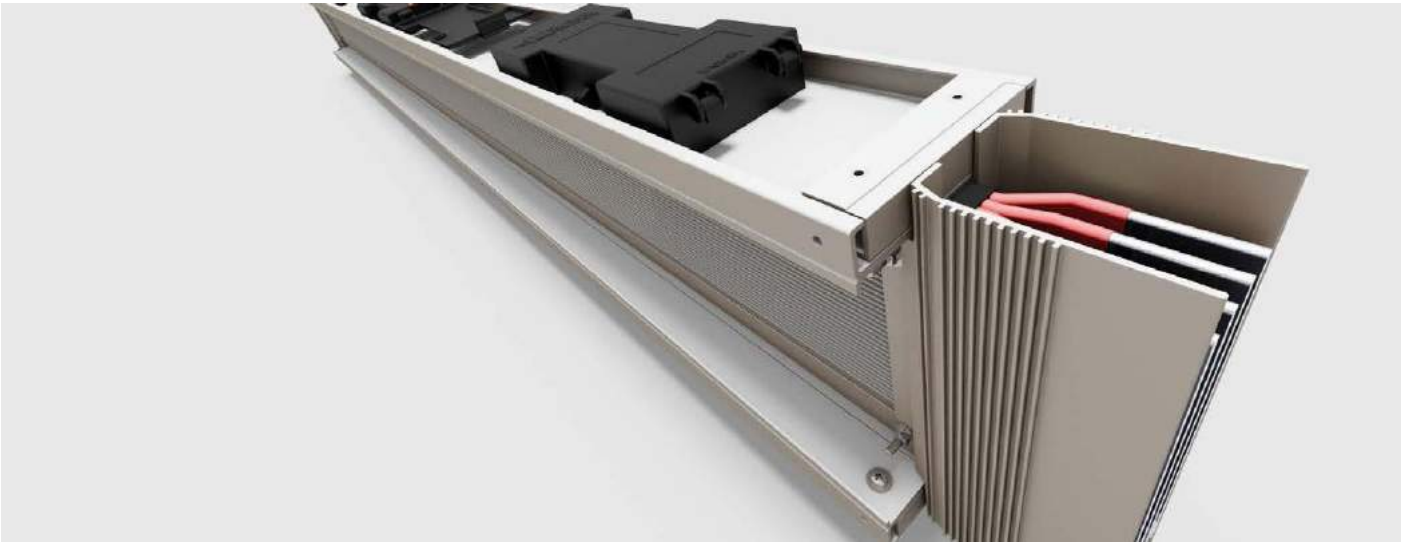




BUSWAY



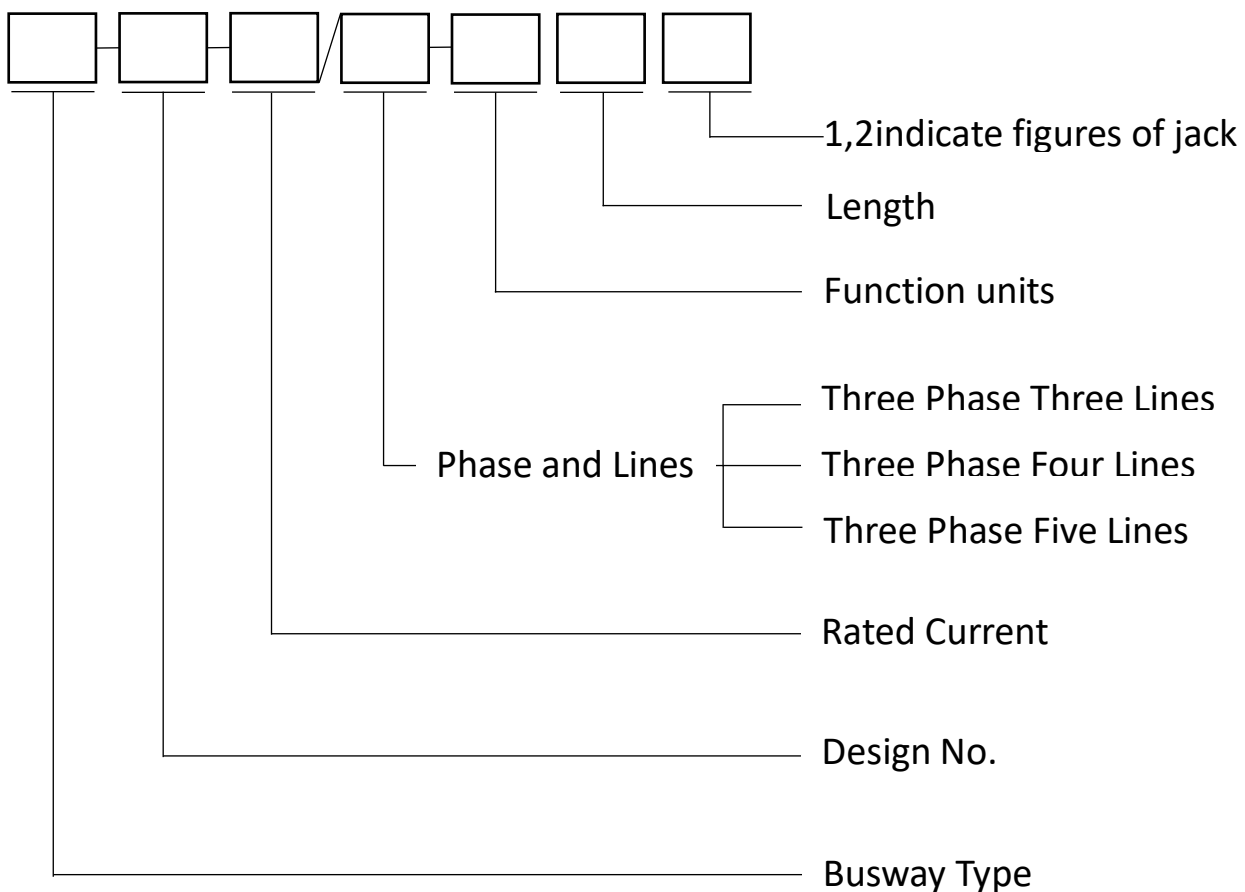
SHANGHAI XINMA BUSBAR BRIDGE FRAME CO., LTD.

