CONFIGURATION OF BUSWAY TRUNKING

Electrical Characteristics for Copper & Aluminium Busbars at 50Hz

Copper Busbars at 50Hz

Rated Current (A)	Impedance (μΩ/m)				Line to Line Voltage drop(mV/m) at Rated Current(I) at various Power Factors										STC kA for 1 Sec
I	R20°C	R95°C	X	Z	1.00	0.90	0.80	0.70	0.60	0.50	0.40	0.30	0.20	0.10	
400	114.67	149.37	66.72	163.59	103.48	113.28	110.52	105.45	99.07	91.77	83.76	75.14	131.74	56.34	25
630	71.67	93.35	41.70	102.24	101.86	111.51	108.79	103.80	97.52	90.34	82.45	73.96	129.68	55.46	40
800	57.33	74.68	33.36	81.80	103.48	113.28	110.52	105.45	99.07	91.77	83.76	75.14	131.74	56.34	50
1000	40.95	53.35	23.83	58.43	92.39	101.14	98.68	94.15	88.45	81.94	74.78	67.09	117.63	50.30	50
1250	28.67	37.34	16.68	40.90	80.84	88.50	86.34	82.38	77.40	71.70	65.44	58.70	102.92	44.02	65
1600	22.93	29.87	13.34	32.72	82.79	90.63	88.42	84.36	79.25	73.42	67.01	60.11	105.39	45.07	80
2000	16.38	21.34	9.53	23.37	73.92	80.92	78.94	75.32	70.76	65.55	59.83	53.67	94.10	40.24	80
2500	12.46	16.24	7.25	17.78	70.30	76.96	75.08	71.64	67.30	62.34	56.90	51.05	89.50	38.27	100
3200	11.47	14.94	6.67	16.36	82.79	90.63	88.42	84.36	79.25	73.42	67.01	60.11	105.39	45.07	100
4000	8.19	10.67	4.77	11.69	73.92	80.92	78.94	75.32	70.76	65.55	59.83	53.67	94.10	40.24	100
5000	6.23	8.12	3.63	8.89	70.30	76.96	75.08	71.64	67.30	62.34	56.90	51.05	89.50	38.27	100
6300	5.46	7.11	3.18	7.79	77.61	84.96	82.89	79.09	74.30	68.83	62.82	56.35	98.81	42.26	100

Aluminium Busbars at 50Hz

Rated Current (A)	Impedance (μΩ/m)				Line to Line Voltage drop(mV/m) at Rated Current(I) at various Power Factors										STC kA for 1 Sec
I	R20°C	R95°C	X	Z	1.00	0.90	0.80	0.70	0.60	0.50	0.40	0.30	0.20	0.10	
400	119.71	155.93	41.70	161.41	108.03	109.82	103.76	96.25	87.93	79.03	69.69	59.97	131.17	39.55	25
630	79.81	103.96	27.80	107.61	113.43	115.31	108.95	101.07	92.33	82.99	73.17	62.97	137.73	41.53	40
800	59.85	77.97	20.85	80.71	108.03	109.82	103.76	96.25	87.93	79.03	69.69	59.97	131.17	39.55	50
1000	47.88	62.37	16.68	64.57	108.03	109.82	103.76	96.25	87.93	79.03	69.69	59.97	131.17	39.55	50
1250	38.31	49.90	15.16	52.15	108.03	111.53	106.12	99.06	91.08	82.44	73.29	63.72	132.23	43.46	65
1600	27.36	35.64	9.53	36.89	98.77	100.41	94.87	88.00	80.39	72.26	63.72	54.83	119.93	36.16	80
2000	20.82	27.12	7.25	28.07	93.94	95.50	90.23	83.70	76.46	68.73	60.60	52.15	114.06	34.39	80
2500	15.96	20.79	5.56	21.52	90.03	91.52	86.47	80.21	73.28	65.86	58.08	49.97	109.31	32.96	80
3200	13.68	17.82	4.77	18.45	98.77	100.41	94.87	88.00	80.39	72.26	63.72	54.83	119.93	36.16	100
4000	10.41	13.56	3.63	14.04	93.94	95.50	90.23	83.70	76.46	68.73	60.60	52.15	114.06	34.39	100
5000	7.98	10.40	2.78	10.76	90.03	91.52	86.47	80.21	73.28	65.86	58.08	49.97	109.31	32.96	100

Note: For the 60Hz calculation, divide the reactance (X) by 0.83. And the resistance(R) remains unchanged due to the negligible difference in frequency.

