

#### CONVERTS 12 VOLT DC TO AC **INVERTER & CHARGER** SUPERIOR 3 STAGE AUTOMATIC 12 VOLT CHARGING



INSTRUCTION MANUAL Please read user manual before use.



#### USEFUL APPLICATIONS RUN NOTEBOOK COMPUTERS, RADIOS, TVS, VCRS, LAMPS, FANS, FAX, DRILL.....ETC.

#### **1. DESCRIPTION**

#### FIG 1: P/No. PIC500-1205 PIC600-1205



#### FIG 2: P/No. PIC800-1205



#### FIG 3: P/No. PIC1000-1210、PIC1200-1210、PIC1500-1210、PIC2000-1220



#### FIG 4: P/No. PIC3000-1220 PIC4000-1220 PIC5000-1220





- Please verify if you have chosen the right operating voltage for both input and output.
- Connect the red cable from the "+" terminal (red terminal) of the battery to the + binding post (red connection) of the inverter and the black cable from the "-" terminal (black terminal) of the battery to the "-" binding post (black connection) of the inverter.
- •Be sure to tighten the screws in order to avoid loose connection.

# 4. OPERATION

When connected to an appliance, remember to turn on the inverter before turning on the appliance. If the buzzer sounds during operation, this indicates that the battery voltage is very low and the inverter will be disconnected in 5 minutes.



- When connecting electrical appliance with CRT, such as TV set, computer and so on to the Power Inverter which below 500W, the electrical appliance may need to be started several times before it can work smoothly. Don't start the power inverter when it is loaded, otherwise the power inverter will be damaged.
- When connecting the electrical appliance with motor or compressor, such as drill, air-conditioner and so on to the power inverter, please make sure that the power rating of the power inverter is at least 3 times of the power rating of the electrical appliance, so that it can work smoothly, because the starting up power is much beyond of the power rating of the electrical appliance.

#### 5. CHARGER

CONNECT AC INPUT POWER CORD TO HOME MAIN SOCKET THEN USE RED BATTERY CORD TO CONNECT (+) OF DC BATTERY TO (+) BINDING POST. AND USE BLACK BATTERY CORD TO CONNECT (-) BATTERY TO (-) BINDING POST.





#### 6. AS UPS

IF YOU WANT TO USE IT AS U.P.S. TURN ON INVERTER WHEN THE BLACKOUT HAPPENS AT THE MEANTIME. THE INVERTER WILL AUTOMATICALLY CHANGE FROM ORIGINAL SUPPLY TO BATTERY SUPPLY (DC-AC) HOME MAIN SOCKET



# 7. INDICATING SIGN

#### GREEN/ RED LED LIGHT.

WHEN THE LED LIGHT ILLUMINATES IN GREEN COLOR, IT MEANS THE POWER SWITCH IS IN "ON" POSITION AND INVERTER IS WORKING NORMALLY. WHEN THE INVERTER IS AT FAULT, THE LED LIGHT WILL ILLUMINATES IN RED COLOR.

#### RED LED LIGHT.

WHEN THE RED LED LIGHT ILLUMINATES, IT MEANS THE INVERTER IS CONNECTED TO AC POWER SOURCE, BATTERY CHARGER INSIDE IS RECEVING POWER.

#### ORANGE) / GREEN LED LIGHT.

WHEN THE LED LIGHT ILLUMNATES IN ORANGE COLOR, IT MEANS THE BATTERY IS BEING CHARGED, WHEN THE BATTERY IS FULLY CHARGED, THE ORANGE LED LIGHT WILL EXTINGUISH AND THE LED LIGHT WILL ILLUMINATE IN GREEN COLOR.



# 8. OUTPUT CAPACITY

The inverter will switch off automatically if the total wattage of the electrical appliances exceed the inverter's output capacity. This will also happen if the temperature of the inverter exceeds  $65^{\circ}$  +/-10% due to prolonged use.

# 9. SPECIAL RECOMMENDATION

- •Unplug the AC inverter when not in use.
- •Unplug the AC inverter when starting the vehicle's motor.
- ♦ If the AC inverter makes a beeping sound: switch off your appliance, unplug the inverter and restart your vehicle's engine. The beeping sound implies a warning of low-battery, which indicates that the voltage of your battery is getting low. Your inverter will shut down automatically if you do not restart your engine and continue the use of your inverter. This will leave your vehicle's battery at about 10.5VDC (21VDC when using 24V inverter/42VDC when using 48V inverter), enabling you to start your engine and resume operation of the inverter. It also eliminates the possibility of being stranded with a dead battery.

