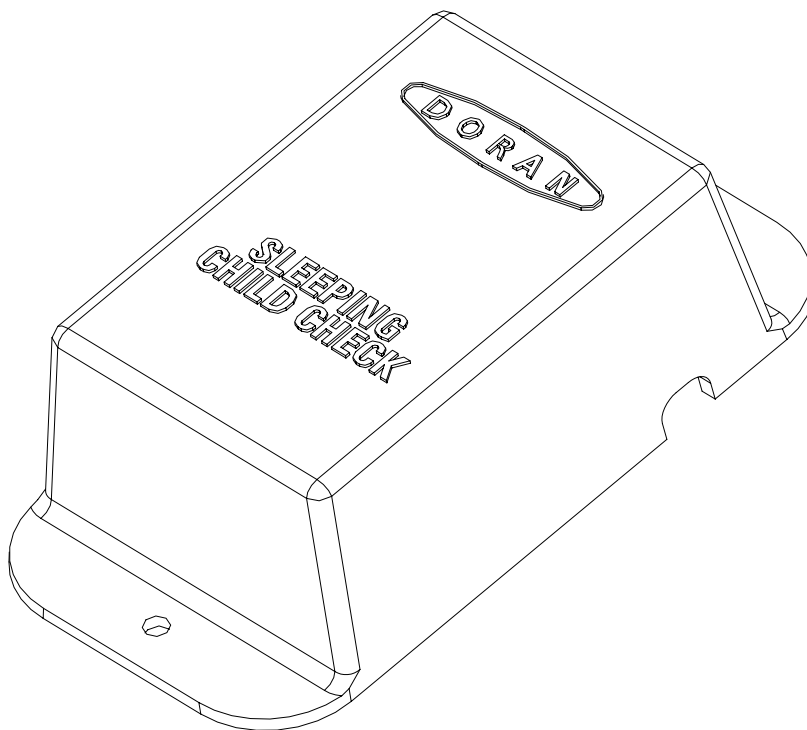




# ***SLEEPING CHILD CHECK***

*Model SCC-AM-01 Version 5.11*



## ***INSTALLATION AND OPERATION MANUAL***

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# DORAN MFG LLC SLEEPING CHILD CHECK

## *HOW IT WORKS*

Doran Manufacturing's Sleeping Child Check (SCC) is an electronic device that, when armed, is designed to force the bus driver to walk to the back of the bus and de-activate the system before leaving the vehicle. If the driver fails to do so, and exits the bus through the front door, the horn will immediately sound.

Doran designed this unique system with the children's safety in mind. Leaving a child on an empty school bus at the end of a route would create a nightmare for the youngster, his family and the school district.

Doran's Sleeping Child Check gives you the peace of mind in knowing that the bus driver cannot deactivate the system without first walking to the back of the bus - virtually eliminating the possibility that a child will be left behind.

### 1) What is included?

- Doran Mfg. Sleeping Child Check module (1)
- Re-set Switch (1)
- Wiring Instructions

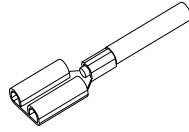
### 2) What you will need:

- Electric drill and 5/8" drill bit
- Test Light Probe.
- 16 gauge wire
- Insulated female quick-connectors for .250" blades
- Wire stripper/crimper
- Basic hand tools
- Wire ties
- Automotive-grade insulated wire splices or equivalent
- Loctite® (non-permanent, serviceable) or equivalent
- (2) # 10 self tapping screws
- **SCC-AM-SW-00 switch (see page 8 of this manual to determine if it is required for you application)**
- **Optional if needed (Additional isolated door jam switches for Conversion vans and Mini buses)**

**These are considered general instructions for the Sleeping Child Check module. To ensure proper and reliable function of this product, the Sleeping Child Check must be installed according to the directions. Some variation may be required depending on the manufacturer of your specific bus. Contact Doran Manufacturing or visit our website at [www.doranmfg.com](http://www.doranmfg.com) for questions or comments regarding these instructions.**

**Please follow the testing procedure upon completion of installation of the Doran Sleeping Child Check listed on page 7 of this manual.**

