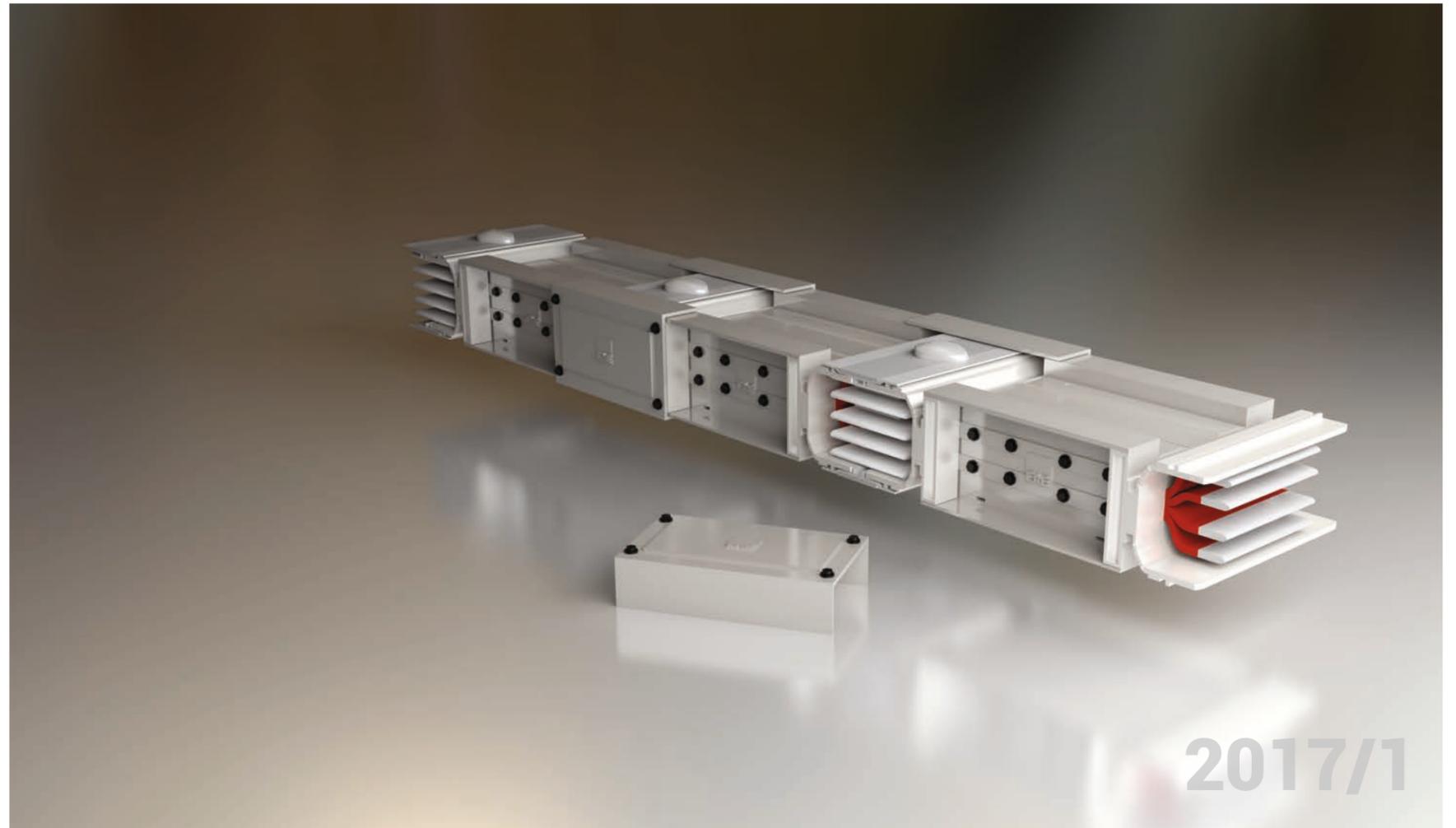


E-LINEDC-KX

Busbar Systems 700...18900A DC

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Catalogue 12-Eng. / Rev 09 2000 pcs. 23/11/2017
A.C.E.

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2017/1

E-LINEDC-KX

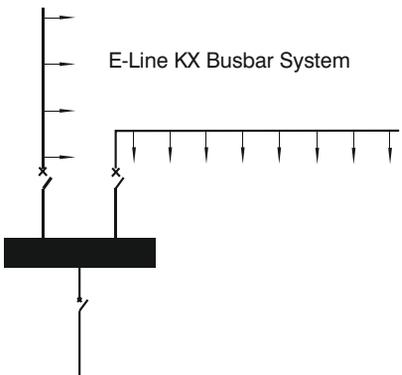
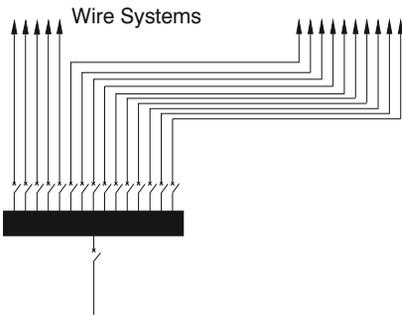




CONTENTS

►► E-LINE DC-KX

Introduction.....	2-3
Distribution & Horizontal Applications	4
Riser & Vertical Applications	5
Technical Characteristics	6-9
Order Code System	10
Straight Lengths.....	11
Elbows	12-15
Standard Components	16
Expansions	17-18
End Closer	19
Panel Connections.....	20-24
Transformer Connections & Flexible.....	25-29
Tap-off Boxes	30-35
Vertical & Horizontal Support Applications	36-37
Feeder Boxes	38-39
Fixing Elements.....	40-48
Joint Structure	49
Measuring a Special Length	50
Inserting "Make-up Section"	51
CE Conformity Certificate	52
Certificates	53
Product Specification	54



Transportation and distribution of electricity especially at high ampere ratings used to be provided by paralleling a number of large sized cables. In order to support these cables in the buildings, there were used a lot of cable trays, cable ladders, under-floor cable channels, etc. Applications of cables, such as, fixing to cable channels, branching, connecting, calculating distances between cables for heat dissipation, adjusting difference lengths, etc. need special expert workers, more time, more effort, which means more money. Even after all above difficulties and expense, the result is not efficient enough. For example, there is no flexibility in this solution.

In order to eliminate all above disadvantages, modern **BUSBAR SYSTEMS** are developed. **EAE** manufactures **E-LINE** busbar systems from 25A up to 18900A in order to convert above disadvantages to advantages. High technological, modular structured **E-LINE** busbar systems allow users to get safe energy how much and where ever they need by tap off boxes, easy and efficient planning, short installation time, better heat dissipation, automatic length adjustments, re-design / re-using capability, better electrical characteristics, etc. **E-LINE** busbar systems are designed and certified as per IEC 61439-6 standard.

Standard Prefabricated Structure

E-Line KX busbar system can be adapted to any kind of building structure using space-saving prefabricated components. All necessary components and fitting elements are manufactured items.

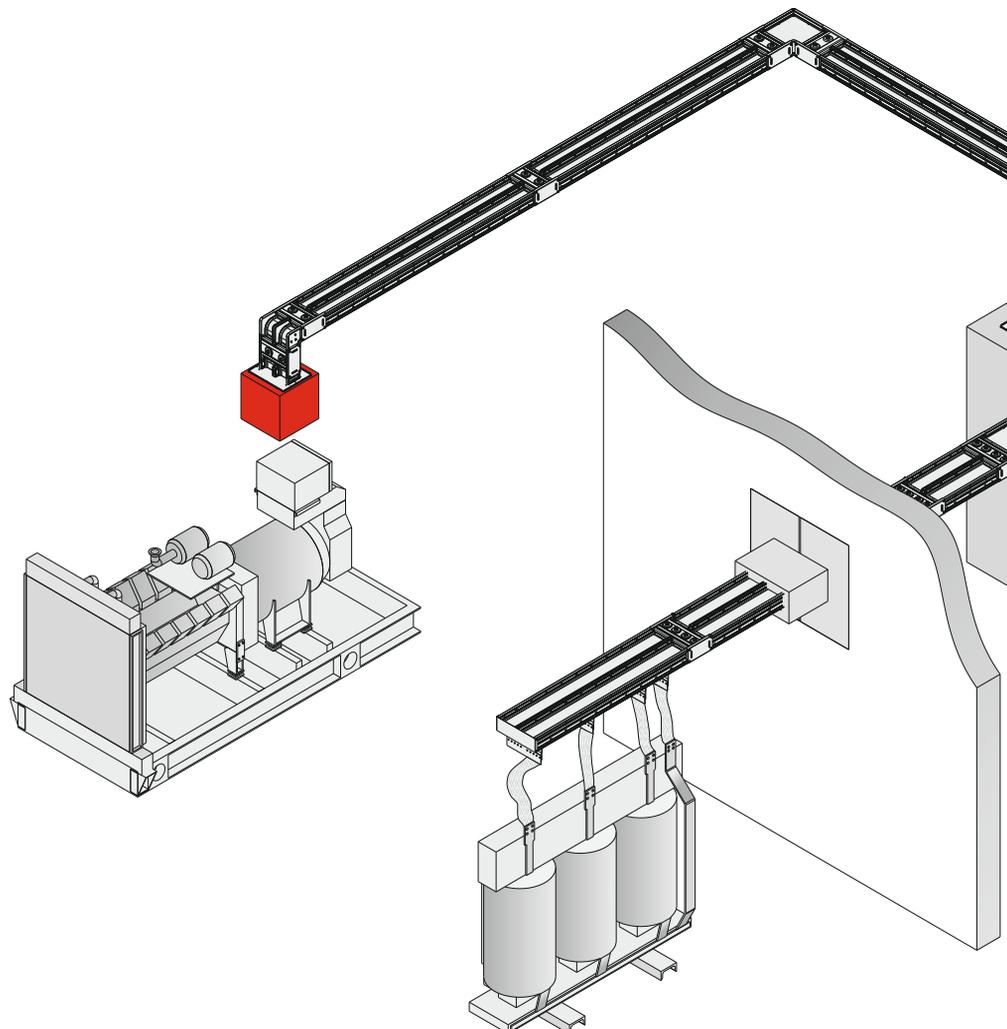
** Special components can be manufactured in one week on request.*

Rapid and Efficient Installation

It has been important to keep abreast with the rapidly improving building technologies in civil engineering, the installation time was we have lowered by reducing the number of bolts on the joint points of the busbar.

Flexible Power Supply

Tap-off points at short intervals make electrical power available in all locations; the power supply can be adapted to different production processes simply by relocating the tap-off unit.



►► Technical Features

Hybrid Insulation

The perfect design for high current busbar systems is the "compact structure" where tin plated and insulated, with B class polyester film and epoxy coated on conductors, are tightly placed into the extruded aluminium housing, (Figure 1).

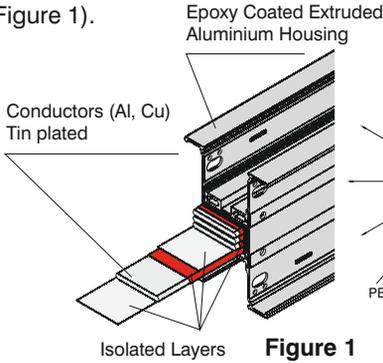


Figure 1

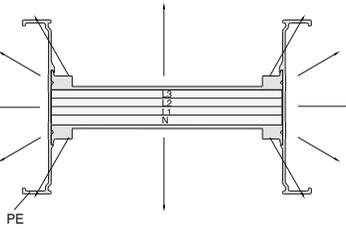


Figure 2

Heat Transfer

"In compact structure" there is no empty space filled with air and heat is easily transferred to the environment by the housing that works like a heat-sink (Figure 2).

Minimum Voltage Drop

In E-Line DC-KX, inductive reactance is very low due to closely placed conductors. The voltage drop comparison of compact and ventilated busbar that have same cross sectional area prove the importance of the compact structure.

High Short-Circuit Endurance

As there are no support points, in "compact structure", momentum levers are not formed (Figure 1). This feature ensures high short-circuit endurance, (Figure 5).

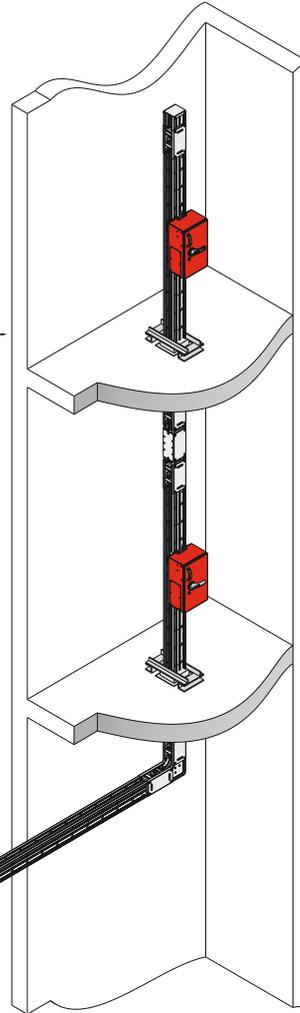


Figure 5

Easy and Safe Installation:

Due to alignment piece on the joint point, block joint element and busbar tray are aligned. This makes installation easier and correct on the right axes, (Figure 6).

One Bolt Joint Ensures Safety and Easy Installation

E-Line DC-KX Busbars are installed by tightening the "one bolt joint". Belleville spring washers on both ends of the bolt retains the original contact pressure, ensuring a more secure, reliable and maintenance-free joint.

E-Line DC-KX Busbar Systems are easily installed, (Figures 3-4).

*** The bolt is tightened to 83 Nm (60 lbf) using the torque spanner.**

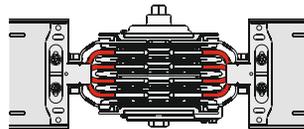
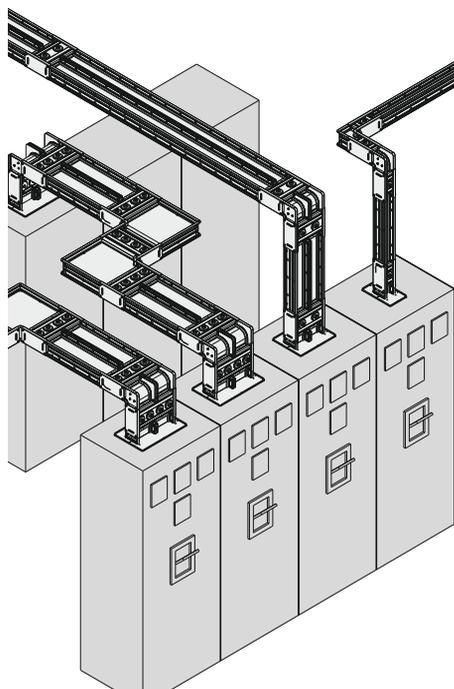


Figure 3

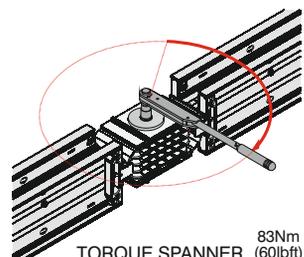


Figure 4



Figure 6

While designing an electrical distribution system with E-Line DC-KX a few approximate details will be necessary.

- Location, number, type and approximate ratings of loads,
- Transformer rates and short-circuit capacities, Utilization factor= α ,
- System coordination with other distribution system (heat, water, etc),
- Determining the route of E-Line DC-KX on layout, If necessary, coordination of E-Line DC-KX Busbar with E-Line KO-II runs,
- Deciding on suitable hanger types.

Utilization Factor (α)

Utilization factor (α) depends on the type and number of loads.

It is usually around 0.7 or lower. The utilization factor of a line that supplies electricity to motors and lighting systems is usually lower than 0.6.

It is as low as 0.30 in weld shops of car factories, it can be 1 in lines where only one big load is supplied.

Voltage Drop

For practical voltage drop calculation, necessary values, formula and easy calculation methods are given on the technical characteristics table on pages 6-9.

Rated Current

The current is calculated using the following equation:

$$I_B = \frac{P \cdot \alpha}{U}$$

I_B = Operation current (A)

P = Installed load (W)

α = Utilization factor

U = Supply voltage (V)

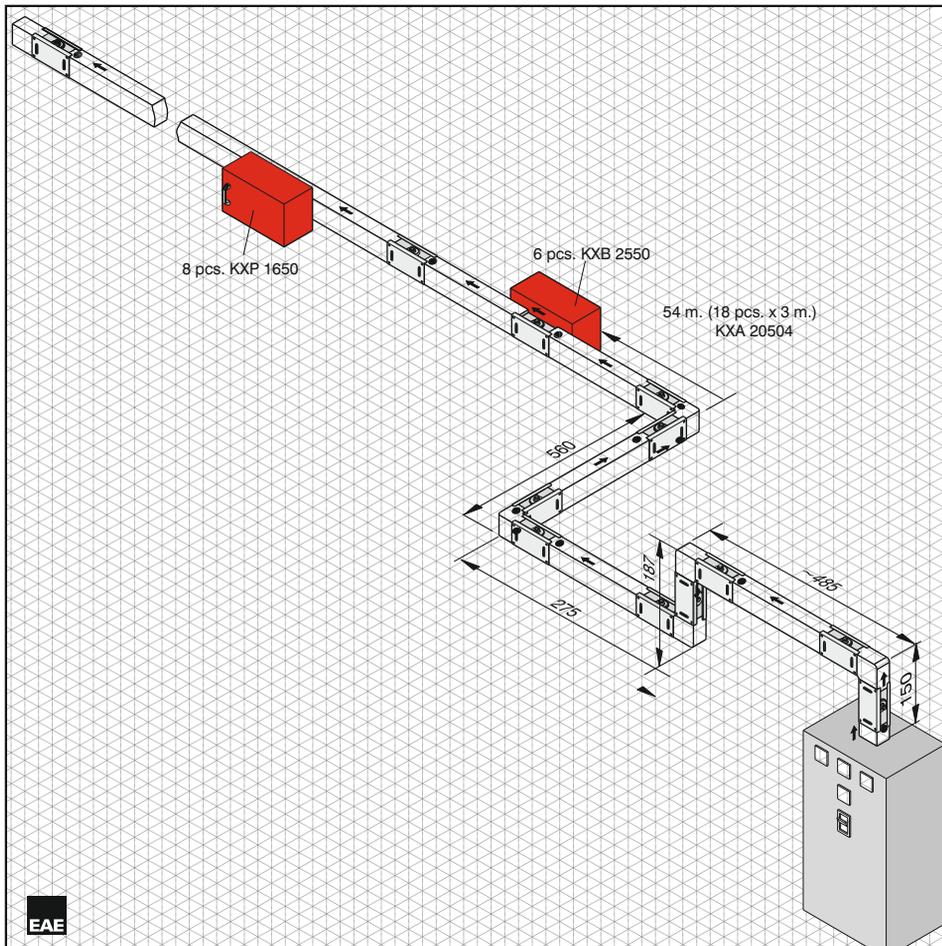
- Busbar current rating is chosen as equal to or higher than the calculated I_B current.
- After the voltage drop calculation if the chosen current rate is not convenient, a higher rating is chosen.

