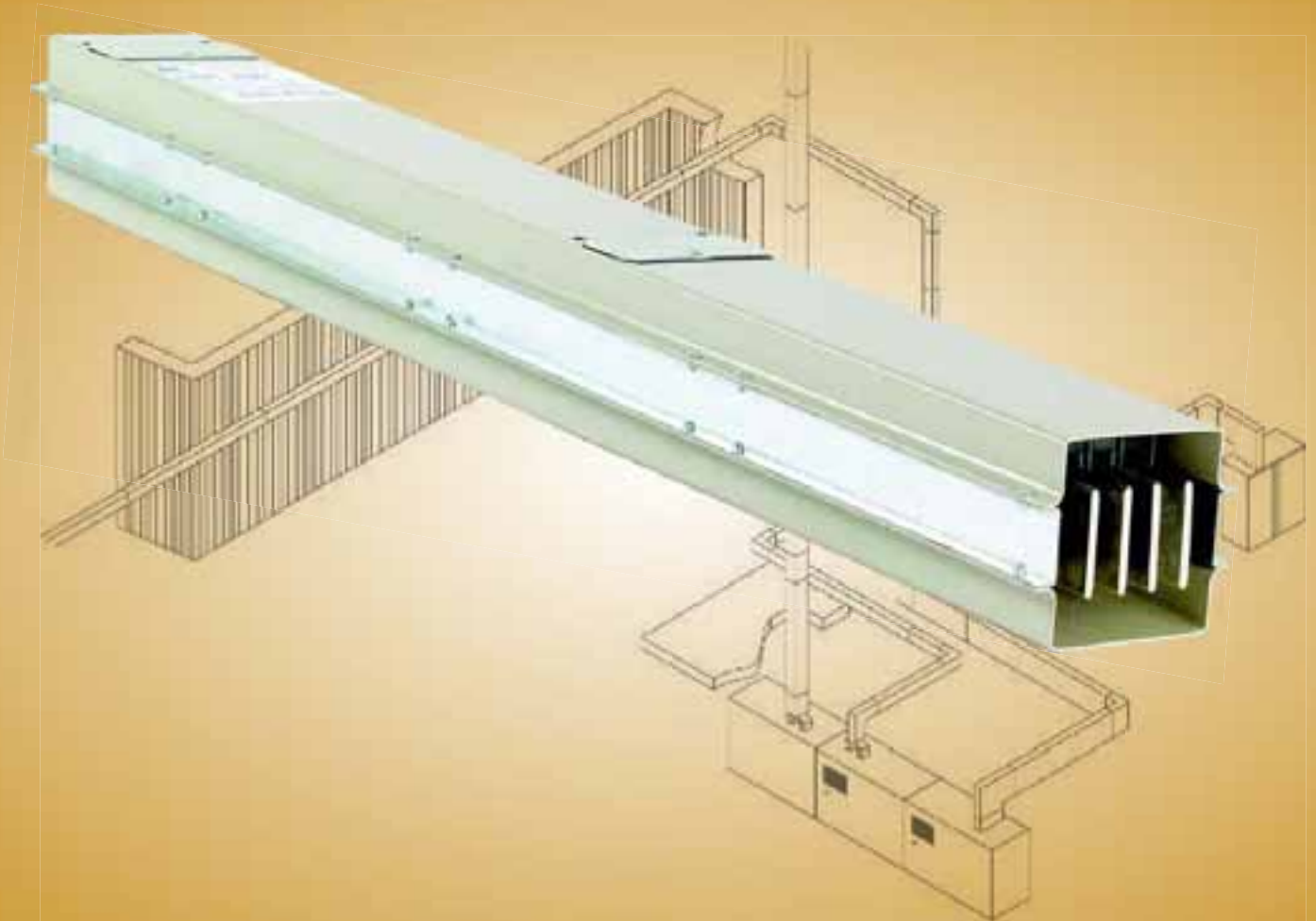
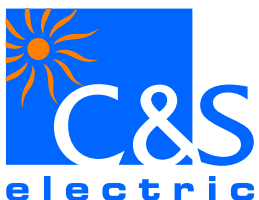


We touch your **electricity** everyday!



## Busbar Trunking System COMPACT AIR INSULATED



**C&S Electric Ltd.**



## OUR MISSION

- To create a unique alchemy of outstanding products, operational excellence, path breaking customer service, and compelling marketing.
- To create and relish a vibrant workplace where employees are empowered, cared for, developed, and most of all, provided unlimited opportunity to discover their full potential.
- To continuously enhance our core technologies, and develop new world class technologies and products to expand our offering to customers.
- To consolidate and strengthen our position as India's largest exporter of Industrial power distribution and control equipment.
- To earn a healthy return on investment for the shareholders.
- To everyday experience, the sheer joy of delighting our internal and external customers, and to relish the thrill of participation in India's infrastructure boom.

## OUR VISION

- C&S shall be the most trusted, respected and preferred brand, for electrical and electronic equipment that finds application in power generation, distribution, control and final consumption.
- In its major businesses C&S shall not only command a domestic market share ranging from 12% to 50% or more, but be known widely as the company "**closest to its Customers**"
- C&S products shall be used to manage power in india's biggest industries, in its highest buildings, in its most critical infrastructure and in millions of its homes.
- The C&S name shall be recognized widely as a benchmark, and shall serve as a role model and an inspiration to other Indian engineering products companies.
- C&S shall be cited as a company that played an important role in making "**Made in India**" a label that is trusted and respected the world over.



## Manufacturing Plant at Hardwar



CNC TURRET PUNCH PRESS



BUSBAR CUTTING MACHINE



EPOXY POWDER COATING PLANT



BUSBAR SLEEVING MACHINE



LASER INSULATION CUTTING MACHINE





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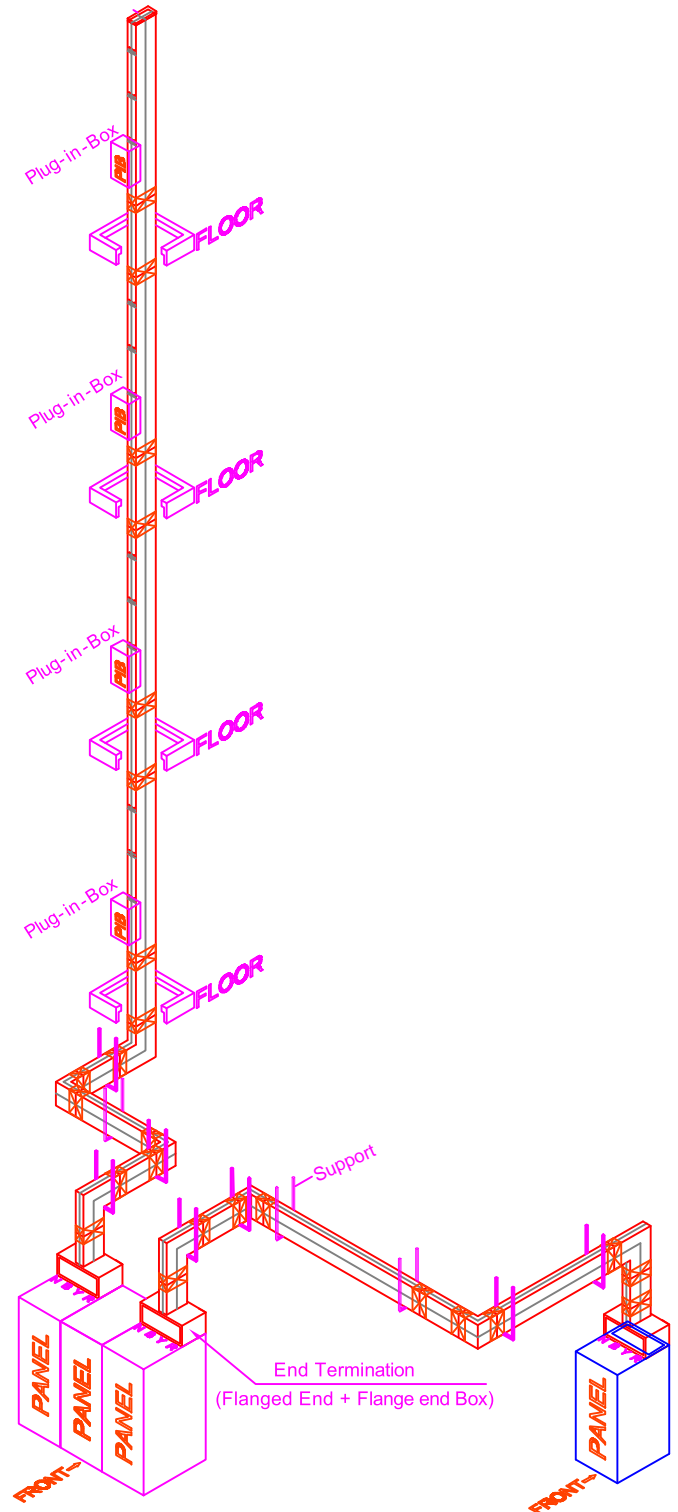
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## General

- Busbar Trunking System for electrical distribution is an alternative to cumbersome conventional cable distribution system.
- Busbar Trunking System has the advantage of expansions, Changes, replacement and reusing capability in the future.
- Loads can be fed from Plug-in Box unlike cables, where each floor/ machine is to be fed separately from the main switchboard. Repositioning of distribution points is simpler.
- Installation time is much shorter than cable system. This provides low installation and manpower costs and help for better time management.
- Busbar Trunking systems have a modern and aesthetic look.
- System is maintenance free.

## Salient Features

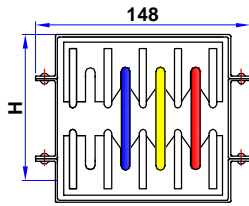
- Inside the bustrunking, busbars are supported at every 250mm for rigid and shockproof construction.
- Busbars in enclosure are held tight, and cannot easily slide even in vertical run when used as rising mains.
- Automatic polarity is maintained during installation.
- System can be mounted edgewise or flat wise, horizontally or vertically in any direction with all kinds of bends, and tees etc.
- Two sections can be electrically isolated for maintenance and testing in installed condition without dismantling or removal of any section.
- Fire barrier provision with F & T rating for 2hours can be provided as per requirement for floor and wall crossings (as per UL 1479) .



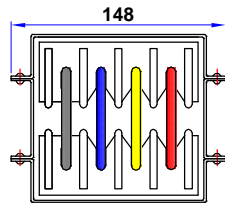
■ <b>Compliance of Standard</b>	IEC 60439 (1&2) & IS 8623 (1&2)
■ <b>Independent Certification Authority</b>	ASTA-UK, CPRI-India
■ <b>Busbar Arrangement</b>	Air Insulated type
■ <b>Busbar Ratings</b>	Copper 125 ~ 2000A Aluminium 200 ~ 1250A
■ <b>Busbar Configuration</b>	3 Phase+50% Integral Earth 3 Phase+100% Neutral+50% Integral Earth 3 Phase+200% Neutral+50% Integral Earth 3 Phase+100%Neutral+100% Isolated Earth +50%Integral Earth
■ <b>Rated Operational Voltage (Ue)</b>	1000 Volt, AC
■ <b>Rated Insulation Voltage (Ui)</b>	1000 Volt, AC
■ <b>Rated Dielectric Voltage</b>	3.5 KV r.m.s
■ <b>Rated Impulse Withstand Voltage (Uimp)</b>	12 kV (1.2/50 $\mu$ s)
■ <b>Rated Frequency</b>	50 Hz / 60 Hz
■ <b>Enclosure Material</b>	1.6mm G.I
■ <b>Surface Coating on Enclosure</b>	Epoxy polyester powder coated (RAL-7032)
■ <b>Busbar Material (Phase/Neutral)</b>	Copper (full round edge ),99.9% pure ETP grade Aluminium (full round edge), 97.5% pure.
■ <b>Busbar Material (Integral Earth)</b>	G.I / Copper
■ <b>Busbar Material (External Earth)</b>	Copper / Aluminium
■ <b>Busbar Insulator</b>	Glass Filled Noryl / Polyester (Class -F)
■ <b>Degree of Protection</b>	IP 54
■ <b>Joint</b>	Uniblock Joint (with Isolation and tamper proof shear off Nut)*
■ <b>Plug -in-Box</b>	32~800 A

\* Except for CBC125~CBC500 and CBA160~CBA315

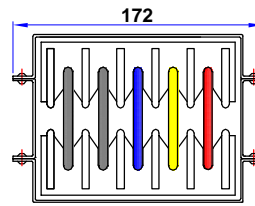
## ■ CBC (Copper Air Insulated Bus Trunking)



