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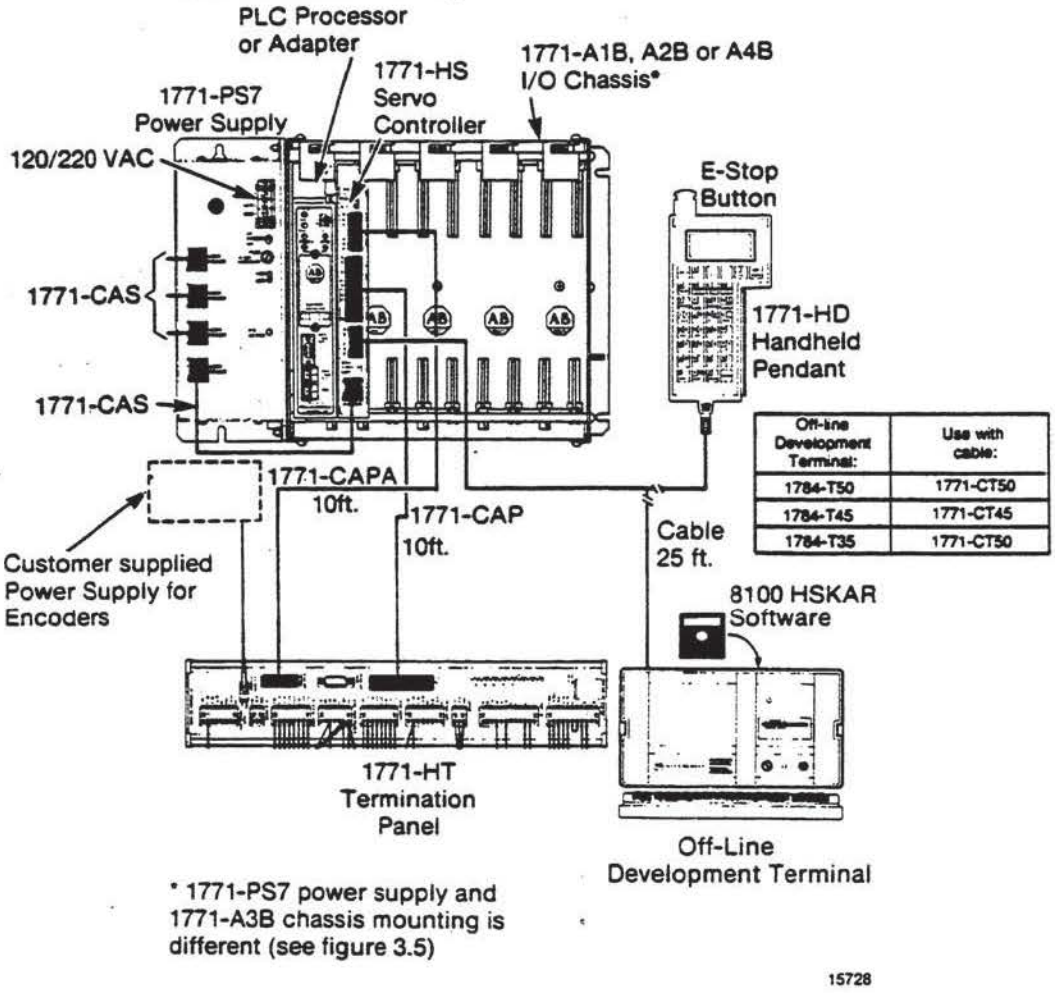
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Find the *Rockwell / Allen-Bradley 1771-HM3A* at our website: *Click HERE*

Figure 5.2 shows the cabling between the servo controller module, 1771-PS7 power supply, the termination panel, and the RS-232 device (handheld pendant or offline development system).

Figure 5.2
Servo Controller Cabling



5.2
1771-HM Plug-in Memory Cartridge

The IMC 120 servo controller module comes with the 1771-HM plug-in memory cartridge already installed.

The 1771-HM memory cartridge:

- plugs directly into the servo controller module through the component side cover of the module
- is necessary for the operation of the IMC 120 system since it is the entire system memory.

The plug-in memory cartridge contains:

- a lithium battery for battery backup
- either 8K or 72K CMOS RAM for MML program memory

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5.2.1
Enabling the Battery on the Plug-In Memory Cartridge

To enable the battery, set the rocker switch SW1 to BAT ON (see figure 5.3) using a ballpoint pen. This switch is accessible through the cover of the plug-in memory cartridge.

