Ameritron ARB-702I

Instruction Manual

INTRODUCTION

The ARB-702 serves the same function as the isolation relay recommended by many transceiver manufacturers, but has no moving parts to wear out or reduce T/R switching speed. The ARB-702 places less stress on the radio than the smallest isolation relay.

The ARB-702, when properly installed, fully protects radios from damage caused by keying line transients or excessive current and voltage. Any transceiver that provides an external power amplifier control line may be used to control any amplifier having a positive relay control voltage under 200 volts and 200 mA when the ARB-702 is used. The ARB-702 fully protects transceivers like the Icom 706 from excessive control line voltage or current, and even allows a simple and safe interface to rigs like Ten-Tec's that source a positive amplifier control voltage.

TECHNICAL DESCRIPTION

The ARB-702 draws only 1 mA per volt from a radio keying line that goes high (common in Ten-Tec's). If the keying line goes to 12 volts, the ARB-702 will draw 12 mA from the radio. Any radio pulling the control line low will have less than 2 mA of current. The open circuit voltage applied to the radio can be set by the user to any voltage between 3 and 30 volts.

The output will pull a 100 mA relay line to within 0.2 volts of ground, and is capable of handling 200 volts of positive open circuit voltage.

INSTALLATION

If your radio has a control line that pulls low:

1.) Connect the center pin of the jack marked "RADIO" to the radio's amplifier control line. Connect the shell of the "RADIO" jack to the radio's common control line connection or ground.

2.) Connect the center pin of the "POWER" jack to a positive supply voltage. This voltage must be *more than 3 volts* but *less than 30 volts for the maximum safe voltage for the radio*. You can find the voltage rating in the radio's manual, or ask the radio's manufacturer what the safe control line voltage is. In nearly all cases, 5-12 volts will be completely safe.

3.) Connect the center pin of the jack marked "AMP Relay" to the amplifiers relay control jack. Do not exceed 200 volts or 200mA on this jack, and not apply AC or negative voltage. Connect the shell of this jack to the amplifier's relay control line ground.

If your radio has a control line that goes high to activate the amplifier:

1.) Connect the center pin of the jack marked "RADIO" directly to the shell of the "RADIO" jack.

2.) Connect the center pin of the "POWER" jack to the radio's positive control voltage. This voltage must be *more than 3 volts* but *less than 30 volts.*

3.) Connect the center pin of the jack marked "AMP Relay" to the amplifier's relay control jack. Connect the shell of this jack to the amplifiers relay control line ground.

Warning: Do not exceed 200 volts or 200 mA on AMP Relay jack, and do not apply AC or negative voltage.

SCHEMATIC

For Icom 706 & Mark II	ARB-702I
Pin 3	Radio center
Pin 2	Radio shield
Pin 8	Red lead of power jack