

PROTECTION FEATURES

Internal circuitry will help protect the load, battery and power supply in case of the following events:

- Internal temperature too high - will reduce output current until stable temperature maintained
- Input ac voltage out of range - will shut off output, automatically restarts when in operating range
- Output Short Circuit – current regulated to less than the max rated level
- Output Over Voltage – will shut off output, automatically restarts after delay
- Battery current too high – dc output fuse will open
- Reverse Battery connection – dc output fuse will open
- Input Over current – internal AC fuse will open

SPECIFICATIONS

Input Voltage:	100 – 264Vac 50/60Hz
Input Power Factor:	0.99 (120Vac input)
V-output Line Regulation:	+/- 0.1%
V-output Load Regulation:	+/- 0.2%
Electronic current limit:	Constant current regulation with fold back for short circuit conditions
Operating Temperature:	-30°C to 60°C ¹
Output Grounding:	Positive, Negative or floating
Efficiency:	88% typical (120Vac)
EMC:	Meets FCC part 15 class B limits
Safety:	Designed to meet EN60950-1

Model:	12V 20A	12V 12A	24V 10A
Output Voltage (Nominal, +/- 0.5%)	13.8V	13.8V	27.6V
Continuous Current Rating (at nominal output voltage)	20A	10A	10A
Output Current Limit (+5%,-0%)	20A	12A	10A
Output V Noise (max)	25 mVrms	25 mVrms	25 mVrms
Input Current max at 100Vin	3Aac	1.8Aac	3Aac
Output Power (max rated)	276W	166W	276W

¹ Reduce output current 1% per °C for ambient above 50°C

LIMITED WARRANTY

ICT Limited Warranty is only intended for the benefit of the original Purchaser of this product. This Warranty is not transferable or assignable without the prior written permission of ICT. ICT's sole obligation and liability under this warranty is limited to either repairing or replacing defective products at the sole discretion of ICT. When repairing or replacing the products, ICT may use products or parts that are new, equivalent to new or re-conditioned. Parts repaired or replaced during the warranty period will be under warranty for the remainder of the warranty period.

The warranty period on ICT products purchased new from ICT is two years. The warranty period for a repaired product or part thereof is ninety (90) days or the remainder of the unexpired term of the new product warranty period, whichever is greater. Repair or replacement of a defective product or part does not extend the original warranty coverage period.

No claim will be accepted unless written notice of the claim is received by ICT in accordance with ICT's Return Material Authorization (RMA) procedure, as soon as reasonably possible after the defect is discovered. A valid product serial number must be provided with the RMA claim to prove eligibility. The RMA form is available on the ICT website at www.ict-power.com/support/warranty-repair/.

The Purchaser shall at their own risk and cost return the defective product to ICT's factory or designated repair center once an RMA is issued by ICT. Return of the products to the customer after repair is completed shall be prepaid by ICT unless otherwise mutually agreed between the parties. Products shipped to ICT which have incurred freight damage will not be covered by this Warranty and any repairs or replacement parts, components or products needed will be invoiced in the full current price amount and returned freight collect to Purchaser. It is the Purchaser's responsibility to check the product upon receipt for any damage during shipping and to contact the carrier or shipper regarding such damage. Product that is returned as defective, which is determined to operate within published specifications will be returned to the Purchaser freight collect.

This Warranty will be void if the product has been subjected to misuse, neglect, accident, exposure to environmental conditions not conforming to the products' limits of operation, improper installation or maintenance, improper use of an electrical source, defects caused by sharp items or by impact pressure, a force majeure event, has been modified or repaired by anyone other than ICT or its authorized representative, has been subjected to unreasonable physical, thermal or electrical stress, improper maintenance, or causes external to the unit including but not limited to general environmental conditions such as rust, corrosive atmospheres, sustained temperatures outside the specified operating range of the equipment, exposure to power surges and/or electrical surges, improper grounding, mould or dust, animal or insect damage, water damage or immersion in liquid of any kind.

ICT does not control the installation and use of any ICT product. Accordingly, it is understood this does not constitute a warranty of performance or a warranty of fitness for a particular purpose.



Innovative Circuit Technology Ltd.



CM Series DC Power Supply

INSTRUCTION MANUAL

855-159-001

Models:

ICT24012-20CM

ICT24012-12CM

ICT24024-10CM

INNOVATIVE CIRCUIT TECHNOLOGY LTD.

26921 Gloucester Way

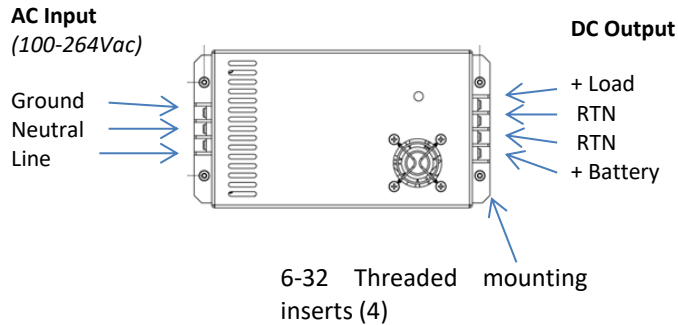
Langley, British Columbia, Canada V4W 3Y3

T 604.856.6303 F 604.856.6365 www.ict-power.com

ICT CM SERIES POWER SUPPLY

The CM Series off-line power supplies from ICT provide a reliable 275 Watts of dc power with a built-in battery back-up port and low current float charger for powering 12, or 24Vdc based systems. With an efficient wide range power factor corrected input the units are useable world-wide, and their built in flange mounting points and terminal block connections make installation simple. Temperature controlled fan cooling² ensures long life operation over a wide range of ambient temperatures.