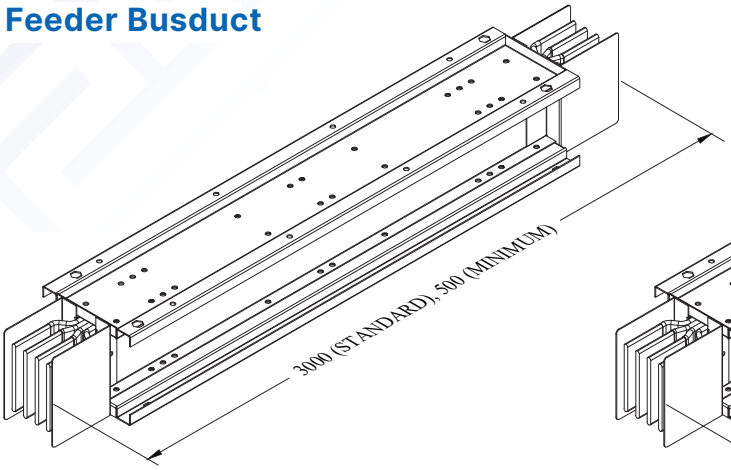
Voltage Drop Calculation - As per IEC 61439-6

$$DV = k \times (\sqrt{3}) \times I \, (R \cos\phi + X \sin\phi)$$

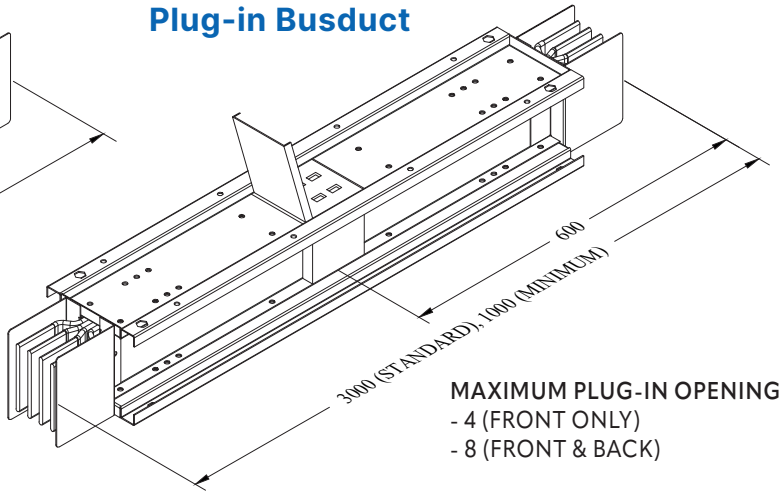
where DV = Line to Line voltage drop per meter (to be calculated)
I = Load Current
Cosø = Load Power Factor
Sinø = Sinø = $\sqrt{(1 - \cos^2\phi)}$
R = Resistance
X = Reactance
k = The load distribution factor*
* k=1, if the Load is concentrated at the end of the BT run
* (n+1)/(2xn) if the load is uniformly spread between 'n' branches (where n = No. of TOU)

STANDARD COMPONENTS - DIMENSIONAL DETAILS

Feeder Busduct

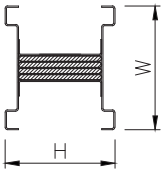


Plug-in Busduct

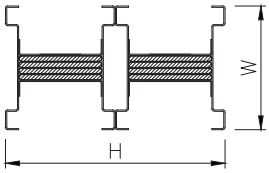


MAXIMUM PLUG-IN OPENING
- 4 (FRONT ONLY)
- 8 (FRONT & BACK)

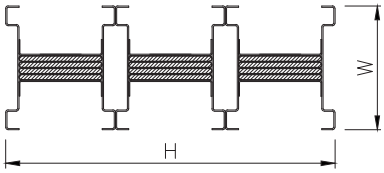
PLUG-IN OPENING INTERVAL
- 600mm (STANDARD)



[Fig.L1-1]



[Fig.L1-2]



[Fig.L1-3]

