

## SM020KAMFA | SMART APP ONLINE 3-PHASE MODULAR UPS SYSTEM

Safeguard mission-critical applications with seamless, double-conversion power protection

سیستم یو پی اس ماژولار ۳ فاز آنلاین CYBERPOWER SM020KAMFA SMART APP در فضا و کارایی را برای فناوری حفاظت از برق ۳ فاز به ارمغان می آورد. قابل تنظیم برای سیستم N+N یا افزونگی ماژول برق N+1، این سیستم می تواند به طور هوشمند واحدهای جداگانه را برای دستیابی به راندمان بالاتر مدیریت کند. طراحی ماژولار قابل تنظیم را می توان به عنوان یک برج، کنار هم یا در یک قفسه پیکربندی کرد. ماژول های قدرت ۱۰ کیلو ولت آمپر / ۱۰ کیلو وات با چگالی بالا و مقیاس پذیر دارای ارتفاع 2U هستند که در عین صرفه جویی در فضا، گزینه های بیشتری برای افزایش ظرفیت فراهم می کند.



### SPECIFICATIONS

| GENERAL                            |                                      |
|------------------------------------|--------------------------------------|
| Dual Power Inputs                  | Yes                                  |
| Energy Saving                      | Online ECO Mode<br>Efficiency >97.5% |
| Hot Swappable Bypass Module        | Yes                                  |
| Hot Swappable Power Module         | Yes                                  |
| Power Module Capacity              | 3                                    |
| Parallel Expansion                 | Yes                                  |
| Power Module Redundancy Capability | Yes                                  |
| UPS Topology                       | Online Double Conversion             |

| BATTERY                             |   |
|-------------------------------------|---|
| Battery Bus Voltage                 | Nominal: $\pm 120$ VDC, one-side range: 120 VDC - 132 VDC |
| Battery Cabinet                     | Modular External  |
| Charger Voltage Tolerance           | $\leq 1\%$ Float  |
| Extended Battery Cabinet            | BCT3L9N125  |
| Hot Swappable Battery Module        | Yes   |
| Recharge Power                      | Default 10% x UPS Power                                   |
| Recharge Power (Selectable)         | 1% - 20%  |
| Ripple Current                      | $\leq 5\%$ C10  |
| Ripple Voltage                      | $\leq 1\%$ VDC Float                                      |
| Temperature Compensation (Per Cell) | -3 mV/°C  |

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### SPECIFICATIONS CONT.

| INPUT                                      |   |
|--|---|
| Backfeed Protection                        | Yes   |
| Bypass Input Voltage Range                 | -20% - +15%   |
| Bypass Input Voltage Range (Selectable)    | Lower limit:<br>-10%, -20%, -30%, -40%<br>Higher limit:<br>+10%, +15%, +20%, +25% |
| Bypass Overload Protection                 | 110% - 130% Load for 5 Min<br>130% - 150% Load for 1 Min<br>>150% Load for 300ms  |
| Bypass Rated Current                       | 55.6A@ 208V   |
| Bypass Frequency Tolerance (Default)       | ±10%  |
| Bypass Frequency Tolerance (Selectable)    | ±2.5%, ±5%, ±10%, ±20%  |
| Bypass to Inverter Switch Time             | Synchronized switch: ≤1ms   |
| Current rating of bypass neutral cable (A) | 1.7 x Input Rated Current   |
| Input Connector                            | Hardwire (L1, L2, L3, N, G)   |
| Input Frequency Range                      | 40 Hz - 70 Hz   |
| Input Power Factor                         | 0.99  |
| Input Voltage                              | 208/120 V 220/127 V   |
| Input Voltage Range                        | 187 VAC - 260 VAC   |
| Phase                                      | 3-Phase   |
| Synchronization Window                     | Rated frequency: ±2 Hz  |
| Synchronization Window (Selectable)        | ±0.5 Hz - ±5 Hz   |
| THDI (%)                                   | < 4% (Full Linear Load)   |
| OUTPUT                                     |   |
| Automatic Voltage Regulation               | ±1 (Balanced Load)<br>±1.5 (100% Unbalanced Load)                                 |
| Bypass                                     | Internal Bypass (Automatic and Manual)  |
| Crest Factor                               | 3:1   |
| Efficiency                                 | 92.5% (Battery Mode)<br>93% (Normal Mode)   |
| Harmonic Distortion                        | < 1.5% at Linear Load<br>< 6% at Non-Linear Load                                  |
| Built-in Maintenance Bypass                | Yes   |

