

Invertronic Modular 3 Phase 480VAC in/out Inverter System

Up to 80 kVA of secure
AC power in 2 cabinets

Benning is proud to introduce **Invertronic Modular 80KVA 480VAC in/out Inverter System** a high power density, modular true three phase inverter system for telecom, datacenters, and other critical AC power applications. This Invertronic Inverter system uses -48VDC input with 480VAC bypass and 480VAC 60Hz output, providing a solution for sites requiring 480VAC commercial power. This provides an excellent solution for commercial sites replacing older UPS equipment using 480VAC input and output voltages. The Invertronic can use the existing DC power plant with typical longer battery hold time for critical AC loads

Customers can now protect their load from AC mains power disturbances saving the cost of yearly UPS service contracts and associated separate UPS battery maintenance can also be eliminated. Cutover from a three phase UPS to the Invertronic is quick and easy because the inverter system output can be run up and connected directly into the existing three phase AC distribution. There is no need to incur the cost and downtime associated with disturbing the existing distribution panels and cabling.

This version of the Invertronic continues to use the proven topology whereby each inverter module has its own Static Bypass Switch (SBS). Secure data bus communications between modules provides for a coordinated transfer to back-up AC in the unlikely event of system failure or overload. Redundancy is determined dynamically, based on measurement of actual present load. A transfer to back-up will take place when the system determines that its capacity has been exceeded either due to a non-redundant module failure or due to excess load being added on the output.

The **Invertronic Modular 80KVA 480VAC in/out Inverter System** provides the proven advantages of the Invertronic Inverter system with the ability to use 480VAC in a small foot print for critical power protection

Key Features

- Hot swap 10kVA modules each with built-in SBS for the ultimate in scalability (80kVA systems in single cabinet; transformers in a second cabinet)
- Employs 4th Generation DSP Technology for outstanding dynamic step load response and maintenance of high quality, low distortion sine wave output into non-linear loads
- Integrated Manual Bypass Switch in Secondary Cabinet
- Front Door-mounted Graphical Display of Operating Mode & System Parameters
- Remote Monitoring via Network (HTML) (SNMP)
- Small footprint 47"W x31.5"D



Technical Specifications

Invertronic Modular 3 Phase Inverter		
AC OUT	Inverter Module Rating	10kVA / 8kW at 0.8 power factor inductive
	Maximum System Capacity	80kVA / 64kW at 0.8 power factor inductive
	Maximum Modules Per Cabinet	8
	Maximum Cabinets	2
	AC Output Volts	480 VAC 3 phase, 4 wire, Wye connected
	AC Output Amps	27.8A per phase at full load
	AC Output Frequency	60Hz +/- .01% on internal crystal; tolerance is programmable when synchronized to commercial AC bypass
	Maximum Allowable Phase Imbalance	100%, up to full load per phase current rating
	Load Power Factor Range	0.7 lagging (inductive) to 0.8 leading (capacitive), standard UPS de-rating
	Output Regulation	Static: +/- 1%; Dynamic: +/-5% max with 100% step load change, settling time: <10 msec
	Efficiency	>86% @ full load
	Crest Factor Accommodated	2.8 for nominal power (>3.0 possible with derated output power)
	Distortion	<2% THD into a linear load; pure sine wave output
	Overload Capability	125% for 10 minutes; 200% for 4 seconds
DC IN	Input Voltage	Nominal: 48VDC, Operating Range 42-60VDC
	Input Current	Maximum: 228A at 42VDC at full load, Nominal: 138A at 54VDC at 80% load
	Inrush Current	Soft-start circuit limits inrush to <25% of full load current
	Reflected Noise on DC Input	<2mV psophometric
SYSTEM	Static Bypass Switch (SBS)	208VAC, 3 Phase SCR bridge built into each module
	SBS Priority	Inverter Priority Only; Offline mode not possible
	Transfer Time	SBS is make-before-break; 2ms typical, 6ms maximum
	SBS Overload Capability	1000% for 8ms
	SBS Transfer Criteria	Overload, modules over temperature, short circuit on output, low DC voltage, manual initiation, output AC volts out of range
	External Alarming	10 Outputs include: Major, Minor, Mains Fail, DC Fail, Inverter Fail
	Metering	Phase voltages, currents, kW, kVA, KVAR
Indicators	13 Programmable LEDs on front door display panel	
MECHANICAL	Module Weight & Dimensions	99lbs. (45kg); 19.9" x 17.7" x 8.75" (5RU) (505 x 450 x 222 mm)
	Cabinet Weight & Dimensions (each)	1,200lbs. (544kg); 23.5" W x 31.5" D x 84" H (600 x 800 x 2134 mm)
	Transformer Cabinet W & D	1,900lbs. (862kg); 23.5" W x 31.5" D x 84" H (600 x 800 x 2134 mm)
	Heat Output	<5000 BTUs / hour / module, full load @ 54VDC input
	Operating Temperature Range	0-40°C
	Operating Humidity Range	0-95% relative humidity, non-condensing
Elevation	Fully rated to 1000M, de-rated thereafter	
DESIGN	Safety	cETLus Listed (ul60950, ul1778)
	Design	NEBS Level 3 Certified, Zone 4 cabinets available
	EMI Emissions	EN 62040-2 classification C3, FCC Class A
	EMI Immunity	EN 61000-4-4, EN 61000-4-5
	Electrostatic Discharge Immunity	EN 61000-4-2, (level: 4kV contact, 8kV air discharge)

Benning Power Electronics, Inc.
 1220 Presidential Dr., Richardson, TX 75081
 E-Mail: sales@benning.us
 www.benning.us

Toll Free North America: 1.800.910.3601
 or local: 1.214.553.1444

Fax: 1.214.553.1355