Short-Circuit

Tested short-circuit capacities are given on technical characteristics table on pages 6-9.

Busbar Installation Plan

Our distributor's project & design departments will help you for preparing the installation plans on request.



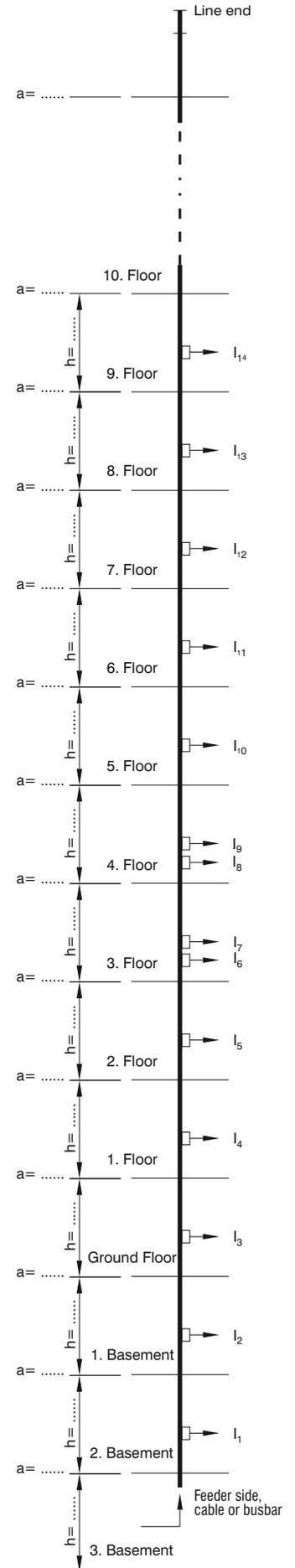
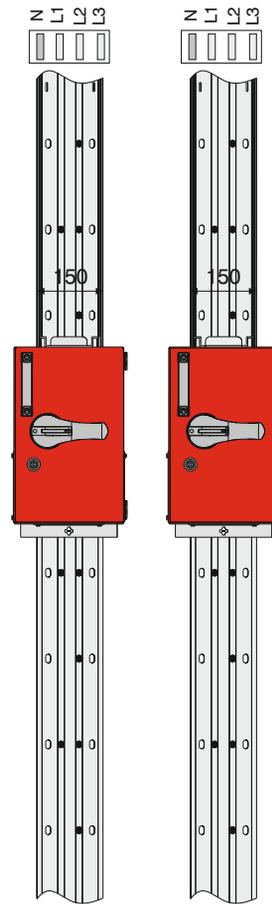
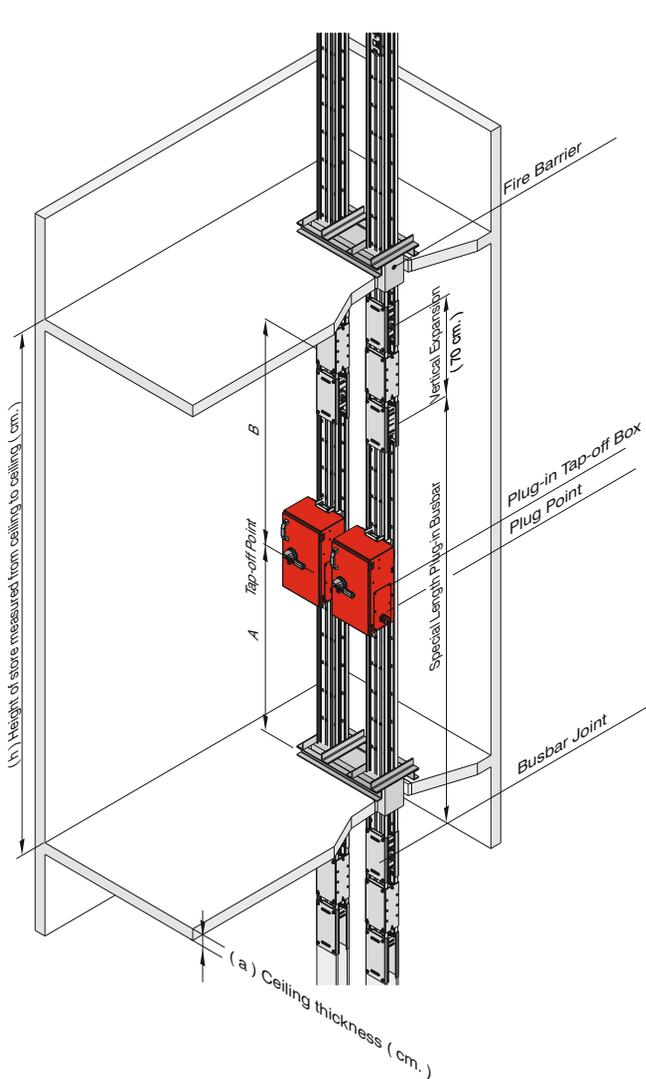
Components List			
Item	Components	Quantity	
1	KXA 20504 - STD-DC1 Busbar (20 x 3m.)	60 m.	
2	KXA 20504 - D-DC1 Downwards Elbow	2 pcs.	
3	KXA 20504 - R-DC1 Right Elbow	1 pc.	
4	KXA 20504 - U-DC1 Upwards Elbow	1 pc.	
5	KXA 20504 - L-DC1 Left Elbow	1 pc.	
6	KXA 20504 - P11-DC1 Panel Connection	1 pc.	
7	KXA 20504 - S10-DC1 End Closer	1 pc.	
8	KXA 20504 - X95-DC1 Special Straight Length	1 pc.	
8	KXA 20504 - X120-DC1 Special Straight Length	1 pc.	
9	KXA 20504 - X122-DC1 Special Straight Length	1 pc.	
10	KXA 20504 - X200-DC1 Special Straight Length	1 pc.	
11	KXA 20504 - X174-DC1 Special Straight Length	1 pc.	
12	KXP 1650 Tap-off Box	8 pcs.	
13	KXB 2550 Tap-off Box	6 pcs.	

Company	: Demir Makine
Project	: II.OSB Tesisleri
Project No	: 1128

Prepared by	Name : Abdullah ELDELEKLI
	Date : 02 / 01 / 2009
	Signature:

As each building's structure is different than the other for vertical applications of **E-Line DC-KX** special projects has to be designed.

The details on this page briefly explain the necessary information for drawing a vertical application project.



Project Design

The details below should be sent to our Project & Design department.

- Location and dimensions of the floor penetration where busbar will be installed.
- Number, height and ceiling thickness of storeys. (a=..., h=...)
- Connected load for each storey.
- Supply type of the vertical line (busbar or cable).

Please send the information to us by fax or e-mail with a sample drawing in Figure 1.

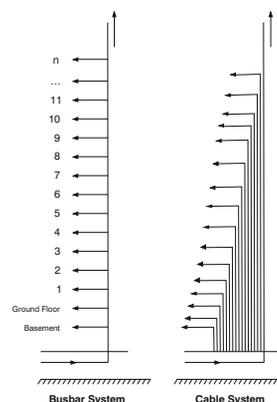


Figure 1

Aluminium Conductor (Al)

DC Direct Current Busbar Properties

Standards	IEC 61439-6, TS EN 61439-6, IEC 61439-1, TS EN 61439-1		
Rated Isolation Voltage	U _i	V	1000 at Cat IV
Max. Rated Operational Voltage	U _e	V _{dc}	1000
Rated Impulse Withstand Voltage	U _{imp}	kV	12
Frequency	f	Hz	0
Protection Degree	IP55/65		
External Mechanical Impacts (IK Code)*	Bolt-on Busbar IK09, Plug-in Busbar IK08		
Protection for Safety	Basic Protection (HD 60364-4-41, Clause A1)		

DC1 Single Busbar Pole Current	I _{dc}	A	700	875	1100	1400	1750	2170	2350	2800	3500	4350	4350	5475	5550	7000	8700
Busbar Code	DC1		04	05	06	08	10	12	14	17	20	25	27	32	33	40	50
Conductor			(6x25)	(6x30)	(6x40)	(6x55)	(6x80)	(6x110)	(6x125)	(6x160)	(6x200)	(6x110)	(6x250)	(6x140)	(6x160)	(6x200)	(6x200)
Number of conductors			2	2	2	2	2	2	2	2	2	2 + 2	2	2 + 2	2 + 2	2 + 2	2 + 2 + 2
Total Cross Section		mm ²	300	360	480	660	960	1320	1500	1920	2440	2640	3000	3360	3840	4800	7200
Conductor			(6x25)	(6x30)	(6x40)	(6x55)	(6x80)	(6x110)	(6x125)	(6x160)	(6x200)	(6x110)	(6x250)	(6x140)	(6x160)	(6x200)	(6x200)
Number of conductors			2	2	2	2	2	2	2	2	2	2 + 2	2	2 + 2	2 + 2	2 + 2	2 + 2 + 2
Total Cross Section		mm ²	300	360	480	660	960	1320	1500	1920	2440	2640	3000	3360	3840	4800	7200
Resistance 20 °C	R ₂₀	mΩ/m	0,0985	0,0815	0,0605	0,0440	0,0305	0,0220	0,0200	0,0155	0,0130	0,0110	0,0105	0,0090	0,0075	0,0060	0,0040
Resistance at Full Load	R ₁	mΩ/m	0,1290	0,1125	0,0795	0,0580	0,0400	0,0290	0,0260	0,0205	0,0170	0,0145	0,0140	0,0120	0,0100	0,0080	0,0050
Busbar Weight		kg/m	7,0	7,4	7,9	9,2	11,3	13,9	15,2	18,3	21,7	27,3	28,5	32,5	35,9	42,9	63,9

DC2 Plural Busbar Pole Current	I _{dc}	A	1200	1500	1890	2400	3000	3750	4050	4800	6000	7500	7500	9450	9600	12000	15000
Busbar Code	DC2		04	05	06	08	10	12	14	17	20	25	27	32	33	40	50
Conductor			(6x25)	(6x30)	(6x40)	(6x55)	(6x80)	(6x110)	(6x125)	(6x160)	(6x200)	(6x110)	(6x250)	(6x140)	(6x160)	(6x200)	(6x200)
Number of conductors			3	3	3	3	3	3	3	3	3	3 + 3	3	3 + 3	3 + 3	3 + 3	3 + 3 + 3
Total Cross Section		mm ²	450	540	720	990	1440	1980	2250	2880	3660	3960	4500	5040	5760	7200	10800
Conductor			(6x25)	(6x30)	(6x40)	(6x55)	(6x80)	(6x110)	(6x125)	(6x160)	(6x200)	(6x110)	(6x250)	(6x140)	(6x160)	(6x200)	(6x200)
Number of conductors			3	3	3	3	3	3	3	3	3	3 + 3	3	3 + 3	3 + 3	3 + 3	3 + 3 + 3
Total Cross Section		mm ²	450	540	720	990	1440	1980	2250	2880	3660	3960	4500	5040	5760	7200	10800
Resistance 20 °C	R ₂₀	mΩ/m	0,0657	0,0543	0,0403	0,0293	0,0203	0,0147	0,0133	0,0103	0,0087	0,0073	0,0070	0,0060	0,0050	0,0040	0,0027
Resistance at Full Load	R ₁	mΩ/m	0,0860	0,0750	0,0530	0,0387	0,0267	0,0193	0,0173	0,0137	0,0113	0,0097	0,0093	0,0080	0,0067	0,0053	0,0033
Busbar Weight (+ pole or - pole)		kg/m	6,6	6,9	7,2	8,2	9,8	11,9	12,9	15,5	18,1	23,4	22,8	27,5	30,2	35,8	53,2

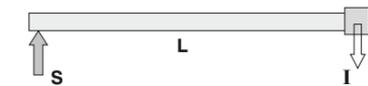
DC - KXA Busbar Values																	
Rated Short-time Withstand rms Current 1s (pole-pole)	I _{cw}	kA	16	16	25	35	50	60	60	80	80	100	80	100	120	120	120
Rated Peak Withstand Current (pole-pole)	I _p	kA	32	32	52,5	73,5	105	132	132	176	176	220	176	220	264	264	264
Rated Short-time Withstand rms Current 1s (Pole-Earth)	I _{cw}	kA	9,6	9,6	15	21	30	36	36	48	48	60	48	60	72	72	72
Rated Peak Withstand Current for (Pole-Earth)	I _p	kA	16,32	16,32	30	44,1	63	75,6	75,6	100,8	100,8	132	100,8	132	158,4	158,4	158,4
Housing Resistance at 20 °C	R _h	mΩ/m	0,0380	0,0330	0,0280	0,0240	0,0280	0,0240	0,0260	0,0330	0,0350	0,0180	0,0200	0,0260	0,0230	0,0180	0,0150
Housing Cross Section (Aluminium)		mm ²	1449	1509	1686	1788	1894	2050	2128	2314	2518	3912	2764	4224	4411	4848	7128
Extra PE Earth or Isoleted Earth Conductor		mm ²	150	180	240	330	480	660	750	960	1220	1320	1500	1680	1920	2400	3600
Extra PE Earth or Isoleted Earth Conductor Weight		kg/m	0,4	0,5	0,7	1	1,5	2	2,3	2,8	3,6	3,9	5,7	5	5,7	7,1	10,7

Voltage Drop Calculation

Generally Voltage drop of a busbar system can be calculated with the following formula.

$$\Delta U = 2 \cdot R_1 \cdot I_{dc} \cdot L \quad [V]$$

- ΔU = Voltage Drop (V)
- R₁ = Resistance at I_{dc} Current (mΩ/m)
- I_{dc} = DC Current (A)
- L = One Line Length (m)



S = Supply Point

Copper Conductor (Cu)

DC Direct Current Busbar Properties

Standards	IEC 61439-6, TS EN 61439-6, IEC 61439-1, TS EN 61439-1		
Rated Isolation Voltage	U _i	V	1000
Max. Rated Operational Voltage	U _e	V _{dc}	1000
Rated Impulse Withstand Voltage	U _{imp}	kV	12
Frequency	f	Hz	0
Protection Degree	IP55/65		
External Mechanical Impacts (IK Code)*	Bolt-on Busbar IK09, Plug-in Busbar IK08		
Protection for Safety	Basic Protection (HD 60364-4-41, Clause A1)		

DC1 Single Busbar Pole Current	I _{dc}	A	950	1125	1400	1750	2170	2350	2800	3500	3900	4350	3500	4350	5750	6250	7000	7360	8700	11000	
Busbar Code	DC1		05	06	08	10	12	14	17	23	21	25	22	26	32	36	40	43	50	63	
Conductor			(6x25)	(6x30)	(6x40)	(6x55)	(6x70)	(6x80)	(6x95)	(6x125)	(6,1x160)	(6x200)	(6x55)	(6x80)	(6x110)	(6x125)	(6x140)	(6,1x160)	(6x200)	(6x200)	
Number of conductors			2	2	2	2	2	2	2	2	2	2	2 + 2	2 + 2	2 + 2	2 + 2	2 + 2	2 + 2	2 + 2	2 + 2	2 + 2 + 2
Total Cross Section		mm ²	300	360	480	660	840	960	1140	1500	1952	2400	1320	1920	2640	3000	3360	3904	4800	7200	
Conductor			(6x25)	(6x30)	(6x40)	(6x55)	(6x70)	(6x80)	(6x95)	(6x125)	(6,1x160)	(6x200)	(6x55)	(6x80)	(6x110)	(6x125)	(6x140)	(6,1x160)	(6x200)	(6x200)	
Number of conductors			2	2	2	2	2	2	2	2	2	2	2 + 2	2 + 2	2 + 2	2 + 2	2 + 2	2 + 2	2 + 2	2 + 2	2 + 2 + 2
Total Cross Section		mm ²	300	360	480	660	840	960	1140	1500	1952	2400	1320	1920	2640	3000	3360	3904	4800	7200	
Resistance 20 °C	R ₂₀	mΩ/m	0,0590	0,0485	0,0360	0,0265	0,0205	0,0180	0,0155	0,0110	0,0085	0,0070	0,0125	0,0090	0,0065	0,0060	0,0050	0,0045	0,0035	0,0025	
Resistance at Full Load	R ₁	mΩ/m	0,0810	0,0685	0,0485	0,0355	0,0285	0,0250	0,0220	0,0165	0,0130	0,0105	0,0180	0,0125	0,0095	0,0080	0,0075	0,0060	0,0050	0,0030	
Busbar Weight		kg/m	10,7	11,9	14,4	18,3	22,0	24,5	27,7	36,2	44,6	54,7	35,9	48,5	63,5	71,1	78,6	88,6	108,8	162,8	