- To avoid over-discharging the battery, it is advisable to let your engine run for 10 to 20 minutes after every 2-3 hours of using the AC inverter. This allows your vehicle's battery to recharge.
- Please remember to connect the "+" wire to the "+" terminal and the "-" wire to the "-" terminal if you choose to use an adapter in order to establish a direct connection between the AC inverter and the battery terminals.

IF YOU CONNECT THE WIRES TO INCORRECT TERMINALS, THE POLARITY WILL BE REVERSED AND THIS WILL DAMAGE THE INVERTER.

- Please remember to disconnect the AC inverter before using the battery charger to replenish you battery's voltage. Failure to disconnect the inverter prior to connecting a charger may result in an input spike which will damage the inverter.
- Make sure that the battery's voltage never exceeds 15VDC (30VDC when 24V version is used/60VDC when 48V version is used). AS THIS MAY DAMAGE THE INVERTER.

# **10. ADDING EXTENSION CORD**

We recommend that the buyer refrain from using an extension cord between the DC power source and the inverter's DC input. Connecting an extension cord to the DC input will create a voltage drop, entailing reduced efficiency and output. Instead, we recommend the use of an extension cord between the AC output and the AC applicance You may use up to 100ft (30m) of high quality extension cord. A longer cord may result in reduced power.

#### **11. GROUNDING CONNECTION**

WARNING: BEFORE USING THIS INVERTER YOU MUST PROVIDE A GROUND CONNECTION TO THE INVERTER.

- ♦On the rear panel of the Inverter is a terminal fitted with a nut. This terminal is connected to the case of the Inverter and also to the earth terminal of the AC output socket. The use of this terminal will depend on your particular installation. In any installation, heavy duty, green-insulated wire should be used for this connection.
- In a stationary land based installation, the earth terminal should be connected to a metal earthing stake driven into the ground to a depth of 1.2m or more, If the battery system powering the Inverter does not have a connection to ground, one of the battery terminals (commonly the negative terminal) should also be connected to the earthing stake.
- In a vehicle where the Inverter is wired directly to the battery, the earth terminal is simply connected to the vehicle chassis. If the Inverter is to be used in a vehicle on a temporary basis and will be powered via the cigarette lighter socket in the vehicle, the earth terminal should be

connected via a short link to either the negative or positive DC input terminal of the Inverter, depending on whether the vehicle has a negative or positive chassis connection. However when using the Inverter to power equipment used outside the vehicle, an earthing stake should also be used, as described above.

- In a boat, the earth terminal should be connected to the existing grounding system, which may be the hull of the craft, or a network of ground wires.
- NOTE: The earth terminal of the AC outlet is connected to the neutral terminal. This is the same as a standard household power point where the neutral line is bonded to earth and there is normally no voltage between them

#### **12. MEASURING AC VOLTAGE**

The output wave of the AC inverter is a MODIFIED SINEWAVE. If you choose to measure the AC output voltage, you must use an AUTHENTIC RMS VOLT METER. Using any other type of voltage measuring device will result in an AC voltage reading that is up to 20 to 30 volts lower than the rated value. The reading will only be accurate when using an authentic RMS voltmeter.



FIGURE 1: D/A INVERTER-MODIFIED SINEWAVE

### **13. VENTILATION**

IMPORTANT! During operation, make sure the fan keeps revolving. Check the inverter for possible malfunctions if the fan does not work when this unit is being used.

Make sure the fan is not blocked in order to avoid poor ventilation.



# **14. CHASSIS EARTHING**

The chassis earthing lug should be connected to an earthing point, which will vary depending on where the power inverter is installed. In a vehicle, connect the chassis ground lug to the chassis of the vehicle. In a boat, connect to the boat's grounding systems. In a fixed location, connect to earth.



### **15.CAUTION**

In case of trouble with the AC output, e.g. short-circuit, overload, etc... the protection circuit will automatically cut off the output.

In such cases:

- (A) switch off the power at once.
- (B) disconnect all units.
- (C) check the connected devices.
- (D) use the units again unless the problems concerning the connected devices have been solved.

When in use for a prolonged period of time, the AC output may suddenly be cut off although the battery voltage is still very strong. This may be caused by excessive temperatures. If this happens. Please proceed as follows:

(A)Switch off the inverter at once.

(B)Disconnect some of the appliances or wait until the inverter cools off Switch the inverter back on.

Always keep the inverter in an environment which is:

(A)Well-ventilated.

(B)Not exposed to direct sunlight or any other heat source .

(C)Inaccessible to children.

(D)Safe from water/moisture, oil or grease.

(E)Safe from any flammable substance.

#### **16. MAINTENANCE**

Very little maintenance is required to keep your Inverter operating properly. You should clean the exterior of the unit periodically with a damp cloth to prevent accumulation of dust and dirt. At the same time, tighten the screws on the DC input terminals.

