

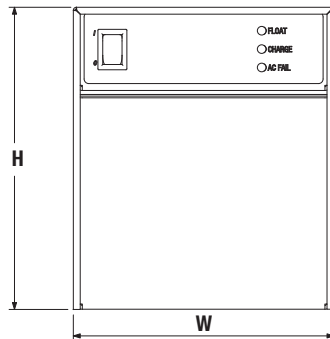
## SPECIFICATIONS

	<b>ICT12012-12IBD</b>
<b>Input Voltage Range</b>	100-130 VAC
<b>Input Frequency</b>	50/60 Hz
<b>Output Voltage</b>	13.6 VDC
<b>Output Current (Cont.)</b>	10.0 Amps
<b>Output Current (Peak)</b>	12.0 Amps
<b>Current Limiting</b>	12.5 Amps
<b>Efficiency (Typical)</b>	>80%
<b># of Batteries</b>	2
<b>Battery Capacity</b>	14.4 AH
<b>Battery Type</b>	Sealed Lead Acid
<b>Transfer Time</b>	None
<b>Battery Disconnect Voltage</b>	10.5 VDC

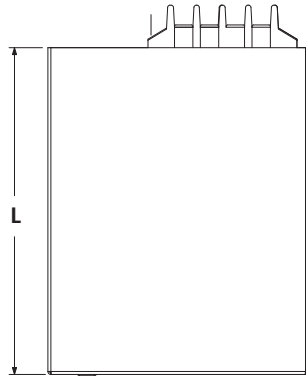
## OUTLINE DRAWING

DIMENSIONS IN  
INCHES (MILLIMETRES)

	<b>L</b>	<b>W</b>	<b>H</b>
<b>IB</b>	7.6 (193)	7.1 (180)	6.6 (168)
<b>IBG</b>	7.6 (193)	6.4 (162)	6.6 (168)
<b>IBX</b>	7.1 (180)	5.6 (142)	6.6 (168)



FRONT VIEW



TOP VIEW

## DESCRIPTION OF OPERATION

- ▶ The ICT DC UPS series is a full function DC backup system complete with internal sealed lead acid batteries. When AC power is available, the internal battery is charged and the load is powered at the same time. When AC power is not available, the internal battery continues to power the load with zero transfer time.
- ▶ The internal battery is charged in three stages. In stage one, a constant current charges the battery. This current is maintained by varying the voltage applied to the battery. During stage two, a fixed voltage is applied to the battery as it completes charging. When the battery is about 90% charged, the charger switches to stage three, where a float voltage is applied to keep the battery fully charged.
- ▶ The ICT DC UPS will enter a new charge cycle when one of the following conditions occurs:
  - ▶ AC power is applied to the ICT DC UPS.
  - ▶ Twenty days has elapsed since the last charge cycle with AC power applied to the charger.
- ▶ The ICT DC UPS will switch to float mode when one of the following conditions occurs:
  - ▶ The charging current drops to a preset level indicating full charge.
  - ▶ The charger has been in charge mode for twenty hours.
- ▶ The battery is protected against damage from overdischarge, overcharge, and reverse connection. ICT DC UPS has an internal input fuse, external and internal battery protection fuses, current limiting, and various microprocessor and software protection features to ensure complete reliability.

## PRODUCT FEATURES

- ▶ Fully automatic microprocessor-controlled three stage charge cycle for fast and optimum battery charging.
- ▶ LED status indicators: Float (green), Charge (yellow), and AC fail (red).
- ▶ Equipped with internal SLA batteries.
- ▶ Under voltage lockout ensures the battery is never over discharged. Battery disconnect voltage is set to 10.5V
- ▶ Timer backup feature helps prevent overcharging the battery
- ▶ Periodic refresh feature recharges battery every 20 days to keep battery active and fully charged.
- ▶ Buzzer alarm when AC power fails and battery is attached (can be disabled).
- ▶ AC good output for external monitoring.
- ▶ Reverse polarity protection on battery input.
- ▶ Zero Transfer time to battery power when AC power fail.
- ▶ Internal/External battery protection fuse



## ICT DC UPS SERIES INSTRUCTION MANUAL



INNOVATIVE CIRCUIT TECHNOLOGY LTD.

855-146-002

## ICT DC UPS SERIES

The DC UPS Series is a full-function DC backup system complete with internal sealed lead acid batteries. Based on our industry proven switchmode conversion designs, this compact system is rugged and efficient. The charger is microprocessor controlled and restores power quickly and efficiently to the batteries using an advanced three stage charge algorithm. When the batteries are fully charged the system keeps the batteries active by restarting the cycle every 20 days. When AC power is not available, the system monitors the battery voltage and disconnects the batteries when the terminal voltage falls below 10.5VDC. Front panel LED indicators show charge mode as well as AC status.

These instructions should be read before using the product and it should be saved for future reference.

## TEMPERATURE COMPENSATION

- ▶ This feature always charges the battery to the correct levels regardless of ambient temperature. Battery temperatures must be limited to  $-20^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$ . Outside of these temperature damage to the battery may occur.

