

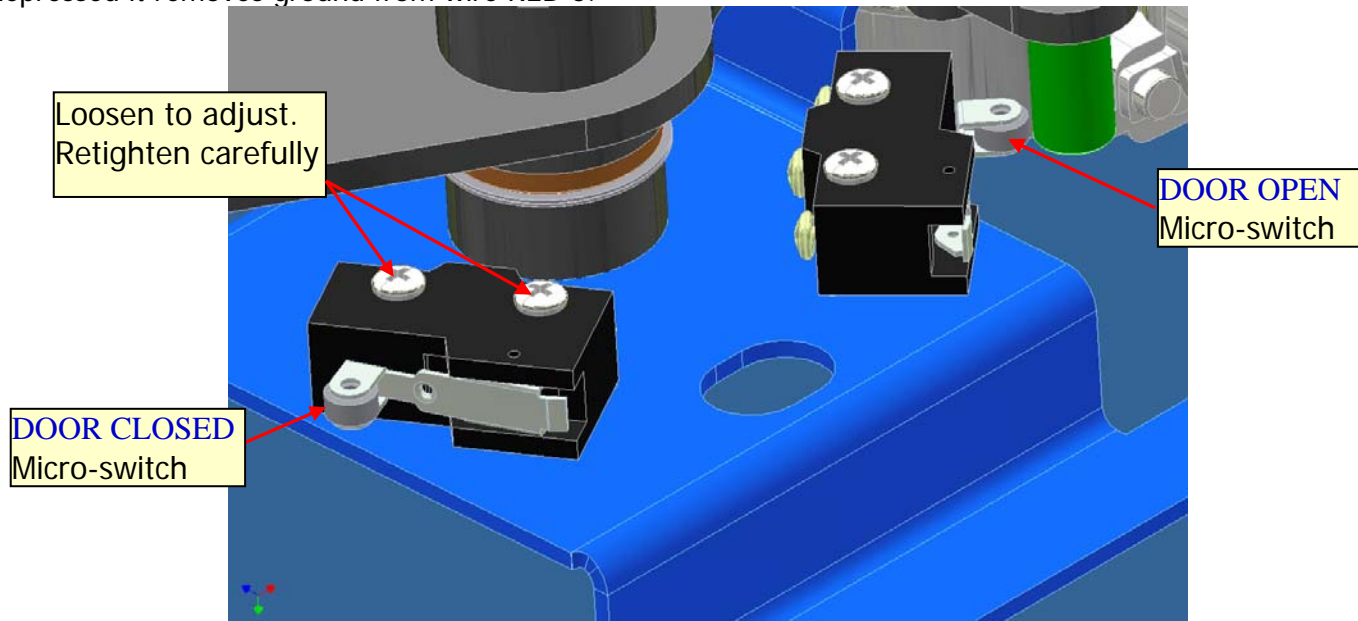
Effective Date: 3/7/05 Updated Date: 9/16/2009

**Ref. IC Bus wiring diagram #454800007 for all designators & wire connections mentioned in this guide. (file name 'TECH-A503-pg3_IC-454800007' under Technical Bulletins Miscellaneous)*

FUNCTIONALITY OVERVIEW:

The system controller [tied in at terminal block J1007]-controls the function of the electric door by grounding either one of the two outputs: WHT 32 (J1007, pin #7) or WHT 33 (J1007, pin#9).

The positive voltage (**+12V**) powers the relays when they are selected by grounding wire WHT 32 or WHT 33, which comes from wire BLK 32 off of C9 and fuse# 30 (25 AMP). This energizes the proper relay labeled OPEN or CLOSED to provide the correct input to the door control circuit at terminal block J22. There are 4 input wires from the system to electric door mechanism coming through terminal block J22. When the door is activated to **OPEN**, ground needs to appear on (J22) pin 2 (BLU 5) along with **+12V** for the motor on (J22) pin 4 (RED 6). It will run until micro-switch labeled **DOOR CLOSED** is depressed. Once depressed it removes ground from wire BLU 5. When door is requested to **CLOSE**, ground needs to appear on (J22) pin 4 (RED 6), and **+12V** on (J22) pin 2 (BLU 5). It will run until micro-switch labeled **DOOR OPEN** is depressed. Once depressed it removes ground from wire RED 5.