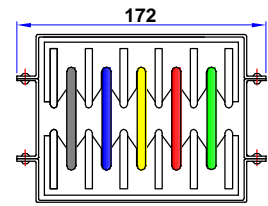
3 Phase+50%  
Integral Earth



3 Phase+100% Neutral  
+50% Integral Earth



3 Phase+200% Neutral  
+50% Integral Earth



3 Phase+100% Neutral+100%  
Isolated Earth+50% Integral Earth

Rated Current (In)	Amps	125	315	400	500	630	800	1000	1250	1750	2000
Product Code	—	<b>CBC 125</b>	<b>CBC 315</b>	<b>CBC 400</b>	<b>CBC 500</b>	<b>CBC 630</b>	<b>CBC 800</b>	<b>CBC 1000</b>	<b>CBC 1250</b>	<b>CBC 1750</b>	<b>CBC 2000</b>
Busbar size per phase (No. of busbars)	mm	Dia 6.0	6x20(1)	6x30(1)	6x40(1)	6x50(1)	6x70(1)	6x90(1)	6x50(2)	6x70(2)	6x90(2)
Overall Height (H)	mm	60	85	85	85	95	115	135	190	230	270
Rated Three Phaserm s Short Time Current for 1 Second (Icw)	kA	5	20	30	35	50	50	50	50	65	65
Rated Three phasepeak short time current (Ipk)	kA	7.5	40	63	73.5	105	105	105	105	143	143
Rated Single Phase rms Short Time Current for 1 Second (Icw)	kA	3	12	18	21	30	30	30	30	39	39
Rated Singleph asepeak short time current (Ipk)	kA	4.5	24	36	44.1	63	63	63	63	81.9	81.9
<b>Approximate Weight of Bustrunking</b>											
3 Phase + 50% Internal Earth	kg/m	6.8	11.2	12.9	14.7	16.8	20.9	25.0	29.6	37.8	46.0
3 Phase + 100% Neutral + 50% Internal Earth	kg/m	7.1	12.4	14.7	17.1	19.7	25.0	30.3	35.4	46.0	56.6
3 Phase + 200% Neutral + 50% Internal Earth	kg/m	8.0	14.2	17.1	20.1	23.3	29.8	36.2	42.0	54.9	67.8
3 Phase + 100% Neutral + 100% Isolated Earth + 50% Internal	kg/m	8.0	14.2	17.1	20.1	23.3	29.8	36.2	42.0	54.9	67.8
<b>Electrical Characteristics for 50 Hz</b>											
AC Resistance at 20°C (R20)	milliohms /mtr.	0.6346	0.1481	0.0987	0.0740	0.0592	0.0429	0.0339	0.0296	0.0215	0.0169
A.C. Resistance at thermal conditions (Rt)	milliohms /mtr.	0.8092	0.1888	0.1259	0.0944	0.0755	0.0548	0.0432	0.0378	0.0274	0.0216
Reactance (X)	milliohms /mtr.	0.1786	0.1250	0.1056	0.0792	0.0667	0.0524	0.0444	0.0342	0.0268	0.0227
Impedance at thermal conditions (Z)	milliohms /mtr.	0.8287	0.2264	0.1643	0.1232	0.1007	0.0758	0.0620	0.0509	0.0383	0.0313
Composite Voltage drop at full Load concentrated at the end of bustrunking run (V)	mV/mtr./A at 0.7 P.F.	1.2020	0.3835	0.2832	0.2124	0.1740	0.1312	0.1074	0.0880	0.0663	0.0543
	mV/mtr./A at 0.8 P.F.	1.3069	0.3915	0.2841	0.2131	0.1739	0.1303	0.1061	0.0878	0.0658	0.0535
	mV/mtr./A at 0.9 P.F.	1.3964	0.3887	0.2759	0.2070	0.1681	0.1249	0.1009	0.0847	0.0629	0.0508
	mV/mtr./A at 1.0 P.F.	1.4016	0.3270	0.2180	0.1635	0.1308	0.0948	0.0749	0.0654	0.0474	0.0374
<b>Electrical Characteristics for 60 Hz</b>											
AC Resistance at 20°C (R20)	milliohms /mtr.	0.6348	0.1483	0.0989	0.0742	0.0594	0.0431	0.0341	0.0298	0.0217	0.0171
A.C. Resistance at thermal conditions (Rt)	milliohms /mtr.	0.8219	0.1920	0.1281	0.0961	0.0769	0.0558	0.0441	0.0386	0.0280	0.0222
Reactance (X)	milliohms /mtr.	0.2143	0.1500	0.1267	0.0950	0.0800	0.0629	0.0533	0.0410	0.0321	0.0272
Impedance at thermal conditions (Z)	milliohms /mtr.	0.8494	0.2436	0.1801	0.1351	0.1110	0.0841	0.0692	0.0563	0.0427	0.0351
Composite Voltage drop at full Load concentrated at the end of bustrunking run (V)	mV/mtr./A at 0.7 P.F.	1.2616	0.4183	0.3119	0.2340	0.1922	0.1454	0.1195	0.0975	0.0737	0.0606
	mV/mtr./A at 0.8 P.F.	1.3616	0.4219	0.3091	0.2319	0.1897	0.1427	0.1166	0.0961	0.0722	0.0590
	mV/mtr./A at 0.9 P.F.	1.4432	0.4125	0.2953	0.2215	0.1803	0.1345	0.1091	0.0911	0.0680	0.0551
	mV/mtr./A at 1.0 P.F.	1.4236	0.3325	0.2218	0.1664	0.1332	0.0967	0.0764	0.0668	0.0486	0.0384



## CBA (Aluminium Air Insulated Bus Trunking)

### Voltage Drop Calculation Formulae

$$\Delta V = k \times 3 \times (R_t \cos \phi + X \sin \phi) \times I_B \times L$$

Where

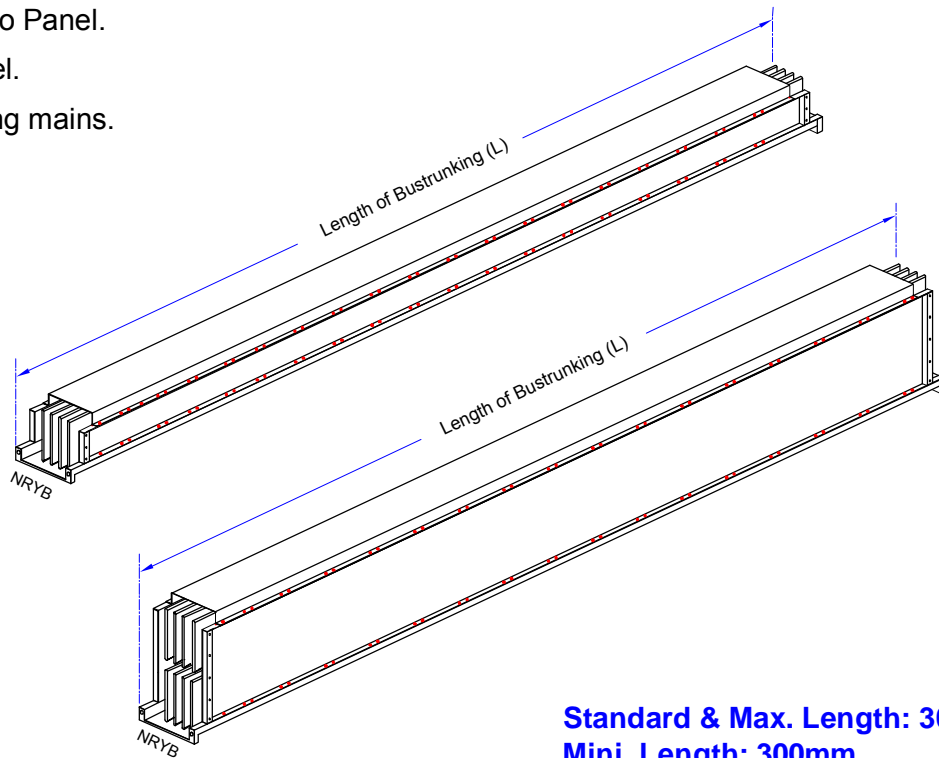
- V is the composite voltage drop of the system (V);
- R<sub>t</sub> & X are the mean resistance and reactance values of the system (Ω/m);
- I<sub>B</sub> is the actual load current of the circuit being considered (A);

- L is the length of the system being considered (M);
- cos φ is the load power factor being considered;
- k is the load distribution factor.  
k=1, if full load is concentrated at the end of the busbar trunking run;  
k=(n+1)/2n, if the load is uniformly spread between n branches.

Rated Current (In)	Amps	200	250	315	400	500	630	800	1000	1250
Product Code	—	CBA 200	CBA 250	CBA 315	CBA 400	CBA 500	CBA 630	CBA 800	CBA 1000	CBA 1250
Busbar size per phase (No. of busbars)	mm	6x20(1)	6x30(1)	6x40(1)	6x50(1)	6x70(1)	6x90(1)	6x50(2)	6x70(2)	6x90(2)
Overall Height (H)	mm	85	85	85	95	115	135	190	230	270
Rated Three Phase rms Short Time Current for 1 Second (I <sub>cw</sub> )	kA	10	15	25	30	35	50	50	50	50
Rated Three phase peak short time current (I <sub>pk</sub> )	kA	17	30	52.5	63	73.5	105	105	105	105
Rated Single Phase rms Short Time Current for 1 Second (I <sub>cw</sub> )	kA	6	9	15	18	21	30	30	30	30
Rated Single phase peak short time current (I <sub>pk</sub> )	kA	10.2	15.3	30	36	44.1	63	63	63	63
<b>Approximate Weight of Bustrunking</b>										
3 Phase + 50% Internal Earth	kg/m	8.7	9.3	9.8	10.6	12.3	13.9	17.3	20.6	23.9
3 Phase + 100% Neutral + 50% Internal Earth	kg/m	9.1	9.8	10.5	11.5	13.5	15.5	19.1	23.1	27.1
3 Phase + 200% Neutral + 50% Internal Earth	kg/m	10.1	11.0	11.9	13.1	15.4	17.8	21.5	26.2	31.0
3 Phase + 100% Neutral + 100% Isolated Earth + 50% Internal Earth	kg/m	10.1	11.0	11.9	13.1	15.4	17.8	21.5	26.2	31.0
<b>Electrical Characteristics for 50 Hz</b>										
AC Resistance at 20°C (R <sub>20</sub> )	miliohms /mtr.	0.2611	0.1741	0.1305	0.1044	0.0757	0.0598	0.0522	0.0379	0.0299
A.C. Resistance at thermal conditions (R <sub>t</sub> )	miliohms /mtr.	0.3335	0.2223	0.1667	0.1334	0.0967	0.0763	0.0667	0.0484	0.0382
Reactance (X)	miliohms /mtr.	0.1250	0.1056	0.0792	0.0667	0.0524	0.0444	0.0342	0.0268	0.0227
Impedance at thermal conditions (Z)	miliohms /mtr.	0.3561	0.2461	0.1846	0.1491	0.1100	0.0883	0.0749	0.0553	0.0444
Composite Voltage drop at full Load concentrated at the end of bustrunking run (V)	mV/mtr./A at 0.7 P.F.	0.5589	0.4001	0.3001	0.2442	0.1820	0.1475	0.1231	0.0918	0.0743
	mV/mtr./A at 0.8 P.F.	0.5920	0.4177	0.3133	0.2541	0.1884	0.1519	0.1279	0.0948	0.0765
	mV/mtr./A at 0.9 P.F.	0.6142	0.4263	0.3197	0.2583	0.1903	0.1525	0.1298	0.0956	0.0766
	mV/mtr./A at 1.0 P.F.	0.5775	0.3850	0.2888	0.2310	0.1675	0.1322	0.1155	0.0837	0.0661
<b>Electrical Characteristics for 60 Hz</b>										
AC Resistance at 20°C (R <sub>20</sub> )	miliohms /mtr.	0.2614	0.1744	0.1309	0.1047	0.0760	0.0601	0.0525	0.0382	0.0302
A.C. Resistance at thermal conditions (R <sub>t</sub> )	miliohms /mtr.	0.3390	0.2262	0.1697	0.1359	0.0986	0.0779	0.0681	0.0495	0.0392
Reactance (X)	miliohms /mtr.	0.1500	0.1267	0.0950	0.0800	0.0629	0.0533	0.0410	0.0321	0.0272
Impedance at thermal conditions (Z)	miliohms /mtr.	0.3707	0.2592	0.1945	0.1577	0.1169	0.0944	0.0795	0.0590	0.0477
Composite Voltage drop at full Load concentrated at the end of bustrunking run (V)	mV/mtr./A at 0.7 P.F.	0.5966	0.4309	0.3233	0.2637	0.1973	0.1604	0.1333	0.0998	0.0812
	mV/mtr./A at 0.8 P.F.	0.6257	0.4450	0.3339	0.2714	0.2020	0.1634	0.1370	0.1020	0.0826
	mV/mtr./A at 0.9 P.F.	0.6418	0.4482	0.3363	0.2722	0.2012	0.1618	0.1372	0.1015	0.0816
	mV/mtr./A at 1.0 P.F.	0.5872	0.3917	0.2940	0.2353	0.1708	0.1350	0.1180	0.0858	0.0678

## Straight Length (Feeder)

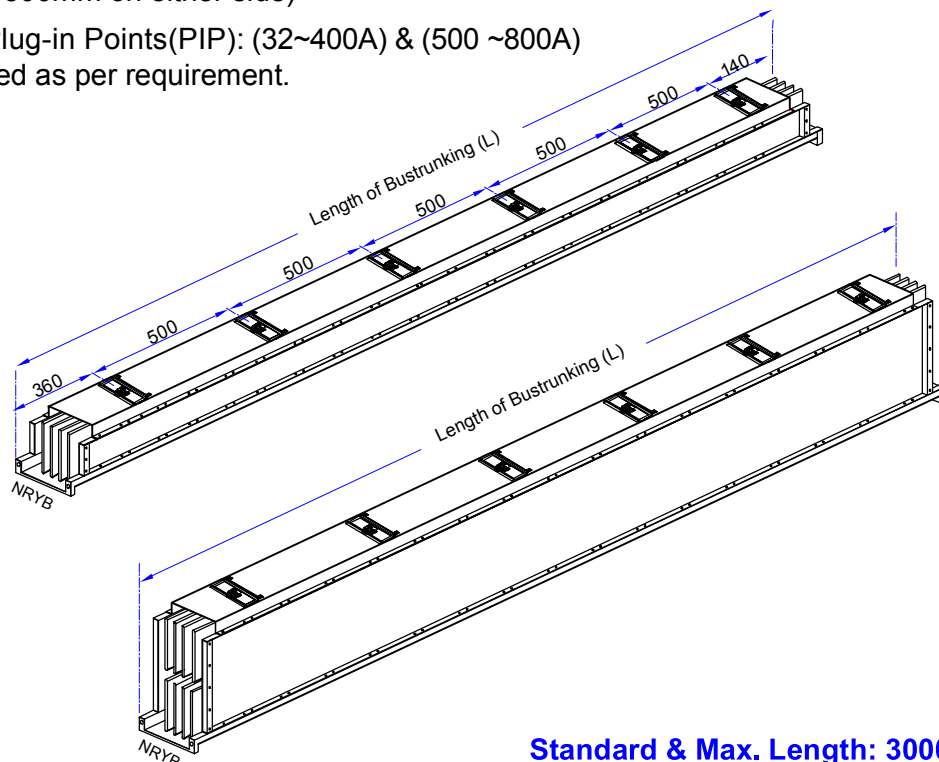
- Transformer to Panel.
- Panel to Panel.
- Panel to Rising mains.