BUSDUCT WITH COPPER CONDUCTOR

Rating in Amps	Busbar Size	Dimensions in mm		Weight in Kg/Mtr.		Fig.
		W	H	3P 4W	3P 4W + 50%E	
400	(25x6)x1	150	59	16	17	L1-1
630	(40x6)x1	150	74	17	18	L1-1
800	(50x6)x1	150	84	19.5	20.5	L1-1
1000	(70x6)x1	150	104	24.5	26	L1-1
1250	(100x6)x1	150	134	32	34	L1-1
1600	(125x6)x1	150	159	38	41	L1-1
2000	(175x6)x1	150	209	50.5	56	L1-1
2500	(230x6)x1	150	264	63.5	70	L1-1
3200	(125x6)x2	150	318	76.5	82.5	L1-2
4000	(175x6)x2	150	418	99.5	109	L1-2
5000	(230x6)x2	150	528	127.5	140.5	L1-2
6300	(175x6)x3	150	627	152	169	L1-3

BUSDUCT WITH ALUMINIUM CONDUCTOR

Rating in Amps	Busbar Size	Dimensions in mm		Weight in Kg/ Mtr.		Fig.
		W	H	3P 4W	3P 4W + 50%E	
400	(40x6)x1	150	74	10.6	11	L1-1
630	(60x6)x1	150	94	12.3	12.9	L1-1
800	(80x6)x1	150	114	14	14.8	L1-1
1000	(100x6)x1	150	134	15.7	16.7	L1-1
1250	(125x6)x1	150	159	17.8	19	L1-1
1600	(175x6)x1	150	209	22	23.7	L1-1
2000	(230x6)x1	150	264	26.6	28.8	L1-1
2500	(150x6)x2	150	368	43.5	46	L1-2
3200	(175x6)x2	150	418	45	48	L1-2
4000	(230x6)x2	150	528	54	58.5	L1-2
5000	(200x6)x3	150	702	74.5	78.5	L1-3

Elins Busways

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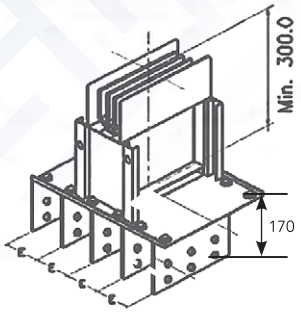
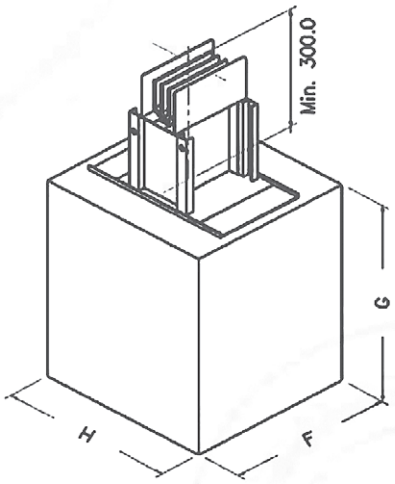
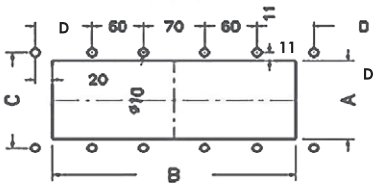
Flange End



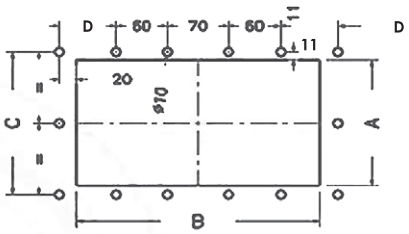
End Feed Cable Box



Mounting Cut Out



[Fig.L2-1]



[Fig.L2-2]

COPPER BUSDUCT

FLANGE END

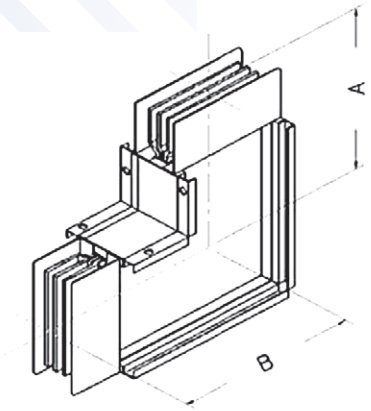
Ampere	Mounting Cut out(mm)				Interval	End feed box size(mm)			Fig
(A)	A	B	C	D	E	F	G	H	
400	35		57						
630	50		72						
800	60		82						
1000	80	280	102	65	80				
1250	110		132						
1600	135		157						
2000	185		207						
2500	240		262			330			L2-1
3200	294		316			500			L2-2
4000	394		416				650	450	
5000	504		526						
6300	603	340	625	95	100				