***All these voltage measurements MUST be referenced to Power Ground for a proper reading. They must also be in the correct order for closing or opening.**

A- No voltages:

1. Check C9 for +12V (fuse#30)
2. Check terminals 87 and 86 on the closed relay and the open relay
3. Check terminal 86 on the step light relay.

B- Door will not open or close:

In each direction the motor has **+12V** and GND, with the polarity switched for the opposite direction. If this voltage is not present in either direction then the fault will most likely be the micro-switch. When the motor is running, either micro-switch provides ground to the motor to complete the circuit. When either micro-switch (open or close) is depressed it breaks the ground path and stops the motor. If the micro-switch is causing a problem with either opening or closing door and the input voltage is

TECHNICAL BULLETIN - #A503
SUBJECT: **TROUBLESHOOTING ELECTRIC DOOR
CONTROL MECHANISM**

Effective Date: 3/7/05 Updated Date: 9/16/2009

correct, then most likely the switch is not closing. Examine the switch for proper closing. A continuity check across a closed or open switch will verify the function of the switch.

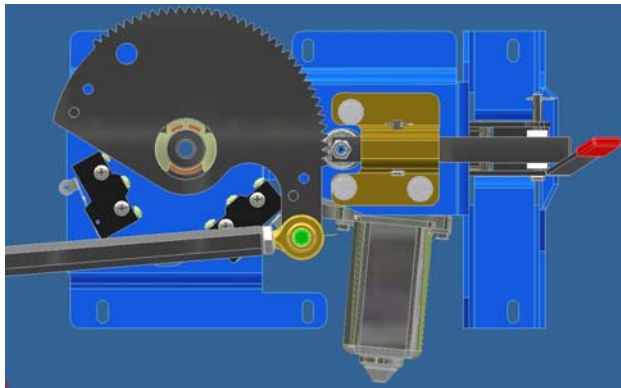
1. Check the micro-switches.

If the switch lever is not depressed then the switch is closed and shorted to ground (0 ohms or 0 volts)(ON), if it is depressed then the switch is open and not connected to ground (OFF). Both of these can be measured using continuity to ground (one lead from the voltmeter on ground and the other on the terminal block J22 pin 1 or 3 depending on which switch is tested (see diagram). If either test fails then the micro-switch is at 'fault' or the switch is not fully engaging. If not fully engaged loosen screws, adjust switch and retighten 10-12 in-lbs. (*Over tightening can damage switch housing*).

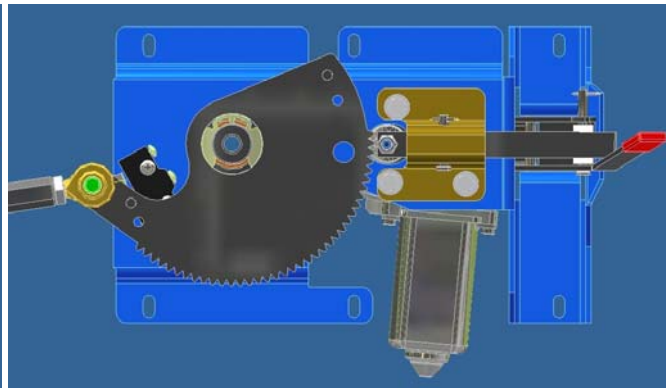
2. Verify Motor- for proper voltage.

If the motor is at fault, the correct voltage will be observed across it, but there will be no shaft movement. (If the motor is in neutral, it will be heard as a whine with no movement) Also, with the power off, continuity should be read across the motor terminals (shorted). If there's no continuity across the motor when it's off, then the motor is most likely at 'fault'.

If further help is needed, contact the engineering department at Specialty Manufacturing.



Door open position



Door closed position