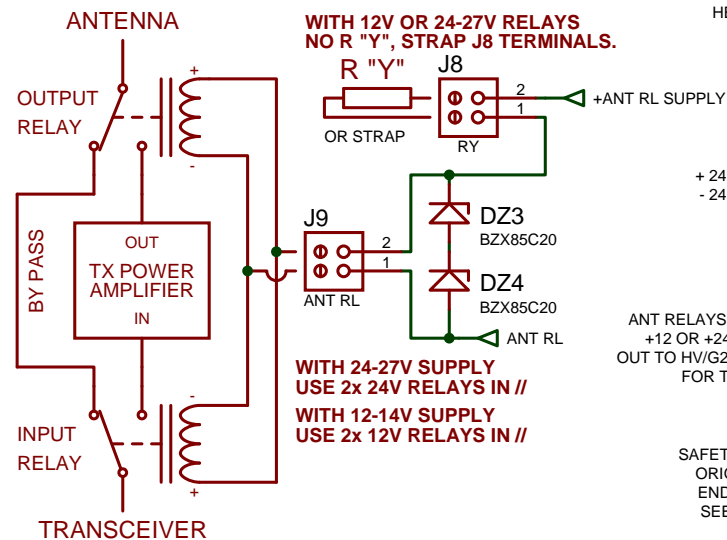
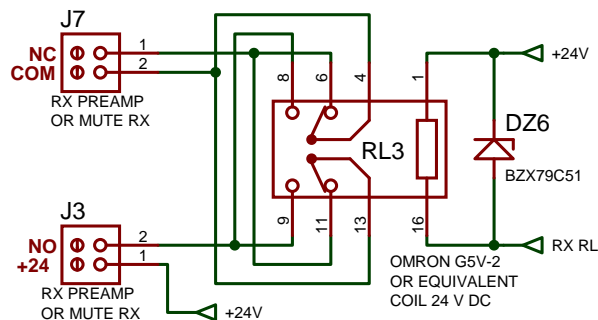


