

March 2006

Aftermarket Solutions, Ref. No. [129]

Panelboards

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Westinghouse PRL3

Product Description

Panelboards and switchboards are enclosed assemblies for lighting and distribution that accept incoming power and consist of a series of circuit breakers and/or fusible switches.

These devices protect each circuit by providing overcurrent and short circuit protection.

4

Product History

In 1994, Eaton Corporation acquired the Distribution and Control Business Unit (DCBU) of Westinghouse and integrated it with their Cutler-Hammer® business unit forming a powerful new combination. This product history tracks the evolution of panelboard and switchboard products for both manufacturers.

In the 1920s, prior to the development of circuit breakers, Westinghouse sold panelboards designed for main and branch circuit fuses. Circuit breakers were first introduced in 1927 and put Westinghouse in the forefront of circuit breaker technology. A few years later the first Westinghouse “NOFUSE” circuit breakers were introduced. “NOFUSE” panelboards were initially available in ratings up to 225 amperes at 250 volts. Panelboards were designed at higher ratings as circuit breakers’ ratings became available. By 1958, panelboards were available at ratings up to 800 amperes and 600 volts.

The most significant panelboard types were the CDP and FDP panels. For more than 34 years, these two types encompassed most Westinghouse molded case circuit breakers and fusible switches.

In 1962, Eaton’s electrical business entered the panelboard and switchboard market with the purchase of Mullenbach. Soon after the Mullenbach acquisition, Cutler-Hammer entered into an agreement with Westinghouse to supply breakers and fusible devices for panelboards and switchboards, and Eaton also began manufacturing Westinghouse-type panelboards under the agreement. This relationship made in the early 1960s provided users of both trade name products access to aftermarket service for add-on branch devices and hardware. Classic Cutler-Hammer panelboards and switchboards were designed and listed for use with Westinghouse breakers.



Cutler-Hammer NFB



Westinghouse FDP



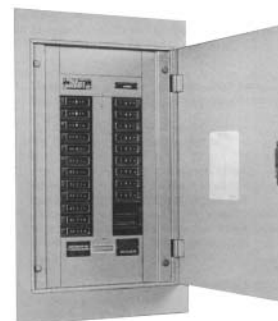
Cutler-Hammer MP40



Westinghouse Pow-R-Line 3



Cutler-Hammer CHB



Westinghouse WEB



Cutler-Hammer EE



Westinghouse CDP

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Product History (Continued)

In 1988, Westinghouse redesigned the panelboard and switchboard line to incorporate the new Series C® design breakers. This new design became a true family of products. These new panelboards and switchboards became today's Pow-R-Line family

which are manufactured in state-of-the-art facilities strategically located throughout the United States.

Eaton unique Satellite Plants support aftermarket services for all current Pow-R-Line panelboard and switchboard products. Aftermarket service

for out-of-production panelboards and switchboards for both the classic Westinghouse and Cutler-Hammer designs is supported by the **Aftermarket Center in Sumter, SC** (see **Page 4-21**) and is staffed with experienced and knowledgeable representatives.

Product History Time Line

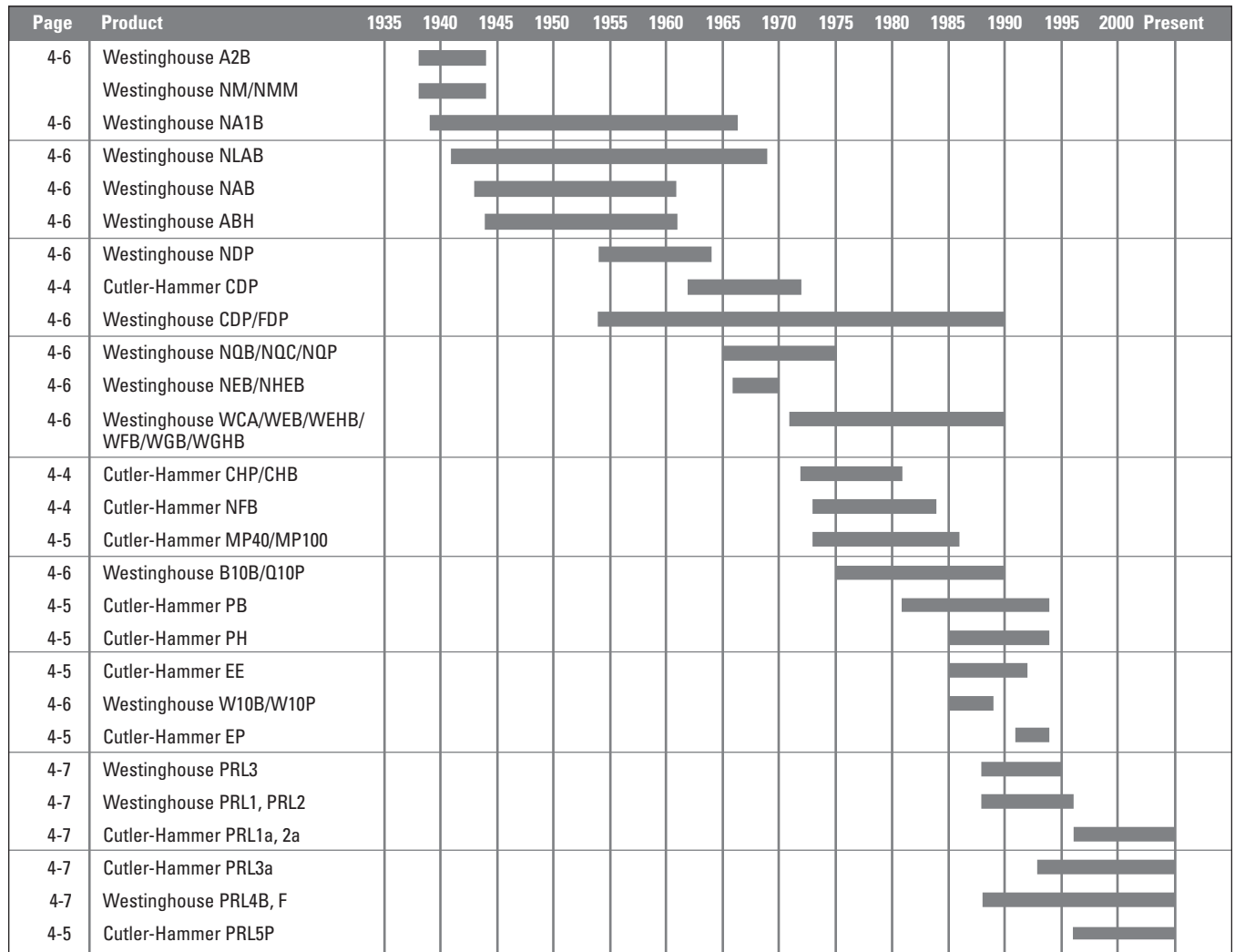


Figure 4-1. Product History Time Line

Replacement Capabilities

How to Select Replacement Breakers

A complete line of new, UL® listed products, physically and electrically interchangeable molded case circuit breakers is offered by Eaton.

To properly select the breaker for your existing panelboard:

1. Identify the panel type and existing branch breaker.
2. Select the appropriate breaker from the direct replacement solution column. As shown, three options are available.

Option 1: Series C breakers are available as direct replacement for installation in Cutler-Hammer panelboards. They are available at your local distributors and are the most economical solution.

Option 2: Original, but still-in-production breakers, (sometimes referred to as replacement breakers) are available from Cutler-Hammer national warehouses. These are identical to the existing branch breakers.

Option 3: Panelboard replacement breakers, available for out-of-production molded case breakers, are physically and electrically interchangeable with the existing breaker. Available in 3-pole only. Refer to **Pages 3-64** through **3-70** for further information.

