MPS Ultra
2RU Redundant Hot Swap Modular DC Power System

The ICT MPS Ultra provides hot swappable, N+1 redundancy for power requirements up to 5.6kW. Available for 48, 24 or 12 volt DC applications, MPS Ultra systems are preconfigured at the factory to provide fast, easy installation at the site. Every model includes the ICT Intelligent Control Module to provide full TCP/IP remote monitoring and control of all system functions. A variety of battery management and load distribution combinations are available to suit your requirements.

**Power Chassis**
- 2RU Power Chassis configured at factory for fast, easy installation
- All connections are accessible from the rear, with no covers to remove during setup
- Accepts 48, 24 or 12 volt DC hot-swappable ICT 700 watt Power Modules

**Integrated Intelligent Control Module**
- TCP/IP remote Ethernet communications for monitoring and control of all system parameters through a single I.P. address and fully integrated user interface
- Embedded web server for plug and play set up
- HTTP/HTTPS, SMTP, SNMPv1/v2c/v3 protocols supported
- Alarms can be sent to multiple email accounts
- Four site monitoring sensor inputs with alarm reporting
- Data logging of AC, DC, alarms and load current conditions
- Password protection with multiple security levels

**Load Distribution Module** (2.8, 3.5 and 4.2kW models)
- Load current monitoring and alarm reporting of each output for pinpointing of issues with connected loads
- Outputs can be power cycled individually over Ethernet
- Adjustable alarm and load-shed settings for each output
- 8 or 12 outputs, max. 30A circuit breakers

**Battery Management Module** (2.8 and 3.5kW models)
- Temperature compensated charging, display of battery voltage, status, battery current, state of charge, and run time remaining
- Adjust LVD settings remotely
- Configure advanced battery management features such as boost charge parameters, max charge current, battery capacity, battery test timer, and battery discharge testing

**700 Watt Power Modules** (order separately)
- 100-300 volts AC input with Power Factor Correction
- 48, 24 or 12VDC volts nominal DC output
- 90-93% efficiency
- -30°C to +60°C operating temperature range
**TECHNICAL SPECIFICATIONS**

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

**ENVIRONMENTAL**
- Operating temperature range: -30° to +60°C
- Storage temperature: -45° to +85°C
- Rated power derating: 2% /°C

**MECHANICAL**
- AC input connectors (dual)
- DC output connector
- Ethernet connector
- Remote alarm connectors
- Mounting: 2RU, 19 inch rack mount

**Terminal Block**
- #8 - #16 AWG
- Busbars with 5/16” bolts
- RJ-45
- Terminal Block (#16 - 24 AWG)

**ETHERNET COMMUNICATIONS**
- Front display: High resolution OLED with function keys
- Remote communications: TCP/IP 10/100 Base-T
- I.P. protocols: HTTP/HTTPS, SMTP, SNMPv1/v2c/v3

**Monitoring & Control:**
- AC input, DC output V and A reporting and adjust, DC output control, Power Module status and remote alarms reporting
- Enable/disable DC load outputs, adjust output voltage and current settings, auto restart delay time, power cycle load outputs, auto load shedding, network watchdog, power on sequencing, customizable input alarm labels and settings
- Battery state of charge and run time remaining reporting, battery equalization and discharge testing, LVD setpoint adjust