# TYPICAL WIRING CONNECTION TO SCC MODULE

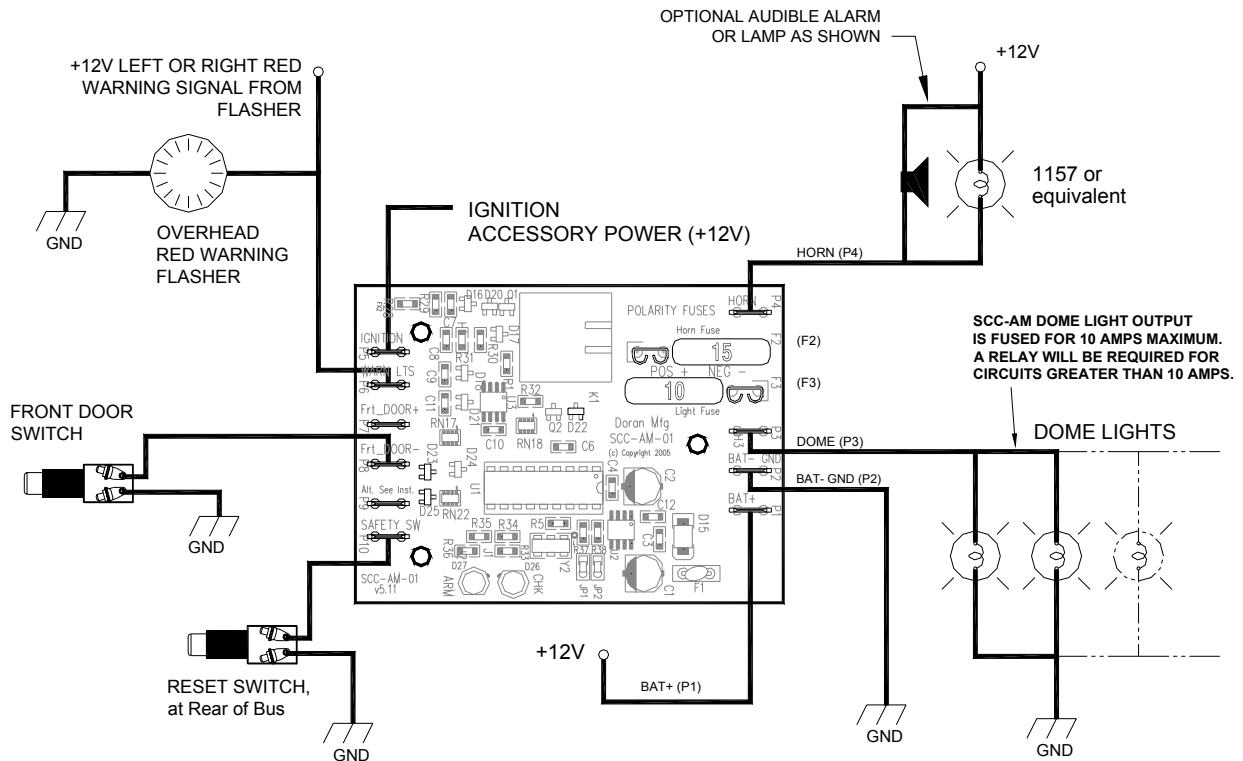


**Fig. 1**  
Insulated female Quick-Connector for .250" wide blades crimped to 16-gauge wire.

