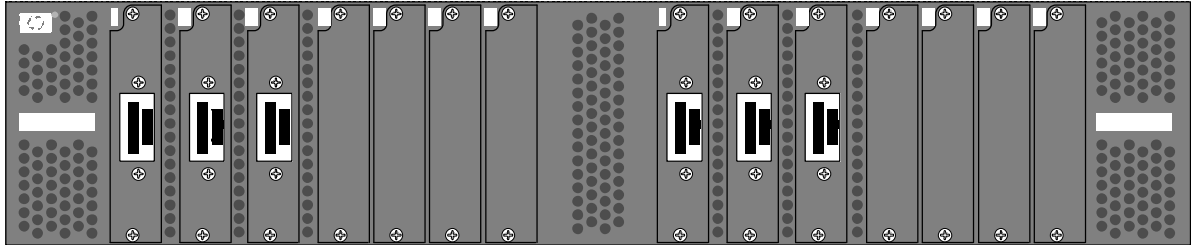# QuickSpecs HP BladeSystem Breaker Panel

Overview

The HP BladeSystem Breaker Panel is a dual input panel, where each input is rated for 240Amp, -36VDC to -72VDC. There are seven breakers on each input of the panel; where the first three are pre-configured with 80Amp breakers and the remaining four positions are available for 30Amp breaker options.

HP BladeSystem Breaker Panel

At A Glance

- HP BladeSystem Breaker Panel features:
    - Two power inputs, each rated for 240Amps, -36 to -72VDC.
    - Breaker slots A1-A3 and B1-B3 are rated for 80Amps.
    - Breaker slots A4-A7 and B4-B7 are rated for 50Amps.
    - Each input provides three pre-installed 80Amp breakers
    - Four remaining positions are for 30Amp breaker options
- Form Factor:
    - Standard RETMA 2 EIA
- Warranty:
    - The HP BladeSystem Breaker Panel is protected by HP Services and a worldwide network of resellers and service providers. 1-year parts,1-year Labor and 1-year on-site (next busy day) limited global warranty. Certain restrictions and exclusions apply.

QuickSpecs HP BladeSystem Breaker Panel

Overview

Models

HP BladeSystem Breaker Panel   AH355A

NOTE: Ships with four blank filler panels on each input side. Blanking panels must be installed in any unused slots.

Upgrade Options

HP BLc 2.0M Cable Option   AH392A

The BLc 2.0m cable option is used when connecting the lower c7000 in Seismic Cabinet positions U1-10 to the Breaker Panel in position U35-36.

This cable kit consists of six red -48VDC and six black RTN 4AWG cables 2.0m long with lugs attached on both ends, and individually labeled for proper installation.

HP BLc 1.3M Cable Option   AH393A

The BLc 1.3m cable option is used when connecting the upper c7000 in Seismic Cabinet positions U14-23 to the Breaker Panel in position U32-33.

This cable kit consists of six red -48VDC and six black RTN 4AWG cables 1.3m long with lugs attached, individually labeled for proper installation.

HP BLc 30 Amp Circuit Breaker   AM336A

The BLc 30 Amp circuit breaker is recommended for the HP ProLiant DL-385 G5 CG and HP StorageWorks MSA2324 CG.

The 30 Amp circuit breaker kit consist of two 30 Amp breakers.

QuickSpecs HP BladeSystem Breaker Panel

Product Highlights

Key Features   **Features of the HP BladeSystem Breaker Panel:**

The HP BladeSystem Breaker Panel is a dual input panel, where each input is rated for 240Amp, -36VDC to -72VDC. There are seven breakers on each input of the panel; where the first three are pre-configured with 80Amp breakers and the remaining four positions are available for 30Amp breakers.

Inputs   Rated inputs for HP BladeSystem Breaker Panel
- Nominal Voltage: -48VDC / -60VDC
- Operating Voltage: -36VDC / -72VDC
- Number of Inputs: 2
- Max Input Rating: 240Amps per input

Outputs   Rated outputs for HP BladeSystem Breaker Panel
- Max Output Load per input: 240Amp continuous
- Max Output Load per Breaker Panel: 480Amp continuous

Breaker Slots   Breaker Position Rated outputs for HP BladeSystem Breaker Panel
- Side A Input
  - Slots A1 – A3   80Amp
  - Slots A4 – A7   50Amp
- Side B Input
  - Slots B1 – B3   80Amp
  - Slots B4 – B7   50Amp

Grounding   Grounding is provided from Breaker Panel chassis to customer supplied earth ground. Supplied ground cable connects on the rear of the Breaker Panel. Ground is sufficient to protect from full input power. The grounding terminal studs are two 3/8″-16 post terminations with 1.0″ on center.

Input Terminals   The power input terminals are two 3/8″-16 thread post terminations with 1.0″ on center.. Four input terminals are provided for -48VDC and RTN for both inputs A and B.