3. For additional information, contact Avery Creek, NC Technical Resource Center, **1-800-356-1243**.

Original Cutler-Hammer Panelboard Breaker Replacement Chart

Table 4-1. Original Cutler-Hammer Panelboard Breaker Replacement Chart

Cutler-Hammer Panelboard Type	Original Branch Circuit Breaker	Replacement Solutions		
		New Panelboard Type	New Breaker	Panelboard Replacement Breaker ^①
CHP ^②	CH	PRL1a	CH	—
CHB ^②	CHB	PRL1a	CHB	—
NPLAB ^②	P	PRL1a	—	—
NLAB ^②	QL	PRL1a	—	—
NA1B ^②	E EA	PRL3a PRL3a	—	REH REH
NH1B ^②	EH	PRL3a	—	REH
NDP ^②	E EA	PRL3a PRL3a	—	REH REH
HNDP ^②	EH	PRL3a	—	REH
NFB	EB	PRL3a or PRL4B	EHD	—
	EBH		EHD	—
	EHC		FD	—
	EC		EHD	—
	CA		CA	—
	CC		CC	—
	FB		FD	—
	HFB		FD	—
	FD		FD	—
	FC		FD	—
	FH		HFD	—
	FS		FD	—
	HFC		HFD	—
	CCH		—	—
	CHH		CHH	—
CDP ^③	E	PRL4B	—	REH
	EA		—	REH
	EH		—	REH
	EB		EHD	—
	EBH		EHD	—
	F		—	RHF
	FA		—	RHFA
	HF		—	RHF
	HFA		—	RHFA
	FB		FDB	—
	HFB		FD	—
	CA		CA	—
	DA		DK	—
	JA		KDB	—
	KA		KD	—
	HKA		HKD	—
	HK		—	RHK
	HKL		—	RHKL
	LA		LD	—
	HLA		LD	—
	LAB		LDB	—
	LM		—	RHLM
	HLM		—	RHLM
	MA		MDL	—
	HMA		MDL	—
	NB		ND	—
	HNB		ND	—
	CC		CC	—
	CCH		—	—
	CHH		CHH	—

^① New breakers which are a direct physical and electrical replacement for out-of-production breakers. Available in 3-pole only. See **Pages 3-64** through **3-70** for further information.

^② Connectors not available.

^③ Not rated for 100% rated breakers.

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Replacement Chart

Original Cutler-Hammer Panelboard Breaker
Replacement Chart (Continued)Table 4-1. Original Cutler-Hammer Panelboard Breaker
Replacement Chart (Continued)

Cutler-Hammer Panelboard Type	Original Branch Circuit Breaker	Replacement Solutions	
		New Panelboard Type	New Breaker
MP40 ①	CC	PRL4B	CC
	CCH		—
	CHH		CHH
	EB		EHD
	EBH		EHD
	EC		EHD
	EHC		FD
	FB		FDB
	HFB		FD
	FC		FDB
	HFC		HFD
	FH		HFD
	FS		FD
	JA		KDB
	JB		JB
	JS		HJD
	JH		HJD
	JL		JDC
	KA		KD
	HKA		HKD
	KB		JD
	HKB		JD
	KS-D		KD
	KH-D		KD
	DA		DK
	LA		LD
	HLA		LD
	HLA		LD
	LAB		LDB
	LB		KD
	LBB		KDB
	HLB		KD
	LC		LD
	LS (A)		LD
	LH (A)		HLD
	MA		MDL
	HMA		MDL
	MC		MDL
	HMC		MDL
	MS		MDL
	MH		MDL
	NB		ND
	HNB		ND
	NC		ND
	HNC		ND
	NS		ND
	NH		ND
MP100	M50 Fusible Switch	PRL4F	M50 Fusible Switch
PH ②	CH	PRL3a	CH
	CHB		CHB
	CC		CC
	CCH		CCH
	CHH		CHH
	EB		EHD
	EBH		EHD
	EC		EHD
	EHD		EHD
	FC		FD
	FS		FD
	FH		HFD
	FD		FD
PB ②③	CH	PRL1a	CH
	CHB		CHB

① See also Page 4-11.

② See also Page 4-10.

③ Connectors not available.

Plug-in Power Panelboards and Switchboards

Table 4-2. Plug-in Power Panelboards and Switchboards

Cutler-Hammer Panelboard Type	Original Branch Circuit Breaker	Replacement Solutions	
		New Panelboard Type	New Breaker
EE ④⑤	FS	PRL5P	FD
	FH		HFD
	FL		HDC
	JS		JD
	JH		HJD
	JL		JDC
	KS		KD
	KH		HKD
	LS		LD
	LS(A)		LD
	LS(E)		LD
	LH(B)		HLD
	LH(A)		HLD
	LL(E)		LDC
	LS(B)		LD
	LH(E)		HLD
	MS		MDL
	NS		ND
	MH		—
	CC		CC
	CCH		—
	CHH		CHH
EP ④⑥	FS	PRL5P	FD
	FH		HFD
	FL		FDC
	JS		JD
	JH		HJD
	JL		JDC
	KS		KD
	KH		HKD
	LS		LD
	LS(A)		LD
	LS(E)		LD
	LH(B)		HLD
	LH(A)		HLD
	LL(E)		LDC
	LS(B)		LD
	LH(E)		HLD
	MS		MDL
	NS		ND
	MH		—
	NH		HND
	CC		CC
	CCH		—
	CHH		CHH

④ Not rated for 100% rated breakers.

⑤ See also Page 4-12.

⑥ See also Page 4-13.

Original Westinghouse Panelboard Breaker Replacement Chart

Table 4-3. Original Westinghouse Panelboard Breaker Replacement Chart

Westinghouse Panelboard Type	Existing Branch Circuit Breaker	Replacement Solutions		
		New Panelboard Type	New Breaker	Panelboard Replacement Breaker ^①
Panelboards Manufactured Between 1937 and 1988				
ABH ^② A2B ^② B10B ^② B10B-LX ^② B10B-LXX ^② B65B ^② CDP/HCDP ^{②③}	E E BA BA BA HBA E, EA, EH, F, FA	PRL3a PRL3a PRL1a PRL1aLX PRL1aLX PRL1a PRL4B	— — BAB BAB BAB — —	REH REH — — — HBAW, HBAX REH, RHF, RHFA
CDP/HCDP ^{③④}	EB, EHB, EHD, FB, HFB, FDB, FD, HFD, FDC FB-P TRI-PAC JB, KB, HKB, JDB, JD, HJD, JDC CA, CAH, HCA DA, LB, LBB, HLB ^⑤ JA, KA, HKA, DK, KD, HKD, KDC LA, LAB, HLA (400 Amperes) LA-P TRI-PAC LA, LC, HLA (600 Amperes) MA, HMA, MC, HMC LCL NB, HNB, NC, HNC NB-P TRI-PAC®	PRL4B	EHD, FDB, FD, HFD, FDC FB-P TRI-PAC JDB, JD, HJD, JDC ED, EDH, EDC ^⑤ DK, KD, HKD, KDC LD, HLD LA-P TRI-PAC LD, HLD, LDC MDL LCL ND, HND NB-P TRI-PAC	Contact your local Eaton Field Sales office.
FDP ^⑥	Fusible Switches	PRL4F	—	Fusible Switches
H10P ^② H10B ^② NAB ^② NA1B ^②	HQP BA E E	PRL2a PRL2a PRL3a PRL3a	HQP BAB — —	— — REH REH
NDP ^② NEB ^② NHDP ^② NHEB ^②	E, EA, EAH EA EH EH, FA	PRL3a PRL3a PRL3a PRL3a	— — — —	REH REH REH REH, RHFA
NH1B ^② NLAB ^② NLAB-LX ^② NLAB-AB ^②	E-277 QC QC QC	PRL2a PRL1a PRL1aLX PRL3a	— — — —	REH — — —
NLAB-ABH ^② NPLAB ^② NPLAPQ ^② NQC ^②	QC QP QP QC	PRL3a PRL1a PRL1a PRL1a	— HQP HQP —	— — — —
NQB ^② NQP ^② Q10P ^② Q22P ^②	BA QP QP QPH	PRL1a PRL1a PRL1a PRL1a	BAB HQP HQP QPHW	— — — —
Q22B ^② Q65P ^② W10B ^② W10P ^②	QBH HP BA HQP	PRL1a PRL2a PRL1a PRL1a	QBHW QHPW BAB HQP	— — — —
W22B ^② W22P ^② WCA WEB	QBH QPH CA EB	PRL1a PRL1a PRL3a PRL3a	QBHW QPHW CA EB, EHD	— — — —
WEHB WFB WGB ^② WGHB ^②	EBH FB GB GHB	PRL3a PRL3a PRL2a PRL2a	EBH, EHD FB, FDB GB GHB	— — — —

^① Not rated for 100% rated breakers. Available in 3-pole only. See **Pages 3-64** through **3-70** for further information.

^② Connectors not available.

^③ See also **Page 4-8**.

^④ Only breakers of the same frame size can be installed across from each other (i.e., in the same horizontal plane). For other configurations contact the Aftermarket Center in Sumter, SC (see **Page 4-21**).

^⑤ KD breakers can be mounted across from LB breakers if a TAD3 line side adapter is utilized. All hardware works with this configuration.

^⑥ See also **Page 4-9**.

