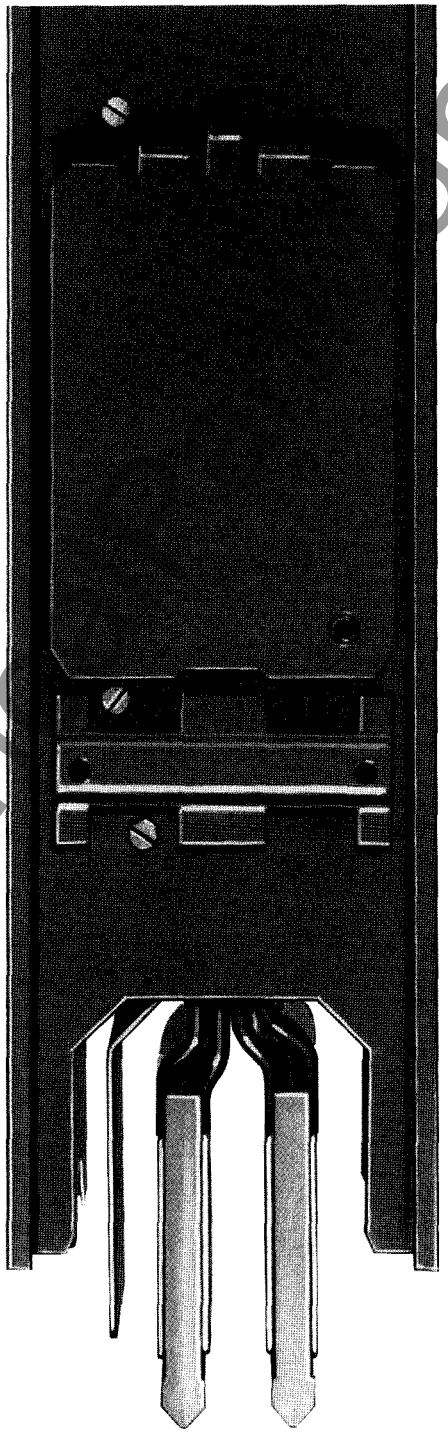
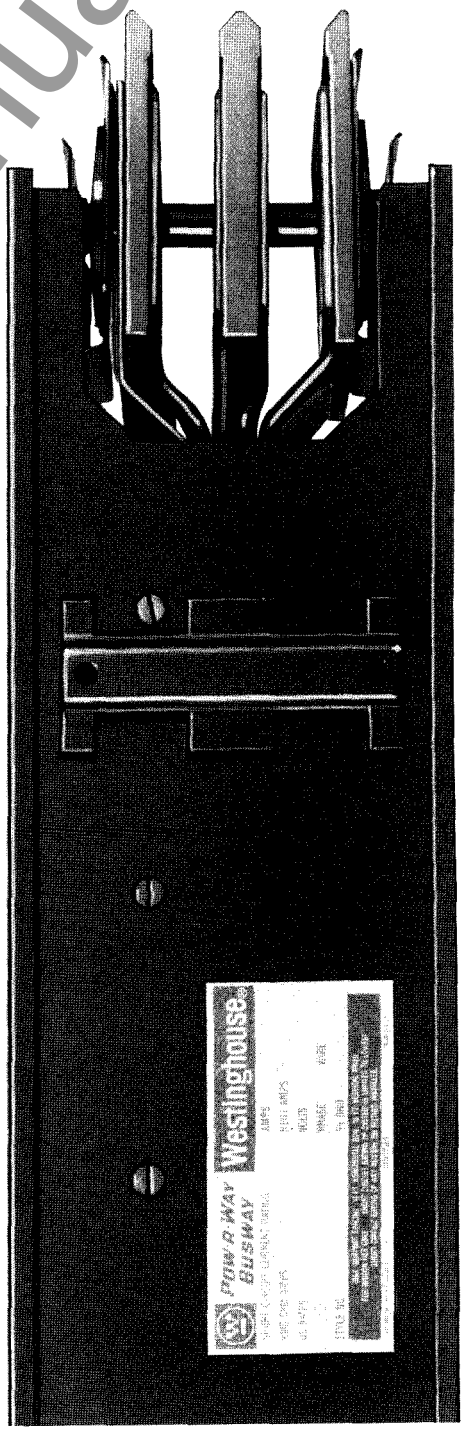
Westinghouse POW-R-WAY® Busway Systems

In This Section

Warning: There is a hazard of electrical shock or burn whenever working in or around electrical equipment.





Pow-R-Way® Busway Systems

Pow-R-Way II Busway
(225-400 Amperes Only)
Westinghouse Pow-R-Way II single bolt per bar busway (225 and 400 amperes only) was designed to provide an economical system, yet meet the specification which are the most important. Totally enclosed and non-ventilated, it is available in **indoor** plug-in and **indoor** feeder which can be used interchangeably without adaptors or special splice plates. (Not available for outdoor applications.)

Pow-R-Way II is available with aluminum or copper bus bars in ratings of 225 and 400 amperes only. The following systems are available:

- 3-phase, 3-wire
- 3-phase, 3-wire with 50% internal ground
- 3-phase, 4-wire, full neutral
- 3-phase, 4-wire, full neutral with 50% internal ground

All 3-wire systems have a maximum voltage rating of 600 volts and all 4-wire systems have a maximum of 347/600 volts.

Pow-R-Way II can be mounted in flatwise, or edgewise, without derating. When the busway is mounted with the **bus bars** in the flatwise position, hangers may be on 10 ft.-0 in. max. centers. **When the busway is mounted with the bus bars in the edgewise position, hangers must be on 5 ft.-0 in. max. centers.** Firestops are required when passing through walls or floors. When applying Pow-R-Way II in vertical risers, the Busway Division must be advised.

Pow-R-Way II busway is listed by Underwriters Laboratories, Inc. and is manufactured in accordance with NEMA standards for busway.

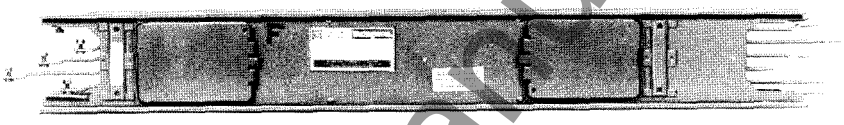
Construction
Housing
Pow-R-Way II busway uses an all bolted housing. It is pretreated and then painted ANSI #61 gray baked-on enamel applied by an electro-coat process. (See typical construction details.)

Bus Bars
The bus bars run straight through the housing and remain on 13⁄16 inch centers. They are insulated their entire length by a uniform layer of epoxy which is a Class B (130˚C) material. This insulation is applied utilizing the fluidized bed process. The bus bars are silver plated at all contact surfaces. The bus bars are held firmly in place by high strength molded polyester glass insulators.

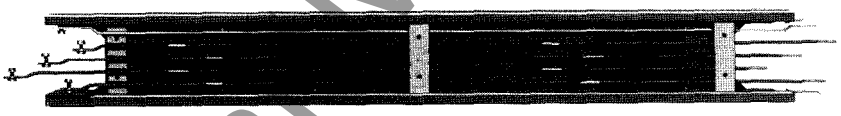
An optional 50% internal ground bar is available in either copper or aluminum. The ground bar is bolted to the housing at each joint, thus ensuring a good ground path through the entire housing.

Plug-in Openings
Plug-in openings are on 24-inch centers and are identical to the plug-in openings of 600A through 4000A Pow-R-Way. Thus, plug-in units are interchangeable with all ratings or Pow-R-Way. (See photo below.)

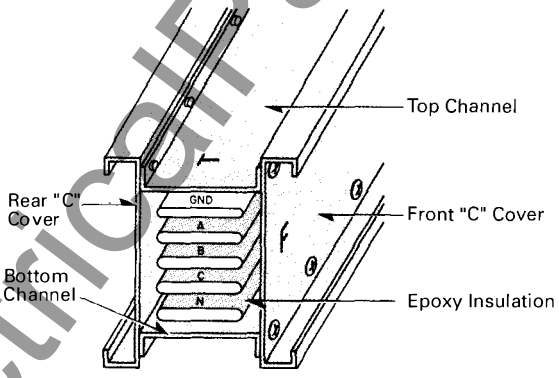
Typical Plug-in Straight Length

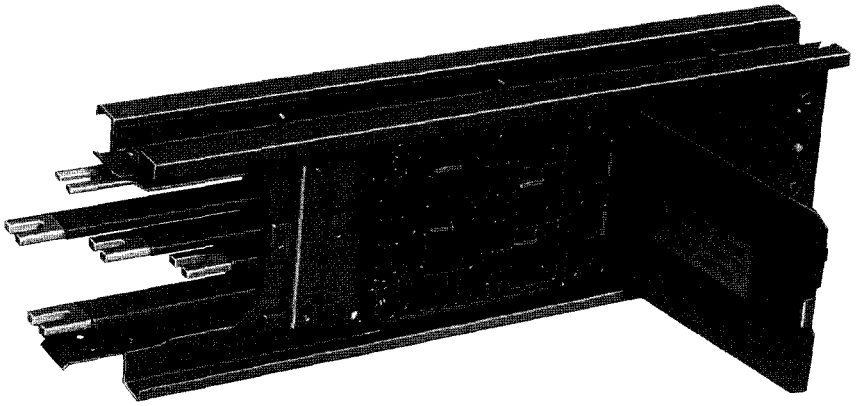


Plug-in Straight Length With Side Channel Removed



Typical Construction Details





Typical Plug-in Opening

Pow-R-Way® Busway Systems

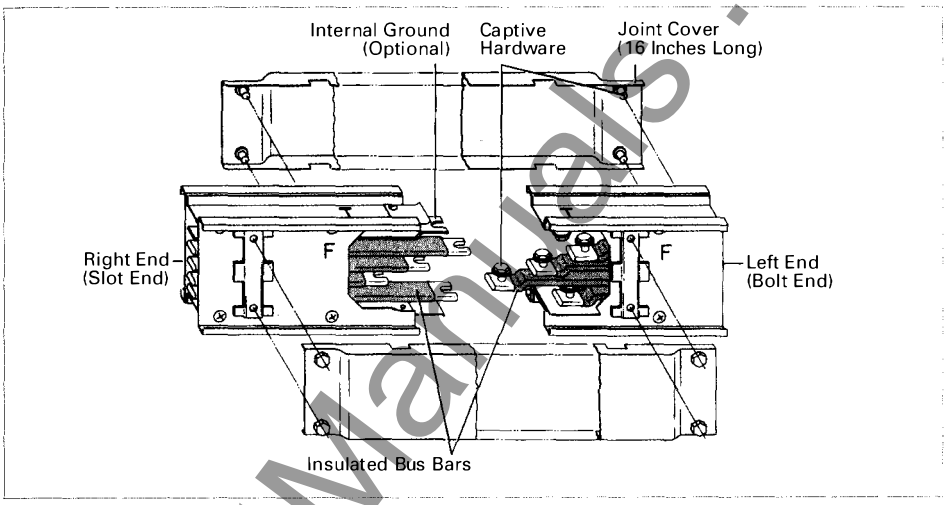
Joint

The joint of Pow-R-Way II utilizes one captive bolt per bar making for as labor-free a joint connection as possible. The left end of every section of Pow-R-Way II has offset bus bars with 5/16 inch diameter hex head bolts which are held captive by threaded steel inserts. Hex head bolts have flanged head which evenly distributes pressure over the entire width of the bus bar. The right end has straight bus bars with open slots.

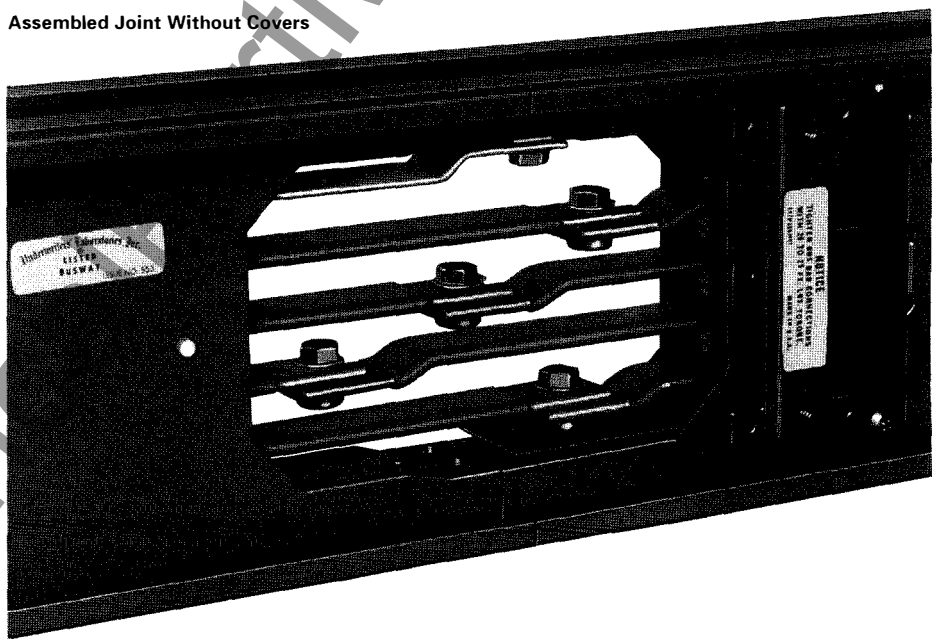
The ends of the bus bars are staggered to assure adequate electrical clearances between phases. The joint is made up by simply tightening the joint bolts to 20-25 ft.-lbs. and then installing the two joint covers.

Tightening the four captive bolts on each joint cover completes the assembly and provides a good mechanical connection between sections. The joint covers are identical with the ones used on 600 through 5000 ampere Pow-R-Way.

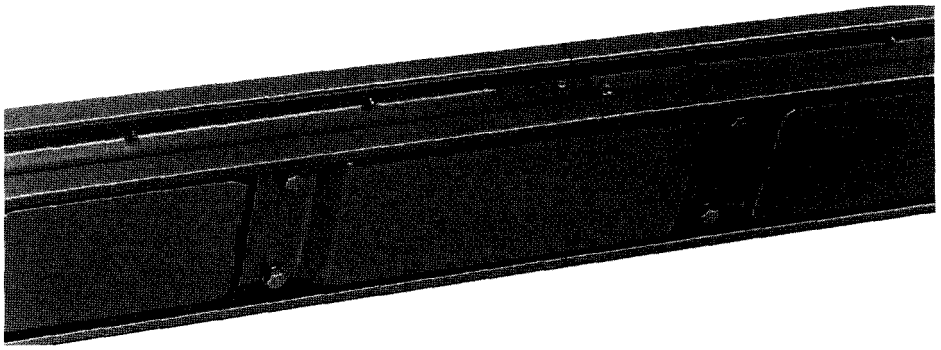
Exploded View of Joint Details



Assembled Joint Without Covers



Assembled Joint



Pow-R-Way® Busway Systems

Pow-R-Way Busway
(600-5000 Amperes)
The Westinghouse Pow-R-Way (600-5000 amperes) busway is totally enclosed and non-ventilated, it is available in three forms: outdoor feeder, indoor feeder, and indoor plug-in which can be used interchangeably without adaptors or special splice plates. This eliminates the need for a variety of busway types in the construction of a complete low-voltage power distribution system. One set of fittings-elbows, tees, flanges, etc. has been designed for use with both the plug-in and feeder types of POW-R-WAY busway, complementing even more the flexibility of the POW-R-WAY system.

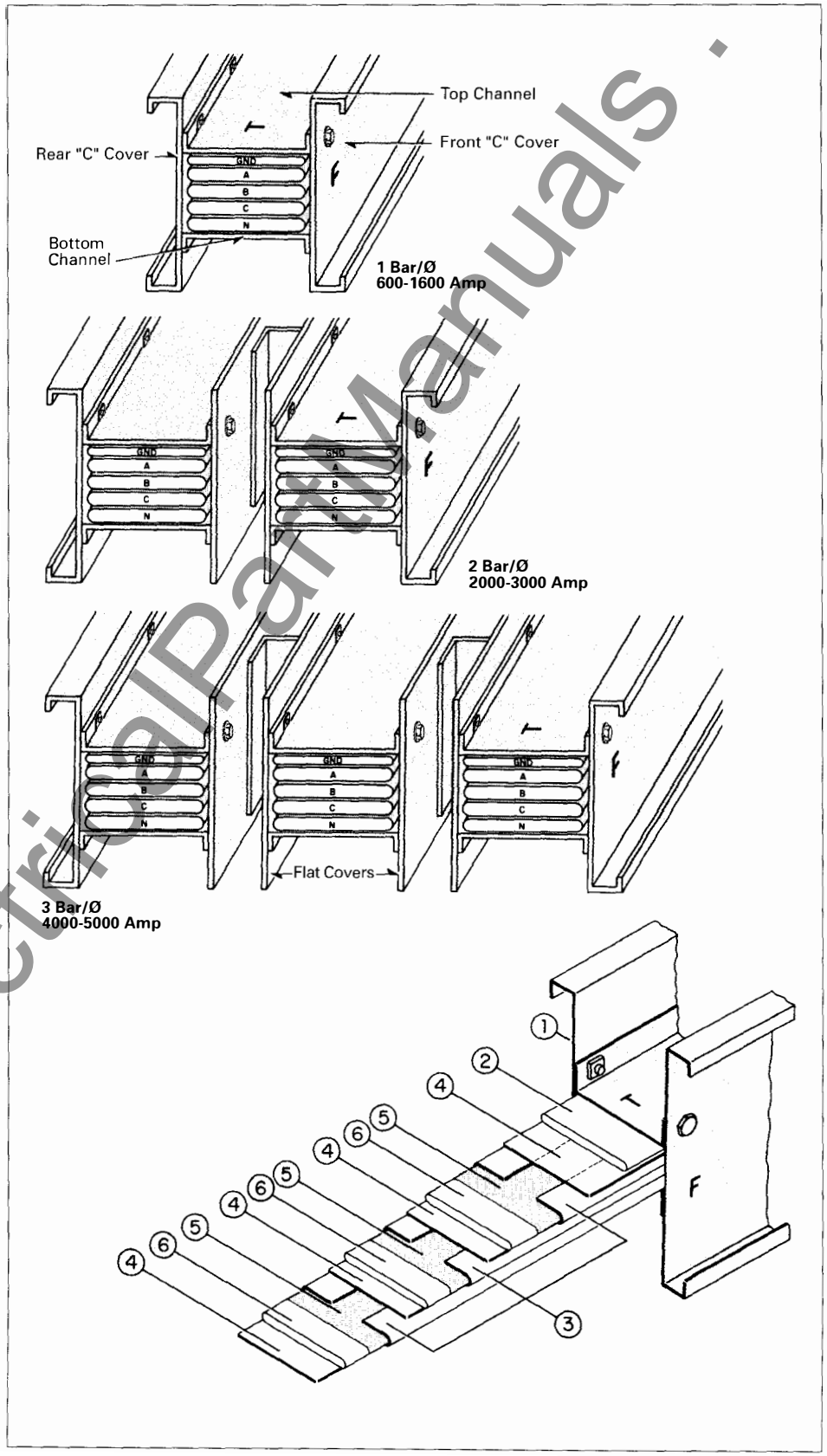
Construction
General
POW-R-WAY busway is one basic design which can be supplied as indoor plug-in, indoor feeder, or outdoor feeder. POW-R-WAY busway is available with aluminum bus bars in ratings from 600-4000 amps. and with copper bus ratings from 600-5000 amps.

The following systems are available:
- 3-phase, 3-wire
- 3-phase, 3-wire with 50% internal ground
- 3-phase, 4-wire, FN
- 3-phase, 4-wire, FN, with 50% internal ground

All 3-wire systems have a maximum voltage rating of 600 volts and all 4-wire systems have a maximum of 347/600 volts. One hanger is supplied for every 10 feet of horizontally mounted duct. POW-R-WAY busway can be mounted in flatwise, edgewise, or vertical positions without derating. POW-R-WAY busway is listed by Underwriters Laboratories, Inc. and is manufactured in accordance with NEMA standards for busway.

Housing (See right)
The duct housing is made of 14 and 16 gauge steel. It is bonderized inside and outside and given one coat of ASA #61 light gray baked-on enamel applied by an electro-coat process. The bottom channel is spot welded to the "C" covers (1) and the top channel is bolted to the "C" covers using 1/4-20 high tensile strength (100,000 psi) bolts, located on 4-inch max. centers.