# SLEEPING CHILD CHECK WIRING OPTIONS

## Option #1

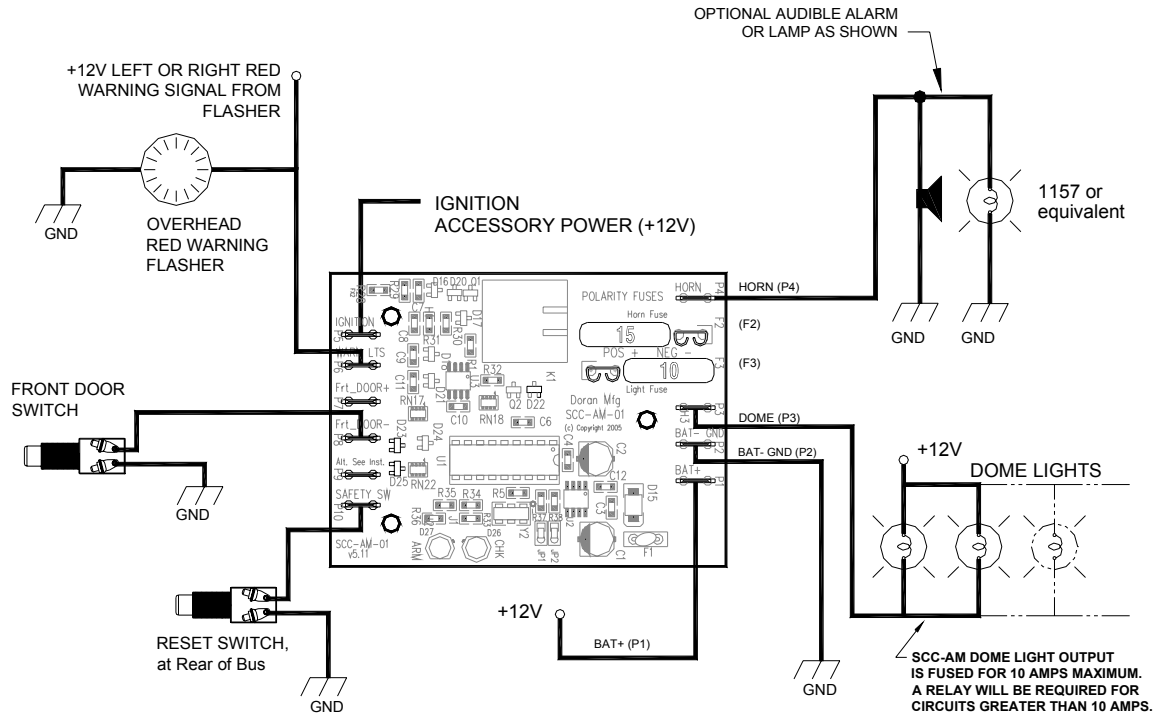
Chassis Ground – When grounded, horn sounds immediately upon probing



(See Section II for detailed wiring instructions)