# **17. NOTE**

All specifications typical at nominal line, half load, and  $25^{\circ}$  unless otherwise noted. Specifications subject to change without notice. WARNING:

DO NOT DISASSEMBLE THE UNIT. HAZARDOUS VOLTAGE! DANGER! PLEASE RETURN TO THE DEALER IF YOU FIND ANY PROBLEM WITH THE UNIT.

#### **18. SUITABLE POWER SOURCE**

- In order to operate the inverter and supply power to an appliance, a suitable 12V DC power supply is required. This can be a vehicle or caravan battery, portable power pack or an independent 12V lead acid battery, For most applications, a deep cycle battery is recommended for best performance..
- The size of the battery used will determine how long the inverter will supply power to an appliance and how well the inverter will perform. Most batteries are marked with their size in Amp hours (AH) or Cold Cranking Amps.
- Because 12 Volt inverters are capable of drawing high currents, the inverter should only be connected to a suitable size battery, Connection to an undersized battery could damage the battery and will result in the inverter shutting down within a short period due to low battery voltage.
- The amount of power dawn from the battery is proportional to the inverter load.

| 1101200   |             |             |             |              |              |  |  |  |  |  |  |  |
|---|-------------|-------------|-------------|--------------|--------------|--|--|--|--|--|--|--|
| P/No.   | PIC500-1205 | PIC600-1205 | PIC800-1205 | PIC1000-1210 | PIC1200-1210 |  |  |  |  |  |  |  |
| Minimum Recommended<br>Battery Size                           | 50Ah        | 50Ah        | 75Ah        | 75Ah         | 75Ah         |  |  |  |  |  |  |  |
| Run time maximum load<br>& minimum battery size               | 35min       | 30min       | 20min       | 15min        | 10min        |  |  |  |  |  |  |  |
| Run time for a 100 Watt<br>globe with minimum<br>battery size | 4 hours     | 4 hours     | 6 hours     | 6 hours      | 6 hours      |  |  |  |  |  |  |  |
| Ideal battery size  | 50-130Ah    | 50-130Ah    | 75-250Ah    | 75-250Ah     | 75-300Ah     |  |  |  |  |  |  |  |

#### P/No. PIC500-1205、PIC600-1205、PIC800-1205、PIC1000-1210、 PIC1200-1210

#### P/No. PIC1500-1210、PIC2000-1220、PIC3000-1220、PIC3000-1220、 PIC400-1220、PIC5000-1220

| P/No.   | PIC1500-1210 | PIC2000-1220 | PIC3000-1220       | PIC4000-1220       | PIC5000-1220       |
|---|--------------|--------------|--------------------|--------------------|--------------------|
| Minimum Recommended<br>Battery Size                           | 85Ah         | 85Ah         | 100Ah              | 150Ah              | 200Ah              |
| Run time maximum load<br>& minimum battery size               | 7min         | 5min         | Not<br>Recommended | Not<br>Recommended | Not<br>Recommended |
| Run time for a 100 Watt<br>globe with minimum<br>battery size | 7 hours      | 7 hours      | 8 hours            | 12 hours           | 16 hours           |
| Ideal battery size  | 85-400Ah     | 85-400Ah     | 100-500Ah          | 150-600Ah          | 200-700Ah          |

### **19. DETERMINING SUITABLE LOAD / APPLIANCES**

The inverter is fitted with 1 to 2 approved EUROPEAN sockets (depending on model) either or both sockets can be used.

As long as the combined load (Watts required to run appliance) does not exceed the inverter' continuous rating. All appliances have a rating plate that shows the amount of power (Watts) used or the current (Amp) drawn under normal use.

The following table shows the maximum combined AC Amp Watts or AC Amp which can be run by the inverter.

| P/No.                        | PIC500-1205 | PIC600-1205 | PIC800-1205 | PIC1000-1210 | PIC1200-1210 |
|------------------------------|-------------|-------------|-------------|--------------|--------------|
| AC combined max load (Watts) | 500W        | 600W        | 800W        | 1000W        | 1200W        |
| AC combined max load (Amps)  | 2.2A        | 2.7A        | 3.5A        | 4.4A         | 5.3A         |
| Number of sockets            | 1           | 1           | 1           | 2            | 2            |

| P/No.                        | PIC1500-1210 | PIC2000-1220 | PIC3000-1220 | PIC4000-1220 | PIC5000-1220 |
|------------------------------|--------------|--------------|--------------|--------------|--------------|
| AC combined max load (Watts) | 1500W        | 2000W        | 3000W        | 4000W        | 5000W        |
| AC combined max load (Amps)  | 6.5A         | 8.7A         | 13.1A        | 17.4A        | 21.8A        |
| Number of sockets            | 2            | 2            | 2            | 2            | 2            |

Note: For PIC4000-1220 & PIC5000-1220 do not exceed 3500W (16Amp) per socket outlet.