**Standard & Max. Length: 3000mm.  
Mini. Length: 300mm.**

## Straight Length (PIP)

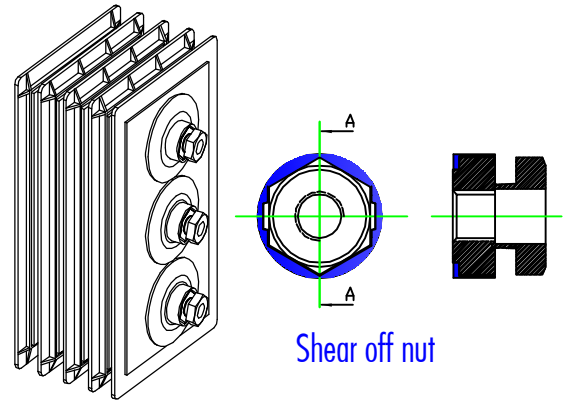
- For tapping Power from Main Line through Plug-in-Boxes. (Horizontal Distribution / Vertical Distribution (Rising mains))
- Plug-in Points are available at every 250 mm on alternate side (at every 500mm on either side)
- Two type of Plug-in Points(PIP): (32~400A) & (500 ~800A) can be provided as per requirement.



**Standard & Max. Length: 3000mm.**

## Uniblock Joint

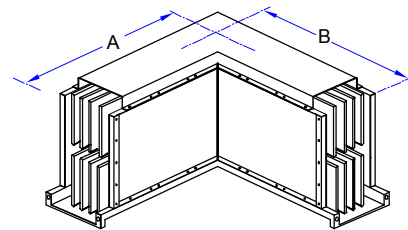
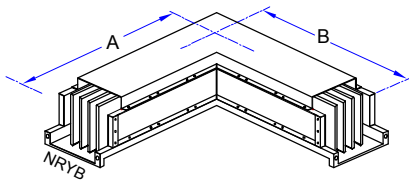
- Joint can be fitted / removed in installed condition without removal of section.
- Heavy duty disc spring used on both sides for uniform distribution of pressure.
- Joint can be tightened easily with help of spanner on nut side only. (spanner not required on bolt head side)
- Shear off nut ensure tightness of joint at desired torque and eliminates the need of torque wrench during installation.
- Tamper proof cap over shear off nut prevents opening of nut after achieving desired torque. Nut can only be opened after breaking the cap.



\* Except for CBC125~CBC500 and CBA160~CBA315

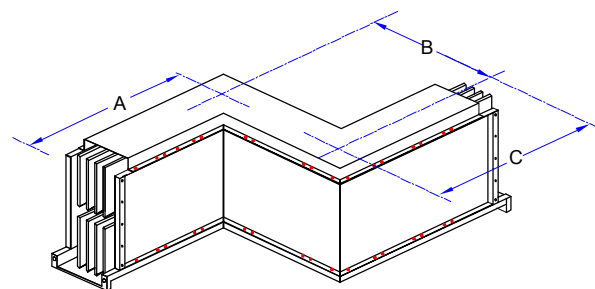
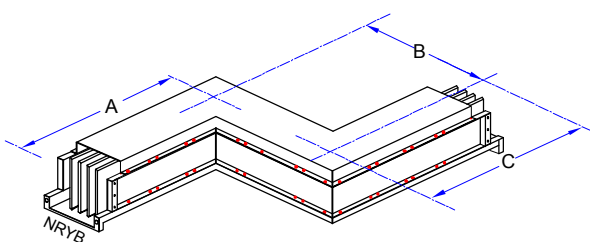
## Edge Elbow

Current Rating	Standard & Mini. Dimn. A x B (mm)
Copper 125~2000A Aluminum 200~1250A	300 x 300



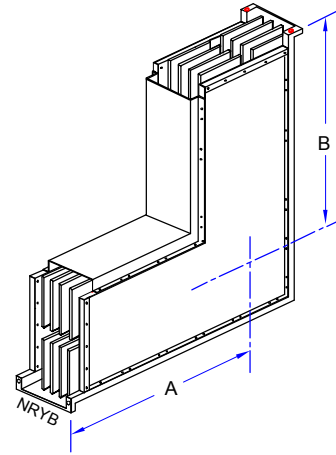
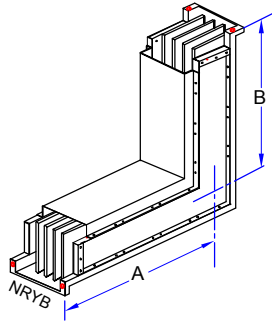
## Offset Edge Elbow

Current Rating	Standard & Mini. Dimn. AxBxC (mm)
Copper 125~2000A Aluminum 200~1250A	300 x 300 x 300



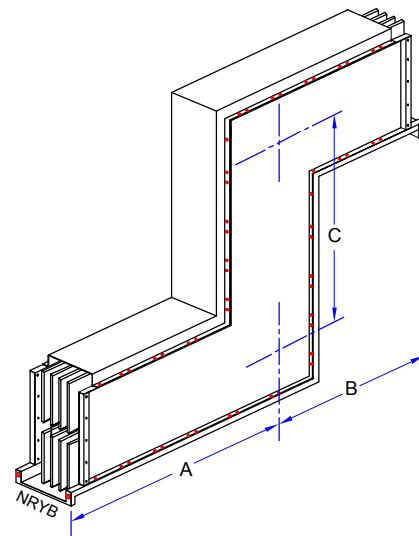
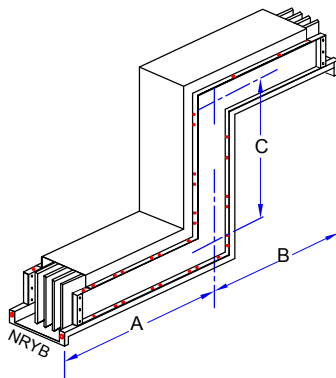
## Flat Elbow

Current Rating	Standard & Mini. Dimn. A x B (mm)
Copper 125~2000A Aluminum 200~1250A	300 x 300



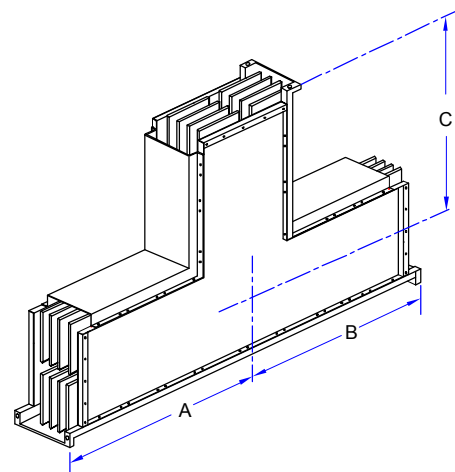
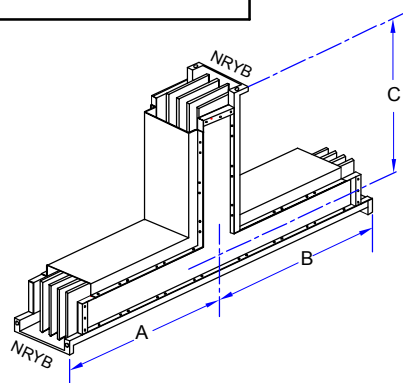
## Offset Flat Elbow

Current Rating	Standard & Mini. Dimn. AxBxC (mm)
Copper 125~2000A Aluminum 200~1250A	300 x 300 x 300



## Flat Elbow

Current Rating	Standard & Mini. Dimn. AxBxC (mm)
Copper 125~2000A Aluminum 200~1250A	400 x 400 x 400



## Flanged End

- Flanged End are required to connect Bustrunking Run with Panel/ Transformer directly or through Flanged End Box.

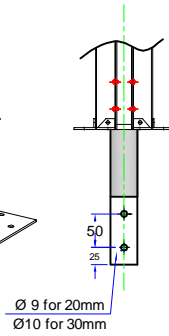
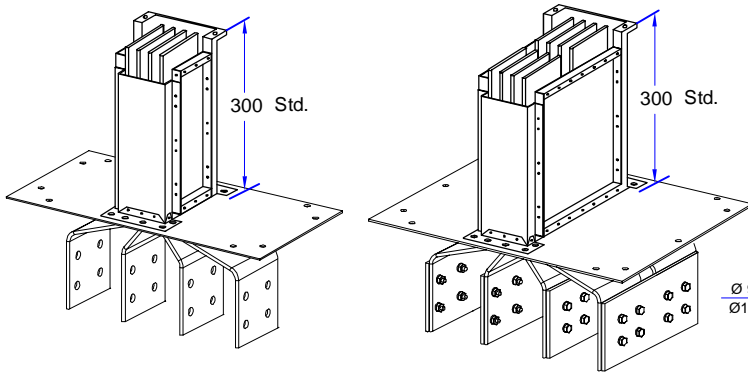


Fig. 1

BUSBAR WIDTH  
20 ~ 30mm

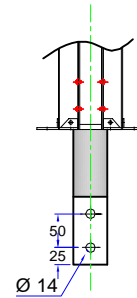


Fig. 2

BUSBAR WIDTH  
40 ~ 70 mm

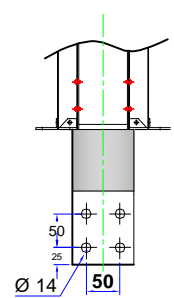
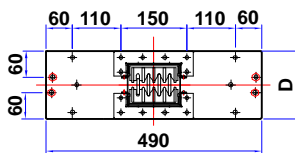
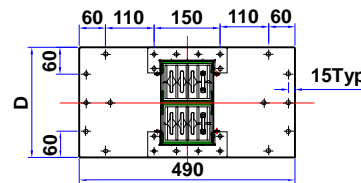


Fig. 3

BUSBAR WIDTH  
90 mm



SECTION XX'



SECTION XX'

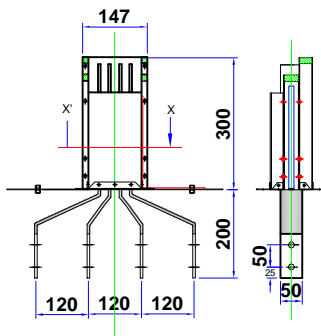


Fig. 4

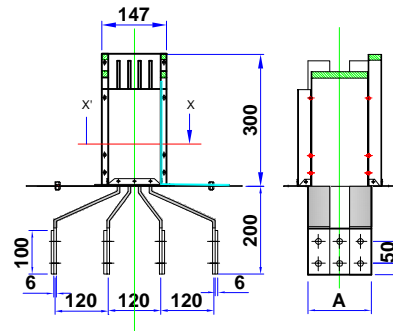


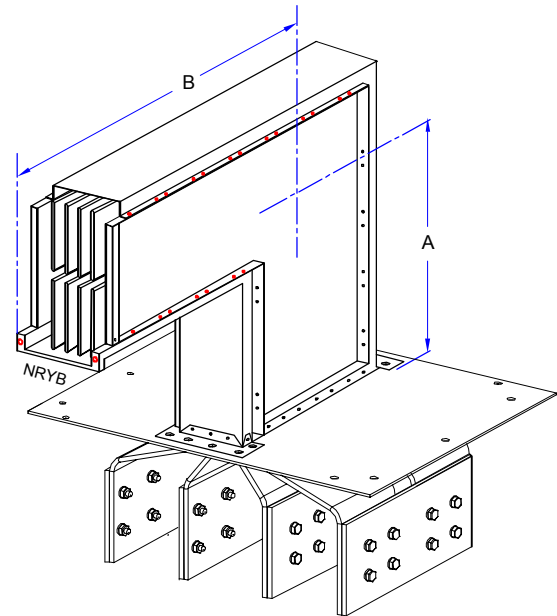
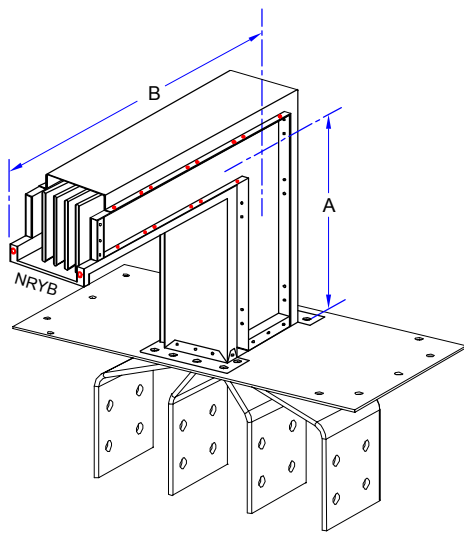
Fig. 5

### Flanged End cut out & Drilling

S.No.	Copper		Aluminum		Busbar Size (No.of Busbar)	DIMENSIONS		Bus bar Hole Details	Terminal Detail
	Rating	Product Code	Rating	Product Code		D	A		
01.	125	CBC 125	----	----	----	120	---		
02.	315	CBC 315	200	CBA 200	20 x 6 (1)	145	20	fig 1	fig 4
03.	400	CBC 400	250	CBA 250	30 x 6 (1)	145	30	fig 2	fig 4
04.	500	CBC 500	315	CBA 315	40 x 6 (1)	145	40	fig 2	fig 4
05.	630	CBC 630	400	CBA 400	50 x 6 (1)	155	50	fig 2	fig 4
06.	800	CBC 800	500	CBA 500	70 x 6 (1)	175	70	fig 2	fig 4
07.	1000	CBC 1000	630	CBA 630	90 x 6 (1)	195	90	fig 3	fig 4
08.	1250	CBC 1250	800	CBA 800	50 x 6 (2)	250	145	fig 2	fig 5
09.	1750	CBC 1750	1000	CBA 1000	70 x 6 (2)	290	185	fig 2	fig 5
10.	2000	CBC 2000	1250	CBA 1250	90 x 6 (2)	330	225	fig 3	fig 5

