



RANGER 811H LINEAR AMPLIFIER



Operating Manual

WiMo Antennen und Elektronik GmbH

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SECTION 1

SETTING UP AND INSTALLATION

SETTING UP

After unpacking the amplifier but before connecting, please carry out the following checks:

- a) Check your amplifier is not damaged and is complete.
- b) Ensure you have a reasonable airflow at the rear of the site you have chosen to install your amplifier.
- c) Ensure ALL connectors to be used by yourself are of a sufficient electrical standard to carry the higher RF output generated by the amplifier and any in-line power meter is of a type designed to carry the higher output power of a linear amplifier.
- d) Never attempt to operate the Ranger without first connecting an antenna or 50ohm dummy load.
- e) Check that the front panel switches of the amplifier are switched to STBY and OFF.

CONNECTIONS

Connect the amplifier as follows:

- a) Switch your HF transceiver OFF.
- b) Connect a suitable antenna or dummy load to the amplifier SO239 OUTPUT (ANT) socket or to a suitable POWER METER, which is connected to an antenna or dummy load.
- c) Connect a coaxial cable from the transceiver output to the amplifier SO239 INPUT (TX) socket.
- d) Connect the PTT lead to the PHONO socket on the amplifier and to your transceiver.
- e) Connect the mains lead to a suitable 220-240V mains supply.
- f) If desired, connect the ALC PHONO socket to the ALC on your transceiver.

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INITIAL TUNE-UP

- a) Switch the ON/OFF switch to on. (There is a slight delay whilst the soft-start activates but there is no warm-up time necessary).

NB. While the STBY/OP switch is in the STBY position your transceiver will be able to operate as before i.e. straight into the antenna.

- b) Switch your transceiver on.
- c) Pre-tune the amplifier by switching the amplifier BAND switch to the desired band e.g. 20 for 20 metres (14MHz).

TUNING UP THE AMPLIFIER

- a) Set the TUNE and LOAD controls on the amplifier as shown on your supplied tune-up guide sheet (at the back of this handbook).
- b) Select half-power (approx. 50 Watts) on your transceiver.
- c) Switch to TUNE or CW on the transceiver.
- d) Switch the amplifier STBY/OP switch to OP (operate), rotate the TUNE and LOAD controls for maximum RF output using your external power meter or using the RF-OUT meter on the amplifier.
- e) Your external Wattmeter should now show approx. 400W.
- f) Switch your transceiver to full power i.e. 100W and immediately peak the TUNE and LOAD controls for maximum RF output.
- g) The ALC can now be used to set the desired power output level into your antenna.
- h) Switch your transceiver to the mode you require and operate your equipment as normal.

NB. Under normal operating conditions, the plate current with full drive will rise to between 0.75A and 1 Amp, and the grid current up to 300mA max.

With no drive, the plate standing current is normally around 100mA.

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SECTION 2

FRONT PANEL CONTROLS



- ON/OFF SWITCH.....Mains power on and off
- STBY/TX SWITCH.....Amplifier standby/operate switch
- BAND CHANGE SWITCH.....Marked 10 12 15 17 20 30 40 80 & 160
- PLATE METER.....0 - 1.5A
- GRID METER.....0 - 400 mA
- TUNE.....Plate tune control
- LOAD.....Pi tank load control
- RF SET & RF OUT METER.....Used together as a tuning up meter,
sensitivity is set up by the RF SET knob
- READY LED.....Shows that the amplifier is switched on
and is ready to operate
- ON AIR LED.....Indicates that the amplifier is in the
transmit mode and has been operated
from the transceiver
- ALC CONTROL.....The ALC circuit is controlled from the
front panel, the OFF position is fully anti-clockwise.
The amplifier will deliver full output when the ALC
switch on the front panel is switched OFF.
The output of the amplifier can be controlled by the
ALC control.

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REAR PANEL



FAN.....Papst Low Noise axial fan
NB. Air blows out of amplifier via this fan.
Ensure that airflow is not obstructed.