Original Westinghouse Panelboard Breaker Replacement Chart (Continued)

Table 4-3. Original Westinghouse Panelboard Breaker Replacement Chart (Continued)

Westinghouse Panelboard Type	Original Branch Circuit Breaker	Replacement Solutions		
		New Panelboard Type	New Breaker	Panelboard Replacement Breaker
Panelboards Manufactured After 1988				
PRL1 ①	BAB, QBHW HQP, QPHW	PRL1a ①	BAB, QBHW	— —
PRL2 ①	GB, GHB, GHBS	PRL2a ①	GB, GHB, GHBS-D	—
PRL3 ②	BAB, QBH GB, GHB, GHBS EHD, FD, FDB, HFD, FDC ED, EDH, EDC CA, HCA, CAH	PRL3a ③	BAB, QBHW GB, GHB, GHBS-D EHD, FD, FDB, HFD, FDC ED, EDH, EDC CA, HCA, CAH	— — — — —
PRL4B ④	EHD, FD, FDB, HFD, FDC ED, EDH, EDC CA, CAH, HCA FCL, FB-P, FDB/LFB JD, JDB, HJD, JDC DK, KDB, KD, HKD, KDC LCL LA-P TRI-PAC LC, HLC, LA, HLA LD, HLD, LDC, MD, MDS, ND, HND, NDC MC, HMC, MA, HMA NC, HNC, NB, HNB NB-P TRI-PAC BAB, QBGF, QBHW, QBHGF, GB, GHB	PRL4B	EHD, FD, FDB, HFD, FDC ED, EDH, EDC CA, CAH, HCA FCL, FB-P, FDB/LFB JD, JDB, HJD, JDC DK, KDB, KD, HKD, KDC LCL LA-P TRI-PAC LC, HLC, LA, HLA LD, HLD, LDC, MDL, ND, HND, NDC MC, HMC, MA, HMA NC, HNC, NB, HNB NB-P TRI-PAC BAB, QBGF, QBHW, QBHGF, GB, GHB	— — — — — — — — — — — — — —
PRL4F ⑤	Fusible Switches ⑥	PRL4F	—	Fusible Switches

① See also Page 4-14.

② See also Page 4-15.

③ See also **Page 4-16**.

④ See also **Page 4-17**.

⑤ See also Page 4-18.

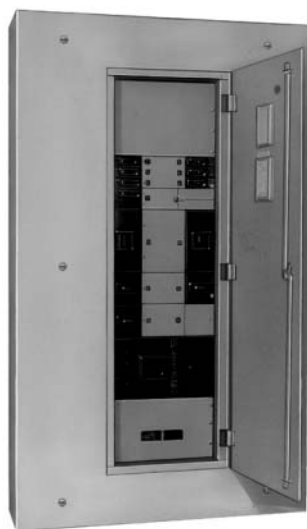
⑥ 400 A, 600 A, 800 A, 1200 A, FDP connectors are **NOT** compatible with FDPW switches.

Replacement Capabilities (Continued)

CDP

Originally a Westinghouse Product

4



Westinghouse CDP

The panel layouts shown on this and the following pages will aid in determining the space available for the addition of molded case circuit breakers into your existing CDP panelboards.

- Determine the amount of space available in the panelboard for adding circuit breakers. 1-3/8 inches of panel height = one X space.
- Determine the type of breaker needed for the required ampere rating and number of poles.

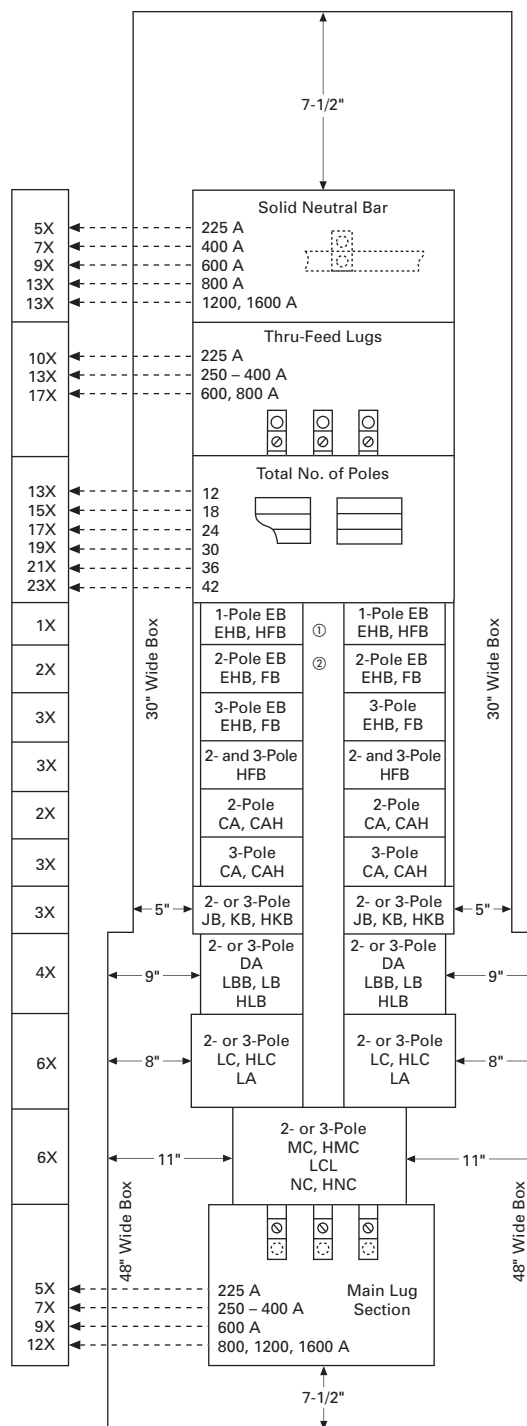
Ratings:

1600 Amperes Maximum

Replacement Capabilities:

Breakers

Refer to renewal parts data RP01400002E for a complete list of available parts including branch device retrofit kits which include the device, as well as, the bus connectors and the required mounting hardware. Contact the Aftermarket Center in Sumter, SC (see [Page 4-21](#)).



One X space = 1-3/8 inches.
Blank fillers are required for unused X space.

Figure 4-2. CDP Panel Layout

- ① When only one EB, EHB or HFB single-pole breaker is required in conjunction with other frame size breakers, the single-pole breaker space required changes from 1X to 2X.
- ② Must use 3-pole connector kit.

Replacement Capabilities (Continued)

FDP

Originally a Westinghouse Product



Westinghouse FDP

The panel layouts shown on this and the following pages will aid in determining the space available for the addition of fusible switches into your existing FDP panelboards.

- Determine the amount of space available in the panelboard for adding fusible switches. 1-3/8 inches of panel height = one X space.
- Determine the type of fusible switch needed for the required ampere rating and number of poles.

Ratings:

1600 Amperes Maximum

Replacement Capabilities:

Fusible Switches

Refer to renewal parts data RP01400002E for a complete list of available parts including branch device retrofit kits which include the device, as well as, the bus connectors and the required mounting hardware. Contact the Aftermarket Center in Sumter, SC (see **Page 4-21**).

