

UnRS-C Generic Systems

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By 2010 most open frame common open frame relays, the main suppliers being Three suppliers were used, Deltrol, Midtex, and P&B, went obsolete. While simple cube relay replacements and other substitutes are available none of them to this date are sequenced. Sequencing is required to preserve tank circuits and other voltage spike sensitive RF parts, including FETs and band switches. Some systems are even marketed as sequenced when they are actually not properly sequenced.

This **fully-sequenced** universal relay system replaces almost all open frame amateur power level T/R relays. This board draws 100mA @ 15Vdc nominal or 20mA @ 120Vdc. The board can be custom manufactured for any voltage from 12 to 120 volts. This device is polarity-sensitive. Do not reverse the + and – coil leads. It must be wired exactly as show.

The measured timing at 13Vdc (14Vdc supply) is:

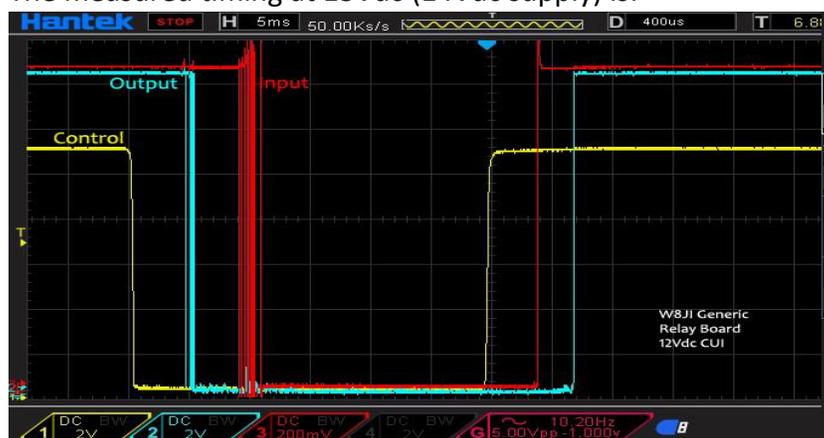


Figure 1 Timing (Worst case)

The output contacts close worst-case in 4-5mS. The input and bias contacts follow 3-4mS later. The relay drop is also properly sequenced, with input and bias turning off before the output contact release. The test above is at a nominal 13Vdc. Speed is faster with increased source voltage and slower at reduced voltage.

This board parallels two sets of 8-ampere contacts for output. This is far more reliable than a single 16-ampere contact.

We manufacture amplifier specific board kits for most Ameritron and Heathkit amplifiers. This board is a universal board, and thus only has generic instructions. We cannot help very much beyond these basic instructions.

Despite being able to handle several kW of RF, this board is quite compact. It measures only 1.5" W x 1.75" D x 1" tall.

