

**EMC[®] CLARiiON[®]
DC-Powered AX4-5 Series Enclosures****Installation and Operation Guide**

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This document describes the few exceptions in which DC-powered AX4-5 series systems differ from their AC counterparts. Topics include:

- ◆ Power considerations..... 2
- ◆ Cabling DC power and powering the system up and down..... 4

In general, you configure, operate, and maintain DC-powered systems as you would the more common AC systems except DC storage systems do not include standby power supplies (SPS).

For the most up-to-date and complete set of AX4-5 series documentation, visit the Technical Documentation and Advisories sections of the EMC Powerlink[®] website, <http://powerlink.emc.com>.

**IMPORTANT**

Systems with DC power are intended for use in environments with redundant and highly available power sources (for example, "Central Office" grade power within the telecommunications industry), and DC power provided by the site must meet this requirement. The sudden loss of all incoming DC power to a storage system may cause unexpected abnormal behavior of the storage system and loss of write-cache data.

Power considerations

Power distribution must support the number of outlets required for the device (2 per enclosure) and the device power rating. Table 1 lists the power specifications for AX4-5 series disk processor and disk array enclosures

Table 1 Disk processor and enclosure (AX4-5 DPE-AX and DAE-AX) DC ratings

Requirement	Description (note all ratings assume fully configured systems)	
	AX4-5 DPE-AX	AX4-5 DAE-AX
DC line voltage	-36 to -72 V DC (Nominal -48 V or -60 V power systems)	
Device rating maximum	12.0 A at -36 V DC, 6.0 A at -72 V DC	10.0 A at -36 V DC, 5.0 A at -72 V DC
DC line current (operating maximum)	8.5 A max at -36 V DC, 6.4 A max at -48 V DC	6.5 A max at -36 V DC, 4.9 A max at -48 V DC
Power consumption (operating maximum)	306 W max	235 W max
Heat dissipation (operating maximum)	1.10 x 10 ⁶ J/hr, (1,050 Btu/hr) max	8.41 x 10 ⁵ J/hr, (800 Btu/hr) max
In-rush current	25 A peak, per requirements in EN300 132-2 Sect. 4.7 limit curve	
DC protection	25 A fuse in each power supply	
DC inlet type	Positronic Industries PLB3W3M1000	
Mating DC connector	Positronic Industries PLB3W3F7100A1	
Ride-through time	2.5 ms min at -48 V input	
Current sharing	±10% of full load, between power supplies	

Power cords

Figure 1 and Table 2 describe power cords provided by EMC.

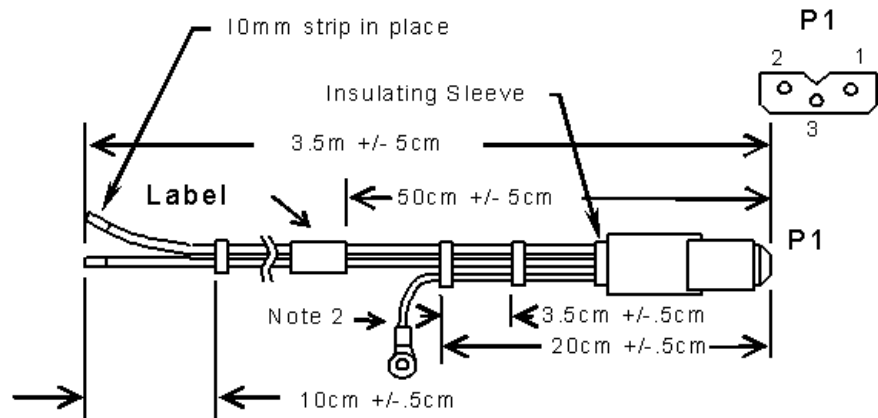


Figure 1 P3-pin Positronic DC power cord

Table 2 Cabling pinout

P1 designation	Description	Wire color
1	DC positive (+)	Black
2	DC negative (-)	Brown
3	Chassis ground	Green/Yellow

Cablings DC power and powering the system up and down

Connect each power supply to a DC power source. See Figure 2.

For high availability, be sure to connect the A and B power cords in each enclosure to different power source feed circuits.

Ground lugs on the back of each DC power supply provide additional grounding sources for NEBS-compliant environments.

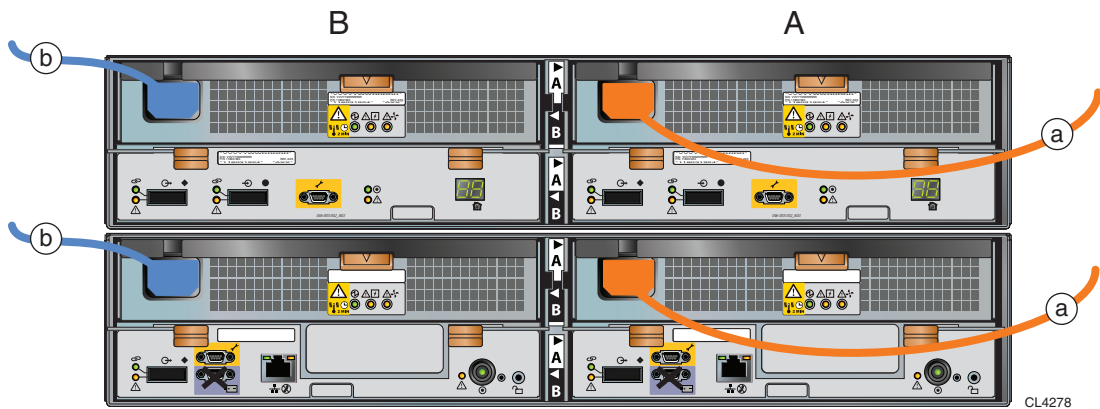


Figure 2 DC power cord connection



IMPORTANT

Each DAE-AX powers up immediately and begins blinking once connected to a live power source.

Powering up a DC-powered AX4-5 series system

Press and release the power buttons (one per storage processor) on the DPE-AX.

Powering down a DC-powered AX4-5 series system

Follow these instructions to power down AX4-5 series storage systems with DC power:

1. Stop all I/O activity to the storage system.

Stopping the I/O allows the SP to destage cache data, and may take some time. The length of time will be based on criteria such as the amount of cache, the amount of data in the cache, the type of data in the cache, and the target location on the disks, but it is typically less than one minute.

2. If the server connected to the storage system is running a UNIX operating system, unmount the file systems.
3. On the disk processor enclosure, push and release the power button on each storage processor.

Allow the power supply to complete its shutdown sequence before unplugging or removing the power source. An orderly shutdown can take several seconds. We recommend that you wait two minutes before continuing.

4. If you need to power down any DAE-AX, disconnect the power cords.

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