Summarization

In electric power distribution, a busway (also called bus duct), is a sheet metal duct containing either copper or aluminium busbars for the purpose of conducting a substantial current of electricity. It is an alternative means of conducting electricity to power cables or cable bus.

Originally a busway consisted of bare copper or aluminum conductors supported on inorganic insulators, such as porcelain, mounted within a non-ventilated steel housing.

Type meaning



Technical Terms

Composition and meaning of shell protective grade (IP code),

Quoted from GB4208-2008、 IEC6052

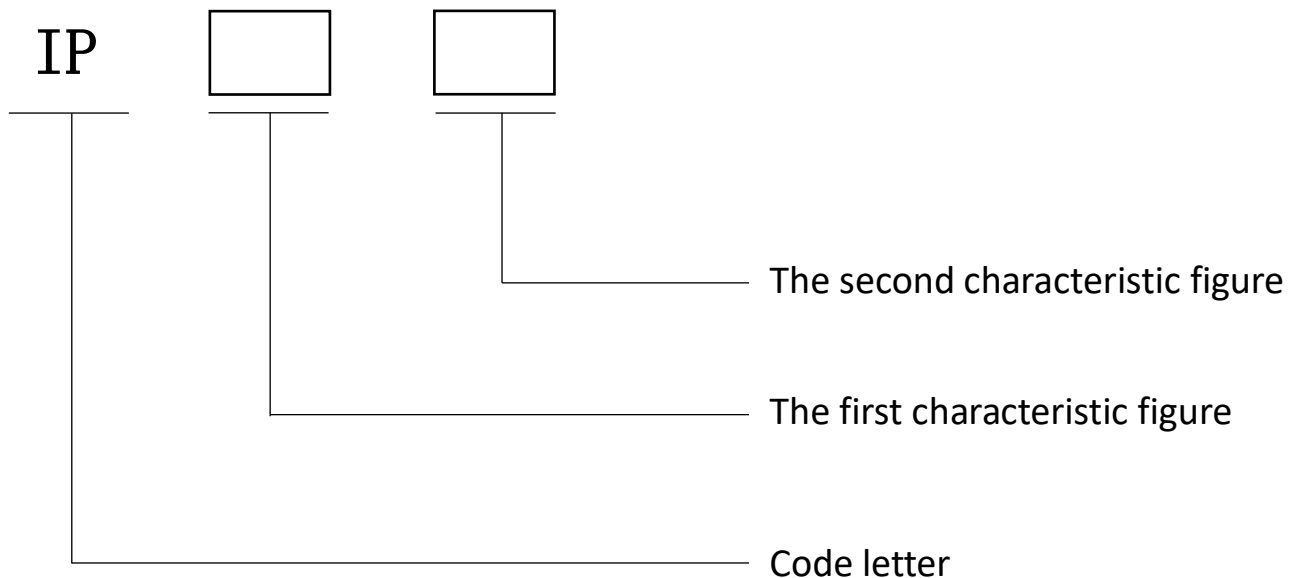
The purpose to specify the shell protection grade for electrical equipments is to prevent human body approach to internal dangerous parts, prevent solid impurities entering equipment shell and prevent harmful damage to equipments for water in shell.

Composition and meaning of IP code

(International Protection)

IP code is composed of code letter IP (International Protection), the first digit and others

(See Table 2 for the composition of IP code)