Bus Bar and Insulation (See right)
Full rounded edge bus bars (6) are available in either high strength 55% minimum conductivity aluminum or 98% conductivity pure copper. The bus bars are silver plated at all contact surfaces.



Each bus bar is covered with a uniform layer of epoxy insulation (5), which is a Class B (130˚C) material. This epoxy insulation is applied by the fluidized bed process, which ensures a smooth, even, continuous insulation and eliminates hand taping.

An optional 50% internal ground bus bar (2) is available in either copper or aluminum.

Joint
Bus bars on the left-end (bolt end) of a busway section are flared out and have a closed slot. The left end also has an insulated captive joint bolt. This joint bolt must be tightened to 30 ft.-lbs. torque for 2-inch and 2½-inch wide bus bars, and 60 ft.-lbs. torque for 3-inch and wider bus bars. For 6-inch, 6½-inch and 7½-inch wide bus bars, two joint bolts are used to assure good electrical contact between bus bars. Bolt retainers, which keep bolt head from turning, can easily be moved to the opposite side of the duct by removing two #10-32 retainer screws. Also captive to the left-end are two belleville washers which evenly distribute pressure over the entire contact area.

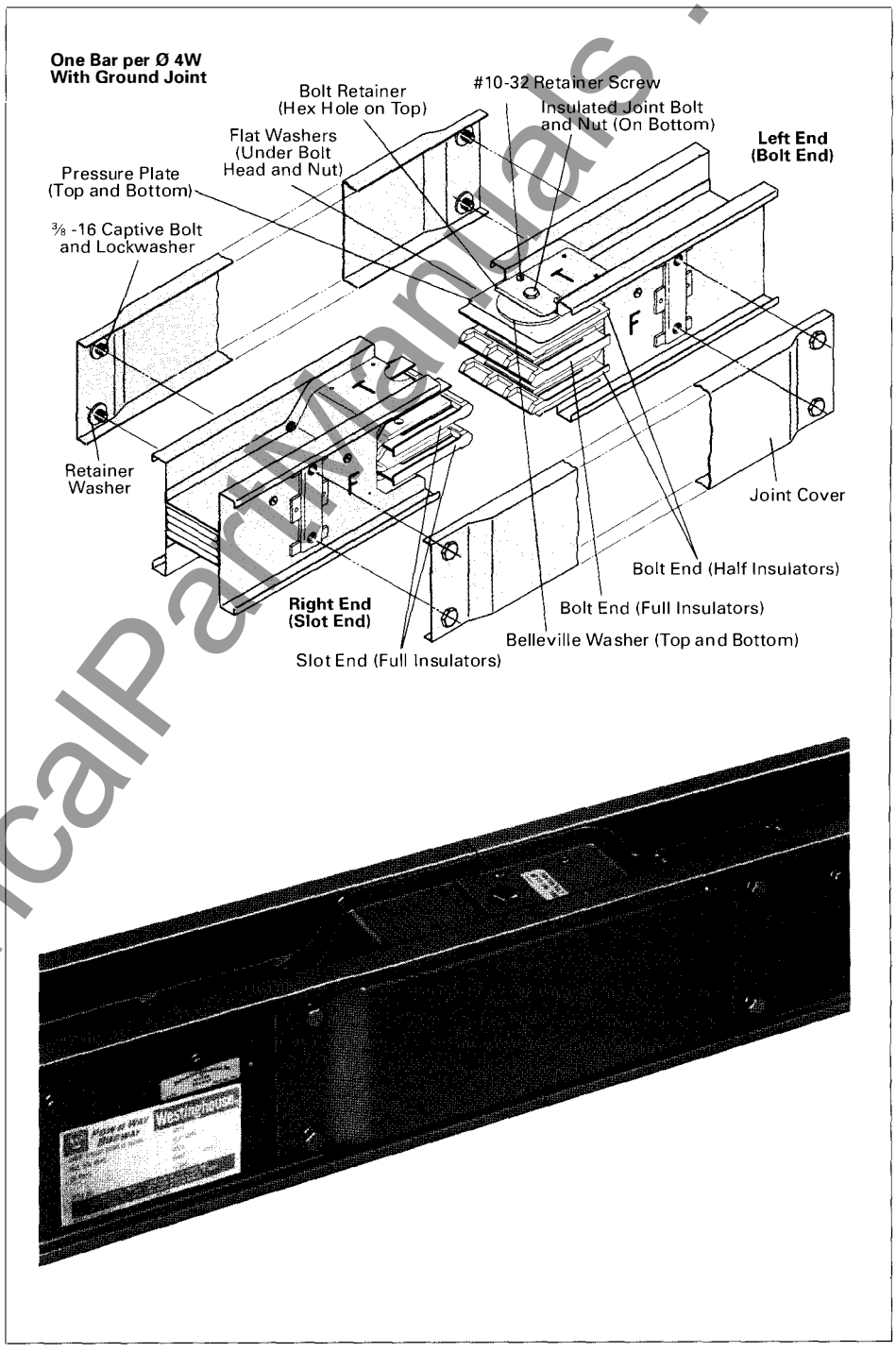
High strength molded polyester glass joint insulators are inserted between opposite phases of bus bars and between bus bars and the housing. This provides adequate over the surface electrical clearances and mechanical strength for the joint.

Bus bars on the right-end (slot end) of a busway section are flared and have an open slot to accept the captive joint bolt. Joint insulators on this end also have an open slot.

Joint covers with captive hardware complete the housing joint giving a good mechanical connection between sections. The same universal joint cover is used for all ratings of Pow-R-Way, 225-5000 Amperes, both plug-in and feeder.

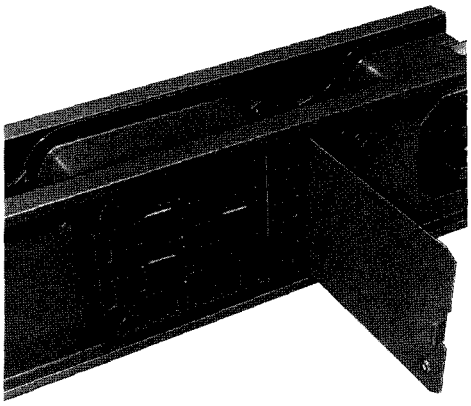
Note: Pow-R-Way plug-in design with bus bars under 3-inch wide (225-600 Aluminum or 225-800A Copper) requires 10¼ inches to joint centerline when passing through walls or floors. This is necessary to keep joint covers clear of walls and floors.

Exploded View of Joint Details



Pow-R-Way® Busway Systems

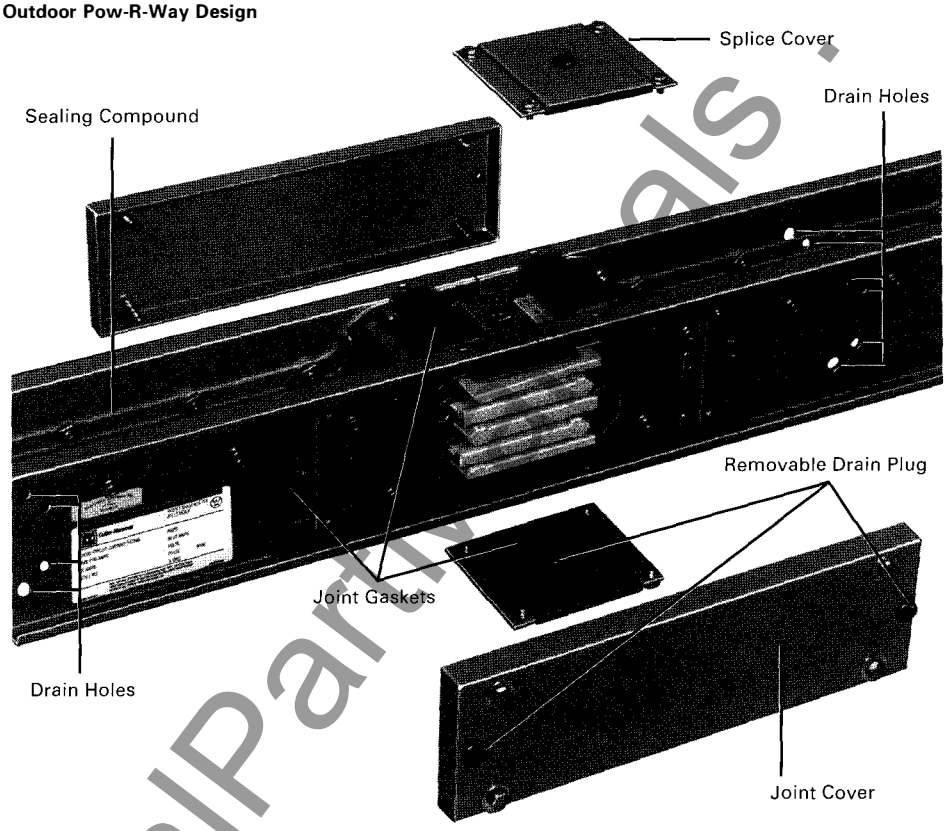
Plug-in Openings



Plug-in openings are on 24-inch centers. Plug-in opening doors have a formed hinge and remain on duct at all times.

At each plug-in opening, the bus bars are flared out to 13/16-inch centers to allow plug-in stabs to engage bus bars. High strength molded polyester glass plug-in insulators provide protection of the duct in the event of stresses due to a fault and provide full isolation of the stabs of any plug-in device installed on the duct.

Outdoor Pow-R-Way Design

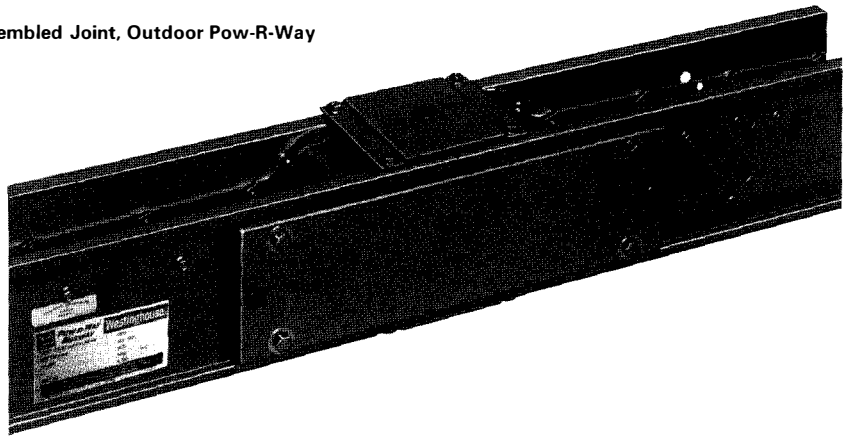


Pow-R-Way outdoor duct is the same design as indoor duct except for the following features as shown above:

- Gasket splice plates with removable drain plugs are supplied to cover joint bolt.
- Special outdoor joint covers with removable drain plugs.
- All four sides of duct have neoprene gasketing to seal out all water.
- Housing is of galvanized steel and has drain holes.
- All seams are sealed with sealing compound.

CAUTION
After Busway Joint has been assembled, remove and discard all rubber drain plugs located on the underside of the duct.

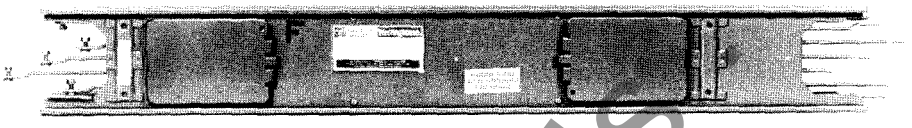
Assembled Joint, Outdoor Pow-R-Way



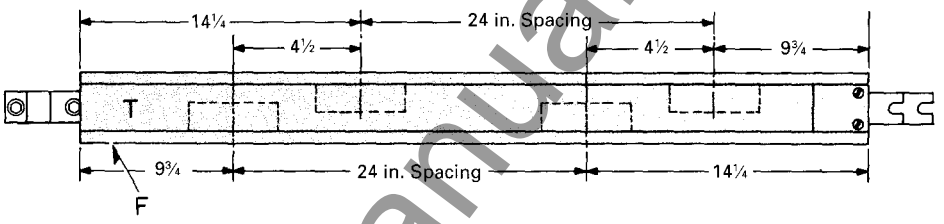
Pow-R-Way II Straight Lengths
(225-400 Amperes Only) Indoor Only

Plug-in Straight Lengths
Straight lengths of Pow-R-Way II plug-in busway are supplied only in 2, 4, 6, 8 and 10 foot lengths to maintain 24-inch spacing for plug-in openings.

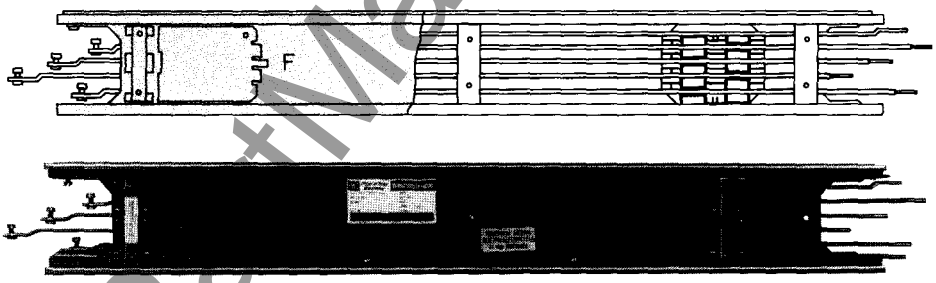
Risers
Refer to Cutler-Hammer.



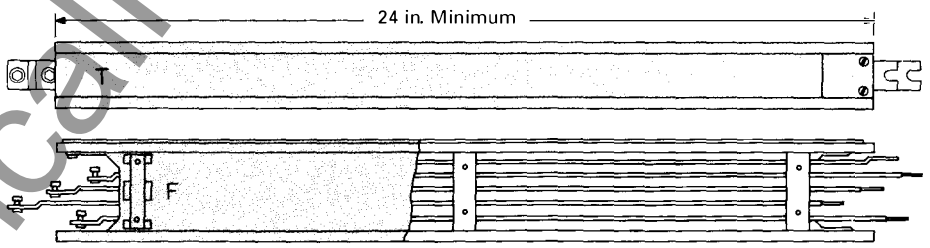
Typical Plug-in Straight Length



Feeder Straight Lengths
Straight lengths of feeder busway can be supplied in any length from 24-inch to 10-feet.



Typical Feeder Straight Length



Dimensions in Inches

Pow-R-Way® Busway Systems

Pow-R-Way Straight Lengths
(600-5000 Amperes)

Plug-in Straight Lengths
Straight lengths of plug-in busway are supplied only in 2, 4, 6, 8, and 10 foot lengths, with the exception that 2-feet lengths are not available in aluminum for 600 amps, and in copper for 600 and 800 amps.

In all two and three bar per phase arrangements, tie bars between like phases are added in order to electrically balance the busway.

Figures A through D illustrate configuration of duct for available ampere ratings. See Table A for reference to proper figure. Table B shows number of plug-in openings available for standard lengths.

Table A

Ampere Rating	Figure Number	
	Aluminum	Copper
600	A	A
800	B	A
1000	B	B
1200	B	B
1350	B	B
1600	B	B
2000	C	C
2500	C	C
3000	C	C
4000	D	D

Table B

Duct Length	No. of Plug-in Openings	
	Front	Back
2 ft.-0 in.	1	1
4 ft.-0 in.	2	2
6 ft.-0 in.	3	3
8 ft.-0 in.	4	4
10 ft.-0 in.	5	5

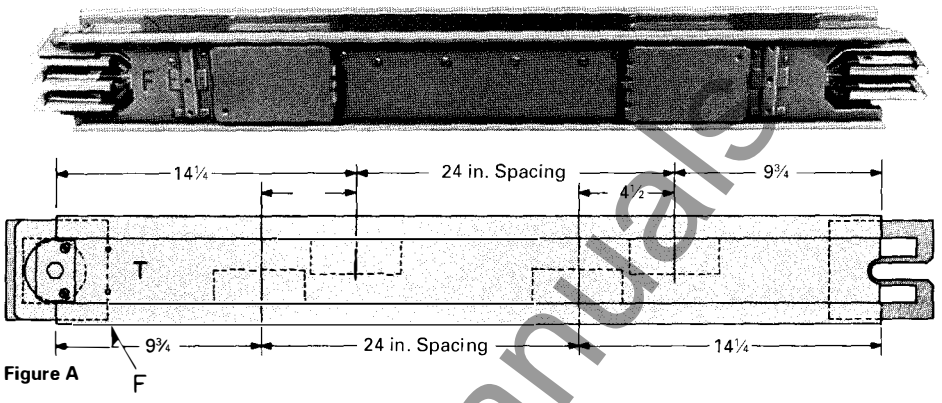


Figure A

Figure B

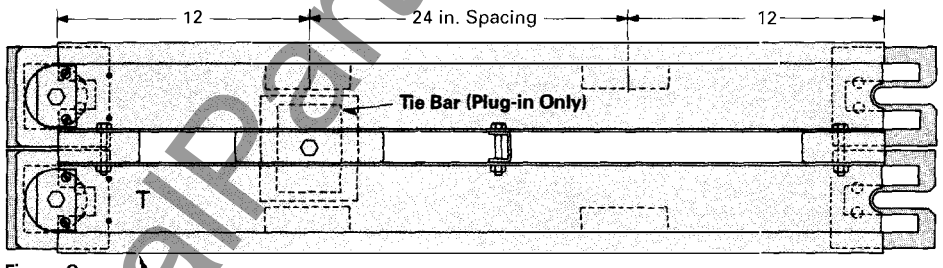


Figure C

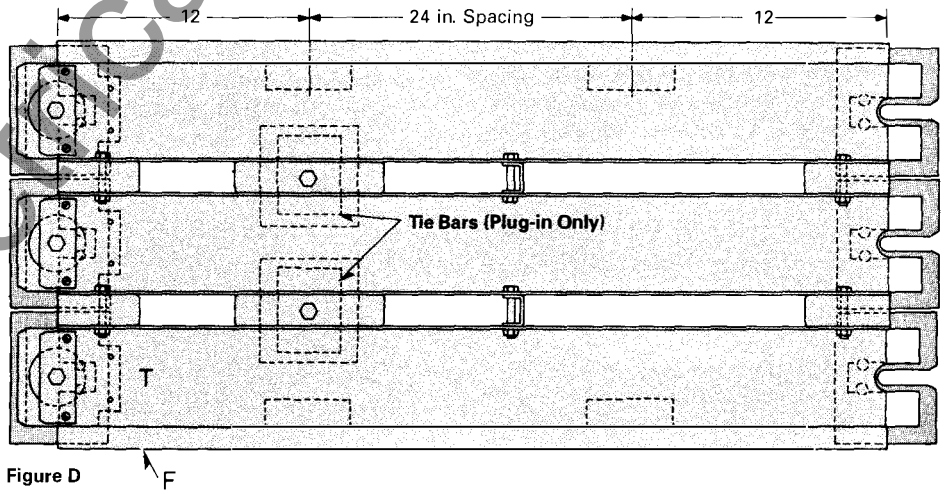


Figure D

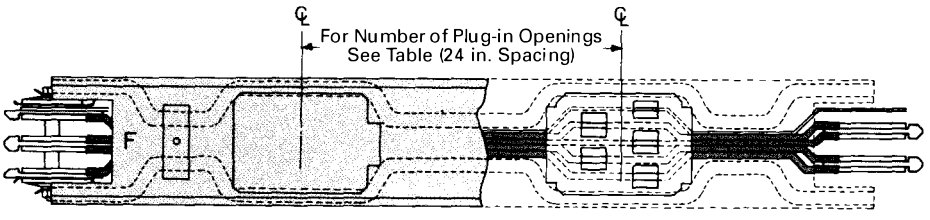


Figure E

Dimensions in Inches

Pow-R-Way® Busway Systems

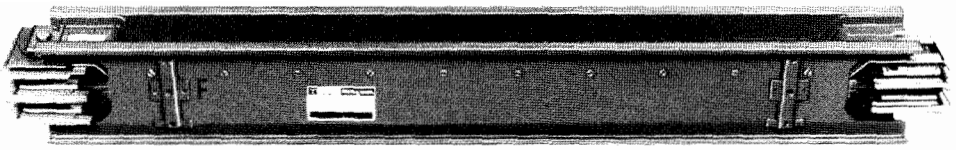
Pow-R-Way Straight Lengths
(600-5000 Amperes)

Feeder Straight Lengths

Straight lengths of feeder busway can be supplied in any length from 24 in. to 10 ft.-0 in.

