

SERVICE BULLETIN IGNITION SWITCH CONTROL

INSTRUCTIONS

Mobile Power Control Relay Kit,
12 Volts, Hammarlund Pt. #PL53064-G1

The Hammarlund #53064-G1 mobile power control relay kit has been designed as an accessory item for the FM50-A/FM60-A front or rear mount installation to allow control of the radio equipment through the ignition switch of the vehicle. Ignition switch control of two-way radio is often quite advantageous, particularly where the vehicle is in a type of service requiring constant on and off use, wherein it might be possible that the operator might forget and leave his equipment on. Another advantage of this kit is that the communications unit is automatically turned off during starting cycles of the vehicle which is particularly advantageous in cold weather where low battery voltage during the starting cycle might cause the transistor switching circuitry to stop operating. The #53064-G1, 12 volt mobile power control relay kit is designed universally for both front and rear mount installations. In the front mount installation where the FM50-A or FM60A is mounted in the driver's compartment, the relay is directly energized by the ignition switch of the vehicle and breaks the power feeding the standard front mount power cable. The relay is not inter-connected with the on-off switch on the unit, in other words the relay is energized whenever the ignition switch of the vehicle is turned to the "on" and/or "accessory" position. The OFF-STANDBY-ON switch located on the front panel of the communications unit operates in a normal manner except that power is blocked from reaching it if the ignition switch control prevents same.

In rear mount installations where the CRL-A mobile remote control head is employed, the #53064-G1 kit is controlled directly from the OFF-STADNEY-ON switch located on the remote control head. The switch on the front panel of the FM50A or FM60A when mounted in the trunk of the vehicle is completely inoperative as is the case in the regular trunk mount installation.

The #53064-G1 kit consists of the following items:

<u>Part No.</u>	<u>Description</u>	<u>Qty.</u>
40405-2	12 volt relay	1
40127-4	Sheet metal screws for mounting relay	2
53197-G1	Fused lead	1
53198-G1	Unfused lead	1
53199-G1	Jumper, relay to fuse block	1
35090-12	Soldering lugs (terminals)	2
53200-G1	Jumper, ground	1

INSTRUCTIONS (General)

The relay, part #40405-2 should be mounted with the two screws provided in the immediate vicinity of the fuse block in such a manner that the terminals are facing downward, and that the primary power jumper will reach from said relay to the fuse block. The ground jumper furnished with the kit should be wired from one of the winding terminals designated "S" to ground usually under the head of one of the relay mounting screws. Next the primary power lead on the load side of the existing fuse block should be removed and connected to the relay switch contact designated "B", and permanently attached. The primary power jumper supplied with this kit should now be wired from the other switch contact of the relay designated "H" to the load side of the fuse block. From this point on, the installation will differ depending upon whether the front or rear mount cables are employed.

INSTRUCTIONS (Front Mount)

The fused lead is connected from the other terminal of the relay winding designated "S" to the accessory switch terminal of the ignition switch. Before making this installation permanent it should be determined that the accessory tap on the ignition switch is de-energized when the engine is cranking. This may be simply checked by the use of a voltmeter connected from this point to ground. It should be noted that many vehicles will have an accessory tap but will not have an accessory position on the ignition switch itself. In this instance the accessory tap is usually provided for the drop out feature previously referenced, that is, this terminal will be de-energized during the time when the key is turned to the position and will crank the engine. In those few vehicles where there is no tap on the ignition switch providing this feature, same may be accomplished by connecting the fused lead to the existing terminal on the fuse block and then removing the ground lead previously referenced connecting one of the relay winding connections to ground. In this instance an extended lead should be connected from this relay winding terminal to the starter post or hot a terminal of the starter. In this mode of operation the exceptionally low DC resistance of the starter (fraction of an ohm) will allow for normal operation of the relay when the engine is not cranking. During the start cycle of the vehicle when 12 volts is applied to the starter, the difference of potential across the relay winding will drop to "0" thereby de-energizing it and providing the same basic function as an ignition or start switch with drop out circuitry built in. It is important that this lead be connected directly to the hot terminal of the starter and not the starter switch, as most starter switches are mechanically energized and have hot "A" or 12 volts on the battery side.

The installation should now be checked for proper operation of the relay, which is; the relay will be energized when the ignition switch is turned to the "on" (or accessory position if provided) and will be de-energized when the engine is starting. Upon starting of the engine the relay should immediately become energized.

