

The La Marche I31 is an Industrial Inverter based on sinusoidal pulse width modulation (SPWM) using fully digital DSP+ IGBT technology. Inverter interface features includes a user-friendly touch-screen mimic panel for displaying power flow, voltages, currents, alarm statuses, data logging, and password-protected configuration capabilities.

The I31 has a range of selectable features such as kVA rating, input/output voltages, enclosure protection ratings, isolation bypass transformers, distribution, and more.

The built-in Static Switch uses power SCR's to provide instantaneous transfer to an alternate source in less than 4ms if any disturbance occurs at the I31 output. The I31 is highly reliable and is the preferred choice for mission-critical applications, including telecommunications, emergency lighting, offshore oil exploration, utility substations, security alarms, and more.



Shown Above: I31 Unit

Standard Features

IGBT - SPWM Technology

Output Isolation Transformer

7" Touch Display

Mimic Panel with in-built Keyboard

Data Logging

8 Dry Alarm Contacts

Static Bypass Switch

Redundant Fans

Circuit Breakers for DC Input, Inverter Output and Bypass

IP20 Rated Enclosure

Optional Features

AC Distribution

External Manual Bypass Switch

External Bypass Isolation Transformer

Additional IP Rated Enclosures

Communication Protocols

21J IEC 61850 Ethernet

21P DNP 3.0 Communications RS232/RS485/Ethernet

21Q Modbus Communications RS232/RS485/Ethernet

21S Modbus RTU RS232/RS485

21X SNMP and Web Browser (Ethernet)

Specifications

INVERTER OUTPUT	Inverter kVA Rating	(Up to 60) kVA
	AC Output Voltage	1 Phase: 120Vac, 208Vac, 220Vac, 230Vac or 240Vac Split Phase: 120 / 240Vac (2 Ph, 3 W)
	Output voltage stability (0-100% load variation)	Static Balanced Load $\pm 1\%$ Static Unbalanced Load $\pm 2\%$ Dynamic Load $\pm 3\%$
	Output Frequency	60Hz $\pm 0.1\%$
	Frequency Stability	Free Running $\pm 0.1\%$ Mains sync $\pm 3\%$
	Total Harmonic Distortion	With 100% linear load: $< 5\%$ With 100% non-linear load: $\leq 7\%$ (non linear load defined by IEC 62040)
	Efficiency	80 - 85%
	Inverter Overload Capacity	105% for 60mins 125% for 10mins 150% for 1 min >150% for 200mS
	Load Power Factor	0.8 lagging to 0.8 leading
	Output Crest Factor Admissible	3:1
DC LINK	DC Voltage	125Vdc 240Vdc
	DC Voltage Range	(105-150)Vdc (220-264)Vdc
	Inverter DC Input Voltage Range	-20% / 18%
STATIC SWITCH	kVA Rating	125% of System Rating
	Transfer Time	$< 4\text{mS}$
	Overload Capacity	125% for Continuous 150% for 10 minutes 200% for 1 minutes 1000% for 1 cycle
MANUAL BYPASS	Switch Type	Rotary Switch (3 Positions - UPS, Test and Bypass)
	Switching	Make Before Break
PROTECTION	Protection	Output Under Voltage, Output Over Voltage, Input in Rush Current Protection by soft start as well as pre-charge circuit, Output Over Load, DC Input Under Voltage, DC Input Over Voltage, Output Short Circuit
ENVIRONMENTAL	Ambient Temperature	0° to 40°C (32° to 104°F)
	Relative Humidity	0-95% non-condensing
	Operating Altitude	Up to 1000 meters without derating the output
	Noise Level	65-70 dBA @ 1 meter
MECHANICAL	Enclosure Color	RAL 7035 or as Requested
	Cooling	Fan Assisted (Temperature Dependent)
	External Protection	IP20 as standard (others available upon request)
	Dimensions	According to ratings and options
	Compliance (pending)	UL NEMA PE1 IEC 62040 -1 / -2 / -3 FCC Part 15 Class A

