Click on Model to view Data Sheet, and use your Zoom tool as needed.

La Marche Product Catalog **Table of Contents**

LaMARCHE®
ISO 9001:2000 CERTIFIED

A12B

Battery Charger / Power Supply

Unit shown with several optional accessories

The Industry's Most Reliable Filtered Battery Charger / Power Supply

The La Marche model A12B Series Filtered Battery Chargers Power Supplies are engineered for the demanding requirements of Switch Gear applications, Process Controls and Communications. The magnetic amplifier circuitry is designed to carry continious and intermittent loads up the maximum rated output. Its robust design and unmatched reliability has made this workhorse the standard in the industry, and with its customizing features, there is virtually no application that the A12B cannot meet.

Check the Digital CAP Systems data sheet for our accessory package.

Standard Features

- Magnetic Amplifier Circuitry provides increased longevity and worry-free operation
- 2% Accuracy Analog DC Ammeter and DC Voltmeter (Digital meter is optional)
- Fused AC input and DC output protects Battery and Charger/Power Supply
- Automatic AC Voltage Compensation
- AC Power Failure Relay with Form "C" Contacts
- Separate Float and Equalize Potentiometers provide simple and precise DC Voltage calibration.
- Float/Equalize Mode Switching
- Float and Equalize Lights
- Filtered DC Output (clean power) - the A12B can be used as a Power Supply with 30mV RMS or less on single phase units and 100mV RMS or less on three phase units.
- Current Limiting Circuitry prevents overload and provides current control from 50 to 120% of rated output (factory set at 115%).
- +/- 0.5% DC Voltage Regulation
- Industry's unparalleled 10-year Warranty

P25-DSA12B-1
ECN 18437
09/09

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Specifications

ELECTRICAL

- **AC Input Voltages**
  Single Phase 60Hz: 120, 208, 240, 480 or 575
  Single Phase 50Hz: 220/240, 380 or 415
  Three Phase 60Hz: 208, 240, 480 or 575
  Three Phase 50Hz: 220/240, 380 or 415
- **Power Protection**
  AC Fuse, DC Fuse and Current Limit Protection
- **DC Output Voltages**
  DC Amps: 3 to 400 amperes
  DC Volts: 12, 24, 48 & 130VDC (Others available such as 32&36VDC)
- **Output Filtereing (With or without a battery)**
  30mV RMS for single phase models and 100mV RMS for three phase models
- **DC Voltage Regulation**
  Plus or minus 0.5% of setting from no load to full load over the specified input voltage, frequency and ambient temperature ranges.

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)
- **MTBF**
  350,000 Hours
- **Dimensions**
  Overall dimensions and weights are listed on the last page of this Data Sheet. Case specifications are subject to change due to innovative product development and design. When space requirements are critical, please consult the factory.
- **Mounting**
  Floor or wall units are available. Mounting flanges are supplied as integral part of cabinet back plate on wall mounted models.
- **Finish**
  Pretreated with three step iron phosphate wash and de-ionized rinse. Finished with environmentally safe water based ANSI 61 gray baked enamel.

Agency Approvals

- **U.L. Battery Charger**
  File E 319318, Guide BBML
  U.L. Std. No. 1012
- **C-U.L Battery Charger**
  CAN/CSA
  Std. C22.2 No. 107-2
- **U.L. Fire Alarm System Power Supply**
  File S2768, Guide UTRZ
  Std. No. 1481
  Must Specify Accessory Code 09A

Notes:
All models where appropriate will carry the U.L. and C-U.L. Battery Charger listing. When U.L. Fire Alarm System Power Supply Listings are required, you must specify this requirement at the time of order. Not all models can be U.L. approved. Accessories, type of charger and rating will determine U.L. approval. Consult our factory if U.L. approvals are required.

Optional Accessories

ALARM & CONTROL

- **16 Series** (Refer to Digital C.A.P. Systems Data Sheet for complete details)
  Digital C.A.P. (Combined Accessory Package) Systems featuring a Selectable LED Display, a Multi-Mode Equalize Timer with Light adjustable from 1-144 hrs with five selectable modes and various failure alarm& lights.
- **46 Series** (Refer to LCD C.A.P. Systems Data Sheet for complete details)
  LCD C.A.P. Systems common features:
  Selectable Display, Multi-Mode Equalize Timer, Equalize Light, Float Light, AC Power Failure Relay w/ (2) sets Form "C" (except 46Q), Low DC Current Alarm w/ (2) sets Form "C" Low DC Voltage 1 Alarm w/ (2) sets Form "C" & Adjustable Time Delay (0-255 sec) (Except Ground Detection Alarms).
- **03N** Low DC Current Alarm & Light w/ (1) set Form "C" contacts
- **04J** Electronic Equalize Timer Multi-Mode adjustable from 2-144hrs with five selectable modes; Standard, 7-day, 14-day, 30-day and Equalize after Low DC Voltage.
- **050** Ground Detection Switch 3-position with DC Voltmeter indication (130VDC models utilizes two switches)
- **051** Ground Detection Alarm with Reset Pushbutton and (1) set form "C" Positive and (1) set form "C" Negative contacts
- **052** Ground Detection Lights (Positive and Negative)
- **053** Ground Detection Switch & Lights 3-position with DC Voltmeter indication (130VDC models utilizes two switches)
- **054** AC Power Failure Light
- **060** AC Pilot Light Neon Bulb *(LED included with Digital C.A.P. Systems)*
- **068** Sonalert with Silence Switch Audible Alarm
- **16C** Hi/Lo-2 Combination Alarm High/Low DC Voltage, Field Calibrations & Adjustments, Individual Lights and (2) Form "C" contacts for each alarm
- **10G** Forced Load Sharing *(with same model number only)*
- **103** Remote Sensing
- **162** Summary Alarm *(for use with discrete components only)*

METERING & PROTECTION

- **011** AC Breaker Single Pole *(120VAC only)*
- **012** DC Breaker Single Pole
- **016** AC Breaker Two Pole
- **017** DC Breaker Two Pole
- **01B** AC Breaker Three Pole *(3-phase input only)*
- **01B** AC Breaker Three Pole *(3-phase input only)*
- **---** AC Breakers High Interrupting. Contact factory for appropriate code.
- **06G** Zero Center Ammeter w/Battery & Load Terminals *(under 250A units)*

METERING & PROTECTION CONTINUED

- **06L** AC Ammeter +/-2% accuracy *(single phase only)*
- **06M** AC Voltmeter +/-2% accuracy *(single phase only)*
- **102** DC Blocking Diode
- **104** AC Dual Fusing
- **105** DC Dual Fusing
- **107** DC Surge Protectors *(MOV's)*
- **140** AC Switch Single Pole *(60A Maximum)*
- **141** AC Switch Two Pole *(60A Maximum)*
- **143** AC Switch Three Pole *(60A Maximum)*

MISCELLANEOUS

- **09A** U.L. 1481 Listing
- **092** Tropicalization (magnetics only) Single Phase
- **093** Tropicalization (magnetics only) Three Phase
- **10B** USCG (U.S. Coast Guard) Accessories *
- **10L** Battery & Load Terminals without meter (under 250A units)
- **11F** 30mV Filtering for 3-phase units
- **38G** ABS (American Bureau of Shipping) Modifications *
  - **---** Floor Stand (must order separately)
  - **---** Drip Shield (must order separately) *
- **38J** ABS (38G) & USGC (10B) Single Phase *
- **38K** ABS (38G) & USGC (10B) Three Phase *
- **11V** Temperature Compensation (Internal Probe)
- **11W** 15 Foot External Temperature Probe
- **100** 2 Battery Charge Divider - Negative Ground
- **10U** 2 Battery Charge Divider - Positive Ground
- **101** 3 Battery Charge Divider - Negative Ground
- **10V** 3 Battery Charge Divider - Positive Ground
- **095** Point to Point Wiring Diagram with Wire Makers
- **096** Wire Markers - Includes Wire Marker Numbers on Electrical Schematic
- **09L** Physical Parts Location Drawing
- **097** SIS Wire (#16 AWG and larger)
- **09W** Heat Shrinkable Wire Markers
- **21P** DNP3.0 (Offered only with 46 series CAP)
- **21Q** Modbus (Offered only with 46 series CAP)

**ONLY Available On Case No. 3, 6, 7, 70, & 72.*
Notes: Discrete Alarms are not available in conjunction with Digital C.A.P. (Combined Accessory Package) systems. Typically, when ordering two or more discrete components, the Digital C.A.P. system listed above provides a more economical approach.
Case sizes may differ depending on optional accessories and/or 50Hz input. Please consult factory when dimensions are critical.

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Must specify only one battery type and number of cells from range shown above. Please consult factory for other available cell ranges if desired range not shown.

	Model Number	DC Amps	DC [1] Fuse Size (Amps)	AC Input Phase	AC Input Current Draw @ 100% Load [2] (Amps)									Std. [5] Case Size	Shipping Weight (Approximate)	
					60Hz Units						50Hz Units [3, 4]					
					A 120	D 208	L 220	B 240	C 480	E 575	B L 240 / 220	G 380	J 415		lbs	kgs
12 volt systems (6L, 9 or 10NC)	A12B-3-12V	3	10	1	0.8	0.4	0.4	0.4	---	---	0.4 / 0.4	---	---	7	60	27.2
	A12B-6-12V	6	15	1	1.5	0.9	0.8	0.8	---	---	0.8 / 0.8	---	---	7	70	31.8
	A12B-10-12V	10	20	1	2.5	1.4	1.4	1.3	---	---	1.3 / 1.4	---	---	7	80	36.3
	A12B-15-12V	15	25	1	3.8	2.2	2.1	1.9	---	---	1.9 / 2.1	---	---	3	90	40.8
	A12B-20-12V	20	30	1	5	2.9	2.7	2.5	---	---	2.5 / 2.7	---	---	3	95	43.1
	A12B-30-12V	30	40	1	7.5	4.3	4.1	3.8	1.9*	1.6*	3.8 / 4.1	2.4*	2.2*	3	105	47.6
	A12B-40-12V	40	60	1	10	5.8	5.5	5	2.5*	2.1*	5 / 5.5	3.2*	2.9*	6	155	70.3
	A12B-50-12V	50	80	1	13	7.2	6.8	6.3	3.1*	2.6*	6.3 / 6.8	4.0*	3.6*	6	170	77.1
	A12B-60-12V	60	80	1	15	8.7	8.2	7.5	3.8*	3.1*	7.5 / 8.2	4.7*	4.3*	6	180	81.7
	A12B-75-12V	75	100	1	19	11	11	9.4	4.7*	3.9*	9.4 / 11	5.9*	5.4*	6	225	102.1
	A12B-100-12V	100	150	3	---	7.5	7.1	6.5	3.3*	2.7*	6.5 / 7.1	4.1*	3.8*	8A	325	147.4
24 volt systems (12L, 19 or 20NC)	A12B-3-24V	3	10	1	1.5	0.9	0.8	0.8	---	---	0.8 / 0.8	---	---	7	70	31.8
	A12B-6-24V	6	15	1	3	1.7	1.6	1.5	---	---	1.5 / 1.6	---	---	3	85	38.6
	A12B-10-24V	10	20	1	5	2.9	2.7	2.5	---	---	2.5 / 2.7	---	----	3	95	43.1
	A12B-15-24V	15	25	1	7.5	4.3	4.1	3.8	1.9*	1.6*	3.8 / 4.1	2.4*	2.2*	3	100	45.4
	A12B-20-24V	20	30	1	10	5.8	5.5	5	2.5*	2.1*	5 / 5.5	3.2*	2.9*	3	120	54.4
	A12B-25-24V	25	35	1	13	7.2	6.8	6.3	3.1*	2.6*	6.3 / 6.8	4.0*	3.6*	3	135	61.2
	A12B-30-24V	30	40	1	15	8.7	8.2	7.5	3.8*	3.1*	7.5 / 8.2	4.7*	4.3*	3	145	65.9
	A12B-35-24V	35	50	1	18	11	9.6	8.8	4.4*	3.7*	8.8 / 9.6	5.5*	5.1*	6	190	86.2
	A12B-40-24V	40	60	1	21	12	11	10	5*	3.2*	10 / 11	6.3*	5.8*	6	205	93.0
	A12B-50-24V	50	80	1	26	15	14	13	6.3*	5.2*	13 / 14	7.9	7.2	6	240	108.9
	A12B-60-24V	60	80	1	31	18	17	15	7.5	6.3*	15 / 17	9.5	8.7	6	265	120.2
	A12B-75-24V	75	100	1	38	22	21	19	9.4	7.8	19 / 21	12	11	70	400	181.4
	A12B-100-24V	100	150	1	51	29	28	26	13	11	26 / 28	16	15	70	450	204.1
	A12B-125-24V	125	200	3	---	19	18	17	8.1	6.8*	17 / 18	11	9.4	70	525	238.1
	A12B-150-24V	150	200	3	---	23	22	20	9.8	8.2	20 / 22	13	12	72	630	285.8
	A12B-200-24V	200	250	3	---	30	29	26	13	11	26 / 29	17	16	27	825	374.2
	A12B-250-24V	250	300	3	---	38	36	33	17	14	33 / 36	21	19	27	880	399.2
	A12B-300-24V	300	400	3	---	46	43	40	20	17	40 / 43	25	23	27	940	426.4
	A12B-400-24V	400	600	3	---	61	57	53	26	22	53 / 57	33	31	47	1350	612.4
48 volt systems (24L, 36, 37 or 38NC)	A12B-3-48V	3	10	1	3	1.7	1.6	1.5	---	---	1.5 / 1.6	---	---	7	85	38.6
	A12B-6-48V	6	15	1	6	3.5	3.3	3	---	---	3 / 3.3	---	---	3	90	40.8
	A12B-10-48V	10	20	1	10	5.8	5.5	5	2.5*	2.1*	5 / 5.5	3.2*	2.9*	3	140	63.5
	A12B-15-48V	15	25	1	15	8.7	8.2	7.5	3.8*	3.1*	7.5 / 8.2	4.7*	4.3*	6	180	81.7
	A12B-20-48V	20	30	1	21	12	11	10	5*	4.2*	10 / 11	6.3*	5.8*	6	205	93.0
	A12B-25-48V	25	35	1	26	15	14	13	6.3*	5.2*	13 / 14	7.9	7.2	6	240	108.9
	A12B-30-48V	30	40	1	31	18	17	15	7.5	6.3*	15 / 17	9.5	8.7	6	265	120.2
	A12B-40-48V	40	60	1	41	24	22	21	10	8.4	21 / 22	13	12	8A	275	124.7
	A12B-50-48V	50	80	1	51	29	28	26	13	11	26 / 28	16	15	8A	355	161.0
	A12B-60-48V	60	80	3	---	18	17	16	7.8	6.5*	16 / 17	9.9	9	8A	400	181.4
	A12B-75-48V	75	100	3	---	23	22	20	9.8	8.2	20 / 22	13	12	72	525	238.1
	A12B-100-48V	100	150	3	---	30	29	26	13	11	26 / 29	17	16	72	625	283.5
	A12B-125-48V	125	200	3	---	38	36	33	17	14	33 / 36	21	19	72	700	317.5
	A12B-150-48V	150	200	3	---	46	43	40	20	17	40 / 43	25	23	27	850	385.6
	A12B-175-48V	175	250	3	---	53	50	46	23	19	46 / 50	29	27	27	1000	453.6
	A12B-200-48V	200	250	3	---	61	57	53	26	22	53 / 57	33	31	27	1150	521.6
	A12B-250-48V	250	300	3	---	76	71	66	33	28	66 / 71	42	38	47	1400	635.0
	A12B-300-48V	300	400	3	---	91	86	79	40	33	79 / 86	50	46	47	1700	771.1
	A12B-400-48V	400	600	3	---	*121*	*114*	105	53	44	105 / 114	66	61	47	1800	816.5
130 volt systems (58 or 60L, 92, 93, 96 or 97NC)	A12B-3-130V	3	10	1	7.5	4.3	4.1	3.8	---	---	3.8 / 4.1	---	---	3	140	63.5
	A12B-6-130V	6	15	1	15	8.7	8.2	7.5	---	---	7.5 / 8.2	4.7*	---	3	140	63.5
	A12B-10-130V	10	20	1	26	15	14	13	6.3*	5.2*	13 / 14	7.9	7.2	6	225	102.1
	A12B-15-130V	15	25	1	38	22	21	19	9.4	7.8	19 / 21	12	11	6	250	113.4
	A12B-20-130V	20	30	1	51	29	28	26	13	11	26 / 28	16	15	6	270	122.5
	A12B-25-130V	25	35	1	*63*	37	35	32	16	14	32 / 35	20	19	8A	355	161.0
	A12B-30-130V	30	40	1	*76*	44	41	38	19	16	38 / 41	24	22	8A	390	176.9
	A12B-35-130V	35	50	1	*88*	51	48	44	22	19	44 / 48	28	26	72	505	229.1
				3	---	27	25	23	12	9.5	23 / 25	15	14	72	580	263.1
	A12B-40-130V	40	60	1	*101*	58	55	51	26	21	51 / 55	32	29	72	550	249.5
				3	---	30	29	26	13	11	26 / 29	17	16	72	625	283.5
	A12B-50-130V	50	80	3	---	38	36	33	17	14	33 / 36	21	19	72	645	292.6
	A12B-60-130V	60	80	3	---	46	43	40	20	17	40 / 43	25	23	27	865	392.4
	A12B-75-130V	75	100	3	---	*57*	54	49	25	21	49 / 54	31	29	27	930	421.9
	A12B-100-130V	100	150	3	---	76	71	66	33	28	66 / 71	42	38	27	1040	471.7
	A12B-125-130V	125	200	3	---	94	89	82	41	34	82 / 89	52	48	47	1500	680.4
	A12B-150-130V	150	200	3	---	*113*	*107*	*98*	49	41	*98* / *107*	62	57	47	1800	816.5
	A12B-175-130V [3]	175	250	3	---	*132*	*125*	*114*	57	48	*114* / *125*	72	66	47	1950	884.5
	A12B-200-130V [3]	200	250	3	---	*151*	*142*	*131*	66	55	*131* / *142*	83	76	47	2100	952.6
	A12B-250-130V [3]	250	300	3	---	*188*	*178*	*163*	82	68	*163* / *178*	103	95	47	2300	1043.3
	A12B-300-130V [3]	300	400	3	---	*226*	*214*	*196*	98	82	*196* / *214*	124	113	47	2400	1088.6
	A12B-400-130V [3]	400	600	3	---	*301*	*285*	*261*	131	109	*261* / *285*	165	151	57	2550	1156.7

*[1] Optional DC Breaker when ordered in lieu of standard fuse(s) may slightly differ in ratings. AC Draws shown with asterisk * are not available with Optional AC Breaker.*
[2] AC Current Draws based @ 100% load and standard battery cells of 6L (12V), 12L (24V), 24L (48V) and 60L (130V). Maximum Current Draw is 120% of ratings shown. AC Current draws shown in Italics have high current draws for their specific input voltages - verification of input power requirement should be done prior to ordering.
[3] Denotes units not U.L. Listed [4] 50Hz units are not U.L. listed.
[5] Case sizes shown are for standard 60Hz units and may differ depending on optional accessories and/or 50Hz input. Please consult factory when dimensions are critical.

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Case Specifications

Case No.	Overall Dimensions					
	Width		Depth		Height	
	in	mm	in	mm	in	mm
3	15.375	391	11.000	279	23.750	603
6	25.580	650	13.935	354	28.000	711
7	14.250	362	10.625	270	19.875	505
8A	27.200	691	15.250	387	32.500	826
27	27.312	694	25.875	657	56.125	1426
47	38.000	965	39.375	1000	70.000	1778
57	60.000	1524	36.000	914	80.000	2032
70	27.000	686	19.000	483	41.000	1041
72	27.000	686	23.500	597	44.500	1130

Case No.	Cable Entry (when facing unit)		Mounting
	AC input	DC output	
3	RIGHT	LEFT	WALL / FLOOR
6	RIGHT / TOP / BOTTOM	LEFT / TOP / BOTTOM	WALL / FLOOR
7	RIGHT	LEFT	WALL / FLOOR
8A	RIGHT	LEFT	FLOOR
27	TOP	TOP	FLOOR
47	TOP / BOTTOM	TOP / BOTTOM	FLOOR
57	BOTTOM	BOTTOM	FLOOR
70	RIGHT / BOTTOM	LEFT / BOTTOM	FLOOR
72	RIGHT / BOTTOM	BOTTOM	FLOOR

Case sizes may differ depending on optional accessories and / or 50Hz input. Please consult factory when dimensions are critical.
Dimensions shown above are overall footprint. Detailed dimensions drawings are available for mounting purposes.

Model Number Nomenclature

A12B - 15 - 130V - ( ) ( ) 1 - ( ) - ( )

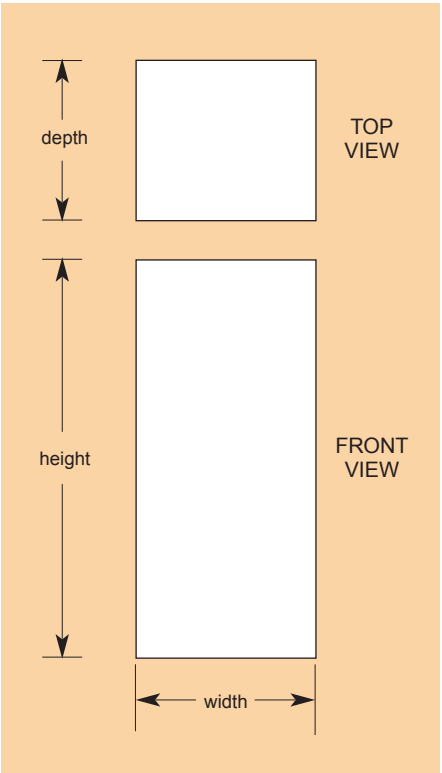
- Model Number
- DC Amps
- DC Volts
- Factory Assigned Accessory Code
- Battery Cell Range
- AC Phase Code
- AC Voltage(s) Codes
- Special Frequency When Required *

AC Phase Codes
1 - Single Phase
3 - Three Phase

AC Voltage Codes

60Hz	50Hz
A - 120	B L - 240/220
D - 208	G - 380
L - 220	J - 415
B - 240	
C - 480	
E - 575	

Special Frequency Code
5 - 50Hz
* 60Hz standard unless special code is entered



Ordering Information

When ordering, please specify:

- La Marche Model Number A12B
- Input Voltage, Frequency, Phase
- Number and Type of Battery Cells
- Ampere Hour Capacity of Battery
- Intermittent DC Loads and Duration
- Continous DC Load
- Allowable Recharge Time from Full Discharge (where applicable)
- Optional Accessories
- Verify AC Input Current Draw

La MARCHE®
ISO 9001:2000 CERTIFIED

TPSD

Battery Charger / Power Supply / Battery Eliminator

Standard TPSD Unit Shown Above

TruPowerSource Filtered Battery Charger / Power Supply / Battery Eliminator

The La Marche TPSD Filtered Battery Charger / Power Supply / Battery Eliminator is controlled Ferroresonant technology ideally suited for Switchgear and Process Control applications. It is designed to carry continuous loads up to its maximum rated output. The MTBF (Mean Time Between Failure) is conservatively rated at 225,000 hours at 50°C, assuring longevity and a higher return for your dollar.

The TPSD assures the quality, reliability and performance you have come to expect from La Marche.

Standard Features

- Controlled Ferroresonant Microprocessor
- Automatic DC Voltage Regulation
- Automatic AC Voltage Compensation
- AC & DC Surge Protection (MOV's)
- AC Input Circuit Breaker
- DC Output Circuit Breaker or Fuse
- Digital Meter Display & Alarm Indicators
- Local & Remote Equalize
- Local & Remote Output Voltage Sensing
- Float/Equalize Mode Switching & Lights
- Output Load Current Sharing
- Internal Temperature Compensation
- AC Power Failure Relay with Form "C" Contacts
- U.L. 1012 Listed (for all 60Hz Units)
- 5-Year Limited Warranty

Options

017 DC Breaker 2-Pole (Standard on some units) see chart on pg. 3 for further details.

01D 2-Pole High Interrupting Capacity AC Breaker 65KAIC 480VAC. Only available for units with current draws above 12 amps.

01G 3-Pole High Interrupting Capacity AC Breaker 65KAIC 480VAC. Only available for units with current draws above 12 amps.

102 Blocking Diode

11W External Temperature Probe 22ft

11Y External Temperature Probe 100ft

11L Lightning Arrestor

21S Serial Data Port - Modbus RTU

21P DNP3 Communications / SCADA

21Q Modbus Communications / SCADA

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

06V Second Digital Meter - DC Volts Only

38G ABS Type Approval

MADE IN U.S.A.
Specifications subject to change without notice
P25-DSTPSD-1
ECN 18726
06/10

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Specifications

ELECTRICAL

- **AC Input**
  Voltage range: +/- 10% from nominal
  Frequency range: +/- 5%
- **Single Phase models:**
  A1: 120VAC/1/60Hz
  ABD1: 120/240/208VAC/1/60Hz
  BLD1: 240/220/208VAC/1/60Hz
  C1: 480VAC/1/60Hz
  5BL1: 240/220VAC/1/50Hz
- **Three Phase models:**
  BD3: 240/208VAC/3/60Hz
  C3: 480VAC/3/60Hz
  5G3: 380VAC/3/50Hz
- **DC Output**
  DC Amps: 6 to 200 amperes
  DC Volts: 24, 48 & 130VDC
  DC Output Voltage Range - a chart is provided on the last page of this data sheet.
- **Output Filtering (With or without a battery)**
  30mV RMS for single phase models and 100mV RMS for three phase models.
- **DC Voltage Regulation** Steady-State
  +/- 0.5% of setting from no load to full load over the specified input voltage, frequency and ambient temperature ranges.
- **Dynamic Response (On Battery)**
  Maximum Voltage Transient will not exceed +/- 5% of initial steady-state voltage for a step change from 20 to 100% of the full rated load. Recovery to steady-state voltage regulation does not exceed 200ms and all transient behavior disappears within 500ms.
- **Audible Noise**
  Less than 65dBA at any point 5 feet from any vertical surface of the enclosure.
- **Load Sharing**
  Load sharing terminal located inside of unit. When connected, identical La Marche Units are forced to share the load within +/- 5% for individual unit outputs greater than 15% of the rated output.

PROTECTION

- **Current Walk-in**
  The output current will gradually increase after the charger is turned on, eliminating surges and overshoot.
- **Current Limit**
  The chargers have an inherent magnetic current limiting feature. Electronic current limiting control circuitry provides for an adjustable value of 50 to 115% of the rated output current.
- **AC Breaker**
  Single Phase Units:
  A two-pole breaker opens both legs of the AC service to 208VAC and 240VAC. Breaker opens phase side of 120VAC service.
  Three Phase Units:
  A three-pole breaker opens all three legs of the AC service.
- **DC Breaker & DC Fuse**
  Standard units are equipped with a fuse or a 2-pole circuit breaker. For units equipped with a fuse, an optional breaker is available. Refer to the model chart on the next page for further details.

ENVIRONMENTAL

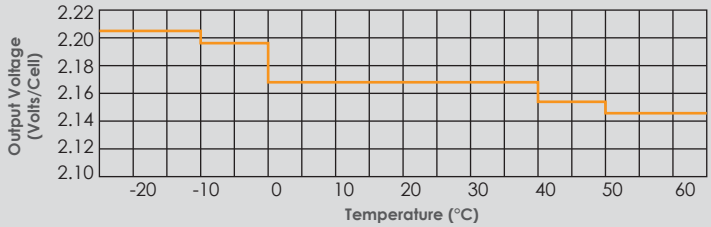
- **Operating Temperature**
  0 to 50° C (32 to 122° F)
- **Storage Temperature**
  -40 to 85° C (-40 to 185° F)
- **Relative Humidity**
  0 to 95% (non-condensing)
- **Cooling**
  Convection Cooled

ENCLOSURES

- **Dimensions**
  Overall dimensions and weights are listed on the last page. Case specifications are subject to change due to innovative product development and design. When space requirements are critical, please consult the factory.
- **Mounting**
  Our enclosures are very versatile. Some units can be wall, floor or rack mounted and others can be wall or floor mounted. See the Case Specifications Chart on the last page of this data sheet for further details.
- **Finish**
  Pretreated with three step iron phosphate wash and deionized rinse. Finished with environmentally safe water based ANSI 61 gray baked enamel.

TEMPERATURE COMPENSATION

The TPSD units feature Temperature Compensation circuitry. An ambient temperature probe is mounted inside the unit. The Temperature Compensation mode may be selected on the TPSD control to temperature compensate the output voltage in steps that approximate -.001V/cell/degree C as shown below.



Digital Meter Display & Alarm Indicators

The TPSD is equipped with a handy and user-friendly Digital Meter Display and Alarm Indicators located on the front panel of the unit.

PANEL FEATURES INCLUDE:

- Float/Equalize mode lights
- AC "ON" green indicator light
- Low DC Current, Low DC Voltage, High DC Voltage, Positive/Negative Ground Detection and Summary Alarm and Lights with (2) sets of Form "C" contacts.
- Potentiometers to adjust the current limit, float and equalize voltages.
- High DC Voltage Shutdown Alarm and Light with (1) set of Form "C" contact.
- A switch that controls 2 different functions:
  a) An Automatic Electronic Equalize Timer to initiate an Equalize charge for the batteries.
  b) A selectable Digital Amp/Volt meter allows the operator to choose if the digital display will show the system current or voltage. Status indicator lights give a visual indication of which option has been selected.
- A switch that tests the Ground Detection LED.

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TPSD Charger Chart

1-Phase

	Model Number	DC Amps	DC Protection		60Hz AC Current Draw[1]/ Recommended Feeder AC Supply Breaker								60Hz Shipping Weight		50Hz[4] AC Current Draw[1] Feeder AC Supply Breaker		50Hz Shipping Weight		Heat Loss[5] BTU's/ Hour	Case No.
			DC Fuse	DC Breaker/ Rating	A1 120	ABD1 120/240/208	BLD1 240/220/208	Feeder** Breaker Size	Rating	C1 480V	Feeder** Breaker Size	Rating	lb	kg	5BL1 240/220	Feeder** Breaker Size	lb	kg		
24V[2] (12L or 20NC)	TPSD-6-24V	6	---	10 / 7.5kaic	2	---	---	5	2kaic	---	---	---	90	40.8	---	---	---	---	119	4B
	TPSD-12-24V	12	---	15 / 7.5kaic	4	---	---	10	2kaic	---	---	---	90	40.8	---	---	---	---	238	4B
	TPSD-20-24V	20	---	30 / 7.5kaic	---	6.7 / 3.4 / 3.9	---	10 / 5 / 5	5kaic	---	---	---	100	45.4	3.4 / 3.7	5 / 5	110	49.8	396	4
	TPSD-25-24V	25	---	40 / 7.5kaic	---	8.4 / 4.2 / 4.9	---	15 / 10 / 10	5kaic	---	---	---	125	56.7	4.2 / 4.6	10 / 10	138	62.6	495	4
	TPSD-30-24V	30	---	40 / 7.5kaic	---	11 / 5 / 5.8	---	15 / 10 / 10	5kaic	---	---	---	150	68.0	5.0 / 5.5	10 / 10	165	74.8	405	4
	TPSD-35-24V	35	---	50 / 7.5kaic	---	12 / 5.9 / 6.8	---	20 / 10 / 10	5kaic	---	---	---	154	69.9	5.9 / 6.4	10 / 10	170	77.1	472	4
	TPSD-50-24V	50	---	70 / 7.5kaic	---	17 / 8.4 / 9.7	---	30 / 15 / 15	5kaic	---	---	---	175	79.4	8.4 / 9.2	15 / 15	193	87.5	674	4
	TPSD-75-24V	75	---	100 / 7.5kaic	---	26 / 13 / 15	---	40 / 20 / 20	5kaic	6.3	10	5kaic	211	95.7	13 / 14	20 / 20	233	105.7	1011	4
	TPSD-100-24V	100	130	Optional*	---	34 / 17 / 20	---	40 / 20 / 20	5kaic	8.4	15	5kaic	225	102.1	17 / 19	25 / 25	248	112.5	1347	9
48V[2] (24L or 37NC)	TPSD-6-48V	6	---	10 / 7.5kaic	4	---	---	10	2kaic	---	---	---	90	40.8	---	---	---	---	191	4B
	TPSD-12-48V	12	---	15 / 7.5kaic	8.1	---	---	15	2kaic	---	---	---	110	49.9	---	---	---	---	382	4B
	TPSD-20-48V	20	---	30 / 7.5kaic	---	14 / 6.7 / 7.8	---	20 / 10 / 10	5kaic	---	---	---	150	68.0	6.7 / 7.3	10 / 10	165	74.8	637	4
	TPSD-25-48V	25	---	40 / 7.5kaic	---	17 / 8.4 / 9.7	---	30 / 15 / 15	5kaic	---	---	---	150	68.0	8.4 / 9.2	15 / 15	165	74.8	796	4
	TPSD-30-48V	30	---	40 / 7.5kaic	---	21 / 11 / 12	---	30 / 15 / 15	5kaic	---	---	---	155	70.3	11 / 11	15 / 15	171	77.6	601	4
	TPSD-35-48V	35	---	50 / 7.5kaic	---	24 / 12 / 14	---	40 / 20 / 20	5kaic	5.9	10	5kaic	180	81.7	12 / 13	20 / 20	198	89.8	702	4
	TPSD-50-48V	50	---	70 / 7.5kaic	---	34 / 17 / 20	---	40 / 20 / 20	5kaic	8.4	15	5kaic	205	93.0	17 / 19	25 / 25	225	102.1	1002	4
	TPSD-75-48V	75	---	100 / 7.5kaic	---	51 / 26 / 30	---	70 / 35 / 35	5kaic	13	20	5kaic	295	133.8	26 / 28	40 / 40	325	147.4	1503	9
	TPSD-100-48V	100	130	Optional*	---	---	34 / 37 / 39	50 / 50 / 50	5kaic	17	25	5kaic	321	145.6	34 / 37	50 / 50	354	160.6	2004	9
130V[2] (58L or 60L, 92NC or 96NC)	TPSD-6-130V	6	---	10 / 5kaic	---	11 / 5 / 5.8	---	20 / 10 / 10	5kaic	---	---	---	140	63.5	5.0 / 5.5	10 / 10	154	69.9	478	4
	TPSD-12-130V	12	---	15 / 10kaic	---	21 / 11 / 12	---	30 / 15 / 15	5kaic	---	---	---	175	79.4	11 / 11	15 / 15	193	87.5	955	4
	TPSD-20-130V	20	---	30 / 10kaic	---	34 / 17 / 20	---	50 / 25 / 25	5kaic	8.4	15	5kaic	225	102.1	17 / 19	25 / 25	233	105.7	1591	4
	TPSD-25-130V	25	---	40 / 10kaic	---	42 / 21 / 25	---	60 / 30 / 30	5kaic	11	15	5kaic	250	113.4	21 / 23	30 / 30	275	124.7	1989	4
	TPSD-30-130V	30	---	40 / 10kaic	---	51 / 26 / 30	---	60 / 30 / 30	5kaic	13	15	5kaic	319	144.7	26 / 28	40 / 40	352	159.7	1503	9
	TPSD-35-130V	35	---	50 / 10kaic	---	59 / 30 / 34	---	80 / 40 / 40	5kaic	15	20	5kaic	372	168.7	30 / 33	45 / 45	410	186	1753	9
	TPSD-50-130V	50	---	70 / 10kaic	---	---	42 / 46 / 49	60 / 60 / 70	5kaic	21	25	5kaic	532	241.3	42 / 46	60 / 60	586	265.8	2504	9

** Optional DC Breaker is rated at 10kaic.*
*** Recommended Breaker Size*

3-Phase

	Model Number	DC Amps	DC Protection		60Hz AC Current Draw[1]/ Recommended Feeder AC Supply Breaker						60Hz Shipping Weight		50Hz[4] AC Current Draw[1] Feeder AC Supply Breaker		50Hz Shipping Weight		Heat Loss[5] BTU's/ Hour	Case No.
			DC Fuse	DC Breaker/ Rating	BD3 240/208V	Feeder** Breaker Size	Rating	C3 480	Feeder** Breaker Size	Rating	lb	kg	5G3 380V	Feeder** Breaker Size	lb	kg		
24V[2] (12L or 20NC)	TPSD-75-24V	75	---	100 / 7.5kaic	6.3 / 7.3	10 / 10	5kaic	---	---	---	400	181.4	---	---	---	---	752	72
	TPSD-100-24V	100	130	Optional*	8.5 / 9.8	15 / 15	5kaic	---	---	---	475	215.5	---	---	---	---	1002	72
	TPSD-150-24V	150	200	Optional*	13 / 15	20 / 20	5kaic	6.3	15	5kaic	530	240.4	---	---	---	---	1503	72
	TPSD-200-24V	200	250	Optional*	17 / 20	25 / 25	5kaic	8.5	15	5kaic	600	272.2	---	---	---	---	2004	72
48V[2] (24L or 37NC)	TPSD-50-48V	50	---	70 / 7.5kaic	8.5 / 9.8	15 / 15	5kaic	---	---	---	400	181.4	---	---	---	---	1002	72
	TPSD-75-48V	75	---	100 / 7.5kaic	13 / 15	25 / 25	5kaic	6.3	10	5kaic	575	260.8	---	---	---	---	1503	72
	TPSD-100-48V	100	130	Optional*	17 / 20	30 / 30	5kaic	8.5	15	5kaic	600	272.2	---	---	---	---	2004	72
	TPSD-150-48V	150	200	Optional*	26 / 30	40 / 40	5kaic	13	200	5kaic	700	317.5	---	---	---	---	3005	72
	TPSD-200-48V	200	250	Optional*	34 / 40	60 / 60	5kaic	17	25	5kaic	755	342.5	---	---	---	---	4007	72
130V[2] (58L or 60L, 92NC or 96NC)	TPSD-25-130V	25	---	40 / 10kaic	11 / 13	20 / 20	5kaic	---	---	---	420	190.5	---	---	---	---	1252	72
	TPSD-30-130V	30	---	40 / 10kaic	13 / 15	20 / 20	5kaic	6.3	10	5kaic	490	222.3	---	---	---	---	1503	72
	TPSD-35-130V	35	---	50 / 10kaic	15 / 18	25 / 25	5kaic	7.4	10	5kaic	550	249.5	---	---	---	---	1753	72
	TPSD-50-130V	50	---	70 / 10kaic	22 / 25	35 /35	5kaic	11	20	5kaic	600	272.2	---	---	---	---	2504	72
	TPSD-75-130V	75	100	Optional*	32 / 37	50 / 50	5kaic	16	25	5kaic	660	299.4	20	30	727	329.8	3756	72
	TPSD-100-130V	100	130	Optional*	43 / 49	70 / 70	5kaic	22	30	5kaic	800	362.9	27	35	882	400.1	5008	72
	TPSD-125-130V[3]	125	200	Optional*	53[3] / 61[3]	80 / 80	5kaic	27[3]	40	5kaic	850	385.6	---	---	---	---	6260	44
	TPSD-150-130V[3]	150	200	Optional*	64[3] / 74[3]	100 / 100	5kaic	32[3]	45	5kaic	900	408.2	---	---	---	---	7512	44

** Optional DC Breaker is rated at 10kaic.*
*** Recommended Breaker Size*
[1] AC Current Draws based @ 100% load and standard battery cells of 12L (24V), 24L (48V) and 60L (130V). Maximum Current Draw is 115% of ratings shown.
[2] Must specify only one battery type and number of cells from range shown above. Please consult factory for other available cell ranges if desired range not shown.
[3] Consult Factory for lead times on these units.
[4] 50Hz units are not U.L. listed.
[5] BTU's are based on 12L (24V), 24L (48V) and 60L (130V). Heat loss is stated for nominal float voltage, 100% output current and nominal AC line.

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Case Specifications

Case No.	Overall Dimensions					
	Width		Depth		Height	
	in	mm	in	mm	in	mm
4B*	19.000	483	15.000	381	12.250*	311*
4*	19.000	483	15.000	381	24.000*	610*
9*	23.000	584	15.000	381	36.000*	914*
72	27.000	686	23.500	597	44.500	1130
44	24.000	610	19.000	483	72.100	1831

Case sizes may differ depending on optional accessories. Consult factory when dimensions are critical. Detailed dimensional drawings are available for mounting purposes. *Floor mounting brackets adds 2" (51mm) to overall height.

Case No.	Cable Entry (when facing unit)		Mounting
	AC input	DC output	
4B*	RIGHT	LEFT	19/23" RACK, WALL / FLOOR
4*	RIGHT	LEFT	19/23" RACK, WALL / FLOOR
9*	TOP RIGHT	TOP LEFT	23" RACK, WALL / FLOOR
72	RIGHT / BOTTOM	BOTTOM	FLOOR
44	LEFT	RIGHT	FLOOR

Adjustable DC Output Voltage Range

	Battery Cell Type Code	Float		Equalize	
		Min	Max	Min	Max
24V	12L	25.44	27.60	27.00	28.80
	20N	27.80	29.00	30.00	32.00
48V	24L	50.88	55.20	54.00	57.60
	37N	51.43	53.65	55.50	59.20
130V	58L	122.96	133.40	130.50	139.20
	60L	127.20	138.00	135.00	144.00
	92N	127.88	133.40	138.00	147.20
	96N	133.44	139.20	144.00	153.60

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)

Model Number Nomenclature

TPSD - 25 - 130V - ( ) ( ) ( ) - ( ) - ( )

- Model Number
- DC Amps
- DC Volts
- Special Frequency When Required *
- AC Voltage(s) Code(s)
- AC Phase Code
- Battery Cell Range
- Factory Assigned Accessory Code

Special Frequency Code
5 - 50Hz
* 60Hz standard unless special code is entered

AC Voltage Codes
A - 120
C - 480
G - 380
BD - 240/208
BL - 240/220
ABD - 120/240/208
BLD - 240/220/208

AC Phase Codes
1 - Single Phase
3 - Three Phase

Battery Cell Type Code
12L 20N
24L 37N
58L 92N
60L 96N

L = Lead Acid
N = Nickel Cadmium

Ordering Information

When ordering, please specify:

- La Marche Model Number TPSD
- DC Amps
- DC Volts
- Special Frequency, When Required
- AC Voltage Code
- AC Phase Code
- Battery Cell Type Code
- Optional Accessories (Option Code)

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ISO 9001:2000 CERTIFIED

A75A/A75AE Series
SCR Battery Charger / Eliminator
Single Phase

SCR Battery Charger With Analog Meters

The La Marche Model A75A/A75AE Series Battery Chargers are engineered for the demanding requirements of Switchgear, Process Control and Oil Exploration to name a few.

The A75A/A75AE battery charger is a solid state unit utilizing SCR technology. It has ±0.5% regulation from no load to full load over the specified input voltage, frequency and ambient temperature range.

The A75A/A75AE series is offered with DC output voltages of 24, 48 or 130 VDC with DC output currents from 6 to 100 Amps. These chargers can be powered with 120, 208, 240 or 480 VAC. The current limit is factory set at 105% and is adjustable from 50 to 110%.

The battery chargers are designed for dependable operation in harsh environments at temperatures up to 122° F (50° C). The unit is convection cooled and the components are designed to achieve MTBF in excess of 100,000 hours.

The enclosures are very versatile. Some units can be wall, floor or rack mounted. See the Case Specifications chart on the other side of this Data Sheet for further details.

Standard Features

- A75A -Unfiltered Battery Charger
- A75AE -Filtered Battery Charger/Power Supply/Battery Eliminator (DC Output filtering 30mv rms or less)
- SCR Technology
- Automatic AC Voltage Compensation
- AC & DC Surge Protection (MOV)
- AC & DC Fuses
- Internal Temperature Compensation
- Float/Equalize Mode Switch
- Separate Float and Equalize Adjustments
- Adjustable Current limit from 50 to 110% (factory set at 105%)
- ±0.5% DC Voltage Regulation
- 2% Accuracy DC Ammeter & DC Voltmeter
- Load Sharing
- LED Indications
  Float/Equalize
  AC “ON”
- AC Power Failure Contact 2 Form “C”
- 2-Year Warranty
- UL1012 Pending

Options

- Equalize Timer - adjustable from 1-144 hours with five selectable modes of operation (manual, automatic every 7, 14 or 30 days and equalize after sensing a low DC voltage)
- AC & DC Breakers
- Ground Detection Relays & Lights
- High & Low DC Voltage Alarm Relays & Lights
- Low Current Failure Alarm Relay & Light
- External Temperature Compensation Probe (15ft)

Made in USA

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ELECTRICAL

AC Input Operating Voltage Range
Voltage range: +10, -12% from nominal
Frequency range: 60Hz ±5%

Single Phase Model Voltages:
120, 208, 240, and 480 VAC.
(Tap selectable 120/208/240 on units up to 25 amps output. All other units must specify single input voltage)

DC Output:
6 to 100 Amps
24, 48 & 130 Volts

DC Output Voltage Range:

	Volts		Cells	
	Float	Equalize	Lead Acid	Ni-Cad
24V	23-29.5	24-31	11-13L	17-20N
48V	46-57	48-61	22-26L	33-39N
130V	115-140	123-145	53-62L	83-93N

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

Output Filtering (A75AE Models):
30mv rms with or without a battery

DC Regulation
± 0.5% of setting from no load to full load over the specified input voltage, frequency and ambient temperature ranges.

Audible Noise
Less than 65dBA at any point 5 feet from any vertical surface of the charger/power supply.

Load Sharing
Load Sharing terminal located inside of unit. When connected, identical La Marche units are forced to share the load.

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 for an adjustable value of 50 to 110% of the rated output current. Factory set at 105%.

AC Fuse
Standard units are equipped with fuse protection. An optional breaker is available.

DC Fuse
Standard units are equipped with fuse protection. An optional breaker is available.

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

Mounting
Our enclosures are very versatile. Some units can be wall, floor or rack mounted, and others can be wall or floor mounted. See the Case Specifications Chart on page 3 of this data sheet for further details.

Finish
Pretreated with three step iron phosphate wash and deionized rinse. Finished with environmentally safe water based ANSI 61 gray.

Ordering Information

When ordering, please specify:

- La Marche Model Number
- 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 & Intermittent DC Loads and Duration (Amps)

Options

011	1-Pole AC Breaker (120 VAC Single Input Only)
016	2-Pole AC Breaker Breaker 10 KAIC @ 240VAC / 14 KAIC @ 480VAC
017	2-Pole DC Breaker Breaker 5KAIC @ 125VDC
01C	2-Pole High Interrupting Capacity AC Breaker 65KAIC @ 240VAC / 25KAIC @ 480VAC (Only available for units with current draws above 12 amps.)
01D	2-Pole High Interrupting Capacity AC Breaker 100KAIC @ 240VAC / 65KAIC @ 480VAC (Only available for units with current draws above 12 amps.)
03M	High and Low DC Voltage Alarm
03N	Low DC Current Alarm
04J	Electronic Equalize Timer
051	Ground Detection Relays
052	Ground Detection Lights
11W	External Temperature Probe Standard length of 15'
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

Model Number Nomenclature

A75A (E) - 25 - 130V - ( ) 1 - ( ) - ( )

- Model Number
- Filtered / Battery Eliminator
- DC Amps
- DC Volts
- AC Voltage Code
- AC Phase Code
- Battery Cell Type Code
- Factory Assigned Accessory Code

AC Voltage Codes 60Hz

ABD -120/208/240
A - 120 B - 240
C - 480 D - 208

AC Phase Codes

1 - Single Phase

Battery Cell Type Code

11L 12L 13L 22L 23L 24L 25L 26L 53L 54L 55L 56L 57L 58L 59L 60L 61L 62L
17N 18N 19N 20N 33N 34N 35N 36N 37N 38N 39N 83N 84N 85N 86N 87N 88N 89N 90N 91N 92N 93N

L = Lead Acid N = NiCad

A75A/A75AE Series
SCR Battery Charger / Eliminator

A75A/A75AE Charger Chart

	Model Number	DC Amps	AC Input Current Draw Single Phase @ 100% Load (Amps)					Case Size	Shipping Weight (Approximate)	
			ABD 120/ 240/ 208	A 120	B 240	D 208	C 480		lbs	kgs
24 Volt Systems	A75A(E)-6-24V	6	2.4 / 1.2 / 1.4	---	---	---	---	4B75	87	40
	A75A(E)-12-24V	12	4.8 / 2.4 / 2.8	---	---	---	---	4B75	92	42
	A75A(E)-16-24V	16	7 / 3.5 / 4	---	---	---	---	4B75	98	45
	A75A(E)-20-24V	20	9.6 / 4.8 / 5.6	---	---	---	---	4B75	100	46
	A75A(E)-25-24V	25	12.3 / 6.1 / 7	---	---	---	---	4B75	104	48
	A75A(E)-30-24V	30	---	14	7	8	4	475	130	59
	A75A(E)-35-24V	35	---	17.1	8.5	9.8	4.3	475	150	69
	A75A(E)-40-24V	40	---	19.5	9.8	11.2	4.9	475	160	73
	A75A(E)-50-24V	50	---	24.5	12.3	14	6.1	475	185	84
	A75A(E)-60-24V	60	---	28	14	16	7	475	208	95
	A75A(E)-75-24V	75	---	35	17.5	20	8.8	975	240	109
	A75A(E)-100-24V	100	---	49.1	24.5	28	12.2	975	275	125
48 Volt Systems	A75A(E)-6-48V	6	4.8 / 2.4 / 2.8	---	---	---	---	4B75	90	41
	A75A(E)-12-48V	12	9.6 / 4.8 / 5.6	---	---	---	---	4B75	99	45
	A75A(E)-16-48V	16	14 / 7 / 8	---	---	---	---	475	137	62
	A75A(E)-20-48V	20	19.5 / 9.8 / 11.2	---	---	---	4.9	475	166	76
	A75A(E)-25-48V	25	24.5 / 12.3 / 14	---	---	---	6.1	475	150	68
	A75A(E)-30-48V	30	---	28	14	16	7	475	170	77
	A75A(E)-35-48V	35	---	32.6	16.3	18.7	8.2	475	180	82
	A75A(E)-40-48V	40	---	39	19.5	22.5	9.8	475	195	89
	A75A(E)-50-48V	50	---	48.8	24.4	28.2	12.2	475	205	93
	A75A(E)-60-48V	60	---	58.6	29.3	33.9	14.8	975	300	137
	A75A(E)-75-48V	75	---	73.2	36.6	42.3	16.5	975	350	159
	A75A(E)-100-48V	100	---	97.6	48.7	56.4	24.4	975	448	204
130 Volt Systems	A75A(E)-6-130V	6	14 / 7 / 8	---	---	---	3.5	475	178	81
	A75A(E)-12-130V	12	28 / 14 / 16	---	---	---	7	475	185	84
	A75A(E)-16-130V	16	33 / 16.5 / 19	---	---	---	9.6	475	200	91
	A75A(E)-20-130V	20	44 / 22 / 25.3	---	---	---	11	475	235	107
	A75A(E)-25-130V	25	55 / 27.5 / 31.7	---	---	---	13.8	475	255	116
	A75A(E)-30-130V	30	---	66	33	38	16.5	475	300	137
	A75A(E)-35-130V	35	---	77	38.5	44	19.2	975	375	171
	A75A(E)-40-130V	40	---	88	44	50.6	22	975	422	192
	A75A(E)-50-130V	50	---		55	63.3	27.5	975	480	218
	A75A(E)-75-130V	75	---		77	88	38.4	72	625	284

Case Specifications

Case No	Overall Dimensions						Cable Entry		Standard Mounting	Optional Mounting Kits	
	Width		Depth		Height						
	in	mm	in	mm	in	mm	AC Input	DC Output		Rack	Floor
4B75	19	482.6	15.1	383.54	12.22	310.39	Right Top / Bottom	Left Top / Bottom	Wall	19"/23"	✓
475	19	482.6	15.1	383.54	24	609.6	Right Top / Bottom	Left Top / Bottom	Wall	19"/23"	✓
975	23	584.2	15.1	383.54	37.9	962.66	Right Top / Bottom	Left Top / Bottom	Floor	23"	---
72	27	685.8	23.5	596.9	44.5	1130.3	Bottom Right	Bottom Left	Floor	---	---

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Alternate Technologies For Your Utility Needs

A12B...**Controlled Magnetic Amplifier** Circuitry battery charger/battery eliminator designed with extremely high MTBF. Meets the demanding requirements for switchgear, process control and communications applications. Available in 12, 24, 48 and 130VDC and 3 to 400 amps output.

TPSD...Microprocessor Controlled **Ferroresonant** design battery charger / battery eliminator is ideal for switchgear and process control. The TPSD comes fully equipped with standard features such as digital display, alarm indications, electronic timer and temperature compensation.

A96/A97...130VDC **Switchmode** Utility Charger is a compact rectifier system with current limiting, voltage regulation, high efficiency and high power factor. AC input line regulation operates over a range of 185-264 volts, with a frequency range of 45-66Hz. The systems are available as rack, wall, floor or mobile cart mount.

Specifications subject to change without notice

P25-DSA75A-1
ECN 18380
07/09

LaMARCHE®
ISO 9001:2000 CERTIFIED

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ISO 9001:2000 CERTIFIED

A75D/A75DE Series
SCR Battery Charger / Eliminator
Single Phase

SCR Battery Charger With Digital Display

The La Marche Model A75D/A75DE Series Battery Chargers are engineered for the demanding requirements of Switchgear, Process Control and Oil Exploration to name a few.

The A75D/A75DE battery charger is a solid state unit utilizing SCR technology and has ±0.5% regulation from no load to full load over the specified input voltage, frequency and ambient temperature range.

The A75D/A75DE series is offered with DC output voltages of 24, 48 or 130 VDC with DC output currents from 6 to 100 Amps. These chargers can be powered with 120, 208, 240 or 480 VAC. The current limit is factory set at 105% and is adjustable from 50 to 110%.

The battery chargers are designed for dependable operation in harsh environments at temperatures up to 122° F (50° C). The unit is convection cooled and the components are designed to achieve MTBF in excess of 100,000 hours.

The enclosures are very versatile. Some units can be wall, floor or rack mounted and others can be wall or floor mounted. See the Case Specifications chart on the other side of this Data Sheet for further details.

Standard Features

- A75D - Unfiltered Battery Charger
- A75DE - Filtered Battery Charger/Power Supply/Battery Eliminator (DC Output filtering 30mv rms or less)
- SCR Technology
- Automatic AC Voltage Compensation
- AC & DC Surge Protection (MOV)
- AC Input Breaker
- DC Output Breaker
- Internal Temperature Compensation
- Float/Equalize Mode Switch
- Separate Float and Equalize Adjustments
- Adjustable current limit 50 to 110% (factory set at 105%)
- ±0.5% DC Voltage Regulation
- Load Sharing
- LCD Display for DC Voltage, DC Current & Alarms
- LED Indications
  - Float/Equalize
  - AC "ON"
  - AC Failure
  - Summary Alarm
  - Low DC Current
  - Low DC Voltage
  - Battery End of Discharge
  - High DC Voltage
  - High DC Voltage Shutdown
  - Positive & Negative Ground Detection
- Remote Annunciation 2 Form "C" Contact
  - AC Failure
  - Summary Alarm
- Equalize Timer - adjustable from 1-144 hours with five selectable modes of operation (manual, automatic every 7, 14 or 30 days and equalize after sensing a low DC voltage)
- 2-Year Warranty
- UL1012 Pending

Options

- Discrete Alarm Relays
- High Interrupting Capacity Breakers
- External Temperature Compensation Probe (15ft)
- Communication Protocols DNP3 & Modbus

Made in USA

La Marche Manufacturing Company
106 Bradrock Drive , Des Plaines , IL 60018-1967
Tel: 1-847-299-1188 Toll Free Fax: 1-888-232-9562
sales@lamarchemfg.com www.lamarchemfg.com

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ELECTRICAL

AC Input Operating Voltage Range
Voltage range: +10, -12% from nominal
Frequency range: 60Hz ±5%

Single Phase Model Voltages:
120, 208, 240, and 480 VAC.
(Tap selectable 120/208/240 on units up to 25 amps output. All other units must specify single input voltage)

DC Output:
6 to 100 Amps
24, 48 & 130 Volts

DC Output Voltage Range:

	Volts		Cells	
	Float	Equalize	Lead Acid	Ni-Cad
24V	23-29.5	24-31	11-13L	17-20N
48V	46-57	48-61	22-26L	33-39N
130V	115-140	123-145	53-62L	83-93N

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

Output Filtering (A75DE Models):
30mv rms with or without a battery

DC Regulation
± 0.5% of setting from no load to full load over the specified input voltage, frequency and ambient temperature ranges.

Audible Noise
Less than 65dBA at any point 5 feet from any vertical surface of the charger/power supply.

Load Sharing
Load Sharing terminal located inside of unit. When connected, identical La Marche units are forced to share the load.

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 for an adjustable value of 50 to 110% of the rated output current. Factory set at 105%.

AC Breaker
A 2-pole breaker opens both legs of the AC Service to 208VAC and 240VAC. Breaker opens phase side of 120VAC service. (10KAIC @ 240VAC / 14KAIC @ 480VAC) Units with 120 VAC single input are equipped with single pole AC Breaker.

DC Breaker
Standard units are equipped with a 2-pole circuit breaker. (5KAIC @ 125VDC)

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

Mounting
Our enclosures are very versatile. Some units can be wall, floor or rack mounted, and others can be wall or floor mounted. See the Case Specifications Chart on page 3 of this data sheet for further details.

Finish
Pretreated with three step iron phosphate wash and deionized rinse. Finished with environmentally safe water based ANSI 61 gray.

Ordering Information

When ordering, please specify:

- La Marche Model Number
- 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 & Intermittent DC Loads and Duration (Amps)

Options

01C	2-Pole High Interrupting Capacity AC Breaker 65KAIC @ 240VAC / 25KAIC @ 480VAC (Only available for units with current draws above 12 amps.)
01D	2-Pole High Interrupting Capacity AC Breaker 100KAIC @ 240VAC / 65KAIC @ 480VAC (Only available for units with current draws above 12 amps.)
11W	External Temperature Probe Standard length of 15'
21P	DNP3 Communications / SCADA
21Q	Modbus Interface Module
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

Model Number Nomenclature

A75D (E) - 25 - 130V - ( ) 1 - ( ) - ( )

- Model Number
- Filtered / Battery Eliminator
- DC Amps
- DC Volts
- AC Voltage Code
- AC Phase Code
- Battery Cell Type Code
- Factory Assigned Accessory Code

AC Voltage Codes 60Hz

ABD -120/208/240
A - 120 B - 240
C - 480 D - 208

AC Phase Codes

1 - Single Phase

Battery Cell Type Code

11L 12L 13L 22L 23L 24L 25L 26L 53L 54L 55L 56L
57L 58L 59L 60L 61L 62L
17N 18N 19N 20N 33N 34N 35N 36N 37N 38N 39N
83N 84N 85N 86N 87N 88N 89N 90N 91N 92N 93N

L = Lead Acid N = NiCad

A75D/A75DE Series
SCR Battery Charger / Eliminator

A75D/A75DE Charger Chart

	Model Number	DC Amps	AC Input Current Draw Single Phase @ 100% Load (Amps)					Case Size	Shipping Weight (Approximate)	
			ABD 120/ 240/ 208	A 120	B 240	D 208	C 480		lbs	kgs
24 Volt Systems	A75D(E)-6-24V	6	2.4 / 1.2 / 1.4	---	---	---	---	4B75	87	40
	A75D(E)-12-24V	12	4.8 / 2.4 / 2.8	---	---	---	---	4B75	92	42
	A75D(E)-16-24V	16	7 / 3.5 / 4	---	---	---	---	4B75	98	45
	A75D(E)-20-24V	20	9.6 / 4.8 / 5.6	---	---	---	---	4B75	100	46
	A75D(E)-25-24V	25	12.3 / 6.1 / 7	---	---	---	---	4B75	104	48
	A75D(E)-30-24V	30	---	14	7	8	4	475	130	59
	A75D(E)-35-24V	35	---	17.1	8.5	9.8	4.3	475	150	69
	A75D(E)-40-24V	40	---	19.5	9.8	11.2	4.9	475	160	73
	A75D(E)-50-24V	50	---	24.5	12.3	14	6.1	475	185	84
	A75D(E)-60-24V	60	---	28	14	16	7	475	208	95
	A75D(E)-75-24V	75	---	35	17.5	20	8.8	975	240	109
	A75D(E)-100-24V	100	---	49.1	24.5	28	12.2	975	275	125
48 Volt Systems	A75D(E)-6-48V	6	4.8 / 2.4 / 2.8	---	---	---	---	4B75	90	41
	A75D(E)-12-48V	12	9.6 / 4.8 / 5.6	---	---	---	---	4B75	99	45
	A75D(E)-16-48V	16	14 / 7 / 8	---	---	---	---	475	137	62
	A75D(E)-20-48V	20	19.5 / 9.8 / 11.2	---	---	---	4.9	475	166	76
	A75D(E)-25-48V	25	24.5 / 12.3 / 14	---	---	---	6.1	475	150	68
	A75D(E)-30-48V	30	---	28	14	16	7	475	170	77
	A75D(E)-35-48V	35	---	32.6	16.3	18.7	8.2	475	180	82
	A75D(E)-40-48V	40	---	39	19.5	22.5	9.8	475	195	89
	A75D(E)-50-48V	50	---	48.8	24.4	28.2	12.2	475	205	93
	A75D(E)-60-48V	60	---	58.6	29.3	33.9	14.8	975	300	137
	A75D(E)-75-48V	75	---	73.2	36.6	42.3	16.5	975	350	159
	A75D(E)-100-48V	100	---	97.6	48.7	56.4	24.4	975	448	204
130 Volt Systems	A75D(E)-6-130V	6	14 / 7 / 8	---	---	---	3.5	475	178	81
	A75D(E)-12-130V	12	28 / 14 / 16	---	---	---	7	475	185	84
	A75D(E)-16-130V	16	33 / 16.5 / 19	---	---	---	9.6	475	200	91
	A75D(E)-20-130V	20	44 / 22 / 25.3	---	---	---	11	475	235	107
	A75D(E)-25-130V	25	55 / 27.5 / 31.7	---	---	---	13.8	475	255	116
	A75D(E)-30-130V	30	---	66	33	38	16.5	475	300	137
	A75D(E)-35-130V	35	---	77	38.5	44	19.2	975	375	171
	A75D(E)-40-130V	40	---	88	44	50.6	22	975	422	192
	A75D(E)-50-130V	50	---	---	55	63.3	27.5	975	480	218
	A75D(E)-75-130V	75	---	---	77	88	38.4	72	625	284

Case Specifications

Case No	Overall Dimensions						Cable Entry		Standard Mounting	Optional Mounting Kits	
	Width		Depth		Height						
	in	mm	in	mm	in	mm	AC Input	DC Output		Rack	Floor
4B75	19	482.6	15.1	383.54	12.22	310.39	Right Top / Bottom	Left Top / Bottom	Wall	19”/23”	✓
475	19	482.6	15.1	383.54	24	609.6	Right Top / Bottom	Left Top / Bottom	Wall	19”/23”	✓
975	23	584.2	15.1	383.54	37.9	962.66	Right Top / Bottom	Left Top / Bottom	Floor	23”	---
72	27	685.8	23.5	596.9	44.5	1130.3	Bottom Right	Bottom Left	Floor	---	---

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Alternate Technologies For Your Utility Needs

A12B...**Controlled Magnetic Amplifier** Circuitry battery charger/battery eliminator designed with extremely high MTBF. Meets the demanding requirements for switchgear, process control and communications applications. Available in 12, 24, 48 and 130VDC and 3 to 400 amps output.

