

BUSDUCT CATALOG

Standard Dimension



Low-voltage Busduct

**NISSIN
ELECTRIC**

NEV

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NISSIN BUSDUCT

Nissin Electric Vietnam Co., Ltd. is producing the various kinds Busduct of the low voltage and high voltage and there are many delivery projects.

1. MV Busduct (3-22 KV) IEC60694, IEC62271, JEM1425

1-1. Air Insulation / Bare conductor type (IP54, IP55, IP65)

1-2. Air Insulation / Insulated conductor type (IP54, IP55, IP65)

2. LV Busduct IEC60439-1, IEC60439-2, JIS 8364

2-1. Insulation (sandwich) type 600A - 6300A

* Feeder Busduct IP41, IP54, IP55, IP65

* Plug-in Busduct IP41, IP54

2-2. Air Insulation / Insulated conductor type 600A - 6300A

* Feeder Busduct IP41, IP54, IP55, IP65

2-3. Air Insulation / Bare conductor type

* Feeder Busduct 600A – 5000A IP41, IP54, IP55, IP65

* Plug-in Busduct 600A – 3000A IP41, IP54

* MINI Busduct 600V 3W 200A, 300A IP41

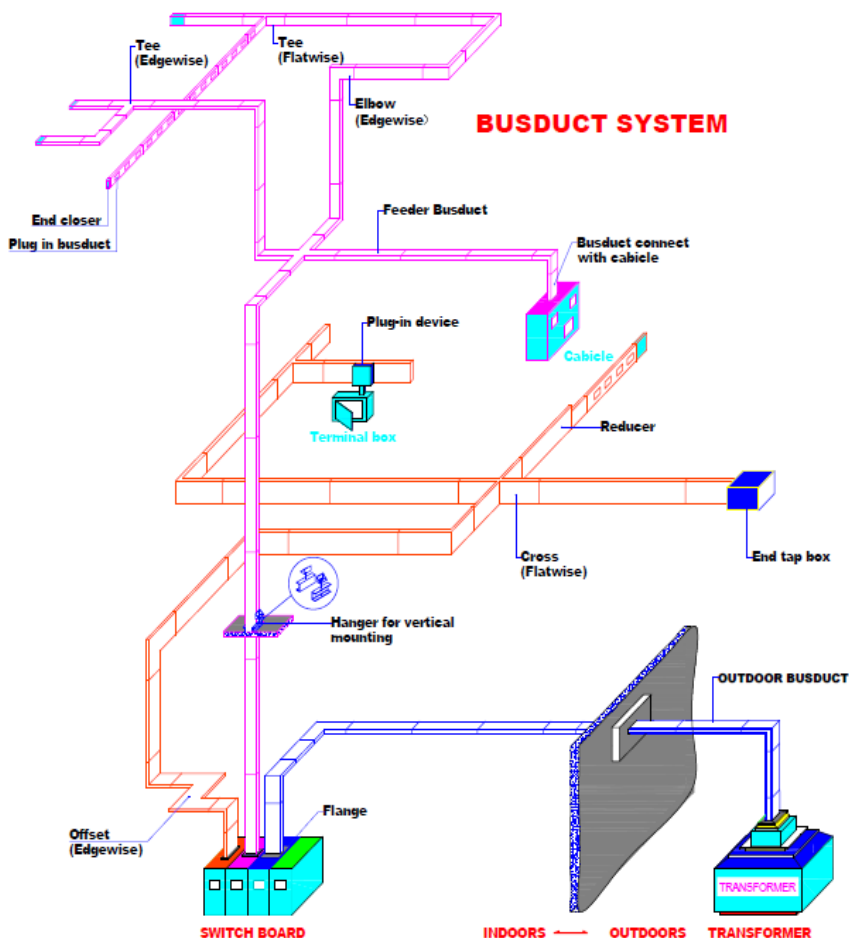
* LINE Busduct 600V 4W 250A, 400A IP41, IP54

GENERAL SPECIFICATION OF 600V Insulation Type BUSDUCT

NISSIN ELECTRIC VIETNAM CO.,LTD.

		SPECIFICATION						BS-08-00010
Rated Voltage		AC 600V						
Phase		3Ph ,3Ph + N						
Rated Current		600A, 800A, 1000A, 1500A, 2000A, 2500A, 3000A, 3500A, 4000A, 4500A, 5000A, 6300A						
Insulation Level		2500V (1 min.)						
Applicable Standard		IEC 60439-1 , IEC 60439-2, JIS C 8364						
Material	Conductor	61% Conductivity Aluminium Busbar (JISH 4180 Aluminium and Aluminium Alloy Bus Conductor)						
	Duct	Galvanized Steel Sheet						
	Coductor Insulation	Class B 130°C Polyester Film (t=0.25mm. 2 layer)						
Surface treatment	Conductor	Conductor connection surface : Tin plating						
	Duct	Polyester powder painting 5Y 7/1 Thickness of Painting : Indoor Type BD : More than 40 μm(Outside of case) Outdoor Type BD : More than 70 μm(Outside of case)						
Temperature Rise		Less than 30°C. (AT out side surface of duct) *Ambient Temperature : 35°C						
Degree of Protection	Outdoor	IP 55 or IP 65						
	Indoor	IP 41 or IP 54						
Short circuit current(1sec)		600A	800A	1000A	1200A	1350A-2000A	2500A-3000A	3500A-6300A
		40KA		60KA		80KA	100KA	120KA
Acceptance Inspection	Visual & dimension Inspection	All inspection data and specification are compared and confirmed.						
	Insulation Resistance	The insulation resistance shall be not less than 100MΩ. (1000V Insulation resistance tester)						
	Withstand Voltage test	The busduct shall withstand the test voltage 2500V one minute.						

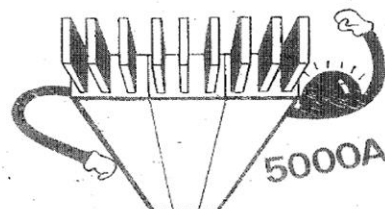
BUS-DUCT mainly consists of the following component



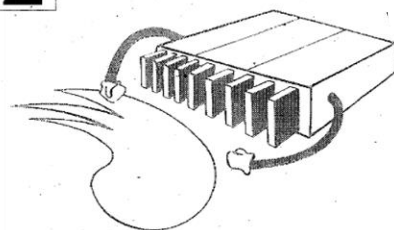
Since bus duct system has a lot of merits, the modern building like ones of cities or hotels are put it to a good use, as the main bus. It is also used regularly from the respect of rationality and good economy in electric power supply for the factories. Sumitomo Electric manufactures every kind of bus duct system including static and dynamic distribution system. You can find a bus duct system from Sumitomo's bus duct which is quite suitable for any and every installation application. Sumitomo's bus duct system provides power conveniently wherever it is needed.

Feature

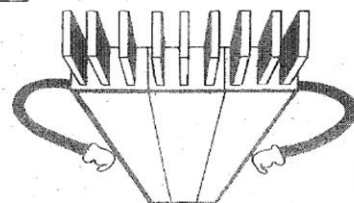
- 1 Standardized up to 5000A current capacity.



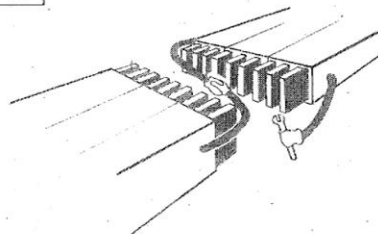
- 2 Long life and high safety.



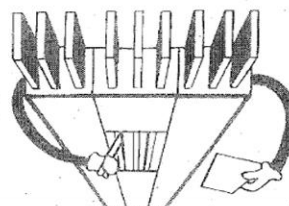
- 3 Fit into any place neatly.



- 4 Interchangeable feeders and plug-in sections.



- 5 Easy installation and maintenance.



. Construction

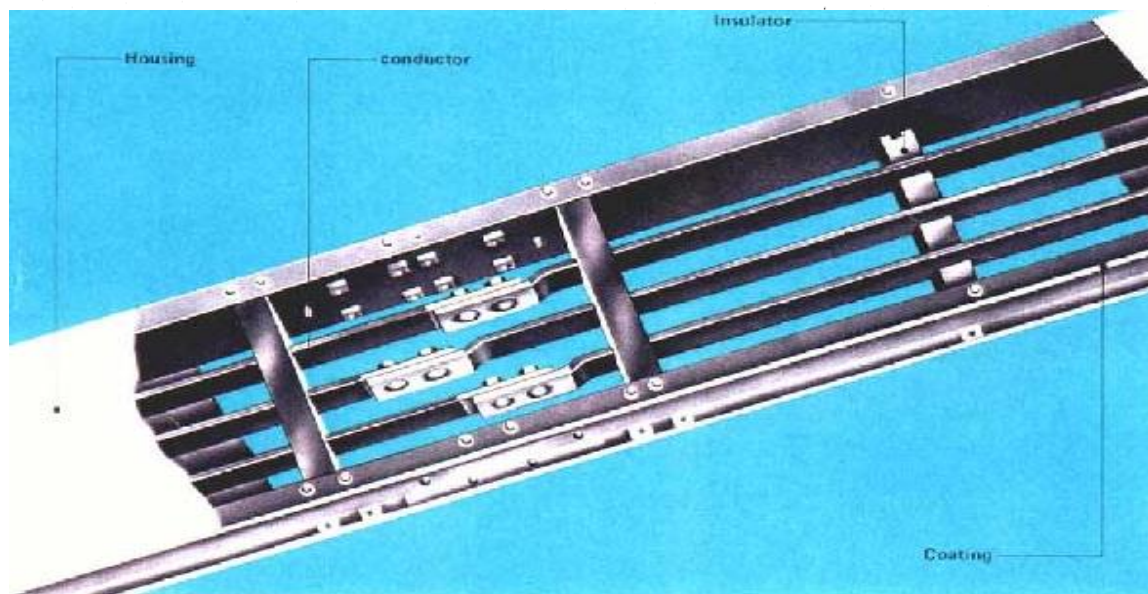
***BUS-DUCT using bare conductor**

Conductor

Electrical copper having 98% conductivity is used for the copper conductor and electrical aluminium of 60% conductivity for the aluminum conductor. Joints are tin plated. The aluminum conductor costs less and is lighter than the copper conductor.