Figures A through D illustrate configuration of duct for available ampere ratings. See table below for reference to proper figure.

Ampere Rating	Figure Number	
	Aluminum	Copper
600	A	A
800	B	A
1000	B	B
1200	B	B
1350	B	B
1600	B	B
2000	C	C
2500	C	C
3000	C	C
4000	D	D
5000	. .	D



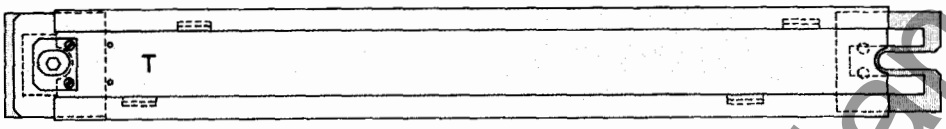


Figure A

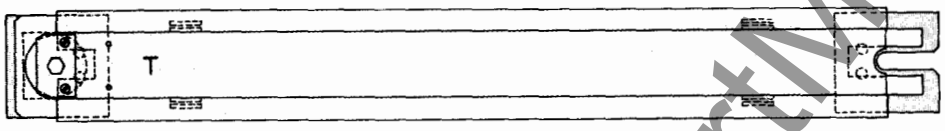


Figure B

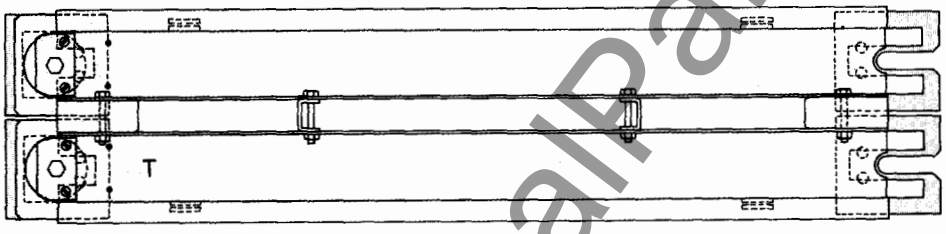


Figure C

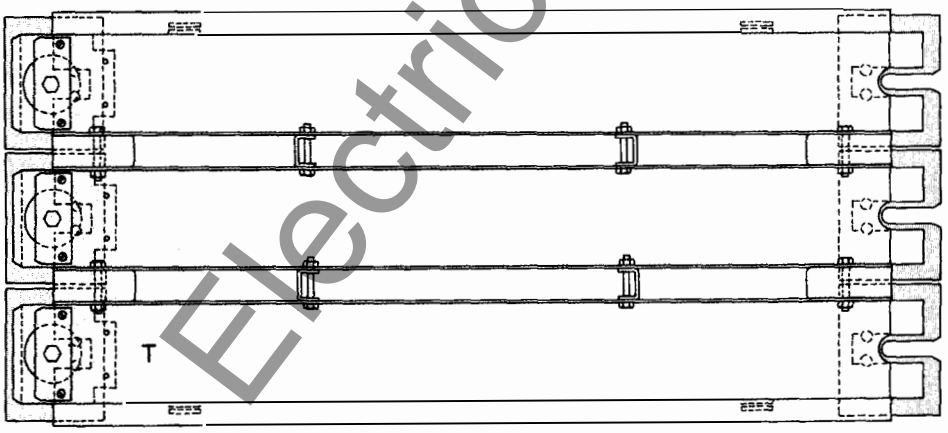


Figure D

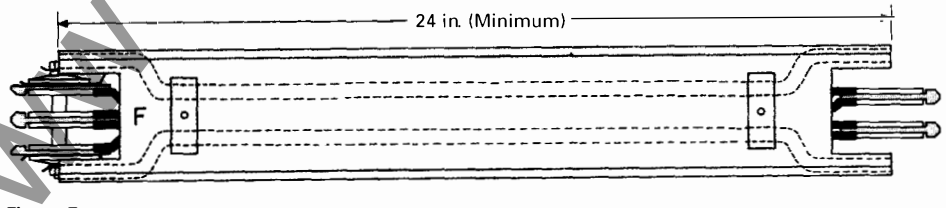


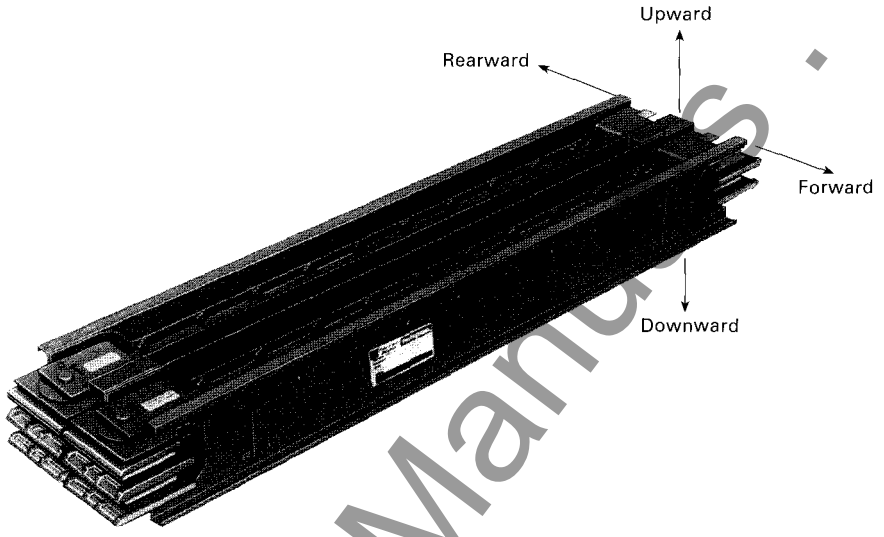
Figure E

Dimensions in Inches

March 1996

Pow-R-Way® Busway Systems

Fittings for Pow-R-Way II and Pow-R-Way Busway
There is a basic fitting to meet every application need: flanges, elbows, offsets, tees, cable tap boxes, weatherheads, transformer connections, power take off sections, reducers, adapter cubicles, expansion joints and end closers. These fittings, along with standard and minimum dimensions are described on the following pages. **When making field measurements and layouts, it should be remembered that dimensions of fittings are given from the centerline of the busway.** Relationship of fitttings to straight lengths is illustrated at right.

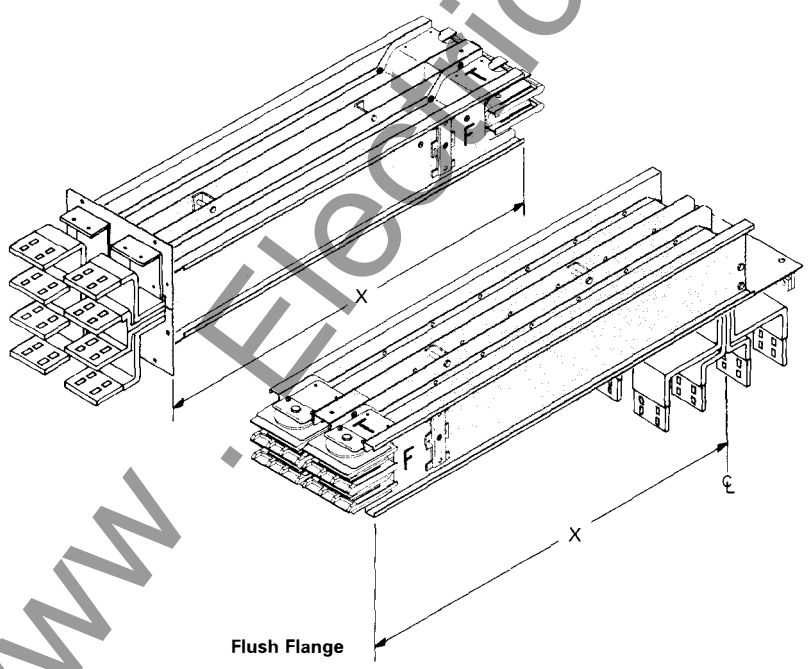


Assembled sections of busway are marked "T" for top and "F" for front. When assembling the system, "T" and "F" markings of adjacent sections must match.

Flanges①
Flanges join busway housing to the switchgear or other apparatus and include standardized bus extensions for electrical connection.

When busway extends into switchgear, switchboards or motor control centers, the opening and flange drillings must be provided by the switchgear builder. In which case, the cutout dimensions and drilling plan must be followed. For proper coordination between busway and any equipment, detailed drawings must accompany the order.

Flange



Flush Flange

Flange can be supplied on left or right of section, as required. Minimum dimensions are shown in the tables below.

Ampere Rating	Minimum X Dimension, Inches	
	Aluminum	Copper
225②	14	14
400②	14	14
600	12	12
800	9¾	12
1000	9¾	9¾
1200	9¾	9¾
1350	9¾	9¾
1600	9¾	9¾
2000	9¾	9¾
2500	9¾	9¾
3000	9¾	9¾
4000	9¾	9¾
5000	9¾	9¾

Flush Flanges
Flush Flange is used when duct must lay flat on top of a switchboard. Flange can be supplied on left or right end of section, as required. Extensions can extend out of top or bottom as required.

Ampere Rating	Minimum X Dimension, Inches	
	Aluminum	Copper
225②	12⅝	12⅝
400②	12⅝	12⅝
600	12⅝	12⅝
800	12⅝	12⅝
1000	12⅝	12⅝
1200	12⅝	12⅝
1350	12⅝	12⅝
1600	12⅝	12⅝
2000	12⅝	12⅝
2500	12⅝	12⅝
3000	12⅝	12⅝
4000	12⅝	12⅝
5000	. . . .	12⅝

① Flange hardware to be supplied by others.
② Dimensional purposes only. Pow-R-Way II is standard design in this rating.

Pow-R-Way® Busway Systems

Fittings, *Continued*

Elbows
Elbows are used to make 90° changes in the direction of busway runs. There are four types available.

See minimum leg lengths in tables.

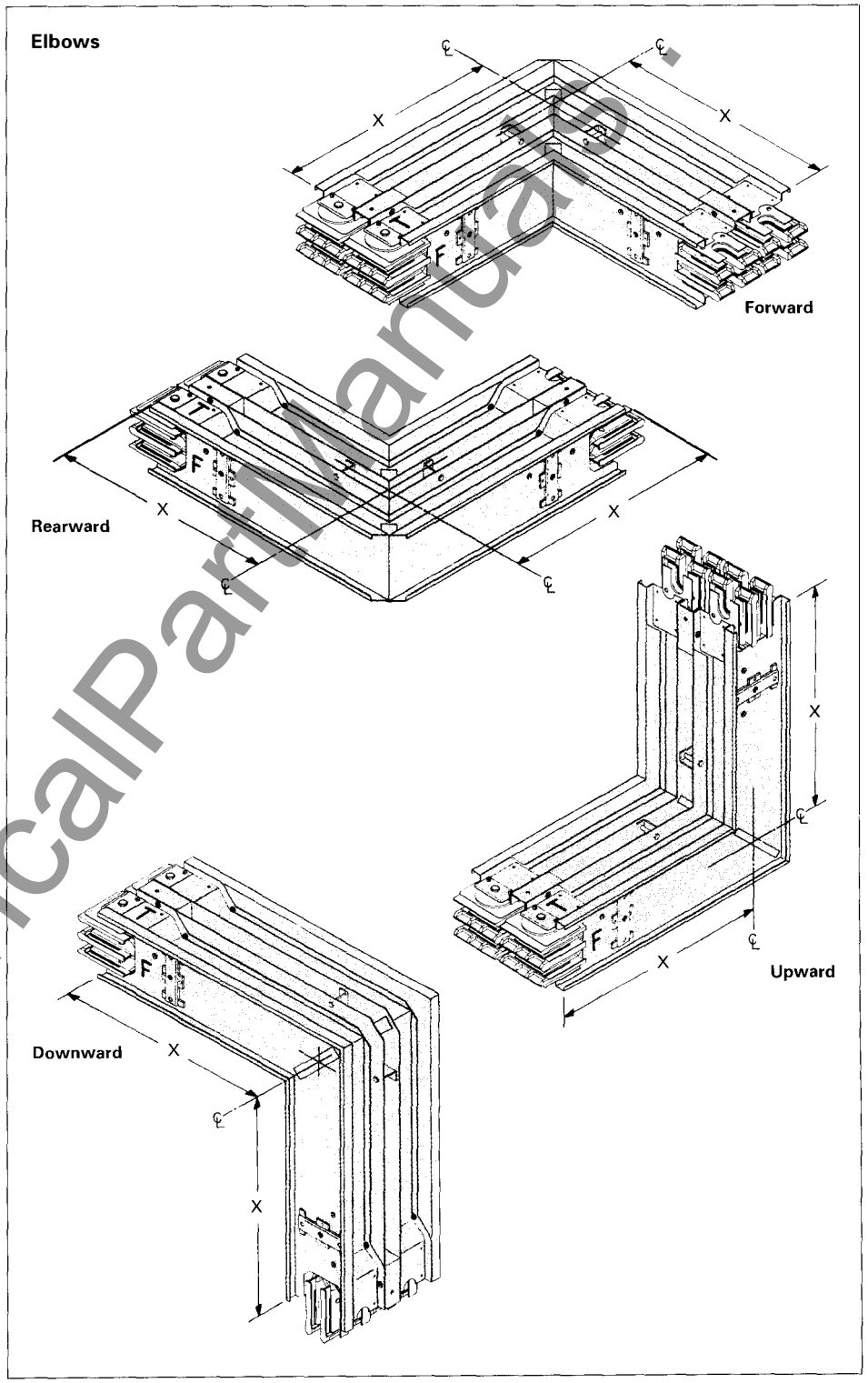
Forward and Rearward Elbows

Ampere Rating	Min. Leg Lengths (X), Inches	
	Aluminum	Copper
225①	15¾	15¾
400①	15¾	15¾
600	15¾	15½
800	13¾	15¾
1000	14¼	13¾
1200	14¾	14¼
1350	15¼	14½
1600	16	14¾
2000	17⅝	16⅜
2500	19⅛	17⅝
3000	20⅝	18⅛
4000	23¾	20¾
5000	. . . .	23

Upward and Downward Elbows

Ampere Rating	Min. Leg Lengths (X), Inches	
	Aluminum	Copper
225①	15	15
400①	15	15
600	13½	13½
800	11½	13½
1000	11½	11½
1200	11½	11½
1350	11½	11½
1600	11½	11½
2000	11½	11½
2500	11½	11½
3000	11½	11½
4000	11½	11½
5000	. . . .	11½

① Pow-R-Way II is standard design in this rating.



Pow-R-Way® Busway Systems

Fittings, *Continued*

Elbow Flanges①
Flanges can be supplied on end of right or left leg as required. Minimum leg lengths are shown below.

Forward and Rearward Elbow Flanges

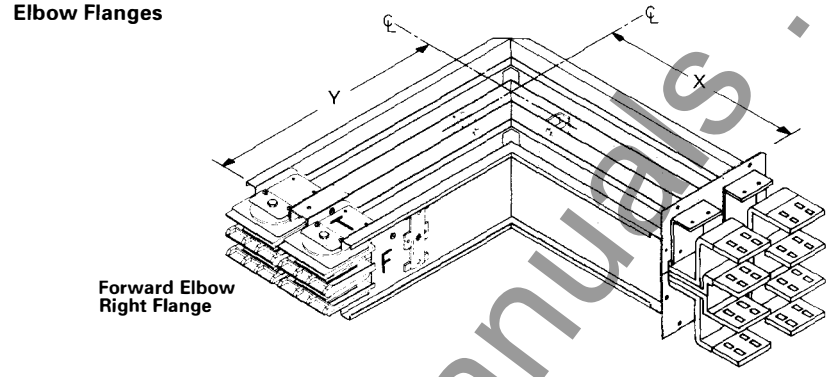
Ampere Rating	Minimum Dimensions, Inches			
	Flange Leg (X)		Joint Leg (Y)	
	Alum.	Copper	Alum.	Copper
225②	8	8	15¾	15¾
400②	8	8	15¾	15¾
600	5⅞	5⅝	15¾	15½
800	6⅛	5⅞	13¾	15¾
1000	6⅝	6⅛	14¼	13¾
1200	7⅛	6⅝	14¾	14¼
1350	7⅝	6⅞	15¼	14½
1600	8⅜	7⅛	16	14¾
2000	10	8⅞	17⅝	16⅜
2500	11½	10	19⅛	17⅝
3000	13	10½	20⅝	18⅛
4000	16⅛	13⅛	23¾	20¾
5000	. . . .	15⅜	. . . .	23

Upward and Downward Elbow Flanges

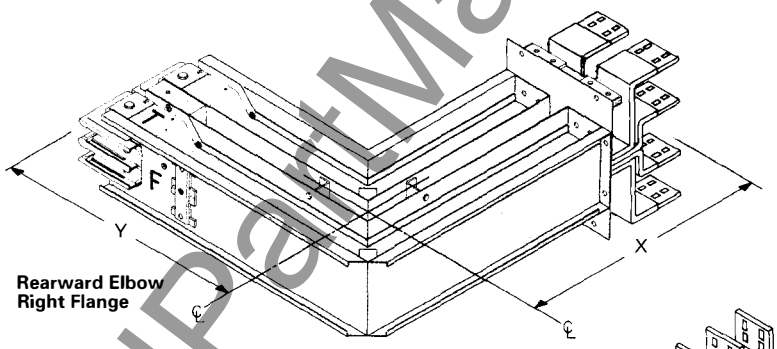
Ampere Rating	Minimum Dimensions, Inches			
	Flange Leg (X)		Joint Leg (Y)	
	Alum.	Copper	Alum.	Copper
225②	8	8	15	15
400②	8	8	15	15
600	5⅛	5⅛	13½	13½
800	5⅛	5⅛	11½	13½
1000	5⅛	5⅛	11½	11½
1200	5⅛	5⅛	11½	11½
1350	5⅛	5⅛	11½	11½
1600	5⅛	5⅛	11½	11½
2000	5⅛	5⅛	11½	11½
2500	5⅛	5⅛	11½	11½
3000	5⅛	5⅛	11½	11½
4000	5⅛	5⅛	11½	11½
5000	. . . .	5⅛	. . . .	11½

① Flange hardware to be supplied by others.
② Pow-R-Way II is standard design in this rating.

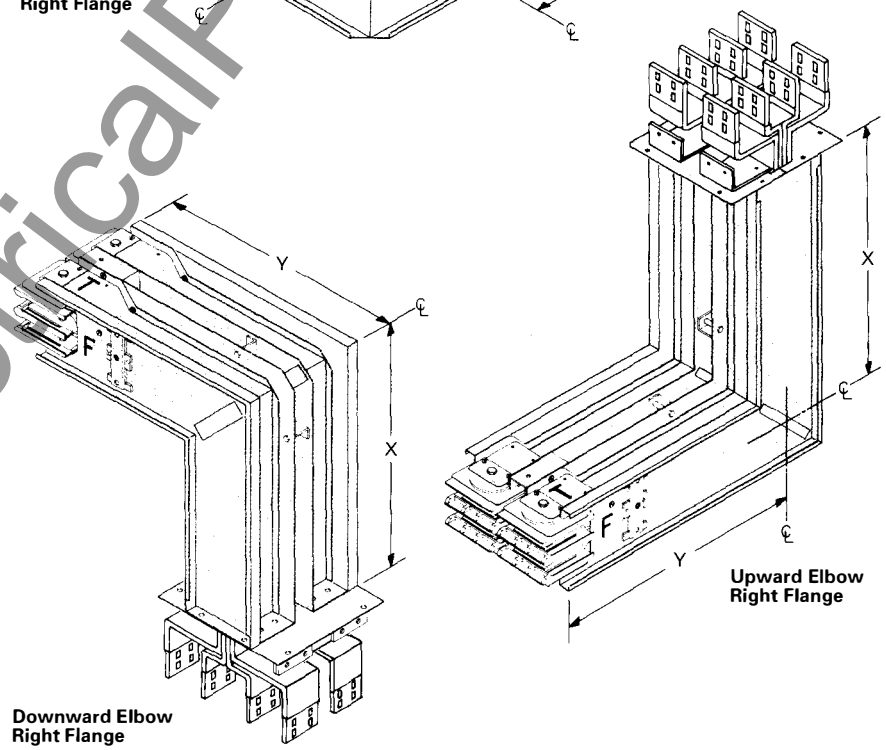
Elbow Flanges



Forward Elbow Right Flange



Rearward Elbow Right Flange



Upward Elbow Right Flange

Downward Elbow Right Flange

Pow-R-Way® Busway Systems

Fittings, *Continued*

Offsets
An offset is used to avoid obstacles and to conform with building structure. It is simply two elbows fabricated into one unit for use where it is impossible to use a standard elbow because of space restrictions.