Code composition	Code figure	Equipment protection meaning Prevent solid impurities entering	Personal protection meaning Prevent approach to dangerous parts	Description
The first characteristic figure	0	No protection	No protection	No protection for external person or object
	1	$\cong \Phi 50\text{mm}$	Bank of hand	Prevent the palm approaching to dangerous parts and prevent solid impurities, of which diameters are no less than 50mm, entering the shell.
	2	$\cong \Phi 12.5\text{mm}$	Finger	Prevent the finger approaching to dangerous parts and prevent solid impurities, of which diameters are no less than 12.5mm, entering the shell.
	3	$\cong \Phi 2.5\text{mm}$	Toll	Prevent tool and solid impurities, of which diameters are no less than 2.5mm, approaching to dangerous parts and entering the shell.
	4	$\cong \Phi 1.0\text{mm}$	Metal line	Prevent solid impurities and metal line, of which diameters are no less than 1.0mm, entering the shell.
	5	Dustproof	Metal line	Prevent metal line approaching to dangerous parts, not fully prevent dust, but the entering dust never affect normal operation and safety of the equipments.
	6	Dust tightness	Metal line	Prevent metal line approaching to dangerous parts and completely prevent dust entering.
		Prevent water leading to harmful effect		
The second characteristic figure	0	No protection	-	Not any protection
	1	Vertical water dripping	-	Prevent vertical water dripping, there is not any protection.
	2	15° dripping	-	Prevent the shell tilting within 15° scope, the vertical dripping shall never have harmful influence.
	3	Showering	-	Prevent showering, there is not harmful influence if different elevations are showered in 60° scope.
	4	Splashing	-	Prevent splashing, there is not harmful influence if the water slashes toward all directions of the shell.
	5	Spraying	-	Prevent spraying, there is not harmful influence if the water slashes toward all directions of the shell.
	6	Wild spraying	-	Prevent wild spraying, there is not harmful influence if the water slashes toward all directions of the shell.
	7	Short-time soaking	-	Prevent short-time soaking, there is not harmful influence if the water slashes toward all directions of the shell.
	8	Continual soaking	-	Prevent continual soaking, the water in shell after continual soaking can not bring harmful influence.

Technical Data

The various series of bus channels produced by this company are applicable for high buildings, industrial factory building with many floors, workshops with concentrated lathes and with varied technology, the old workshops rebuilt, various labs, exhibition halls, gyms, hotels, banks, entertainment and other places, and used for feeding and distributing electricity. It has the characteristics of safety&reliability, easy installation, flexible construction, small volume but large capacity, short cycle for construction, long service life and the like. The concrete technical parameters are as follows:

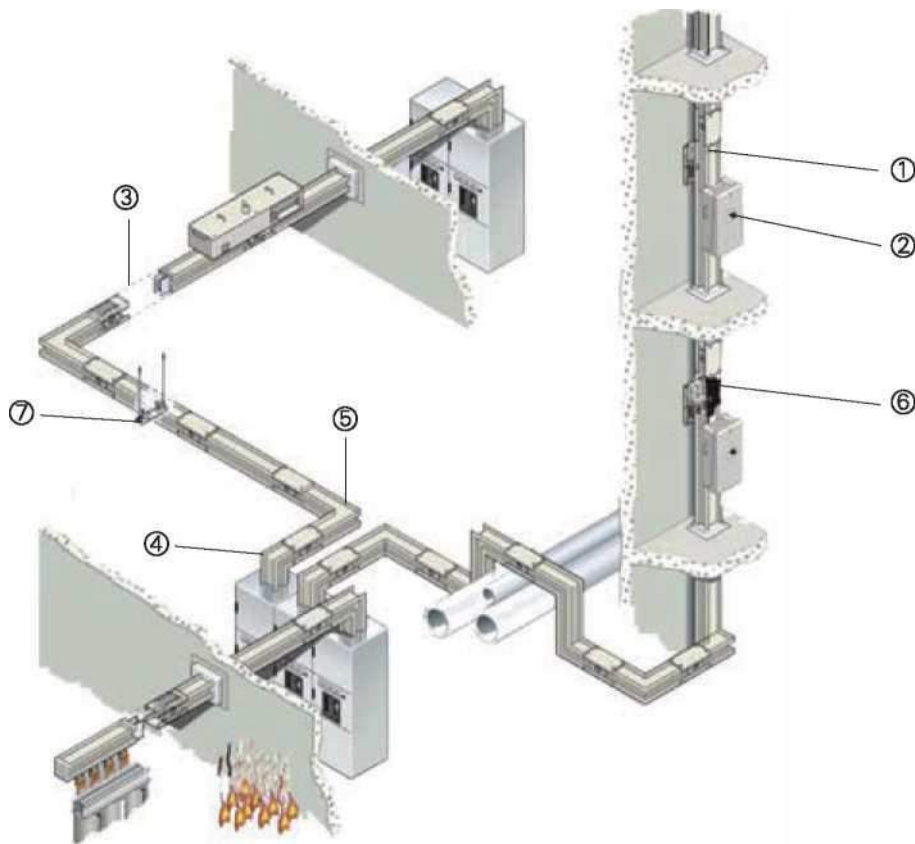
Standard	IEC 439.2-1 982 ZBK36002-89 GB 1497 GB 7251-87						
Sea Level	m	Not higher than 2000					
Ambient Temp	°C	-5- +40(average temp is not higher than +35 within 24 hrs.)					
Relative Humidity	Not higher than 50% when +40°C ,not higher than 90% when +20°C						
Protective Grade	IP42(With accessories up to IP54)						
Installation Category	Classes IV						
Polluted Grade	Grade 2						
Rated Insulation Voltage	V(AC)	500					
V(AC) Rated Working Voltage	V(AC)	400					
Rated Frequency	Hz	50-60					
Rated Working Current	A	100	250	400	630	800	1000
Resistance	Rx10Ω/m	967	94.4	70.8	73.0	61.4	46.6
Impedance	Zx10Ω/m	106.8	103.8	83.2	72.4	69.8	53.8
Reduction	V/m	0.0432	0.0475	0.0360	0.089	0.1	0.0485
Short Circuit Strength t=1S	KA(Peak Value)	20	35	50	70	75	85
Rated Working Current	A	1250	1600	2000	2500	3150	4000
Resistance	Rx10Ω/m	28.9	23.6	21.3	14.4	12.1	10.0
Impedance	Zx10Ω/m	40.6	38.0	24.1	19.7	16.5	12.1
Reduction	V/m	0.059	0.063	0.0814	0.0705		
Short Circuit Strength t=1Sz	KA(Peak Value)	100	115	129			
Temp. Rise of Each Position	(K)	Connective terminal 60 Metal shell 30 Surface of insulating part 40					
Dielectric Strength	Imin A.C.working frequency(effective value)3750V						
Insulating Resistance	Not less than 20mΩ between phases and the shells						

