



Pure sine wave

PWM dc – ac inverter

voltage regulation + isolation

XINv model**400E-48V**

400 VA
400 watts
+/- 48 vdc input
230 vac output

700E-48V

700 VA
700 watts
+/- 48 vdc input
230 vac output

1400E-48V

1400 VA
1400 watts
+/- 48 vdc input
230 vac output

*Power with a
precision attitude™*

Rack-mountable dc – ac inverter with transformer isolated sine wave

These heavy-duty XINv Series dc to ac inverters are housed in a 2U rack-mountable enclosure. XINv PWM inverters feature a transformer isolated sine wave output. They are designed for all applications requiring continuous pure sine wave power. They produce 230 volts ac from 48 volts dc.

Key XINv benefits

XINv uses high-performance microprocessor and unipolar pulse-width-modulated (PWM) power conversion circuits for high efficiency and low input dc ripple currents. They also feature high dc to ac power conversion efficiency, pure sine wave output and long MTBF. XINv also provides precision automatic voltage regulation: of 230 vac +/- 3% and less than 5% THD.

XINv's 2U high construction with optional wall or rack-mounting kits provides maximum flexibility for telecom and industrial users. XINv offers a hardwire terminal block battery connection with a dc circuit breaker for external 48 vdc battery banks.

How the XINv works

A rugged, high-performance microprocessor and unipolar pulse-width-modulated (PWM) power conversion circuit takes the dc input and converts it into a pure sine wave. The circuitry automatically adjusts the duty cycle of the output for all loads and inputs. XINv delivers a stable 50Hz +/- 0.5% frequency.

A dc circuit breaker protects all dc circuits, and an overload shutdown feature protects the inverter from overload. If the input dc voltage drops below 42 vdc, a DB9 connector in the rear of the inverter sends signals for inverter output failure and low dc input voltage.

A comprehensive array of output current, battery charge levels, and status LED indicators are provided for visual assessment of inverter status. A DB-9 port is provided for communication using RS-232 or dry relay contact signals.



Typical XINv applications

Applications include all waveshape sensitive equipment such as telecommunications systems, industrial, measurement and other mission-critical, harmonic-sensitive electronics.

They are also ideal for use in facilities with 48 vdc rectifier/battery power plants, where the inverter can be used to provide the function of a double-conversion on-line UPS.

Key XINv features

- Pure sine wave inverter output
- Eight IEC 320 receptacles
- Rack or wall mountable with optional rack/wall-mount kits
- Unipolar PWM inverter
- Ac output is isolated from dc
- +/- 3% voltage regulation
- Comprehensive array of status LEDs/bargraphs
- SNMP compatible via RS-232 port with optional SNMP adapter
- Both RS-232 and relay contact signals are provided
- Very low audible noise
- Rugged construction supports mobile and portable applications
- Two year limited warranty parts and labor