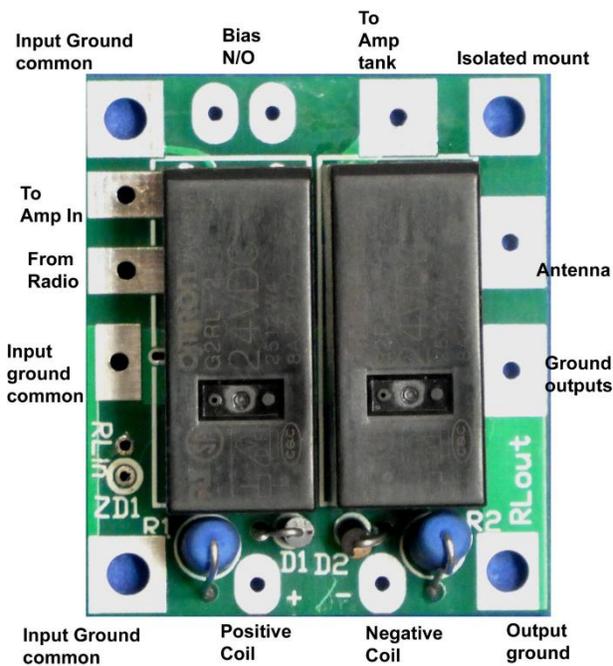


Figure 2 UnRS-C-120

1. Your amplifier's relay voltage, including polarity, must be understood before ordering and installing this system. While an accurate schematic is the ultimate authority, almost always measuring the relay control jack voltage will give the voltage and polarity. To measure, place your amplifier on and in the operate position. Measure from the relay control line to chassis ground. This will nearly always provide the relay power supply's voltage and polarity.
2. The + terminal of the relay coil pads must connect to the relay control jack in amplifier's using negative relay supply amplifiers. The - terminal must connect to the power source in negative supply amplifiers.
3. The - terminal of the relay coil pads must connect to the relay control jack in amplifier's using positive relay supply amplifiers. The + terminal must connect to the power source in positive supply amplifiers.
4. The input and output grounds are optional connection point you can use for cable shields. Ground traces do not affect relay function, although grounding the input ground will improve isolation and might help bypass SWR.
5. NEVER reverse polarity the coil leads. The + pad must always be more positive than the - pad.

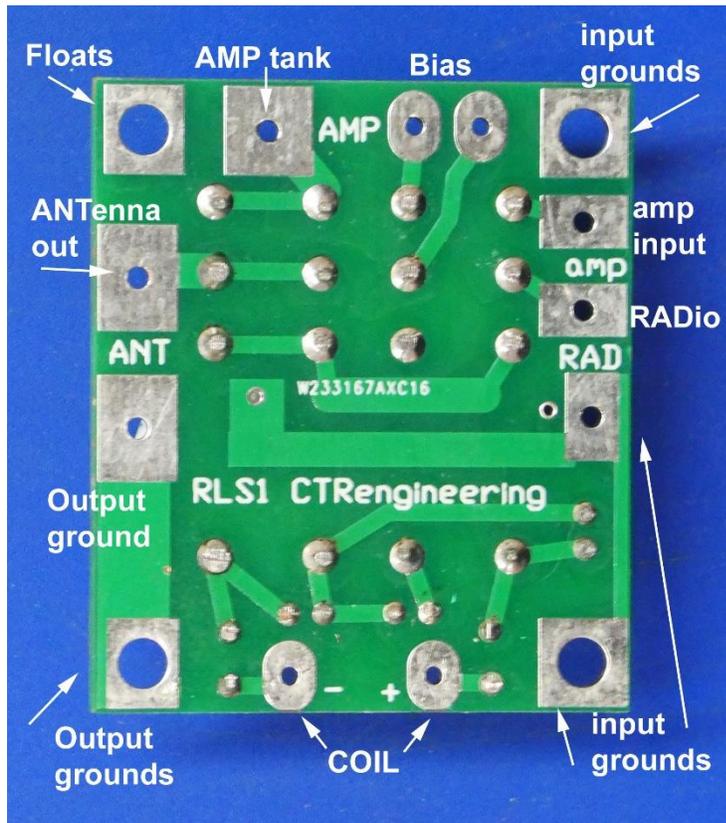


Figure 3 Pad connections

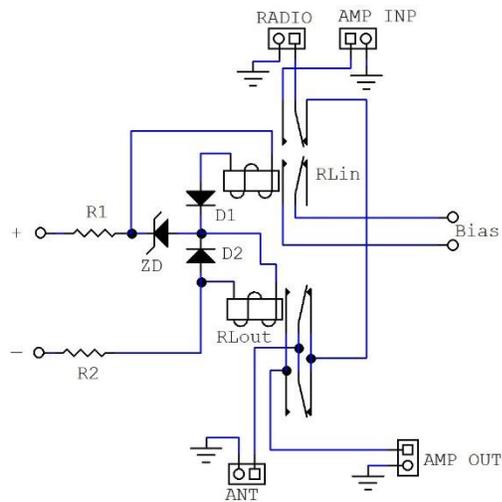


Figure 4 schematic