

## ACM1800 DC POWER PLANT

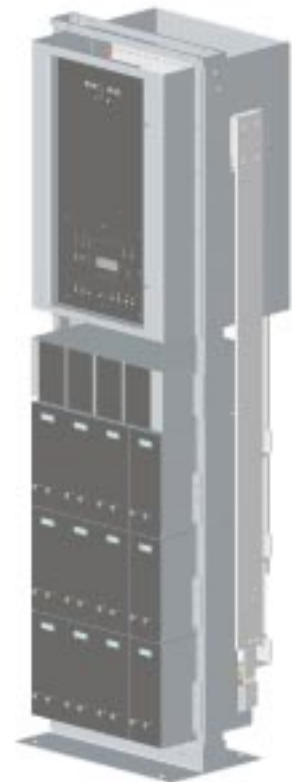
**+24Vdc, 1800 Amps**  
**-48Vdc, 80 Amps**

### DESCRIPTION

The C&D Technologies' ACM1800 is a fully integrated +24 Vdc, 1800 Amp telecom power plant in only 37 rack spaces. Even with its small size, this system is fully equipped and has ample space for customer connections. With all its features and small size the ACM1800 is ideally suited for virtually any Cellular, PCS or +24 Vdc application requiring up to 1800 Amps of +24 Vdc and up to 80 Amps of -48 Vdc power.

### QUICK FEATURE GUIDE

- Up to 1800 Amps of +24 Vdc power
  - Modular "Hot-Plug" +24 Vdc, 150 Amp rectifiers true 4500-watt rating, 6-watts/ cubic inch
- Up to 80 Amps of -48 Vdc Power
  - Modular "Hot-Plug" +24 Vdc to -48 Vdc, 20 Amp converters
- +24 Vdc AM1 type plug-in circuit breaker distribution or GJ1 breaker distribution
- -48 Vdc GMT fuse distribution or AM1 distribution
- 1800 Amp low voltage disconnect
- Full metering, controls and alarms
- Ample space for customer access and cabling
- All of the above in a fully integrated power plant that only requires 37 rack spaces.



ACM1800

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**+24Vdc, 1800 Amps**  
**-48Vdc, 80 Amps**

## ACM1800 DETAILED FEATURES:

### Extremely Compact Design

- A fully integrated power plant consisting of:
  - 1800 Amps of +24 Vdc power
  - 80 Amps of -48 Vdc power
  - Distribution
  - LVD
  - Digital meter for system volts & amps
  - Alarms local/remote

*All in only 37 rack spaces*

Internal power connections bussed for greater reliability

### Supports up to 12 HFM24BC150 Rectifiers

- True Hot-Plug
- +24 Vdc, 150 amp advanced switchmode
- 150 amps to 1800 amps

### Supports up to 4 DC to DC Converters

- True Hot-Plug
- +24 Vdc to -48 Vdc, 20 amp switchmode
- 20 amps to 80 amps

### Distribution

- +24 Vdc
  - Up to 86 positions of AM1 type snap-in circuit breakers breaker sizes up to 125 amps
  - Up to 12 GJ1 positions, reduces AM1 positions by 36
- -48 Vdc
  - Up to 10 GMT fuses – fuse sizes up to 10 amps, reduces AM1 positions by 10

### Low Voltage Load Disconnect

- 1800 Amp contactor
- LVD by-pass switch to provide for uninterrupted power if system board should ever need servicing
- Remote LVD disconnect capability for emergency load disconnect

### 208/240 Vac Auto Ranging Input

- Protected for AC surges up to 310 Vac. Rectifiers will automatically restart when input drops below 264 Vac.

### Advanced Battery Functions

- Battery temperature compensation
  - Protects against thermal runaway and increases battery life
- Battery temperature alarms
  - Absolute
  - Differential (relative to ambient)

### Advanced Plant Functions

- Equalize
- High voltage shut-down and restart
- LVD control
- LVD by-pass switch for maintenance

### LEDs:

- Major
- Minor
- High & low voltage alarms
- High temperature alarm
- Low voltage disconnect alarm (disconnected)
- Low voltage disconnect (connected)
- +24 Vdc circuit breaker or fuse alarm
- -48 Vdc fuse alarm
- DC to DC converter fail alarm
- Rectifier fail alarm
- Equalize mode

### Form C Relay Contacts:

- Major (2 sets)
- Minor
- High & low voltage alarms
- High temperature alarm
- Low voltage disconnect alarm
- +24 Vdc circuit breaker or fuse alarm
- -48 Vdc fuse alarm
- DC to DC converter fail alarm
- Rectifier fail alarm

### Test Jacks

- Individual rectifier
  - Output volts
  - Output current
- System
  - Load volts, 24/48 V
  - Load currents, 24/48 V

Part number 110-4191L-1A

ACM 1800 includes all features described above. Rectifiers, converters, circuit breakers, fuses, and temperature compensation kit are NOT included and must be ordered separately.