CONNECTION DIAGRAM



⚠️ WARNINGS

Risk of personal injury or damage to equipment and property! Always observe the following:

- Install and operate unit in a Restricted Access location, such as an enclosed equipment rack
- Operate the supply from a grounded 3-pin 120Vac or 230Vac outlet (50 or 60Hz) with a branch circuit breaker rated 20A or less
- Use an appropriate dc over-current protection device in line with the optional battery connection
- Use wire and connectors rated for the maximum load current and size of battery fuse or circuit breaker
- Ensure battery polarity is correct before connecting
- Ensure required load current does not exceed max rating of unit

INSTALLATION

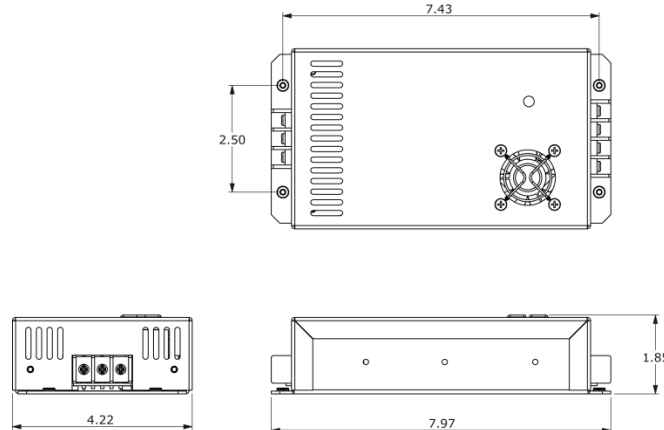
Mount the unit on a horizontal flat surface in a restricted access environment such as an equipment rack or cabinet, (ensuring air vents are not blocked) using four 6-32 mounting screws (not supplied). Make the following connections using wire and

² On 276W models

connectors appropriately rated for the maximum input and output current rating of the unit:

- Connect the supply POS output terminal to the load positive input
- Connect the supply RTN output terminal to the load negative input terminal
- Connect an optional external battery if dc back-up capability is desired
 - Choose a lead-acid battery with a float voltage rating that matches the Panel Mount Series output voltage, and has a 10 Amp-hour (Ahr) capacity rating or greater. Larger capacity batteries will provide a longer back up time in the event of an AC power failure
 - Connect the battery negative to the supply RTN battery terminal
 - Connect the battery positive to an over current protection device (fuse or breaker)
 - With the battery fuse removed or breaker open connect the fuse or switch to the supply BAT(+) terminal
 - Either the POS or NEG lead may be connected to earth ground if required by the application, as the supply output is isolated from the chassis and ground.
- Connect a de-energized AC power cord to the AC input terminals of the supply, then plug into a grounded 3 terminal 120Vac or 230Vac 50/60Hz outlet.

DIMENSIONS (inches)



OPERATION

Once the unit is mounted and all wiring is connected per the INSTALLATION section instructions, connect a dc voltmeter to the output load terminals and apply AC power to the input.

Check that the DC output voltage is within the normal range for the model in use.

The unit will now power the load and trickle charge the optional back up battery at the rated output voltage setting of the unit. The output will continue to be powered directly from the battery if the AC input is off for any reason; ensuring critical loads are powered continuously.

USING the OPTIONAL BACKUP BATTERY

The CM Series uses an isolation diode between the BAT terminal, and the Load + output. When in back-up mode the voltage supplied to the load will be the external battery voltage less the drop across the diode, which is approximately 0.6V. So for example a battery at a voltage of 12.7V will provide approximately 12.1V to the load.

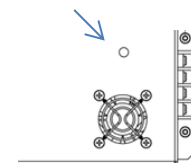
For prolonged AC outages, the battery may be discharged to a very low level, as there is no internal low-voltage-disconnect device. It is good practice to ensure the battery has enough capacity to power the load for long durations and still ensure it is not discharged below approximately 11V. This will help to prevent permanent loss of battery capacity due to over-discharge.

Excessive load current from the battery is limited by an internal ATO type fuse. A short circuit or other over-current event on the load wiring will cause this fuse to open, protecting the internal circuitry. This fuse may be replaced by disconnecting the unit from all power sources, removing the cover, and replacing fuse F3 with a fuse of the same type and rating.

The output voltage may be adjusted slightly to better match the float voltage ratings of specific batteries, by setting the trim-pot as shown with an insulated adjusting tool.

Disconnect any loads or battery, and connect an accurate voltmeter to the output terminals. With the unit powered observe the output voltage and slowly adjust the output setting to the desired level.

Output Voltage Adjustment Trim Pot



Switch off the AC power and reconnect all output wiring.