TPSD...Microprocessor Controlled **Ferroresonant** design battery charger / battery eliminator is ideal for switchgear and process control. The TPSD comes fully equipped with standard features such as digital display, alarm indications, electronic timer and temperature compensation.

A96/A97...130VDC **Switchmode** Utility Charger is a compact rectifier system with current limiting, voltage regulation, high efficiency and high power factor. AC input line regulation operates over a range of 185-264 volts, with a frequency range of 45-66Hz. The systems are available as rack, wall, floor or mobile cart mount.

Specifications subject to change without notice

P25-DSA75D-1
ECN 18380
07/09

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ISO 9001:2000 CERTIFIED
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A97 Series

130VDC Switchmode Utility Rectifier / Battery Charger

Unit shown with Digital Meter 16J Option

130VDC Switchmode Utility Rectifier

The La Marche A97 Series provides highly reliable, 130VDC power in a compact rectifier system. It offers high power density combined with high efficiency. With current limiting circuitry, voltage regulation, high efficiency and high power factor, it is the ultimate rectifier for Utility applications.

The A97 is more than a rectifier/battery charger, it is also a power supply/battery eliminator. Its AC input line regulation operates over a range of 185-264 volts, with a frequency range of 45-66 Hz. Steady state output voltage remains within ±0.5% of the setting from no load to full load to handle charging today's diverse battery technologies. This product can be specified in a 20A, 40A or 60A output capability.

Standard Features

- High Frequency Switchmide Technology
- Power Supply / Battery Eliminator
- >85% Efficiency Including Series Output Diode
- Float / Equalize Switch
- Adjustable Float & Equalize Voltage
- Analog DC Voltmeter & Ammeter
- AC Breaker (2 Pole for Single Phase or 3 Pole for Three Phase)
- DC Breaker 2 Pole
- High Voltage Shutdown
- AC Power Failure Alarm Contacts Form "C"
- Walk-In Circuit
- Compact and Light Weight System
- Adaptable Mounting Configurations
- Single Phase or Three Phase AC Input
- Operates on a Grounded or Ungrounded System
- 1-Year Warranty

MADE IN U.S.A.
Specifications subject to change without notice
P25-DSA97-1
ECN 18726
06/10

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	Model Number	DC Output		AC Input Phase	Nominal Current Draw* @ 100% Load (Amps)	Case Size	Overall Dimensions W x D x H	Cable Entry (when facing unit)		Mounting	Shipping Weight	
		Amps	Volts					AC Input	DC Output		lbs	kgs
130 VDC 60L or 92NC	A97R-20-130V-V1	20	130	1	15	96RW	16.4 x 18.38 x 8.75	RIGHT/BACK	LEFT/BACK	19/23" Rack	49	22.3
	A97R-40-130V-V1	40	130	1	30	96RW	417 x 467 x 222 mm	RIGHT/BACK	LEFT/BACK	19/23" Rack	60	27.3
	A97W-20-130V-V1	20	130	1	15	96RW	19.02 x 9.30 x 18.38**	RIGHT/TOP/BOTTOM	LEFT/TOP/BOTTOM	WALL/SHELF	49	22.3
	A97W-40-130V-V1	40	130	1	30	96RW	483 x 236 x 467 mm**	RIGHT/TOP/BOTTOM	LEFT/TOP/BOTTOM	WALL/SHELF	60	27.3
	A97-60-130V-V1	60	130	1	45	4	19 x 15 x 24***	RIGHT	LEFT	19" or 23"	130	59.1
	A97-60-130V-V3	60	130	3	Consult Factory	4	483 x 381 x 610 mm***	RIGHT	LEFT	RACK/WALL/SHELF	130	59.1

* AC Current Draws based at 100% load and standard battery cells of 60L (130V).
** For the A97W the height of the shelf mount is 19.82" (503mm).
*** For the A97 the height of the shelf mount is 25.875" (657mm).

INPUT

- **Input Voltage Range**
  185-264VAC
- **Input Frequency Range**
  45-66Hz
- **Power Factor**
  Power factor correction curcuitry corrects the input power factor > 0.95

OUTPUT

- **Regulation**
  Dynamic response (with battery). Maximum voltage transient will not exceed ±10% of initial steady state voltage for a step change from 20% to 100% of the full rated load. Recovery to steady state voltage regulation range does not exceed 50ms and all transient behavior disappears within 100ms.
- **Steady State**
  Typical output voltage is ±0.5% of the setting from no load to full load over the specified input voltage, and ambient temperature ranges.
- **Current Limit**
  Maximum output current limited at 105% of its rated value.

FILTERING

- **Electromagnetic Interference (EMI)**
  EMI (cinducted or radiated) rated in accordance with FCC Part 15. Class "A" limits.
- **Ripple Voltage**
  Ripple Voltage is less than 30 mv RMS when connected to a battery with an Amp-Hour capacity of four times the rated output of the rectifier. When used as a power supply the ripple voltage is less than 45 mv RMS. NOTE: When the A97 is used as a power supply with inductive loads, consult the factory.

LED STATUS INDICATORS

- **Fan Failure LED**
  A Red LED illiminates when the cooling fan is not operating
- **Over-Temperature LED**
  A Red LED illuminates upon over temperature (operating at reduced output due to excessive internal temperature) of the rectifier.
- **High DC Voltage Shutdown LED**
  A Red LED illuminates when the rectifier has shutdown due to the output voltage being greater than 150V.
- **AC Available LED**
  A Green LED illuminates when adequate AC voltage is present.
- **Current Limit LED**
  A Red LED illuminates when the rectifier is in current limit.
- **Thermal Control LED**
  A Yellow LED illuminates when the rectifier is operating with fan temperature control.
- **DC Amps LED**
  A Green LED illuminates when the rectifier is operating above 1.5 amps.
- **DC Volts LED**
  A Green LED illuminates when the rectifier is operating in the correct DC voltage range (120-144VDC).
- **Float**
  A Green LED illuminates when the rectifier is in the float mode.
- **Equalize**
  A Yellow LED illuminates when the rectifier is in the equalize mode.

PROTECTION

- **Walk-In Circuit**
  Output voltage will gradually increase after the charger is turned on, eliminating surges and over-shoot.
- **High Voltage Shutdown**
  Included

ENVIRONMENTAL

- **Operating Temperature**
  0°C (32°F) to 50°C (130°F)
- **Storage Temperature**
  -40°C (-40°F) to 85°C (185°F)
- **Humidity**
  0% to 95% relative humidity, non-condensing

ADDITIONAL

- **Audible Noise**
  Less than 54dBa at any point three feet from any vertical surface of the rectifier.
- **Cooling**
  Fan Cooled

CONTROLS

- **Float/Equalize Switch**
  Rectifier may be equalized locally via front panel switch.
- **Float Voltage**
  Adjustable From 120-135V
- **Equalize Voltage**
  Adjustable From 130-144V

OPTIONS

- 16J or 16T LED Combination Accessory Package with DC Digital Meter (Replaces Analog Meters: See Digital CAP Data Sheet for further details)
- 46J or 46T LCD Combination Accessory Package with DC Digital Meter (Replaces Analog Meters: See LCD CAP Data Sheet for further details)
- Remote Communications (SCADA compatible)
- Wheeled Cart for A97W
- Lifting Eyes for A97W

Model Number Nomenclature

A97 ( ) ( ) 130V V ( ) -

- Model Number
- Mounting
- DC Amps
- DC Volts
- AC Voltage Code
- AC Phase Code
- Battery Cell Range

Mounting	DC Amps	AC Phase Codes	Battery Cell Range
(For 20A and 40A units only)	20A	1 - Single Phase	Factory set at
(R) Rack	40A	3 - Three Phase	60L and 92NC
(W) Wall/Shelf	60A		

Ordering Information

When ordering, please specify:

- La Marche Model Number A97
- Mounting (For 20A & 40A Units Only)
- DC Amps
- DC Volts
- AC Voltage Code
- AC Phase Code
- Options

ISO 9001:2000 CERTIFIED

ESCR

Engine Starting Battery Charger

ESCR Engine Starting Applications

The ESCR engine starting battery charger product line utilizes microprocessor controlled SCR Charging Technology. The PWM control provides the highest reliability that is required for maintaining and recharging engine start batteries for generator sets. This charger is suitable for various types of batteries such as flooded lead acid, VRLA and NiCad.

Automatic input sensing for 120/208-240 VAC 50/60Hz does not require any tap changes and multi-output (12V/24V) makes this product line flexible and convenient for multiple jobs. The 0.5% regulation, temperature compensation, battery check, equalize timer along with adjustable output voltage and current limiting assures longevity and performance for your batteries. This economical solution equipped with advanced features incorporates La Marche quality and reliability.

The front panel is equipped with LCD display, alarm status LED's and controls. The two-line LCD displays output voltage and current along with alarm status text description. Individual LED indicators provide local supervision.

This multi-input/output all-in-one unit meets NFPA 110, C62.41A and UL safety requirements. Form "C" contacts are available for remote annunciation. Push button controls are used for Float/Equalize mode, Reset, Lamp Test and Configure.

Standard Features

- Microprocessor Controlled SCR Technology
- Auto Select Input 120/208-240 VAC, 50/60Hz
- Field Selectable Output 12/24 VDC
- LCD Display
- Alarm LED's and Form "C" Contacts
- Adjustable Float and Equalize Voltages
- Automatic AC Input Voltage Compensation
- AC to DC Isolation
- Filtering Suitable for VRLA Batteries
- Battery Fault Detection
- Internal Temperature Compensation
- Equalize Timer
- Anodized Aluminum Case
- Soft Start
- Meets NFPA110 and C62.41A
- 3 Year Warranty

Optional

- External Temperature Compensation Probe

Specifications subject to change without notice

P25-DSESCR-1
ECN 18437
09-09

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Model Number	AC Input		DC Output		Overall Dimensions W x D x H	Shipping Weight	
	Amps	Volts (Nominal)	Amps	Volts (Nominal)		lbs	kgs
ESCR-20/10-12/24V-AV1	3.2/1.6 5.4/3.0 6.0/3.0	120/208-240 120/208-240 120/208-240	10 20 10	12 12 24	7.75" x 7" x 11.25" 197 x 179 x 285mm	25	11
ESCR-40/20-12/24V-AV1	10.9/5.9 12.1/6.1	120/208-240 120/208-240	40 20	12 24	11.38" x 9" x 15" 289 x 229 x 381mm	42	19

AC INPUT
- 120/208 - 240 VAC ±10%, 50/60HZ, Single Phase

DC OUTPUT (Field Selectable)
- 10A - 12V or 20A - 12V or 10A - 24V
- 40A - 12V or 20A - 24V

REGULATION
- **Line:** < ±0.5%
- **Load:** < ±0.5%

PROTECTION
- **Input**
  Fuse with Surge Protection
- **Output**
  Fuse with Surge Protection
  Reverse Polarity Protection

BATTERY CELL SELECTION
- **12 Volts**
  6L
  9NC
  10NC
- **24 Volts**
  12L
  18NC
  19NC
  20NC

OUTPUT CURRENT LIMIT
- Factory set at 105%
  Adjustable from 50 - 105%

METERS
- LCD DC Output Digital Voltmeter and Ammeter (1%)

ADJUSTABLE VOLTAGE RANGE
- **Float Voltage**
  2.12 - 2.3 volts/cell (Lead)
  1.39 - 1.45 volts/cell (NiCad)
- **Equalize Voltage**
  2.25 - 2.40 volts/cell (Lead)
  1.45 - 1.6 volts/cell (NiCad)

CONTROLS
- **Float and Equalize Button**
  Switch from Float to Equalize
- **Configure Button**
  Output Settings
  Voltage and Cells
  Adjust Voltage for Float & Equalize
  Adjust Alarm Settings and Delay
  Enable/Disable Temperature Compensation
  Equalize Timer
  ~Multi-Mode Equalize Timer and Light; adjustable from 1 - 144 hrs
  ~Five selectable modes: Manual, 7-day, 14-day, 30-day and Equalize after Low DC Voltage and/or AC Failure
  Default Factory Setting
- **Reset Button**
  Restarts the Unit
- **Lamp Test Button**
  Tests LCD Display & LED's

ALARM CONTACTS
- AC Failure
- Low DC Voltage
- High DC Voltage
- Charger Failure

MONITORING
- **LCD Display**
  Volts
  Amps
  Status
- **LED Indications**
  Float (Green)
  Equalize (Yellow)
  AC ON (Green)
  Charger Failure (Red)
  Battery Fault (Red)
  Current Limit (Red)
  High DC Voltage (Red)
  Low DC Voltage (Red)

ENVIRONMENTAL
- **Operating**
  -20° to 40°C
- **Storage**
  -40° to 85°C
- **Relative Humidity**
  5% to 95% non condensing

ENCLOSURE
- **Structural Design**
  Housed in NEMA 1 anodized aluminum wall mount
- **Cable Entry**
  Left Side

STANDARDS
- Model Number ESCR-20/10-12/24V-AV1 is CE and UL 1236 listed
- Model Number ESCR-40/20-12/24V-AV1 is CE and UL 1236 pending

Model Number Nomenclature

ESCR - 20/10 - 12/24V - AV1 - ( )

- Model Number
- DC Amps
- DC Volts
- AC Voltage Code
- AC Phase Code
- Factory Assigned Accessory Code

AC Voltage Code
AV - 120/208-240

AC Phase Code
1 - Single Phase

Front Panel Display

ISO 9001:2000 CERTIFIED

A46 / A46F

Engine Starting Battery Charger Without / With Filtering

Unit shown with optional 46E LCD C.A.P. System

Engine Starting Battery Charger

The La Marche A46/A46F battery charger is specially designed for maintaining and recharging starting batteries of engine generator sets. The controlled magnetic amplifier technology provides the highest reliability that is necessary for the continued operation of the emergency standby equipment and eliminates most starting problems by maintaining batteries at a proper charge, ensuring optimum performance and maximum life.

These chargers can also be customized to meet the American Bureau of Shipping (ABS) and United States Coast Guard (USCG) standards for applications such as offshore and on board vessels.

Standard Features

- Magnetic Amplifier Circuitry
- Automatic DC Voltage Regulation
- Automatic AC Input Voltage Compensation +/- 10%
- Automatic Surge Suppression
- Analog DC Ammeter & DC Voltmeter
- DC Current Limiting Circuitry
- AC Input and DC Output Fusing
- AC Power Failure Relay with (1) set of Form "C"Contacts
- Float/Equalize Mode Switching
- Charger design prevents battery from discharging if AC line fails
- AC to DC Isolation
- Model A46F is filtered for Valve-Regulated batteries
- UL 1564 Listed and C-UL Listed
- 10-Year Limited Warranty

MADE IN U.S.A.
Specifications subject to change without notice
P25-DSA46-1
ECN 18726
06/10

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A46 & A46F Models

	Model Number All Models Available As A46F	DC Output			AC Input Current Draw* at 100% Load (Amps)			A46 Case No.	A46 Shipping Weight (Approximate)		A46F Case No.	A46F Shipping Weight (Approximate)	
		Amps	Volts	Fuse Size	A 120	D 208	B 240		lbs	kgs		lbs	kgs
12VDC 6L, 9 or 10NC	A46-6-12V	6	12V	15A	1.5	0.9	0.8	1	28	12.7	2	39	17.8
	A46-10-12V	10	12V	20A	2.5	1.4	1.3	1	30	13.6	2	41	18.7
	A46-20-12V	20	12V	35A	5	2.9	2.5	2	56	25.4	7	68	31.0
	A46-30-12V	30	12V	50A	7.5	4.3	3.8	2	66	29.9	3	91	41.4
24VDC 12L, 19 or 20NC	A46-6-24V	6	24V	15A	3	1.7	1.5	1	38	17.2	7	50	22.8
	A46-10-24V	10	24V	20A	5	2.9	2.5	2	62	28.1	7	74	33.7
	A46-20-24V	20	24V	35A	10	5.8	5	2	73	33.1	7	85	38.7
	A46-30-24V	30	24V	50A	15	8.7	7.5	7	108	49.0	3	127	57.8
	A46-40-24V	40	24V	70A	21	12	10	7	112	50.8	3	143	65.0
32VDC 16L	A46-6-32V	6	32V	15A	4	2.3	2	2	58	26.3	7	70	31.9
	A46-10-32V	10	32V	20A	6.7	3.9	3.3	2	68	30.8	7	80	36.4
	A46-20-32V	20	32V	35A	14	7.7	6.7	2	74	33.6	3	92	41.9
	A46-30-32V	30	32V	50A	21	12	10	7	112	50.8	3	131	59.6
36VDC 18L	A46-6-36V	6	36V	15A	4.5	2.7	2.4	2	58	26.3	7	70	31.9
	A46-10-36V	10	36V	20A	7.5	4.2	3.9	2	68	30.9	7	80	36.4
	A46-20-36V	20	36V	35A	15	8.7	7.5	7	74	33.6	3	92	41.9
	A46-30-36V	30	36V	50A	22.5	12.9	11.4	7	112	50.8	3	131	59.6

Case Specifications

Case No.	Overall Dimensions Width x Depth x Height
1	10" x 8" x 16" 264 x 200 x 413mm
2	13" x 10" x 17" 326 x 254 x 435mm
3	15" x 11" x 24" 391 x 279 x 603
7	14" x 11" x 20" 362 x 270 x 505

Note: All above models designed for optimal performance at 60Hz. They will operate at 50Hz with reduced performance. Consult factory for units designed specifically at 50Hz. Must specify only one battery type and number of cells. Please consult factory for other available cell ranges if desired range not shown.
*AC Current Draws based @ 100% load using standard battery cells of 6L(12V),12L(24V) and 16L(32V), 18L(36V) Maximum Current Draw is typically 140% of ratings shown.

Options

Circuit Breakers

- **011** AC Breaker Single Pole (120VAC only)
- **012** DC Breaker Single Pole
- **016** AC Breaker Two Pole
- **017** DC Breaker Two Pole

Choose options from Discrete or Combination Accessory Packages (C.A.P.)

Discrete

(Choose one or more of the options in this category)

- **055** Float Light
- **056** Equalize Light
- **060** AC Pilot Light
- **04J** Multi-Mode Equalize Timer & Lights Adjustable from 1-144hrs in (5) selectable modes; Standard, 7-day, 14-day, 30-day and Equalize after Low DC Voltage includes Float and Equalize Lights (055 and 056).

Combination Accessory Packages (C.A.P.)

- **16E** Digital C.A.P. System (Meets NFPA 110) Features a selectable LED display along with the AC Pilot Light, Equalize Timer and many more features (Refer to the Digital C.A.P. System data sheet for complete details).
- **16J** Digital C.A.P. System (Meets NFPA 110) Includes all the features of 16E package (above) plus Ground Detection Alarm (Refer to the Digital C.A.P. System data sheet for complete details).
- **46E** LCD C.A.P. Systems (Meets NFPA 110) Features Selectable Display, Multi-Mode Equalize Timer, Equalize Light, Float Light and many more features (Refer to the LCD C.A.P. System data sheet for complete details).
- **46J** LCD C.A.P. Systems (Meets NFPA 110) Includes all the features of 46E package (above) plus Ground Detection Alarm (Refer to the LCD C.A.P. System data sheet for complete details).
- **204** C.A.P. System (Meets NFPA 110) Includes (1) set of form "C" contacts for AC Power Failure. Low DC Voltage, High DC Voltage, and Low DC Current.
- **03M** Low/High DC Voltage Alarm & Lights with (1) set of Form "C" contacts each for Low Voltage & High Voltage w/LED's.

ABS/USCG (U.S. Coast Guard)

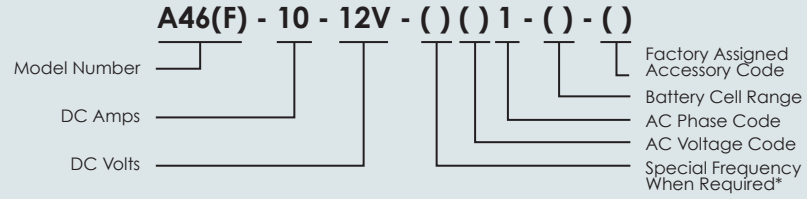
- **10B** U.S.C.G. Accessories, includes a drip shield, on/off switch & water tight connectors.
- **38G** ABS (American Bureau of Shipping) Type Approval with option 060, 16E or 16J.
- **38J** ABS & U.S.C.G. Accessories with option 060, 16E or 16J.

Internal Charge Dividers

(consult factory may increase case size)

- **100** To charge 2 batteries w/negative common.
- **10U** To charge 2 batteries w/positive common.
- **101** To charge 3 batteries w/negative common.
- **10V** To charge 3 batteries w/positive common.

Model Number Nomenclature



Model Number
A46 - Unfiltered
A46F - Filtered

AC Phase Codes
1 - Single Phase

AC Voltage Codes
A - 120
D - 208
B - 240

Special Frequency Code
5 - 50Hz
* 60Hz standard unless special code is entered

Battery Cell Type Code
12V - 6L, 9N, 10N
24V - 12L, 19N, 20N
32V - 16L
36V - 18L

- 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

- NEMA 1 enclosure ANSI 61 gray baked enamel paint

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LaMARCHE®

ISO 9001 CERTIFIED

EC Series
Engine Starting Charger

Standard Features

- Ferroresonant Charging Technology
- Stainless Steel NEMA-1 Enclosure
- Compact, Light Weight Design
- Single Phase AC Input 120V AC 60Hz
- Automatic AC Input Voltage Compensation ±10%
- DC Current Limit Circuitry (typically less than 150%)
- Complete Isolation from the AC line from the DC Charging Circuit
- No controls to adjust
- No Battery Discharge during failure
- Two rate charging
- Float/Equalize Switch
- Float/Equalize LED Indicators
- AC Circuit Breaker
- DC Ammeter
- DC Voltmeter
- Standard Battery Voltage Settings of:

  Lead-Acid Cells: 2.17±.05 vpc on Float
  2.32±.05 vpc on Equalize

  Nickel-Cadmium: 1.43±.01 vpc on Float
  1.55±.02 vpc on Equalize

- 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

- UL & CUL Listed
- 2 Year Warranty

Options

NFPA 110 which includes 204 CAP system (204 CAP System features Low Voltage, High Voltage, Low Current & AC Failure Alarm)

EC Series
Automatic Float Charger

The new La Marche EC Series of Rectifiers offers LaMarche quality and reliability in an environmentally rugged stainless steel enclosure. These chargers are designed for maintaining and recharging Engine Starting Batteries to a fully charged state without supplying any DC loads *(see our models A40 and A46 for this type of application).*

The La Marche EC charger uses proven Ferroresonant charging technology. It is a completely automatic, Solid State, constant voltage Battery Charger that will sense the Battery condition and deliver the appropriate output current to recharge it. Once the Battery becomes fully charged, the output current will automatically decrease to a very low Trickle Charge to prevent overcharging of the Batteries. The EC is designed and built to charge Flooded Lead-Acid or Nickel Cadmium Batteries containing a specific number of cells. However, it is not suitable to charge sealed Valve-Regulated Batteries since these require output filtering such as a Power Supply *(see our models A12B, TPSD or A36D for this type of application).*

The front panel Float/Equalize switch allows the operator to manually initiate a periodic equalize charge to optimize battery longevity. LED's are also provided to indicate when the Charger is operating in either Float or Equalize mode.

Our optional 204 C.A.P. System is designed to meet NFPA 110 requirements. It consists of and (1) Form "C" contact for each of the following: AC Power Failure, Low DC Current, Low DC Voltage and High DC Voltage. These are provided for monitoring the condition of the Battery Charger and Battery Bank.

P25-DSEC-1
ECN-15718
01-03

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Made in USA

EC Series
Engine Starting Charger

EC Charger

	Model No.	DC Output		120 VAC Current Draw* @100% Load (Amps)	Overall Dimentions W x D x H	Cable Entry (when facing unit)		Mounting	Shipping Weight (approximate)	
		Amps	Volts			AC input	DC output		lbs	kgs
24DC 12L or 20 NC	EC-10-24V-A1	10	24V	3.0	9"x8.7"x11.5" 229x221x292 mm	Left	Right	Wall	22	10
	EC-20-24V-A1	20	24V	6.1	15"x8.5"x16.5" 381x216x419 mm	Left	Right	Wall	38	17.3

**AC Current Draws based @ 100% load and standard battery cells of 12L(24V). Maximum Current draw is typically less then 150% of ratings shown.*

Model Number Nomenclature

EC - 10 - 24V - A 1 - ( ) - ( )

- Model Number
- DC Amps
- DC Volts
- AC Voltage Code
- AC Phase Code
- Battery Cell Range
- Factory Assigned Accessory Code

AC Voltage Code
A - 120

AC Phase Code
1 - Single Phase

Standard Battery Voltage Settings
Lead Acid Cells:
2.17 ± .05 vpc on Float
2.32 ± .05 vpc on Equalize
Nickel Cadmium Cells:
1.43 ± .01 vpc on Float
1.55 ± .02 vpc on Equalize

Ordering Information

When ordering, please specify:

- LaMarche Model Number EC
- Input Voltage of 120VAC/1/60Hz
- Number and Type of Battery Cells
- Ampere Hour Capacity of Battery
- Allowable recharge Time from Full Discharge(where applicable)
- Optional Accessory *(Option #204 Combined Alarm Package if desired)*

Specifications subject to change without notice

P25-DSEC-1
ECN 15718
01-03

LaMARCHE®
ISO 9001 CERTIFIED

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LaMARCHE®
ISO 9001:2000 CERTIFIED

A40 / A40F

Engine Starting Battery Charger Without / With Filtering

"Constavolt"

Engine Starting Battery Charger

The La Marche model A40/A40F battery chargers are renowned throughout the industry as the Constavolt because of their reliability and their precise and constant output voltage to charge your batteries. The Constavolt is a completely automatic, solid state, constant voltage battery charger built to carry continuous and intermittent loads up to 80% of its maximum rated output capacity. It is ideal for applications where it is advantageous to have the charger permanently connected across the battery, keeping it charged at all times and to simultaneously carry continuous and/or intermittent current loads such as onboard peripheral equipment.

Standard Features

- Magnetic Amplifier Circuitry
- Automatic DC Voltage Regulation
- Automatic AC Input Voltage Compensation +/- 10%
- Automatic Surge Suppression
- AC input and DC output fusing protects battery and charger
- Analog DC Ammeter
- DC Current Limiting Circuitry
- Charger design prevents battery from discharging if AC line fails
- AC to DC Isolation
- Model A40F is filtered for Valve-Regulated batteries
- A40/A40F models are UL 1564 Listed & C-UL Listed
- 10-Year Limited Warranty

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

MADE IN U.S.A.
Specifications subject to change without notice
P25-DSA40-1
ECN 18726
06/10

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A40 / A40F Models

	Model Number All Models Available As A40F	DC Output			AC Input Current Draw* at 100% Load (Amps)			A40 Case No.	A40 Shipping Weight (Approximate)		A40F Case No.	A40F Shipping Weight (Approximate)	
		Amps	Volts	Fuse Size	A 120	D 208	B 240		lbs	kgs		lbs	kgs
12VDC 6L, 9 or 10NC	A40-10-12V	10	12V	20A	2.5	1.4	1.3	05	30	13.6	2	46	20.9
	A40-20-12V	20	12V	35A	5	2.9	2.5	2	54	24.5	7	66	30.0
	A40-30-12V	30	12V	50A	7.5	4.3	3.8	2	65	29.5	3	90	40.9
	A40-40-12V	40	12V	70A	10	5.8	5	2	74	33.6	4	133	60.5
	A40-60-12V	60	12V	100A	15	8.7	7.5	7	98	44.5	6	168	76.4
	A40-75-12V	75	12V	130A	19	11	9.4	3	123	55.9	6	187	85.0
	A40-100-12V	100	12V	150A	26	15	13	6	165	75.0	8A	260	118.2
24VDC 12L, 19 or 20NC	A40-10-24V	10	24V	20A	5	2.9	2.5	2	61	27.7	7	73	33.2
	A40-20-24V	20	24V	35A	10	5.8	5	2	72	32.7	7	84	38.2
	A40-30-24V	30	24V	50A	15	8.7	7.5	7	98	44.5	3	117	53.2
	A40-40-24V	40	24V	70A	21	12	10	7	105	47.7	3	136	61.8
	A40-60-24V	60	24V	100A	31	18	15	3	150	68.2	4	213	96.8
	A40-75-24V	75	24V	130A	38	22	19	3	210	95.5	6	274	124.5
	A40-100-24V	100	24V	150A	51	29	26	8A	300	136.4	8A	374	170.0
32VDC 16L	A40-10-32V	10	32V	20A	6.7	3.9	3.3	2	61	27.7	7	73	33.2
	A40-20-32V	20	32V	35A	14	7.7	6.7	2	72	32.7	3	90	40.9
	A40-30-32V	30	32V	50A	21	12	10	7	98	44.5	3	117	53.2
	A40-40-32V	40	32V	70A	27	16	14	3	140	63.6	4	187	85.0
	A40-60-32V	60	32V	100A	41	24	21	3	170	77.3	6	234	106.4
	A40-75-32V	75	32V	130A	51	29	26	8A	250	113.6	8A	291	132.3
130 VDC 60L / 92NC	A40-10-130V	10	130V	20A	26	15	13	3	155	70.5	4	183	83.2
	A40-20-130V	20	130V	35A	51	29	26	6	175	79.5	6	181	82.3
	A40-30-130V	30	130V	50A	76	44	38	8A	330	150.0	8A	343	155.9

All above models designed for optimal performance at 60Hz. They will operate at 50Hz with reduced performance. Consult factory for units designed specifically at 50Hz. Please consult factory for other available cell ranges if desired range not shown. *AC Current Draws based @ 100% load and standard battery cells of 6L(12V),12L(24V),16L(32V),60L(130V). Maximum Current Draw is typically 140% of ratings shown.

Case Specifications

Case No.	Overall Dimensions						Cable Entry (when facing unit)		Mounting
	Width		Depth		Height				
	in	mm	in	mm	in	mm	AC input	DC output	
05	8.000	203	7.000	178	13.000	330	BOTTOM RIGHT	BOTTOM RIGHT	WALL
1	10.375	264	7.875	200	16.250	413	RIGHT	LEFT	WALL
2	12.812	326	10.000	254	17.125	435	RIGHT	LEFT	WALL
3	15.375	391	11.000	279	23.750	603	RIGHT	LEFT	WALL/FLOOR
4	19.000	483	15.000	381	25.875	657	RIGHT/TOP/BOTTOM	LEFT/TOP/BOTTOM	WALL/FLOOR/RACK
6	25.580	650	13.935	354	28.000	711	RIGHT/TOP/BOTTOM	LEFT/TOP/BOTTOM	WALL/FLOOR
7	14.250	362	10.625	270	19.875	505	RIGHT	LEFT	WALL/FLOOR
8A	27.200	691	15.250	387	32.500	826	RIGHT	LEFT	FLOOR

Case sizes may differ depending on optional accessories. Please consult factory when dimensions are critical. Dimensions shown above are overall footprint. Detailed dimension drawings are available for mounting purposes.

Optional External Charge Dividers

Model Number	Number of Batteries	DC Range		Case No.	Shipping Weight (Approximate)	
		Amps	Volts		lbs	kgs
CD40-20/30-12/32-N2	2	10-30	12-32	05	10	4.5
CD40-20/30-12/32-N3	3	10-30	12-32	05	11	5.0
CD40-40/60-12/32-N2	2	40-60	12-32	1	14	6.4
CD40-40/60-12/32-N3	3	40-60	12-32	1	15	6.8
CD40-75/100-12/32-N2	2	75-100	12-32	2	23	10.4
CD40-75/100-12/32-N3	3	75-100	12-32	2	25	11.3

Note: All above models are configured for Negative Common. For Positive Common, part number changes as follow: CD40-20/30-12/32-P2.

Optional Internal Charge Dividers

- 100 To charge 2 batteries with a negative common
- 10U To charge 2 batteries with a positive common
- 101 To charge 3 batteries with a negative common
- 10V To charge 3 batteries with a positive common

Note: Consult factory may increase case size.

Model Number Nomenclature

A40(F) - 10 - 12V - ( ) ( ) 1 - ( ) - ( )

- Model Number
- DC Amps
- DC Volts
- Factory Assigned Accessory Code
- Battery Cell Range
- AC Phase Code
- AC Voltage Code
- Special Frequency When Required*

Model Number
A40 - Unfiltered
A40F - Filtered

AC Phase Codes
1 - Single Phase

AC Voltage Codes
A - 120
D - 208
B - 240

Special Frequency Code
5 - 50Hz
* 60Hz standard unless special code is entered

Battery Cell Type Code
12V - 6L, 9N, 10N
24V - 12L, 19N, 20N
32V - 16L
130V - 60L, 92N

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 (Amps) and Duration (Time)

Ordering Information When ordering, please specify:

- La Marche Model Number A40 or A40F
- DC Amps
- DC Volts
- Special Frequency, When Required
- AC Voltage Code
- AC Phase Code
- Battery Cell Type Code
- Optional Accessories (Option Code)

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ISO 9001:2000 CERTIFIED

A18J / A20R
Engine Starting Battery Chargers

Model shown A18J-3-12V-A1

Automatic Battery Chargers for Engine Starting Batteries

The La Marche models A18J and A20R Battery Chargers are completely automatic and are designed for continuous operation on unloaded Engine Starting Batteries. They are intended for mounting near the Engine Generator Set and to be permanently connected to the Battery and AC lines.

The A18J and A20R Battery Chargers are designed and built for use on Flooded Lead-Acid Batteries and are not suitable to charge Sealed Valve-Regulated Batteries since these require output filtering such as a Power Supply *(see our model A40F for this type of application).*

They will automatically sense the Battery condition and will shutdown to milliampere currents once the Battery becomes fully charged. Not designed to carry any DC loads *(see models A40 and A46 for this type of application)*, the A18J and A20R's are typically used in applications where a small capacity Battery Charger is required to maintain and recharge a single Battery Bank.

The A18J and A20R Battery Chargers are simple to operate. There are no external controls or adjustments to be made once the Battery is permanently connected. The models are available with either 120, 208 or 240VAC single phase input.

A18J / A20R
Engine Starting Battery Chargers

Standard Features

- Automatic Operation
- Silicon Diode Full Wave Rectifier Design
- No RFI (Radio Frequency Interference) Emitted
- Simple Operation - No External Controls, Switches or Moving Parts
- Charger design prevents Battery from discharging if AC Line Fails
- Complete Isolation of the AC Line from the DC Charging Circuit Eliminates the Danger of High Voltage Shock to Personnel on Ungrounded Equipment
- Automatic Surge Protector
- AC input Fusing and DC output Auto-Reset Breaker protects Battery and Charger
- Flush Mounted 5% Accuracy Analog DC Ammeter
- Environmental:

  Operating Temperature: 0 to 50°C (32 to122°F)

  Storage Temperature: -40 to 85°C (-40 to 185°F)

  Relative Humidity: 0 to 95% non-condensing
- AC Input Voltages of 120, 208 or 240VAC, 60Hz, single phase
- CSA Approved
- NEMA 1 Enclosure ANSI 61 Gray Baked Enamel Paint
- 2-year Warranty

Optional Feature

- 03A - DC Cranking Disconnect Relay

All models are equipped with convenient AC input taps to adjust the output voltage where low or high level AC lines are present. The A20R-5-24/32V and A20R-5-30/36V models, which have multiple output voltages, are also equipped with DC output taps to select the desired Battery Cell setting.

All components of the A18J and A20R Battery Chargers operate significantly below their nominal ratings, thus assuring the longest possible service life.

La Marche Manufacturing Company
106 Bradrock Drive, Des Plaines, IL 60018-1967
Tel: 847-299-1188 Toll Free Fax: 1-888-232-9562
sales@lamarchemfg.com www.lamarchemfg.com

Made in USA

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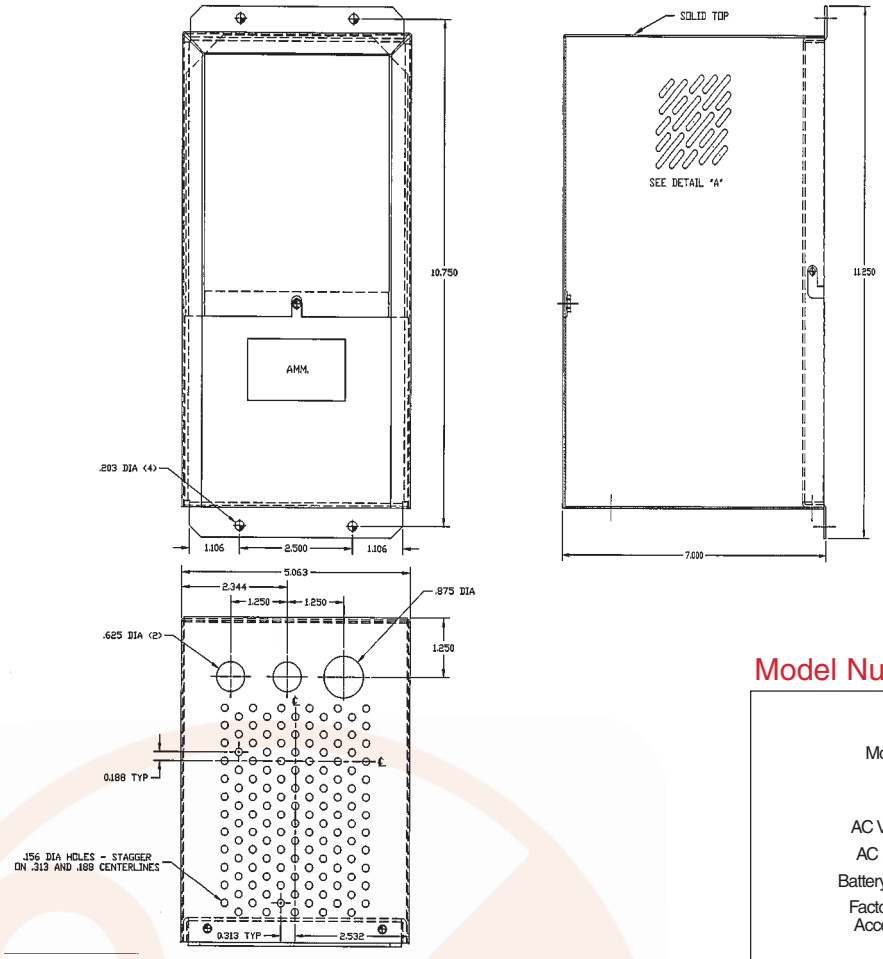
A18J / A20R

Engine Starting Battery Chargers

Model Number	DC Output				AC Input Current Draw @100% (Load)			Cable Entry (When facing unit)		Overall Dimentions W x D x H	Mounting	Case No.	Shipping Weight (Approx.)	
	Amps	Volts	Battery Cells (Lead Acid)	Breaker Size	A 120	D 208	B 240	AC Input	DC Output				Lbs	Kgs
A18J-2-6V	2	6	3	4	1			Bottom Front		5.125" x 7.125" x 11.250" 130 x 181 x 286mm	wall	02C	13	5.9
A18J-3-12V	3	12	6	5									13	5.9
A20R-4-24V	4	24	12	6	2	1	1	Right Side	Left Side				15	6.8
A20R-5-24/32V	5	24/30/32	12/15/2016										16	7.3
A20R-5-30/36V		30/32/36	15/16/18										16	7.3

No. 02 Case Drawing



Ordering Information

When ordering, please specify:

- LaMarche Model Number A18J or A20R
- Input Voltage
- Number of Battery Cells
- A.H. Capacity of Battery
- Allowable Recharge Time from Full Discharge (where applicable)
- Optional Accessory (Option #03A Cranking Disconnect Relay if desired)

Model Number Nomenclature

A18J - 3 - 12V - A 1 - ( ) - ( )

- Model Number
- DC Amps
- DC Volts
- AC Voltage Code
- AC Phase Code
- Battery Cell Range
- Factory Assigned Accessory Code

AC Voltage Code
A - 120
B - 240
D - 208

AC Phase Code
1 - Single Phase

Specifications subject to change without notice

P25-DSA18J/20R-1
ECN 18213
03-09

laMARCHE®
ISO 9001:2000 CERTIFIED

106 Bradrock Drive, Des Plaines, IL 60018-1967
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La MARCHE®
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A12B

Battery Charger / Power Supply

Unit shown with several optional accessories

The Industry's Most Reliable Filtered Battery Charger / Power Supply

The La Marche model A12B Series Filtered Battery Chargers/Power Supplies are engineered for the demanding requirements of Switch Gear applications, Process Controls and Communications. The magnetic amplifier circuitry is designed to carry continuous and intermittent loads up the maximum rated output. Its robust design and unmatched reliability has made this workhorse the standard in the industry, and with its customizing features, there is virtually no application that the A12B cannot meet.

Check the Digital CAP Systems data sheet for a combined accessory package.

Standard Features

- Magnetic Amplifier Circuitry
- Separate Float and Equalize Potentiometers provide simple and precise DC Voltage calibration.
- Float/Equalize Mode Switching
- Float and Equalize Lights
- Automatic AC Voltage Compensation
- +/- 0.5% DC Voltage Regulation
- Fused AC input and DC output protects Battery and Charger/Power Supply
- Analog DC Ammeter and DC Voltmeter
- Current Limiting Circuitry prevents overload and provides current control from 50 to 120% of rated output (factory set at 115%).
- Filtered DC Output (clean power) - the A12B can be used as a Power Supply with 30mV RMS or less on single phase units and 100mV RMS or less on three phase units.
- AC Power Failure Relay with Form "C" Contacts
- UL 1012, UL 1481 Listed & C-UL Listed
- 10-year Limited Warranty

MADE IN U.S.A.
Specifications subject to change without notice
P25-DSA12B-1
ECN 18726
06/10

La Marche Mfg. (A U.S. Company)
106 Bradrock Drive, Des Plaines, IL 60018
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Specifications

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ELECTRICAL

- **AC Input Voltages**
  Single Phase 60Hz: 120, 208, 240, 480 or 575
  Single Phase 50Hz: 220/240, 380 or 415
  Three Phase 60Hz: 208, 240, 480 or 575
  Three Phase 50Hz: 220/240, 380 or 415
- **Power Protection**
  AC Fuse, DC Fuse and Current Limit Protection
- **DC Output Voltages**
  DC Amps: 3 to 400 amperes
  DC Volts: 12, 24, 48 & 130VDC (Others available such as 32&36VDC)
- **Output Filtering (With or without a battery)**
  30mV RMS for single phase models and 100mV RMS for three phase models
- **DC Voltage Regulation**
  Plus or minus 0.5% of setting from no load to full load over the specified input voltage, frequency and ambient temperature ranges.

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)
- **MTBF**
  250,000 Hours
- **Dimensions**
  Overall dimensions and weights are listed on the last page of this Data Sheet. Case specifications are subject to change due to innovative product development and design. When space requirements are critical, please consult the factory.
- **Mounting**
  Floor or wall units are available. Mounting flanges are supplied as integral part of cabinet back plate on wall mounted models.
- **Finish**
  Pretreated with three step iron phosphate wash and de-ionized rinse. Finished with environmentally safe water based ANSI 61 gray baked enamel.

Agency Approvals

- **UL Battery Charger**
  File E 319318, Guide BBML
  UL Std. No. 1012
- **C-UL Battery Charger**
  CAN/CSA
  Std. C22.2 No. 107-2
- **UL Fire Alarm System Power Supply**
  File S2768, Guide UTRZ
  Std. No. 1481
  Must Specify Accessory Code 09A

Notes:
All models where appropriate will carry the U.L. and C-U.L. Battery Charger listing. When U.L. Fire Alarm System Power Supply Listings are required, you must specify this requirement at the time of order. Not all models can be U.L. approved. Accessories, type of charger and rating will determine U.L. approval. Consult our factory if U.L. approvals are required.

Optional Accessories

ALARM & CONTROL

- **16 Series** (Refer to Digital C.A.P. Systems Data Sheet for complete details)
  Digital C.A.P. (Combined Accessory Package) Systems featuring a Selectable LED Display, a Multi-Mode Equalize Timer with Light adjustable from 1-144 hrs with five selectable modes and various failure alarm & lights.
- **46 Series** (Refer to LCD C.A.P. Systems Data Sheet for complete details)
  LCD C.A.P. Systems common features:
  Selectable Display, Multi-Mode Equalize Timer, Equalize Light, Float Light, AC Power Failure Relay w/ (2) sets Form "C" (except 46Q), Low DC Current Alarm w/ (2) sets Form "C" Low DC Voltage 1 Alarm w/ (2) sets Form "C" & Adjustable Time Delay (0-255 sec) (Except Ground Detection Alarms).
- **03N** Low DC Current Alarm & Light w/ (1) set Form "C" contacts
- **04J** Electronic Equalize Timer Multi-Mode adjustable from 2-144hrs with five selectable modes; Standard, 7-day, 14-day, 30-day and Equalize after Low DC Voltage.
- **050** Ground Detection Switch 3-position with DC Voltmeter indication (130VDC models utilizes two switches)
- **051** Ground Detection Alarm with Reset Pushbutton and (1) set form "C" Positive and (1) set form "C" Negative contacts
- **052** Ground Detection Lights (Positive and Negative)
- **053** Ground Detection Switch & Lights (130VDC models utilizes two switches)
- **054** AC Power Failure Light
- **060** AC Pilot Light Neon Bulb *(LED included with 16B Digital C.A.P. Systems)*
- **068** Sonalert with Silence Switch Audible Alarm
- **16C** Hi/Lo-2 Combination Alarm High/Low DC Voltage, Field Calibrations & Adjustments, Individual Lights and (2) Form "C" contacts for each alarm
- **10G** Forced Load Sharing *(with same model number only)*
- **103** Remote Sensing
- **162** Summary Alarm *(for use with discrete components only)*

METERING & PROTECTION

- **011** AC Breaker Single Pole *(120VAC only)*
- **012** DC Breaker Single Pole
- **016** AC Breaker Two Pole
- **017** DC Breaker Two Pole
- **01B** AC Breaker Three Pole *(3-phase input only)*
- **---** AC Breakers High Interrupting. Contact factory for appropriate code.
- **06G** Zero Center Ammeter w/Battery & Load Terminals *(under 250A units)*

METERING & PROTECTION CONTINUED

- **06L** AC Ammeter +/-2% accuracy *(single phase only)*
- **06M** AC Voltmeter +/-2% accuracy *(single phase only)*
- **102** DC Blocking Diode
- **104** AC Dual Fusing
- **105** DC Dual Fusing
- **107** DC Surge Protectors *(MOV's)*
- **140** AC Switch Single Pole *(60A Maximum)*
- **141** AC Switch Two Pole *(60A Maximum)*
- **143** AC Switch Three Pole *(60A Maximum)*

MISCELLANEOUS

- **09A** U.L. 1481 Listing
- **092** Tropicalization (magnetics only) Single Phase
- **093** Tropicalization (magnetics only) Three Phase
- **10B** USCG (U.S. Coast Guard) Accessories *
- **10L** Battery & Load Terminals (under 250A units)
- **11F** 30mV Filtering for 3-phase units
- **38G** ABS (American Bureau of Shipping) Modifications *
- **---** Floor Stand (must order separately)
- **---** Drip Shield (must order separately) *
- **38J** ABS (38G) & USGC (10B) Single Phase *
- **38K** ABS (38G) & USGC (10B) Three Phase *
- **11V** Temperature Compensation (Internal Probe)
- **11W** External Temperature Probe 22 ft
- **100** 2 Battery Charge Divider - Negative Ground
- **10U** 2 Battery Charge Divider - Positive Ground
- **101** 3 Battery Charge Divider - Negative Ground
- **10V** 3 Battery Charge Divider - Positive Ground
- **095** Point to Point Wiring Diagram with Wire Makers
- **096** Wire Markers - Includes Wire Marker Numbers on Electrical Schematic
- **09L** Physical Parts Location Drawing
- **097** SIS Wire (#16 AWG and larger)
- **09W** Heat Shrinkable Wire Markers
- **21P** DNP3.0 (Offered only with 46 series CAP)
- **21Q** Modbus (Offered only with 46 series CAP)

**ONLY Available On Case No. 3, 6, 7, 70, & 72.*
Notes: Discrete Alarms are not available in conjunction with Digital C.A.P. (Combined Accessory Package) systems. Typically, when ordering two or more discrete components, the Digital C.A.P. system listed above provides a more economical approach.
Case sizes may differ depending on optional accessories and/or 50Hz input. Please consult factory when dimensions are critical.

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Must specify only one battery type and number of cells from range shown above. Please consult factory for other available cell ranges if desired range not shown.

	Model Number	DC Amps	DC [1] Fuse Size (Amps)	AC Input Phase	AC Input Current Draw @ 100% Load [2] (Amps)								Std. [5] Case Size	Shipping Weight (Approximate)	
					60Hz Units						50Hz Units [3, 4]				
					A 120	D 208	L 220	B 240	C 480	E 575	B L 240 / 220	G 380	J 415		
														lbs	kgs
12 volt systems (6L, 9 or 10NC)	A12B-3-12V	3	10	1	0.8	0.4	0.4	0.4	---	---	0.4 / 0.4	---	---	7	60	27.2
	A12B-6-12V	6	15	1	1.5	0.9	0.8	0.8	---	---	0.8 / 0.8	---	---	7	70	31.8
	A12B-10-12V	10	20	1	2.5	1.4	1.4	1.3	---	---	1.3 / 1.4	---	---	7	80	36.3
	A12B-15-12V	15	25	1	3.8	2.2	2.1	1.9	---	---	1.9 / 2.1	---	---	3	90	40.8
	A12B-20-12V	20	30	1	5	2.9	2.7	2.5	---	---	2.5 / 2.7	---	---	3	95	43.1
	A12B-30-12V	30	40	1	7.5	4.3	4.1	3.8	1.9*	1.6*	3.8 / 4.1	2.4*	2.2*	3	105	47.6
	A12B-40-12V	40	60	1	10	5.8	5.5	5	2.5*	2.1*	5 / 5.5	3.2*	2.9*	6	155	70.3
	A12B-50-12V	50	80	1	13	7.2	6.8	6.3	3.1*	2.6*	6.3 / 6.8	4.0*	3.6*	6	170	77.1
	A12B-60-12V	60	80	1	15	8.7	8.2	7.5	3.8*	3.1*	7.5 / 8.2	4.7*	4.3*	6	180	81.7
	A12B-75-12V	75	100	1	19	11	11	9.4	4.7*	3.9*	9.4 / 11	5.9*	5.4*	6	225	102.1
	A12B-100-12V	100	150	3	---	7.5	7.1	6.5	3.3*	2.7*	6.5 / 7.1	4.1*	3.8*	8A	325	147.4
24 volt systems (12L, 19 or 20NC)	A12B-3-24V	3	10	1	1.5	0.9	0.8	0.8	---	---	0.8 / 0.8	---	---	7	70	31.8
	A12B-6-24V	6	15	1	3	1.7	1.6	1.5	---	---	1.5 / 1.6	---	---	3	85	38.6
	A12B-10-24V	10	20	1	5	2.9	2.7	2.5	---	---	2.5 / 2.7	---	----	3	95	43.1
	A12B-15-24V	15	25	1	7.5	4.3	4.1	3.8	1.9*	1.6*	3.8 / 4.1	2.4*	2.2*	3	100	45.4
	A12B-20-24V	20	30	1	10	5.8	5.5	5	2.5*	2.1*	5 / 5.5	3.2*	2.9*	3	120	54.4
	A12B-25-24V	25	35	1	13	7.2	6.8	6.3	3.1*	2.6*	6.3 / 6.8	4.0*	3.6*	3	135	61.2
	A12B-30-24V	30	40	1	15	8.7	8.2	7.5	3.8*	3.1*	7.5 / 8.2	4.7*	4.3*	3	145	65.9
	A12B-35-24V	35	50	1	18	11	9.6	8.8	4.4*	3.7*	8.8 / 9.6	5.5*	5.1*	6	190	86.2
	A12B-40-24V	40	60	1	21	12	11	10	5*	3.2*	10 / 11	6.3*	5.8*	6	205	93.0
	A12B-50-24V	50	80	1	26	15	14	13	6.3*	5.2*	13 / 14	7.9	7.2	6	240	108.9
	A12B-60-24V	60	80	1	31	18	17	15	7.5	6.3*	15 / 17	9.5	8.7	6	265	120.2
	A12B-75-24V	75	100	1	38	22	21	19	9.4	7.8	19 / 21	12	11	70	400	181.4
	A12B-100-24V	100	150	1	51	29	28	26	13	11	26 / 28	16	15	70	450	204.1
	A12B-125-24V	125	200	3	---	19	18	17	8.1	6.8*	17 / 18	11	9.4	70	525	238.1
	A12B-150-24V	150	200	3	---	23	22	20	9.8	8.2	20 / 22	13	12	72	630	285.8
	A12B-200-24V	200	250	3	---	30	29	26	13	11	26 / 29	17	16	27	825	374.2
	A12B-250-24V	250	300	3	---	38	36	33	17	14	33 / 36	21	19	27	880	399.2
	A12B-300-24V	300	400	3	---	46	43	40	20	17	40 / 43	25	23	27	940	426.4
	A12B-400-24V	400	600	3	---	61	57	53	26	22	53 / 57	33	31	47	1350	612.4
48 volt systems (24L, 36, 37 or 38NC)	A12B-3-48V	3	10	1	3	1.7	1.6	1.5	---	---	1.5 / 1.6	---	---	7	85	38.6
	A12B-6-48V	6	15	1	6	3.5	3.3	3	---	---	3 / 3.3	---	---	3	90	40.8
	A12B-10-48V	10	20	1	10	5.8	5.5	5	2.5*	2.1*	5 / 5.5	3.2*	2.9*	3	140	63.5
	A12B-15-48V	15	25	1	15	8.7	8.2	7.5	3.8*	3.1*	7.5 / 8.2	4.7*	4.3*	6	180	81.7
	A12B-20-48V	20	30	1	21	12	11	10	5*	4.2*	10 / 11	6.3*	5.8*	6	205	93.0
	A12B-25-48V	25	35	1	26	15	14	13	6.3*	5.2*	13 / 14	7.9	7.2	6	240	108.9
	A12B-30-48V	30	40	1	31	18	17	15	7.5	6.3*	15 / 17	9.5	8.7	6	265	120.2
	A12B-40-48V	40	60	1	41	24	22	21	10	8.4	21 / 22	13	12	6	275	124.7
	A12B-50-48V	50	80	1	51	29	28	26	13	11	26 / 28	16	15	8A	355	161.0
	A12B-60-48V	60	80	3	---	18	17	16	7.8	6.5*	16 / 17	9.9	9	8A	400	181.4
	A12B-75-48V	75	100	3	---	23	22	20	9.8	8.2	20 / 22	13	12	72	525	238.1
	A12B-100-48V	100	150	3	---	30	29	26	13	11	26 / 29	17	16	72	625	283.5
	A12B-125-48V	125	200	3	---	38	36	33	17	14	33 / 36	21	19	72	700	317.5
	A12B-150-48V	150	200	3	---	46	43	40	20	17	40 / 43	25	23	27	850	385.6
	A12B-175-48V	175	250	3	---	53	50	46	23	19	46 / 50	29	27	27	1000	453.6
	A12B-200-48V	200	250	3	---	61	57	53	26	22	53 / 57	33	31	27	1150	521.6
	A12B-250-48V	250	300	3	---	76	71	66	33	28	66 / 71	42	38	47	1400	635.0
	A12B-300-48V	300	400	3	---	91	86	79	40	33	79 / 86	50	46	47	1700	771.1
	A12B-400-48V	400	600	3	---	*121*	*114*	105	53	44	105 / 114	66	61	47	1800	816.5
130 volt systems (58 or 60L, 92, 93, 96 or 97NC)	A12B-3-130V	3	10	1	7.5	4.3	4.1	3.8	---	---	3.8 / 4.1	---	---	3	140	63.5
	A12B-6-130V	6	15	1	15	8.7	8.2	7.5	---	---	7.5 / 8.2	4.7*	---	3	140	63.5
	A12B-10-130V	10	20	1	26	15	14	13	6.3*	5.2*	13 / 14	7.9	7.2	6	225	102.1
	A12B-15-130V	15	25	1	38	22	21	19	9.4	7.8	19 / 21	12	11	6	250	113.4
	A12B-20-130V	20	30	1	51	29	28	26	13	11	26 / 28	16	15	6	270	122.5
	A12B-25-130V	25	35	1	*63*	37	35	32	16	14	32 / 35	20	19	8A	355	161.0
	A12B-30-130V	30	40	1	*76*	44	41	38	19	16	38 / 41	24	22	8A	390	176.9
	A12B-35-130V	35	50	1	*88*	51	48	44	22	19	44 / 48	28	26	72	505	229.1
				3	---	27	25	23	12	9.5	23 / 25	15	14	72	580	263.1
	A12B-40-130V	40	60	1	*101*	58	55	51	26	21	51 / 55	32	29	72	550	249.5
				3	---	30	29	26	13	11	26 / 29	17	16	72	625	283.5
	A12B-50-130V	50	80	3	---	38	36	33	17	14	33 / 36	21	19	72	645	292.6
	A12B-60-130V	60	80	3	---	46	43	40	20	17	40 / 43	25	23	27	865	392.4
	A12B-75-130V	75	100	3	---	57	54	49	25	21	49 / 54	31	29	27	930	421.9
	A12B-100-130V	100	150	3	---	76	71	66	33	28	66 / 71	42	38	27	1040	471.7
	A12B-125-130V	125	200	3	---	94	89	82	41	34	82 / 89	52	48	47	1500	680.4
	A12B-150-130V	150	200	3	---	*113*	*107*	*98*	49	41	*98* / *107*	62	57	47	1800	816.5
	A12B-175-130V [3]	175	250	3	---	*132*	*125*	*114*	57	48	*114* / *125*	72	66	47	1950	884.5
	A12B-200-130V [3]	200	250	3	---	*151*	*142*	*131*	66	55	*131* / *142*	83	76	47	2100	952.6
	A12B-250-130V [3]	250	300	3	---	*188*	*178*	*163*	82	68	*163* / *178*	103	95	47	2300	1043.3
	A12B-300-130V [3]	300	400	3	---	*226*	*214*	*196*	98	82	*196* / *214*	124	113	47	2400	1088.6
	A12B-400-130V [3]	400	600	3	---	*301*	*285*	*261*	131	109	*261* / *285*	165	151	57	2550	1156.7

*[1] Optional DC Breaker when ordered in lieu of standard fuse(s) may slightly differ in ratings. AC Draws shown with asterisk * are not available with Optional AC Breaker.*
[2] AC Current Draws based @ 100% load and standard battery cells of 6L (12V), 12L (24V), 24L (48V) and 60L (130V). Maximum Current Draw is 120% of ratings shown. AC Current draws shown in Italics have high current draws for their specific input voltages - verification of input power requirement should be done prior to ordering.
[3] Denotes units not U.L. Listed [4] 50Hz units are not U.L. listed.
[5] Case sizes shown are for standard 60Hz units and may differ depending on optional accessories and/or 50Hz input. Please consult factory when dimensions are critical.

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Case Specifications

Case No.	Overall Dimensions					
	Width		Depth		Height	
	in	mm	in	mm	in	mm
3	15.375	391	11.000	279	23.750	603
6	25.580	650	13.935	354	28.000	711
7	14.250	362	10.625	270	19.875	505
8A	27.200	691	15.250	387	32.500	826
27	27.312	694	25.875	657	56.125	1426
47	38.000	965	39.375	1000	70.000	1778
57	60.000	1524	36.000	914	80.000	2032
70	27.000	686	19.000	483	41.000	1041
72	27.000	686	23.500	597	44.500	1130

Case No.	Cable Entry (when facing unit)		Mounting
	AC input	DC output	
3	RIGHT	LEFT	WALL / FLOOR
6	RIGHT / TOP / BOTTOM	LEFT / TOP / BOTTOM	WALL / FLOOR
7	RIGHT	LEFT	WALL / FLOOR
8A	RIGHT	LEFT	FLOOR
27	TOP	TOP	FLOOR
47	TOP / BOTTOM	TOP / BOTTOM	FLOOR
57	BOTTOM	BOTTOM	FLOOR
70	RIGHT / BOTTOM	LEFT / BOTTOM	FLOOR
72	RIGHT / BOTTOM	BOTTOM	FLOOR

Case sizes may differ depending on optional accessories and / or 50Hz input. Please consult factory when dimensions are critical.
Dimensions shown above are overall footprint. Detailed dimensions drawings are available for mounting purposes.