Housing

The housing is a metal case generally made of galvanized steel or aluminum. It is of non-ventilated type meeting the requirements of the Japanese Industrial Standards.



Insulator

The insulator of conductor is provided with of glass-fiber-reinforced-polyester having a large mechanical strength and high electrical and heat resistance. Extra attentions have been given to avoid fires due to rising temperatures and mechanical failures.

Coating

The housing is coated with heat resistant paint having strong rustproofness, smooth surface and luster.

The standard color of coating will be greenish blue (7.5 BG6/1.5) for indoor and gray (N7) for outdoor.

Please specify desired colors.

*BUS-DUCT using insulated conductor

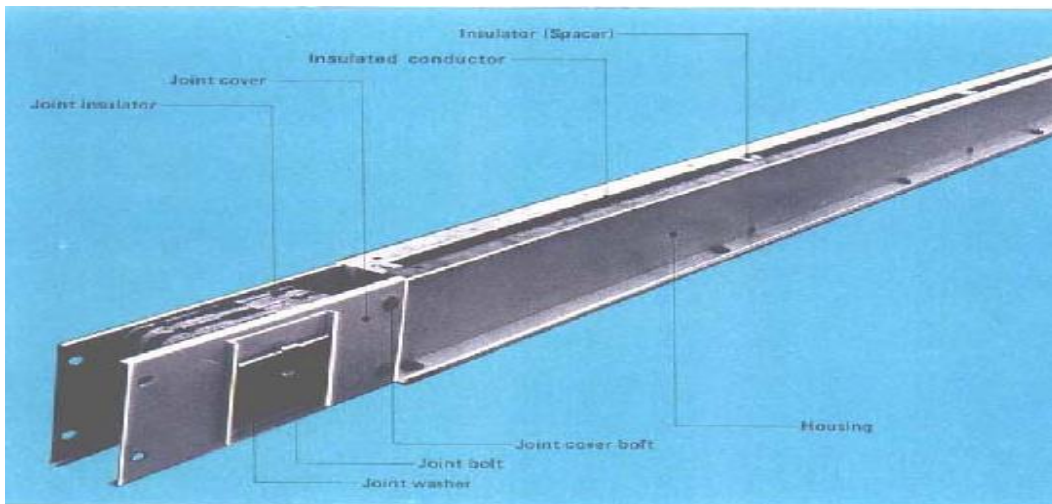
Insulated conductor

The descriptions of the conductor is the same as bus duct for the bare conductor. The difference is that the conductor is insulated throughout the entire length except the contact area by extruding tubing.

The insulator is made of special composite heat resistant polyvinylchloride.

Housing

The housing of the insulated conductor is about the same with that of the bare conductor, its electric loss in the housing is much less than that of the bare conductor.



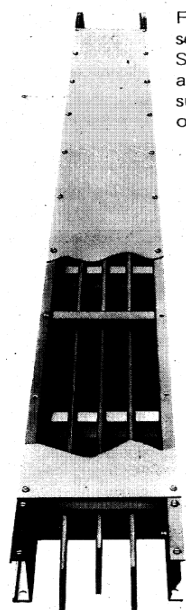
Jointing(Joint bolt. Joint washer.Joint insulator)

Joints are designed to provide smooth contact surface between the conductors, proper fastening effect, safe electrical insulation and simple installation

- (a) Joint bolt is designed to avoid a "creep" to the bolt as well as to the conductor and large pressures even in the repeated cycles of heating and cooling.
- (b) Joint washer is stable against the creep and pressures because it is designed taking into account thermal expansion differentials of the copper conductor or the aluminum conductor to the steel bolt.

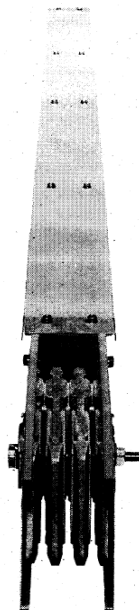
- (c) Joint insulator has enough strength to withstand fastening force of the bolt because of a special insulation material containing less humidity.

Feeder bus duct

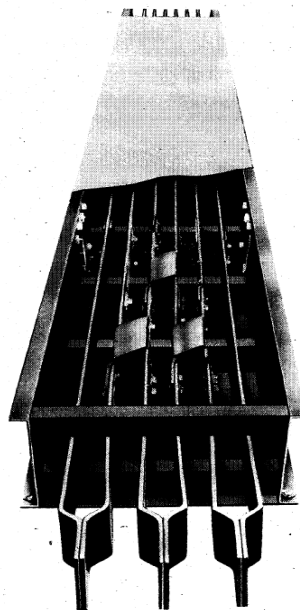


Feeders have no plug-in sections and taps. Sections of straight feeder are 3 meters long measured from the center-line of a joint.

◀ Bus duct using bare conductor



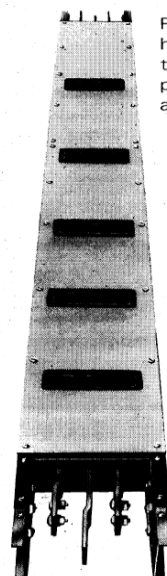
▶ Bus duct using insulated conductor



Low impedance bus ducts are arranged in transpositioned Composite conductors. It is mostly used to prevent the increase in voltage drop of large current or long-range bus ways.

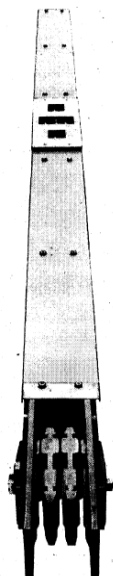
◀ Bus duct using bare conductor (low impedance)

Plug-in bus duct



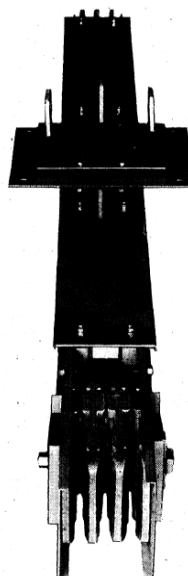
Plug-in bus ducts have holes for plug-in connection with devices. It provides taps where they are desired.

◀ Bus duct using bare conductor



▶ Bus duct using insulated conductor

Tap bar bus duct

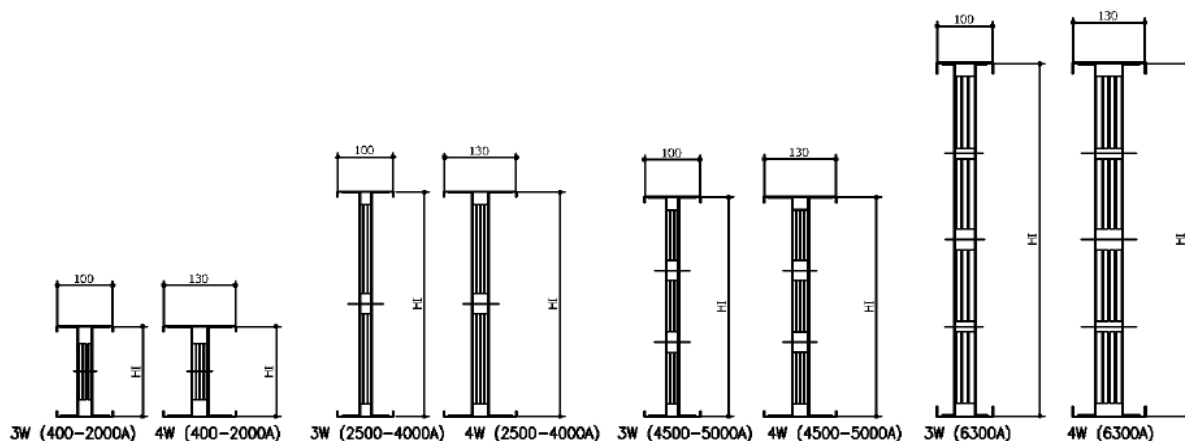


Tap bar bus ducts are suitable for the taps of 600A or more and for direct connecting with tap cables.