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XINv



Rack-mountable heavy-duty PWM dc to ac inverter

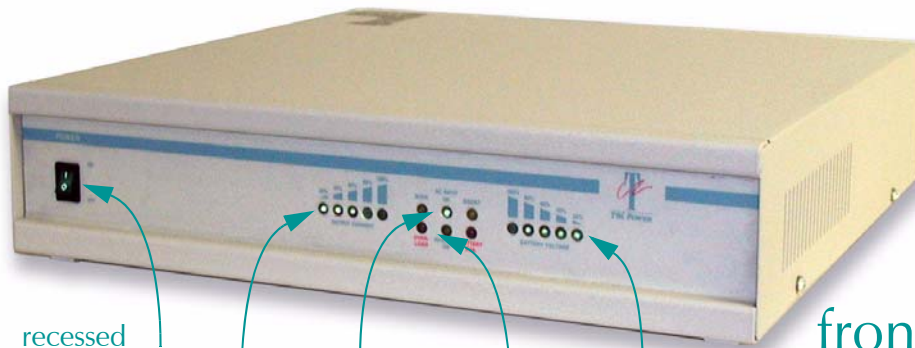
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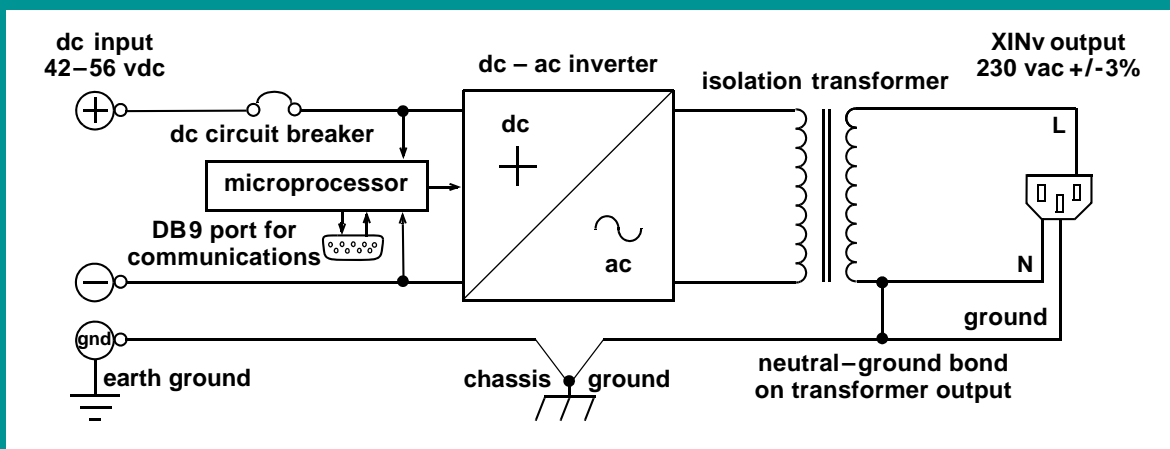
Specification	XINv-400E-48V	XINv-700E-48V	XINv-1400E-48V
Electrical			
Capacity in VA (watts)	400VA (400W)	700VA (700W)	1400VA (1400W)
Inverter type	Pulse-width-modulated (PWM) with isolation transformer.		
Input			
Nominal voltage	-48 volts dc / +48 volts dc		
Operating voltage	42–56 volts dc		
Maximum input current	25 amperes	40 amperes	75 amperes
Dc input connector	3 screw terminal block for Earth Ground, (+), (-) dc Inputs.		
Recommended wire	10mm ² (8 AWG)	15mm ² (6 AWG)	25mm ² (4 AWG)
Output			
Ac output voltage	230 volts +/-3% ac (factory settable to 200, 220 or 240vac)		
Frequency stability	50 Hz +/- 0.5%		
Output waveform	Pure sine wave. Less than 5% maximum THD for 0–100% loads.		
Load compatibility	All linear and non-linear loads from -0.6 (leading) to +0.6 (lagging) power factor, including new power-factor corrected switchmode power supplies and older non-power-factor corrected power supplies.		
Load crest factor	Up to 3:1 crest factor loads can be powered by the inverter.		
Surge current capability	Up to 300% surge power is available from the inverter to power load equipment with high starting/stopping surge currents for a few ac cycles.		
Overload capability	1 minute @ 120% overcurrent.		
Power efficiency	Greater than 85% under all load and dc input voltage conditions.		
Power On/Off switch	Recessed On/off rocker style power switch.		
Communications	Rear-mounted DB-9 female signal port.		
Status indicators	Dc input voltage indicator: 5 green LEDs (25% per each LED). Ac output current: 5 green LEDs (25% per each LED). Inverter On: 1 yellow LED illuminates during normal inverter operation. Overload: 1 red LED illuminates if overload condition exists.		
Ac receptacles	Four standard IEC320-C13 female outlets (receptacles).		
Audible noise	<45dBA @ 1m under all operating conditions.		
Isolation and grounding	100% isolation between input dc and output ac (isolation transformer included). Metal enclosure is bonded to dc input terminal block Earth Ground input.		
Physical			
Dimensions	406mm (16") wide x 381 mm (15") deep x 89mm (3.5") high (2U high)		
Weight	10 kg (22 lbs.)	12 kg (26 lbs.)	18 kg (38 lbs.)
Rack or wall mounting kits (optional)	19 inch front or rear rack-mount kit: MK-5019A 19 inch center rack-mount kit: MK-5019F Wall or floor mount kit: MK-5000C		
Safety			
Agency approvals	Designed to meet IEC 60950 Safety Standards.		
Dc breaker	Protection against shorts or misapplication of inverter current.		
Low voltage disconnect	Inverter turns off automatically if input dc voltage drops below 42vdc.		
Overload shutdown	Inverter turns off automatically if overload is >120% for over 1 minute.		
Environmental			
Ambient temperature	0° to +40°C (32° to +104°F). 5 to 95% RH non-condensing. Storage temp. -20° to +60°C (-4° to +140°F).		
Cooling method	Forced air (internal hot air exhaust fan is included).		
Elevation	-200 to 3000 meters (-656' to 9842') with respect to sea level.		
Warranty			
Warranty	Two year limited depot warranty, parts and labor.		