Model Number Nomenclature

A12B - 15 - 130V - ( ) ( ) 1 - ( ) - ( )

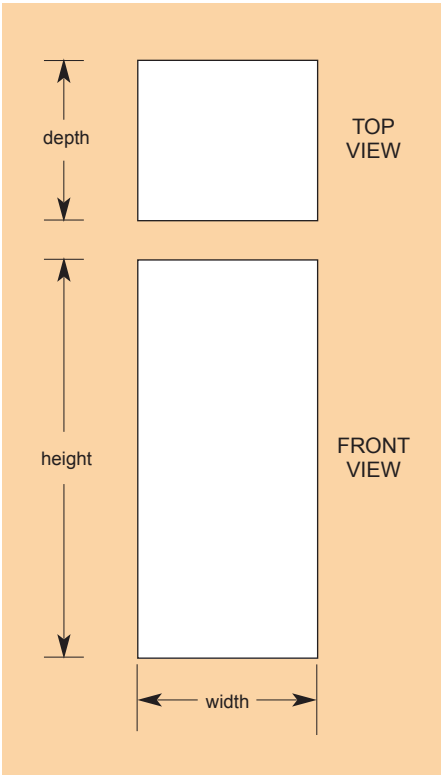
- Model Number
- DC Amps
- DC Volts
- Factory Assigned Accessory Code
- Battery Cell Range
- AC Phase Code
- AC Voltage(s) Codes
- Special Frequency When Required *

AC Phase Codes
1 - Single Phase
3 - Three Phase

AC Voltage Codes

60Hz	50Hz
A - 120	B L - 240/220
D - 208	G - 380
L - 220	J - 415
B - 240	
C - 480	
E - 575	

Special Frequency Code
5 - 50Hz
* 60Hz standard unless special code is entered



Ordering Information

When ordering, please specify:

- La Marche Model Number A12B
- Input Voltage, Frequency, Phase
- Number and Type of Battery Cells
- Ampere Hour Capacity of Battery
- Intermittent DC Loads and Duration
- Continous DC Load
- Allowable Recharge Time from Full Discharge (where applicable)
- Optional Accessories
- Verify AC Input Current Draw

ISO 9001:2000 CERTIFIED

LMHF

La Marche Manufacturing High Frequency

Modular Switchmode Rectifier System

The La Marche model LMHF (La Marche Manufacturing High Frequency) is a 4RU modular design rectifier for telecommunication applications. It is a highly compact self-contained power system. The current limiting circuitry, voltage regulation, high efficiency and high power factor makes the LMHF an ideal choice where power requirements are critical.

These rectifiers are available with nominal output voltages of 24VDC or 48 VDC, and can deliver 115 amps and 66 amps respectively. The nominal universal input range of 208 VAC to 227 VAC and the frequency range of 45 to 66 Hz provides the flexibility for worldwide power requirements.

The temperature controlled variable fan speed rectifier in a six across 23" rack configuration (five across in 19" configuration) offers high power density and efficiency. These parallel operating rectifiers are ideal for N+1 redundancy.

Loss of one rectifier will not affect the operation of the remaining rectifiers. A module can be unplugged and replaced, while maintaining power to critical loads without shutting down the system.

The system controller features a full graphic LCD touch screen, data-logging and advanced alarm notification. This user-friendly graphical (Menu Driven) display allows simple control and monitoring of LMHF rectifiers. Complete configuration and monitoring is possible through the Ethernet port and web browser. The communication ports provide reliable communication between LMHF power system and management system.

LMHF controller easily allows adjustments such as float voltage, equalize voltage, high voltage alarm, low voltage alarm and high voltage shutdown.

Standard Features

Rectifier

- High Frequency Switchmode Circuitry
- Power Factor Correction Circuitry
- Hot Swappable 4RU Design
- Output Power
  - 3.6KW per 48 Volt Rectifier
  - 3.1KW per 24 Volt Rectifier
- 92% Efficiency
- Parallel Operation
- Over Temperature and Over Voltage Protection
- Operating Temperature
  - -40° to 65°C (-40° to 149°F)
- Indicators
  - AC ON - Green LED
  - DC ON - Green LED
  - Alarm - Red LED

Shelf

- 23" Rack Mounting - up to 6 Modules
  (19" up to 5 Modules)
- Easy Installation and Maintenance

Controller

- Shelf or Rack Mount
- LCD touch-screen graphical display for local and remote set-up, adjustment and control
- Digital and Analog User-Configurable Inputs
- Temperature Compensation
- User-defined Major/Minor Alarms
- Web server and SNMP support via Ethernet
- Connectivity: Ethernet, RS232, RS485
- 2-year Warranty

MADE IN U.S.A.
Specifications subject to change without notice
P25-DSLMHF-1
ECN 18437
09/09

La Marche Mfg. (A U.S. Company)
106 Bradrock Drive, Des Plaines, IL 60018
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www.lamarchemfg.com

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	Model Number	AC Input			DC Output			Overall Dimensions H x W x D (inches)	Mounting	Shipping Weight	
		Nominal	Operating	Frequency	Amps	Volts (Nominal)	Range			lbs	kgs
Rectifier	LMHF-110-24V-D-F1	208-277 VAC	176-312 VAC	45-70 Hz	115	24	21-29 VDC	6.3 x 3.4 x 11.8	4RU	10	4.6
Rectifier	LMHF-65-48V-D-F1	208-277 VAC	176-312 VAC	45-66 Hz	66	48	42-60 VDC	6.3 x 3.4 x 11.8	4RU	10	4.6
Shelf	LMHF-PC660-24V-23*	208-277 VAC	176-312 VAC	45-70 Hz	660	24	21-29 VDC	6.9 x 20.8 x 15.3	4RU	21	9.5
Shelf	LMHF-PC390-48V-23*	208-277 VAC	176-312 VAC	45-66 Hz	400	48	42-60 VDC	6.9 x 20.8 x 15.3	4RU	21	9.5
Shelf	LMHF-PC575-24V-23*[1]	208-277 VAC	176-312 VAC	45-70 Hz	575	24	21-29 VDC	6.9 x 20.8 x 15.3	4RU	21	9.5
Shelf	LMHF-PC325-48V-23*[1]	208-277 VAC	176-312 VAC	45-66 Hz	325	48	42-60 VDC	6.9 x 20.8 x 15.3	4RU	21	9.5

	Model Number	Input		Overall Dimensions H x W x D (inches)	Mounting		Shipping Weight (approx.)	
		Amps	Voltage		Shelf	Rack	lbs	kgs
Controller	LMHF-SSC-0-1	<200mA	20-60 VDC	6.9 x 2.9 x 10	4RU	-	3.9	1.8
Controller	LMHF-SSC-0-2*	<100mA	20-60 VDC	5.1 x 23 x 3.9	-	3RU	13.8	6.2

Factory set @ 48V, to change the settings to 24V refer to the instruction manual.
* 19" configuration available upon request, please contact factory for specifications.
1- Shelf for use with LMHF-SSC-0-1 controller.

Rectifier Specifications

INPUT VOLTAGE
- **Nominal:** 208 to 277 VAC
- **Operating:** 176 to 312 VAC
- **Extended:** 176 to 90 VAC (derated power)

INPUT CURRENT
- 48 VDC 16.8A @ 240 VAC
  19.4A @ 208 VAC
  22.8A @ 176 VAC (Max)
- 24 VDC 14.6A @ 240 VAC
  16.9A @ 208 VAC
  20.2A @ 176 VAC (Max)

INPUT FREQUENCY
- 45 to 66Hz (48 VDC Models)
- 45 to 70Hz (24 VDC Models)

POWER
- 3600W @ 48 VDC
- 3100W @ 24 VDC

OUTPUT CURRENT
- 115A @ 27 VDC (130A max. 24V)
- 66A @ 54 VDC (75A max. 48V)

POWER FACTOR
- > 0.99 (50 to 100% load)

THD
- < 5%

EFFICIENCY
- > 92%

LOAD REGULATION
- < ±0.5%

LINE REGULATION
- < ±0.1%

NOISE
- < 32dBrnC

RIPPLE
- < 30mV RMS

PROTECTION
- Current Limit, High Voltage, Shutdown, Start Delay, Input/Output Fuses

WEIGHT
- 10lb (4.6Kg)

ENVIRONMENTAL

TEMPERATURE
- **Standard:** -40° to 65°C (-40° to 149°F)
- **Storage:** -40° to 85°C (-40° to 185°F)

HUMIDITY
- 0 to 95% RH non-condensing

ELEVATION
- -500 to 2800m (-1640 to 9186ft)

HEAT DISSIPATION
- < 1215 BTU per hour

Shelf Specifications

23" SHELF DIMENSIONS
- 6.9H x 20.8W x 15.3D (inches)
- 177H x 530W x 389D (mm)

WEIGHT
- 19lb (8.5kg)

MOUNTING
- Flush mount up to 6 modules

OPTIONAL REAR COVER
- LMHF-SRC-1

CONNECTIONS

INPUT (per rectifier)
- Box type terminal block 10 to 6AWG (6 to 16mm^2)

OUTPUT
- Bus adapters with 3/8 studs

CHASSIS GROUND
- Compression lug (10 to 6AWG)

CAN COMMUNICATION
- RJ12 offset

Controller Specifications

DISPLAY
- LCD touch screen, 160 x 160 pixels

LED INDICATORS
- System OK, Minor and Major

PORTS
- RS232, RS485, Ethernet

MODEM
- Optional (consult factory)

INPUT VOLTAGE
- 20 to 60 VDC

CURRENT
- < 100mA @ 48V
- < 200mA @ 24V

TEMPERATURE
- -40° to 65°C

WEIGHT
- 3.9lb (1.8kg)

ADJUSTMENTS
- Float Voltage, Equalize Voltage, High Voltage Alarm, Low Voltage Alarm, High Voltage Shutdown, Current Limit, Slope, Start Delay Timers

Agency Approvals

Safety: CSA C22.2 No 60950-1-03
UL 60950-1 1st Edition
CE marked
IEC/EN 60950-1
ANSI / IEEE C62.41 Cat B3

Ordering Information

When ordering, please specify:
- La Marche Model Number

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TPM SYSTEMS
SWITCHMODE RECTIFIER SYSTEMS

LaMARCHE®

ISO 9001 CERTIFIED

19" and/or 23" TPM Cage shown above with (4) TPM Rectifiers

TOTAL POWER MODULE SWITCHMODE RECTIFIER SYSTEMS

The LaMarche TPM (Total Power Module) Switchmode Rectifier Systems are compact self contained Power Systems that provide the Modular Power that today's Telecommunications, Process Control and Utility Substation applications require. The TPM Switchmode Rectifer is the building block of these reliable systems utilizing advanced switching technology. Its filtered output provides the clean power required for sensitive loads.

The TPM is rated at 750 watts and available in 24V (30 amps) and 48V (15 amps) versions. A 12V TPM module is also offered and rated at 375 watts (30 amps). The Rectifier modules are hot-swappable plug-in type. Replacement is swift and simple, and achieved without affecting the integrity of the system.

The universal input voltage range of 102-264VAC and frequency of 47-63Hz is ideal for power demands throughout the world. The AC input and DC output wiring of the Rectifiers can be done either in pairs from the same side of the cage or as a complete system. A convenient AC input cord (6 ft long, 20A rated) is supplied to power each pair of TPMsRectifiers per cage. The DC output wiring is done by hardwiring to the provided busbar.

Flexibility is given to hardwire a single connection for all Rectifiers or for each pair of Rectifiers per cage. This allows for custom field installations and gives greater system flexibility to suit the customer needs and preferences.

TPM Systems are factory configured with one to four Modules in a single Cage. Distribution Modules consisting of either GMT Fuses or Breakers can share a Cage with the Rectifiers to form a complete Power System.

A wall mounting configuration is offered for smaller load requirements or when rack mounting is not available. One or two TPM's can be fitted in our TPW cage. A separate Distribution Module can also be provided.

Rely on LaMarche quality, reliability and performance to power your present and future system needs.

Standard Features

- High Frequency Switchmode Circuitry provides High Power Density
- Hot Plug-In feature provides easy replacement without disturbing System operation
- 24 and 48VDC Versions–750 Watts Output Power
- 12VDC Version–375 Watts Output Power
- 19" and 23" Rack Mounting (using TPC cages)
- Wall Mounting Configurations (using TPW cages)
- Universal Input Voltage Range from 102-264VAC and Frequency Range of 47-63Hz
- AC Input Breaker Mounted on Cage for each TPM
- Output Voltage Adjustment Potentiometer
- Test Points for Measuring Output Current and Voltage using a Precision Multi-Meter
- Current Limiting Circuitry of 105% maximum (factory adjusted)
- Power Factor Correction better than 0.95 within 20-100% of rated load
- Filtered/Battery Eliminator Design–less than150mVp-p, 32dBRN "C" message weighted with or without Batteries
- 82% Efficiency within 50 to 100% of rated load
- Forced Load Sharing Circuitry (10% of rated load)
- Soft Walk-in Circuit
- Over Temperature and Voltage Protection
- Rectifier Failure Alarm with (1) set of Form "C" contacts with Light (Alarm will initiate for either Low Voltage, High Voltage Shutdown, Low DC Current, Rectifier Failure or AC Power Failure/AC Breaker Tripped)
- 6ft (1.83m) 20Amp Power Cord supplied with Cage for every (2) TPM modules
- 2-year Warranty

LaMarche Manufacturing Company
106 Bradrock Drive, Des Plaines, IL 60018-1967
Tel: 847-299-1188 Toll Free Fax: 888-232-9562
sales@lamarchemfg.com www.lamarchemfg.com

SPECIFICATIONS

ELECTRICAL

AC INPUT

Voltage Range
102-264VAC, single phase
Frequency Range
47-63Hz
Power Factor Correction
Better than 0.95 within 20 to 100% of rated load
Protection
AC Breaker provided on Cage for each unit

DC OUTPUT

Adjustable Output Voltage Range
12 to 14.5VDC on 12V models
24 to 29VDC on 24V models
48 to 58VDC on 48V models
Power
375W per 12VDC module, 1500 Watts per Cage
750W per 24 & 48VDC module, 3000 Watts per Cage
Voltage Regulation
± 0.6% Total DC Voltage Regulation (Measured at Rectifier side of blocking diode)
Current Limit
105% of rated output maximum (factory adjusted)
Load Sharing
Forced Load Sharing Circuitry
(10% of rated load)
Protection
Over Voltage, Over Temperature
Efficiency
82% within 50-100% of rated load
Ripple and Noise
Less than 150mV peak to peak, 32dBRNC "C" message weighted, with or without batteries
Test Points
For output current and output voltage using a precision digital voltmeter

ENVIRONMENTAL

FCC Approved Part 15, Subpart B, Class A
IEC-555-2 Compliant
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)
Altitude: 0 to 3,000 meters (10,000 ft)

ENCLOSURES

TPM Rectifiers
Dimensions
3.25"W x 11.0"D x 5.25"H (83 x 279 x 133 mm)
Weight
4 lbs each (1.8 kgs)
Mounting
19"/23" Rack Mount TPC Cages or TPW Wall Mount Cages

TPC Cages
Dimensions for 19" Rack
18.25"W x 15.29"D x 7"H (464 x 388 x 178 mm)
Dimensions for 23" Rack
18.25"W x 15.00"D x 5.25"H (464 x 381 x 133 mm)
Weight
23lbs to 26 lbs (10.5kgs to 11.8 kgs)
TPC23: 36 lbs (16.4kgs)
Mounting
TPC = 3 RU's
TPC23 = 4 RU's

AGENCY APPROVALS

U.L. Recognized Component

TPM Modules

Model Number	DC Amps	DC Volts	AC Input Voltage Range	Typical AC Input Current Draw @100% Load* (Amps)
TPM-30-12V-U1	30	12	102-264	5
TPM-30-24V-U1	30	24	102-264	9
TPM-15-48V-U1	15	48	102-264	8.5

TPC Cages

Model Number	Description	No of Available Bays	DC Amps	DC Volts	No of Input Cords	Rack Mounting
TPC-120-12V-U1	1-4 modules	4	120	12	2	19"/23"
TPC-120-24V-U1			120	24	2	19"/23"
TPC-60-48V-U1			60	48	2	19"/23"
TPC-60-12V-U1	1-2 modules with TPCD or TPCDB1	2 + 1	60	12	1	19"/23"
TPC-60-24V-U1			60	24	1	19"/23"
TPC-30-48V-U1			30	48	1	19"/23"
TPC23-60-48V-U1	1-4 modules with TPCD or TPCDB1	4 + 1	60	48	2	23"

Units can be mounted flush with the rack or moved forward 5 inches (127mm).
Allow an additional .75 inches (19mm) for handles.

TPC cage 19.0" or 23.0" mounting
reversible flange provided

TPC Rectifier Cage with (2) TPM Rectifiers and TPCD Fuse Distribution Module

TPC23 cage 23.0" mounting only

TPC23 Rectifier Cage with (4) TPM Rectifiers and TPCDB1 Breaker Distribution Module

TPCD (GMT Fuses) / TPCDB1 (Breakers) Distribution Modules

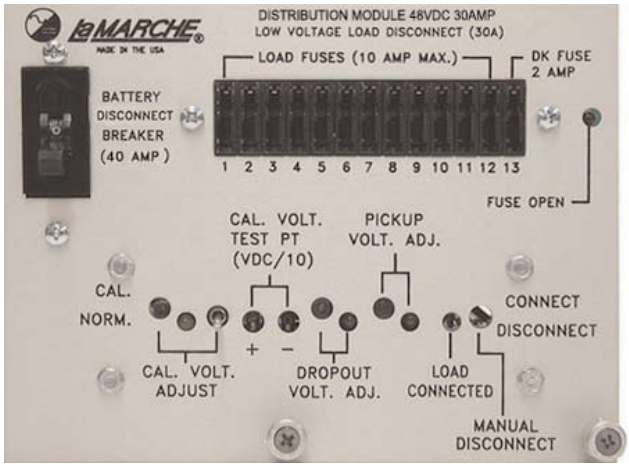
Model Number	DC Volts	DC Amps Rating	Battery Disconnect Breaker	GMT Fuses Qty (12) 0-10A	1-Pole Breakers Qty (7) 10A	LVLD Low Voltage Load Disconnect	Digital Meter & Alarm	Shipping Weight (Approximate)	
								lbs	kgs
TPCD-30-12V	12	30	40A	✔	---	✔	---	7	3.2
TPCD-30-24VN	24	30	40A	✔	---	✔	---	7	3.2
TPCD-30-48V	48	30	40A	✔	---	✔	---	7	3.2
TPCDB1-60-12V	12	60	70A	---	✔	✔	✔	9	4.1
TPCDB1-60-24VN	24	60	70A	---	✔	✔	✔	9	4.1
TPCDB1-60-48V	48	60	70A	---	✔	✔	✔	9	4.1

Above 12V & 48V Distribution Modules are configured for Positive Ground System as standard. For Negative Ground System order part number with "N" following voltage. Above 24V Distribution Modules are configured for Negative Ground System - delete "N" in part number to order Positive Ground. Please consult factory for other available Distribution Module configurations should above not meet your requirement.

TPCD Distribution Module - GMT Fuses

Features

- 12, 24 & 48VDC versions
- Maximum system current rating of 30A
- Low Voltage Disconnect w/field adjustable calibration mode and Alarm with (1) set of Form "C" contacts
- 40 Amp battery Disconnect Breaker
- (12) 0-10 GMT type Fuses
- Fuse open Alarm with (1) set of Form "C" contacts & LED indicator
- Low Voltage Alarm with (1) set of Form "C" contacts
- Front panel adjustments for all Alarm set points

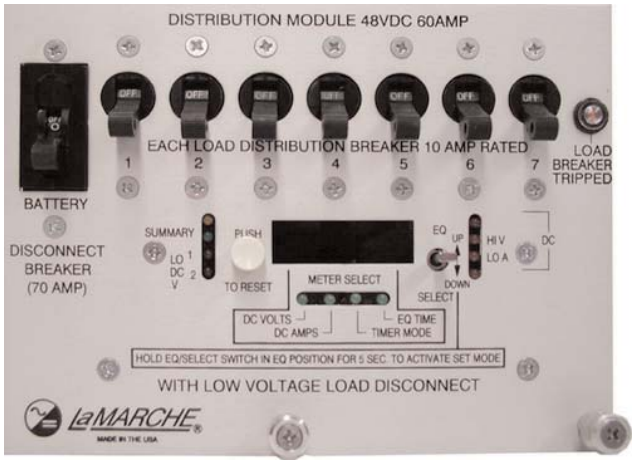


The TPCD GMT Fuse Distribution Modules are rated at 30A of maximum capacity and occupy (2) bay positions within our TPC cages. The TPCD Modules incorporate the most common features required to distribute your loads without having to resort to a larger chassis. The TPCD's are equipped with (12) GMT type Fuses for distribution of supervisory equipment. A 40 Amp Battery Disconnect allows the user to manually disconnect the battery bank for servicing or for replacement purposes. A Fuse Open Alarm consisting of a set of Form "C" contacts is provided to remotely report this Alarm condition along with an LED on the front panel for local supervision. An LVLD (Low Voltage Load Disconnect) is included to automatically disconnect the load from the system to prevent the battery from being overly discharged. A Bus return and terminal strip connector for the load side connection (#12 AWG wire) and a 70A Battery terminal strip to accommodate #6 AWG wire is provided for the battery connection.

TPCDB1 Distribution Module - Breakers

Features

- 12, 24 & 48VDC
- Maximum system current rating of 60Amp
- Switch selectable 1% Load Digital Ammeter/Voltmeter
- Low Voltage Disconnect w/field adjustable calibration mode
- 70 Amp Battery Disconnect Breaker
- (7) 10 Amp single pole Breakers
- Summary Alarm with (2) sets of Form "C" contacts indicating Low DC Current, Low DC Voltage, Low Voltage Disconnect, High Voltage, Rectifier Failure, Breaker Tripped
- Low DC Current, Low DC Voltage, Critical (2nd) Low DC Voltage, High DC Voltage and Summary Alarm LED's



The TPCDB1 Breaker Distribution Modules are rated at 60A of maximum capacity. Like the TPCD Fuse version, (2) bay positions are required within our TPC Cages. The TPCDB1's feature a digital switch selectable 1% accuracy Ammeter/Voltmeter. The TPCDB1's are equipped with (7) single pole 10 Amp Breakers for distribution of loads. A 70 Amp Battery Disconnect allows the user to manually disconnect the Battery Bank for servicing or for replacement purposes. A Breaker Tripped Alarm consisting of a set of Form "C" contacts is provided to remotely report this Alarm condition along with an LED on the front panel for local supervision. An LVLD (Low Voltage Load Disconnect) is included to automatically disconnect the load from the system to prevent the Battery from being overly discharged. A Bus return and terminal strip connector for the load side connection (#12AWG wire) and a 70A Battery terminal strip to accommodate #6 AWG wire is provided for the battery connection.

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TPM SYSTEMS
SWITCHMODE RECTIFIER SYSTEMS

TPW Wall Mounted Systems

Model Number	Mounting Type	No of Available Bays	DC Volts	DC Amps Rating	Overall Dimensions Width x Depth x Height		Shipping Weight (Approximate)	
					in	mm	lbs	kgs
TPWH1-30-12V-U1	Hinge	1	12	30	15.08x6.38x7.00	383x162x133	16	7.3
TPWH1-30-24V-U1	Hinge	1	24	30			16	7.3
TPWH1-15-48V-U1	Hinge	1	48	15			16	7.3
TPWH2-60-12V-U1	Hinge	2	12	60	15.08x9.30x5.22	383x236x133	17	7.7
TPWH2-60-24V-U1	Hinge	2	24	60			17	7.7
TPWH2-30-48V-U1	Hinge	2	48	30			17	7.7
TPW2-60-12V-U1	Standard	2	12	60	17.78x9.30x7.72	451x236x196	10	4.5
TPW2-60-24V-U1	Standard	2	24	60			10	4.5
TPW2-30-48V-U1	Standard	2	48	30			10	4.5
TPWD-60-12V	Standard	Distribution	12	60	13.70x6.50x7.00	348x165x178	12	5.5
TPWD-60-24VN	Standard	Distribution	24	60			12	5.5
TPWD-60-48V	Standard	Distribution	48	60			12	5.5

Above TPWD 12V & 48V Distribution Modules are configured for Positive Ground System as standard. For Negative Ground System order part number with "N" following voltage. Above TPWD 24V Distribution Module is configured for Negative Ground System–delete "N" in part number to order Positive Ground.

The LaMarche TPW (Wall Mounted Systems) offers an alternative solution to relay rack mounting for applications requiring a small and highly compact DC Power System. Designed to contain LaMarche TPM Rectifiers, the TPW enclosure's versatility can be used in a wide variety of applications, including Process Control, Utility Substation, and Telecommunications.

The TPWH1 (single TPM) and TPWH2 (dual TPM capability) features a hinged wall mounted bracket for either right or left swing out. This allows for front accessibility and simplifies the installation and removal of TPM units in tight quarters.

The TPW2 version is a fixed wall mounted enclosure for use where space is not restrictive. With dual Rectifier capability–(2) TPM Rectifiers can be installed to provide redundancy or to simply increase the system's capacity.

The TPWD is a wall mounted Distribution system offered in conjunction with a TPW enclosure to form a complete DC Power System. Standard features include (9) 10A GMT Load Fuses, Battery and Rectifier Terminal Connections, Single Form "C" Blown Load Fuse Alarm Contacts and LED, and Load and Common Return Terminal Strip Connections. The front panel of the TPWD enclosure has a hinged front door which allows easy access for wiring connections in the field.

A Low Voltage Load Disconnect Relay with factory settings and LED's indicating Connect/Disconnect and Single Form "C" Low Voltage Alarm Contacts is offered as an option. The maximum rating of the TPWD Distribution system is 60 Amps.

Specifications subject to change without notice

P25-DSTPM-1
ECN 15551
09-02

TPW Enclosures

TPWH1 Hinged Single Recttifer Bay shown above with hinge on left hand side

TPW2 Standard (non-hinged) Dual Recttifer Bay shown above

TPWD Distribution Module

laMARCHE®
ISO 9001 CERTIFIED

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ISO 9001 CERTIFIED

A36D
Battery Charger / Power Supply

Model Shown: A36D-50-48V-ABD1-24L

Controlled Ferroresonant Rectifier / Power Supply

The La Marche Model A36D Controlled Ferroresonant Rectifier / Power Supply has many inherent advantages such as voltage regulation, high efficiency, high power factor and short circuit protection.

These chargers provide separate adjustable voltages for floating or equalizing lead or nickel-cadmium cells. The equalize switch located on the the front of the chargers can be used to manually activate an equalize cycle or to program the automatic multi-mode EQ timer.

Steady state output voltage remains within ±1/2% of the setting from no load to full load and for AC input voltages within ±10% of the nominal input voltage. The model A36D is internally filtered to be no greater than 32dBrn ("C" message weighting) and 30 millivolts RMS for all conditions on input voltage and output load with or without batteries connected. This allows the A36D to be used as a battery eliminator.

The A36D comes fully equipped with standard features such as Digital Meter Display and Alarm Indicators, Electronic Equalize Timer and Temperature Compensation. Several form 'C' alarm contacts are included to remotely monitor the A36D's operating condition.

Standard Features

- Recognized La Marche Quality and Reliability
- Digital Metering
- Load Sharing/Paralleling
- Current Walk In
- Led Status Indicators
  - Float & Equalize Voltage
  - AC "ON"
  - Low DC Current
  - Low & High DC Voltage
  - Blown DC Protection
  - Summary
- AC Input Circuit Breaker
- One Pole DC Output Breaker / Single Phase Units
- Output Fusing / Three Phase Units
- AC Power Failure Alarm, One Form "C" Contact
- 2 Form "C" Contacts for each of the following:
  - Low DC Current
  - Low DC Voltage
  - High DC Voltage
  - Summary Alarm
  - Load Sharing
- Temperature Compensation
- UL 1012, UL 1481, CSA Listed
- 5 Year Warranty

The optional communications module allows you to interface with your SCADA system to remotely monitor and control the operation of the A36D. Refer to the DNP3.0/Modbus data sheet for further details.

The A36D battery charger assures the quality, reliability and performance you have come to expect from La Marche with an MTBF in access of 225,000 hours at 50°C.

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Made in USA

Input Specifications

AC Voltage

Voltage range ±10% from nominal Frequency range 60 Hz ±5%
Optional 50 Hz

Regulation

Steady State

±1/2% of the setting from no load to full load over the specified input voltage, frequency and ambient temperature ranges.

Dynamic Response (on battery)

Maximum voltage transient will not exceed ±5% of initial steady-state voltage for step change from 20% to 100% of the full rated load. Recovery to steady state voltage regulation range does not exceed 200ms and all transient behavior disappears within 500ms.

Audible Noise

Less than 65dBA at any point 5 feet from any vertical surface of the charger / power supply.

Filtering

Voice Band Noise

Less than 22dB when tested according to REA Form 524 and less than 32 dBrn "C" on batteries rated in amperehours at four times the rated rectifier current. All A36D units are filtered to 32 dBrn "C" without batteries connected.

Protection

Current Limit

The chargers have an inherent magnetic current limiting feature. Electronic current limiting control circuitry provides for an adjustable value of 90 to 115% of the rated output current.

AC Breaker

A two pole breaker, on single phase units opens both legs of the AC service to 208 and 240. Breaker opens phase side of 120 VAC service. A three pole breaker is supplied on three phase units.

DC Breaker / DC Fuse

A single pole output breaker is supplied as standard on single phase units. A DC Fuse is standard on three phase units.

Metering

A switch selectable 1% combination digital volt / amp meter is supplied.

Mean Time Between Failure

The mean time between failure (MTBF) as tested per the Bell Communications Standard TR-TSY-000332 is 225,000 hours at 50°C.

Environmental

Operating Temperature

0 to 50°C

Storage Temperature

-40 to 85°C

Humidity

0 to 95% Relative Humidity (Non-Condensing)

Cooling

Convection cooled

Load Sharing

Load sharing terminals are provided on the alarm interface board. When connected, two (2) or more La Marche units are forced to share to the load within ±5% with individual unit outputs greater than 10% of the rated output. 2 sets of form "C" contacts are provided to indicate when connected rectifiers are operating.

Current Walk In

Output current will gradually increase after the charger is turned on eliminating surges and overshoot.

Temperature Compensation

5 step @ .001v / Deg. C

Remote Equalize

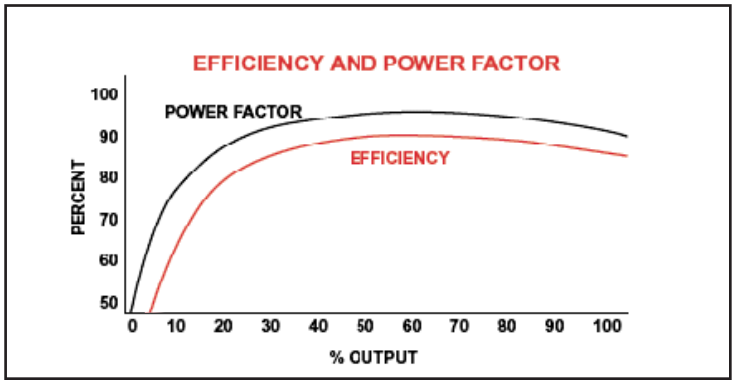
Single wire control. Switch any charger into equalize and all that are wired together also go into equalize.

AC Power Failure Relay

Indicates when an AC failure has occurred. One set of form "C" contacts provided.

Enclosures

Front access NEMA 1, Relay rack or floor mount. Paint is ANSI 61 Gray.



OPTIONS

- 11W 15 Foot External Temperature Probe
- 09A UL 1481 Label (Fire Alarm). Available For 48V 60Hz Models Only.
- 09C I.D. TAGS (Black / White / Black)
- 09V I.D. TAGS (White / Black / White)
- 09U Seismic Bracing
- 012 DC BKR 1P
- 21D Display Guard Kit
- 21P DNP3.0
- 21Q Modbus

NOTE: Consult Factory for NI-Cad size availability

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Single Phase 60Hz Models

	Model Number	DC Amps	AC Input (60Hz Single Phase) Volts	Amperes 120	208	220	240	Protection Input 120	208	220	240	Output	Case No.	Approx. Weight (lbs)	BTU's/ Hour
12 VOLT	A36D-15-12V-A1	15A	120	2.4	- - -	- - -	- - -	5.0	- - -	- - -	- - -	25	39	45	429
	A36D-20-12V-A1	20A		3.2	- - -	- - -	- - -	7.5	- - -	- - -	- - -	30	39	50	388
	A36D-25-12V-A1	25A		4.0	- - -	- - -	- - -	7.5	- - -	- - -	- - -	40	39	54	347
	A36D-30-12V-A1	30A		5.0	- - -	- - -	- - -	10.0	- - -	- - -	- - -	40	33	78	674
	A35D-50-12V-ABD1	50A	120/208/240	8.4	4.8	- - -	4.2	20.0	10.0	- - -	10.0	80	33	99	695
	A36D-75-12V-ABD1	75A		12.6	7.3	- - -	6.3	30.0	15.0	- - -	15.0	100	33E	110	1043
	A36D-100-12V-ABD1	100A		16.8	9.7	- - -	8.4	30.0	15.0	- - -	15.0	130	33E	130	1227
	A36D-150-12V-ABD1	150A		25.2	14.5	- - -	12.6	30.0	15.0	- - -	15.0	200	9D	145	3068
	A36D-200-12V-ABD1	200A		33.6	19.4	- - -	16.8	40.0	20.0	- - -	20.0	250	9D	180	3272
24 VOLT	A36D-10-24V-A1	10A	120	3.3	- - -	- - -	- - -	5.0	- - -	- - -	- - -	15	39	50	150
	A36D-12-24V-A1	12A		4.0	- - -	- - -	- - -	7.5	- - -	- - -	- - -	15	39	54	191
	A36D-15-24V-A1	15A		5.0	- - -	- - -	- - -	7.5	- - -	- - -	- - -	25	39	58	241
	A36D-20-24V-A1	20A		6.7	- - -	- - -	- - -	10.0	- - -	- - -	- - -	30	39	64	321
	A36D-25-24V-ABD1	25A	120/208/240	8.4	4.8	- - -	4.2	15.0	7.5	- - -	7.5	40	33	99	402
	A36D-30-24V-ABD1	30A		10.0	5.8	- - -	5.0	15.0	7.5	- - -	7.5	40	33	115	482
	A36D-50-24V-ABD1	50A		16.8	9.7	- - -	8.4	30.0	15.0	- - -	15.0	80	33	130	803
	A36D-75-24V-ABD1	75A		25.2	14.5	- - -	12.6	40.0	20.0	- - -	20.0	100	33E	145	1205
	A36D-100-24V-ABD1	100A		33.6	19.4	- - -	16.8	40.0	20.0	- - -	20.0	130	33E	180	1606
	A36D-150-24V-ABD1	150A		50.5	29.1	- - -	25.2	70.0	35.0	- - -	35.0	200	9D	280	2410
	A36D-200-24V-ABD1	200A		67.0	38.8	- - -	33.6	80.0	40.0	- - -	40.0	250	9D	310	3213
48 VOLT	A36D-10-48V-A1	10A	120	6.7	- - -	- - -	- - -	10.0	- - -	- - -	- - -	15	39	64	312
	A36D-12-48V-A1	12A		8.0	- - -	- - -	- - -	15.0	- - -	- - -	- - -	15	39	70	383
	A36D-15-48V-A1	15A		10.0	- - -	- - -	- - -	15.0	- - -	- - -	- - -	25	33	110	386
	A36D-20-48V-ABD1	20A	120/208/240	13.4	7.7	- - -	6.7	15.0	7.5	- - -	7.5	30	33	118	643
	A36D-25-48V-ABD1	25A		16.8	9.7	- - -	8.4	30.0	15.0	- - -	15.0	40	33	125	803
	A36D-30-48V-ABD1	30A		20.0	11.6	- - -	10.0	30.0	15.0	- - -	15.0	40	33	133	964
	A36D-50-48V-ABD1	50A		33.6	19.4	- - -	16.8	50.0	25.0	- - -	25.0	80	33	180	1606
	A36D-75-48V-ABD1	75A		50.4	29.1	- - -	25.2	70.0	35.0	- - -	35.0	100	9D	260	2410
	A36D-100-48V-ABD1	100A		67.2	38.8	- - -	33.6	80.0	40.0	- - -	40.0	130	9D	286	3213
	A36D-150-48V-BLD1	150A	208/220/240	- - -	58.2	55.0	50.4	- - -	70.0	70.0	70.0	200	72	528	4819
	A36D-200-48V-BLD1	200A		- - -	77.6	73.3	67.3	- - -	80.0	80.0	80.0	250	72	572	6426

Three Phase 60 Hz Models

	Model Number	DC Amps	AC Input (60 Hz Three Phase) Volts	Amperes 208	240	480	Protection Input 208	240	480	Output	Case No.	Approx. Weight (lbs)	BTU's/ Hour
24 VOLT	A36D-200-24V-BD3	200A	208/240	19.5	16.9	- - -	25	25	- - -	250	43	600	2514
	A36D-300-24V-BD3	300A		29.3	25.4	- - -	35	35	- - -	400		700	3772
	A36D-400-24V-BD3	400A		39.1	33.9	- - -	50	50	- - -	500		800	5029
	A36D-200-24V-C3	200A	480	- - -	- - -	8.5	- - -	- - -	15	250	43	600	2514
	A36D-300-24V-C3	300A		- - -	- - -	12.7	- - -	- - -	20	400		700	3772
	A36D-400-24V-C3	400A		- - -	- - -	16.9	- - -	- - -	25	500		800	5029
48 VOLT	A36D-200-48V-BD3	200A	208/240	39.1	33.9	- - -	50	50	- - -	300	43	755	5029
	A36D-300-48V-BD3	300A		58.6	50.8	- - -	80	80	- - -	400	44	900	7543
	A36D-400-48V-BD3	400A		78.1	67.7	- - -	100	100	- - -	500	44	1,193	10057
	A36D-200-48V-C3	200A	480	- - -	- - -	16.9	- - -	- - -	25	300	43	755	5029
	A36D-300-48V-C3	300A		- - -	- - -	25.4	- - -	- - -	40	400	44	900	7543
	A36D-400-48V-C3	400A		- - -	- - -	33.9	- - -	- - -	50	500	44	1,193	10057

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Single Phase 50 Hz Models

	Model Number	DC Amps	AC Input (50Hz Single Phase)			Protection			Case No.	Approx. Weight (lbs)	BTU's/ Hour
			Volts	Amperes		Input		Output			
				220	240	220	240				
12 VOLT	A36D-50-12V-5BL1	50A	220/240	4.6	4.2	10.0	10.0	80	33	109	695
	A36D-75-12V-5BL1	75A		6.9	6.3	15.0	15.0	100	33	121	1043
	A36D-100-12V-5BL1	100A		9.2	8.4	15.0	15.0	130	4D	143	1227
	A36D-150-12V-5BL1	150A		13.8	12.6	15.0	15.0	200	9D	160	3068
	A36D-200-12V-5BL1	200A		18.3	16.8	20.0	20.0	250	9D	198	3272
24 VOLT	A36D-25-24V-5BL1	25A	220/240	4.6	4.2	7.5	7.5	40	33	109	402
	A36D-30-24V-5BL1	30A		5.5	5.0	7.5	7.5	40	33	127	482
	A36D-50-24V-5BL1	50A		9.2	8.4	15.0	15.0	80	33	143	803
	A36D-75-24V-5BL1	75A		13.8	12.6	20.0	20.0	100	33E	160	1205
	A36D-100-24V-5BL1	100A		18.3	16.8	20.0	20.0	130	33E	198	1606
	A36D-150-24V-5BL1	150A		27.5	25.2	35.0	35.0	200	9D	309	2410
	A36D-200-24V-5BL1	200A		36.7	33.6	40.0	40.0	250	9E	342	3213
48 VOLT	A36D-20-48V-5BL1	20A	220/240	7.3	6.7	7.5	7.5	30	33	130	643
	A36D-25-48V-5BL1	25A		9.2	8.4	15.0	15.0	40	33	138	803
	A36D-30-48V-5BL1	30A		11.0	10.1	15.0	15.0	40	33	147	964
	A36D-50-48V-5BL1	50A		18.3	16.8	25.0	25.0	80	33	198	1606
	A36D-75-48V-5BL1	75A		27.5	25.2	35.0	35.0	100	9D	287	2410
	A36D-100-48V-5BL1	100A		36.7	33.6	40.0	40.0	130	9E	315	3213
	A36D-150-48V-5BL1	150A		55.0	50.5	70.0	70.0	200	72	582	4819
	A36D-200-48V-5BL1	200A		73.4	67.3	80.0	80.0	250	72	630	6426

Three Phase 50 Hz Models

	Model Number	DC Amps	AC Input (50Hz Single Phase)		Protection		Case No.	Approx. Weight (lbs)	BTU's/ Hour
			Volts	Amperes	Input	Output			
				380	380				
24 VOLT	A36D-200-24V-5G3	200A	380	10.7	15	250	43	661	2514
	A36D-300-24V-5G3	300A		16	20	400	43	771	3772
	A36D-400-24V-5G3	400A		21.4	25	500	44	881	5029
48 VOLT	A36D-200-48V-5G3	200A	380	21.4	25	300	43	832	5029
	A36D-300-48V-5G3	300A		32.1	40	400	44	992	7543
	A36D-400-48V-5G3	400A		42.8	50	500	44	1315	10057

Note:

1) Case size may change on certain models in 50Hz applications.
2) 50Hz units are not UL lised.
3) 50 Hz units are optional. Please consult factory as enclosure size may change.

Output Voltage Chart

Number of Cells	6L*	12L*	24L*
DC Voltage	12	24	48
Float	12.7 to 13.8	25.4 to 27.6	50.9 to 55.2
Equalize	13.6 to 14.4	27.1 to 28.8	54.2 to 57.6

* LR for VRLA Settings

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Single Phase 19” Rack Mount

	Model Number	DC Amps	AC Input (60 Hz Single Phase)				Protection				Case No.	Approx Weight (lbs)	BTU’s/ Hour
			Volts	Amperes			Input			Output			
				120	208	240	120	208	240				
12 VOLT	A36DA-30-12V-A1	30A	120	8.0	- - -	- - -	10.0	- - -	- - -	40A	4D	78	674
	A36DA-50-12V-ABD1	50A	120/208/240	8.0	5.0	4.0	20.0	10.0	10.0	80A	4D	99	695
	A36DA-75-12V-ABD1	75A	120/208/240	16.0	9.0	8.0	30.0	15.0	15.0	100A	4D	110	1,043

	Model Number	DC Amps	AC Input (60 Hz Single Phase)				Protection				Case No.	Approx Weight (lbs)	BTU’s/ Hour
			Volts	Amperes			Input			Output			
				120	208	240	120	208	240				
24 VOLT	A36DA-25-24V-ABD1	25A	120/208/240	8.0	5.0	4.0	15.0	7.5	7.5	40A	4D	99	402
	A36DA-30-24V-ABD1	30A	120/208/240	11.0	6.0	6.0	15.0	7.5	7.5	40A	4D	115	482
	A36DA-50-24V-ABD1	50A	120/208/240	16.0	9.0	8.0	30.0	15.0	15.0	80A	4D	130	803
	A36DA-75-24V-ABD1	75A	120/208/240	24.0	15.0	12.0	40.0	20.0	20.0	100A	4D	145	1,205

	Model Number	DC Amps	AC Input (60 Hz Single Phase)				Protection				Case No.	Approx Weight (lbs)	BTU’s/ Hour
			Volts	Amperes			Input			Output			
				120	208	240	120	208	240				
48 VOLT	A36DA-15-48V-A1	15A	120	10	- - -	- - -	15.0	- - -	- - -	25A	4D	110	482
	A36DA-20-48V-ABD1	20A	120/208/240	13.0	7.0	6.0	15.0	7.5	7.5	30A	4D	118	643
	A36DA-25-48V-ABD1	25A	120/208/240	16.0	9.0	8.0	30.0	15.0	15.0	40A	4D	125	803
	A36DA-30-48V-ABD1	30A	120/208/240	18.0	11.0	9.0	30.0	15.0	15.0	40A	4D	133	964
	A36DA-50-48V-ABD1	50A	120/208/240	29.0	16.0	14.0	50.0	25.0	25.0	80A	4D	180	1,606

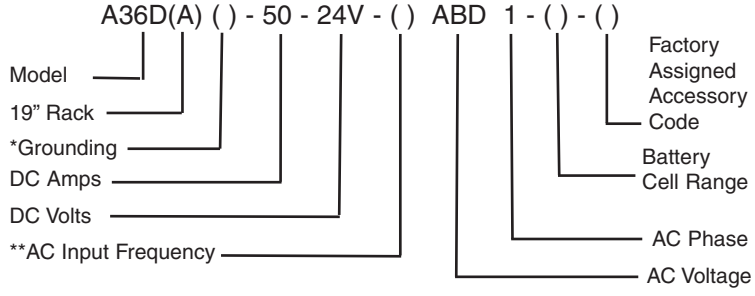
Dimensions

Case No.	Width		Depth		Height	
	in	mm	in	mm	in	mm
19” Rack						
4D	16.750	425	15.000	381	14.000	356
39	16.750	425	15.000	381	7.000	178
23” Rack						
9E**	21.000	533	20.000	508	17.250	438
33***	21.000	533	15.00	381	10.500	267
33E	21.000	533	17.500	445	10.500	267
39	16.750	425	15.000	381	7.000	178
Floor Mounting						
43	13.000	330	19.000	483	84.000	2134
44	24.000	610	19.000	483	72.100	1831
72	27.000	686	23.500	597	44.500	1130

** Add 3.000 inches to depth for Heat Sink
*** Add 1.250 inches to depth for Heat Sink

Note:
1) BTU’s on single phase units based on 85% efficiency
2) Input Amps are at Nominal AC Input and at 100% of rated load.

Model Number Nomenclature



System Ground
N= Negative Ground
*positive ground is standard unless “N” is entered for Negative ground.

Special Input Frequency
5= 50 Hz
**Leave Blank for 60 Hz

AC Voltage
A = 120 B = 240
C = 480 D = 208
L = 220 G = 380

AC Phase
1= Single Phase
3= Three Phase

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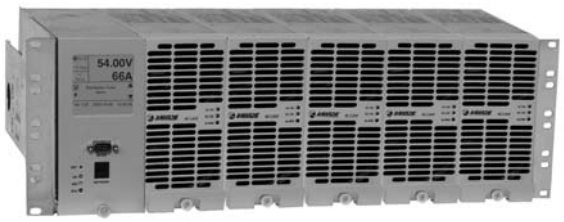
Other La Marche Telecom Products



LMHF

These rectifiers are available with nominal output voltages of 24VDC or 48VDC and can deliver 115 amps and 66 amps respectively. The nominal universal input range of 208VAC to 277VAC and the frequency range of 45 to 66Hz provides the flexibility for worldwide power requirements. The temperature controlled variable fan speed rectifier in a six across 23” rack configuration (five across in 19” configuration) offers high power density and efficiency.

TPM

Compact high frequency units provide filtered, modular power to fit the needs of telecom applications. Available in 12, 24, and 48 volt DC output.

A32P/A32S

Uninterruptible Power Supply is listed under UL 1481 fire protective signaling standard, making them ideal for central station and critical alarm system applications.

TPSD

Microprocessor Controlled Ferroresonant design battery charger / battery eliminator is ideal for switchgear and process control. The TPSD comes fully equipped with standard features such as digital display, alarm indication, electronic timer, and temperature compensation.

Specifications subject to change without notice

P25-DSA36D-1
ECN 18213
DATE 03/09

LaMARCHE®
ISO 9001 CERTIFIED

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La MARCHE®
ISO 9001:2000 CERTIFIED

A12B

Battery Charger / Power Supply

Unit shown with several optional accessories

The Industry's Most Reliable Filtered Battery Charger / Power Supply

The La Marche model A12B Series Filtered Battery Chargers/Power Supplies are engineered for the demanding requirements of Switch Gear applications, Process Controls and Communications. The magnetic amplifier circuitry is designed to carry continuous and intermittent loads up the maximum rated output. Its robust design and unmatched reliability has made this workhorse the standard in the industry, and with its customizing features, there is virtually no application that the A12B cannot meet.

Check the Digital CAP Systems data sheet for a combined accessory package.

Standard Features

- Magnetic Amplifier Circuitry
- Separate Float and Equalize Potentiometers provide simple and precise DC Voltage calibration.
- Float/Equalize Mode Switching
- Float and Equalize Lights
- Automatic AC Voltage Compensation
- +/- 0.5% DC Voltage Regulation
- Fused AC input and DC output protects Battery and Charger/Power Supply
- Analog DC Ammeter and DC Voltmeter
- Current Limiting Circuitry prevents overload and provides current control from 50 to 120% of rated output (factory set at 115%).
- Filtered DC Output (clean power) - the A12B can be used as a Power Supply with 30mV RMS or less on single phase units and 100mV RMS or less on three phase units.
- AC Power Failure Relay with Form "C" Contacts
- UL 1012, UL 1481 Listed & C-UL Listed
- 10-year Limited Warranty

MADE IN U.S.A.
Specifications subject to change without notice
P25-DSA12B-1
ECN 18726
06/10

La Marche Mfg. (A U.S. Company)
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Specifications

ELECTRICAL

- **AC Input Voltages**
  Single Phase 60Hz: 120, 208, 240, 480 or 575
  Single Phase 50Hz: 220/240, 380 or 415
  Three Phase 60Hz: 208, 240, 480 or 575
  Three Phase 50Hz: 220/240, 380 or 415
- **Power Protection**
  AC Fuse, DC Fuse and Current Limit Protection
- **DC Output Voltages**
  DC Amps: 3 to 400 amperes
  DC Volts: 12, 24, 48 & 130VDC (Others available such as 32&36VDC)
- **Output Filtering (With or without a battery)**
  30mV RMS for single phase models and 100mV RMS for three phase models
- **DC Voltage Regulation**
  Plus or minus 0.5% of setting from no load to full load over the specified input voltage, frequency and ambient temperature ranges.

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)
- **MTBF**
  250,000 Hours
- **Dimensions**
  Overall dimensions and weights are listed on the last page of this Data Sheet. Case specifications are subject to change due to innovative product development and design. When space requirements are critical, please consult the factory.
- **Mounting**
  Floor or wall units are available. Mounting flanges are supplied as integral part of cabinet back plate on wall mounted models.
- **Finish**
  Pretreated with three step iron phosphate wash and de-ionized rinse. Finished with environmentally safe water based ANSI 61 gray baked enamel.

Agency Approvals

- **UL Battery Charger**
  File E 319318, Guide BBML
  UL Std. No. 1012
- **C-UL Battery Charger**
  CAN/CSA
  Std. C22.2 No. 107-2
- **UL Fire Alarm System Power Supply**
  File S2768, Guide UTRZ
  Std. No. 1481
  Must Specify Accessory Code 09A

Notes:
All models where appropriate will carry the U.L. and C-U.L. Battery Charger listing. When U.L. Fire Alarm System Power Supply Listings are required, you must specify this requirement at the time of order. Not all models can be U.L. approved. Accessories, type of charger and rating will determine U.L. approval. Consult our factory if U.L. approvals are required.

Optional Accessories

ALARM & CONTROL

- **16 Series** (Refer to Digital C.A.P. Systems Data Sheet for complete details)
  Digital C.A.P. (Combined Accessory Package) Systems featuring a Selectable LED Display, a Multi-Mode Equalize Timer with Light adjustable from 1-144 hrs with five selectable modes and various failure alarm & lights.
- **46 Series** (Refer to LCD C.A.P. Systems Data Sheet for complete details)
  LCD C.A.P. Systems common features:
  Selectable Display, Multi-Mode Equalize Timer, Equalize Light, Float Light, AC Power Failure Relay w/ (2) sets Form "C" (except 46Q), Low DC Current Alarm w/ (2) sets Form "C" Low DC Voltage 1 Alarm w/ (2) sets Form "C" & Adjustable Time Delay (0-255 sec) (Except Ground Detection Alarms).
- **03N** Low DC Current Alarm & Light w/ (1) set Form "C" contacts
- **04J** Electronic Equalize Timer Multi-Mode adjustable from 2-144hrs with five selectable modes; Standard, 7-day, 14-day, 30-day and Equalize after Low DC Voltage.
- **050** Ground Detection Switch 3-position with DC Voltmeter indication (130VDC models utilizes two switches)
- **051** Ground Detection Alarm with Reset Pushbutton and (1) set form "C" Positive and (1) set form "C" Negative contacts
- **052** Ground Detection Lights (Positive and Negative)
- **053** Ground Detection Switch & Lights (130VDC models utilizes two switches)
- **054** AC Power Failure Light
- **060** AC Pilot Light Neon Bulb *(LED included with 16B Digital C.A.P. Systems)*
- **068** Sonalert with Silence Switch Audible Alarm
- **16C** Hi/Lo-2 Combination Alarm High/Low DC Voltage, Field Calibrations & Adjustments, Individual Lights and (2) Form "C" contacts for each alarm
- **10G** Forced Load Sharing *(with same model number only)*
- **103** Remote Sensing
- **162** Summary Alarm *(for use with discrete components only)*

METERING & PROTECTION

- **011** AC Breaker Single Pole *(120VAC only)*
- **012** DC Breaker Single Pole
- **016** AC Breaker Two Pole
- **017** DC Breaker Two Pole
- **01B** AC Breaker Three Pole *(3-phase input only)*
- **---** AC Breakers High Interrupting. Contact factory for appropriate code.
- **06G** Zero Center Ammeter w/Battery & Load Terminals *(under 250A units)*

METERING & PROTECTION CONTINUED

- **06L** AC Ammeter +/-2% accuracy *(single phase only)*
- **06M** AC Voltmeter +/-2% accuracy *(single phase only)*
- **102** DC Blocking Diode
- **104** AC Dual Fusing
- **105** DC Dual Fusing
- **107** DC Surge Protectors *(MOV's)*
- **140** AC Switch Single Pole *(60A Maximum)*
- **141** AC Switch Two Pole *(60A Maximum)*
- **143** AC Switch Three Pole *(60A Maximum)*

MISCELLANEOUS

- **09A** U.L. 1481 Listing
- **092** Tropicalization (magnetics only) Single Phase
- **093** Tropicalization (magnetics only) Three Phase
- **10B** USCG (U.S. Coast Guard) Accessories *
- **10L** Battery & Load Terminals (under 250A units)
- **11F** 30mV Filtering for 3-phase units
- **38G** ABS (American Bureau of Shipping) Modifications *
- **---** Floor Stand (must order separately)
- **---** Drip Shield (must order separately) *
- **38J** ABS (38G) & USGC (10B) Single Phase *
- **38K** ABS (38G) & USGC (10B) Three Phase *
- **11V** Temperature Compensation (Internal Probe)
- **11W** External Temperature Probe 22 ft
- **100** 2 Battery Charge Divider - Negative Ground
- **10U** 2 Battery Charge Divider - Positive Ground
- **101** 3 Battery Charge Divider - Negative Ground
- **10V** 3 Battery Charge Divider - Positive Ground
- **095** Point to Point Wiring Diagram with Wire Makers
- **096** Wire Markers - Includes Wire Marker Numbers on Electrical Schematic
- **09L** Physical Parts Location Drawing
- **097** SIS Wire (#16 AWG and larger)
- **09W** Heat Shrinkable Wire Markers
- **21P** DNP3.0 (Offered only with 46 series CAP)
- **21Q** Modbus (Offered only with 46 series CAP)

**ONLY Available On Case No. 3, 6, 7, 70, & 72.*
Notes: Discrete Alarms are not available in conjunction with Digital C.A.P. (Combined Accessory Package) systems. Typically, when ordering two or more discrete components, the Digital C.A.P. system listed above provides a more economical approach.
Case sizes may differ depending on optional accessories and/or 50Hz input. Please consult factory when dimensions are critical.

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Must specify only one battery type and number of cells from range shown above. Please consult factory for other available cell ranges if desired range not shown.

	Model Number	DC Amps	DC [1] Fuse Size (Amps)	AC Input Phase	AC Input Current Draw @ 100% Load [2] (Amps)								Std. [5] Case Size	Shipping Weight (Approximate)	
					60Hz Units						50Hz Units [3, 4]				
					A 120	D 208	L 220	B 240	C 480	E 575	B L 240 / 220	G 380	J 415		
														lbs	kgs
12 volt systems (6L, 9 or 10NC)	A12B-3-12V	3	10	1	0.8	0.4	0.4	0.4	---	---	0.4 / 0.4	---	---	7	60	27.2
	A12B-6-12V	6	15	1	1.5	0.9	0.8	0.8	---	---	0.8 / 0.8	---	---	7	70	31.8
	A12B-10-12V	10	20	1	2.5	1.4	1.4	1.3	---	---	1.3 / 1.4	---	---	7	80	36.3
	A12B-15-12V	15	25	1	3.8	2.2	2.1	1.9	---	---	1.9 / 2.1	---	---	3	90	40.8
	A12B-20-12V	20	30	1	5	2.9	2.7	2.5	---	---	2.5 / 2.7	---	---	3	95	43.1
	A12B-30-12V	30	40	1	7.5	4.3	4.1	3.8	1.9*	1.6*	3.8 / 4.1	2.4*	2.2*	3	105	47.6
	A12B-40-12V	40	60	1	10	5.8	5.5	5	2.5*	2.1*	5 / 5.5	3.2*	2.9*	6	155	70.3
	A12B-50-12V	50	80	1	13	7.2	6.8	6.3	3.1*	2.6*	6.3 / 6.8	4.0*	3.6*	6	170	77.1
	A12B-60-12V	60	80	1	15	8.7	8.2	7.5	3.8*	3.1*	7.5 / 8.2	4.7*	4.3*	6	180	81.7
	A12B-75-12V	75	100	1	19	11	11	9.4	4.7*	3.9*	9.4 / 11	5.9*	5.4*	6	225	102.1
	A12B-100-12V	100	150	3	---	7.5	7.1	6.5	3.3*	2.7*	6.5 / 7.1	4.1*	3.8*	8A	325	147.4
24 volt systems (12L, 19 or 20NC)	A12B-3-24V	3	10	1	1.5	0.9	0.8	0.8	---	---	0.8 / 0.8	---	---	7	70	31.8
	A12B-6-24V	6	15	1	3	1.7	1.6	1.5	---	---	1.5 / 1.6	---	---	3	85	38.6
	A12B-10-24V	10	20	1	5	2.9	2.7	2.5	---	---	2.5 / 2.7	---	----	3	95	43.1
	A12B-15-24V	15	25	1	7.5	4.3	4.1	3.8	1.9*	1.6*	3.8 / 4.1	2.4*	2.2*	3	100	45.4
	A12B-20-24V	20	30	1	10	5.8	5.5	5	2.5*	2.1*	5 / 5.5	3.2*	2.9*	3	120	54.4
	A12B-25-24V	25	35	1	13	7.2	6.8	6.3	3.1*	2.6*	6.3 / 6.8	4.0*	3.6*	3	135	61.2
	A12B-30-24V	30	40	1	15	8.7	8.2	7.5	3.8*	3.1*	7.5 / 8.2	4.7*	4.3*	3	145	65.9
	A12B-35-24V	35	50	1	18	11	9.6	8.8	4.4*	3.7*	8.8 / 9.6	5.5*	5.1*	6	190	86.2
	A12B-40-24V	40	60	1	21	12	11	10	5*	3.2*	10 / 11	6.3*	5.8*	6	205	93.0
	A12B-50-24V	50	80	1	26	15	14	13	6.3*	5.2*	13 / 14	7.9	7.2	6	240	108.9
	A12B-60-24V	60	80	1	31	18	17	15	7.5	6.3*	15 / 17	9.5	8.7	6	265	120.2
	A12B-75-24V	75	100	1	38	22	21	19	9.4	7.8	19 / 21	12	11	70	400	181.4
	A12B-100-24V	100	150	1	51	29	28	26	13	11	26 / 28	16	15	70	450	204.1
	A12B-125-24V	125	200	3	---	19	18	17	8.1	6.8*	17 / 18	11	9.4	70	525	238.1
	A12B-150-24V	150	200	3	---	23	22	20	9.8	8.2	20 / 22	13	12	72	630	285.8
	A12B-200-24V	200	250	3	---	30	29	26	13	11	26 / 29	17	16	27	825	374.2
	A12B-250-24V	250	300	3	---	38	36	33	17	14	33 / 36	21	19	27	880	399.2
	A12B-300-24V	300	400	3	---	46	43	40	20	17	40 / 43	25	23	27	940	426.4
	A12B-400-24V	400	600	3	---	61	57	53	26	22	53 / 57	33	31	47	1350	612.4
48 volt systems (24L, 36, 37 or 38NC)	A12B-3-48V	3	10	1	3	1.7	1.6	1.5	---	---	1.5 / 1.6	---	---	7	85	38.6
	A12B-6-48V	6	15	1	6	3.5	3.3	3	---	---	3 / 3.3	---	---	3	90	40.8
	A12B-10-48V	10	20	1	10	5.8	5.5	5	2.5*	2.1*	5 / 5.5	3.2*	2.9*	3	140	63.5
	A12B-15-48V	15	25	1	15	8.7	8.2	7.5	3.8*	3.1*	7.5 / 8.2	4.7*	4.3*	6	180	81.7
	A12B-20-48V	20	30	1	21	12	11	10	5*	4.2*	10 / 11	6.3*	5.8*	6	205	93.0
	A12B-25-48V	25	35	1	26	15	14	13	6.3*	5.2*	13 / 14	7.9	7.2	6	240	108.9
	A12B-30-48V	30	40	1	31	18	17	15	7.5	6.3*	15 / 17	9.5	8.7	6	265	120.2
	A12B-40-48V	40	60	1	41	24	22	21	10	8.4	21 / 22	13	12	6	275	124.7
	A12B-50-48V	50	80	1	51	29	28	26	13	11	26 / 28	16	15	8A	355	161.0
	A12B-60-48V	60	80	3	---	18	17	16	7.8	6.5*	16 / 17	9.9	9	8A	400	181.4
	A12B-75-48V	75	100	3	---	23	22	20	9.8	8.2	20 / 22	13	12	72	525	238.1
	A12B-100-48V	100	150	3	---	30	29	26	13	11	26 / 29	17	16	72	625	283.5
	A12B-125-48V	125	200	3	---	38	36	33	17	14	33 / 36	21	19	72	700	317.5
	A12B-150-48V	150	200	3	---	46	43	40	20	17	40 / 43	25	23	27	850	385.6
	A12B-175-48V	175	250	3	---	53	50	46	23	19	46 / 50	29	27	27	1000	453.6
	A12B-200-48V	200	250	3	---	61	57	53	26	22	53 / 57	33	31	27	1150	521.6
	A12B-250-48V	250	300	3	---	76	71	66	33	28	66 / 71	42	38	47	1400	635.0
	A12B-300-48V	300	400	3	---	91	86	79	40	33	79 / 86	50	46	47	1700	771.1
	A12B-400-48V	400	600	3	---	*121*	*114*	105	53	44	105 / 114	66	61	47	1800	816.5
130 volt systems (58 or 60L, 92, 93, 96 or 97NC)	A12B-3-130V	3	10	1	7.5	4.3	4.1	3.8	---	---	3.8 / 4.1	---	---	3	140	63.5
	A12B-6-130V	6	15	1	15	8.7	8.2	7.5	---	---	7.5 / 8.2	4.7*	---	3	140	63.5
	A12B-10-130V	10	20	1	26	15	14	13	6.3*	5.2*	13 / 14	7.9	7.2	6	225	102.1
	A12B-15-130V	15	25	1	38	22	21	19	9.4	7.8	19 / 21	12	11	6	250	113.4
	A12B-20-130V	20	30	1	51	29	28	26	13	11	26 / 28	16	15	6	270	122.5
	A12B-25-130V	25	35	1	*63*	37	35	32	16	14	32 / 35	20	19	8A	355	161.0
	A12B-30-130V	30	40	1	*76*	44	41	38	19	16	38 / 41	24	22	8A	390	176.9
	A12B-35-130V	35	50	1	*88*	51	48	44	22	19	44 / 48	28	26	72	505	229.1
				3	---	27	25	23	12	9.5	23 / 25	15	14	72	580	263.1
	A12B-40-130V	40	60	1	*101*	58	55	51	26	21	51 / 55	32	29	72	550	249.5
				3	---	30	29	26	13	11	26 / 29	17	16	72	625	283.5
	A12B-50-130V	50	80	3	---	38	36	33	17	14	33 / 36	21	19	72	645	292.6
	A12B-60-130V	60	80	3	---	46	43	40	20	17	40 / 43	25	23	27	865	392.4
	A12B-75-130V	75	100	3	---	57	54	49	25	21	49 / 54	31	29	27	930	421.9
	A12B-100-130V	100	150	3	---	76	71	66	33	28	66 / 71	42	38	27	1040	471.7
	A12B-125-130V	125	200	3	---	94	89	82	41	34	82 / 89	52	48	47	1500	680.4
	A12B-150-130V	150	200	3	---	*113*	*107*	*98*	49	41	*98* / *107*	62	57	47	1800	816.5
	A12B-175-130V [3]	175	250	3	---	*132*	*125*	*114*	57	48	*114* / *125*	72	66	47	1950	884.5
	A12B-200-130V [3]	200	250	3	---	*151*	*142*	*131*	66	55	*131* / *142*	83	76	47	2100	952.6
	A12B-250-130V [3]	250	300	3	---	*188*	*178*	*163*	82	68	*163* / *178*	103	95	47	2300	1043.3
	A12B-300-130V [3]	300	400	3	---	*226*	*214*	*196*	98	82	*196* / *214*	124	113	47	2400	1088.6
	A12B-400-130V [3]	400	600	3	---	*301*	*285*	*261*	131	109	*261* / *285*	165	151	57	2550	1156.7

*[1] Optional DC Breaker when ordered in lieu of standard fuse(s) may slightly differ in ratings. AC Draws shown with asterisk * are not available with Optional AC Breaker.*
[2] AC Current Draws based @ 100% load and standard battery cells of 6L (12V), 12L (24V), 24L (48V) and 60L (130V). Maximum Current Draw is 120% of ratings shown. AC Current draws shown in Italics have high current draws for their specific input voltages - verification of input power requirement should be done prior to ordering.
[3] Denotes units not U.L. Listed [4] 50Hz units are not U.L. listed.
[5] Case sizes shown are for standard 60Hz units and may differ depending on optional accessories and/or 50Hz input. Please consult factory when dimensions are critical.