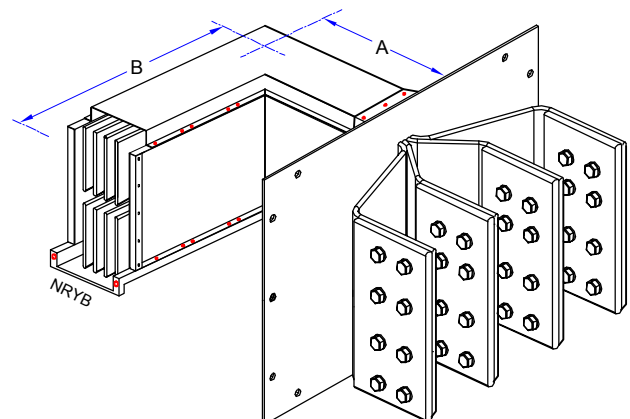
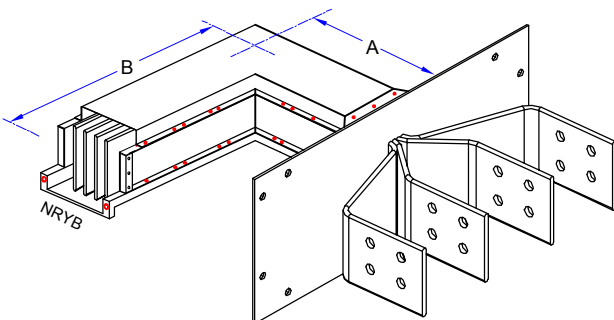
Current Rating	Standard & Mini. Dimn. A x B (mm)
Copper 125~2000A Aluminum 200~1250A	275 x 300

## Flanged End with Flat Elbow



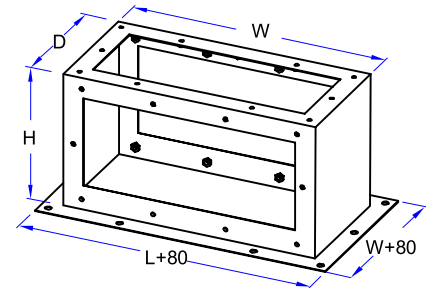
Current Rating	Standard & Mini. Dimn. A x B (mm)
Copper 125~2000A Aluminum 200~1250A	175 x 300

## Flanged End with Edge Elbow



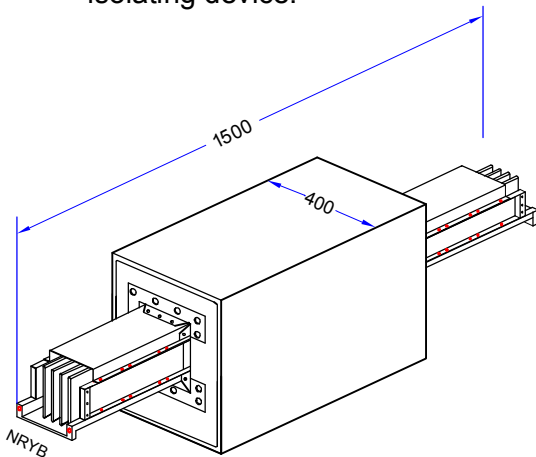
## Flanged End Box

S.NO	Current Rating	STANDARD DIMENSIONS		
		W	D	H
01.	Copper 125~1000A Aluminum 200~630A	500	250	250
02.	Copper 1250~2000A Aluminum 800~1250A	500	350	250

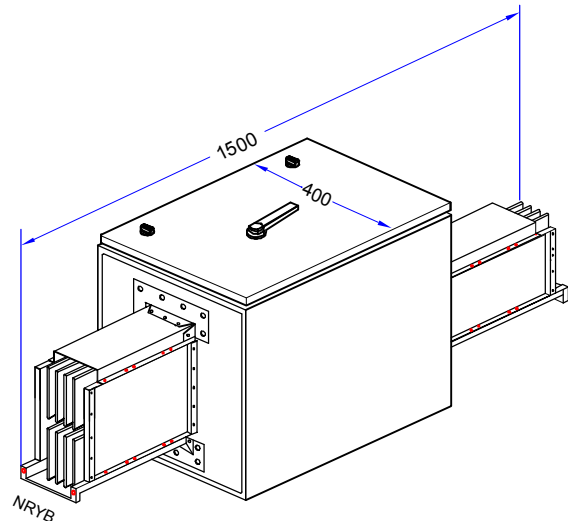


- These are required to connect two dissimilar rating of bustrunking. Reducer may be designed with switching or isolating device.

## Reducer



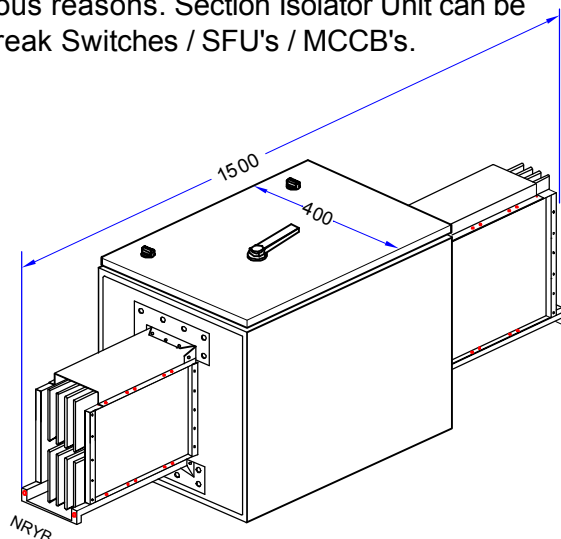
**Reducer (Direct)**



**Reducer (Switchgear)**

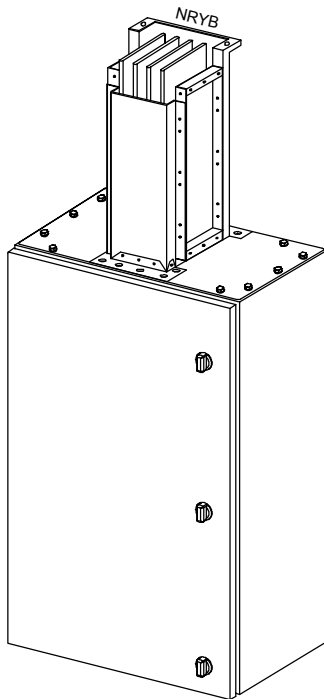
- These are required to isolate the bustrunking run in between, for various reasons. Section Isolator Unit can be fitted with load Break Switches / SFU's / MCCB's.

## Sectional Isolator

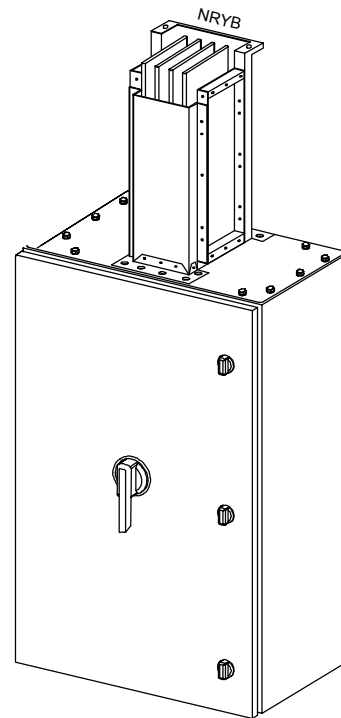


## End Feed

- End feed is required to charge bustrunking through cables from one end of bustrunking.
- End feed is available with sufficient space for direct connection through lugs and bolts. MCCB, SFU, Isolators, fuse holders etc. can be fitted in End Feed as per requirement.
- 300 mm length of bustrunking is integrally fitted along with End Feed as standard practice so that joint between End Feed and bustrunking is exactly same as joint of two normal bustrunking lengths.
- Undrilled cable gland plate is provided at bottom for multiple cable entry.
- A set of thrust pad forms an integral part of end feed to support Busbar firmly and allows expansion in outer direction only.



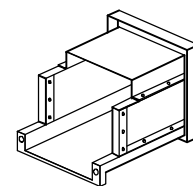
**End Feed (Direct)**



**End Feed (Switchgear)**

## End Cover

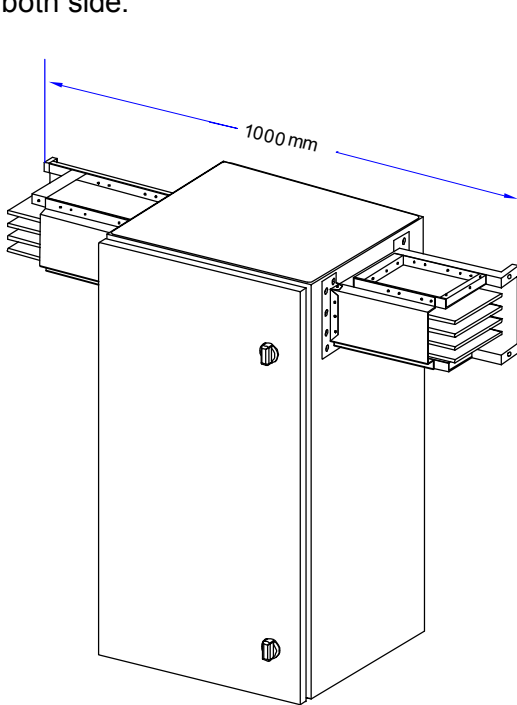
- It is used to close the end of plug-in bustrunking run.
- It can be removed easily for extension of bustrunking .



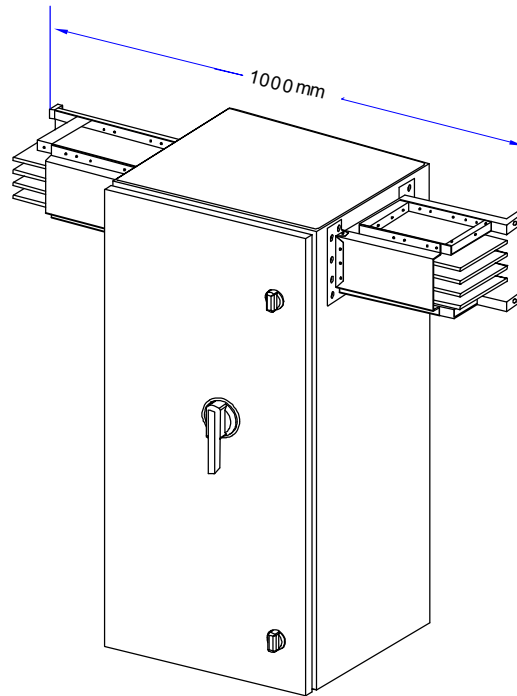


## Center Feed Unit

- Center feed is required to charge bustrunking through cables at any position between to section of bustrunking.
- Center feed is available with sufficient space for direct connection through lugs and bolts. MCCB, SFU, Isolators, fuse holders etc. can be fitted in Center Feed Unit as per requirement.
- Undrilled cable gland plate is provided at bottom for multiple cable entry.
- 1000mm of bustrunking is inbuilt in center feed for easy connection to bustrunking sections both side.



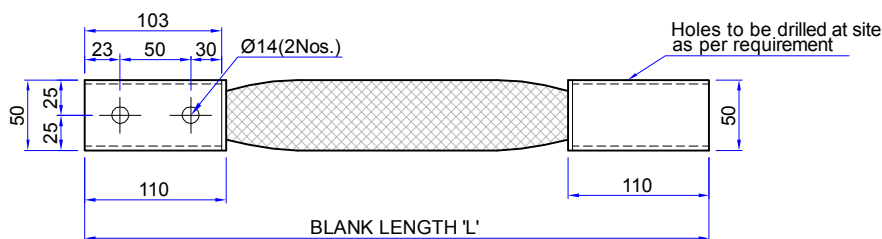
**Center Feed Unit (Direct)**



**Center Feed Unit (Switchgear)**

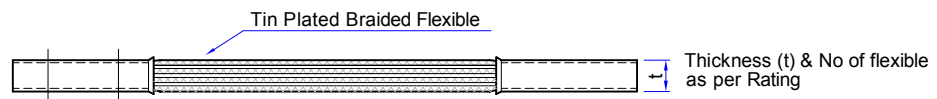
- Copper Flexible are required to connect flanged end busbar with busbars (Terminals) of Panel / Transformer.

## Copper Flexible



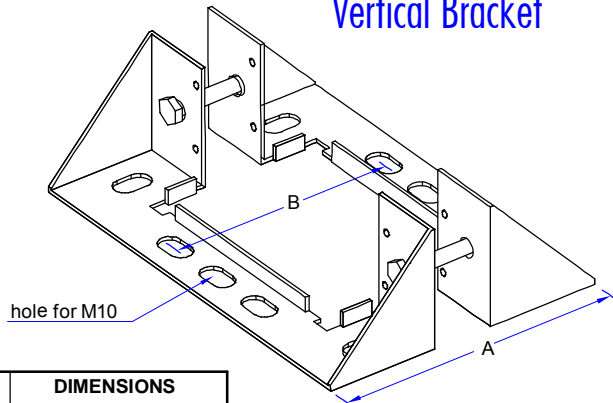
Bustrunking side

Switchgear side  
(Panel/TFR.)



## Vertical Bracket

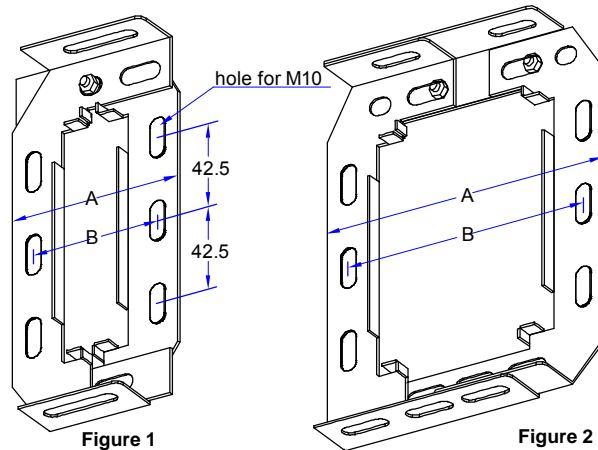
- It is required to support vertical bustrunking (Rising Mains) through angle/chanel support fitted on the wall.



