



Powering Business Worldwide

## Changing Out the Battery in a Logic Controller

Instruction Leaflet



### WARNING ELECTRICAL

**BEFORE WORKING ON EQUIPMENT MAKE SURE THAT ALL POWER SOURCES ARE OFF AND "LOCKED OUT" USING THE LATEST APPROVED LOCK-OUT / TAG-OUT PROCEDURES.**

The Contactor Bypass Isolation contains a Logic Controller in either the lower panel (Figure 1a 400A Frame) or the right center cavity (Figure 1b 1200A Frame). Both are shown below, see star.



Figure 1a. 400 A Frame.

All ELCs or PLCs have batteries with long lives. Typically with the usage of the system (powered on), a battery will last 7 to 9 years as show in the chart below.

Temperature (°C)	0	25	50	70
Life (year)	9	8	6	5

There is not a charging circuit for the battery when power is present on the switch. If a switch is not used then the battery will stay charged for about a year. **If the battery is dead, then the switch will not operate in the automatic mode because the program is now absent.** There are terminal blocks (TB21,22,23) for a UPS to be connected to if desired.

The part number of the battery/pigtail is ELC-BAT.

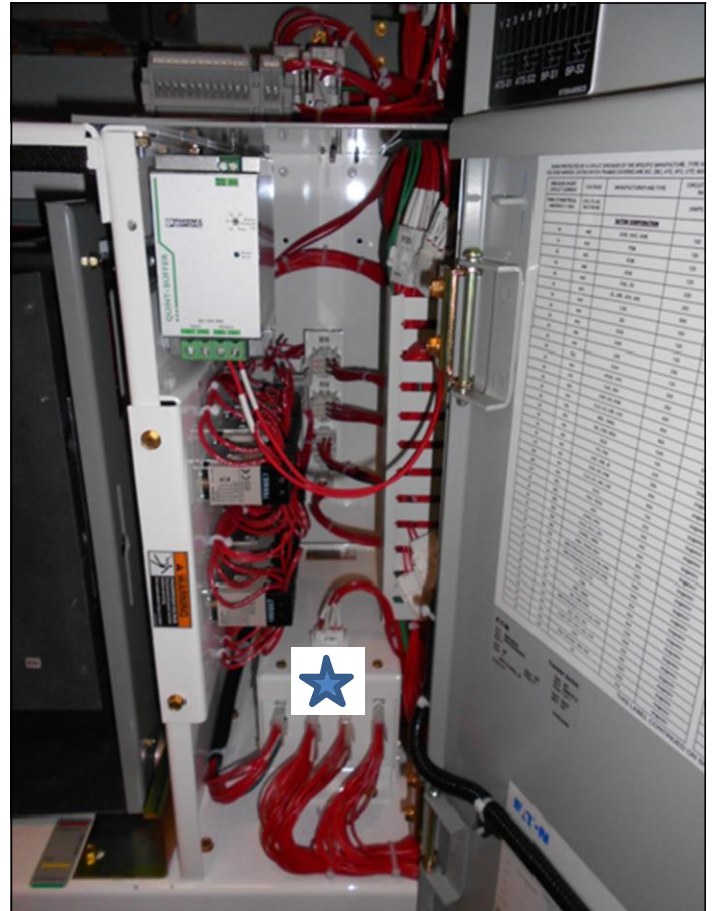


Figure 1b. 1200 Frame.

### BAT.LOW Indicator (ELC-PC/PA/PH)

When the battery voltage is low, the "BAT.LOW" LED will be on. The battery should be charged if the switch has not been powered on for a significant time period. Power the switch or hook up a UPS to the terminal block TB:21 (line), 22 (com), 23 (GND). If this does not shut off the lamp, then replace the battery as soon as possible; otherwise the user program and the data in latched area will be lost. (When the ELC's battery is removed (see below), please change the battery within 1 minute to retain the ELC's internal user programs and data).

If the battery is in low voltage (before the power is switched off when the BAT.LOW indicator is on) and the power is off for more than 1 minute, ELC will automatically restore the data in the latched area in the program and transfer Flash ROM into SRAM memory next time when it is re-powered.