FOR R "Y" CALCULATION SEE EXCEL FILE
AMPLIFIER BY-PASS RELAYS SUPPLY.XLT

**WITH 12V OR 24-27V RELAYS
NO R "Y", STRAP J8 TERMINALS.**



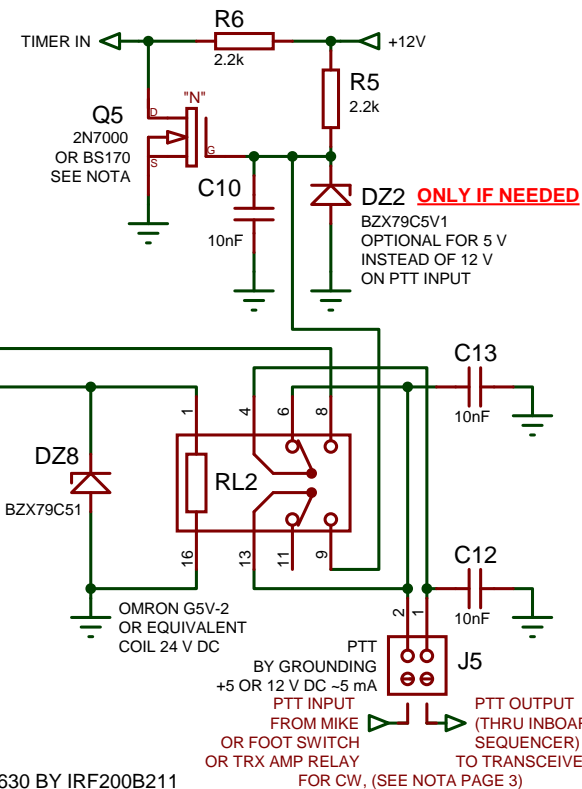
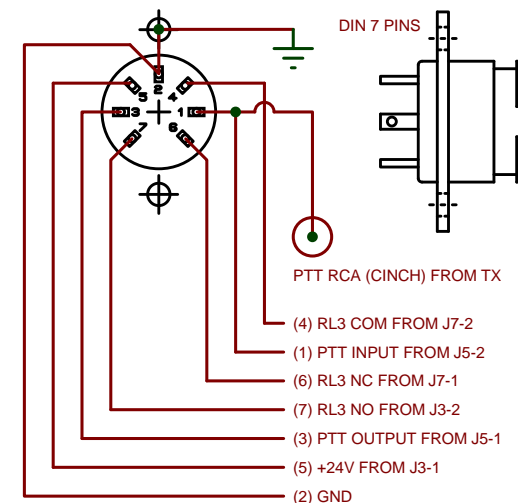
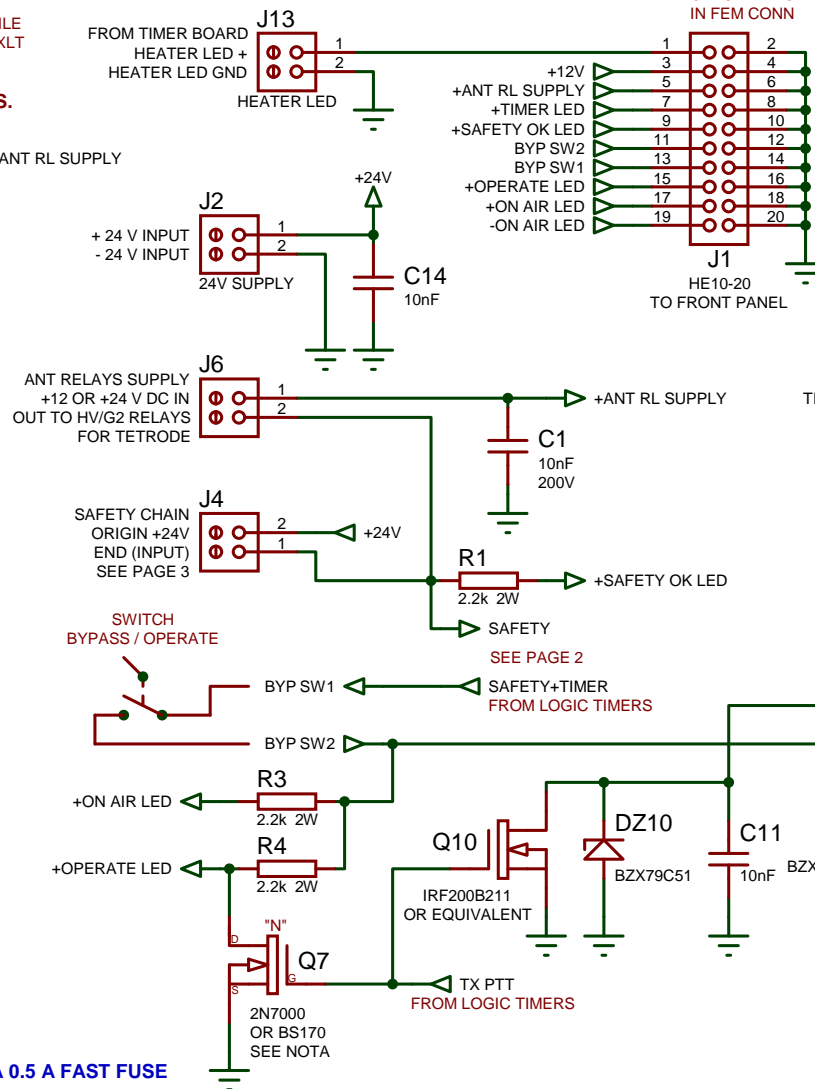
**WITH 24-27V SUPPLY
USE 2x 24V RELAYS IN //**
**WITH 12-14V SUPPLY
USE 2x 12V RELAYS IN //**



J3 / J7 / RL3 CAN BE USED TO ACTIVATE A RX
PREAMPLIFIER OR MUTE A SEPARATE RECEIVER.

NOTA. IF +24 V OUT IS USED EXTERNALLY, INSERT EXTERNALLY A 0.5 A FAST FUSE

AS HEATER SUPPLY CAN BE EITHER AC, OR DC, AND INSULATED FROM
GROUND, A RECTIFIER BRIDGE + FILTERING CAPACITOR ARE FORESEEN
INSIDE THE BLOWER DELAYED STOP TIMER BOARD.