**700W POWER MODULES** (order separately)

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output Voltage Polarity</th>
<th>Output Power</th>
<th>System Power Output</th>
<th>Max. System Current @ 48VDC</th>
<th>Max. System Current @ 24VDC</th>
<th>Max. System Current @ 12VDC</th>
<th>Battery Management Module</th>
<th>Battery Circuit Breakers</th>
<th>LVD Rating</th>
<th>Load Distribution Module</th>
<th>Load Shedding</th>
<th>No. of Managed Load Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT-2U4</td>
<td>NEG</td>
<td>2.8KW</td>
<td>50A</td>
<td>100A</td>
<td>200A&lt;sup&gt;(c)&lt;/sup&gt;</td>
<td>Yes</td>
<td>100A (x2)</td>
<td>150A</td>
<td>Yes</td>
<td>150A</td>
<td>Yes</td>
<td>12</td>
</tr>
<tr>
<td>ICT-2U4P</td>
<td>POS</td>
<td>2.8KW</td>
<td>50A</td>
<td>100A</td>
<td>200A&lt;sup&gt;(c)&lt;/sup&gt;</td>
<td>Yes</td>
<td>100A (x2)</td>
<td>150A</td>
<td>Yes</td>
<td>150A</td>
<td>Yes</td>
<td>12</td>
</tr>
<tr>
<td>ICT-2U5</td>
<td>NEG</td>
<td>3.5KW</td>
<td>65A</td>
<td>125A</td>
<td>250A&lt;sup&gt;(c)&lt;/sup&gt;</td>
<td>Yes</td>
<td>100A (x2)</td>
<td>150A</td>
<td>Yes</td>
<td>150A</td>
<td>Yes</td>
<td>8</td>
</tr>
<tr>
<td>ICT-2U5P</td>
<td>POS</td>
<td>3.5KW</td>
<td>65A</td>
<td>125A</td>
<td>250A&lt;sup&gt;(c)&lt;/sup&gt;</td>
<td>Yes</td>
<td>100A (x2)</td>
<td>150A</td>
<td>Yes</td>
<td>150A</td>
<td>Yes</td>
<td>8</td>
</tr>
<tr>
<td>ICT-2U6</td>
<td>NEG</td>
<td>4.2KW</td>
<td>78A</td>
<td>150A</td>
<td>300A</td>
<td>No</td>
<td>N/A</td>
<td>N/A</td>
<td>Yes</td>
<td>N/A</td>
<td>Yes</td>
<td>8</td>
</tr>
<tr>
<td>ICT-2U6P</td>
<td>POS</td>
<td>4.2KW</td>
<td>78A</td>
<td>150A</td>
<td>300A</td>
<td>No</td>
<td>N/A</td>
<td>N/A</td>
<td>Yes</td>
<td>N/A</td>
<td>Yes</td>
<td>8</td>
</tr>
<tr>
<td>ICT-2U8</td>
<td>POS/NEG</td>
<td>5.6KW</td>
<td>104A</td>
<td>200A</td>
<td>400A</td>
<td>No</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>N/A</td>
<td>No</td>
<td>8</td>
</tr>
</tbody>
</table>

**LOAD DISTRIBUTION OUTPUTS - 2.8, 3.5 and 4.2KW Systems**
- Load outputs: 12 or 8
- Over current protection: Hydraulic/magnetic circuit breakers
- Max. breaker size: 30A<sup>(b)</sup>

**BATTERY MANAGEMENT - 2.8KW & 3.5KW Systems**
- Circuit breaker: Dual 100A
- Low voltage disconnect: 150A contactor

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

**REGULATORY STANDARDS**
- Safety: EN 60950-1
- Emissions (48/24V only): EN61000-6-1, EN61000-6-3, EN61000-3-2, RoHS, CE

**MECHANICAL**
- AC input connectors (dual): Terminal Block, #8 - #16 AWG
- DC output connector: Busbars with 5/16” bolts
- Ethernet connector: RJ-45
- Remote alarm connectors: Terminal Block (#16 - 24 AWG)
- Mounting: 2RU, 19 inch rack mount
- Weight (exc. Power Modules): 30lbs / 13.6 kg
- Dimensions - H x W x L: 89 x 483 x 398 mm

**700W POWER MODULES**
- Model number: ICT700-48PM, ICT700-24PM, ICT700-12PM
- Nominal voltage: 48, 24, 12
- Output voltage range (adjustable): 46.0 - 62.0 VDC, 23.0 - 31.0 VDC, 11.5 - 15.5 VDC
- Output current per module: 12.5A, 25A, 50A
- Power Factor: 0.99 typ.
- Efficiency (typical): 93%, 91%, 90%
- Output ripple (rms): 60mV, 30mV

**MODEL COMPARISON**

(a) Load breakers must be ordered separately
(b) Max. system current rating for each 4 position load distribution module is 80A. Breakers should be continuously operated at no more than 80% of their current rating.