Some appliances that use an electric motor or transformer may draw 2 to 6 times their rating when first turned on. these are called inductive loads and are the most difficult tor the inverter to run.

For these appliances it is often a matter of trial and error to see what size inverter they will run on. if in doubt always use a larger inverter. The following table is a guide to the appropriate AC Watt drawn by various appliances. The DC Amp column shows the approximate power drawn from the 12 Volt supply.

| APPLICATION CHART<br>Appliance   |      |              |       |       |       |       |       |       |       | Approxi<br>AC Watt   | mate<br>s DC Amps   |
|--|------|--------------|-------|-------|-------|-------|-------|-------|-------|--|---|
| Small Air Compressor*/Water Heater<br>Small Air Compressor*/Water Heater<br>Larger Power Tools*/Electric Kettle<br>Circular Power Saw/Electric Kettle<br>Small Household Vacuum Cleaner<br>Belt Sander & other Power Tools<br>Small Microwave Oven (500/600W)*<br>Combo TV/VCR<br>Power Drill/Portable Grinder<br>Flood Lights (500W)<br>Submersible Pump*<br>Small Colour Television*<br>Small Power Tools/Fluorescent Light*<br>Juicer/Blender<br>Bar Fridge*/Large Stereo/PA Amplifier<br>Hand Mixer<br>Laptop Computer/Electric Knife<br>Portable Stereo/CD/DVD/VCR/Playstation<br>Charger/Mobile Phone/Camera/Camera/Camera | 500W | 600W<br>800W | 1000W | 1200W | 1500W | 2000W | 3000W | 4000W | 5000W | 5000<br>4000<br>2000<br>1500<br>1250<br>1000<br>900<br>750<br>600<br>500<br>350<br>300<br>250<br>400<br>350<br>300<br>250<br>175<br>150<br>100<br>50 | 470<br>380<br>260<br>175<br>140<br>95<br>92<br>83<br>69<br>50<br>46<br>37<br>32<br>28<br>23<br>19<br>16<br>12<br>9<br>5 |

# **20. HARD WIRED CONNECTION**

When mounting the inverter in a vehicle, boat or cabin it may be preferable to use longer DC battery cables than those supplied, so that the inverter can be placed in a more convenient cooler or more protected location.

