

ICT 100A REDUNDANT ISOLATION MODULE

The ICT 100A Redundant Isolation Module connects two power supplies in parallel to create a redundant 12, 24, or 48V power system for critical loads. Under normal operation low loss electronically controlled solid state switches connect each supply to the output so they can share the load of up to 100A equally. If the voltage on one of the supplies falls below the output level due to a failure or other reason, the switch on that input will immediately open to ensure the failed supply cannot pull down the output of the good supply. The higher voltage supply will then fully power the load without interruption.

The solid state MOSFET devices used in the Isolation Module have a much lower voltage drop and resulting heat dissipation than seen in a conventional diode based unit. This enables the module to run much cooler, with the load experiencing a minimal drop in the supply voltage.

WARNINGS

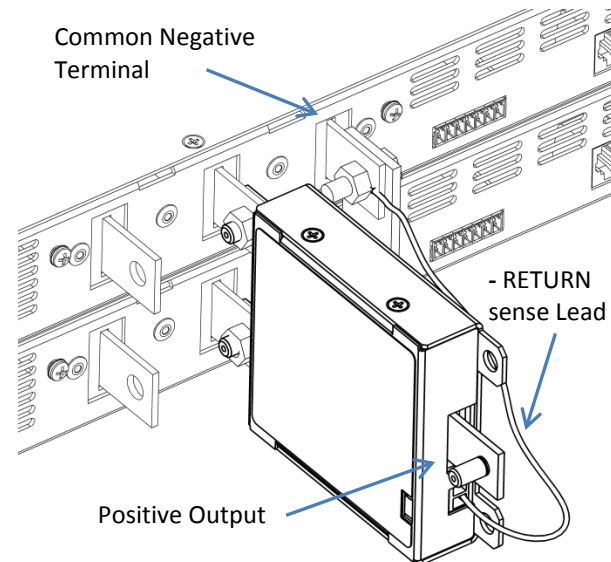
Risk of personal injury or damage to equipment and property! Always observe the following:

- Install and operate unit in a Restricted Access location, such as an enclosed equipment rack
- Ensure the RETURN lead on the module is connected to the power supply common negative terminal
- Use an appropriate dc over-current protection device in line with any battery used as one of the dc sources
- Use wire and connectors rated for the maximum load current
- Ensure supply polarity is correct before connecting
- Ensure required load current does not exceed the maximum 100A rating of unit
- Ensure the input voltage does not exceed the maximum 65V rating of the unit

INSTALLATION

Procure and install two redundant power supplies (with the same output rating, $\leq 100A$, $\leq 65V$) in an equipment rack or other suitable location according to their installation instructions. Set each output to the voltage required by the critical load, then switch off input power.

Mount the ICT100-RIM module inputs directly on the Positive (+) Output bus bars of two matching ICT Digital series or Pro Series dc power supplies, by placing the $\frac{1}{4}$ -20 input studs through the power supply output bus bar holes, and then securing tightly using the nuts and lock washers provided. (as shown below)



Connect the power supply Negative terminals together with a conductor rated for the full output load current, installing the module Negative RETURN lead ring tongue under one of the fastening bolts, as shown above. (Use the ICT-PAR high current paralleling strap from ICT to simplify connecting bus bar outputs together on ICT Digital Series and Pro series power supplies, as shown)

Note: When using back-up batteries with your supplies a battery must be independently connected to the +BAT terminal on each unit, with a common connection to the supply Negative terminals only. Do not tie the power supply +BAT input terminals together with a single battery, as this will defeat the isolation function of the ICT100-RIM device.

WARNING

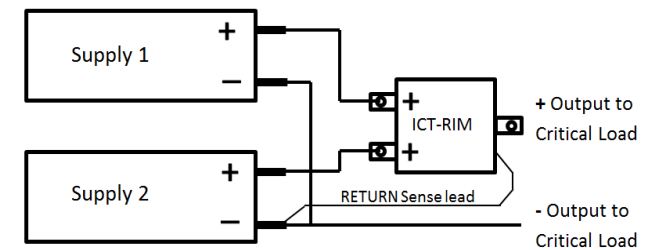
Risk of personal injury or damage to equipment and property! Always observe the following:

When using batteries or other high current device as an input power source you must install an inline fuse or circuit breaker rated for 100A or less, between the supply and the module input. This is required to limit the maximum fault current through the module to a safe level if the critical load input is shorted.

Connect the critical load to the module + OUTPUT stud, and to the common Negative terminal of the power supplies using appropriately rated wire and ring terminals. Slip the output load cable through the terminal boot (included) before connecting it to the +OUTPUT stud. Position the boot to help insulate the connection after tightening the nut on the output terminal.

Note: When using the unit with other models of power supplies the ICT100-RIM should be mounted directly to a flat surface such as a rack shelf using the 3 mounting tabs on the module. (Mounting hardware not provided) Make power connections to the dual inputs and output using suitably rated wire terminated with ring lugs sized to fit the $\frac{1}{4}$ -20 gauge studs on the module.

CONNECTION DIAGRAM



Note: For -48V (positive ground) applications ensure the ground connection is made on the load side of the Isolation Module only. Otherwise the isolation function may be bypassed by a ground connection on both the input and the output.

OPERATION

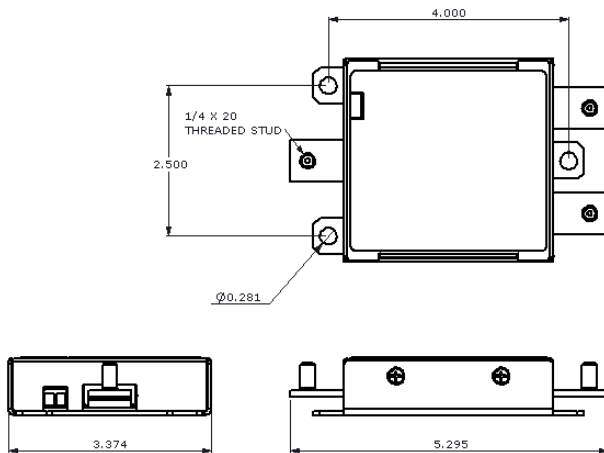
Once the unit is mounted and all wiring is connected per the INSTALLATION section instructions, connect a dc voltmeter from the module output, to the common supply negative terminal. Switch on both supplies and verify that the output voltage to the critical load is within 0.15V of the ICT100-RIM Module input voltage.

The system is now operational, and will disconnect either input if its voltage drops lower than the output voltage.

SPECIFICATIONS

Number of input channels:	2
Input channel current (max continuous):	100Adc
Output current rating (max continuous):	100Adc
Input voltage range (both channels):	5 to 65Vdc
Reverse channel detection voltage (Vsd):	-28mV (typical)
Channel switch-off time:	< 2 μ s
Forward voltage drop (at 100A):	< 0.15V (at Amb = 25C)
Operating Ambient Temperature:	-40°C to 60°C

DIMENSIONS (inches)



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 three (3) years 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 three (3) years 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.

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



Innovative Circuit
Technology Ltd.



Two Input 100A
Redundant Isolation
Module for 12, 24, or
48V Systems

INSTRUCTION MANUAL
855-152-000 Rev 1.1

Model:
ICT100-RIM