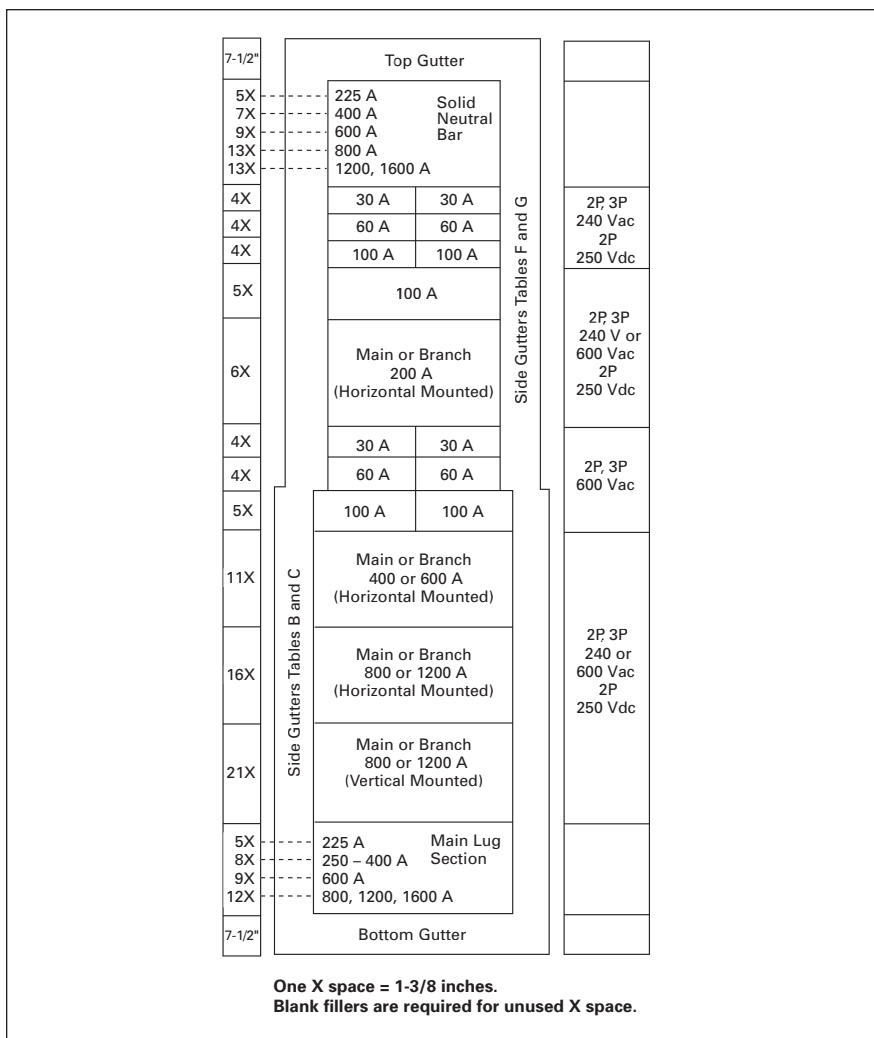


Figure 4-3. FDP Panel Layout

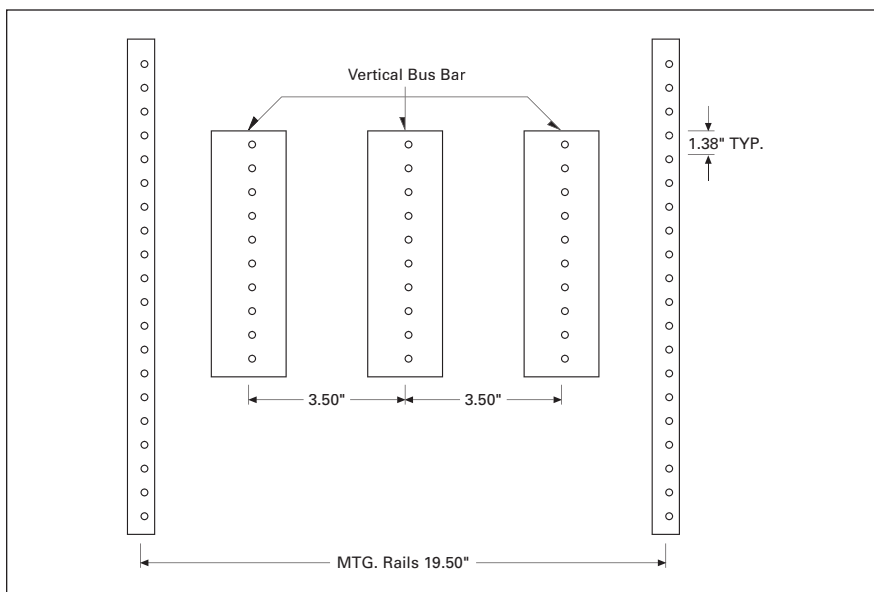


Figure 4-4. FDP and CDP Bus Dimensions

Replacement Capabilities (Continued)**PB/PH/PH-L****Originally a Cutler-Hammer Product****4**

*15 or 21 inches wide
Cutler-Hammer PB*



*21 or 26 inches wide
Cutler-Hammer PH*



*21 inches wide
Cutler-Hammer PH-L*

Ratings:

PB – 400 Amperes Maximum

PH – 800 Amperes Main Lug Only or
600 Amperes Main Breaker

PH-L – 225 Amperes Maximum

Replacement Capabilities:**Breakers**

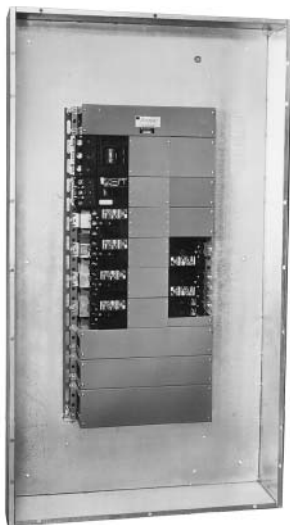
Refer to renewal parts data RP01400003E for a complete list of available parts including branch device retrofit kits which include the device, as well as, the bus connectors and the required mounting hardware. Contact the Aftermarket Center in Sumter, SC (see **Page 4-21**).

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Replacement Capabilities (Continued)

MP40

Originally a Cutler-Hammer Product



Cutler-Hammer MP40

The panel layouts shown on this and the following pages will aid in determining the space available for the addition of molded case circuit breakers into your existing MP40 panelboards.

- Determine the amount of space available in the panelboard for adding circuit breakers. 1-3/8 inches of panel height = one X space.
- Determine the type of breakers needed for the required ampere rating and number of poles.

Ratings:

1600 Amperes Maximum

Replacement Capabilities:

Breakers

Refer to renewal parts data RP01400003E for a complete list of available parts including branch device retrofit kits which include the device, as well as, the bus connectors and the required mounting hardware. Contact the Aftermarket Center in Sumter, SC (see **Page 4-21**).

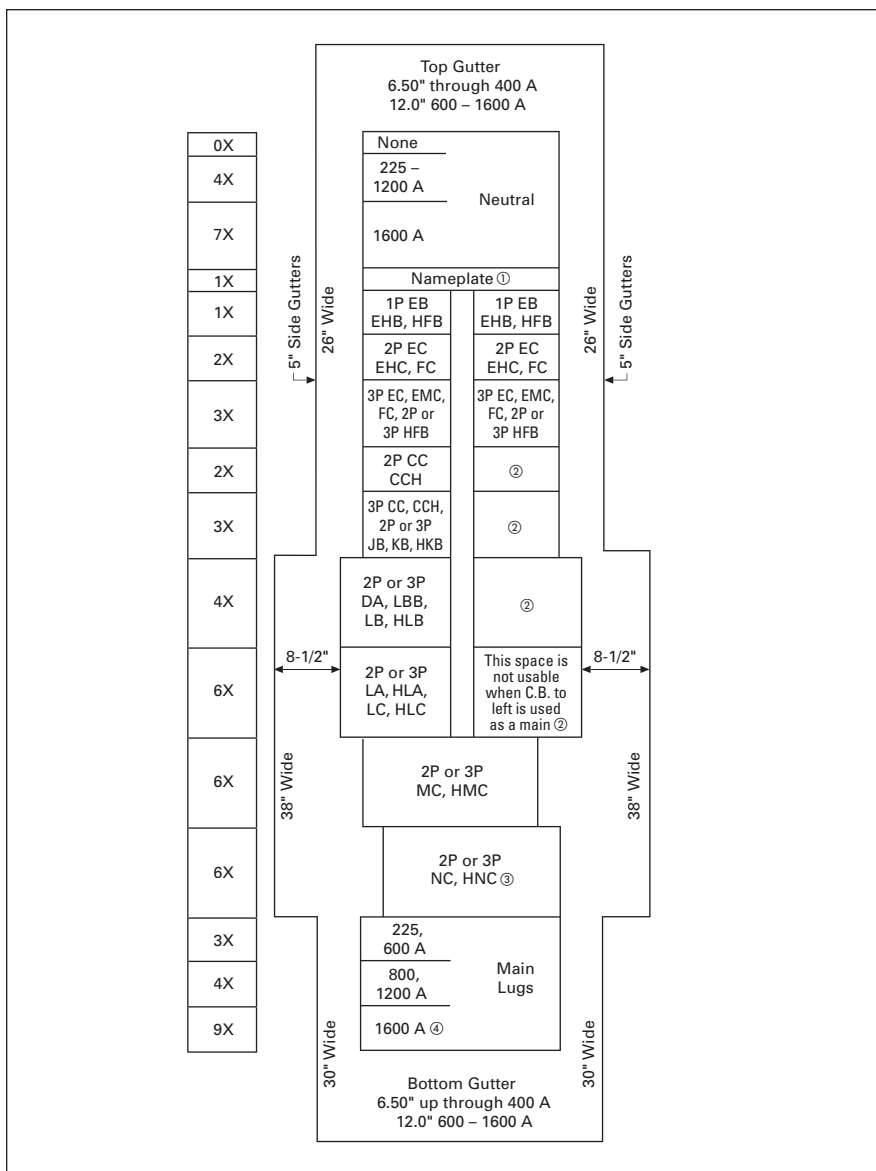


Figure 4-5. MP40 Panel Layout

- ① If the panelboard has a main breaker, no neutral, no split bus, or no sub-feed or feed-through lugs, add 1X to provide space for a nameplate.
- ② Breakers of the same frame size, regardless of poles, may be mounted opposite of each other.
- ③ Only Type NC and HNC breakers require a 11.38-inch deep box. Standard box depth is 10.50 inches.
- ④ When 1600 ampere lug mains are for (4)-600 kcmil maximum copper cables per phase, the X unit space can be reduced to 4X.

Replacement Capabilities (Continued)

EE

Originally a Cutler-Hammer Product

4



Cutler-Hammer EE Panelboard

The panel layouts shown on this and the following pages will aid in determining the space available for the addition of molded case circuit breakers and fusible switches into your existing EE panelboards.