S.No.	Copper		Aluminum		DIMENSIONS	
	Rating	Product Code	Rating	Product Code	A	B
01.	125	CBC 125	---	---	122	92
02.	315	CBC 315	200	CBA 200	147	117
03.	400	CBC 400	250	CBA 250	147	117
04.	500	CBC 500	315	CBA 315	147	117
05.	630	CBC 630	400	CBA 400	157	127
06.	800	CBC 800	500	CBA 500	177	147
07.	1000	CBC 1000	630	CBA 630	197	167
08.	1250	CBC 1250	800	CBA 800	252	222
09.	1750	CBC 1750	1000	CBA 1000	292	262
10.	2000	CBC 2000	1250	CBA 1250	332	302

- It is required to support vertical bustrunking (Rising Mains) through angle/chanel support.

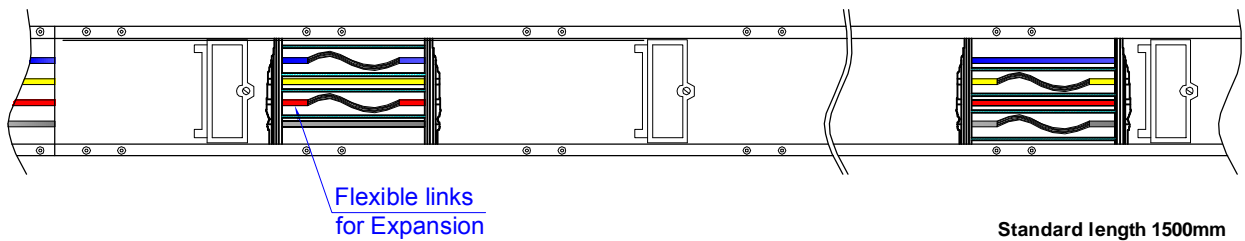
## Horizontal Bracket



S.No.	Copper		Aluminum		DIMENSIONS		Figure
	Rating	Product Code	Rating	Product Code	A	B	
01.	125	CBC 125	---	---	122	92	Figure 1
02.	315	CBC 315	200	CBA 200	147	117	Figure 1
03.	400	CBC 400	250	CBA 250	147	117	Figure 1
04.	500	CBC 500	315	CBA 315	147	117	Figure 1
05.	630	CBC 630	400	CBA 400	157	127	Figure 1
06.	800	CBC 800	500	CBA 500	177	147	Figure 1
07.	1000	CBC 1000	630	CBA 630	197	167	Figure 1
08.	1250	CBC 1250	800	CBA 800	252	222	Figure 2
09.	1750	CBC 1750	1000	CBA 1000	292	262	Figure 2
10.	2000	CBC 2000	1250	CBA 1250	332	302	Figure 2

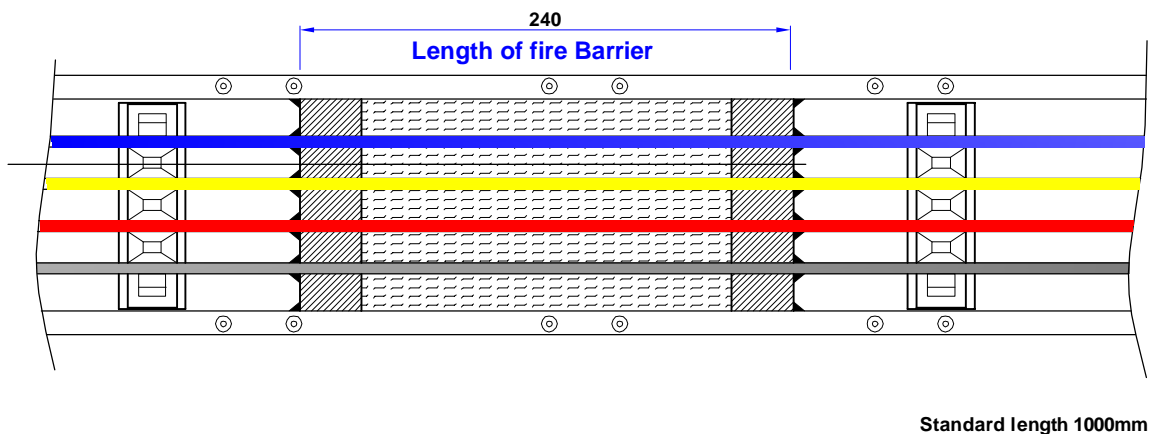
## Expansion Joint Unit

- Expansion joint is provided in bustrunking section against specific requirement.
- Recommended to be used after continuous straight run of 50 mtrs.



## Fire Barrier Unit

- Fire Barrier is provided in bustrunking section at specific position as per site requirement for prevention of fire spreading through bustrunking.
- Recommended to be used at each floor and wall crossing.



## Plug - in - Box

- Plug in box enclosure is made from G.I with side hinged door.
- Plug in contacts are made out of silver plated copper with spring steel backup pressure clips for ensuring uniform pressure and low contact resistance .
- For cables entry, provision of gland plates are provided on both sides and bottom of Plug in Box.
- Earth contact of Plug-in boxes makes first & breaks last.
- Plug in box with MCCB/SFU's can be available with rotary handle and door interlocking.
- Plug in boxes can be available with Interlocking with bustrunking to ensure "plug-in" and "Plug-Out" possible only in "Off" Condition.
- Silver Plated contacts are properly shrouded / isolated.
- Plug in box up to 400 A are compatible to all ratings of Bustrunking with 400 A Plug-in-points
- Plug in box from 500A to 800 A are compatible to all ratings of Bustrunking with 800 A plug in points.
- Plug in boxes can only be fitted on to the Bustrunking with corrected polarity i.e. NRYB.

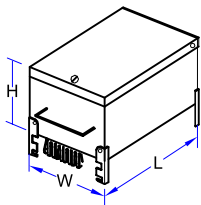


Fig-1

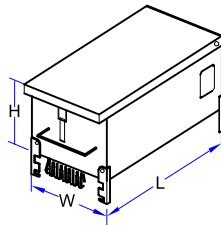


Fig-2

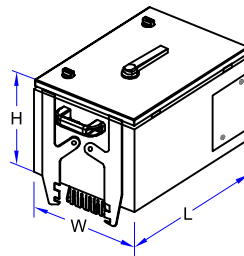


Fig-3

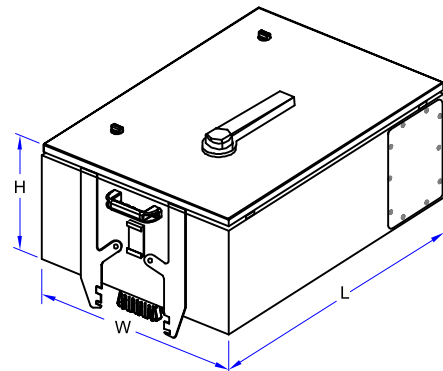


Fig-4

Product Code	PIB X-S 3B-4B	PIB X-S 5B	PIB X-A 3B-4B	PIB X-A 5B	PIB X-N 3B-4B	PIB X-N 5B	PIB X-B 3B-4B	PIB X-B 5B	PIB X-C 3B-4B	PIB X-C 5B	PIB X-D 3B-4B	PIB X-D 5B	PIB X-E 3B-4B	PIB X-E 5B
Figuer	Figure 1		Figure 2		Figure 3		Figure 4		Figure 4		Figure 4		Figure 4	
With MCB/FUSES	32~63A	32~63A	32~125A		NA		NA		NA		NA		NA	
With SOCKET-1No.	32A	32A	63A		NA		NA		NA		NA		NA	
With MCB+SOCKET 1No	NA	NA	32~63A		NA		NA		NA		NA		NA	
With MCCB	NA	NA	32~125A		NA		160~200A		250~400A		500~630A		800A	
With MCCB+R/H	NA	NA	NA		32~125A		160~200A		250~400A		500~630A		800A	
With SFU	NA	NA	NA		32~125A		160~200A		315~400A		500~630A		800A	
FINAL BOX SIZE (L x W x H)	240x180 x100	240x204 x100	380x180 x124	380x204 x124	430x300x170		430X300X250		600X400X250		800x400X250		1000x400X250	
Recommended Cable Size (Aluminum)	25 Sqmm	25 Sqmm	70 Sqmm	70 Sqmm	70 Sqmm	70 Sqmm	150 Sqmm	150 Sqmm	2X150 Sqmm	2X150 Sqmm	2X300 Sqmm	2X300 Sqmm	2X400 Sqmm	2X400 Sqmm

PIB with subcode 4B is applicable for-

- 3 Phase+100% Neutral

PIB with subcode 4B is applicable for-

- 3 Phase+200% Neutral
- 3 Phase+100% Neutral+100% Isolated Earth

PIB with subcode 3B

- 3 Phase

\* Available with Isolator.

## Domestic References

S No.	Project	Region	CU/AL	Rating
<b>HOSPITAL</b>				
1	Medicity, Gurgaon	North	AL	3200A,1250A,800A
2	Seven Hills Healthcare Ltd., Andheri	West	AL	160QA,200A,250A,400A,630A,1000A
3	Blue Sapphire Healthcare, Faridabad	North	AL	630A,800A,1600A,3200A,4000A
4	Fortis Hospitel, Shalimar Bagh, New Delhi	North	AL	400A,630A,1250A
5	Vimta Life Science, Hyderabad	South	AL	3200A,2000A,1600A,1200A
6	Max Balaji Hospital, New Delhi	North	AL	630A,800A,3200A
7	Tata Hospital, Mumbai	West	AL	2500A
8	LNJP Hospital, New Delhi	North	AL	1600A
9	RML Hospital, New Delhi	North	AL	2500A
10	S S S Hospital (Jalandhar)	North	AL	400A
11	PWD Malviya Ngr Hosp(Delhi)	North	AL	400A,1000A
<b>HOTEL</b>				
1	Chalet Hotel, Hyderabad	West	CU	2500A,2000A,1000A
2	Westinn Hotel, Gurgaon	North	AL	630A,1000A,1600A,3200A
3	M/S Ambience hotels & resorts Ltd.	North	AL	2500A, 2000A, 1250A
4	Narsi Hotel & Resorts, Gurgaon	North	AL	2500A,1000A
5	Trident Hilton - BKC	West	AL	2500A, 1600A, 1000A
6	Sea Valley Resorts, Visakhapatnam	South	CU	1250A,1600A,2000A
7	Cleriqes Hotel Faridabad	North	AL	2000A,800A
8	Oberoi Westinn Hotel, Goregaon, Mumbai	West	AL	800A,2500A,4000A
9	TAJ GVK Hotel, Bangalore	South	AL	1600A, 1200A,600A
10	Taj Hotel, Bangalore	West	AL	800A,2500A
11	The Grand Hotel, Jaipur	North	AL	2500A,3200A
12	Novotel & IBIS Combo Hotel, Bangalore	South	AL	1000A,2500A
13	Oberoi Hotel	North	AL	2500A,3200A
14	Radisson Hotel, Amritsar	North	AL	250A,400A,1600A
15	Park Hotel, Hyderabad	South	AL	2500A,2000A,800A
16	Today Hotel , Okhla Phase 1, New Delhi	North	AL	2500A
17	TAJ GVK, Hyderabad	South	AL+CU	1250A,630A
18	JW Marriott, Chennai	South	AL	800A,1250A
19	Central Park, Gurgaon	North	AL	2000A,800A
20	DD Resorts, Gurgaon	North	AL	1000A
21	Ceebros Hotel	South	AL	800A,1250A
22	Redission Hotel, Manesar	North	AL	2000A,2500A
23	Today Hotel ,GGN	North	AL	1600A,800A
24	Clarion Hotel, Bangalore	South	AL	630A,2500A
25	Today Hotel ,GGN	North	AL	630A
26	DLF, Hilton Hotel, GGN	North	AL	315A,600A
27	IBIS, Pune	North	AL	400A
28	Vishnupriya Hotel	South	AL	500A
29	I.B.I.S Hotel, Gurgaon	North	AL	400A
30	Today Hotel , Okhla Phase 1, New Delhi	North	AL	100A
31	Skycity Hotel, Gurgaon	North	AL	400A
32	Hotel Bista, Jaipur	North	AL	1000A
33	Orchid Hotel, Ahmedabad	West	AL	1600A

S No.	Project	Region	CU/AL	Rating
<b>IT PARKS / CALL CENTERS/</b>				
1	IBM Data Centre, Noida	North	AL+CU	5000A,4000A,2500A,2000A,1250A,1000A,800A,400A,200A
2	Airtel data Centre, Bangalore	South	AL+CU	4000A,3200A,1600A,630A,500A,315A,250A
3	M/S HCL Technologies Ltd.	North	AL+CU	3200A,2500A,,1600A,1250A,800A,630A
4	SP Infocity	South	AL	1250A,2000A,3200A,4000A,5000A
5	Nokia Phase III, Chennai	South	CU	3200A,2400A,400A
6	C-DOT (New Delhi)	North	CU	400,630,800A,1000A
7	Persistent System,Pune	West	AL	125A,315A,1000A
8	TCG Omega Project, Kolkata	East	AL	4000A, 2500A, 2000A,800A
9	Olymoia Tech park Ph II ,Chennai	South	AL	3200A,1600A,1250A,1000A
10	Fact Software, Noida	North	AL	1600A,2500A,3200A,4000A
11	Nokia Siemens Network	South	CU	3200A,,2500A,250A,63A
12	Advent IT Park, Noida	North	CU	1000A,1600A,2500A,4000A
13	Sena Bhawan, New Delhi	North	AL	200A,400A,630A,800A,1200A,1250A
14	Olympia Tech Park Ph I, Chennai	South	CU+AL	4000A,2000A,1000A,800A
15	SP Infocity IT Park, Chennai	South	AL	2000A
16	ETL Infrastructure, Bangalore	South	CU	4000A,2000A,1250A
17	Sigma IT Park,Banglore	South	AL	1250A,800A,630A
18	Zensar Technologies Ltd., Pune	South	CU	3200A,630A,300A
19	Reliance Communication Infra., Hyderabad	West	AL	3200A,1250A
20	Vitel IT park, Gurgaon	North	AL	1600A,2000A
21	GPOA Building, New Delhi	North	AL	300A,400A,630A,800A,2000A,2500A
22	Technopark, Trivandrum	South	AL	3200A,1600A,2500A
23	Wintek IT Park	South	CU	5000A,4000A,2400A
24	South City, IT Park, Saltlake	East	AL	2000A,1600A,1250A,1000A800A
25	M/S HP-GR Tech park	South	AL+CU	160A,250A,1000A,1250A,5000A
26	ABB, Bagmane tech park, Bangalore	South	AL+CU	1250A,800A,630A
27	Wipro, Chennai	South	AL	3200A,2500A
28	satyam computers	South	AL	4000A,2500A,1600A
29	DLF, Akruiti Info Park	West	AL	4000A
30	S P Infocity, Gurgaon	North	AL	1000A, 630A, 1600A
31	Wipro, Kolkatta	East	AL+CU	2500A,1600A,600A
32	Techspace Towers, Chennai	South	AL	2500A,1600A,1000A
33	SDB III- CTS Chennai	South	CU	1250A,1600A,1000A
34	Genpact Infrastructure Pvt. Ltd., Gurgaon	North	CU+AL	600A,1600A,2000A
35	RMZ Millenia Business Park	South	AL	3500A, 3200A,2500A
36	GMR Varalakshmi Tech Park, BLGR	South	AL	630A,800A
37	Triton Square, Chennai	South	AL	2500A,1600A
38	Cisco Business IT Park, Bangalore	South	AL	2500A,2000A
39	Wegman's IT Park, Greater Noida	North	AL	800A,1600A,2500A,3200A
40	K. Raheja IT Park, Hyderabad	West	AL	1250A,1600A
41	SDB III- CTS, Chennai	South	CU	1250A,1600A,1000A
42	K. Raheja IT park, Hydrabad	South	AL	1250A
43	Spaze Tower (P) Ltd.	North	AL	1250A,2500A

