

PERPETUAL POWER

SERVICES PRIVATE LIMITED

GTC Series

120-800 kVA

Three/three-phase Online UPS

*Advanced 3 Phase Power Protection for
Small-Medium Server Rooms, Data Centers,
Industrial, Telecom and another mission-critical
Applications*



Features:

- * True On Line-Double Conversion Technology (Class VFI-SS-111)
- * IGBT PWM Rectifier & Inverter Technology
- * DSP Control
- * Low Input Current THDi (<3%)
- * High Input Power Factor (>0.99)
- * High Efficiency up to 95%
- * Optional Dual Input
- * Wide Input Voltage Range
- * Advanced Battery Management
- * Short Circuit and Overload Protection
- * Unlimited Number of Paralellable Modules
- * Selectable Number of Batteries
- * 500 Real Time Event Log with Detailed Parameters
- * Static&Manual Bypass Operation
- * Overload and Short Circuit Protection
- * Small Footprint and Easy Maintenance
- * Advanced Communication Capabilities
- * Perfect Generator Compatibility
- * Customizable as Frequency Converter

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Strategic Power Solutions

Challenger Series



GTC Series is a true Online Double Conversion, new generation fully digital controlled UPS. Its highly flexible design meets high efficiency and high availability power needs of a wide variety of critical applications and delivers an advanced power solution with low cost of ownership.

High Performance Power Protection Designed for Maximum Efficiency and Flexibility

Equipped with its new IGBT rectifier GTC series keeps your critical loads protected while its space-saving compact design and front access for maintenance successfully reduce mean time to repair (MTTR).

Thanks to the wide variety of accessories and options GTC Series presents maximum flexibility advantage to users and optimizes total cost of ownership.

DSP Power Factor Corrected IGBT Rectifier

IGBT based power factor correction technology provides Input Power Factor close to 1 (≥ 0.9) and keeps Input Current Total Harmonic Distortion (THDi) less than %3, that helps to avoid the disturbance.

Digital Control System

All of the control functions for GTC Series UPS including power-on, start-up control, input stage power factor control, battery charging and boosting control, output stage ac voltage regulation and shut-down control, can be realized by using a single DSP control board.

Low Input Current THD

(THDi) less than %3 avoids the disturbance to connected loads

High input power factor

0.9 Input power factor ensures clean and sinusoidal input current. The high input power leads to reduced electricity pay-out, minimizes cable, switchboard, fuse and generator requirements, thus reducing investment cost.

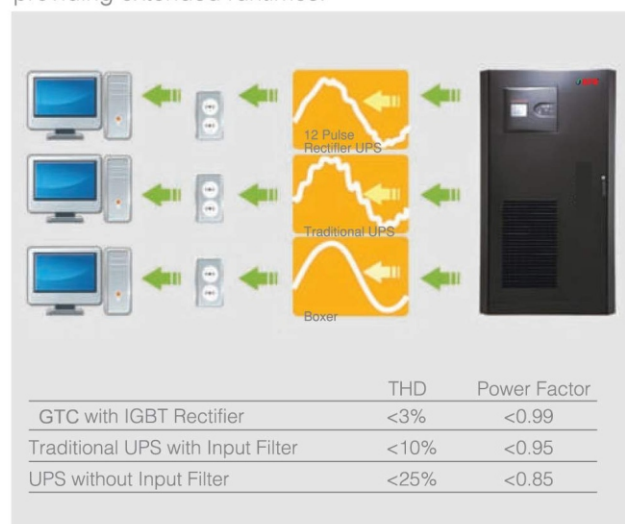
High Efficiency & Low Total Cost of Ownership

With its high efficiency up to %95 GTC Series UPS consumes less energy to supply the loads. Thanks to this high efficiency rate, the percentage of energy that is produced as heat is reduced to a minimum. As a result of decreased heat emission users can reduce their electricity usage and air conditioning requirements.

Flexibility

GTC Ups is compatible with wide range of application. Flexibility achieved through many choices, including type of battery, single or multi-unit configuration, accessories and options.

- Frequency converter mode
- Optional temperature sensor for external battery cabinets (to assist the recharge voltage compensation)
- Additional battery chargers to optimize charge time
- Optional separated bypass
- Optional backfeed protection
- Isolation transformers to vary neutral connectivity in the event of separate power sources or for galvanic isolation between input and output
- Battery cabinets of different sizes and capacities, for providing extended runtimes.



Static & Manual (Maintenance) Bypass

GTC Series includes standard static and manual bypass. Static bypass provides safe failure to mains if the UPS is overloaded or develops a fault condition. Where EMI filters are used to help to neutralize spikes and electrical noise, the load may be routed through bypass to provide further protection.

Manual bypass function is intended only for maintenance work, this bypass supply is incorporated into the GTC UPS design. Manual bypass is used to power down the UPS without interrupting the power to the load. With this feature it is completely safe for the technical personnel to work on the faulty UPS.

Auto Restart

When the main and bypass sources fail, the UPS draws power from the battery system to supply the load until the batteries are depleted. When UPS will reach its end of discharge, it will shut down.

The UPS will automatically restart and enable output power:

- After utility power is restored
- After the "Auto Start Delay Time" is expired (the default delay is 5 minutes) .

Perfect Generator Compatibility

GTC Series is perfectly compatible with diverse sources, especially with generators. When generator power is used, thanks to its robust IGBT rectifier, it ensures clean, uninterrupted power to protected equipment.

With high input power factor performance of GTC Ups series it is enough to choose generator with power only %20 higher rated than the UPS.

