



Fully Equipped 3KVA System with Optional SNMP Module
UNIPOWER Product



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, Static Transfer Switch, 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 available 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. No. Modules	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	4	120VAC or 230 VAC	60Hz / 50Hz	8 x IEC60-320	YES	5U	IX5U-2-TS50-D2E-F-LMC
6KVA / 4.8kW	4	120VAC or 230 VAC	60Hz / 50Hz	8 x IEC60-320	YES	5U	IX5U-2-TS50-D2E-M-LMC

Notes:

- 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.
- 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.
- "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

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	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	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, output 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

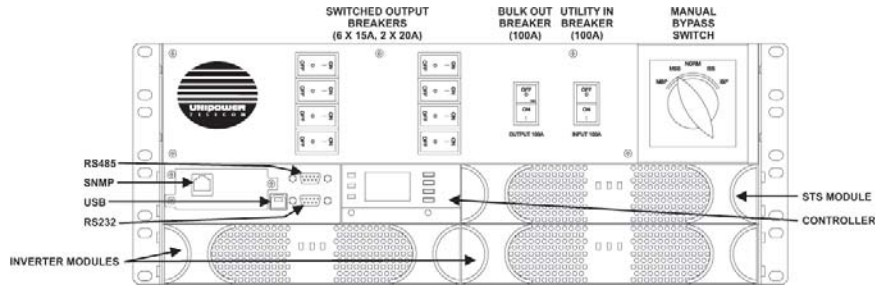
Safety Standards
UL60950-1
CSA22.2, No. 60950-1
EN60950-1

3KVA SYSTEM CONFIGURATIONS

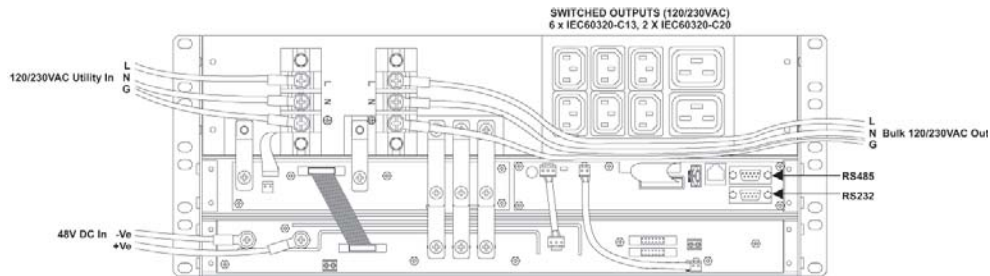
Rear views are with safety covers removed to show input and output connection details.

IX4U-1-TS50S-D2E-LMC

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



Front View (Shown with optional SNMP Module)



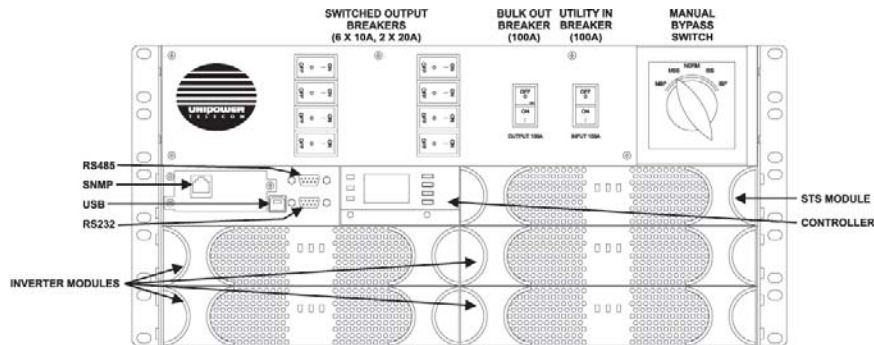
Rear View

6KVA SYSTEM CONFIGURATIONS

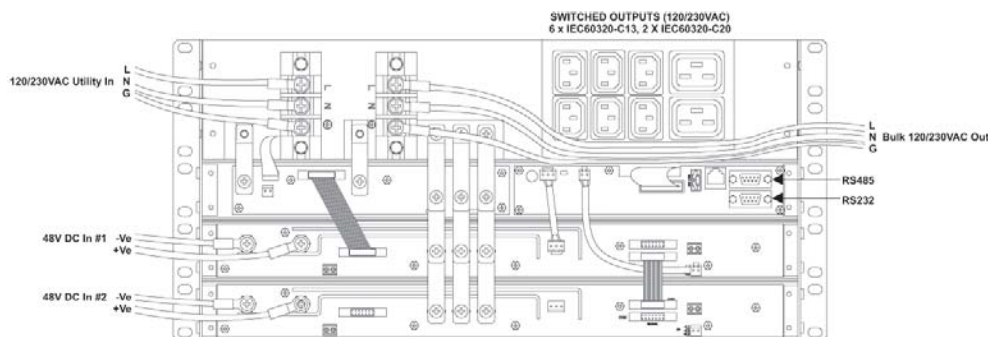
Rear views are with safety covers removed to show input and output connection details.

IX5U-2-TS50S-D2E-LMC

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



Front View (Shown with optional SNMP Module)



Rear View

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 inadvertently 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