S No.	Project	Region	CU/AL	Rating
44	UB city, Bangalore	South	AL	1000A, 1600A
45	Wipro technologies, Gachibowli	South	AL	13000A,2500A,400A
46	Bridge Town Tech Park, Chennai	South	AL	2500A
47	Wipro Data Center, Greter Noida	North	AL	250A,2500A,3200A
48	CTS, Pune	West	AL	4000A,2000A,1000A,630A
49	TCS, Lucknow	North	AL+CU	3200A,1600A,1000A,630A,400A,200A
50	Tech Park -Pune	West	AL	1250A,800A,630A
51	Wipro , Gurgaon	North	AL+CU	300A,3200A
52	CTS Bangalore	South	AL	2000A
53	Wipro Ltd , Hyderabad	South	AL	2500A
54	Hotel Intercontinantal , Mayur Vihar, Delhi	North	AL	1000A, 2000A
55	Universal Tower, Gurgaon	North	AL	1600A,1000A,1250A
56	Ascendas IT Park Phase II, Chennai	South	AL	4000A,3200A
57	Hotel Intercontinantal , Mayur Vihar, Delhi	North	AL	1000A,2000A
58	M/S BPTP Gurgaon	North	AL	2000A,1250A,800A,630A,400A
59	L&T, Technology centre, Chennai	South	AL	400A,630A
60	Philip Innovation Campus, Bangalore	South	AL	1250A
61	Reliance Info com, Chennai	South	AL	800A,
62	M/S Fast Track Building(SEZ),Noida	North	AL	2500A,800A
63	Perot System , Noida	North	AL	1600A,4000A
64	Cyberbad convention centre, HYD	South	CU	800A
65	Suntech IT park, Chennai	South	CU	1000A, 630A
66	Lucent	South	AL	1000A,800A
67	Cadence Design Center, Noida	North	AL	2500A,1600,1000A
68	ICC Devi gaurav, Pune	West	AL	4000A
69	TCS, Lucknow	North	AL	3200A,1600A,100A,630A,400A
70	M/S TCG Developers India Pvt. Ltd	South	AL	1000A
71	Mfar Philips,Banglore	South	AL	1600A
72	Ascendas IT park, Chennai	South	AL	2000A,1000A
73	Ascendas IT park, Chennai	South	AL	2000A
74	Bristol IT park	South	AL	400A,1000A
75	Ascendas IT park, Chennai	South	AL	3200A,2500A,1250A
76	Konkard Tower , Pune	West	CU	400A
77	M-Far Silver line, Bangalore	South	AL	1000A
78	Wipro Technologies,Sariapur	South	AL	2500A
79	Emirates Technologies Ltd., Noida	North	AL	1600A,3200A
80	Wipro Technologies, Hyderabad	South	AL+CU	2500A,2000A,400A
81	Samson Techpark,Egmore, Chennai	South	AL	2000A
82	Wipro Campus, Greater Noida	North	AL	3200A
83	M/S Kochar Technology parks pvt. Ltd	South	AL	2500A
84	KRISP IT Park, Chennai	South	CU	400A,630A
85	L&T, Infotech	South	AL	800A
86	Cisco System, Bangalore	South	AL	1250A,2000A
87	Ascendas IT park, Chennai	South	AL	2500A

S No.	Project	Region	CU/AL	Rating
88	Nokia Siemens Network, Bangalore	South	AL	2000A
89	Nokia, Phase 3	South	CU	400A
90	Cybertek, Chennai	South	AL	3200A,800A,630A
91	Integra Software ser., Pondicharry	South	AL	800A
92	M/S Pluto Software Pvt. Ltd.	North	AL	800A,630A,400A,200A
93	Wipro Phase 5, Kolkata	East	AL+CU	3000A,2000A,1600A,1000A,800A,630A
94	Philip Innovation Campus, BLR	South	AL	4000A
95	Global Technology Park	South	AL	1600A
96	Kanbay Software, Hydrabad	South	AL	800A
97	L&T Cyber Park, Phase II	South	AL	1000A
98	Wipro Ltd, Vizag	South	AL+CU	2000A,630A,400A
99	M/S Wipro Ltd., Cochin	South	AL	3200A
100	Quark City, Mohali, Punjab	North	AL	1250A
101	Dell Call Centre, HYD	South	AL	630A
102	Perot System , Noida	North	AL	400A
103	Kirloskar Bus. Park(Bangalore)	South	AL	630A
104	Suntech IT park, Chennai	South	AL	1600A
105	Mind Space Building No - 3B	South	AL	800A
106	K Raheja IT Park (Hyderabad)	South	AL	1250A
107	TCS, Velachery	South	AL	630A
108	Dell Centre Mohali	North	AL	400A
109	Wipro Ltd , Hydrabad	South	AL	2500A
110	Satyam Computers	North	CU	1250A,800A
111	Medical College, Jammu	North	AL	3200A
112	CISCO Systems	South	AL	4000A
113	Khivraj IT park , Chennai	South	AL	5000A, 4000A, 3200A, 2500A,1600A
114	Lecoanet Hemant, Gurgoan	North	AL	2000A
115	Wipro technologies, Pune	West	AL+CU	2500A,630A
116	CISCI-B4	South	AL	4000A
117	Divyasree soft tech relators, Bangalore	South	AL	3000A
118	Anjenya Complex(East)Bangalore	South	AL	630A,800A
119	Anjenya Complex(West)Bangalore	South	AL	630A,800A
120	RMZ AecoSpace,Banglore	South	AL	1000A
121	Wipro technologies,EC 4 Bangalore	South	CU+AL	300A,400A,3000A
122	Zen Technologies Ltd., Hyderabad	South	AL	3200A
123	M/S Bhagavan Cyber Park, Chennai	South	AL	4000A
124	Salarpuria Touchstone	South	AL	800A,1250A
125	Vatika, City point, Gurgaon	North	AL	630A
126	infotech Group, kotdwar	North	AL	2000A
127	Eminence Techno park	North	AL	2500A
128	M/S Sonata Software, Bangalore	South	AL	200A,630A,800A
129	I Gate Global Solutions , Bangalore	South	AL	250A,400A
130	Pragati Maidan, New Delhi	North	AL	2000A
131	Genpact Infrastructure Pvt. Ltd./, Gurgoan	North	AL	630A
132	Ascendas IT park, Chennai	South	CU	2000A
133	L & T Infotech , Bangalore	South	AL	1600A



S No.	Project	Region	CU/AL	Rating
134	Wipro Ltd., Mumbai	West	AL	2500A
135	Ascendas Phase - 3	South	AL	1600A
136	Vatika, City point, Gurgaon	North	AL	1000A
137	M/S Divyasri Softech, Hyderabad	South	AL	1000A
138	KTPL, Chennai	South	AL	2500A,4000A
139	M/S Ascendas - Mahindra City	South	CU	2000A
140	IBM Daksh, Gurgaon	North	AL	1250A
<b>MALL</b>				
1	World Trade Park, Jaipur	North	AL	1250A,3200A,4000A,5000A
2	AMBI Mall, Vasantkunj	North	AL	2500A,5000A,1250A,1600A,2000A
3	Festival City, Ludhiana	North	AL	5000A,4000A,3200A,2500A
4	World Trade Park, Jaipur	North	AL	1250A,2500A,4000A,5000A
5	Empire Mall, Aurangabad	West	AL	3200A,4000A,6300A
6	Alpha G Mall, Amritsar	North	AL	4000A,3200A,2500A,1250A,630A
7	Dmall Project, New Delhi	North	AL	4000A,2500A,1600A,1000A,800A,630A
8	Imperial Tower	West	AL	600A,800A,1000A,1250A,1600A
9	Inorbit Mall, Hyderabad	West	AL	3200A,2500A
10	BKC Complex	West	AL	2500A
11	Gold Souk, Vytilla	South	AL	1250A,2500A,3000A
12	Central plaza, Mohali	North	AL	1600A,2000A,2500A
13	G Corp. Mall	West	AL	1600A,2250A,3200A
14	Celebration Mall, Udaipur	North	AL	3200A,4000A
15	Dev Grand Mall	West	AL	2750A
16	Dev Star Mall	West	AL	2750A
17	MGF Mall, Jaipur	North	AL	2500A,3600A
18	MBD Neopolis, Jallundhur	North	AL	2000A
19	Inorbit Mall, Hyderabad	South	AL	2500A
20	Amazon Regalia, Jasola, New Delhi	North	AL	2000A, 1250A,800A 630A
21	Big Bazar, Ameerpet, Hydrabad	South	CU	800A
22	Pure earth Infra, New Delhi	North	AL	2500A
23	M/S IDEB Grand Mall	South	AL	800A, 1250A, 1600A
24	IDEB Grand Mall, Bangalore	South	AL	800A,1250A,1600A
25	ManiSquare Mall, Jaipur	North	AL	2500A
26	MV- Power Family Entertainment Mall	South	AL	1600A,2500A
27	Real gold tower, chennai	South	AL	3200A
28	M/S Select City Walk, Saket, New Delhi	North	AL	3500A
29	M/S Prestige Estates Projects Pvt. Ltd.	South	AL	2500A
30	AKM Enterprises Ltd.	North	AL	2000A
31	Gold Souk, Vytilla	South	AL	2500A
32	Velocity Mall, Raipur	South	AL	4000A
33	Contel Shopping Mall, Panchkula	North	AL	800A,1000A,1250A,2000A
34	District center, Jasola, New Delhi	North	AL	800A 630A
35	Maple Tree, Mumbai	West	AL	800A,1000A
36	Inorbit Mall, Navi Mumbai	West	CU	630A
37	Bhatinda Mall	North	AL	600A
38	ILD Trade Centre, Gurgaon	North	AL	630A,800A,1000A,1250A

S No.	Project	Region	CU/AL	Rating
<b>INDUSTRIES</b>				
1	Suzuki Powertrain, Manesar	North	AL	3200A,1600A,1200A,800A,400A,160A
2	Ford India - Engine Shop, Chennai	South	CU	800A,1600A
3	Munjhal Showa, GGN	North	AL	32A,500A,800A,1600A,2000A,4000A,5000A
4	Suzuki Powertrain, Transmission Plant, Manesar	North	AL	400A,1600A,3200A
5	Bijnor, Mansurpur, Raipura,Asmoli	North	AL	5000A,
6	Palm Springs, Gurgaon	North	AL	1250A,1600A,2500A
7	Ford India, Chennai	South	CU	2000A
8	Holland Tractors	North	AL	1000A,800A,2000A,3200A
9	SEA BIRD Karwar(Karnatka)	South	CU	250A,400A,630A
10	M/S Tata World Truck Ltd., Jamshedpur	East	AL	2500A
11	Suzuki Powertrain, Engine plant, Manesar	North	AL	400A,1600A
12	SE Forge Ltd. Coimbatore	West	AL	3200A,2400A,1250A
13	M/S Foxconn India developer Pvt. Ltd.	South	CU	5000A,4000A
14	M/S Hansen Drives	South	CU	1000A,2500A
15	L & T - Hazira (Surat)	West	AL	1250A
16	Varun Beverages Ltd, Kosi Kalan	North	AL	4000A
17	JCB India Ltd., Ballabhgarh	North	CU	200A
18	Ashok Leyland Ltd., Pantnagar	West	AL	630A,800A,2500A
19	Triveni Bialeli, Thane	West	CU	2000A,3200A,5000A
20	Integra Overseas,Gurgaon	North	AL	1600A,2500A
21	M/S Hindustan Coca cola Beverages Pvt. Ltd.	North	AL	2500A
22	Foxconn, Chennai	South	CU	3200A,2500A
23	Airport Authority of India, Mumbai	North	AL	1250A,1600A,800A
24	Subros, Manesar	North	AL	1600A,800A
25	Areva T&D Ltd., Chennai	South	AL	400A,630A,1250A,2500A
26	Venture Automotive, Hyderabad	South	CU	1250A
27	Jindal Steel & Power Ltd, Raigarh	North	CU	4000A,2500A
28	L&T, MHI Boilers	West	AL	800A
29	Dwarka District court, ND	North	AL	250A,400A
30	Dhampur Sugar Mill, Dhampur	North	AL	5000A
31	Rexam Pharma	South	AL	1000A,2000A
32	NBRC, Gurgaon	North	AL	1350A,2500A,2750A
33	DSM Sugar, Bijnor, UP	North	AL	5000A
34	M/S India Glycols Ltd. Noida	North	AL	4000A,3200A,2500A
35	Bombay Dyeing,Mumbai	West	AL	400A,1000A,1600A,2000A
36	Thai Sumit Neel Auto Pvt. Ltd., Pant Nagar	North	AL	2500A,2000A
37	Bellsonica, Manesar	North	AL	1250A,250A
38	M/S Otsuka Chemicals Ltd., Rajasthan	North	AL	5000A
39	Subros Ltd., noida	North	AL	2000A,1600A,800A,630
40	M/S Jay Bharat Maruti Ltd. , Gurgaon	North	AL	4000A,2500A
41	M/S NYPRO Forbes Products Pvt. Ltd.	South	AL	2500A
42	Kirloskar Bus. Park(Banglore)	West	AL	3600A
43	M/S AT&S, Mysore	South	AL	3600A
44	Fermatik Milacon India Ltd.	West	AL	800A,1000A
45	Rico Auto, Gurgaon	North	AL	1000A

