Commander Power System

Incredible Functionality, Flexibility, and Scalability in a 5 RU, 1.0 to 14.0 Kw DC Power System

- 19", 5U rackmount shelf with integrated power distribution
- 90-250 VAC input, Power Factor Corrected
- 7 power bays accept 1000 or 2000 watt modular rectifiers
- 259 amp, 14,000 watt total max. output capacity, (222 Amp, 2,000 Watt, N+1) @ - 54 VDC
- Output temperature compensated for precise battery charging
- 18 DC circuit breaker distribution capacity, with tripped breaker alarm, 63 amp max. circuit breaker rating
- Master disconnect breakers for four battery banks, with tripped breaker alarm
- Controller with digital display of system parameters with TCP/IP interface and SNMP monitoring/logging
- Alarm contacts monitor major system functions
- Low voltage disconnect built in
- Easily configures to meet site power requirements

Complete system design and integration by Newmar to your application parameters: Rectifier configuration, installation of distribution circuit breakers, and configuration of alarms and monitors. Assembly in a relay rack with batteries and wiring also available. Let us submit a proposal on your next project.

System Power Configurations @ 48V*

<table>
<thead>
<tr>
<th>Watts Per Rectifier</th>
<th># of Rectifiers Installed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>2000</td>
<td>37A (2,000W)</td>
</tr>
</tbody>
</table>

* @ 230 VAC input, 2Kw: derate 41% @ 110 VAC input; 1Kw: derate 33% @ 110 VAC input
# Commander Power System

## AC Input
- **Nominal:** 230V
- **Voltage Range:** 90-300V (derate @ 115 input)
- **Wiring Options:**
  1. Single 208-240VAC, 3 phase, 4 wire WYE ('Y') input or
  2. 3 x separate 208-240VAC, 2 wire inputs
- **Frequency Range:** 45-65 Hz
- **Power Factor:** >0.99
- **Efficiency:** >94% (from 30-95% output power)

## DC Output
- **Voltage:** -48 volt
- **Nominal Voltage:** 48V
- **Rated Voltage:** 58V
- **Rated maximum System Output Power:** 14,000W @ -48V
- **Polarity:** Positive Earth (or specify)
- **Individual Rectifier Power:** 2000 watt
- **Amperage @ 230 vac in:** 37
- **Amperage @ 115 vac in:** 21

## DC Distribution
- **Load:** 18 breaker position capacity, available amperages (specify) 6A, 10A, 15A, 20A, 30A, and 63A with tripped breaker alarm
- **Battery:** 4 x 100A battery circuit breakers
- **Breaker Fail Detection:** Electronic fail detection on both load and battery breakers
- **Low Voltage Battery Disconnect:** 300A battery LVD installed standard, with disconnect alarm

## Monitoring & Control
Monitors all power system conditions including DC voltage, rectifier current, battery current, battery temperature, and distribution failure. Visual notification of alarm conditions by LED’s and a 4 line x 16 character alpha numeric display mounted on the front panel, with remote notification being enabled by relay contacts, TCP/IP, SNMP. It has a built-in web based configurator allowing setup of system parameters using a web browser and utilizes a USB communications port which allows for local monitoring of system operations as well as easy downloading of configuration files for multiple site installations.

## General System

### Protection:
- **Current Limit:** Adjustable to 50-100% of maximum rated current.
- **Over Temperature:** Automatic current reduction, backup shutdown protection.
- **Polarity Reversal:** Output fuse with crowbar diode.
- **Over Voltage:** Adjustable limit.
- **Input Voltage:** Auto shutdown, auto restart when correct voltage restored.
- **Input Inrush:** <2x maximum input current.
- **Input Fuses:** In phase and neutral.

### Technical Characteristics:
- **Noise:** Ripple <100Hz: <1mV rms unweighted <1mV rms psophometric
- **Voice band 100Hz-5KHz:** <5mV rms unweighted <100mV peak to peak
- **Wide band 5kHz-1MHz:** 3500V DC (VDR to chassis removed)
- **Peak to 0-20MHz:** 2100V DC
- **Input to Chassis:** Line = ±0.1%, Load = ±0.5% (no load to full load)

### Mechanical:
- **Shell:** Dimensions / Weight: 19” W x 8.75” H x 15.35” D / 35.15 Lbs. (excluding rectifier modules)
- **Rectifiers:** Dimensions / Weight: 4.25” W x 2.75” W x 11.1” D / 3.15 Lbs
- **Cooling:** Forced cooled.

### Environmental
- **Ambient Temperature:** Nominal: 25+/-5°C
- **Range:** -10°C to +70°C (maximum output power is derated above +50°C)
- **Humidity:** 5-95% RH (non-condensing)
- **Altitude:** <8,202 ft., De-rate maximum ambient temperature by 4°C per 3,280 ft. above sea level.

### Compliances
- **Safety:** EN60950
- **Electrostatic Discharge:** CISPR24
- **Radiated Radio Freq:** CISPR22
- **AC Harmonics:** EN61000-3-2
- **AC Flicker & Fluctuation:** EN61000-3-3
- **Other:** CE & RoHS compliant