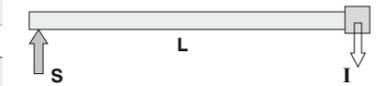
DC2 Plural Busbar Pole Current	I _{dc}	A	1650	1950	2400	3000	3750	4050	4800	6000	6750	7500	6000	7500	9900	10800	12000	12750	15000	18900	
Busbar Code	DC2		05	06	08	10	12	14	17	23	21	25	22	26	32	36	40	43	50	63	
Conductor			(6x25)	(6x30)	(6x40)	(6x55)	(6x70)	(6x80)	(6x95)	(6x125)	(6,1x160)	(6x200)	(6x55)	(6x80)	(6x110)	(6x125)	(6x140)	(6,1x160)	(6x200)	(6x200)	
Number of conductors			3	3	3	3	3	3	3	3	3	3	3 + 3	3 + 3	3 + 3	3 + 3	3 + 3	3 + 3	3 + 3	3 + 3	3 + 3 + 3
Total Cross Section		mm ²	450	540	720	990	1260	1440	1710	2250	2928	3600	1980	2880	3960	4500	5040	5760	7200	10800	
Conductor			(6x25)	(6x30)	(6x40)	(6x55)	(6x70)	(6x80)	(6x95)	(6x125)	(6,1x160)	(6x200)	(6x55)	(6x80)	(6x110)	(6x125)	(6x140)	(6,1x160)	(6x200)	(6x200)	
Number of conductors			3	3	3	3	3	3	3	3	3	3	3 + 3	3 + 3	3 + 3	3 + 3	3 + 3	3 + 3	3 + 3	3 + 3	3 + 3 + 3
Total Cross Section		mm ²	450	540	720	990	1260	1440	1710	2250	2928	3600	1980	2880	3960	4500	5040	5760	7200	10800	
Resistance 20 °C	R ₂₀	mΩ/m	0,0393	0,0323	0,0240	0,0177	0,0137	0,0120	0,0103	0,0073	0,0057	0,0047	0,0083	0,0060	0,0043	0,0040	0,0033	0,0030	0,0023	0,0017	
Resistance at Full Load	R ₁	mΩ/m	0,0540	0,0457	0,0323	0,0237	0,0190	0,0167	0,0147	0,0110	0,0087	0,0070	0,0120	0,0083	0,0063	0,0053	0,0050	0,0040	0,0033	0,0020	
Busbar Weight (+ pole or - pole)		kg/m	9,2	10,3	12,0	15,1	17,9	19,8	16,9	29,2	35,1	42,9	29,4	39,1	50,5	56,4	62,0	69,7	85,2	127,4	

Voltage Drop Calculation

Generally Voltage drop of a busbar system can be calculated with the following formula.

$$\Delta U = 2 \cdot R_1 \cdot I_{dc} \cdot L \quad [V]$$

- ΔU = Voltage Drop (V)
- R₁ = Resistance at I_{dc} Current (mΩ/m)
- I_{dc} = DC Current (A)
- L = One Line Length (m)

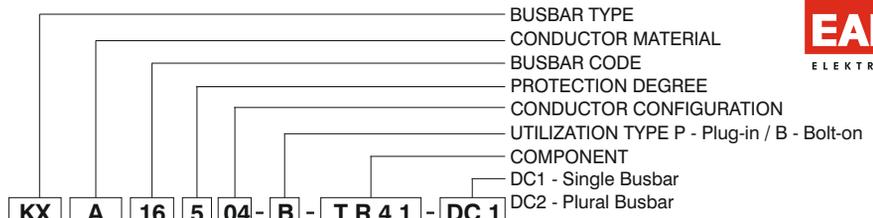


S = Supply Point

DC - KXC Busbar Values

Rated Short-time Withstand rms Current 1s (pole-pole)	I _{cw}	kA	24	24	40	50	60	60	80	80	100	100	70	100	120	120	120	120	120	120
Rated Peak Withstand Current (pole-pole)	I _p	kA	50,4	50,4	84	105	132	132	176	176	220	220	154	220	264	264	264	264	264	264
Rated Short-time Withstand rms Current 1s (Pole-Earth)	I _{cw}	kA	14,4	14,4	24	30	36	36	48	48	60	60	42	60	72	72	72	72	72	72
Rated Peak Withstand Current for (Pole-Earth)	I _p	kA	28,8	28,8	50,4	63	75,6	75,6	100,8	100,8	132	132	88,2	132	158,4	158,4	158,4	158,4	158,4	158,4
Housing Resistance at 20 °C	R _h	mΩ/m	0,0360	0,0340	0,0270	0,0290	0,0240	0,0280	0,0280	0,0390	0,0340	0,0310	0,0190	0,0220	0,0180	0,0230	0,0210	0,0210	0,0210	0,0110
Housing Cross Section (Aluminium)		mm ²	1449	1509	1686	1788	1842	1894	2050	2128	2314	2518	3340	3600	3912	4068	4224	4411	4848	7128
Extra PE Earth or Isoleted Earth Conductor		mm ²	150	180	240	330	420	480	570	750	976	1200	660	960	1320	1500	1680	1920	2400	3600
Extra PE Earth or Isoleted Earth Conductor Weight		kg/m	1,5	1,6	2,4	3,2	4,1	4,7	10,8	7	9,5	11,8	6,5	9,4	13	14,7	16,6	18,9	23,6	35,4

►► Order Code System



Busbar Type

Aluminium (Al) **A**
Copper (Cu) **C** CONDUCTOR MATERIAL

KXA - Al Conductor	KXC - Cu Conductor	Conductor Size
Busbar Code	Busbar Code	
04	05	6x25
05	06	6x30
06	08	6x40
08	10	6x55
-	12	6x70
10	14	6x80
-	17	6x95
12	-	6x110
14	23	6x125
17	-	6x160
-	21	6,1x160
20	25	6x200
27	-	6x250
-	22	2(6x55)
-	26	2(6x80)
25	32	2(6x110)
-	36	2(6x125)
32	40	2(6x140)
33	-	2(6x160)
-	43	2(6,1 x160)
40	50	2(6x200)
50	63	3(6x200)

(*) Bolt-on tap-off box can not be used on the joints of mentioned ratings of busbars. Plug-in points can be **at one side only**.

BUSBAR CODE

IP 55 **5** PROTECTION DEGREE

Conductor Configuration

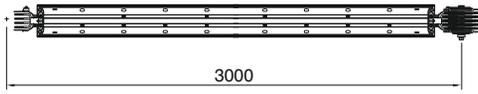
DC1- Single Busbar					DC2- Plural Busbar						
Code	Pole -	Pole +	PE	CPE	PE (Housing)	Code	Pole -	Pole +	PE	CPE	PE (Housing)
04	✓	✓	✓	✓	✓	03	✓	✓	✓	✓	✓
05	✓	✓	✓	✓	✓	05	✓	✓	✓	✓	✓
09	✓	✓	✓	✓	✓	09	✓	✓	✓	✓	✓

*TYPE	Utilization Type
(B) Bolt-on	Energy is supplied from the joints.
(P) Plug-in	Energy is supplied from the joints and the plug-in points.

COMPONENTS

Standard Length	STD
Special Length	X
Upwards Elbow	U
Downwards Elbow	D
Right Elbow	R
Left Elbow	L
Left Horizontal Offset	LH
Right Horizontal Offset	RH
Upwards Vertical Offset	UV
Downwards Vertical Offset	DV
Upwards Left Combined Offset	KUL
Upwards Right Combined Offset	KUR
Downwards Left Combined Offset	KDL
Downwards Right Combined Offset	KDR
Left Upwards Combined Offset	KLU
Right Upwards Combined Offset	KRU
Left Downwards Combined Offset	KLD
Right Downwards Combined Offset	KRD
End Closer	S
Reduction	RD
Left Side Feeder "T"	TYL
Right Side Feeder "T"	TYR
Central Feeder "T"	TO
Horizontal Expansion	YDT
Vertical Expansion	DDT
Phase Transposition Module	FDM
Panel Connection	P10
Panel Connection	P11
Upwards Panel Connection	PU20
Upwards Panel Connection	PU21
Downwards Panel Connection	PD20
Downwards Panel Connection	PD21
Right Panel Connection	PR30
Right Panel Connection	PR31
Left Panel Connection	PL30
Left Panel Connection	PL31
Panel Connection	P40
Panel Connection	P41
Transformer Connection	TR11
Upwards Transformer Connection	TU21
Downwards Transformer Connection	TD21
Transformer Connection	TR31
Transformer Connection	TR41
Right Transformer Connection	TR51
Left Transformer Connection	TL51
Transformer Connection	TR61
Transformer Connection	TR71
Feeder Box	B10
Feeder Box	B11
Central Feeder Box	BO
Flexible	F

Bolt-on

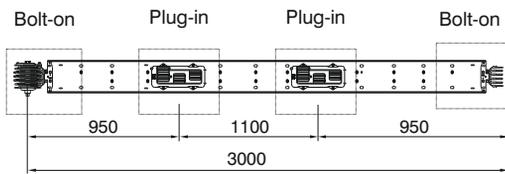


Electrical energy up to 1000 A can be supplied from the joints of bolt-on type by bolt-on tap-off boxes.

Note:

Busbar energy should be turned off, before installing bolt-on type tap-off boxes.

Plug-in



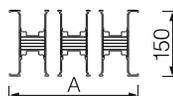
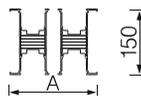
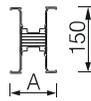
Electrical energy up to 1000 A can be supplied from the joints and up to 630 A can be supplied from the plus.

Note:

Please, determine number and side of plug-in points (single or double side).

Table For Outer Dimension of Busbars

KXA - Al Conductor	KXC - Cu Conductor	A
Busbar Code	Busbar Code	(mm)
*04	*05	77,5
*05	*06	82,5
*06	*08	91
*08	*10	106
-	12	121
10	14	131
-	17	146
12	-	161
14	23	176
17	-	211
-	21	211
20	25	251
27	-	301
-	22	202
-	26	252
25	32	312
-	36	342
32	40	372
33	-	412
-	43	412
40	50	492
50	63	732



Important Notice for the Tap-off box use;

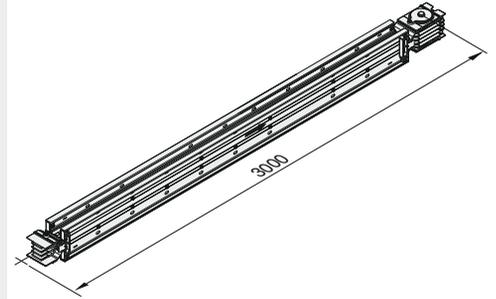
*It is not possible to install tap-off box at joint side for KXA 04,KXA 05,KXA 06,KXA 08, KXC 05,KXC 06,KXC 08 and KXC 10. KXA 04,05,KXA 06,KXA 08, KXC 05,KXC 06,KXC 08 and KXC 10 busbar range may have plug-in windows at one side only. It is highly recommended to consider these points in your project designs.

Bolt-on Standard - STD Straight Length Busbar

Sample Order:

4350A DC, Aluminium, Bolt-on, IP 55, 4 conductors

KXA 25504 - B - STD - DC1



Applications:

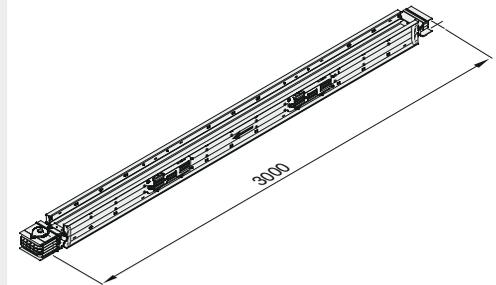
- As feeder or sub-feeder line,
- Where a load has to be supplied from the busbar.

Plug-in Standard - STD Straight Length Busbar

Sample Order:

2170A DC, Copper, Plug-in, IP 55, 4 conductors

KXC 12504 - P - STD - DC1



Applications:

- In application of bolt-on
- As vertical feeder line high rise buildings
- For frequent energy supply
- If continuous energy needed, while tap-offs installed.

Special Straight Length



Special Straight Length in (cm)

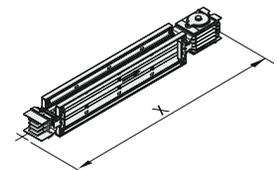
Sample Order:

4350A DC, Copper, Bolt-on, IP 55, 4 conductors, 147cm

KXC 25504 - B - X - 147 - DC1

Note:

Bolt-on Minimum Length = 35cm
Plug-in Minimum Length = 100cm

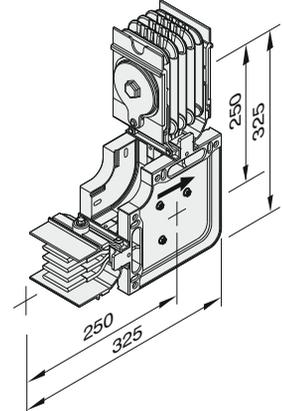


Upwards Elbow - U

Sample Order:

5750A DC, Copper, Bolt-on, IP 55,
4 conductors

KXC 32504 - B - U - DC1

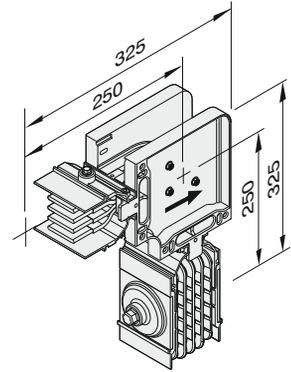


Downwards Elbow - D

Sample Order:

5750A DC, Copper, Bolt-on, IP 55,
4 conductors

KXC 32504 - B - D - DC1

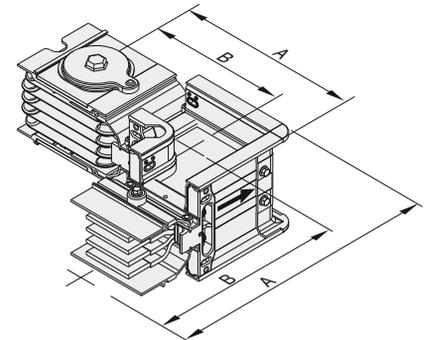


Left Elbow - L

Sample Order:

3900A DC, Copper, Bolt-on, IP 55,
4 conductors

KXC 21504 - B - L - DC1

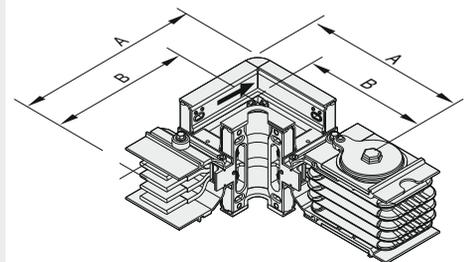


Right Elbow - R

Sample Order:

3500 A, Aluminium, Bolt-on, IP 55,
4 conductors

KXA 20504 - B - R - DC1



KXA - Al Conductor	KXC - Cu Conductor	A	B
Busbar Code	Busbar Code	(mm)	(mm)
04	05	252	214
05	06	257	217
06	08	267	222
08	10	282	229
-	12	297	236
10	14	307	241
-	17	322	249
12	-	337	256
14	23	352	264
17	-	387	281
-	21	387	281
20	25	427	301
27	-	477	326
-	22	377	276
-	26	427	301
25	32	487	331
-	36	517	346
32	40	547	361
33	-	587	381
-	43	587	381
40	50	667	421
50	63	907	541

■ Special left or right elbows between 90° and 180° can be manufactured upon request.
 ■ The dimensions given above are minimum values. ■ Please call us for non-standard components.

Left Horizontal Offset - LH

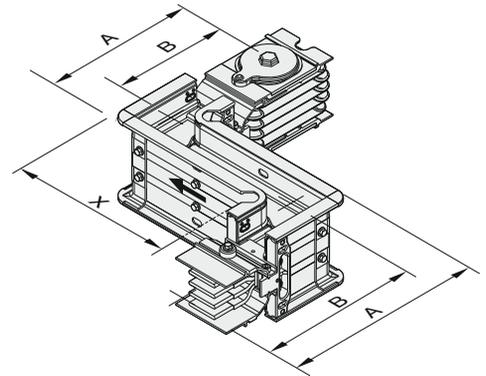
Sample Order:

X=60 cm, 5750 A DC, Copper Bolton, IP 55, 4 conductors

KXC 32504-B-LH60 - LH

Note:

X=min:28 cm,
max: *Please see table.
Used,if two horizontal elbows
can not fit.



Right Horizontal Offset - RH

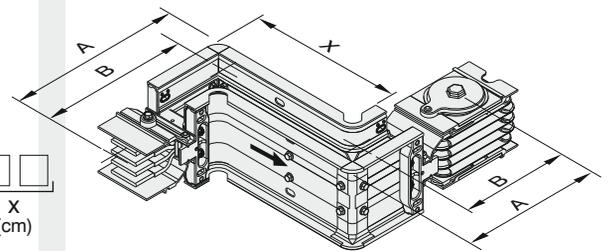
Sample Order:

X=60 cm, 5750 A DC, Copper Bolton, IP 55, 4 conductors

KXC 32504-B-RH60 - RH

Note:

X=min:28 cm,
max: *Please see table.
Used,if two horizontal elbows
can not fit.



