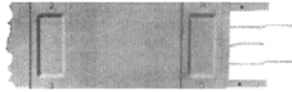


Busway (Low Voltage)



Standard Plug-In

Product Description

Eaton's Cutler-Hammer® low voltage busway consists of aluminum or copper bars inside a metal housing used for power distribution. Busway is available in ampere ratings of 100–5000A. Busway is available as feeder (indoor or outdoor) and plug-in. Feeder busway routes power from point-to-point, whereas plug-in busway allows for power to be tapped off along a run as needed. Busway is typically used in manufacturing buildings and high-rise office buildings.

Product History

Westinghouse began marketing low voltage busway in 1938. The first product offering was power distribution busway, using a multiple bolt joint that later evolved into standard plug-in busway. Victory bus duct was developed during the Second World War to comply with federal limitations placed on usage of materials such as steel and copper, which were critical to the war effort. In 1947, Westinghouse began manufacturing busway at the newly acquired facility in Beaver, PA, with standard

plug-in and feeder bus in ratings up to 1500A. All of these early designs used separated, uninsulated busbars inside a totally enclosed or perforated steel housing.

In 1951, low impedance feeder busway was introduced as the first design to use heat-shrinkable tubing for insulation on the busbars and a ventilated steel housing. An internal ground bus was not available with this product line, but provisions were made for mounting an external ground bus directly to the busway housing. Low impedance feeder and standard plug-in busway accounted for the majority of busway business written by Westinghouse through the 1950s and into the 1960s. Low impedance plug-in busway was introduced in 1961. With this design, the product offering was expanded to a maximum of 5000A for feeder and 4000A for plug-in.

During the 1950s, various other designs were introduced to meet specific customer needs. Westinghouse Lifeline Unibus, rolled out in 1955, provided low impedance characteristics with plug-in openings and incorporated flexible armored cable into the design for use as elbows, offsets and flat to edgewise adapters.

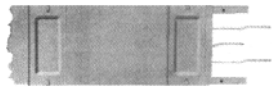
Westinghouse high frequency busway was introduced in 1958 to address the inherent problems of transmitting power at frequencies from 180 to 20,000 Hz. Cutler-Hammer high frequency BV (balanced voltage) busway was also marketed during the late 1950s and early 1960s. Westinghouse high frequency busway and Cutler-Hammer BV busway both found success in aircraft manufacturing plants, industrial induction heating systems, military missiles and radar bases.

Electric utility busway was also introduced by Westinghouse in 1958 and was designed to conduct direct current with low voltage drop. By 1963, electric utility busway had been expanded to meet the growing industrial market for direct current power and was marketed simply as DC busway. This product line was applied to feeding plating processes, welding installations, mill drives and motors.

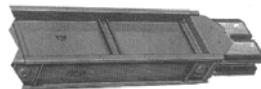
In 1958, Westinghouse sold the rights to the Life Line Unibus product line to EDP of Allentown, PA, which marketed EDP Unibus until 1962 when EDP became a wholly owned subsidiary of Eaton. Eaton successfully marketed Unibus until the product line was discontinued in 1974.

In 1966, Westinghouse introduced its first true sandwich bus design with H5000 feeder busway. H5000 was also the first single bolt joint design offered by Westinghouse and it initially used a PVC shrink tubing and later a Mylar® wrap for busbar insulation. A combination of steel and aluminum channels were used to form a lightweight non-magnetic housing. The grounding method for H5000 was similar to low impedance busway and an external ground bus mounted onto the housing was the only offering. H5000 plug-in busway rolled out in 1968 as a non-sandwich design with separated and uninsulated busbars.

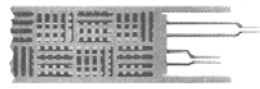
In 1970, the Eaton's Cutler-Hammer Bethlehem, PA, plant introduced CP2 SAFETYBUS that used an innovative single bolt, bridge joint design with a steel housing for plug-in, and a combination of steel and aluminum channels for the feeder housing. CP2 used a Mylar wrap for busbar insulation and an Alstan® process for plating. The feeder busway was a sandwich design while the plug-in design used separated busbars that were braced and supported by corrugations formed in the housing sides.