S No.	Project	Region	CU/AL	Rating
46	TAML, Bangalore	South	AL	2500A,800A
47	Hindustan Unilever Ltd.	West	AL	2500A
48	Caparo India, Greater Noida	North	AL	2500A
49	High Polymer Lab, Palwal	North	AL	4000A,2500A
50	Ashoka Leyland, Gurgaon	North	AL	630A,2000A
51	Hindustan Unilever Ltd.	West	AL	1600A
52	Gujrat Glass(Bharuch)	West	AL	1600A,2500A
53	Appolo Tyre,Mysore	South	AL	2500A,3200A
54	M/S Adani Power Plant, Gujrat	South	Cu	2300A
55	TAML, Bangalore	South	AL	4000A
56	Reichhold India Pvt. Ltd., Pune	West	AL	2500A,4000A
57	ETA factory,Tamilnadu	South	AL	1600A,400A,250A,160A
58	Ispat Industries, Dolvi	West	AL	4000A,3200A
59				
60	Satelite Forging Pvt. Ltd. IMT Manesar	North	AL	3200A,2000A,200A
61	Utham Padmavathi	South	AL	2000A
62	Lumax Ltd. Sripermbudur	South	AL	2500A
63	Airport Authority of India(M)	West	AL	2500A, 1000A
64	Coca Cola Ghaziabad	North	AL	5000A
65	TACO Pune	West	AL	800A
66	Japuria Corporate office,GGN	North	AL	400A,600A,1600A
67	Merico Industries Ltd., Mumbai	West	AL	1600A
68	Trimex Industries	South	AL	3200A
69	Sai Krishna Engg	South	AL	5000A
70	Appolo Power Systems	South	AL	2500A, 2000A
71	Megha Engg. Factory	South	AL	4000A
72	Himmoinsa Rudrapur	North	AL	1250A,160A,400A
73	Suzlon Energy Ltd.	West	AL	4000A
74	Dishman Pharma, Ahmedabad	West	AL	4000A
75	Hindustan Unilever, Haridwar	North	AL	3200A
76	DMRL, Hyderabad	South	AL	2000A,400A
77	Sri Fort Aduotorium, New Delhi	North	AL	1600A
78	NBRC, Gurgaon	North	AL	1600A
79	AAI, Mumbai	West	AL	1000A
80	Escorts LTD, Pant Nagar, Ruderpur	North	AL	300A
81	GEA building, Ludhiana	North	AL	2000A
82	Litura Electrical Technologies Pvt. Ltd.	West	AL	160A
83	M/S Hewlett-Packard , Uddham Singh Nagar	North	AL	2500A
84	Stangen Toyotetsu India Pvt. Ltd.	South	AL	2000A
85	Vedanta Alumina Ltd.	West	AL	2500A
86	Stovec Industries Ltd	West	AL	400A
87	Mahindra Gesco, Chennai	South	CU	800A
88	Chaman Lal Setia Exports Ltd Karnal	North	AL	2500A
89	Hindustan Coca Cola, Hyderabad	South	AL	2500A
90	Qcon Infra, Hyderabad	South	CU	3200A
91	Jindal Steel & Power Ltd.,Raigarh	North	CU	4000A

S No.	Project	Region	CU/AL	Rating
92	M/S INKOR Autotech	South	AL	1600A
93	Ranbaxy (Gurgaon)	North	AL	630A
<b>INSTITUTIONS</b>				
1	MCD Civic Centre New-Delhi	North	AL+CU	5000A,3200A,2500A,1250A,1000A
2	ICICI Bank, Hyderabad	South	CU	1000A,1250A,1600A,2000A,2500A,4000A
3	Katraj Ghat Tunnel on NH4, Pune	West	AL+CU	1500A,630A,125A
4	Cabinet Sectt, New Delhi	North	AL	2500A,1250A,630A,400A,250A
5	Kumarmanalam Medical College, Salem, Chennai	North	AL	400A,630A,800A,1000A,1250A,1800A,3200A
6	AAI, Ahemadabad	West	AL	1250A,2000A,3200A,4000A
7	City Centre Phase II, NDMC, New Delhi	North	AL	2500A
8	TOI, Noida	North	AL	1600A,2500A,4000A
9	Nirman Bhawan, New Delhi	North	CU	800A,630A,400A,200A
10	Central Sec. Building, South Block, New Delhi	North	AL	630A,800A,1250A
11	SRI Fort Aduotorium, New Delhi	North	AL	630A,1000A,2000A,3000A,4000A
12	Jawahar Lala Nehru Bhawan, New Delhi	North	AL	200A,400A,630A
13	Chhatrapati Shivaji International Airport, Mumbai	West	AL	800A,1000A,4000A
14	Parinee Developers, Mumbai	West	AL	3200A,4000A
15	BSNL, Mumbai	West	AL	1600A,2500A,3200A,4000A,5000A
16	Delhi International Airport	North	AL	4000A,2500A
17	Yamuna Sport complex, New Delhi	North	AL	1000A,1250A,2500A
18	MDC Stadium, New Delhi	North	AL	800A, 1000A, 2000A, 2500A, 3200A, 4000A
19	RK Investment	South	AL	2500A,2000A,1600A
20	State Trading Corporation, New Delhi	North	AL	5000A,2500A
21	PWD Disstt. Court, Saket, New Delhi	North	AL	2500A
22	Vatika Landbase, Gurgaon	North	AL	1000A,630A
23	Runwal Town Centre, Mumbai	West	AL	3200A,2500A,1600A
24	Indian Express Tower, Mumbai	West	AL	250A,800A,1600A,3200A,4000A
25	IJM, MCD Civic Centre, New Delhi	North	AL	1000A
26	Velocity Mall, Raipur	South	AL	4000A
27	JLN Stadium New delhi	North	AL	800A, 1000A, 1250A, 1600A, 2500A, 3200A,4000A
28	Talkatora Stadium, New Delhi	North	AL	800A, 1000A, 1250A, 1600A, 2000A,2500A, 3200A,4000A
29	M/S Spaze Commercial Complex, Gurgaon	North	AL+CU	3200A,1000A,800A
30	Maruti Corporate Building, Vasant Kunj	North	AL	1600A,1250A,1000A,630A,400A,200A
31	AAI, Bhopal	West	AL	800A,1250A,2500A
32	PMO, New Delhi	North	CU	2500A, 1250A
33	Matrix Tower, Chennai	South	AL	2000A
34	BSNL, Bangalore	West	AL	2500A
35	Mangalore Airport	North	AL	1250A,2000A,2500A
36	Madurai Airport	North	AL	800A,1250A,2000A,2500A
37	Sewa Bhawan, New Delhi	North	AL	2500A
38	Kotak Mahindra Bank, Mumbai	West	AL+CU	800A,1600A,2000A,3000A,4000A
39	Airport Authority of India, Aurangabad	West	AL	2500A,1600A
40	GM Office Building, Jaipur	North	CU	1600A
41	Bombay Stock Exchange, Mumbai	West	AL	3200A
42	Mahindra Chloris, Faridabad	North	AL	400A,800A,1250A
43	MTNL, New Delhi	North	AL	2000A,1600A

S No.	Project	Region	CU/AL	Rating
44	BSNL, Saltlake, Kolkata	East	AL	2500A,4000A
45	Jawaharlal Nehru bhawan, New Delhi	West	AL	630A,1250A,2500A
46	TAML	South	AL	3200A,2000A
47	Medical College, Trivendrum	South	AL	630A,1000A,1600A
48	Western Capital Management	South	AL	2500A, 1250A
49	SeepZ MIDC, Mumbai	South	CU	1600A,3200A
50	Obero Construction	West	CU	3200A,500A
51	MHS Bhawan, Pune	West	AL	2500A
52	Sewa Bhawan, New Delhi	North	AL	2500A
53	BSNL, Bangalore	West	AL	3200A
54	South Block, New Delhi	North	AL	3200A
55	M/S TAML, Bangalore	South	AL	2500A
56	CPWD, North Block	North	AL	3200A
57	NGMA Jaipur House , New Delhi	North	AL	2000A,2500A,800A
58	M/S CAE PTF, Bangalore	South	AL	2500A
59	CPWD, Parliament House, New Delhi	North	CU	1000A,400A
60	Sena Bhawan, New Delhi	North	CU	2500A
61	VSNL, GK -1	North	AL	2750A
62	Kochar Holding	South	AL	2500A
63	MIHAN - Nagpur	West	AL	4000A
64	Country Inn Hotel,Sahibabad,U.P	North	AL	3600A
65	CDR Building Part 2	East	AL	2500A
66	Real Value	South	AL	1600A
67	Hindustan Times	West	AL	4500A
68	ICICI Bank, Hyderabad	South	AL	1000A,1350A,1600A,2000A,4000A
69	BSNL, Bangalore	South	AL	2000A
70	BSNL exchange, Bangalore	North	CU	2500A
71	CPWD, Krishi Bhawan	North	AL	2500A
72	DIAL ,New Delhi	North	AL	1600A, 2500A,3000A
73	Udyog Bhawan, New Delhi	North	AL	2500A
74	BSNL, Chennai	South	AL	2500A
75	MTNL, New Delhi	North	AL	1250A, 400A
76	BSNL, Delhi	North	CU	600A
77	Najumbaug Trust , Mumbai	West	CU	400A
78	Reliance Life Bioscience, Navi Mumbai	West	AL	4000A
79	Hindustan Times, New Delhi	North	AL	1750A,1250A
80	DMRC, BD1, Yamuna Depot	North	AL	4000A
81	Dwarks ,New Delhi	North	AL	2500A
82	Lawyers Chambers, Karkardooma	North	AL	630A
83	CDR Building,Saltlake	East	AL	2500A
84	Airport Authority of India, Jaipur	North	AL	1250A,1600A
85	Time Properties Pvt. Ltd.	West	AL	800A
86	IIT Madaras	South	CU	800A
87	Dwarka District court, ND	North	AL	1000A,250A
88	TEC. K L Bhawan , New Delhi	North	CU	2000A

S No.	Project	Region	CU/AL	Rating
89	Sankara Nethralaya	South	AL	800A
90	M/S F L Smidth, Egatur	South	AL+CU	500A,800A
91	MTNL, New Delhi	North	AL	1600A,1250A,1000A,800A
92	Tata Communications Ltd., Hyderabad	South	AL	3200A
93	Prestige Shantiniketan, Bangalore	South	AL	2500A,3000A
94	Rajeev Gems Park	South	AL	1600A,2000A,4000A
95	DMRC-BD3, Sultanpur, New Delhi	North	AL	3200A
96	Deloitte, Hyderabad	South	AL	1250A
97	BSNL, Trichy	South	AL	2000A
98	BSNL, Cochin	South	AL	1600A,2000A
99	Airport Authority of India, Ahmedabad	West	AL	1000A
100	Shastri Bhawan, NewDelhi	North	AL	3200A
101	ARAI	West	CU	4000A
102	Reliance Corporate Office, New Delhi	North	AL	1000A
103	BSNL, Coimbatore	South	AL	1600A
104	IIT Girl Hostel, Mumbai	West	AL	630A
105	IIT, Chennai	South	AL	250A
106	JLNR Bhawan, New Delhi	North	AL	630A,2500A
107	BSNL, Ahemadabad	West	AL	2500A
108	BSNL, Patna	North	AL	2000A,400A
109	Bank Of Baroda, Lucknow	North	AL	1600A
111	HAL, Koraput	North	CU	3200A,1500A,1000A
112	IFCI Ltd. Mayur Vihar, Delhi	North	AL	800A
113	Tata Housing Development Ltd.	South	AL	1000A
114	BSNL, Chandigarh	North	AL	1600A
115	GMR International Airport, Hyderabad	South	AL	1000A
116	BSNL, Vellore	South	AL	1600A
117	Areva Ltd., Vadodara	West	AL	400A
118	IIT Chennai	South	CU	800A
119	LANXESS - Baoda	West	AL	4000A
120	MHS Bhavan, Pune	West	AL	1600A
121	RCR Complex, PM House, New Delhi	North	AL	1250A
122	Arikavela Irrigation Project, Hyderabad	South	AL	1600A
123	Tata Communications	South	AL	630A
124	BSNL, Pune	West	AL	3200A
125	BSNL, Cuttack	East	AL	1600A
126	BSNL, Pune	West	AL	1250A
127	IIT Madras	South	CU	250A
128	Voltas Corporates Suites, Gurgaon	North	CU	630A
129	CETE - BSNL	East	AL	800A, 630A
130	BSNL, Bangalore	South	AL	2000A
131	Aircel, Chennai	South	AL	1250A
132	Jodhpur Airport, Jodhpur	North	AL	2000A
133	Powertek, Trissur	South	AL	1600A
134	CM office - Jaipur	North	AL	500A
135	IIT, Roorkee	North	AL	1000A

S No.	Project	Region	CU/AL	Rating
136	Raheja Building, Hyderabad	South	AL	800A
137	Tata Communications Ltd., Chennai	West	AL	3600A
138	School Building, Noida	North	AL	500A
139	M/s Tech Mahindra Ltd. (SEZ), Chandigarh	North	AL	200A,400A
140	IDMC, Baroda	West	AL	200A
141	SBS School, Noida	North	AL	1600A
142	MTNL, Kandivli	West	AL	1600A
143	Kribhco, Noida	North	AL	1600A
144	NDTV, New Delhi	North	AL	2000A

