

ALC-1 ALC Inhibit User Manual



Description

The Array Solutions ALC-1 Transmitter Inhibit controller interfaces between your amplifier's ALC output, your PowerMaster PTT connections, and your transceiver's ALC input to provide fast, rapid protection of your transceiver and amplifier when a sudden high VSWR event occurs.

The Array Solutions PowerMaster provides a PTT feature which can be used to unkey your amplifier when a VSWR reading above a user-selectable pre-set limit occurs. However, when this occurs, your transceiver's output can be hot-switched since the amplifier is being unkeyed while your transceiver is still putting out full power. Further, some amplifiers are designed such that they do NOT unkey as long as RF is present to eliminate any possibility of amplifier hot-switching until the RF input has completely decayed to zero. So these amplifiers can be subjected to a momentary high VSWR resulting in possible damage.

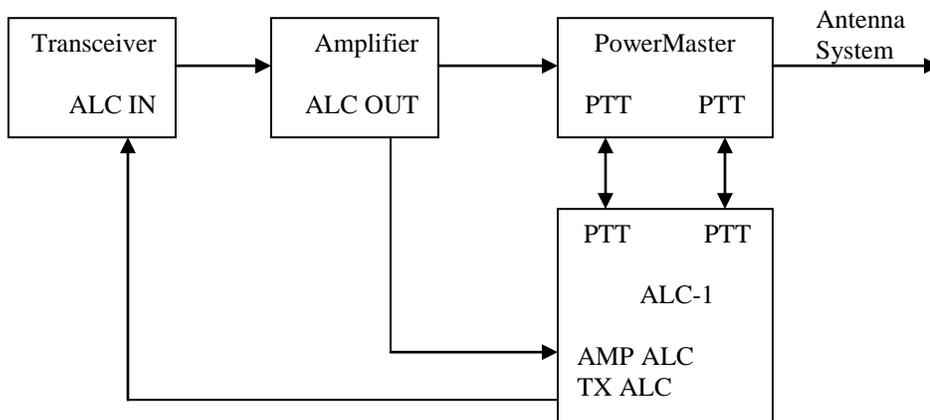
The Array Solutions ALC-1 Transmit Inhibit Controller eliminates potential hot-switching or high-SWR operating problems by instantly applying a cut-off ALC voltage to your transceiver when a high VSWR event occurs. This turns down your transmitter

RF power faster than the amplifier RF relays can operate, ensuring that no hot-switching can occur.

Note: For proper operation, the ALC-1 requires that the PowerMaster be always DC powered (we recommend the Array Solutions PS-12R1A regulated power supply). While the PowerMaster goes to sleep after a few minutes of non-use, which turns off the display and draws minimal power, the PowerMaster internal relays stay in the programmed state required by the ALC-1. If DC power is removed from the PowerMaster, the ALC-1 is continuously enabled – resulting in short ALC-1 battery life. Should you wish to remove dC power from the PowerMaster, disconnect either of the PTT leads from the ALC-1.

Connections

Simply connect the two RCA pendant cables of the ALC-1 to the PTT jacks on the back of the PowerMaster. Either cable can be connected to either PTT jack. Connect the amplifier's ALC output to the AMP ALC jack on the ALC-1, and connect the TX ALC output to your transceiver's ALC input via an RCA cable. All connections are shown below:



ALC-1 Connection Diagram

Set-Up

- 1) Ignore Step 2 if your amplifier does NOT provide an ALC connection or you have elected to not use ALC feedback from your amplifier. Also, no ALC connection to the amplifier will be required in this case.
- 2) With the PowerMaster turned OFF, adjust your amplifier/transceiver ALC as described in your amplifier's operation manual.
- 3) Set the ALC SET control on the ALC-1 fully counter-clockwise.
- 4) Turn ON your PowerMaster and select the "VSWR Alarm Menu". Set the VSWR alarm to the desired value at which you want to protect your transceiver and amplifier.
- 5) Select the PowerMaster "Alarm Polarity Menu" and set it for "Alarm Opens Relay".
- 6) With your amplifier bypassed, key your transceiver to full output and adjust the ALC SET control on the ALC-1 for zero transmitter output power.

7) On the PowerMaster “Alarm Polarity Menu”, set it for “Alarm Closes Relay”.

You can now operate normally. Whenever a high SWR condition occurs, the ALC-1 will operate and reduce your transceiver’s RF output to zero.

ALC-1 Maintenance.

The ALC-1 contains an internal 9VDC battery. This battery is only used when a high SWR condition occurs, therefore the battery life-time will equal the battery shelf life. You will probably never need to replace this battery. However, remember that the PowerMaster must be continuously DC powered when used with the ALC-1.