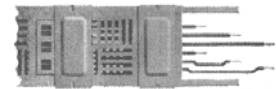
Standard Plug-In



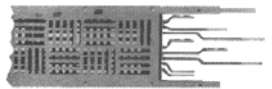
H5000 Feeder



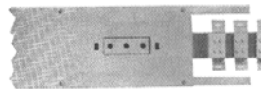
Electric Utility (DC)



Low Impedance Plug-In



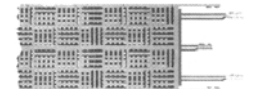
Low Impedance Feeder



High Frequency



H5000 Plug-In 225–1000A



Current Limiting



Typical Pow-R-Way Plug-In Straight Length



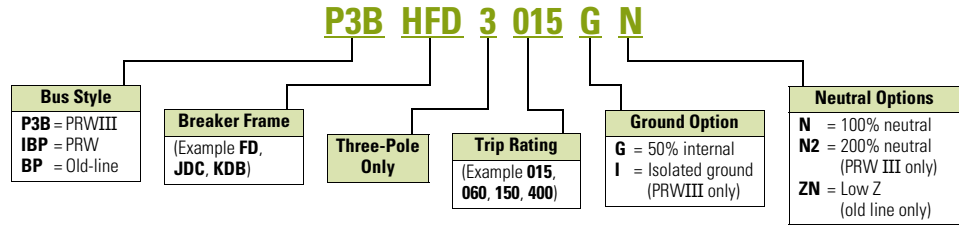
Typical Pow-R-Way II Plug-In Straight Length

Quick-Assembled Plugs

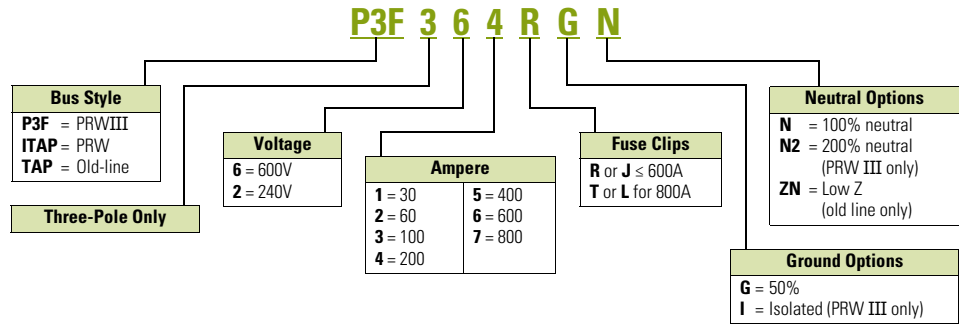
The Mod Center in Spartanburg, SC, will perform the assembly of the bus plugs in 3 days or less for most orders. Bid Manager™ enables you to “build” the appropriate catalog number. When the order is entered in Bid Manager, it will automatically transfer the order to suffix “QAP.” Please see the following rules for building the assembled catalog number.

Catalog Numbering Selection

Quick-Assembled Plugs—Breaker Unit ^{①②}



Quick-Assembled Plugs—Fusible Unit ^{②③④}



Notes

- ① Do not leave space between characters. Example: **P3BHFD3015GN**.
- ② Contact your local Eaton Field Sales office for help in assigning a catalog number for a specific application.
- ③ Do not leave space between characters. Example: **P3F264RGN**.
- ④ “H” clips are standard for Pow-R-Way and vintage busway products unless specified by adding “R” or “J” in the catalog number. Example: **P3F264RGN**, **ITAP361JGN**.

Replacement Capabilities—CP2, CP3 or CP4 SAFETYBUS Busway Plug-In Units

CP2, CP3 or CP4 SAFETYBUS Busway Plug-In Units

Originally a Westinghouse Product

Bolt-On Units ①

Breaker Frame	Ampere Rating	Enclosure Catalog Number	Neutral ② (If Required) Catalog Number	Ground ③ (If Required) Catalog Number
Circuit Breaker Bolt-On Units (Breaker Not Included)				
EHD, FDB, FD HFD, FDC	15–150	BPFDBO	④	④
JDB, JD, HJD, JDC	125–250	BPJDBO	④	④
KDB, KD, HKD, KDC	250–400	BPKDBO	④	④
LDB, LD, HLD LDC	300–600	BPLDBO	④	④
MDL, HMDL	400–800	BPMDBO	④	④
FB (TRI-PAC)	15–100	BPFBPBO	④	④
LA (TRI-PAC)	125–400	BPLAPBO	④	④
NB (TRI-PAC)	500–800	BPNBPBO	④	④
Fusible Bolt-On Units ⑤				
240V	30	TAP321BO	④	④
	60	TAP322BO	④	④
	100	TAP323BO	④	④
	200	TAP324BO	④	④
	400	TAP325BO	④	④
	600	TAP326BO	④	④
	800	TAP327BO	④	④
600V	30	TAP361BO	④	④
	60	TAP362BO	④	④
	100	TAP363BO	④	④
	200	TAP364BO	④	④
	400	TAP365BO	④	④
	600	TAP366BO	④	④
	800	TAP367BO	④	④