# **21. SPECIFICATION**

|          | 21. SPECIFICA                        |  |                       |              |                          | 1                  |  |  |  |  |
|----------|--------------------------------------|--|-----------------------|--------------|--------------------------|--------------------|--|--|--|--|
| P/I      | No.                                  | PIC  | 500-1205              |              | PIC600-1205              | PIC800-1205        |  |  |  |  |
|          | DC Input Voltage (Rated)             | 12   | / <del></del> , 45.5A |              | 12V, 55A                 | 12V, 73A           |  |  |  |  |
|          | DC Input Voltage (Range)             | 10-15V   |                       |              | 10-15V <del></del>       | 10-15V <del></del> |  |  |  |  |
|          | Input Standby Current (12VDC,+/-5%)  | ≪0   | .6A                   |              | ≪0.6A                    | ≪0.6A              |  |  |  |  |
|          | AC Output Voltage                    |  | 230V~                 |              | 220-240V~                | 110V~              |  |  |  |  |
|          | Output Frequenc                      |  | 50Hz                  |              | 60Hz                     |                    |  |  |  |  |
|          | Output Regulation                    | +/-5% Intelligent Pwm                                  |                       |              |                          |                    |  |  |  |  |
|          | Output Power (Continuous Watts)      | 500  | )W, 2.2A              |              | 600W, 2.7A               | 800W, 3.5A         |  |  |  |  |
|          | Output Power (Peak Watts)            | 100  | W00                   |              | 1200W                    | 1600W              |  |  |  |  |
|          | Output Waveform                      | Мо   | dified Sine Wav       | e ·          |                          | ·                  |  |  |  |  |
| R        | Low Battery-Voltage Alarm (Volts)    | 10.  | 5V=== +/-0.5V         |              |                          |                    |  |  |  |  |
| INVERTER | Low Battery-Voltage Shutdown (Volts) | 10.  | 0V=== +/-0.5V         |              |                          |                    |  |  |  |  |
| RTE      | Thermal Shutdown                     | 65   | +/-5                  |              |                          |                    |  |  |  |  |
| R        | Efficiency                           | 85-  | 90%                   |              |                          |                    |  |  |  |  |
|          | Cooling Fan                          | Au   | tomatic tempera       | atu          | re controlled            |                    |  |  |  |  |
|          | Overload                             | Sh   | ut Down & Alarn       | ٦            |                          |                    |  |  |  |  |
|          | Battery Polarity Reverse             | By Fuse  |                       |              |                          |                    |  |  |  |  |
|          | Output Short                         | Output Short Circuit Protection                        |                       |              |                          |                    |  |  |  |  |
|          | Replacement Fuse                     | Standard Auto Blade Fuse                               |                       |              |                          |                    |  |  |  |  |
|          | Fuse Quantity & Size                 | 3x2  | 20A                   |              | 3x25A                    | 4x25A              |  |  |  |  |
|          | Fuse Location                        | Ext  | ernal                 |              | External                 | Internal*          |  |  |  |  |
|          | Connection Cable                     | 6.0  | mm²/900mm             |              | 6.0mm²/900mm             | 10.0mm²/1100mm     |  |  |  |  |
|          | Rated Input                          |  | 230V~                 |              | 220-240V~                | 110V~              |  |  |  |  |
|          | Input Frequency                      |  | 50Hz                  |              | 60Hz                     |                    |  |  |  |  |
|          | Input Power                          | 0.7  | 2A                    |              | 0.72A                    | 0.85A              |  |  |  |  |
|          | Rated Output                         | 12   | /DC, 5000mA           |              | 12VDC, 5000mA            | 12VDC, 5000mA      |  |  |  |  |
|          | Minimum Start Voltage                | 4.5  | V                     |              | 4.5V                     | 4.5V               |  |  |  |  |
|          | Current Fuse Rating (Internal)       | 250  | 0VAC, F2.5A           |              | 250VAC, F2.5A            | 250VAC, F3.15A     |  |  |  |  |
|          | Current Fuse Rating (External)       | 250  | VAC, T10.0A           |              | 250VAC, T10.0A           | 250VAC, T10.0A     |  |  |  |  |
| C        | Fuse Quantity & Size                 | 5x2  | 20mm                  |              | 5x20mm                   | 5x20mm             |  |  |  |  |
| ЧАF      | Туре                                 | 3 S  | tage automatic        |              | 3 Stage automatic        | 3 Stage automatic  |  |  |  |  |
| CHARGER  | Charge Control                       | Bulk 5000mA (up to 14.7V)/Absorption 14.4V/Float 13.8V |                       |              |                          |                    |  |  |  |  |
| R        | Thermal Protect (fan ON)             | 65   | +/-5                  |              |                          |                    |  |  |  |  |
|          | Efficiency                           | Ap   | App.85%               |              |                          |                    |  |  |  |  |
|          | Battery Type                         | For charging 12V lead acid batteries ONLY              |                       |              |                          |                    |  |  |  |  |
|          | Performance                          | Mic  | cro-processing        | itching mode |                          |                    |  |  |  |  |
|          | Input Short                          | Input Short Circuit Protection                         |                       |              |                          |                    |  |  |  |  |
|          | Output Short                         | Output Short Circuit Protection                        |                       |              |                          |                    |  |  |  |  |
|          | Output Polarity Reverse              | Output Polarity Reverse Circuit Protection             |                       |              |                          |                    |  |  |  |  |
| Au       | tomatic Switch / Transfer Time       | AC   | Line to Inverter      | ۰, Ir        | nverter to AC Line / Tra | ansfer Time 10ms   |  |  |  |  |
| Dir      | mension (L x W x H)                  | 25   | 5 x 212 x 67mm        |              | 255 x 212 x 67mm         | 360 x 212 x 67mm   |  |  |  |  |
| We       | eight                                | 2.2  | Ka                    |              | 2.3Kg                    | 3.0Kg              |  |  |  |  |