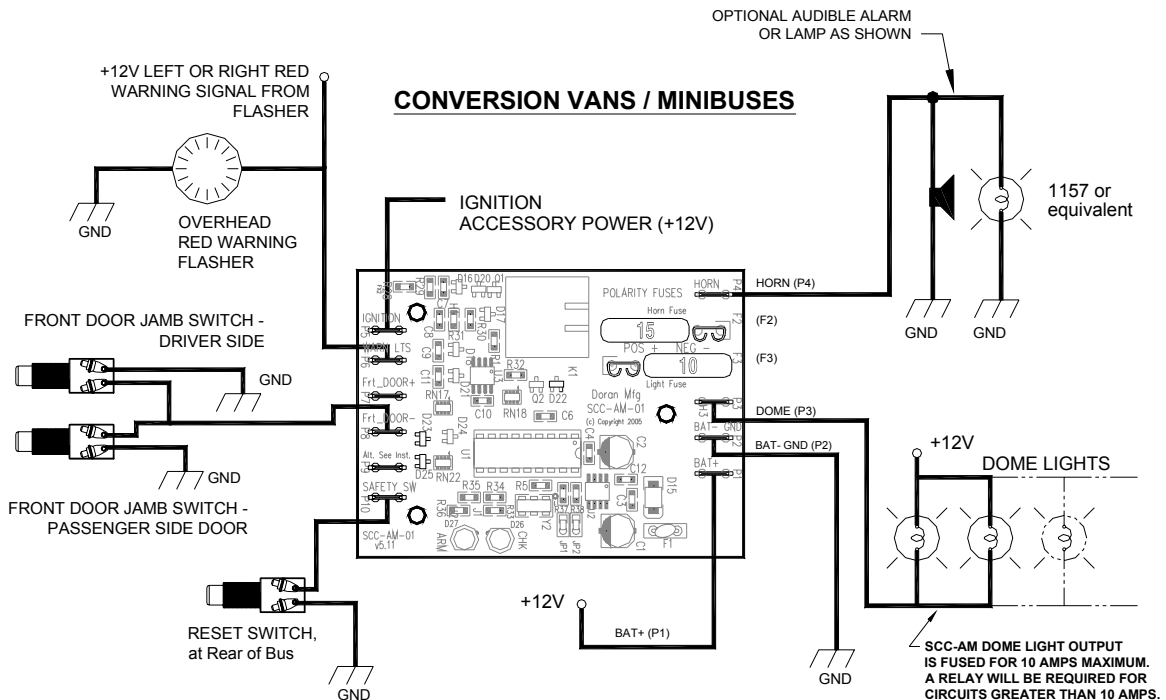
# Option #2

Horn sounds when connected to +12V



# Option #3

CONVERSION VANS / MINIBUSES



(See Section II for detailed wiring instructions)

# INSTALLATION INSTRUCTIONS

## I. Locating the Sleeping Child Check Module

Before wiring, determine where you want to mount the Sleeping Child Check module. Make sure that it does not interfere with the driver's ability to control the vehicle. After wiring is complete and the system has been tested, the module can be permanently mounted using two #10 self-tapping screws (not included). All connections to the Sleeping Child Check should be done with terminals as pictured in **Fig. 1**

## II. Wiring Instructions

### **POWER - P1 (Battery +)**

Make a connection from **P1** ("Bat +" terminal on the SCC) to constant +12V. With the ignition turned OFF, use a test probe to locate a wire with constant +12V.

### **GROUND - P2 (Battery -)**

Make a connection from **P2** ("Bat -" terminal on the SCC) to a chassis ground.

### **HORN - P4 (Horn Out)**

Make a connection from **P4** ("Horn" terminal on the SCC) directly to the horn relay wire. This wire will output either +12V or ground signals to energize the school bus relay.

**To test if the horn is activated by a +12V battery or ground connection, locate the horn wire (usually found at the base of the steering column). Follow these steps:**

- a) Connect the alligator clip on the test light probe to any metal surface that is a chassis ground.
- b) Probe the wire you believe carries the horn signal with the test light probe. Do not press horn button.

### **Option #1 ~ Chassis Ground Horn Activation**

If the horn sounds immediately upon probing, you have found the correct wire. This may cause the test light to be dimly lit. If you press the horn button and the light goes out, you can be certain that the horn is activated by the ground signal. **The Horn Fuse (F2) should be in the NEG- Polarity position.**

### **Option #2 ~ +12V Battery Horn Activation (most common)**

If you find a wire that lights up the test light when the horn button is sounded, you have most likely found the correct wire and can be fairly certain that it requires +12V to activate the horn. **The Horn Fuse (F2) should be in the POS+ Polarity position.**

### Horn Fuse Position

Option #1 Ground Activation	Option #2 Battery + Activation
Fuse (F2) to NEG-	Fuse (F2) to POS+

## **ACCESSORY POWER - P5 (Ignition)**

Make a connection from **P5** (“Ignition” terminal on the SCC) to accessory power. To determine if the accessory wire receives +12V, turn the ignition key to the “ON” or “ACCESSORY” position, and probe the wire. The test light should come on. Turn the ignition key “OFF” and the test light should turn off.

## **FLASHERS - P6 (Warning Lights)**

Make a connection from **P6** (“Warning LTS” terminal on the SCC) to either the left or right overhead red warning light output wires from the flasher unit.

## **DOOR - P8 (Frt\_Door -)**

### **A. STANDARD CONVENTION, FE AND RE BUSES:**

Make a connection from **P8** (“Frt\_DOOR-” terminal on the SCC) to the Front Door Switch. A convenient place to connect to the switch may be at Pin 9 or 10 of the flasher unit, which uses the door switch. Frt\_DOOR- is expecting a ground when the door begins to open. Frt\_DOOR+ pin **P7** may be used if +12V is present when the door is opened.

