



Unit Shown: A77DE



Microprocessor Controlled SCR Battery Charger

The La Marche Model A77 Series Battery Charger is engineered for the demanding requirements of Switchgear, Process Control, Oil Exploration and other DC power applications.

Powered by Microprocessor Controlled SCR technology, the A77 Series Battery Charger / Battery Eliminator has $\pm 0.25\%$ DC voltage regulation from no load to full load over the specified input voltage, frequency and ambient temperature ranges.

These chargers are available in DC output voltages of 24, 48, 130, and 260 VDC with DC output currents from 6 amps and above. Consult factory for any special input and output requirements not mentioned above.

The La Marche A77 charger provides value added features such as AC/DC breakers, easy to read LCD display with text readout alarm LED's and form "C" alarm contacts. Communication options are available to remotely monitor and control the charger using DNP3, Modbus, IEC 61850 and SNMP protocols. The SNMP option features easier and faster charger setup and configuration using a web browser.

Designed to meet NEMA PE5 and UL 1012 safety standards.

* Pending

Standard Features

- Microprocessor Controlled SCR Technology
- A77D - Filtered
- A77DE - Battery Eliminator
- Automatic AC Voltage Compensation
- AC & DC Surge Protection (MOV)
- AC & DC Breaker
- Temperature Compensation
Adjustable (1-5 mV / cell/°C)
- Float / Equalize Mode Switch
- Digital Float and Equalize Adjustments
- Digital Current Limit Adjustment 50 to 110%
- $\pm 0.25\%$ DC Voltage Regulation
- SCR Failure Detection
- Load Sharing
- Master Equalize
- Over Temperature Protection
- LCD Display
 - DC Voltage and Current
 - Alarms
 - Unit Temperatures
- Advanced Data Logging (Micro SD)
- LED Indicators
 - Float / Equalize
 - AC Failure
 - AC ON
 - Summary Alarm
 - Charger Failure
 - Low DC Current
 - Overload / Current Limit
 - Low DC Voltage
 - End of Discharge
 - High DC Voltage
 - High DC Voltage Shutdown
 - Positive & Negative Ground Detection
- Remote Annunciation Form "C" Contacts
 - AC Failure
 - Summary Alarm
 - (See Optional Accessories For Additional Alarm Contacts)
- Alarms Latching / Non-Latching
- Equalize Timer - adjustable from 1-255 hours with
with five selectable modes of operation (manual,
automatic every 7, 14 or 30 days and equalize after
sensing a low DC voltage)
- UL 1012, CUL & IBC
- 5 Year Warranty

Specifications subject to change without notice

P25-DSA77-1
ECN 21244
08/16

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Specifications

ELECTRICAL

- **AC Input Operating Range Voltage**
Voltage range: +10, -12% from nominal
Frequency range: 60 Hz \pm 5%
(50Hz Consult Factory)
- **Single Phase Voltages:**
120, 208, 240, 480 or 600 VAC
(Tap selectable 120/208/240 on units up to 25 amp output. All other units must specify single input voltage). Consult factory for other voltages.
- **Three Phase Voltages:**
208, 240, 480 or 600 VAC
Consult factory for other voltages.
- **DC Output**
24, 48, 130, 260 VDC
6 to 500 amps
- **Efficiency**
Single Phase > 85%
Three Phase > 90%
- **Output Filtering (with or without batteries):**

	24V	48V	130V	260V
A77D Filtered (w/o battery)	240mV (1%)	480mV (1%)	2.6V (2%)	5.2V (2%)
A77D Filtered (w/battery)	30mV	30mV	100mV*	200mV*
A77DE Eliminator (w/o battery)	30mV	30mV	100mV**	200mV

* Battery AH = 4x the charger's ampacity
** 30mV filtering available as an option

- **DC Voltage Regulation Steady State**
 \pm 0.25% of setting from no load to full load over the specified input voltage, frequency and ambient temperature ranges.

DC Output Voltage Range

Volt	Cells	
	Float	Equalize
24V	23-29.5	24-29
48V	46-57	48-59
130V	115-140	123-147
260V	230-280	246-294

Note: Typical cell ranges are based on the following:
Lead Acid 2.17 vpc Float, 2.33 vpc Equalize
NiCad 1.44 vpc Float, 1.55 vpc Equalize
VRLA 2.25 vpc Float, 2.27 vpc Equalize

Front Display Panel



- **Data Logging**
A77 Battery Charger is equipped with data logging capability on an internal Micro-SD Card. It logs and stores data of Event-Driven and Time-Interval-Driven Events. The charger's data-log file does not need proprietary software to examine the data; it could be viewed and easily formatted with many popular spreadsheet programs.
- **Dynamic Response (On Battery)**
Voltage transient < \pm 5% over a step change in the load from 20% to 100%
Recovery Time < 200 ms
- **Audible Noise**
Less than 65dBA at any point 5 feet from any vertical surface of the unit.
- **Load Sharing**
Identical La Marche A77 units, when connected in parallel, are capable of sharing the DC load within \pm 5% for individual unit outputs greater than 5% of the rated output.

