X54-1300-10 CTR Kenwood

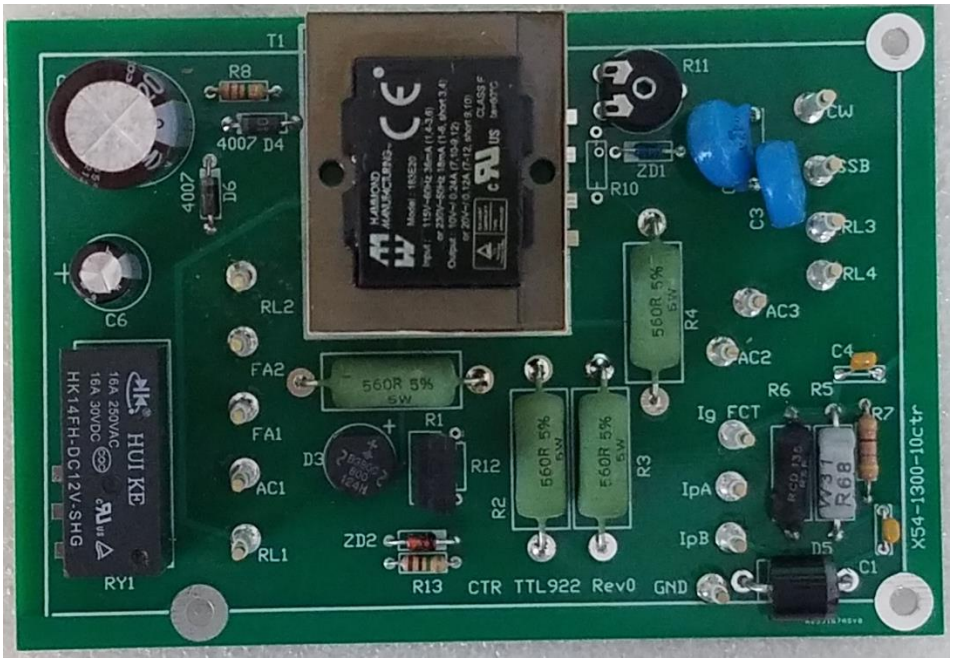
Sept 2022 c W8ji

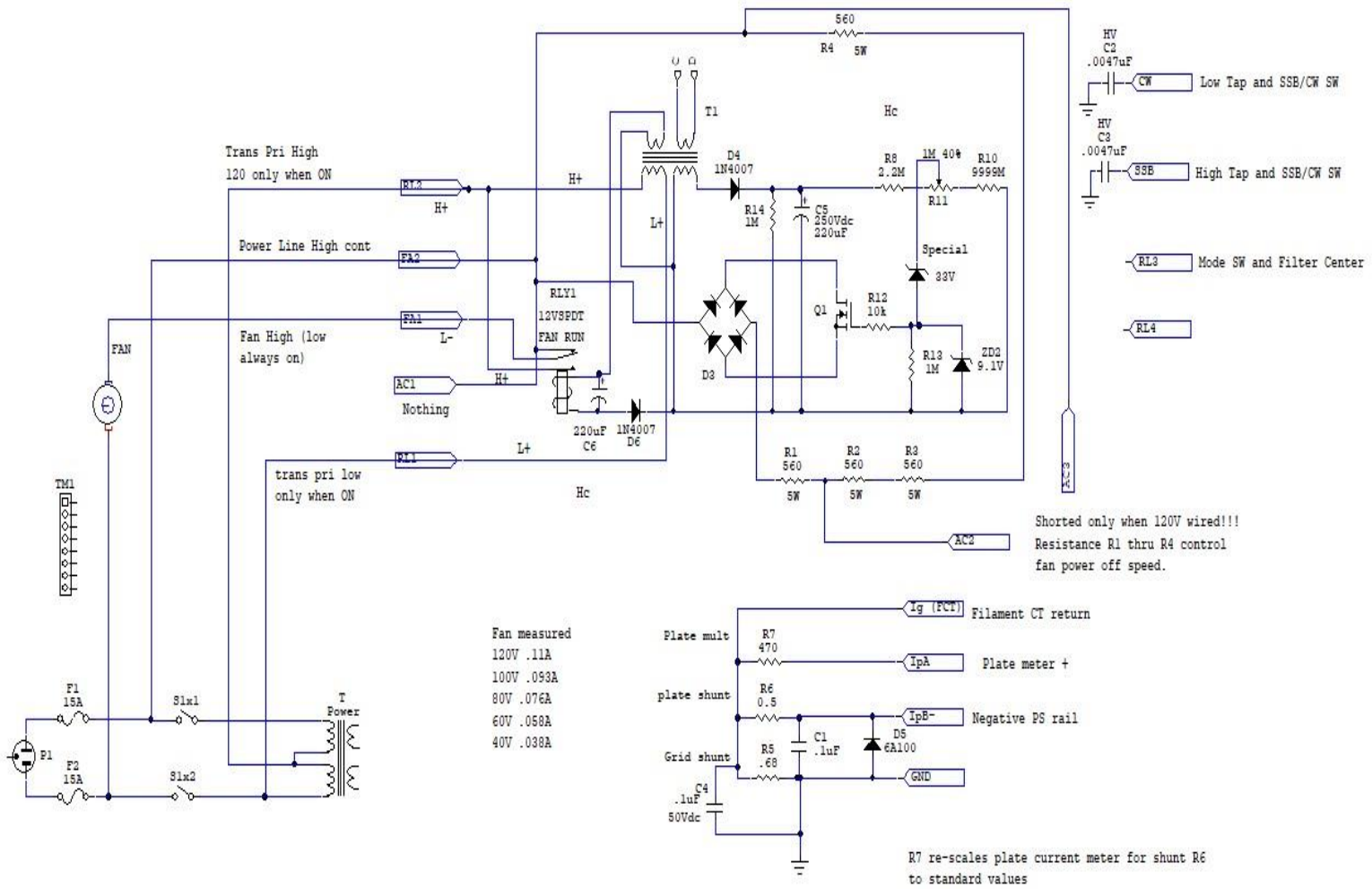
The X54-1300-10CTR is a wire-for-wire direct replacement to the failure prone Kenwood X54-1300-10 board. This board retains the fan delay time function while adding negative rail fault protection. This board does not have the high-low relay provision; that provision was obsoleted by Kenwood due to chronic relay failures. We suggest taking good pictures of the old board and marking wire positions. Some components on this board are intentionally left blank.

Fan off-time run length can be adjusted with R11 and associated resistors. To prevent over temperature on the anode seal, I recommend full cooldown time when using graphite anode tubes.

To reduce voltage on the meter shunt and allow a rail clamp diode, the X54-1300-10CTR resizes plate current shunt and meter multiplier resistance values. The meter reads accurately with these new component values.