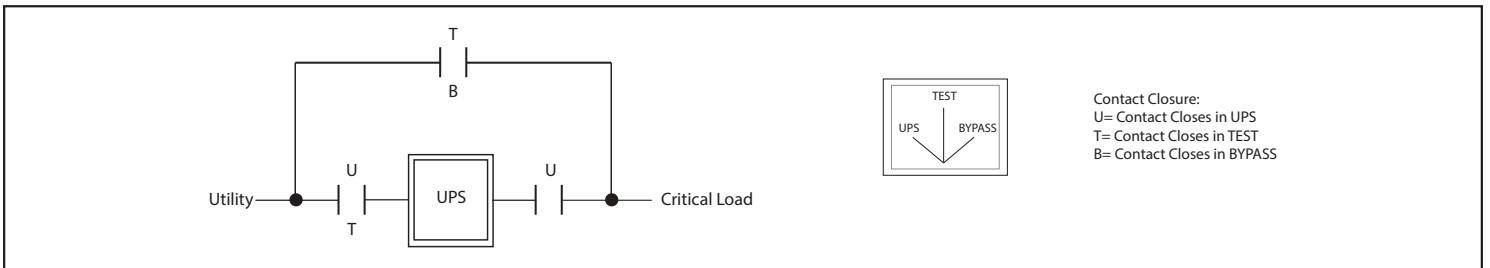
Model Number Chart

Model Number	kVA Rating	Phase	Inverter Output / Bypass Input					Freq. (Hz)	Inverter Input Current (A) @ DC Input Voltage (V)		Approx. Weight	
			Output Current (A) @ Output Voltage (V)						125VDC	240VDC	lbs	kg
			120	208	220	230	240					
I31-5K	5	1PH	41.7	24.1	22.8	21.7	20.9	60	56.1	28.1	993	450
I31-10K	10	1PH	83.4	48.1	45.5	43.4	41.7	60	112.1	56.1	1081	490
I31-15K	15	1PH	125	72.2	68.2	65.2	62.5	60	168.1	84.1	1125	510
I31-20K	20	1PH	166.7	96.2	91	86.9	83.4	60	224.1	112.1	1246	565
I31-30K	30	1PH	250	144.3	136.4	130.4	125	60	336.2	108.1	1599	725
I31-40K	40	1PH	333.4	192.4	181.9	173.9	166.7	60	448.2	224.1	1709	775
I31-50K	50	1PH	416.7	240.4	227.3	217.3	208.4	60	---	280.2	2448	1110
I31-60K	60	1PH	500	288.5	272.8	260.8	250	60	---	336.2	2602	1180

Enclosure Specifications

Rating	Number of Bays	W	D	H	W	D	H
		inches			mm		
5kVA - 40kVA	1	32	36	82	812.8	914.4	2082
50kVA - 60kVA	2	64	36	82	1625.6	914.4	2082

Manual Bypass Switch Configuration



System Panel Display

Load Status
*Load on DC Voltage
*Load on Bypass
*Manual Bypass

Inverter ON/OFF Switch

Data Logging

Date & Time

LED Status & Alarms

Bypass Source Icon
*Additional parameters pop up in the middle of the screen when icons are pressed

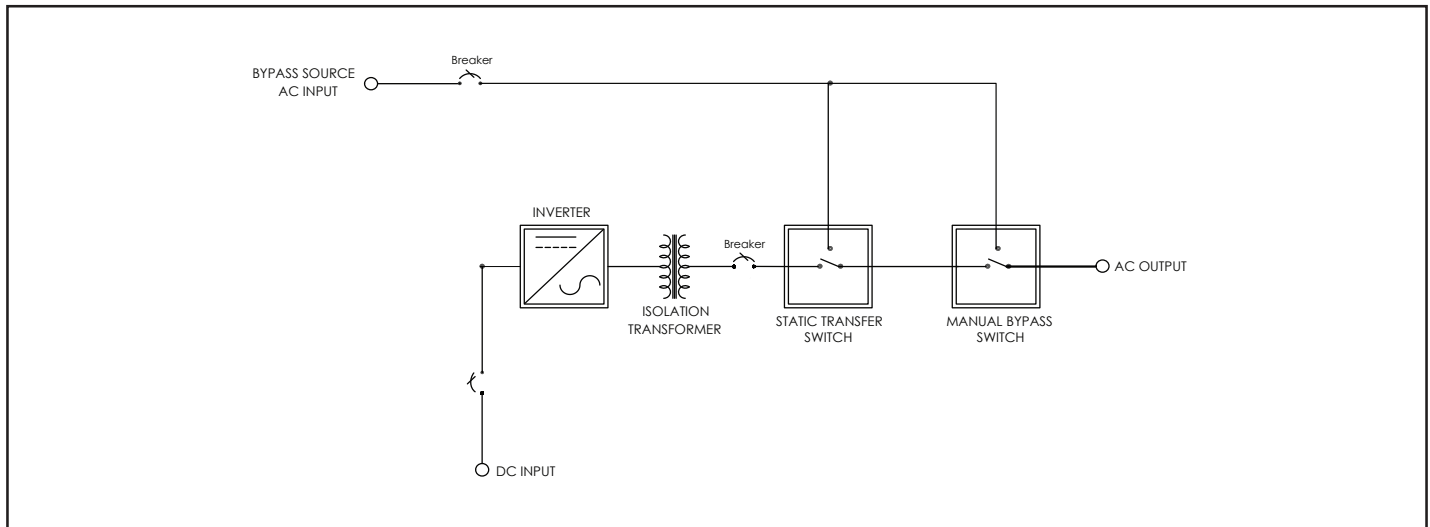
Inverter & Bypass Sync Status
*In Sync
*Out of Sync