Climatic over 24h	Min./Max./Average	-5/+40/35°C
Ingress Protection		IP54、IP65
Torque for Joint park		70N.m
Colour		Electrostatic powder spraying (according to user's requirements)
Isolating material		Hydronalium
Isolating colour		International Standard Grey (RAL7032, RAL7035) with specific colors according to customer needs
Rated Isolating Voltage		1000VAC
Rated operating Voltage		690V
Rated Frequency		50Hz
Rated Current		1)
Rated current short tolerance		1)
Rated current short tolerance I _{pk}		1)
Isolating of Bar		Cu、Al
Maximum installation spacing		See below
Dimensions		1)
Weight		1)
Voltage Degree	Category/Pollution	111/3

Note:1)Different current range gets its corresponding technical data.

2)Detailed data please refer the technical parameter list in the next part.

XMMX-XL Busway System



- ① Straight trunking units (with or without tap-off points)
- ② Tap-off units, can be connected whilst live
- ③ Joint pack units
- ④ Feeder units
- ⑤ Connection to Siemens power distribution boards
- ⑥ Junction units
- ⑦ Additional equipment for wall/ceiling mounting

Combining successful sales and manufacturing experience, XMMX-XL makes XMMX-XL compact system much closer to customer. The system is upgraded on the original type, enjoying higher automation degree to meet different customers' requirements. And it will lead the new technical developing direction of busway for sure.

System Components

The compact busway system with aluminum house which accord with GB7251 and IEC60439 standards is applied in fields of transmitting and distributing power. The novel and simple construction keeps convenient installation, safe and reliable running. RM busway system include two bar configurations: copper and aluminum, rating current from 250A to 6300A, the capacity of tap-off box up to 1600A, two high ingress protection IP54 and IP65 guarantee the stable and safe running under different environments.

1 Straight trunking units

If needed wall-through cover unit is available. Protection degree: IP54 (The highest is IP65)

With or without tap-off points

Standard length:

XMMX-XL A: 4m, 3m, 2m, 1m

XMMX-XL C: 3m, 2m, 1m

Optional length:

XMMX-XL A: 0.39 - 3.99m

XMMX-XL C: 0.39 - 2.99m

Optional for vertical and horizontal installation

With tap-off points straight trunking unit

Single side with tap-off points

Double sides with tap-off points

Tap-off point protection degree is IP54

Anti-wrong installation device

Anti-fire straight trunking unit

Passed the JB/T10327 - 2002 regulation

Anti-fire capability test

Degree is IP54

2 Tap-off units

Adopts breaker or fuse switch as protection

Steel enclosure

Excellent earth device

Protection degree:IP54

Standard color: RAL7032 RAL7035

Easy installation

Mechanical inter-lock device and auto-positioning device

Plug feet silver plated

3 Feeder Units

Transformer feeder units

Special flexible connection

Rated current up to 6300A

Distribution board feeder units

Special copper bar connection

Rated current up to 6300A

4 Connecting Devices

Single bolt joint pack with high strength pressing plate and spring dish washer is benefit for uniform pressure and loose proof; Installation torque is ensured by using one normal spanner to twist off the out side head of double heads bolt; The joint pack can only be tightened from one side; Dismount the joint pack but not affect the adjacent busway units; Flange construction with sealing parts guarantees the high IP.

5 Junction units

Easily change the busway system direction

70° ~175°

L unit

T unit

Z unit

6 Accessories

End cap

Joint pack

Fixing bracket

Tools for connection

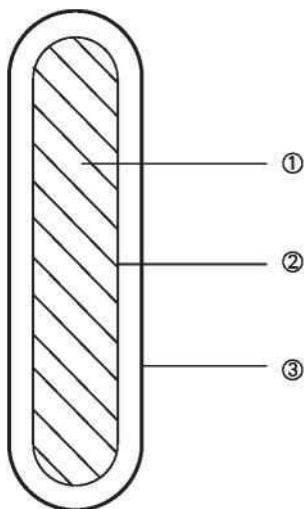
Enclosure

The system adopts excellent alloy as enclosure material, enjoys non-magnetism, environment protection, light weight and fast heat dissipation capability. No-eddy current loss when system on loading. Airproof sealing parts for assembly keep the high IP capacity; Top and bottom aluminum extruded profile provide high strength and better locating. The surface is static painted and passed the 1200h salt withstand test, which can meet the high air humidity, salt separating, high pollution etc. Environment.