◀ Bus duct using insulated conductor

Cross Section of Bus duct

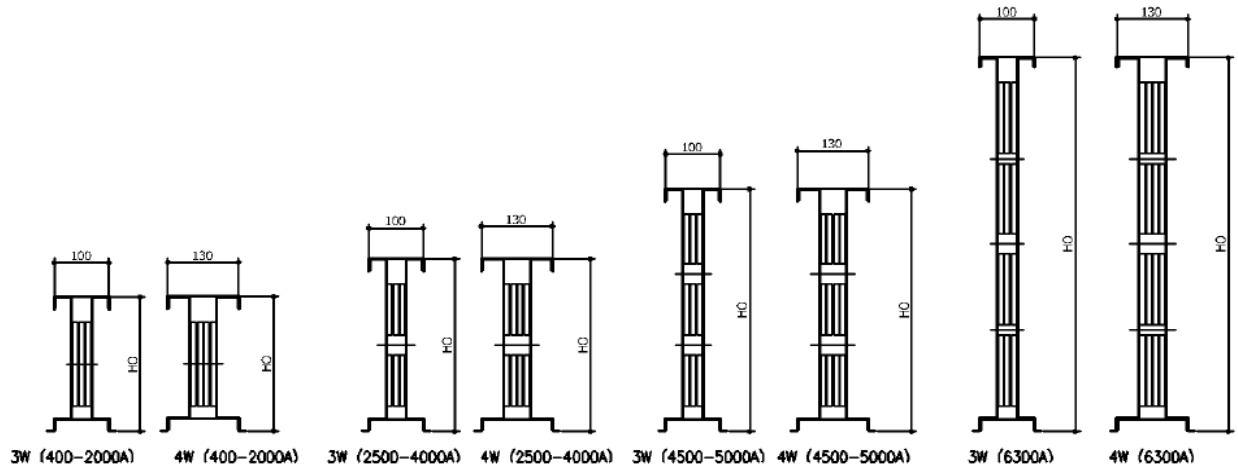
Indoor Type



ALUMINIUM CONDUCTOR				
AMP. RATING (A)	CONDUCTOR SIZE (mm.)	HI (mm.)	WEIGHT (Kg/m.)	
			3W	4W
400A	1-t6x50	115	11	13
600A	1-t6x50	115	11	13
800A	1-t6x75	125	13	16
1000A	1-t6x100	150	16	20
1200A	1-t6x125	175	18	23
1350A	1-t6x165	215	22	34
1500A	1-t6x165	215	22	34
1600A	1-t10x165	215	28	36
2000A	1-t10x175	225	30	38
2500A	2-t10x125	330	35	45
3000A	2-t10x140	350	40	50
3500A	2-t10x175	440	65	80
4000A	2-t10x200	490	74	89
4500A	3-t10x165	625	84	108
5000A	3-t10x175	655	90	114
6300A	4-t10x140	690	90	120

COPPER CONDUCTOR				
AMP. RATING (A)	CONDUCTOR SIZE (mm.)	HI (mm.)	WEIGHT (Kg/m.)	
			3W	4W
800A	1-t6x50	115	17	21
1000A	1-t6x75	125	21	28
1200A	1-t6x100	150	26	34
1350A	1-t6x125	175	37	41
1500A	1-t6x125	175	37	41
1600A	1-t6x165	215	42	54
2000A	1-t6x175	225	44	57
2500A	2-t6x125	330	50	65
3000A	2-t6x140	350	60	75
3500A	2-t6x175	440	82	98
4000A	2-t6x200	490	94	113
4500A	3-t6x165	625	126	162
5000A	3-t6x175	655	132	171
6300A	4-t6x140	690	140	190

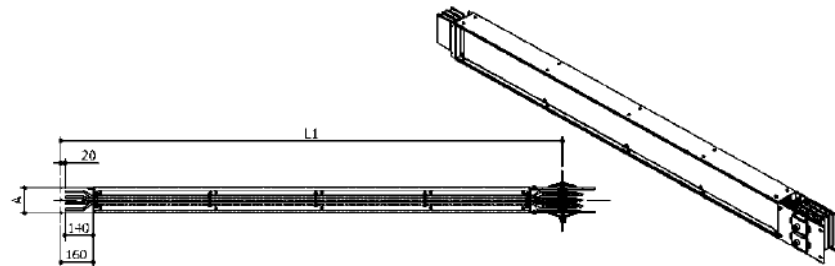
Outdoor Type



ALUMINIUM CONDUCTOR				
AMP. RATING (A)	CONDUCTOR SIZE (mm.)	HO (mm.)	WEIGHT (Kg/m.)	
			3W	4W
400A	1-t6x50	165	23	26
600A	1-t6x50	165	23	26
800A	1-t6x75	175	25	30
1000A	1-t6x100	200	29	34
1200A	1-t6x125	225	32	38
1350A	1-t6x165	265	37	50
1500A	1-t6x165	265	37	50
1600A	1-t10x165	265	44	52
2000A	1-t10x175	275	46	54
2500A	2-t10x125	380	70	90
3000A	2-t10x140	400	80	100
3500A	2-t10x175	490	97	113
4000A	2-t10x200	540	108	124
4500A	3-t10x165	675	132	156
5000A	3-t10x175	705	138	162
6300A	4-t10x140	740	150	200

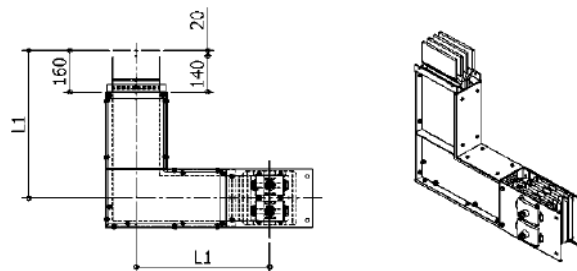
COPPER CONDUCTOR				
AMP. RATING (A)	CONDUCTOR SIZE (mm.)	HO (mm.)	WEIGHT (Kg/m.)	
			3W	4W
800A	1-t6x50	165	29	34
1000A	1-t6x75	175	33	42
1200A	1-t6x100	200	39	48
1350A	1-t6x125	225	51	56
1500A	1-t6x125	225	51	56
1600A	1-t6x165	265	57	70
2000A	1-t6x175	275	60	73
2500A	2-t6x125	380	90	105
3000A	2-t6x140	400	100	115
3500A	2-t6x175	490	114	131
4000A	2-t6x200	540	128	148
4500A	3-t6x165	675	171	210
5000A	3-t6x175	705	180	219
6300A	4-t6x140	740	190	230

Straight Indoor (S)



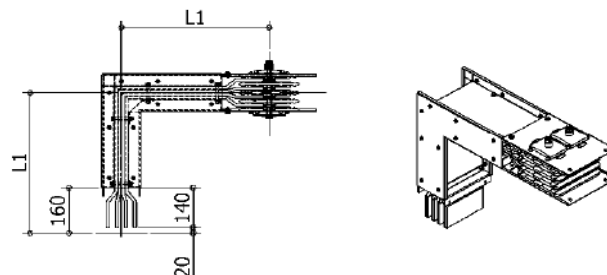
CONDUCTOR	AMP. RATING (A)	A (mm.)		L1 (mm.)	
		3W	4W	STANDARD	MINIMUM
ALUMINIUM	400 - 6300	100	130	3000 ,4000 ,5000	500
COPPER	800 - 6300				

Vertical Elbow (EL)



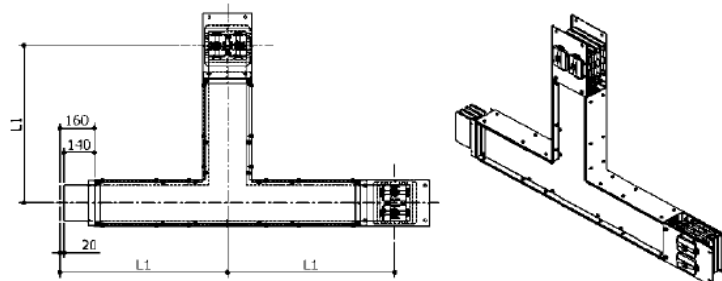
CONDUCTOR	AMP. RATING (A)	A (mm.)		L1 (mm.)	
		3W	4W	STANDARD	MINIMUM
ALUMINIUM	400 - 3000	100	130	500	450
	3500 - 6300			700	650
COPPER	800 - 3000			500	450
	3500 - 6300			700	650

Horizontal Elbow (FL)



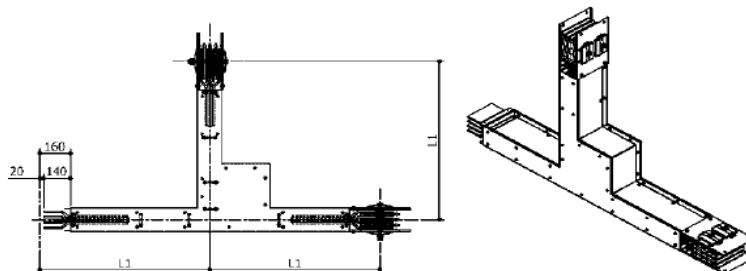
CONDUCTOR	AMP. RATING (A)	A (mm.)		L1 (mm.)	
		3W	4W	STANDARD	MINIMUM
ALUMINIUM	400 - 6300	100	130	500	350
COPPER	800 - 6300				

Vertical Tee (ET)