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Case Specifications

Case No.	Overall Dimensions					
	Width		Depth		Height	
	in	mm	in	mm	in	mm
3	15.375	391	11.000	279	23.750	603
6	25.580	650	13.935	354	28.000	711
7	14.250	362	10.625	270	19.875	505
8A	27.200	691	15.250	387	32.500	826
27	27.312	694	25.875	657	56.125	1426
47	38.000	965	39.375	1000	70.000	1778
57	60.000	1524	36.000	914	80.000	2032
70	27.000	686	19.000	483	41.000	1041
72	27.000	686	23.500	597	44.500	1130

Case No.	Cable Entry (when facing unit)		Mounting
	AC input	DC output	
3	RIGHT	LEFT	WALL / FLOOR
6	RIGHT / TOP / BOTTOM	LEFT / TOP / BOTTOM	WALL / FLOOR
7	RIGHT	LEFT	WALL / FLOOR
8A	RIGHT	LEFT	FLOOR
27	TOP	TOP	FLOOR
47	TOP / BOTTOM	TOP / BOTTOM	FLOOR
57	BOTTOM	BOTTOM	FLOOR
70	RIGHT / BOTTOM	LEFT / BOTTOM	FLOOR
72	RIGHT / BOTTOM	BOTTOM	FLOOR

Case sizes may differ depending on optional accessories and / or 50Hz input. Please consult factory when dimensions are critical.
Dimensions shown above are overall footprint. Detailed dimensions drawings are available for mounting purposes.

Model Number Nomenclature

A12B - 15 - 130V - ( ) ( ) 1 - ( ) - ( )

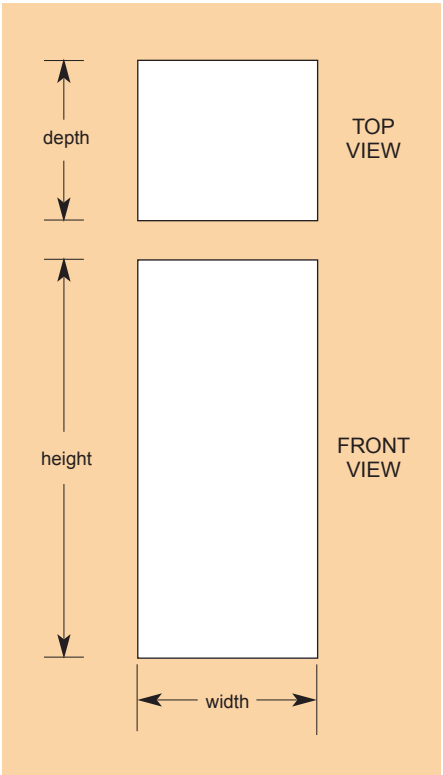
- Model Number
- DC Amps
- DC Volts
- Factory Assigned Accessory Code
- Battery Cell Range
- AC Phase Code
- AC Voltage(s) Codes
- Special Frequency When Required *

AC Phase Codes
1 - Single Phase
3 - Three Phase

AC Voltage Codes

60Hz	50Hz
A - 120	B L - 240/220
D - 208	G - 380
L - 220	J - 415
B - 240	
C - 480	
E - 575	

Special Frequency Code
5 - 50Hz
* 60Hz standard unless special code is entered



Ordering Information

When ordering, please specify:

- La Marche Model Number A12B
- Input Voltage, Frequency, Phase
- Number and Type of Battery Cells
- Ampere Hour Capacity of Battery
- Intermittent DC Loads and Duration
- Continous DC Load
- Allowable Recharge Time from Full Discharge (where applicable)
- Optional Accessories
- Verify AC Input Current Draw

LaMARCHE®
ISO 9001:2000 CERTIFIED

TPSD

Battery Charger / Power Supply / Battery Eliminator

Standard TPSD Unit Shown Above

TruPowerSource Filtered Battery Charger / Power Supply / Battery Eliminator

The La Marche TPSD Filtered Battery Charger / Power Supply / Battery Eliminator is controlled Ferroresonant technology ideally suited for Switchgear and Process Control applications. It is designed to carry continuous loads up to its maximum rated output. The MTBF (Mean Time Between Failure) is conservatively rated at 225,000 hours at 50°C, assuring longevity and a higher return for your dollar.

The TPSD assures the quality, reliability and performance you have come to expect from La Marche.

Standard Features

- Controlled Ferroresonant Microprocessor
- Automatic DC Voltage Regulation
- Automatic AC Voltage Compensation
- AC & DC Surge Protection (MOV's)
- AC Input Circuit Breaker
- DC Output Circuit Breaker or Fuse
- Digital Meter Display & Alarm Indicators
- Local & Remote Equalize
- Local & Remote Output Voltage Sensing
- Float/Equalize Mode Switching & Lights
- Output Load Current Sharing
- Internal Temperature Compensation
- AC Power Failure Relay with Form "C" Contacts
- U.L. 1012 Listed (for all 60Hz Units)
- 5-Year Limited Warranty

Options

017 DC Breaker 2-Pole (Standard on some units) see chart on pg. 3 for further details.

01D 2-Pole High Interrupting Capacity AC Breaker 65KAIC 480VAC. Only available for units with current draws above 12 amps.

01G 3-Pole High Interrupting Capacity AC Breaker 65KAIC 480VAC. Only available for units with current draws above 12 amps.

102 Blocking Diode

11W External Temperature Probe 22ft

11Y External Temperature Probe 100ft

11L Lightning Arrestor

21S Serial Data Port - Modbus RTU

21P DNP3 Communications / SCADA

21Q Modbus Communications / SCADA

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

06V Second Digital Meter - DC Volts Only

38G ABS Type Approval

MADE IN U.S.A.
Specifications subject to change without notice
P25-DSTPSD-1
ECN 18726
06/10

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Specifications

ELECTRICAL

- **AC Input**
  Voltage range: +/- 10% from nominal
  Frequency range: +/- 5%
- **Single Phase models:**
  A1: 120VAC/1/60Hz
  ABD1: 120/240/208VAC/1/60Hz
  BLD1: 240/220/208VAC/1/60Hz
  C1: 480VAC/1/60Hz
  5BL1: 240/220VAC/1/50Hz
- **Three Phase models:**
  BD3: 240/208VAC/3/60Hz
  C3: 480VAC/3/60Hz
  5G3: 380VAC/3/50Hz
- **DC Output**
  DC Amps: 6 to 200 amperes
  DC Volts: 24, 48 & 130VDC
  DC Output Voltage Range - a chart is provided on the last page of this data sheet.
- **Output Filtering (With or without a battery)**
  30mV RMS for single phase models and 100mV RMS for three phase models.
- **DC Voltage Regulation** Steady-State
  +/- 0.5% of setting from no load to full load over the specified input voltage, frequency and ambient temperature ranges.
- **Dynamic Response (On Battery)**
  Maximum Voltage Transient will not exceed +/- 5% of initial steady-state voltage for a step change from 20 to 100% of the full rated load. Recovery to steady-state voltage regulation does not exceed 200ms and all transient behavior disappears within 500ms.
- **Audible Noise**
  Less than 65dBA at any point 5 feet from any vertical surface of the enclosure.
- **Load Sharing**
  Load sharing terminal located inside of unit. When connected, identical La Marche Units are forced to share the load within +/- 5% for individual unit outputs greater than 15% of the rated output.

PROTECTION

- **Current Walk-in**
  The output current will gradually increase after the charger is turned on, eliminating surges and overshoot.
- **Current Limit**
  The chargers have an inherent magnetic current limiting feature. Electronic current limiting control circuitry provides for an adjustable value of 50 to 115% of the rated output current.
- **AC Breaker**
  Single Phase Units:
  A two-pole breaker opens both legs of the AC service to 208VAC and 240VAC. Breaker opens phase side of 120VAC service.
  Three Phase Units:
  A three-pole breaker opens all three legs of the AC service.
- **DC Breaker & DC Fuse**
  Standard units are equipped with a fuse or a 2-pole circuit breaker. For units equipped with a fuse, an optional breaker is available. Refer to the model chart on the next page for further details.

ENVIRONMENTAL

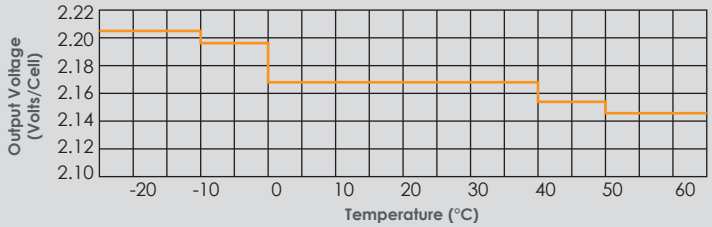
- **Operating Temperature**
  0 to 50° C (32 to 122° F)
- **Storage Temperature**
  -40 to 85° C (-40 to 185° F)
- **Relative Humidity**
  0 to 95% (non-condensing)
- **Cooling**
  Convection Cooled

ENCLOSURES

- **Dimensions**
  Overall dimensions and weights are listed on the last page. Case specifications are subject to change due to innovative product development and design. When space requirements are critical, please consult the factory.
- **Mounting**
  Our enclosures are very versatile. Some units can be wall, floor or rack mounted and others can be wall or floor mounted. See the Case Specifications Chart on the last page of this data sheet for further details.
- **Finish**
  Pretreated with three step iron phosphate wash and deionized rinse. Finished with environmentally safe water based ANSI 61 gray baked enamel.

TEMPERATURE COMPENSATION

The TPSD units feature Temperature Compensation circuitry. An ambient temperature probe is mounted inside the unit. The Temperature Compensation mode may be selected on the TPSD control to temperature compensate the output voltage in steps that approximate -.001V/cell/degree C as shown below.



Digital Meter Display & Alarm Indicators

The TPSD is equipped with a handy and user-friendly Digital Meter Display and Alarm Indicators located on the front panel of the unit.

PANEL FEATURES INCLUDE:

- Float/Equalize mode lights
- AC "ON" green indicator light
- Low DC Current, Low DC Voltage, High DC Voltage, Positive/Negative Ground Detection and Summary Alarm and Lights with (2) sets of Form "C" contacts.
- Potentiometers to adjust the current limit, float and equalize voltages.
- High DC Voltage Shutdown Alarm and Light with (1) set of Form "C" contact.
- A switch that controls 2 different functions:
  a) An Automatic Electronic Equalize Timer to initiate an Equalize charge for the batteries.
  b) A selectable Digital Amp/Volt meter allows the operator to choose if the digital display will show the system current or voltage. Status indicator lights give a visual indication of which option has been selected.
- A switch that tests the Ground Detection LED.

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TPSD Charger Chart

1-Phase

	Model Number	DC Amps	DC Protection		60Hz										50Hz [4]				Heat Loss BTU's/ Hour [5]	Case No.
					AC Current Draw [1]/ Recommended Feeder AC Supply Breaker								Shipping Weight		AC Current Draw [1] Feeder AC Supply Breaker		Shipping Weight			
			DC Fuse	DC Breaker/ Rating	A1 120	ABD1 120/240/208	BLD1 240/220/208	Feeder** Breaker Size	Rating	C1 480V	Feeder** Breaker Size	Rating	lb	kg	5BL1 240/220	Feeder** Breaker Size	lb	kg		
24V [2] (12L or 20NC)	TPSD-6-24V	6	---	10 / 7.5kaic	2	---	---	5	2kaic	---	---	---	90	40.8	---	---	---	---	119	4B
	TPSD-12-24V	12	---	15 / 7.5kaic	4	---	---	10	2kaic	---	---	---	90	40.8	---	---	---	---	238	4B
	TPSD-20-24V	20	---	30 / 7.5kaic	---	6.7 / 3.4 / 3.9	---	10 / 5 / 5	5kaic	---	---	---	100	45.4	3.4 / 3.7	5 / 5	110	49.8	396	4
	TPSD-25-24V	25	---	40 / 7.5kaic	---	8.4 / 4.2 / 4.9	---	15 / 10 / 10	5kaic	---	---	---	125	56.7	4.2 / 4.6	10 / 10	138	62.6	495	4
	TPSD-30-24V	30	---	40 / 7.5kaic	---	11 / 5 / 5.8	---	15 / 10 / 10	5kaic	---	---	---	150	68.0	5.0 / 5.5	10 / 10	165	74.8	405	4
	TPSD-35-24V	35	---	50 / 7.5kaic	---	12 / 5.9 / 6.8	---	20 / 10 / 10	5kaic	---	---	---	154	69.9	5.9 / 6.4	10 / 10	170	77.1	472	4
	TPSD-50-24V	50	---	70 / 7.5kaic	---	17 / 8.4 / 9.7	---	30 / 15 / 15	5kaic	---	---	---	175	79.4	8.4 / 9.2	15 / 15	193	87.5	674	4
	TPSD-75-24V	75	---	100 / 7.5kaic	---	26 / 13 / 15	---	40 / 20 / 20	5kaic	6.3	10	5kaic	211	95.7	13 / 14	20 / 20	233	105.7	1011	4
	TPSD-100-24V	100	130	Optional*	---	34 / 17 / 20	---	40 / 20 / 20	5kaic	8.4	15	5kaic	225	102.1	17 / 19	25 / 25	248	112.5	1347	9
48V [2] (24L or 37NC)	TPSD-6-48V	6	---	10 / 7.5kaic	4	---	---	10	2kaic	---	---	---	90	40.8	---	---	---	---	191	4B
	TPSD-12-48V	12	---	15 / 7.5kaic	8.1	---	---	15	2kaic	---	---	---	110	49.9	---	---	---	---	382	4B
	TPSD-20-48V	20	---	30 / 7.5kaic	---	14 / 6.7 / 7.8	---	20 / 10 / 10	5kaic	---	---	---	150	68.0	6.7 / 7.3	10 / 10	165	74.8	637	4
	TPSD-25-48V	25	---	40 / 7.5kaic	---	17 / 8.4 / 9.7	---	30 / 15 / 15	5kaic	---	---	---	150	68.0	8.4 / 9.2	15 / 15	165	74.8	796	4
	TPSD-30-48V	30	---	40 / 7.5kaic	---	21 / 11 / 12	---	30 / 15 / 15	5kaic	---	---	---	155	70.3	11 / 11	15 / 15	171	77.6	601	4
	TPSD-35-48V	35	---	50 / 7.5kaic	---	24 / 12 / 14	---	40 / 20 / 20	5kaic	5.9	10	5kaic	180	81.7	12 / 13	20 / 20	198	89.8	702	4
	TPSD-50-48V	50	---	70 / 7.5kaic	---	34 / 17 / 20	---	40 / 20 / 20	5kaic	8.4	15	5kaic	205	93.0	17 / 19	25 / 25	225	102.1	1002	4
	TPSD-75-48V	75	---	100 / 7.5kaic	---	51 / 26 / 30	---	70 / 35 / 35	5kaic	13	20	5kaic	295	133.8	26 / 28	40 / 40	325	147.4	1503	9
	TPSD-100-48V	100	130	Optional*	---	---	34 / 37 / 39	50 / 50 / 50	5kaic	17	25	5kaic	321	145.6	34 / 37	50 / 50	354	160.6	2004	9
130V [2] (58L or 60L, 92NC or 96NC)	TPSD-6-130V	6	---	10 / 5kaic	---	11 / 5 / 5.8	---	20 / 10 / 10	5kaic	---	---	---	140	63.5	5.0 / 5.5	10 / 10	154	69.9	478	4
	TPSD-12-130V	12	---	15 / 10kaic	---	21 / 11 / 12	---	30 / 15 / 15	5kaic	---	---	---	175	79.4	11 / 11	15 / 15	193	87.5	955	4
	TPSD-20-130V	20	---	30 / 10kaic	---	34 / 17 / 20	---	50 / 25 / 25	5kaic	8.4	15	5kaic	225	102.1	17 / 19	25 / 25	233	105.7	1591	4
	TPSD-25-130V	25	---	40 / 10kaic	---	42 / 21 / 25	---	60 / 30 / 30	5kaic	11	15	5kaic	250	113.4	21 / 23	30 / 30	275	124.7	1989	4
	TPSD-30-130V	30	---	40 / 10kaic	---	51 / 26 / 30	---	60 / 30 / 30	5kaic	13	15	5kaic	319	144.7	26 / 28	40 / 40	352	159.7	1503	9
	TPSD-35-130V	35	---	50 / 10kaic	---	59 / 30 / 34	---	80 / 40 / 40	5kaic	15	20	5kaic	372	168.7	30 / 33	45 / 45	410	186	1753	9
	TPSD-50-130V	50	---	70 / 10kaic	---	---	42 / 46 / 49	60 / 60 / 70	5kaic	21	25	5kaic	532	241.3	42 / 46	60 / 60	586	265.8	2504	9

** Optional DC Breaker is rated at 10kaic.*
*** Recommended Breaker Size*

3-Phase

	Model Number	DC Amps	DC Protection		60Hz								50Hz [4]						Heat Loss BTU's/ Hour [5]	Case No.
					AC Current Draw [1]/ Recommended Feeder AC Supply Breaker						Shipping Weight		AC Current Draw [1] Feeder AC Supply Breaker		Shipping Weight					
			DC Fuse	DC Breaker/ Rating	BD3 240/208V	Feeder** Breaker Size	Rating	C3 480	Feeder** Breaker Size	Rating	lb	kg	5G3 380V	Feeder** Breaker Size	lb	kg				
24V [2] (12L or 20NC)	TPSD-75-24V	75	---	100 / 7.5kaic	6.3 / 7.3	10 / 10	5kaic	---	---	---	400	181.4	---	---	---	---			752	72
	TPSD-100-24V	100	130	Optional*	8.5 / 9.8	15 / 15	5kaic	---	---	---	475	215.5	---	---	---	---			1002	72
	TPSD-150-24V	150	200	Optional*	13 / 15	20 / 20	5kaic	6.3	15	5kaic	530	240.4	---	---	---	---			1503	72
	TPSD-200-24V	200	250	Optional*	17 / 20	25 / 25	5kaic	8.5	15	5kaic	600	272.2	---	---	---	---			2004	72
48V [2] (24L or 37NC)	TPSD-50-48V	50	---	70 / 7.5kaic	8.5 / 9.8	15 / 15	5kaic	---	---	---	400	181.4	---	---	---	---			1002	72
	TPSD-75-48V	75	---	100 / 7.5kaic	13 / 15	25 / 25	5kaic	6.3	10	5kaic	575	260.8	---	---	---	---			1503	72
	TPSD-100-48V	100	130	Optional*	17 / 20	30 / 30	5kaic	8.5	15	5kaic	600	272.2	---	---	---	---			2004	72
	TPSD-150-48V	150	200	Optional*	26 / 30	40 / 40	5kaic	13	200	5kaic	700	317.5	---	---	---	---			3005	72
	TPSD-200-48V	200	250	Optional*	34 / 40	60 / 60	5kaic	17	25	5kaic	755	342.5	---	---	---	---			4007	72
130V [2] (58L or 60L, 92NC or 96NC)	TPSD-25-130V	25	---	40 / 10kaic	11 / 13	20 / 20	5kaic	---	---	---	420	190.5	---	---	---	---			1252	72
	TPSD-30-130V	30	---	40 / 10kaic	13 / 15	20 / 20	5kaic	6.3	10	5kaic	490	222.3	---	---	---	---			1503	72
	TPSD-35-130V	35	---	50 / 10kaic	15 / 18	25 / 25	5kaic	7.4	10	5kaic	550	249.5	---	---	---	---			1753	72
	TPSD-50-130V	50	---	70 / 10kaic	22 / 25	35 /35	5kaic	11	20	5kaic	600	272.2	---	---	---	---			2504	72
	TPSD-75-130V	75	100	Optional*	32 / 37	50 / 50	5kaic	16	25	5kaic	660	299.4	20	30	727	329.8			3756	72
	TPSD-100-130V	100	130	Optional*	43 / 49	70 / 70	5kaic	22	30	5kaic	800	362.9	27	35	882	400.1			5008	72
	TPSD-125-130V [3]	125	200	Optional*	53 [3] / 61 [3]	80 / 80	5kaic	27 [3]	40	5kaic	850	385.6	---	---	---	---			6260	44
	TPSD-150-130V [3]	150	200	Optional*	64 [3] / 74 [3]	100 / 100	5kaic	32 [3]	45	5kaic	900	408.2	---	---	---	---			7512	44

** Optional DC Breaker is rated at 10kaic.*
*** Recommended Breaker Size*
[1] AC Current Draws based @ 100% load and standard battery cells of 12L (24V), 24L (48V) and 60L (130V). Maximum Current Draw is 115% of ratings shown.
[2] Must specify only one battery type and number of cells from range shown above. Please consult factory for other available cell ranges if desired range not shown.
[3] Consult Factory for lead times on these units.
[4] 50Hz units are not U.L. listed.
[5] BTU's are based on 12L (24V), 24L (48V) and 60L (130V). Heat loss is stated for nominal float voltage, 100% output current and nominal AC line.

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Case Specifications

Case No.	Overall Dimensions					
	Width		Depth		Height	
	in	mm	in	mm	in	mm
4B*	19.000	483	15.000	381	12.250*	311*
4*	19.000	483	15.000	381	24.000*	610*
9*	23.000	584	15.000	381	36.000*	914*
72	27.000	686	23.500	597	44.500	1130
44	24.000	610	19.000	483	72.100	1831

Case sizes may differ depending on optional accessories. Consult factory when dimensions are critical. Detailed dimensional drawings are available for mounting purposes. *Floor mounting brackets adds 2" (51mm) to overall height.

Case No.	Cable Entry (when facing unit)		Mounting
	AC input	DC output	
4B*	RIGHT	LEFT	19/23" RACK, WALL / FLOOR
4*	RIGHT	LEFT	19/23" RACK, WALL / FLOOR
9*	TOP RIGHT	TOP LEFT	23" RACK, WALL / FLOOR
72	RIGHT / BOTTOM	BOTTOM	FLOOR
44	LEFT	RIGHT	FLOOR

Adjustable DC Output Voltage Range

	Battery Cell Type Code	Float		Equalize	
		Min	Max	Min	Max
24V	12L	25.44	27.60	27.00	28.80
	20N	27.80	29.00	30.00	32.00
48V	24L	50.88	55.20	54.00	57.60
	37N	51.43	53.65	55.50	59.20
130V	58L	122.96	133.40	130.50	139.20
	60L	127.20	138.00	135.00	144.00
	92N	127.88	133.40	138.00	147.20
	96N	133.44	139.20	144.00	153.60

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)

Model Number Nomenclature

TPSD - 25 - 130V - ( ) ( ) ( ) - ( ) - ( )

- Model Number
- DC Amps
- DC Volts
- Special Frequency When Required *
- AC Voltage(s) Code(s)
- AC Phase Code
- Battery Cell Range
- Factory Assigned Accessory Code

Special Frequency Code
5 - 50Hz
* 60Hz standard unless special code is entered

AC Voltage Codes
A - 120
C - 480
G - 380
BD - 240/208
BL - 240/220
ABD - 120/240/208
BLD - 240/220/208

AC Phase Codes
1 - Single Phase
3 - Three Phase

Battery Cell Type Code
12L 20N
24L 37N
58L 92N
60L 96N

L = Lead Acid
N = Nickel Cadmium

Ordering Information

When ordering, please specify:

- La Marche Model Number TPSD
- DC Amps
- DC Volts
- Special Frequency, When Required
- AC Voltage Code
- AC Phase Code
- Battery Cell Type Code
- Optional Accessories (Option Code)

LaMARCHE®
ISO 9001:2000 CERTIFIED

A41 / A41F

Marine Battery Charger Without / With Filtering

"Constavolt"

Marine Battery Charger

The La Marche model A41/A41F battery chargers are renowned throughout the industry like the Constavolt because of their reliability and their precise and constant output voltage to charge your batteries. These battery chargers can supply DC power for all ship board accessories while they simultaneously charge and keep your vessel batteries properly maintained. A wide range of A41/A41F Constavolt models are offered from 12 to 130 Volts DC to suit your needs. The Constavolt is a completely automatic, solid state, constant voltage battery charger built to carry continuous and intermittent loads up to 80% of its maximum rated output capacity.

Standard Features

- Magnetic Amplifier Circuitry
- Automatic DC Voltage Regulation
- Automatic AC Input Voltage Compensation +/- 10%
- Dual AC input and DC output fusing protects battery and charger
- Analog DC Ammeter
- DC Current Limiting Circuitry
- Charger design prevents battery from discharging if AC line fails
- AC to DC Isolation
- Model A41F is filtered for Valve-Regulated batteries
- USCG (United States Coast Guard) Accessories include a drip shield, On/Off switch & water tight connectors
- UL 1236 Listed
- 10-Year Limited Warranty

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

MADE IN U.S.A.
Specifications subject to change without notice
P25-DSA41-1
ECN 18726
06/10

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A41 / A41F Models

	Model Number All Models Available As A41F	DC Output			AC Input Current Draw* at 100% Load (Amps)			A41 Case No.	A41 Shipping Weight (Approximate)		A41F Case No.	A41F Shipping Weight (Approximate)	
		Amps	Volts	Fuse Size	A 120	D 208	B 240		lbs	kgs		lbs	kgs
12VDC 6L, 9 or 10NC	A41-10-12V	10	12V	20A	2.5	1.4	1.3	05	33	15.0	2	49	22.3
	A41-20-12V	20	12V	35A	5	2.9	2.5	2	57	25.9	7	69	31.4
	A41-30-12V	30	12V	50A	7.5	4.3	3.8	2	68	30.9	3	93	42.3
	A41-40-12V	40	12V	70A	10	5.8	5	2	78	35.5	4	137	62.3
	A41-60-12V	60	12V	100A	15	8.7	7.5	7	104	47.3	6	174	79.1
	A41-75-12V (1)	75	12V	130A	19	11	9.4	3	130	59.1	6	194	88.2
	A41-100-12V (1)	100	12V	150A	26	15	13	6	180	81.8	8A	225	102.3
24VDC 12L, 19 or 20NC	A41-10-24V	10	24V	20A	5	2.9	2.5	2	64	29.1	7	76	34.5
	A41-20-24V	20	24V	35A	10	5.8	5	2	76	34.5	7	88	40.0
	A41-30-24V	30	24V	50A	15	8.7	7.5	7	104	47.3	3	123	55.9
	A41-40-24V	40	24V	70A	21	12	10	7	146	66.4	3	177	80.5
	A41-60-24V	60	24V	100A	31	18	15	3	200	90.9	4	263	119.5
	A41-75-24V (1)	75	24V	130A	38	22	19	3	278	126.4	6	319	145.0
32VDC 16L	A41-10-32V	10	32V	20A	6.7	3.9	3.3	2	70	31.8	7	82	37.3
	A41-20-32V	20	32V	35A	14	7.7	6.7	2	75	34.1	3	93	42.3
	A41-30-32V	30	32V	50A	21	12	10	7	102	46.4	3	121	55.0
	A41-40-32V	40	32V	70A	27	16	14	3	190	86.4	4	237	107.7
	A41-60-32V	60	32V	100A	41	24	21	3	225	102.3	6	289	131.4
130 VDC 60L / 92N	A41-10-130V	10	130V	20A	26	15	13	3	165	75.0	4	183	87.7
	A41-20-130V	20	130V	35A	51	29	26	6	185	84.1	6	191	86.8

All above models designed for optimal performance at 60Hz. They will operate at 50Hz with reduced performance. Consult factory for units designed specifically at 50Hz. Please consult factory for other available cell ranges if desired range not shown. *AC Current Draws based @ 100% load and standard battery cells of 6L(12V),12L(24V),16L(32V),60L(130V). Maximum Current Draw is typically 140% of ratings shown.
(1) Units Not UL Listed.

Case Specifications

Case No.	Overall Dimensions						Cable Entry (when facing unit)		Mounting
	Width		Depth		Height				
	in	mm	in	mm	in	mm	AC input	DC output	
05	8.000	203	7.000	178	13.000	330	BOTTOM RIGHT	BOTTOM RIGHT	WALL
1	10.375	264	7.875	200	16.250	413	RIGHT	LEFT	WALL
2	12.812	326	10.000	254	17.125	435	RIGHT	LEFT	WALL
3	15.375	391	11.000	279	23.750	603	RIGHT	LEFT	WALL/FLOOR
4	19.000	483	15.000	381	25.875	657	RIGHT/TOP/BOTTOM	LEFT/TOP/BOTTOM	WALL/FLOOR/RACK
6	25.580	650	13.935	354	28.000	711	RIGHT/TOP/BOTTOM	LEFT/TOP/BOTTOM	WALL/FLOOR
7	14.250	362	10.625	270	19.875	505	RIGHT	LEFT	WALL/FLOOR
8A	27.200	691	15.250	387	32.500	826	RIGHT	LEFT	FLOOR

Case sizes may differ depending on optional accessories. Please consult factory when dimensions are critical. Dimensions shown above are overall footprint. Detailed dimension drawings are available for mounting purposes.

Optional External Charge Dividers

Model Number	Number of Batteries	DC Range		Case No.	Shipping Weight (Approximate)	
		Amps	Volts		lbs	kgs
CD40-20/30-12/32-N2	2	10-30	12-32	05	10	4.5
CD40-20/30-12/32-N3	3	10-30	12-32	05	11	5.0
CD40-40/60-12/32-N2	2	40-60	12-32	1	14	6.4
CD40-40/60-12/32-N3	3	40-60	12-32	1	15	6.8
CD40-75/100-12/32-N2	2	75-100	12-32	2	23	10.4
CD40-75/100-12/32-N3	3	75-100	12-32	2	25	11.3

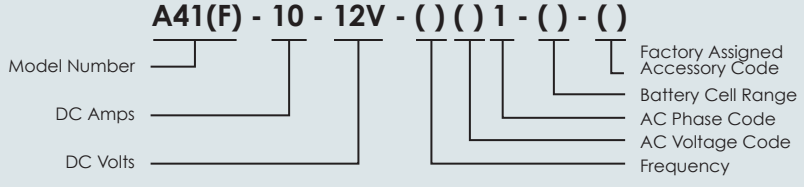
Note: All above models are configured for Negative Common. For Positive Common, part number changes as follow: CD40-20/30-12/32-P2.

Optional Internal Charge Dividers

- 100 To charge 2 batteries with a negative common
- 10U To charge 2 batteries with a positive common
- 101 To charge 3 batteries with a negative common
- 10V To charge 3 batteries with a positive common

Note: Consult factory may increase case size.

Model Number Nomenclature



Model Number
A41 - Unfiltered
A41F - Filtered

AC Voltage Codes
A - 120
D - 208
B - 240

AC Phase Codes
1 - Single Phase

Battery Cell Type Code
12V - 6L, 9N, 10N
24V - 12L, 19N, 20N
32V - 16L
130V - 60L, 92N

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 (Amps) and Duration (Time)

Ordering Information When ordering, please specify:

- La Marche Model Number A41 or A41F
- DC Amps
- DC Volts
- Special Frequency, When Required
- AC Voltage Code
- AC Phase Code
- Battery Cell Type Code
- Optional Accessories (Option Code)

ISO 9001:2000 CERTIFIED

A40 / A40F

Engine Starting Battery Charger Without / With Filtering

"Constavolt"

Engine Starting Battery Charger

The La Marche model A40/A40F battery chargers are renowned throughout the industry as the Constavolt because of their reliability and their precise and constant output voltage to charge your batteries. The Constavolt is a completely automatic, solid state, constant voltage battery charger built to carry continuous and intermittent loads up to 80% of its maximum rated output capacity. It is ideal for applications where it is advantageous to have the charger permanently connected across the battery, keeping it charged at all times and to simultaneously carry continuous and/or intermittent current loads such as onboard peripheral equipment.

Standard Features

- Magnetic Amplifier Circuitry
- Automatic DC Voltage Regulation
- Automatic AC Input Voltage Compensation +/- 10%
- Automatic Surge Suppression
- AC input and DC output fusing protects battery and charger
- Analog DC Ammeter
- DC Current Limiting Circuitry
- Charger design prevents battery from discharging if AC line fails
- AC to DC Isolation
- Model A40F is filtered for Valve-Regulated batteries
- A40/A40F models are UL 1564 Listed & C-UL Listed
- 10-Year Limited Warranty

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

MADE IN U.S.A.
Specifications subject to change without notice
P25-DSA40-1
ECN 18726
06/10

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A40 / A40F Models

	Model Number All Models Available As A40F	DC Output			AC Input Current Draw* at 100% Load (Amps)			A40 Case No.	A40 Shipping Weight (Approximate)		A40F Case No.	A40F Shipping Weight (Approximate)	
		Amps	Volts	Fuse Size	A 120	D 208	B 240		lbs	kgs		lbs	kgs
12VDC 6L, 9 or 10NC	A40-10-12V	10	12V	20A	2.5	1.4	1.3	05	30	13.6	2	46	20.9
	A40-20-12V	20	12V	35A	5	2.9	2.5	2	54	24.5	7	66	30.0
	A40-30-12V	30	12V	50A	7.5	4.3	3.8	2	65	29.5	3	90	40.9
	A40-40-12V	40	12V	70A	10	5.8	5	2	74	33.6	4	133	60.5
	A40-60-12V	60	12V	100A	15	8.7	7.5	7	98	44.5	6	168	76.4
	A40-75-12V	75	12V	130A	19	11	9.4	3	123	55.9	6	187	85.0
	A40-100-12V	100	12V	150A	26	15	13	6	165	75.0	8A	260	118.2
24VDC 12L, 19 or 20NC	A40-10-24V	10	24V	20A	5	2.9	2.5	2	61	27.7	7	73	33.2
	A40-20-24V	20	24V	35A	10	5.8	5	2	72	32.7	7	84	38.2
	A40-30-24V	30	24V	50A	15	8.7	7.5	7	98	44.5	3	117	53.2
	A40-40-24V	40	24V	70A	21	12	10	7	105	47.7	3	136	61.8
	A40-60-24V	60	24V	100A	31	18	15	3	150	68.2	4	213	96.8
	A40-75-24V	75	24V	130A	38	22	19	3	210	95.5	6	274	124.5
	A40-100-24V	100	24V	150A	51	29	26	8A	300	136.4	8A	374	170.0
32VDC 16L	A40-10-32V	10	32V	20A	6.7	3.9	3.3	2	61	27.7	7	73	33.2
	A40-20-32V	20	32V	35A	14	7.7	6.7	2	72	32.7	3	90	40.9
	A40-30-32V	30	32V	50A	21	12	10	7	98	44.5	3	117	53.2
	A40-40-32V	40	32V	70A	27	16	14	3	140	63.6	4	187	85.0
	A40-60-32V	60	32V	100A	41	24	21	3	170	77.3	6	234	106.4
	A40-75-32V	75	32V	130A	51	29	26	8A	250	113.6	8A	291	132.3
130 VDC 60L / 92NC	A40-10-130V	10	130V	20A	26	15	13	3	155	70.5	4	183	83.2
	A40-20-130V	20	130V	35A	51	29	26	6	175	79.5	6	181	82.3
	A40-30-130V	30	130V	50A	76	44	38	8A	330	150.0	8A	343	155.9

All above models designed for optimal performance at 60Hz. They will operate at 50Hz with reduced performance. Consult factory for units designed specifically at 50Hz. Please consult factory for other available cell ranges if desired range not shown. *AC Current Draws based @ 100% load and standard battery cells of 6L(12V),12L(24V),16L(32V),60L(130V). Maximum Current Draw is typically 140% of ratings shown.

Case Specifications

Case No.	Overall Dimensions						Cable Entry (when facing unit)		Mounting
	Width		Depth		Height				
	in	mm	in	mm	in	mm	AC input	DC output	
05	8.000	203	7.000	178	13.000	330	BOTTOM RIGHT	BOTTOM RIGHT	WALL
1	10.375	264	7.875	200	16.250	413	RIGHT	LEFT	WALL
2	12.812	326	10.000	254	17.125	435	RIGHT	LEFT	WALL
3	15.375	391	11.000	279	23.750	603	RIGHT	LEFT	WALL/FLOOR
4	19.000	483	15.000	381	25.875	657	RIGHT/TOP/BOTTOM	LEFT/TOP/BOTTOM	WALL/FLOOR/RACK
6	25.580	650	13.935	354	28.000	711	RIGHT/TOP/BOTTOM	LEFT/TOP/BOTTOM	WALL/FLOOR
7	14.250	362	10.625	270	19.875	505	RIGHT	LEFT	WALL/FLOOR
8A	27.200	691	15.250	387	32.500	826	RIGHT	LEFT	FLOOR

Case sizes may differ depending on optional accessories. Please consult factory when dimensions are critical. Dimensions shown above are overall footprint. Detailed dimension drawings are available for mounting purposes.

Optional External Charge Dividers

Model Number	Number of Batteries	DC Range		Case No.	Shipping Weight (Approximate)	
		Amps	Volts		lbs	kgs
CD40-20/30-12/32-N2	2	10-30	12-32	05	10	4.5
CD40-20/30-12/32-N3	3	10-30	12-32	05	11	5.0
CD40-40/60-12/32-N2	2	40-60	12-32	1	14	6.4
CD40-40/60-12/32-N3	3	40-60	12-32	1	15	6.8
CD40-75/100-12/32-N2	2	75-100	12-32	2	23	10.4
CD40-75/100-12/32-N3	3	75-100	12-32	2	25	11.3

Note: All above models are configured for Negative Common. For Positive Common, part number changes as follow: CD40-20/30-12/32-P2.

Optional Internal Charge Dividers

- 100 To charge 2 batteries with a negative common
- 10U To charge 2 batteries with a positive common
- 101 To charge 3 batteries with a negative common
- 10V To charge 3 batteries with a positive common

Note: Consult factory may increase case size.

Model Number Nomenclature

A40(F) - 10 - 12V - ( ) ( ) 1 - ( ) - ( )

- Model Number
- DC Amps
- DC Volts
- Factory Assigned Accessory Code
- Battery Cell Range
- AC Phase Code
- AC Voltage Code
- Special Frequency When Required*

Model Number
A40 - Unfiltered
A40F - Filtered

AC Phase Codes
1 - Single Phase

AC Voltage Codes
A - 120
D - 208
B - 240

Special Frequency Code
5 - 50Hz
* 60Hz standard unless special code is entered

Battery Cell Type Code
12V - 6L, 9N, 10N
24V - 12L, 19N, 20N
32V - 16L
130V - 60L, 92N

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 (Amps) and Duration (Time)

Ordering Information When ordering, please specify:

- La Marche Model Number A40 or A40F
- DC Amps
- DC Volts
- Special Frequency, When Required
- AC Voltage Code
- AC Phase Code
- Battery Cell Type Code
- Optional Accessories (Option Code)

A46 / A46F

Engine Starting Battery Charger Without / With Filtering

Unit shown with optional 46E LCD C.A.P. System

Engine Starting Battery Charger

The La Marche A46/A46F battery charger is specially designed for maintaining and recharging starting batteries of engine generator sets. The controlled magnetic amplifier technology provides the highest reliability that is necessary for the continued operation of the emergency standby equipment and eliminates most starting problems by maintaining batteries at a proper charge, ensuring optimum performance and maximum life.

These chargers can also be customized to meet the American Bureau of Shipping (ABS) and United States Coast Guard (USCG) standards for applications such as offshore and on board vessels.

Standard Features

- Magnetic Amplifier Circuitry
- Automatic DC Voltage Regulation
- Automatic AC Input Voltage Compensation +/- 10%
- Automatic Surge Suppression
- Analog DC Ammeter & DC Voltmeter
- DC Current Limiting Circuitry
- AC Input and DC Output Fusing
- AC Power Failure Relay with (1) set of Form “C”Contacts
- Float/Equalize Mode Switching
- Charger design prevents battery from discharging if AC line fails
- AC to DC Isolation
- Model A46F is filtered for Valve-Regulated batteries
- UL 1564 Listed and C-UL Listed
- 10-Year Limited Warranty

MADE IN U.S.A.
Specifications subject to change without notice
P25-DSA46-1
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A46 & A46F Models

	Model Number All Models Available As A46F	DC Output			AC Input Current Draw* at 100% Load (Amps)			A46 Case No.	A46 Shipping Weight (Approximate)		A46F Case No.	A46F Shipping Weight (Approximate)	
		Amps	Volts	Fuse Size	A 120	D 208	B 240		lbs	kgs		lbs	kgs
12VDC 6L, 9 or 10NC	A46-6-12V	6	12V	15A	1.5	0.9	0.8	1	28	12.7	2	39	17.8
	A46-10-12V	10	12V	20A	2.5	1.4	1.3	1	30	13.6	2	41	18.7
	A46-20-12V	20	12V	35A	5	2.9	2.5	2	56	25.4	7	68	31.0
	A46-30-12V	30	12V	50A	7.5	4.3	3.8	2	66	29.9	3	91	41.4
24VDC 12L, 19 or 20NC	A46-6-24V	6	24V	15A	3	1.7	1.5	1	38	17.2	7	50	22.8
	A46-10-24V	10	24V	20A	5	2.9	2.5	2	62	28.1	7	74	33.7
	A46-20-24V	20	24V	35A	10	5.8	5	2	73	33.1	7	85	38.7
	A46-30-24V	30	24V	50A	15	8.7	7.5	7	108	49.0	3	127	57.8
	A46-40-24V	40	24V	70A	21	12	10	7	112	50.8	3	143	65.0
32VDC 16L	A46-6-32V	6	32V	15A	4	2.3	2	2	58	26.3	7	70	31.9
	A46-10-32V	10	32V	20A	6.7	3.9	3.3	2	68	30.8	7	80	36.4
	A46-20-32V	20	32V	35A	14	7.7	6.7	2	74	33.6	3	92	41.9
	A46-30-32V	30	32V	50A	21	12	10	7	112	50.8	3	131	59.6
36VDC 18L	A46-6-36V	6	36V	15A	4.5	2.7	2.4	2	58	26.3	7	70	31.9
	A46-10-36V	10	36V	20A	7.5	4.2	3.9	2	68	30.9	7	80	36.4
	A46-20-36V	20	36V	35A	15	8.7	7.5	7	74	33.6	3	92	41.9
	A46-30-36V	30	36V	50A	22.5	12.9	11.4	7	112	50.8	3	131	59.6

Case Specifications

Case No.	Overall Dimensions Width x Depth x Height
1	10" x 8" x 16" 264 x 200 x 413mm
2	13" x 10" x 17" 326 x 254 x 435mm
3	15" x 11" x 24" 391 x 279 x 603
7	14" x 11" x 20" 362 x 270 x 505

Note: All above models designed for optimal performance at 60Hz. They will operate at 50Hz with reduced performance. Consult factory for units designed specifically at 50Hz. Must specify only one battery type and number of cells. Please consult factory for other available cell ranges if desired range not shown.
*AC Current Draws based @ 100% load using standard battery cells of 6L(12V),12L(24V) and 16L(32V), 18L(36V) Maximum Current Draw is typically 140% of ratings shown.

Options

Circuit Breakers

- **011** AC Breaker Single Pole (120VAC only)
- **012** DC Breaker Single Pole
- **016** AC Breaker Two Pole
- **017** DC Breaker Two Pole

Choose options from Discrete or Combination Accessory Packages (C.A.P.)

Discrete

(Choose one or more of the options in this category)

- **055** Float Light
- **056** Equalize Light
- **060** AC Pilot Light
- **04J** Multi-Mode Equalize Timer & Lights Adjustable from 1-144hrs in (5) selectable modes; Standard, 7-day, 14-day, 30-day and Equalize after Low DC Voltage includes Float and Equalize Lights (055 and 056).

Combination Accessory Packages (C.A.P.)

- **16E** Digital C.A.P. System (Meets NFPA 110) Features a selectable LED display along with the AC Pilot Light, Equalize Timer and many more features (Refer to the Digital C.A.P. System data sheet for complete details).
- **16J** Digital C.A.P. System (Meets NFPA 110) Includes all the features of 16E package (above) plus Ground Detection Alarm (Refer to the Digital C.A.P. System data sheet for complete details).
- **46E** LCD C.A.P. Systems (Meets NFPA 110) Features Selectable Display, Multi-Mode Equalize Timer, Equalize Light, Float Light and many more features (Refer to the LCD C.A.P. System data sheet for complete details).
- **46J** LCD C.A.P. Systems (Meets NFPA 110) Includes all the features of 46E package (above) plus Ground Detection Alarm (Refer to the LCD C.A.P. System data sheet for complete details).
- **204** C.A.P. System (Meets NFPA 110) Includes (1) set of form "C" contacts for AC Power Failure. Low DC Voltage, High DC Voltage, and Low DC Current.
- **03M** Low/High DC Voltage Alarm & Lights with (1) set of Form "C" contacts each for Low Voltage & High Voltage w/LED's.

ABS/USCG (U.S. Coast Guard)

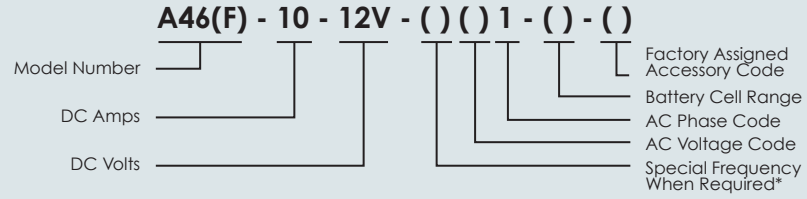
- **10B** U.S.C.G. Accessories, includes a drip shield, on/off switch & water tight connectors.
- **38G** ABS (American Bureau of Shipping) Type Approval with option 060, 16E or 16J.
- **38J** ABS & U.S.C.G. Accessories with option 060, 16E or 16J.

Internal Charge Dividers

(consult factory may increase case size)

- **100** To charge 2 batteries w/negative common.
- **10U** To charge 2 batteries w/positive common.
- **101** To charge 3 batteries w/negative common.
- **10V** To charge 3 batteries w/positive common.

Model Number Nomenclature



Model Number
A46 - Unfiltered
A46F - Filtered

AC Phase Codes
1 - Single Phase

AC Voltage Codes
A - 120
D - 208
B - 240

Special Frequency Code
5 - 50Hz
* 60Hz standard unless special code is entered

Battery Cell Type Code
12V - 6L, 9N, 10N
24V - 12L, 19N, 20N
32V - 16L
36V - 18L

- 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

- NEMA 1 enclosure ANSI 61 gray baked enamel paint

A12B

Battery Charger / Power Supply

Unit shown with several optional accessories

The Industry's Most Reliable Filtered Battery Charger / Power Supply

The La Marche model A12B Series Filtered Battery Chargers/Power Supplies are engineered for the demanding requirements of Switch Gear applications, Process Controls and Communications. The magnetic amplifier circuitry is designed to carry continuous and intermittent loads up the maximum rated output. Its robust design and unmatched reliability has made this workhorse the standard in the industry, and with its customizing features, there is virtually no application that the A12B cannot meet.

Check the Digital CAP Systems data sheet for a combined accessory package.

Standard Features

- Magnetic Amplifier Circuitry
- Separate Float and Equalize Potentiometers provide simple and precise DC Voltage calibration.
- Float/Equalize Mode Switching
- Float and Equalize Lights
- Automatic AC Voltage Compensation
- +/- 0.5% DC Voltage Regulation
- Fused AC input and DC output protects Battery and Charger/Power Supply
- Analog DC Ammeter and DC Voltmeter
- Current Limiting Circuitry prevents overload and provides current control from 50 to 120% of rated output (factory set at 115%).
- Filtered DC Output (clean power) - the A12B can be used as a Power Supply with 30mV RMS or less on single phase units and 100mV RMS or less on three phase units.
- AC Power Failure Relay with Form "C" Contacts
- UL 1012, UL 1481 Listed & C-UL Listed
- 10-year Limited Warranty

MADE IN U.S.A.
Specifications subject to change without notice
P25-DSA12B-1
ECN 18726
06/10

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Specifications

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ELECTRICAL

- **AC Input Voltages**
  Single Phase 60Hz: 120, 208, 240, 480 or 575
  Single Phase 50Hz: 220/240, 380 or 415
  Three Phase 60Hz: 208, 240, 480 or 575
  Three Phase 50Hz: 220/240, 380 or 415
- **Power Protection**
  AC Fuse, DC Fuse and Current Limit Protection
- **DC Output Voltages**
  DC Amps: 3 to 400 amperes
  DC Volts: 12, 24, 48 & 130VDC (Others available such as 32&36VDC)
- **Output Filtering (With or without a battery)**
  30mV RMS for single phase models and 100mV RMS for three phase models
- **DC Voltage Regulation**
  Plus or minus 0.5% of setting from no load to full load over the specified input voltage, frequency and ambient temperature ranges.

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)
- **MTBF**
  250,000 Hours
- **Dimensions**
  Overall dimensions and weights are listed on the last page of this Data Sheet. Case specifications are subject to change due to innovative product development and design. When space requirements are critical, please consult the factory.
- **Mounting**
  Floor or wall units are available. Mounting flanges are supplied as integral part of cabinet back plate on wall mounted models.
- **Finish**
  Pretreated with three step iron phosphate wash and de-ionized rinse. Finished with environmentally safe water based ANSI 61 gray baked enamel.

Agency Approvals

- **UL Battery Charger**
  File E 319318, Guide BBML
  UL Std. No. 1012
- **C-UL Battery Charger**
  CAN/CSA
  Std. C22.2 No. 107-2
- **UL Fire Alarm System Power Supply**
  File S2768, Guide UTRZ
  Std. No. 1481
  Must Specify Accessory Code 09A

Notes:
All models where appropriate will carry the U.L. and C-U.L. Battery Charger listing. When U.L. Fire Alarm System Power Supply Listings are required, you must specify this requirement at the time of order. Not all models can be U.L. approved. Accessories, type of charger and rating will determine U.L. approval. Consult our factory if U.L. approvals are required.

Optional Accessories

ALARM & CONTROL

- **16 Series** (Refer to Digital C.A.P. Systems Data Sheet for complete details)
  Digital C.A.P. (Combined Accessory Package) Systems featuring a Selectable LED Display, a Multi-Mode Equalize Timer with Light adjustable from 1-144 hrs with five selectable modes and various failure alarm & lights.
- **46 Series** (Refer to LCD C.A.P. Systems Data Sheet for complete details)
  LCD C.A.P. Systems common features:
  Selectable Display, Multi-Mode Equalize Timer, Equalize Light, Float Light, AC Power Failure Relay w/ (2) sets Form "C" (except 46Q), Low DC Current Alarm w/ (2) sets Form "C" Low DC Voltage 1 Alarm w/ (2) sets Form "C" & Adjustable Time Delay (0-255 sec) (Except Ground Detection Alarms).
- **03N** Low DC Current Alarm & Light w/ (1) set Form "C" contacts
- **04J** Electronic Equalize Timer Multi-Mode adjustable from 2-144hrs with five selectable modes; Standard, 7-day, 14-day, 30-day and Equalize after Low DC Voltage.
- **050** Ground Detection Switch 3-position with DC Voltmeter indication (130VDC models utilizes two switches)
- **051** Ground Detection Alarm with Reset Pushbutton and (1) set form "C" Positive and (1) set form "C" Negative contacts
- **052** Ground Detection Lights (Positive and Negative)
- **053** Ground Detection Switch & Lights (130VDC models utilizes two switches)
- **054** AC Power Failure Light
- **060** AC Pilot Light Neon Bulb *(LED included with 16B Digital C.A.P. Systems)*
- **068** Sonalert with Silence Switch Audible Alarm
- **16C** Hi/Lo-2 Combination Alarm High/Low DC Voltage, Field Calibrations & Adjustments, Individual Lights and (2) Form "C" contacts for each alarm
- **10G** Forced Load Sharing *(with same model number only)*
- **103** Remote Sensing
- **162** Summary Alarm *(for use with discrete components only)*

METERING & PROTECTION

- **011** AC Breaker Single Pole *(120VAC only)*
- **012** DC Breaker Single Pole
- **016** AC Breaker Two Pole
- **017** DC Breaker Two Pole
- **01B** AC Breaker Three Pole *(3-phase input only)*
- **---** AC Breakers High Interrupting. Contact factory for appropriate code.
- **06G** Zero Center Ammeter w/Battery & Load Terminals *(under 250A units)*

METERING & PROTECTION CONTINUED

- **06L** AC Ammeter +/-2% accuracy *(single phase only)*
- **06M** AC Voltmeter +/-2% accuracy *(single phase only)*
- **102** DC Blocking Diode
- **104** AC Dual Fusing
- **105** DC Dual Fusing
- **107** DC Surge Protectors *(MOV's)*
- **140** AC Switch Single Pole *(60A Maximum)*
- **141** AC Switch Two Pole *(60A Maximum)*
- **143** AC Switch Three Pole *(60A Maximum)*

MISCELLANEOUS

- **09A** U.L. 1481 Listing
- **092** Tropicalization (magnetics only) Single Phase
- **093** Tropicalization (magnetics only) Three Phase
- **10B** USCG (U.S. Coast Guard) Accessories *
- **10L** Battery & Load Terminals (under 250A units)
- **11F** 30mV Filtering for 3-phase units
- **38G** ABS (American Bureau of Shipping) Modifications *
- **---** Floor Stand (must order separately)
- **---** Drip Shield (must order separately) *
- **38J** ABS (38G) & USGC (10B) Single Phase *
- **38K** ABS (38G) & USGC (10B) Three Phase *
- **11V** Temperature Compensation (Internal Probe)
- **11W** External Temperature Probe 22 ft
- **100** 2 Battery Charge Divider - Negative Ground
- **10U** 2 Battery Charge Divider - Positive Ground
- **101** 3 Battery Charge Divider - Negative Ground
- **10V** 3 Battery Charge Divider - Positive Ground
- **095** Point to Point Wiring Diagram with Wire Makers
- **096** Wire Markers - Includes Wire Marker Numbers on Electrical Schematic
- **09L** Physical Parts Location Drawing
- **097** SIS Wire (#16 AWG and larger)
- **09W** Heat Shrinkable Wire Markers
- **21P** DNP3.0 (Offered only with 46 series CAP)
- **21Q** Modbus (Offered only with 46 series CAP)

**ONLY Available On Case No. 3, 6, 7, 70, & 72.*
Notes: Discrete Alarms are not available in conjunction with Digital C.A.P. (Combined Accessory Package) systems. Typically, when ordering two or more discrete components, the Digital C.A.P. system listed above provides a more economical approach.
Case sizes may differ depending on optional accessories and/or 50Hz input. Please consult factory when dimensions are critical.

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Must specify only one battery type and number of cells from range shown above. Please consult factory for other available cell ranges if desired range not shown.