Minimum leg lengths are shown below.

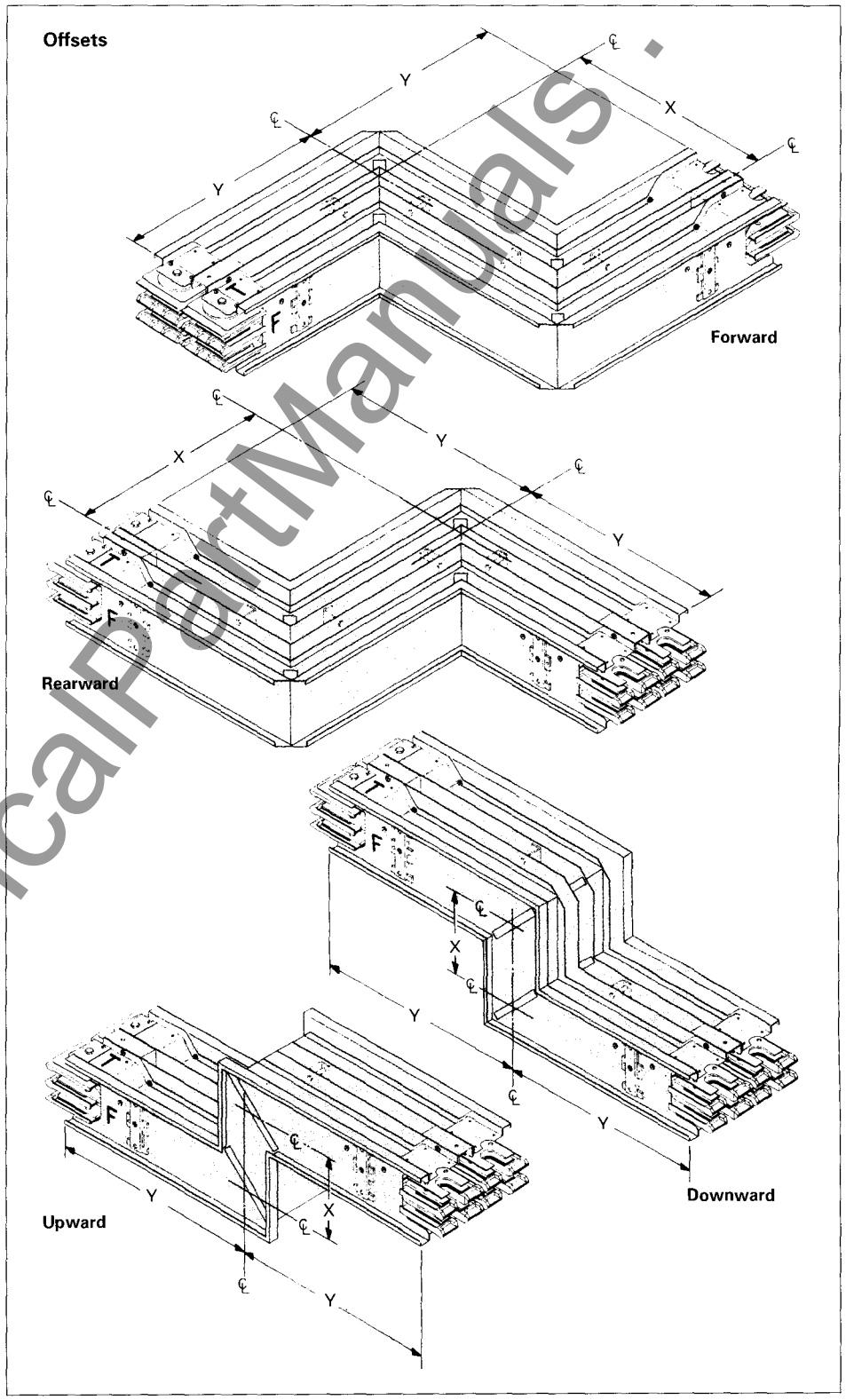
Forward and Rearward Offsets

Ampere Rating	Minimum Dimensions, Inches			
	Middle Leg (X)		Joint Leg (Y)	
	Alum.	Copper	Alum.	Copper
225①	3	3	15¾	15¾
400①	3	3	15¾	15¾
600	3	3	15¾	15½
800	3	3	13¾	15¾
1000	3	3	14¼	13¾
1200	3	3	14¾	14¼
1350	3	3	15¼	14½
1600	3	3	16	14¾
2000	3	3	17⅝	16⅜
2500	3	3	19⅛	17⅝
3000	3	3	20⅝	18⅛
4000	3	3	23¾	20¾
5000	3	3	. . . .	23

Upward and Downward Offsets

Ampere Rating	Minimum Dimensions, Inches			
	Middle Leg (X)		Joint Leg (Y)	
	Alum.	Copper	Alum.	Copper
225①	3	3	15	15
400①	3	3	15	15
600	3	3	13½	13½
800	3	3	11½	13½
1000	3	3	11½	11½
1200	3	3	11½	11½
1350	3	3	11½	11½
1600	3	3	11½	11½
2000	3	3	11½	11½
2500	3	3	11½	11½
3000	3	3	11½	11½
4000	3	3	11½	11½
5000	. .	3	11½	11½

① Pow-R-Way II is standard design in this rating.
② For outdoor duct, add 1¾ inches.



Pow-R-Way® Busway Systems

Fittings, *Continued*

Tees
A tee is a busway fitting suitable for connection in three directions. Minimum lengths are shown below.

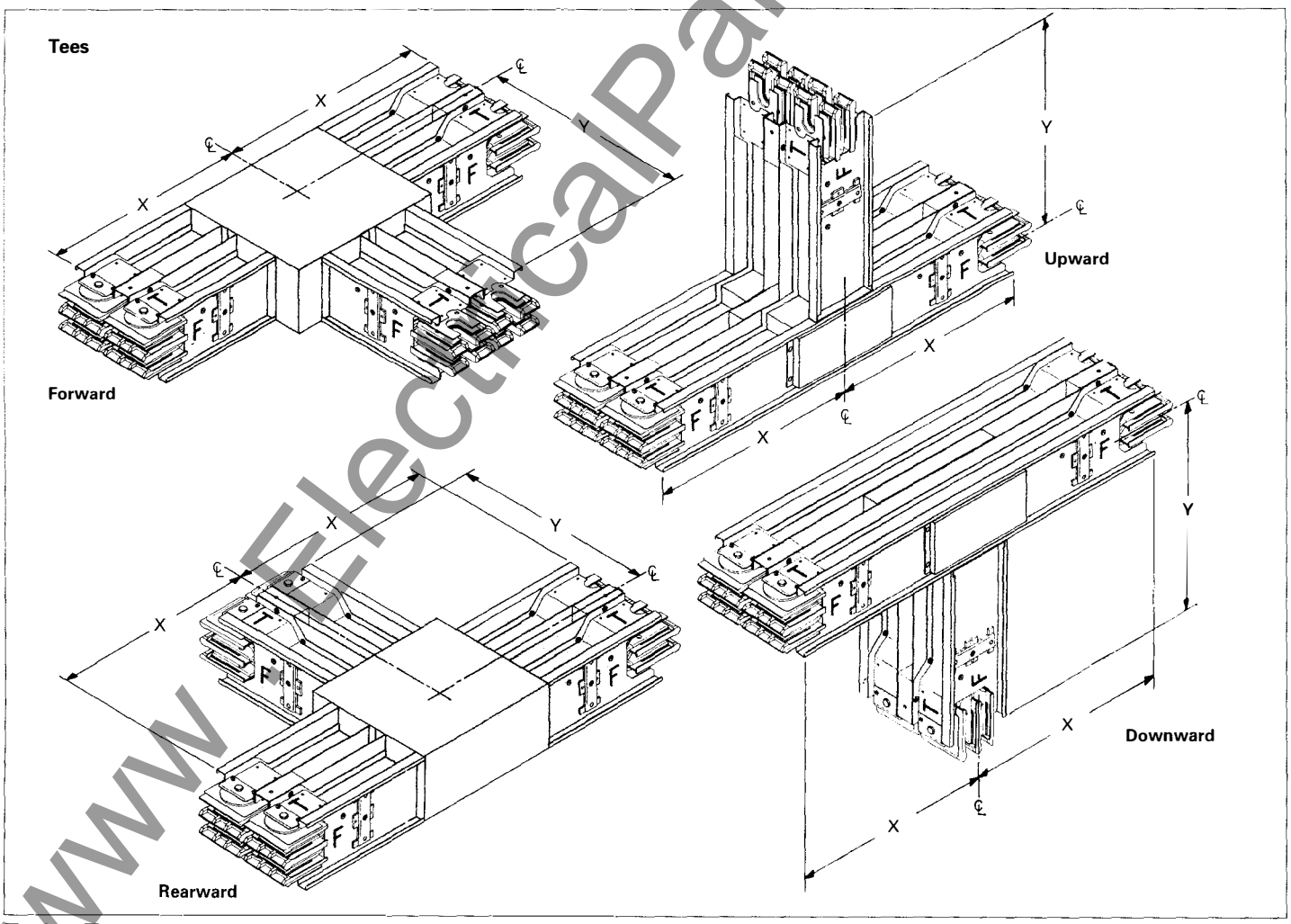
Forward and Rearward Tees

Ampere Rating	Minimum Dimensions, Inches②			
	Left & Right Legs (X)		Middle Leg (Y)	
	Alum.	Copper	Alum.	Copper
225①	15¾	15¾	15¾	15¾
400①	15¾	15¾	15¾	15¾
600	15¾	15¾	15¾	15¾
800	14½	15¾	14½	15¾
1000	15	14½	15	14½
1200	15½	15	15½	15
1350	16	15¼	16	15¼
1600	16¾	15½	16¾	15½
2000	18⅜	17¼	18⅜	17¼
2500	19⅞	18⅜	19⅞	18⅜
3000	21⅜	18⅞	21⅜	18⅞
4000	24½	21½	24½	21½
5000	....	23¾	....	23¾

Upward and Downward Tees

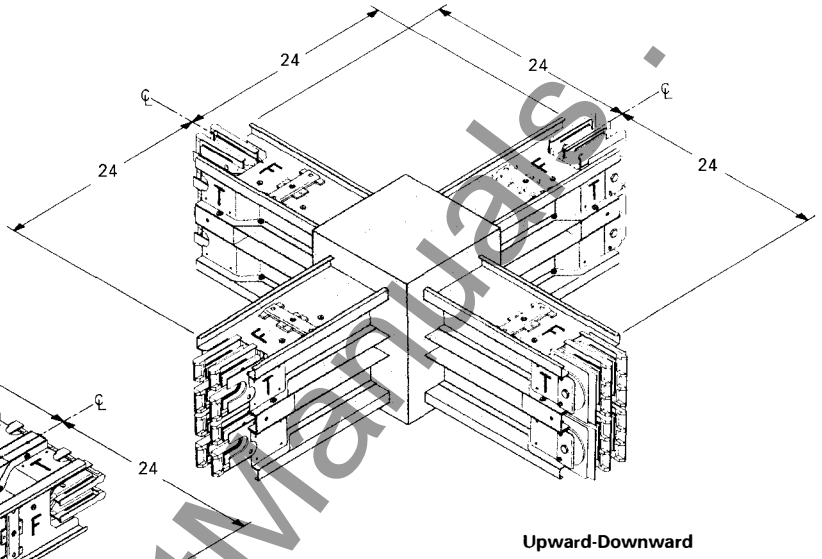
Ampere Rating	Minimum Dimensions, Inches③			
	Left & Right Legs (X)		Middle Leg (Y)	
	Alum.	Copper	Alum.	Copper
225①	18¾	18¾	15	15
400①	18¾	18¾	15	15
600	19¼	18¾	15	15
800	17½	19¼	12¾	15
1000	18½	17½	12¾	12¾
1200	19½	18½	12¾	12¾
1350	20½	19	12¾	12¾
1600	22	19½	12¾	12¾
2000	19	17¾	12¾	12¾
2500	20½	19	12¾	12¾
3000	22	19½	12¾	12¾
4000	21	19	12¾	12¾
5000	....	20½	....	12¾

① Pow-R-Way II is standard design in three rating.
② For outdoor duct, add 1¾ inches.
③ For outdoor duct, add 1 inch.

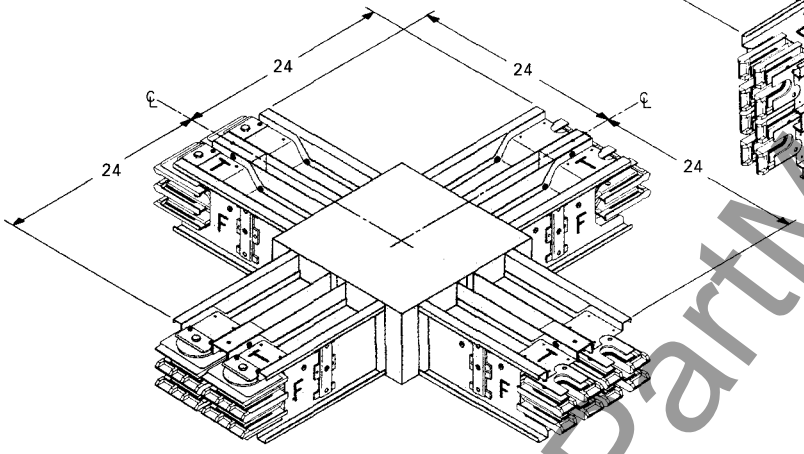


Fittings, *Continued*

Crosses
A cross is a busway fitting suitable for connection in four directions. It is used where a run of duct branches off in three directions in the same plane.



Upward-Downward



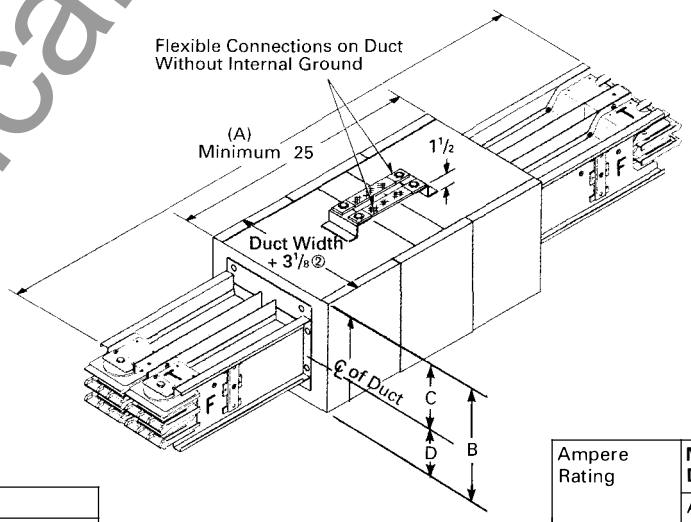
Forward-Rearward

Note: Dimensions shown are typical.
Dimensions in Inches

Expansion Joint
Expansion joints accommodate the expansion and contraction of bus bars with respect to the enclosure. They are necessary to compensate for the difference in the coefficient of expansion of steel housing and copper or aluminum bus bars.

An expansion joint should be installed in the center of extremely long runs of the busway. If such runs have an end closer at one end, so that the bus bars are free to move, or if the run contains elbows, expansion joint may be omitted.

Expansion joints must also be used wherever a run of busway crosses an expansion joint in a building. The use of expansion joints should be engineered for individual installations.



	Dimensions, Inches			
	(B)		(C)	(D)
	225A-400A①③	600A-5000A	600A-5000A	600A-5000A
3W	10⁵⁄₁₆	11¾	6	5¾
4W	13⁵⁄₁₆	15	7⅝	7⅜
3W + Grd.	12⁵⁄₁₆	13⅜	7⅝	5¾
4W + Grd.	15⁵⁄₁₆	16	8⅝	7⅜

① Dimensional purposes only. Pow-R-Way II is standard design in this rating.
② 225A and 400A (Pow-R-Way II) is 5⅛₂ inches total width.
③ B dimension is centered on "F" side of duct.

Ampere Rating	Minimum Dimensions, Inches (A)	
	Aluminum	Copper
225①	53	53
400①	53	53
600	49	49
800	44½	49
1000	44½	44½
1200	44½	44½
1350	44½	44½
1600	44½	44½
2000	44½	44½
2500	44½	44½
3000	44½	44½
4000	44½	44½
5000	44½	44½

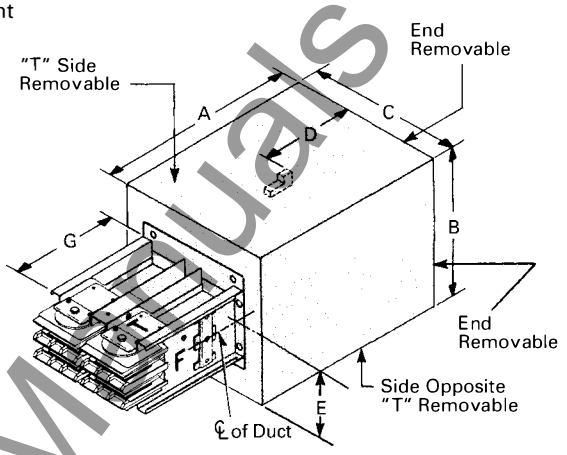
Pow-R-Way® Busway Systems

Fittings, *Continued*

End Cable Tap Box
End cable tap boxes are used where a run of duct is fed at the end by **cable and conduit**, or where equipment served by the duct is connected without overcurrent protection.

Ampere Rating	Dimensions, Inches							No. of #4-600 MCM Lugs or (2) #1/0-250 MCM Cu/Al	
	End Cable Tap Box Indoor②								
	A	B	C	D		E		G②	Per Phase and Neutral	Ground
				3W, 4W	3WG, 4WG	3W, 4W	3WG, 4WG	Min.		
225①	23⅞	18¾	10	....	....	10³⁄₁₆	10³⁄₁₆	14	1	1③
400①	23⅞	18¾	10	....	....	10³⁄₁₆	10³⁄₁₆	14	2	1③
600	30	18⅞	10⅛	16¼	16¼	9⁷⁄₁₆	9⁷⁄₁₆	12	2	2③
800	32	18¼	12⅛	18¼	18¼	9⁷⁄₁₆	9⁷⁄₁₆	12	3	3③
1000	32	18⅞	12⅛	18¼	18¼	9⁷⁄₁₆	9⁷⁄₁₆	9¾	3	3③
1200	33¾	20⅛	16⅝	20	20	10¹⁄₁₆	10¹⁄₁₆	9¾	4	4③
1350	34¾	20⅛	16⅝	21	21	10¹⁄₁₆	10¹⁄₁₆	9¾	4	4
1600	34¾	20⅛	16⅝	21	21	10¹⁄₁₆	10¹⁄₁₆	9¾	5	5
2000	35⅞	22³⁄₃₂	18⅝	22	19⅞	11¹⁄₁₆	9¹⁄₁₆	9¾	6	6
2500	38	22¼	24½	24	21⅞	11³⁄₃₂	9⅛	9¾	8	8
3000	38	22¼	24½	24	21⅞	11³⁄₃₂	9⅛	9¾	9	9
4000	41¾	22¼	27	28	25⅞	11⅛	9⅛	9¾	12	12
5000	43¾	22¼	31	30	27⅞	11⅛	9⅛	9¾	15	15

① Pow-R-Way II is standard design in this rating.
② For outdoor end cable tap box add ¼ in. to A and B dimensions, ⅛ in. to E dimension and 2 in. to G dimension and "T" must be on top for horizontal runs.
③ #6-250 MCM lugs.

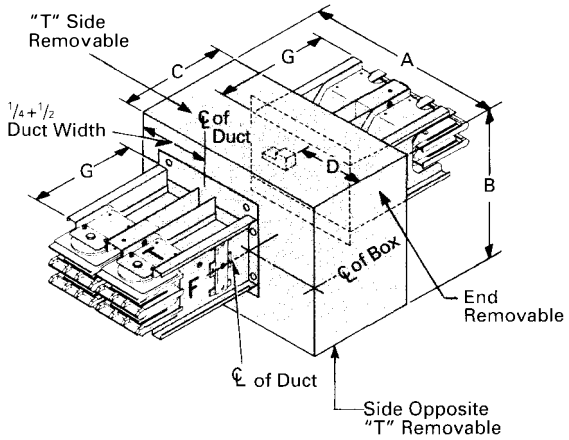


Note: Add ¼ inch to A, B dimensions for outdoor cable tap box and "T" must be on top for horizontal runs.