#### SDECIEIC ATION

| P/I      | No.                                  | PIC  | 1000-1210  | Т     | PIC1200-1210              | PIC1500-1210              |  |  |  |  |
|----------|--------------------------------------|--|--|-------|---------------------------|---------------------------|--|--|--|--|
|          | DC Input Voltage (Rated)             | 12V, 91A   |  |       | 12V, 110A                 | 12V, 137A                 |  |  |  |  |
|          | DC Input Voltage (Range)             | 10-15V   |  |       | 10-15V                    | 10-15V                    |  |  |  |  |
|          | Input Standby Current (12VDC,+/-5%)  | ≪0   | .65A   | +     | ≪0.65A                    | ≪0.7A                     |  |  |  |  |
|          | AC Output Voltage                    |  | 230V~  |       | 220-240V~                 | 110V~                     |  |  |  |  |
|          | Output Frequenc                      |  | 50Hz 60Hz  |       |                           |                           |  |  |  |  |
|          | Output Regulation                    | +/-5% Intelligent Pwm                                    |  |       |                           |                           |  |  |  |  |
|          | Output Power (Continuous Watts)      | 1000W, 4.4A 1200W, 5.3A 1500W, 6.5A                      |  |       |                           |                           |  |  |  |  |
|          | Output Power (Peak Watts)            | 200  | 0W   | +     | 2400W                     | 3000W                     |  |  |  |  |
|          | Output Waveform                      |  | dified Sine Wa                                     | /e -  |                           |                           |  |  |  |  |
| =        | Low Battery-Voltage Alarm (Volts)    |  | 5V=== +/-0.5V                                      | -     |                           |                           |  |  |  |  |
| $\leq$   | Low Battery-Voltage Shutdown (Volts) |  | 0V==+/-0.5V  |       |                           |                           |  |  |  |  |
| ÿ        | Thermal Shutdown                     |  | +/-5   |       |                           |                           |  |  |  |  |
| INVERTER | Efficiency                           |  | 90%  |       |                           |                           |  |  |  |  |
|          | Cooling Fan                          |  |  | atu   | re controlled             |                           |  |  |  |  |
|          | Overload                             |  | Automatic temperature controlled Shut Down & Alarm |       |                           |                           |  |  |  |  |
|          | Battery Polarity Reverse             | By Fuse  |  |       |                           |                           |  |  |  |  |
|          | Output Short                         | ,  | put Short Circ                                     | uit F | Protection                |                           |  |  |  |  |
|          | Replacement Fuse                     |  | ndard Auto Bla                                     |       |                           |                           |  |  |  |  |
|          | Fuse Quantity & Size                 | 6x20A  |  |       | 6x25A                     | 9x20A                     |  |  |  |  |
|          | Fuse Location                        | Internal*  |  |       | Internal*                 | Internal*                 |  |  |  |  |
|          | Connection Cable                     |  | nm²/1100mm   | +     | 16mm <sup>2</sup> /1100mm | 25mm <sup>2</sup> /1100mm |  |  |  |  |
|          | Rated Input                          |  | 230V~  |       | 220-240V~                 | 110V~                     |  |  |  |  |
|          | -                                    |  | ]  |       |                           |                           |  |  |  |  |
|          | Input Frequency                      |  | 50Hz   |       | 60Hz                      | 1                         |  |  |  |  |
|          | Input Power                          | 1.3  | AC   |       | 1.30A                     | 1.65A                     |  |  |  |  |
|          | Rated Output                         | 12V  | DC, 10,000m/                                       | 4     | 12VDC, 10,000mA           | 12VDC, 10,000m            |  |  |  |  |
|          | Minimum Start Voltage                | 4.5  | V  |       | 4.5V                      | 4.5V                      |  |  |  |  |
|          | Current Fuse Rating (Internal)       | 250  | VAC, F3.15A  |       | 250VAC, F3.15A            | 250VAC, F3.15A            |  |  |  |  |
|          | Current Fuse Rating (External)       | 250  | VAC, T10.0A  |       | 250VAC, T10.0A            | 250VAC, T10.0A            |  |  |  |  |
| 2        | Fuse Quantity & Size                 | 5x2  | 0mm  |       | 5x20mm                    | 5x20mm                    |  |  |  |  |
| ₽        | Туре                                 | 3 S1   | tage automatic                                     |       | 3 Stage automatic         | 3 Stage automatio         |  |  |  |  |
| CHARGER  | Charge Control                       | Bulk 10,000mA (up to 14.7V)/Absorption 14.4V/Float 13.8V |  |       |                           |                           |  |  |  |  |
| ΰ        | Thermal Protect (fan ON)             | 65   | +/-5   |       |                           |                           |  |  |  |  |
|          | Efficiency                           | Арр  | 0.85%  |       |                           |                           |  |  |  |  |
|          | Battery Type                         | For charging 12V lead acid batteries ONLY                |  |       |                           |                           |  |  |  |  |
|          | Performance                          | Mic  | ro-processing                                      | swi   | tching mode               |                           |  |  |  |  |
|          | Input Short                          | Inp  | ut Short Circui                                    | Pr    | otection                  |                           |  |  |  |  |
|          | Output Short                         | Out  | put Short Circ                                     | uit F | Protection                |                           |  |  |  |  |
|          | Output Polarity Reverse              | Out  | put Polarity Re                                    | eve   | rse Circuit Protection    |                           |  |  |  |  |
| Au       | Itomatic Switch / Transfer Time      | AC   | Line to Inverte                                    | r,Ir  | nverter to AC Line / Tr   | ansfer Time 10ms          |  |  |  |  |
| Diı      | mension (L x W x H)                  | 365  | x 242 x 76mm                                       | Т     | 365 x 242 x 76mm          | 415 x 242 x 76mm          |  |  |  |  |
|          | eight                                | 3.8  |  | -     | 3.9Kg                     | 4.5Kg                     |  |  |  |  |