REV 5 NEW AND SMALLER PCB
WITH CONNECTOR 20 PTS TO FRONT PANEL
WITH HEATER START-UP RELAY NOW 16 AMPS
WITH NO MAINS 230 V AC ON THIS LOGIC BOARD

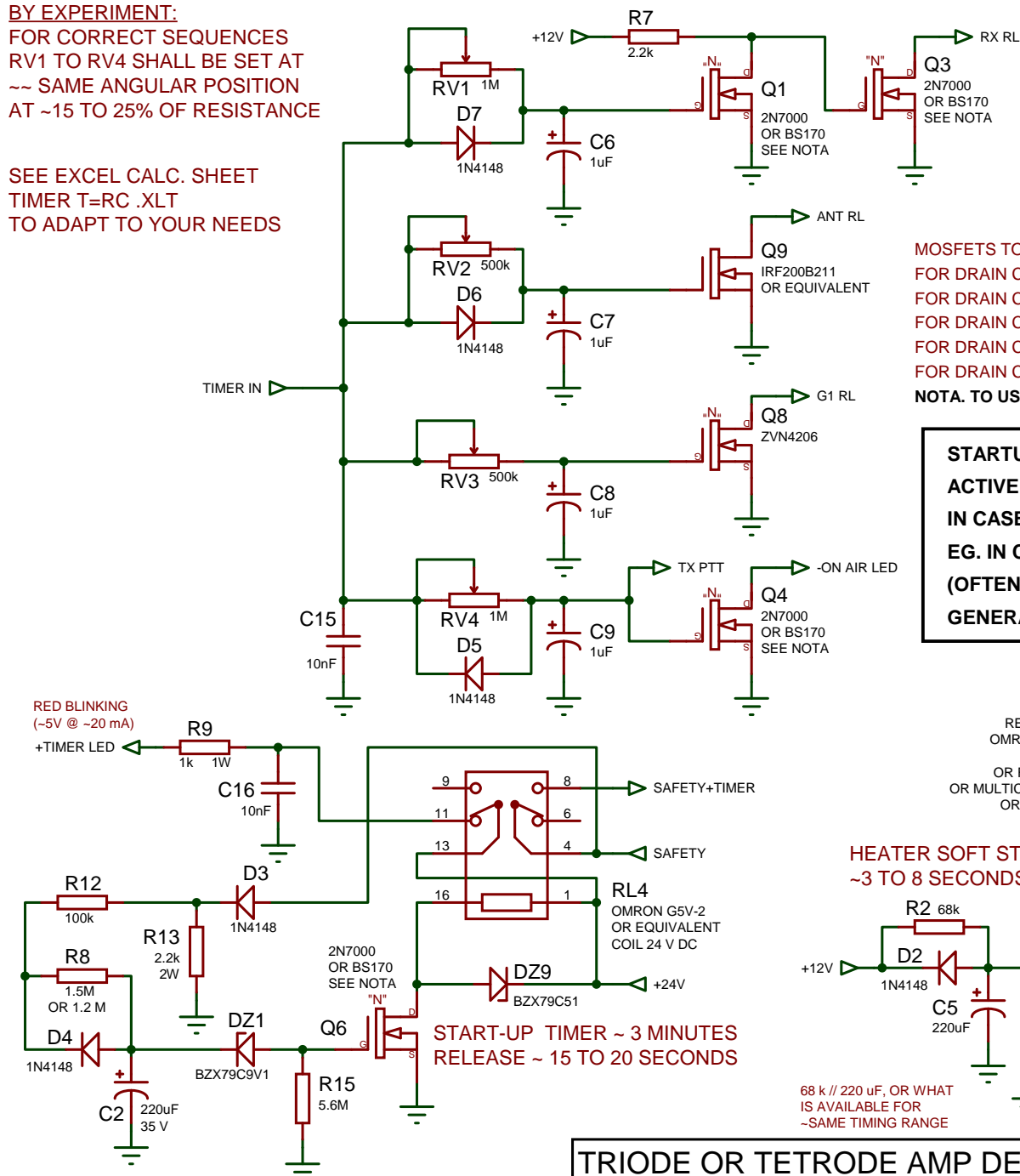
REV 5a ADDED DIN 7 PINS ON REAR PANEL WIRING INFORMATION, REPLACED IRF630 BY IRF200B211

TRIODE OR TETRODE AMP DESIGN PTT & CONNECTOR TO FRONT PANEL

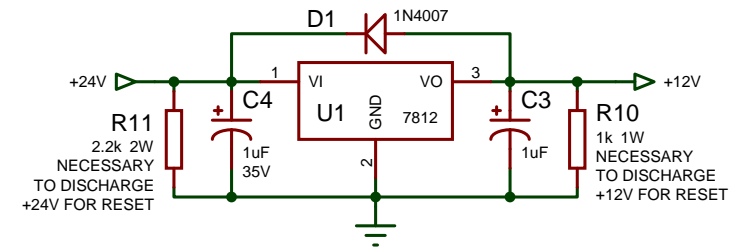
DATE: 10/12/22 REV: 5a PAGE: 1/3
BY: F1FRV@SFR.FR
DOC N°: AMATEUR RADIO