Circuit Breaker Selection and Interrupting Ratings ⑥

Breaker Frame	Ampere Rating	Symmetrical Amperes		
		240 Vac	480 Vac	600 Vac
EHD	15–60	18,000	14,000	—
	70–100	18,000	14,000	—
FDB	15–60	18,000	14,000	14,000
	70–100	18,000	14,000	14,000
	110–150	18,000	14,000	14,000
FD	15–60	65,000	25,000	18,000
	70–100	65,000	25,000	18,000
	110–150	65,000	25,000	18,000
HFD	15–60	100,000	65,000	25,000
	70–100	100,000	65,000	25,000
	110–150	100,000	65,000	25,000
FDC	15–60	200,000	100,000	50,000
	70–100	200,000	100,000	50,000
	110–150	200,000	100,000	50,000
JDB	70–225	65,000	25,000	18,000
	250	65,000	25,000	18,000
JD	70–225	65,000	25,000	18,000
	250	65,000	25,000	18,000
HJD	70–225	100,000	65,000	25,000
	250	100,000	65,000	25,000
JDC	70–225	200,000	100,000	50,000
	250	200,000	100,000	50,000
KDB	250–400	65,000	35,000	25,000
KD	250–400	65,000	35,000	25,000
HKD	250–400	100,000	65,000	35,000
KDC	250–400	200,000	100,000	50,000
LDB	300–600	65,000	45,000	25,000
LD	300–600	65,000	45,000	25,000
HLD	300–600	100,000	65,000	35,000
LDC	300–600	200,000	100,000	50,000
MDL	400–800	65,000	50,000	25,000
HMDL	400–800	100,000	65,000	35,000
NP	400–1200	65,000	50,000	25,000
HND	400–1200	100,000	65,000	35,000
FB (TRI-PAC)	15–100	200,000	200,000	200,000
LA (TRI-PAC)	70–400	200,000	200,000	200,000
	70–400	200,000	200,000	200,000
NB (TRI-PAC)	600–800	200,000	200,000	200,000
	600–800	200,000	150,000	200,000

Notes

- ① Factory assembled. Contact your local Eaton Field Sales office for delivery and order entry information. When ordering, you must specify:
 1. Load left or load right.
 2. Front or rear mounting.
 3. Type of busway to which unit is to be mounted.
- ② Full neutral. For half neutral, contact your local Eaton Field Sales office.
- ③ Not available for low impedance bus duct.
- ④ Order by description with bolt-on unit.
- ⑤ These bolt-on units include an adapter for mounting at the joint. They do not require a power take-off unit.
- ⑥ Refer to the current *Price and Availability Digest (PAD)* for breaker list prices.

Originally a Cutler-Hammer Product

Fusible Switch Plug-In Units

Class R Fuse Clip Included

Ampere Rating	Maximum hp Rating ^①	Catalog Number	Maximum hp Rating ^{①②}	Catalog Number ^③
240V, Three-Phase, Three-Wire			120–208V, Three-Phase, Four-Wire	
30	7-1/2	CP4HD321	5	CP4HD421
60	15	CP4HD322	10	CP4HD422
100	30	CP4HD323	25	CP4HD423
200	60	CP4HD324	60	CP4HD424
400	100	CP4HD325	250	CP4HD425
600 ^④	100	CP4HD326	400	CP4HD426
600V, Three-Phase, Three-Wire			277–480V, Three-Phase, Four-Wire	
30	20	CP4HD361	15	CP4HD461
60	50	CP4HD362	30	CP4HD462
100	75	CP4HD363	60	CP4HD463
200	100	CP4HD364	100	CP4HD464
400	350	CP4HD365	250	CP4HD465
600 ^④	500	CP4HD366	400	CP4HD466

Plug-In Cable Tap Boxes—Plug Into CP2, CP3 or CP4 Busway ^⑤—600A and 800A Sizes Also Have Bolt-On Clips