ALUMINIUM BUSDUCT

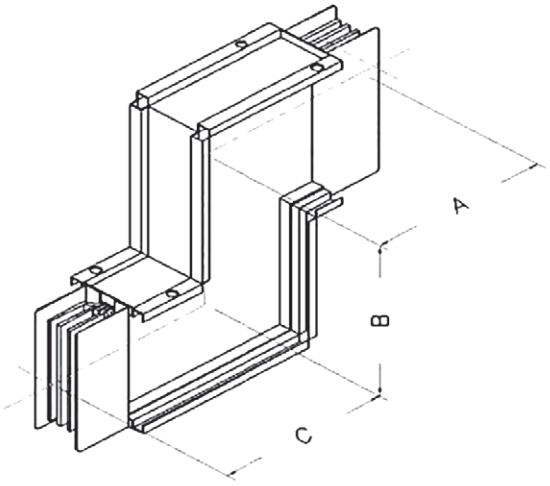
FLANGE END

Ampere	Mounting Cut out(mm)				Interval	End feed box size(mm)			Fig
(A)	A	B	C	D	E	F	G	H	
400	50		72						
630	70		92						
800	90	280	112	65	80				
1000	110		132						
1250	135		157						
1600	185		207						
2000	240		262			330			L2-1
2500	344		366			500			L2-2
3200	394		416				650	450	
4000	504		526						
5000	678	340	700	95	100		-	-	

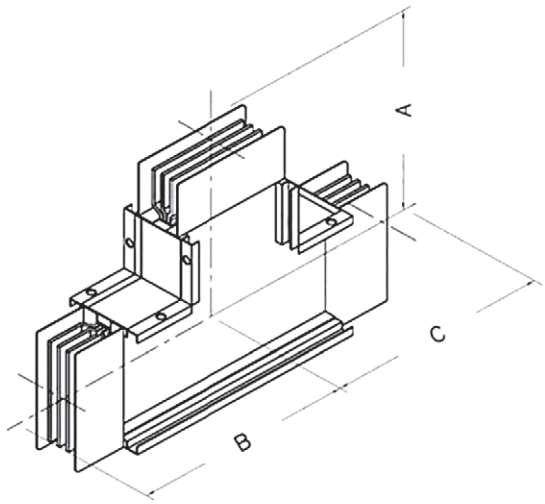
Flatwise Elbow



Flatwise Offset



Flatwise Tee



FLATWISE ELBOW		
Ampere (A)	COPPER	ALUMINIUM
	Standard Dimension(mm) A x B	
400	330 x 330	335 x 335
630	335 x 335	345 x 345
800	340 x 340	355 x 355
1000	350 x 350	365 x 365
1250	365 x 365	380 x 380
1600	380 x 380	405 x 405
2000	405 x 405	430 x 430
2500	430 x 430	480 x 480
3200	455 x 455	505 x 505
4000	505 x 505	560 x 560
5000	560 x 560	650 x 650
6300	615 x 615	-

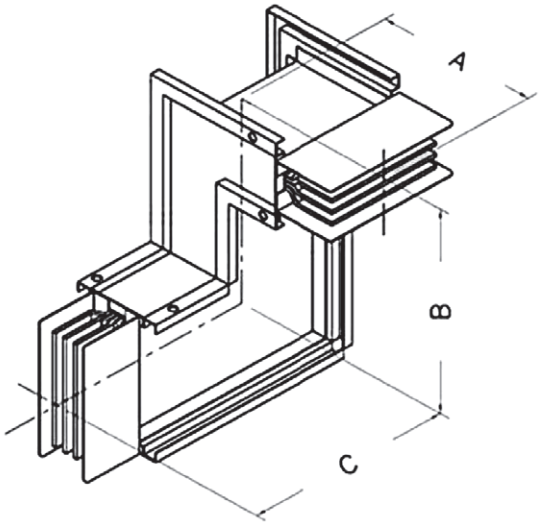
FLATWISE OFFSET		
Ampere (A)	COPPER	ALUMINIUM
	Standard Dimension(mm) A x B x C	
400	330 x 300 x 330	335 x 300 x 335
630	335 x 300 x 335	345 x 300 x 345
800	340 x 300 x 340	355 x 300 x 355
1000	350 x 300 x 350	365 x 300 x 365
1250	365 x 300 x 365	380 x 300 x 380
1600	380 x 300 x 380	405 x 300 x 405
2000	405 x 300 x 405	430 x 300 x 430
2500	430 x 300 x 430	480 x 300 x 480
3200	455 x 300 x 455	505 x 300 x 505
4000	505 x 300 x 505	560 x 300 x 560
5000	560 x 300 x 560	650 x 300 x 650
6300	615 x 300 x 615	-