BY EXPERIMENT:
FOR CORRECT SEQUENCES
RV1 TO RV4 SHALL BE SET AT
~~ SAME ANGULAR POSITION
AT ~15 TO 25% OF RESISTANCE

SEE EXCEL CALC. SHEET
TIMER T=RC .XLT
TO ADAPT TO YOUR NEEDS



TO INCREASE TIME, IF NECESSARY, INCREASE C2 OR R8 VALUE
TO DECREASE TIME, IF NECESSARY, DECREASE C2 OR R8 VALUE



MOSFETS TO BE USED:

FOR DRAIN CURRENT <35 mA @ 24 V, USE BS170

FOR DRAIN CURRENT 35-500 mA @ 24 V, USE ZVN4206

FOR DRAIN CURRENT 500-800 mA @ 24 V, USE ZVN4306 OR 4310

FOR DRAIN CURRENT 0.8-1 A @ 24 V, USE IRF200B211 OR EQUIVALENT

FOR DRAIN CURRENT 1-7 A @ 24 V TO 1 A @ 200 V, USE FDP33N25, FCP125N60E OR EQUIVALENT

NOTA. TO USE BS170s INSTEAD OF 2N7000s (BETTER), INVERT DRAIN & SOURCE ON PCB.

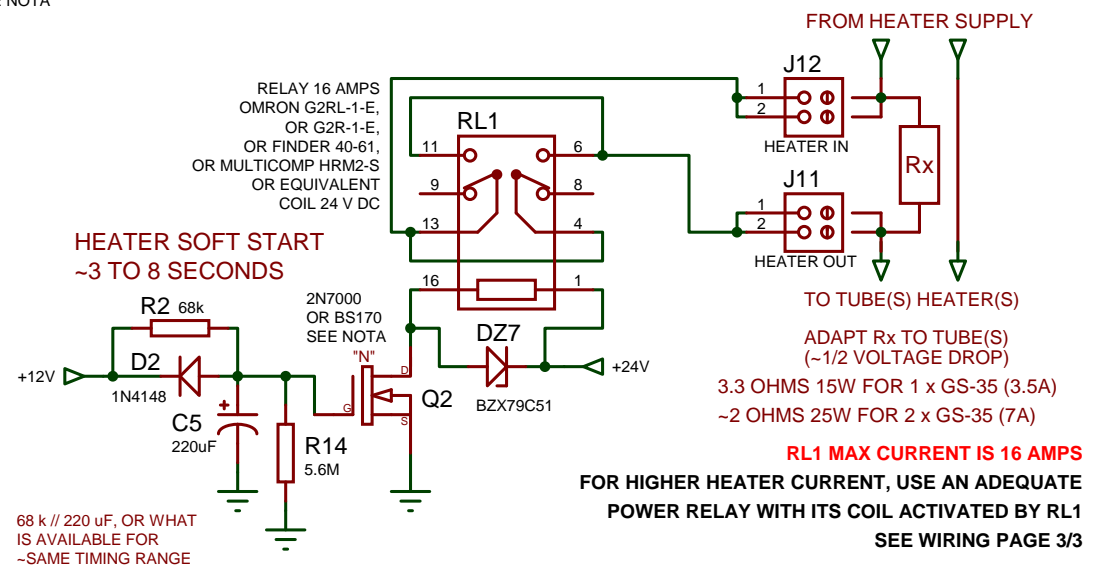
STARTUP TIMER ~ 3 MINUTES WILL REMAIN

ACTIVE ~ 15 SECONDS, TO AVOID HAVING TO WAIT TOO LONG

IN CASE OF HOT AMPLIFIER SWITCH OFF FOR A SHORT TIME .

EG. IN CASE OF HV SUPPLY TEMPORARY SURGE EXCESS & TRIP.

