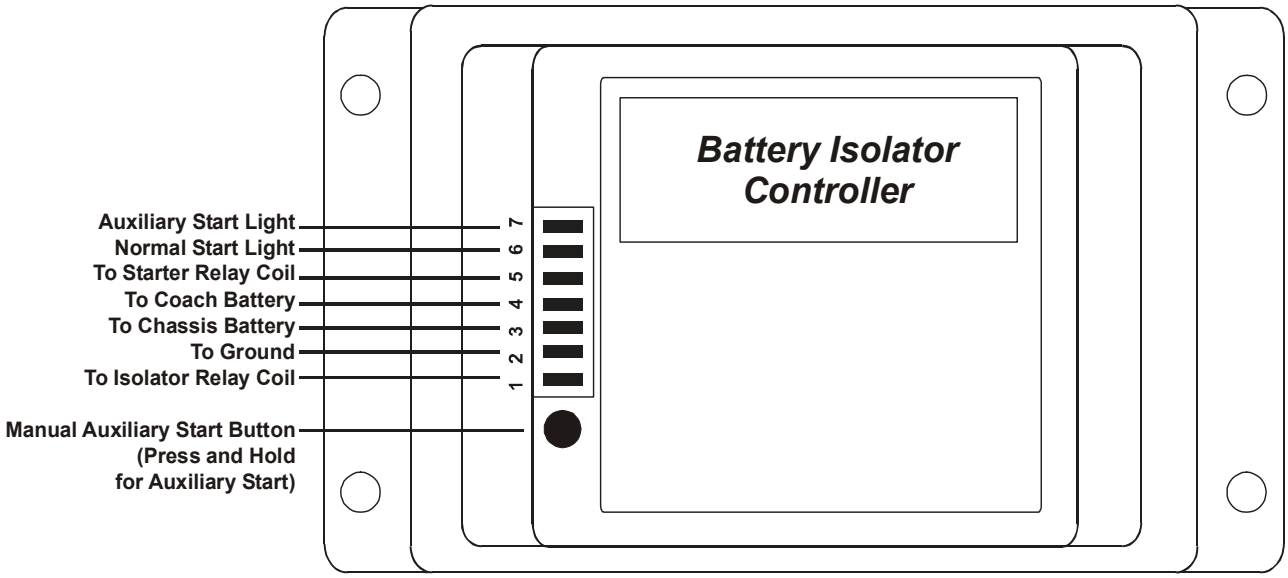
BATTERY ISOLATOR CONTROLLER

SERVICE MANUAL



Battery Isolator Controller P/N 00-00131-000

CAUTION:

The Battery Isolator Controller controls the Isolator Relay which is connected directly to the chassis and coach batteries. Power from both the batteries is fed into the module. The full power of the battery is available at this module. Inadvertant shorts at this box could result in damage and/or injury.

All servicing of this module should be done only by a qualified Service Technician.

Tools required: Low current Test Light, Accurate Voltmeter (digital read-out preferred)

Product Description

The Battery Isolator Controller performs two important functions. First it provides a method of charging and isolating dual batteries in an RV. It also provides automatic auxiliary starting from the house batteries when the chassis battery is unable to provide sufficient starting power. Indicator lamp drivers are included to signal the driver of both normal and auxiliary start. The unit combines the functions of the isolator and manally operated auxiliary start functions. The unit is housed in a plastic enclosure suitable for mounting under the hood, out of direct water spray. It operates in combination with a continuous duty solenoid to connect the two batteries at the proper times.

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How It Works

Isolator Function

The unit operates as an isolator by sensing the level of voltage on the chassis 12 volt system. When this voltage goes *above* 13.3 volts for approximately 12 seconds, as happens when the engine is running normally (normal alternator output voltage is approximately 14.4 volts), it will close the isolator relay providing charging current to the coach battery. When the ignition switch is turned off, the relay will open immediately.

If the voltage should fall *below* 12 volts for more than two seconds while the ignition is on, the relay will drop out to feed all the alternators available output to the chassis battery to keep the engine running. This might happen when the alternator is not able to supply sufficient current to all of the loads. When the chassis voltage goes *above* 13.3 volts again, the relay will again close in about two seconds to retry and charge the coach battery. The resultant flickering of lights would alert the driver of the system overload.

Auxiliary Start Function

The Auxiliary Start function operates by sensing the voltage of both batteries. If when starting, the chassis battery voltage falls below 9 volts for about 1/2 second and the coach battery is above 9 volts, the isolator relay will be closed and held until the starter switch is released. This parallels the coach and chassis batteries, providing the needed boost for starting. The indicator lamp drivers will control 2 optional dash mounted lights, a NORMAL START and an AUXILIARY START. Under normal starting conditions, the NORMAL START indicator light will light when the starter is being activated and will remain on for approximately 3 seconds after the starter switch is off. During cranking, should the auxiliary start function occur, the NORMAL START light will go out and the AUXILIARY START lamp will come on for approximately 3 seconds after release of the starter switch.

