

LA MARCHE A70B  
SCR BATTERY CHARGER  
HAS ALL THE CONTROL FEATURES YOU NEED



**La MARCHÉ**  
La Marche Manufacturing Company

# The La Marche A70B SCR Charger Puts Charging Information and Control at Your Fingertips To Make Your Batteries Last Longer



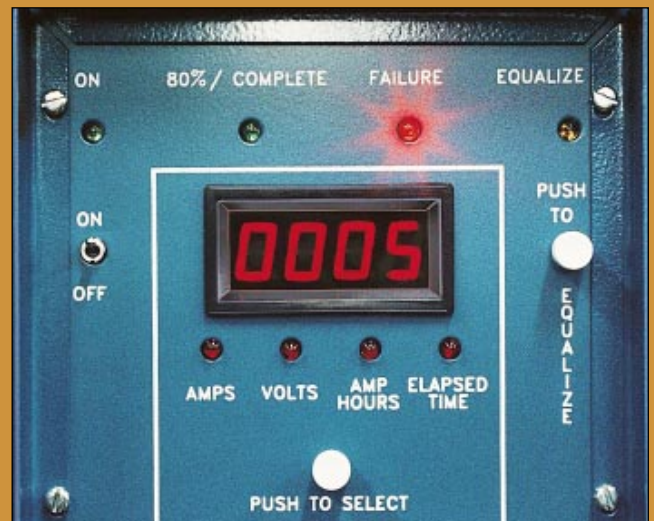
**Output Amperes**—displays actual output current within  $\pm 1$  amp.



**Elapsed Time**—directly readable in hours and minutes.



**Output Voltage**—displays actual voltage of a battery  $\pm 0.1$  volt.



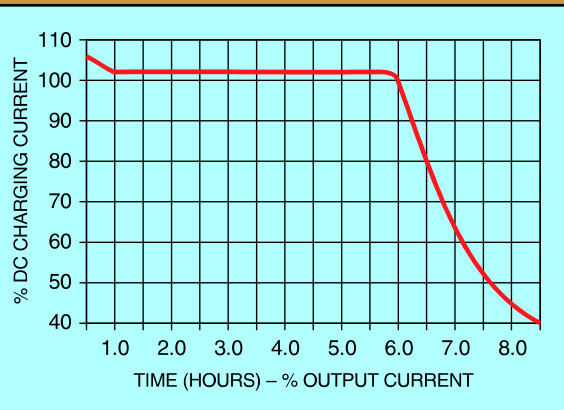
**Failure Diagnostics**—0005=shorted cell, etc.



**Ampere Hours Returned**—displays accumulated amp hours returned to the battery during this charge cycle.

The A70B Charger gives you all the up-to-date status information you need, when you need it. A manual Push-to-Select button allows you to scan each of four critical operating parameters shown on a large  $\frac{1}{2}$ " LED digital display. In case of an input power loss, the LaMarche A70B Charger retains all the vital information in its computer memory.

The above is a typical display of charging a 36 volt battery.



### A70B Typical Constant Voltage Charge Curve

Charge Curve is constant for input variations  $\pm 10\%$

### Data and Control Functions

The LaMarche A70B Micro-Monitor<sup>®</sup> computer-controlled monitoring system prevents undercharging and overcharging—delivers only the charge your battery needs, no matter what its charge level from start through the gassing stage. Also provides battery equalization. All functions are easily and instantly user-selectable or preprogrammed to add to the charging power and money saving potential of the charger.

### Choice of Starting Modes

The LaMarche A70B Charger allows you to select two different starting modes: automatic and delayed start. The charger will not start unless the ON/OFF toggle switch on the front of the control panel is in the ON position. The ON/OFF switch normally remains in the ON position.

In the automatic mode the charger starts after the correct battery is connected.

The **delayed start** feature allows the operator to select a programmed delayed start of typically 0, 1, 4 or 8 hours. The delayed start helps to reduce your electric utility bill by shifting the charging load to off-peak hours with a lower KWH rate. This function may also be used to eliminate unnecessary short-run battery cycling.

The charger will automatically turn off if the battery is disconnected at any time during the charge cycle in either mode.

### Equalize Control

The A70B equalize charge cycle brings all the cells up to the same fully-charged level when the "Equalize" function is selected. Electronic equalize circuitry provides full charge protection with computer accuracy and precision.

### Multi-Input AC Voltage Capability

The A70B allows you to select the required input voltage with simple transformer tap changes.

### Multi-Output Voltage Capability

The A70B's built in computer instantly analyzes DC current, DC voltage, AC voltage and power line frequency to provide a constant update on both battery and line con-

dition. As an optional feature, the A70B Charger will automatically select output battery cell range for 12/18 cell models, 18/24 and 24/36. Contact factory for other combinations.

### Programmable Charging Curve Adds Versatility

The charging curve of the LaMarche A70B Charger is programmable and can therefore be altered to meet changing needs. By changing the software the charging curve can be altered to satisfy different battery types, designs and charging methods in use now as well as those anticipated for the future.

### Selectable Finish Charge Modes

The A70B Charger can be programmed by switches on the control circuit, to operate in one of four charge modes. One mode is the conventional constant voltage automatic finish charge and the other three modes are constant current finish charges at different current levels.