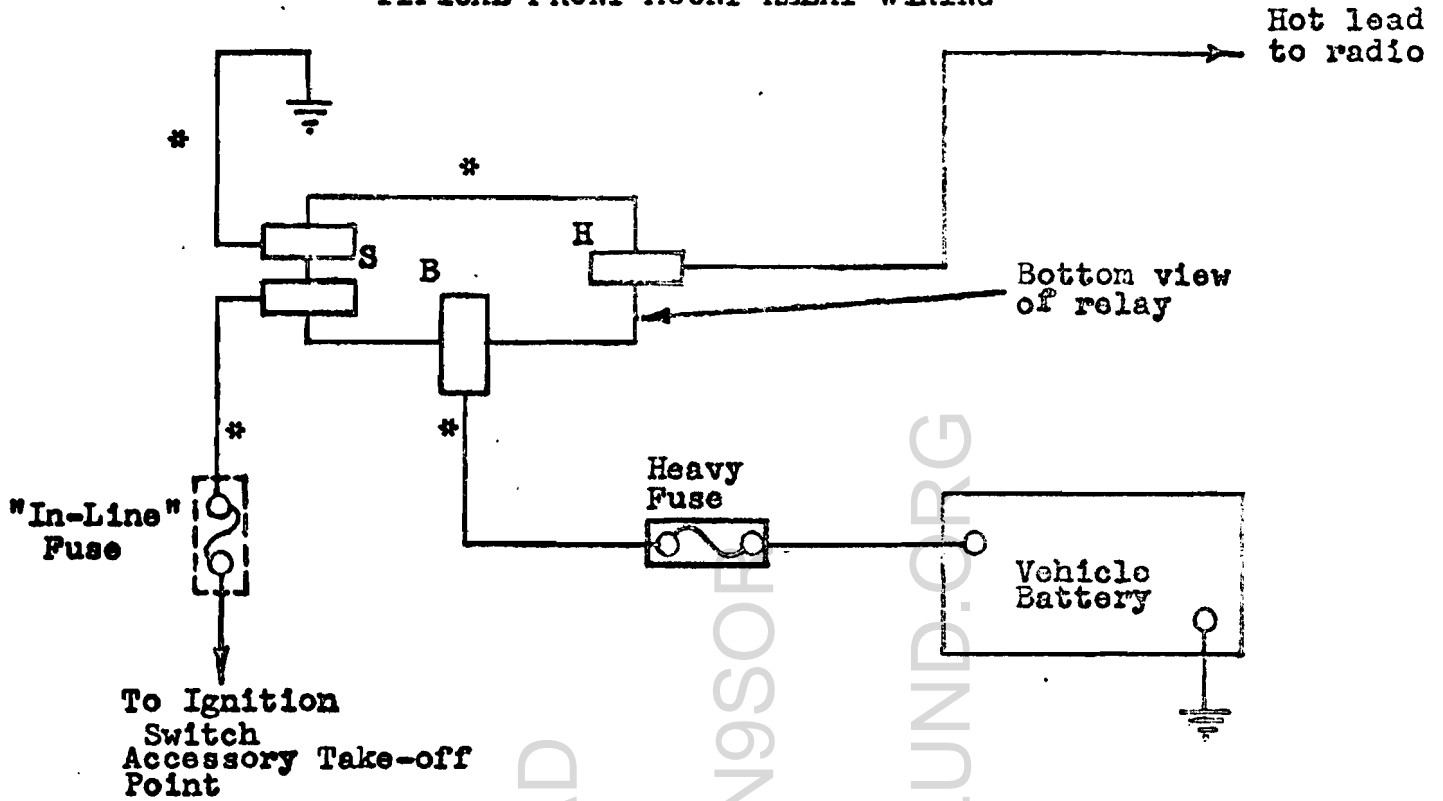
INSTRUCTIONS (Trunk Installation)

Assuming that the trunk installation uses the standard type CUL1-A control head, the unfused lead of the kit should be connected to the remaining relay winding terminal designated "S" and connected to terminal 3 of the control head. The fused lead should now connect between terminal 1 of the control head and the accessory tap of the ignition switch as referenced in the previous instructions for the front mount. The same instructions apply to the accessory tap feature, that is, if this voltage does not drop to "0" during the start cycle, the wiring of the relay winding should be revised slightly whereby the ground lead then goes to the hot terminal of the starter as referenced previously. Next the light primary power lead coming from the trunk of the vehicle should be connected to terminal 4 of the control head. If this is a new installation this lead should first be wired to the load side of the fuse block and routed so that it can be cut at the proper place for connections to terminals 2 and 4 of the control head. Terminal 2 of the control head goes to the heavy fuse block and terminal 4 goes to the equipment side of the cable. Soldering lugs are supplied with this kit for proper connections to the control head. In instances where this relay is added to an existing installation the light primary power cable lead on terminal 4 should be removed and connected to the fuse block and wired as referenced above.