Output Terminals   There are two types of output terminals provided for the 80Amp and 50Amp terminals.
- 80Amp terminals, outputs A1-A3 & B1-B3 – two ¼″-20 post terminations with 5/8″ on center.
- 50Amp terminals, outputs A4-A7 & B4-B7 – #10-32 post termination

Safety Cover   A transparent safety cover is provided to protect the input and output terminals.

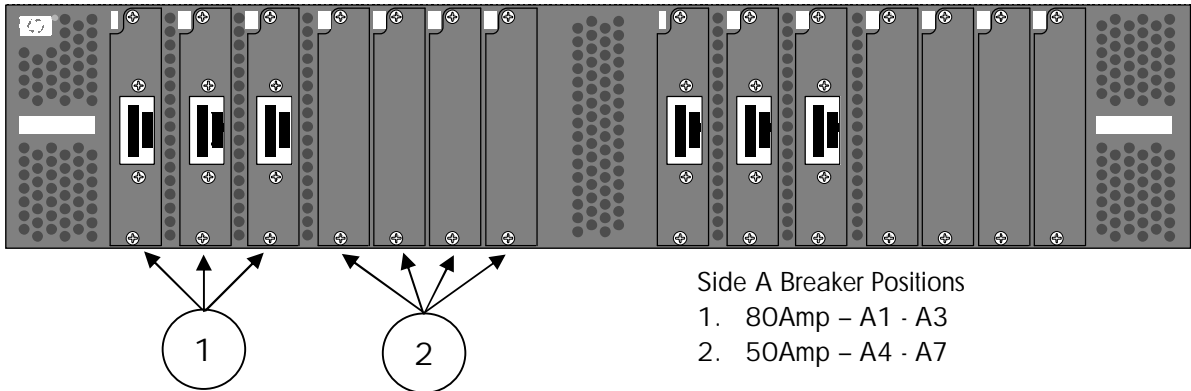**Product Kit Contents**   HP BladeSystem Breaker Panel kits contains

- Breaker Panel
    - o 6 80Amp breakers are pre-installed
    - o Safety cover
- Rack Mounting kit
    - o Rack mounting rails are specific for the HP Seismic Cabinet, 36U, 1m depth – AH343A
- Ground cable – 4/0AWG cable with lugs attached
    - o Ground cable is specific for the HP Seismic Cabinet, 36U, 1m depth – AH343A
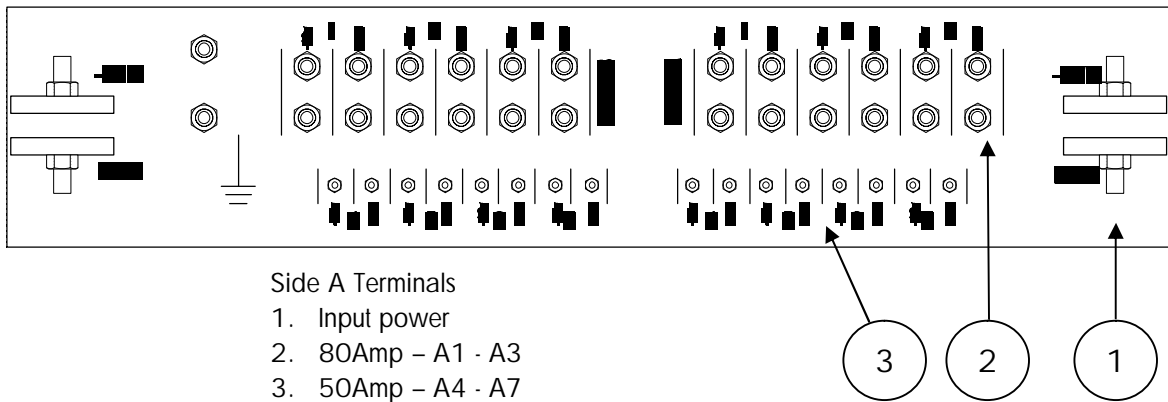
Density   2 EIA rack mount component

Front View of HP BladeSystem Breaker Panel

Side A Breaker Positions
1. 80Amp – A1 - A3
2. 50Amp – A4 - A7

Rear View of HP BladeSystem Breaker Panel

Side A Terminals
1. Input power
2. 80Amp – A1 - A3
3. 50Amp – A4 - A7

QuickSpecs HP BladeSystem Breaker Panel

Overview

This section defines the necessary DC cabling options for HP equipment configured with the Breaker Panel.

Cabling Options

HP BladeSystem c7000 Carrier-Grade enclosure   AH345A
Either the HP BLc 2.0M Cable Option – AH392A or HP BLc 1.3M Cable Option – AH393A cabling kit
must be ordered to connect the BladeSystem c7000 CG enclosure to the breaker panel output terminals A1-
A3 & B1-B3. Each cable kit consists of six red -48VDC and six black RTN 4AWG cables 2.0m or 1.3m
long with lugs attached on both ends, and individually labeled for proper installation.