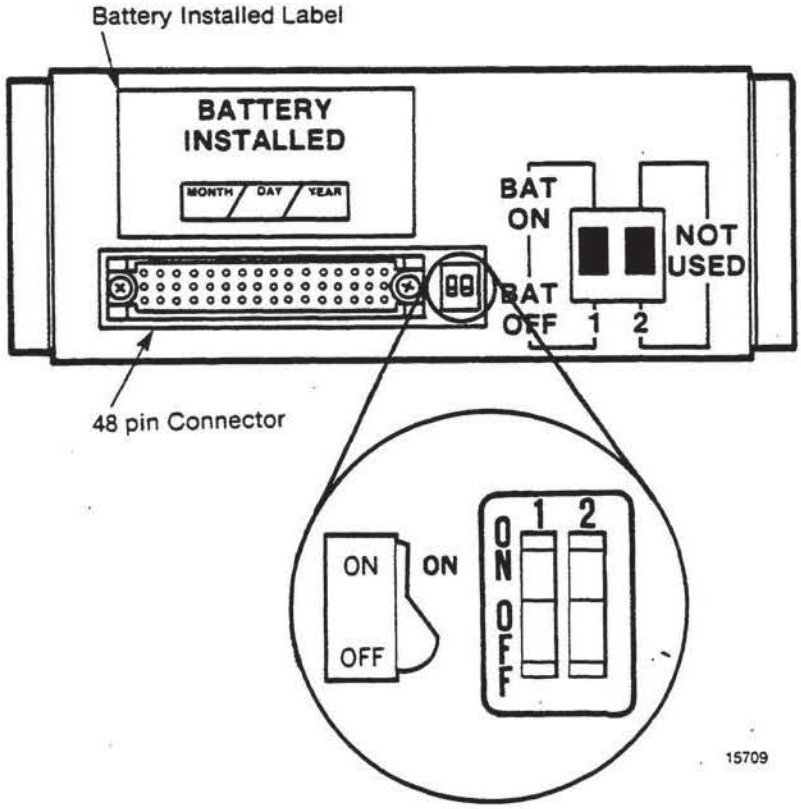
CAUTION: Do not use a pencil because a broken tip could short out circuitry causing failure of the cartridge.

Important: Failure to enable the battery results in:

- the red SYSTEM led on the servo controller module to light
- a battery low signal (bit 15 set in word 5 of block 0) to the PLC

The servo controller module still functions but stored MML programs and AMP parameters are lost when power is removed from the system.

Figure 5.3
Setting the Enable Switch on the Memory Cartridge



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5.2.2
Inserting the Memory Cartridge

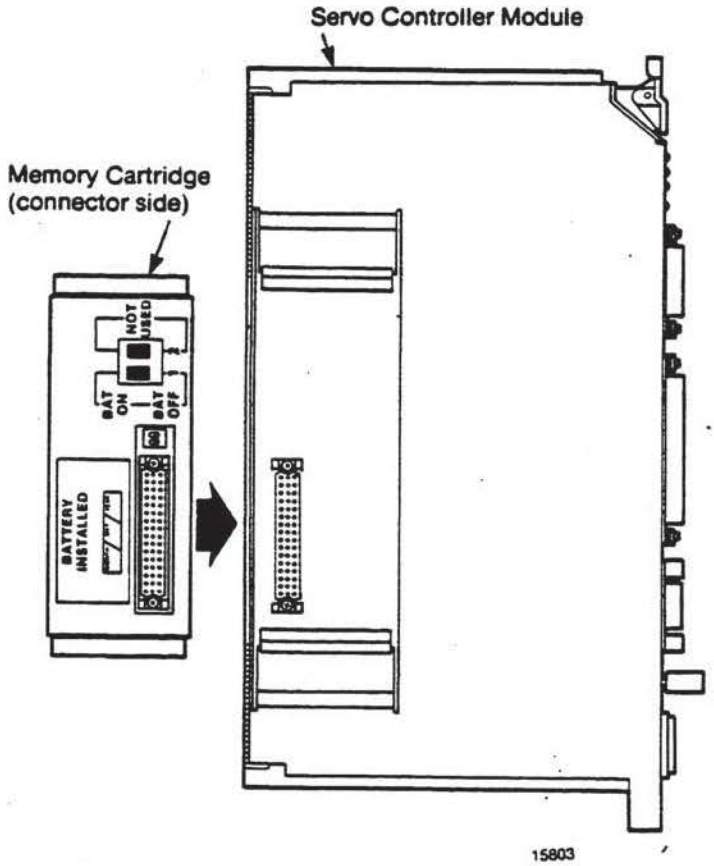
Figure 5.4 shows how the plug-in memory cartridge fits into the servo controller module. Make sure that:

- the edge of the memory cartridge fits snugly into the side cover of the servo controller module
- the male and female parts of the 48 pin connector fit snugly

If you don't install the memory cartridge in the servo controller module, the red MEMORY LED lights on the servo controller when power is supplied to the system.