FUSE.....1 ¼ in fuse, 10Amp

MAINS.....IEC socket, connect to 230V Mains supply

TX.....SO239 connector, coaxial connection to driver

ANT.....SO239 connector, coaxial connection to antenna

PTT.....Phono socket, when earthed via the transceiver,
puts the amplifier into the transmit mode as long
as the STBY/TX switch is in the TX position.

ALC.....Phono socket, connect to the ALC socket on transceiver

EARTH.....Connect to a suitable external earth

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SECTION 3

CIRCUIT DESCRIPTION

FEATURES	Four vertically mounted 811A valves Class AB2 Grounded Grid Excellent IMD products Soft-start circuit Variable threshold level type ALC circuit Matches modern HF equipment
INTRODUCTION	The Ranger 811H linear amplifier is a high powered grounded Grid linear with a tuned cathode input circuit. The amplifier is designed around the much improved 811A valve. Operation design is for the 1.8 3.5 7 10 14 18 21 24 28 MHz amateur bands.
RF UNIT	This is a conventional high Q, Pi tank design which gives good harmonic attenuation with very little through-loss of RF.
RF INPUT	A separate tuned circuit is selected on each frequency band to keep harmonics suppressed and to give your transceiver a good 50 ohm input load while driving the linear amplifier.

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SECTION 4

POWER SUPPLIES

There are three separate voltages in the Ranger 811H amplifier:-

1. **HIGH VOLTAGE**, which is 1700Volts, the main voltage applied to the valve anodes.
2. **HEATER SUPPLY** is 6.3V, supplied from the toroidal transformer.
3. **CONTROL VOLTAGE** is 12 Volts, used for pulling in the TX/RX relay and gives the LED the control condition of the amplifier.



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SECTION 5
SPECIFICATIONS

CIRCUIT

Class AB2 Grounded grid with tuned cathode input.

FREQUENCY COVERAGE

1.8 - 2.0 MHz
3.5 - 4.0 MHz
7.0 - 7.5 MHz
10.0-10.5 MHz
14.0-14.5 MHz
18.0-21.5 MHz
24.0-30.0 MHz

Covering all the WARC bands

MAINS SUPPLY

220 - 240 Volts AC, 50Hz

DRIVE POWER

0 - 100 Watts

RF OUTPUT - SSB

100W Drive = 800W output
40W Drive = 400W output

RF OUTPUT - RTTY

50W Drive = 300W RMS continuous

RF OUTPUT - CW

100W Drive = 800W

FRONT PANEL CONTROLS

Mains ON/OFF
Standby/Operate switch
Band change switch
ALC control
Tune control
Load control
RF set control
RF/Grid switch

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METERING

Plate, Grid and RF output

LED's

Ready to operate (red)

Amplifier on air (green)

CABINET

Charcoal grey with matching front panel

SIZE (Overall dimensions - including feet, rear fan and front panel knobs)

W 14in	H 9.5in	D 16in
355mm	240mm	405mm

WEIGHT

25kg

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WARRANTY

Linear Amp UK Ltd warrants to the original purchaser that this product shall be free from defects in material or workmanship for 12 months from the date of the original purchase. Valves are excluded from this warranty.

Notification should be given as soon as possible after discovering a possible defect. Carriage charges for any parts or units submitted for replacement or repair under this warranty must be paid by the purchaser.

Correct maintenance, repair and use are important to ensure proper performance from this product. Carefully read the operating manual. This warranty does not apply to any defect Linear Amp UK Ltd determines is caused by (1) improper maintenance or repair, including the installation of parts or accessories that do not conform to the quality and specification of the original parts; (2) misuse, abuse, neglect or improper installation; (3) accidental or intentional damage; (4) acts of God.

Linear Amp UK Ltd is not responsible for damage to other equipment or property or any other consequential or incidental damage of any kind.

This warranty is not transferable from the original owner on sale of the unit to another.

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