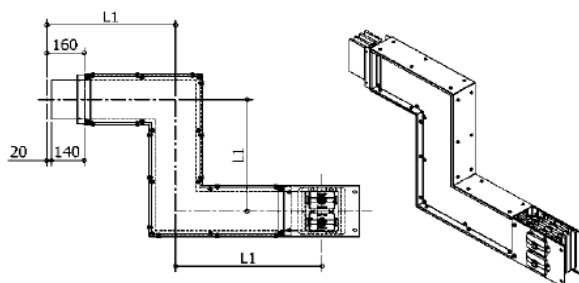
CONDUCTOR	AMP. RATING (A)	A (mm.)		L1 (mm.)
		3W	4W	
ALUMINIUM	400 - 5000	100	130	750
COPPER	800 - 6300			

Horizontal Elbow (FT)



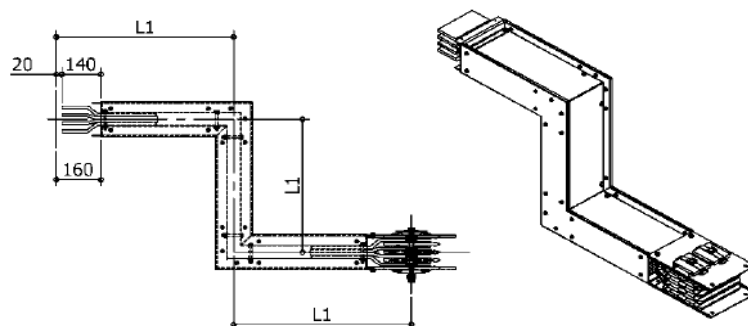
CONDUCTOR	AMP. RATING (A)	A (mm.)		L1 (mm.)
		3W	4W	
ALUMINIUM	400 - 5000	100	130	750
COPPER	800 - 6300			

Edgewise Offset Elbow (EZ)



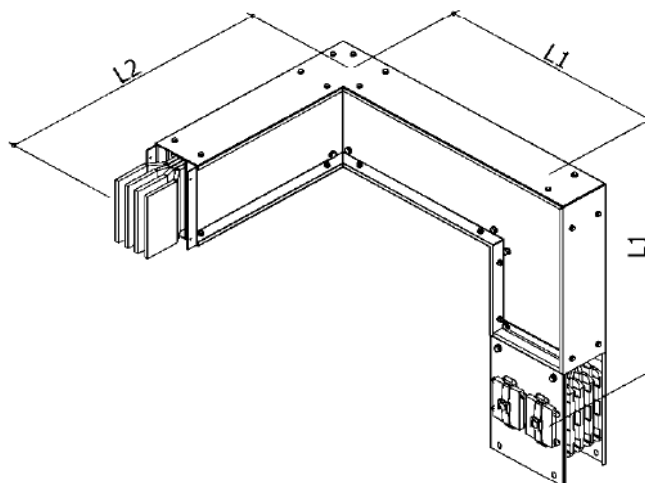
CONDUCTOR	AMP. RATING (A)	A (mm.)		L1 (mm.)	
		3W	4W	STANDARD	MINIMUM
ALUMINIUM	400 - 5000	100	130	500	350
	6300			700	650
COPPER	800 - 5000			500	450
	6300			700	650

Flat wise Offset Elbow (FZ)



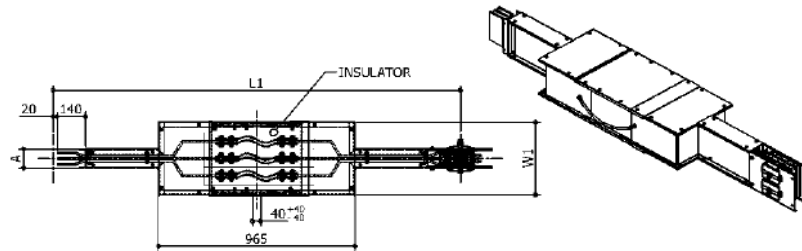
CONDUCTOR	AMP. RATING (A)	A (mm.)		L1 (mm.)	
		3W	4W	STANDARD	MINIMUM
ALUMINIUM	400 - 3000	100	130	500	450
	3500 - 6300			700	650
COPPER	800 - 3000			500	450
	3500 - 6300			700	650

Flat wise + Edgewise Elbow (FL+EL)

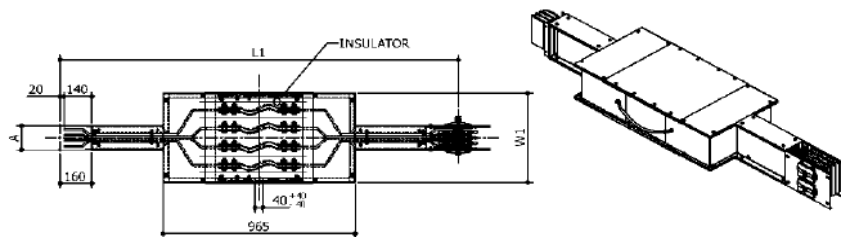


CONDUCTOR	AMP. RATING (A)	A (mm.)		L1 (mm.)		L2 (mm.)	
		3W	4W	STANDARD	MINIMUM	STANDARD	MINIMUM
ALUMINIUM	400 - 3000	100	130	500	450	500	350
	3500 - 6300			700	650	700	550
COPPER	800 - 3000			500	450	500	350
	3500 - 6300			700	650	700	550

Expansion 3W (EXP)

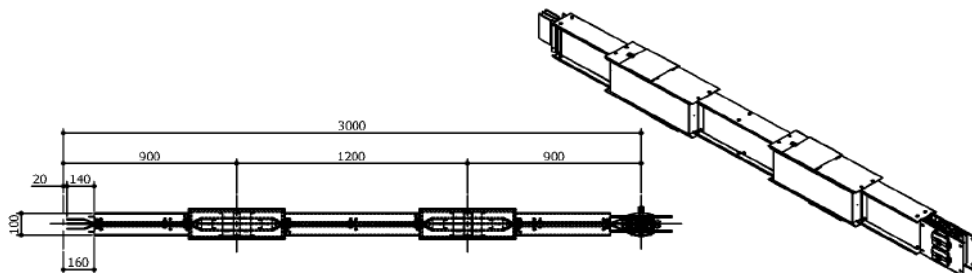


Expansion 4W (EXP)

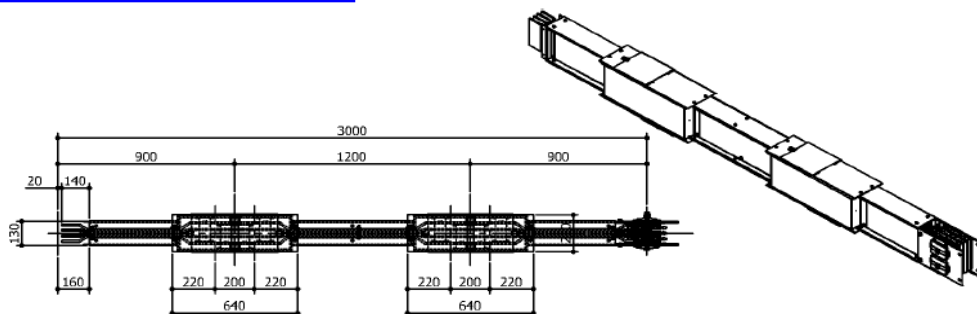


CONDUCTOR	AMP. RATING (A)	A (mm.)		L1 (mm.)	W1 (mm.)	
		3W	4W		3W	4W
ALUMINIUM	400 - 3000	100	130	2000	245	295
	1600 - 6300				345	425
COPPER	800 - 6300				245	295

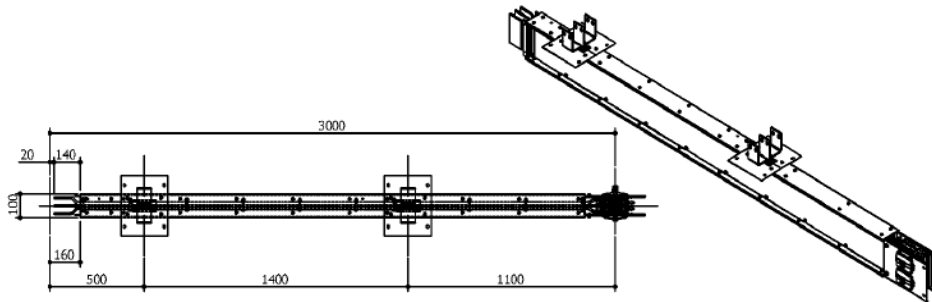
3w Plug-in Bus duct (PI) *** Maximum 6 plug-in unit per Busduct 3 meter.



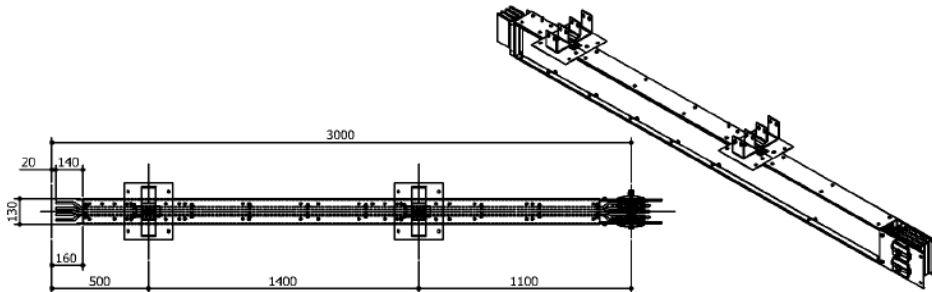
4w Plug-in Bus duct (PI) *** Maximum 6 plug-in unit per Busduct 3 meter.



