units. To avoid hum loops it is essential that an earth connection be made to one unit only, usually the pre-amplifier control unit. A separate true earth is rarely required and earthing via the mains by the green lead of the 3-core cable to the power amplifier is usually satisfactory.

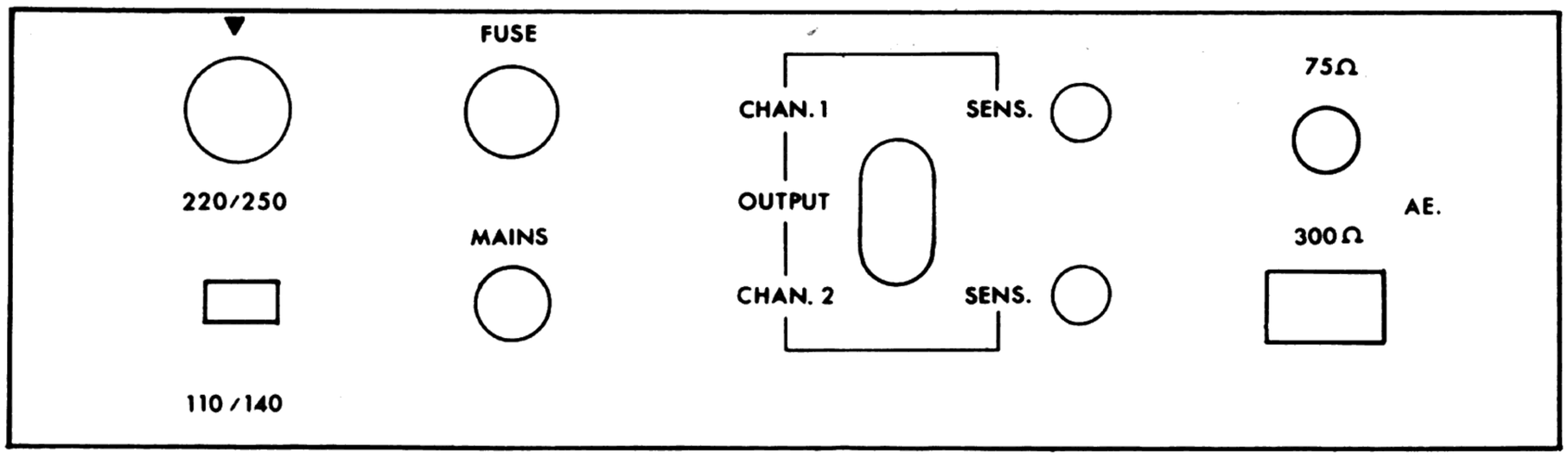
WARNING

The alignment of this receiver has been carried out with extreme care to ensure a low distortion output and to meet the published specification in respect of other parameters. Adjustments to the tuned circuits should NEVER be attempted except as described in the relevant "Technical Instruction", with the recommended test equipment.

REAR TERMINATIONS AND CONTROLS



1. Terminal Input Model.



2. Socket Input Model.

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