



MIP Inverter System

75 kVA - 48 VDC - 120/240/208 VAC

Telecom

Datacom

Mass Transit

Oil & Gas

Utilities



MIP Rack with Bravo Modules

Product Description

The MIP inverter system is a 20 kVA to 75 kVA unit that operates at 48 VDC, accepting input of 120/240/208 VAC. It is designed to meet the diverse and changing requirements of today's mission critical loads. This Modular Inverter Power System is equipped with hot swappable modules that are connected to DC and AC sources, producing an uninterrupted, reliable AC supply. With the Bravo 2,500 VA Inverter module as its building block, the TSI systems are modular and scalable to capacities up to 75 kVA. They are easily configured to your current and future AC requirements.

The MIP rack provides convenient access for connecting the AC input, DC input, and AC output wiring. All configurations are integrated in a framed enclosure.

Product Features

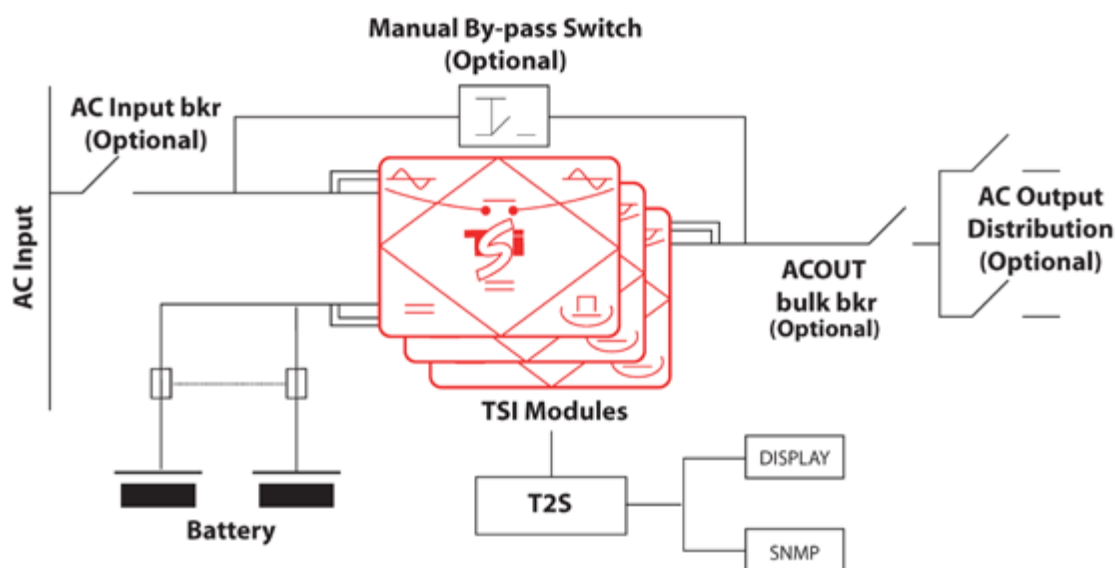
- **Energy Efficient:** The TSI technology performance is unmatched in the industry, 94% in AC to AC double conversion (EPC mode)
- **Maximum Reliability:** The TSI technology eliminates the Static Transfer Switch (STS), the single point of failure in a traditional inverter design
- **Scalable:** TSI features a parallel design. Hence, modules are HOT swappable and field upgradable
- **Power Density:** The TSI inverter has the industry's highest power per square area
- **Enhanced Power Conversion (EPC):** Processes all incoming AC mains supply to ensure clean, reliable power is delivered to the critical applications
- The MIP Inverter System is CE marked according to IEC/EN 60950:1, IEC/EN62040 and complies with EMC Class A

General Specifications

EMC (immunity)	EN 61000-4
EMC (emission)	EN 55022 (Class A)
Safety	UL1778 Listed
Cooling	Forced
Isolation	Doubled
MTBF	240,000 hours
Efficiency (typical)	Enhanced Power Conversion: 94% On Line: 90%
Dielectric strength DC/AC	4,300VDC
True redundant systems	Compliant (3) disconnection levels on AC out and DC in power ports (4) disconnection levels in AC in port
RoHS	Compliant
Connection I/O	Terminal block (protected against inversion of polarity)
Dimensions / weight	610 x 610 x 2136mm (24 x 24 x 84in) / 380kg (840lbs)

Operation Mode

The TSI Enhanced Power Conversion mode develops a high quality AC by drawing power simultaneously from the AC mains and DC sources and presents a regenerated AC for critical application. Since the system draws power from each source simultaneously, output power is guaranteed as long as one input source is available.



MIP Block Diagram

DC Input Specifications	
Nominal voltage	48VDC
Voltage range	40 – 60VDC
Nominal current (at 40 VDC)	1,680A
Maximum input current (15s)	2,520A
Voltage ripple	<2mV

AC Input Specifications	
Nominal voltage	120/240/3x208VAC
Voltage range	83 – 140VAC
Conformity range	Adjustable
Power factor	>99%
Frequency range (selectable)	50 – 60Hz
Synchronization range	47 – 53Hz 57 – 63Hz

AC Output Power	
Nominal output power	75kVA
Output power (resistive load)	60kW
Short time overload capacity (15 seconds)	150%
Permanent overload capacity	110%
Admissible load power factor	Full power rating from 0 inductive to 0 capacitive

AC Output Specifications

Nominal voltage	120 / 240 / 3 x 208VAC
Voltage range	90 – 130VAC
Voltage accuracy	+/-1%
Frequency	50 – 60Hz
Frequency accuracy	+/-0.1%
Load impact recovery time	0.4ms
Turn on delay	40s
Nominal current / protected against reverse current	208A / PhaseA
Crest factor at nominal power with short circuit management and protection	3.1 in.
Short circuit current after clear up capacity	10x in. for 20msec

Signaling & Supervision

Display	LED + LCD
Alarms output	Dry contacts
Monitoring	Via T2S controller

Transfer Performances

Maximum voltage interruption	0s
Total transient voltage duration (max)	0s

Environment

Altitude above sea without derating	<1,500m
Derating slope upper than 1500 m	0.8% by 100m
Ambient temperature	-20 – 40°C (-4 – 104°F)
Storage temperature	-40 – 70°C (-40 – 158°F)
Relative Humidity	95%, non-condensing

Model List

Model Part Number	Max Apparent Power	Max Real Power	AC Input & Output Voltage
MIPS-48-3-75	75kVA	60kW	120/208, 3-phase
MIPS-48-3-60	60kVA	48kW	120/208, 3-phase
MIPS-48-3-30	30kVA	24kW	120/208, 3-phase
MIPS-48-2-40	40kVA	32kW	120/208 or 120/240, 2-phase
MIPS-48-2-20	20kVA	16kW	120/208 or 120/240, 2 -phase
MIPS-48-1-25	20kVA	16kW	120V, single-phase

Ordering Information

Model No.	Description
MIP Inverter System	75kVA Box Bay Inverter System