(c) Do not exceed LVD rating of 150A
(d) Do not exceed battery disconnect breaker rating of 100A each per battery string
STEP 1  Select Power Chassis

<table>
<thead>
<tr>
<th>Model Number</th>
<th>NEG V Output</th>
<th>POS V Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.8KW</td>
<td>ICT-2U4</td>
<td>ICT-2U4P</td>
</tr>
<tr>
<td>Intelligent Power Chassis with integrated Control Module and Ethernet communications. Includes dual 100A battery disconnect breakers and 150A Low Voltage Disconnect. 12-position fully managed load distribution outputs. Accepts up to 4 Power Modules. (Load breakers and Power Modules must be ordered separately).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.5KW</td>
<td>ICT-2U5</td>
<td>ICT-2U5P</td>
</tr>
<tr>
<td>Intelligent Power Chassis with integrated Control Module and Ethernet communications. Includes dual 100A battery disconnect breakers and 150A Low Voltage Disconnect. 8-position fully managed load distribution outputs. Accepts up to 5 Power Modules. (Load breakers and Power Modules must be ordered separately).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.2KW</td>
<td>ICT-2U6</td>
<td>ICT-2U6P</td>
</tr>
<tr>
<td>Intelligent Power Chassis with integrated Control Module and Ethernet communications. Includes 8-position fully managed load distribution outputs. Accepts up to 6 Power Modules. (Load breakers and Power Modules must be ordered separately).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.6KW</td>
<td>ICT-2U8</td>
<td></td>
</tr>
<tr>
<td>Intelligent Power Chassis with integrated Control Module and Ethernet Communications. Accepts up to 8 Power Modules. (Power Modules must be ordered separately).</td>
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<td></td>
</tr>
</tbody>
</table>

STEP 2  Select Power Modules

Select hot-swappable Power Modules (must be same voltage for each chassis)

- 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

STEP 3  Select Load Breakers and Accessories

<table>
<thead>
<tr>
<th>Amp</th>
<th>Hydraulic/Magnetic load breakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>ICT-CB5</td>
</tr>
<tr>
<td>10</td>
<td>ICT-CB10</td>
</tr>
<tr>
<td>15</td>
<td>ICT-CB20</td>
</tr>
<tr>
<td>25</td>
<td>ICT-CB25</td>
</tr>
<tr>
<td>30</td>
<td>ICT-CB30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Amp</th>
<th>Blanking plate for unused load breaker positions</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>ICT-BLP</td>
</tr>
<tr>
<td>10</td>
<td>Blanking panel for unused Power Module positions ICT-BPM</td>
</tr>
</tbody>
</table>

INTELLIGENT POWER CHASSIS

Each MPS Ultra system includes a fully integrated Intelligent Control Module to provide remote Ethernet-based monitoring and control of all aspects of the system through a single I.P. address and a built-in intuitive graphical user interface.

BATTERY MANAGEMENT

The 2.8 and 3.5KW MPS Ultra systems come with an integrated 150A Low Voltage Disconnect, dual 100A Battery disconnect breakers and a remote temperature sense probe. Monitor and adjust LVD set-points over Ethernet. Advanced battery management features include temperature compensated charging, battery state-of-charge, run-time remaining, and battery discharge testing.

MANAGED LOAD DISTRIBUTION OUTPUTS

The 2.8, 3.5 and 4.2KW MPS Ultra systems come with integrated breaker-protected load outputs, allowing you to monitor and power cycle each load individually via Ethernet. Sends email alarms. Automatic load shedding and network watchdog (ping) features maximize run-time for critical loads and will power cycle critical devices such as routers, possibly preventing unplanned trips to the site.

CUSTOM CONFIGURATIONS

Contact factory to discuss custom configuration requirements.