- Determine the amount of space available in the panelboard for adding replacement devices. 1-3/8 inches of panel height = one X space.
- Determine the type of replacement device needed for the required ampere rating and number of poles.

Ratings:

1200 Amperes Maximum

Replacement Capabilities:

Breakers and Fusible Switches

Refer to renewal parts data RP01400003E for a complete list of available parts including branch device retrofit kits which include the device, as well as, the bus connectors and the required mounting hardware. Contact the Aftermarket Center in Sumter, SC (see **Page 4-21**).

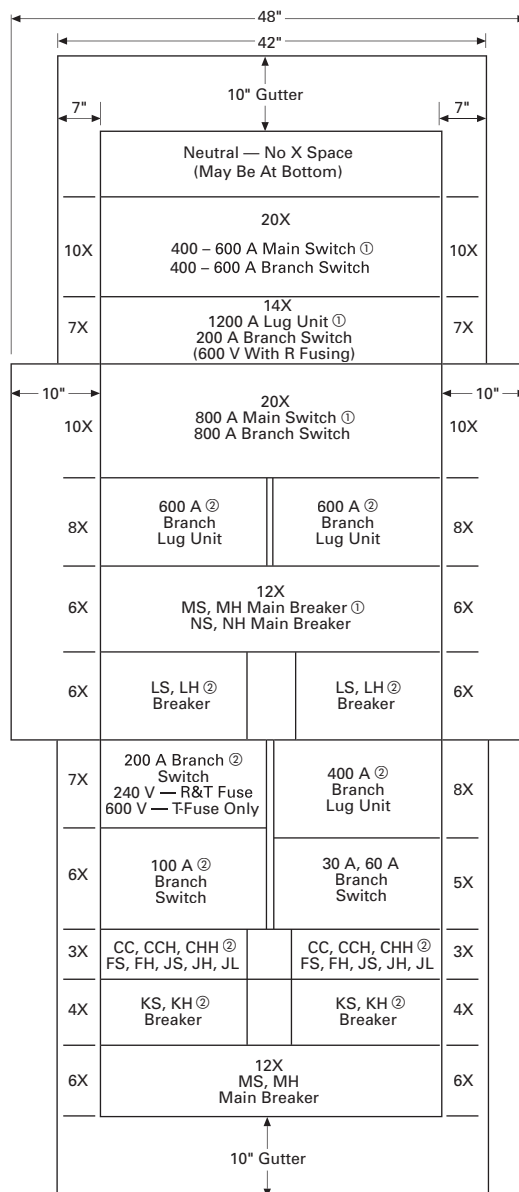


Figure 4-6. EE Panelboard Panel Layout

- ① Main device must be mounted at neutral end of double-bus panel.
- ② May be used in 30-inch wide single bus interiors.

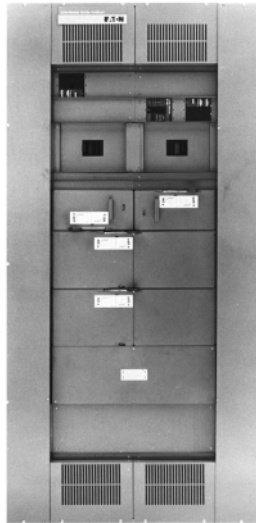
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EP

Replacement Capabilities (Continued)

EP

Originally a Cutler-Hammer Product



Cutler-Hammer EP Panelboard

The panel layouts shown on this and the following pages will aid in determining the space available for the addition of molded case circuit breakers into your existing EP panelboards.

- Determine the amount of space available in the panelboard for adding circuit breakers. 1-3/8 inches of panel height = one X space.
- Determine the type of breaker needed for the required ampere rating and number of poles.

Ratings:

1200 Amperes Maximum

Replacement Capabilities:

Breakers

Refer to renewal parts data RP01400003E for a complete list of available parts including branch device retrofit kits which include the device, as well as, the bus connectors and the required mounting hardware. Contact the Aftermarket Center in Sumter, SC (see **Page 4-21**).

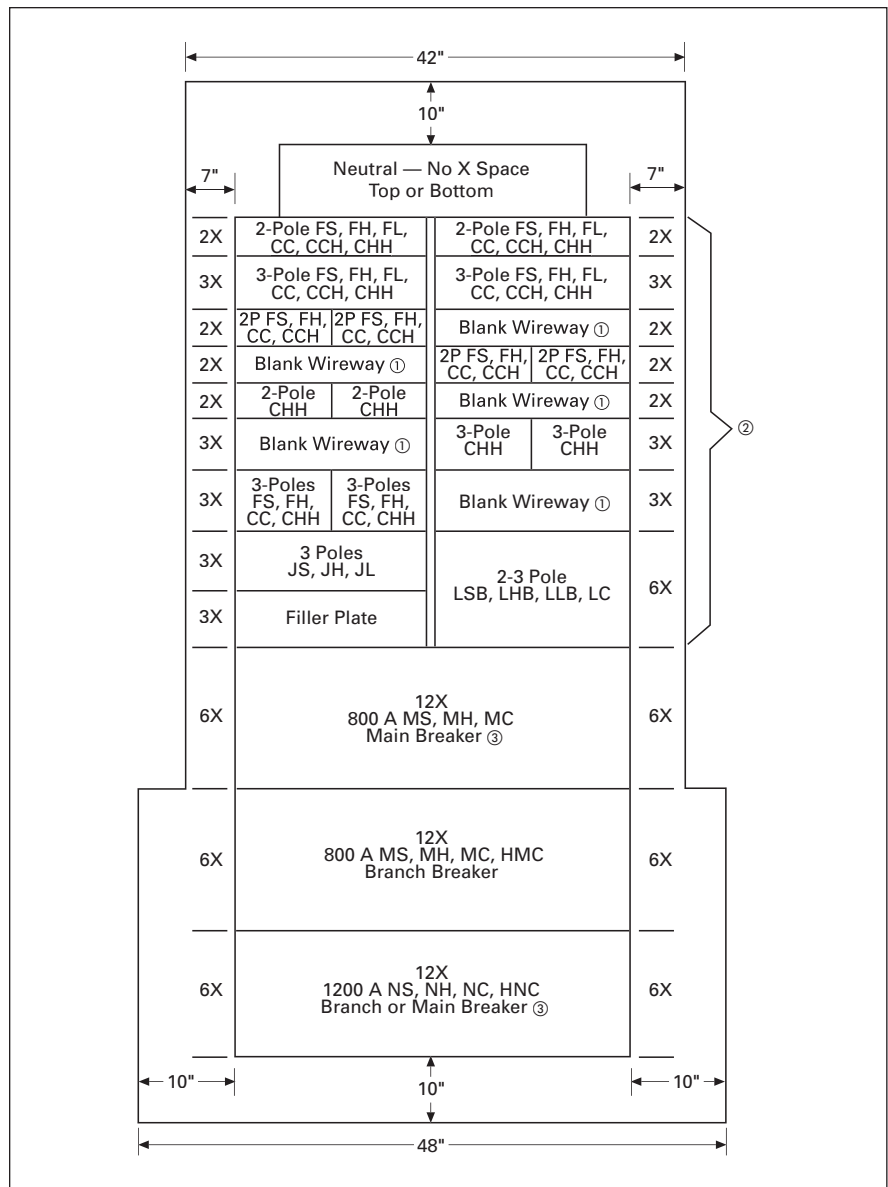


Figure 4-7. EP Panelboard Panel Layout

- ① Blank wireway fillers are required opposite any dual breaker unit or adapter.
- ② May be used in 30-inch wide single bus interiors.
- ③ Main device must be mounted at neutral end of double-bus panel.

Replacement Capabilities (Continued)

PRL1 and PRL2 Panelboards

Originally a Westinghouse Product

4



PRL2 with Trim

Ratings:

600 Amperes Maximum

Replacement Capabilities:

Breakers

Refer to renewal parts data RP01400002E for a complete list of available parts including branch device bus connectors mounting hardware. For further information, contact your local Eaton Field Sales office or call the Eaton Satellite plant in Atlanta, GA. Refer to **Page 4-21**.

PRL1a and PRL2a Panelboards

Current Product



PRL1a

Ratings:

400 Amperes Maximum

Replacement Capabilities

Breakers

Refer to renewal parts data RP01400001E for a complete list of available parts including branch device bus connectors and mounting hardware. Renewal parts are available from your Eaton Satellite plant. Refer to **Page 4-21**.

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PRL3

Replacement Capabilities
(Continued)

PRL3

Originally a Westinghouse Product



Westinghouse PRL3

The panel layouts shown on this and the following pages will aid in determining the space available for the addition of molded case circuit breakers into your existing PRL3 panelboards.

- Determine the amount of space available in the panelboard for adding circuit breakers. 1-3/8 inches of panel height = one X space.
- Determine the type of breaker needed for the required ampere rating and number of poles.

