

# **Making a Low cost, simple and robust 6kW, 50HZ Pure Sine Wave, 48vdc to 230vac, INVERTER.**

## **PCB Component details for the 6-15kW OzControl Board 12bb.**

These Boards have been designed for easily obtainable components and parts. This list will be updated as required. Most of the component/parts details are from Ebay and may be purchased there, however some parts may only be found on Alibaba, so the Web Link is given.

**Please find below a list of the majority of parts required.** 94/10/2017

220vac, 12V 1W Output Voltage Isolation Dry Type Transformer Toroidal Tube. ... Or 220v:12V 3W Output Voltage Isolation/ Dry Type Transformer.

EG8010 LQFP-32 Sine wave inverter chip, HN1518HT1536, <http://www.aliexpress.com/item/10pcs-lot-New-EG8010-LQFP-32-Sine-wave-inverter-chip/32605461001.html>.

Single sided copper clad PCB, 90mm x 187mm x 1.5mm 35um thick copper.

0.65mm to 0.8mm QFN32/QFP32 IC DIP Mounting PCB Adapter Converter Plate for SMD chip, (1 off). .... 40Pin (we need 2 off 16pin), 2.54mm Male & Female SIL Header Socket Row Strips PCB Connectors. .... HC-49S 12MHZ 20PF DIP Crystal Oscillator, (1 off).

IR2110PBF IR2110 IR FETS DRIVER CHIP DIP-14 IC 5V, (2 off). .... TIP35C TRANSISTOR, (2 off) .... Bt169scr thyristor (1off) ... 5.6v (1.3W) Zener Diode, BZX55C5V6, (1 off). .... 13v (1.3W) Zener Diode, BZX85C5V6, (1 off). ...6.8v Zener diode, (1off) ... DIODES fast/RAPIDES FR107 - 1A, (3 off). .... IN4007 Diode - Rectifier - 1A 1000V , (8 off). ... DC 2.5V-3.0V 5mm Red LED Lamp Emitting Diode, (3 off, two red, one green).

Monolithic Ceramic Chip Capacitor 475 4.7UF 50V 20% 5.08mm Pitch, (2 off). .... Monolithic Ceramic Chip Capacitor 10UF 50V , (5 off). .... CBB61 Polypropylene Film Motor Start Run Capacitor, 2uF 50/60Hz 450V AC, (2off). ... 22pF - Ceramic Disc Capacitor, 50V , (2 off). .... 100nf Ceramic Disc Capacitor, 50V, (9 off). .... 1nf Ceramic Disc Capacitor, 50V, (1 off). ... 10uF Electrolytic Capacitor, (can), 63V (max) 105°, (4 off). ... 100uF Electrolytic Capacitor, (can), 63V (max) 105°, (1 off).

100r Ohm 1/2W Metal Film Resistor, (2 off)... ..Resistor 2K Variable TRIMMER, (1 off). .... Resistor 500r Variable TRIMMER, (1 off). . 120 Ohm 5W Ceramic Wirewound Resistor, (1 off). .. 0.6W Metal Film Resistor 10K , (3 off). 0.6W Metal Film Resistor 3K9 , (1 off). 0.6W Metal Film Resistor 1K , (7 off). .. 0.6W Metal Film Resistor 1K8 , (2 off). 0.6W Metal Film Resistor 1K4, (1 off).

IDC Straight Latched PCB Plug (male) Connector 10 Way, (1 off). ... Molex KK Connector Housing 2 Way (5 off). ... Molex KK Straight Header Connector 2 Way (5 off) ... Molex KK Connector Housing 3 Way (2 off). .. Molex KK Connector header 3 Way (2 off). & 15 Molex crimp terminals to match. ....

14-Pin DIL DIP IC Socket PCB Mount Connector, (2 off). .... -50~70°C LCD Panel Digital Thermometer Temperature Meter Probe sensor, (1 off). ... PCB Blade 6.3mm Connector Terminal Vertical (2 off). ... DL-CT08CL5 20A/10MA 2000/1 0~120A MICRO CURRENT TRANSFORMER X9N0, (1 off), for the 230vac sense cable from the secondary.

**Notes. October 2017** Please see Web Site updates.

This Oz Control board, uses the 8010 chip Pin6 for starting and stopping the OzInverter safely. However, when the power board is first switched on using the 40r resistor to slowly charge the big capacitors using a push button before switching the main breaker on, then the control board may hang, use the reset button briefly to clear. The Over

LED warning display:	<u><b>Indication Function</b></u>	OzControl board No8.
Normal:	●●●●●●●●●●	LED light allways on.
Over current:	●●●○○○○○○○○	Blink twice, off 2 seconds, then cycles.
Over voltage:	●●●●●○○○○○○	Blink 3 times, off 2 seconds, then cycles
Below voltage:	●●●○○●○○○○○○	Blink 4 times, off 2 seconds, then cycles
Over temperature:	●●●●●○○●○○○○	Blink 5 times, off 2 seconds, then cycles

Temp probe sensor connector will also switch ON/OFF.

The table left is the Over Temperature LED functions.