Upwards Vertical Offset - UV

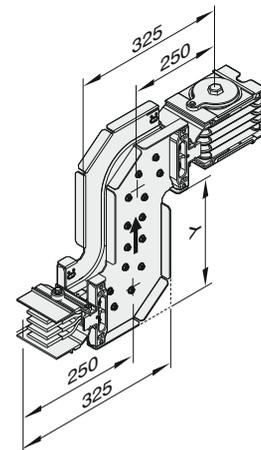
Sample Order:

Y=25 cm, 3500 A DC, Aluminium Bolt-on, IP 55, 5 conductors

KXA 20505-B-UV25-DC1- UV

Note:

Y=min:25 cm max:49 cm



Downwards Vertical Offset - DV

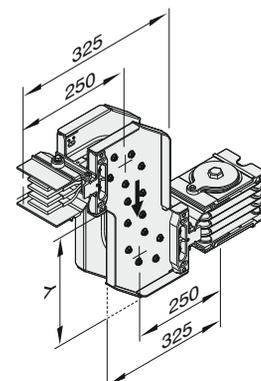
Sample Order:

Y=25 cm, 3500 A DC, Aluminium Bolt-on, IP 55, 5 conductors

KXA 20505-B-DV25-DC1- DV

Note:

Y=min:25 cm max:49 cm



KXA - Al Conductor	KXC - Cu Conductor	A	B	X _{max}
Busbar Code	Busbar Code	(mm)	(mm)	(mm)
04	05	252	214	427
05	06	257	217	432
06	08	267	222	442
08	10	282	229	457
-	12	297	236	472
10	14	307	241	482
-	17	322	249	497
12	-	337	256	512
14	23	352	264	527
17	-	387	281	562
-	21	387	281	562
20	25	427	301	602
27	-	477	326	652
-	22	377	276	552
-	26	427	301	602
25	32	487	331	662
-	36	517	346	692
32	40	547	361	722
33	-	587	381	762
-	43	587	381	762
40	50	667	421	842
50	63	907	541	1082

■ The dimensions given above are minimum values.

KXA - Al Conductor	KXC - Cu Conductor	A	B
Busbar Code	Busbar Code	(mm)	(mm)
04	05	252	214
05	06	257	217
06	08	267	222
08	10	282	229
-	12	297	236
10	14	307	241
-	17	322	249
12	-	337	256
14	23	352	264
17	-	387	281
-	21	387	281
20	25	427	301
27	-	477	326
-	22	377	276
-	26	427	301
25	32	487	331
-	36	517	346
32	40	547	361
33	-	587	381
-	43	587	381
40	50	667	421
50	63	907	541

■ Please call us for non-standard components.

Upwards Left Combined Offset - K U L

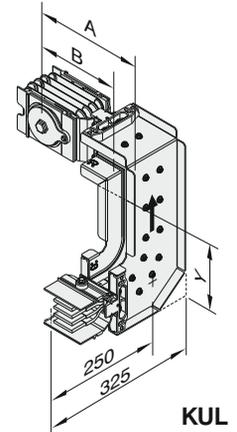
Sample Order:

5750 A, Copper
Bolt-on, IP 55, 4 conductors

KXC 32504 - B - KUL-DC1

Note:

Y=min. 30 cm



KUL

Upwards Right Combined Offset - K U R

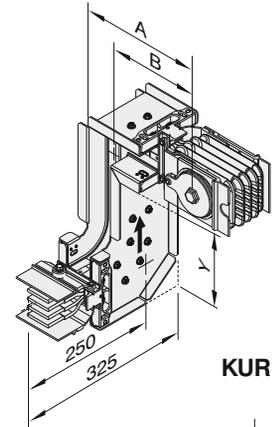
Sample Order:

5550 A DC, Aluminium
Bolt-on, IP 55, 4 conductors

KXA 33504 - B - KUR-DC1

Note:

Y=min. 30 cm



KUR

Downwards Left Combined Offset - K D L

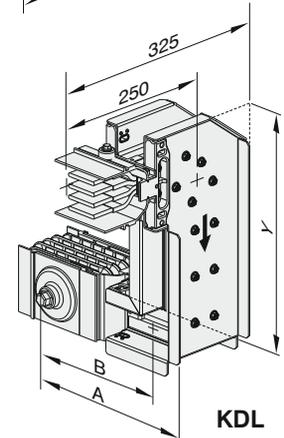
Sample Order:

5750A DC, Copper
Bolt-on, IP 55, 4 conductors

KXC 32504 - B - KDL-DC1

Note:

Y=min. 30 cm



KDL

Downwards Right Combined Offset - K D R

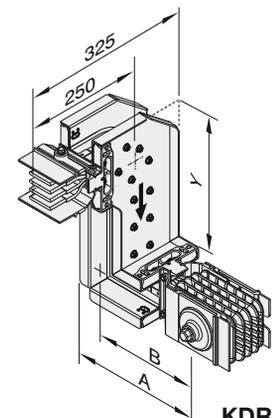
Sample Order:

5550 A DC, Aluminium
Bolt-on, IP 55, 4 conductors

KXA 33504 - B - KDR-DC1

Note:

Y=min. 30 cm



KDR

■ The dimensions given above are minimum values.

Left Upwards Combined Offset - K L U

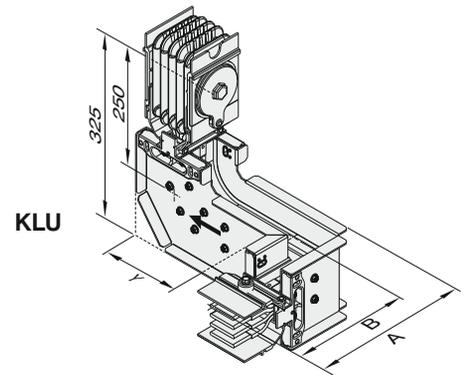
Sample Order:

5550A DC, Aluminium
Bolt-on, IP 55, 4 conductors

KXA 33504 - B - KLU -DC1

Note:

Y= min. 30 cm



KLU

Right Upwards Combined Offset - K R U

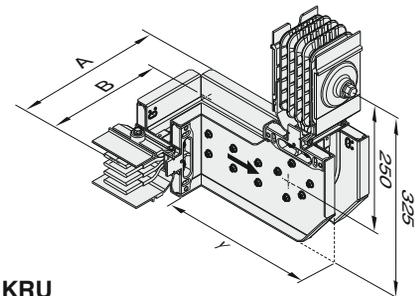
Sample Order:

5750 A DC, Copper
Bolt-on, IP 55, 4 conductors

KXC 32504 - B - KRU -DC1

Note:

Y= min. 30 cm



KRU

Left Downwards Combined Offset - K L D

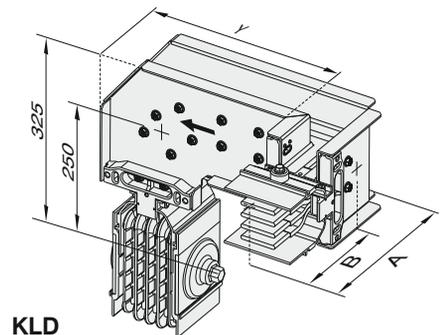
Sample Order:

5550 A DC, Aluminium
Bolt-on, IP 55, 4 conductors

KXA 33504 - B - KLD - DC1

Note:

Y= min. 30 cm



KLD

Right Downwards Combined Offset - K R D

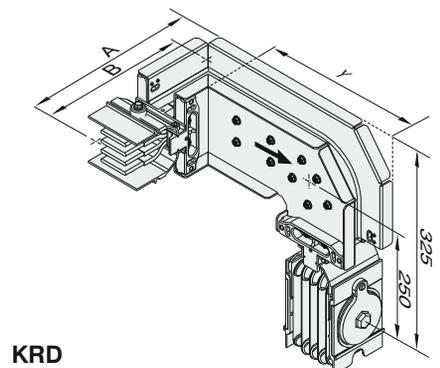
Sample Order:

5475 A DC, Copper
Bolt-on, IP 55, 4 conductors

KXC 32504 - B - KRD - DC1

Note:

Y= min. 30 cm



KRD

KXA - Al Conductor	KXC - Cu Conductor	A	B
Busbar Code	Busbar Code	(mm)	(mm)
04	05	252	214
05	06	257	217
06	08	267	222
08	10	282	229
-	12	297	236
10	14	307	241
-	17	322	249
12	-	337	256
14	23	352	264
17	-	387	281
-	21	387	281
20	25	427	301
27	-	477	326
-	22	377	276
-	26	427	301
25	32	487	331
-	36	517	346
32	40	547	361
33	-	587	381
-	43	587	381
40	50	667	421
50	63	907	541

■ Please call us for non-standard components.

■ The dimensions given above are minimum values.

Reduction

Is used to change the busbar cross section.

NOTE:

Decisions and selection of reduction module and protection on lower side is under the customer's responsibility.

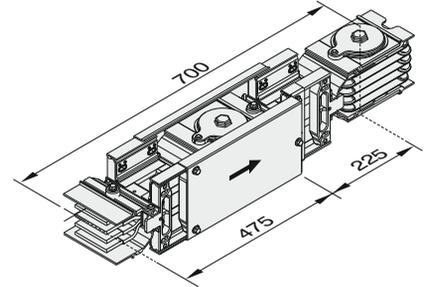
Reduction

- RD Reduced Busbar Current

Sample Order:

3500A / 2800A DC, Aluminium, Bolt-on, IP 55, 4 conductors

KXA 20504 - B - RD17 - DC1



Reducers Table

KXA - Al Conductor		Reduced Busbar Current													
Rated Current		04	05	06	08	10	12	14	17	20	25	27	32	33	40
05	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-	-
08	-	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	✓	✓	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	✓	✓	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	✓	✓	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	✓	✓	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	✓	✓	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	✓	✓	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	✓	✓	-	-	-	-	-
32	-	-	-	-	-	-	-	-	-	✓	✓	-	-	-	-
33	-	-	-	-	-	-	-	-	-	-	✓	✓	-	-	-
40	-	-	-	-	-	-	-	-	-	-	-	✓	✓	✓	-
50	-	-	-	-	-	-	-	-	-	-	-	-	✓	✓	✓

KXC - Cu Conductor		Reduced Busbar Current																	
Rated Current		05	06	08	10	12	14	17	23	21	22	25	26	32	36	40	43	50	
06	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
08	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10	-	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12	-	-	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
14	-	-	-	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	
17	-	-	-	-	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-	
23	-	-	-	-	-	✓	✓	-	-	-	-	-	-	-	-	-	-	-	
21	-	-	-	-	-	-	✓	✓	-	-	-	-	-	-	-	-	-	-	
22	-	-	-	-	-	-	-	✓	✓	-	✓	-	-	-	-	-	-	-	
25	-	-	-	-	-	-	-	-	✓	✓	✓	-	-	-	-	-	-	-	
26	-	-	-	-	-	-	-	-	-	✓	✓	-	-	-	-	-	-	-	
32	-	-	-	-	-	-	-	-	-	-	-	✓	✓	-	-	-	-	-	
36	-	-	-	-	-	-	-	-	-	-	-	-	✓	✓	-	-	-	-	
40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	✓	✓	-	-	
43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	✓	✓	-	
50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	✓	✓	
63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	✓	✓

See table below for ratings and busbar codes.

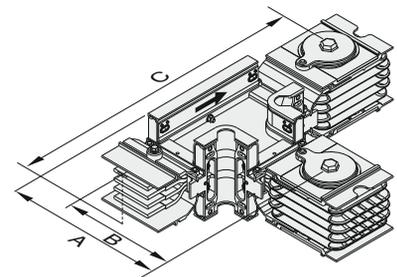
KXA - Al Conductor	KXC - Cu Conductor	A	B	C
Busbar Code	Busbar Code	(mm)	(mm)	(mm)
04	05	252	214	427
05	06	257	217	432
06	08	267	222	442
08	10	282	229	457
-	12	297	236	472
10	14	307	241	482
-	17	322	249	497
12	-	337	256	512
14	23	352	264	527
17	-	387	281	562
-	21	387	281	562
20	25	427	301	602
27	-	477	326	652
-	22	377	276	552
-	26	427	301	602
25	32	487	331	662
-	36	517	346	692
32	40	547	361	722
33	-	587	381	762
-	43	587	381	762
40	50	667	421	842
50	63	907	541	1082

Right Side Feeder "T" - T Y R

Sample Order:

4350A DC, Copper, Bolt-on, IP 55, 4 conductors

KXC 25504 - B - TYR-DC1

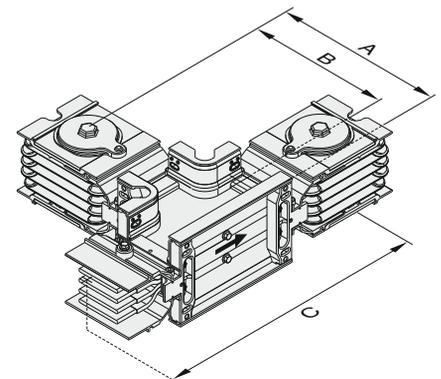


Left Side Feeder "T" - T Y L

Sample Order:

4350A DC, Aluminium, Bolt-on, IP 55, 4 conductors

KXA 25504 - B - TYL-DC1



■ Please call us for non-standard components.

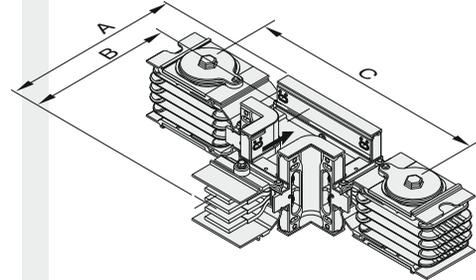
The dimensions given above are minimum values.

Central Feeder "T" - T O

Sample Order:

5750A DC, Copper, Bolt-on,
IP 55, 4 conductors

KXC 32504 - B - TO-DC1



Vertical Expansion

Used for vertical applications in multi storey buildings.

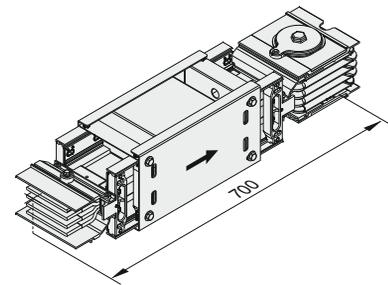
- One vertical expansion unit is advised to be used at every floor between fixed support points.

Vertical Expansion - D D T

Sample Order:

3900A DC, Copper, Bolt-on, IP 55
4 conductors

KXC 21504 - B - DDT-DC1



Horizontal Expansion

Used at every 40m in long horizontal straight lines and building expansion points.

Note:1) Horizontal expansion joint should be utilised if busbar line is crossing to adjacent through building expansion joints.

2) This module is used on the long busbar line (>75m.) where line is ended by end closure and is not fixed on the support rigidly.

3) Horizontal expansion joint has sufficient movement span of 25mm. max.

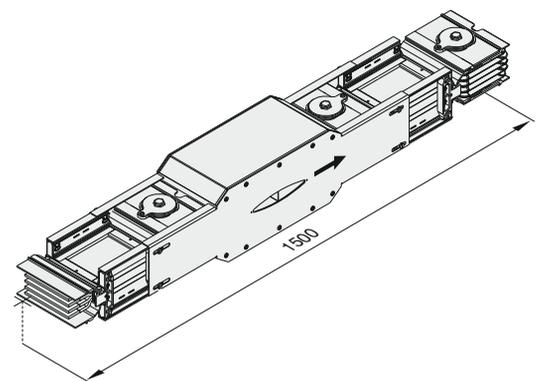
EAE requests to be consulted during design stage.

Horizontal Expansion - Y D T

Sample Order:

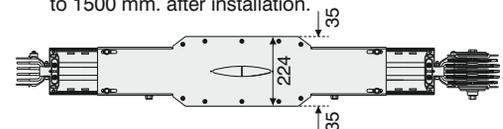
4350 A, Aluminium, Bolt-on,
IP 55, 4 conductors

KXA 25504 - B - YDT - DC1



Attention!

The total length of the module should be adjusted to 1500 mm. after installation.



Phase Transposition Module

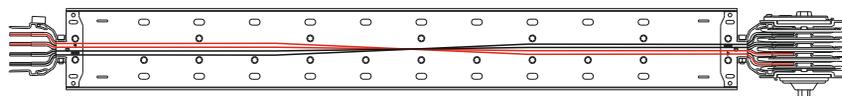
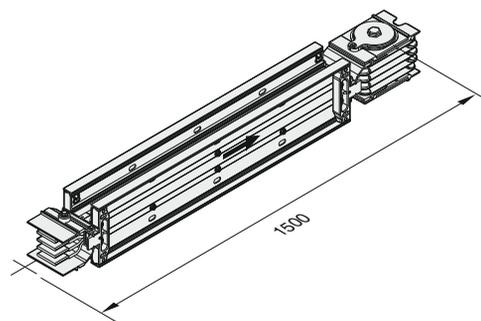
They used for transposition of phase sequence.

Phase Transposition - F D M Module

Sample Order:

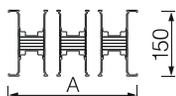
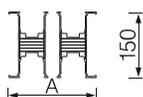
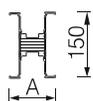
4350A DC, Aluminium, Bolt-on, IP 55, 4 conductors

KXA 25504 - B - FDM-DC1



FDM Dimension Table

KXA - Al Conductor	KXC - Cu Conductor	A
Busbar Code	Busbar Code	(mm)
04	05	77,5
05	06	82,5
06	08	91
08	10	106
-	12	121
10	14	131
-	17	146
12	-	161
14	23	176
17	-	211
-	21	211
20	25	251
27	-	301
-	22	202
-	26	252
25	32	312
-	36	342
32	40	372
33	-	412
-	43	412
40	50	492
50	63	732



■ Please call us for non-standard components.

■ The dimensions given above are minimum values.

End Closer

Is used to close the end of busbar run.

Al Conductor	Cu Conductor	L1, L2, L3, N + Housing L1, L2, L3, N, PE + Housing	Order No
04	05	6x25	3066129
05	06	6x30	3066131
06	08	6x40	3016698
08	10	6x55	3016699
-	12	6x70	3016700
10	14	6x80	3016701
-	17	6x95	3085740
12	-	6x110	3016702
14	23	6x125	3016704
17	21	6x160	3016705
20	25	6x200	3016706
27	-	6x250	3016710
-	22	2(6x55)	3016707
21	26	2(6x80)	3016708
25	32	2(6x110)	3016709
-	36	2(6x125)	3016711
32	40	2(6x140)	3016712
33	43	2(6x160)	3016713

Note: S10 or S11 modules shall be used for Clean Earth and / or 200% N applications.