There is not a window on the LC enclosure. The lid would have to be removed in Maintenance to see the light. Switches after November 15th, 2013 will have lamps flashing on the front door to indicate that the battery should be changed (if the switch is powered up), See Figure 2. These two lamps are the green "Test ATS" and the "Manual Bypass" as shown below. If the LED on the ELC indicator turns from on, to flashing, (once every second) it indicates that the battery cannot be charged anymore and replacement is required immediately. If the "error" red LED is on, then the program is no longer valid in memory anymore and one must replace the LC or replace the battery and request a dongle to add the program back into memory.

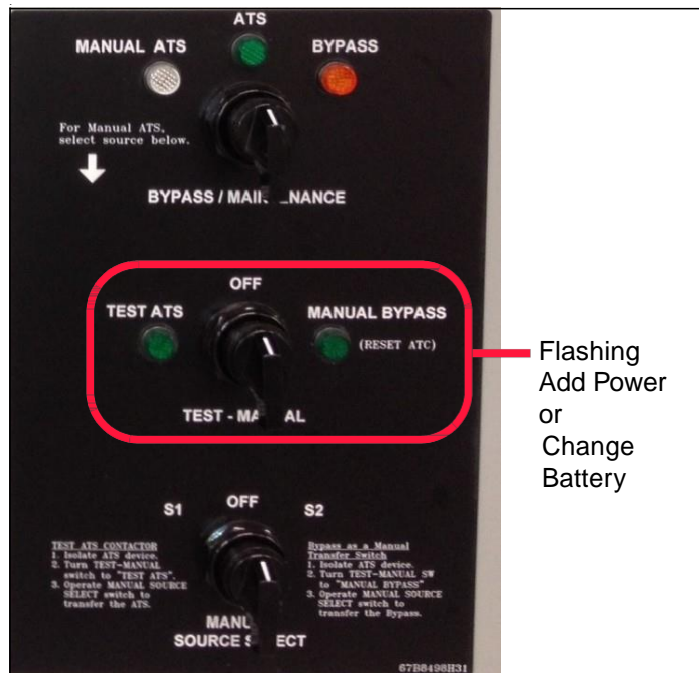


Figure 2. Flashing Lamps for Battery Issue.

### Replacing a Battery in the Logic Controller



### WARNING ELECTRICAL

ALL POWER TO THE SWITCH SHOULD BE OFF AND LOCKED OUT.

#### Required tools:

- 5/16 & 3/8 socket wrench with extender
- Phillips and Flathead Screwdriver
- Needle nose pliers

#### Time Involved:

Fixed or 400 frame	30 minutes
1200 frame non-fixed	50 minutes

Using Figure 3 below, the P19, P20, P21, and P22 connections to the LC will need to be removed to get the LC out. See picture below. These connectors have squeeze side locks to remove them. For a 1200 type frame and dual-draw out, the LC is behind the transformer. If there are not many options then the LC can be lifted over the transformer and out of the switch. If there are many options then it is best to remove the transformer. Both the LC and the transformer have two screws to remove them. There are two 3/8 bolts holding the LC to the chassis. There are two shoulder bolts at the other end but these do not need to be removed as the LC is engaged on these.

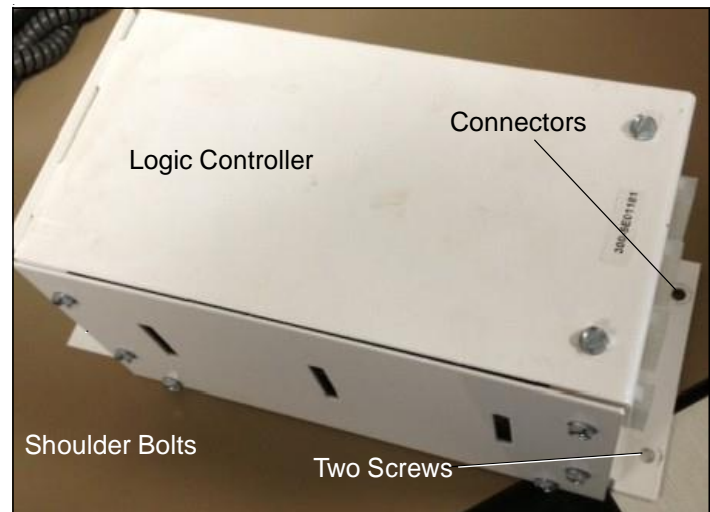


Figure 3. Logic Controller Removed.