R1-R4 control fan power down running speed. Do not short resistors when on high power line voltages! Short only when on 130Vac or lower power mains voltage.




560
R4 5W
T1
Hc
HV
C2
.0047uF
CW
Low Tap and SSB/CW SW
HV
C3
.0047uF
SSB
High Tap and SSB/CW SW
RL3
Mode SW and Filter Center
RL4
Trans Pri High
120 only when ON
RL2
H+
D4
1N4007
R8
2.2M
1M 40%
R10
9999M
R11
R14
1M
C5
250Vdc
220uF
Power Line High cont
FA2
Special
33V
RLY1
12VSPDT
FAN RUN
FA1
L-
Fan High (low
always on)
R12
10k
Q1
D3
R13
1M
ZD2
9.1V
FAN
AC1
H+
Nothing
220uF
C6
1N4007
D6
RL1
L+
trans pri low
only when ON
Hc
R1
560
5W
R2
560
5W
R3
560
5W
AC3
AC2
TM1
Shorted only when 120V wired!!!
Resistance R1 thru R4 control
fan power off speed.
Fan measured
120V .11A
100V .093A
80V .076A
60V .058A
40V .038A
Ig (FCT)
Filament CT return
Plate mult
R7
470
IpA
Plate meter +
plate shunt
R6
0.5
IpB-
Negative PS rail
C1
.1uF
D5
6A100
Grid shunt
R5
.68
GND
C4
.1uF
50Vdc
R7 re-scales plate current meter for shunt R6
to standard values
F1
15A
S1x1
T
Power
P1
F2
15A
S1x2
REV1 CTR W8JI
6/1/2022