Approximate Dimensions in Inches

Volts	Ampere Rating	Approximate Dimensions in Inches			Mounting Clearance		Conduit Sizes	Load Lugs Each Phase	Catalog Number
		Wide	High	Deep	Top	Front			
Three-phase, three-wire 600V maximum	225	15.50	8.10	6.90	6.30	10.50	1-1/2, 2, 2-1/2, 3	(1) #6–300 kcmil Al/Cu	CP2SB34
	400	22.30	8.10	7.90	7.00	11.30	1-1/2, 2, 2-1/2, 3	(1) #1/0–750 kcmil Al/Cu ^⑥	CP2SB35
	600	37.20	15.80	11.70	12.50	16.80	1-1/2, 2, 2-1/2, 3	(2) #2–600 kcmil Al/Cu	CP2SB36 ^④
	800	37.20	15.80	11.70	12.50	16.80	1-1/2, 2, 2-1/2, 3	(3) #2–600 kcmil Al/Cu	CP2SB37 ^④
Three-phase, four-wire 120/208V or 277/480V 100% neutral	225	15.50	8.10	6.90	6.30	10.50	1-1/2, 2, 2-1/2, 3	(1) #6–300 kcmil Al/Cu	CP2SB44
	400	22.30	8.10	7.90	7.00	11.30	1-1/2, 2, 2-1/2, 3	(1) #1/0–750 kcmil Al/Cu ^⑥	CP2SB45
	600	37.20	15.80	11.70	12.50	16.80	1-1/2, 2, 2-1/2, 3	(2) #2–600 kcmil Al/Cu	CP2SB46 ^④
	800	37.20	15.80	11.70	12.50	16.80	1-1/2, 2, 2-1/2, 3	(3) #2–600 kcmil Al/Cu	CP2SB47 ^④

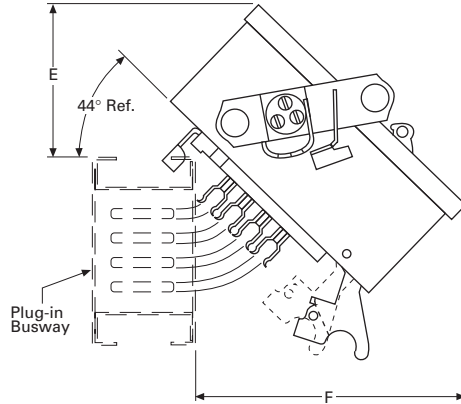
Notes

- ① Maximum hp ratings apply when time delay fuses are used.
- ② 120–208V hp ratings are based on 200V motor usage.
- ③ All units ship as three-phase, four-wire plugs.
- ④ Requires two adjacent plug-in outlets that do not span a busway joint.
- ⑤ For ground stab to engage internal ground bus, add suffix “G” to catalog number.
- ⑥ Also accepts (2) #1–300 kcmil Al/Cu.

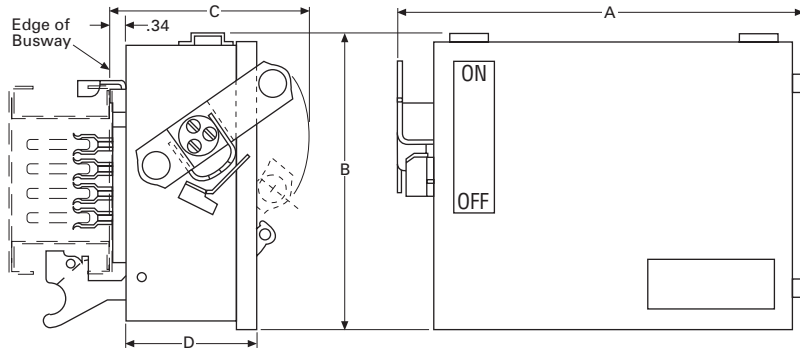
Replacement Capabilities—CP2, CP3 or CP4 SAFETYBUS Busway Plug-In Units

Originally a Cutler-Hammer Product
Approximate Dimensions

Required Mounting Clearances



Typical Side and Front



Plug-In Units—May be Used with Either CP2, CP3 or CP4 Plug-In Busway Sections—Fusible Switch Type

9

Frame or Type	Maximum Ampere Rating	Dimensions in Inches						Conduit Sizes Top, Bottom and Side	Wire Size Range Al/Cu
		A	B	C	D	E	F		
CP4HD	30	19.30	11.50	8.80	5.20	7.00	9.00	1/2, 3/4, 1, 1-1/4, 1-1/2, 2	(1) #14-2
	60	19.30	11.50	8.80	5.20	7.00	9.00	1/2, 3/4, 1, 1-1/4, 1-1/2, 2	(1) #14-2
	100	19.30	11.50	8.80	5.20	7.00	9.00	1/2, 3/4, 1, 1-1/4, 1-1/2, 2	(1) #14-1/0
CP4HD	200	23.00	16.50	9.20	6.00	7.50	13.30	1-1/2, 2, 2-1/2, 3	(1) #6-300 kcmil
	400 ^{①②}	45.60	24.30	15.80	13.10	14.00	20.50	1-1/2, 2, 2-1/2, 3	(1) #1/0-300 kcmil or (1) 750 kcmil
	600 ^{①②}	45.60	24.30	15.80	13.10	14.00	20.50	1-1/2, 2, 2-1/2, 3	(2) #2-600 kcmil

Notes

- ① Provided with busway bolt-on clip and straps for 0.50-inch hanger rods.
- ② Unit extends 10.50 inches below busway.