FLATWISE TEE		
Ampere (A)	COPPER	ALUMINIUM
	Standard Dimension(mm) A x B x C	
400	330 x 330 x 330	335 x 335 x 335
630	335 x 335 x 335	345 x 345 x 345
800	340 x 340 x 340	355 x 355 x 355
1000	350 x 350 x 350	365 x 365 x 365
1250	365 x 365 x 365	380 x 380 x 380
1600	380 x 380 x 380	405 x 405 x 405
2000	405 x 405 x 405	430 x 430 x 430
2500	430 x 430 x 430	480 x 480 x 480
3200	455 x 455 x 455	505 x 505 x 505
4000	505 x 505 x 505	560 x 560 x 560
5000	560 x 560 x 560	650 x 650 x 650
6300	615 x 615 x 615	-

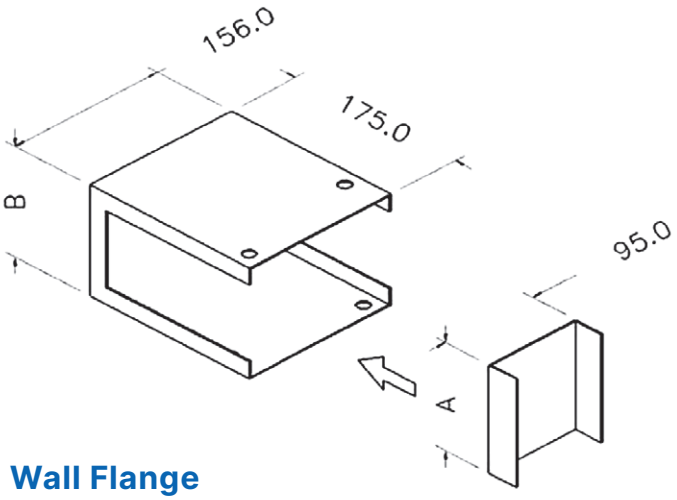
Elins Busways

Smart. Versatile. Efficient.

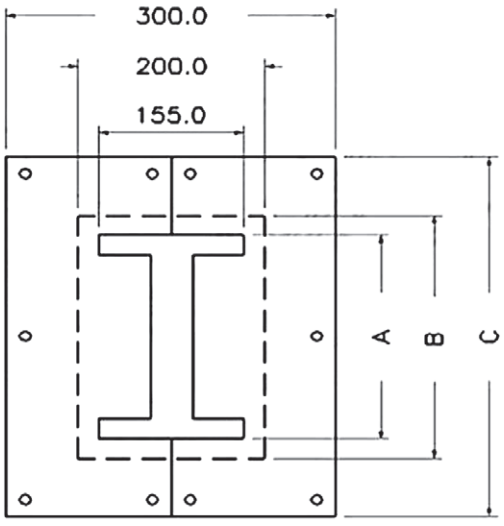
Combination Elbow



End Cover



Wall Flange

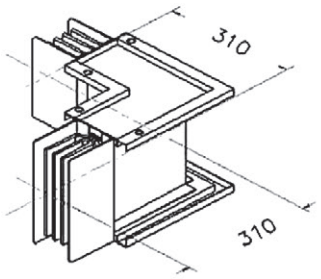


COMBINATION ELBOW		
Ampere (A)	COPPER	ALUMINIUM
	Standard Dimension(mm) A x B x C	
400	310 x 300 x 330	310 x 300 x 335
630	310 x 300 x 335	310 x 300 x 345
800	310 x 300 x 340	310 x 300 x 355
1000	310 x 300 x 350	310 x 300 x 365
1250	310 x 300 x 365	310 x 300 x 380
1600	310 x 300 x 380	310 x 300 x 405
2000	310 x 300 x 405	310 x 300 x 430
2500	310 x 300 x 430	310 x 350 x 480
3200	310 x 350 x 455	310 x 400 x 505
4000	310 x 400 x 505	310 x 450 x 560
5000	310 x 450 x 560	310 x 550 x 650
6300	310 x 550 x 615	-

