

### RECTIFIER/CHARGER

- Wide AC in-punt voltage range
- Universally compatible (3 Phase or Single Phase) 19" modular technology rectifier/charger compliments expandable power rack upto 900A (15 racks)
- Advanced H.F Switched Mode rectifier/charger provides fully regulated output with low-noise operation
- N+1/N+N Redundant capability
- Soft-start (current walk – in test) switching from 15% to 100%
- Soft-start delay programming (adjustable up to 120 sec.)
- Input Power factor  $\geq 99\%$  for leaner and non-leaner loads
- Input galvanic double isolation
- Charge efficiency  $> 93\%$
- In-put high voltage shutdown
- Low line voltage "fold back shutdown"
- Current limit/short circuit protection. Rectifier short circuit at output indefinitely for 105% of nominal Isc
- AC inrush/transient suppression to prevent surge on the AC line
- Input lightning and transient surge protection in acc. with IEEE/ANSI C62.41 category B3
- High temperature protection and automatic re-start against safe level
- VDC reverse polarity protection /LED blinks
- Earth leakage protection/ Alarm

### NO BREAK STATIC INVERTER

- Addressable Static Inverter module of 1.5kVA or 2.5kVA options are compatible for Single Phase (230VAC/50..60Hz) or 3 Phase (415VAC/50..60Hz) configuration to deliver pure sinusoidal wave filtered out-put power supply
- 3 Phase out-put with WYE or DELTA configuration without additional hardware
- Solid state advanced IGBT/PWM technology
- Dual power in-puts (VAC & VDC) to Inverter module is a distinct modern technique facilitates in-built static switch function, eliminates single-point-failure and central static transfer switch (STS) or conventional mechanism



**ULAD/1100**

- User definable Alarms / Status LED
- VDC reverse feedback galvanic double Isolation protection
- Universally compatible for VRLA, VRCL and NiCad Batteries without additional hardware
- Battery management and data logging
- Battery capacity and run time prediction
- Battery temperature compensation control
- Battery healthy history log on last 20 times charge, discharge and battery capacity
- Superior recharging capability to charge 80% of the battery capacity in  $\geq 12$  hrs upon rated discharge
- Automatic deep discharge protection
- MTBF  $\geq 400,000$  hrs.
- MTTR  $\leq 10$  minutes

- TSI technique significantly reduces the system energy lose by  $\geq 60\%$  and in-built Enhanced Power Conversion "EPC" technique optimizes  $\geq 96\%$  efficiency
- Proprietary double conversion technology with internal energy buffering
- True sine wave "TSI" provides filtered out-put power rather than raw unconditioned power irrespective of in-put mains voltage fluctuation
- Each Inverter module being compatible for dual Mains power, from a Grid and local Generator, guarantees highest redundancy in acc. to UL 924, thus eradicates distribution network designed for traditional Inverters

# DZB - TSI

## CENTRAL INVERTER SYSTEM

ETAG

- Static Inverter with in-built DC buffer catalyzes, seamless power transfer in Zero mill second from VDC to VAC and vice-versa in the event of mains failure
- Twin Sinusoidal Inverters, "TSI" technique is most energy efficient when compared to all primitive technologies without diminishing performance
- TSI technique provides a redundant source of supply being able to transfer seamlessly (no-break), to and from mains power without disturbance to the life safety and emergency lighting
- Each Inverter module being self sufficient with in-built DC power supply, abolishes the necessity to upgrade the rectifier/charger rating found in traditional Inverters
- DZB-TSI Inverters are compatible to support magnetic (MVG) and electronic (EVG) ballast fluorescent lamps, high power factor compact fluorescent lamps, LED luminaires, incandescent lamps. Halogen lamps and high intensity discharge (HID) lamps
- Off-line DZB-TSI Inverter solution optional (non compatible for HID lamp application)
- In-built manual by-pass switch to ease maintenance, is a standard feature
- Each Inverter module has inbuilt ability to automatically isolate from system synchronization should it fail/faulty
- Inverter operating temperature at 50°C without diminishing the output power or output voltage. Eliminates derating factor up to 50°C temperature, which is a must for traditional Inverters
- Centralized Inverter system in parallel are configured for automatic load sharing provides highest safety thus eradicates the necessity of traditional group battery distribution network
- Synchronization communication bus in parallel redundant with independent terminal supervisor per phase assures ultimate fail-safe monitoring function
- Independent double conversion DC/AC and AC/AC at each TSI module guarantees highest reliability
- Digital Signal Processor (DSP) at each Inverter, true redundant topology, multiple levels of module isolation, independent isolated DC power supply imperiously attained pace in the emergency lighting and power supply industry



### DZB-TSI 20kVA INVERTER WITH BUILT-IN DUV-MASTER CONTROLLER

- Each addressable Inverter module being remotely controllable (ON/OFF) over BMS facilitates ultimate flexibility
- Each Inverter module is featured with synoptic LED bar-graph to indicate the kVA rating in percentage
- Load power factor 0.5 lagging to 0.9 leading capability, supported by in-built EPC mode at each Inverter module
- Single Phase failure protection, yet guarantees 3 Phase synchronized power output. The effected Phase only draws DC battery power and healthy phase remains in EPC mode
- Static Inverter with independent TSI-Boost delivers 10 times the nominal current (10xI<sub>n</sub>) to allow a short duration high current situation to be isolated downstream. The boost requires no additional energy from the upstream supply or VDC, hence and AC distribution selectivity guaranteed to optimize emergency power
- VDC reverse feedback protection at DC/DC converter via galvanic-double-Isolation

# DZB - TSI CENTRAL INVERTER SYSTEM

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- Distinctly engineered with brown-out voltage protection upto 150VAC and does not shutdown the power to life safety equipment
- Each inverter module is featured with in-built short circuit isolator with LED status
- Automatic isolation of each inverter module from network in case of short circuit or major fault
- Each Inverter module is categorically designed for under voltage protection up to 185VAC. The inverter delivers fully synchronized healthy power during under voltage condition without draining battery power
- Self diagnosing and self testing with inbuilt electronic log book and definable audible alarm
- Automatic synchronization of address and pre-set parameters in the network whilst a new Inverter module been plugged-in to the power rack



- 110% continuous overload without diminishing in out-put power and out-put voltage
- DZB-Bravo Inverters are UL listed and EN certified categorically for Central battery emergency lighting and power solutions
- Inverter design life  $\geq 27$  years
- Most compact modular structure accommodated in a single cubicle (2100x600x603mm) upto 80kVA/60A charger for Single phase and 4 cubicles (2100x600x603mm) upto 225kVA Inverter, drastically reduces the overall foot print requirement compare to traditional hulking Inverters
- Complimented with addressable electronic distribution boards (EDB) in acc. to EN 50171 and UL 924 standards eradicates traditional ELDB with MCB's

Note: Refer operation manual for monitoring parameters, LED status indication, Alarm status and interface with BMS system.

ETAG offers customized static inverter solution on request for wide applications