Al Conductor	Cu Conductor	L1, L2, L3, N + Housing L1, L2, L3, N, PE + Housing	Order No
40	50	2x(6x200)	
50	63	3x(6x200)	

Al Conductor	Cu Conductor	L1, L2, L3, N + Housing L1, L2, L3, N, PE + Housing	Order No
40	50	2x(6x200)	
50	63	3x(6x200)	

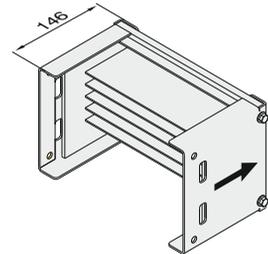
End Closer

- S

Sample Order:

3500A DC, Aluminium, 4350A DC, Copper
Bolt-on, IP 55, 4 1/4 / 5 conductors

KX 205A / 255C - B- S-DC1



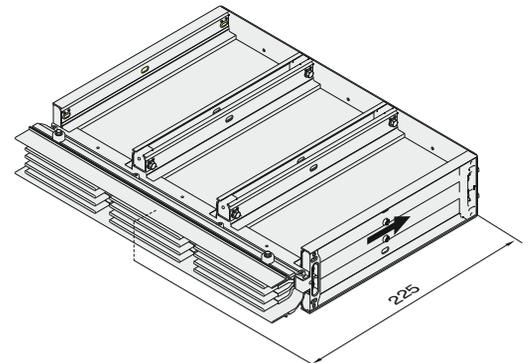
End Closer

- S 10

Sample Order:

11000A DC, Copper
Bolt-on, IP 55, 4 conductors

KXC 63504 - B- S 10-DC1



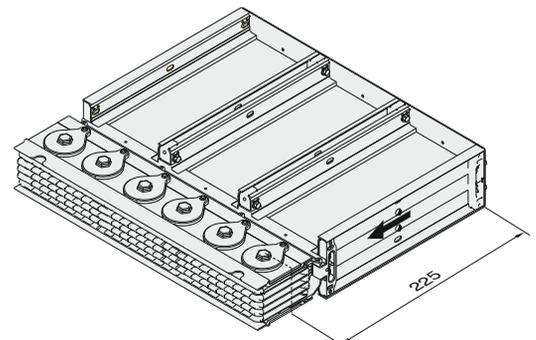
End Closer

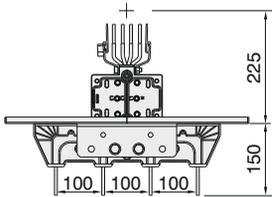
- S 11

Sample Order:

8700A DC, Aluminium,
Bolt-on, IP 55, 4 conductors

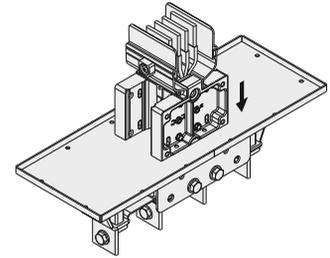
KXA 50504 - B- S 11-DC1



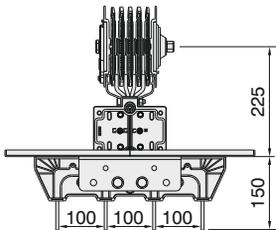


Panel Connection - P 1 0

Panel Feeder
 Sample Order:
 4350A DC, Copper, Bolt-on, 4 conductors for Panel Feeder
KXC 25504 - B - P10 - DC1

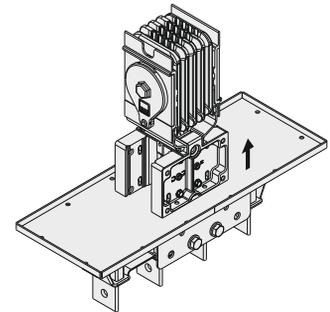


P10

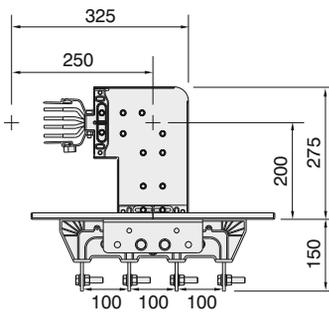


Panel Connection - P 1 1

Busbar Feeder
 Sample Order:
 4350A DC, Copper, Bolt-on, 4 conductors for Busbar Feeder
KXC 25504 - B - P11 - DC1

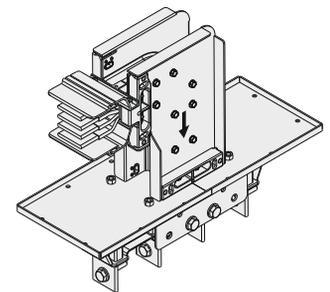


P11

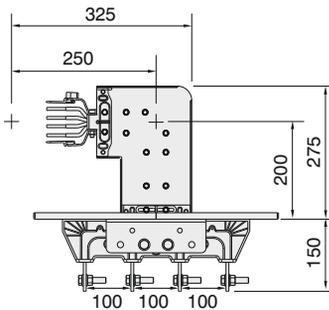


Upwards Panel Connection - P U 2 0

Panel Feeder
 Sample Order:
 6250A DC, Copper, Bolt-on, 4 conductors for Panel Feeder
KXC 36504 - B - PU20 - DC1

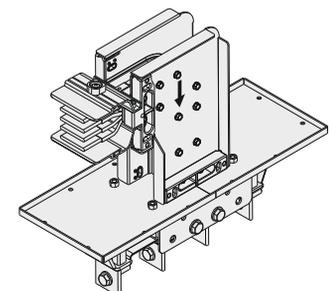


PU20



Downwards Panel Connection - P D 2 0

Panel Feeder
 Sample Order:
 7360A DC, Copper, Bolt-on, 4 conductors for Panel Feeder
KXC 43504 - B - PD20 - DC1

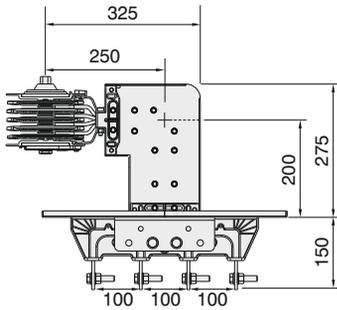


PD20

For connection dimensions please refer to tables on pages 23 and 24.

- Distance between conductors can vary in ± 5 mm.
- Please call us for non-standard components.

- The dimensions given above are minimum values.

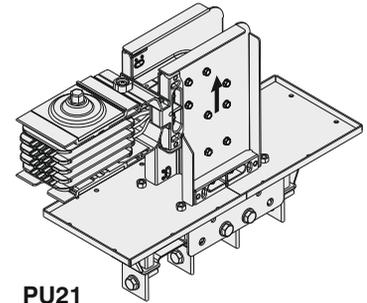


Upwards Busbar Connection - P U 2 1

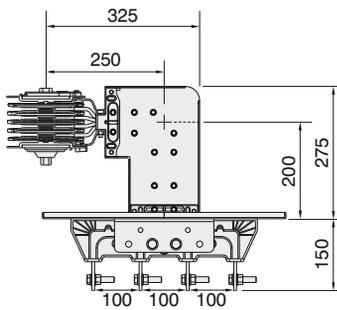
Busbar Feeder

Sample Order:

6250A DC, Copper, Bolt-on, 4 conductors for Busbar Feeder
KXC 36504 - B - PU21 - DC1



PU21

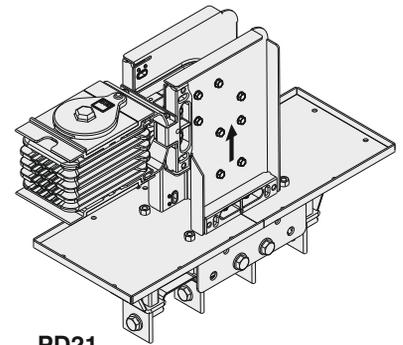


Downwards Busbar Connection - P D 2 1

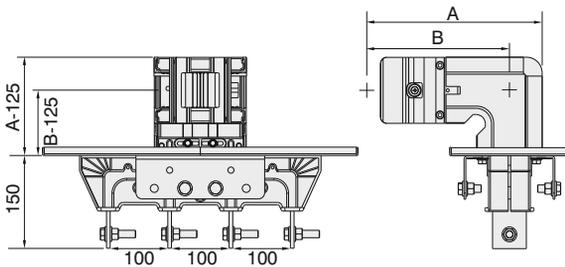
Busbar Feeder

Sample Order:

7360A DC, Copper, Bolt-on, 4 conductors for Busbar Feeder
KXC 43504 - B - PD21 - DC1



PD21

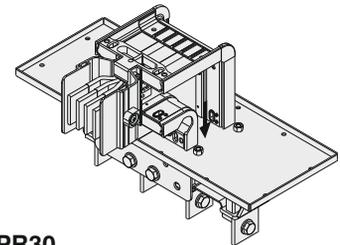


Right Panel Connection - P R 3 0

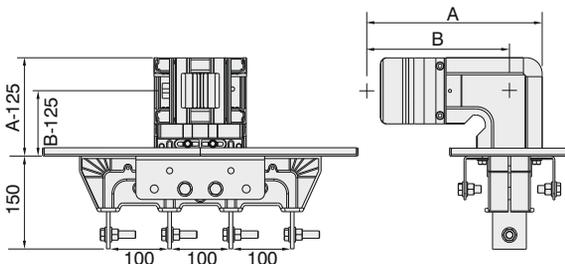
Panel Feeder

Sample Order:

4350A DC, Copper, Bolt-on, 4 conductors for Panel Feeder
KXC 25504 - B - PR30 - DC1



PR30

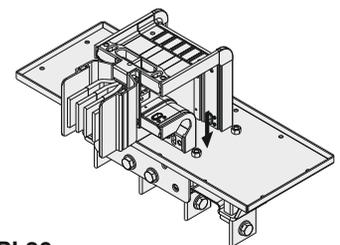


Left Panel Connection - P L 3 0

Panel Feeder

Sample Order:

4350A DC, Copper, Bolt-on, 4 conductors for Panel Feeder
KXC 25504 - B - PL30 - DC1



PL30

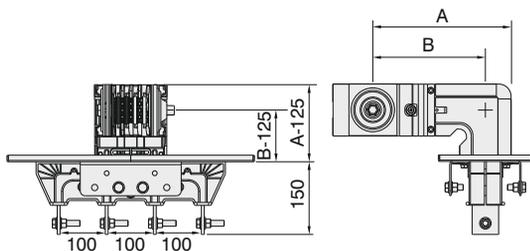
The "A" and "B" dimensions for PR30 and PL30 are the same dimensions as left and right elbows. Please refer to page 12 for the dimensions.

For connection dimensions please refer to tables on pages 23 and 24.

■ Distance between conductors can vary in ± 5 mm.

■ Please call us for non-standard components.

■ The dimensions given above are minimum values.



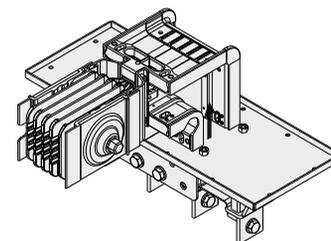
Right Panel Connection - PR 31

Busbar Feeder

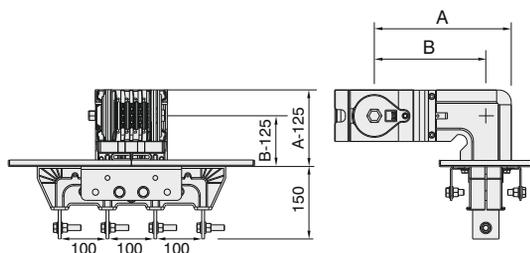
Sample Order:

4350A DC, Copper, Bolt-on, 4 conductors for Busbar Feeder

KXC 25504 - B - PR31-DC1



PR31



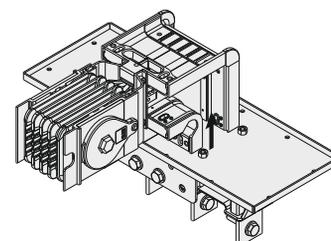
Left Panel Connection - PL 31

Busbar Feeder

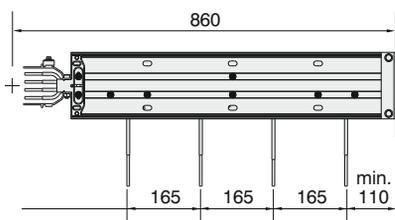
Sample Order:

4350A DC, Copper, Bolt-on, 4 conductors for Busbar Feeder

KXC 25504 - B - PL31-DC1



PL31



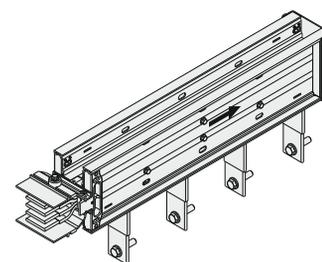
Panel Connection - P 4 0

Panel Feeder

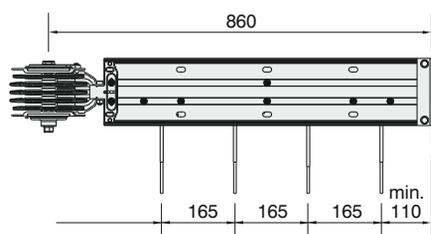
Sample Order:

5750A DC, Copper, Bolt-on, 4 conductors for Panel Feeder

KXC 32504 - B - P40-DC1



P40



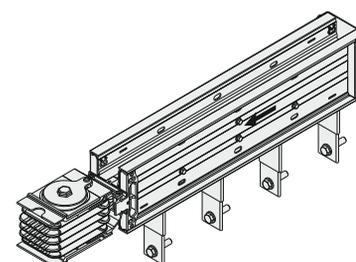
Panel Connection - P 4 1

Busbar Feeder

Sample Order:

5750A DC, Copper, Bolt-on, 4 conductors for Busbar Feeder

KXC 32504 - B - P41-DC1



P41

The "A" and "B" dimensions for PR31 and PL31 are the same dimensions as left and right elbows. Please refer to page 12 for the dimensions.

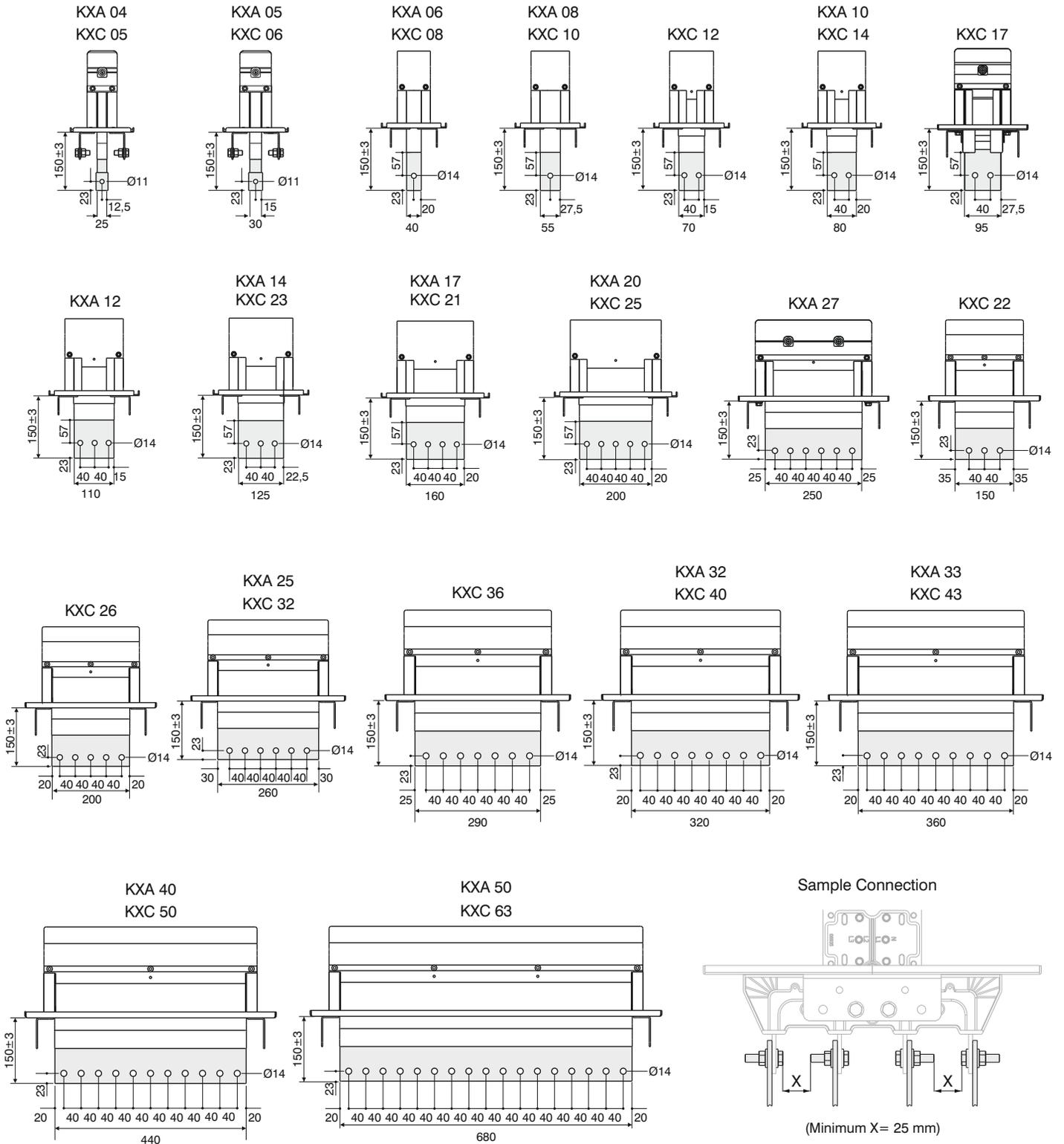
For connection dimensions please refer to tables on pages 23 and 24.

