

Section 5 BATTERY REPLACEMENT

5.1 General

The internal battery is used for preserving the clock and programming memory in the models 5000 and 7000. The procedure for each is given separately. There is no battery in the model 3000.

The battery is located on the CPU board. To replace the battery, you must first remove this board from the unit.

NOTE

When removing the screws, take note of their location, as it is important that they be replaced correctly.

5.2 5000 Battery Replacement

The ordering part number for the lithium battery assembly is #105003.

Necessary Tools:

- Small phillips head screwdriver
- Small soldering iron and solder
- Razor blade or X-acto knife
- Wire stripper
- Heat gun or hair dryer

Remove The CPU Board

1. Remove the screws from the right side panel (panel nearest the operating controls). Note the position of smaller screws versus larger ones. Remove this panel to expose the database board.
2. Two pairs of small pins and two 28 pin connectors on the component side of the database board connect it to the underlying CPU board. The connectors are located near the front panel bezel. Gently pull on the database board, lifting it up from the back of the unit and wiggling it gently to disengage it from the connector on the CPU board. Remove the database board from the unit's housing.
3. The rear cover is attached to the unit housing with five flat-head screws. Remove these screws.

CAUTION

Do not remove the red-marked screw on the top cover. This screw does not secure the rear cover. This screw is not as long as the others because there is not as much clearance at this location. If you remove this screw, be sure to put the correct screw back in this location so as not to damage the unit.

4. The rear cover is connected to the CPU board. Slowly pull the rear cover out of the unit housing until the board is exposed approximately 1-1/2 inches.
5. A ribbon cable connects the solder side of the CPU board to the mother board. Disengage this connector and slide the CPU board completely out of the unit's housing.
6. On the rear cover there are two pan-head screws, located at either end of the 25 pin D-connector, which secure the rear cover to the CPU board. Separate the CPU board and rear cover by first removing these screws.

Remove The Old Battery

7. The lithium battery assembly is mounted near the D-connector. (Refer to Figure 6.) Note the polarity of the two wires from the battery to the CPU board. Using the razor blade or X-acto knife, cut along the shrink tubing on the battery lead. Unsolder these two wires from the terminals on the CPU board.

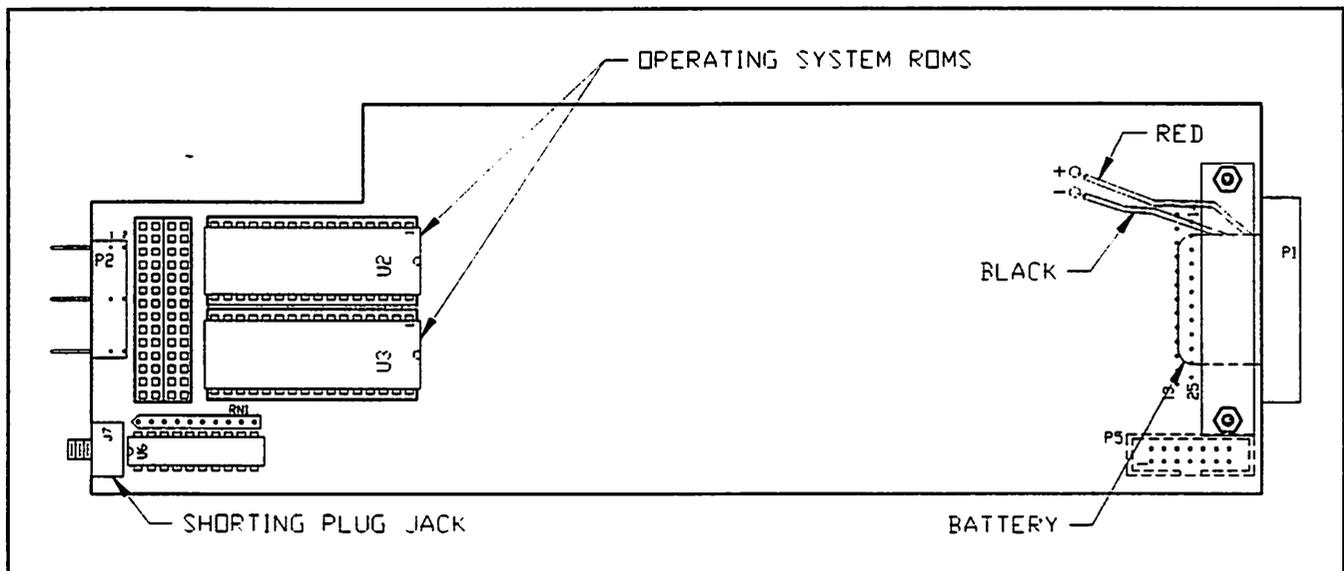


Figure 6. Location of Lithium Battery on 5000 and 7000 CPU Board.