Ratings:

600 Amperes Maximum

Replacement Capabilities:

Breakers

Refer to renewal parts data RP01400002E for a complete list of available parts including branch device retrofit kits which include the device, as well as, the bus connectors and the required mounting hardware. Contact the Aftermarket Center in Sumter, SC (see Page 4-21).

No Neutral	2X 100 – 600 A
Neutral Section	2X 100, 225 A 8X 400, 600 A
Sub Chassis	<div> <div> <div>10X-12</div> <div>13X-18</div> <div>15X-24</div> <div>17X-30</div> <div>19X-36</div> <div>21X-42</div> </div> <div> <div>BAB ①②</div> <div>QBH ①</div> <div>GB ③④</div> <div>GHB ③④</div> </div> </div> <div>(100 A Max.)</div>
400 Amp Maximum Bus Rating	
1-Pole	1-Pole
2-Pole	2-Pole
1-Pole	3-Pole
2-Pole	
2- and 3-Pole	3X CA, CAH, HCA ⑤ (225 A Max.)
Main Lug Section	2X 100, 225 A 7X 400, 600 A
Horizontal Mounting	3X 2P EHD (100 A Max.) ⑥ 3X 2P FDB, FD, HFD, FDC ⑥ (150 A Max.) 4X 3P EHD (100 A Max.) ⑥ 4X 3P FDB, FD, HFD, FDC (150 A Max.) ⑥ 4X 2P & 3P CA, CAH, HCA ⑥ (225 A Max.)
Main Breaker Section	
Vertically Mounted	7X EHD (100 A Max.) 7X FDB, FD, HFD, FDC (150 A Max.) 9X CA, CAH (225 A Max.) 9X FCL, FB-P ⑦ (100 A Max.) 14X JD, JDB, HJD, JDC (250 A Max.) 14X DK, KD, KDB, HKD, KDC (400 A Max.) 19X LC, HLC, LA (600 A Max.) 22X LCL ⑧, LA-P ⑨ (400 A Max.)

Figure 4-8. PRL3 Panel Layout

- ① If panel contains only BAB or QBH branch breakers, use a PRL1 panelboard.
- ② BAB and QBH breakers with shunt trips require one additional pole space, i.e.; 1-pole is 2-pole size, 2-pole is 3-pole size, and 3-pole is 4-pole size.
- ③ GB, GHB breakers cannot be mixed on same subchassis as BAB, QBH.
- ④ If panel contains only GB or GHB branch breakers, use a PRL2 panelboard.
- ⑤ Not recommended for motor loads. Use JD circuit breaker.
- ⑥ Horizontally mounted 15 through 150 ampere main breakers EHD, FDB, FD, HFD and FDC will be furnished as branch breaker construction. Branch breakers 1, 2 or 3 poles as required, may be located opposite these main breakers.
- ⑦ FBP and LAP top mounting only.
- ⑧ 100% rated breaker.
- ⑨ LCL main breaker requires 6-1/2-inch deep box.

Replacement Capabilities (Continued)

PRL3a

Current Product

4



PRL3a

The panel layouts shown on this and the following pages will aid in determining the space available for the addition of molded case circuit breakers into your existing PRL3a panelboards.

- Determine the amount of space available in the panelboard for adding circuit breakers. 1-3/8 inches of panel height = one X space.
- Determine the type of breaker needed for the required ampere rating and number of poles.

Ratings:

600 Amperes Maximum

Replacement Capabilities:

Breakers

Refer to renewal parts data RP01400001E for a complete list of available parts including branch device retrofit kits which include the device, as well as, the bus connectors and the required mounting hardware. Retrofit kits and renewal parts are available from your Eaton Satellite plant. Refer to **Page 4-21**.

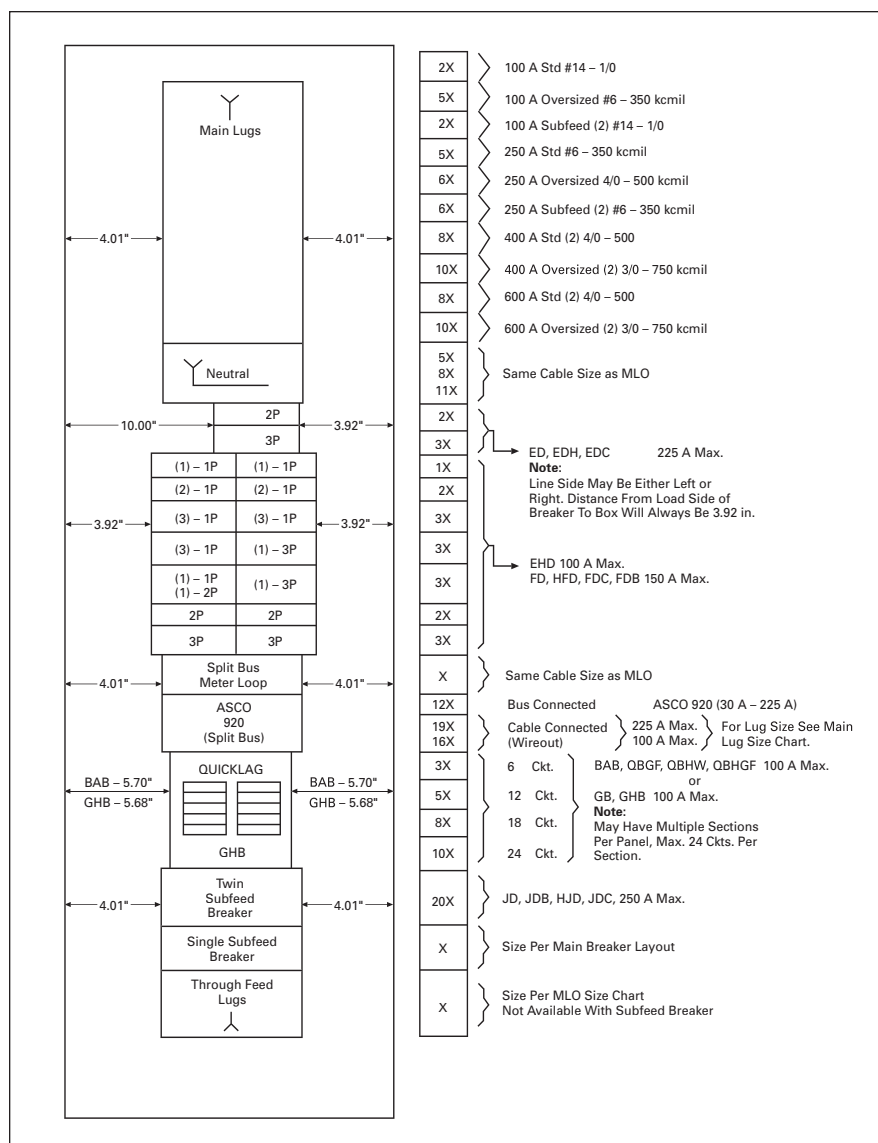


Figure 4-9. PRL3a Panel Layout

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PRL4B

**Replacement Capabilities
(Continued)**

PRL4B

**Current Product
(Originally a Westinghouse Product)**



PRL4B

The panel layouts shown on this and the following pages will aid in determining the space available for the addition of molded case circuit breakers into your existing PRL4B panelboards.

- Determine the amount of space available in the panelboard for adding circuit breakers. 1-3/8 inches of panel height = one X space.
- Determine the type of breaker needed for the required ampere rating and number of poles.

Ratings:

1200 Amperes Maximum

Replacement Capabilities:

Breakers

Refer to renewal parts data RP01400001E for a complete list of available parts including branch device retrofit kits which include the device, as well as, the bus connectors and the required mounting hardware. Retrofit kits and renewal parts are available from your Eaton Satellite plant. Refer to **Page 4-21**.