#### SPECIFICATION P/No PIC2000-1220 PIC3000-1220 PIC4000-1220 12V ----, 183A 12V ----, 367A DC Input Voltage (Rated) 12V ----, 275A DC Input Voltage (Range) 10-15V----10-15V----10-15V----Input Standby Current (12VDC,+/-5%) ≪0.8A ≤0.7A ≤0.75A 110V~ **AC Output Voltage** 230V~ 220-240V~ **Output Frequenc** 50Hz 60Hz **Output Regulation** +/-5% Intelligent Pwm Output Power (Continuous Watts) 2000W, 8.7A 3000W, 13.1A 4000W, 17.4A Output Power (Peak Watts) 4000W 6000W 8000W Modified Sine Wave -... **Output Waveform** Low Battery-Voltage Alarm (Volts) 10.5V ---- +/-0.5V INVERTEF Low Battery-Voltage Shutdown (Volts) 10.0V=+/-0.5V 65 +/-5 Thermal Shutdown Efficiency 85-90% Cooling Fan Automatic temperature controlled Overload Shut Down & Alarm **Battery Polarity Reverse By Fuse Output Short Output Short Circuit Protection Replacement Fuse** Standard Auto Blade Fuse Fuse Quantity & Size 12x25A 18x25A 24x25A **Fuse Location** Internal\* Internal\* Internal\* 25mm<sup>2</sup>/1100mm 35mm<sup>2</sup>/1100mm 50mm<sup>2</sup>/1100mm **Connection Cable** Rated Input 230V~ 220-240V~ 110V~ Input Frequency 50Hz 60Hz Input Power 2.65A 2.75A 2..85A Rated Output 12VDC. 20.000mA 12VDC, 20,000mA 12VDC. 20.000mA Minimum Start Voltage 4.5V 4.5V 4.5V Current Fuse Rating (Internal) 250VAC, F3.15A 250VAC, F3.15A 250VAC, F3.15A Current Fuse Rating (External) 250VAC, T10.0A 250VAC, T10.0A 250VAC, T10.0A Fuse Quantity & Size 5x20mm 5x20mm 5x20mm CHARG Type 3 Stage automatic 3 Stage automatic 3 Stage automatic **Charge Control** Bulk 20,000mA (up to 14.7V)/Absorption 14.4V/Float 13.8V 뮤 Thermal Protect (fan ON) 65 +/-5 Efficiency App.85% Battery Type For charging 12V lead acid batteries ONLY Micro-processing switching mode Performance Input Short Input Short Circuit Protection **Output Short Circuit Protection** Output Short **Output Polarity Reverse Output Polarity Reverse Circuit Protection** AC Line to Inverter Inverter to AC Line / Transfer Time 10ms Automatic Switch / Transfer Time Dimension (L x W x H) 525 x 242 x 76mm 440 x 210 x 156mm 510 x 210 x 156mm Weight 8.7Kg 5.8Kg 7.2Kg