3W Tap-off *** Maximum Tap-off unit per Busduct 3 meter.

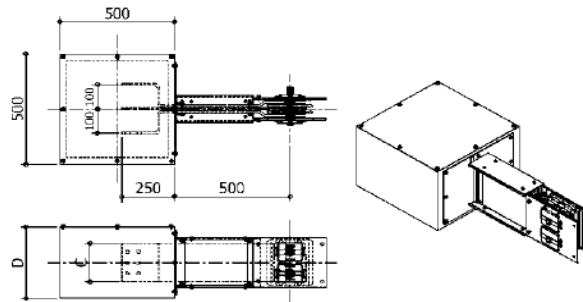


4W Tap-off *** Maximum Tap-off unit per Busduct 3 meter.



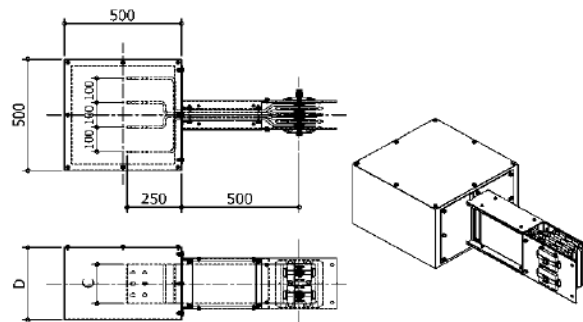
End Feed-in 3W

*** See bus bar holing as per (page 17)



End Feed-in 4W

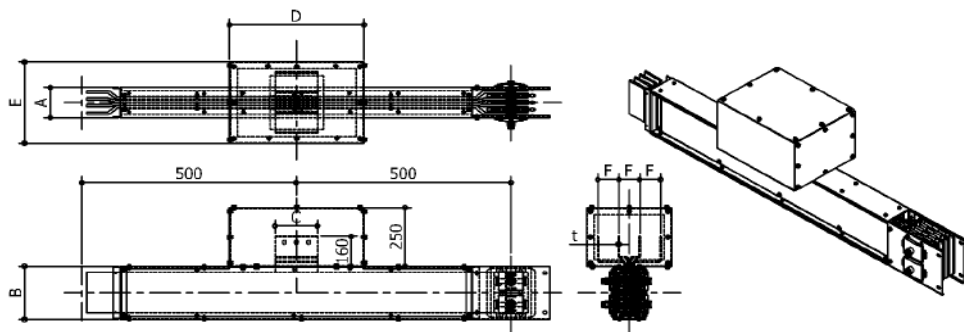
*** See bus bar holing as per (page 17)



ALUMINIUM CONDUCTOR				
RATING (A)	A		B	C
	3W	4W		
400	100	130	115	50
600			115	50
800			125	75
1000			150	100
1200			175	125
1350			215	165
1500			215	165
1600			215	165
2000			225	175

COPPER CONDUCTOR				
RATING (A)	A		B	C
	3W	4W		
800	100	130	115	50
1000			125	75
1200			150	100
1350			175	125
1500			175	125
1600			215	165
2000			225	175

Center Feed-in

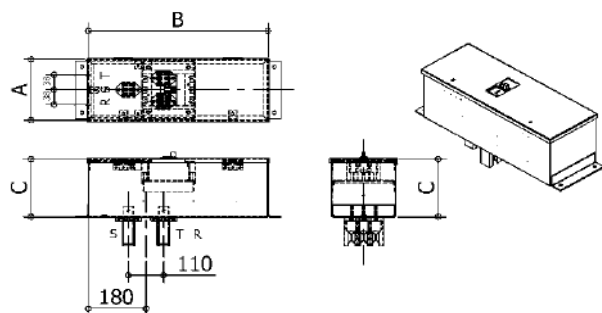


ALUMINIUM CONDUCTOR								
RATING (A)	A		B	C	D	E		t
	3W	4W				3W	4W	
400	100	130	115	50	450	350	450	6
600			115	50				
800			125	75				
1000			150	100				
1200			175	125	500	400	500	10
1350			215	165				
1500			215	165				
1600			215	165				
2000			225	175				

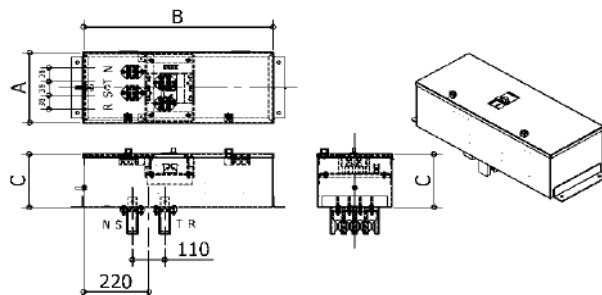
COPPER CONDUCTOR								
RATING (A)	A		B	C	D	E		t
	3W	4W				3W	4W	
800	100	130	115	50	450	350	450	6
1000			125	75				
1200			150	100				
1350			175	125				
1500			175	125	500	400	500	10
1600			215	165				
2000			225	175				

Plug-in Switch Unit

3W



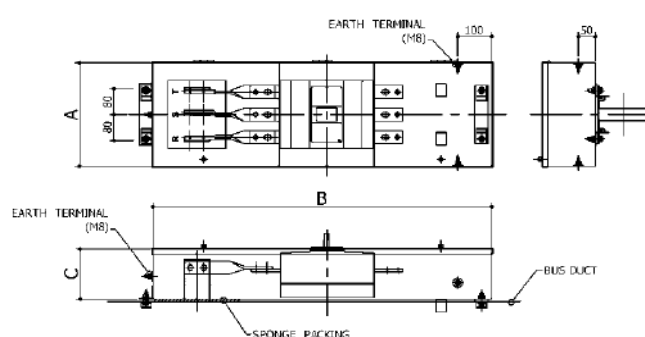
4W



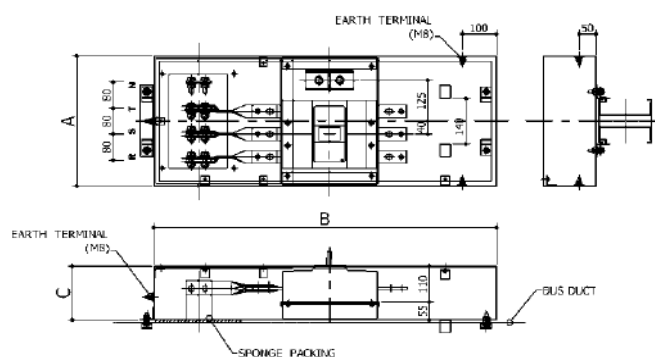
BREAKER FRAME (AF)	3W (mm.)			4W (mm.)		
	A	B	C	A	B	C
50						
100	200	560	190	250	640	190
250						
400	250	680	210	300	700	210
630	320	830	290	370	850	290

Tap-off Switch Unit

3W

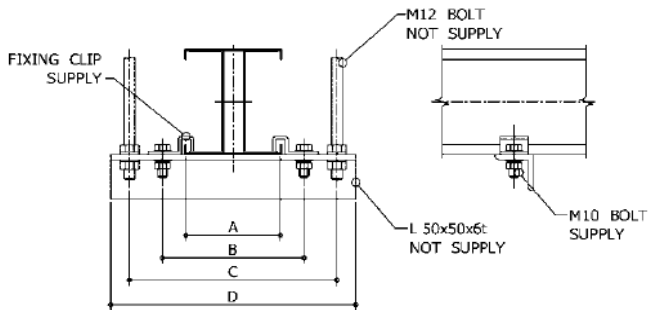
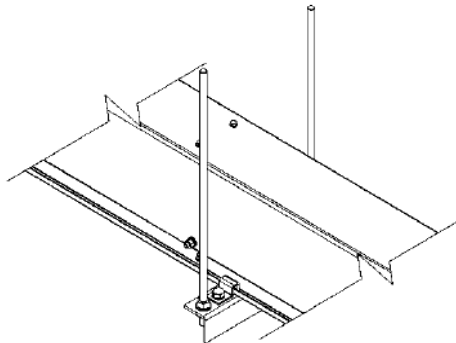


4W



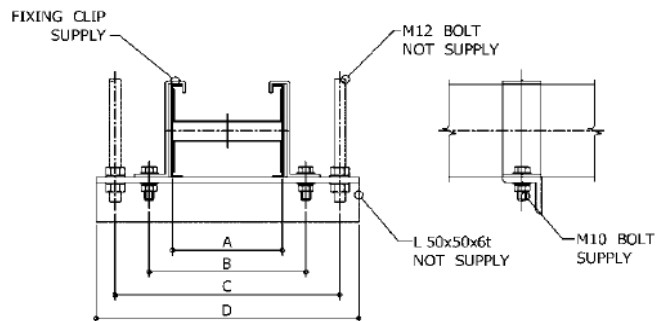
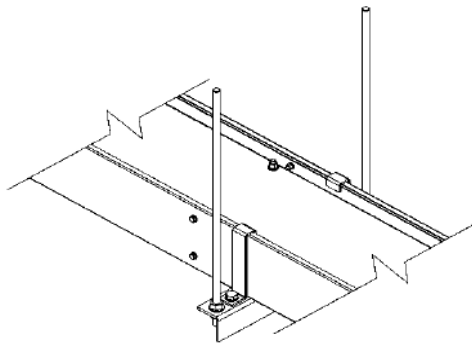
BREAKER FRAME (AF)	3W (mm.)			4W (mm.)		
	A	B	C	A	B	C
800	320	1000	155	400	1000	165
1000	320	1200	210	400	1200	210