### **B. CONVERSION VANS / MINI BUSES:**

Buses with multiple front door exits, such as Type A or B conversion vans or minibuses, require the SCC’s P8 terminal to be connected to both the driver side and passenger side front door switches. In some cases, additional doorjamb switches (normally closed) may be required for one or both front doors. Select a doorjamb switch (SPST - normally closed) that is compatible with the bus and properly mount in the doorjamb. Open and close the door to make sure the switch is operating and make any necessary adjustments to ensure proper switch operation. Wire pin P8 of the SCC-AM to one side of the switch, the vehicle’s chassis ground to the other side. For the schematic, please refer to WIRING OPTION 3 in SECTION I of this manual. Doorjamb switches are readily available and can be purchased at most auto-parts stores.

## **RESET SWITCH - P10 (Safety Switch)**

Make a connection from **P10** (“SAFETY SW” terminal on the SCC) and run the wire to the rear interior of the bus where you plan to mount the reset switch. To mount the reset switch, refer to Section III, “Reset Switch Installation.”

## **Interior Overhead Light – P3 (Dome)**

### **A. STANDARD CONVENTION, FE AND RE BUSES:**

The SCC-AM-01 module is configured to turn on the vehicle’s interior overhead lights to aid the driver in inspecting the bus as the driver walks to the rear of the bus and back. The interior overhead light function is fused at 10 Amperes and can source or sink current depending on the position of the fuse. If the interior overhead lights draw more current than the fuse can handle, a relay or relays can be used to increase the current capacity. (See **Figure 2**).

To use this feature, you will need to determine how the manual switch activates these lights. Find the wire going to the lights from the switch. With a test light or buzzer check the voltage to the light string from the switch out side. Using the following table, determine if the switch is sinking/grounding or sourcing the lights.

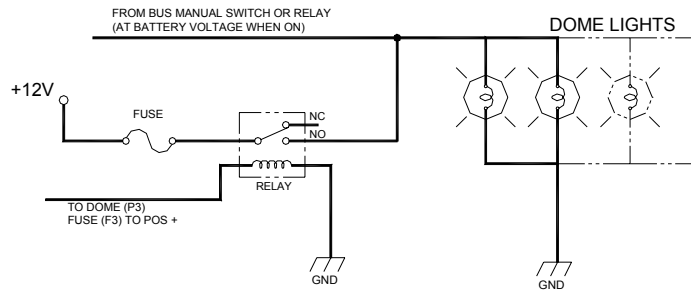


FIGURE 2  
Example of using an auxiliary relay for high current capability.

### Overhead Light Test

	Grounding (F3 to NEG-)	Sourcing (F3 to POS+)
Light Switch Off	Buzzer/Light On	Buzzer/Light Off
Light Switch On	Buzzer/Light Off	Buzzer/Light On

Move the 10 Amp. Light Fuse (F3) to indicated position (See Table). Wire terminal P3 from the SCC to the circuit connected to the interior overhead light switch.

### B. CONVERSION VANS / MINI BUSES:

To use the interior overhead light feature with vans, it is important the door switch circuit and interior overhead light circuits are isolated from each other. For example, if the door switches directly ground the dome lights to make them come on, then the relay in the Sleeping Child Check will ground the dome lights exactly like the doors. At the input to the SCC this would indicate a door has opened and trip the alarm when the ignition is turned off. For this condition, it will be necessary to install separate door switches for the Sleeping Child Check or not use/wire the overhead light feature.

**Figure 3** shows an example of a relay isolated circuit like may be found on some vans. The polarity fuse position is determined the same way as described for a standard bus, see A in Interior Overhead Light section above.

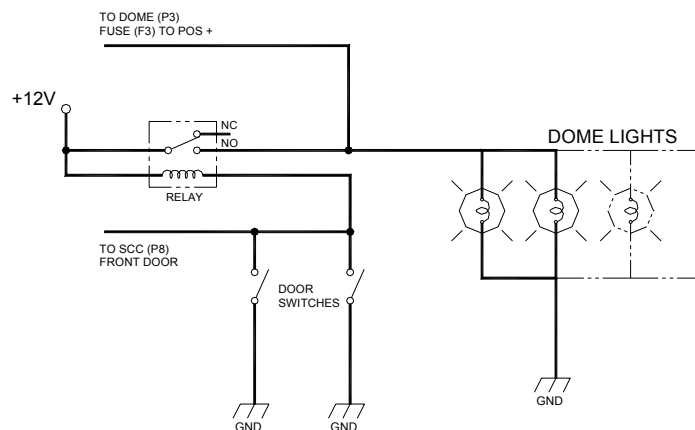


FIGURE 3  
Example of relay isolated Dome Lights and Door Switches

### III. Reset Switch Installation

The Reset switch (**Figure 4**) included with the Sleeping Child Check will need to be installed in the rear interior of the school bus. Be sure there is adequate access space behind the chosen location before installing the switch. An electric drill and 5/8" drill bit are required for installation.