8. Two 1/2 inch screws connect the battery assembly to the CPU board, holding the battery in place. Remove these screws from the solder side of the CPU board. The battery is now loose and can be discarded.

Insert The New Battery

9. Position the new battery assembly on the CPU board and secure it in place with the two 1/2 inch screws, inserted from the solder side of the CPU board.
10. Place the shrink tubing insulation over each wire. Cut the wires to the same length as on the old battery and strip the insulation to expose 1/8 inch of wire. **DO NOT ALLOW THE LEADS TO SHORT.**
11. Solder the wires from the new battery to the terminals on the CPU board. Be sure to use the same polarity as the previous battery. (Refer to Figure 6.)

12. Reposition the shrink tubing to cover any bare or exposed wire. Using the heat gun on an appropriate setting, apply heat to the shrink tubing so that it shrinks to insulate the wire.

Reassemble The Argus

13. Connect the rear cover to the CPU board, securing it in place with the two pan-head screws on either end of the D-connector.

NOTE

The screws mate with locking type threads so that some turning resistance will be felt when the screws are seating.

14. Insert the CPU board into the unit housing as follows:
 - a) Hold the ribbon cable out of the way and insert the CPU board into the slot formed by the top and bottom covers until about one inch of the board is exposed.

NOTE

You may encounter some resistance when the board gets to the deflection yoke. Just keep pushing gently but firmly until the board moves.

- b) Insert the ribbon cable into the connector on the solder side of the board. Hold the ribbon cable against the solder side of the CPU board and push the board all the way in.
 - c) Verify that the tangs on the front edge of the CPU board have engaged in the switch socket on the front panel bezel. If not, slide the board back out and reinsert, straightening the tangs if needed.
15. Secure the rear cover in place with five flat-head screws.
16. Align the connector on the database board with the pins on the CPU board. Gently push on the database board until the pins are seated as far as they will go.
17. Position the side panel and secure it in place with 10 flat-head screws.

NOTE

Two different length screws are used on the side panel. The short screws go at the ends of the panel and the longer screws in the middle.

18. Apply power to the unit and verify that the unit passes all of its self tests. If an error results during the self-tests, or if the unit fails to power on, refer to Section 4 of this manual.

CAUTION

It is important to power the unit on immediately after changing the battery. DO NOT allow the CPU board to sit without having applied power to it. The drain on the battery is much higher than normal after the battery is changed and before the disclaimer page is displayed on the unit's screen. Failure to assemble and test the unit at this point will drastically shorten battery life. After the first time the unit is powered up the battery drain will remain normal for the rest of its life.

19. At this time, set all programmable data as you would when first installing the unit. (Refer to the installation or reference manual.)

5.3 7000 Battery Replacement

The ordering part number for the lithium battery is #105003.

Necessary Tools:

- Small phillips head screwdriver
- Small soldering iron and solder
- Razor blade or X-acto knife
- Wire stripper
- Heat gun or hair dryer

Remove The CPU Board

1. Loosen the two phillips head screws on both sides of the database handle on the front panel of the 7000. (Refer to Figure 1 on page 6 of this manual.) Gently pull on the handle to slide the database board out of the front of the unit.

If difficulty is encountered in removing the database, grasp the handle firmly and wiggle it from side to side while pulling.

CAUTION

DO NOT use a screwdriver or other device to remove the database board. Using any tool to pry out the board will damage the bezel and database board.

2. The bottom panel is held in place with 10 screws: eight 3/16 inch screws and two 1/8 inch screws. The 1/8 inch screws are marked in red. Note their location, then remove all ten screws to remove the bottom panel.
3. The rear cover is attached to the unit housing with five flat-head screws. Remove these screws.