Hanger (Edgewise)



WIRE	A	B	C	D
3W	100	150	220	260
4W	130	180	250	290

Hanger (Flatwise)

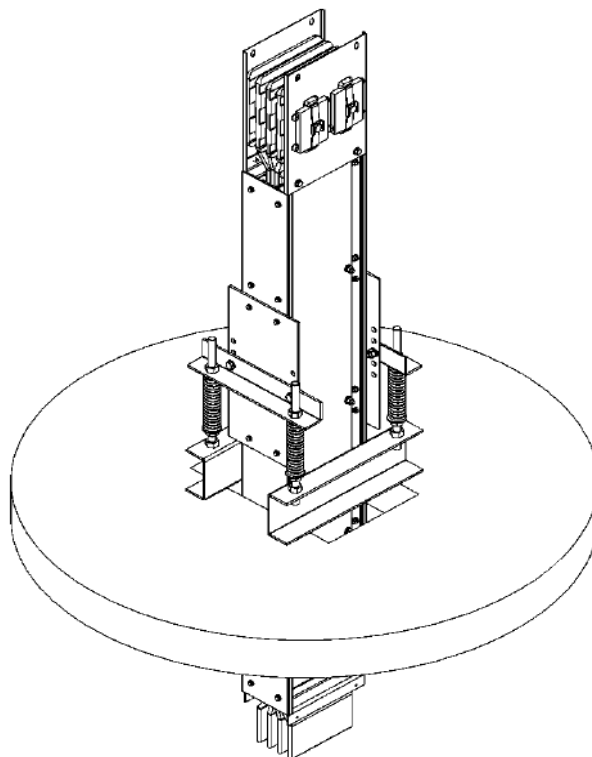
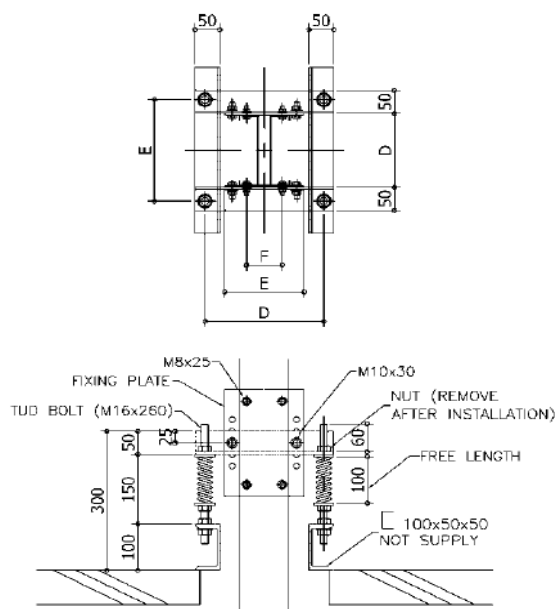


AMP. RATING (A)	A	B	C	D
400	115	164	235	275
600	115	164	235	275
800	125	174	245	285
1000	150	199	270	310
1200	175	224	295	335
1350	215	264	335	375
1500	215	264	335	375
1600	215	264	335	375
2000	225	274	345	385
2500	330	379	450	490
3000	350	399	470	510
3500	440	489	560	600
4000	490	539	610	650
4500	540	589	660	700
5000	650	699	770	810
6300	690	739	810	850

COPPER CONDUCTOR				
AMP. RATING (A)	A	B	C	D
800	115	164	235	275
1000	125	174	245	285
1200	150	199	270	310
1350	175	224	295	335
1500	175	224	295	335
1600	215	264	335	375
2000	225	274	345	385
2500	330	379	450	490
3000	350	399	470	510
3500	440	489	560	600
4000	490	539	610	650
4500	540	589	660	700
5000	650	699	770	810
6300	690	739	810	850

Floor Support

Spring type

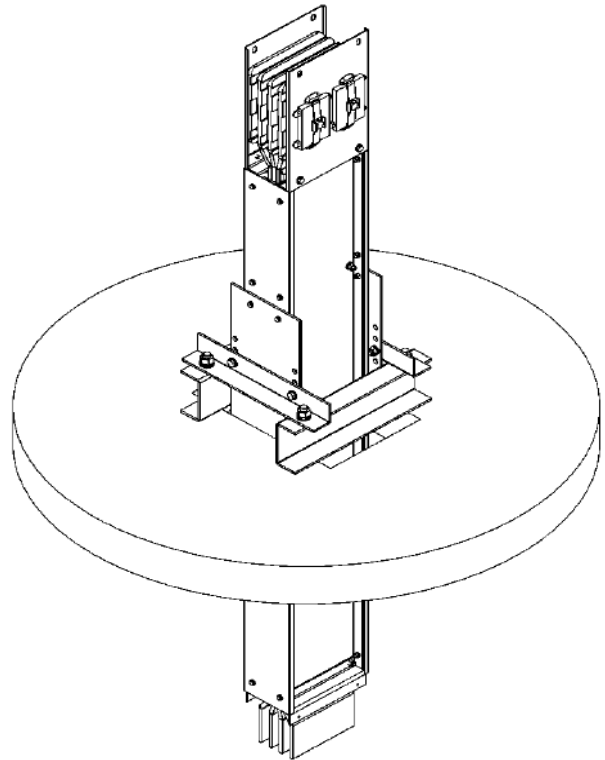
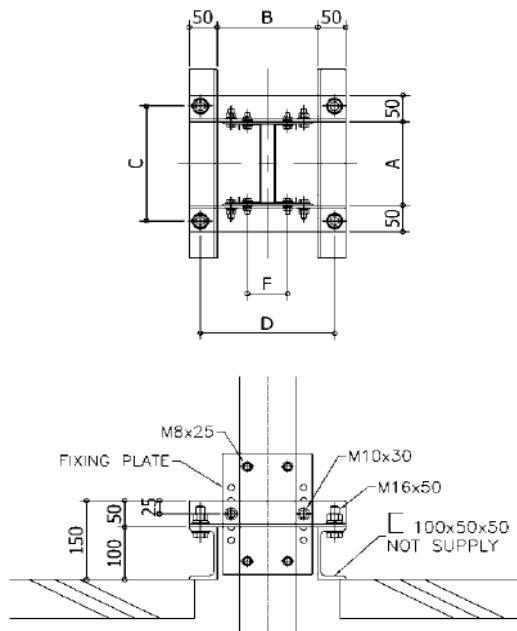


ALUMINIUM CONDUCTOR								
AMP. RATING (A)	3W			4W			D	E
	A	B	C	A	B	C		
400	200	100	74	230	130	104	118	178
600							118	178
800							128	188
1000							153	213
1200							178	238
1350							218	278
1500							218	278
1600							218	278
2000							228	288
2500							334	394
3000							354	414

COPPER CONDUCTOR								
AMP. RATING (A)	3W			4W			D	E
	A	B	C	A	B	C		
800	200	100	74	230	130	104	118	178
1000							128	188
1200							153	213
1350							178	238
1500							218	278
1600							218	278
2000							228	288
2500							334	394
3000							354	414

Floor Support

Fix type

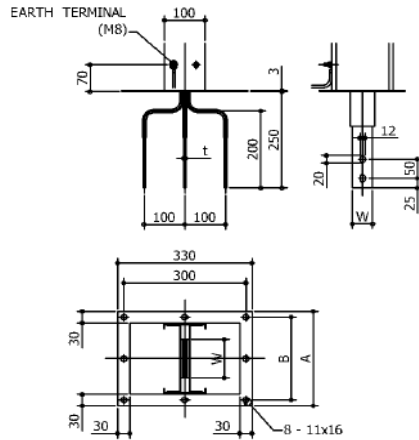


AMP. RATING (A)	3W (AL)					4W (AL)				
	A	B	C	D	F	A	B	C	D	F
600A	124	180	184	240	72	124	210	184	270	102
800A	134		194			134		194		
1000A	159		219			159		219		
1200A	184		244			184		244		
1350A	224		284			224		284		
1500A	224		284			224		284		
1600A	224		284			224		284		
2000A	234		294			234		294		
2500A	340		400			340		400		
3000A	360		420			360		420		