1. Using the 5/16 socket, remove the lid and the rear cover. Also remove the right cover. See Figure 4.
2. Remove the locking mechanism on the din rail, Figure 4.

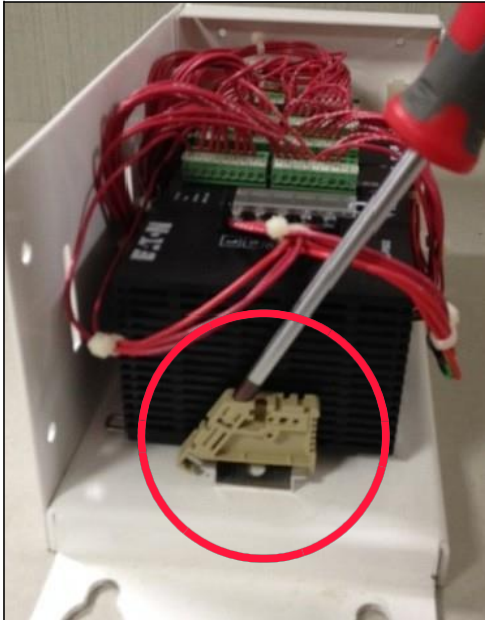


Figure 4. Panels Removed and Locking Mechanism.

3. Flip the din rail lock out on the power supply using a screwdriver and carefully slide the power supply off the din rail and up and over the rest of the modules. See Figure 4 and 5. No wires need to be removed but there could be some wire ties that need to be snipped.



Figure 5. Unlock the Din-Rail for the Power Supply.

4. Slide the small cover off of the ELC to the right and that will expose the battery. Make sure the new battery is ready to go and that it has a connector on it. Carefully, with the needle nose pliers, disconnect the connector. Put the new battery in its place and make sure that the connector is connected well. The red wire should be on the left as the picture shows.

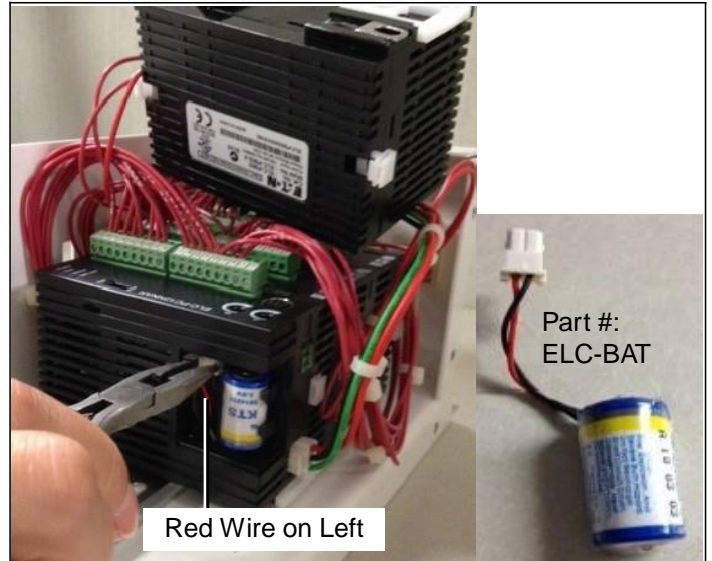


Figure 6. Battery Exposed.

5. Add the cover back on over the battery compartment. Clip the power supply back on the din rail and add the locking mechanism on the din rail. Assure (it should already be in Run mode) that the ELC is in "Run" mode which is a small switch on top of the module that the battery was in. Bolt the covers and lid back in place.

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