NOTE: First printing of the Instruction Sheet for the CUL1-A control head had an error in the terminal connections of 1, 2, 3 and 4. Instruction Sheets designated Issue 2 are correct. The attached diagram with this Instruction Sheet should clarify any possible misunderstanding.

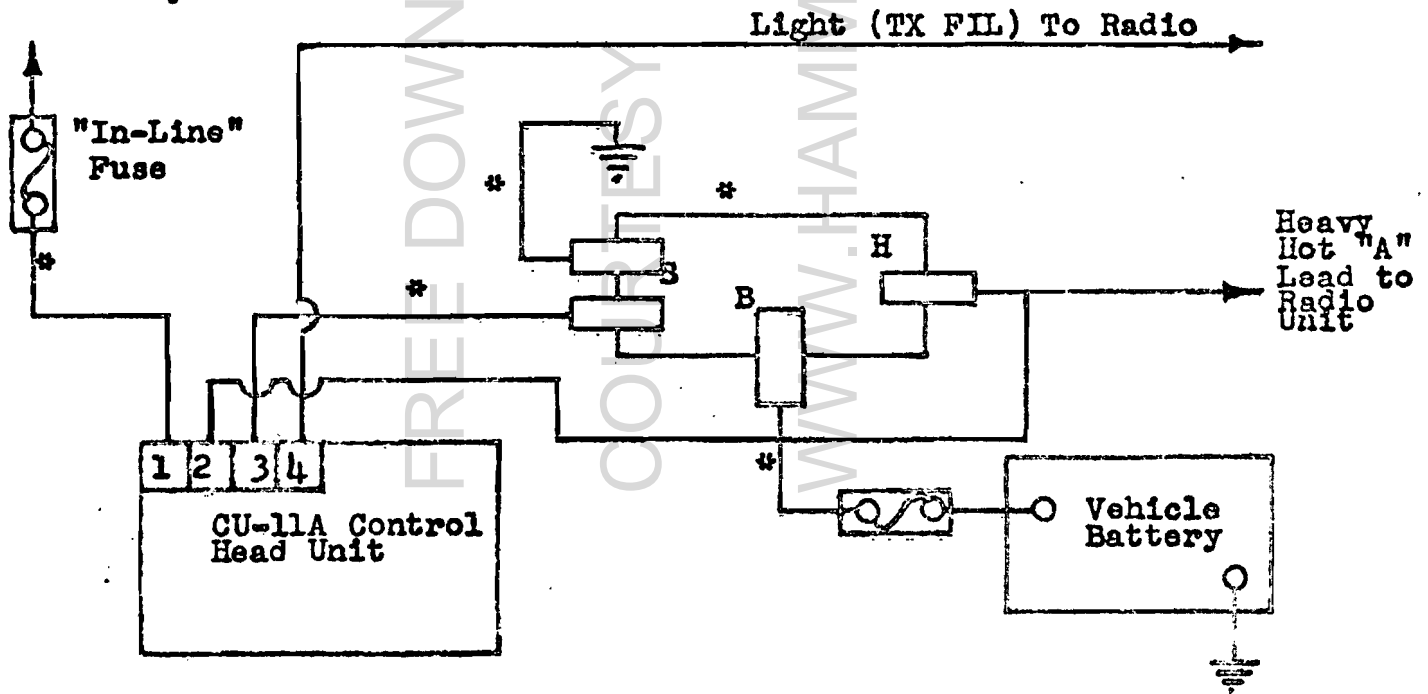
The jumper between terminals 1 and 2 should be removed.

TYPICAL FRONT MOUNT RELAY WIRING



TYPICAL REAR MOUNT RELAY WIRING

To Ignition Switch Take-off Accessory Point



*Indicates Items Supplied With Kit.