	Model Number	DC Amps	DC [1] Fuse Size (Amps)	AC Input Phase	AC Input Current Draw @ 100% Load [2] (Amps)								Std. [5] Case Size	Shipping Weight (Approximate)	
					60Hz Units						50Hz Units [3, 4]				
					A 120	D 208	L 220	B 240	C 480	E 575	B L 240 / 220	G 380	J 415		
														lbs	kgs
12 volt systems (6L, 9 or 10NC)	A12B-3-12V	3	10	1	0.8	0.4	0.4	0.4	---	---	0.4 / 0.4	---	---	7	60	27.2
	A12B-6-12V	6	15	1	1.5	0.9	0.8	0.8	---	---	0.8 / 0.8	---	---	7	70	31.8
	A12B-10-12V	10	20	1	2.5	1.4	1.4	1.3	---	---	1.3 / 1.4	---	---	7	80	36.3
	A12B-15-12V	15	25	1	3.8	2.2	2.1	1.9	---	---	1.9 / 2.1	---	---	3	90	40.8
	A12B-20-12V	20	30	1	5	2.9	2.7	2.5	---	---	2.5 / 2.7	---	---	3	95	43.1
	A12B-30-12V	30	40	1	7.5	4.3	4.1	3.8	1.9*	1.6*	3.8 / 4.1	2.4*	2.2*	3	105	47.6
	A12B-40-12V	40	60	1	10	5.8	5.5	5	2.5*	2.1*	5 / 5.5	3.2*	2.9*	6	155	70.3
	A12B-50-12V	50	80	1	13	7.2	6.8	6.3	3.1*	2.6*	6.3 / 6.8	4.0*	3.6*	6	170	77.1
	A12B-60-12V	60	80	1	15	8.7	8.2	7.5	3.8*	3.1*	7.5 / 8.2	4.7*	4.3*	6	180	81.7
	A12B-75-12V	75	100	1	19	11	11	9.4	4.7*	3.9*	9.4 / 11	5.9*	5.4*	6	225	102.1
	A12B-100-12V	100	150	3	---	7.5	7.1	6.5	3.3*	2.7*	6.5 / 7.1	4.1*	3.8*	8A	325	147.4
24 volt systems (12L, 19 or 20NC)	A12B-3-24V	3	10	1	1.5	0.9	0.8	0.8	---	---	0.8 / 0.8	---	---	7	70	31.8
	A12B-6-24V	6	15	1	3	1.7	1.6	1.5	---	---	1.5 / 1.6	---	---	3	85	38.6
	A12B-10-24V	10	20	1	5	2.9	2.7	2.5	---	---	2.5 / 2.7	---	----	3	95	43.1
	A12B-15-24V	15	25	1	7.5	4.3	4.1	3.8	1.9*	1.6*	3.8 / 4.1	2.4*	2.2*	3	100	45.4
	A12B-20-24V	20	30	1	10	5.8	5.5	5	2.5*	2.1*	5 / 5.5	3.2*	2.9*	3	120	54.4
	A12B-25-24V	25	35	1	13	7.2	6.8	6.3	3.1*	2.6*	6.3 / 6.8	4.0*	3.6*	3	135	61.2
	A12B-30-24V	30	40	1	15	8.7	8.2	7.5	3.8*	3.1*	7.5 / 8.2	4.7*	4.3*	3	145	65.9
	A12B-35-24V	35	50	1	18	11	9.6	8.8	4.4*	3.7*	8.8 / 9.6	5.5*	5.1*	6	190	86.2
	A12B-40-24V	40	60	1	21	12	11	10	5*	3.2*	10 / 11	6.3*	5.8*	6	205	93.0
	A12B-50-24V	50	80	1	26	15	14	13	6.3*	5.2*	13 / 14	7.9	7.2	6	240	108.9
	A12B-60-24V	60	80	1	31	18	17	15	7.5	6.3*	15 / 17	9.5	8.7	6	265	120.2
	A12B-75-24V	75	100	1	38	22	21	19	9.4	7.8	19 / 21	12	11	70	400	181.4
	A12B-100-24V	100	150	1	51	29	28	26	13	11	26 / 28	16	15	70	450	204.1
	A12B-125-24V	125	200	3	---	19	18	17	8.1	6.8*	17 / 18	11	9.4	70	525	238.1
	A12B-150-24V	150	200	3	---	23	22	20	9.8	8.2	20 / 22	13	12	72	630	285.8
	A12B-200-24V	200	250	3	---	30	29	26	13	11	26 / 29	17	16	27	825	374.2
	A12B-250-24V	250	300	3	---	38	36	33	17	14	33 / 36	21	19	27	880	399.2
	A12B-300-24V	300	400	3	---	46	43	40	20	17	40 / 43	25	23	27	940	426.4
	A12B-400-24V	400	600	3	---	61	57	53	26	22	53 / 57	33	31	47	1350	612.4
48 volt systems (24L, 36, 37 or 38NC)	A12B-3-48V	3	10	1	3	1.7	1.6	1.5	---	---	1.5 / 1.6	---	---	7	85	38.6
	A12B-6-48V	6	15	1	6	3.5	3.3	3	---	---	3 / 3.3	---	---	3	90	40.8
	A12B-10-48V	10	20	1	10	5.8	5.5	5	2.5*	2.1*	5 / 5.5	3.2*	2.9*	3	140	63.5
	A12B-15-48V	15	25	1	15	8.7	8.2	7.5	3.8*	3.1*	7.5 / 8.2	4.7*	4.3*	6	180	81.7
	A12B-20-48V	20	30	1	21	12	11	10	5*	4.2*	10 / 11	6.3*	5.8*	6	205	93.0
	A12B-25-48V	25	35	1	26	15	14	13	6.3*	5.2*	13 / 14	7.9	7.2	6	240	108.9
	A12B-30-48V	30	40	1	31	18	17	15	7.5	6.3*	15 / 17	9.5	8.7	6	265	120.2
	A12B-40-48V	40	60	1	41	24	22	21	10	8.4	21 / 22	13	12	6	275	124.7
	A12B-50-48V	50	80	1	51	29	28	26	13	11	26 / 28	16	15	8A	355	161.0
	A12B-60-48V	60	80	3	---	18	17	16	7.8	6.5*	16 / 17	9.9	9	8A	400	181.4
	A12B-75-48V	75	100	3	---	23	22	20	9.8	8.2	20 / 22	13	12	72	525	238.1
	A12B-100-48V	100	150	3	---	30	29	26	13	11	26 / 29	17	16	72	625	283.5
	A12B-125-48V	125	200	3	---	38	36	33	17	14	33 / 36	21	19	72	700	317.5
	A12B-150-48V	150	200	3	---	46	43	40	20	17	40 / 43	25	23	27	850	385.6
	A12B-175-48V	175	250	3	---	53	50	46	23	19	46 / 50	29	27	27	1000	453.6
	A12B-200-48V	200	250	3	---	61	57	53	26	22	53 / 57	33	31	27	1150	521.6
	A12B-250-48V	250	300	3	---	76	71	66	33	28	66 / 71	42	38	47	1400	635.0
	A12B-300-48V	300	400	3	---	91	86	79	40	33	79 / 86	50	46	47	1700	771.1
	A12B-400-48V	400	600	3	---	*121*	*114*	105	53	44	105 / 114	66	61	47	1800	816.5
130 volt systems (58 or 60L, 92, 93, 96 or 97NC)	A12B-3-130V	3	10	1	7.5	4.3	4.1	3.8	---	---	3.8 / 4.1	---	---	3	140	63.5
	A12B-6-130V	6	15	1	15	8.7	8.2	7.5	---	---	7.5 / 8.2	4.7*	---	3	140	63.5
	A12B-10-130V	10	20	1	26	15	14	13	6.3*	5.2*	13 / 14	7.9	7.2	6	225	102.1
	A12B-15-130V	15	25	1	38	22	21	19	9.4	7.8	19 / 21	12	11	6	250	113.4
	A12B-20-130V	20	30	1	51	29	28	26	13	11	26 / 28	16	15	6	270	122.5
	A12B-25-130V	25	35	1	*63*	37	35	32	16	14	32 / 35	20	19	8A	355	161.0
	A12B-30-130V	30	40	1	*76*	44	41	38	19	16	38 / 41	24	22	8A	390	176.9
	A12B-35-130V	35	50	1	*88*	51	48	44	22	19	44 / 48	28	26	72	505	229.1
				3	---	27	25	23	12	9.5	23 / 25	15	14	72	580	263.1
	A12B-40-130V	40	60	1	*101*	58	55	51	26	21	51 / 55	32	29	72	550	249.5
				3	---	30	29	26	13	11	26 / 29	17	16	72	625	283.5
	A12B-50-130V	50	80	3	---	38	36	33	17	14	33 / 36	21	19	72	645	292.6
	A12B-60-130V	60	80	3	---	46	43	40	20	17	40 / 43	25	23	27	865	392.4
	A12B-75-130V	75	100	3	---	57	54	49	25	21	49 / 54	31	29	27	930	421.9
	A12B-100-130V	100	150	3	---	76	71	66	33	28	66 / 71	42	38	27	1040	471.7
	A12B-125-130V	125	200	3	---	94	89	82	41	34	82 / 89	52	48	47	1500	680.4
	A12B-150-130V	150	200	3	---	*113*	*107*	*98*	49	41	*98* / *107*	62	57	47	1800	816.5
	A12B-175-130V [3]	175	250	3	---	*132*	*125*	*114*	57	48	*114* / *125*	72	66	47	1950	884.5
	A12B-200-130V [3]	200	250	3	---	*151*	*142*	*131*	66	55	*131* / *142*	83	76	47	2100	952.6
	A12B-250-130V [3]	250	300	3	---	*188*	*178*	*163*	82	68	*163* / *178*	103	95	47	2300	1043.3
	A12B-300-130V [3]	300	400	3	---	*226*	*214*	*196*	98	82	*196* / *214*	124	113	47	2400	1088.6
	A12B-400-130V [3]	400	600	3	---	*301*	*285*	*261*	131	109	*261* / *285*	165	151	57	2550	1156.7

*[1] Optional DC Breaker when ordered in lieu of standard fuse(s) may slightly differ in ratings. AC Draws shown with asterisk * are not available with Optional AC Breaker.*
[2] AC Current Draws based @ 100% load and standard battery cells of 6L (12V), 12L (24V), 24L (48V) and 60L (130V). Maximum Current Draw is 120% of ratings shown. AC Current draws shown in Italics have high current draws for their specific input voltages - verification of input power requirement should be done prior to ordering.
[3] Denotes units not U.L. Listed [4] 50Hz units are not U.L. listed.
[5] Case sizes shown are for standard 60Hz units and may differ depending on optional accessories and/or 50Hz input. Please consult factory when dimensions are critical.

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Case Specifications

Case No.	Overall Dimensions					
	Width		Depth		Height	
	in	mm	in	mm	in	mm
3	15.375	391	11.000	279	23.750	603
6	25.580	650	13.935	354	28.000	711
7	14.250	362	10.625	270	19.875	505
8A	27.200	691	15.250	387	32.500	826
27	27.312	694	25.875	657	56.125	1426
47	38.000	965	39.375	1000	70.000	1778
57	60.000	1524	36.000	914	80.000	2032
70	27.000	686	19.000	483	41.000	1041
72	27.000	686	23.500	597	44.500	1130

Case No.	Cable Entry (when facing unit)		Mounting
	AC input	DC output	
3	RIGHT	LEFT	WALL / FLOOR
6	RIGHT / TOP / BOTTOM	LEFT / TOP / BOTTOM	WALL / FLOOR
7	RIGHT	LEFT	WALL / FLOOR
8A	RIGHT	LEFT	FLOOR
27	TOP	TOP	FLOOR
47	TOP / BOTTOM	TOP / BOTTOM	FLOOR
57	BOTTOM	BOTTOM	FLOOR
70	RIGHT / BOTTOM	LEFT / BOTTOM	FLOOR
72	RIGHT / BOTTOM	BOTTOM	FLOOR

Case sizes may differ depending on optional accessories and / or 50Hz input. Please consult factory when dimensions are critical.
Dimensions shown above are overall footprint. Detailed dimensions drawings are available for mounting purposes.

Model Number Nomenclature

A12B - 15 - 130V - ( ) ( ) 1 - ( ) - ( )

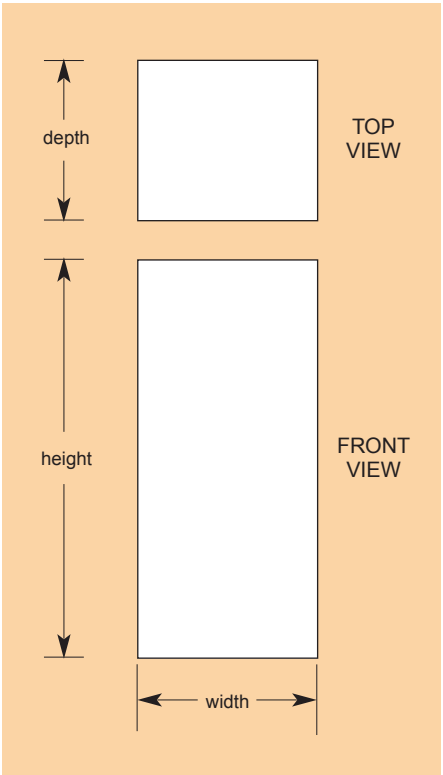
- Model Number
- DC Amps
- DC Volts
- Factory Assigned Accessory Code
- Battery Cell Range
- AC Phase Code
- AC Voltage(s) Codes
- Special Frequency When Required *

AC Phase Codes
1 - Single Phase
3 - Three Phase

AC Voltage Codes

60Hz	50Hz
A - 120	B L - 240/220
D - 208	G - 380
L - 220	J - 415
B - 240	
C - 480	
E - 575	

Special Frequency Code
5 - 50Hz
* 60Hz standard unless special code is entered



Ordering Information

When ordering, please specify:

- La Marche Model Number A12B
- Input Voltage, Frequency, Phase
- Number and Type of Battery Cells
- Ampere Hour Capacity of Battery
- Intermittent DC Loads and Duration
- Continous DC Load
- Allowable Recharge Time from Full Discharge (where applicable)
- Optional Accessories
- Verify AC Input Current Draw

La MARCHE®
ISO 9001:2000 CERTIFIED

TPSD

Battery Charger / Power Supply / Battery Eliminator

Standard TPSD Unit Shown Above

TruPowerSource Filtered Battery Charger / Power Supply / Battery Eliminator

The La Marche TPSD Filtered Battery Charger / Power Supply / Battery Eliminator is controlled Ferroresonant technology ideally suited for Switchgear and Process Control applications. It is designed to carry continuous loads up to its maximum rated output. The MTBF (Mean Time Between Failure) is conservatively rated at 225,000 hours at 50°C, assuring longevity and a higher return for your dollar.

The TPSD assures the quality, reliability and performance you have come to expect from La Marche.

Standard Features

- Controlled Ferroresonant Microprocessor
- Automatic DC Voltage Regulation
- Automatic AC Voltage Compensation
- AC & DC Surge Protection (MOV's)
- AC Input Circuit Breaker
- DC Output Circuit Breaker or Fuse
- Digital Meter Display & Alarm Indicators
- Local & Remote Equalize
- Local & Remote Output Voltage Sensing
- Float/Equalize Mode Switching & Lights
- Output Load Current Sharing
- Internal Temperature Compensation
- AC Power Failure Relay with Form "C" Contacts
- U.L. 1012 Listed (for all 60Hz Units)
- 5-Year Limited Warranty

Options

017 DC Breaker 2-Pole (Standard on some units) see chart on pg. 3 for further details.

01D 2-Pole High Interrupting Capacity AC Breaker 65KAIC 480VAC. Only available for units with current draws above 12 amps.

01G 3-Pole High Interrupting Capacity AC Breaker 65KAIC 480VAC. Only available for units with current draws above 12 amps.

102 Blocking Diode

11W External Temperature Probe 22ft

11Y External Temperature Probe 100ft

11L Lightning Arrestor

21S Serial Data Port - Modbus RTU

21P DNP3 Communications / SCADA

21Q Modbus Communications / SCADA

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

06V Second Digital Meter - DC Volts Only

38G ABS Type Approval

MADE IN U.S.A.
Specifications subject to change without notice
P25-DSTPSD-1
ECN 18726
06/10

La Marche Mfg. (A U.S. Company)
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sales@lamarchemfg.com
www.lamarchemfg.com

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Specifications

ELECTRICAL

- **AC Input**
  Voltage range: +/- 10% from nominal
  Frequency range: +/- 5%
- **Single Phase models:**
  A1: 120VAC/1/60Hz
  ABD1: 120/240/208VAC/1/60Hz
  BLD1: 240/220/208VAC/1/60Hz
  C1: 480VAC/1/60Hz
  5BL1: 240/220VAC/1/50Hz
- **Three Phase models:**
  BD3: 240/208VAC/3/60Hz
  C3: 480VAC/3/60Hz
  5G3: 380VAC/3/50Hz
- **DC Output**
  DC Amps: 6 to 200 amperes
  DC Volts: 24, 48 & 130VDC
  DC Output Voltage Range - a chart is provided on the last page of this data sheet.
- **Output Filtering (With or without a battery)**
  30mV RMS for single phase models and 100mV RMS for three phase models.
- **DC Voltage Regulation** Steady-State
  +/- 0.5% of setting from no load to full load over the specified input voltage, frequency and ambient temperature ranges.
- **Dynamic Response (On Battery)**
  Maximum Voltage Transient will not exceed +/- 5% of initial steady-state voltage for a step change from 20 to 100% of the full rated load. Recovery to steady-state voltage regulation does not exceed 200ms and all transient behavior disappears within 500ms.
- **Audible Noise**
  Less than 65dBA at any point 5 feet from any vertical surface of the enclosure.
- **Load Sharing**
  Load sharing terminal located inside of unit. When connected, identical La Marche Units are forced to share the load within +/- 5% for individual unit outputs greater than 15% of the rated output.

PROTECTION

- **Current Walk-in**
  The output current will gradually increase after the charger is turned on, eliminating surges and overshoot.
- **Current Limit**
  The chargers have an inherent magnetic current limiting feature. Electronic current limiting control circuitry provides for an adjustable value of 50 to 115% of the rated output current.
- **AC Breaker**
  Single Phase Units:
  A two-pole breaker opens both legs of the AC service to 208VAC and 240VAC. Breaker opens phase side of 120VAC service.
  Three Phase Units:
  A three-pole breaker opens all three legs of the AC service.
- **DC Breaker & DC Fuse**
  Standard units are equipped with a fuse or a 2-pole circuit breaker. For units equipped with a fuse, an optional breaker is available. Refer to the model chart on the next page for further details.

ENVIRONMENTAL

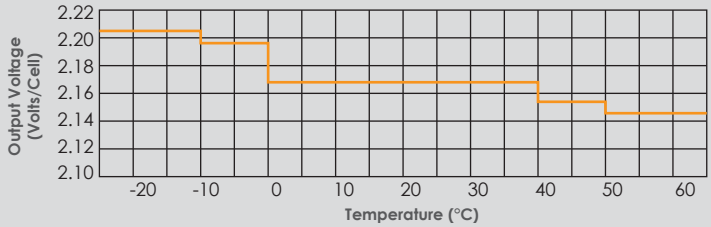
- **Operating Temperature**
  0 to 50° C (32 to 122° F)
- **Storage Temperature**
  -40 to 85° C (-40 to 185° F)
- **Relative Humidity**
  0 to 95% (non-condensing)
- **Cooling**
  Convection Cooled

ENCLOSURES

- **Dimensions**
  Overall dimensions and weights are listed on the last page. Case specifications are subject to change due to innovative product development and design. When space requirements are critical, please consult the factory.
- **Mounting**
  Our enclosures are very versatile. Some units can be wall, floor or rack mounted and others can be wall or floor mounted. See the Case Specifications Chart on the last page of this data sheet for further details.
- **Finish**
  Pretreated with three step iron phosphate wash and deionized rinse. Finished with environmentally safe water based ANSI 61 gray baked enamel.

TEMPERATURE COMPENSATION

The TPSD units feature Temperature Compensation circuitry. An ambient temperature probe is mounted inside the unit. The Temperature Compensation mode may be selected on the TPSD control to temperature compensate the output voltage in steps that approximate -.001V/cell/degree C as shown below.



Digital Meter Display & Alarm Indicators

The TPSD is equipped with a handy and user-friendly Digital Meter Display and Alarm Indicators located on the front panel of the unit.

PANEL FEATURES INCLUDE:

- Float/Equalize mode lights
- AC "ON" green indicator light
- Low DC Current, Low DC Voltage, High DC Voltage, Positive/Negative Ground Detection and Summary Alarm and Lights with (2) sets of Form "C" contacts.
- Potentiometers to adjust the current limit, float and equalize voltages.
- High DC Voltage Shutdown Alarm and Light with (1) set of Form "C" contact.
- A switch that controls 2 different functions:
  a) An Automatic Electronic Equalize Timer to initiate an Equalize charge for the batteries.
  b) A selectable Digital Amp/Volt meter allows the operator to choose if the digital display will show the system current or voltage. Status indicator lights give a visual indication of which option has been selected.
- A switch that tests the Ground Detection LED.

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TPSD Charger Chart

1-Phase

	Model Number	DC Amps	DC Protection		60Hz										50Hz (4)				Heat Loss (5) BTU's/ Hour	Case No.
					AC Current Draw (1)/ Recommended Feeder AC Supply Breaker								Shipping Weight		AC Current Draw (1) Feeder AC Supply Breaker		Shipping Weight			
			DC Fuse	DC Breaker/ Rating	A1 120	ABD1 120/240/208	BLD1 240/220/208	Feeder** Breaker Size	Rating	C1 480V	Feeder** Breaker Size	Rating	lb	kg	5BL1 240/220	Feeder** Breaker Size	lb	kg		
24V (2) (12L or 20NC)	TPSD-6-24V	6	---	10 / 7.5kaic	2	---	---	5	2kaic	---	---	---	90	40.8	---	---	---	---	119	4B
	TPSD-12-24V	12	---	15 / 7.5kaic	4	---	---	10	2kaic	---	---	---	90	40.8	---	---	---	---	238	4B
	TPSD-20-24V	20	---	30 / 7.5kaic	---	6.7 / 3.4 / 3.9	---	10 / 5 / 5	5kaic	---	---	---	100	45.4	3.4 / 3.7	5 / 5	110	49.8	396	4
	TPSD-25-24V	25	---	40 / 7.5kaic	---	8.4 / 4.2 / 4.9	---	15 / 10 / 10	5kaic	---	---	---	125	56.7	4.2 / 4.6	10 / 10	138	62.6	495	4
	TPSD-30-24V	30	---	40 / 7.5kaic	---	11 / 5 / 5.8	---	15 / 10 / 10	5kaic	---	---	---	150	68.0	5.0 / 5.5	10 / 10	165	74.8	405	4
	TPSD-35-24V	35	---	50 / 7.5kaic	---	12 / 5.9 / 6.8	---	20 / 10 / 10	5kaic	---	---	---	154	69.9	5.9 / 6.4	10 / 10	170	77.1	472	4
	TPSD-50-24V	50	---	70 / 7.5kaic	---	17 / 8.4 / 9.7	---	30 / 15 / 15	5kaic	---	---	---	175	79.4	8.4 / 9.2	15 / 15	193	87.5	674	4
	TPSD-75-24V	75	---	100 / 7.5kaic	---	26 / 13 / 15	---	40 / 20 / 20	5kaic	6.3	10	5kaic	211	95.7	13 / 14	20 / 20	233	105.7	1011	4
	TPSD-100-24V	100	130	Optional*	---	34 / 17 / 20	---	40 / 20 / 20	5kaic	8.4	15	5kaic	225	102.1	17 / 19	25 / 25	248	112.5	1347	9
48V (2) (24L or 37NC)	TPSD-6-48V	6	---	10 / 7.5kaic	4	---	---	10	2kaic	---	---	---	90	40.8	---	---	---	---	191	4B
	TPSD-12-48V	12	---	15 / 7.5kaic	8.1	---	---	15	2kaic	---	---	---	110	49.9	---	---	---	---	382	4B
	TPSD-20-48V	20	---	30 / 7.5kaic	---	14 / 6.7 / 7.8	---	20 / 10 / 10	5kaic	---	---	---	150	68.0	6.7 / 7.3	10 / 10	165	74.8	637	4
	TPSD-25-48V	25	---	40 / 7.5kaic	---	17 / 8.4 / 9.7	---	30 / 15 / 15	5kaic	---	---	---	150	68.0	8.4 / 9.2	15 / 15	165	74.8	796	4
	TPSD-30-48V	30	---	40 / 7.5kaic	---	21 / 11 / 12	---	30 / 15 / 15	5kaic	---	---	---	155	70.3	11 / 11	15 / 15	171	77.6	601	4
	TPSD-35-48V	35	---	50 / 7.5kaic	---	24 / 12 / 14	---	40 / 20 / 20	5kaic	5.9	10	5kaic	180	81.7	12 / 13	20 / 20	198	89.8	702	4
	TPSD-50-48V	50	---	70 / 7.5kaic	---	34 / 17 / 20	---	40 / 20 / 20	5kaic	8.4	15	5kaic	205	93.0	17 / 19	25 / 25	225	102.1	1002	4
	TPSD-75-48V	75	---	100 / 7.5kaic	---	51 / 26 / 30	---	70 / 35 / 35	5kaic	13	20	5kaic	295	133.8	26 / 28	40 / 40	325	147.4	1503	9
	TPSD-100-48V	100	130	Optional*	---	---	34 / 37 / 39	50 / 50 / 50	5kaic	17	25	5kaic	321	145.6	34 / 37	50 / 50	354	160.6	2004	9
130V (2) (58L or 60L, 92NC or 96NC)	TPSD-6-130V	6	---	10 / 5kaic	---	11 / 5 / 5.8	---	20 / 10 / 10	5kaic	---	---	---	140	63.5	5.0 / 5.5	10 / 10	154	69.9	478	4
	TPSD-12-130V	12	---	15 / 10kaic	---	21 / 11 / 12	---	30 / 15 / 15	5kaic	---	---	---	175	79.4	11 / 11	15 / 15	193	87.5	955	4
	TPSD-20-130V	20	---	30 / 10kaic	---	34 / 17 / 20	---	50 / 25 / 25	5kaic	8.4	15	5kaic	225	102.1	17 / 19	25 / 25	233	105.7	1591	4
	TPSD-25-130V	25	---	40 / 10kaic	---	42 / 21 / 25	---	60 / 30 / 30	5kaic	11	15	5kaic	250	113.4	21 / 23	30 / 30	275	124.7	1989	4
	TPSD-30-130V	30	---	40 / 10kaic	---	51 / 26 / 30	---	60 / 30 / 30	5kaic	13	15	5kaic	319	144.7	26 / 28	40 / 40	352	159.7	1503	9
	TPSD-35-130V	35	---	50 / 10kaic	---	59 / 30 / 34	---	80 / 40 / 40	5kaic	15	20	5kaic	372	168.7	30 / 33	45 / 45	410	186	1753	9
	TPSD-50-130V	50	---	70 / 10kaic	---	---	42 / 46 / 49	60 / 60 / 70	5kaic	21	25	5kaic	532	241.3	42 / 46	60 / 60	586	265.8	2504	9

** Optional DC Breaker is rated at 10kaic.*
*** Recommended Breaker Size*

3-Phase

	Model Number	DC Amps	DC Protection		60Hz								50Hz (4)				Heat Loss (5) BTU's/ Hour	Case No.
					AC Current Draw (1)/ Recommended Feeder AC Supply Breaker						Shipping Weight		AC Current Draw (1) Feeder AC Supply Breaker		Shipping Weight			
			DC Fuse	DC Breaker/ Rating	BD3 240/208V	Feeder** Breaker Size	Rating	C3 480	Feeder** Breaker Size	Rating	lb	kg	5G3 380V	Feeder** Breaker Size	lb	kg		
24V (2) (12L or 20NC)	TPSD-75-24V	75	---	100 / 7.5kaic	6.3 / 7.3	10 / 10	5kaic	---	---	---	400	181.4	---	---	---	---	752	72
	TPSD-100-24V	100	130	Optional*	8.5 / 9.8	15 / 15	5kaic	---	---	---	475	215.5	---	---	---	---	1002	72
	TPSD-150-24V	150	200	Optional*	13 / 15	20 / 20	5kaic	6.3	15	5kaic	530	240.4	---	---	---	---	1503	72
	TPSD-200-24V	200	250	Optional*	17 / 20	25 / 25	5kaic	8.5	15	5kaic	600	272.2	---	---	---	---	2004	72
48V (2) (24L or 37NC)	TPSD-50-48V	50	---	70 / 7.5kaic	8.5 / 9.8	15 / 15	5kaic	---	---	---	400	181.4	---	---	---	---	1002	72
	TPSD-75-48V	75	---	100 / 7.5kaic	13 / 15	25 / 25	5kaic	6.3	10	5kaic	575	260.8	---	---	---	---	1503	72
	TPSD-100-48V	100	130	Optional*	17 / 20	30 / 30	5kaic	8.5	15	5kaic	600	272.2	---	---	---	---	2004	72
	TPSD-150-48V	150	200	Optional*	26 / 30	40 / 40	5kaic	13	200	5kaic	700	317.5	---	---	---	---	3005	72
	TPSD-200-48V	200	250	Optional*	34 / 40	60 / 60	5kaic	17	25	5kaic	755	342.5	---	---	---	---	4007	72
130V (2) (58L or 60L, 92NC or 96NC)	TPSD-25-130V	25	---	40 / 10kaic	11 / 13	20 / 20	5kaic	---	---	---	420	190.5	---	---	---	---	1252	72
	TPSD-30-130V	30	---	40 / 10kaic	13 / 15	20 / 20	5kaic	6.3	10	5kaic	490	222.3	---	---	---	---	1503	72
	TPSD-35-130V	35	---	50 / 10kaic	15 / 18	25 / 25	5kaic	7.4	10	5kaic	550	249.5	---	---	---	---	1753	72
	TPSD-50-130V	50	---	70 / 10kaic	22 / 25	35 /35	5kaic	11	20	5kaic	600	272.2	---	---	---	---	2504	72
	TPSD-75-130V	75	100	Optional*	32 / 37	50 / 50	5kaic	16	25	5kaic	660	299.4	20	30	727	329.8	3756	72
	TPSD-100-130V	100	130	Optional*	43 / 49	70 / 70	5kaic	22	30	5kaic	800	362.9	27	35	882	400.1	5008	72
	TPSD-125-130V (3)	125	200	Optional*	53 (3) / 61 (3)	80 / 80	5kaic	27 (3)	40	5kaic	850	385.6	---	---	---	---	6260	44
	TPSD-150-130V (3)	150	200	Optional*	64 (3) / 74 (3)	100 / 100	5kaic	32 (3)	45	5kaic	900	408.2	---	---	---	---	7512	44

** Optional DC Breaker is rated at 10kaic.*
*** Recommended Breaker Size*
(1) AC Current Draws based @ 100% load and standard battery cells of 12L (24V), 24L (48V) and 60L (130V). Maximum Current Draw is 115% of ratings shown.
(2) Must specify only one battery type and number of cells from range shown above. Please consult factory for other available cell ranges if desired range not shown.
(3) Consult Factory for lead times on these units.
(4) 50Hz units are not U.L. listed.
(5) BTU's are based on 12L (24V), 24L (48V) and 60L (130V). Heat loss is stated for nominal float voltage, 100% output current and nominal AC line.

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Case Specifications

Case No.	Overall Dimensions					
	Width		Depth		Height	
	in	mm	in	mm	in	mm
4B*	19.000	483	15.000	381	12.250*	311*
4*	19.000	483	15.000	381	24.000*	610*
9*	23.000	584	15.000	381	36.000*	914*
72	27.000	686	23.500	597	44.500	1130
44	24.000	610	19.000	483	72.100	1831

Case sizes may differ depending on optional accessories. Consult factory when dimensions are critical. Detailed dimensional drawings are available for mounting purposes. *Floor mounting brackets adds 2" (51mm) to overall height.

Case No.	Cable Entry (when facing unit)		Mounting
	AC input	DC output	
4B*	RIGHT	LEFT	19/23" RACK, WALL / FLOOR
4*	RIGHT	LEFT	19/23" RACK, WALL / FLOOR
9*	TOP RIGHT	TOP LEFT	23" RACK, WALL / FLOOR
72	RIGHT / BOTTOM	BOTTOM	FLOOR
44	LEFT	RIGHT	FLOOR

Adjustable DC Output Voltage Range

	Battery Cell Type Code	Float		Equalize	
		Min	Max	Min	Max
24V	12L	25.44	27.60	27.00	28.80
	20N	27.80	29.00	30.00	32.00
48V	24L	50.88	55.20	54.00	57.60
	37N	51.43	53.65	55.50	59.20
130V	58L	122.96	133.40	130.50	139.20
	60L	127.20	138.00	135.00	144.00
	92N	127.88	133.40	138.00	147.20
	96N	133.44	139.20	144.00	153.60

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)

Model Number Nomenclature

TPSD - 25 - 130V - ( ) ( ) ( ) - ( ) - ( )

- Model Number
- DC Amps
- DC Volts
- Special Frequency When Required *
- AC Voltage(s) Code(s)
- AC Phase Code
- Battery Cell Range
- Factory Assigned Accessory Code

Special Frequency Code
5 - 50Hz
* 60Hz standard unless special code is entered

AC Voltage Codes
A - 120
C - 480
G - 380
BD - 240/208
BL - 240/220
ABD - 120/240/208
BLD - 240/220/208

AC Phase Codes
1 - Single Phase
3 - Three Phase

Battery Cell Type Code
12L 20N
24L 37N
58L 92N
60L 96N

L = Lead Acid
N = Nickel Cadmium

Ordering Information

When ordering, please specify:

- La Marche Model Number TPSD
- DC Amps
- DC Volts
- Special Frequency, When Required
- AC Voltage Code
- AC Phase Code
- Battery Cell Type Code
- Optional Accessories (Option Code)

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La MARCHE®

ISO 9001:2000 CERTIFIED

A39
UNIVERSAL SCR CHARGER

Model Shown A39-60-90V-BD1

Universal SCR Charger

The La Marche model A39 charger is a microprocessor controlled SCR charger with adjustable output voltage, current limit and charge timer. This charger is designed to provide the battery charging flexibility needed for maintenance shops and other locations with various charging requirements.

This charger may be used as a constant current charger where the open circuit voltage can be adjusted or as a constant voltage charger with 1% regulation. The voltage and current limit adjusts from 5% to 100% of the rated value. This provides the flexibilty to charge a wide range of Lead Acid or Ni-Cad battery cells. The charge timer range adjusts between 30 minutes to 99 hours in 30 minute increments.

A “Select” push-button changes the display function from AMPS, VOLTS, AMP HOURS RETURNED or TIME. The initial voltage setting is derived from the actual battery voltage when the battery is connected.

The model A39 will start upon connection to a battery and closure of the AC or optional DC breaker and will “Auto-Stop” when the charge cycle is terminated by action of a normal charge complete or opening the circuit breaker.

Standard Features

- Microprocessor Control
- Auto Start/Stop Circuitry
- Constant Current Mode Charging
- Wide Current, Voltage & Timer Ranges
- AC Breaker
- DC Breaker (Single Phase Units)
- Automatic Surge protection
- Digital Display
  - Voltage
  - Current
  - Timer Hours
  - AMP-Hours Returned
  - Voltage Setting
  - Current Setting
  - Timer Setting
- LED Lights for:
  - “ON” Charger
  - Charge Complete
  - Amps
  - Volts
  - Amp Hours
  - Elapsed Time
- Digital Ajustable
  - Output Voltage
  - Current Limit
  - Charger Timer
- Fault Mode Diagnostics
- Ten-foot Output Cable with Gray SB Type Connector

Optional

- DC Circuit Breaker (Three Phase Units)
- Safety Door Switch
- Mobile Caster Kit (Not Available for 480 VAC)
- Zero Volt Battery Start

Made in USA

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106 Bradrock Drive, Des Plaines, IL 60018-1967
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sales@lamarchemfg.com www.lamarchemfg.com

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A39
Universal SCR Charger

Model	DC Output			Cells		AC Input	Case	Aprox. Weight (Lbs)
	Amps	Volts	Breaker	Lead	Nickel			
A39-60-30V-ABD1	60	30	Included	1 - 12	2 - 20	120/240/208 VAC - 1 PH.	6	175
A39-20-60V-ABD1	20	60	Included	3 - 24	6 - 40	120/240/208 VAC - 1 PH.	6	130
A39-40-60V-ABD1	40		Included			120/240/208 VAC - 1 PH.	6	190
A39-100-60V-BD3	100		Optional			240/208 VAC - 3 PH.	8A	325
A39-150-60V-BD3	150		Optional			240/208 VAC - 3 PH.	8A	350
A39-200-60V-BD3	200		Optional			240/208 VAC - 3 PH.	70	450
A39-100-60V-C3	100		Optional			480 VAC - 3 PH.	8A	325
A39-150-60V-C3	150		Optional			480 VAC - 3 PH.	8A	350
A39-200-60V-C3	200		Optional			480 VAC - 3 PH.	70	450
A39-60-90V-BD1	60	90	Included	4 - 36	8 - 60	240/208 VAC - 1 PH.	6	300
A39-100-90V-BD3	100		Optional			240/208 VAC - 3 PH.	8A	350
A39-150-90V-BD3	150		Optional			240/208 VAC - 3 PH.	8A	565
A39-200-90V-BD3	200		Optional			240/208 VAC - 3 PH.	70	637
A39-100-90V-C3	100		Optional			480 VAC - 3 PH.	8A	350
A39-150-90V-C3	150		Optional			480 VAC - 3 PH.	8A	565
A39-200-90V-C3	200		Optional			480 VAC - 3 PH.	70	637
A39-30-150V-BD1	30	150	Included	6 - 60	12 - 106	240/208 VAC - 1 PH.	6	300
A39-50-150V-BD3	50		Optional			240/208 VAC - 3 PH.	8A	345
A39-100-150V-BD3	100		Optional			240/208 VAC - 3 PH.	8A	600
A39-150-150V-BD3	150		Optional			240/208 VAC - 3 PH.	27	640
A39-200-150V-BD3	200		Optional			240/208 VAC - 3 PH.	27	690
A39-100-150V-C3	100		Optional			480 VAC - 3 PH.	8A	345
A39-150-150V-C3	150		Optional			480 VAC - 3 PH.	27	600
A39-200-150V-C3	200		Optional			480 VAC - 3 PH.	27	690

Charger Specifications

Electrical

AC Input Voltages (60 Hz)
120/208/240 VAC single phase
240/208 VAC single or three phase
480 VAC three phase

DC Output Current
20 to 200 amps

DC Output Voltage Range
2-30 VDC
6-60 VDC
8-90 VDC
12-150 VDC

Operating Temperature
0° to 50° C

Regulation
1%

Finish
ANSI 61 baked enamel

Case Specifications

Case No.	Width in	Width mm	Depth in	Depth mm	Height in	Height mm	Mounting
6	25.5	650	13.9	354	28.0	711	Wall / Floor
8A	27.2	691	16.1	410	32.5	826	Floor
27	27.3	691	25.8	656	56.1	1425	Floor
70	27.0	686	19.0	483	41.0	1041	Floor

Model Number Nomenclature

A39 - 20 - 60V - ( ) ( )

- A39 - Model Number
- 20 - DC Amps
- 60V - DC Volts
- ( ) - AC Voltages
  - ABD - 120/240/208
  - BD - 240/208
  - C - 480
- ( ) - AC Phase Codes
  - 1 - Single Phase
  - 3 - Three Phase

Ordering Information

When ordering, please specify:

- La Marche Model Number
- Optional Accessories

Specifications subject to change without notice

P25-DSA39-1
ECN 17462
04/07

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La Marche A45E Battery Charger

DESIGN FEATURES

- Proven Mag Amp Technology
- Rugged Design, Built to Handle the Toughest Applications
- Automatic Current Limiting
- Automatic compensation for All AC Line Variations
- Simple, Solid State Design
- Easy to Operate
- Controlled Charging Cycle
- Available with Optional BOTE Ground Integrity System

Made In The USA

La Marche A45E Battery Charger — reliable charging capabilities combined with a superior monitoring system.

The La Marche A45E Battery Charger features an exclusive computer control system that automatically senses conditions the instant it is connected to a battery. It quickly determines the level of charge needed by the battery; reliably delivers the charge; and, maintains the charge at its optimum level for long-term battery performance.

The A45E monitoring system helps prevent both undercharging and over-charging. By delivering only the charge your battery needs, from start, through the gassing stage, to the finish charge, regardless of its charge level.

The charging curve of the A45E is easily adjusted to cover many battery designs and types. The exclusive La Marche Mag Amp technology provides automatic line compensation and adjustable DC output range through a specially designed input transformer and magnetic amplifier.

To minimize harmful temperature rise, the A45E is designed to return a maximum charge to the battery in the shortest possible time. Designed and built with La Marche quality inside and out, the A45E will service your batteries for years.

Call La Marche today for more details.

the powerful advantage™

laMARCHE®

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La Marche A45E Battery Charger
Technical Data

Ordering Information

When Ordering Please Specify the Following

- La Marche model number A45E
- AC input voltage, phase and Hz
- Number and type of battery cells
- Ampere hour capacity of battery
- Standard recharging time is eight hours

Instant Decision Making

The A45E instantly analyzes DC current, DC voltage, AC voltage and power line frequency to provide a constant update on both battery and line conditions. The La Marche A45E also offers a wide spectrum of data and control function.

Push-button Data Selection

Utilizing an LED digital display, any of four operating parameters may be called up. Each push of the button advances the display one function from left to right. The operating parameters are updated automatically every 60 seconds. And, in the event of a power loss, all vital information is retained in the A45E's computer memory.

Output Amperes

The A45E displays actual output current within 1 amp.

Output Voltage

The A45E displays actual output voltage within .1 volts.

Ampere Hours Returned

The A45E displays accumulated amp hours returned to the battery from the start of the charge cycle.

Elapsed Time Display

The A45E can easily determine, at any time, the total accumulated charging time by selecting the "Elapsed Time" function. Elapsed time is shown in hours and minutes.

Status Lights

Important information can be retrieved utilizing the A45E's status lights. The status report provide the following functions:

- Charger On
- 80% Charge
- Charger Complete
- Equalize
- Unit Failure

Equalize Control

The A45E equalize charge cycle brings all the cells up to the same charging level when the control panel "Equalize" function is selected. An automatic 12-hour timer, in conjunction with electronic equalize circuitry, provides full charge protection.

Back-up Timer

The A45E is available with a 12-hour back-up timer. In the event of a system failure, the charger will protect your battery by shutting down. The charger "Failure" light will illuminate any time the back-up timer is activated. During an AC power line failure, the back-up timer retains memory.

Standard Features

10' DC leads with charging connector *(SB, EC or YC)*

Digital LED Display and Status Lights

- Output Amperes
- Output Voltage
- Ampere Hours Returned
- Elapsed Time
- Failure Diagnostic Code

Digital LED Status Lights

- Charger On
- 80% Charged
- Charge Complete
- Equalized Charge
- Unit Failure

Charge Completion On

- Voltage Rate of Change *(DV/DT)*
- Three Hours After 80% Charge
- Six Hours After 80% Charge in Equalized Mode
- Battery-operated Back-up Timer

Control System

- Selectable 6-hour Equalize Charge Control
- Programmable Delayed Start
- Hold Time on AC Failure
- Resume Time on AC Line Return
- Fused AC Input and DC Output
- Internal Terminal Board for Easy Connection of AC Input and DC Output
- Back-up Timer *(12-hour override)*
- Failure Mode Diagnostics
- Fault Lock-out — Manual Reset on Failure Conditions
- Remote/Start/Stop Capability
- Verifies Battery Voltage and Polarity Before Starting
- Low Voltage Control Circuitry on All Models

Failure Diagnostics

The A45E will not only tell you that a failure has occurred by illuminating the "Failure" light, but it will also analyze the situation and instantly provide a numeric diagnostic code on the LED digital display. During a failure, the A45E automatically ceases charging operation.

Fault Lock-out

If the automatic charging mode is interrupted the A45E will shuts down. Once the failure condition has been corrected, the manual "On/Off" switch is used to clear the "Failure" condition LED light, allowing the charger to restart.

Multiple Input — Voltage Capability

Simple transformer tap charges can be used to select the available input voltage.

Specifications

Standard Electrical AC Input Voltages

120/208/240, 50/60 Hz, single-phase
208/240/480, 50/60 Hz, single-phase or 3-phase
480/575, 50/60 Hz, 3-phase

DC Output Combinations

DC Amps — 30 to 400, depending on AH capacity *(159-2,600 AH)* of the battery and allowable charge time *(eight hours typical)*.

DC volts

12 to 240 nominal, depending on the number and type of cells.

Mechanical

Exact dimensions and approximate weights are listed on individual A45E Price Sheets. Consult your La Marche representative or distributor for this information.

Finish

Bonderized silicone baked enamel, medium blue.

Mounting

Wall or floor mounting available *(depends on enclosure size)*.

Optional Accessories

- JIC Approved Enclosure — AC fused disconnect switch
- Fan-forced Cooling System
- 3-phase Input — where single-phase is indicated
- Special Paint
- Export Packaging
- Emergency Stop Button
- Two-circuit Sequence Control
- Three-circuit Sequencing Control

Warranty

La Marche equipment is warrantied to be free from any defect in workmanship and material that may develop within a period of one year from date of purchase. In addition, La Marche warrants its magnetics and power diodes on a part replacement basis only for nine more years. See the Industrial division Manufacturer's Warranty for details.

the powerful advantage™

LaMARCHE

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http://www.lamarche-power.com

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A75M
Mine Battery Charger (SCR)

Model Shown: A75M-xx-xxx

La Marche A75M Mine Battery Charger Utilizes SCR technology for Flexible Charging Requirements

The La Marche model A75M is a SCR controlled industrial battery charger for use on electric vehicle batteries. It is designed to recharge a battery of the proper amp-hour capacity in eight hours. Selectable output ranges (low, medium, high) allow charging a wide range of amp hour batteries.

These chargers feature automatic AC line voltage compensation, integral current limiting, controlled I.E. (constant current/constant voltage) charging cycle and more. The I.E. charge cycle provides constant current start charge rate followed by constant voltage finish rate. This gives the battery a complete and reliable charge. The charge rate is dependent on the state of charge of the battery.

The model A75M regulates the DC output current to produce the proper charging curve for the battery. The automatic AC line voltage compensation prevents variations on the DC charging curve that can occur due to surges or drops in AC line voltage. This design eliminates the need of voltage sensitive relays. The output of the charger is automatically limited to approximately 105% of its rating, thus preventing battery overheating or charger failure and assuring long life for both the battery and the charger.

All electronic components on the A75M are conservatively rated to exceed their functional requirements and provide excellent reliability. This process reduces the need for regular periodic maintenance. The A75M provides an extra margin of capacity by designing its magnetics utilizing a UL recognized 180° C class H insulating system. This system assures continuous operation under the most severe conditions present in mines.

Standard Features

- SCR based control
- Three selectable current ratings
- Automatic Start/Stop circuitry
- Adjustable DC output (Start/Finish Rate)
- AC input voltages of 480 / 575, 3 Phase, 60 cycle
- Microprocessor controlled
- 12 Hour override timer
- Equalize switch
- LEDs indicate:
  - ON Charge
  - 80% Complete
  - Equalize Mode
  - Failure Mode
- Digital Display indicates:
  - Volts
  - Amps
  - Amp hours returned
  - Elapsed time on charge
  - Error codes
- Operating Temperature 0 to 50°C (32 to 122°F)
- Limited 5 year warranty

Options

- Ground integrity system (PA spec)
- Manual Start & Stop Push Buttons
- Tropicalization (magnetics only)

Abnormal conditions such as a shorted cell, high ambient temperatures or a very old battery can interfere with the charging cycle and cause overheating. The A75M is equipped with an electronic control circuit board that limits the length of the charge cycle. This prevents inadvertent extended charging periods under abnormal conditions.

The unit is built to perform reliably under some of the worst conditions such as moisture, corrosive atmosphere, dirt, grime, and rugged handling.

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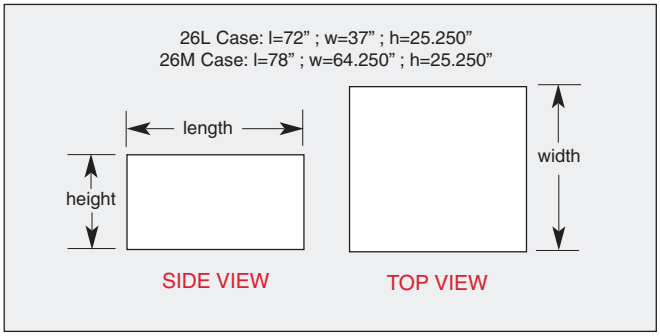
A75M
Mine Battery Charger (SCR)

Model Number			DC Output		Battery Amp-Hour Capcity 100% Discharge (8hr recharge @ High Selectable Rate)	AC Input Draw*		Case No.
			Amps (Max)	Volts		480 VAC	575 VAC	
128 VDC 64L	Single Circuit	A75M-150-64L	153	128	850	29/33/44	24/27/37	26L
		A75M-210-64L	216	128	1200	45/51/59	37/42/49	26L
		A75M-270-64L	270	128	1500	60/68/75	50/59/63	26L
		A75M-360-64L	360	128	2000	70/80/95	58/67/79	CF
	Dual Circuit	A75M2-150-64L	153	128	850	29/33/44	24/27/37	26M
		A75M2-210-64L	216	128	1200	45/51/59	37/42/49	26M
240 VDC 120L	Single Circuit	A75M-150-120L	153	240	850	62/68/85	52/57/71	26L
		A75M-210-120L	216	240	1200	79/87/109	66/73/91	CF
	Dual Circuit	A75M2-150-120L	153	240	850	62/68/85	52/57/71	26M
		A75M2-210-120L	216	240	1200	79/87/109	66/73/91	26M

All above models designed for optimal performance at 60Hz. Consult factory for units designed specifically at 50Hz. Please consult factory for availability of other DC cell ranges. *AC Current Draws based @ 100% load. Maximum Current Draw is typically 105% of ratings shown.

Case Dimensions



Dimensions shown above are overall footprint. Detailed dimension drawings are available for mounting purposes.

Selectable Output Ratings in DC Amps

Rating	Low (AH)	Med (AH)	High (AH)
150	101 (560)	122 (680)	153 (850)
210	157 (875)	180 (1000)	216 (1200)
270	216 (1200)	248 (1375)	270 (1500)
360	270 (1500)	320 (1800)	360 (2000)

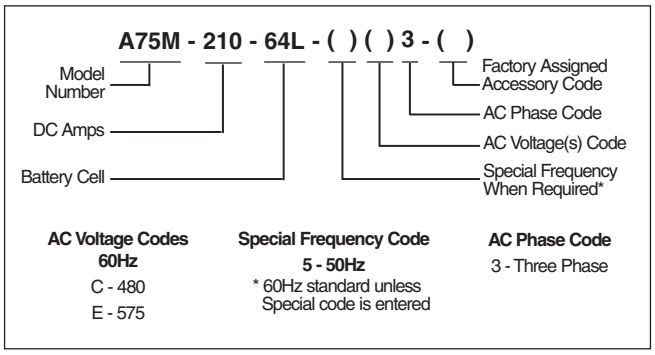
Optional Accessories

21M - Manual Start & Stop Push Buttons

093 - Tropicalization (magnetics only)

184 - Ground Integrity System (PA spec)

Model Number Nomenclature



Note: Units do not include AC and DC cables and connectors.

Ordering Information

When ordering, please specify:

- La Marche Model Number
- Input Voltage, Frequency, Phase
- Number and Type of Battery Cells
- Allowable Recharge Time from Full Discharge (where applicable)
- Optional Accessories

Specifications subject to change without notice

P25-DSA75M-1
ECN 17589
08-07

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A75R Series
SCR Railroad Battery Charger

Model shown: A75R-20-12V-AB1

SCR Railroad Applications

The La Marche model A75R series uses proven SCR charging technology and is developed specifically for the railroad market. It is typically used for signaling, highway crossing and motion detection systems where the battery is cycled frequently.

This filtered unit is designed and built to charge VRLA, Flooded Lead Acid and Nickel Cadmium batteries. Some of the features that make this product unique are remote shutdown, lightning protection and charger failure contacts to name a few. Remote shutdown allows you to place the charger offline for battery testing purposes.

The A75R series is equipped with AAR style hardware on the input and output connections. Temperature compensation is standard to increase the longevity of the batteries and charger. The unit is convection cooled and the components are designed to achieve MTBF in excess of 100,000 hours.

Standard Features

- Microprocessor Controlled SCR Charging Technology
- Single Phase AC Input 120/240V, 60Hz
- Automatic AC Input Voltage Compensation ±10%
- Complete Isolation from AC to DC
- Lightning Protection
- Temperature Compensation with Enable/Disable Switch
- DC Analog Ammeter and Digital Voltmeter
- Adjustable Current Limit from 50% to 105%
- Filtered Output for VRLA Batteries
- Remote Shutdown
- Form "C" Contact for Charger Failure
- Meets AREMA specifications
- Meets ANSI C62-41
- 3-Year Warranty

Specifications subject to change without notice
P25-DSA75R-1
ECN 18726
06/10

La Marche Mfg. (A U.S. Company)
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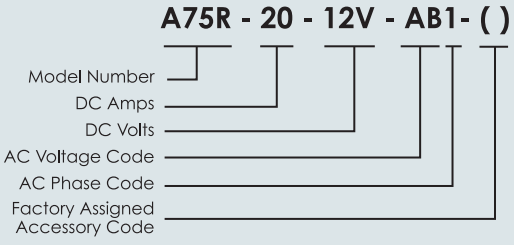
Model Number	DC Output				AC Input Current Draw @ 100% (load)	Overall Dimensions W x D x H	Shipping Weight	
	Amps	Volts (Nominal)	Battery Cells Lead Acid	Battery Cells Ni-Cad			lbs	kgs
A75R-10-12V-AB1	10	12	5-8	8-12	5.8 amps at 120 VAC 2.9 amps at 240 VAC	12" x 10" x 9" 305 x 254 x 228mm	38	17
A75R-20-12V-AB1	20	12	5-8	8-12	11.6 amps at 120 VAC 5.8 amps at 240 VAC	12" x 10" x 9" 305 x 254 x 228mm	42	19
A75R-40-12V-AB1	40	12	5-8	8-12	23.1 amps at 120 VAC 11.6 amps at 240 VAC	14" x 12" x 12" 356 x 305 x 305mm	72	33
A75R-30-24V-AB1	30	24	10-16	16-24	17.4 amps at 120 VAC 8.7 amps at 240 VAC	17" x 13.5" x 12" 432 x 343 x 305mm	85	39

Charger Specifications

- **AC Input**
  Dual Input 120/240 VAC ±10%
  Single Phase 60 Hz
- **Line Regulation**
  ±10%
- **Load Regulation**
  <±0.5%
- **Input Protection**
  Fuse with surge protection
- **Output Current Limit**
  Factory set at 100%, adjustable from 50-105%
- **Output Protection**
  DC breaker with surge protection
- **Meters**
  DC Output Digital Voltmeter (1%)
  DC Output Analog Ammeter (3%)
- **LED Indicators**
  Current Limit
  Temperature Compensation Disable
  AC On
  Nickel Cadmium
  Lead Acid
  Charger Fail
- **Environmental**
  Operating: 0° to 50°C (32° to 122°F) (Derated up to 70°)
  Storage: -40° to 85°C (-40° to 185°F)
  Relative Humidity: 0 to 95% non condensing

- **DC Output**
  12 Volts @ 10 Amps, 20 Amps and 40 Amps
  Lead Acid: 5L, 6L, 7L and 8L
  Ni-Cad: 8NC, 9NC, 10NC, 11NC, 12NC
  24 Volts @ 30 Amps
  Lead Acid: 10L, 12L, 14L and 16L
  Ni-Cad: 16NC, 18NC, 20NC, 22NC, 24NC
- **Adjustable Voltage Range (per cell)**
  Lead-Acid Cells: 2.15 VDC to 2.35 VDC
  Nickel-Cadmium: 1.39 VDC to 1.49 VDC
- **Mounting**
  The enclosures can be wall or shelf mounted
- **Cable Entry**
  Top
- **Finish**
  Powder coat finish (RAL 7032)
- **Standards**
  Meets AREMA specifications
  Meets ANSI C62-41
- **Optional**
  External Temperature Compensation Probe

Model Number Nomenclature



AC Phase Codes
AB- 120/240

AC Phase Code
1 - Single Phase

Ordering Information

When ordering, please specify:

- La Marche Model Number
- Input Voltage
- Number of Battery Cells
- A.H. Capacity of Battery
- Allowable Recharge Time from Full Discharge (where applicable)

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laMARCHE®

ISO 9001 CERTIFIED

A48/A48B

Centrifugal Fire Pump Battery Chargers Used On Sprinkler Systems

Model A48 shown above

Standard Features

- Magnetic Amplifier Circuitry Provides Increased Longevity and Worry-free Operation
- Automatic AC Input Voltage Compensation ±10%
- Automatic Surge Suppression
- AC Input and DC Output Fusing Protects Battery and Charger
- Automatic Float/High Rate Mode Switching
- Float/High Rate Lights (A48 model only)
- Charger Failure Alarm Relay with (1) form "C" Contact
- Automatic DC Voltage Regulation
- DC Current Limiting Circuitry (typically less than 125%) Eliminates the Need for Cranking Disconnect Relay
- 5% Accuracy Analog DC Ammeter & DC Voltmeter (A48 model only)
- Charger Design Prevents Battery from Discharging if AC Line Fails
- Complete Isolation of the AC Line from the DC Charging Circuit
- 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
- AC Input Voltages of 120, 208 or 240, Single Phase, 60Hz
- NEMA 1 Enclosure ANSI 61 Gray Baked Enamel Paint (A48 model only)
- All A48 and A48B models are UL 1236 and CSA Listed
- **Industry's unparalleled 10-year Warranty**

For Charging Batteries on Internal Combustion Engines Driving Centrifugal Fire Pumps Used On Sprinkler Systems

The LaMarche A48 and A48B (Base Plate Version) Battery Chargers are specifically designed for maintaining and recharging the dual-battery starting system used on engine driven centrifugal fire pumps for sprinkler systems. Both the A48 and A48B models are available in 12 or 24 Volt DC output for either positive or negative ground starting systems. The Battery Chargers comply with the standard of the National Fire Protection Association (NFPA No. 20).

The controlled magnetic amplifier technology provides the highest reliability that is necessary for the continued operation of emergency standby equipment and eliminates most starting problems by maintaining batteries at full charge, ensuring optimum performance and maximum life.

The A48/A48B is a completely automatic, solid state, constant voltage Battery Charger built to carry continuous and intermittent loads up to 80% of its maximum rated output capacity. It automatically senses the battery and load conditions and delivers the necessary amount of charge.

The A48/A48B Battery Chargers are equipped with a built-in charge divider circuit to isolate and charge two separate sets of batteries of the same nominal DC Voltage either independently or simultaneously. The operation is completely automatic–a voltage sensing relay is provided to automatically transfer the output of the Battery Charger to the high rate charge mode, after engine cranking or following a power failure. This will bring the batteries to a fully charged state within 24 hours. Once the batteries are fully charged, the relay will automatically transfer the charge rate back to the Float rate to prevent overcharging and protect the batteries.

The A48/A48B Battery Chargers are designed and built for use on Flooded Lead-Acid or Nickel-Cadmium Batteries and are not suitable to charge Sealed Valve-Regulated Batteries since these require output filtering such as a Power Supply *(see our model A12B for this type of application).*

The Controlled Magnetic Amplifier circuitry provides years of trouble-free operation–our confidence in the reliability of our A48/A48B is reflected by our unparalleled and Industry leading 10-year Warranty. The A48/A48B assures the quality, reliability and performance you have come to expect from LaMarche.

Made in USA

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A48 / A48B

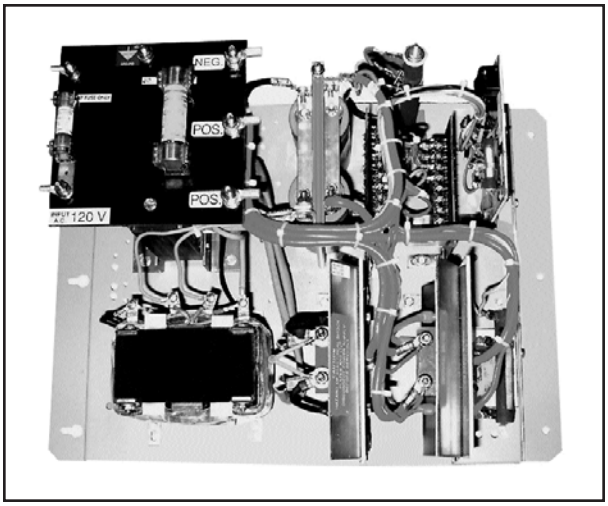
CENTRIFUGAL FIRE PUMP BATTERY CHARGERS USED ON SPRINKLER SYSTEMS

A48 and A48B Models

Model Number	System Ground	DC Output				AC Input Current Draw @ 100% Load (Amps)*			Case No	Overall Dimensions W x D x H	Cable Entry (when facing unit)		Mounting	Shipping Weight (Approx.)	
		Amps	Volts	Battery Cell Range (choose only one)	Fuse Size	A 120	D 208	B 240			AC input	DC output		lbs	kgs
A48-20-12VP	Positive	20	12V	6L, 9 or 10 NC	50A	7.1	4.1	3.5	7	14.250 x 10.625 x 19.875" 362 x 270 x 505 mm	Right	Left	Wall / Floor	75	34
A48-20-12VN	Negative													75	34
A48-20-24VP	Positive	20	24V	12L or 20 NC	50A	15	8.1	7.1	7	14.250 x 10.625 x 19.875" 362 x 270 x 505 mm	Right	Left	Wall / Floor	95	43
A48-20-24VN	Negative													95	43
A48B-20-12VP	Positive	20	12V	6L, 9 or 10 NC	50A	7.1	4.1	3.5	7B	19.875 x 9.000 x 14.250 " 505 x 229 x 362 mm	N/A	N/A	Base Plate	55	25
A48B-20-12VN	Negative													55	25
A48B-20-24VP	Positive	20	24V	12L or 20 NC	50A	15	8.1	7.1	7B	19.875 x 9.000 x 14.250" 505 x 229 x 362 mm	N/A	N/A	Base Plate	75	34
A48B-20-24VN	Negative													75	34

**AC Current Draws based @ 100% load and standard battery cells of 6L(12V) and 12L(24V)*
All above models designed for optimal performance at 60Hz. They will operate at 50Hz with reduced performance. Consult factory for units designed specifically at 50Hz.
Must specify only one battery type and number of cells. Please consult factory for other available cell ranges if desired range not shown.
Maximum Current Draw is typically 125% of ratings shown.
Other Sizes Available - Contact Factory for further information

Base Plate Photo



Ordering Information

When ordering, please specify:

- LaMarche Model Number A48 or A48B (Base Plate)
- Input Voltage of 120, 208 or 240 VAC/Single Phase/60Hz
- Number and Type of Battery Cells
- A.H. Capacity of Batteries
- Intermittent DC Loads and Duration
- Continuous DC Load
- Allowable Recharge Time from Full Discharge (where applicable)

Model Number Nomenclature

A48(B) - 20 - 12V(P) - A1 - ( ) - ( )

- Model Number *(B) designates Base plate Version*
- DC Amps
- DC Volts *(P) designates Positive Ground (N) designates Negative Ground*
- AC Voltage Code
- AC Phase Code
- Battery Cell Range
- Factory Assigned Accessory Code

AC Voltage Code
A - 120
B - 240
D - 208

AC Phase Code
1 - Single Phase

Specifications subject to change without notice

P25-DSA48_A48B-1
ECN: 18250
04-09

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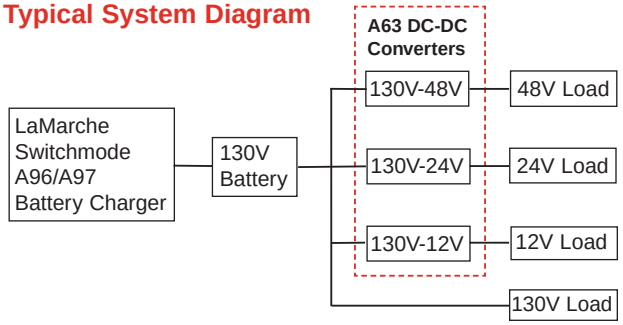
A63
DC-DC Converter Systems

19" and/or 23" PC63 Cage shown above with (2) A63 Converters and a TPCDB1 Distribution Module

A63
DC-DC Converter Systems

The unique design of the LaMarche A63 Series DC-DC Converters will allow you to utilize your 48V, 24V, and/or 12V equipment at a site where 130V batteries are installed. This will save battery, charger, and installation costs as well as reducing maintenance time and optimizing space. The A63 is a compact self contained DC-DC Converter that provides the Modular Power that today's utility substation, process control and telecommunications applications require. The A63 is the building block of these reliable systems using advanced switching technology. Its filtered output provides the clean power required for sensitive loads.

