



N+1 REDUNDANT SERIES

Fault Tolerant DC Power Supplies in 12 and 24VDC Output



The ICT N+1 Redundant Series is the solution to your critical power needs. Multiple power modules allow you to design your site power requirements so that your loads will never lose power. With the N+1 Redundant Series design, if one power module fails, the remaining modules will seamlessly power the load and send an alarm signal. The ICT N+1 systems are manually switchable between 120 and 220 VAC input voltages and are available in 13.8 and 27.6 VDC output voltages.

Up to four 450 watt modules can be installed in a single chassis, providing a total of 1,350 watts with redundant protection. What makes the ICT N+1 Redundant Series different from other solutions is the fact that ORing diodes are used to protect the remaining modules in case of a failure, and the load sharing circuitry is designed in such a way as to never put undue stress on a single module.

Standard features include 19 inch 2RU rack mount chassis, LED indicators for AC and DC status, and system monitoring outputs using a DB-style connector. Battery back-up terminals are provided for float charging an external battery. Built-in revert capability seamlessly switches the load to the battery when AC fails, ideal for communications sites.

Performance and Flexibility

The ICT N+1 Redundant Series is designed for mission critical power needs. Quick-install power modules can be configured with up to 4 modules per chassis depending on requirements. True redundant design means that when configured properly, the failure of a power module will not cause any disturbance to the DC load that the power supply is running. Battery backup terminals are provided as standard to provide a float charge with battery revert capability for seamless load transfer if the AC power fails. You can even order a single module version in 12 or 24VDC output and add additional modules later.

True Redundant Power

An output ORing diode completely isolates a failed power module from the rest of the circuit, preventing harmful feedback to the rest of the system.

Reliability

The ICT N+1 Redundant Series uses active current sharing in order to balance the load equally across the number of power modules, increasing life expectancy. Premium high quality power connectors are used to support the entire output current without voltage drop. There is no internal wiring between modules or from modules to the back plane that could reduce the reliability of the system. High quality ball bearing fans are used for extra long life.

Remote Signal Circuitry

The ICT N+1 Redundant Series incorporates a DB-25 connector that provides AC and DC power status signals, alarms for fan failure, power module failure, and over-temperature conditions.

MODEL SELECTION GUIDE

12VDC Output	24VDC Output	No. of Power Modules	Output Current (Redundant)	Output Current (Peak)
ICT22012-35N		1	34A ^(a)	35A
ICT22012-70N		2	34A	70A
ICT22012-100N		3	68A	105A
ICT22012-140N		4	90A	127A
	ICT22024-35N	2	17A	36A
	ICT22024-50N	3	34A	54A
	ICT22024-70N	4	51A	56A

(a) Single module, redundancy not available

TECH NOTE



WHAT IS N+1?

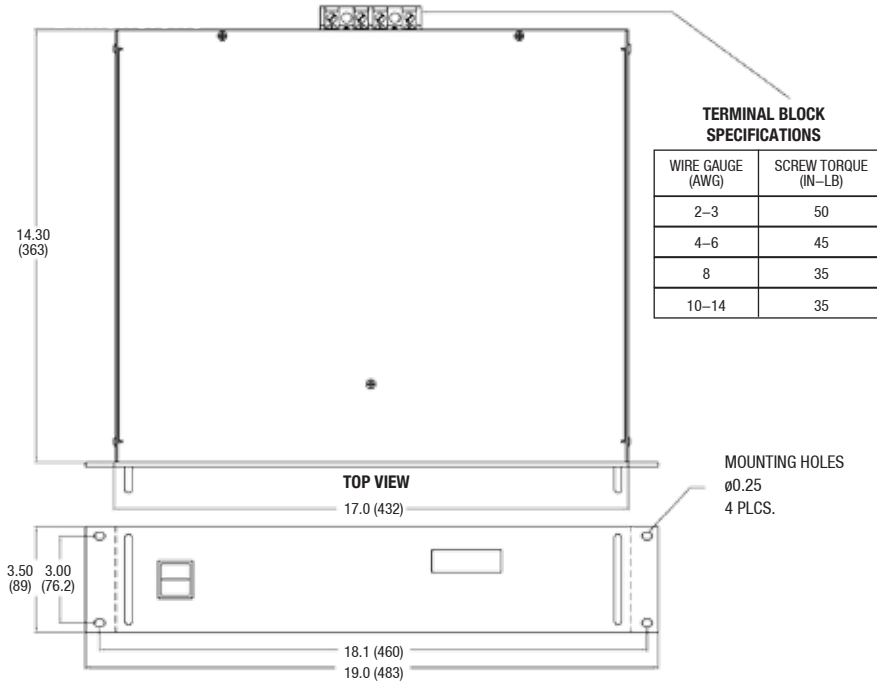
When configuring a system for N+1 redundant operation, size the load in order to allow at least one module to operate in reserve, so that the output load can be maintained even if one module fails.

