

Series 3 Technician's Installation and Service Training Manual

Advanced Troubleshooting Commercial Operator (Controller)



Warning Electrical Shock Hazard

If the problems are not solved in the basic motor head or controller troubleshooting, it will be necessary to do the following to effectively source the issues in an orderly fashion in the shortest time frame.

Open controller case Lid.

Isolate power from the controller.

Disconnect all accessories, accessory modules, photo cells and the case lid from the controller.

Disconnect the DC Motor wires from the control board.

Inspect the controller to verify the following and take corrective action if necessary:

Is the controller mounted through the corner pillars of the controls box. If not, inspect to see if has been mounted through the back of the controller. If so, refer to the controller mounting page and rectify.

Is the wiring ingress into the controller through the bottom of the control box. If not, refer to the controller wiring page and rectify.

Restore the power supply to the controller. Verify the power indicator LED is illuminated. If not, verify power supply.

Check the mains supply. Set your voltmeter to Volts AC. Place the red lead in the Left hand LIVE terminal of the green plug. Place black lead in the left hand neutral terminal of the green plug. Verify you have a suitable power supply of at least 100VAC.

If good, check the mains fuse. Isolate the power supply. Remove mains fuse cover. Remove mains fuse. Set voltmeter to Ohms and test fuse.

If it is bad, replace fuse with 3A 5X20mm 250V fuse. Reinstall fuse, Restore power. If fuse blows, replace board. If not, verify the power indicator LED is illuminated. If not, replace board. If good proceed to next step.

Verify the potentiometers and their settings.

Look at the left hand potentiometer. (Close Sensitivity) On one end of the screwdriver slot there is an arrow indicator. Insert a small slotted technicians screwdriver into the slot.

Gently turn the arrow on the potentiometer counter-clockwise until the indicator arrow is to the 7 o'clock position.

At the 7 o'clock position verify that the internal physical stop in the potentiometer s present at the 7 o'clock position by noticing the resistance. Do not turn potentiometer past this point.

Now turn the arrow on the potentiometer clockwise to the 4 o'clock position and again verify the potentiometer has a in internal physical stop present at the 4 o'clock position.

If both are present, turn the arrow back the 12 o'clock position (Factory setting). If either of the internal stops of the potentiometers are not present, the potentiometer is broken and you must replace the board.

Look at the Right hand potentiometer. (Max power clamp) Repeat the above process to verify the potentiometer. If good, set to the factory setting.

ZAP Series 3 Simply Logical

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Examine the DIP switches and verify they in the following positions:

DIP1 Down, DIP2 Up, DIP3 Up, DIP4 Down, DIP5 Down, DIP6 Down.

Place an alligator clip jumper wire between the stop and common terminals on TB3 to complete the stop circuit. The stop circuit must be present for the operator to function.

Verify the power indicator LED is illuminated.

Perform a master reset by pressing and holding the reset button. While holding the reset button down, press and hold down the red program button. Release the reset button only and wait for the acknowledge light to flash once. Then release the program button. After releasing the program button you will receive 2 confirming flashes of the acknowledge LED. For more detailed instruction on master reset, See Performing a master reset.

Press the program button 1 time and release. The open LED should illuminate. If it does not, verify your connection between stop and common on TB3. Retry. Replace the control board if open LED does not illuminate.

If it does press the program button once more the open LED should turn off.

Press the program button again to turn on the close cycle. The Close LED should illuminate. If it does not, verify your connection between stop and common on TB3. Retry. Replace the control board if close LED does not illuminate. Press the program but once to turn off the close cycle.

Set your voltmeter to VDC 200. Located TB6. It is the vertical strip of six terminals located on the bottom right corner of the control board. Place your black lead on the GND terminal on TB6. Place your red lead on the terminal labeled MOT on TB6.

Voltage reading should read approximately 54VDC. If it reads excessively high or low more than 5VDC either way, replace the board.

Next verify the voltage output on the terminal labeled 24V on TB6 by placing the black lead on the GND terminal on TB6. Place your red lead on the terminal labeled 24V on TB6. Your reading should read 31VDC. If it reads excessively high or low more than 5VDC either way, replace the board.

Next verify the voltage output on the terminal labeled V1+ on TB6 by placing the black lead on the 0V terminal on TB 9. Place your red lead on the terminal labeled V1+ on TB6. your reading should read 15.7VDC. If it reads excessively different contact technical support.

Next verify the voltage output on the terminal labeled RL5 on TB6 by placing the black lead on the GND terminal on TB6. Place your red lead on the terminal labeled RL5 on TB6. Your reading should read 5VDC. If it reads excessively different, contact technical support.

Next verify the voltage output on the terminal labeled RL6 on TB6 by placing the black lead on the GND terminal on TB6. Place your red lead on the terminal labeled RL6 on TB6. Your reading should read 5VDC. If it reads excessively different, contact technical support.

Perform a master reset by pressing and holding the reset button. While holding the reset button down, press and hold down the red program button. Release the reset button only and wait for the acknowledge light to flash once. Then release the program button. After releasing the program button you will receive 2 confirming flashes of the acknowledge LED. For more detailed instruction on master reset, See Performing a master reset.

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Next verify the voltage output on TB12. Set your voltmeter to VDC 200. Place your black lead on M1 and your red lead on M2. Press the program button one time and verify the Open LED is illuminated. Check your volt reading. It should read either + or — 54VDC. Press the program button again to turn off the open LED. If it reads excessively high or low, + or— 5VDC, Replace the board.

Leave your leads on M1 and M2. Press the program button one time and verify the Close LED is illuminated. Check your volt reading. It should read opposite + or — 54VDC of the test of the open cycle test. Press the program button again to turn off the open LED. If it reads excessively high or low, + or— 5VDC, Replace the board.

Verify motor cable does not have a short. Unplug the motor cable from the motor head. Set voltmeter to Ohms. Place the black lead on one of the wires in the motor cable and the red on the other. You should read zero ohms. If it ohms out. Replace motor cable.

Once everything has checked out or been repaired and before any accessories are wired into the controller, perform a master reset by pressing and holding the reset button. While holding the reset button down, press and hold down the red program button. Release the reset button only and wait for the acknowledge light to flash once. Then release the program button. After releasing the program button you will receive 2 confirming flashes of the acknowledge LED. For more detailed instruction on master reset, See Performing a master reset.

Cycle the operator through its calibration process. See initial controller set up page.

Once the operator is fully calibrated, you may begin the process of verifying and installing accessories per the respective pages of instruction.

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