REMOTE MONITORING

- Form "C" Alarm Contacts
- With optional Communications Card:
 - Connect to SCADA System
 - Web Monitoring
 - Alarm / Notification E-mails

PROTECTION

- **Current Walk-in**
The output current will gradually increase after the charger is turned on, eliminating surges and overshoot.
- **Current Limit**
Electronic Current-Limiting Control Circuitry provides a digitally adjustable limit from 50 to 110% of the rated output current of the charger, Factory set at 110%.
- **AC Breaker**
Single Phase units are equipped with a 2-pole circuit breaker.
Three Phase units are equipped with a 3-pole circuit breaker.
- **DC Breaker**
Standard units are equipped with a 2-pole circuit breaker.

ENVIRONMENTAL

- **Operating Temperature**
0 to 50°C (32 to 122°F)
- **Storage Temperature**
-40 to 85°C (-40 to 185°F)
- **Relative Humidity**
0 to 95% (non-condensing)
- **Cooling**
Convection Cooled

ENCLOSURES

- **NEMA Type 1**
Consult factory for other enclosure ratings.
- **Dimensions**
Overall dimensions and weight are listed on the last page. When space requirements are critical, please consult the factory. Case specifications are subject to change.
- **Mounting**
Floor, wall or rack mounting is available; see enclosure specifications on page 4 for details.
- **Finish**
Pretreated with a seven stage iron phosphate wash, sealer and deionized rinse. Then coated with an environmentally safe and durable ANSI 61 gray Polyester TGIC Minite powder finish.

STANDARDS

- ABS *
- UL/CUL 1012
- EN 55011
- NEMA PE5
- FCC Part 15
- IEEE / ANSI C37. 90.1
- IEC 60255-22-3
- IEC 61000-4
- IBC

* pending

Optional Accessories

- 01C 2 - Pole High Interrupting Capacity AC Breaker*
65KAIC @ 240 VAC / 35KAIC @ 480 VAC
 - 01D 2 - Pole High Interrupting Capacity AC Breaker*
100KAIC @ 240 VAC / 65KAIC @ 480 VAC / 25KAIC @ 600 VAC
 - 01F 3 - Pole High Interrupting Capacity AC Breaker*
65KAIC @ 240 VAC / 35KAIC @ 480 VAC
 - 01G 3 - Pole High Interrupting Capacity AC Breaker*
100KAIC @ 240 VAC / 65KAIC @ 480 VAC / 25KAIC @ 600 VAC
- * Only available for units with current draws above 8 amps
- 19T AC Breaker Trip on HVSD
 - 19U Adjustable Ground Detection Sensitivity
 - 19V AC Voltage & Current Metering (1%)
 - 11F Special 30mV Filtering
 - 20Q Equalize Fan Control Relay
 - 217 Reverse Polarity Protection & LED
 - 38D Copper Ground Bus Bar
 - 11L Lightning Arrestor
 - 102 Blocking Diode
 - 11W External Temperature Probe 24ft
 - 11Y External Temperature Probe 100ft
 - 09C I.D. Tags - White text on black background
 - 09V I.D. Tags - Black text on white background
 - 09W Heat Shrink Wire Markers with Electrical Schematic
 - 46R Discrete Alarm Relays
 - Positive Ground
 - Negative Ground
 - High DC Volts
 - Charger Failure
 - Low DC Volts
 - Low DC Amps
 - Battery End of Discharge
 - High Voltage Shutdown
 - 17B 12 Pulse Rectification
 - 535 5% THD
 - 06G Zero Center Ammeter
 - 57D Hydrogen Det. HUB, Alarm Interface & Sensor
 - 57H Hydrogen Det. HUB, Alarm Interface
 - 10Z Electrolyte Level HUB, Alarm Interface & Sensor
 - 538 IBC Certification Label (consult factory for Anchor Kits)

Communication Protocols

- 21J IEC 61850 Ethernet
- 21P DNP 3.0 Communications RS232/RS485/Ethernet
- 21Q Modbus Communications RS232/RS485/Ethernet
- 21S Modbus RTU RS232/RS485
- 21X SNMP & Web Browser (Ethernet)