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Trouble Shooting

Problem	Possible Cause / Solution
Coach battery not charging	With engine running, chassis voltage must be above 13.5 volts (Pin 3 on BIC) If less than 13.3 volts, check vehicle's charging system.
	Check ground on module (Pin 2 on BIC)
	Check for voltage on coil of isolator relay after engine has been running for at least 20 seconds. (Pin 1 on BIC) Voltage should be approximately 12 volts. If no voltage, replace BIC.
	If 12 volts is applied to isolator relay coil, check for voltage drop across the isolator relay contacts. If the drop is greater than 0.3 volts, replace relay.
Chassis battery continues to drain	Check voltage on module with ignition off. (Pins 1 and 4 on BIC) should be 0 volts. If not, check wiring.
	Check for continuity across the isolator relay contacts, the relay should be open with no voltage applied to coil.
Auxiliary Start Function will not operate	While starting engine, chassis battery voltage (Pin 3) must be between 9.0 and 1.5 volts for auxiliary start to occur. If below 1.5 volts, use auxiliary start button located on the BIC.
	Coach battery voltage (Pin 4) must be above 9 volts for the auxiliary start function to occur.
	While starting engine, Pin 5 of BIC (wire from starter solenoid) should be at the battery voltage.
	Check Ground on Pin 2 of BIC.
	While starting engine, check for voltage on isolator relay coil (Pin 1). If no voltage, replace BIC. If battery voltage appears on coil, replace isolator relay.

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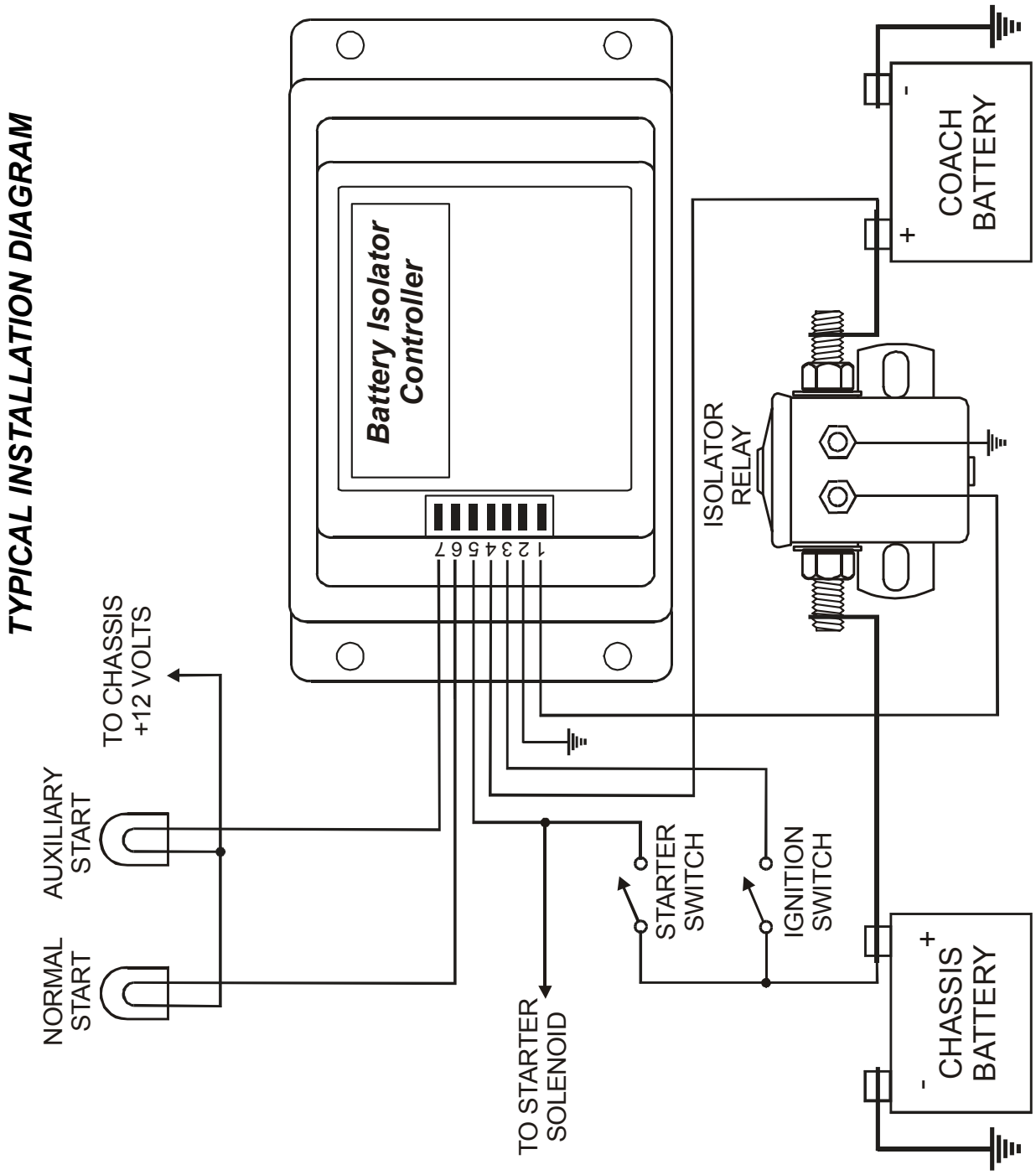
TYPICAL INSTALLATION DIAGRAM



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