



LaMARCHE®

ISO 9001 CERTIFIED

A31 DC-AC INVERTER



Above photo is shown with optional 1ms Static Transfer Switch

Standard Features

- Highly Reliable Ferroresonant Transformer
- UL 1012 Listed Power Supply
- UL 1481 (Contact Factory)
- Available DC Inputs 24V or 48V or 120V
- Voltage Regulated
- Current Limited
- Adjustable DC Under/Over Voltage Shutdown
- Overload Protected
- Inverter On/Off Switch
- AC Circuit Breaker
- DC Circuit Breaker
- Quartz Time/Base Line Synchronization
- Reverse Polarity Protection/Indication Filtered DC Input
- Operating Temperature 0°-50°C
- Class H (180°C) Insulation
- 60 Hz Operation (50 Hz Optional)

A31 DC-AC INVERTER

The LaMarche A31 Inverter is the ideal choice when AC power requirements are critical. Its ferroresonant transformer-based design and transistor switching provide an extremely reliable and high quality sine wave output (<5% THD). Applications may include the following systems: Computer, telecommunications, emergency lighting, offshore oil exploration, utility sub-station, security alarm, etc.

The A31 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 precharge circuit which includes an indicator to inform you that the inverter is ready for operation.

Code	Description
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	For 22P & 22S details, refer to datasheet P25-DSSS-1 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 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
06D	DC Voltmeter
C.F	50 Hz Output (Not UL Listed)
C.F	208 or 220 or 240 VAC Output

C.F. Consult Factory

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Made in USA

Input Specifications

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:

60 Hz
50 Hz (Optional, Not UL Listed)

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 dB_{rn} "C" message
weighted with a battery whose
ampere-hour rating is at least 4 times
the full load DC input current rating of
the unit (24VDC and 48VDC only).

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

Battery Ranges

24 volt nominal 21-30VDC
48 volt nominal 42-60VDC
120 volt nominal 105-150VDC

Specifications subject to change without notice

P25-DSA31-1
ECN 15960
05-03

Model Number	DC Input Amps		AC Output			BTU Hour***	Case No	Approx. weight	
	N.L.	F.L.***	VA	Volts	Amps			lb	kg
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	6.0	44.0	750	120	6.25	595	33	80	36
A31-1K-24V-A6	11.0	59.0	1000	120	8.33	817	9D	105	48
A31-1.5K-24V-A6	12.0	87.0	1500	120	12.50	1118	9D	120	55
A31-2K-24V-A6	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	
	N.L.	F.L.***	VA	Volts	Amps			lb	kg
A31-250-48V-A6	2.0	9.0	250	120	2.08	308	39	60	27
A31-500-48V-A6	2.5	15.0	500	120	4.17	445	39	75	34
A31-750-48V-A6	3.5	22.0	750	120	6.25	595	33	80	36
A31-1K-48V-A6	5.0	28.0	1000	120	8.33	602	9D	105	48
A31-1.5K-48V-A6	7.0	40.0	1500	120	12.50	616	9D	120	55
A31-2K-48V-A6	10.0	54.0	2000	120	16.67	917	9E*	175	80
A31-3K-48V-A6	13.0	81.0	3000	120	25.00	1375	9E*	270	123
A31-4K-48V-A6	15.0	106.0	4000	120	33.33	1546	9E*	310	141
A31-5K-48V-A6	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	
	N.L.	F.L.***	VA	Volts	Amps			lb	kg
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			in	mm	in	mm	in	mm
		19"	23"							
39	N/A	X	X	4	7.00	178	16.75	425	16.25	413
33	N/A	N/A	X	6	10.50	267	21.00	533	16.25	413
9D	N/A	N/A	X	10	17.50	445	20.88	530	18.00	457
9E	N/A	N/A	X	10	17.50	445	20.88	530	23.00	584
70	X	N/A	N/A	N/A	41.00	1041	27.00	686	19.00	483
72	X	N/A	N/A	N/A	44.50	1130	27.00	686	23.50	597
44	X	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

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,
consult factory)

Ordering Information

When ordering, please specify:

- LaMarche Model 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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