Inverter Temperature

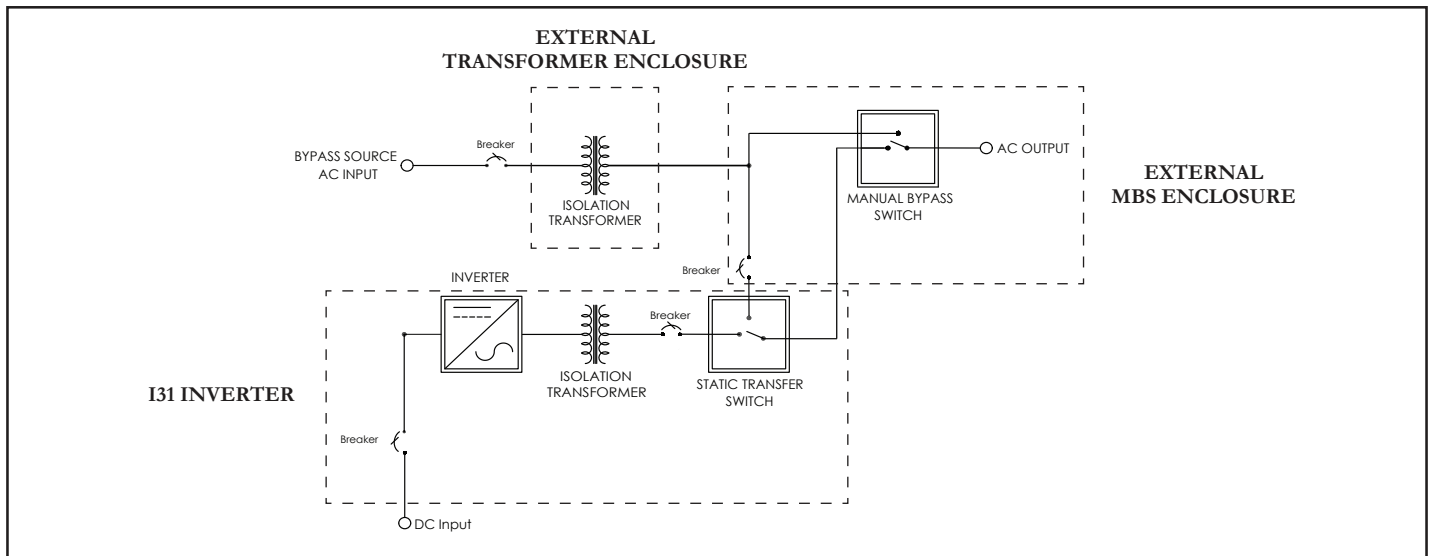
Screen Tabs:
*Home
*Monitoring
*Configuration
*Test
*Support

Home Tab with Live Status of the entire Inverter
*Icons of the main components
*Current Flow

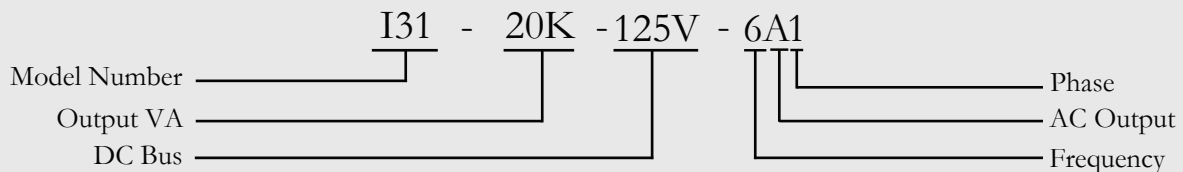
I31 Block Diagram - Standard



I31 Block Diagram - with optional External Bypass Transformer & External MBS



Model Number Nomenclature



Output VA	DC Bus	Frequency	AC Output	Phase Code
5K 30K	125 Volt	6 - 60Hz	A1 - 120V (1PH)	1 - Single Phase
10K 40K	240 Volt	5 - 50Hz	B1 - 240V (1PH)	2 - Split Phase
15K 50K			D1 - 208V (1PH)	
20K 60K			L1 - 220V (1PH)	
			Q1 - 230V (1PH)	
			AB2- 120/240V (2PH)	