GTC Series has the ability to adjust power walk-in from 5 to 15 seconds, along with reduced input current distortion.

EPO(Emergency Power Off)

EPO function is designed to switch off the UPS in emergency conditions (fire, flood, etc.). The system will turn off the rectifier, inverter and will stop powering the load immediately (including the inverter and bypass) also the battery stops charging or discharging.

Reverse Energy Tolerance for Regenerative Loads:

The GTC UPS can be used with regenerative loads, such as synchronous motors. The regenerative loads pump the energy back to mains, traditional Ups systems burn this feedback energy and this causes lower efficiency. GTC Series Ups with IGBT rectifier are able to absorb intermittent load generated power. Additionally, this reverse power tolerance permits execution of important system operations like closed transition transfers of the UPS load directly to an engine generator source.

Advanced Battery Management

GTC Series guarantees enhanced battery life and maximizes battery performance, life span and reliability through intelligent precision charging. Temperature Compensated Battery Charging monitors performing measurement of external and internal battery temperature and adjusting the charge current rate accordingly. Advanced battery management provides real-time information about battery capacity and back up time, this information can be seen on LCD panel. The Ups tests the batteries at adjustable periods without switching off the system, the test periods can be set by users.

Advanced User Interface

GTC Series UPS has Large and user-friendly 320x240 LCD display that provides operating information in four different languages. Thanks to this advanced LCD display all parameters of working device can be monitored and controlled. UPS is capable of recording up to 500 events.

Models UPS	400KVA	500-600KVA	800KVA
Dimensions (cm)			

Parallel and Redundant Operation

GTC Series features easy and simple scalability and redundancy. It is ready to grow with your business demands. Different power rated units and any number of UPS can be connected in parallel..

Power Increase: The UPS's can be connected in parallel to increase total capacity of the system. If one of the devices goes out of order, the critical loads are transferred to by-pass.

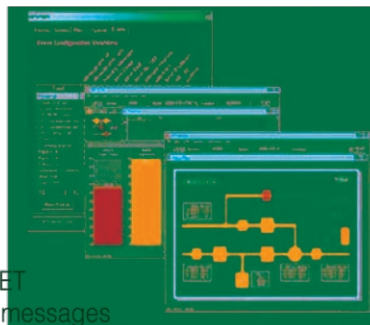
Redundancy: In redundant operation number of devices (N) would supply the load and one more unit (N+1) would remain as standby. All units in this system share the loads equally. When one of the Ups' goes out of order because of failure or maintenance works, the other standby Ups continues feeding the critical loads without any interruption.

Parallel Operation Features :

- Internal standard parallel microprocessor for all models.
- Up to 16 units parallelable
- Parallel connection with ring cable
- Autosensing disconnected parallel cable
- Equal current share with DSP control
- Easy power upgrade without any interruption
- All parallel systems can be controlled from the front panel of one unit
- Full synchronization of parallel units
- Isolated parallel operation card
- Static by-pass for all units

Software :

MakNET is Ups Management software for the centralized management of UPS through SNMP communication protocol. When MakNET begins, it collects the messages sent from the UPS and analyses them to notify the operator.



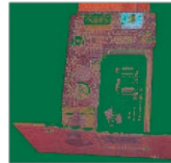
- Monitoring of UPS systems with potential-free contacts or serial interface.
- Automatic shutdown, Multiserver Shutdown, Unlimited shutdown manager
- Program execution, messaging, logging etc. of local and remote computers in the network
- Graphic display of input voltage and frequency with min. - max. and average values
- Alarm notification via E-mail and SMS
- Password protection of all UPS remote functions
- Scheduler for time controlled execution of functions, such as battery test, reboot, shutdown etc.
- Available For Windows operating systems (2008 Server, Vista, 2003 and XP), Linux, Mac OS X, Solaris 8, 9 and 10, and Open VMS and IBM OS/2
- User messages in 12 languages

Accessories

GTC Series a wide range of advanced remote communication options. Remote control management of the UPS is provided over the Network and enables centralized management via the MAKNet Software.

MakNET SNMP Card

MakNET SNMP Card was developed to integrate the UPS into networks. It allows control and monitoring of multiple UPS's using the TCP/IP, HTTP and SNMP.



- Compatible with MakNET software.
- Events log and data management
- Management of environmental sensors
- Warning notifications via audible alarm, email and SMS.

RS232, RS485 Serial Port



UPS input-output parameters can be observed and controlled with RS232 and 485 communication port and MAKNet software. MAKnet software reports all changes in UPS status by email; also all operating systems can be safely turned off through the network.

Dry Contact Card



A "dry" contact is a contact that is not initially connected to a voltage source and provides isolated, dry contact signals that can indicate any failure of UPS. Relay contacts are totally isolated from UPS and Ground. All isolated contacts can operate between 3.3Vdc - 24Vdc. UPS can be controlled remotely with help of the isolated contacts and via other devices.

Data Expansion Card



R326-R01A module is directly connected to one of two expanding slots of UPS. The main duty of this module is to collect information from other battery cabins. Here, in physical intercommunication environment CAN works with MAKBUS protocol.

External Battery Temperature Sensor



R336-R01A module is mounted on battery cabinet. Altogether with information about the temperature of the batteries inside the cabin, it also forwards the information about the position of the key on the cabin. A single card of this type is needed for each cabin.

Remote Panel



The Ups Remote Panel is intended to help the user to observe the operational status of the UPS from a distant place. The user can be informed about status of all operations, events and parameters of the working UPS through the LCD screen of remote panel.

* Under Certain Conditions