INDUSTRIAL INVERTER

Industrial Inverter systems are used for rugged environments and designed particularly to safeguard critical loads in industrial applications. An galvanically isolationed transformer is used to isolate load from input supply. Otherwise, voltage transients, created by degraded mains supply, can seriously damage both inverter and the critical load.

The inverter converts DC voltage into pure sinusoidal AC voltage with constant amplitude and stable frequency. The unit works with an IGBT inverter bridge with PWM (pulse width modulation) having high efficiency in the partial load range as well as achieving a low distortion factor at non-linear load. Inverter output encompasses 6 IGBT modules, boosting the instant power capacity of the inverter by double fold with comparison to regular systems. This feature allows the inverter to handle higher capacity loads (inrush currents) with smaller capacity devices. In addition, switching at high frequency – 16KHz – keeps the output sin wave (THD) undistorted providing reliable solutions for nonlinear loads. On LCD panel all measurement values, real time base events and failures can be viewed and communicate remotely with RS485 port.

In the event of mains interruption or failure, the battery connected to the DC input feeds the load automatically and without interruption. If the battery discharge limit is exceeded, the inverter automatically turns off and a warning is given shortly before the discharged voltage limit is reached. Automatic change-over of the load to the bypass mains or a suitable spare supply occurs if the supply from the inverter falls outside the preset tolerances. Having mono-phase and three-phase alternatives PMI Inverter systems are ideal for off-grid solar applications, wind turbine systems and for specific requirements ofmission-critical processes where there is a need for reliable AC/DC conversion
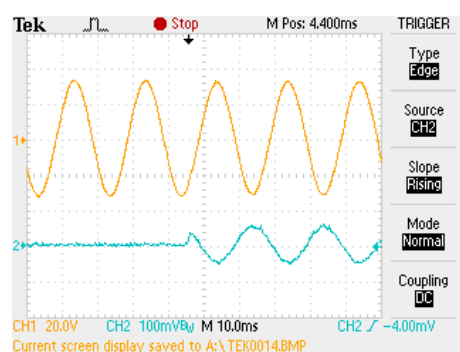
Features

- IGBT (PWM) controlled inverter with high frequency switching to ensure no waveform distortion for reactive and nonlinear loads.
- Galvanically isolated output (inverter transformer is standard, bypass transformer is optional) for maximum safety on critical loads
- Thyristor controlled static bypass to ensure uninterrupted transfer between inverter and bypass source
- Communication (Free alarm contacts, remote PC monitoring, Modbus, SNMP, Profibus, DNP 3.0 via RS 232, RS 485, USB or Ethernet TCP/IP ports)

- Manual Bypass with 3 positions
- LC Filter for DC Input
- Electronic Over / Under Voltage, Over Current and Short Circuit Protections
- Parallel Redundant Operation (Optional)
- Internal Over Temperature protection
- LCD Panel with Mimic Diagram and LED Indication
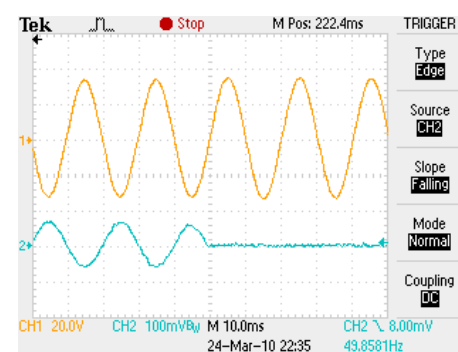- Event History for all Electrical values and failures
- 8 units Free Alarm Contacts

Perfomance Graphs
Dynamic Responce at Output

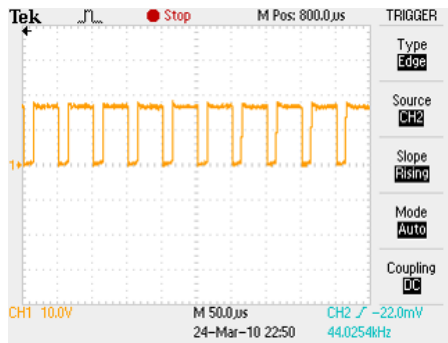Output at 0-100% load change   Output at 100-0% load change

In sudden load changes dynamic response recovery time is 200msec and max voltage change is 10%
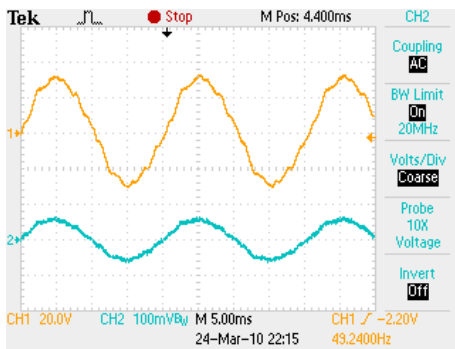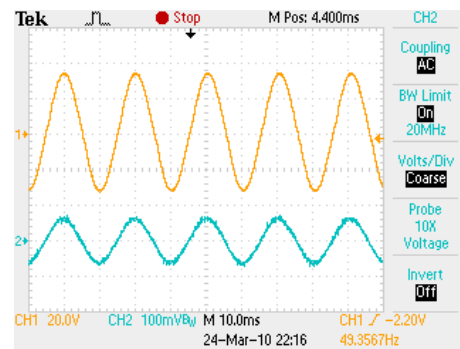
Switching waveform

By high frequency switching, there is no waveform distortion for reactive and nonlinear loads and audible noise very low

Waveforms for Lineer and Non-Linear Loads

Line Voltage

Output waveform
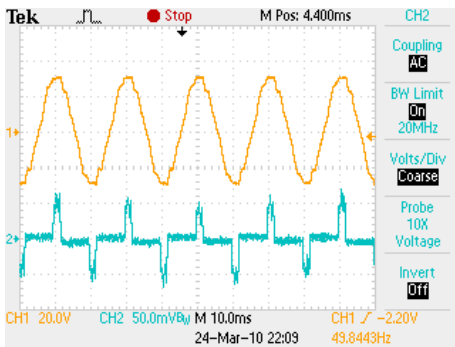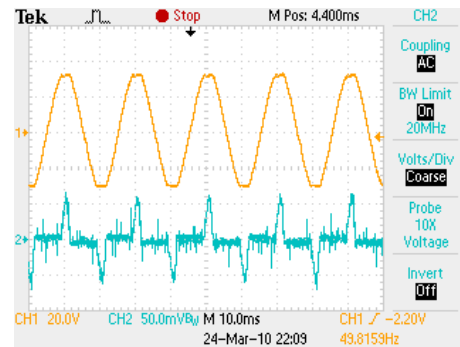

Perfect output waveform with linear loads

Line Voltage

Output waveform

Perfect output waveform with non-linear loads

LCD Front Panel