Center Cable Tap Box
Center cable tap boxes are used where a run of duct is center fed by **cable and conduit**, or where equipment served by the duct is connected without overcurrent protection.

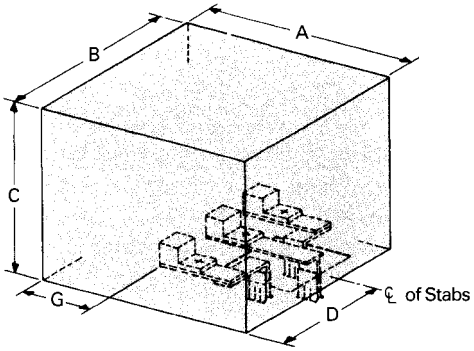
Ampere Rating	Dimensions, Inches							No. of #4-600 MCM Lugs or (2) #1/0-250 MCM Cu/Al	
	Center Cable Tap Box								
	A		B	C	D		G②	Per Phase and Neutral	Ground
	Cu	Al			Cu	Al			
225①	19½	19½	18¾	16¼	10³⁄₁₆	10³⁄₁₆	14	1	1③
400①	19½	19½	18¾	16¼	10³⁄₁₆	10³⁄₁₆	14	2	1③
600	28½	28½	18⅞	16¼	16¼	16¼	12	2	2③
800	32	32	18⅞	16¼	19	19¼	12	3	3③
1000	32	32	18⅞	16¼	19¼	18¾	9¾	3	3③
1200	34¾	34¾	20⅛	16¼	21	20	9¾	4	4③
1350	36¾	36¾	20¼	16¼	22½	21	9¾	4	4
1600	38¾	38¾	20¼	16¼	23½	21	9¾	5	5
2000	40¾	43¼	22³⁄₁₆	16¼	22	22	9¾	6	6
2500	45¼	48¼	22³⁄₁₆	22¼	24	24	9¾	8	8
3000	46¼	51¼	22³⁄₁₆	22¼	24	24	9¾	9	9
4000	55⁹⁄₁₆	61⁹⁄₁₆	22³⁄₁₆	27	28	28	9¾	12	12
5000	63⁹⁄₁₆	....	22³⁄₁₅	32½	30	....	9¾	15	15

① Pow-R-Way II is standard design in these rating.
● Add 2 inches for outdoor cable tap box.
③ #6-250 MCM lugs.



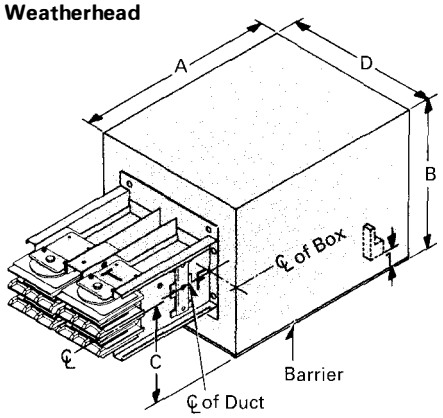
Plug-in Cable Tap Box
Plug-in cable tap boxes are used to feed the busway run, or where equipment served by the busway is connected without overcurrent protection. Plug-in cable tap boxes plug into any Pow-R-Way busway (225-4000 amps) plug-in openings.

Max. Amps	Dimensions, Inches					No. of #4 to 600 MCM Lugs Per Phase
	A	B	C	D	G	
225	15⅛	12⅛	7	6¹⁄₁₆	6⅛	1
400	18⅛	14⅛	7	7¹⁄₁₆	8⅜	2
600	23⁷⁄₁₆	22³⁄₁₆	9¹⁵⁄₁₆	11¹⁄₁₆	12⅛	2
1000	23⁷⁄₁₆	22³⁄₁₆	9¹⁵⁄₁₆	11¹⁄₁₆	12⅛	3



Fittings, *Continued*

Weatherhead

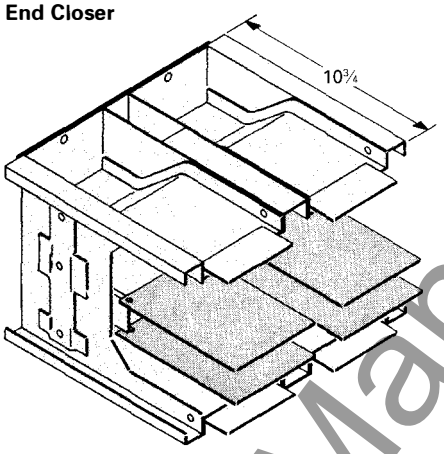


Right End Weatherhead①

A weatherhead is used where power is fed into a building **by cable** from a utility service drop, or from a transformer. Cables enter bottom of weatherhead per N. E. C. drip loop requirements.

① T and F marking must be shown.

End Closer



End closers terminate run of duct and can be used to close either the right or left end.

Weatherhead Dimensions

Ampere Rating	Dimensions, Inches												No. of Lugs Per Phase and Neutral	No. of Lugs for Ground
	Dimension A				Dimension B				Dimension C		Dimension D			
	3W	3W With Ground	4W	4W with Ground	3W	3W With Ground	4W	4W With Ground	3W With or Without Ground	4W With or Without Ground	Al Bars	Cu Bars		
225	....	....	....	....	....	....	....	....	....	....	....	....	..	..
400	20 3/16	24 3/16	26 3/16	30 3/16	14 13/16	17 11/16	17 11/16	19 3/16	9 5/8	11 3/16	12 5/16	12 5/16	2	2
600	20 3/16	24 3/16	26 3/16	30 3/16	14 13/16	17 11/16	17 11/16	19 3/16	9 5/8	11 3/16	12 5/16	12 5/16	2	2
800	20 3/16	24 3/16	26 3/16	30 3/16	14 13/16	17 11/16	17 11/16	19 3/16	9 5/8	11 3/16	12 5/16	12 5/16	3	3
1000	20 3/16	24 3/16	26 3/16	30 3/16	14 13/16	17 11/16	17 11/16	19 3/16	9 5/8	11 3/16	12 5/16	12 5/16	3	3
1200	20 3/16	24 3/16	26 3/16	30 3/16	14 13/16	17 11/16	17 11/16	19 3/16	9 5/8	11 3/16	12 5/16	12 5/16	3	3
1350	20 3/16	24 3/16	26 3/16	30 3/16	14 13/16	17 11/16	17 11/16	19 3/16	9 5/8	11 3/16	12 5/16	12 5/16	3	3
1600	20 3/16	24 3/16	26 3/16	30 3/16	14 13/16	17 11/16	17 11/16	19 3/16	9 5/8	11 3/16	12 5/16	12 5/16	3	3
2000	20 1/8	24 1/8	26 1/8	30 1/8	14 7/8	17 5/8	17 27/32	19 3/16	9 5/8	11 3/16	15 1/2	13	4	4
2500	20 1/8	24 1/8	26 1/8	30 1/8	14 7/8	17 5/8	17 27/32	19 3/16	9 5/8	11 3/16	18 1/2	15 1/2	5	5
3000	20 1/8	24 1/8	26 1/8	30 1/8	14 7/8	17 5/8	17 27/32	19 3/16	9 5/8	11 3/16	21 1/2	16 1/2	6	6
4000	20 1/4	24 3/16	26 1/8	30 1/8	14 7/8	17 5/8	17 27/32	19 3/16	9 5/8	11 3/16	28 7/8	22 7/8	8	8
5000	20 1/4	24 3/16	26 1/8	30 1/8	14 7/8	17 5/8	17 27/32	19 3/16	9 5/8	11 3/16	....	27 3/8/28 3/8	10	10

#4 to 600 MCM or (2) 1/0 to 250 MCM Cu/Al lugs supplied facing down and are 1 in. from bottom plate. 500 MCM to 1000 MCM Cu/Al lugs may be substituted for #4 to 600 MCM lugs. Please specify if 500 MCM to 1000 MCM lugs are required and the quantity per phase.

Pow-R-Way® Busway Systems

Fittings, *Continued*

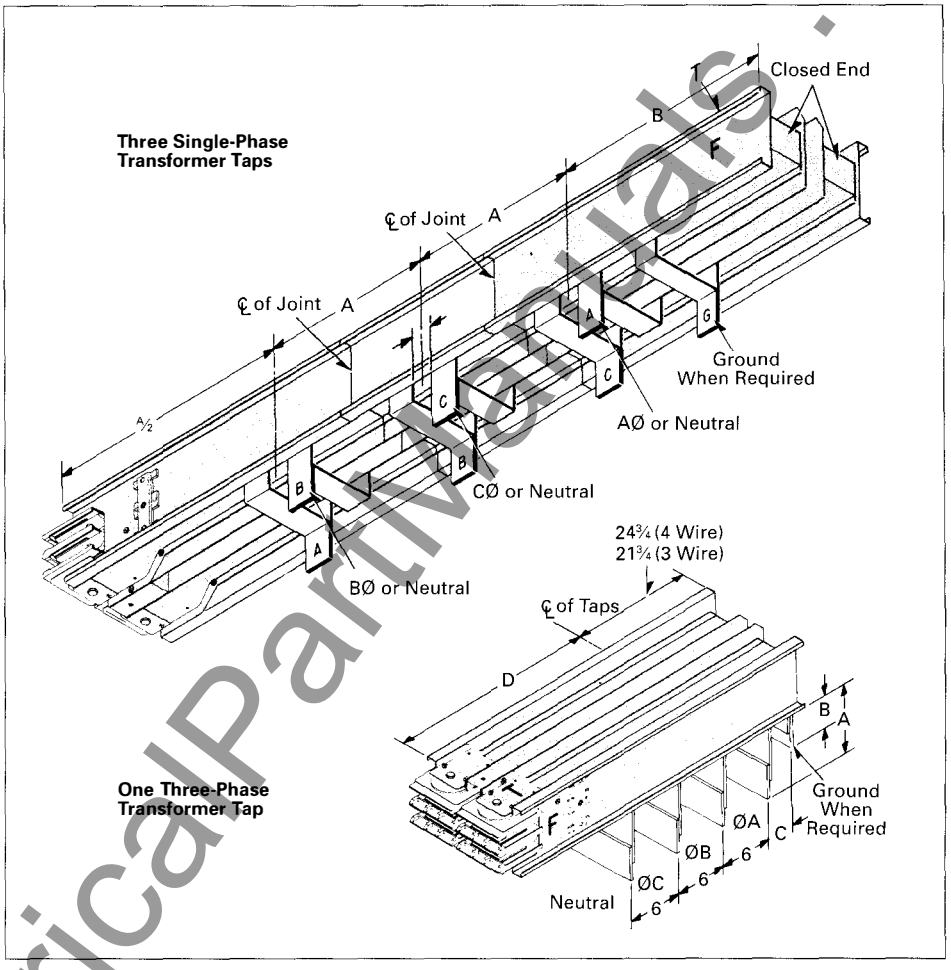
Single-Phase Transformer Tap
This type of transformer tap arrangement is used when making connections to three single-phase transformers. The bus extensions do not include drilling or lugs unless specified on the order.

Ampere Rating	Dimensions, Inches					
	A②		B (No Grd)		B (W/Grd)	
	Al	Cu	Al	Cu	Al	Cu
225①	29½	29½	16¼	16¼	18¼	18¼
400①	29½	29½	16¼	16¼	18¼	18¼
600	30½	29½	16¾	16¼	19¼	18¼
800	31½	30½	17¼	16¾	19¾	19¼
1000	33½	31½	18¼	17¼	21¼	19¾
1200	35½	33½	19¼	18¼	22¾	21¼
1350	37½	34½	20¼	18¾	24¼	22¼
1600	40½	35½	21¾	19¼	26¾	22¾
2000	34½	32	18¾	17½	22¼	20¼
2500	37½	34½	20¼	18¾	24¼	22¼
3000	40½	35½	21¾	19¼	26¾	22¾
4000	38½	34½	20¾	18¾	25	22¼
5000	....	37½	....	20¼	....	24¼

Three-Phase Transformer Tap
This type of transformer tap arrangement is used when making connections to a 3-phase transformer. The bus extensions do not include drilling or lugs unless specified on the order.

Ampere Rating	Dimensions, Inches						
	A	B	C	D (Minimum)			
				Aluminum		Copper	
				3W	4W	3W	4W
225①	6	2¾	3	20③	23③	20③	23③
400①	6	2¾	3	20③	23③	20③	23③
600	6	2¾	3	20③	23③	20③	23③
800	6	2¾	3	19④	22④	20③	23③
1000	6	2¾	3	19④	22④	19④	22④
1200	6	2¾	3	19④	22④	19④	22④
1350	6	2¾	3	19④	22④	19④	22④
1600	6	2¾	3	19④	22④	19④	22④
2000	8½	4¾	3⅜	19④	22④	19④	22④
2500	8½	4¾	3⅜	19④	22④	19④	22④
3000	8½	4¾	3⅜	19④	22④	19④	22④
4000	8½	4¾	3⅜	19④	22④	19④	22④
5000	8½	4¾	3⅜	....	....	19④	22④

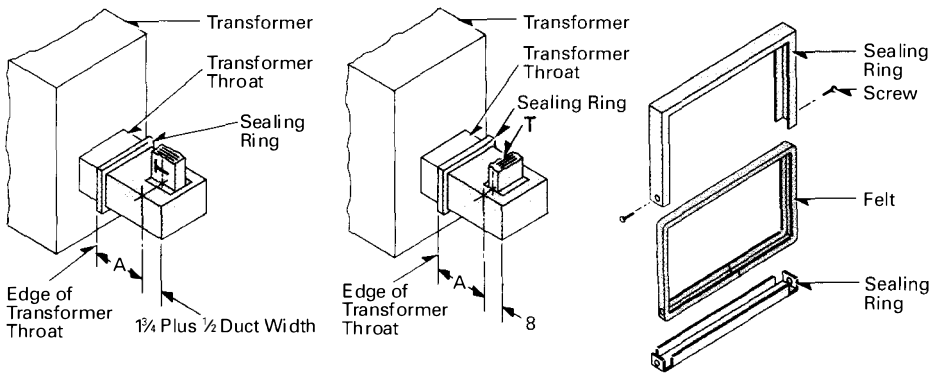
Transformer Taps



① Pow-R-Way II is standard design in these ratings.
② For outdoor duct, add 3½ inches.
③ For outdoor duct, add ¾ inch.
④ For outdoor duct, add 1¾ inches.

Transformer Throat Connections
All transformer throat connections include flexible connectors between transformer low-voltage studs and bus bars. For transformer with drilled flanges, busway will bolt to throat instead of using a sealing ring.

Duct Ampere Rating	Dimensions A, Inches
225-1600	26
2000	28½
2500	28½
3000	28½
4000	31½
5000	31½



Power Take-off Sections②●
Power take-off sections are used in the following situations:

1. To take large amounts of power off a run (beyond the current carrying capabilities of plug-in stabs).

2. Where space restrictions dictate that the wide dimensions of the busway be flat against a wall or ceiling or other obstructions, bolt-on units are used instead of plug-in units.

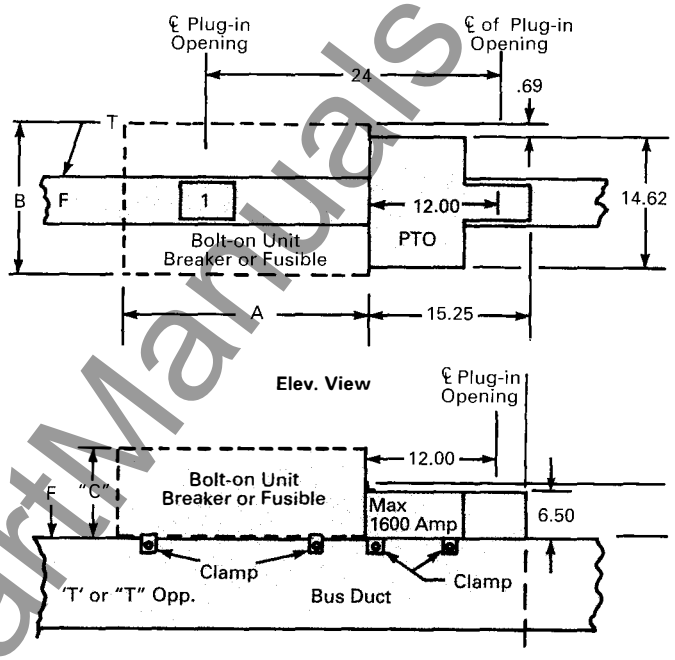
3. Where panelboards are mounted on busway.

The plug-in power take-off is a design that permits the take-off of power (1600A max.) at a standard plug-in opening. The molded insulator in the opening is removed completely. The power take-off conductor is inserted into the opening until contact is made with the bus bars in the bus duct. A single bolt design in the power take-off is then torqued to 60 ft.-lb., permitting 1600A maximum capacity.

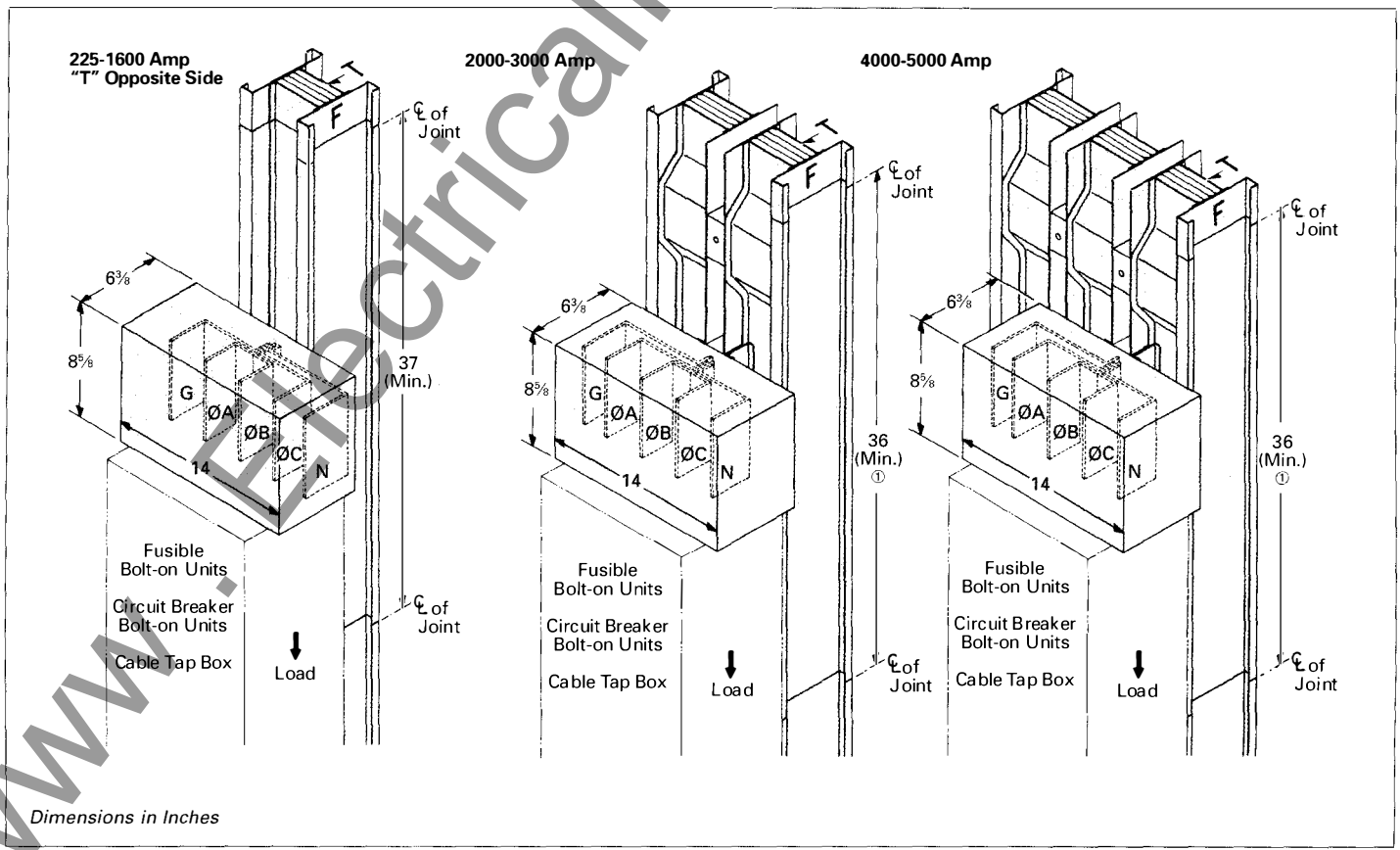
The bolt-on circuit breaker, fusible switch or tap box is then bolted to the power take-off by solid buswork. The plug-in power take-off cannot, in itself, be used as a cable tap box. An overcurrent protective device must be priced with the power take-off. This device for load applications as shown.