Conductor

The conductors of the RM busway system are normally tin-plated or silver plated, totally covered with highly insulation material.

XMMX-XL C is copper system; XMMX-XL A is aluminum system. Aluminum conductor should be nickel-plated and copper-plated before tin-plated.



1. Conductor, copper bar(XMMX-XL C), aluminum bar
2. Coating. Tin coating(XMMX-XL C), nickel coating, copper coating, tin coating(XMMX-XL A)
3. Insulation Material

XMMX-XL Busway

XMMX-XL C List of parameters

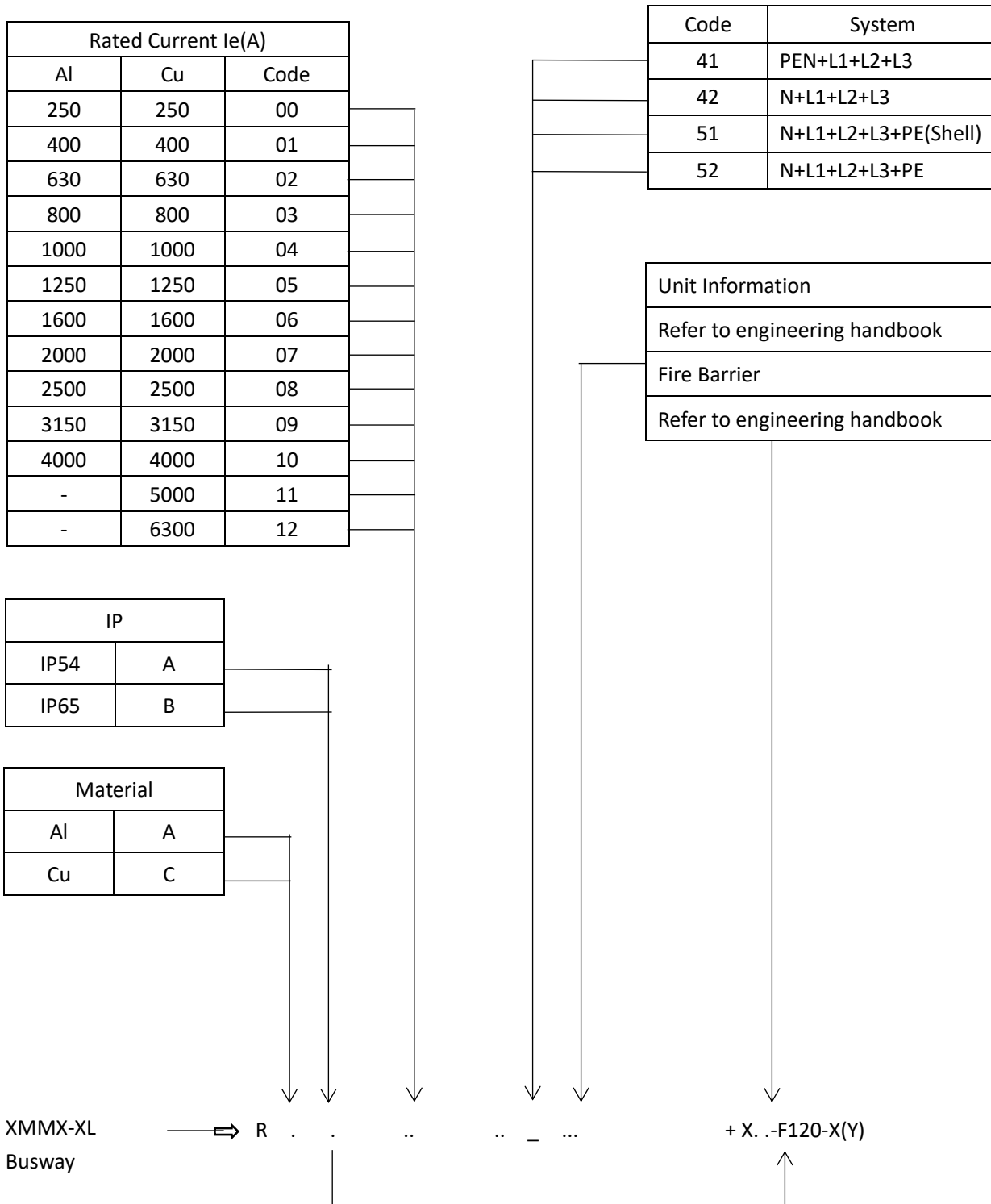
Current	Current short tolerance (I _{cw})kA	Current Short tolerance (I _{pk})kA	Resistance/m (mΩ)	Reactance/m (mΩ)	Impedence/m (mΩ)	Redution/m(V)	Dimensions	
							Width	Height
400	30	63	0.109	0.044	0.117	0.076	140	115
630	30	63	0.094	0.039	0.101	0.102	140	115
800	30	63	0.073	0.034	0.081	0.100	140	115
1000	30	63	0.060	0.032	0.073	0.091	140	130
1250	30	63	0.050	0.028	0.058	0.087	140	145
1600	65	143	0.036	0.023	0.043	0.079	140	180
2000	65	143	0.026	0.019	0.032	0.073	140	220
2500	65	143	0.016	0.012	0.020	0.071	140	270
3150	100	220	0.013	0.009	0.016	0.072	140	350
4000	100	220	0.010	0.005	0.011	0.071	140	440
5000	100	220	0.007	0.001	0.007	0.063	140	550
6300	100	220	0.004	0.001	0.004	0.071	140	720