HP StorageWorks MSA2324 Carrier-Grade Storage Array   AM337A
Two DC cable assemblies come with the MSA2324-CG and they connect to one output terminal on each
side A and side B on the 50Amp rated positions, A4-A7 & B4-B7. The 10AWG DC cables consist of a
red -48VDC, black RTN, and Green GRND cables assembled with a connector on one end that connects to
the MSA2324-CG DC power supply and the other end of the red/black cables connect to the Breaker
Panel and the green cable connects to customer supplied earth ground. The red/black cables are 2.4m
(8ft) long and the green cable is 68.5cm (27in). The red/black cables have 3/16″ lugs attached and the
green cable has ¼″ lug attached.
The HP BLc 30 Amp Circuit Breaker – AM336A option kit must be ordered to provide power to the
associated Breaker Panel output terminals.

HP ProLiant DL385 G5 Carrier-Grade Server   AH410A
AH410A #001: Two DC cable assemblies come with the ProLiant DL385 G5 CG AH410A with the
#001 option, and they connect to one output terminal on each side A and side B on the 50Amp rated
positions, A4-A7 & B4-B7. The 10 AWG DC cables consist of a blue -48VDC, black RTN, and Green
GRND cables assembled with a connector on one end that connects to the ProLiant DL385 G5 CG DC
power supply and the other end of the blue/black cables connect to the Breaker Panel and the green cable
connects to customer supplied earth ground. The blue/black/green cables are 4.0m (13.1ft) long. The
blue/black cables have 3/16″ lugs attached and the green cable has ¼″ lug attached.

AH410A #0D1: The ProLiant DL385 G5 CG AH410A with #0D1 option includes the same cables as the
#001option and is also factory integrated in the HP Seismic Rack and cabled to the Breaker Panel.

The HP BLc 30 Amp Circuit Breaker – AM336A option kit must be ordered to provide power to the
associated Breaker Panel output terminals.

QuickSpecs HP BladeSystem Breaker Panel

Service and Support, HP Care Pack, and Warranty Information

Warranty

Protected by HP Services and a worldwide network of HP Authorized Channel Partners. 1-year parts, 1-year Labor and 1-year on-site (next business day 9-5) limited global warranty. Certain restrictions and exclusions apply.

Service and Support

The HP BladeSystem Breaker Panel is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners. Hardware diagnostic support and repair is available for three years from date of purchase. Additional support may be covered under the warranty or available for an additional fee. Enhancements to warranty services are available through HP Care Pack services or customized service agreements.

HP services provide total care and support expertise with committed response designed to meet your IT and business needs.

The HP Care Pack service for ProLiant BL c-Class (or p-Class) server blades, cover the server blade and all HP branded hardware options qualified for the server, purchased at the same time or afterwards, internal to the server.

To fully capitalize on your HP BladeSystem servers' capabilities requires a service partner who thoroughly understands your server technology and systems environment. HP Services, an industry leader in provision of multi vender support solutions provides a range of support services designed to meet the varying needs of business. Whether an SMB or large global corporation HP has a HP BladeSystem server support offer to help you speedily deploy and maximize system uptime.

Recommended Service - simplify ProLiant solution implementation, maintenance, and management.
- **Support** - 3-Year, 24x7, Same Business Day, 4-Hour response coverage
- **Deployment Service** - Installation and Start Up for HP BladeSystem Infrastructure

Enhanced Service - optimize service level to increase IT performance and availability.
- **Support** -1-Year HP Proactive BladeSystem Service
- **Deployment Service** - Enhanced Network Installation and Start-up for HP BladeSystem Switches

Installation & Start-Up service for HP BladeSystem Infrastructure plus HP BladeSystem Enhanced Network Installation and Start-UP as per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excluding HP holidays.

For a complete listing of service offerings and information visit:
http://www.hp.com/services/bladesystemservices
http://www.hp.com/go/proliant/carepack

QuickSpecs HP BladeSystem Breaker Panel

Technical Specifications

HP BladeSystem Breaker Panel

Dimensions	Height	3.47 in (8.81 cm)	
	Width	17 in (43.18 cm)	
	Depth	30.65 in (77.85 cm)	
Weight	Maximum	45.5 lbs (20.6 kg)	
Temperature Range*	Operating***	-5° to 50° C (23° to 122° F)	
	Non-Operating	-40° to 70° C (-40° to 158° F)	
Relative Humidity	Operating***	5% to 90%	
	Non-Operating**	5% to 93%	
Altitude***	Operating	40°C (104°F) to 1800m (6,000ft)	
		30°C (86°F) to 4000m (13,000ft)	

* All temperature ratings shown are for sea level. No direct sunlight allowed.

**Non-operating maximum humidity of 93% is based on a maximum temperature of 40° C (104° F).

***Telcordia GR-63-CORE requirements for frame-level equipment.

Environment-friendly Products and Approach   End-of-life Management and Recycling

Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

QuickSpecs HP BladeSystem Breaker Panel