Typical System Diagram



The A63 DC output is available in 48V (15 amps) and 24V (30 amps) rated at 750W, or 12V (30 amps) modules rated at 375W. The converter modules are hot-swappable plug-in type. Installation or replacement is swift, simple, and achieved without affecting the integrity of the system.

Its versatile design allows the DC output to be wired as a single connection for all converters or for each pair of converters per cage. This allows for custom field installations and gives greater system flexibility to suit the customer needs and preferences.

A63 Converter Systems are factory configured with one to four Modules in a single cage. Distribution Modules consisting of either GMT Fuses (TPCD) or Breakers (TPCDB1) can share a cage with the converters to form a complete Power System.

Rely on LaMarche quality, reliability and performance to power your present and future system needs.

Standard Features

- High Frequency Switchmode Circuitry Provides High Power Density
- Hot Plug-In Feature Provides Easy Replacement Without Disturbing System Operation
- 48VDC and 24VDC Versions–750 Watts Output Power
- 12VDC Version–375 Watts Output Power
- 19" and 23" Rack Mounting (using PC63 cages)
- Nominal Input Voltage of 130VDC, Range from 105-150VDC
- DC Input Breaker Mounted on Cage for Each Converter Module (wired in positive leg)
- Output Voltage Adjustment Potentiometer
- Test Points for Measuring Output Current and Voltage Using a Precision Multi-Meter
- Current Limiting Circuitry of 105% Maximum (factory set)
- Filtered/Battery Eliminator Design–less than 150mVp-p, $32db_{rn}$ "C" Message Weighted
- 82% Efficiency within 50 to 100% of Rated Load
- Load Sharing Circuitry (10% of rated load)
- Soft Walk-In Circuit
- Over Temperature and Voltage Protection
- Converter Failure Alarm with (1) Set of Form "C" Contacts with Light (Alarm will Initiate for either Low Voltage, High Voltage Shutdown, Low DC Current, Converter Failure or DC Breaker Tripped)
- 2-Year Limited Warranty

Made in USA

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106 Bradrock Drive, Des Plaines, IL 60018-1967
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sales@lamarchemfg.com www.lamarchemfg.com

A63
DC-DC Converter Systems

Electrical

DC Input

Voltage Range
105-150VDC

Protection
DC Breaker provided on cage for each unit

DC Output

Adjustable Output Voltage Range
48 to 58VDC on 48V models
24 to 29VDC on 24V models
12 to 14.5VDC on 12V models

Power
750W per 48VDC and 24VDC module, maximum 3000 Watts per cage
375W per 12VDC module, maximum 1500 Watts per cage

Voltage Regulation
± 0.6% Total DC Voltage Regulation (Measured at converter side of blocking diode)

Current Limit
105% of rated output maximum (factory set)

Load Sharing
Load Sharing Circuitry (10% of rated load)

Protection
Over Voltage, Over Temperature

Efficiency
82% within 50-100% of rated load

Ripple and Noise
Less than 150mV peak to peak, 32db$_{rn}$
"C" message weighted

Test Points
For output current and output voltage using a precision digital voltmeter

Environmental

FCC Approved Part 15, Subpart B, Class A
IEC-555-2 Compliant

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)

Altitude:
0 to 3,000 meters (10,000 ft)

A63 Modules

Model Number	DC Output Amps	DC Output Volts	DC Input Voltage Range	Typical DC Input Current Draw @100% Load (Amps)
A63-15-48V-130V	15	48	105-150	9
A63-30-24V-130V	30	24	105-150	9
A63-30-12V-130V	30	12	105-150	5

PC63 Cages

Model Number	Description	No of Available Bays	DC Output Amps	DC Output Volts	Rack Mounting
PC63-60-48V-130V	1-4 modules	4	60	48	19"/23"
PC63-120-24V-130V			120	24	19"/23"
PC63-120-12V-130V			120	12	19"/23"
PC63-30-48V-130V	1-2 modules with TPCD or TPCDB1	2 +1	30	48	19"/23"
PC63-60-24V-130V			60	24	19"/23"
PC63-60-12V-130V			60	12	19"/23"

Units can be mounted flush with the rack or moved forward 5 inches (127mm).
Allow an additional 0.75 inches (19mm) for handles.

Enclosures

A63 DC-DC Converters
Dimensions
3.25"Wx11.0"Dx5.25"H
(83x279x133 mm)

Weight
7 lbs each (3.2 kgs)

Mounting
19"/23" Rack Mount PC63 Cages

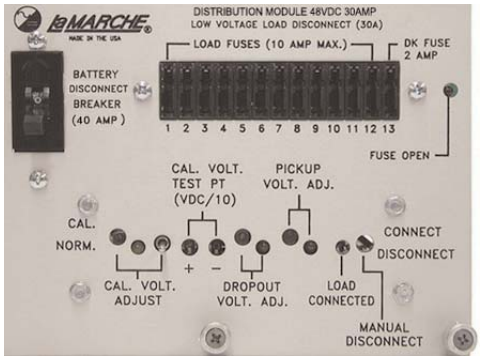
PC63 Cages
Dimensions for 19" or 23"Rack
18.25"W x 15.29"D x 8.75"H
(464x388x222 mm)

Weight
26 lbs

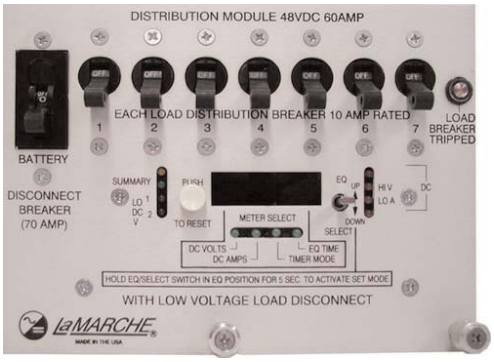
Mounting
PC63 = 5 RU's

Agency Approvals

U.L. Recognized Component



TPCD Distribution Module–GMT Fuses (For further details on this product refer to the TPM Systems Data Sheet)



TPCDB1 Distribution Module–Breakers (For further details on this product refer to the TPM Systems Data Sheet)

Specifications subject to change without notice

P25-DSA63-1
ECN 15678
12-025

ISO 9001 CERTIFIED

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Unit shown with optional 1ms Static Transfer Switch & Digital Display

A31 DC-AC Inverter

The La Marche A31 Inverter is the ideal choice when AC power requirements are critical. This inverter has a wide range of standard features such as a sine wave output, voltage regulation, protection from AC-DC shorts, under/over-voltage conditions, input filtering and overload protection. It incorporates a DC input breaker and an automatic under/over-voltage shutdown circuit to protect the inverter. The A31 has a polarity indicator to tell you if the battery is connected incorrectly. The unit is equipped with an input filter pre-charge circuit which includes an indicator to inform you that the inverter is ready for operation. Applications may include data centers, fire alarms, telecommunications, emergency lighting, security, oil exploration and utility substation systems.

Available in 50 or 60 Hz 120, 240, 208 or 220 AC Output.

Standard Features

- Highly Reliable Ferroresonant Transformer
- Available DC Inputs 24V or 48V or 120V
- DC to AC Isolation
- Pure Sine Wave Output
- Adjustable DC Under/Over Voltage Shutdown
- Analog AC Ammeter & Voltmeter (2%) (Optional on 250 VA & 500 VA)
- Overload/Current Limit
- Inverter On/Off Switch
- AC Circuit Breaker
- DC Circuit Breaker
- IGBT Power Block Technology
- UL 1012 Listed, UL 1481 Listed (selected models) and C-UL Listed
- 5-Year Limited Warranty

Options

22P 1ms Static Transfer Switch (Inverter Prime)
(available on 1KVA and larger)

22S 1ms Static Transfer Switch (Inverter Standby)
(available on 1KVA and larger)

22A Static Switch Alarm Package consisting of the following: 2 Form "C" Contacts for Phase Lock, Utility Available, Inverter Available, Load on Preferred, Load on Alternate, Requires 22P or 22S.

22D Digital Display (replaces AC analog meters). Used only with 1ms Static Switch. Requires 22P or 22S.

09A UL 1481

164 10-15ms Static Switch Transfer (Inverter Prime)
(not available on 4KVA & above)

165 10-15ms Static Switch Transfer (Inverter Standby)
(not available on 4KVA & above)

130 Inverter Failure Relay and Light (not available with option 22A)

132 Inverter Failure Relay (1 Form "C") (not available with option 22A)

133 Utility Available Relay (1 Form "C") (not available with option 22A)

123 Duplex Receptacles (not UL Listed)

06L AC Ammeter (Std. on 750 VA and larger)

06M AC Voltmeter (Std. on 750 VA and larger)

06C DC Ammeter (2%)

06D DC Voltmeter (2%)

MADE IN U.S.A.
Specifications subject to change without notice
P25-DSA31-1
ECN 18747
07/10

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Model Number	DC Input Amps		AC Output			BTU Hour***	Case No.	Approx. Weight	
	No Load	Full Load***	VA	Volts	Amps			lbs	kgs
A31-250-24V-A6	3.0	16.0	250	120	2.08	294	39	60	27
A31-500-24V-A6	5.0	28.0	500	120	4.17	301	39	75	34
A31-750-24V-A6 (1)	6.0	44.0	750	120	6.25	595	33	80	36
A31-1K-24V-A6 (1)	11.0	59.0	1000	120	8.33	817	9D	105	48
A31-1.5K-24V-A6 (1)	12.0	87.0	1500	120	12.50	1118	9D	120	55
A31-2K-24V-A6 (1)	17.0	116.0	2000	120	16.67	1491	9E*	175	80

Model Number	DC Input Amps		AC Output			BTU Hour***	Case No.	Approx. Weight	
	No Load	Full Load***	VA	Volts	Amps			lbs	kgs
A31-250-48V-A6 (1)	2.0	9.0	250	120	2.08	308	39	60	27
A31-500-48V-A6 (1)	2.5	15.0	500	120	4.17	445	39	75	34
A31-750-48V-A6 (1)	3.5	22.0	750	120	6.25	595	33	80	36
A31-1K-48V-A6 (1)	5.0	28.0	1000	120	8.33	602	9D	105	48
A31-1.5K-48V-A6 (1)	7.0	40.0	1500	120	12.50	616	9D	120	55
A31-2K-48V-A6 (1)	10.0	54.0	2000	120	16.67	917	9E*	175	80
A31-3K-48V-A6 (1)	13.0	81.0	3000	120	25.00	1375	9E*	270	123
A31-4K-48V-A6 (1)	15.0	106.0	4000	120	33.33	1546	9E*	310	141
A31-5K-48V-A6 (1)	16.0	132.0	5000	120	41.67	1860	9E*	340	155
A31-10K-48V-A6	29.0	278.0	10000	120	83.33	5732	44**	800	364

Model Number	DC Input Amps		AC Output			BTU Hour***	Case No.	Approx. Weight	
	No Load	Full Load***	VA	Volts	Amps			lbs	kgs
A31-250-120V-A6	1.0	3.0	250	120	2.08	222	39	60	27
A31-500-120V-A6	1.8	6.0	500	120	4.17	445	39	75	34
A31-750-120V-A6	2.0	9.0	750	120	6.25	667	33	80	36
A31-1K-120V-A6	4.0	11.0	1000	120	8.33	730	9D	105	48
A31-1.5K-120V-A6	4.5	17.0	1500	120	12.50	975	9E*	120	55
A31-2K-120V-A6	5.0	22.0	2000	120	16.67	1060	9E*	175	80
A31-3K-120V-A6	6.0	32.0	3000	120	25.00	1231	9E*	270	123
A31-4K-120V-A6	8.0	42.0	4000	120	33.33	1402	9E*	310	141
A31-5K-120V-A6	9.0	52.0	5000	120	41.67	1573	9E*	340	155
A31-7.5K-120V-A6	10.0	79.0	7500	120	62.5	2719	72**	500	227
A31-10K-120V-A6	12.0	105.0	10000	120	83.33	3506	72**	800	364
A31-15K-120V-A6	25.0	162.0	15000	120	125.00	6874	44**	950	432

Case No.	Case Type			RU	Height		Width****		Depth	
	Floor	Relay Rack								
		19"	23"		in	mm	in	mm	in	mm
39	N/A	√	√	4	7.0	178	16.75	425	16.25	413
33	N/A	N/A	√	6	10.50	267	21.00	533	16.25	413
9D	N/A	N/A	√	10	17.50	445	20.88	530	18.00	457
9E	N/A	N/A	√	10	17.50	445	20.88	530	23.00	584
70	√	N/A	N/A	N/A	41.00	1041	27.00	686	19.00	483
72	√	N/A	N/A	N/A	44.50	1130	27.00	686	23.50	597
44	√	N/A	N/A	N/A	72.10	1831	24.00	610	19.06	484

* Requires a heat baffle when 2 or more units are used.
** Floor mount case only (all others are rack mounted).
*** Typical at full load and minimum input voltage.
**** Main body width of case on relay rack units. Side mounting angles located 7.50" from front of relay rack.
(1) UL 1481 Listing Available

Input Specifications

- **Battery Ranges**
  24 volt nominal 21-30VDC
  48 volt nominal 42-60VDC
  120 volt nominal 105-150VDC
- **Input**
  Reverse Polarity Protection Indicator
  Filter Pre-charge Circuit; DC Breaker
- **DC Under Voltage Shutdown**
  Adjustable
- **DC Over Voltage Shutdown**
  Adjustable

Output Specifications

- **AC Output Voltage**
  120V Nominal (Standard)
  240V (Optional)
  208V and 220V (Optional, Not UL Listed)
- **Output Power**
  Rated VA continuous for unity to .8 lagging power factor
- **Line Regulation**
  ±3% Over DC Battery Range
- **Load Regulation**
  ±4% from no load to full load
- **Frequency Regulation**
  ±0.5% (Quartz Clock)
- **Current Limit**
  Approximately 150%. Protected by AC Output Breaker
- **Total Harmonic Distortion**
  Approximately 5% at nominal DC Input and Full Load. Less than 3% for any single harmonic.
- **Noise**
  Less than 32 dBrn "C" message weighted with a battery (24VDC and 48VDC only).
- **Audible Noise**
  65 dB @ 5 feet
- **Approximate Efficiency**
  24VDC models 70-75%
  48VDC models 85-90%
  120VDC models 85-90%
- **Load Crest Factor**
  Will operate with Load Crest Factors up to 2.8

Environmental

- **Operating Temperature**
  0 to 50°C
- **Storage Temperature**
  -20 to 60°C
- **Relative Humidity**
  0-95% (non-condensing)
  Convection Cooled (4KVA and larger units are fan assisted)

Agency Approvals

- UL 1012
  UL 1481 (Available for selected models, refer to chart)
- C-UL

Ordering Information

When ordering, please specify:

- La Marche Model Number A31 Inverter
- Desired output power (VA)
- Battery type and number of cells
- Output voltage and frequency
- Description of load
- Optional Accessories

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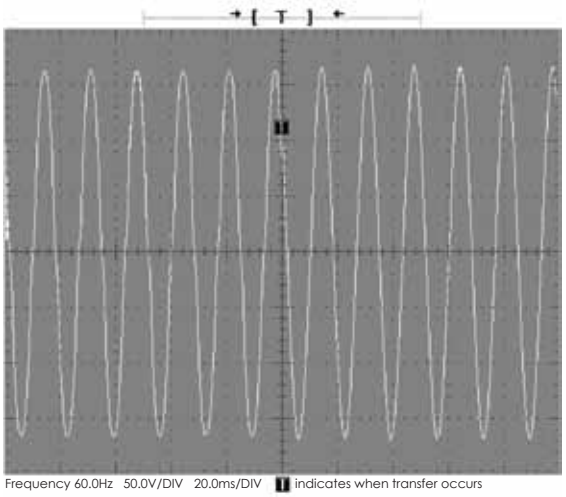
22P / 22S Static Switch

1MS Electronic Transfer Switch



Frequency 60.0Hz 50.0V/DIV 20.0ms/DIV ▮▮ indicates when transfer occurs

Scope photo shown above of typical Static Switch Transfer from Inverter Prime Source to Alternate Source upon loss of Inverter Output

1MS Electronic Static Switch for La Marche A31 DC to AC Inverter

The La Marche Electronic Static Switch is an automatic device that will transfer an AC load to and from the Prime Source to an Alternate Source, if the Prime Source fails, in a rapid 1 millisecond. The Static Transfer Switch is intended for use on the La Marche A31 DC to AC Inverters ranging from 1kVA to 15kVA models (consult factory for other applications). A customer calibration mode is incorporated into the Static Switch Menu to allow for on site settings that are best suited for the intended application.

A Digital Display Panel, which replaces the unit's AC analog meters, is also offered as an option. The Digital Display will allow the operator to view Load Voltage, Load Current, VA (Volt-Amps), Utility Voltage, Utility Frequency, Inverter Voltage and Inverter Frequency readings.

Status Display

A Status Display panel consisting of (5) LED indicator lights and (2) switches are provided on the front of the unit.

⌘ Phase Lock	▶▶ Indicates when the Prime and Alternate sources are in synchronization
⌘ Utility Available	▶▶ Indicates the Alternate source is connected and operating within its proper range
⌘ Inverter Available	▶▶ Indicates the Inverter is operating within its proper range
⌘ Load on Preferred Source	▶▶ Indicates the AC load is operating on the Prime source
⌘ Load on Alternate Source	▶▶ Indicates the AC load is operating on the Secondary source
▶ Auto/Manual Switch	▶▶ Allows for an Automatic or Manual Transfer
▶ Test Transfer Pushbutton	▶▶ Allows an active check of the Static Switch operation

Customer Calibration Mode

The customer calibration mode allows the user to select the available parameters and to set per preferences.

SELECTIONS	▶▶ SETTINGS
1. Preferred Source	▶▶ May be selected to either Utility or Inverter
2. Load Voltage Window Upper Limit	▶▶ Maximum voltage allowed on the Load
3. Load Voltage Window Lower Limit	▶▶ Minimum voltage allowed on the Load
4. Utility Voltage Upper Limit	▶▶ Maximum voltage allowed for Utility to be considered good
5. Utility Voltage Lower Limit	▶▶ Minimum voltage allowed for Utility to be considered good
6. Inverter Voltage Upper Limit	▶▶ Maximum voltage allowed for Inverter to be considered good
7. Inverter Voltage Lower Limit	▶▶ Minimum voltage allowed for Inverter to be considered good
8. Inverter Sense Delay	▶▶ The amount of time the Inverter must be within the upper and lower limits before the Inverter is considered within tolerance
9. Utility Sense Delay	▶▶ The amount of time the Utility must be within the upper and lower limits before the Utility is considered within tolerance
10. Retransfer Delay	▶▶ Used to set the time the Static Switch will attempt retransfer from the Alternate Source to the Primary Source
11. Hit Counter	▶▶ Used to determine the maximum allowable load voltage deviations outside of the pre-defined envelope that will trigger a transfer

Static Switch Options

Option #22A Alarm Relay Board consisting of (2) sets of Form "C" Contacts for each of the following:

- Phase Lock
- Utility Available
- Inverter Available
- Load on Prime Source
- Load on Alternate Source

Option #22D Digital Display (replacing AC analog meters on unit) to indicate the following:

- Load Voltage
- Load Current
- VA (Volt -Amps)
- Utility Voltage
- Utility Frequency
- Inverter Voltage
- Inverter Frequency

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Manual Bypass Switch

For AC Applications

*Back Cover Not Shown

Manual Bypass Switch

The Manual Bypass Switch (MBS) provides a mechanical means to transfer between power sources to your critical loads. Whether you are performing regular schedule maintenance on the system or in the event of an unexpected system malfunction, the power to the load can be safely transferred without being interrupted.

La Marche offers two types of MBS configurations, a Make-Before-Break (MB4B) and a Break-Before-Make (BB4M). The MB4B switch links both primary and secondary sources momentarily before completing the transfer. The MB4B is the preferred configuration for use with critical loads.

Rack Panel	Inverter Rating	Rack Units
20A	250 TO 1.5kVA	2
45A	2k to 4kVA	3
75A	5kVA	4
200A	7.5 to 15kVA	8

Wall Mount	Inverter Ratings	Case No.	Width		Depth		Height	
			in	mm	in	mm	in	mm
20A	250 TO 1.5kVA	1	10.375	264	7.875	200	16.250	413
45A	2k to 4kVA	1	10.375	264	7.875	200	16.250	413
75A	5kVA	2	12.812	326	10.000	254	17.125	435
200A	7.5 to 15kVA	3	15.375	391	11.000	279	23.750	603

Standard Features

- Input & Output Terminal Block
- Rotary CAM Type Switch
- 2- Position for Complete Isolation
- Rack or Wall Mount available
- UL Listed Bypass Switches
- 20 to 200 AMP Rating Switches

Option

- 06J - Frequency Meter (available for MB23 & MBW)

Note: For use on 120 VAC Inverters. For other AC Voltages consult factory.

Model Number Nomenclature

MB 19 - 20A - MB4B

- Model Number
- Mounting
- Amps
- MB4B - Make Before Break
  BB4M - Break Before Make

Mounting

19 - Mounting for 19" Rack
23 - Mounting for 23" Rack
W - Wall Mount

Amps

20A
45A
75A
200A

La MARCHE
ISO 9001:2000 CERTIFIED

IX SERIES

High Frequency / Hot-Swap Inverter Systems

Fully Equipped 3k VA System with Optional SNMP Module
UNIPOWER Product

RoHS CE 2006/95/EC

IX Series

This IX Inverter Series offered by La Marche Manufacturing is designed to operate from a 48VDC (40.5-58V range) input and produce either 120VAC or 230VAC nominal output at up to 6kVA total capacity. The low distortion 50 or 60 Hz sine wave is produced using an advanced DSP controlled architecture which achieves better than 89% efficiency and 10.5VA per cubic inch power density.

The IX Series pre-configured inverter systems include a controller and Static Transfer Switch with optional power distribution and maintenance by-pass facilities. Remote communications to a PC is provided via USB, RS232 or RS485 serial connections. SNMP alarm traps delivered over an Ethernet TCP/IP connection are also provided as an option.

Inverter Modules

Output Power	Output Voltage	Output Frequency [1]	Model Number
1500VA @ 0.8PF 1200W @ 1PF	120VAC	60Hz (50Hz)	INV1548-LMC
	230VAC	50Hz (60Hz)	INV1548H-LMC

Notes:
1. The frequency shown in parenthesis can be obtained by reprogramming the unit from the system controller.

Standard System Configurations

Max. Output Power		Max. Output Power	Output Voltage [1]	Output Frequency [2]	Distribution Socket Type	Manual Bypass	Rack Height	Model Number [3]
3kVA	2.4kW	2	120VAC or 230 VAC	60Hz / 50Hz	8 x IEC60-320	YES	4U	IX4U-1-TS50-D2E-F-LMC
3kVA	2.4kW	2	120VAC or 230 VAC	60Hz / 50Hz	8 x IEC60-320	YES	4U	IX4U-1-TS50-D2E-M-LMC
6kVA	4.8kW	2	120VAC or 230 VAC	60Hz / 50Hz	8 x IEC60-320	YES	5U	IX5U-2-TS50-D2E-F-LMC
6kVA	4.8kW	2	120VAC or 230 VAC	60Hz / 50Hz	8 x IEC60-320	YES	5U	IX5U-2-TS50-D2E-M-LMC

Notes:
1. Inverter modules must be ordered separately based on output voltage and total system capacity required. Module types may not be mixed in the same system.
2. 120VAC inverters are pre-programmed to 60Hz, 230VAC inverters are pre-programmed to 50Hz. These settings can be changed from the front panel of the controller or remotely using the WIN-power client application.
3. "F" = Front Mounting / "M" = Mid Mounting

Standard Features

- Hot-Swap Inverter, STS and Controller Modules
- 19 or 23 inch Rack Mounting
- 1500 to 6000 VA System Capacity
- 120VAC or 230VAC
- Low Distortion 50 or 60Hz Pure Sine Wave
- 40.5 to 58 VDC Input
- DSP Management & Control
- > 89% Efficiency
- 2-year Warranty

Specifications subject to change without notice

P25-DSIX-1
ECN 18471
10/09

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sales@lamarchemfg.com
www.lamarchemfg.com

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SPECIFICATIONS

Typical at 48V Input, Full Load and 25°C Unless Otherwise Noted.

INVERTER MODULES

INPUT

Voltage Range 40.5-58VDC
Undervoltage Warning Threshold 45VDC
Undervoltage Threshold 40VDC
Overvoltage Warning Threshold 58VDC
Overvoltage Threshold 60VDC
Input Current, 48VDC Input INV1548 .....28.4A
Input Protection .....Fused Reverse Polarity Protection
Inrush Current .....Less than 2x Rated Iin (IEC62040-3-1999)
Isolation
  Input to Output.....Reinforced Pri-Sec, 4242VDC / 1 min.
  Input to Ground ..... 707VDC (Varistor & filter caps removed)
Psophometric Noise Voltage ..... <1mV ITU-T 0.41 (16.66-6000Hz)
Reflected Psophometrics Noise Current .....<1% YD/T 777-2006
Reflected Relative Band Wide Current.....<10% YD/T 777-2006 (0-2MHz)
Wide Band Noise.....<20mVrms (25Hz-20kHz)
Peak to Peak Noise..... <150mV up to 100MHz

OUTPUT

AC Waveform ..... Pure Sine Wave
Output Power INV1548 .....1500VA @ 0.8PF OR 1200W @ 1PF
Power Factor or Load.....-0.8 to +0.8
Rated Output Voltage .....120VAC or 230VAC (see model table)
Output Voltage Variation.....<±2%
Output Frequency..... 50Hz or 60Hz (see model table)
Frequency Variation.....<±0.5%
Crest Factor..... 3:1 max.
THD of Voltage Waveform
  Linear Load .....<3%
  Non-Linear Load..... .....<5%
Capacitive/Inductive Load ..... +0.8 to +0.8 PF
  without exceeding permissible distortion for resistive load
Efficiency .....>89%
Overload Protection..... Electronic Current Limit at Overload & Short Circuit
  1.25 x Rated Current, Temperature Controlled
  1.50 x Rated Current for Periods <20 Seconds
Dynamic Response .....<±10%
Isolation, Output to Chassis .....Basic Isolation (Pri-Gnd) 2121 VDC/1 min.
Surge Protection.....EN61000-4-5
  Telcordia GR-1089 Core ANSI C62.41-IEEE, STD 587-1980
Load Sharing ..... <5% of Rated Load

CONTROL/STATUS

LED Indicators
  Inverter Status ..... Green OK, Red FAIL
  Overload ..... Off OK, Yellow for Overload
  Reverse Polarity ..... Off OK, Red for Reversed
Status/Alarm Information (via controller) .....Inverter Fail, Overload,
  LVD Alarm, Fail Alarm, Thermal Derating, Power Output,
  Input Voltage, Output Voltage, Output Current, Output
  Frequency, Low Input Voltage Shutoff, Inventory Data.
Runtime Info. ..... Through Maintenance Feature in Controller

STATIC TRANSFER SWITCH (STS)

INPUT

Voltage Range
  110/115/120VAC Systems 89-138VAC
  208/220/230/240VAC Systems.....176-276VAC
Over / Undervoltage Threshold (adjustable from controller)
  110VAC Systems..... 117 to 127VAC / 89 to 105VAC
  115VAC Systems..... 122 to 132VAC / 93 to 110VAC
  120VAC Systems..... 127 to 138VAC / 100 to 114VAC
  208VAC Systems.....220 to 240VAC / 176 to 198VAC
  220VAC Systems.....233 to 252VAC / 176 to 209VAC
  230VAC Systems.....244 to 264VAC / 185 to 218VAC
  240VAC Systems.....254 to 276VAC / 193 to 228VAC

OUTPUT

AC Waveform .....Sine Wave
Output Voltage.....Same as utility or inverter modules
Permissible Frequency Variation to Synchronise Inverters .....±2.5%
Transfer Time ..... Typically 1/4 cycle
Rated Current.....50A
Operation Modes (programmable) .....Inverter Priority or Utility Priority
Default Priority..... Inverters

CONTROL/STATUS

LED Indicators
  Fault (red) ..... Off OK, On FAIL
  Warning (yellow)..... Off OK, Flashing for warning condition
  Power On (green)..... On OK, Flashing for bypass
Status/Alarm Information .....CAN communication failure
  back-feed relay open, SCR short, uutput short, overload
  over temperature, mains unavailable, inverter unavailable
  output abnormal, fan failure, MBS position error

GENERAL

ENVIRONMENTAL

Operating Temp. Range
  Without Derating.....-5°C to 50°C
  With Derating.....-20°C to 70°C
Storage Temp. Range.....-40°C to +85°C
Humidity.....0% to 95%, Non-Condensing
Cooling .....Variable Speed Internal Fans (Field Replaceable)
Operating Altitude .....1500m without derating

REGULATORY

Safety
  Inverter/PDU/MBS/chassis..... UL60950-1, EN60950-1, IEC60950-1
  STS module.....UL1778
EMC (individual modules) .....EN300 386:2001 Class B
Acoustic Noise (individual modules).....55dB ETS300 753, Class 3.1

Safety Standards
UL60950-1
CSA22.2, No. 60950-1
EN60950-1

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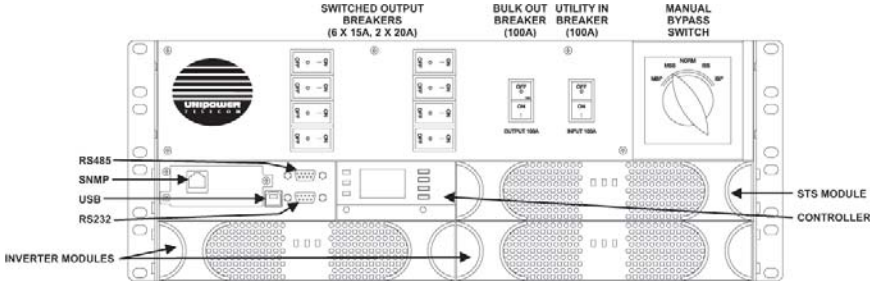
3k VA SYSTEM CONFIGURATIONS

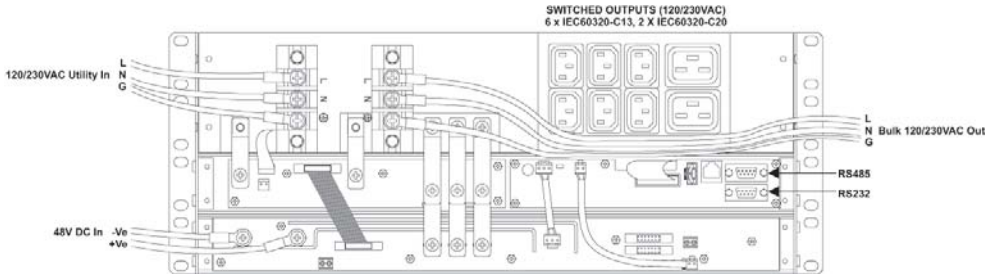
Rear views are with safety covers removed to show input and output connection details.

IX4U-1-TS50S-D2E-LMC

Bulk AC Output / 6 x IEC60320-C13 Outlets / 2x IEC60320-C20 Outlets - 120VAC or 230VAC
STS Hot-Swappable using Manual Bypass



Front View



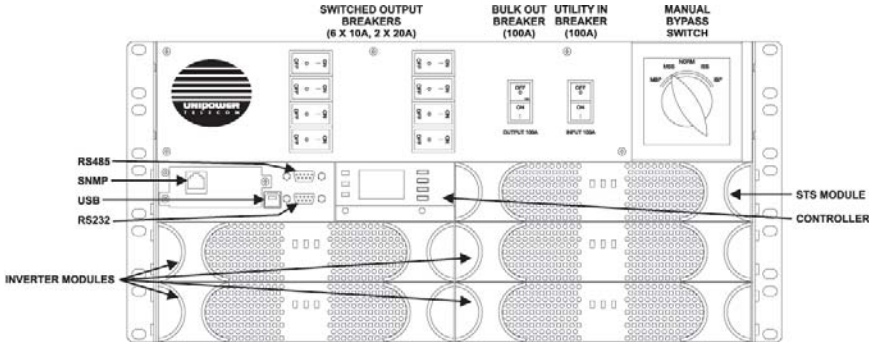
Rear View

6k VA SYSTEM CONFIGURATIONS

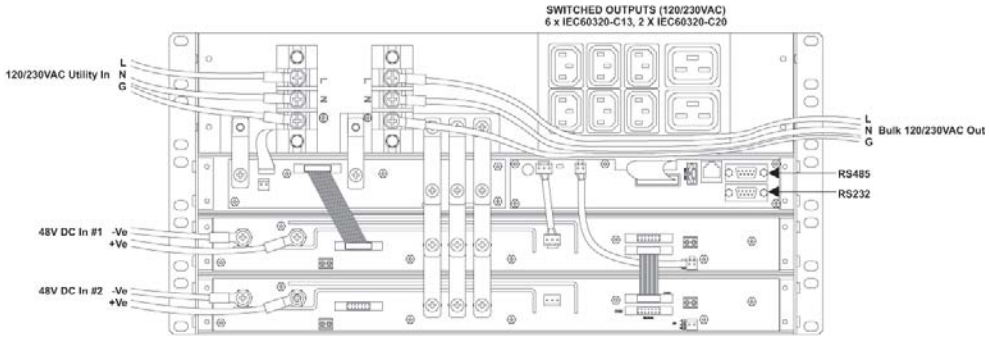
Rear views are with safety covers removed to show input and output connection details.

IX5U-2-TS50S-D2E-LMC

Bulk AC Output / 6 x IEC60320-C13 Outlets / 2x IEC60320-C20 Outlets - 120VAC or 230VAC
STS Hot-Swappable using Manual Bypass



Front View



Rear View

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IFC2000 Communications Interface Module

The IX Series Communications Interface Module provides system connection to a computer via RS232, RS485 or USB for the purposes of remote monitoring, control or programming. Remote PC based software provides a user friendly GUI interface.

An optional SNMP module (integral to the STS/Controller shelf) provides alarm traps over a TCP/IP Ethernet interface.

DSC2048 Controller Module

The IX Series Controller, allows the user to monitor real-time system status such as output voltage, output current, alarm status, and also allows system parameters, to quickly be changed with the touch of a few keys on the front panel. With the Communications Interface Module installed remote access can be made with a PC over a variety of interfaces.

- Compact design (1RU height)
- RS-232
- RS-485
- SNMP
- USB
- CAN bus interface embedded
- Programmable dry contact
- Hot swappable
- Realtime clock embedded
- LCD and LED indicator
- Audible alarm

DPMBS2U Manual Bypass / Distribution Module

The IX Series manual bypass and power distribution module enables the user to manually switch between inverter output or utility output and to override the STS module for maintenance purposes. A mechanical interlock between the DPMBS2U and the STS module ensures that AC to the load cannot be inadvertantly interrupted.

The DPMBS2U provides two means of distributing AC to the load as standard; as a single bulk output or via eight IEC320 outlet sockets with individual Magnetic Circuit Breakers.

- 50A bypass switch
- Enables hot-swap of STS module
- 50A bulk output on terminal block
- AC utility can be isolated via MCB
- 100A master MCB
- 6 x IEC320-C13 + 2 x IEC320-C20 outlets (-E)
- Individual MCBs for each circuit

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ISO 9001:2000 CERTIFIED

Model A32P / A32S
Uninterruptible Power Supply (UPS)
for Fire Alarm and Security Systems

Model A32P / A32S
Uninterruptible Power Supply

Model shown A32P-1.5K-48VBC-A6-8-24

U.L. 1481 Listed for Fire Alarm System

Standard Features

- Rectifier & Inverter U.L. 1481 Listed for Fire Alarm System
- High Quality Sine Wave
- Ferroresonant Design
- Automatic Electronic Transfer Switch
- Local & Remote Alarms
- LED Indicators & Switches
- Line Regulation & Load Regulation
- Environmental:
  Operating Temperature: 0 to 50°C (32 to122°F)
  Storage Temperature: -20 to 60°C (-2 to 140°F)
  Relative Humidity: 0 to 95% non-condensing
- NEMA 1 Enclosure ANSI 61 Gray Baked Enamel Paint
- 5 Year Limited Warranty

The La Marche model A32 series is an Uninterruptible Power Supply system designed to power critical AC loads. Modular in concept, it utilizes separate rectifier and inverter components allowing for simplicity in sizing and growth for various requirements.

All sub-system components (rectifiers and inverters) utilize a 48VDC bus and are listed under the UL 1481 Fire Protective Signaling Standard, making them ideal for central station and critical alarm system applications.

The La Marche model A31 Inverter is compact and supplies a sine wave output. It provides reliability through transistor switching and a ferroresonant transformer which has inherent voltage regulation, output filtering and overload protection.

The La Marche A36D Rectifier (Charger) uses controlled ferroresonant technology, with separate adjustable voltage settings for float and equalize. It provides high efficiency, high power factor, short circuit protection, and an integral alarm package.

Available for primary or standby operation, the A32 series provides the highest form of reliable UPS protection for fire protective signaling applications.

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sales@lamarchemfg.com www.lamarchemfg.com

Made in U.S. A.

A31 DC-AC Inverter

AC Output Voltage
120 Volt nominal, single phase.

Design Features

Regulation
Line : ±3 Over DC battery range.
Load : ±4% from no load to full load

Output Power Factor
Rated volts-amps continuous for unity to 0.8 lagging.

Frequency: 60 Hz

Frequency Regulation
±0.5% of the rated value and line synchronization- Quartz Crystal Control.

Wave Shape: Sine Wave

Total Harmonic Distortion (THD)
5% at nominal DC input and full load; less than 3% any single harmonic.

Approximate Efficiency: 85% to 90%

Noise: Less than 32 DBRN

*Refer to the A31 Data Sheet for further details.

Protection

Inverter Input DC Breaker

Inverter Output AC Breaker

DC Undervoltage/ Overvoltage Shutdown

Current Limit Protection

Reverse Polarity Indicator Indicator/filter precharge circuit.

A36D Rectifier / Power Supply

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AC Input Voltage
120/208/240 Volt, single phase, 60 Hz.
(some models 120 Volt only)

Design Features

Steady-State
±0.5% from no load to full load over the specified input voltage, frequency, and ambient temperature ranges

Dynamic Response on Battery
Maximum voltage transient will not exceed ±5% of the initial steady-state voltage for a step change from 20% to 100% of the full rated load.

Current Walk In
Output current will gradually increase after the charger is turned on eliminating surges and overshoot.

Temperature Compensation
5 step @ 1mVpc/°C

Protection
Current Limit, AC Breaker and DC Breaker.

*Refer to the A36D Data Sheet for further details.

Alarm Status Panel

Equalize Indicator

Float Indicator

AC "ON" Indicator
Low Current Alarm Indicator

Low DC Voltage Alarm Indicator

High DC Voltage Alarm Indicator

Summary Rectifier Fail Alarm Indicator

Transfer Switches

1ms Electronic Static Switch

(provided on 1KVA and larger)

The La Marche Electronic Static Switch is an Automatic device that will transfer an AC load to and from the Prime Source to an Alternate Source, if the Prime Source fails in a rapid 1ms. The Static Transfer Switch is provided on the La Marche A31 DC to AC Inverters. Whether your Prime Source is established as your AC commercial line or the A31 Inverter, the Static Switch can be calibrated for either Source at the factory or at your site.

LED Indicators

- Phase lock
- Utility Available
- Inverter Available
- Load on preferred source
- Load on alternate source

15ms Electronic Static Switch

(provided on 500VA & 750VA)

An electronic load transfer switch is provided with approximately 15ms transfer time to switch the load from the inverter stage to the bypass source or from the bypass source to the inverter. Load voltage is sensed and power is transferred to the AC bypass source or the inverter. When the voltage is out of the specified value for longer than 15ms. This transfer point is adjustable by potentiometer. Retransfer is automatic after a time delay when both AC sources are available.

LED Indicators

- Bypass Available
- Inverter Available
- Load on alternate source

*Refer to the A22P/A22S Data Sheet for further details

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A32P - PRIME SYSTEMS

UPS System Model Number	KVA	AC Output		Battery Charger U.L. 1481 Listed			Inverter U.L. 1481 Listed			Approx System Weight	No. of Battery Trays	*Backup Time Range in Hrs	Approx. Battery Amp Hrs.
		Volts	Amps	Model Number	AC Input		Model Number	DC Input Amps					
					Volts	Amps		N. L.	F. L.				
"Prime" UPS System 24Hr Recharge													
A32P-500-48VBC-A6-2-24	0.5	120	4.17	A36D-15-48V-A1-24L	120	10.0	A31-500-48V-A6-24L	2.5	15.0	355	1	0.25 - 2	40
A32P-500-48VBC-A6-8-24	0.5	120	4.17	A36D-20-48V-ABD1-24L	120/208/240	13.4/7.7/6.7	A31-500-48V-A6-24L	2.5	15.0	363	1	4 - 8	72 - 125
A32P-500-48VBC-A6-24-24	0.5	120	4.17	A36D-30-48V-ABD1-24L	120/208/240	20.0/11.6/10.0	A31-500-48V-A6-24L	2.5	15.0	328	-	24	312
A32P-750-48VBC-A6-4-24	0.75	120	6.25	A36D-25-48V-ABD1-24L	120/208/240	16.8/9.7/8.4	A31-750-48V-A6-24L	3.5	22.0	375	1	0.25 - 4	40 - 105
A32P-750-48VBC-A6-8-24	0.75	120	6.25	A36D-30-48V-ABD1-24L	120/208/240	20.0/11.6/10.0	A31-750-48V-A6-24L	3.5	22.0	428	2	8	210
A32P-750-48VBC-A6-24-24	0.75	120	6.25	A36D-50-48V-ABD1-24L	120/208/240	33.6/19.4/16.8	A31-750-48V-A6-24L	3.5	22.0	380	-	24	520
A32P-1K-48VBC-A6-4-24	1	120	8.33	A36D-30-48V-ABD1-24L	120/208/240	20.0/11.6/10.0	A31-1K-48V-A6-24L	5.0	28.0	408	1	0.25 - 4	40 - 125
A32P-1K-48VBC-A6-8-24	1	120	8.33	A36D-50-48V-ABD1-24L	120/208/240	33.6/19.4/16.8	A31-1K-48V-A6-24L	5.0	28.0	500	2	8	300
A32P-1K-48VBC-A6-24-24	1	120	8.33	A36D-75-48V-ABD1-24L	120/208/240	50.4/29.1/25.2	A31-1K-48V-A6-24L	5.0	28.0	485	-	24	615
A32P-1.5K-48VBC-A6-2-24	1.5	120	12.5	A36D-50-48V-ABD1-24L	120/208/240	33.6/19.4/16.8	A31-1.5K-48V-A6-24L	7.0	40.0	470	1	0.25 - 2	40 - 105
A32P-1.5K-48VBC-A6-8-24	1.5	120	12.5	A36D-50-48V-ABD1-24L	120/208/240	33.6/19.4/16.8	A31-1.5K-48V-A6-24L	7.0	40.0	515	2	4 - 8	208 - 310
A32P-1.5K-48VBC-A6-24-24	1.5	120	12.5	A36D-100-48V-ABD1-24L	120/208/240	67.2/38.8/33.6	A31-1.5K-48V-A6-24L	7.0	40.0	526	-	24	896
A32P-2K-48VBC-A6-0.5-24	2	120	16.67	A36D-50-48V-ABD1-24L	120/208/240	33.6/19.4/16.8	A31-2K-48V-A6-24L	10.0	54.0	525	1	0.25 - 0.5	40 - 72
A32P-2K-48VBC-A6-2-24	2	120	16.67	A36D-75-48V-ABD1-24L	120/208/240	50.4/29.1/25.2	A31-2K-48V-A6-24L	10.0	54.0	605	1	2	155
A32P-2K-48VBC-A6-4-24	2	120	16.67	A36D-75-48V-ABD1-24L	120/208/240	50.4/29.1/25.2	A31-2K-48V-A6-24L	10.0	54.0	650	2	4	250
A32P-2K-48VBC-A6-8-24	2	120	16.67	A36D-75-48V-ABD1-24L	120/208/240	50.4/29.1/25.2	A31-2K-48V-A6-24L	10.0	54.0	555	-	8	432
A32P-2K-48VBC-A6-24-24	2	120	16.67	A36D-100-48V-ABD1-24L	120/208/240	67.2/38.8/33.6	A31-2K-48V-A6-24L	10.0	54.0	581	-	24	1096
A32P-3K-48VBC-A6-0.5-24	3	120	25.0	A36D-100-48V-ABD1-24L	120/208/240	67.2/38.8/33.6	A31-3K-48V-A6-24L	13.0	81.0	726	1	0.25 - 0.5	40 - 72
A32P-3K-48VBC-A6-2-24	3	120	25.0	A36D-100-48V-ABD1-24L	120/208/240	67.2/38.8/33.6	A31-3K-48V-A6-24L	13.0	81.0	771	2	2	208
A32P-3K-48VBC-A6-8-24	3	120	25.0	A36D-100-48V-ABD1-24L	120/208/240	67.2/38.8/33.6	A31-3K-48V-A6-24L	13.0	81.0	676	-	4 - 8	432 - 696
A32P-3K-48VBC-A6-24-24	3	120	25.0	A36D-100-48V-ABD1-24L(X2)	120/208/240	67.2/38.8/33.6	A31-3K-48V-A6-24L	13.0	81.0	967	-	24	1800
A32P-4K-48VBC-A6-0.5-24	4	120	33.3	A36D-100-48V-ABD1-24L	120/208/240	67.2/38.8/33.6	A31-4K-48V-A6-24L	15.0	106.0	766	1	0.25 - 0.5	72 - 90
A32P-4K-48VBC-A6-2-24	4	120	33.3	A36D-100-48V-ABD1-24L	120/208/240	67.2/38.8/33.6	A31-4K-48V-A6-24L	15.0	106.0	811	2	2	310
A32P-4K-48VBC-A6-8-24	4	120	33.3	A36D-75-48V-ABD1-24L(X2)	120/208/240	50.4/29.1/25.2	A31-4K-48V-A6-24L	15.0	106.0	950	-	4 - 8	520 - 896
A32P-4K-48VBC-A6-24-24	4	120	33.3	A36D-100-48V-ABD1-24L(X2)	120/208/240	67.2/38.8/33.6	A31-4K-48V-A6-24L	15.0	106.0	1007	-	24	2400
A32P-5K-48VBC-A6-0.5-24	5	120	41.67	A36D-75-48V-ABD1-24L(X2)	120/208/240	50.4/29.1/25.2	A31-5K-48V-A6-24L	16.0	132.0	1025	1	0.25 - 0.5	72 - 125
A32P-5K-48VBC-A6-4-24	5	120	41.67	A36D-75-48V-ABD1-24L(X2)	120/208/240	50.4/29.1/25.2	A31-5K-48V-A6-24L	16.0	132.0	980	-	2 - 4	432 - 608
A32P-5K-48VBC-A6-8-24	5	120	41.67	A36D-100-48V-ABD1-24L(X2)	120/208/240	67.2/38.8/33.6	A31-5K-48V-A6-24L	16.0	132.0	1037	-	8	1096

Note: Backup time - range indicates the range of backup times that the systems can be used for. Example: A32P-500-48VBC-A6-8-24 can be used for applications of 4 Hrs - 8 Hrs.

(X2) = Two chargers per system.

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A32S - STANDBY SYSTEMS

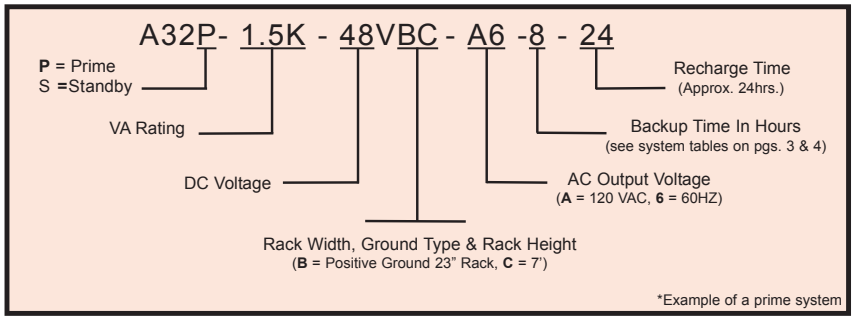
UPS System Model Number	KVA	AC Output		Battery Charger U.L. 1481 Listed			Inverter U.L. 1481 Listed			Approx System Weight	No. of Battery Trays	* Backup Time Range in Hours	Approx. Battery Amp Hrs.
		Volts	Amps	Model Number	AC Input		Model Number	DC Input Amps					
					Volts	Amps		N. L.	F. L.				
"Standby" UPS System 24Hr Recharge													
A32S-500-48VBC-A6-8-24	0.5	120	4.17	A36D-10-48V-A1-24L	120	6.7	A31-500-48V-A6-24L	2.5	15.0	309	1	0.25 - 8	40 - 125
A32S-500-48VBC-A6-24-24	0.5	120	4.17	A36D-20-48V-ABD1-24L	120/208/240	13.4/7.7/6.7	A31-500-48V-A6-24L	2.5	15.0	313	-	24	312
A32S-750-48VBC-A6-4-24	0.75	120	6.25	A36D-10-48V-A1-24L	120	6.7	A31-750-48V-A6-24L	3.5	22.0	314	1	0.25 - 4	40 - 104
A32S-750-48VBC-A6-8-24	0.75	120	6.25	A36D-15-48V-A1-24L	120	10	A31-750-48V-A6-24L	3.5	22.0	405	2	8	210
A32S-750-48VBC-A6-24-24	0.75	120	6.25	A36D-30-48V-ABD1-24L	120/208/240	20.0/11.6/10.0	A31-750-48V-A6-24L	3.5	22.0	333	-	24	520
A32S-1K-48VBC-A6-4-24	1	120	8.33	A36D-10-48V-A1-24L	120	6.7	A31-1K-48V-A6-24L	5.0	28.0	339	1	0.25 - 4	40 - 125
A32S-1K-48VBC-A6-8-24	1	120	8.33	A36D-15-48V-A1-24L	120	10	A31-1K-48V-A6-24L	5.0	28.0	430	2	8	250
A32S-1K-48VBC-A6-24-24	1	120	8.33	A36D-50-48V-ABD1-24L	120/208/240	33.6/19.4/16.8	A31-1K-48V-A6-24L	5.0	28.0	405	-	24	608
A32S-1.5K-48VBC-A6-2-24	1.5	120	12.5	A36D-10-48V-A1-24L	120	6.7	A31-1.5K-48V-A6-24L	7.0	40.0	354	1	0.25 - 2	40 - 104
A32S-1.5K-48VBC-A6-4-24	1.5	120	12.5	A36D-15-48V-A1-24L	120	10.0	A31-1.5K-48V-A6-24L	7.0	40.0	445	2	4	208
A32S-1.5K-48VBC-A6-8-24	1.5	120	12.5	A36D-25-48V-ABD1-24L	120/208/240	16.8/9.7/8.4	A31-1.5K-48V-A6-24L	7.0	40.0	460	2	8	310
A32S-1.5K-48VBC-A6-24-24	1.5	120	12.5	A36D-50-48V-ABD1-24L	120/208/240	33.6/19.4/16.8	A31-1.5K-48V-A6-24L	7.0	40.0	420	-	24	896
A32S-2K-48VBC-A6-0.5-24	2	120	16.67	A36D-10-48V-A1-24L	120	6.7	A31-2K-48V-A6-24L	10.0	54.0	409	1	0.25 - 0.5	40 - 72
A32S-2K-48VBC-A6-2-24	2	120	16.67	A36D-15-48V-A1-24L	120	10.0	A31-2K-48V-A6-24L	10.0	54.0	455	1	2	155
A32S-2K-48VBC-A6-4-24	2	120	16.67	A36D-20-48V-ABD1-24L	120/208/240	13.4/7.7/6.7	A31-2K-48V-A6-24L	10.0	54.0	508	2	4	250
A32S-2K-48VBC-A6-8-24	2	120	16.67	A36D-30-48V-ABD1-24L	120/208/240	20.0/11.6/10.0	A31-2K-48V-A6-24L	10.0	54.0	428	-	8	432
A32S-2K-48VBC-A6-24-24	2	120	16.67	A36D-75-48V-ABD1-24L	120/208/240	50.4/29.1/25.2	A31-2K-48V-A6-24L	10.0	54.0	555	-	24	1096
A32S-3K-48VBC-A6-0.5-24	3	120	25.0	A36D-15-48V-A1-24L	120	10.0	A31-3K-48V-A6-24L	13.0	81.0	550	1	0.25 - 0.5	40 - 72
A32S-3K-48VBC-A6-2-24	3	120	25.0	A36D-20-48V-ABD1-24L	120/208/240	13.4/7.7/6.7	A31-3K-48V-A6-24L	13.0	81.0	603	2	2	208
A32S-3K-48VBC-A6-4-24	3	120	25.0	A36D-30-48V-ABD1-24L	120/208/240	20.0/11.6/10.0	A31-3K-48V-A6-24L	13.0	81.0	523	-	4	432
A32S-3K-48VBC-A6-8-24	3	120	25.0	A36D-50-48V-ABD1-24L	120/208/240	33.6/19.4/16.8	A31-3K-48V-A6-24L	13.0	81.0	570	-	8	696
A32S-3K-48VBC-A6-24-24	3	120	25.0	A36D-100-48V-ABD1-24L	120/208/240	67.2/38.8/36.6	A31-3K-48V-A6-24L	13.0	81.0	676	-	24	1800
A32S-4K-48VBC-A6-0.5-24	4	120	33.3	A36D-20-48V-ABD1-24L	120/208/240	13.4/7.7/6.7	A31-4K-48V-A6-24L	15.0	106.0	598	1	0.25 - 0.5	72 - 90
A32S-4K-48VBC-A6-2-24	4	120	33.3	A36D-25-48V-ABD1-24L	120/208/240	16.8/9.7/8.4	A31-4K-48V-A6-24L	15.0	106.0	650	2	2	310
A32S-4K-48VBC-A6-4-24	4	120	33.3	A36D-30-48V-ABD1-24L	120/208/240	20.0/11.6/10.0	A31-4K-48V-A6-24L	15.0	106.0	563	-	4	520
A32S-4K-48VBC-A6-8-24	4	120	33.3	A36D-50-48V-ABD1-24L	120/208/240	33.6/19.4/16.8	A31-4K-48V-A6-24L	15.0	106.0	610	-	8	896
A32S-4K-48VBC-A6-24-24	4	120	33.3	A36D-75-48V-ABD1-24L(X2)	120/208/240	50.4/29.1/25.2	A31-4K-48V-A6-24L	15.0	106.0	950	-	24	2400
A32S-5K-48VBC-A6-0.5-24	5	120	41.67	A36D-20-48V-ABD1-24L	120/208/240	13.4/7.7/6.7	A31-5K-48V-A6-24L	16.0	132.0	628	1	0.25 - 0.5	72 - 125
A32S-5K-48VBC-A6-2-24	5	120	41.67	A36D-30-48V-ABD1-24L	120/208/240	20.0/11.6/10.0	A31-5K-48V-A6-24L	16.0	132.0	593	-	2	432
A32S-5K-48VBC-A6-4-24	5	120	41.67	A36D-50-48V-ABD1-24L	120/208/240	33.6/19.4/16.8	A31-5K-48V-A6-24L	16.0	132.0	640	-	4	608
A32S-5K-48VBC-A6-8-24	5	120	41.67	A36D-75-48V-ABD1-24L	120/208/240	50.4/29.1/25.2	A31-5K-48V-A6-24L	16.0	132.0	720	-	8	1096
A32S-5K-48VBC-A6-24-24	5	120	41.67	A36D-75-48V-ABD1-24L(X2)	120/208/240	50.4/29.1/25.2	A31-5K-48V-A6-24L	16.0	132.0	980	-	24	3000

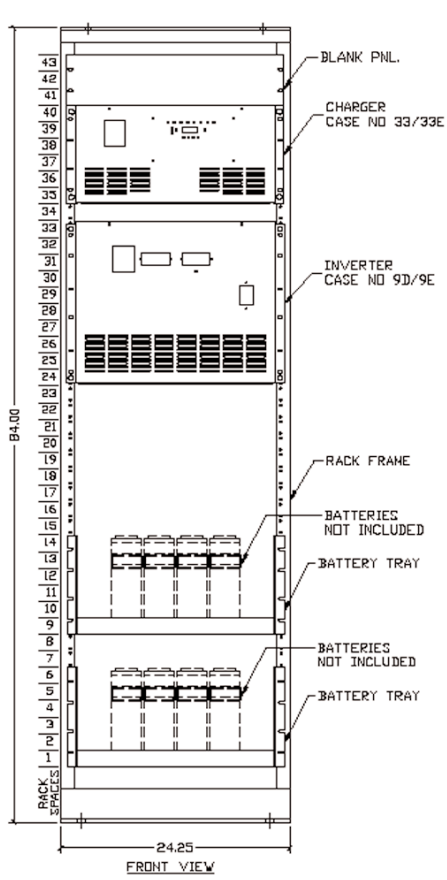
Note: Backup time - range indicates the range of backup times that the systems can be used for. Example: A32S-500-48VBC-A6-8-24 can be used for applications ranging from 15 min - 8 Hrs.

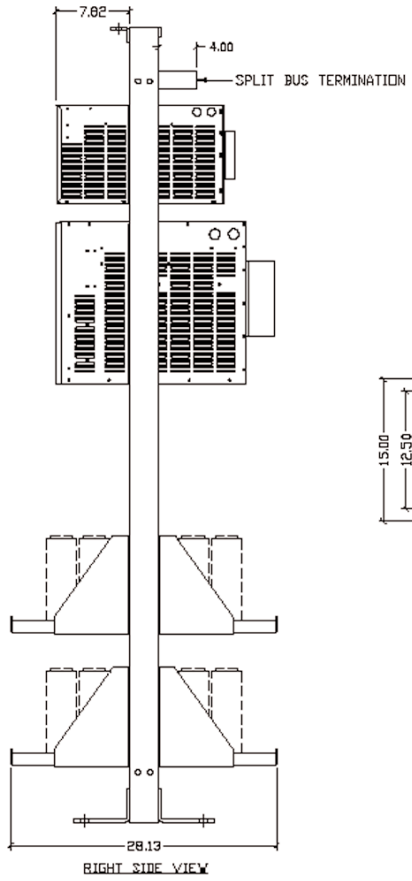
(X2) = Two chargers per system.

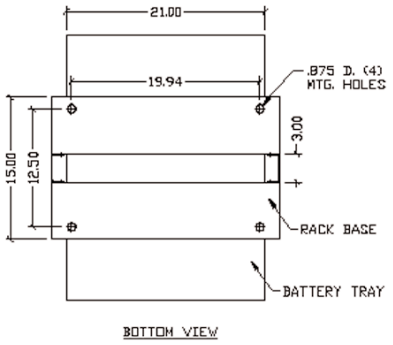
Ordering Information

Model Number Nomenclature









ALL DIMENSIONS GIVEN IN INCHES

Standard System Components

1) 7 foot x 23 inch Open Relay Rack

2) Controlled Ferroresonant Charger (Positive Ground) UL 1481 approved.

3) Transistorized Ferroresonant Inverter - UL 1481 approved.

4) Split Bus Termination.

Environmental

Operating Temperature
0 to 50°C

Storage Temperature
-20 to 60°C

Relative Humidity
0 to 95% (Non-condensing)

Cooling
Convection

Notes

A) System sized for 24 hour battery recharge.

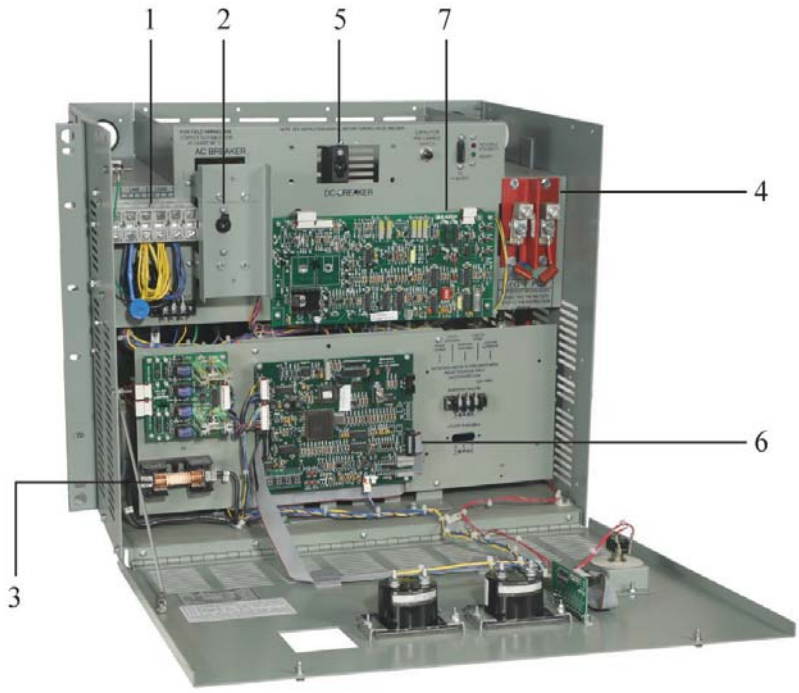
B) Static transfer switch reduces KVA output by 100VA

C) Batteries are not included in the above systems. For battery requirements consult the factory.