- Distance between conductors can vary in ± 5 mm.
- Please call us for non-standard components.

- The dimensions given above are minimum values.

Panel Connection Units

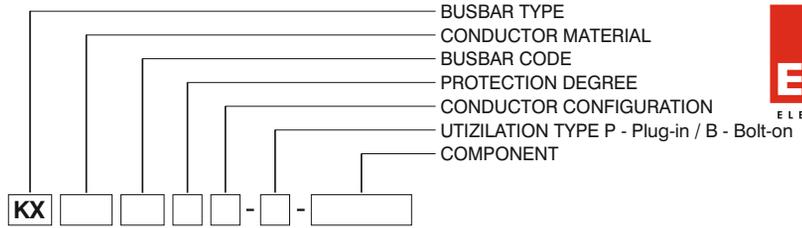
Panel Connection Units (P10,P11,PU20,PD20,PU21,PD21,PL30,PR30,PL31,PR31,P40,P41)



■ Please call us for non-standard components.

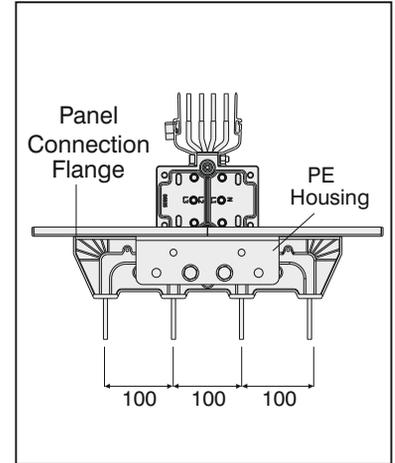
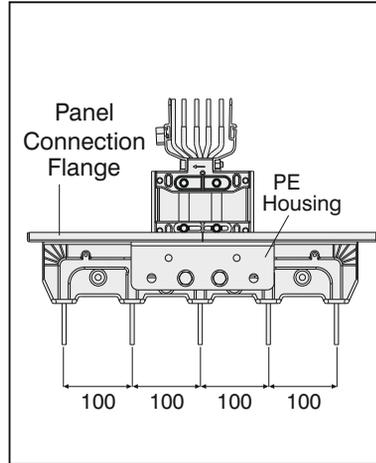
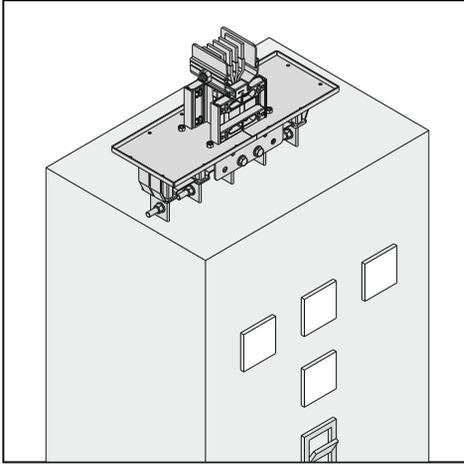
■ Distance between conductors can vary in ± 5 mm.

■ The dimensions given above are minimum values.

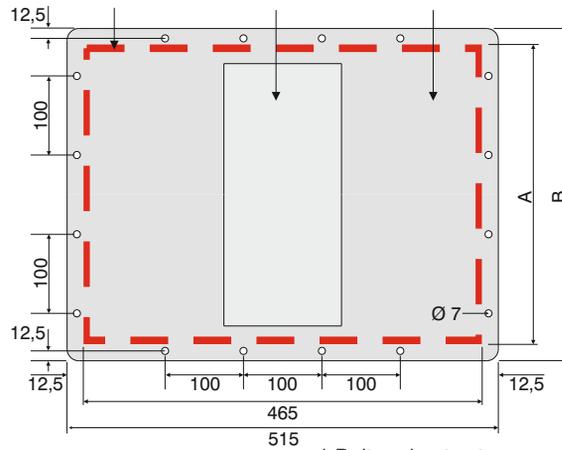


Flange Dimensions

Panel Connection Units are supplied with suitable flange as standard.

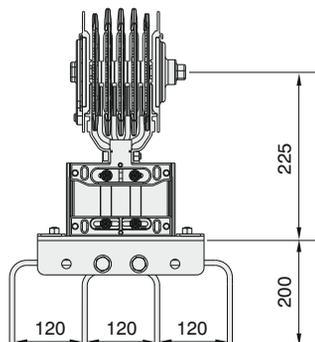


Opening on the panel board E-Line KX Panel Connection Busbar Flange



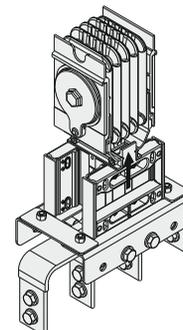
* Bolt and nut sets are supplied together with related product as per the quantities below.

Aluminium (Al)	Copper (Cu)	Conductor Size	A (mm)	B (mm)	Number of the holes along B length	* M6 Bolt/ Nut Set(pcs)
04	05	6x25	120	165	2	12
05	06	6x30	125	170	2	12
06	08	6x40	135	180	2	12
08	10	6x55	150	195	2	12
-	12	6x70	165	210	2	12
10	14	6x80	175	220	2	12
-	17	6x95	190	235	2	12
12	-	6x110	205	250	3	14
14	23	6x125	220	265	3	14
17	-	6x160	255	300	3	14
-	21	6,1x160	255	300	3	14
20	25	6x200	295	340	4	16
27	-	6x250	345	390	4	16
-	22	2x(6x55)	245	290	3	14
-	26	2x(6x80)	295	340	3	14
25	32	2x(6x110)	355	400	4	16
-	36	2x(6x125)	385	430	4	16
32	40	2x(6x140)	415	460	5	18
33	-	2x(6x160)	455	500	5	18
-	43	2x(6,1x160)	455	500	5	18
40	50	2x(6x200)	535	580	6	20
50	63	3x(6x200)	775	820	8	24

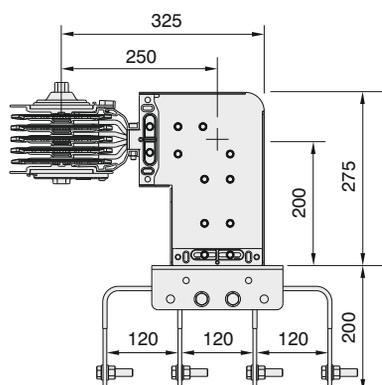


Transformer Connection - T R 1 1

Sample Order:
4350A DC, Aluminium, Bolt-on, 4 conductors
KXA 25504 - B - TR11-120-DC1

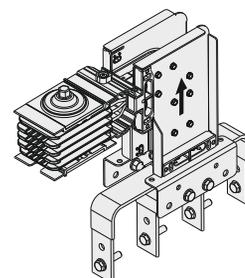


TR11

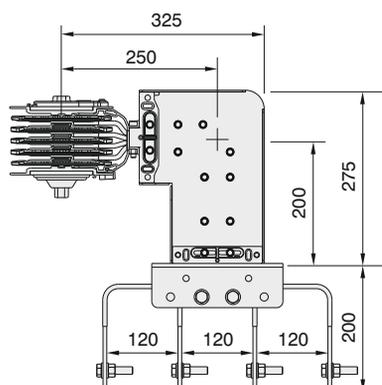


Upwards Transformer Connection - T U 2 1

Sample Order:
4350A DC, Copper, Bolt-on, 4 conductors
KXC 25504 - B - TU21-120-DC1

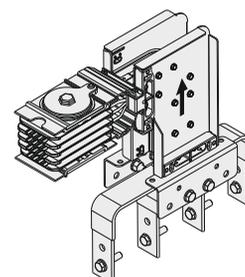


TU21



Downwards Transformer Connection - T D 2 1

Sample Order:
4350A DC, Aluminium, Bolt-on, 4 conductors
KXA 25504 - B - TD21-120-DC1



TD21

For connection dimensions please refer to tables on pages 28 and 29.

- Distance between conductors can vary in ± 5 mm.
- Please call us for non-standard components.
- The dimensions given above are minimum values.

For transformer and panel connection applications EAE design and planning department can prepare your projects upon request.

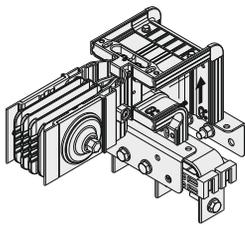
For the design, the following information is required;

- Plan of transformer and panel board room, heights.
- Transformer dimensions, distance between bushings.

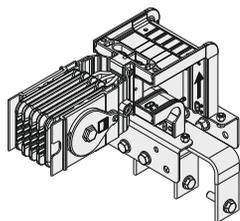
For connection dimensions please refer to tables on page 28.

Flexible are used for

- Transformer - busbar,
- Panel - busbar connections.



TR51



TL51

- Distance between conductors can vary in ± 5 mm.
- Please call us for non-standard components.

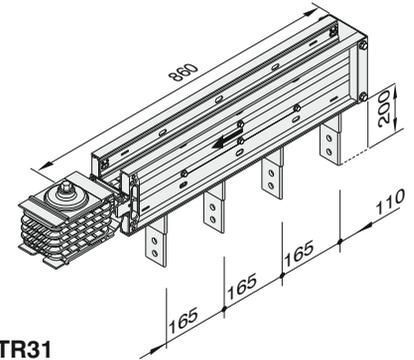
Transformer Connection

- T R 3 1

Sample Order:

4350A DC, Copper, Bolt-on, 4 conductors

KXC 25504 - B - TR31 -DC1



TR31

- F 
L
(cm)

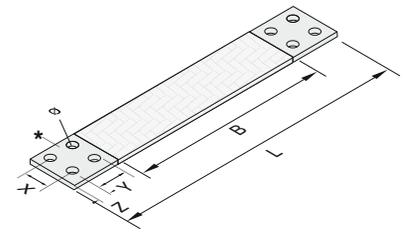
Flexibles

Sample Order:

1400 A DC, Aluminium

KXA 0800 - F40

B=.....mm
X=.....mm
Y=.....mm
Z=.....mm
 ϕ =.....mm



- This side is punched according to the needs of the customer.

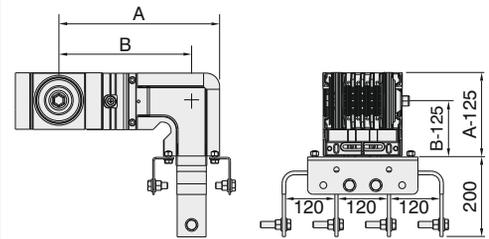
Right Transformer Connection

- T R 5 1

Sample Order:

4350A DC, Copper, Bolt-on,
4 conductors

KXC 25504 - B - TR51-DC1



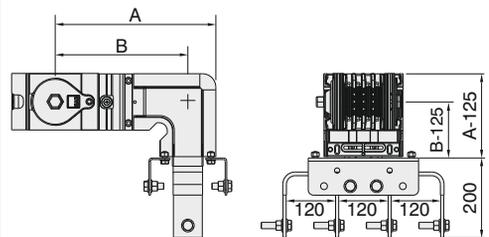
Left Transformer Connection

- T L 5 1

Sample Order:

4350A DC, Aluminium, Bolt-on,
4 conductors

KXA 25504 - B - TL51-DC1



- The dimensions given above are minimum values.

For transformer and panel connection applications EAE design and planning department can prepare your projects upon request.

For the design, the following information is required;

- Plan of transformer and panel board room, heights.
- Transformer dimensions, distance between bushings.

A and B dimensions of TR51 and TL51 are same as left and right elbows.

Please refer to page 12 for the dimensions.

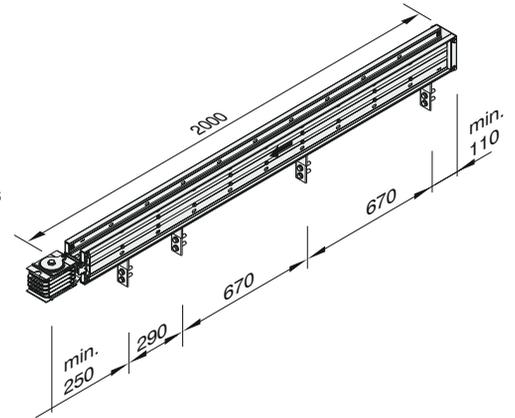
For connection dimensions please refer to tables on page 28.

Transformer Connection - T R 4 1

Sample Order:

4350A DC, Copper, Bolt-on, 4 conductors

KXC 25504 - B - TR41-DC1



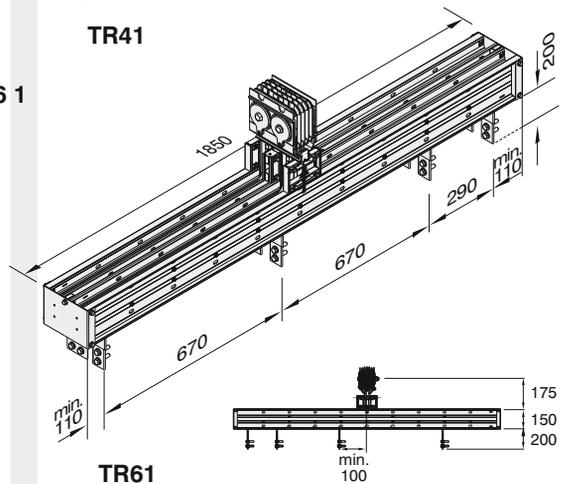
TR41

Transformer Connection - T R 6 1

Sample Order:

6250A DC, Copper, Bolt-on, 4 conductors

KXC 36504 - B - TR61-DC1



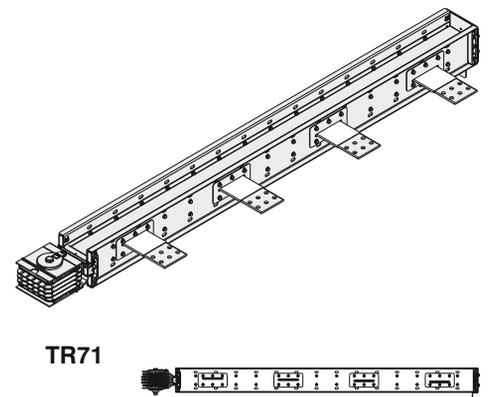
TR61

Transformer Connection - T R 7 1

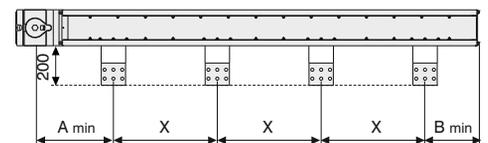
Sample Order:

7000A DC, Copper, Bolt-on, 4 conductors

KXC 40504 - B - TR71-DC1



TR71



TR71 Dimension Table

KXA - Al Conductor	KXC - Cu Conductor	Conductor	A min (mm)	B min (mm)	X min (mm)
04	05	6x25	263	123	85
05	06	6x30	265	125	90
06	08	6x40	270	130	100
08	10	6x55	278	138	115
-	12	6x70	285	145	130
10	14	6x80	290	150	140
-	17	6x95	298	158	155
12	-	6x110	305	165	170
14	23	6x125	313	173	185
17	-	6x160	330	190	220
-	21	6,1x160	330	190	220
20	25	6x200	350	210	260
27	-	6x250	375	235	310
-	22	2(6x55)	278	138	115
-	26	2(6x80)	290	150	140
25	32	2(6x110)	305	165	170
-	36	2(6x125)	313	173	185
32	40	2(6x140)	320	180	200
33	-	2(6x160)	330	190	220
-	43	2(6,1 x160)	330	190	220
40	50	2(6x200)	350	210	260

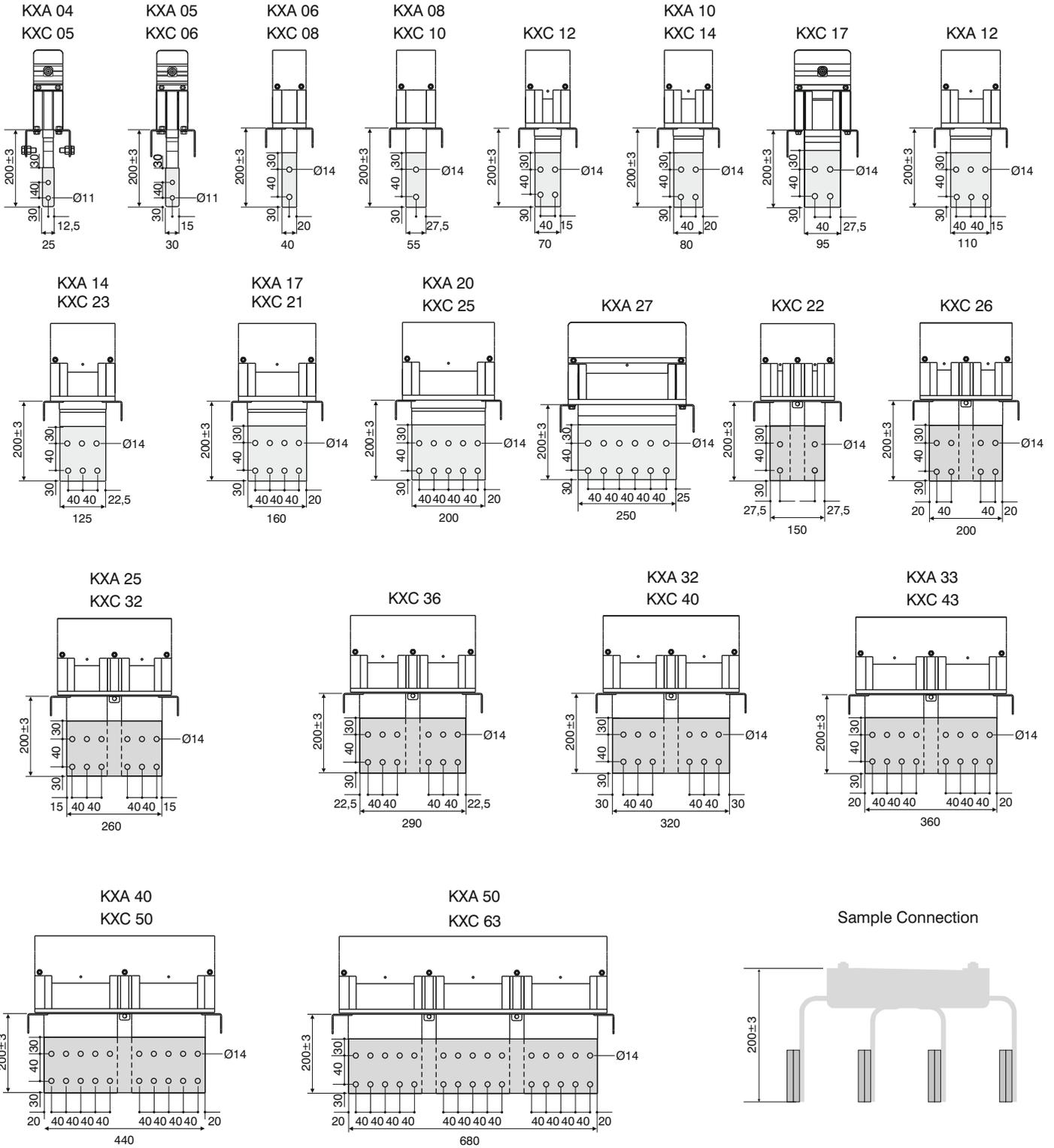
- Distance between conductors can vary in ± 5 mm.
- Please call us for non-standard components.
- The dimensions given above are minimum values.

