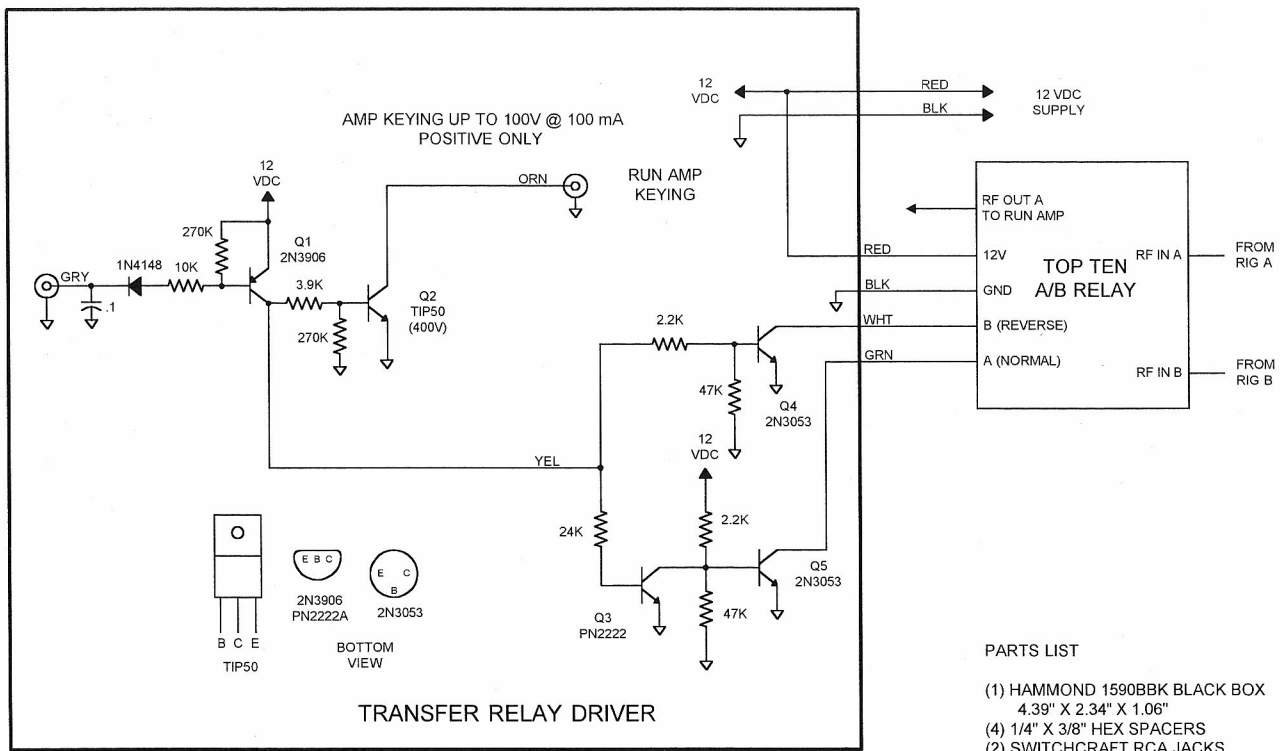


AMP KEYING LINE FROM B (MULT) TRANSCEIVER



IT IS CRITICAL THAT THIS SIDE OF THE RELAY CONNECTS TO THE TRANSCEIVERS TO AVOID DESTROYING A RECEIVER FRONT END

PARTS LIST

- (1) HAMMOND 1590BBK BLACK BOX 4.39" X 2.34" X 1.06"
- (4) 1/4" X 3/8" HEX SPACERS
- (2) SWITCHCRAFT RCA JACKS

MOUSER #

- 546-1590B-BK
- 534-2202
- 502-3501PFX

OPERATION

The TopTen A/B relay is a SPDT antenna switch with very good isolation between ports. It is used to transfer the main antenna and amplifier between the run transmitter and the mult transmitter whenever the mult transmitter is keyed. This arrangement is used at stations that have both radios on the same band and they share a single amp and antenna. The Top Ten relays require that 12 V be applied, and either the A or B input grounded for a signal to pass. There is a lockout circuit within the relay that prevents both the A and B outputs to be connected at the same time. The B driver transistor cannot be used to drive the A transistor directly because the lockout circuit removes the voltage on the B line while A is engaged. A separate transistor is needed.

We cannot simply tap off the amp keying line in parallel with the amp input to drive key our transfer relay since the voltages are not the same. Nor can we use isolation diodes because the diode would hold the keying line at .6 volt above ground. That is too high to reliably key any amp with a logic level keying input. We use Q2 to provide the required very low ON voltage. It has the added benefit of providing an isolated high voltage, high current keying line thus protecting the transceiver's keying output. Note that 12 VDC power must be on for amp keying to work.

This circuit originally used a simple SPDT relay to drive the transfer relays. However, the relay added enough time delay that the mult transmitter transmitted into an open circuit for a few milliseconds causing the protection circuit to back power way off until the ALC could recover. The first few dits were therefore lost.

TOP TEN TRANSFER RELAY SYSTEM ONE AMP VERSION (STATION 2 - 4)		
PJ2T - CURACAO		
9/9/11		DRAWN BY: JOHN BARCROFT, K8AM