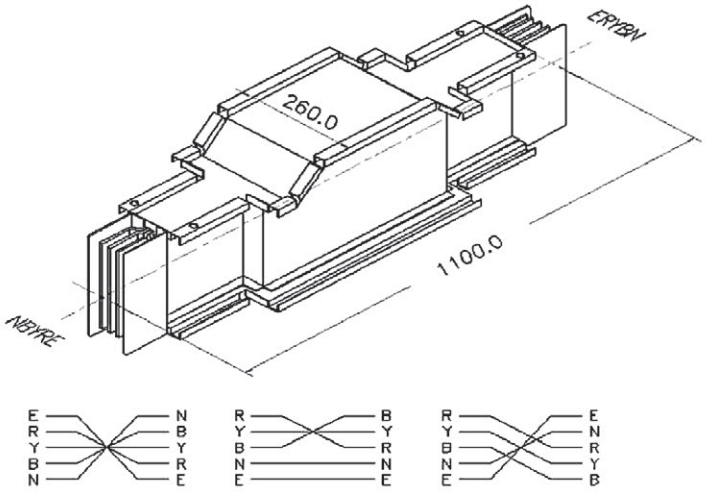
END COVER		
Ampere (A)	COPPER	ALUMINIUM
	Standard Dimension(mm) A x B	
400	60 x 65	75 x 80
630	75 x 80	95 x 100
800	85 x 90	115 x 120
1000	105 x 110	135 x 140
1250	135 x 140	160 x 165
1600	160 x 165	210 x 215
2000	210 x 215	265 x 270
2500	265 x 270	370 x 375
3200	320 x 325	420 x 425
4000	420 x 425	530 x 535
5000	530 x 535	705 x 710
6300	630 x 635	-

WALL FLANGE		
Ampere (A)	COPPER	ALUMINIUM
	Standard dimension(mm) A x B x C	
400	70 x 115 x 155	85 x 130 x 170
630	85 x 130 x 170	105 x 150 x 190
800	95 x 140 x 180	125 x 170 x 210
1000	115 x 160 x 205	145 x 190 x 230
1250	145 x 190 x 230	170 x 215 x 255
1600	170 x 215 x 255	220 x 265 x 305
2000	220 x 265 x 305	275 x 320 x 360
2500	275 x 320 x 360	380 x 425 x 465
3200	330 x 375 x 415	430 x 475 x 515
4000	430 x 475 x 515	540 x 585 x 625
5000	540 x 585 x 625	715 x 760 x 800
6300	640 x 685 x 725	-

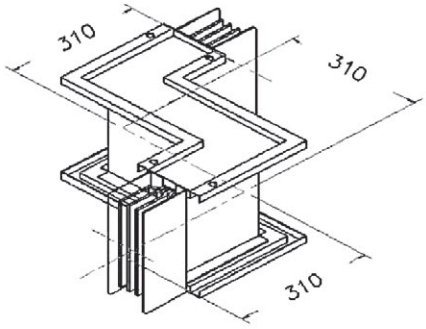
Edgewise Elbow



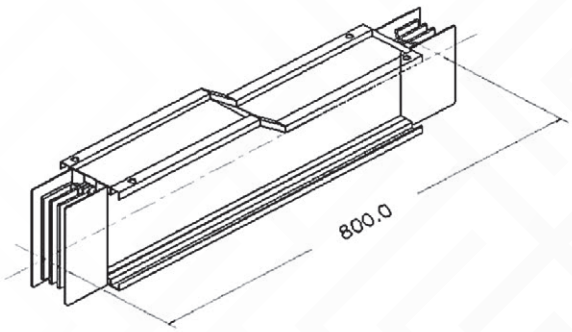
Phase Transportation Unit



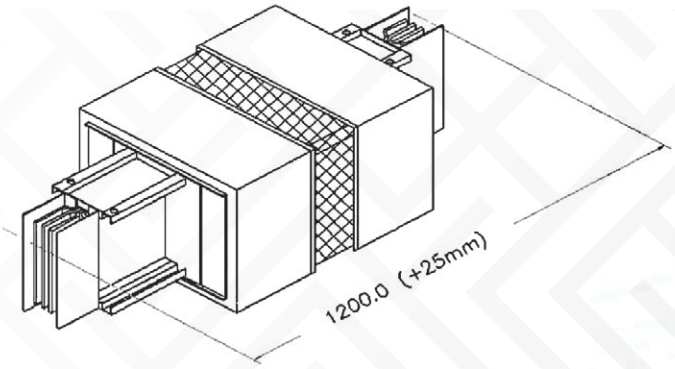
Edgewise Offset



Reducer



Expansion Unit



Note:

*Edgewise Elbow = Horizontal Elbow
*Flatwise Elbow = Vertical Elbow
*Contact us for any special Elbow requirement