Transformer Connection Units

Transformer Connection Units (TU21, TD21, TL31, TR31, TR41, TR61)

Note:

No flange supplied with transformer connection units.



■ Please call us for non-standard components.

■ Distance between conductors can vary in ±5 mm.

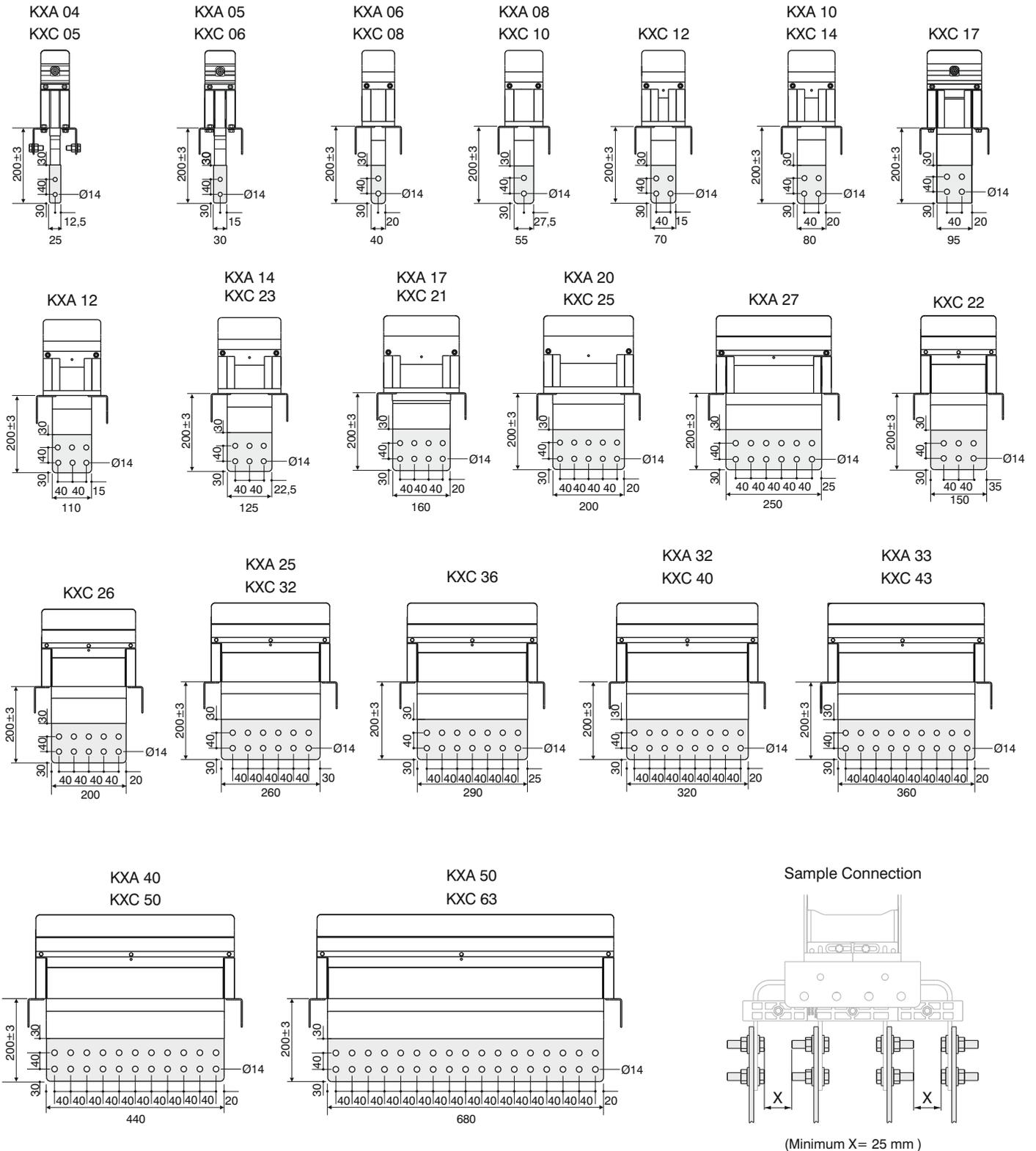
■ The dimensions given above are minimum values.

Transformer Connection Units

Transformer Connection Units (TR11, TR51, TL51)

Note:

No flange supplied with transformer connection units.

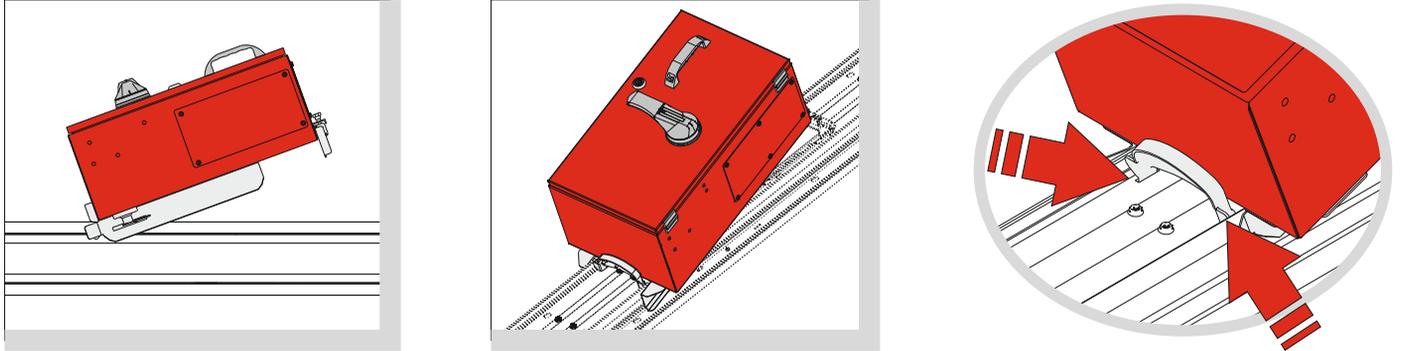


■ Please call us for non-standard components. ■ Distance between conductors can vary in ±5 mm. ■ The dimensions given above are minimum values.

▶▶ Tap-off Boxes

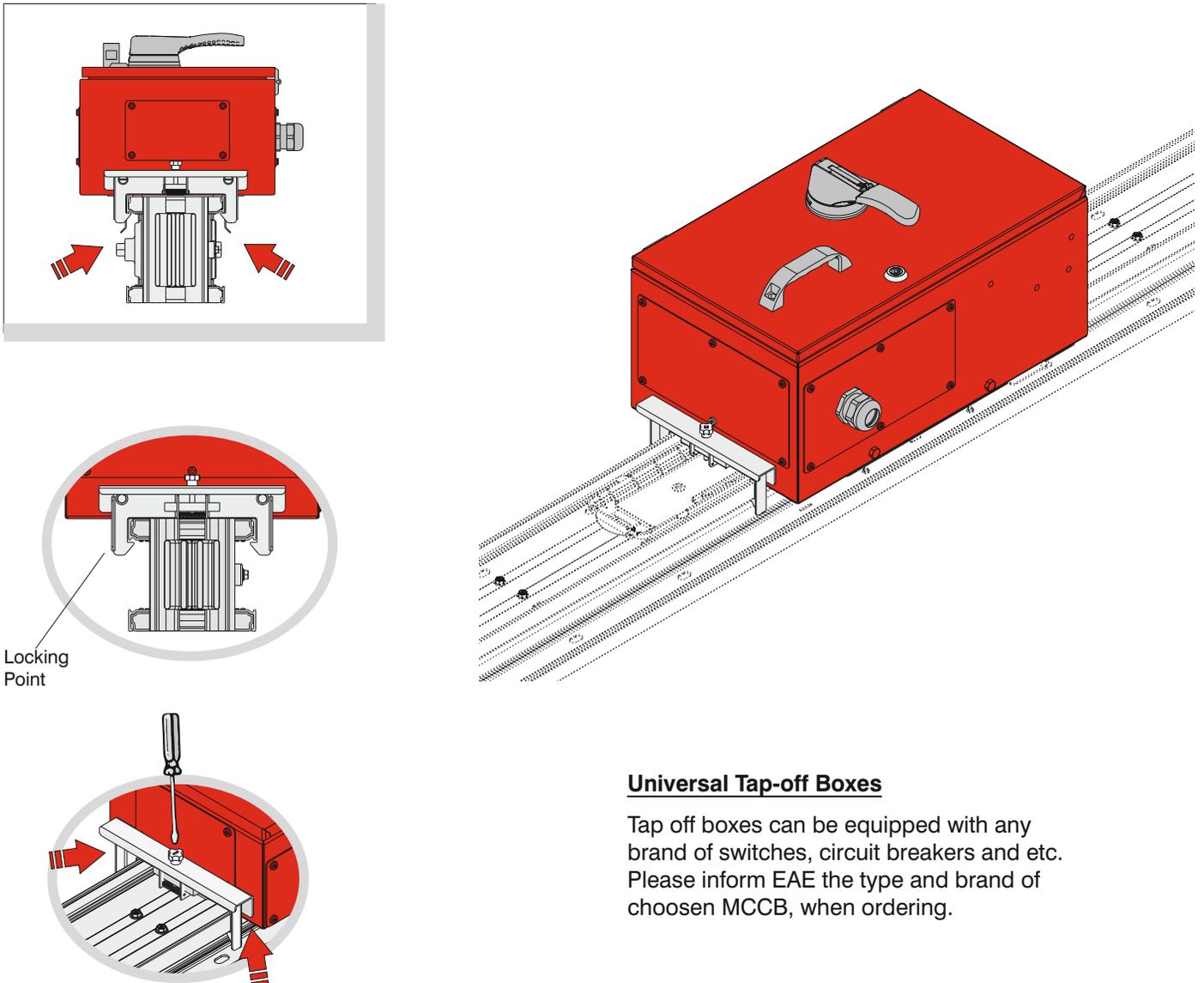
Easy Installation System of Tap-off Boxes

The patented hinge system is designed to allow the installation of plug-in tap-off boxes simply and easily.



Fixing System of Tap-off Boxes to Busbars

Hook system, which is used for fixing of tap-off boxes on busbars.



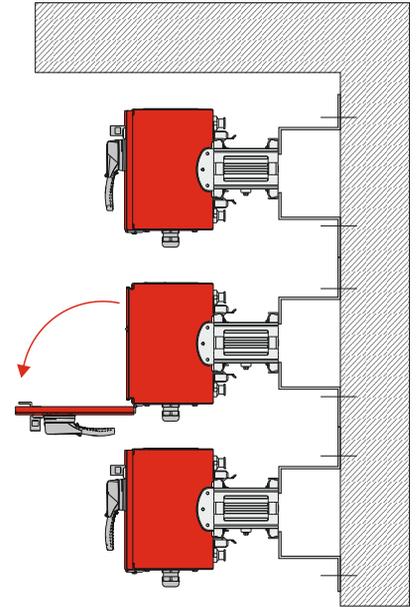
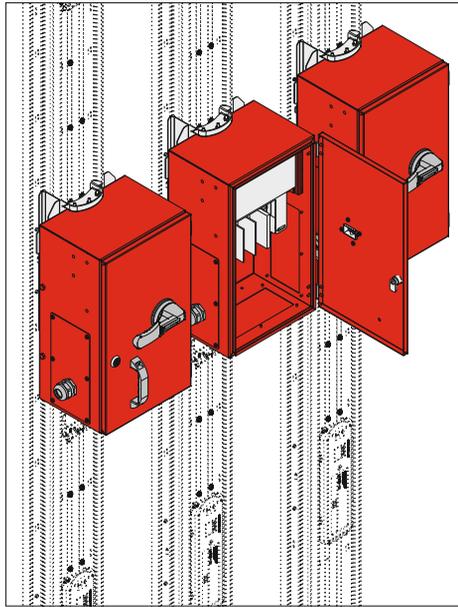
Universal Tap-off Boxes

Tap off boxes can be equipped with any brand of switches, circuit breakers and etc. Please inform EAE the type and brand of chosen MCCB, when ordering.

►► Technical Features

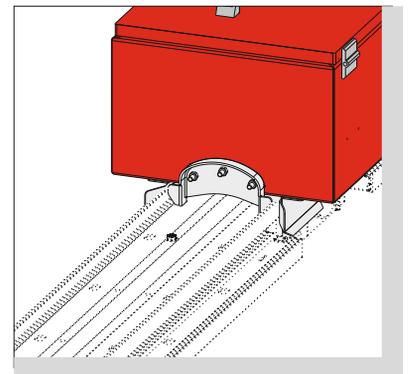
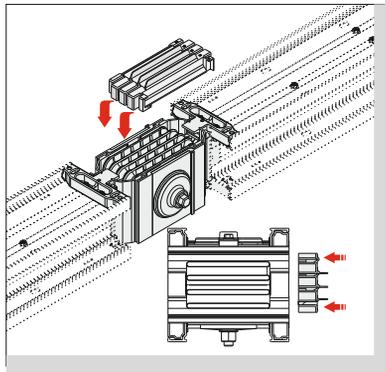
Side Opening Box Lids

A new generation of tap-off box with side opening lids enables easier connection to protective devices and maintenance.



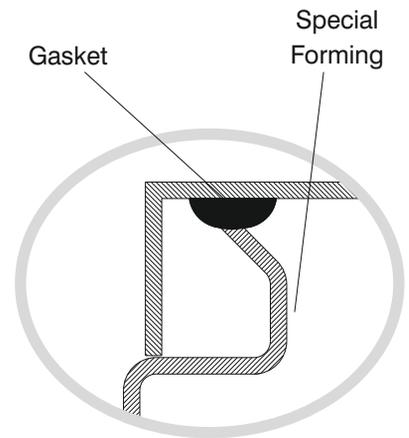
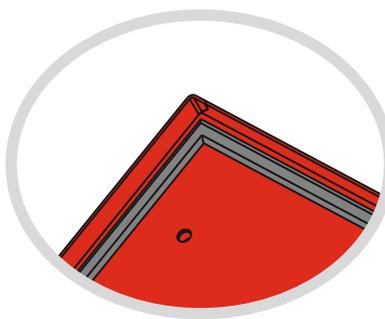
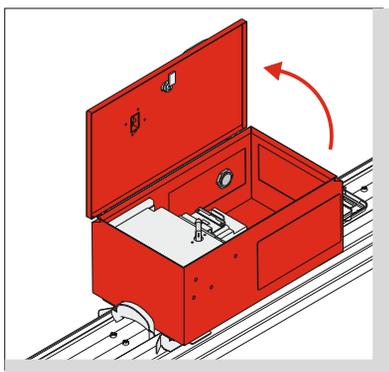
Bolt-on Tap-off Boxes

- Bolt-on tap-off boxes are designed to be installed at the joints without removing the joint block.
- The range of tap off boxes from 275A upto 1750A DC.
- Busbar run must be de-energized before installing bolt-on tap-off boxes.



Effective Gasket

- Protection from dust and humidity due to effective gasket system.
- High IP Protection due to special forming.



▶▶ Tap-off Boxes with Fused Switches (Bolt-on-KXB)



Cable Gland Plates

Mat. Sheet	Cable Gland Type	Order Code	Inner Diameter (mm)
Sheet	M32	RP1	25
Sheet	M40	RP2	32
Sheet	Special	RP3	63
AL	2xSpecial	RP4	63
AL	4xM25	RP5	18
AL	4xM32	RP6	25
AL	4xM40	RP7	32
AL	8xM32	RP8	25

Notes:

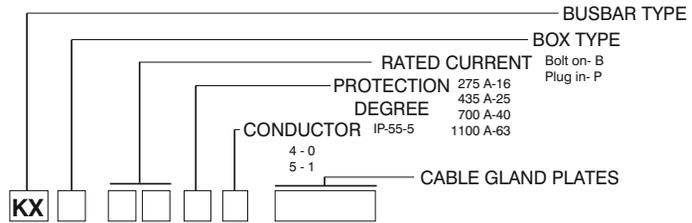
EAE Bolt-on Tap Off Boxes are secured with an interlocking mechanism. This protects against attaching them to or removing them from the busbar in the "ON" position. When in the "OFF" position they are safe to attach to or remove from the busbar.

- Tap off boxes shall not be used empty. Fused switches, MCCBs or similar protection devices must be installed into tap-off boxes before they are installed to the busbar runs.