Product Close-up

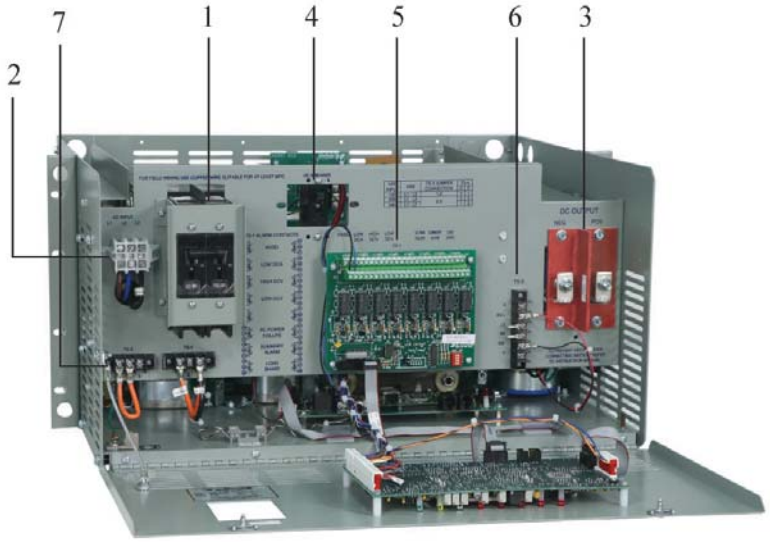
A31

1. AC Output Terminal
2. AC Output Breaker
3. AC Alt. Source Fuse
4. DC Input Terminal
5. DC Input Breaker
6. Static Switch
7. Control Board



A36D

1. AC Breaker
2. AC Input Terminal Block
3. DC Output Terminal Block
4. DC Breaker
5. Alarm Terminal Strip
6. Remote Equalize, Sensing & Load Sharing Strip
7. AC Tap Jumper Terminal Strip



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ISO 9001 CERTIFIED

BATTERY INFORMER SERIES

(PATENTED)

LIVE CIRCUIT BATTERY TESTING

STATIONARY BATTERY INFORMER

STATIONARY BATTERY INFORMER

U.S PATENT NO. 6,992,487

The LaMarche Stationary Battery Informer is a breakthrough in technology. This tester can be installed in any battery system and, within seconds, can determine the condition of your batteries under load without disrupting the system operation. The battery and charger are never disconnected from the load even during the test. The intelligent tester control circuit will not allow testing to take place when the batteries are being used in an emergency situation or if they are recharging from a recent discharge. It will also signal if the tester has failed and/or the charging system is inoperative.

The Battery Informer performs a unique, patented discharge test, signaling whether the batteries are missing, good, have open cell(s), are sulfated, and whether failure is imminent. Testing lasts only seconds. If the tester detects suspected sulfation, an automatic equalize cycle can be initiated on a charger equipped with a remote equalize input. Summary failure indicates if one or more of the following failures occur: open cell, possible battery failure or tester fail. The tests can be initiated manually or the controller can be programmed to automatically perform the test periodically.

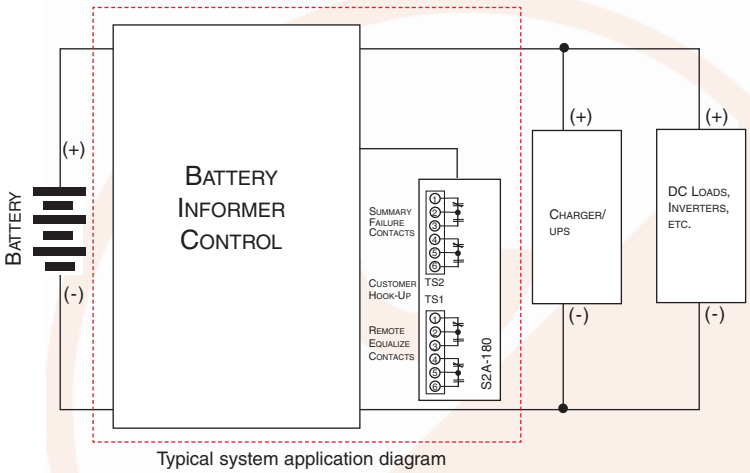
The Battery Informer is available in several models covering battery strings of 24, 48 and 130 Volts with capacities ranging from 25 to 1000 ampere hours. Contact the factory for other system ratings.

Standard Features

- Test Battery Condition on Live System
- Unique Momentary Test
- Manual Test Mode
- Programmable AutoTest Interval
  (Adjustable 1 to 120 day interval)
- Battery and Charger are Never Disconnected from Load
- Automatic Self-Diagnostics
- LED's provided for
  - Test in Process
  - Test Pass
  - Manual Test
  - Auto Equalize (if enabled)
  - Check Battery System
  - Open Cell Detected
  - Tester Failure
  - DC Volts
  - Amp Hour Capacity of Battery
  - Auto Test Interval
- Remote Auto Equalize Control (Two Form "C" contacts)
- Summary Failure Alarm (Two Form "C" contacts)
  Summary Failure is defined as any of the following Alarms: Open Cell, Possible Battery or Tester Failure.
- 2 Year Warranty

Optional Features

- 068-Audible Alarm with Silence Switch
  (uses (1) set of Summary contacts)
- 21C-Charger Inoperative Alarm Contacts (Two Form "C")



Typical system application diagram

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Made in USA

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LIVE CIRCUIT BATTERY TESTING

STATIONARY BATTERY INFORMER

Battery Informer(BI) Models

		Battery Amp Hour Range	25-50	51-100	101-150	151-300	301-400	401-500	501-600	601-700	701-800	801-900	901-1000
24VDC	12L	Continuous Load 0-100A	BI-100-24V-50	BI-100-24V-100	BI-100-24V-150	BI-100-24V-300	BI-100-24V-400	BI-100-24V-500	N/A	N/A	N/A	N/A	N/A
		Continuous Load 0-200A	N/A	N/A	N/A	N/A	N/A	N/A	BI-200-24V-600	BI-200-24V-700	BI-200-24V-800	BI-200-24V-900	BI-200-24V-1000
		Continuous Load 0-400A	N/A	N/A	N/A	N/A	N/A	N/A	BI-400-24V-600	BI-400-24V-700	BI-400-24V-800	BI-400-24V-900	BI-400-24V-1000

		Battery Amp Hour Range	25-50	51-100	101-150	151-300	301-400	401-500	501-600	601-700	701-800	801-900	901-1000
48VDC*	23L/24L	Continuous Load 0-100A	BI-100-48V-50	BI-100-48V-100	BI-100-48V-150	BI-100-48V-300	BI-100-48V-400	BI-100-48V-500	N/A	N/A	N/A	N/A	N/A
		Continuous Load 0-200A	N/A	N/A	N/A	N/A	N/A	N/A	BI-200-48V-600	BI-200-48V-700	BI-200-48V-800	BI-200-48V-900	BI-200-48V-1000
		Continuous Load 0-400A	N/A	N/A	N/A	N/A	N/A	N/A	BI-400-48V-600	BI-400-48V-700	BI-400-48V-800	BI-400-48V-900	BI-400-48V-1000

*Consult factory for Battery Amp Hour Ranges over 1000A

		Battery Amp Hour Range	25-50	51-100	101-150	151-300	301-400	401-500	501-600	601-700	701-800	801-900	901-1000
130VDC	58L/60L	Continuous Load 0-100A	BI-100-130V-50	BI-100-130V-100	BI-100-130V-150	BI-100-130V-300	BI-100-130V-400	BI-100-130V-500	N/A	N/A	N/A	N/A	N/A
		Continuous Load 0-200A	N/A	N/A	N/A	N/A	N/A	N/A	BI-200-130V-600	BI-200-130V-700	BI-200-130V-800	BI-200-130V-900	BI-200-130V-1000
		Continuous Load 0-400A	N/A	N/A	N/A	N/A	N/A	N/A	BI-400-130V-600	BI-400-130V-700	BI-400-130V-800	BI-400-130V-900	BI-400-130V-1000

Model Number Nomenclature

BI - 100 - 24V - 50 - ( ) - ( )

- Battery Informer
- Continuous Load
- DC Voltage
- Battery Informer Amp Hour Rating
- Number & Type of Cells
- Option Code

Continuous Load
100
200
400

DC Voltage
24V
48V
130V

Battery Informer Amp Hour Rating
50
100
150
300
400
500
600
700
800
900
1000

Number &Type of Battery Cells**
12L
23L/24L
58L/60L

**Consult factory for other than lead acid batteries

Optional Accessory Codes
068-Audible Alarm with Silence Switch

21C-Charger Inoperative Alarm Contacts

Ordering Information

When ordering, please specify:

- LaMarche Model Number BI (Battery Informer)
- Continuous Load (load current draw under normal operations)
- DC Voltage
- Battery Amp Hour Rating
- Number & Type of Battery Cells
- Optional Accessories

Specifications subject to change without notice

P25-DSBI-1
ECN 18508
11-09

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DIGITAL C.A.P. SYSTEMS
(COMBINED ACCESSORY PACKAGE)

laMARCHE®

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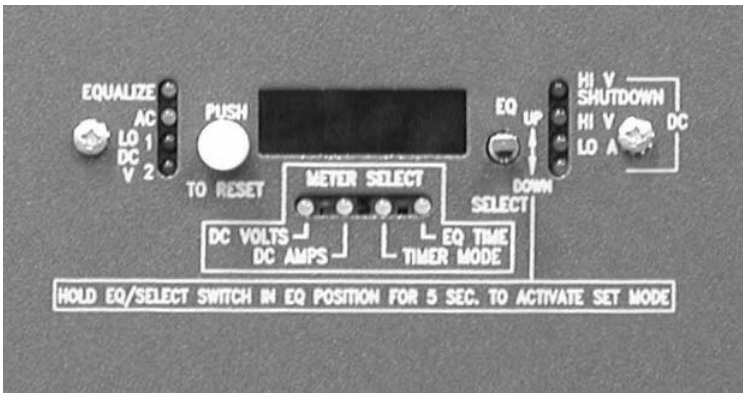
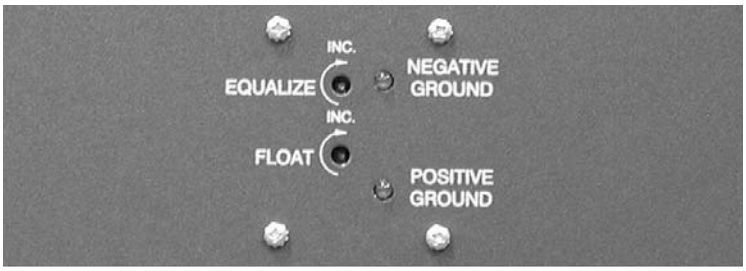


Front panel display (except 16H)



Ground Detection LED's (16J, 16Q, 16T & 16U only) shown on A12B model

Standard Features

Selectable Digital LED Display for DC Voltage, DC Amps (Current), Timer Mode and Equalize Time Remaining (hrs)

- Multi-Mode Equalize Timer & Light; adjustable from 1-144 hrs with five selectable modes: Standard, 7-day,14-day, 30-day and Equalize after Low DC Voltage
- AC Pilot Light
- AC Power Failure Alarm (except 16H) Adjustable Time Delay (0-255 sec) (De-Energizes during alarm condition)
- Low DC Current Alarm Adjustable Time Delay (0-255 sec) (De-Energizes during alarm condition)
- Low DC Voltage Alarm Adjustable Time Delay (0-255 sec) (De-Energizes during alarm condition)
- Low DC Voltage 2 Alarm Adjustable Time Delay (0-255 sec) (De-Energizes during alarm condition)
- High DC Voltage Alarm Adjustable Time Delay (0-255 sec) (Energizes during alarm condition)
- High DC Voltage Shutdown Alarm Adjustable Time Delay (0-255 sec) (Energizes during alarm condition)
- Positive & Negative Ground Alarm (16J, 16Q, 16T & 16U only) (Energizes during alarm condition)
- Summary Alarm Adjustable Time Delay (0-255 sec) (De-Energizes during alarm condition)

All alarm contacts are rated for 0.5A @ 120VAC, 2A @ 30VDC and 0.25A @ 125VDC

THE ULTIMATE ACCESSORY FOR YOUR LAMARCHE BATTERY CHARGER

The Digital C.A.P. (Combined Accessory Package) Systems feature a microprocessor-based design that incorporates the most popular alarms combined with a Multi-Mode Equalize Timer and a Digital LED Display in one convenient factory installed package.

The Alarm relay contacts and LED indicators allow the user to report faulty conditions remotely and locally. Alarm conditions are reported via Form "C" contacts to alert the operator of a faulty condition of the DC Power System and take corrective actions. Individual Alarm LED indicators and the Digital Display are provided for local supervision.

You are not limited to a *one size fits all* either - several Digital C.A.P. System configurations are offered to meet your specific needs. Whether Ground Detection, Low Voltage Battery Disconnect, Low Voltage Load Disconnect or an Audible Alarm is required, LaMarche offers a wide variety of solutions for every application.

Completely user-friendly, the Digital C.A.P. System alarm settings can be adjusted and calibrated in the field without the need of special tools or equipment. Best of all, adjustments can be made when the battery is on-line without affecting the load thus reducing costly downtime.

With its uncomplicated interface, operating these Digital C.A.P. Systems is easy; Meter readings, Equalize and Calibration modes are accessed via the multi-functional Eq/Select switch. All alarm settings are stored in memory - the last becomes the new default setting even if an extended power failure occurs. The LED indicators are instantaneously alarmed and the alarm relays have an adjustable time delay of 0-255 seconds with the exception of the Ground Detection Alarms (16J, 16Q, 16T & 16U only) which have no time delay.

The Multi-Mode Equalize Timer is field programmable and has Equalize settings that are adjustable from 1-144 hrs in five different modes; Standard, 7-day, 14-day, 30-day and Equalize after Low DC Voltage, allowing you to select the right mode for your application. An Equalize LED is displayed on the front panel when the timer is in operation and an Equalize Time Remaining feature can be viewed through the selectable Digital Display.

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DIGITAL C.A.P. SYSTEMS
(COMBINED ACCESSORY PACKAGE)

Features	16E	16G	16H	16J	16L	16P	16Q	16T	16U
	Available on Charger Models								
	A12B A46	A12B	PPC	A12B A46 A97	A12B	A12B	A12B	A12B A97	A12B
Digital Selectable LED Display for: DC Voltage, DC Current (Amps), Timer Mode, Equalize Time Remaining (hrs)	✔	✔	✔	✔	✔	✔	✔	✔	✔
Multi-Mode Digital Equalize Timer; adjustable from 1-144 hrs with five selectable modes: Standard, 7-day, 14-day, 30-day, Equalize after Low DC Voltage	✔	✔	✔	✔	✔	✔	✔	✔	✔
Equalize Light (Amber LED)	✔	✔	✔	✔	✔	✔	✔	✔	✔
AC Pilot Light (Green LED)	✔	✔	✔	✔	✔	✔	✔	✔	✔
AC Power Failure Relay with (2) sets Form “C”	✔	✔	---	✔	✔	✔	✔	✔	✔
Low DC Current Alarm Light (Red LED) with (2) sets Form “C”	✔	✔	✔	✔	✔	✔	✔	✔	✔
Low DC Voltage Alarm Light (Red LED) with (2) sets Form “C”	✔	✔	---	✔	✔	✔	✔	✔	✔
Low DC Voltage Alarm Light (Red LED) only - no contacts	---	---	✔	---	---	---	---	---	---
Low DC Voltage 2 Alarm Light (Red LED) with (2) sets Form “C”	✔	---	---	---	---	✔	---	---	---
Low DC Voltage 2 Alarm Light (Red LED) with (1) set Form “C”- utilized for Low Voltage Battery Disconnect	---	✔	---	---	---	---	---	---	✔
Low DC Voltage 2 Alarm Light (Red LED) with (1) set Form “C”- utilized for Low Voltage Load Disconnect	---	---	---	---	✔	---	✔	---	---
Low DC Voltage 2 Alarm Light (Red LED) only - no contacts	---	---	✔	✔	---	---	---	✔	---
High DC Voltage Alarm Light (Red LED) with (2) sets Form “C”	✔	✔	---	✔	✔	✔	✔	✔	✔
High DC Voltage Alarm Light (Red LED) only - no contacts	---	---	✔	---	---	---	---	---	---
High DC Voltage Shutdown Alarm Light (Red LED) with (1) set Form “C”	✔	✔	---	✔	✔	✔	✔	✔	✔
Positive Ground Alarm Light (Green LED) with (1) set Form “C”	---	---	---	✔	---	---	✔	✔	✔
Negative Ground Alarm Light (Green LED) with (1) set Form “C”	---	---	---	✔	---	---	✔	✔	✔
Summary Alarm with (2) sets Form “C” includes: AC Power Failure (except 16H), Low DC Current (can be de-selected), Low DC Voltage, Low DC Voltage 2, High DC Voltage, High DC Voltage Shutdown (except 16H). Adds Positive & Negative Ground on 16J, 16Q, 16T, & 16U.	✔	✔	✔	✔	✔	---	✔	---	✔
Summary Alarm with (1) set Form “C” includes: AC Power Failure, Low DC Current (can be de-selected), Low DC Voltage, Low DC Voltage 2, High DC Voltage, High DC Voltage Shutdown. Adds Positive & Negative Ground 16T.	---	---	---	---	---	✔	---	✔	---
Audible Alarm with Silence Switch	---	---	---	---	---	✔	---	✔	---

DIGITAL C.A.P. DESCRIPTIONS

Digital C.A.P. Systems common features EXCEPT 16H : Selectable LED Display, Multi-Mode Equalize Timer, Equalize Light, AC Pilot Light , AC Power Failure Relay w/ (2) sets Form "C", Low DC Current Alarm Light w/ (2) sets Form "C", & Low DC Voltage Alarm Light w/ (2) sets Form "C".

16E (for LaMarche Charger models A12B & A46 only): Low DC Voltage 2 Alarm Light w/ (2) sets Form "C", High DC Voltage Alarm Light w/ (2) sets Form "C", High DC Voltage Shutdown Alarm Light w/ (1) set Form "C", Summary Alarm (all alarms listed above) w/ (2) sets Form "C" (Low DC Current can be de-selected).

16G (for LaMarche Charger model A12B only): Low DC Voltage 2 Alarm Light utilized for Low Voltage Battery Disconnect w/ (1) set Form "C", High DC Voltage Alarm Light w/ (2) sets Form "C", High DC Voltage Shutdown Alarm Light w/ (1) set Form "C", Summary Alarm (all alarms listed above) w/ (2) sets Form "C" (Low DC Current can be de-selected).

16H (for LaMarche Charger model PPC only): Low DC Voltage Alarm Light only (no contacts), Low DC Voltage 2 Alarm Light only (no contacts), High DC Voltage Alarm Light only (no contacts), Summary Alarm (all alarms listed above) w/ (2) sets Form "C" (Low DC Current can be de-selected).

16J (for LaMarche Charger model A12B, A97 & A46 only): Low DC Voltage 2 Alarm Light only (no contacts), High DC Voltage Alarm Light w/ (2) sets Form "C", High DC Voltage Shutdown Alarm Light w/ (1) set Form "C", Positive Ground Alarm Light w/ (1) set of Form "C", Negative Ground Alarm Light w/ (1) set Form "C", Summary Alarm (all alarms listed above) w/ (2) sets Form "C" (Low DC Current can be de-selected).

16L (for LaMarche Charger model A12B only): Low DC Voltage 2 Alarm Light utilized for Low Voltage Load Disconnect w/ (1) set Form "C", High DC Voltage Alarm Light w/ (2) sets Form "C", High DC Voltage Shutdown Alarm Light w/ (1) set Form "C", Summary Alarm (all alarms listed above) w/ (2) sets Form "C" (Low DC Current can be de-selected).

16P (for LaMarche Charger model A12B only): Low DC Voltage 2 Alarm Light w/ (2) sets Form "C", High DC Voltage Alarm Light w/ (2) sets Form "C", High DC Voltage Shutdown Alarm Light w/ (1) set Form "C", Summary Alarm (all alarms listed above) w/ (1) set Form "C" (Low DC Current can be de-selected), Audible Alarm w/ Silence Switch.

16Q (for LaMarche Charger model A12B only): Low DC Voltage 2 Alarm Light with (1) set of form "C" contacts utilized for Low Voltage Load Disconnect, High DC Voltage Alarm Light w/ (2) sets Form "C", High DC Voltage Shutdown Alarm Light w/ (1) set Form "C", Positive Ground Alarm Light w/ (1) set of Form "C", Negative Ground Alarm Light w/ (1) set Form "C", Summary Alarm (all alarms listed above) w/ (2) sets Form "C" (Low DC Current can be de-selected).

16T (for LaMarche Charger model A12B & A97 only): Low DC Voltage 2 Alarm Light only (no contacts), High DC Voltage Alarm Light w/ (2) sets Form "C", High DC Voltage Shutdown Alarm Light w/ (1) set Form "C", Positive Ground Alarm Light w/ (1) set Form "C", Summary Alarm (all alarms listed above) w/ (1) set Form "C" (Low DC Current can be de-selected), Audible Alarm w/ Silence Switch.

16U (for LaMarche Charger model A12B only): Low DC Voltage 2 Alarm Light utilized for Low Voltage Battery Disconnect w/ (1) set Form "C", High DC Voltage Alarm Light w/ (2) sets Form "C", High DC Voltage Shutdown Alarm Light w/ (1) set Form "C", Positive Ground Alarm Light w/ (1) set of Form "C", Negative Ground Alarm Light w/ (1) set Form "C", Summary Alarm (all alarms listed above) w/ (2) sets Form "C" (Low DC Current can be de-selected).

Specifications subject to change without notice

P25-DSDIGITAL_CAP_SYSTEMS-1
ECN 16901
09-05

LaMARCHE®
ISO 9001:2000 CERTIFIED

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LCD C.A.P. Systems
(Combined Accessory Package)

Front panel display

Ground Detection LED's (46J, 46Q,46T & 46U only) shown on A12B model

Standard Features

- LCD Display for DC Voltage, DC Current & Alarms
- Multi-Mode Equalize Timer; adjustable from 1-144 hrs with five selectable modes: Standard, 7-day,14-day, 30-day and Equalize after Low DC Voltage
- Float & Equalize LED
- Alarm LED with Text description
- AC Power Failure Alarm
- Low DC Current Alarm
- Low DC Voltage Alarm(s)
- High DC Voltage Alarm
- High DC Voltage Shutdown Alarm
- Positive & Negative Ground Alarm (46J, 46Q, 46T & 46U only)
- Summary Alarm Adjustable Time Delay (0-255 sec)
- Adjustable Time Delay (0-255 sec) (Except Ground Detection Alarms)

All alarm contacts are rated for 0.5A @ 120VAC, 2A @ 30VDC and 0.25A @ 125VDC

The Ultimate Accessory for your La Marche Battery Charger

The LCD C.A.P. System (Combined Accessory Package) features a microprocessor-based design that incorporates the most popular alarms combined with a Multi-Mode Equalize Timer and a LCD Display in one convenient factory installed package.

The Alarm relay contacts and LCD indications allow the user to report faulty conditions remotely and locally. Alarm conditions are reported via Form "C" contacts to alert the operator of a faulty condition of the DC Power System. The Digital Display is provided for local supervision.

You are not limited to "one size fits all". Several system configurations are offered to meet your specific needs. Whether Ground Detection, Low Voltage Battery Disconnect, Low Voltage Load Disconnect or an Audible Alarm is required, LaMarche offers a wide variety of solutions for every application.

Completely user-friendly, the alarm settings can be adjusted and calibrated in the field without the need of special tools or equipment. Best of all, adjustments can be made when the battery is on-line without affecting the load thus reducing costly downtime.

With its uncomplicated interface, operating this LCD C.A.P. System is easy. Meter readings, Equalize and Calibration modes are accessed via the multi-functional Mode switch. All alarm settings are stored in memory - the last setting becomes the new default setting even if an extended power failure occurs. Upon an alarm condition, the LCD screen instantly provides a text description along with an LED alarm indication.

The Multi-Mode Equalize Timer is field programmable and has Equalize settings that are adjustable from 1-144 hrs in five different modes; Standard, 7-day, 14-day, 30-day and Equalize after Low DC Voltage, allowing you to select the right mode for your application. The alarm relays have an adjustable time delay of 0-255 seconds with the exception of the Ground Detection Alarms (46J, 46Q, 46T & 46U only) which have no time delay.

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LCD C.A.P. Systems
(Combined Accessory Package)

Features	46E	46G	46J	46L	46P	46Q	46T	46U
	Available on Charger Models							
	A12B A46	A12B	A12B A46 A97	A12B	A12B	A12B	A12B A97	A12B
LCD Display for: DC Voltage, DC Current (Amps), Timer Mode, Equalize Time Remaining (hrs)	✓	✓	✓	✓	✓	✓	✓	✓
Multi-Mode Digital Equalize Timer; adjustable from 1-144 hrs with five selectable modes: Standard, 7-day, 14-day, 30-day, Equalize after Low DC Voltage	✓	✓	✓	✓	✓	✓	✓	✓
Equalize Light	✓	✓	✓	✓	✓	✓	✓	✓
Float Light	✓	✓	✓	✓	✓	✓	✓	✓
AC Power Failure Relay with (2) sets Form “C” (De-energizes during alarm condition)	✓	✓	✓	✓	✓	–	✓	✓
Low DC Current Alarm (2) sets Form “C” (De-energizes during alarm condition)	✓	✓	✓	✓	✓	✓	✓	✓
Low DC Voltage 1 Alarm (2) sets Form “C” (De-energizes during alarm condition)	✓	✓	✓	✓	✓	✓	✓	✓
Low DC Voltage 2 Alarm (2) sets Form “C” (De-energizes during alarm condition)	✓	–	–	–	✓	–	–	–
Low DC Voltage 2 Alarm (1) set Form “C” (De-energizes during alarm condition) Utilized for Low Voltage Battery Disconnect	–	✓	–	–	–	–	–	✓
Low DC Voltage 2 Alarm (1) set Form “C” (De-energizes during alarm condition) Utilized for Low Voltage Load Disconnect	–	–	–	✓	–	✓	–	–
Low DC Voltage 2 Alarm (No contacts)	–	–	✓	–	–	–	✓	–
High DC Voltage Alarm (2) sets Form “C” (Energizes during alarm condition)	✓	✓	✓	✓	✓	✓	✓	✓
High DC Voltage Shutdown Alarm (1) set Form “C” (Energizes during alarm condition)	✓	✓	✓	✓	✓	✓	✓	✓
Positive Ground Alarm Light (Green LED) with (1) set Form “C” (Energizes during alarm condition)	–	–	✓	–	–	✓	✓	✓
Negative Ground Alarm Light (Green LED) with (1) set Form “C” (Energizes during alarm condition)	–	–	✓	–	–	✓	✓	✓
Summary Alarm with (2) sets Form “C” includes: AC Power Failure, Low DC Current (can be de-selected), Low DC Voltage, Low DC Voltage 2, High DC Voltage, High DC Voltage Shutdown. Adds Positive & Negative Ground on 46J, 46Q, & 46U. (De-energizes during alarm condition)	✓	✓	✓	✓	–	✓	–	✓
Summary Alarm with (1) set Form “C” includes: AC Power Failure, Low DC Current (can be de-selected), Low DC Voltage, Low DC Voltage 2, High DC Voltage, High DC Voltage Shutdown. Adds Positive & Negative Ground 46T. (De-energizes during alarm condition)	–	–	–	–	✓	–	✓	–
Audible Alarm with Silence Switch	–	–	–	–	✓	–	✓	–

LCD C.A.P. DESCRIPTIONS

LCD C.A.P. Systems common features : Selectable Display, Multi-Mode Equalize Timer, Equalize light, Float light, AC Power Failure Relay w/ (2) sets Form "C" (except 46Q), Low DC Current Alarm w/ (2) sets Form "C", Low DC Voltage 1 Alarm w/ (2) sets Form "C" & Adjustable Time Delay (0-255 sec) (Except Ground Detection Alarms).

46E (for LaMarche Charger models A12B & A46 only): Low DC Voltage 2 Alarm w/ (2) sets Form "C", High DC Voltage Alarm w/ (2) sets Form "C", High DC Voltage Shutdown Alarm w/ (1) set Form "C", Summary Alarm (all alarms listed above) w/ (2) sets Form "C" (Low DC Current can be de-selected).

46G (for LaMarche Charger model A12B only): Low DC Voltage 2 Alarm utilized for Low Voltage Battery Disconnect w/ (1) set Form "C", High DC Voltage Alarm w/ (2) sets Form "C", High DC Voltage Shutdown Alarm w/ (1) set Form "C", Summary Alarm (all alarms listed above) w/ (2) sets Form "C" (Low DC Current can be de-selected).

46J (for LaMarche Charger model A12B, A46 & A97 only): Low DC Voltage Alarm (no contacts), High DC Voltage Alarm w/ (2) sets Form "C", High DC Voltage Shutdown Alarm w/ (1) set Form "C", Positive Ground Alarm Light w/ (1) set of Form "C", Negative Ground Alarm Light w/ (1) set Form "C", Summary Alarm (all alarms listed above) w/ (2) sets Form "C" (Low DC Current can be de-selected).

46L (for LaMarche Charger model A12B only): Low DC Voltage 2 Alarm utilized for Low Voltage Load Disconnect w/ (1) set Form "C", High DC Voltage Alarm w/ (2) sets Form "C", High DC Voltage Shutdown Alarm w/ (1) set Form "C", Summary Alarm (all alarms listed above) w/ (2) sets Form "C" (Low DC Current can be de-selected).

46P (for LaMarche Charger model A12B only): Low DC Voltage 2 Alarm w/ (2) sets Form "C", High DC Voltage Alarm w/ (2) sets Form "C", High DC Voltage Shutdown Alarm w/ (1) set Form "C", Summary Alarm (all alarms listed above) w/ (1) set Form "C" (Low DC Current can be de-selected), Audible Alarm w/ Silence Switch.

46Q (for LaMarche Charger model A12B only): Low DC Voltage 2 Alarm with (1) set of form "C" contacts utilized for Low Voltage Load Disconnect, High DC Voltage Alarm w/ (2) sets Form "C", High DC Voltage Shutdown Alarm w/ (1) set Form "C", Positive Ground Alarm Light w/ (1) set of Form "C", Negative Ground Alarm Light w/ (1) set Form "C", Summary Alarm (all alarms listed above) w/ (2) sets Form "C" (Low DC Current can be de-selected).

46T (for LaMarche Charger model A12B & A97 only): Low DC Voltage 2 Alarm Light only (no contacts), High DC Voltage Alarm w/ (2) sets Form "C", High DC Voltage Shutdown Alarm w/ (1) set Form "C", Positive Ground Alarm w/ (1) set of Form "C", Negative Ground Alarm w/ (1) set Form "C", Summary Alarm (all alarms listed above) w/ (1) set Form "C" (Low DC Current can be de-selected), Audible Alarm w/ Silence Switch.

46U (for LaMarche Charger model A12B only): Low DC Voltage 2 Alarm utilized for Low Voltage Battery Disconnect w/ (1) set Form "C", High DC Voltage Alarm w/ (2) sets Form "C", High DC Voltage Shutdown Alarm w/ (1) set Form "C", Positive Ground Alarm Light w/ (1) set of Form "C", Negative Ground Alarm Light w/ (1) set Form "C", Summary Alarm (all alarms listed above) w/ (2) sets Form "C" (Low DC Current can be de-selected).

Specifications subject to change without notice
P25-DSLCD_CAP_SYSTEMS-1
ECN 17461
03/07

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Floor Stands, Drip Shields & Mounting Kits

Enclosure Accessories

Model Number Nomenclature	
Model Number	Model Number Suffix
( )	( )

When Ordering Please Specify:
Model Number
Model Number Suffix

Model Number	
P3	Floor Stands
S4C1	Dripshields
SP3K-FLR/R1	Floor Mounting Kit
SP3K-WR1	Wall Mounting Kit

Floor Stands		
Model Number	For Case No.	Height (Inches) Floor To Case
P3-3-L05A	3	26.00
P3-4-L01A	4	30.00
P3-6-L07A	6	18.00
P3-70/72-L01A	70 & 72	18.00
P3-8A-L04A	8A	40.00
P3-9-L01A	9	30.00

Drip Shield Kits				
Model Number	For Case No.	Length (inches)	Width (inches)	Height (inches)
S4C1-1-2	1	12.75	9.38	1.88
S4C1-2-1	2	15.38	11.69	1.88
S4C1-3-1	3	17.69	11.44	1.88
S4C1-05-1	05	9.50	7.75	1.06
S4C1-6-2	6	28.00	14.88	2.56
S4C1-7-1	7	16.63	13.25	1.88
S4C1-72-1	70 & 72	Consult Factory		

Floor Mounting Kit	
Model Number	Description
SP3K-FLR/R1	For Case No. 4D, 9D, 9E, 33 & 39

Wall Mounting Kit	
Model Number	Description
SP3K-WR1	For Case No. 4D, 9D, 33 & 39

Consult Factory For Further Details

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DNP3.0 / MODBUS

ISO 9001:2000 CERTIFIED

COMMUNICATION BOARD

The La Marche communication board allows users to monitor selected La Marche models over a serial connection. La Marche battery chargers can be equipped with serial RS-485, RS-232 or TCP/IP ports for data communication over Modbus, DNP3.0 and LAN. The TCP/IP port eliminates the need for a serial to TCP/IP converter to connect to the LAN. These protocols allows easy communication within all types of network architectures. The communication protocols are being used between Intelligent Electronic Devices (IEDs) and Remote Terminal Units (RTUs) in substations to monitor and control.

DNP3.0 and Modbus permits a device to report digital inputs, counter inputs and analog inputs. DNP3.0 supports reporting mode, where remote devices can report field events without being polled by the master station. This protocol supports multiple methods of reading inputs individually or as a group. All three protocols query the charger for the current status.

The communication board is designed for the utility industry and is immune to electrical noise. The RS-232 is limited to a maximum cable length of 50 feet and RS-485 can have cable lengths up to 4,000 feet. It provides an efficient means of gathering small quantities of data from the battery charger for the SCADA system.

The RS-232 and RS-485 connections are galvanically isolated. The ethernet port is also isolated per the IEEE specs. The La Marche communication option has wide market acceptance and is implemented by major utility providers.

Standard Features

- DNP3.0 or Modbus over an:
  RS-232, RS-485 or TCP/IP
- Analog Inputs and Setpoints
  - DC Voltage
  - DC Current
  - Equalize Time Remaining
  - Equalize Timer Mode
  - Low DC Voltage
  - High DC Voltage
  - High DC Voltage Shutdown
- Alarms
  - AC Failure or Blown DC Protection
  - Low DC Voltage
  - High DC Voltage
  - High DC Voltage Shutdown
  - Low DC Current
  - Positive Ground
  - Negative Ground
  - Selectable Summary
- Control Relay Output Blocks/Coils
  - Float/Equalize
  - Low Current in Summary Alarm
  - AC Failure in Summary Alarm
  - Ground Detection in Summary Alarm
- Fully Isolated RS-232 & RS-485 Connectors

Available on the following models

A12B, A36D, A75DE & TPSD

Option Codes:
21P - DNP3.0
21Q - Modbus

Specifications subject to change without notice.
P25-DSDNP3-1
ECN: 18508
11/09

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Made in USA

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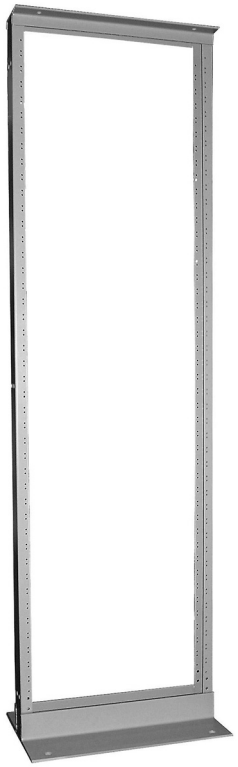
RELAY RACK

ISO 9001:2000 CERTIFIED



Standard Features

- Relay Racks constructed from 11 gauge steel
- ANSI-61 gray paint finish
- The 3 inch vertical channels are drilled and tapped on the front and rear for 12-24 NC hardware
- Welded construction
- 19 or 23 inch wide configuration
- Holes in sides of rack for joining racks
- 1.75 inch mounting hole pattern

Options

(Consult factory for further details)

- Seismic Relay Rack
- Aluminum Relay Rack
- Steel, Bolted Relay Rack
- Cable Stay

RELAY RACK

La Marche Relay Racks can be used for mounting Rectifiers, Batteries and other related power system equipment.

La Marche offers an array of Relay Rack heights in both 19 and 23 inch widths. See our web site for a detailed drawing of the relay rack.

Rack Base

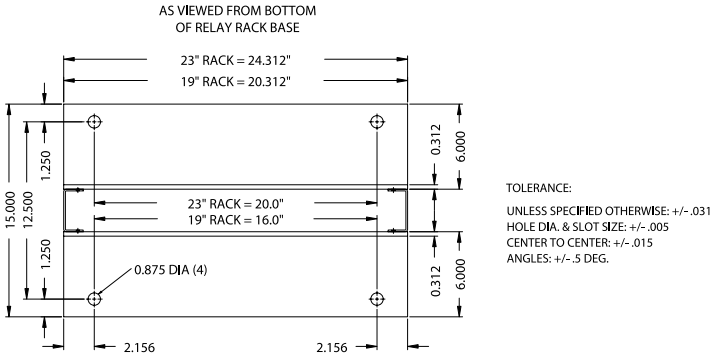


Chart for 19" Relay Rack

Model Number	Height (feet)	Rack Width* (inches)	Rack Units
P3-RR-P110	6.00	20.312	36
P3-RR-P040	7.00	20.312	43
P3-RR-P100	7.50	20.312	47
P3-RR-P120	8.00	20.312	50
P3-RR-P080	9.00	20.312	57

*Center to center is 18.312 inches.

Chart for 23" Relay Rack

Model Number	Height (feet)	Rack Width** (inches)	Rack Units
P3-RR-P020	6.00	24.312	36
P3-RR-P060	7.00	24.312	43
P3-RR-P180	7.50	24.312	47
P3-RR-P050	8.00	24.312	50
P3-RR-P070	9.00	24.312	57

**Center to center is 22.312 inches.

Specifications are subject to change without notice.

P25-DSP3-RR-RACKS-1
ECN 16713
03-05

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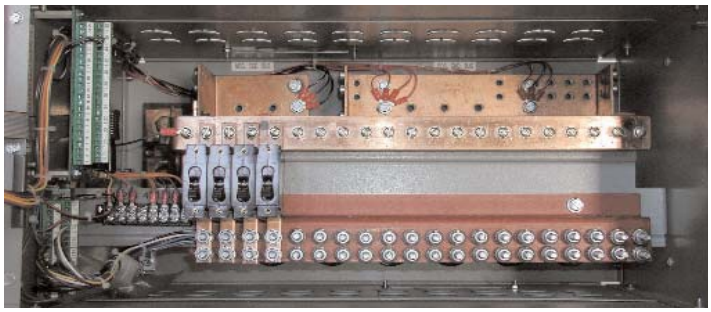
ISO 9001 CERTIFIED

CDPD
COMBINATION DISTRIBUTION PANEL

CDPD Center mounted on 23" rack with optional Digital Status Alarm package



Inside View of CDPD Center shown with optional Breakers

Standard Features

- 24VDC & 48VDC Positive or Negative Return versions
- 200A & 400A rated models
- Compact Design measuring 23"W (for relay rack mounting) X 15.5"D x 12.25"H (7 ru's).
  Consult factory for 19" rack mount availability.
- Front Accessibility with removable Top and Bottom panels
- 20-Position Single-Pole Load Breakers (0-125A) w/ Breaker Tripped LED and Form "C" contact.
- Ground/Charge Busbars
  - Accommodates Single or Two-Hole Lugs
  - Threaded inserts for ease of installation
- Ground Bus Termination Provisions
  - Qty (20) Load Returns for Two-Hole Lugs 1/2" centers and 1/4-20 hardware
  - Qty (3) Battery Returns for Two-Hole Lugs 1" centers and 5/16-18 hardware
- Charge Bus Termination Provisions
  - Qty (3) Battery Connections for Two-Hole Lugs 1" centers and 5/16-18 hardware

Optional Features

- Low Voltage Load Disconnect Package is Field Adjustable and includes: Fused Disconnect Contactor, Calibration Voltage Adjustment LED, Pickup Adjustment LED, Dropout Voltage Adjustment LED and Connected LED. With (2) Form "C" LVLD Alarm contacts
- Digital Status Alarm Package includes a Digital Volt/Amp Meter LED Display, a Multi-Mode Electronic Equalize Timer and Form "C" Alarm contacts for Breakers Tripped, Low Voltage, Low Voltage 2, Low Current, High Voltage and Summary Alarm. An Audible Alarm w/ Silence Switch is provided for the Summary Alarm.

COMPACT DISTRIBUTION CENTER - ALL IN ONE DESIGN

The LaMarche CDPD (Combination Distribution Panel) center is designed for use with all LaMarche rectifier systems built on a standard 23" rack frame. This compact unit's standard features includes Ground & Charge busbars and provisions for up to (20) Load Breakers. With its optional Low Voltage Disconnect & Digital Status Alarm packages, the CDPD offers a compact solution utilizing only half of the rack spaces that would be required with standard discrete panel assemblies.

The CDPD center is accessible from the front, allowing the wiring of Load Breakers without requiring rear access. Threaded inserts provide quick and simple mounting of breakers in the field. The CDPD center provides versatile wiring access to the Battery and Load Termination points via the top, rear and bottom. A designation label is provided to identify Load and Breaker positions/ratings.

The CDPD center can accommodate up to (20) 1-pole Breakers for load distribution. Each breaker can be rated up to 125 amps, with a maximum total distribution rating of 200 & 400 amps of the respective CDPD models. Breakers rated from 10 to 60A utilizes (1) position, 70 to 100A utilizes (2) positions and the 125A breaker utilizes (4) positions of the (20) available. 200 & 400 amps Positive & Negative busbars for terminating Batteries and Load Return leads are provided as standard. The busbars can accommodate Single and/or Two-Hole Terminal Lugs.

An optional Low Voltage Disconnect circuit is available to disconnect the load from the system thus protecting the Battery bank from an over discharge. A Calibration circuit is provided to set the alarm points to the desired thresholds allowing adjustments to be made while the system is energized without affecting the load. The optional Digital Status Alarm package features a Digital Volt/Amp Meter LED Display with form "C" Alarm contacts as well as a Multi-Mode Electronic Equalize Timer to provide an equalize charge to the Battery bank when necessary.

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CDPD
COMBINATION DISTRIBUTION PANEL

CDPD Centers

Model Number	DC Voltage	Maximum Bus Rating	Low Voltage Disconnect	Digital Alarm System
CDPD400-24V-23-2	24	400	---	---
CDPD400-48V-23-2	48	400	---	---
CDPD200-24V-23-1	24	200	included	---
CDPD400-24V-23-1	24	400	included	---
CDPD200-48V-23-1	48	200	included	---
CDPD400-48V-23-1	48	400	included	---
CDPD200-24V-23-22	24	200	---	included
CDPD400-24V-23-22	24	400	---	included
CDPD200-48V-23-22	48	200	---	included
CDPD400-48V-23-22	48	400	---	included
CDPD200-24V-23-23	24	200	included	included
CDPD400-24V-23-23	24	400	included	included
CDPD200-48V-23-23	48	200	included	included
CDPD400-48V-23-23	48	400	included	included

- All CDPD centers are for 23" rack mounting. Overall dimensions are 23"Wx15.5"Dx12.25"H. Approximate weight of CDPD centers is 50 lbs.
- Positive Ground System is standard configuration. Part number changes as follow for Negative Ground Systems: CDPD400-24V**N**-23-2.
- Standard CDPD centers have (20) breaker positions for load distribution. Optional Breaker Kits are not included in CDPD *(see adjacent chart for optional available breaker kits).*
- Straight lugs are used if termination is from the top or bottom. 90° Turn Lugs are required to terminate through the back of the CDPD center. *(see adjacent chart for optional available Compression type Lugs).*

Optional U.L. Recognized Breaker Kits

Kit Number	Ampere Rating	Number of required breaker positions
SP4K-CDPD-10B1	10A	1
SP4K-CDPD-20B1	20A	1
SP4K-CDPD-30B1	30A	1
SP4K-CDPD-40B1	40A	1
SP4K-CDPD-50B1	50A	1
SP4K-CDPD-60B1	60A	1
SP4K-CDPD-70B1	70A	2
SP4K-CDPD-80B1	80A	2
SP4K-CDPD-90B1	90A	2
SP4K-CDPD-100B1	100A	2
SP4K-CDPD-125B1	125A	4

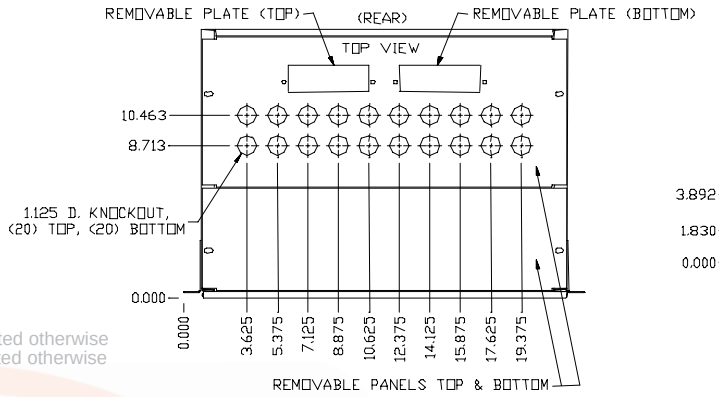
Optional Two-Hole Lug Kits

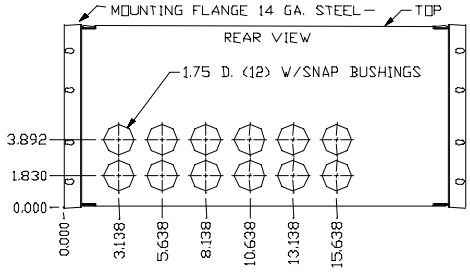
Lug Kit Number	Straight Lug		90° Lug	
	Qty	Size	Qty	Size
S4B-CDP/D-2	1	#6 AWG	1	#6 AWG
S4B-CDP/D-6	20	#6 AWG	20	#6 AWG
S4B-CDP/D-6S	40	#6 AWG	---	---

Optional Two-Hole Individual Lugs

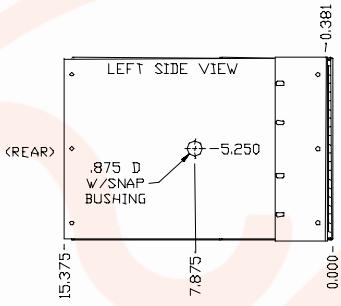
Lug Number	Lug Type	Size
P7LUG-60	Straight Lug	#6 AWG
P7LUG-58	90° Lug	#6 AWG

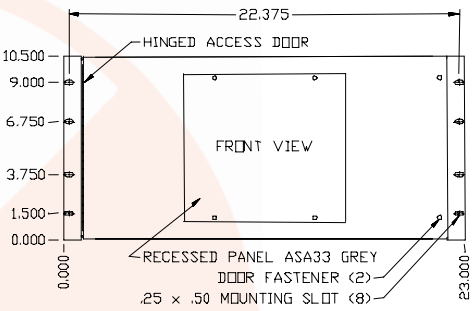
Detailed Mounting Dimensions

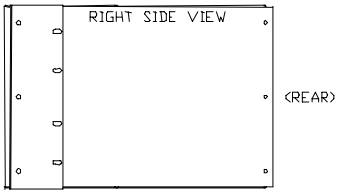




Notes:
All Dimensions given in inches
Material: 16GA. Steel unless noted otherwise
Finish: ANSI 61 Gray unless noted otherwise







Specifications subject to change without notice

P25-DSCDPD-1
ECN 14854
09-01

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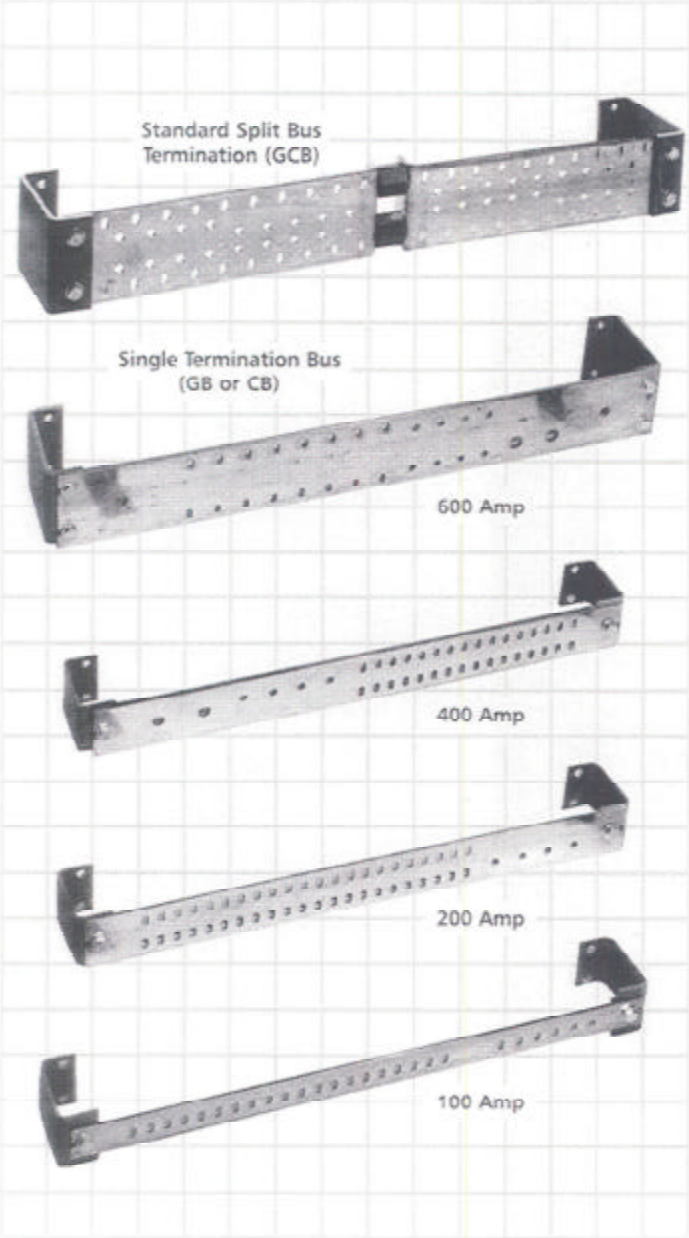
MODEL GCB/GB/CB SERIES



Solderless Mechanical Lugs

Model	Description
P7LUG-P969-6	14GA-4GA
P7LUG-P969-7	10GA-1/0
P7LUG-P969-5	6GA-300MCM
P7LUG-P969-1	4/0-600MCM

Specifications are subject to change without notice.
Please contact La Marche for current information.

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Termination Buses and Lug Kits

General Description

La Marche **Termination Bus Bars** provide a convenient means of **system ground** or **lead connections**. These bus bars have insulated standoffs to **electrically isolate** them from the rack. Each bar is made of **solid copper** sized to handle its rated current and is available in either 19 or 23 inch relay rack mount. Termination bus bars can be provided with various quantities and sizes of solderless lugs. All termination bars greater than 200 amps are available for NEMA 2-hole lugs – please consult our factory for details. Model GCB Series Split Bus Termination is standard for all rack systems unless otherwise specified.

Model Number Nomenclature

XX 23 – 800

- XX: GB = Ground Bar; CB = Charge Bar; GCB = Split Bus
- 23: Panel Width (inches)
- 800: Current Rating

Termination Bus

Model Number	Panel Width (inches)	Current Rating	*No. of Rack Units	Approx. Weight (lbs.)
XX19-100	19	100	3	2
XX23-100	23	100	3	2
XX19-200	19	200	3	4
XX23-200	23	200	3	4
XX19-400	19	400	3	8
XX23-400	23	400	3	8
XX19-600	19	600	3	12
XX23-600	23	600	3	12
XX19-800	19	800	3	16

* One "rack unit space" is equal to 1.75 inches.

Lug Kit Descriptions

Lug Kit Number	Quantity of Lugs Per Kit			
	P969-6	P969-7	P969-5	P969-1
S4B-1	20	7		
S4B-2		10		
S4B-3	20		4	
S4B-4	20	5	4	
S4B-5		10	4	
S4B-6	20		4	2
S4B-7		10	4	2
S4B-8		5	4	2

ISO 9001 CERTIFIED

Product Bulletin: Model BPK Series

MODEL BPK SERIES

Single Pole Circuit Breaker Distribution Panel

Circuit Breaker Distribution Panels are designed to provide protection for multiple load/distribution circuits. The circuit breakers fast trip response assures the panel breaker will trip before the main circuit breaker/fuse so that power will not be interrupted from other critical DC loads if an overload occurs.

BPK Panels utilize UL recognized breakers with an interrupting capacity of 5,000 amps DC at 65 volts.

Connection to the load is made directly to the load side terminal/screw of the breaker. For breakers size up to 70 amps, the terminal is a 10-32 stud with a recommended maximum #6 AWG wire size. For 100 amp breakers, the terminal is a 1/4 - 20 stud with a recommended maximum #4 AWG wire size.

Base panel does not include circuit breakers. For information on available circuit breaker sizes, see list price sheet.

A blank 1.75" high panel (1RU) is recommended below breaker panel for ease of installation.

See reverse side of data sheet for further details about the Model BPK Series Circuit Breaker Distribution Panel.

Specifications are subject to change without notice. Please contact La Marche for latest information.

Standard Features

- Guard Kit to prevent accidental tripping of breakers.
- Blank fillers furnished for all unused breaker positions.
- Breaker designation label track
- Alarm LED light and form "C" relay alarm contacts. The relay will be activated if any breaker in the panel trips or is shut off.
- Available breaker sizes are 0-100 amps single pole (70-100 amp breakers take two positions).
- Finish – ANSI-61 grey paint

Optional Equipment/Features

- For wire sizes in excess of recommended maximums or for NEMA two hole lug requirements, a separate stand-alone glastic landing strip behind the breaker panel can be provided as a separate optional accessory.
- Right bus connection as viewed from front of breaker panel
- Special paint finishes

Dimensions

- Height 5.25 inches – 3 Rack Units
- Width 19 inches – 18 Breaker Positions
  23 inches – 24 Breaker Positions
- Depth 9 inches with Guard Kit
  8 inches without Guard Kit

Voltage and Current Ratings

- 12, 24, or 48 volts DC ratings available. Must indicate negative common (return) as part of model number format when applicable. See reverse side of data sheet for model format.
- Total DC continuous current carrying capacity of panel 600 amps.

TYPICAL MODEL NO.	Rack Width	DC Voltage	DC Bus Connection	Alarm Contacts	Negative Common (Return)	Positive Common (Return)	Specific Bill of Material Listing Breakers/Block Off Kits
BPK19-24VL-18RN-3	19"	24V	LEFT	YES	YES	—	3
BPK23-48VL-24R-5	23"	48V	LEFT	YES	—	YES	5

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P25-DSBPK-1
ECN 14165
9-00

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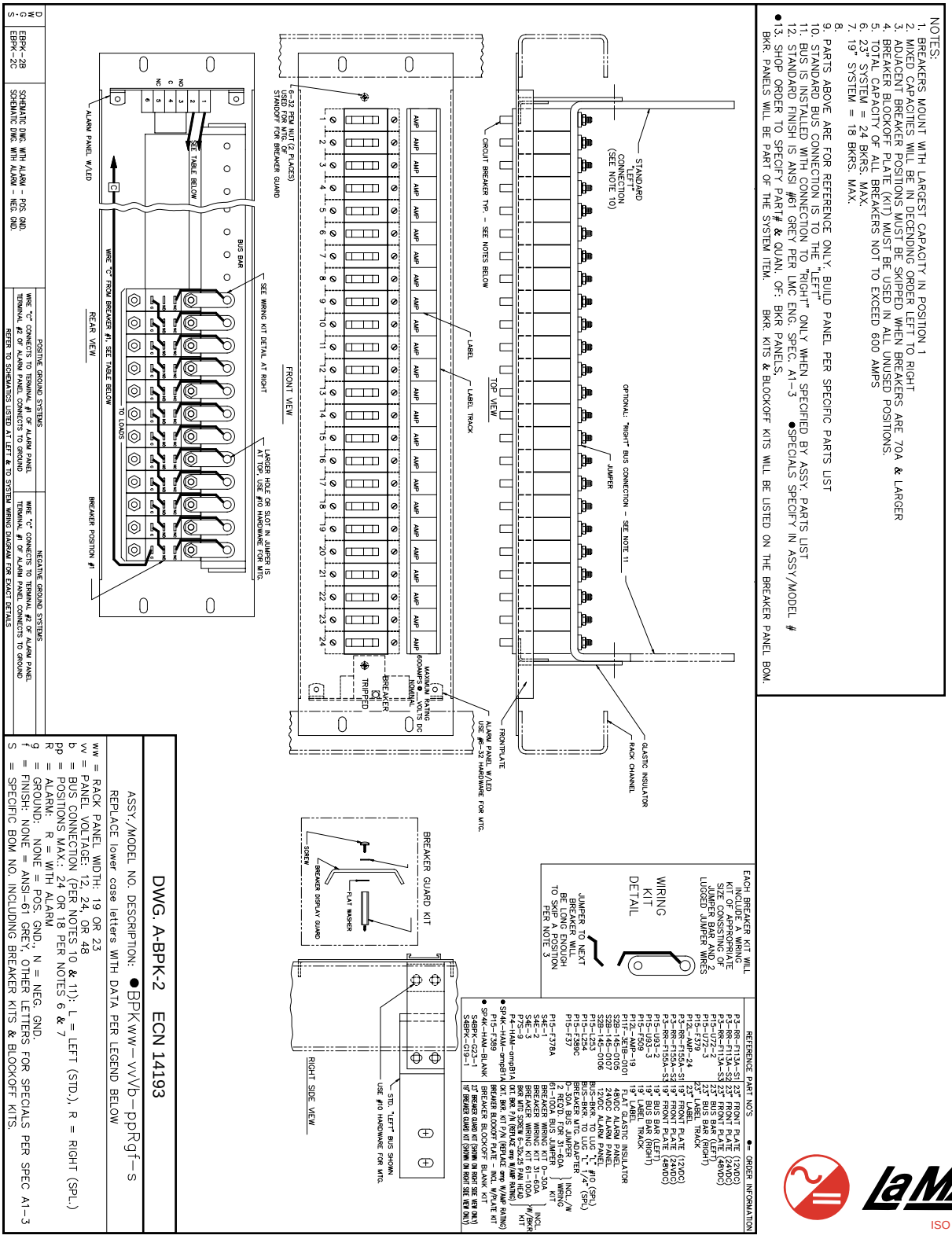
PRODUCT DATA

MODEL BPK SERIES

Single Pole Circuit Breaker Distribution Panel

Product Bulletin: Model BPK Series



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Model FPR Series

Form 101 Fuse Panels With Alarm

Model Number Nomenclature					
Model Number	Rack Mounting	DC Voltage	Ground	Fuse Blocks	DC Amp Range
FPR	( )	( )	( )	( )	( )

When Ordering Please Specify:
Model Number
Rack Mounting
DC Voltage
Ground
Fuse Blocks
DC Amp Range

Model Number	
FPR	Form 101 Fuse Panel With Alarm

Ground	
-	Positive
N	Negative

Model Number	Number of Fuse Blocks	DC Amp Range	Rack Mounting (inches)	Rack Units
24V				
FPR19-24V1-1AS400	1	70-400	19	3
FPR19-24V1-2AS400	2	70-400	19	3
FPR19-24V1-1AS600	1	70-600	19	3
FPR19-24V1-2AS600	2	70-600	19	3
FPR23-24V1-1AS400	1	70-400	23	3
FPR23-24V1-2AS400	2	70-400	23	3
FPR23-24V1-1AS600	1	70-600	23	3
FPR23-24V1-2AS600	2	70-600	23	3
FPR19-24V1N-1AS400	1	70-400	19	3
FPR19-24V1N-2AS400	2	70-400	19	3
FPR19-24V1N-1AS600	1	70-600	19	3
FPR19-24V1N-2AS600	2	70-600	19	3
FPR23-24V1N-1AS400	1	70-400	23	3
FPR23-24V1N-2AS400	2	70-400	23	3
FPR23-24V1N-1AS600	1	70-600	23	3
FPR23-24V1N-2AS600	2	70-600	23	3
48V				
FPR19-48V1-1AS400	1	70-400	19	3
FPR19-48V1-2AS400	2	70-400	19	3
FPR19-48V1-1AS600	1	70-600	19	3
FPR19-48V1-2AS600	2	70-600	19	3
FPR23-48V1-1AS400	1	70-400	23	3
FPR23-48V1-2AS400	2	70-400	23	3
FPR23-48V1-1AS600	1	70-600	23	3
FPR23-48V1-2AS600	2	70-600	23	3

Fuses Are Not Included On Panel Prices Listed Above (See Optional FPR Fuse Prices Below)

Optional FPR Fuses	
Model Number	Amp Rating
P8-A1-A70	70
P8-A1-A80	80
P8-A1-A90	90
P8-A1-A100	100
P8-A1-A150	150
P8-A1-A200	200
P8-A1-A250	250
P8-A1-A300	300
P8-A1-A350	350
P8-A1-A400	400
P8-A3-A500	500
P8-A3-A600	600

Fuses Must Be Ordered As A Separate Line Item & Will Be Shipped Loose From Fuse Panel

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ISO 9001:2000 CERTIFIED

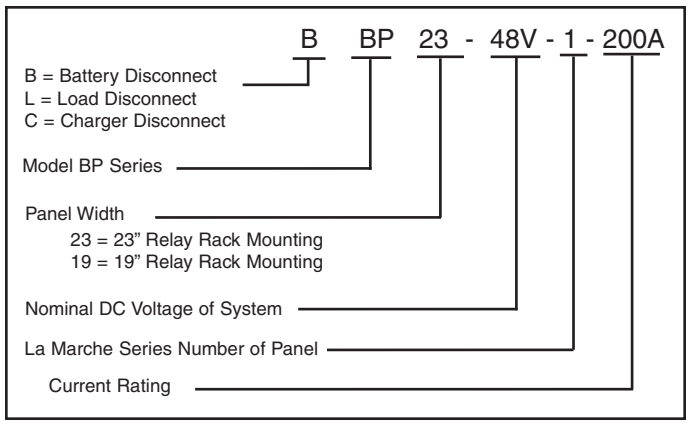
BP SERIES
BATTERY / LOAD / CHARGER DISCONNECT PANEL

MODEL BP SERIES
BATTERY/ LOAD / CHARGER DISCONNECT PANEL

The La Marche Disconnect Circuit Breaker Panel is designed to provide a quick and convenient method to disconnect either a battery, a load or a charger from the DC power system. The Model BP Series Disconnect Panels utilize UL Listed single pole magnetic/hydraulic circuit breakers*, and have termination points for input/output connections to accommodate the cable size required for that particular Model BP Disconnect Circuit Breaker Panel. For long DC cable runs, consult the factory.