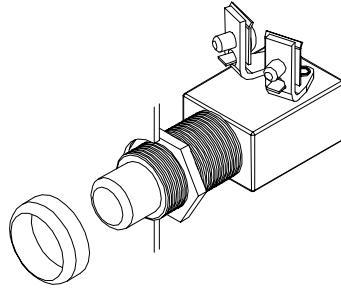


Figure 4

#### Cut-away view of Reset Switch Installation

- Drill 5/8" hole in access panel in the rear interior of the bus.
- Thread hex nut onto threaded stem.
- Insert switch through hole as shown.
- Adjust hex nut to proper depth to secure switch properly.
- Make a connection from chassis ground (at the rear of the bus) to one terminal of the reset switch.
- Make a connection from P10 wire to the other terminal of the reset switch.
- Apply Loctite® (non-permanent, serviceable) to exposed threads.
- Thread cap onto threaded stem and tighten securely.

### IV. Installation Testing for the SCC Monitor

The inspection procedure listed below should be followed at the completion of the installation.

- 1) Start the school bus. Make sure all the doors are closed.
  - 2) Activate the Red warning light flashers and open the door. The "YELLOW" LED will light on the circuit board to show the system is armed.
  - 3) Turn off the Red warning light flashers and close the door.
  - 4) Turn the ignition key to the "OFF" position. The "RED" LED will blink and the interior overhead lights will come on (if the overhead light option is hooked up)
  - 5) Open the front door. The "RED" LED will stay on and the horn should cycle on and off.
  - 6) Close the front door and walk to the back of the bus. Depress the reset switch. If functioning properly, this will disarm the Sleeping Child Check module and the horn should deactivate. Both LEDs will go out on the printed circuit board. The interior overhead lights will remain on for one minute if this option is installed.
- NOTE: (alarm will not deactivate with front door open).**



## V. Air Door Switch option #SCC-AM-SW-00

This option is required for buses equipped with power-assisted doors whose 8-way warning lamp flasher units are not activated by a mechanical door switch. For these buses, the SCC monitor will not function when the emergency release valve is used to dump the air from the system. To determine if this switch option will be required please perform the following procedure:

- Turn the ignition ON.
- Close the front door.
- Activate the Amber warning lights.
- Open the front door's emergency release valve to dump the air from the system.
- Walk over to the front door
- Manually push the front door open.
- Walk to the outside of the bus and check to see if the Red warning lights have been activated.
- If the Red warning lights are not flashing, then the air door switch option #SCC-AM-SW is required (**Figure 5**)

