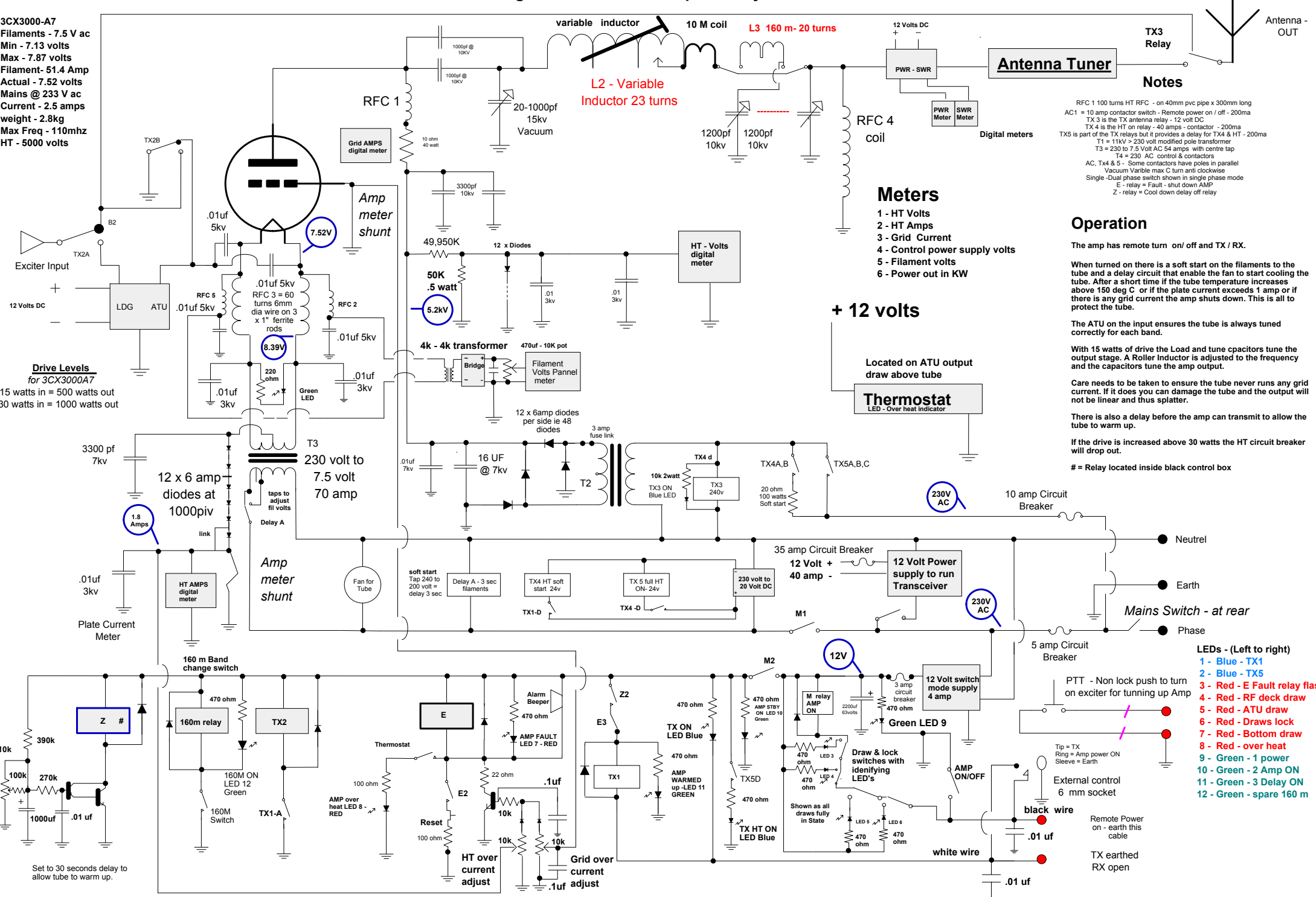


Tube specs

3CX3000-A7
 Filaments - 7.5 V ac
 Min - 7.13 volts
 Max - 7.87 volts
 Filament - 51.4 Amp
 Actual - 7.52 volts
 Mains @ 233 V ac
 Current - 2.5 amps
 weight - 2.8kg
 Max Freq - 110mhz
 HT - 5000 volts

1 KW legal limit RF Linear Amplifier - by ZL3SV



Drive Levels
 for 3CX3000A7
 15 watts in = 500 watts out
 30 watts in = 1000 watts out

Antenna Tuner

Notes

RFC 1 100 turns HT RFC - on 40mm pvc pipe x 300mm long
 AC1 = 10 amp contactor switch - Remote power on / off - 200ma
 TX 3 is the TX antenna relay - 12 volt DC
 TX 4 is the HT on relay - 40 amps - contactor - 200ma
 TX5 is part of the TX relays but it provides a delay for TX4 & HT - 200ma
 T1 = 11kv = 230 volt modified pole transformer
 T3 = 230 to 7.5 Volt AC 54 amps with centre tap
 T4 = 230 AC control & contactors
 AC, Tx4 & 5 - Some contactors have poles in parallel
 Vacuum Variable max C turn anti clockwise
 Single - Dual phase switch shown in single phase mode
 E - relay = Fault - shut down AMP
 Z - relay = Cool down delay off relay

Meters

- 1 - HT Volts
- 2 - HT Amps
- 3 - Grid Current
- 4 - Control power supply volts
- 5 - Filament volts
- 6 - Power out in KW

Operation

The amp has remote turn on/ off and TX / RX.

When turned on there is a soft start on the filaments to the tube and a delay circuit that enable the fan to start cooling the tube. After a short time if the tube temperature increases above 150 deg C or if the plate current exceeds 1 amp or if there is any grid current the amp shuts down. This is all to protect the tube.

The ATU on the input ensures the tube is always tuned correctly for each band.

With 15 watts of drive the Load and tune capacitors tune the output stage. A Roller inductor is adjusted to the frequency and the capacitors tune the amp output.

Care needs to be taken to ensure the tube never runs any grid current. If it does you can damage the tube and the output will not be linear and thus splatter.

There is also a delay before the amp can transmit to allow the tube to warm up.

If the drive is increased above 30 watts the HT circuit breaker will drop out.

= Relay located inside black control box

- LEDs - (Left to right)**
- 1 - Blue - TX1
 - 2 - Blue - TX5
 - 3 - Red - E Fault relay flash
 - 4 - Red - RF deck draw
 - 5 - Red - ATU draw
 - 6 - Red - Draws lock
 - 7 - Red - Bottom draw
 - 8 - Red - over heat
 - 9 - Green - 1 power
 - 10 - Green - 2 Amp ON
 - 11 - Green - 3 Delay ON
 - 12 - Green - spare 160 m

PTT - Non lock push to turn on exciter for tuning up Amp

Tip = TX
 Ring = Amp power ON
 Sleeve = Earth

External control
 6 mm socket

Remote Power on - earth this cable

TX earthed
 RX open

Set to 30 seconds delay to allow tube to warm up.