*800 Amp Disconnect Panel use thermal magnetic breakers.

Model Number Nomenclature



Standard Features

- UL Listed circuit breakers
- Finish - ANSI-61 gray paint
- 100 amp and below circuit breakers rated 5,000 amp DC interrupting.
- 125 amp and above circuit breakers rated 10,000 amp DC interrupting.
- Alarm contacts provided for remote indication of circuit breaker open or tripped conditions.

Dimensions

- Height

50-250 amps	3.50 inches (2 RU's)
300-400 amps	5.25 inches (3 RU's)
500-600 amps	7.00 inches (4 RU's)
800 amps	8.75 inches (5 RU's)

- Rack mount 19 or 23 inch panels

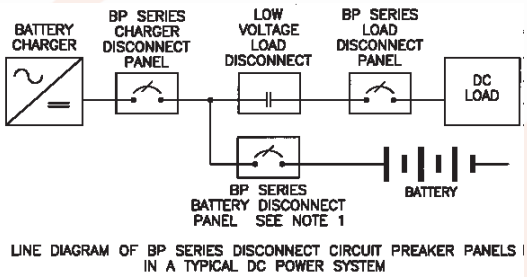
Voltage and Current Ratings

- 12, 24, or 48 volts DC ratings available
- DC current ratings available - 50, 100, 125, 200, 250, 300, 400, 500, 600 and 800.

Optional

- Two pole circuit breaker disconnect panels. Consult factory.

LINE DIAGRAM OF BP SERIES DISCONNECT CIRCUIT BREAKER PANELS IN A TYPICAL DC POWER SYSTEM



LINE DIAGRAM OF BP SERIES DISCONNECT CIRCUIT PREAKER PANELS IN A TYPICAL DC POWER SYSTEM

NOTE:
1. Disconnect Circuit Breaker Panels used with multiple battery chargers/power supplies must be rated a minimum of 125% over the total number of battery chargers/power supplies being used. For example, if two 50 amp chargers are part of a single system, the battery disconnect must be rated at 125 amps minimum (i.e., 2 x 50 x 125% = 125 Amps.)

Specifications subject to change without notice

P25-DSBP-1
ECN: 18250
04-09

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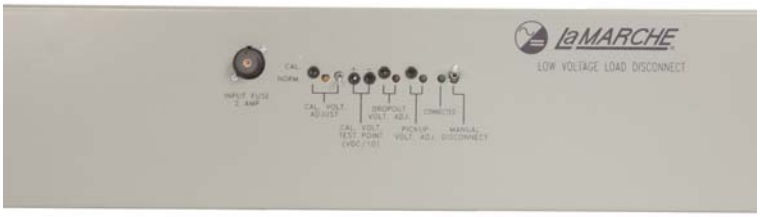
LVLD SERIES
Low Voltage Load Disconnect Panel



MODEL LVLD SERIES
Low Voltage Load Disconnect Panel

The La Marche Low Voltage Load Disconnect (LVLD) panels automatically disconnect the DC load from the battery by means of a heavy-duty contactor. If the battery voltage drops below the preset level, a drop-out LED indicator on the front panel will illuminate and an alarm relay will de-energize, thus causing the contacts to change state. The load is reconnected automatically when the battery voltage returns to the desired voltage.

The calibration mode allows adjustments to the drop-out and pull-in set points on a live system without disturbing the system voltage or the load.

MODEL NUMBER FORMAT

LD 23 (2) - 100 - 48V (N) 1 - 24L

- LD — Load Disconnect
- 23 — Panel Size: 23 = 23" Relay Rack Panel; 19 = 19" Relay Rack Panel
- (2) — Redundant: Load Disconnect
- 100 — DC Current Rating
- 48V — DC Voltage Rating
- (N) — Negative Ground
- 1 — LMC SeriesNumber
- 24L — Cell Type

LMC Enclosure Size: 1C=(LMC #1 Case)

Standard Features

- Front access mounted test points, controls, fuse and LED's
- Field adjustable drop out and pick up voltages
- Manual disconnect switch with locking toggle lever
- Calibration Mode
- LED indicators for:
  - Load Connected
  - Calibration Voltage Adjust
  - Pick Up Voltage Adjust
- Two sets of form "C" low voltage alarm contacts
- Finish – ANSI-61 grey paint
- Coil of DC contactor fuse protected

Optional Features

- Enclosed wall mounted low voltage load disconnects. Consult the factory for details.
- Special paint finishes

Dimensions

- Height

50-400 amps	5.250 inches (3RU's)
600-1200 amps	8.750 inches (5RU's)

- Width
  19 or 23 inches wide Relay Rack Panels
- Weight of panel mounted low voltage load disconnects (approx.)

50-100 amps	5 lbs.
200-400 amps	8 lbs.
600-800 amps	10 lbs.
1200 amps	15 lbs.

Voltage and Current Ratings

- 12, 24, or 48 volts DC ratings available. Must indicate negative common (return) as part of model number format when applicable. See model format for details.
- DC current ratings available: 50-1200 amps

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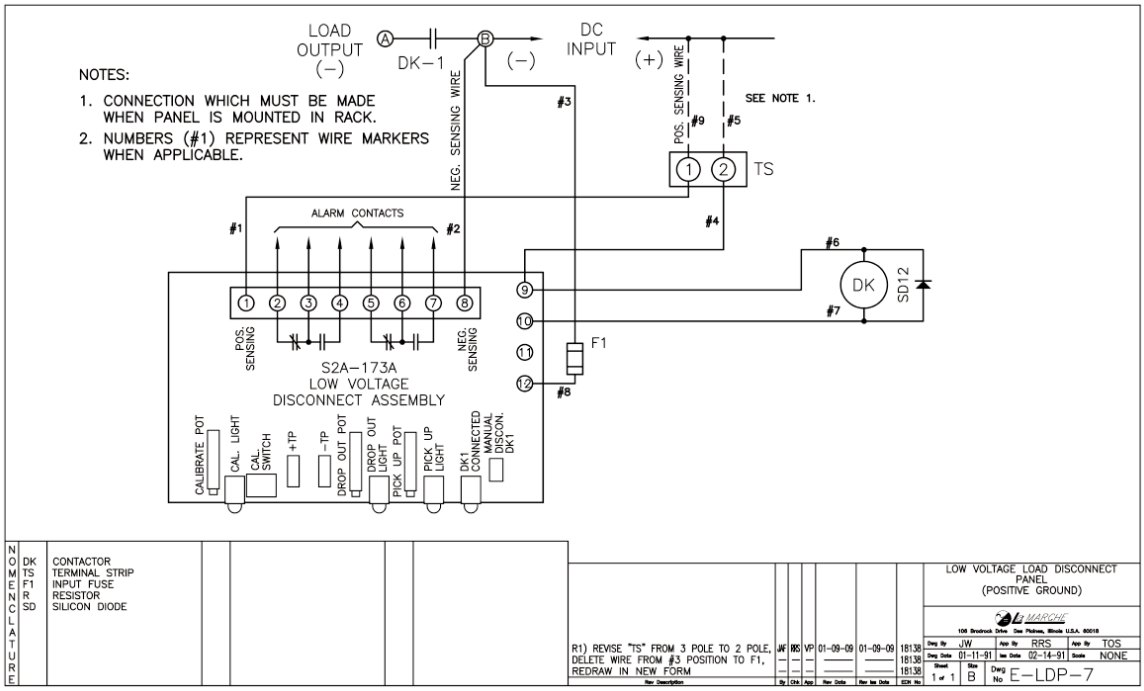
MODEL LD SERIES

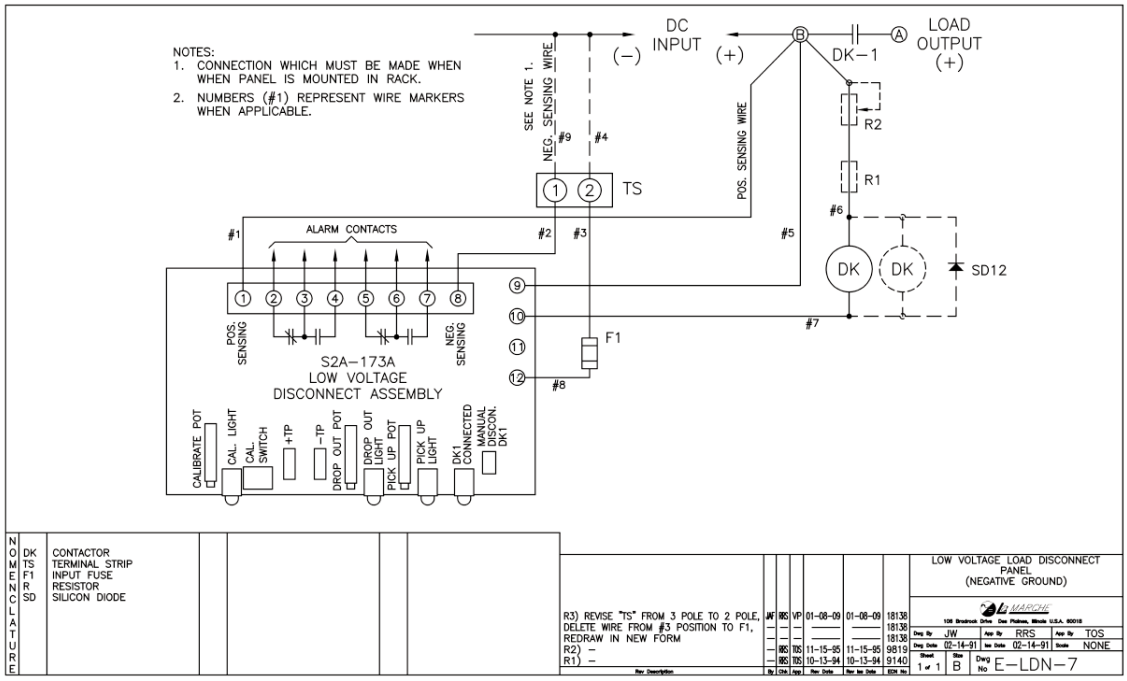
Low Voltage Load Disconnect Panel

Product Bulletin: Model LD Series

POSITIVE GROUND LOW VOLTAGE LOAD DISCONNECT PANEL



NEGATIVE GROUND LOW VOLTAGE LOAD DISCONNECT PANEL



P25-DSLD-1
ECN 18213
03/09

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Model CE Series
Counter EMF Panel

Model Number Nomenclature						
Model Number	DC Voltage	DCAmps	DC Voltage Drop	Rack Mounting	Ground	Battery Cell Range
CE	24	50A	( )	( )	( )	( )

When Ordering Please Specify:
Model Number
DC Voltage
DC Amps
DC Voltage Drop
Rack Mounting
Ground
Battery Cell Range

Ground	
-	Positive
N	Negative

Battery Cell Range*	
12L	24V
24L	48V

Model Number	DC Voltage Drop	Rack Mounting (inches)	Rack Units
24V			
CE24-50A-4V19	4V	19	9
CE24-100A-4V19	4V	19	11
CE24-200A-4V19	4V	19	19
CE24-50A-3V19	3V	19	9
CE24-100A-3V19	3V	19	11
CE24-200A-3V19	3V	19	19
CE24-50A-4V19N	4V	19	9
CE24-100A-4V19N	4V	19	11
CE24-200A-4V19N	4V	19	19
CE24-50A-3V19N	3V	19	9
CE24-100A-3V19N	3V	19	11
CE24-200A-3V19N	3V	19	19
CE24-50A-4V23	4V	23	9
CE24-100A-4V23	4V	23	11
CE24-200A-4V23	4V	23	19
CE24-400A-4V23A	4V	23	20
CE24-50A-3V23	3V	23	9
CE24-100A-3V23	3V	23	11
CE24-200A-3V23	3V	23	19
CE24-400A-3V23A	3V	23	20
CE24-50A-4V23N	4V	23	9
CE24-100A-4V23N	4V	23	11
CE24-200A-4V23N	4V	23	19
CE24-400A-4V23AN	4V	23	20
CE24-50A-3V23N	3V	23	9
CE24-100A-3V23N	3V	23	11
CE24-200A-3V23N	3V	23	19
CE24-400A-3V23AN	3V	23	20
48V			
CE48-50A-4V19	4V	19	9
CE48-100A-4V19	4V	19	11
CE48-200A-4V19	4V	19	19
CE48-50A-3V19	3V	19	9
CE48-100A-3V19	3V	19	11
CE48-200A-3V19	3V	19	19
CE48-50A-4V23	4V	23	9
CE48-100A-4V23	4V	23	11
CE48-200A-4V23	4V	23	19
CE48-400A-4V23A	4V	23	20
CE48-50A-3V23	3V	23	9
CE48-100A-3V23	3V	23	11
CE48-200A-3V23	3V	23	19
CE48-400A-3V23A	3V	23	20

*Consult Factory For Pricing On Battery Ranges Not Listed

Refer To The Model **CE** Seried Data Sheet For Further Details

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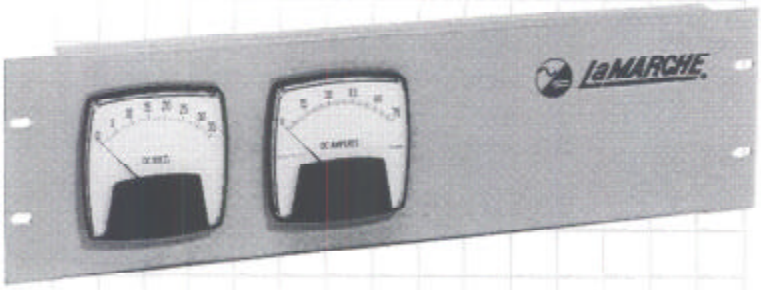
Model MP Series



Meter Panels

GENERAL DESCRIPTION

Meter panels are provided to measure the DC voltage and current of the system. Panels are 5-1/4 inches high (3 rack units). Standard meter accuracy is 2%. Optional 1% meters are available at an additional cost. Shunts are supplied for ratings 75 amps and above. 24 VDC panels have 35 VDC scales. 48 VDC panels have 75 VDC scales.

Model Number Nomenclature

MP 19 2 – 300 – 48V

- MP — Meter Panel
- 19 — Panel Width (inches)
- 2 — Current Rating
- 300 — Current Rating
- 48V — System Voltage

23 Inch Panel

Model Number	Ampere Rating	DC Voltage	Ammeter Scale
MP232 – 25 – 24V	25	24	30
MP232 – 25 – 48V	25	48	30
MP232 – 50 – 24V	50	24	75
MP232 – 50 – 48V	50	48	75
MP232 – 75 – 24V	75	24	100
MP232 – 75 – 48V	75	48	100
MP232 – 100 – 24V	100	24	150
MP232 – 100 – 48V	100	48	150
MP232 – 150 – 24V	150	24	200
MP232 – 150 – 48V	150	48	200
MP232 – 200 – 24V	200	24	250
MP232 – 200 – 48V	200	48	250
MP232 – 300 – 24V	300	24	400
MP232 – 300 – 48V	300	48	400
MP232 – 400 – 24V	400	24	500
MP232 – 400 – 48V	400	48	500

19 Inch Panel

Model Number	Ampere Rating	DC Voltage	Ammeter Scale
MP192 – 25 – 24V	25	24	30
MP192 – 25 – 48V	25	48	30
MP192 – 50 – 24V	50	24	75
MP192 – 50 – 48V	50	48	75
MP192 – 75 – 24V	75	24	100
MP192 – 75 – 48V	75	48	100
MP192 – 100 – 24V	100	24	150
MP192 – 100 – 48V	100	48	150
MP192 – 150 – 24V	150	24	200
MP192 – 150 – 48V	150	48	200
MP192 – 200 – 24V	200	24	250
MP192 – 200 – 48V	200	48	250
MP192 – 300 – 24V	300	24	400
MP192 – 300 – 48V	300	48	400
MP192 – 400 – 24V	400	24	500
MP192 – 400 – 48V	400	48	500

Note: Optional battery/system DC voltage switch is available. Please consult the factory for pricing and availability. All specifications are subject to change without notice. Please consult the factory for current listing.

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Model DSA
Digital Status Alarm Panel

Model Number Nomenclature				
Model Number	Rack Mounting	DC Amps	DC Voltage	Ground
( )	( )	( )	( )	( )

When Ordering Please Specify:
Model Number
Rack Mounting
DC Amps
DC Voltage
Ground

Ground	
-	Positive
N	Negative

Model Number	Rack Mounting (inches)	Rack Units
24V		
DSA19-200A-24V	19	4
DSA19-400A-24V	19	4
DSA19-600A-24V	19	4
DSA19-800A-24V	19	4
DSA23-200A-24V	23	4
DSA23-400A-24V	23	4
DSA23-600A-24V	23	4
DSA23-800A-24V	23	4
DSA19-200A-24VN	19	4
DSA19-400A-24VN	19	4
DSA19-600A-24VN	19	4
DSA19-800A-24VN	19	4
DSA23-200A-24VN	23	4
DSA23-400A-24VN	23	4
DSA23-600A-24VN	23	4
DSA23-800A-24VN	23	4
48V		
DSA19-200A-48V	19	4
DSA19-400A-48V	19	4
DSA19-600A-48V	19	4
DSA19-800A-48V	19	4
DSA23-200A-48V	23	4
DSA23-400A-48V	23	4
DSA23-600A-48V	23	4
DSA23-800A-48V	23	4

Consult Factory For Availability Of Higher Current Capacities

P25-DSDSA-1
ECN 16625
01-05

BATTERY TRAY

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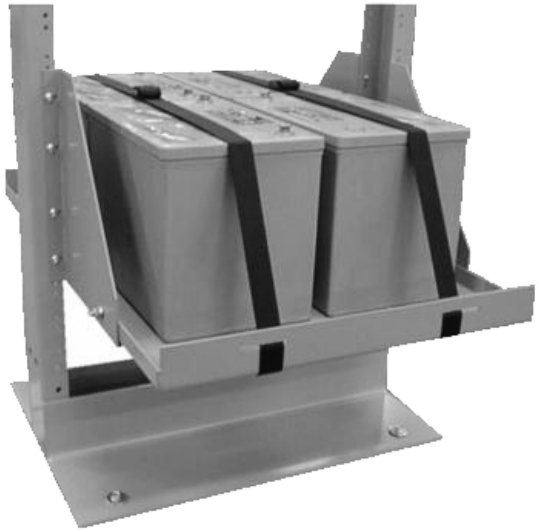

(Battery Tray shown with optional Tie Down Straps)

Standard Features

- Constructed from 12 gauge steel
- ANSI-61 gray paint finish
- Assembly and mounting hardware
- Welded corners

Options

(Consult factory for further details)

- Battery Tie Down Strap Kit
- Special Battery Tray size

BATTERY TRAY

La Marche Relay Rack Mounted Battery Trays are beneficial if floor space is confined and batteries are to be mounted directly in the DC power system equipment racks.

Battery Tray Chart

Model Number	Width (inches)	Depth (inches)	Rack Mounting (inches)	Height (inches)	Rack Units
P3-RRB-A03A	17.00	19.00	19	10.50	6
P3-RRB-A04A	17.00	28.00	19	10.50	6
P3-RRB-A07A	21.00	28.00	23	10.50	6
P3-RRB-A08A	21.25	25.00	23	10.50	6
S4C-TRAY-1	Tie Down Strap for Battery Tray				

Specifications are subject to change without notice.

P25-DSBT-1
ECN 16713
03-05

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BLANK PANEL

Standard Features

- Constructed from 14 gauge steel
- ANSI-61 gray paint finish
- Mounting hardware
- 1.75 inch mounting hole pattern

Options

(Consult factory for further details.)

- Vented front panel

FRONT MOUNTED BLANK PANEL

The front mounted blank panels can be used to shield exposed bus work from the front of the rack assembly to allow for easy expansion of an existing power rack system.

Standard Blank Panel Chart for 19" Rack

Model Number	Height (inches)	Rack Width* (inches)	Rack Units
P3-RR-F72A	1.75	19	1
P3-RR-F21A	3.50	19	2
P3-RR-F20A	5.25	19	3
P3-RR-F28A	7.00	19	4
P3-RR-F41A	8.75	19	5
P3-RR-F22A	10.50	19	6
P3-RR-F29A	12.25	19	7
P3-RR-F30A	15.75	19	9
P3-RR-F39A	17.50	19	10

*Center to center is 18.25 inches.

Standard Blank Panel Chart for 23" Rack

Model Number	Height (inches)	Rack Width** (inches)	Rack Units
P3-RR-F73A	1.75	23	1
P3-RR-F18A	3.50	23	2
P3-RR-F23A	5.25	23	3
P3-RR-F50A	7.00	23	4
P3-RR-F43A	8.75	23	5
P3-RR-F24A	10.50	23	6
P3-RR-F32A	12.25	23	7
P3-RR-F37A	15.75	23	9
P3-RR-F40A	17.50	23	10

**Center to center is 22.25 inches.

Specifications are subject to change without notice.

P25-DSBLKP-1
ECN 16713
03-05

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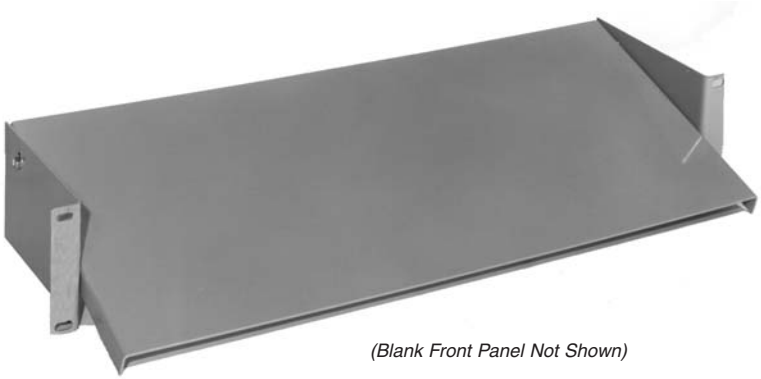
HEAT BAFFLE



(Blank Front Panel Not Shown)

Standard Features

- Constructed from 14 gauge steel
- ANSI-61 gray paint finish
- 2 side plates, baffle plate and a blank front panel
- Mounting hardware

Options

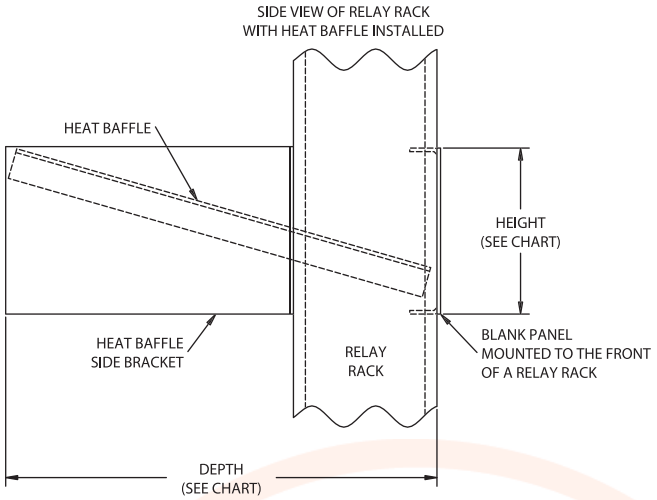
(Consult factory for further details.)

- Vented front panel
- Special Heat Baffle size

HEAT BAFFLE

Heat Baffles are attached to the Relay Rack generally above or between any heat-generating piece(s) of equipment.

The baffle will divert the heat away from sensitive components/equipment mounted above the Heat Baffle.



Heat Baffle Chart

Model Number	Height (inches)	Rack Width (inches)	Depth (inches)	Rack Units
HB19-350	3.50	19	9.00	2
HB23-350	3.50	23	9.00	2

Specifications are subject to change without notice.

P25-DSBLKP-1
ECN 16713
03-05

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Mount, Wire & Test
Miscellaneous Panels

Mount Wire & Test	
Group	**Description**
1	Up To Five (5) Items On One (1) Rack
2	Six (6) To Eight (8) Items On One (1) Rack
3	Nine (9) To Ten (10) Items On One (1) Rack
4	Five (5) To Fifteen (15) Items On Two (2) Racks

Racks And Blank Panels **Do Not** Count As Items

P25-DSMWT
ECN 16625
01-05

When assembling a Relay Rack System that is made up of several pieces of equipment, the pieces must be properly mounted, wired, & tested to function properly. The list above shows how La Marche groups the different levels of labor that must go into a Relay Rack System

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Model PBS - Page 1 of 3
Protective Back & Sides

Model Number Nomenclature			
Model Number	Height in Rack Units	Depth in Inches	Width in Inches
S4L	**( )**	**8D**	**( )**

When Ordering Please Specify:
Model Number
Height in Rack Units
Depth in Inches
Width in Inches

For Areas Larger Than 29 Rack Units Use A Combination Of Kits. **(See Examples Below)**	
35 Rack Units	Use (1) S4L-15RU-8D-23W and (1) S4L-20RU-8D-23W
43 Rack Units	Use (1) S4L-20RU-8D-23W and (1) S4L-23RU-8D-23W

Model Number	Rack Units	Depth (inches)	Width (inches)
S4L-2RU-8D-19W	2	8	19
S4L-4RU-8D-19W	4	8	19
S4L-6RU-8D-19W	6	8	19
S4L-7RU-8D-19W	7	8	19
S4L-8RU-8D-19W	8	8	19
S4L-10RU-8D-19W	10	8	19
S4L-11RU-8D-19W	11	8	19
S4L-12RU-8D-19W	12	8	19
S4L-13RU-8D-19W	13	8	19
S4L-14RU-8D-19W	14	8	19
S4L-15RU-8D-19W	15	8	19
S4L-16RU-8D-19W	16	8	19
S4L-17RU-8D-19W	17	8	19
S4L-18RU-8D-19W	18	8	19
S4L-19RU-8D-19W	19	8	19
S4L-20RU-8D-19W	20	8	19
S4L-22RU-8D-19W	22	8	19
S4L-23RU-8D-19W	23	8	19
S4L-24RU-8D-19W	24	8	19
S4L-25RU-8D-19W	25	8	19
S4L-26RU-8D-19W	26	8	19
S4L-28RU-8D-19W	28	8	19
S4L-29RU-8D-19W	29	8	19
S4L-2RU-8D-23W	2	8	23
S4L-4RU-8D-23W	4	8	23
S4L-6RU-8D-23W	6	8	23
S4L-7RU-8D-23W	7	8	23
S4L-8RU-8D-23W	8	8	23
S4L-10RU-8D-23W	10	8	23
S4L-11RU-8D-23W	11	8	23
S4L-12RU-8D-23W	12	8	23
S4L-13RU-8D-23W	13	8	23
S4L-14RU-8D-23W	14	8	23
S4L-15RU-8D-23W	15	8	23
S4L-16RU-8D-23W	16	8	23
S4L-17RU-8D-23W	17	8	23
S4L-18RU-8D-23W	18	8	23
S4L-19RU-8D-23W	19	8	23
S4L-20RU-8D-23W	20	8	23
S4L-22RU-8D-23W	22	8	23
S4L-23RU-8D-23W	23	8	23
S4L-24RU-8D-23W	24	8	23
S4L-25RU-8D-23W	25	8	23
S4L-26RU-8D-23W	26	8	23
S4L-28RU-8D-23W	28	8	23
S4L-29RU-8D-23W	29	8	23

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Model PBS - Page 2 of 3
Protective Back & Sides

Model Number Nomenclature			
Model Number	Height in Rack Units	Depth in Inches	Width in Inches
S4L	( )	12D	( )

When Ordering Please Specify:
Model Number
Height in Rack Units
Depth in Inches
Width in Inches

For Areas Larger Than 29 Rack Units Use A Combination Of Kits. **(See Examples Below)**	
35 Rack Units	Use (1) S4L-15RU-8D-23W and (1) S4L-20RU-8D-23W
43 Rack Units	Use (1) S4L-20RU-8D-23W and (1) S4L-23RU-8D-23W

Model Number	Rack Units	Depth (inches)	Width (inches)
S4L-2RU-12D-19W	2	12	19
S4L-4RU-12D-19W	4	12	19
S4L-6RU-12D-19W	6	12	19
S4L-7RU-12D-19W	7	12	19
S4L-8RU-12D-19W	8	12	19
S4L-10RU-12D-19W	10	12	19
S4L-11RU-12D-19W	11	12	19
S4L-12RU-12D-19W	12	12	19
S4L-13RU-12D-19W	13	12	19
S4L-14RU-12D-19W	14	12	19
S4L-15RU-12D-19W	15	12	19
S4L-16RU-12D-19W	16	12	19
S4L-17RU-12D-19W	17	12	19
S4L-18RU-12D-19W	18	12	19
S4L-19RU-12D-19W	19	12	19
S4L-20RU-12D-19W	20	12	19
S4L-22RU-12D-19W	22	12	19
S4L-23RU-12D-19W	23	12	19
S4L-24RU-12D-19W	24	12	19
S4L-25RU-12D-19W	25	12	19
S4L-26RU-12D-19W	26	12	19
S4L-28RU-12D-19W	28	12	19
S4L-29RU-12D-19W	29	12	19
S4L-2RU-12D-23W	2	12	23
S4L-4RU-12D-23W	4	12	23
S4L-6RU-12D-23W	6	12	23
S4L-7RU-12D-23W	7	12	23
S4L-8RU-12D-23W	8	12	23
S4L-10RU-12D-23W	10	12	23
S4L-11RU-12D-23W	11	12	23
S4L-12RU-12D-23W	12	12	23
S4L-13RU-12D-23W	13	12	23
S4L-14RU-12D-23W	14	12	23
S4L-15RU-12D-23W	15	12	23
S4L-16RU-12D-23W	16	12	23
S4L-17RU-12D-23W	17	12	23
S4L-18RU-12D-23W	18	12	23
S4L-19RU-12D-23W	19	12	23
S4L-20RU-12D-23W	20	12	23
S4L-22RU-12D-23W	22	12	23
S4L-23RU-12D-23W	23	12	23
S4L-24RU-12D-23W	24	12	23
S4L-25RU-12D-23W	25	12	23
S4L-26RU-12D-23W	26	12	23
S4L-28RU-12D-23W	28	12	23
S4L-29RU-12D-23W	29	12	23

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Model PBS - Page 3 of 3
Protective Back & Sides

Model Number Nomenclature			
Model Number	Height in Rack Units	Depth in Inches	Width in Inches
S4L	( )	16D	( )

When Ordering Please Specify:
Model Number
Height in Rack Units
Depth in Inches
Width in Inches

For Areas Larger Than 29 Rack Units Use A Combination Of Kits. **(See Examples Below)**	
35 Rack Units	Use (1) S4L-15RU-8D-23W and (1) S4L-20RU-8D-23W
43 Rack Units	Use (1) S4L-20RU-8D-23W and (1) S4L-23RU-8D-23W

Model Number	Rack Units	Depth (inches)	Width (inches)
S4L-2RU-16D-19W	2	16	19
S4L-4RU-16D-19W	4	16	19
S4L-6RU-16D-19W	6	16	19
S4L-7RU-16D-19W	7	16	19
S4L-8RU-16D-19W	8	16	19
S4L-10RU-16D-19W	10	16	19
S4L-11RU-16D-19W	11	16	19
S4L-12RU-16D-19W	12	16	19
S4L-13RU-16D-19W	13	16	19
S4L-14RU-16D-19W	14	16	19
S4L-15RU-16D-19W	15	16	19
S4L-16RU-16D-19W	16	16	19
S4L-17RU-16D-19W	17	16	19
S4L-18RU-16D-19W	18	16	19
S4L-19RU-16D-19W	19	16	19
S4L-20RU-16D-19W	20	16	19
S4L-22RU-16D-19W	22	16	19
S4L-23RU-16D-19W	23	16	19
S4L-24RU-16D-19W	24	16	19
S4L-25RU-16D-19W	25	16	19
S4L-26RU-16D-19W	26	16	19
S4L-28RU-16D-19W	28	16	19
S4L-29RU-16D-19W	29	16	19
S4L-2RU-16D-23W	2	16	23
S4L-4RU-16D-23W	4	16	23
S4L-6RU-16D-23W	6	16	23
S4L-7RU-16D-23W	7	16	23
S4L-8RU-16D-23W	8	16	23
S4L-10RU-16D-23W	10	16	23
S4L-11RU-16D-23W	11	16	23
S4L-12RU-16D-23W	12	16	23
S4L-13RU-16D-23W	13	16	23
S4L-14RU-16D-23W	14	16	23
S4L-15RU-16D-23W	15	16	23
S4L-16RU-16D-23W	16	16	23
S4L-17RU-16D-23W	17	16	23
S4L-18RU-16D-23W	18	16	23
S4L-19RU-16D-23W	19	16	23
S4L-20RU-16D-23W	20	16	23
S4L-22RU-16D-23W	22	16	23
S4L-23RU-16D-23W	23	16	23
S4L-24RU-16D-23W	24	16	23
S4L-25RU-16D-23W	25	16	23
S4L-26RU-16D-23W	26	16	23
S4L-28RU-16D-23W	28	16	23
S4L-29RU-16D-23W	29	16	23

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Approval Agency Listings

MODEL	APPROVAL AGENCY
A12B	UL (1012); C-UL; UL (1481)
A18J	CSA
A20R	CSA
A31	UL (1012); C-UL; UL (1481)
A36D	UL (1012); C-UL; UL (1481)
A40/A40F	UL (1564); C-UL
A41	UL (1236)
A45	UL (1564); C-UL; CSA
A45E	UL (1564), C-UL
A46/A46F	UL (1564); C-UL
A48	UL (1236); CSA
A48B	UL RECOGNIZED; CSA
A70B	UL (1564); CSA
A86	UL (1950)
AGVB	UL (1564); CSA
AVIA	UL (1564)
CCFB	UL (1564), C-UL
EC	UL (1564); C-UL
ESCR	UL (1236)
LMHF	CSA; US-CSA
TPSD	UL (1012), C-UL
TPM	UL (1012), C-UL

Note: This is a general guide. Not all models or options may be approved. Please consult the individual data sheet for which models or options are approved.

P25-DS_AA_CS-1
ECN 18716
06-10

La Marche Manufacturing Co. 106 Bradrock Dr. Des Plaines, IL. 60018-1967
Phone: 847-299-1188 Fax: 847-299-3061 Web: www.lamarchemfg.com

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Case Specifications
Standard & Rack Mounted Cases

Case N0.	Width		Depth		Height		Mounting	Rack Mounting (inches)	Rack Units
	in	mm	in	mm	in	mm			
1	10.375	264	7.875	200	16.250	413	Wall	N/A	N/A
02	5.125	130	7.125	181	11.250	286	Wall	N/A	N/A
02C	5.000	127	5.250	133	7.250	184	Wall	N/A	N/A
2	12.812	326	10.000	254	17.125	435	Wall	N/A	N/A
3	15.375	391	11.000	279	23.750	603	Wall/Floor	N/A	N/A
4*	16.878	429	15.000	381	25.875	657	Floor/Wall	19 & 23	14
4_23	16.750	425	15.000	381	24.000	610	23"RR	23	N/A
4_30	16.750	425	15.000	381	24.000	610	30"RR	30	N/A
475	19.000	483	15.000	381	24.000	610	Wall	19"/23"	N/A
4A	16.750	425	15.000	381	36.000	914	19"RR	19	N/A
4A-23	16.750	425	15.000	381	36.000	914	23"RR	23	N/A
4A-30	16.750	425	15.000	381	36.000	914	3"RR	30	N/A
4B*	16.878	429	15.000	381	14.050	357	Floor/Wall	19 & 23	7
4B-23	16.750	425	15.000	381	12.250	311	23"RR	23	N/A
4B75	19.000	483	15.000	381	12.000	310	Wall	19"/23"	N/A
4D	16.750	425	15.000	381	14.000	356	N/A	19 & 23	8
4D-23	16.750	425	15.000	381	14.000	356	23"RR	23	N/A
05	8.000	203	7.000	178	13.000	330	Wall	N/A	N/A
6	25.580	650	13.935	354	28.000	711	Wall/Floor	N/A	N/A
7	14.250	362	10.625	270	19.875	505	Wall/Floor	N/A	N/A
7B	19.875	505	9.000	229	14.250	362	Base Plate	N/A	N/A
8A	27.200	691	15.250	387	32.500	826	Floor	N/A	N/A
9*	20.735	527	15.000	381	37.875	962	Floor	23 & 30	21
9_30	20.750	527	15.000	381	36.000	914	30"RR	30	N/A
975	20.735	527	15.000	381	37.875	962	Floor	23 & 30	21
9B	20.750	527	15.000	381	21.000	533	23"RR	23	N/A
9B-30	20.750	527	15.000	381	21.000	533	30"RR	30	N/A
9D**	21.000	533	15.000	381	17.250	438	N/A	23	10
9D-30	21.000	533	15.000	381	17.500	438	23"RR	30	N/A
9E**	21.000	533	20.000	508	17.250	438	N/A	23	10
27	27.312	694	25.875	657	56.125	1426	Floor	N/A	N/A
33***	21.000	533	15.000	381	10.500	267	N/A	23	6
33_23	16.750	425	15.000	381	7.000	178	23"RR	23	N/A
33E	21.000	533	17.500	445	10.500	267	N/A	23	6
39	16.750	425	15.000	381	7.000	178	N/A	19 & 23	4
40	16.880	411	9.500	241	13.000	330	Shelf/Wall	N/A	N/A
41	24.000	610	13.250	337	14.000	356	Shelf/Wall	N/A	N/A
43	13.000	330	19.000	483	84.000	2134	Floor	N/A	N/A
44	24.000	610	19.000	483	72.100	1831	Floor	N/A	N/A
47	38.000	965	39.375	1000	70.000	1778	Floor	N/A	N/A
47B	38.000	965	47.000	1194	71.000	1803	Floor	N/A	N/A
57	60.000	1524	36.000	914	80.000	2032	Floor	N/A	N/A
68	27.000	686	15.000	381	27.500	6985	Floor	N/A	N/A
70	27.000	686	19.000	483	41.000	1041	Floor	N/A	N/A
72	27.000	686	23.500	597	44.500	1130	Floor	N/A	N/A
74	9.000	229	8.687	221	11.500	292	Wall	N/A	N/A
83	13.375	340	8.687	221	16.500	419	Floor	N/A	N/A
D-ESCR-1	7.680	195	6.880	154	13.070	332	Wall	N/A	N/A

*When Rack Mounting The Case, Subtract 1.875 Inches From Height For Floor Mounting Brackets

**Add 3.000 Inches To Depth For Heat Sink

***Add 1.250 Inches To Depth For Heat Sink

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ECN 18716
06-10

La Marche Manufacturing Co. 106 Bradrock Drive. Des Plaines, IL 60018-1967
Phone: 847-299-1188 Fax: 847-299-3061 Web:www.lamarchemfg.com

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Float Battery Chargers Reference Guide

Model	Technology	Filtering for VRLA	Battery Eliminator	Breakers	Temp. Comp.	Ground Det.	Load Sharing	Communications	UL Listing	Meets NFPA110	Meets USCG	ABS Type Approved	Warranty
A40	Controlled Mag-Amp								1236, 1564				10 Yrs Ltd
A40F	Controlled Mag-Amp	■							Pending: 1564				10 Yrs Ltd
A41	Controlled Mag-Amp								1236		■		10 Yrs Ltd
A41F	Controlled Mag-Amp	■							Pending: 1564		■		10 Yrs Ltd
A46	Controlled Mag-Amp			O					1564	O	O	O	10 Yrs Ltd
A46F	Controlled Mag-Amp	■		O					Pending: 1564	O	O	O	10 Yrs Ltd
A75R	Controlled SCR	■			■				N/A				3 Yrs
EC	Ferro								1236	O			2 Yrs
ESCR	Controlled SCR	■			■				Pending: 1236	■			3 Yrs
PPC	Hybrid	■		■					1012	O		O	5 Yrs Ltd
A12B	Controlled Mag-Amp	■	■	O	O	O	O	O	1564, 1481	O	O	O	10 Yrs Ltd
A75A	Controlled SCR			O	■	O	■		Pending: 1012	O			2 Yrs
A75AE	Controlled SCR	■	■	O	■	O	■		Pending: 1012	O			2 Yrs
A75D	Controlled SCR			■	■	■	■	O	Pending: 1012	■			2 Yrs
A75DE	Controlled SCR	■	■	■	■	■	■	O	Pending: 1012	■			2 Yrs
A97	Switchmode	■	■	■	O	O	O	O	Pending: 1012	O			1 Yrs
TPSD	Controlled Ferro	■	■	■	■	■	■	O	1012	■		O	5 Yrs Ltd
A36D	Controlled Ferro	■	■	■	■		■	O	1012, 1481	■			5 Yrs Ltd
LMHF	Switchmode	■	■		O		■	■	60950				2 Yrs
TPM	Switchmode	■	■	■			■		1012				2 Yrs

Key: Option = **O** Standard = ■

Notes:

- Please see Data Sheet for more detailed information

P25-REFGUIDE-1
ECN: 17939
07-08

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MANUFACTURER'S WARRANTY

All La Marche Manufacturing Co. equipment has been thoroughly tested and found to be in proper operating condition upon shipment from the factory and is warranted to be free from any defect in workmanship and material that may develop within one year from date of purchase. In addition to the standard one (1) year warranty, La Marche warrants it's magnetics and power diodes on a parts replacement basis only for nine (9) more years under normal use.

Any part or parts of the equipment (except fuses, d.c. connectors and other wear-related items) that prove defective within a one (1) year period shall be replaced without charge providing such defect, in our opinion, is due to faulty material or workmanship and not caused by tampering, abuse, misapplication or improper installation. Magnetics and power diodes are warranted for ten (10) years after date of purchase. During the last nine (9) years of this ten (10) year warranty period, the warranty covers parts replacement only, no labor or other services are provided by La Marche, nor is La Marche obligated to reimburse the owner or any other person for work performed.

Should a piece of equipment require major component replacement or repair during the first year of the warranty period, these can be handled in one of two ways:

1. The equipment can be returned to the La Marche factory to have the inspections, parts replacements and testing performed by factory personnel. Should it be necessary to return a piece of equipment or parts to the factory, the customer or sales representative must obtain authorization from the factory. If upon inspection at the factory, the defect was due to faulty material or workmanship, all repairs will be made at no cost to the customer during the first year. Transportation charges or duties shall be borne by purchaser.

2. If the purchaser elects not to return the equipment to the factory and wishes a factory service representative to make adjustments and/or repairs at the equipment location, La Marche's field service labor rates will apply. A purchase order to cover the labor and transportation cost is required prior to the deployment of the service representative.

In accepting delivery of the equipment, the purchaser assumes full responsibility for proper installation, installation adjustments and service arrangements. Should minor adjustments be required, the local La Marche sales representative should be contacted to provide this service only.

All sales are final. Only standard LaMarche units will be considered for return. A 25% restocking fee is charged when return is factory authorized. Special units are not returnable.

In no event shall La Marche Manufacturing Co. have any liability for consequential damages, or loss, damage or expense directly or indirectly arising from the use of the products, or any inability to use them either separately or in combination with other equipment or materials, or from any other cause. In addition, any alterations of equipment made by anyone other than La Marche Manufacturing Co. renders this warranty null and void.

La Marche Manufacturing Co. reserves the right to make revisions in current production of equipment, and assumes no obligation to incorporate these revisions in earlier models.

The failure of La Marche Manufacturing Co. to object to provisions contained in customers' purchase orders or other communications shall not be deemed a waiver of the terms or conditions hereof, nor acceptance of such provisions.

The above warranty is exclusive, supersedes and is in lieu of all other warranties, expressed or implied, including any implied warranty of merchantability or fitness. No person, agent or dealer is authorized to give any warranties on behalf of the Manufacturer, nor to assume for the Manufacturer any other liability in connection with any of its products unless made in writing and signed by an official of the manufacturer.

ECN/DATE

CPN105479

106 BRADROCK DRIVE
DES PLAINES, IL. 60018-1967
(847) 299-1188
FAX: (847)299-3061

ISSUE: ECN 15349-04/02

INSTRUCTION DRAWING NUMBER:

P25-**LMFGWARRANTY-10**

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MANUFACTURER'S WARRANTY

LA MARCHE REFERENCE

1 YEAR (P25-LMFGWARRANTY-1)
A18JA
A40R SERIES
AR COMPONENTS
CCFB

2 YEAR (P25-LMFGWARRANTY-2)	
A13	EC/ESC
A18J	MPS
A20R	MPSC
A75D/A75DE	A75A/A75AE

3 YEAR - (P25-LMFGWARRANTY-3)	
A75R	ECSR

5 YEAR (P25-LMFGWARRANTY-5)		
TPS / TPSD	A35M	E12
PPC	A36D	AVIA
CCFP	A45M	A85M

10 YEAR (P25-LMFGWARRANTY-10)	
A45E	
A48/A48B	
10 YEAR (P25-LMFGWARRANTY-10B) (10C EXT)	
A12B	A41
A40	A46

1 YEAR – High Frequency - **(P25-LMFGWARRANTY-1A)**	
A76 – PC76	A96
A76A – PC76A	A97

2 YEAR – High Frequency - **(P25-LMFGWARRANTY-2A)**
A63 – B63 – PC63
A86 – PC86
TPCD - TPCDB
TPM – TPC – TPW
LMHF

2 YEAR – (P25-LMFGWARRANTY-2BI)
BATTERY INFORMER

5 YEAR – MAGNETICS ONLY **(P25-LMFGWARRANTY-5A)**	
A31	A75M

10 YEAR – MAGNETICS ONLY **(P25-LMFGWARRANTY-10A)**
A39
A70B
AGVB

90 DAY - (P25-LMFGWARRANTY-90D)
REFURBISHED UNITS

ECN/DATE

CPN105472

17939 – 7/08	17486 – 6/07	17348 – 11/06	17046 - 2/06
16976 - 11/05	16563 - 10/04	16138 – 8/03	16012 – 6/03

ISSUE: ECN15349 – 04/02

INSTRUCTION DRAWING NUMBER: P25-**LWARRANTYREFERENCE-1**

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FIELD SERVICE RATES

Factory service representatives are available for service on a contract or individual basis in connection with equipment manufactured by La Marche.

Service is normally available on 48 hours' notice, but every effort will be made to provide immediate attention for emergency situations.

Effective – JULY 1, 2007

FIELD SERVICE

RATES ARE PORTAL TO PORTAL

LABOR RATES:

$150.00/hour	Monday - Friday	8:00 a.m. to 5:00 p.m.
$225.00/hour	Monday - Friday	5:00 p.m. to 8:00 a.m.
$225.00/hour	Saturday	
$300.00/hour	Sundays and Holidays	

LOCAL TRAVEL RATES:

$75.00/hour	To and from the factory to jobsite
+.50 cents per mile	

Materials, Lodging, Air Fare and Personal Expenses are an additional expense.

International Service Rates are factory quoted on a per need basis with payment in advance.

To arrange for Field Service, call or write the Service Manager at the address below.

IN-HOUSE REPAIRS

LABOR RATES:

$110.00/hour	Monday - Friday	8:00 a.m. to 5:00 p.m.

CPN102527 - PART # P25-LFIELD_SERVICE_RATES – ECN14443; ECN15624-11/02; **ECN17514 – 6/07**

106 BRADROCK DRIVE DES PLAINES, IL. U.S.A. 60018-1967
PHONE: 847-299-1188 FAX: 847-391-9003

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La MARCHE ORDER FORM

SO#:

FAX TO: (847) 299-3061

QUOTE #:

E-QUOTE #:

(DO NOT FILL SHADED AREAS)

BILL TO #:

SHIP TO #:

REP NAME:

MARKS:

ORDER #:

FRT TERMS: PA PP PU CL COD NA 3P ☐ ☐ ☐ ☐ ☐ ☐ ☐

SALES #1:

DATE TAKEN:

SHIP VIA: TERMS:

WGHT 1:

TAKEN FROM: TEL # ( )

ORDER ON HOLD: YES ☐ NO ☐ IF YES APPROVAL ZHA ☐ DWGS ZHD ☐ RELEASE ZHR ☐

SALES #2:

TAKEN BY:

SHIP COMPLETE: YES ☐ NO ☐

WGHT 2:

DATE REQ'D: ASAP OR M / D / Y

SOURCE CODE: PICK UP 001 ☐ TEL/FAX 002 ☐ MAIL 003 ☐ REP 005 ☐

SALES #3:

DATE PROMISED:

COMMENTS:

WGHT 3:

ITEM	QTY	MODEL/PART NO.	LIST $	DISC	F2#	NET $
01						

LINE	TP	QTY	ACC#	DESCRIPTION	PRICE	DISC
				CELL INFO / AC VOLTAGE / PHASE / HZ		
001	C					

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Terms and Conditions of Sale

1. QUOTATIONS:

La Marche Manufacturing Company (hereinafter referred to as La Marche) offers to sell the machinery, tools, equipment, components, parts, or service described in the accompanying written quotation, OR in the invoice on the reverse side issued pursuant to a prior oral quotation, OR In the accompanying confirmation of Buyer's purchase order, or on the face of the order form taken from La Marche Manufacturing Company's Pants Catalog upon these Terms and Conditions of Sale which shall apply to the exclusion of any Inconsistent or additional terms and conditions of Customer's order, acceptance, or acknowledgment. These Terms and Conditions of Safe and the contract formed by acceptance of them cannot be modified, canceled, rescinded, or waived except by a written agreement in which the parties agree specifically to modify, cancel, rescind, or wave any of These terms or provisions signed by both parties, including en authorized officer of La Marche,

2. **ACCEPTANCE:**

Acceptance of this offer can be made by any commercially reasonable means, Including Customer's issuance of an order, acceptance, or acknowledgment or Customer's return of the attached acknowledgment form, Acceptance of this quotation by Customer is expressly limited to the terms and conditions contained in it. If Customer shall use its own purchase order or other form to order goods from La Marche that form shall be used for convenience only and shall evidence Customer's unconditional agreement to these Terms and Conditions of Sale, and any terms or conditions contained in Customer's form inconsistent with or in addition to terms and conditions contained herein shall be of no force or effect whatsoever between the parties.

3. PRICES:

(a) Prices are firm unless otherwise stated in the offer/quotation. Payments made within 10 days of invoice date shall be discounted at the rate shown on the invoice; otherwise net 30 days; past due amounts are subject to service charge of 1% per month or fraction thereof.

(b) The prices do not include any applicable governmental taxes or other charges. Customer shall pay any of these taxes or other charges, together with penalties and expenses, if any, upon receipt of at invoice from La Marche in lieu of a payment of these taxes, Customer shall provide La Marche with a tax exemption certificate acceptable to the taxing authorities.

(c) Unless otherwise quoted by La Marche all prices are F.O.B. La Marche Manufacturing Company, Des Plaines, Illinois.

(d) All catalog prices are subject to change without notice.

(e) Freight will be prepaid and billed as a separate item on the invoice. All extra charges for special handling, packaging and demurrage are obligations of the Buyer and will be billed as such.

(f) Goods not manufactured by La Marche will be Invoiced at the prices stated in the quotation, subject to increase in prices of any of these goods by La Marche's suppliers.

(g) La Marche reserves the right to refuse to extend credit at any time, regardless of prior dealings, and for any reason; in such cases items will be shipped C.O.D.

(h) Customer shall reimburse La Marche for all costs and expenses. Including attorneys' fees and court costs, Incurred in collecting any amounts due.

4. COMPLETION-DELIVERY:

(a) The proposed delivery data and performance schedule stated in the quotation is a best estimate at the lime of quotation and is not binding on La Marche. Unless otherwise stated, goods quoted as “In stock” are subject to prior sale. La Marche hereby rejects any attempt to impose a penalty or other burden on the failure to deliver on the date set forth In the quote or offer or acceptance.

(b) La Marche shall have no liability to customers or any third party for any loss, damage, or expense from any delay or failure of performance due to any cause beyond the control of La Marche, including, but not limited to, fire, strike, accident, war conditions, government regulation or restriction, shortages in transportation, power, labor, or material. freight embargo, riot or civil commotion, default of the supplier, or prohibitions or events which render performance difficult or impossible.

(c) Upon giving notice to a customer of a delay in accordance with the Illinois Uniform Commercial Code, La Marche shall allocate all goods produced by La Marche among the then customers of La Marche in proportion to the contracts then received.

(d) Unless otherwise set forth or subsequently agreed to in writing, La Marche has complete discretion in specifying the manner of shipment even though Buyer Is paying full cost thereof.

5. TITLE AND DELIVERY:

Delivery of goods to a carrier by La Marche F.O.B. La Marche's plant, Des Plaines, Illinois, consigned to Customer or its order, as Customer may direct, shall be complete delivery to Customer as well as transfer to Customer of title, ownership, and possession of and to the goods. Customer assumes risk of loss, damage, or shortage in transit and shall be responsible for pursuing all claims with the carrier or carrier's insurer. Customer shall provide La Marche with written notice of any shortage, loss or damage within five (5) days of receipt of the goods.

6. **SERVICES PERFORMED:**

If customer has requested La Marche to service and repair any machinery or equipment (Work), Customer shah provide a safe area in which La Marche's employees, agents, or contractors may perform the Work and Customer shall be responsible for the safety of all persons on, about, or adjacent to areas where the Work is performed. Customer shall furnish to La Marche all necessary work tools, equipment, and supplies.

7. COOPERATION, CHANGES, OR CANCELLATIONS:

(a) Customer shall at all times cooperate with La Marche and furnish any specifications, drawings, or Information requested by La Marche within a reasonable time after any request. La Marche and its agents and employees are under no obligation whatsoever to treat as confidential any disclosure made by Customer in connection with this or other transactions with La Marche

(b) Customer shall not countermand, cancel, or change the order on cause the work or shipment to be delayed or stopped except with the consent of, and upon the terms agreed to, by La Marche.

(c) No goods can be returned to La Marche without prior written approval. All returned goods are subject to La Marche's usual and customary restocking fee. Special made items are not returnable.

8. PERFORMANCE BY LA MARCHE:

In the event of any proceedings filed by or against Customer, voluntary or Involuntary, In bankruptcy or insolvency, or for appointment of a receiver or trustee, or an assignee for the benefit of creditors, La Marche shall have the right to discontinue work on the offer and receive full reimbursement for all costs incurred plus a reasonable profit. If La Marche, in its sole discretion, in good faith, is insecure as to customer's payment or performance, it may refuse to perform until it receives adequate assurances of customer's payment or performance.

9. **INSTALLATION:**

Unless otherwise specifically agreed by La Marche, Customer shall install all goods, and La Marche shall bear no expense of installation.

10. WARRANTY:

For a period of one (1) year from the date of shipment, La Marche warrants that the goods manufactured and the services performed by it shall be free from defects in material and workmanship.

NOTWITHSTANDING ANY PROVISION OF THESE TERMS AND CONDITIONS, THE WARRANTY CONTAINED IN THIS PARAGRAPH, AS LIMITED IN IT, IS THE ONLY WARRANTY EXTENDED BY LA MARCHE IN CONNECTION WITH ANY SALE BY IT AND IS EXTENDED TO CUSTOMER ONLY AND NOT TO ANY SUCCESSIVE BUYERS, USERS, THIRD PARTIES, OR EMPLOYEES AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

11. REMEDIES:

La Marche's obligations under these Terms and Conditions upon breach of warranty or other provision shall be limited, at La Marche's election, to the repair or replacement of goods or the crediting to the Customer of an amount not to exceed the purchase price of the goods. If notice of a breach of warranty is given by Customer, La Marche shall be obligated only to repair, replace. Or credit the purchase price for goods which examination by La Marche or its representatives shall disclose to have been defective under ordinary and normal use. Written notice of any defect shall be given by Customer to La Marche at 106 Bradrock Dr., Des Plaines, Illinois, within thirty (30) days after the defect appears. No allowance shall be made for any expenses incurred by Customer in repairing defective parts or supplying any missing parts except on the written consent of La Marche. In any case, if La Marche agrees to replace or repair a defective part, Customer shall have the responsibility and bear the cost for and related to procuring and providing all necessary dismantling, reassennbling, and handling facilities in connection with these services.

12. LIMITATION OF DAMAGES:

In no event shall La Marche have any liability whatsoever for payment of any consequential, incidental, Indirect, special, or tort damages of any kind, including, but not limited to, any loss of profits.

13. CUSTOMER RESPONSIBILITY-INDEMNITY:

(a) Customer assumes and shall bear sole responsibility for providing adequate and efficient safeguards, work-handling tools, and safety devices necessary to provide a safe work place and to protect fully all personnel from bodily injury or death which otherwise may result from the use, operation, setup or maintenance of the goods. Compliance with the Occupational Safety and Health Act and the regulations adopted under it and with other prevailing federal, state, and local codes and industry-accepted standards is the responsibility of Customer. La Marche shall bear no responsibility whatsoever for the failure of Customer to order, install, on use safeguards, work-handling tools, or safety devices. Customer shall establish, and require all persons who use, operate, set up, or maintain the goods to use, all proper and safe operating procedures, Including, but not limited to, procedures set forth in any manuals or instruction sheets relating to the goods. Customer shall not remove or modify any devices, warning signs or manuals furnished with or installed upon or attached to the goods.

(b) Customer releases all actions (including, but not limited to, any action for injury to or death of any person or damage to property) arising out of the manufacture, sale, use, or operation of the goods which Customer may have any time against La Marche or its agents or employees. Customer covenants to indemnify and hold harmless La Marche and its agents and employees of, from, and against any and all loss, damage, expense (including reasonable attorneys' fees, claims, suits, or liability) which La Marche or any of its agents or employees may sustain or incur at any time, for or by reason of any injury to or death of any person or damage to any property. arising out of any claimed or actual breach by Customer of Customer's undertaking under Paragraph 13 (a) or any acts primarily attributable to the conduct of Customer on its employees and agents, Including, but not limited to, the negligence or reckless conduct of Customer's employees or agents, Customer's maintenance of the goods, Customer's addition to or modification of the goods, or Customer's use of the goods in an Inappropriate manner.

(c) Customer shall notify La Marche promptly, In writing, and in all events within ten (10) days after its occurrence, of any accident or malfunction involving any goods which results in injury to or death of persons, including Customer's agents and employees, or damage to property, including Customer's property, or the loss of use of any property, and Customer shall cooperate fully with La Marche in investigating and determining the cause of any such accident or malfunction.

14. PATENTS:

(a) La Marche will defend and save Customer harmless from and against any loss or expense caused by any claimed infringement of any United States patent arising out of the purchase, sale, or use of goods designed and manufactured by La Marche in the event Customer gives La Marche prompt, written notice of any claim of Infringement and complete authority in defending against it. Notwithstanding La Marche's indemnity, Customer releases any claims Customer may have at any time against La Marche for consequential damages or loss of profits to Customer resulting from any suit regarding the use of La Marche's goods or any part of them. Customer shall give La Marche any reasonable assistance in defense of any claimed infringement as it shall be able to give and shall not charge La Marche for the costs of that assistance. If the goods or any part of them designed and manufactured by La Marche are held to infringe any United States patent and the use is enjoined, La Marche shall, at its own expense, In lieu of all other liability, either procure for Customer the right to continue using the goods, replace the goods with non-Infringing goods, modify the goods so as to become non-infringing, or return the purchase price. NOTWITHSTANDING ANYTHING IN THESE TERMS AND CONDITIONS TO THE CONTRARY, LA MARCHE'S LIABILITY UNDER THIS PARAGRAPH 14 SHALL BE LIMITED TO THE PURCHASE PRICE AND THE TRANSPORTATION AND INSTALLATION COSTS OF THE GOODS. La Marche grants no license express or implied other than the right of Customer to use the goods in the form delivered by La Marche.

(b) Customer will defend, protect and save La Marche harmless from and against any loss or expense incident to any claimed Infringement of any United States patent arising out of the manufacture, service, or sale of goods or any parts of them which are manufactured or serviced by La Marche but which are not designed by La Marche.

15. APPLICABLE LAW:

These Terms and Conditions of Sale shall be construed in accordance with the law of the State of Illinois.

16. SUCCESSORS:

La Marche's quotation and these Terms and Conditions shall inure to the benefit of, and be binding upon, the successors of the parties to them.

17. LIMITATION ON ACTION:

Any action or suit against La Marche arising in any way from the quotation or with respect to the goods must be commenced within one (I) year after the cause of action has accrued.

18. SEVERABILITY.'

The invalidity of any segment of these Terms and Conditions shall in no way operate to invalidate any other portion and, except for the invalid segment, the entire balance of these Terms and Conditions shall be and remain in full force and effect,

19. WHOLE AGREEMENT:

All previous oral and written communications of the parties for the sale of goods are abrogated. The parties agree that there are no other agreements or warranties, except as contained in these Terms and Conditions and the accompanying quotation. These Terms and Conditions and the accompanying quotation are the final, complete and exclusive expression of the parties' agreement.

20. WAIVER:

No waiver of performance required by Customer shall be valid unless in writing signed by a duly authorized officer of La Marche. No waiver of a specific action shall be construed as a waiver of future performance.