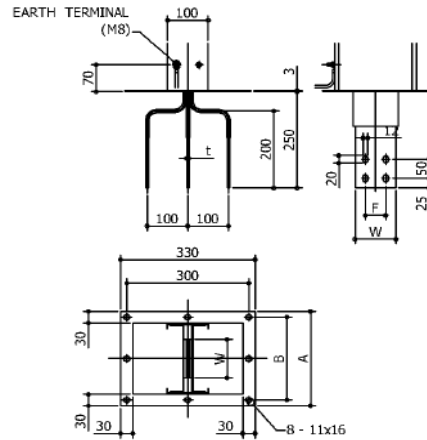
AMP. RATING (A)	3W (CU)					4W (CU)				
	A	B	C	D	F	A	B	C	D	F
800A	124	180	184	240	72	124	210	184	170	102
1000A	134		194			134		194		
1200A	159		219			159		219		
1350A	184		244			184		244		
1500A	184		244			184		244		
1600A	224		284			224		284		
2000A	234		294			234		294		
2500A	340		400			340		400		
3000A	360		420			360		420		

3W Flanged End

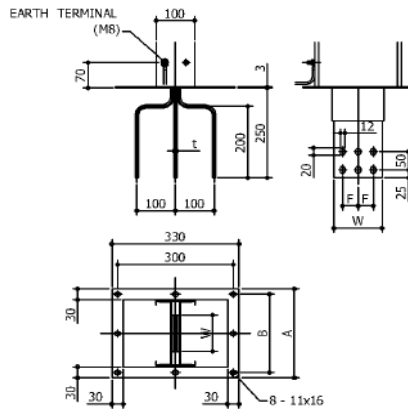
AL 3W 400-600A
CU 3W 800A



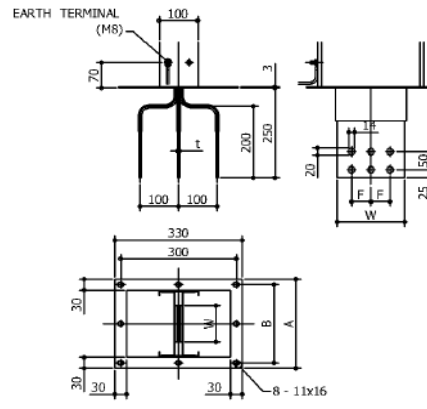
AL 3W 800-1000A
CU 3W 1000-1200A



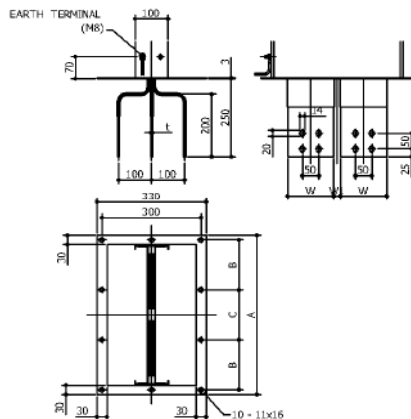
AL 3W 1200A
CU 3W 1350-1500A



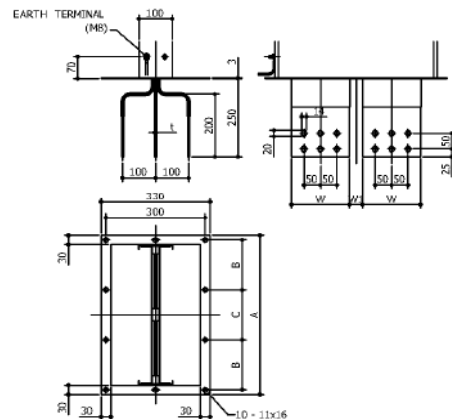
AL 3W 1350-2000A
CU 3W 1600-2000A

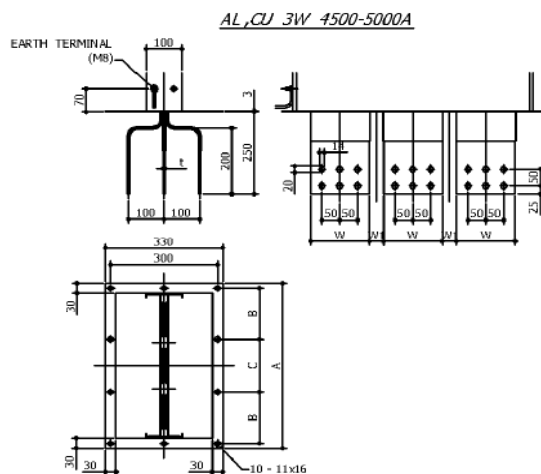


AL, CU 3W 2500A-3000A



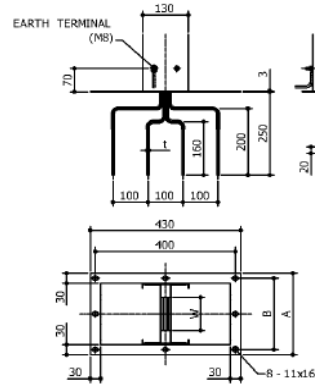
AL, CU 3W 3500A



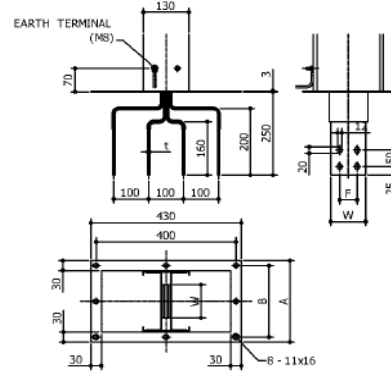


4W Flanged End

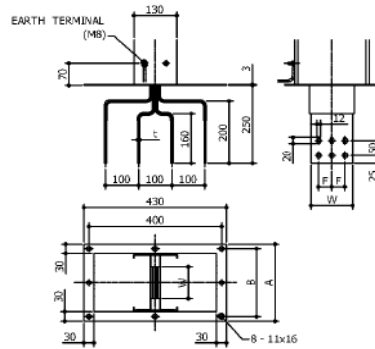
AL 4W 400-600A
CU 4W 800A



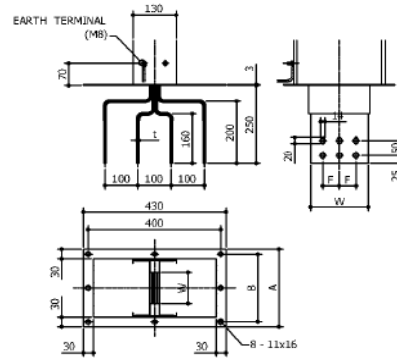
AL 4W 800-1000A
CU 4W 1000-1200A



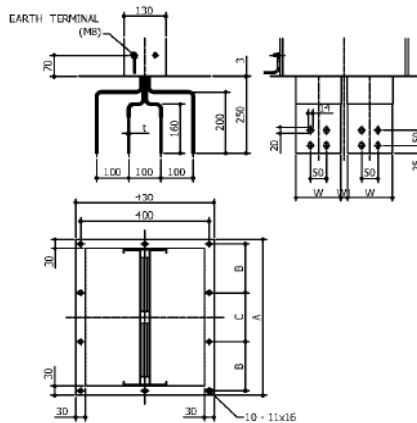
AL 4W 1200A
CU 4W 1350-1500A



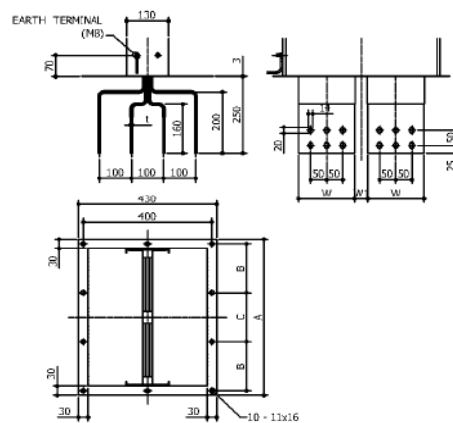
AL 4W 1350-2000A
CU 4W 1600-2000A

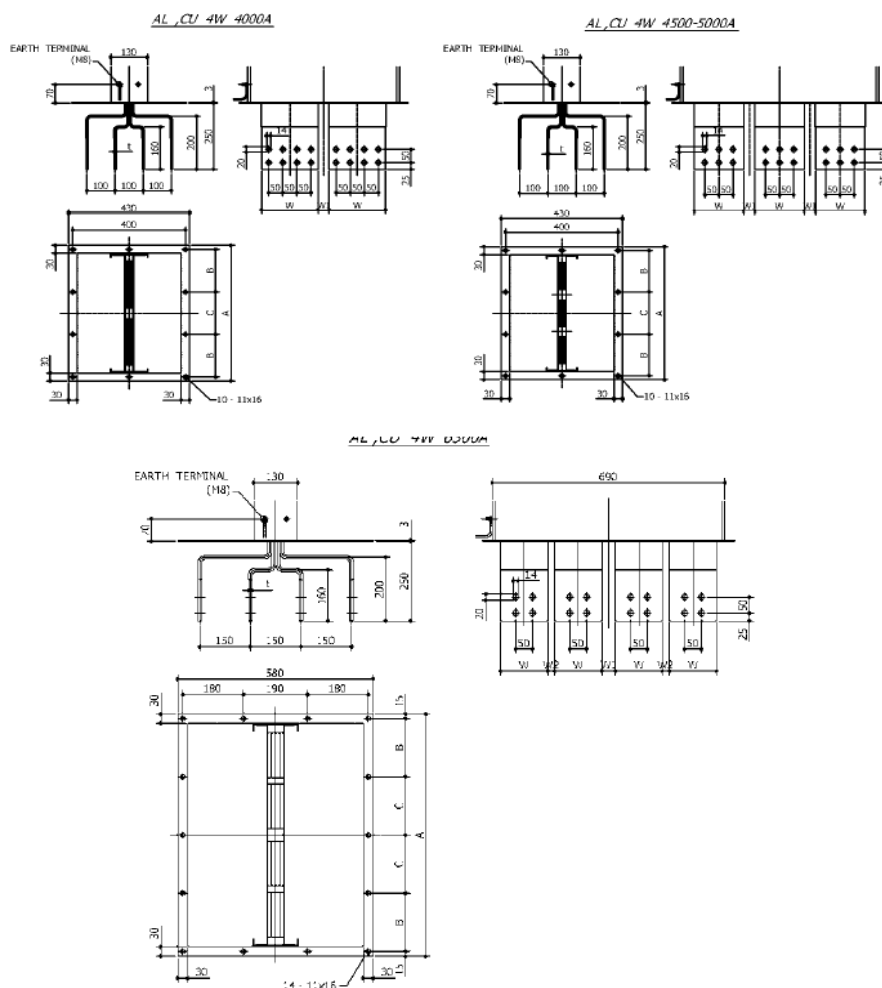


AL ,CU 4W 2500A-3000A



AL ,CU 4W 3500A

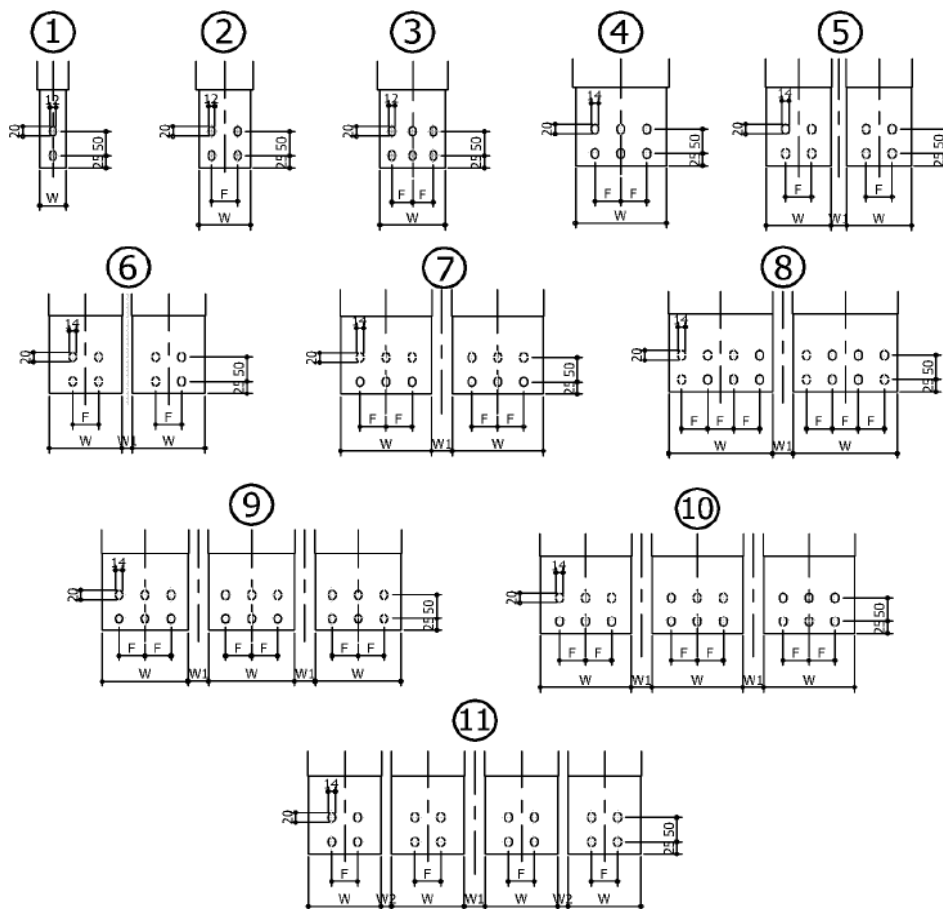




ALUMINIUM CONDUCTOR							
AMP. RATING (A)	A	B	C	W	W1	W2	t
400	185	155	-	50	-	-	6
600	185	155	-	50	-	-	
800	195	165	-	75	-	-	
1000	220	190	-	100	-	-	
1200	245	215	-	125	-	-	
1350	285	255	-	165	-	-	
1500	285	255	-	165	-	-	10
1600	285	255	-	165	-	-	
2000	295	265	-	175	-	-	
2500	400	125	120	125	30	-	
3000	420	130	130	140	20	-	
3500	510	160	160	175	40	-	
4000	560	175	180	200	40	-	
4500	695	220	225	165	40	-	