① Right leg must be 24 inches.
② When laying out the bus run, "T" and "F" must be shown.
③ Built-in power take-off device, 1250-amp max.

Plug-in Power Take-Off (1600A Max)



Dimensions in Inches



Dimensions in Inches

Pow-R-Way® Busway Systems

Fittings, *Continued*

Non-Fused Reducers
Non-fused reducers are used to reduce the capacity of busway without overcurrent protective devices. No overcurrent protection is required where busway is reduced in size, provided the length of the smaller duct does not extend more than 50 feet and has a current rating of at least 1/3 of the overcurrent device next back on the line. (See NEC Section 364-11.)

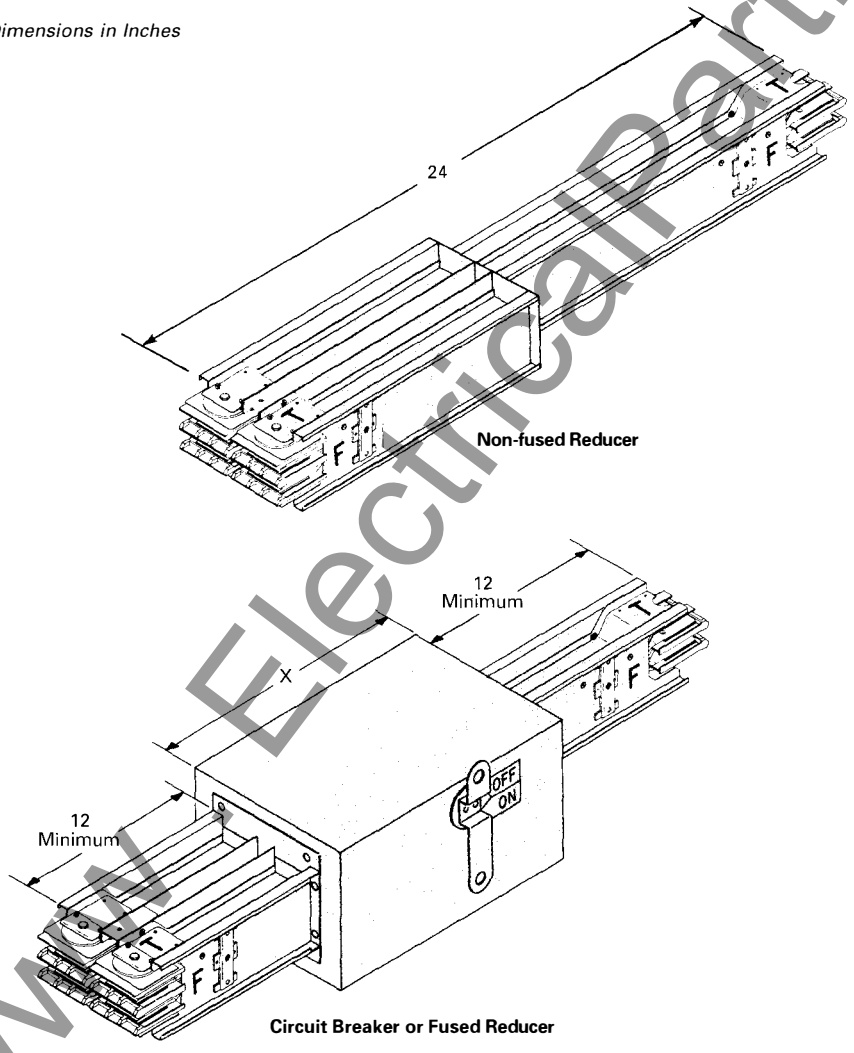
Circuit Breaker or Fused Reducer
Reducer cubicles are available with either a circuit breaker or fused non-automatic circuit breaker to furnish overcurrent protection and serve as a disconnecting means. Reduction in bus capacity is made within the cubicle. The line side of the cubicle is connected to the large rating of duct and the load side to the reducing rating of duct. (Not approved for use as service entrance.)

Flatwise-to-flatwise, reduces to left or right.

① Pow-R-Way II is standard design in this rating.
② N. E. C. Class H fuses.
③ Class L fuses.
④ For height and width dimensions, refer to Cutler-Hammer.

Circuit Breaker Reducer④		Fused Reducer④	
Breaker Amperes	Min. X Dim., In.	Fuse Rating	Min. X Dim., In.
225①	34	200②	42
400①	34	400②	54
600	42	600②	60
800	42	800③	60
1000	42	1000③	64
1200	42	1200③	64
1600	48	....	..
2000	48	....	..
2500	48	....	..

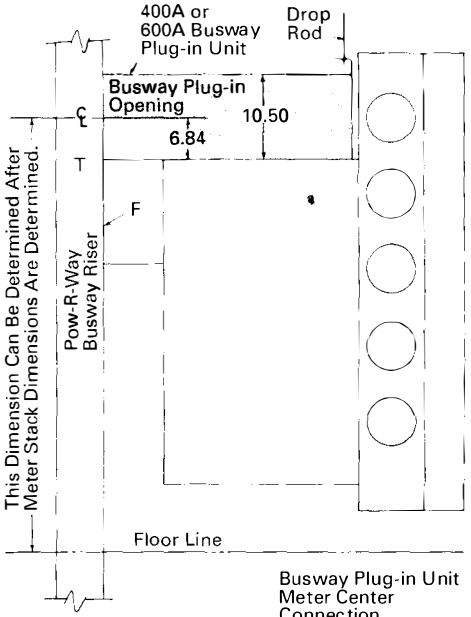
Dimensions in Inches



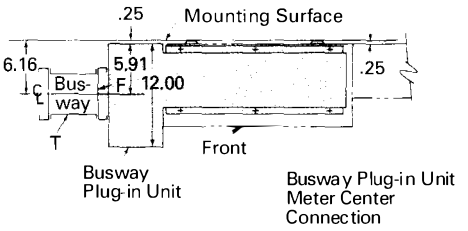
Busway Plug-In Unit for Connection to Meter Center Fusible Switch
The main meter center fusible switch can also be used in conjunction with a Pow-R-Way plug-in unit. With this device, busway can be applied to feed meter stacks. These main service cubicles can be utilized with either left-or right-hand bus tap connections as required by building layout. The meter stacks are then added to the fusible switch cubicle on the side opposite the bus tap flange. (Not approved for service entrance.)

For 400- and 600-amp only.

Elevation View (Typical)



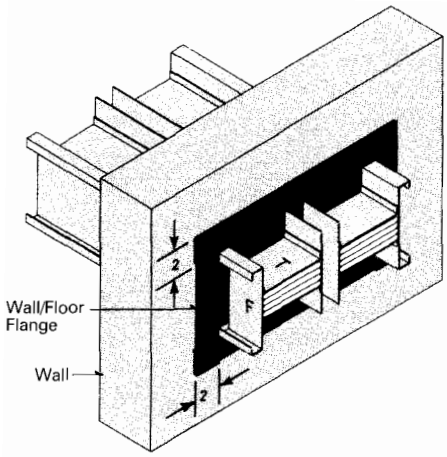
Plan View (Typical)



Dimensions in Inches

Miscellaneous Fittings

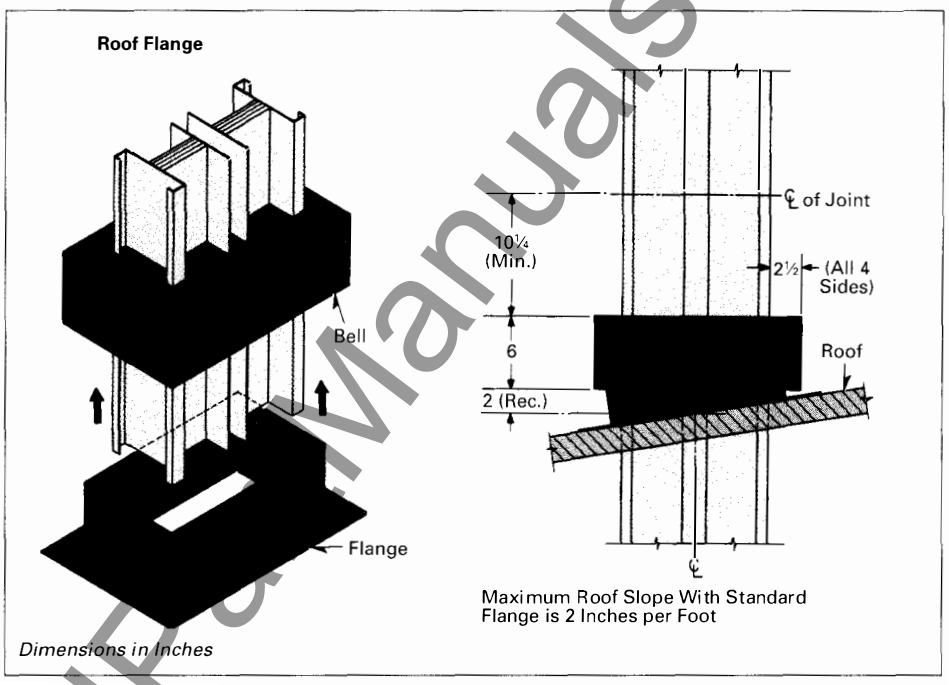
Wall Flanges



Wall/floor flanges are used to fit around busway and close off hole in wall or floor where duct penetrates.

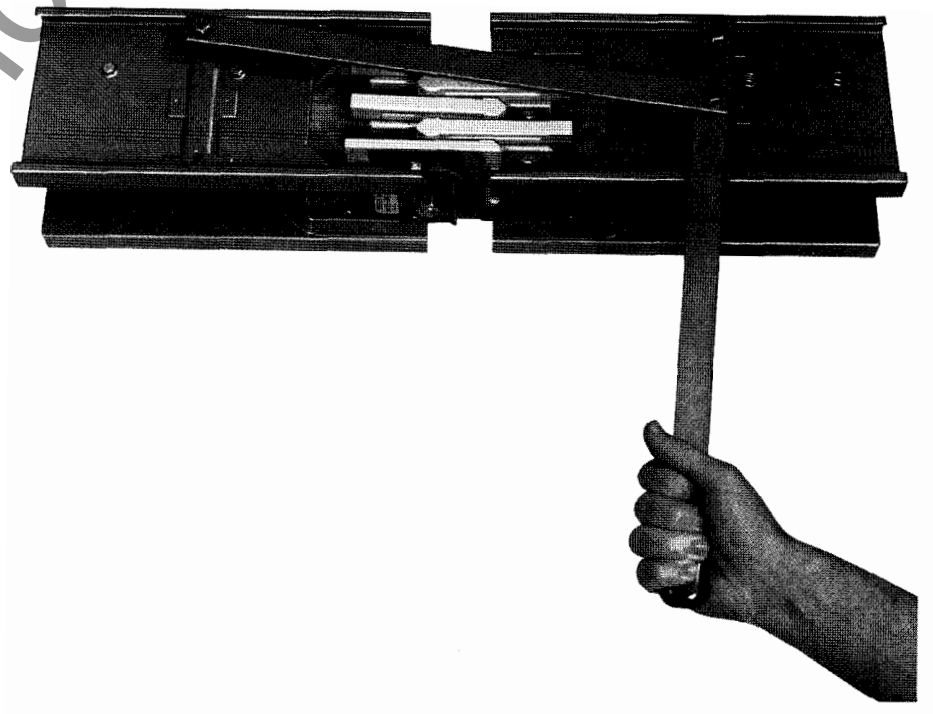
Roof Flange

A roof flange should be used with outdoor duct where the duct penetrates the roof.



Joint Puller

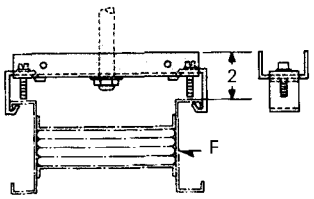
A joint puller is available to assist in joining two sections of duct.



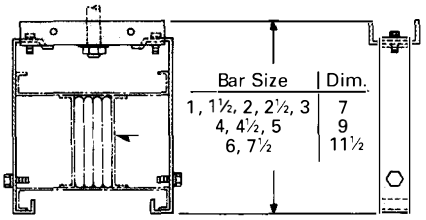
Pow-R-Way® Busway Systems

Hangers for Horizontal Mounting
One hanger is supplied for every 10 feet of horizontally mounted busway. Type of hanger supplied is determined by the specific mounting requirements of the duct. Types of hangers are shown below. **Drop rods (½ in. dia.) must be furnished by customer.**

Flatwise Hook Hanger (225-1600 Amp Only)

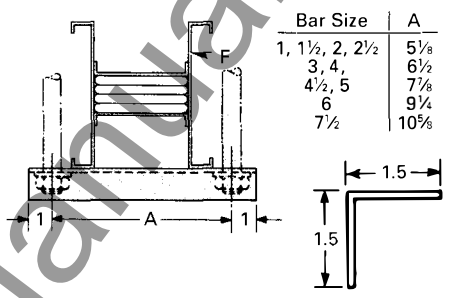


Edgewise Hook Hanger (225-1600 Amp Only)



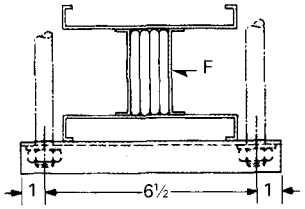
Bar Size	Dim.
1, 1½, 2, 2½, 3	7
4, 4½, 5	9
6, 7½	11½

Flatwise Angle Hanger (225-1600 Amp)

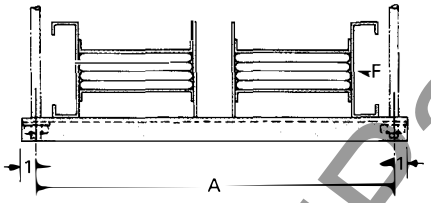


Bar Size	A
1, 1½, 2, 2½	5⅛
3, 4,	6½
4½, 5	7⅞
6	9¼
7½	10⅝

Edgewise Angle Hanger (225-5000 Amp)

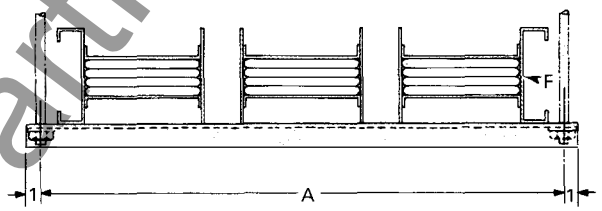


Flatwise Angle Hanger (2000-3000 Amp)



Bar Size	A
3¼	12
4½	13⅜
5	14¾
6	17¼
7½	20¼

Flatwise Angle Hanger (4000-5000 Amp)



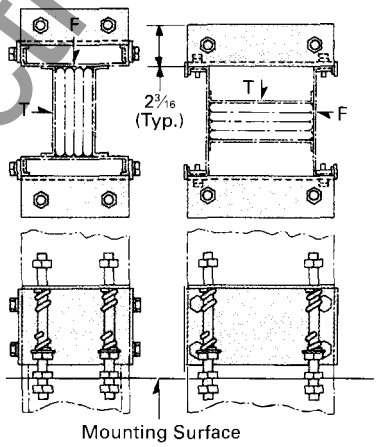
Bar Size	A
4½	20¼
6	24⅜
6½	25¾

Dimensions in Inches

Hangers for Vertical Mounting
When busway is to be installed vertically, a spring suspension type hanger is furnished. This unique hanger equalizes the weight of vertically mounted duct among all supports. A vertical hanger must be used on each floor and at the end of the busway on the last floor. The maximum span permitted by UL on vertical hangers is 16 feet. Intermediate hangers are required if floor heights exceed 16 feet.

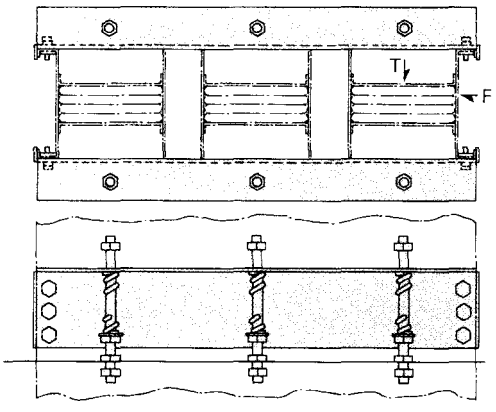
Note: Vertical hangers must be priced as part of busway.

1 and 2 Bars per Ø Only



1 and 2 Bars per Ø

3 Bars per Ø (4 Springs for Al Bars, 6 Springs for Cu Bars)



Dimensions in Inches

Plug-in Protective Devices
All Pow-R-Way and Pow-R-Way II plug-in units (both circuit breaker and fusible types) have the following features:

Personnel Safety (See Fig. 1)
Plug-in units have a dual purpose interlock to prevent cover from being opened while the device is in the "ON" position and to prevent accidental closing of the device while cover is open. This dual purpose interlock may be defeated if necessary for maintenance.

The plug-in unit and the busway are interlocked to ensure that the device is in the "OFF" position prior to installation or removal from the unit (Fig. 2).

The plug-in enclosure is grounded to the busway housing before the phase and neutral stabs make contact with the busway bus bars.

The operating handle remains in control of the disconnect device at all times.

All plug-in units are polarized to make it impossible to put plugs on backwards and have neutral stab touch a phase bar.

The clamp and guide are designed to allow plug-in units to be hung in place on horizontal runs prior to insertion of stabs.

Flexibility (See Fig. 3)
Two-position handle location allows handle to be mounted on the end of the unit for horizontal runs or on the side of the unit for vertical runs.

Neutral stab and ground stab are field mountable.

Backfeeding is an industry-acknowledged practice whereby incoming power is fed into the load side of a plug-in unit to feed a busway run. UL permits "backfeeding" a circuit breaker, providing it has a non-interchangeable trip or is a Seltronic-type breaker.

UL **will not permit** "backfeeding" a TRI-PAC® type circuit breaker or a fusible plug-in device.

Using Westinghouse Series C circuit breaker bus plugs, system interrupting ratings can be increased up to 100K AIC (480V) or 200K AIC (240V) when F-(150A), J-(250A), or K-(400A) frames are used. By changing out the breaker only and leaving the enclosure intact, this allows for flexibility to deal with system short circuit availability changes (up to the rating of the busway), as well as downstream protection through series ratings.