XMMX-XL A List of parameters

Current	Current short tolerance (I _{cw})kA	Current short tollerance (I _{pk})kA	Resistance/m (mΩ)	Reactance/m (mΩ)	Impedence/m (mΩ)	Redution/m(V)	Dimensions	
							Width	Height
250	30	63	0.185	0.039	0.189	0.080	140	115
400	30	63	0.144	0.034	0.148	0.100	140	115
630	30	63	0.108	0.030	0.112	0.118	140	135
800	30	63	0.081	0.025	0.085	0.112	140	155
1000	30	63	0.072	0.023	0.076	0.125	140	180
1250	65	143	0.053	0.019	0.055	0.112	140	210
1600	65	143	0.041	0.015	0.043	0.112	140	250
2000	65	143	0.032	0.012	0.035	0.112	140	300
2500	100	220	0.026	0.009	0.027	0.102	140	390
3150	100	220	0.016	0.002	0.016	0.089	140	570
4000	100	220	0.013	0.002	0.013	0.080	140	720

Product Number

XMMX-XL busway system has a set of codes for basic units, including rated current, conductor configuration, protection grade ingress protection and conductor material. The customer can choose according to system codes below while ordering.



Tap-off Unit

Breaker	Code
MCCB	M
Fuse Switch	S
Fuse	F

System	Code
PEN+L1+L2+L3	41
N+L1+L2+L3	42
N+L1+L2+L3+PE(House)	51
N+L1+L2+L3+PE	52

Rated Current Ie(A)	Plugging Way	Code
0-25	Plug	1
125-250		2
250-630		3
630-1000	Bolt	4
1000-1600		5

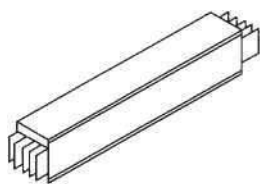
Code	Short Circuit Capacity
H	High
N	Normal
L	Low

Operation	Method
1	Inner
2	Handle
3	Rod

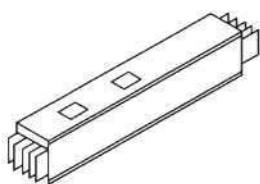
XT + Accessories

Code of busway function units

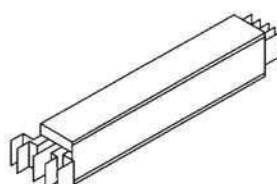
Code	A	An	S	LS	LC	TS	TC	SH
Name	Straight busway	Straight with socket	Top busway	L horizontal elbow	L vertical elbow	T horizontal tee	T vertical tee	Top access box
Code	BY	BX	P	SS	SC	ZS	ZC	Z
Name	Reduction joint	Feeder joint	Expansion joint	Horizontal cross	Vertical cross	Z horizontal elbow	Z vertical elbow	Terminal cover



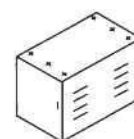
A



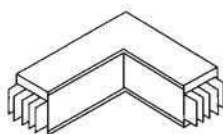
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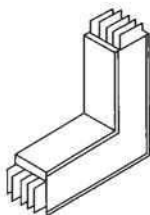
S



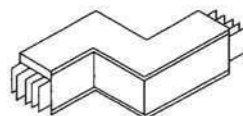
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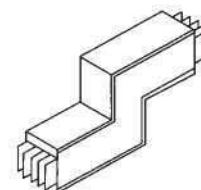
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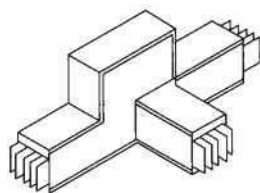
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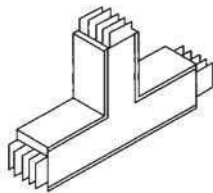
ZS



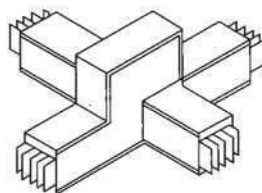
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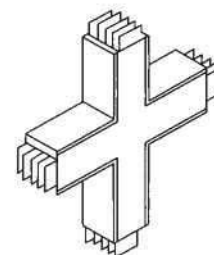
TS



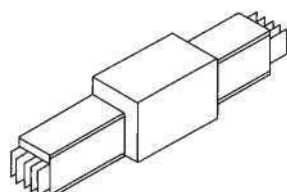
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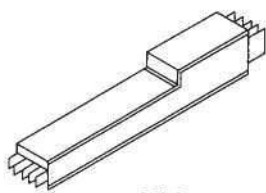
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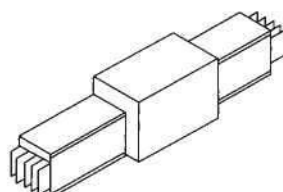
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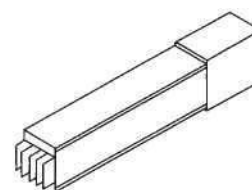
P