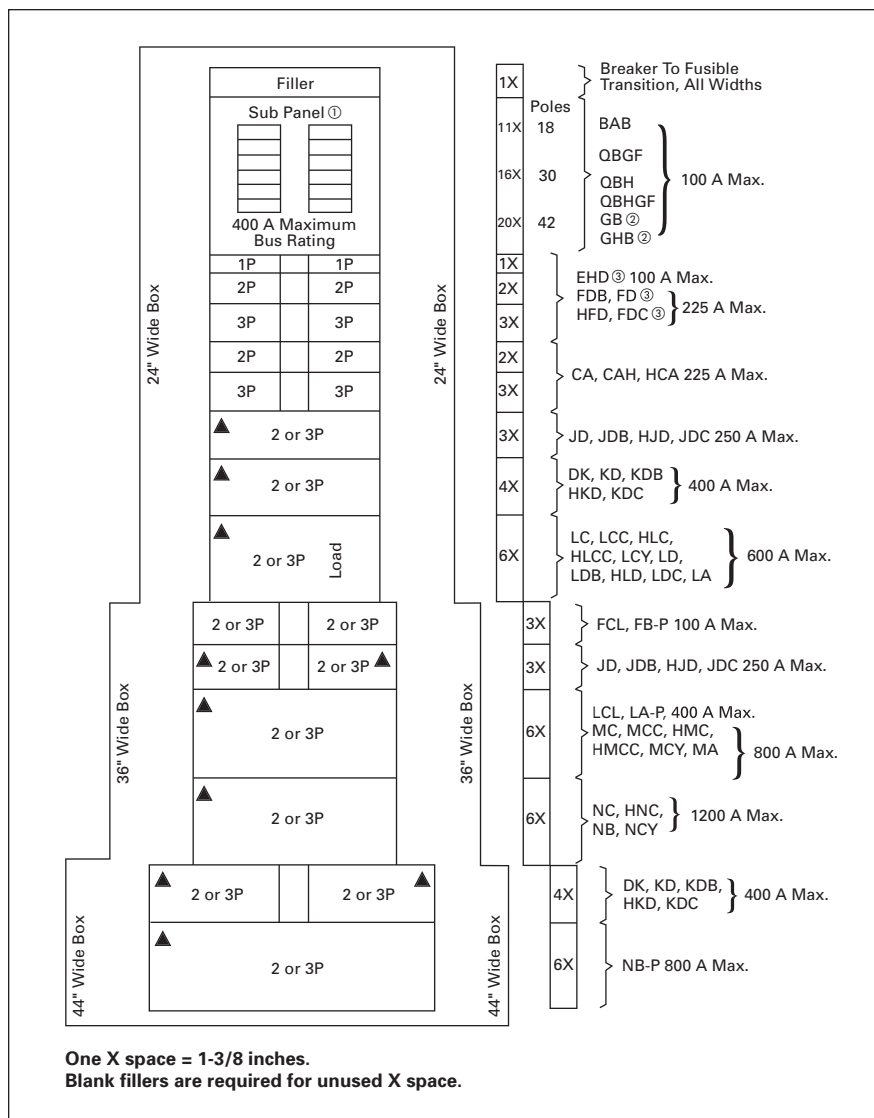


Figure 4-10. PRL4B Panel Layout

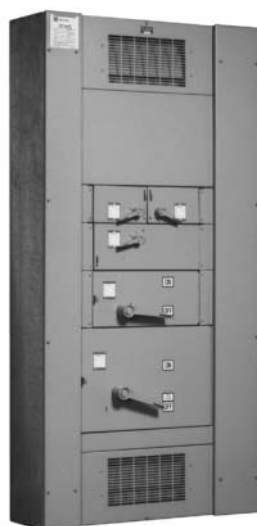
- ① Maximum amperes connected to any one connector cannot exceed 140 amperes.
- ② GB, GHB breakers cannot be mixed on the same subchassis as BAB, QBHW.
- ③ When only one single-pole breaker of the group is required on either side of chassis, the single-pole breaker space required changes from 1X to 2X.

Replacement Capabilities (Continued)

PRL4F

Current Product
(Originally a Westinghouse Product)

4



PRL4F

The panel layouts shown on this and the following pages will aid in determining the space available for the addition of fusible switches into your existing PRL4F panelboards.

- Determine the amount of space available in the panelboard for adding fusible switches. 1-3/8 inches of panel height = one X space.
- Determine the type of fusible switch needed for the required ampere rating and number of poles.

Ratings:

1200 Amperes Maximum

Replacement Capabilities:

Fusible Switches

Refer to renewal parts data RP01400001E for a complete list of available parts including branch device retrofit kits which include the device, as well as, the bus connectors and the required mounting hardware. Retrofit kits and renewal parts are available from your Eaton Satellite plant. Refer to **Page 4-21**.

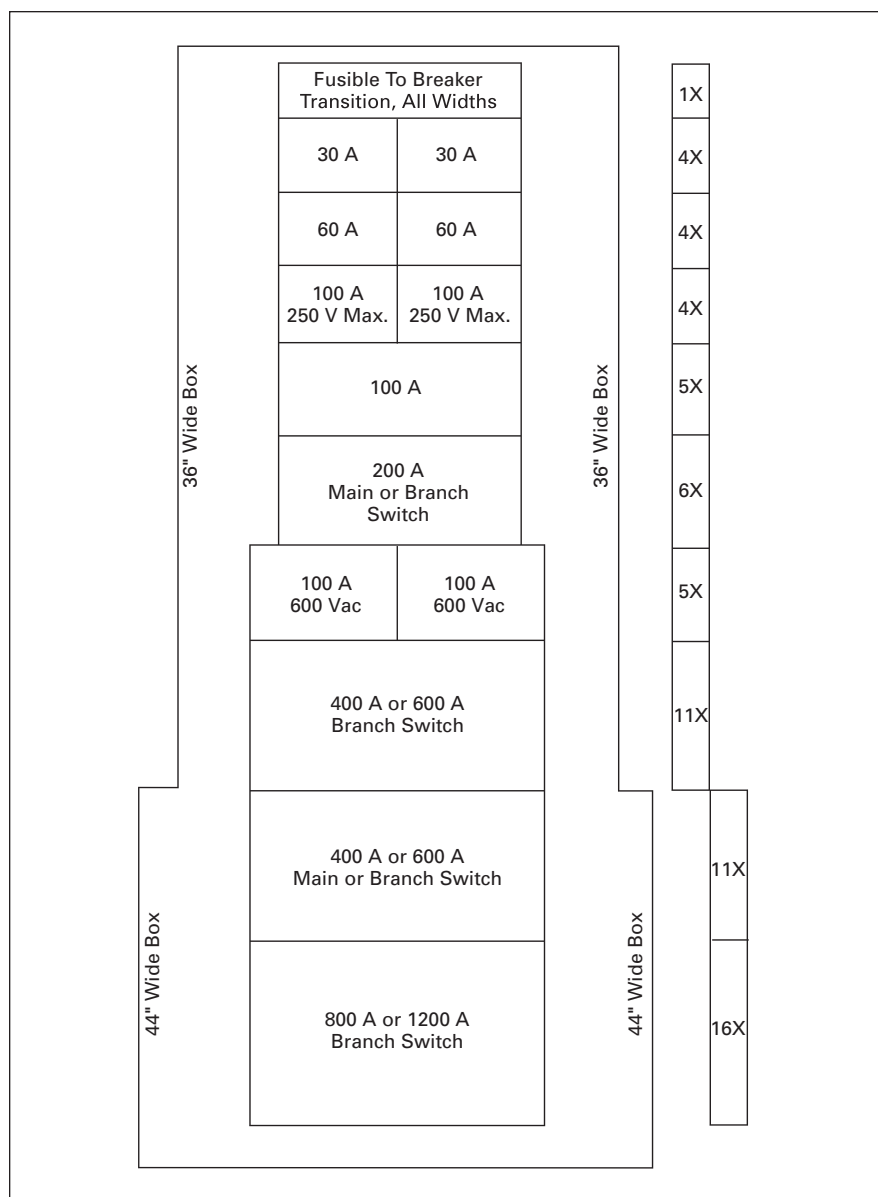


Figure 4-11. PRL4F Panel Layout

Technology Upgrades

Clipper Power System — Visor Series



*Clipper Power System — Visor
Transient Voltage Surge Suppressor*

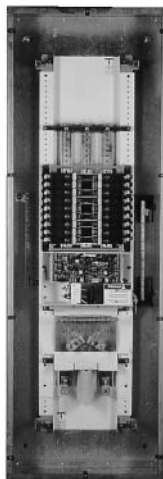
The Cutler-Hammer **Clipper Power System** is a hybrid Transient Voltage Surge Suppressor (TVSS) used to protect sensitive electronic equipment from the damaging effects of voltage transients and electrical line noise. The Visor's design combines both suppression and filtering elements to provide best-in-class performance. Field installation is required.

Benefits

- Visor can be externally mounted to existing distribution equipment.
- Surge ratings: 100, 120, 160, 200, 250, 300, 400 and 500 kA.
- Standard NEMA® 1/3R enclosure, optional NEMA 4X and 12.
- Surface or flush mounting.
- Full range of diagnostic and monitoring options.
- Remote mountable display panel.

For more information about Clipper Power Systems, contact your local Eaton Field Sales office.

Pow-R-Command™



*Pow-R-Command
Lighting Control*

Cutler-Hammer **Pow-R-Command** is a family of microprocessor-based lighting control systems designed for today's modern facilities. They may be utilized as a stand-alone, or networked for the control of lighting and other branch circuits.