|         | SPECIFICATIO                         | N   |                      |       |                     |       |                      |  |  |  |
|---------|--------------------------------------|---|----------------------|-------|---------------------|-------|----------------------|--|--|--|
| P/      | No.                                  | PIC   | 5000-1220            |       |                     |       |                      |  |  |  |
|         | DC Input Voltage (Rated)             | 12V   | ′ <del></del> , 458A |       |                     |       |                      |  |  |  |
|         | DC Input Voltage (Range)             | 10-15V  |                      |       |                     |       |                      |  |  |  |
|         | Input Standby Current (12VDC,+/-5%)  | ≪0.9A   |                      |       |                     |       |                      |  |  |  |
|         | AC Output Voltage                    |   | 230V~                |       | 220-240V~           |       | 110V~                |  |  |  |
|         | Output Frequenc                      | 50Hz  |                      |       | 60Hz                |       |                      |  |  |  |
|         | Output Regulation                    | +/-5% Intelligent Pwm   |                      |       |                     |       |                      |  |  |  |
|         | Output Power (Continuous Watts)      | 500   | 0W, 21.8A            |       |                     |       |                      |  |  |  |
|         | Output Power (Peak Watts)            | 10,0  | W000                 |       |                     |       |                      |  |  |  |
| Z       | Output Waveform                      | Мос   | dified Sine Wa       | ive   |                     |       | •                    |  |  |  |
| Ē       | Low Battery-Voltage Alarm (Volts)    | 10.5  | 5V=== +/-0.5V        |       |                     |       |                      |  |  |  |
| INVERTE | Low Battery-Voltage Shutdown (Volts) | ) 10.0V=== +/-0.5V  |                      |       |                     |       |                      |  |  |  |
| ER      | Thermal Shutdown                     | 65 +/-5   |                      |       |                     |       |                      |  |  |  |
|         | Efficiency                           | 85-90%  |                      |       |                     |       |                      |  |  |  |
|         | Cooling Fan                          | Automatic temperature controlled  |                      |       |                     |       |                      |  |  |  |
|         | Overload                             | Shu   | It Down & Ala        |       |                     |       |                      |  |  |  |
|         | Battery Polarity Reverse             | By Fuse   |                      |       |                     |       |                      |  |  |  |
|         | Output Short                         |   | put Short Circ       | uit   | Protection          |       |                      |  |  |  |
|         | Replacement Fuse                     | Standard Auto Blade Fuse  |                      |       |                     |       |                      |  |  |  |
|         | Fuse Quantity & Size                 |   |                      |       | 1 430               |       |                      |  |  |  |
|         | Fuse Location                        | 30x25A<br>Internal*   |                      |       |                     |       |                      |  |  |  |
|         | Connection Cable                     |   | nm²/1100mm           | -     |                     |       |                      |  |  |  |
|         | Rated Input                          |   | 230V~                |       | 220-240V~           |       |                      |  |  |  |
|         | Input Frequency                      |   | ]<br>50Hz            |       |                     |       |                      |  |  |  |
|         | Input Power                          | 2.9   | 50                   |       |                     |       |                      |  |  |  |
|         | Rated Output                         | -   | DC, 20,000m          | _     |                     |       |                      |  |  |  |
|         | Minimum Start Voltage                | 4.5   |                      | ^     |                     |       |                      |  |  |  |
|         | Current Fuse Rating (Internal)       |   |                      | _     |                     |       |                      |  |  |  |
|         | <b>.</b> ,                           |   | VAC, F3.15A          | _     |                     |       |                      |  |  |  |
|         | Current Fuse Rating (External)       |   | VAC, T10.0A          | _     |                     |       |                      |  |  |  |
| СH      | Fuse Quantity & Size                 |   | 0mm                  | -     |                     |       |                      |  |  |  |
| AR      | Type                                 | 3 Stage automatic<br>Bulk 20,000mA (up to 14.7V)/Absorption 14.4V/Float 13.8' |                      |       |                     |       |                      |  |  |  |
| CHARGER | Charge Control                       |   |                      | (up   | to 14.7 V)/Absor    | ptio  | on 14.4V/Float 13.8V |  |  |  |
| J       | Thermal Protect (fan ON)             |   | +/-5                 |       |                     |       |                      |  |  |  |
|         | Efficiency                           |   | 0.85%                | 1.6.7 | d a aid hatteries 0 |       | ,                    |  |  |  |
|         | Battery Type                         |   | 0 0                  |       | d acid batteries O  | INLY  |                      |  |  |  |
|         | Performance                          |   | ro-processing        |       | -                   |       |                      |  |  |  |
|         | Input Short                          |   | ut Short Circu       |       |                     |       |                      |  |  |  |
|         | Output Short                         |   | put Short Circ       |       |                     |       |                      |  |  |  |
|         | Output Polarity Reverse              |   |                      |       | rse Circuit Protec  |       |                      |  |  |  |
|         | tomatic Switch / Transfer Time       |   |                      |       | nverter to AC Line  | / Tra | ansfer Time 10ms     |  |  |  |
| Di      | mension (L x W x H)                  |   | x 210 x 156m         | m     |                     |       |                      |  |  |  |
| We      | eight                                | 9.51  | ≺g                   |       |                     |       |                      |  |  |  |

#### WITH THIS "INVERTER" YOU WON'T HAVE TO WORRY ABOUT POWER OUTAGES OR BROWNOUTS!



#### WARINIG:

To prevent fire shock hazard do not expose this appliance to rain or moisture.

# AC OUTPUT SOCKET:



#### **CAUTION:**

ALWAYS PLACE THE INVERTER IN AN

ENVIRONMENT WHICH IS:

- (A)WELL VENTILATED.
- (B)NOT EXPOSED TO DIRECT SUNLIGHT OR HEAT SOURCE.
- (C)OUT OF REACH FROM CHILDREN.
- (D)AWAY FROM WATER/MOISTURE, OIL OR GREASE.

(E)AWAY FROM ANY FLAMMABLE SUBSTANCE SECURE AND NO RISK OF FALLING.