**(OFTEN IF USING BAD REGULATION BRUSHLESS TOO LOW POWER
GENERATORS DURING PORTABLE OPERATION CONTESTS)**

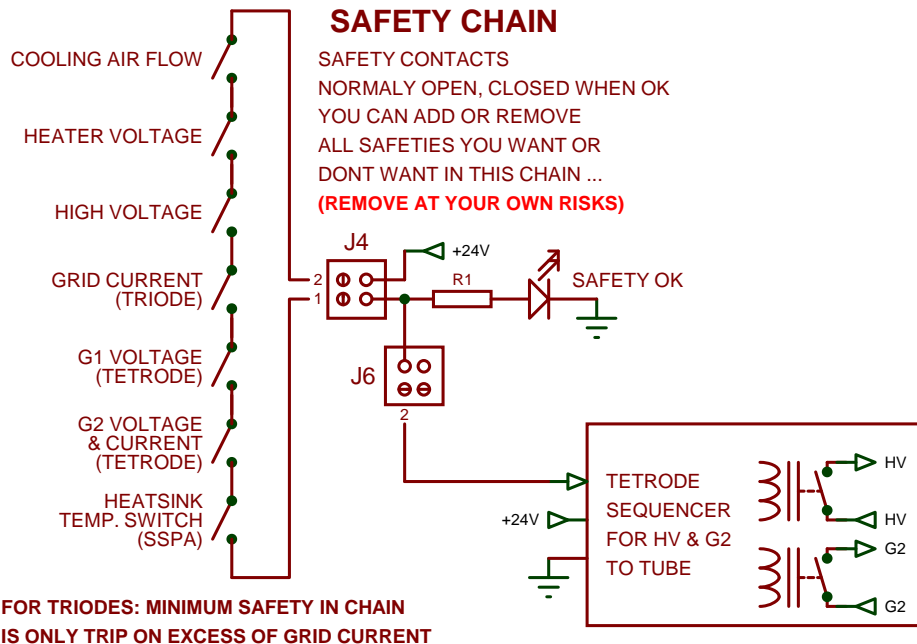


68 k // 220 uF, OR WHAT
IS AVAILABLE FOR
~SAME TIMING RANGE

RL1 MAX CURRENT IS 16 AMPS
**FOR HIGHER HEATER CURRENT, USE AN ADEQUATE
POWER RELAY WITH ITS COIL ACTIVATED BY RL1
SEE WIRING PAGE 3/3**

TRIODE OR TETRODE AMP DESIGN PTT LOGIC & START-UP TIMERS

DATE: 10/12/22 REV: 5a PAGE: 2/3
BY: F1FRV@SFR.FR
DOC N°: AMATEUR RADIO



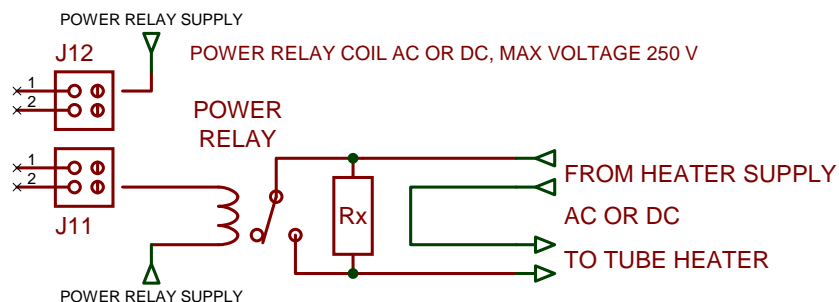
NOTA: IF YOUR TX HAS AN INTERNAL TEMPO (~25 ms) ON AMP OUTPUT CONNECTOR, YOU CAN USE YOUR TX AS USUAL, AND NOT USE THE AMP SEQUENCER. IN THIS CASE, ONLY CONNECT YOUR TX AMP RELAY OUTPUT TO THE PTT INPUT OF THE LOGIC BOARD (J5-2).

IN THIS CASE, YOU CAN SET TRIMERS RV1 TO RV4 AT ~15 TO 25%

FOR CW, IF YOUR TX IS NOT POSSESSING A SORT OF VOX , KEYING THE PTT, USE TX PTT BEFORE KEYING (THERE IS NO VOX IN THIS BOARD)