BY



BX



Z

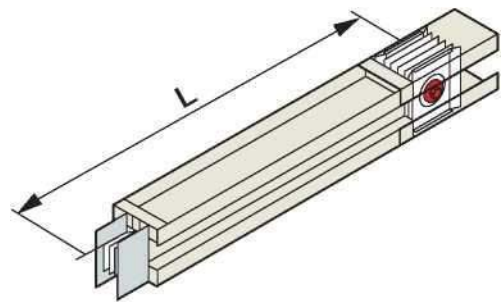
Straight trunking units

The busway system adopts totally enclosed structure with the max protection degree of IP65, making the system be applied in aggressive environment and allowed entire enclosure (100% more capacity than phase conductor) as earth system , which can guarantees system safety, shortest and reliable earth approach. When there is a high earthing fault, it can protect the entire system effectively. Straight runs without tap-off units are available with vertical and horizontal installation.

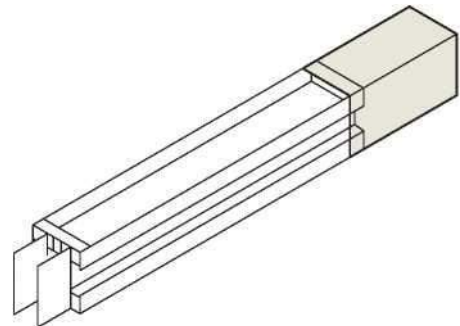
End cap

End cap is mounted in the end to avoid exposing of conductors. Remoued after it can continue to connect bar.

Standard Length	
XMMX-XL-C	1m
	2m
	3m
Optional Length	
XMMX-XL-C	0.39m-0.99
	1.01m-1.99
	2.01m-2.99

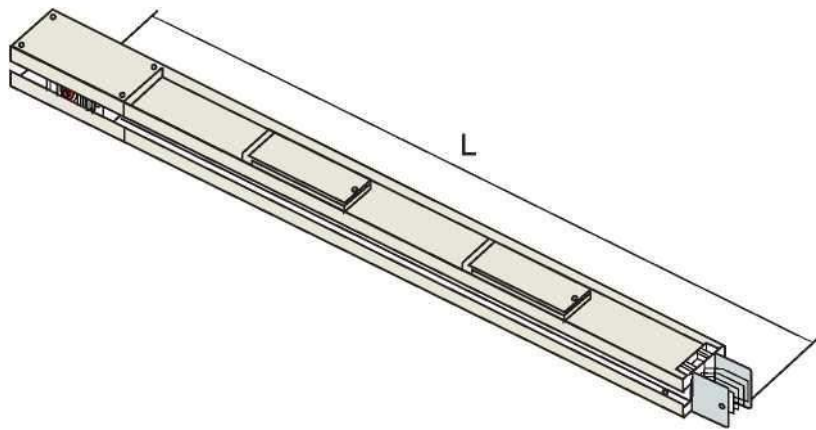


Standard Length	
XMMX-XL A	1m
	2m
	3m
	4m
Optional Length	
XMMX-XL A	0.39m-0.99
	1.01m-1.99
	2.01m-2.99
	3.01m-3.99



Straight trunking units

Straight trunking with tap-off units are available with vertical and horizontal installation. The tap-off point can be planned flexibly with double sides at the min span of 575mm. The 3m length straight unit can be planned with max 10 tap-off units. The users can reserve tap-off points in case of changing and increasing load equipment later according to the site condition. The special PE bar will be setted inside the tap-off opening for the system with house as PE to ensure the short curcuit current.

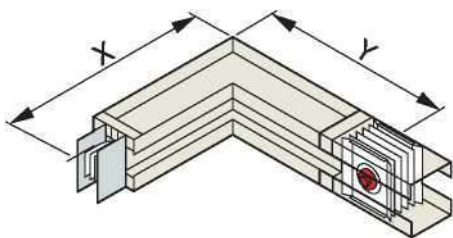


Standard Length	
XMMX-XL C	L=1、 2、 3m
Optional Length	
XMMX-XL C	L=0.9-2.99m

Standard Length	
XMMX-XL A	L=1、 2、 3、 4m
Optional Length	
XMMX-XL A	L=0.9-3.99m

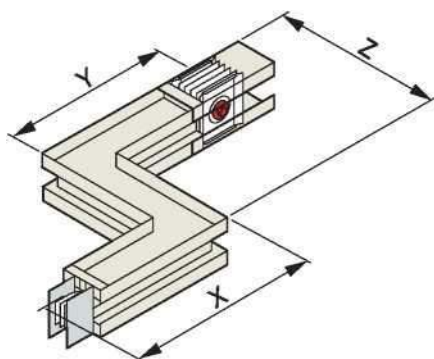
Junction units

In order to change the direction easily, RM busway system plans with multi standard junction units, and is available with non-standard planning according to site condition.