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**+24Vdc, 1800 Amps**  
**-48Vdc, 80 Amps**

## ACM1800 PLANT SPECIFICATIONS

### Physical Specifications

|        |                      |
|--------|----------------------|
| HEIGHT | 68.25" (173.38cm)    |
| WIDTH  | 23" Relay Rack Mount |
| DEPTH  | 21.34" (54.20cm)     |
| WEIGHT | 250 lbs. (113.48kg)  |

### Environmental Specifications

|                       |   |
|-----------------------|---|
| OPERATING TEMPERATURE | -40 C to +55C (-40 F to +131 F)             |
| STORAGE TEMPERATURE   | -40 C to +85 C (-40 F to +185 F)            |
| HUMIDITY              | 0 to 95 % Non-Condensing                    |
| ALTITUDE              | 7,000 ft. (2,133m)                          |
| HEAT DISSIPATION      | 30,000 BTU/Hr. Maximum @ 1800 Amps @ 30 Vdc |
| COOLING               | Forced Air – Individual Rectifiers          |
| SEISMIC               | UBC Zone 4 w/Bracing                        |
| AUDIBLE NOISE         | <62 dBa @ 2 ft. in Front of Plant           |

### Electrical Specifications

|                                |  |
|--------------------------------|--|
| EMI                            | FCC Part 15, Subpart J for Class A Equipment |
| LIGHTNING                      | ANSI/IEEE C62.41C Class B3                   |
| ELECTRICAL NOISE: Voice Band   | ≤ 32 dbrnc                                   |
| ELECTRICAL NOISE: Wide Band    | ≤ 40mv rms: DC to 20 Mhz                     |
| ELECTRICAL NOISE: Peak to Peak | ≤ 350mv Peak to Peak @ 20 Mhz Band Width     |

### Power Specifications

|  |   |            |                     |
|--|---|------------|---------------------|
| INPUT VOLTAGE                                    | 183-264 Vac, Single Phase, 45-65 Hz: Auto Ranging with Safe Operation up to 310 Vac.<br>Rectifiers will automatically restart when input drops below 264 Vac. |            |                     |
| INPUT AC SERVICE CIRCUIT<br>BREAKER REQUIREMENTS | INPUT   | CABLE SIZE | BREAKER             |
|  | Individual Rectifier AC Inputs  | 8 Gauge    | 40 Amp Delayed Trip |
| OUTPUT MAX. POWER                                | 54,000 watts: 1800 Amps @ -30 Vdc   |            |                     |

# ACM1800 DC POWER PLANT

**+24Vdc, 1800 Amps**  
**-48 Vdc, 80 Amps**

## RECTIFIER SPECIFICATIONS

### Physical Specifications

|        |                   |
|--------|-------------------|
| HEIGHT | 12.25" (31.12cm)  |
| WIDTH  | 5.00" (12.7cm)    |
| DEPTH  | 14.50" (36.83cm)  |
| WEIGHT | 25 lbs. (11.34kg) |

### Environmental Specifications

|                       |  |
|-----------------------|--|
| OPERATING TEMPERATURE | -40 C to +55C (-40 F to +131 F)          |
| STORAGE TEMPERATURE   | -40 C to +85 C (-40 F to +185 F)         |
| HUMIDITY              | 0 to 95 % Non-condensing                 |
| ALTITUDE              | 7,000 ft. (2,133m)                       |
| HEAT DISSIPATION      | 2500 BTU/Hr. Maximum @ 150 Amps @ 30 Vdc |
| COOLING               | Forced Air – Individual Rectifiers       |
| SEISMIC               | Zone 4                                   |
| AUDIBLE NOISE         | <62 dBa @ 2 ft. in Front of Plant        |

### Electrical Specifications

|                                |  |
|--------------------------------|--|
| Total Harmonic Distortion      | <5% THD, Meets IEC 555                       |
| EMI                            | FCC Part 15, Subpart J for Class A Equipment |
| LIGHTNING                      | ANSI/IEEE C62.41C Class B3                   |
| ELECTRICAL NOISE: VOICEBAND    | ≤ 32 dbrnc                                   |
| ELECTRICAL NOISE: WIDEBAND     | ≤ 40mv rms: DC to 20 Mhz                     |
| ELECTRICAL NOISE: Peak to Peak | ≤ 350mv Peak to Peak @ 20 Mhz Band Width     |

### Power Specifications

|                   |   |
|-------------------|---|
| INPUT VOLTAGE     | 183-264 Vac, Single Phase, 45-65 Hz:<br>Protected for AC surges up to 310 Vac.<br>Rectifiers will automatically restart when input drops below 264 Vac. |
| INPUT CURRENT     | 22.0 Amps @ 240 Vac: @ Full Load, 30 Vdc<br>25.0 Amps @ 208 Vac: @ Full Load, 30 Vdc  |
| OUTPUT VOLTAGE    | Float: 24 to 28 Vdc<br>Equalize: 24 to 30 Vdc   |
| OUTPUT REGULATION | +/- 0.5% for 0 to 100% of Full Load within the Specified Input Voltage and Frequency Range  |
| OUTPUT CURRENT    | 150 Amps Max  |
| OUTPUT MAX POWER  | 4500 watts: 150 Amps @ 30 Vdc   |
| CURRENT LIMIT     | Adjustable from 0 to 150 Amps Max   |
| LOAD SHARE        | +/- 10% from 10% to 100% of Full Load Rating  |
| POWER FACTOR      | >.98  |
| EFFICIENCY        | >86%  |

### Protection

|                       |                             |
|-----------------------|-----------------------------|
| INPUT PROTECTION      | Two Pole AC Circuit Breaker |
| OUTPUT PROTECTION     | Circuit Breaker             |
| HIGH VOLTAGE SHUTDOWN | Adjustable to 31 Vdc        |
| TURN-ON               | Soft-Start                  |

### Agencies

|  |                 |
|--|-----------------|
|  | UL/CSA/ISO 9001 |
|--|-----------------|

#### POWERCOM DIVISION

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