

HELIOS IS PROUD TO BE THE EXCLUSIVE PARTNER OF ICT IN NEW ZEALAND , AUSTRALIA AND ASIA

MODULAR POWER SERIES

DC POWER SYSTEM WITH HOT SWAPPABLE POWER MODULES FOR 48 , 24 OR 12 VOLTS DC

The ICT Modular Power Series is a redundant , flexible DC power system with an array of configurable features designed to meet the needs of a variety of DC power applications including wireless broadband, radio access networks, small cell, DAS, land mobile radio, security and surveillance, and many others.



SYSTEM'S COMPONENTS

POWER SHELF

- ◆ The RU power Shelf includes the backplane , AC and DC connectors and has four slots for Power Modules or optional Battery Management and Load Distribution Modules .
- ◆ Flexible configurations adaptable to customer needs (Standard or Intelligent Shelf).
- ◆ Up to 2800 watts of power with redundancy in a single shelf.
Second shelf can be added for higher power applications

POWER MODULES

- ◆ 100-300 volts AC input with Power Factor Correction.
- ◆ 120/240 VAC input wit no power de-rating.
- ◆ 700 watts hot swappable Power Modules.
- ◆ 12, 24 or 48 volts nominal DC.
- ◆ 90-93% efficiency.
- ◆ -30 °C to +60 °C



INTELLIGENT CONTROL MODULE :Is a factory installed option for the ICT Modular Power Series that provides a complete local and remote monitoring and control of up eight Modular Power System components.

- ◆ High resolution OLED display with intelligent front panel controls fully integrated into Power Shelf.
- ◆ TCP/IP remote Ethernet communications. Embedded web server with easy to use Graphical User interface.
- ◆ Intelligent monitoring, reporting, and control of system and all installed modules. (Take a look to the live demonstration <http://www.ict-power.com/demos/ict-ips-bmm-ldm/>)
- ◆ Local and remote password protection. Downloadable firmware updates over Ethernet.
- ◆ AC input voltage, DC output voltage, system current reporting (local and Ethernet). Local and remote output voltage and current limit adjustment.
- ◆ Monitoring and control of Master power shelf and accessories and second slaved power shelf (up to 4.9KW).
- ◆ Up to 30 days logging at 1 minute sampling rate, cvs file download mayor event logging.
- ◆ Remote on/off Power Module Control.
- ◆ Site monitoring inputs for door, smoke, water and temperature sensors with remote alarm notifications.
- ◆ Runsafe mode in event of controller failure(system will revert to factory default output settings).



WHEN THE ICM IS USED THE FOLLOWING MODULES BELOW CAN BE INSTALLED *

BATTERY MANAGEMENT MODULE

- ◆ The BMM includes either a 100 amp battery disconnect breaker for single battery strings or two breakers for dual battery strings, and a 150 amp Low Voltage Disconnect.
- ◆ Temperature compensated charging.
- ◆ Manual, Automatic and period equalization.
- ◆ Battery state of charge and estimated runtime remaining indication. Battery low warning.
- ◆ Auto or manual battery test modes.
- ◆ User definable low voltage disconnect and reconnect setpoints.



LOAD DISTRIBUTION MODULE

- ◆ Display current reading of each of four load outputs.
- ◆ Remote on/off control of individual outputs or entire load bus over Ethernet .
- ◆ User definable alarm level indications (sent via Form C and Ethernet)
- ◆ User definable load disconnect and reconnect levels.
- ◆ Definable automatic load shedding.
- ◆ Auto-ping automatic power cycling of specified load outputs.



ACCESSORIES :These include paralleling bus bar straps, a smart paralleling communications jumper cable, remote sense probe for temperature compensated battery charging , blanking plates , and hydraulic / magnetic load breakers in a variety of sizes.

* Battery Management Module and Load Distribution Module require Power Shelf with integrated Intelligent Control Module.

ORDERING INFORMATION

1. Select Power Shelf : Select the power shelf that meets your requirement for DC voltage, battery management and load distribution features

Intelligent Power Shelf with integrated Control Module and Ethernet communications. 1400 Watts Maximum. Factory-installed 100A Battery Management Module with Low Voltage Disconnect and four position Intelligent Load Distribution Module.	-48VDC	+48/24/12 VDC
	ICT-IPS-BMM-LDM	ICT-IPS-BMM-LDMP
Intelligent Power Shelf with integrated Control Module and Ethernet communications. 1400 Watts Maximum. Factory-installed 100A Battery Management Module with Low Voltage Disconnect and four position Intelligent Load Distribution Module.	ICT-IPS-BMMD-LDM	ICT-IPS-BMMD-LDMP
	ICT-IPS-BMM	ICT-IPS-BMMP
Intelligent Power Shelf with integrated Control Module and Ethernet communications. 2100 Watts Maximum. Factory-installed dual 100A Battery Breakers with Low Voltage Disconnect .	ICT-IPS-BMMD	ICT-IPS-BMMDP
	ICT-IPS-LDM	ICT-IPS-LDMP
Intelligent Power Shelf with integrated Control Module and Ethernet Communications. 2100 Watts Maximum. Factory-installed four position Intelligent Load Distribution Module.	ICT-IPS	
Intelligent Power Shelf with integrated Control Module and Ethernet Communications. 2800 watts Maximum. Accepts up to four Power Modules.	ICT-SPS	
Standard Power Shelf accepts up to four Power Modules. Designed to combine with ICT-IPS Intelligent Power Shelf, ICT-JMP and ICT-PAR to provide expanded power system with up to 4900 Watts of Ethernet-managed power.	ICT-SPS	










2. Select Power Modules : Depending on the Power Shelf selected, up to four hot-swappable Power Modules can be installed (must be same voltage).