5000	725	230	235	175	40	-	
6300	760	182.5	182.5	140	40	20	

COPPER CONDUCTOR							
AMP. RATING (A)	A	B	C	W	W1	W2	t
800	185	155	-	50	-	-	6
1000	195	165	-	75	-	-	
1200	220	190	-	100	-	-	
1350	245	215	-	125	-	-	
1500	245	215	-	125	-	-	
1600	285	255	-	165	-	-	
2000	295	265	-	175	-	-	
2500	400	125	120	125	30	-	
3000	420	130	130	140	20	-	
3500	510	160	160	175	40	-	
4000	560	175	180	200	40	-	
4500	695	220	225	165	40	-	
5000	725	230	235	175	40	-	
6300	760	182.5	182.5	140	40	20	

Bus Bar Holing

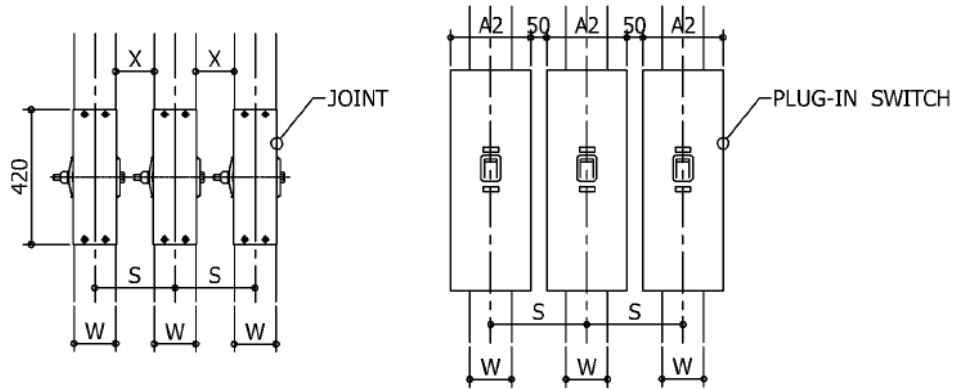


ALUMINIUM CONDUCTOR					
AMP. RATING (A)	W	W1	W2	F	PIC TURE
400	50	-	-	-	1
600	50	-	-	-	
800	75	-	-	40	2
1000	100	-	-	50	
1200	125	-	-	40	3
1350	165	-	-	50	4
1500	165	-	-	50	
1600	165	-	-	50	
2000	175	-	-	50	
2500	125	30	-	50	5
3000	140	20	-	50	6
3500	175	40	-	50	7
4000	200	40	-	50	8
4500	165	40	-	50	9
5000	175	40	-	50	10
6300	140	40	20	50	11

COPPER CONDUCTOR					
AMP. RATING (A)	W	W1	W2	F	PIC TURE
800	50	-	-	-	1
1000	75	-	-	40	2
1200	100	-	-	50	
1350	125	-	-	40	3
1500	125	-	-	40	
1600	165	-	-	50	4
2000	175	-	-	50	
2500	125	30	-	50	5
3000	140	20	-	50	6
3500	175	40	-	50	7
4000	200	40	-	50	8
4500	165	40	-	50	9
5000	175	40	-	50	10
6300	140	40	20	50	11

Minimum Installation Space Between Bus duct

Feeder Bus duct

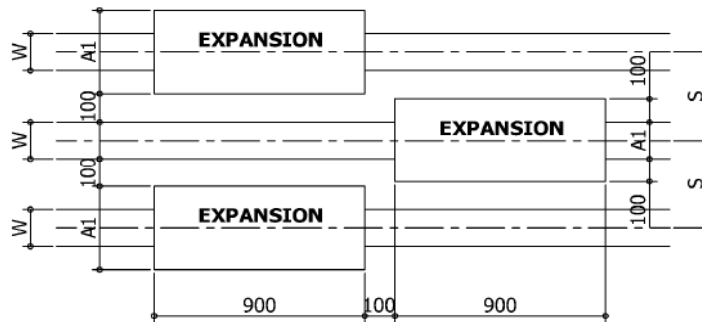


Plug-in Bus duct

INSTALLATION	X	S
HORIZONTAL RUN	120	W + X
VERTICAL RUN	170	

INSTALLATION	S
HORIZONTAL RUN	A2 + 50
VERTICAL RUN	

Expansion Bus duct



INSTALLATION	S
HORIZONTAL RUN	$A1/2 + W2 + 100$
VERTICAL RUN	

***Dimension W : refer to dimension table of Cross Section of Bus duct (page 1-2)

***Dimension A1 ,A2 : refer to drawing of Expansion Bus duct (page 6) Plug-in Switch (page 6)