System Features Include:

- Day/Date/Time of Day scheduling.
- Holiday scheduling — up to 30 days/year.
- Astronomical time scheduling.
- Real-time clock.
- Hardware diagnostics.
- Off warning by blinking lights.
- Manual load override control.
- Brownout and power failure recovery.
- Telephone override of schedules.
- Switch override of schedules.
- Remote access to system.
- Dimming systems for fluorescent fixtures.
- Priority load management.

Existing facilities can be retrofitted to include various Pow-R-Command scenarios allowing customers varying degrees of control. For more information on upgrading your building to include the energy savings and control of Pow-R-Command, contact your local Eaton Field Sales office.

Replacement Capabilities

Panelboard Retrofits

4



Type PRL1a

Another Custom-Assembled Panelboard Capability from Your Local Eaton Satellite

Save time and money when upgrading and expanding existing electrical services by utilizing existing panelboard enclosures and conduit runs.

Retrofitting existing panelboards can be an effective solution for:

- Providing additional circuits for load growth.
- Replacing obsolete equipment.
- Upgrading protective device interrupting ratings.
- Accommodating system change and additions.
- Adding ground fault circuit interrupters.
- Adding lighting controls.
- Adding transient voltage surge protection.

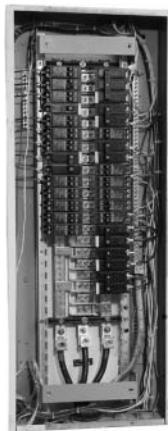
The unique capabilities of the Eaton Satellite plants can provide special configurations to meet the special needs encountered in retrofit applications.

Pow-R-Line 1R renovation panelboards or custom built panelboard interiors and trims can be provided to retrofit most any manufacturer's existing panelboard enclosure.

Armed with the necessary information about the existing installation and the needed upgrade, the professional staff at your local Satellite plant can offer the assistance and application support to assure an accurate quotation and on-time delivery of a quality retrofit product.

Pow-R-Line 1R

Renovation Panel



Renovation Panel

Product Description

- 240 Vac maximum.
- Single-phase 3-wire or single-phase 2-wire.
- 3-phase 3-wire or 3-phase 4-wire.
- 225 amperes maximum.
- 100 ampere maximum branch breakers.
- Fits existing box depths from 4.50 to 6.00 inches (114.3 to 152.4 mm) deep.
- Integrally mounted neutral assembly.
- Ground bar and bonding conductor included.
- Neutral and ground convertible from left-right.
- Bolt-on branch breakers.
- Factory assembled.

Application Description

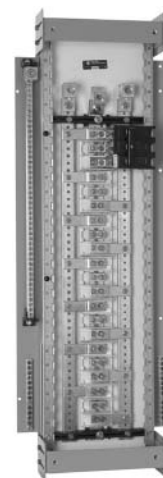
- Lighting and appliance branch panelboards.
- Fully rated or series rated.
- Interrupting capacities to 100 kA symmetrical.
- Suitable for use as Service Entrance Equipment where specified on the order.

Standards and Certifications

- UL 67.
- Federal Specification W-P-115c.
- CSA® C22.2 No. 29.

The Pow-R-Line 1R Retrofit Panelboard is designed specifically for use in the renovation of existing electrical systems. This innovative solution employs a chassis design that enables the use of the existing back box, conduit and cables. An exclusive depth-adjusting mechanism and an integrated trim assembly provides for fast, trouble-free mounting of the new panelboard interior into any existing enclosure.

The panelboard chassis is designed for the use of main lugs or a main breaker and can accommodate 18, 30 or 42 branch circuits.



Pow-R-Line 1R Retrofit Chassis

Chassis Features

Designed to accommodate minimal box widths at 14.00 inches (355.6 mm).

Innovative telescoping chassis accommodates depths from 4.50 to 6.00 inches (114.3 to 152.4 mm) without the need for box modifications.

Universal mounting locations allow the neutral and grounds to be relocated from top to bottom or left to right side of back plate.

High quality laser cut trim with lock.

Trim and door mount directly to the chassis assembly. Concealed trim hardware is not dependent on back box for mounting.

Refer to publication **CA01417001E** for complete information.

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Satellite Locations

Product Support Services

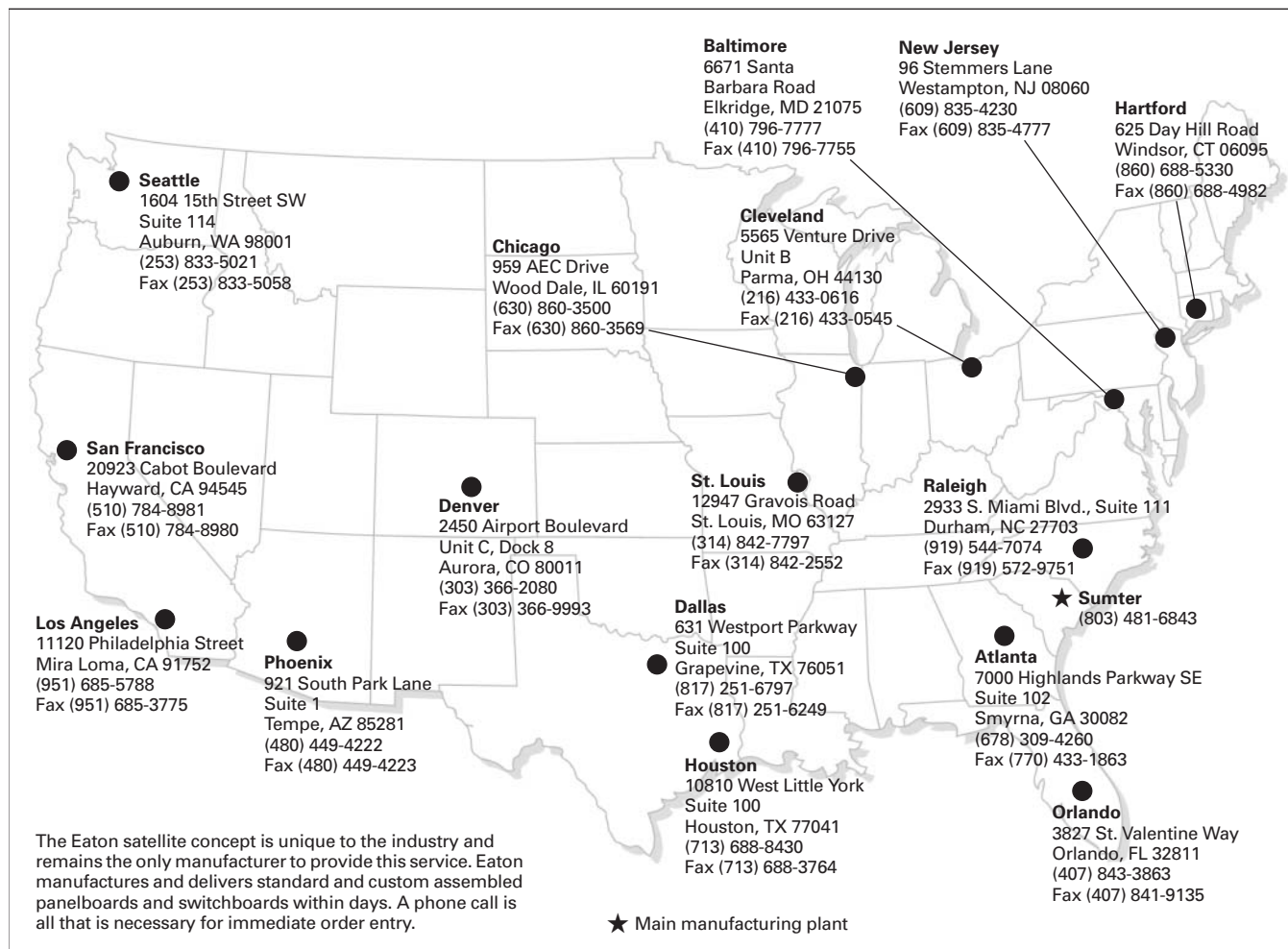


Figure 4-12. Satellite Locations

Further Information

Publication Number	Description
RP01400003E	Renewal Parts Data for MP40 and MP-200
RP01400003E	Renewal Parts Data for PB, PH, PH-L, EP and EE
RP01400002E	Renewal Parts Data for CDP/HCDP, FDP, PRL1-LX, PRL1, PRL2 and PRL3
RP01400001E	Renewal Parts Data for PRL1a, PRL2a, PRL3a, PRL4B, PRL4F and PRL5P

Pricing Information

Price List for MP40 and MP-200 — PL01400003E

Price List for PB, PH, PH-L, EP and EE — PL01400003E

Price List for CDP/HCDP, FDP, PRL1-LX, PRL1, PRL2 and PRL3 — PL01400002E

Price List for PRL1a, PRL2a, PRL3a, PRL4B, PRL4F and PRL5P — PL01400001E

Discount Symbol CE9

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