**If the SCC-AM-SW-00 switch is required to be installed, please follow the instructions below:**

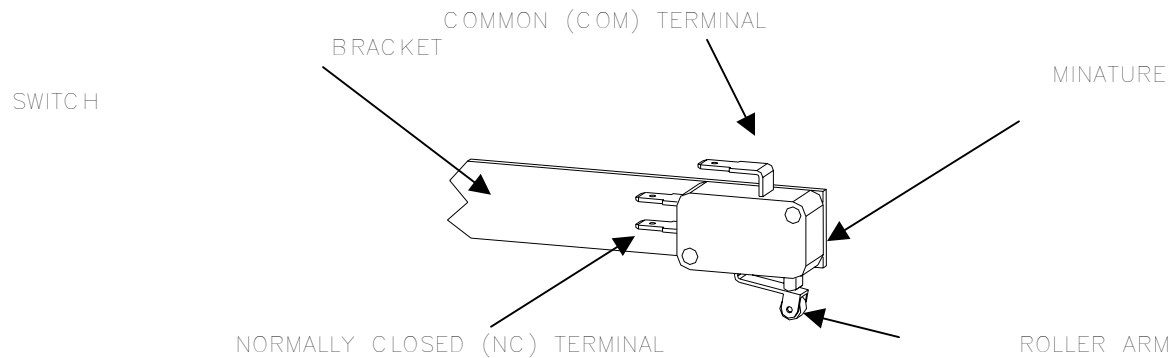


Figure 5

### SCC-AM-SW-00 Switch

- Remove the panel above the air door.
- Bend and/or twist the switch bracket and firmly mount the SCC-AM-SW-00 switch assembly in a position where the switch's roller arm is fully engaged when the air door is fully closed. Excessive force applied to the switch's roller arm can cause damage to the switch. Because of this, the switch bracket should not deflect more than 1/32" when the roller arm is fully engaged.
- Connect the switch's common (COM) terminal to the SCC monitor's front door terminal #P8.
- Connect the switch's normally closed (NC) terminal to a chassis ground.
- Close the door and inspect the switch making sure the switch's roller arm is completely engaged.
- Open the front door and inspect the switch. The switch's roller arm should spring back to its original resting position.
- Follow the procedure in **SECTION V** below to test the air door switch. This will ensure that it is functioning properly.

## VI. Periodic Testing for the SCC Monitor

The inspection procedure listed below should be followed at the completion of the installation, and periodically to ensure the SCC is functioning properly.

1. Start the school bus. Make sure all the doors are closed.
2. Activate the Red warning light flashers and open the door.
3. Turn off the Red warning light flashers and close the door.
4. Turn the ignition key to the "OFF" position.
5. Overhead dome lights should come on if option is hooked up.
6. Open the front door. The horn should cycle on and off.
7. Close the front door and walk to the back of the bus. Depress the reset switch. If functioning properly, this will disarm the Sleeping Child Check module and the horn should deactivate. **NOTE:(alarm will not deactivate with front door open).**

## VII. Troubleshooting

<u>Problem</u>	<u>Solution</u>
Horn does not activate when I turn off accessory power and open the front door, but I can hear a relay inside the SCC module clicking on and off.	Check the connection on the horn relay wire. Verify that you have made a secure connection.
Horn does not activate when I turn off accessory power and open the front door, and I do not hear any relays clicking inside the SCC module.	If the front door switch is activated by +12V, the door switch wire should read "0" Volts when the door is closed, and +12V when the door is open, then P7 on the SCC should be used. If the front door switch is activated by ground signals, the door switch wire should read +5 to +12V when the door is closed, and "0" Volts when the door is open. In this case the door switch wire should be connected to P8.
Horn activates immediately when the ignition/accessory switch is turned off.	<p>(1.) Sometimes another device is connected to the same door switch and it "grounds" the SCC door input through leakage when the power is off to the device (sometimes the flasher unit will cause this). In this case the SCC door input must be isolated from the other device(s), or a separate door switch or contact must be used for the SCC. A diode has been provided on the SCC that may provide isolation from the other device. (See Fig. 6) After the door switch is directly connected to the SCC, connect the other device (flasher) to P9. Retest the operation of each device, as the device attached to P9 will not go completely to 0V when the door switch is grounded.</p> <p>(2.) Door Switch is wired in conjunction with dome lights and a door jam Switch is required to activate SCC-AM properly</p> <p>(3.) Check that door is not open or ajar causing the system to go to into warning mode</p>

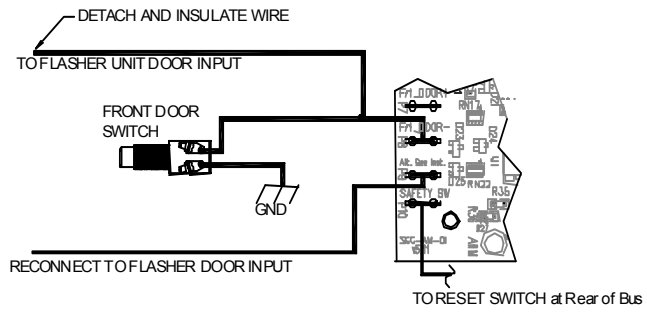


FIGURE 6