TOTAL SYSTEM POWER
1350 Watts (3 X 450W)
With Redundancy

	Model Number	Input Voltage Range	Output Voltage	Output Current (Continuous/Redundant)	Output Current (Peak)	Current Limiting	No. of Power Modules	Line Regulation	Load Regulation	Output Ripple (Typical)	Efficiency (Typical)	Operating Temperature Range ^(c)
12VDC Output	ICT22012-35N	105-130/205-250 VAC	13.8 VDC +/- 300 mV	34 A ^(b)	35 A	36 A	1	1%	2%	40mV RMS	79%	-30°C to +60°C
	ICT22012-70N	105-130/205-250 VAC	13.8 VDC +/- 300 mV	34 A	70 A	72 A	2	1%	2%	40mV RMS	79%	-30°C to +60°C
	ICT22012-100N	105-130/205-250 VAC	13.8 VDC +/- 300 mV	68 A	105 A	108 A	3	1%	2%	40mV RMS	79%	-30°C to +60°C
	ICT22012-140N	105-130/205-250 VAC	13.8 VDC +/- 300 mV	90 A	127 A	144 A	4	1%	2%	40mV RMS	77%	-30°C to +60°C
24VDC Output	ICT22024-35N	105-130/205-250 VAC	27.6 VDC +/- 600 mV	17A	36 A	38 A	2	1%	2%	40mV RMS	83%	-30°C to +60°C
	ICT22024-50N	105-130/205-250 VAC	27.6 VDC +/- 600 mV	34 A	54 A	57 A	3	1%	2%	40mV RMS	83%	-30°C to +60°C
	ICT22024-70N	105-130/205-250 VAC	27.6 VDC +/- 600 mV	51 A	56 A	76 A	4	1%	2%	40mV RMS	83%	-30°C to +60°C
Modules	ICT12-30	105-130/205-250 VAC	13.8 VDC	34 A	35 A	36 A		1%	2%	40mV RMS	80%	-30°C to +60°C
	ICT24-17	105-130/205-250 VAC	27.6 VDC	17 A	18 A	19 A		1%	2%	40mV RMS	84%	-30°C to +60°C

(b) Single module, redundancy not available.
(c) Derate 2%/°C > 40°C.

Dimensions



OPTIONS GUIDE

Description	Add Suffix
Digital Meter	Displays voltage and current (example: ICT22012-70NM) M
ICT12-30	12VDC, 34 Amp Power Module
ICT24-17	24VDC, 17 Amp Power Module

Signal Connector Functions

Connector Type	DB-25
Functions	15VDC and 5VDC AC power good signals Fan failure alarm 0-5VDC system current sense signal Individual power module status (1-4) Over temperature alarm signal DC output voltage signal

Certifications

Safety	CSA C22.2 No.107.1 UL 1012 (6th edition)
Emissions	FCC Class A