## Export

S No.	Project	CU/AL	Rating
1	Dafna Residential tower,Doha	CU	2500A, 1600A, 800A,400A
2	West Bay 44 tower,Doha	CU	2500A, 1600A, 800A,400A
3	SHK Falak twin tower,Doha	CU	2500A, 1600A, 800A,400A
4	B +G +3 ( Jamai Ahmed Ismail Ahmed),Doha	CU	400A
5	7th floor at SHK thani Bin Abdul Aziz, Doha	CU	400A
6	G + 11 Residential building,Doha	CU	400A, 800A
7	B+G+5, Navigation Building,Doha	CU	400A
8	B3+B2+B1+G+M+15 Residential Bld, Doha	CU	400A
9	AJAJ building ,Doha	CU	400A
10	Mellineium tower,Doha	CU	400A, 800A
11	B +G +3, Doha - Qatar	CU	400A
12	Stock Order	CU	400A
13	B+G+7 Islamic Park, Dubai	CU	400A
14	B+G+8 Al Ghanem, Dubai	CU	400A
15	44 West bay	CU	400A,2000A,2500A
16	B+G+10, Dubai	CU	630A
17	Not Available	CU	2000A,800A
18	3B+G+M+7,Doha,Qatar	CU	1000A
19	Al-Mansoura Project	CU	400A
20	Kirbey building system, Kuwait	CU	1600A
21	Al Nazar Tower, Kuwait	CU	1600A, 1000A, 800A
22	Al Mazaya tower, Kuwait	CU	1600A, 2000A
23	Holiaday INN, Kuwait	CU	3000A,2000A,1600A
24	Gravity Tower	CU	800A
25	Najat School, Kuwait	CU	1600A,2500A
26	Centre Research & Studies	CU	1500A, 800A
27	Holiaday INN, Kuwait	CU	2000A
28	Salmiya Hotel	CU	2500A,2000A,1500A
29	Phoneix Hotel, Tanzania	CU	400A
30	Land Mark Plaza, Kenya	CU	400A
31	Blue sheild Insurace Co HQ, Kenya	CU	400A
32	Infinity Info-Electric Co Ltd, Taiwan	CU	4000A,1600A,1250A
33	JSC SOEMI, Russia	AL	630A,400A,250A



S No.	Project	CU/AL	Rating
34	AL Nazzar Tower, Jordan	CU	1350A
35	Port Saeed, Dubai	CU	1250A
36	Port Saeed, Dubai	CU	2500A,1600A, 1250A
37	2B+G+12	CU	2500A
38	P.S Bank, Philipines	CU	2500A,600A
39	E-Services Manila	AL	4000A,3000A
40	Victoria Tower, Philipines	AL	3200A,1200A,600A
41	San Lazaro BPO, Singapore	CU	3600A
42	Glorietta 5, Singapore	CU	1200A,1600A
43	ICON Residences, Singapore	AL	1200A,1600A
44	HKM Hotel, Singapore	AL	2000A
45	SEIBU Tower, Singapore	AL	2000A
46	2B+G+14, Dubai	CU	1600A,2000A,2500A
47	Liugong, Dhar	AL	250A
48	JESSA Investment	CU	800A
49	CRM, CGL Complex	CU	4000A,3200A
50	Specialised Power system, Kenya	CU	250A
51	Orient Star International, Doha, Qatar	CU	400A







Hiranandani Gardens, Mumbai

I Flex, Bangalore



Adobe Software Park, Noida

Delhi Secretariat, New Delhi





Bosch, Bangalore

Philips, Bangalore



Oracle, Bangalore

Accenture, Bangalore



Infosys, Bangalore



Strides, Bangalore



Infotech, Bangalore



Tata, Bangalore



Cognizant, Bangalore





Beta, Bangalore

Subros, Noida



Shangri-la New Delhi

Hero Honda, Gurgaon



Venunberg IT Park, Hyderabad



Bharti Airtel, Bangalore



GE (Genpact), Hyderabad









Wipro, Hyderabad



CSC, Hyderabad





<b>TEST REPORT</b>		<b>PDL-03.125.13</b>	
<b>Client:</b> <b>Order number:</b> <b>Date of tests:</b> <b>Report code:</b>	<b>CONTROLS &amp; SWITCHGEAR COMPANY LTD</b> <b>BL9095</b> <b>18 September 2003</b> <b>TR</b>		<b>Prof. &amp; Services Laboratory</b> PO Box 23, 7100 BA Hengelo Hengelo 204, 7519 ZL Hengelo, The Netherlands Tel: +31 75 246 6207 Fax: +31 75 246 6202
<b>Subject:</b>	<b>BUSBAR TRUNKING SYSTEMS CBC 1000</b>		
<b>Purpose:</b>	Verification of short-circuit withstand strength; test parameters and procedure based on IEC/EN 60439-1(1999-09) and IEC/EN60439-2 (2003-03) clause 6.2.3 <b>Three phase: low 50kA - 1s Ipk 105kA</b> <b>Neutral: low 30kA - 1s Ipk 63kA</b>		
<b>Object:</b>	<b>Air insulated busbar trunking system CBC1000</b> <b>Manufacturer: Controls &amp; Switchgear Company LTD</b>		
<b>Conclusion:</b>	The above mentioned requirements are met.		
<b>Author:</b>	J. Otten 		
<b>Checked by:</b>	H. Jusseldijk 		
<b>This report consists of:</b> Sheets: Tables: Photo's sheets: Oscillograms: Drawings: Circuit diagrams: Appendices:	15 - - - - - -		
	 <b>Ir. R.J. Ritma</b> <b>General Manager</b> <b>Hengelo, 15 March 2004</b>		
	The test results concern only the investigated test objects		
	Publication and/or reproduction of the contents of this report is only allowed from that by complete and verbatim text in the language it was originally issued & not allowed without written permission.		
	 		

 <b>Central Power Research Institute</b> SWITCHGEAR TESTING & DEVELOPMENT STATION GOVINDPURA, BHOPAL-462023, INDIA Phone: +91(0)755 2586682 Fax: +91(0)755 2587774		 SABL Accredited Laboratory
<b>TEST REPORT</b>		
Sheet 1 of 5		
<b>Test Report Number</b>	81040818	Date: <b>5 JAN 2005</b>
<b>Name &amp; address of the client</b>	Controls & Switchgear Co. Ltd., B-1, Site IV, Surajpur Industrial Area, Karna Road, Greater Noida (U.P)-201306, India	
<b>Name &amp; address of the Manufacturer</b>	Controls & Switchgear Co. Ltd., B-1, Site IV, Surajpur Industrial Area, Karna Road, Greater Noida (U.P)-201306, India	
<b>Particulars of sample tested</b>	1500A Copper Busbar (2x600mm)	
<b>Condition of sample on Receipt</b>	New	
<b>Type</b>	Air insulated	
<b>Designation</b>	CBC-1500	
<b>Serial number</b>	Nil	
<b>Number of samples tested</b>	One	
<b>Date(s) of Test(s)</b>	20 <sup>th</sup> December, 2004	
<b>CPRI sample code no.</b>	STD55T204531252	
<b>Particulars of tests conducted</b>	Verification of short circuit strength	
<b>Test in accordance with Standard/specification</b>	As per cl. 8.2.3 of IEC 60439-2, 2000 & IS-8623(Part 2) : 1993	
<b>Sampling plan</b>	Not applicable	
<b>Client's requirement</b>	Nil	
<b>Deviation (if any)</b>	Nil	
<b>Name of the Witnessing persons</b>	Mr. Santosh Gupta (Sr. Engineer QA)	
<b>Client's representative</b>	Nil	
<b>Other than client's representative</b>	Nil	
<b>Test subcontracted with address of the laboratory</b>	None	
<b>Documents constituting this report (in words)</b>		
Number of sheets	Five	
Number of oscillograms	Two	
Number of graphs	Nil	
Number of photos	One	
Number of Test circuit diagrams	Two	
Number of drawings	Two	
 (SARITA DONGRE) TEST ENGINEER	 (M.L. INHALE) JOINT DIRECTOR	
AUT-GRISED SIGNATORY		



Controls & Switchgear company Ltd.  
222, Okhla Industrial Estate  
110 020 NEW DELHI

India

your letter -  
your reference -

our reference 2036755 00-QUA/COM  
04-0385 HLS/Sco

author H.L. Schendstok  
direct line +31 26 3 56 20 07  
telefax +31 26 3 52 58 00  
e-mail Henk.Schendstok@kema.com

subject

Arnhem, April 5, 2004

Testing of busbar trunking system types CBC1000,  
SBC100N1, SBC175N1, SBC175N2 and SBA175N1  
from the manufacturer Controls & Switchgear Company Ltd.

Dear Sirs,

We declare herewith that the busbar trunking system, types CBC1000, SBC100N1, SBC175N1, SBC175N2 and SBA175N1, from the manufacturer Controls & Switchgear Company Ltd., have been tested according to IEC 60439-2 as in the clauses mentioned on pages 2 and 3. The tests as laid down in the reports from Prof. Ir. Damstra Laboratorium dated March 15, 2004 were witnessed by KEMA.

We trust that we have informed you sufficiently, if not, please do not hesitate contact us.

Kind regards,

KEMA Quality B.V.



H.L. Schendstok

**KEMA Quality B.V.**  
Utrechtseweg 310, 6812 AR Arnhem  
P.O. Box 5185, 6802 ED Arnhem  
The Netherlands  
Website: [www.kema.com](http://www.kema.com)  
[www.buyerlink.com](http://www.buyerlink.com)  
Telephone +31 26 3 56 20 00  
Telefax +31 26 3 52 58 00  
Postbank 6794687  
ABN AMRO Bank Utrecht 43.10.71.748

Member of the KEMA Quality Network

 <b>Central Power Research Institute</b> SWITCHGEAR TESTING & DEVELOPMENT STATION GOVINDPURA, BHOPAL-462023, INDIA Phone: +91(0)755 2586682 Fax: +91(0)755 2587774		 SABL Accredited Laboratory
<b>TEST REPORT</b>		
Sheet 1 of 5		
<b>Test Report Number</b>	81040818	Date: <b>5 JAN 2005</b>
<b>Name &amp; address of the client</b>	Controls & Switchgear Co. Ltd., B-1, Site IV, Surajpur Industrial Area, Karna Road, Greater Noida (U.P)-201306, India	
<b>Name &amp; address of the Manufacturer</b>	Controls & Switchgear Co. Ltd., B-1, Site IV, Surajpur Industrial Area, Karna Road, Greater Noida (U.P)-201306, India	
<b>Particulars of sample tested</b>	1500A Copper Busbar (2x600mm)	
<b>Condition of sample on Receipt</b>	New	
<b>Type</b>	Air insulated	
<b>Designation</b>	CBC-1500	
<b>Serial number</b>	Nil	
<b>Number of samples tested</b>	One	
<b>Date(s) of Test(s)</b>	20 <sup>th</sup> December, 2004	
<b>CPRI sample code no.</b>	STD55T204531252	
<b>Particulars of tests conducted</b>	Verification of short circuit strength	
<b>Test in accordance with Standard/specification</b>	As per cl. 8.2.3 of IEC 60439-2, 2000 & IS-8623(Part 2) : 1993	
<b>Sampling plan</b>	Not applicable	
<b>Client's requirement</b>	Nil	
<b>Deviation (if any)</b>	Nil	
<b>Name of the Witnessing persons</b>	Mr. Santosh Gupta (Sr. Engineer QA)	
<b>Client's representative</b>	Nil	
<b>Other than client's representative</b>	Nil	
<b>Test subcontracted with address of the laboratory</b>	None	
<b>Documents constituting this report (in words)</b>		
Number of sheets	Five	
Number of oscillograms	Two	
Number of graphs	Nil	
Number of photos	One	
Number of Test circuit diagrams	Two	
Number of drawings	Two	
		
(SARITA DONGRE) TEST ENGINEER	(M.L. INHALE) JOINT DIRECTOR	
AUTOGRAVED SIGNATORY		



Isolated Phase Busducts

(11- 36KV up to 28,000 Amps)

Segregated Non-Segregated  
Phase Busduct

(415 - 33KV up to 5000 Amps.)



Sandwich Insulated Busbar Trunking System

(Low - Impedance)

(400 ~ 6600 Amps)

Lighting Trunking  
(25 - 40A)



## Notes





#### Western/M.P Region

#A 301 / 302, 3<sup>rd</sup> floor, Nav Bharat Estate,  
Zakaria Bunder Road, Sweri (West),  
Mumbai - 400 015, Maharashtra, India.  
Tel. : +91-22- 24114727, 24114728  
Fax: +91-22-241137858, 24114704  
email : venkatesh.s1@cselectric.co.in

#### Southern Region

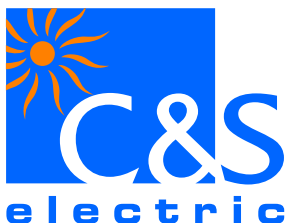
#N607, North Block, Rear Wing,  
Manipal Center, 47, Dickenson Road,  
Bangalore -560 042, Karnataka, India.  
Tel. : +91-80- 30570359,340  
Fax: + 91-80- 25584839  
email : roopkumar.k@cselectric.co.in

#### Northern Region

222, Okhla Industrial Estate,  
New Delhi - 110 020, India.  
Tel. : +91-11-30887520-29  
Fax : +91-11-2684 8241, 2684 7342  
email : Yashwant.sarathe@cselectric.co.in  
Yamuna.sharma@cselectric.co.in

#### Eastern Region

222, Okhla Industrial Estate,  
New Delhi - 110 020, India.  
Tel. : +91-11-30887520-29  
Fax : +91-11-2684 8241, 2684 7342  
email : anoop.krishna@cselectric.co.in



#### C&S Electric Ltd.

Works : Plot No. 1A, Sector 8C, Integrated Industrial Estate (SIDCUL)  
Ranipur, Hardwar, Uttarakhand -249403 Tel.: 01334-239212, 01334-239217

Corporate Office : 222, Okhla Industrial Estate, New Delhi - 110 020  
Tel. : +91-11-30884912, 30887520-29 Fax: +91-11-2684 8241, 2684 7342  
email : rajesh.bhardwaj@cselectric.co.in

Website: [www.cselectric.co.in](http://www.cselectric.co.in)