Important: If the servo controller module doesn't power up, (green RUN LED isn't lit), when power is applied or the red MEMORY LED turns on, you may have bent a pin on the connector while inserting the memory cartridge.

Figure 5.4
How the Memory Cartridge Fits Into the Servo Controller Module



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5.2.3
Checking the Lithium Battery

The typical life expectancy of your lithium battery is 3.5 years based upon an average ambient temperature of 40° C measured just below the chassis. Battery life is a strong function of temperature. If your environment approaches worst case (60° C), battery life may be as short as 1.4 years.

If your lithium battery has reached the low trip point, the servo controller module informs you through either:

- its SYSTEM led turning on
- the warning message #64, MEMORY CARD BATTERY LOW, displayed on the IMC 120 handheld pendant
- a battery low signal (bit 15 set in word 5 of block 0) to the PLC

Important: The battery Check low trip point is typically 3.10V DC. Normal battery voltage is between 3.6V DC and 3.66V DC.

If your lithium battery has reached its low point, you should replace it immediately even though the remaining life is typically several weeks. No guarantees can be made as to the remaining life expectancy of the cell.

5.2.4
Replacing the Lithium Battery

You can replace the lithium battery only if the IMC 120 system is powered down and the servo controller module is unplugged from the 1771 chassis to allow access to the plug-in memory cartridge.

Important: Follow these guidelines when you handle plug-in memory cartridges:

- wear an ESD grounding wrist strap
- when the memory module is removed from the servo controller module immediately put it into a static-protective bag
- do not touch the internal connector or any part of the circuit board

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You may lose your MML programs and AMP parameters when you swap the old battery for the new one unless you upload your MML programs and AMP parameters to an off-line development system.

If your off-line development system is not available, use the following procedure to replace the battery and maintain MML and AMP files:

1. Power down the host PLC.

2. Remove the servo controller module from the I/O chassis.

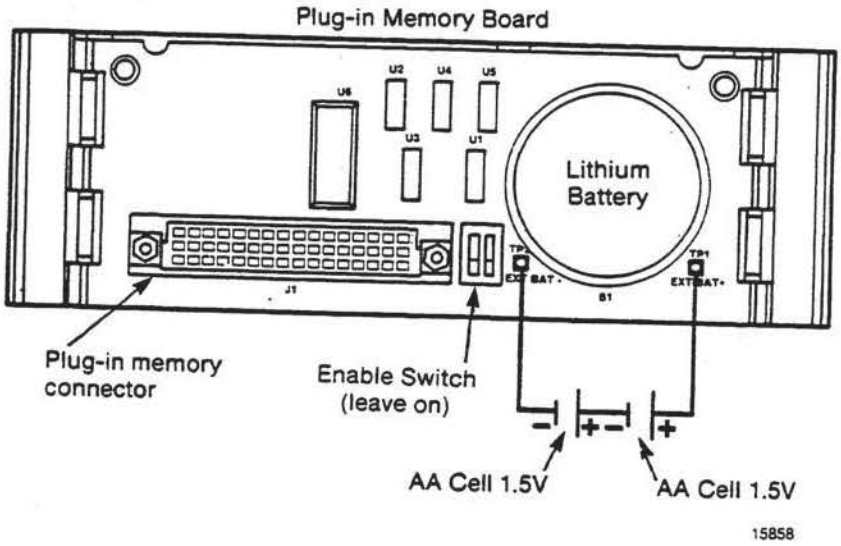
3. Unplug the memory module from the servo controller module. Pry up on the slots to disassemble.

   Important: Do not turn off the battery enable switch during this replacement procedure.

4. Remove the printed circuit board containing the memory from the plastic case.

5. Use two 1.5V AA cells as a power source to backup CMOS memory while you change the battery. Figure 5.5 shows the circuit for this battery and its connections to the memory board.

Figure 5.5
Circuit for Battery



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6. Connect external batteries to the supplied test points on the plug-in memory board.

   Important: If you inadvertently connect the batteries in reverse order, the cartridge is not harmed, but the MML program and AMP parameters will be lost.

7. Remove old battery and install new battery.

8. Remove external batteries.

9. Re-assemble memory cartridge.

If you lose memory during this procedure, you must download your MML program (see chapter 16 in the IMC 120 Programming Manual) and AMP parameters (see chapter 11 in the IMC 120 Programming Manual) from the off-line development system.

Publication 1770-2.19 entitled "PLC-3 Lithium Battery Information" provides other information on lithium battery relating to:

- handling
- storage
- transportation
- disposal
- potential hazards
- handling damaged batteries

WARNING: Follow the lithium battery information provided here. If you fail to do so, you risk damaged equipment and personal injury

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