### Rate Timing (DI/DT)—Protects Your Batteries & Saves Energy

The Rate Timing feature on your LaMarche A70B Charger performs two important functions for you. 1) If the battery is partially charged, the rate timing feature will complete the charge and automatically terminate the charge before the preset time has elapsed. 2) Rate Timing detects shorted cells and terminates the charge cycle before the battery is damaged.

### Manual Override Charger Start (Jump Start)

On rare occasions, if authorized individuals determine that a properly sized battery is extremely discharged (below the normal level for automatic start), they can manually initiate the recharge cycle, eliminating the necessity of removing and partially charging the extremely discharged battery on a different charger.

### Current Walk-In

The controlled start feature on the A70B Charger eliminates initial start-up AC input current surges.

### High Current Protection

If a high current problem is detected, the LaMarche A70B Charger automatically terminates the charge cycle, and the "FAILURE" light is activated. This failure condition requires a manual reset with the "ON/OFF" switch.

### Charger Overcurrent Protection

Shuts the unit off during over current conditions even if the microprocessor has failed. Protective circuitry looks around the microprocessor and senses failed control circuitry.

### AC Voltage Out Of Limits

A Failure indicator Light will come on when the AC line voltage is above or below 15% of the normal value. Under low AC input conditions (-15%) the charger will turn off. When the AC input returns to normal the A70B will resume the charge where it left off.

### Watchdog Back-up Timer

The back-up timer protects your battery in case of a control malfunction by shutting down the charger. The 14-hour back-up timer is independent of the microprocessor. The charger "FAILURE" light comes on anytime the back-up timer is activated. On AC failure the back-up timer retains memory.

### Fault Lock-out Battery Protection

When a failure occurs, the automatic charging mode is interrupted and the charger shuts down. To re-enable the charger, the battery must be disconnected from the charger.

### Analysis Mode Diagnostics

Should a battery or charger problem occur, the red "FAILURE" light will come on, and the A70B automatically ceases charging operation. The charger's computerized monitoring system diagnoses the problem immediately and displays a number code on the LED digital readout to identify the condition.

# The La Marche A70B SCR CHARGER...

## ALL THE CHARGING CONTROL YOU NEED

### The A70B Requires Very Little Maintenance

Except for the AC input contactor which provides line isolation safety, there are no voltage-sensitive relays or moving parts that need continual servicing and maintenance. Special microprocessor programming is used to minimize contactor wear.

### Performance Tested & Proven

LaMarche A70B Chargers conform to CSA, UL, OSHA, NEMA and FM standards of performance, durability and safety.

### La Marche Sets The Standards

LaMarche Manufacturing Company was founded in 1945 in the Midwest to manufacture battery chargers for all types of demanding applications. Through the years, our engineering and production has set the standards for all charger technologies in the industrial field, including motive power applications in materials handling, automatic guided vehicles, aviation, mining and others. LaMarche continues to set the standard in battery charger technology with the A70B SCR Charger. Call on LaMarche today for your battery charging needs.

## Specifications

### Electrical AC Input Voltages (50/60 Hz)

#### Single Phase:

120/208/240 VAC, or 208/240/480 VAC

#### Three Phase:

208/240/480 VAC, or 480/575 VAC

### DC Output

DC amps 30 to 400, depending on AH capacity of the battery and allowable charge time.

DC volts 12 to 130 nominal, depending upon the number and type of cells.



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### Mechanical

Exact dimensions and approximate weights are listed on appropriate A70B price sheets. Please call your representative or distributor for this information.

### Finish

Bonderized silicone baked enamel, blue.

### Mounting

Wall and floor mounting adapters, depending on the base selected.

### Standard Accessories Supplied

1. Standard Operating Temperature: 0° to 50°C
2. Ten foot DC leads with charging connector (SB, EC, or YC).
3. DC ammeter (½" digital display).
4. Microprocessor control system includes:
  - a. Automatic Start/Stop.
  - b. Rate timer control (DI/DT).
  - c. Selectable 6 hr. equalize charge.
  - d. 14-hour override timer.
  - e. Programmable delayed start.
  - f. Hold time on AC line failure.
  - g. Resume time on AC line return.
  - h. AC contactor.
  - i. Lights: "On", "Equalize Mode", "80% Complete", "Failure".
  - j. Automatic lamp test sequence on initial start-up.
  - k. Selectable finish charge modes.
  - l. Selectable DC cable length voltage compensation.
5. Fused AC input and DC output.
6. Easy connection of AC input, DC output to internal terminals.
7. Combination AC inputs at no charge.

### Optional Accessories

1. J.I.C. approved enclosure.
2. Fan-forced cooling system.
3. For non standard temperature operations, contact factory.
4. Three phase input where single phase is indicated.
5. Special paint.
6. Export packaging .
7. Wall-mount brackets for floor case.
8. AC disconnect switch safety door interlock.
9. Stackable cases.
10. Automatic dual DC voltage output selection 12/18, 12/24, 18/24, 24/36 and others.
11. Automatic digital scan of all functions.
12. Water control valve.
13. DC proximity detector sensor to verify DC connector hook up.
14. DC output cable rated for all-weather outdoor use.
15. UL approved outdoor rain-proof units.
16. Verification of the number of cells.
17. Automatic equalize cycle.

Others—contact factory.



Specifications subject to change without notice.