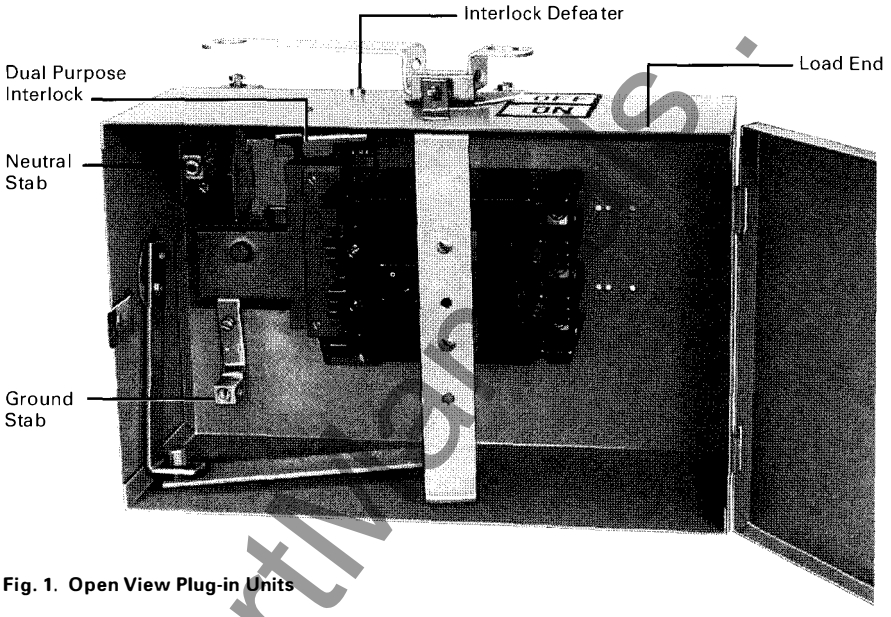


Fig. 1. Open View Plug-in Units

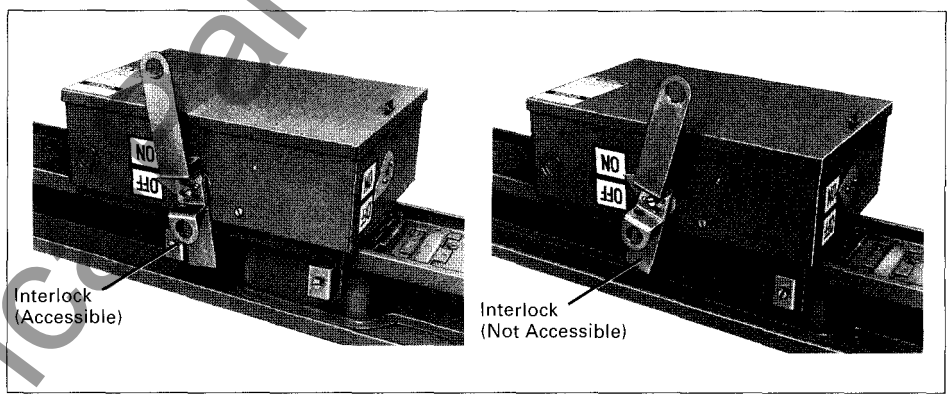


Fig. 2. Plug-in Unit Mounted on Busway

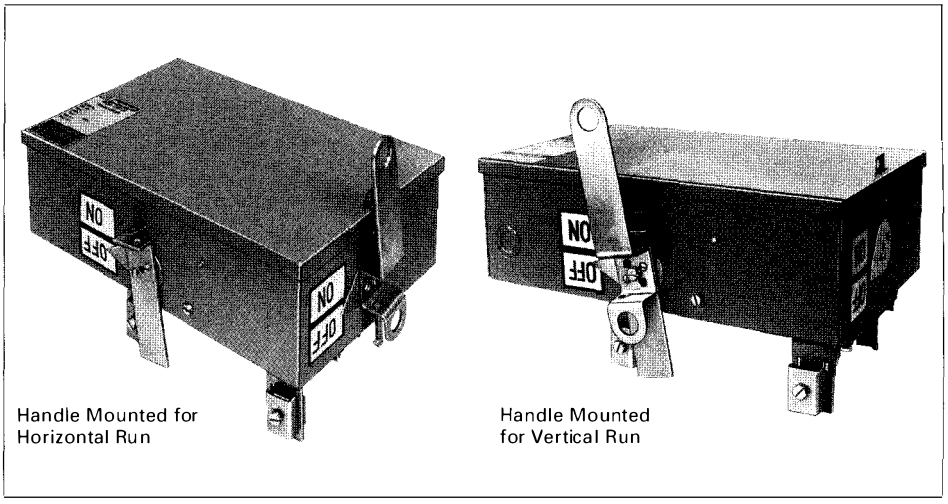


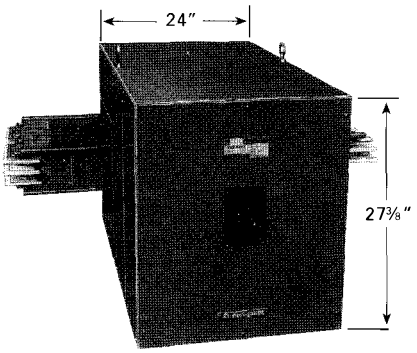
Fig. 3. Universal Handle Mounting

Pow-R-Way® Busway Systems

Ground Detector and Neutralizer Plug-in

In rare cases, bus bars in a busway system pick up static electricity. In order to discharge this potential, a neutralizer plug is available which also serves as a ground detector. The unit has three 18,000 ohm resistors connected between the bus bars and the ground. Static electricity is discharged through these resistors. A neon lamp is placed in series with the bus bar and part of the resistor and burns continuously. If there is a ground anywhere on the system which is of lower resistance than the path through the lamp, the lamp will go out, indicating that there is a short in the system. **For 3-phase, 3-wire systems only.**

PC SELTRONIC™ Breaker Cubicle



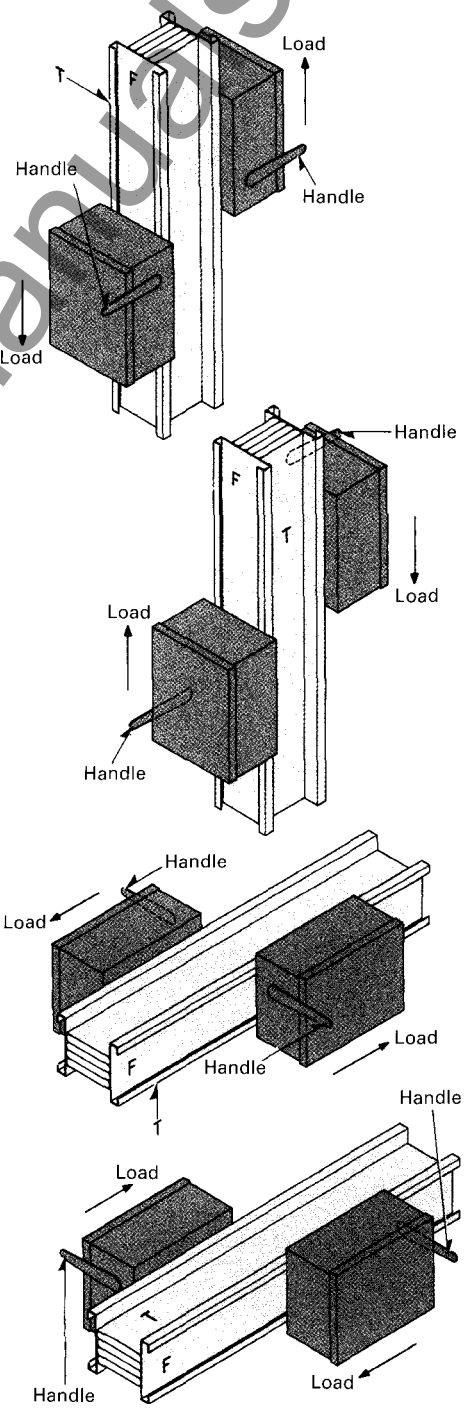
3000 Ampere Seltronic Circuit Breaker

In today's complex distribution systems sophisticated solid-state tripping characteristics are sometimes required on circuit protective devices. The PC Seltronic circuit breaker can be used as a main breaker in a run of duct or as branch feeder protection. They are available 600 through 3000 amperes with interrupting ratings up to 100,000 AIC symmetrical at 600 volts.

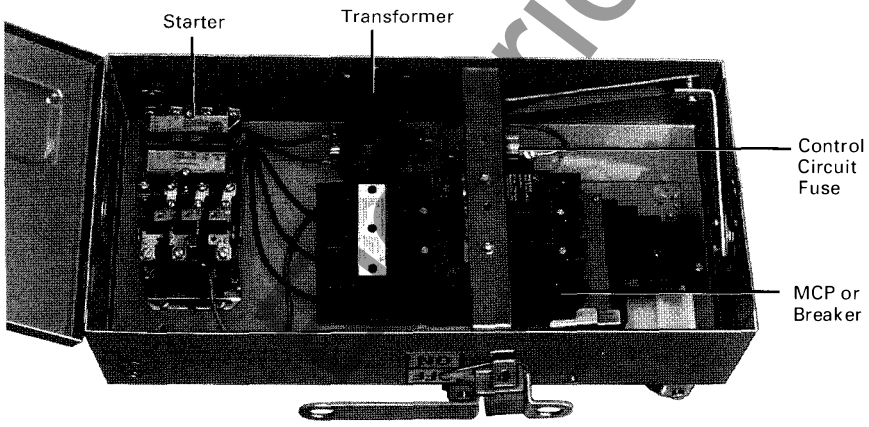
(Not approved for use as service entrance equipment.)

Plug-in Device Mounting

The load end of a plug-in unit varies with the orientation of the busway as determined by the "F" and "T" markings. See drawings below.



Plug-in Combination Starters and Contactors

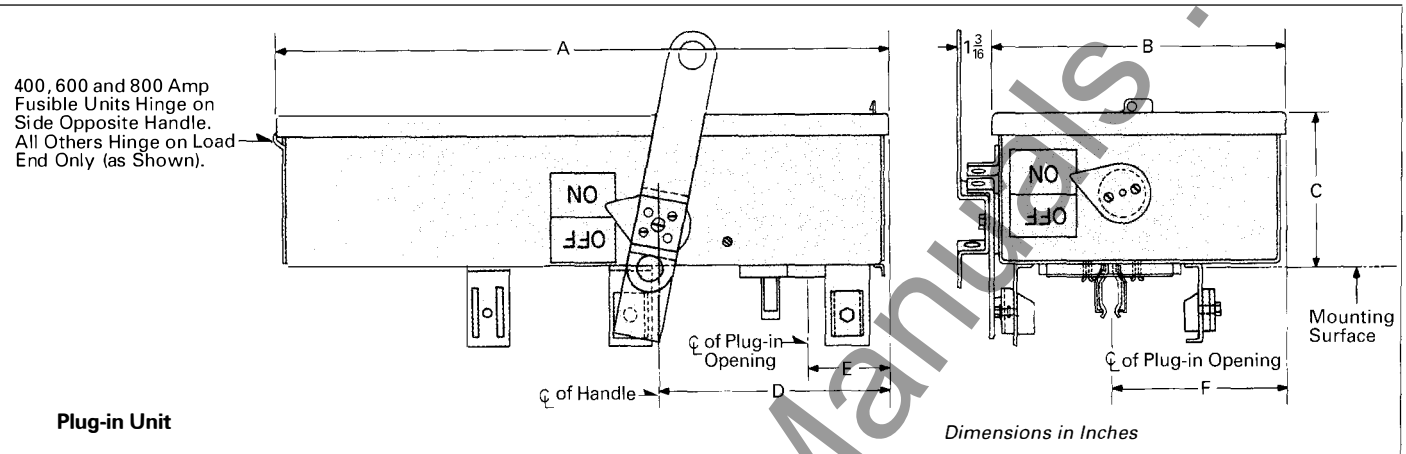


Plug-in combination starters or contactors are mounted in enclosures identical to the standard circuit breaker or fusible switch enclosure including safety interlocks and two-position handle location. They are available from size 0 through size 4 with a circuit breaker, MCP or fusible disconnect.

A 120-volt control transformer fused on the secondary, selector switches and indicating lights are available as optional items.

Provisions for neutral stab and/or ground stab are provided. For outline dimensions of enclosure refer to Cutler-Hammer.

Dimensions and Weights, Plug-in Units



Plug-in Unit

Dimensions in Inches

Plug-in Units

Plug-in Unit	Max. Amps	Max. Ac Volts	Dimensions A	B	C	D	E	F	Gutter Space, Inches	Conduit Sizes, Inches	Mechanical Terminal Wire Range Per Phase	Net Wt., Lbs.
Circuit Breaker Plug-in Units												
IBP-EHD	100	480	20 29/32	9 7/8	5 1/16	7 13/16	2 3/4	5 13/16	4 1/8	1 1/4, 1 1/2, 2	#14 to 1/0 Cu or Al	17
IBP-FD IBP-HFD	150	600	20 29/32	9 7/8	5 1/16	7 13/16	2 3/4	5 13/16	4 1/8	1 1/4, 1 1/2, 2	100A-#14 to 1/0 Cu or Al 150A-#4 to 4/0 Cu or Al	17
IBP-FB-TRI-PAC	100	600	20 15/16	9 7/8	5 1/16	7 13/16	2 3/4	5 13/16	7	1 1/4, 1 1/2, 2	#14 to 1/0 Cu or Al	21
IBP-JD	250	600	21	9 7/8	6 5/8	10 3/8	2 3/4	5 9/16	5 5/8	None	#4 to 350 MCM Cu or #2 to 350 MCM Al	39
IBP-KD	400	600	23 1/2	13 5/16	6 11/16	9 1/2	3 1/8	7 9/16	9 3/4	None	(1) 3-350 MCM, (1) 250-500 MCM or (2) 3/0-250 MCM	45
IBP-MC	800	600	31 3/4	15 7/16	8 3/4	14 5/8	3 1/8	6 11/16	10 1/8	None	(3) 3/0-400 MCM Cu or Al	63
IBP-LA TRI-PAC	400	600	27 3/4	13 7/16	8 3/4	8 1/8	3 1/8	7 9/16	9 1/8	None	#4 to 250 MCM Cu or Al plus 3/0 to 600 MCM Cu or Al	90
IBP-NB TRI-PAC	800	600	39 3/4	15 7/16	9 5/8	14 5/8	3 1/8	6 11/16	12 1/8	None	(3) 3/0-400 MCM Cu or Al	125
IBP-FCL	100	480	20 15/16	9 7/8	5 1/16	7 13/16	2 3/4	5 13/16	7	None	#14 to 1/0 Cu or Al	21
IBP-LCL	400	480	29 11/16	14 1/4	9 1/2	15 11/16	2 15/16	7 5/8	9 1/8	None	#4 to 250 MCM Cu or Al 3/0 to 600 MCM Cu or Al	80
Fusible Plug-in Units												
I-TAP-321	30	240	20 15/16	9 7/8	5 1/16	7 13/16	2 3/4	5 13/16	3	1 1/4, 1 1/2, 2	Cu-#14 to #3, Al-#12 to #2	17
I-TAP-322	60	240	20 15/16	9 7/8	5 1/16	7 13/16	2 3/4	5 13/16	2 1/8	1 1/4, 1 1/2, 2	Cu-#14 to #2, Al-#12 to #2	17
I-TAP-361	30	600	20 15/16	9 7/8	5 1/16	7 13/16	2 3/4	5 13/16	5 5/8	1 1/4, 1 1/2, 2	Cu-#14 to #2, Al-#12 to #2	19
I-TAP-362	60	600	20 15/16	9 7/8	5 1/16	7 13/16	2 3/4	5 13/16	5 3/8	1 1/4, 1 1/2, 2	Cu-#14 to #2, Al-#12 to #2	19
I-TAP-323	100	240	20 15/16	9 7/8	5 1/16	7 13/16	2 3/4	5 13/16	5 5/8	1 1/4, 1 1/2, 2	Cu-#14 to 1/0, Al-#12 to 1/0	19
I-TAP-363	100	600	20 15/16	9 7/8	5 1/16	7 13/16	2 3/4	5 13/16	3 5/8	1 1/4, 1 1/2, 2	Cu-#14 to 1/0, Al-#12 to 1/0	19
I-TAP-324	200	240	23 1/2	13 5/16	6 11/16	8 1/8	2 1/2	7 9/16	7	None	#4 to 250 MCM Cu or Al	42
I-TAP-364	200	600	23 1/2	13 5/16	6 11/16	8 1/8	2 1/2	7 9/16	4 1/2	None	#4 to 250 MCM Cu or Al	42
I-TAP-325	400	240	40	18 1/2	9 3/4	12 1/8	3 1/4	9 3/8	16 5/8	None	#4 to 600 MCM Cu or Al (2) 250 MCM, (2) 1/0	70
I-TAP-365	400	600	40	18 1/2	9 3/4	12 1/8	3 1/4	9 3/8	13 5/8	None	#4 to 600 MCM Cu or Al (2) 250 MCM, (2) 1/0	70
I-TAP-326	600	240	40	18 1/2	9 3/4	12 1/8	3 1/4	9 3/8	15 5/8	None	(2) #2 to 600 MCM Cu or Alø①	75
I-TAP-366	600	600	40	18 1/2	9 3/4	12 1/8	3 1/8	9 3/8	12 5/8	None	(2) #2 to 600 MCM Cu or Alø①	75
I-TAP-327	800	240	47 1/2	18 1/2	9 13/16	14 5/8	3 1/4	8 1/8	10 1/8	None	(3) #4 to 600 MCM Cu or Al	185
I-TAP-367	800	600	47 1/2	18 1/2	9 13/16	14 5/8	3 1/4	8 1/8	10 1/8	None	(3) #4 to 600 MCM Cu or Al	185

① ø as shown or (4) 1/0 to 250 MCM Cu or Al.

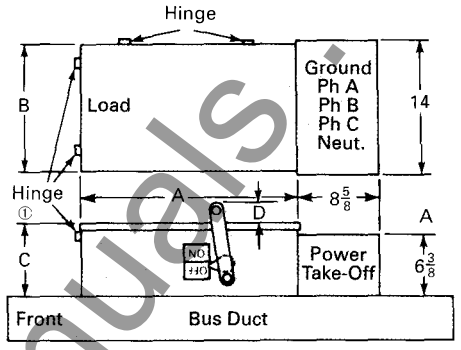
Pow-R-Way® Busway Systems

Dimensions and Weights, Bolt-on Units and Bus Bars

Bolt-on Units

Bolt-on Device	Dimensions A	B	C	D	Wiring Gutters	Mechanical Terminal Wire Range Per Phase	Neutral
Circuit Breaker Frames							
FB	15 1/8	9 7/8	7 25/32	3 1/16	4 1/8 In.	#6 to 3/0	#14 to 1/0
KA, LB	23 1/2	13 5/16	7 5/8	2 3/16	9 3/4 In.	(2) #6 to 350 MCM	(2) 3/0 to 250 MCM
MC	31 25/32	15 7/16	8 13/32	. . .	10 1/8 In.	(3) 3/0 to 400 MCM	(3) 3/0 to 400 MCM
NC④	43 3/8	19 9/16	9 3/4	3 1/2	21 9/16 In.	(3) 4/0 to 500 MCM	(3) 4/0 to 500 MCM
PC④	59 5/8	24 5/8	19 7/16	. . .	21 7/8 In.	(5) #4 to 600 MCM, or (2) 1/0 and (2) 250 MCM	(5) 4/0 to 600 MCM, or (2) 1/0 and (2) 250 MCM
Fusible Switch Units							
100	20 29/32	9 7/8	7 25/32	3 1/16	3 5/8 In.	#14 to 1/0	#14 to 1/0
200	23 1/2	13 9/16	7 5/8	2 3/16	4 1/2 In.	#4 to 350 MCM	#4 to 350 MCM
400②	23 1/2	15 15/16	16 5/32	. . .	6 1/4 In.	#4 to 600 MCM or (2) 3/0 to 250 MCM	(2) 3/0 to 250 MCM
600	47 1/2	17 17/32	8 1/4	3 5/8	8 1/16 In.	(3) #2 to 600 MCM	(2) 250 to 500 MCM
800	47 1/2	18 17/32	9 11/16	3 5/8	10 1/8 In.	(3) #4 to 600 MCM	(3) 3/0 to 400 MCM
1000	60 1/2	17 17/32	9 17/32	3 1/2	20 1/4 In.	(3) #4 to 600 MCM	(2) 250 to 500 MCM
1200	60 1/2	19 17/32	9 17/32	3 1/2	18 3/4 In.	(4) 600 MCM	(3) 500 to 750 MCM
400③	39 31/32	18 15/32	9 3/16	3 13/16	13 5/8 In.	#4 to 600 MCM or (2) 250 MCM and (2) 1/0	(2) 3/0 to 250 MCM
600③	39 31/32	18 15/32	9 9/16	3 13/16	12 1/2 In.	(2) #4 to 600 MCM, or (4) 1/0 to 250 MCM	(2) 250 to 500 MCM

① PC breaker has bolt-on cover.
② Special piggy-back unit.
③ Inline unit.
④ UL, Inc. listed 1000-amp max.