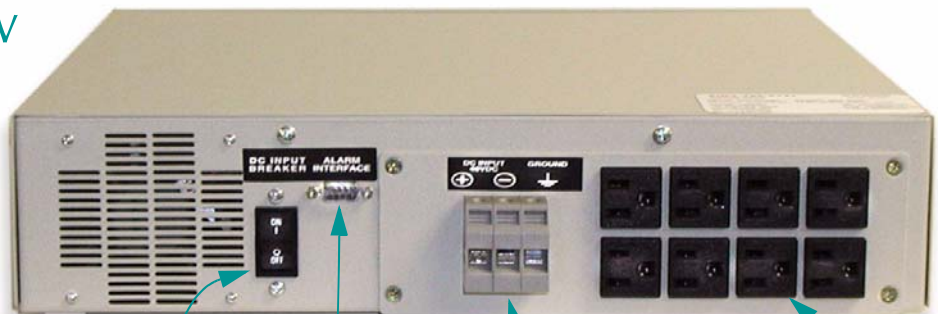
recessed on/off switch
 output current level: 20% per LED
 inverter On
 overload condition
 dc input voltage level: 20% per LED

front-right view

XINv-400E/700E/1400E -48V system architecture



rear view



dc input circuit breaker
 DB-9 communication port provides both RS-232 and relay alarm contact signals (or SNMP using optional SNMP adapter)
 dc input terminal block connector
 output ac via four standard IEC320-C13 female outlets (receptacles) (115V NEMA 5-15R receptacles shown)



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Rack-mountable heavy-duty PWM dc to ac inverter

Specification	Connector pin	Switching condition
DB9 port function (Please note: relay contact is rated for 48vac/vdc, 1 A maximum).		
Remote shutdown	1 For remote shutdown	A +5 vdc to +12 vdc signal sent to pin#1 for three full seconds will shut down the inverter remotely. Note: this operation requires manual restart.
Transmit data	2 TXD RS-232 signal	RS-232 signal line
Receive data	3 RXD RS-232 signal	RS-232 signal line
Custom or future use	4 Unused	For future use.
Ground	5 Ground	Logic ground for pins 1 through 4.
Inverter on	6 + 7 Inverter On/Off (relay Contact)	Closed when inverter is On, Open when inverter is Off.
Low battery alarm	8 + 9 Low battery alarm (relay contact)	Open when dc is okay. Closed when input source (battery voltage) drops below 43 vdc.
RS-232C serial communication for inverter status communication compatible with MEGATEC Communication Protocol, Part 1		
Baud rate	2400 bps	
Data length	8 bits	
Stop bit	1 bit	
Parity	None	
SNMP interface (optional)		
SNMP interface for inverter monitoring and automatic shutdown configuration (optional)	Using an external SNMP adapter, the RS-232 signals (from the DB-9 female connector) from the inverter can be converted to 10M/100M fast Ethernet signals (and RJ-45 connection) for external inverter monitoring/configuration capability using Telnet, web browsers, or NMS (most such external devices support TCP/IP, UDP, SNMP, Telnet, SNTP, PPP, HTTP & SMTP protocols).	

XINv-400E/700E/1400E-48V at a glance

Rack or wall-mountable heavy-duty PWM dc – ac inverter with isolation transformer and +/- 3% voltage regulation

- High performance microprocessor-controlled PWM sine wave output +/-48 vdc – 230 vac inverter
- Pure sine wave output
- Isolation transformer
- Rack-mountable 2U high metal cabinet allows for rack or wall mounting using optional mounting kits
- 230 vac +/-3% standard output can be set to a 200, 220 or 240 vac output at the factory
- Four IEC 320-C13 female outlets
- +/-48 vdc terminal block connection with dc circuit breaker
- DB-9 signal port with RS-232 and relay contact signals
- SNMP compatible with optional SNMP adapter

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