## SETUP

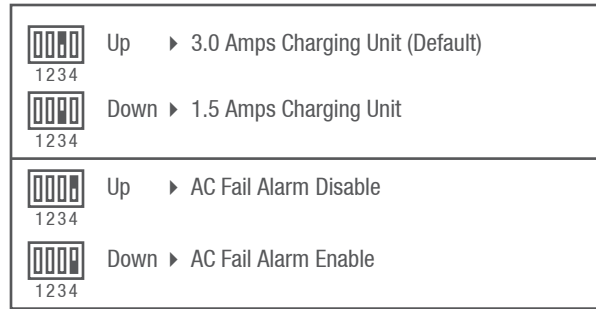
- ▶ Ensure the DIP switches at the rear of the DC UPS are set to default. Please refer to the SETTINGS section in this manual.
- ▶ Connect the 12V equipment to the load terminals on back of the unit while observing the correct polarity.
- ▶ If the temperature probe option was ordered (ICT-TSP-10), plug it into pin 4 and 5 of the status connector on back of unit, with the probe end as close to the battery post as possible.
- ▶ On the status connector, pins 1 and 3 are provided for AC good signal. These pins are the collector(pin1) and emitter(pin3) of an opto coupler, completely isolated from the rest of the circuit. These two pins are shorted when AC is good and open when AC fails.  
Max Vce = 60V, recommend maximum current = 10mA.
- ▶ Insert the enclosed 15A ATO fuse into the ATO fuse holder on the back of the unit. Please note that at this point the load will be powered.
- ▶ Make sure that the power switch on the front of the unit is in OFF position, plug the enclosed power cord into the AC receptacle on the back of the unit, then plug the other end into the 115VAC outlet.

## NOTES

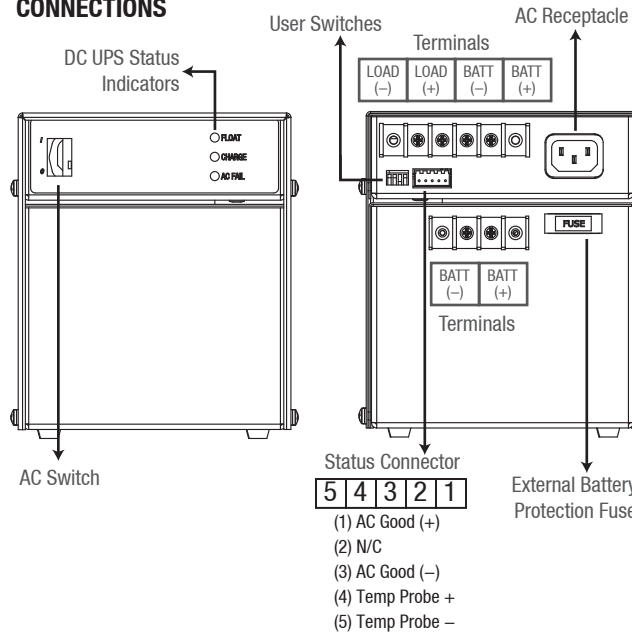
- ▶ Always turn the DC UPS off before making any changes to the circuit wiring. For example, turn off the AC power and remove the external battery protection fuse.
- ▶ Avoid drawing a continuous load current greater than 12 Amps from the battery to avoid damaging the internal protection relay.

## SETTINGS

The DIP switches allow the user to enable/disable the AC fail alarm and select the charging current to the internal batteries.



## CONNECTIONS



## TROUBLESHOOTING

- ▶ Indicator Lights do not turn on:
  - ▶ Check all power connections.
  - ▶ Check battery connections for correct polarity.
  - ▶ Check external battery protection fuse is in place.
- ▶ No output with AC power on:
  - ▶ Check all power connections.
- ▶ No output with AC off and battery attached:
  - ▶ Check battery connections for correct polarity.
  - ▶ Battery may be heavily discharged. (Under voltage lockout) Recharge the battery.
  - ▶ Check external battery protection fuse is in place.

## LIMITED WARRANTY

ICT Ltd. warrants to the original consumer purchaser that this product shall be in good working order, free from defects in materials and workmanship, for a period of one (1) year from the date of purchase. Should failure occur during the above stated time period, then ICT will, at its option, repair or replace this product at no additional charge except as set forth below. All parts, whether for repair or replacement, will be furnished on an exchange basis. All exchange pieces become the property of ICT. This limited warranty shall not apply if the ICT product has been damaged by unreasonable use, accident, negligence, disaster, service, or modification by anyone other than the ICT factory.

Limited warranty service is obtained by delivering the product during the above stated one (1) year warranty period to an authorized ICT dealer or ICT factory and providing proof of purchase date. If this product is delivered by mail, you will insure the product or assume risk of loss or damage in transit, and prepay shipping charges to the factory.

Every reasonable effort has been made to ensure that ICT product manuals and promotional materials accurately describe ICT product specifications and capabilities at the time of publication. However, because of ongoing improvements and updating of ICT products, ICT cannot guarantee the accuracy of printed materials after the date of publication and disclaims liability for changes, errors or omissions.

If this ICT product is not in good working order, as outlined in the above warranty, your sole remedy shall be repair or replacement as provided above. In no event will ICT be liable for any damages resulting from the use of or the inability to use the ICT product, even if an ICT employee or an authorized ICT dealer has been advised of the possibility of such damages, or for any claim by any other party.

ICT reserves the right to make changes without further notice to any products or documentation for improvement of reliability, function, or design.

ICT Ltd. does not recommend use of its products in life support applications wherein a failure or malfunction of the product may directly or indirectly threaten life or cause injury. The user of ICT products, which are to be used in life support applications as described above, assumes all risks of such use and indemnifies ICT against all damages.

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