A77 Charger Chart

	Model Number	DC Amps	DC Protection DC Breaker/ Rating	Three Phase AC Input Current Draw Amps @ 100% Load (Recommended Feeder AC Supply Breaker)							Enclosure	Shipping Weight* (Approximate)	
				(D)208	(B)240	Rating	(C)480	Rating	(ZD)600	Rating		lbs	kgs
				260 Volt Systems	A77D(E)-25-260V	25	40/25 KAIC	36 (50)	31 (50)	25 KAIC		16 (25)	22 KAIC
	A77D(E)-50-260V	50	70/25 KAIC	72 (100)	62 (90)	25 KAIC	31 (50)	22 KAIC	26 (40)	18 KAIC	72N	700	317
	A77D(E)-75-260V	75	100/25 KAIC	108 (150)	94 (125)	25 KAIC	47 (70)	22 KAIC	39 (60)	18 KAIC	46N	900	408
	A77D(E)-100-260V	100	150/25 KAIC	144 (200)	125 (175)	25 KAIC	62 (90)	22 KAIC	52 (70)	18 KAIC	47N	1800	816
	A77D(E)-150-260V	150	200/25 KAIC	---	187 (250)	25 KAIC	94 (150)	25 KAIC	78 (100)	18 KAIC	47N	2200	998
	A77D(E)-200-260V	200	300/25 KAIC	---	---	25 KAIC	125 (175)	25 KAIC	104 (150)	18 KAIC	57N	3000	1360

Note: Case size subject to change without notice
*Consult Factory for optional export crating weight

Enclosure Specifications

Enclosure	Overall Dimensions						Cable Entry		Standard Mounting	Optional Mounting Kits	
	Width		Depth		Height		AC Input	DC Input		Rack	Floor
	in	mm	in	mm	in	mm					
10	19	483	15.1	384	12.3	310	RIGHT TOP / BOTTOM	LEFT TOP / BOTTOM	WALL	19" / 23"	✓
477	19	483	15.1	384	24	610	RIGHT TOP / BOTTOM	LEFT TOP / BOTTOM	WALL	19" / 23"	✓
977	20.8	585	15.7	399	37.9	963	RIGHT TOP / BOTTOM	LEFT TOP / BOTTOM	FLOOR	23"	STD
72N	27	686	23.5	597	44.5	1130	BOTTOM RIGHT	BOTTOM LEFT	FLOOR	---	---
46N	30	762	20	508	66	1676	TOP / BOTTOM	TOP / BOTTOM	FLOOR	---	---
47N	38	986	39.4	1001	70	1778	TOP / BOTTOM	TOP / BOTTOM	FLOOR	---	---
57N	60	1524	30	762	77	1956	TOP / BOTTOM	TOP / BOTTOM	FLOOR	---	---

Model Number Nomenclature

A77D (E) - 25 - 130V - () 1 - () - ()

Model Number: A77D (E)
 Battery Eliminator: -
 DC Amps: 25
 DC Volts: 130V
 AC Voltage Code: ()
 AC Phase Code: 1
 Battery Cell Type Code: ()
 Factory Assigned Accessory Code: ()

AC Voltage Codes	AC Phase Codes	Battery Cell Type Code
ABD - 120/240/208 A - 120 D - 208 L - 220 Q - 230 BL - 240/220 B - 240 G - 380 ZA - 400 J - 415 K - 440 C - 480 ZD - 600	1 - Single Phase 3 - Three Phase	11L 12L 13L 22L 23L 24L 25L 26L 53L 54L 55L 56L 57L 58L 59L 60L 61L 62L 110L 115L 116L 120L 17N 18N 19N 20N 33N 34N 35N 36N 37N 38N 39N 83N 84N 85N 86N 87N 88N 89N 90N 91N 92N 93N I = Lead Acid N = Nickel Cadmium LR = VRLA

Ordering Information

- When ordering, please specify:**
- La Marche Model Number A77D/A77DE
 - DC Amps
 - DC Volts
 - Special Frequency, When Required
 - AC Voltage Code
 - AC Phase Code
 - Battery Cell Type Code
 - Optional Accessories (Option Code)

Battery Charger Sizing Guidelines

- Required Battery Backup Time (Hours)
- DC Output Voltage
- Ampere Hour Capacity of Battery
- Allowable Recharge Time From Full Discharge (Hours), Where Applicable
- Continuous and Intermittent DC Loads and Duration (Amps)