| OUTPUT CONT.                                    |  |
|---|--|
| Max Change Rate of Synch Frequency              | 1 Hz/s   |
| Max Change Rate of Synch Frequency (Selectable) | 0.1 - 5 Hz/s   |
| Maximum Capacity (VA)                           | 20,000 VA  |
| Maximum Watts Capacity                          | 20,000 W   |
| Neutral Current Capability                      | 170 %  |
| Non-Linear Load Capability                      | 100 %  |
| Outlet Type                                     | 1 - Hardwire Terminal Block  |
| Output Connector                                | Hardwire (L1, L2, L3, N, G)  |
| Output Frequency                                | 50 Hz / 60 Hz<br>(auto-sensing/configurable)                                 |
| Output Power Factor                             | 1  |
| Output Voltage                                  | 208/120 V 220/127 V  |
| Output Voltage Range                            | ±5% VAC  |
| Overload Protection                             | 110% Load, 10 min<br>125% Load, 1 min<br>150% Load, 30s<br>>150% Load, 200ms |
| Short Circuit Protection                        | 300% - 200ms   |
| Synchronization Window (Rated)                  | ±2 Hz  |
| Synchronization Window (Selectable)             | ±1 Hz - ±5 Hz  |
| Transient Voltage Response                      | ±5%  |
| Typical Transfer Time                           | 0 ms   |
| VA  | 20,000 VA  |
| Watts   | 20,000 W   |

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## SPECIFICATIONS CONT.

### MANAGEMENT AND COMMUNICATIONS

|                                |  |
|--------------------------------|--|
| Dry Contacts                   | Yes  |
| Emergency Power Off (EPO) Port | Yes  |
| LCD                            | Multifunction LCD, Touch Screen, Color                           |
| LED Status Indicators          | Rectifier, Battery, Bypass, Inverter, Output                     |
| SNMP / HTTP Remote Monitoring  | Yes - RMCARD205 pre-installed                                    |
| Communication Port/Protocols   | 1 x RS-232 DB9 Serial<br>1 x RS-485 Modbus (2-wire Twisted Pair) |
| Software (Free Download)       | PowerPanel® Business   |

### PHYSICAL

|                          |         |
|--------------------------|---------|
| Color                    | Black   |
| Form Factor              | Modular |
| Material of Construction | Metal   |
| Mounting Hardware        | Yes     |
| Rack Height              | 11U     |

### PHYSICAL DIMENSIONS

|                                   |                          |
|-----------------------------------|--------------------------|
| Physical Dimensions - WxHxD (cm)  | 48.51 x 60.71 x 77.47 cm |
| Physical Dimensions - WxHxD (in.) | 19.1 x 23.9 x 30.5 in.   |
| Weight (kg)                       | 60.69 kg                 |
| Weight (lb)                       | 133.8 lbs.               |

### SHIPPING DIMENSIONS

|                                   |                          |
|-----------------------------------|--------------------------|
| Shipping Dimensions - WxHxD (cm)  | 63.2 x 78.74 x 102.24 cm |
| Shipping Dimensions - WxHxD (in.) | 24.88 x 31 x 40.25 in.   |
| Weight (kg)                       | 91.97 kg                 |
| Weight (lb)                       | 202.75 lbs.              |

### POWER MODULE DIMENSIONS

|  |    |
|--|----|
| Individual Power Module - Rack Units   | 2U |
| Individual Battery Module - Rack Units | 3U |

### ENVIRONMENTAL

|  |  |
|--|--|
| Audible noise at 1m from surface of unit | 56 dBA   |
| Ingress Protection                       | IP20   |
| Maximum Air Exchange                     | 3.02 m3/min  |
| Online Thermal Dissipation               | 5,732.16 BTU/hr  |
| Operating Elevation                      | 0 - 10,000 ft (0 - 3,048 m)  |
| Operating Elevation Note                 | At $\leq$ 1,000m above sea level, de-rate power by 1% per 100m between 1,000m and 3,048m |
| Operating Relative Humidity              | 0 - 95 % (non-condensing)  |
| Operating Temperature                    | 32 - 104°F (0 - 40°C)  |
| Operating Temperature Note               | Battery life is halved for every 50°F (10°C) increase above 68°F (20°C)                  |
| Storage Battery Temperature Note         | Optimum battery storage between 5 - 68°F (-15 - 20°C)                                    |
| Storage Relative Humidity                | 0 - 95% (non-condensing)   |
| Storage Temperature                      | -4 - 158°F (-20 - 70°C)  |

### CERTIFICATIONS

|               |   |
|---------------|---|
| Environmental | RoHS Compliant  |
| Safety        | cTUVus<br>UL1778, CSA C22.2, No. 107.3-14<br>CFR 47 FCC Part 15, Subpart B, Class A<br>IEC62040-2 |

### WARRANTY

|                  |                         |
|------------------|-------------------------|
| Product Warranty | 1-Year Limited Warranty |
|------------------|-------------------------|

