

# HYBRID POWER SERIES

48 and 24 Volt DC Power Systems with integrated 12 or 24 Volt DC Converter Output



Two DC Output Voltages, Advanced Battery Management Features, Standard TCP/IP Monitoring and Control, up to 3000 Watt Total Output Power in a Compact 1RU Package

## Features

- ▶ **One or two hot swappable** 700 or 1500 watt 48 or 24 volt primary DC output power modules
- ▶ **700 watt 12 or 24 volt integrated** DC output converter
- ▶ **90 to 95%** efficiency
- ▶ **-30 C to +60 C** operating temperature range
- ▶ **TCP/IP Ethernet** is standard on every model - provides complete and easy-to-use remote monitoring and control of the power system using secure web server and graphical user interface or SNMP
- ▶ **Battery Backup with 150A LVD** and adjustable disconnect and reconnect voltage setpoints
- ▶ **Single or Dual** 100A battery disconnect breakers
- ▶ **User Adjustable** output voltages and battery charge current limit
- ▶ **Advanced SLA Battery Management** features:
  - Battery state of charge
  - Estimated run-time remaining
  - Battery discharge testing
  - Temperature compensated charging
- ▶ **Support for Li-ion** battery management systems
- ▶ **Digital and Analog** inputs for site monitoring sensor reporting

## Description

Many wireless communications sites require different DC voltages to power a range of devices, whether 48, 24 or 12 volts DC. This often means installing multiple power supplies or DC converters which may not always be feasible given limited rack space or budgets.

The ICT Hybrid Power Series is designed to meet this need. It combines a 48 or 24 volt DC power system with a factory installed 12 or 24 volt DC converter module to provide up to 3000 watts maximum power flexible hybrid DC solution for wireless network sites. The Hybrid Power Series accepts one or two hot swappable 700 or 1500 watt 48 or 24 volt DC Power Modules. The integrated DC converter provides up to 700 watts of 12 or 24 volts DC output through a separate output bus bar.

Ethernet-based communications and control is standard on every model. System and battery monitoring are provided through a secure web-based server or SNMP. Outputs can be turned off and on, and various parameters can be controlled and managed remotely.

The ICT Hybrid Power Series is designed, manufactured and supported in North America to meet the need for wireless communications, broadband and other demanding DC power applications.

## Applications

- Critical wireless communications networks
- Fixed Wireless Access
- Radio Access Networks
- FTTP/H PON GPON
- Distributed Antenna Systems
- Security and surveillance
- Industrial DC power

## ELECTRICAL SPECIFICATIONS - POWER MODULES

	700 Watt		1500 Watt	
AC input voltage (nominal)	120/240VAC		120/240VAC (derate to 50% power at 90VAC)	
Input voltage range	100-300VAC		90-300VAC	
AC input current (per module) at 220VAC nom.	8.0A max.		8.0A max.	
AC input current (per module) at 110VAC nom.	7.0A max.		7.0A max.	
Power factor (typical)	0.99		0.99	
Frequency	50/60Hz		50/60Hz	
Output voltage	+/- 55.2 VDC	+/- 27.6 VDC	+/- 55.2 VDC	+/- 27.6 VDC
Output voltage range (adjustable)	46.0 - 62.0 VDC	23.0 - 31.0 VDC	46.0 - 62.0 VDC	23.0 - 31.0 VDC
Power output per module (230VAC nom.)	700W	700W	1500W	1500W
Power output per module (115VAC nom.)	700W	700W	900W	900W
Output current per module (230VAC nom.)	12.5A	25A	27A	54A
Output current per module (115VAC nom.)	12.5A	25A	13A	27A
Efficiency (peak)	93%	91%	95%	94%
Output ripple (rms)	60mV	30mV	60mV	40mV
Max. system output current with 2 Power Modules (230VAC nom.)	25A	50A	54A	108A
Max. system output current with 2 Power Modules (115VAC nom.)	25A	50A	27A	54A

## ELECTRICAL SPECIFICATIONS - DC CONVERTER

Output voltage	+/- 13.8 VDC	+/- 27.6 VDC
Output voltage range (adjustable)	10.5 - 15.5 VDC	21.0 - 31.0 VDC
Power output	700W	700W
Output current	50A	25A
Efficiency (peak)	92%	92%
Output ripple (rms)	20mV	30mV

## MECHANICAL

AC input connector	Terminal Block, #8 - #16 AWG
DC output connectors	Busbars with 1/4-20 x 7/8" bolts
Remote alarm connectors	Terminal Block (#16 -24 AWG)
Mounting	1RU, 19 in rack mount
Weight	8.1lbs / 3.7 kg
Dimensions - H x W x L	1.74 x 19.0 x 15.7 in. / 44 x 483 x 398 mm

## ENVIRONMENTAL

Operating temperature range	-30° to +60° C
Output derating	2% /°C (above 50° C)
Storage temperature	-45° to +85° C

**WARRANTY** Two (2) years

## DESIGN STANDARDS

Safety	EN 60950-1
Emissions	<b>700 W</b> : EMC Compliance with CE Class B, FCC Part 15/B, UL/CSA60950-1, UL/CSA 62368-1, ICES-003, EN 61000-6-2 and EN 61000-6-3 <b>1500 W</b> : EMC Compliance with CE Class A, UL/CSA 60950-1, UL/CSA 62368-1, ICES-003, EN55032, EN 61000-3-2 and EN 61000-3-3

## ORDERING INFORMATION

	Primary Output Voltage (nominal)			Converter Output Voltage (Floating)
	System Voltage	Negative Voltage Output	Positive Voltage Output	
Intelligent Power Shelf with integrated Ethernet Controller. Factory-installed 100A Battery Management Module with LVD and 700 watt 12 volt DC secondary converter output.	48 or 24 VDC	ICT-IPS-DC12-BMM	ICT-IPS-DC12-BMMP	12 VDC
Intelligent Power Shelf with integrated Ethernet Controller. Factory-installed 200A Battery Management Module with LVD and 700 watt 12 volt DC secondary converter output.	48 or 24 VDC	ICT-IPS-DC12-BMMD	ICT-IPS-DC12-BMMDP	12 VDC
Intelligent Power Shelf with integrated Ethernet Controller. Factory-installed 100A Battery Management Module with LVD and 700 watt 24 volt DC secondary converter output.	48 or 24 VDC	ICT-IPS-DC24-BMM	ICT-IPS-DC24-BMMP	24 VDC
Intelligent Power Shelf with integrated Ethernet Controller. Factory-installed 200A Battery Management Module with LVD and 700 watt 24 volt DC secondary converter output.	48 or 24 VDC	ICT-IPS-DC24-BMMD	ICT-IPS-DC24-BMMDP	24 VDC
Power Module, 48 VDC, 700W output, hot swappable				ICT700-48PM
Power Module, 24 VDC, 700W output, hot swappable				ICT700-24PM
Power Module, 48 VDC, 1500W output, hot swappable				ICT1500-48PM
Power Module, 24 VDC, 1500W output, hot swappable				ICT1500-24PM
Optional blanking panel for unused Power Module positions				ICT-BPM