Power Module, 48VDC, 700W output, hot swappable, floating output	ICT700-48PM
Power Module, 24VDC, 700W output, hot swappable, floating output	ICT700-24PM
Power Module, 12VDC, 700W output, hot swappable, floating output	ICT700-12PM
Optional blanking panel for unused Power Module positions	ICT-BPM



3. Select Load Breakers and Accessories: If you selected a Power Shelf with Load Distribution Module installed, select up to four Hydraulic/Magnetic

5 Amp Hydraulic/Magnetic breaker for use with Load Distribution Module	ICT-CB5		Optional Remote Temperature Probe with 3 metre cable. Enables temperature-compensated charging when used with ICT-IPS Intelligent Power Shelf and Battery Management Module.	ICT-TMP	
15 Amp Hydraulic/Magnetic breaker for use with Load Distribution Module	ICT-CB15				
25 Amp Hydraulic/Magnetic breaker for use with Load Distribution Module	ICT-CB25		Allows Smart Parallel Operation with automatic load sharing when paralleling ICT-SPS with ICT-IPS.	ICT-JMP	
Optional blanking plate for unused load breaker positions	ICT-BLP		Allows paralleling of output bus bars when installing ICT-SPS as a slave power shelf to ICT-IPS.	ICT-PAR	

ICM TECHNICAL SPECIFICATIONS

USER INTERFACE
Local: 128 x 64 OLED high resolution display 4 scroll/input buttons
Ethernet: 10/100 BASE-T, IEEE 802.3 compatible Embedded web-based GUI accessed using Internet browser IP Protocols: IPv4, HTTP, HTTPS, SMTP, DNS, TCP, UDP, ICMP, DHCP, ARP, SNMP v1/v2c Security: AES/R44 HTTPS Encryption, TLS 1.0 protocol

ALARM NOTIFICATIONS
Email: SMTP via Ethernet (up to two addresses)
SNMP: v1/v2 via Ethernet
Alarm Relays :Form C contacts

CONTROLLER INPUTS/OUTPUTS
Digital Inputs: 4 digital inputs for voltage-free site monitoring sensors (configurable NO/NC)
Temp Sense Input: 1 x analog temperature sensor input (for ICT-TMP probe with 3m cable)
Ethernet: 1x RJ45 10/100 BASE-T
Form C: C/NO/NC
ENVIRONMENTAL
Operating Temperature Range: -30°C to +60°C

TECHNICAL SPECIFICATIONS

AC INPUT	
Nominal system voltage	120/240VAC
Input voltage range	100-300VAC
Power factor (typical)	0.99
Frequency	50/60Hz

DC OUTPUT	48 VDC	24 VDC	12 VDC
Power output per module	700W	700W	700W
Output current per Power Module	12.5A	25A	50A
Max. system output current with 4 Power Modules (120/240VAC)	50A	100A	150A (current limited)
Efficiency (typical)	93%	91%	90%
Output ripple (rms)	60mV	30mV	30mV
Output voltage range (adjustable)	46.0 - 62.0 VDC	23.0 - 31.0 VDC	11.5 - 15.5 VDC

MECHANICAL	
AC input connector	Terminal Block, #8 - #16 AWG
DC output connector	Busbars with 5/16" bolts
Remote alarm connectors	Terminal Block (#16 -24 AWG)
Mounting	1RU, 19 in rack mount
Weight (Power Shelf empty)	8.1lbs / 3.7 kg
Weight (Power Shelf + 4 modules)	18.5 lbs / 8.4 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

DESIGN STANDARDS	
Safety	EN 60950-1
Emissions	EMC compliance with FCC Part 15, Class B, EN61000-6-1, EN61000-6-3, EN61000-3-2

FACTORY INSTALLED OPTIONS ^(a)

POWER SHELF WITH INTEGRATED INTELLIGENT CONTROL MODULE	
Front display	High resolution OLED with function keys
Remote communications	TCP/IP - RJ45 Ethernet connector on rear
I.P. protocols	10/100 BASE-T, HTTPS, HTML, SNMP
Inputs	4 digital, 1 analog temp sensor contacts
Monitoring functions	See ICM data sheet
Control functions	See ICM data sheet

POWER SHELF WITH BATTERY MANAGEMENT MODULE	
Circuit breaker	Single or Dual 100A ^(c)
Low voltage disconnect	150A contactor
Battery terminal	Busbar with 3/8" bolt

POWER SHELF WITH LOAD DISTRIBUTION MODULE	
Load outputs	4
Max. current rating per output	20A (48/24/12VDC)
Protection	Hydraulic/magnetic circuit breakers ^(b)
Remote current monitoring	Yes, with ICM installed
Remote power control of outputs	Yes, with ICM installed

(a) Battery Management Module and Load Distribution Module require Power Shelf with integrated Intelligent Control Module.

(b) Load breakers must be ordered separately.

(c) Must be specified at time of ordering. Battery disconnect breakers are installed at factory. For high current load breaker configuration contact HELIOS POWER SOLUTIONS.