IF YOU DONT DO SO, RL2 & ON AIR LED COULD BLINK AT CW SPEED

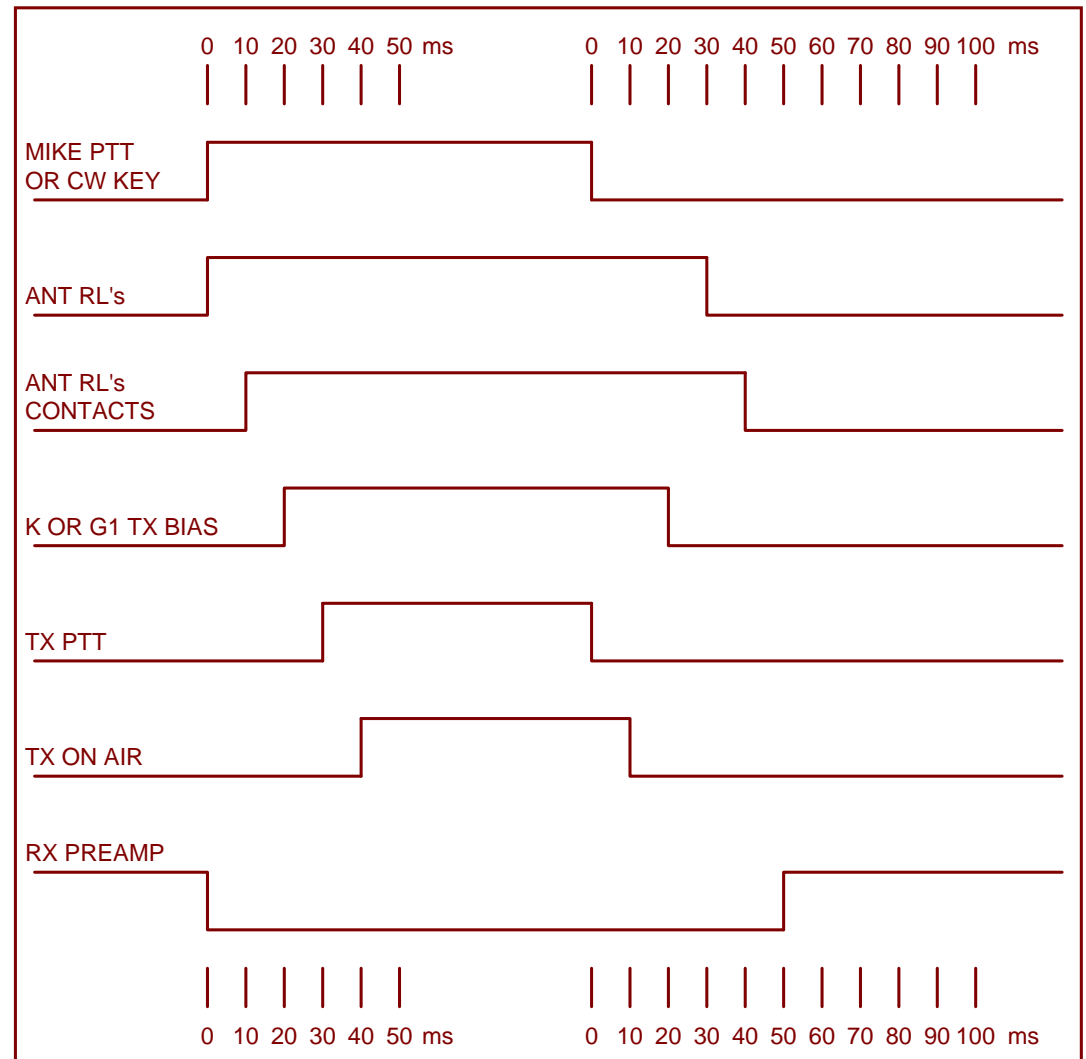
EXTERNAL POWER RELAY WIRING FOR HEATER CURRENT > 16 A



ADAPT R "X" TO TUBE(S), ~1/2 VOLTAGE DROP
 Eg. For 1 x 4CX1500A (40 A @ 5 V) R "X" = ~0.125 OHM 50 W
 R "X" CAN BE 4 x 0.5 OHMS 10 W in //

SEE SPECIFIC FRONT PLATES WITH LEDS 1 FOR TRIODES, 1 FOR TETRODES, 1 FOR SSPAs

FOR ANTENNA RELAYS:
 BEFORE SELECTING VACUUM RELAYS, CHECK MANUFACTURER DATA
 FOR LIFE EXPECTANCY (OFTEN ONLY 100 000 CYCLES !!!!)



TRIODE OR TETRODE AMP DESIGN PTT & SAFETY LOGIC DIAGRAMS

DATE: 10/12/22 REV: 5a PAGE: 3/3
 BY: F1FRV@SFR.FR
 DOC N°: AMATEUR RADIO