A. Handle on Top of Cover.

Dimensions in Inches

Dimensions and Weights – Bus Bars

Ampere Rating	Fig. No.	No. and Size of Bus Bars Per Phase and Neutral Plug-in	Feeder	No. and Size of Ground Bar	Current Density Amps/In^2 Plug-in	Feeder	Dim. A	Approx. Weight (lbs.) Per Foot 3-Wire	4-Wire	3-Wire/Grd.	4-Wire/Grd.
Aluminum											
225	1	1 - 1/4 x 1	. . . . .	1 - 1/8 x 1	900	. . . .	3 3/8	7	7	7	7
400	1	1 - 1/4 x 2	. . . . .	1 - 1/8 x 2	800	. . . .	4 3/8	8	9	9	9
600	2	1 - 1/4 x 2 1/2	1 - 1/4 x 2 1/2	1 - 1/8 x 2 1/2	960	960	4 1/2	8	9	9	9
800	2	1 - 1/4 x 3	1 - 1/4 x 3	1 - 1/8 x 3	1067	1067	5	10	11	10	11
1000	2	1 - 1/4 x 4	1 - 1/4 x 3 3/4	1 - 1/8 x 4	1000	1067	6	11	12	12	13
1200	2	1 - 1/4 x 5	1 - 1/4 x 4 3/4	1 - 1/8 x 5	960	1011	7	12	14	13	15
1350	2	1 - 1/4 x 6	1 - 1/4 x 5 3/4	1 - 1/8 x 6	900	939	8	14	16	15	16
1600	2	1 - 1/4 x 7 1/2	1 - 1/4 x 7	1 - 1/8 x 7 1/2	856	914	9 1/2	16	18	17	19
2000	3	2 - 1/4 x 4 1/2	2 - 1/4 x 4 1/4	2 - 1/8 x 4 1/2	889	941	12 3/4	22	24	23	26
2500	3	2 - 1/4 x 6	2 - 1/4 x 5 3/4	2 - 1/8 x 6	833	870	15 3/4	27	31	29	33
3000	3	2 - 1/4 x 7 1/2	2 - 1/4 x 7	2 - 1/8 x 7 1/2	800	857	18 3/4	31	35	33	37
4000	4	3 - 1/4 x 6 1/2	3 - 1/4 x 6 1/4	3 - 1/8 x 6 1/2	821	853	25	42	48	45	51
Copper											
225	1	1 - 1/4 x 1	. . . . .	1 - 1/8 x 1	900	. . . .	3 3/8	9	10	9	10
400	1	1 - 1/4 x 1 1/2	. . . . .	1 - 1/8 x 1 1/2	1067	. . . .	3 7/8	11	12	11	13
600	2	1 - 1/4 x 2	1 - 1/4 x 2	1 - 1/8 x 2	1200	1200	4	11	13	12	14
800	2	1 - 1/4 x 2 1/2	1 - 1/4 x 2 1/4	1 - 1/8 x 2 1/2	1280	1422	4 1/2	13	15	14	17
1000	2	1 - 1/4 x 3	1 - 1/4 x 2 3/4	1 - 1/8 x 3	1333	1455	5	14	17	15	18
1200	2	1 - 1/4 x 4	1 - 1/4 x 3 3/4	1 - 1/8 x 4	1200	1280	6	16	19	17	20
1350	2	1 - 1/4 x 4 1/2	1 - 1/4 x 4 1/4	1 - 1/8 x 4 1/2	1205	1271	6 1/2	21	25	23	27
1600	2	1 - 1/4 x 5 1/4	1 - 1/4 x 5	1 - 1/8 x 5 1/4	1219	1280	7 1/4	22	27	25	29
2000	3	2 - 1/4 x 3 1/4	2 - 1/4 x 3	2 - 1/8 x 3 1/4	1235	1333	10 1/4	32	38	35	42
2500	3	2 - 1/4 x 4 1/2	2 - 1/4 x 4 1/4	2 - 1/8 x 4 1/2	1111	1176	12 3/4	40	48	44	52
3000	3	2 - 1/4 x 5	2 - 1/4 x 4 3/4	2 - 1/8 x 5	1200	1263	13 3/4	44	54	59	68
4000	4	3 - 1/4 x 4 1/2	3 - 1/4 x 4 1/4	3 - 1/8 x 4 1/2	1190	1255	19	61	74	67	81
5000	4	. . . . .	3 - 1/4 x 6	3 - 1/8 x 6 1/2	. . . .	1111	25	77	95	85	103

① Higher short circuit ratings are available. Refer to Cutler-Hammer.

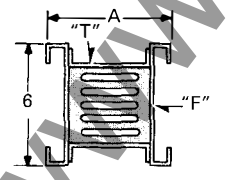


Figure 1

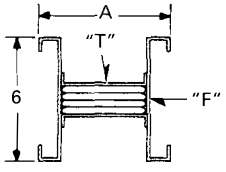


Figure 2

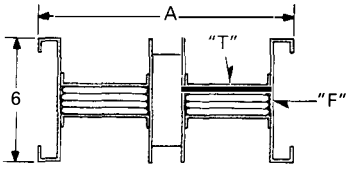


Figure 3

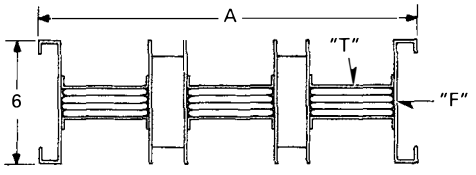


Figure 4

Dimensions in Inches

Pow-R-Way® Busway Systems

Line-to-Line Voltage Drop

The tables below give average 3-phase voltage drop per 100 feet at rated current and varying power factor. Line-to-neutral voltage drop is obtained by multiplying the line value by .577.

Plug-in Distributed Load

Ampere Rating	Percent Power Factor													
	0	10	20	30	40	50	60	70	75	80	85	90	95	100
Aluminum														
225	0.63	0.77	0.90	1.03	1.15	1.26	1.37	1.45	1.49	1.53	1.55	1.57	1.56	1.44
400	0.97	1.09	1.21	1.31	1.40	1.48	1.56	1.59	1.61	1.61	1.60	1.58	1.52	1.29
600	1.10	1.25	1.38	1.50	1.61	1.71	1.79	1.85	1.86	1.87	1.87	1.84	1.78	1.51
800	0.79	0.96	1.12	1.27	1.41	1.54	1.66	1.77	1.81	1.85	1.88	1.89	1.88	1.72
1000	0.87	1.02	1.17	1.31	1.44	1.56	1.67	1.76	1.79	1.82	1.84	1.84	1.82	1.63
1200	0.78	0.94	1.09	1.23	1.36	1.48	1.59	1.69	1.73	1.76	1.78	1.79	1.78	1.61
1350	0.70	0.85	0.99	1.13	1.25	1.37	1.47	1.56	1.60	1.64	1.66	1.67	1.66	1.52
1600	0.67	0.81	0.95	1.08	1.20	1.31	1.41	1.50	1.54	1.57	1.60	1.61	1.60	1.47
2000	0.78	0.92	1.05	1.18	1.30	1.40	1.50	1.58	1.61	1.63	1.65	1.65	1.63	1.46
2500	0.63	0.77	0.90	1.02	1.14	1.25	1.34	1.43	1.47	1.50	1.52	1.54	1.53	1.40
3000	0.48	0.61	0.74	0.86	0.98	1.09	1.19	1.29	1.33	1.37	1.40	1.43	1.43	1.35
4000	0.61	0.74	0.87	0.99	1.11	1.21	1.31	1.40	1.43	1.46	1.49	1.50	1.50	1.38
Copper														
225	0.63	0.71	0.78	0.85	0.91	0.96	1.00	1.03	1.04	1.04	1.04	1.02	0.98	0.83
400	1.04	1.14	1.22	1.30	1.36	1.41	1.44	1.45	1.45	1.43	1.41	1.36	1.28	1.01
600	1.22	1.32	1.41	1.49	1.56	1.60	1.63	1.64	1.63	1.61	1.58	1.52	1.43	1.10
800	1.47	1.58	1.67	1.75	1.81	1.86	1.88	1.87	1.85	1.82	1.77	1.69	1.57	1.17
1000	0.99	1.11	1.22	1.32	1.40	1.48	1.54	1.58	1.59	1.59	1.55	1.55	1.49	1.25
1200	1.04	1.15	1.25	1.34	1.42	1.48	1.53	1.56	1.56	1.55	1.54	1.50	1.43	1.16
1350	1.12	1.23	1.33	1.42	1.50	1.56	1.61	1.63	1.63	1.62	1.59	1.55	1.47	1.18
1600	0.99	1.11	1.22	1.32	1.41	1.48	1.54	1.58	1.59	1.59	1.58	1.55	1.49	1.25
2000	0.97	1.08	1.18	1.28	1.35	1.42	1.47	1.50	1.51	1.51	1.49	1.46	1.40	1.16
2500	0.97	1.07	1.17	1.25	1.32	1.38	1.42	1.44	1.45	1.44	1.42	1.39	1.32	1.07
3000	0.92	1.04	1.15	1.24	1.33	1.40	1.46	1.50	1.52	1.52	1.51	1.49	1.44	1.21
4000	0.84	0.95	1.05	1.15	1.23	1.31	1.37	1.41	1.43	1.43	1.43	1.41	1.37	1.17

Feeder Concentrated Load

Ampere Rating	Percent Power Factor													
	0	10	20	30	40	50	60	70	75	80	85	90	95	100
Aluminum														
225	1.26	1.54	1.81	2.06	2.30	2.53	2.73	2.91	2.99	3.05	3.10	3.13	3.12	2.87
400	1.94	2.19	2.41	2.62	2.81	2.97	3.09	3.18	3.21	3.22	3.21	3.16	3.05	2.57
600	1.32	1.61	1.89	2.16	2.41	2.64	2.86	3.04	3.13	3.19	3.25	3.28	3.27	3.01
800	0.91	1.25	1.57	1.89	2.19	2.48	2.76	3.02	3.14	3.25	3.36	3.44	3.50	3.38
1000	0.96	1.29	1.62	1.94	2.24	2.53	2.81	3.07	3.19	3.30	3.40	3.49	3.54	3.41
1200	1.02	1.34	1.66	1.96	2.26	2.53	2.80	3.04	3.15	3.25	3.42	3.42	3.46	3.31
1350	0.90	1.21	1.51	1.80	2.08	2.35	2.60	2.84	2.95	3.05	3.14	3.21	3.26	3.13
1600	0.97	1.28	1.57	1.86	2.13	2.39	2.64	2.87	2.97	3.07	3.15	3.22	3.25	3.11
2000	1.07	1.37	1.65	1.92	2.18	2.43	2.65	2.86	2.96	3.04	3.11	3.16	3.18	2.99
2500	1.08	1.36	1.64	1.90	2.14	2.36	2.59	2.79	2.87	2.95	3.01	3.06	3.07	2.88
3000	1.02	1.31	1.58	1.85	2.10	2.34	2.56	2.76	2.85	2.93	3.00	3.06	3.07	2.90
4000	0.94	1.21	1.48	1.74	1.99	2.23	2.45	2.65	2.74	2.83	2.90	2.96	2.98	2.83
Copper														
225	1.26	1.42	1.56	1.70	1.82	1.92	2.00	2.06	2.07	2.08	2.07	2.04	1.97	1.66
400	2.09	2.28	2.45	2.59	2.72	2.81	2.88	2.90	2.89	2.86	2.81	2.72	2.57	2.02
600	1.77	1.97	2.15	2.32	2.46	2.58	2.67	2.73	2.74	2.74	2.72	2.66	2.55	2.10
800	2.06	2.31	2.54	2.75	2.93	3.09	3.21	3.30	3.32	3.32	3.30	3.24	3.12	2.61
1000	1.67	1.94	2.18	2.42	2.63	2.82	2.98	3.11	3.16	3.19	3.21	3.19	3.12	2.74
1200	1.15	1.39	1.62	1.84	2.05	2.24	2.41	2.57	2.63	2.68	2.72	2.74	2.73	2.50
1350	1.19	1.44	1.67	1.90	2.10	2.30	2.47	2.62	2.68	2.74	2.77	2.79	2.77	2.53
1600	1.33	1.58	1.81	2.03	2.24	2.43	2.59	2.73	2.79	2.84	2.87	2.87	2.84	2.55
2000	1.50	1.75	1.97	2.19	2.38	2.56	2.71	2.83	2.87	2.91	2.92	2.91	2.85	2.51
2500	1.32	1.54	1.74	1.94	2.11	2.27	2.41	2.52	2.56	2.59	2.61	2.60	2.55	2.25
3000	1.51	1.75	1.98	2.20	2.40	2.57	2.73	2.85	2.90	2.93	2.95	2.94	2.88	2.54
4000	1.41	1.66	1.90	2.13	2.34	2.53	2.70	2.84	2.89	2.94	2.97	2.97	2.93	2.62
5000	1.20	1.43	1.64	1.83	2.02	2.19	2.33	2.46	2.51	2.55	2.58	2.58	2.55	2.29

Derating Chart for Higher Ambient Temperatures

POW-R-WAY busway may be operated continuously at its assigned ratings without exceeding the maximum hot-spot temperature rise of 55°C, provided the ambient temperature does not exceed 40°C. For higher ambient temperatures, the ratings should be reduced by applying the appropriate multiplier shown in chart.

Ambient Temperature, Degrees C	Multiplier
55	1.00
60	.95
65	.90
70	.85
75	.80
80	.74
85	.68

Short Circuit Rating 3 Cycles①

Ampere Rating	3 Phase RMS Sym. Short Circuit Rating		NEMA Standard Ratings	
	Plug-in	Feeder	Plug-in	Feeder
Aluminum				
225	18,000	18,000	14,000	. . . . .
400	25,000	25,000	22,000	. . . . .
600	50,000	75,000	22,000	42,000
800	100,000	100,000	22,000	42,000
1000	100,000	100,000	42,000	75,000
1200	100,000	100,000	42,000	75,000
1350	100,000	100,000	42,000	75,000
1600	100,000	100,000	65,000	100,000
2000	100,000	100,000	65,000	100,000
2500	150,000	150,000	65,000	150,000
3000	150,000	150,000	85,000	150,000
4000	200,000	270,000	85,000	200,000
5000	. . . . .	. . . . .	. . . . .	. . . . .
Copper				
225	18,000	18,000	14,000	. . . . .
400	25,000	25,000	22,000	. . . . .
600	50,000	75,000	22,000	42,000
800	50,000	75,000	22,000	42,000
1000	100,000	100,000	42,000	75,000
1200	100,000	100,000	42,000	75,000
1350	100,000	100,000	42,000	75,000
1600	100,000	100,000	65,000	100,000
2000	100,000	100,000	65,000	100,000
2500	150,000	150,000	65,000	150,000
3000	150,000	150,000	85,000	150,000
4000	200,000	200,000	85,000	200,000
5000	. . . . .	200,000	. . . . .	200,000

① Over 100K, ground bar required.

Resistance, Reactance and Impedance

Ohms per 100 feet, line to neutral (60 hertz)

Ampere Rating	Plug-in			Feeder		
	Resis-tance	Reac-tance	Imped-ance	Resis-tance	Reac-tance	Imped-ance
Aluminum						
225	.00737	.00323	.00805	.00737	.00323	.00805
400	.00371	.00280	.00465	.00371	.00280	.00465
600	.00291	.00212	.00360	.00289	.00127	.00316
800	.00248	.00114	.00273	.00244	.000660	.00253
1000	.00188	.00100	.00213	.00197	.000552	.00205
1200	.00155	.000755	.00172	.00159	.000490	.00166
1350	.00130	.000600	.00143	.00134	.000385	.00139
1600	.00106	.000480	.00116	.00112	.000350	.00117
2000	.000841	.000449	.000953	.000864	.000310	.000918
2500	.000648	.000290	.000710	.000664	.000250	.000710
3000	.000521	.000183	.000552	.000558	.000197	.000592
4000	.000397	.000175	.000434	.000409	.000135	.000431
Copper						
225	.00425	.00323	.00534	.00425	.00323	.00534
400	.00291	.00301	.00419	.00291	.00301	.00419
600	.00212	.00234	.00316	.00202	.00170	.00264
800	.00169	.00212	.00271	.00188	.00149	.00240
1000	.00144	.00114	.00184	.00158	.000965	.00185
1200	.00112	.00100	.00150	.00120	.000552	.00132
1350	.00101	.000960	.00139	.00108	.000510	.00119
1600	.000898	.000716	.00115	.000920	.000480	.00104
2000	.000667	.000562	.000872	.000724	.000434	.000844
2500	.000494	.000449	.000668	.000520	.000305	.000603
3000	.000465	.000355	.000585	.000488	.000290	.000568
4000	.000336	.000242	.000414	.000378	.000203	.000429
5000	. . . . .	. . . . .	. . . . .	.000264	.000139	.000298

Pow-R-Way® Busway Systems

Typical Specifications For POW-R-WAY Busway

General
The feeder and/or plug-in busway shall consist of either aluminum or copper conductors in a totally enclosed housing and shall be capable of being mounted in any position without derating. Plug-in and feeder sections shall be interchangeable without the use of special adapter joint covers. The complete installation shall be coordinated throughout and, where possible, shall consist of standard 10-foot sections with special sections and fittings provided to suit the installation. Horizontal runs of busway shall be suitable for hanging on 10 ft.-0 in. maximum support centers. Vertically mounted busway shall be approved for that purpose and one adjustable vertical hanger shall be provided for 16 ft.-0 in. maximum support centers. Where required, busway suitable for outdoor service shall be supplied. An internal ground bar of 50-percent capacity shall be supplied where called for on the plans or drawings. All material and installation shall comply with the applicable standards, practices, and codes of ASA, IEEE, NEMA and Underwriters Laboratories, Inc. The busway shall be listed by Underwriters Laboratories, Inc.

Housing
The housing shall be of the non-ventilated type meeting NEC requirements and constructed of code gauge steel which is pretreated and painted ANSI #61, on both inside and outside using an electro-coat process. Plug-in type busway, except for fittings, shall have provisions for plug-in openings with a hinged outlet cover provided for each.

Joint
The joint design of 600 through 5000 ampere busway shall permit safe, practical testing of its tightness without de-energizing the run. The joint shall be of the single-bolt pressure design providing optimum electrical contact and mechanical strength. The joint shall be of the overlap type with a joint bolt which passes through the overlap to maintain positive pressure. Access to only one side of the duct need be required for tightening or inspection of the joint. Any one section of the duct should be removable without disturbing adjacent pieces. All hardware required to make up an indoor joint shall be captive.

Bus Bars
All bus bars shall be fabricated from either high-strength, 55% conductivity aluminum or all shall be of 98% conductivity copper. Bus bars shall be silver plated at all electrical contact surfaces. Bus bars shall be insulated over their entire length, except at joints and contact surfaces, with epoxy insulation applied by the fluidized bed process. This insulation shall be Class B (130˚C).

Plug-in Openings
On plug-in type busway a suitable support shall be provided at each plug-in opening to provide protection of the duct in the event of stresses due to a fault and to provide full isolation and polarization of the stabs of any plug-in device installed in the duct. When an internal ground bar is included in the busway, the plug-in support shall also provide for its positive engagement by the grounding stab of the plug-in device.

Voltage Drop
The three-phase, line-to-line voltage drop for the feeder busway shall not exceed 3.32 volts per one-hundred feet (concentrated load) at 80-percent power factor. The voltage drop for the plug-in busway shall not exceed 1.87 volts per one-hundred feet (distributed load) at 80-percent power factor.

Short-Circuit Bracing
The busway, feeder and/or plug-in, shall be braced to withstand the maximum available short-circuit currents as indicated on the plans and drawings and shall in all cases be braced for no less than the NEMA standard for that rating.

Operating Characteristics
The busway shall be so designed and tested that, at rating, the bus bars shall not exceed a 55˚C temperature rise based on a 40˚C ambient temperature. The busway shall withstand for one minute, without breakdown, the application of 2200 volts of 60-Hertz alternating potential between conductors, and between conductors and the enclosure. Each piece of Pow-R-Way busway is given a 5000-volt Ac high pot. Test after assembly to ensure that the insulation system is properly applied.

Plug-In Units
Where required, plug-in units of the types and ratings indicated on the plans and specifications shall be supplied. Plug-in units shall be Underwriters Laboratories, Inc. listed. Plug-in units shall be mechanically interlocked with the busway housing to prevent their installation or removal while the switch is in the "ON" position. The enclosure of any plug-in unit shall make positive ground connection to the duct housing before the stabs make contact with the bus bars. A ground stab shall be provided, where required, to engage the busway internal ground bar. All plug-in units shall be equipped with a defeatable interlock to prevent the cover from being opened while the switch is in the "ON" position and to prevent the accidental closing of the switch while the cover is open. The plugs must be provided with a means of padlocking the cover closed and the disconnect device in the "OFF" position. The operating handle and mechanism must remain in control of the disconnect device at all times. It shall be possible to mount the handle on either the end or the side of the plug-in unit, permitting its easy operation from the floor by means of a hookstick or chain. For safety reasons, no projections shall extend into the busway housing, other than plug-in stabs, which shall be silver plated. The plug-in units shall be interchangeable without alteration or modification on all ratings of Pow-R-Way plug-in bus duct.

Fusible type plugs shall have a quick-make, quick-break disconnect switch and positive pressure fuse clips.

The busway shall be Pow-R-Way as manufactured by Cutler-Hammer or approved equal.

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