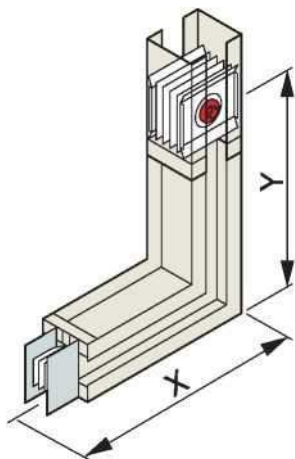
L Elbow(LL/LR)

Standard Length	
XMMX-XL A	X/Y=0.35m
Optional Length	
XMMX-XL A	X/Y=0.50m



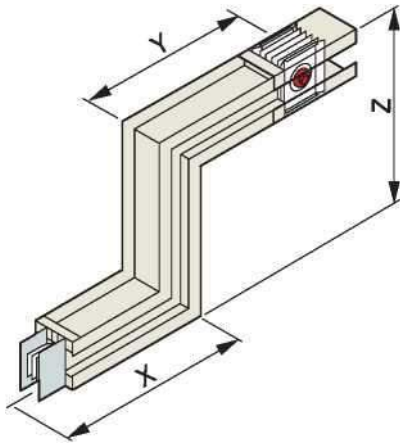
Z Unit(ZL/ZR)

Standard Length	
XMMX-XL A	X=0.35m Y=0.35m Z=0.4m
Optional Length	
XMMX-XL A	X=0.50m Y=0.30m Z=0.50m



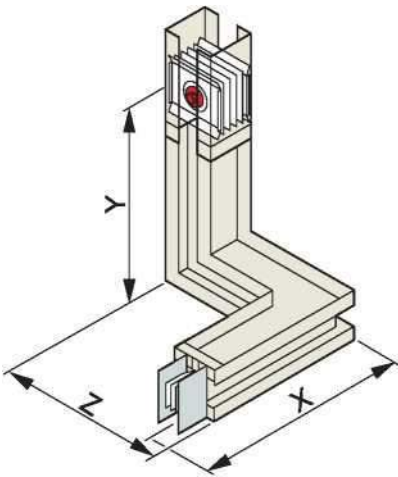
L Knee(LU/LD)

Standard Length	According to the current
XMMX-XL C ... 01-05	X/Y=0.35m
XMMX-XL C ... 06-08	X/Y=0.5m
XMMX-XL C ... 09-11	X/Y=0.8m
XMMX-XL C ... 12	X/Y=0.9m
Optional Length	According to the current
XMMX-XL A ... 01-04	X/Y=0.40m
XMMX-XL A ... 05-07	X/Y=0.50m
XMMX-XL A ... 08	X/Y=0.60m
XMMX-XL A ... 09-10	X/Y=0.80m



Z Unit(ZU/ZD)

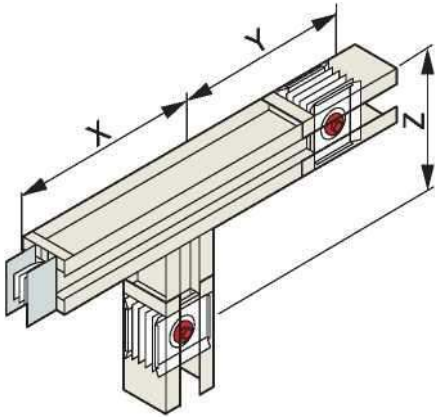
Standard Length	According to the current
XMMX-XL C ... 01-05	X/Y=0.35m Z=0.4m
XMMX-XL C ... 06-08	X/Y=0.5m Z=0.5m
XMMX-XL C ... 09-11	X/Y=0.8m Z=0.8m
XMMX-XL C ... 12	X/Y=0.9m Z=1m
Standard Length	According to the current
XMMX-XL A ... 01-04	X/Y/Z=0.40m
XMMX-XL A ... 05-07	X/Y/Z=0.50m
XMMX-XL A ... 08	X/Y/Z=0.60m
XMMX-XL A ... 09	X/Y/Z=0.80m
XMMX-XL A ... 10	X=0.80m Y=0.90m Z=0.80m



Offset Unit

Standard Length	According to the current
XMMX-XL C ... 01-05	X/Y=0.35m Z=0.4m
XMMX-XL C ... 06-08	X/Y=0.5m Y=0.35m Z=0.5m
XMMX-XL C ... 09-11	X/Y=0.8m Y=0.35m Z=0.8m
XMMX-XL C ... 12	X/Y=0.9m Y=0.35m Z=0.9m
Standard Length	According to the current
XMMX-XL A ... 01-04	X=0.50m Y/Z=0.40m
XMMX-XL A ... 05-07	X/Y/Z=0.50m
XMMX-XL A ... 08	X=0.50m Y/Z=0.60m
XMMX-XL A ... 09-10	X=0.50m Y/Z=0.80m

Standard Length	According to the current
XMMX-XL C ... 01-05	X/Y/Z=0.35m
XMMX-XL C ... 06-08	X/Y/Z=0.5m
XMMX-XL C ... 09-11	X=Y=0.6m Z=0.8m



XMMX-XL C ... 12	X=Y=0.6m Z=0.9m	current
T Unit(TU/TD)		0m
XMMX-XL A ... 05-08	X/Y/Z=0.50m	
XMMX-XL A ... 09-10	X/Y=0.60m Z=0.80m	



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