CAUTION

Do not remove the red-marked screw on the right cover. This screw does not secure the rear cover. This screw is not as long as the others because there is not as much clearance at this location. If you remove this screw, be sure to put the correct screw back in this location so as not to damage the unit.

4. The rear cover is connected to the CPU and transfer boards. Slowly pull the rear cover out of the unit housing until the boards are exposed approximately 1-1/2 inches.
5. A ribbon cable connects the solder side of the CPU board to the mother board. Disengage this connector and slide the CPU board completely out of the unit's housing.
6. On the rear cover there are two pan-head screws located at either end of the 25 pin D-connector, which secure the rear cover to the CPU board. Separate the CPU board and rear cover by first removing these screws.

7. The transfer board is attached to the CPU board by a connector on the end of the board nearest the front panel of the unit. Pull the transfer board from the CPU board using a gentle rocking motion.

Remove The Old Battery

8. The lithium battery assembly is mounted near the D-connector. (Refer to Figure 6 on page 21.) Note the polarity of the two wires from the battery to the CPU board. Using the razor blade or x-acto knife, cut along the shrink tubing on the battery lead. Unsolder these two wires from the terminals on the CPU board.
9. Two 1/2 inch screws attach the battery assembly to the CPU board, holding the battery in place. Remove these screws from the solder side of the CPU board. The battery is now loose and can be discarded.

Insert The New Battery

10. Position the new battery assembly on the CPU board and secure it in place with the two 1/2 inch screws, inserted from the solder side of the CPU board.
11. Place the shrink tubing insulation over each wire. Cut the wires to the same length as on the old battery and strip the insulation to expose 1/8 inch of wire. **DO NOT ALLOW THE LEADS TO SHORT.**
12. Solder the wires from the new battery to the terminals on the CPU board. Be sure to use the same polarity as the previous battery. (Refer to Figure 6 on page 21.)
13. Reposition the shrink tubing to cover any bare or exposed wire. Using the heat gun or hair dryer on its hottest setting, apply heat to the shrink tubing so that it shrinks to insulate the wire.

Reassemble The Argus

14. Position the transfer board over the CPU board and line the connector of the transfer board with the pins on the CPU board. Press firmly on the transfer board until the pins are seated as far as they will go.
15. Reconnect the rear cover to the CPU board, securing it in place with the two pan-head screws on either end of the D-connector.

NOTE

The screws mate with locking type threads so that some turning resistance will be felt when the screws are seating.

16. Insert the transfer and CPU boards into the unit housing as follows:
 - a) Hold the ribbon cable out of the way and insert the boards into the slots formed by the right and left covers until about one inch of the boards is exposed.
 - b) Insert the ribbon cable into the connector on the solder side of the CPU board. Hold the ribbon cable against the solder side of the CPU board and push the boards all the way in.

- c) Verify that the tangs on the front edge of the CPU board have engaged in the switch socket on the front panel bezel. If not, slide the boards back out and reinsert, straightening the tangs if needed.
17. Secure the rear cover in place with five flat-head screws.
 18. Gently insert the database board into the enclosure slot and apply pressure until the board engages the rear connector and the handle is flush with the bezel.
 19. Tighten the two phillips-head screws to secure the database board into position.
 20. Position the bottom panel in place and secure it with the ten flat-head screws (eight 3/16 inch and two 1/8 inch). Be sure to replace the red-marked screws in the positions noted previously and depicted in Figure 5 on page 16 of this manual. The two red screws are attached to the front panel bezel.
 21. Apply power to the unit and verify that the unit passes all of its self tests. If an error results during the self-tests, or if the unit fails to power on, refer to Section 4 of this manual.

CAUTION

It is important to power the unit on immediately after changing the battery. DO NOT allow the CPU board to sit without having applied power to it. The drain on the battery is much higher than normal after the battery is changed and before the disclaimer page is displayed on the unit's screen. Failure to assemble and test the unit at this point will drastically shorten battery life. After the first time the unit is powered up the battery drain will remain normal for the rest of its life.

22. At this time, set all programmable data as you would when first installing the unit. (Refer to the installation or reference manual.)