



Pure sine wave

PWM dc – ac inverter

voltage regulation + isolation

**XINv model****400-48V**

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

**700-48V**

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

**1400-48V**

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

## 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 115 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 with 115 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 48vdc 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 60 Hz +/- 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 & 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 NEMA 5-15R 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

*Power with a  
precision attitude™*



**TSi Power Corporation**  
1103 West Pierce Ave  
Antigo, WI 54409 USA  
800 874 3160 (USA only)  
Phone +1 715 623 0636  
Fax +1 715 623 2426  
sales@tsipower.com  
www.tsipower.com  
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**XINv**



Rack-mountable heavy-duty PWM dc to ac inverter

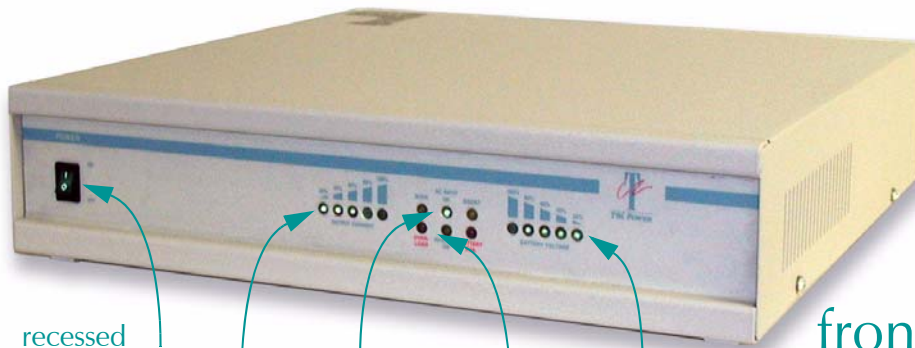
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1103 West Pierce Ave  
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Fax +1 715 623 2426  
sales@tsipower.com  
www.tsipower.com  
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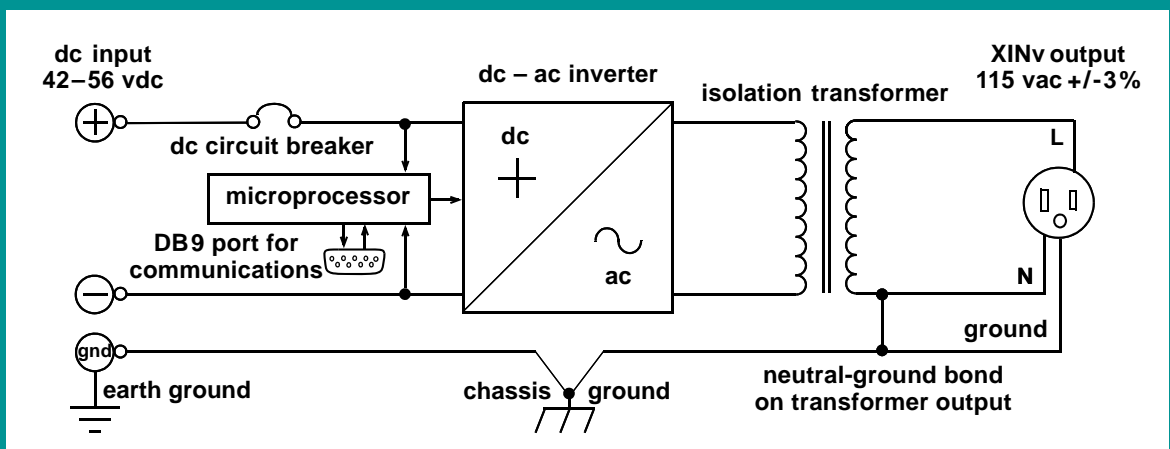
Specification	XINv-400-48V	XINv-700-48V	XINv-1400-48V
<b>Electrical</b>			
Capacity in VA (watts)	400VA (400W)	700VA (700W)	1400VA (1400W)
Inverter type	Pulsed-width-modulated (PWM) with isolation transformer.		
<b>Input</b>			
Nominal voltage	-48 volts dc or +48 volts dc		
Operating voltage	42 to 56 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 <sup>2</sup> (8 AWG)	15mm <sup>2</sup> (6 AWG)	25mm <sup>2</sup> (4 AWG)
<b>Output</b>			
Ac output voltage	115 volts +/-3% ac (factory settable to 100, 110 or 120vac)		
Frequency stability	60 Hz +/- 0.5%		
Output waveform	Pure sine wave. Less than 5% maximum THD for 0 to 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	Eight standard NEMA 5-15R female 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.		
<b>Physical</b>			
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		
<b>Safety</b>			
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 42 vdc.		
Overload shutdown	Inverter turns off automatically if overload is >120% for over 1 minute.		
<b>Environmental</b>			
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.		
<b>Warranty</b>			
Warranty	Two year limited depot warranty, parts and labor.		



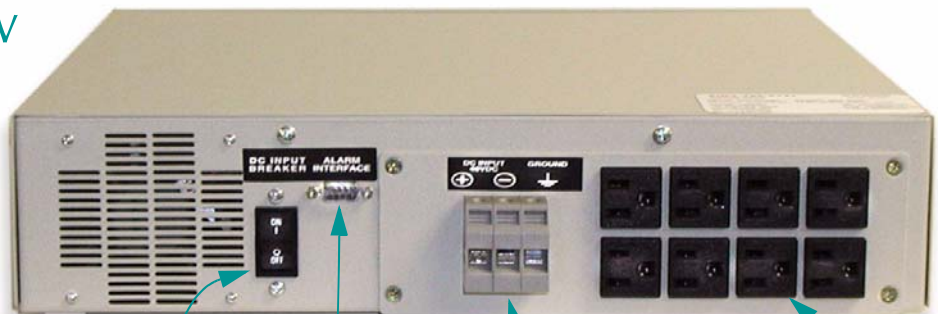
front-right view

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

XINv-400/700/1400-48v system architecture



rear view



dc input circuit breaker  
 dc input terminal block connector  
 output ac via eight standard NEMA 5-15R receptacles

DB-9 communication port provides both RS-232 and relay alarm contact signals (or SNMP using optional SNMP adapter)



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Specification	Connector pin	Switching condition
<b>DB9 Port Function</b> (Please note: relay contact is rated for 48 vac/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.
<b>RS-232C serial communication for inverter status communication compatible with MEGATEC Communication Protocol, Part 1</b>		
Baud rate	2400 bps	
Data length	8 bits	
Stop bit	1 bit	
Parity	None	
<b>SNMP interface (optional)</b>		
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-400-700-1400-48V at a glance

Rack or wall-mountable heavy-duty PWM dc – ac inverter with isolation transformer and 115 vac +/- 3% voltage regulation

- High performance microprocessor-controlled PWM sine wave output +/-48 vdc – 115 vac inverter
- Pure sine wave output
- Isolation transformer
- Rack-mountable 2U high metal cabinet allows for rack or wall mounting using optional mounting kits
- 115 vac +/-3% standard output can be set to a 100, 110 or 120 vac output at the factory
- Eight NEMA 5-15R receptacles
- +/-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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