Tap-off Boxes	A (mm)	B (mm)	C (mm)	D (mm)	Fuse Size	Standard Gland
275A DC	750	380	240	265	NH 1	RP2
435A DC	750	380	240	265	NH 1	RP3
700A DC	850	420	260	265	NH 3	RP4
1100A DC	850	420	260	265	NH 3	RP4

Tap-off boxes can be equipped with any brand of switches, circuit breakers and etc.

Please call us for non-standard tap-off boxes and detailed information.



Bolt-on Tap-off Boxes

- KX B 1 6 5 0
- KX B 2 5 5 0
- KX B 4 0 5 0
- KX B 6 3 5 0

Sample Order:

Bolt-on / 1100 A DC / IP-55 / 4 conductors

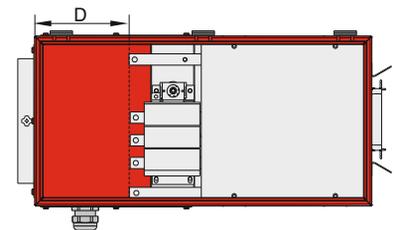
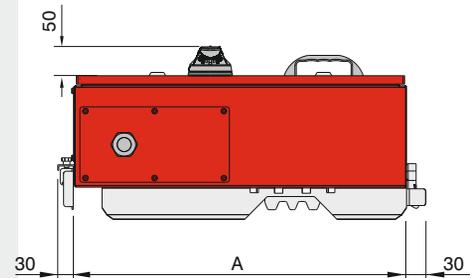
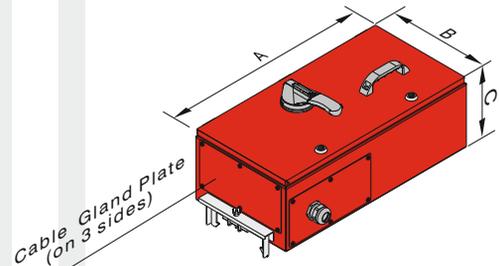
KXB 6350

- KX B 1 6 5 1
- KX B 2 5 5 1
- KX B 4 0 5 1
- KX B 6 3 5 1

Sample Order:

Bolt-on / 1100A DC / IP-55 / 5 conductors

KXB 6351



Bolt-on tap-off box can not be used on the joints of mentioned ranges of busbars.

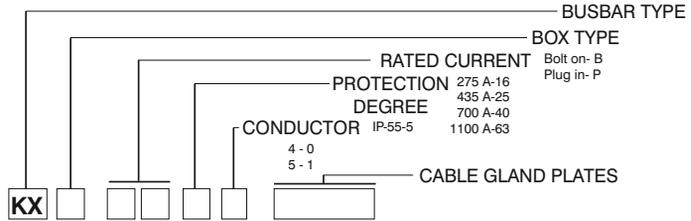
KXA - Al Conductor	KXC - Cu Conductor	Bolt-on Tap-off Box
Busbar Code	Busbar Code	
04	05	x
05	06	x
06	08	x

Gland Type	Max. External Diameter of Cable Cross-section
M25	Ø 18
M32	Ø 26
M40	Ø 33
M50	Ø 39
M63	Ø 45
Special for EAE	Ø 60

■ The dimensions given above are minimum values.

ELINEDC-KX

▶▶ Tap-off Boxes with Fused Switches (Plug-in-KXP)



Cable Gland Plates

Mat. Sheet	Cable Gland Type	Order Code RP0	Inner Diameter (mm)
Sheet	M32	RP1	25
Sheet	M40	RP2	32
Sheet	Special	RP3	63
AL	2xSpecial	RP4	63
AL	4xM25	RP5	18
AL	4xM32	RP6	25
AL	4xM40	RP7	32
AL	8xM32	RP8	25

Plug-in Tap-off Boxes

- KX P 1 6 5 0
- KX P 2 5 5 0
- KX P 4 0 5 0
- KX P 6 3 5 0

Sample Order:

Plug-in / 700 A DC / IP-55 / 4 conductors

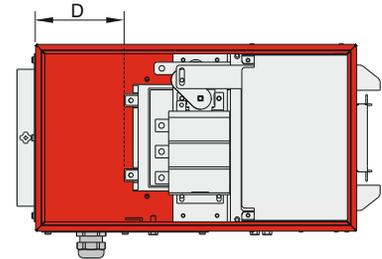
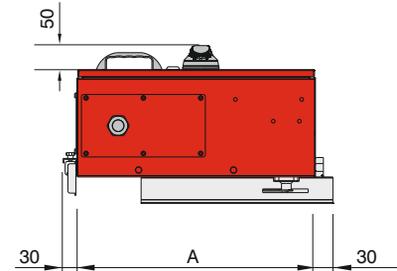
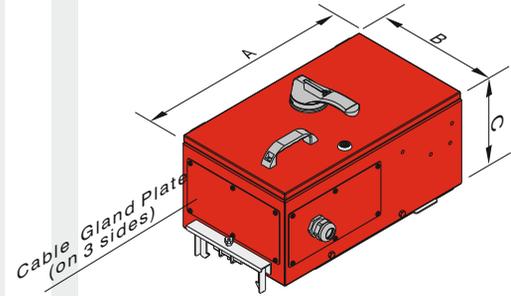
KXP 4050

- KX P 1 6 5 1
- KX P 2 5 5 1
- KX P 4 0 5 1
- KX P 6 3 5 1

Sample Order:

Plug-in / 1100 A DC / IP-55 / 5 conductors

KXP 6351



Notes:

EAE Plug-in Tap Off Boxes are secured with an interlocking mechanism. This protects against attaching them to or removing them from the busbar in the "ON" position. When in the "OFF" position they are safe to attach to or remove from the busbar.

- Tap off boxes shall not be used empty. Fused switches, MCCBs or similar protection devices must be installed into tap-off boxes before they are installed to the busbar runs.

Tap-off Boxes	A (mm)	B (mm)	C (mm)	D (mm)	Fuse Size	Standard Gland
275A DC	520	300	210	140	NH00	RP2
435A DC	670	380	270	290	NH 1	RP3
700A DC	750	420	300	285	NH 3	RP4
1100A DC	750	420	300	285	NH 3	RP4

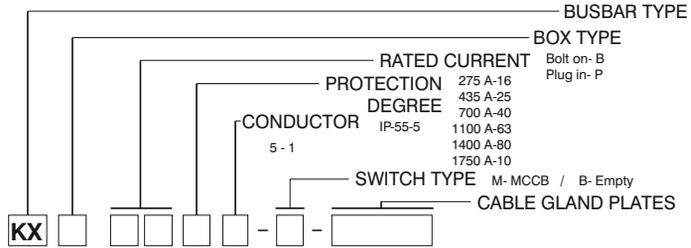
Gland Type	Max. External Diameter of Cable Cross-section
M25	Ø 18
M32	Ø 26
M40	Ø 33
M50	Ø 39
M63	Ø 45
Special for EAE	Ø 60

Tap-off boxes can be equipped with any brand of switches, circuit breakers and etc.

Please call us for non-standard tap-off boxes and detailed information.

■ The dimensions given above are minimum values.

▶▶ Tap-off Boxes for MCCB's (KXB)



Cable Gland Plates

Mat.	Cable Gland Type	Order Code	Inner Diameter (mm)
Sheet	----	RP0	----
Sheet	M32	RP1	25
Sheet	M40	RP2	32
Sheet	Special	RP3	63
AL	2xSpecial	RP4	63
AL	4xM25	RP5	18
AL	4xM32	RP6	25
AL	4xM40	RP7	32
AL	8xM32	RP8	25
AL	3xSpecial	RP9	63

Bolt-on Tap-off Boxes

- KX B 1 6 5 1 - B
- KX B 2 5 5 1 - B
- KX B 4 0 5 1 - B
- KX B 6 3 5 1 - B
- KX B 1 6 5 1 - M
- KX B 2 5 5 1 - M
- KX B 4 0 5 1 - M
- KX B 6 3 5 1 - M

Sample Order:

Bolt-on / 1100 A DC / IP-55 / 5 conductors, empty tap-off box

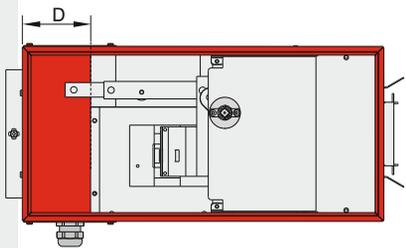
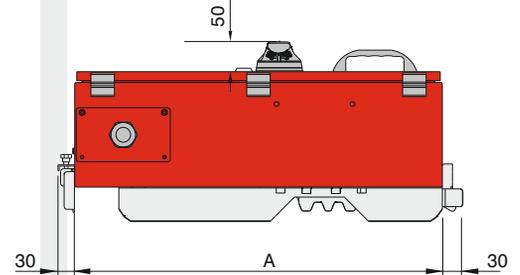
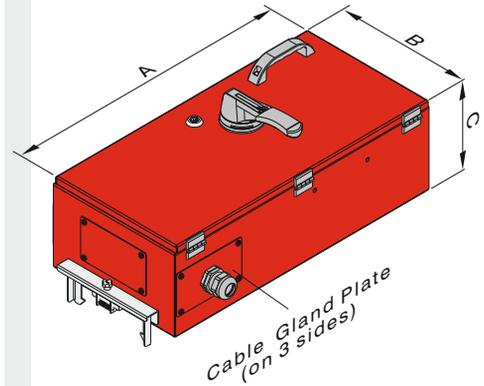
KXB 6351 - B

- KX B 8 0 5 1 - B
- KX B 1 0 5 1 - B
- KX B 8 0 5 1 - M
- KX B 1 0 5 1 - M

Sample Order:

Bolt-on / 1400 A DC / IP-55 / 5 conductors, empty tap-off box

KXB 8051 - B



Special Cable Gland Plates

Mat.	Cable Gland Type	Order Code	Inner Diameter (mm)
Sheet	----	RPK0	----
Sheet	M25	RPK1	18
Sheet	M32	RPK2	25
Sheet	M40	RPK3	32
Sheet	1xSpecial	RPK4	63

Bolt-on tap-off box can not be used on the joints of mentioned ranges of busbars.

Tap-off Boxes	A (mm)	B (mm)	C (mm)	*D (mm)	Standard Gland
275A DC	650	300	220	130	RPK3
435A DC	650	300	220	130	RPK4
700A DC	800	300	220	210	RP4
1100A DC	800	300	220	210	RP4
1400A DC	1100	450	275	385	RP9
1750A DC	1100	450	275	385	RP9

KXA - Al Conductor	KXC - Cu Conductor	Bolt-on Tap-off Box
Busbar Code	Busbar Code	
04	05	x
05	06	x
06	08	x

Gland Type	Max. External Diameter of Cable Cross-section
M25	Ø 18
M32	Ø 26
M40	Ø 33
M50	Ø 39
M63	Ø 45
Special for EAE	Ø 60

* D value varies as per the used switch.

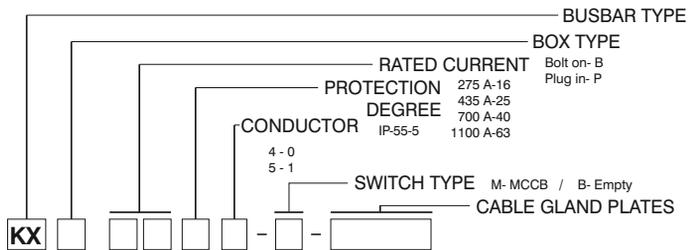
*** Tap-off boxes can be equipped with any brand of MCCB's.**

Please call us for non-standard tap-off boxes.

■ The dimensions given above are minimum values.

ELINEDC-KX

▶▶ Tap-off Boxes for MCCB's (KXP)



Cable Gland Plates

Mat.	Cable Gland Type	Order Code	Inner Diameter (mm)
Sheet	----	RP0	----
Sheet	M32	RP1	25
Sheet	M40	RP2	32
Sheet	Special	RP3	63
AL	2xSpecial	RP4	63
AL	4xM25	RP5	18
AL	4xM32	RP6	25
AL	4xM40	RP7	32
AL	8xM32	RP8	25

Plug-in Tap-off Boxes

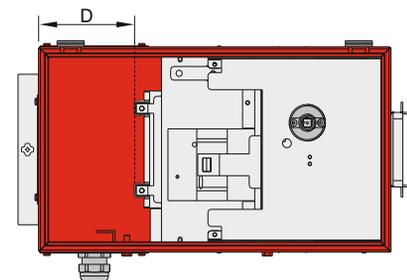
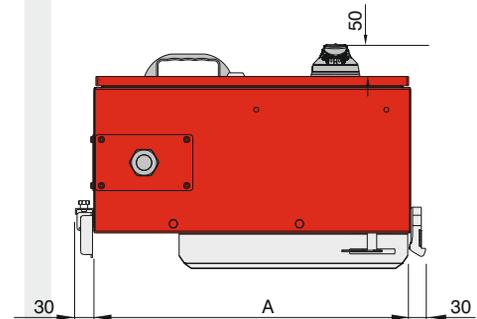
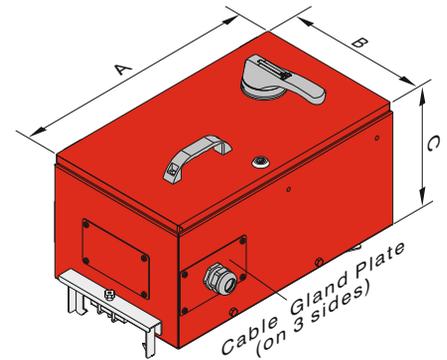
- KX P 1 6 5 0 - B1
- KX P 2 5 5 0 - B1
- KX P 4 0 5 0 - B1
- KX P 6 3 5 0 - B1

- KX P 1 6 5 0 - M1
- KX P 2 5 5 0 - M1
- KX P 4 0 5 0 - M1
- KX P 6 3 5 0 - M1

Sample Order:

Plug-in / 700A DC / IP-55 / 4 conductors, empty tap-off box

KXP 4050 - B1



Special Cable Gland Plates

Mat.	Cable Gland Type	Order Code	Inner Diameter (mm)
Sheet	----	RPK0	----
Sheet	M25	RPK1	18
Sheet	M32	RPK2	25
Sheet	M40	RPK3	32
Sheet	1xSpecial	RPK4	63

- KX P 1 6 5 1 - B1
- KX P 2 5 5 1 - B1
- KX P 4 0 5 1 - B1
- KX P 6 3 5 1 - B1

- KX P 1 6 5 1 - M1
- KX P 2 5 5 1 - M1
- KX P 4 0 5 1 - M1
- KX P 6 3 5 1 - M1

Sample Order:

Plug-in / 700A DC / IP-55 / 5 conductors, empty tap-off box

KXP 4051 - B1

Tap-off Boxes	A (mm)	B (mm)	C (mm)	*D (mm)	Standard Gland
275A DC	520	300	250	150	RPK3
435A DC	520	300	250	150	RPK4
700A DC	700	300	250	255	RP4
1100A DC	700	300	250	255	RP4

Gland Type	Max. External Diameter of Cable Cross-section
M25	Ø 18
M32	Ø 26
M40	Ø 33
M50	Ø 39
M63	Ø 45
Special for EAE	Ø 60

* D value varies as per the used switch.

*** Tap-off boxes can be equipped with any brand of MCCB's.**

Please call us for non-standard tap-off boxes.

■ The dimensions given above are minimum values.

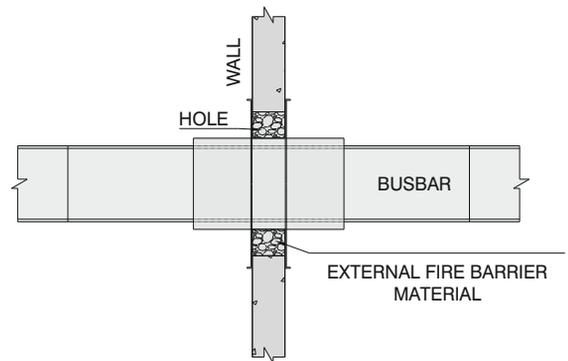
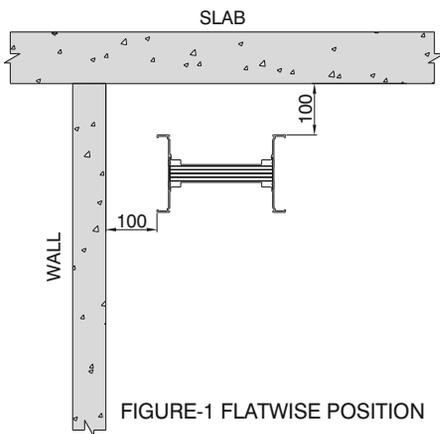


FIGURE-5 SAMPLE WALL CROSSING WITH FIRE BARRIER

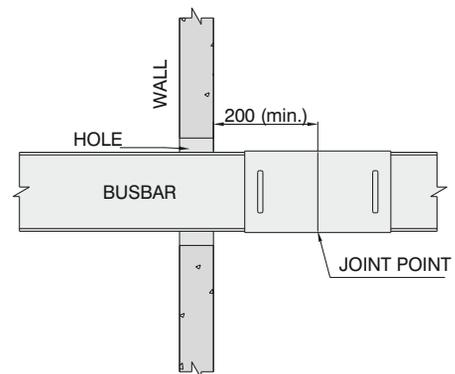
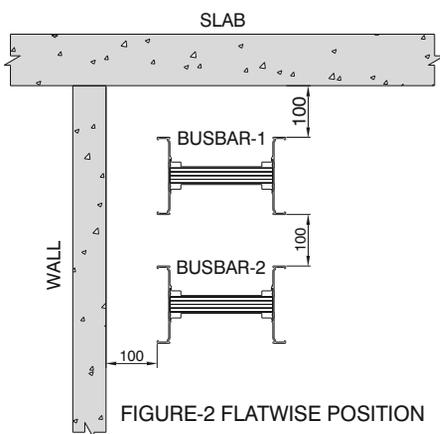
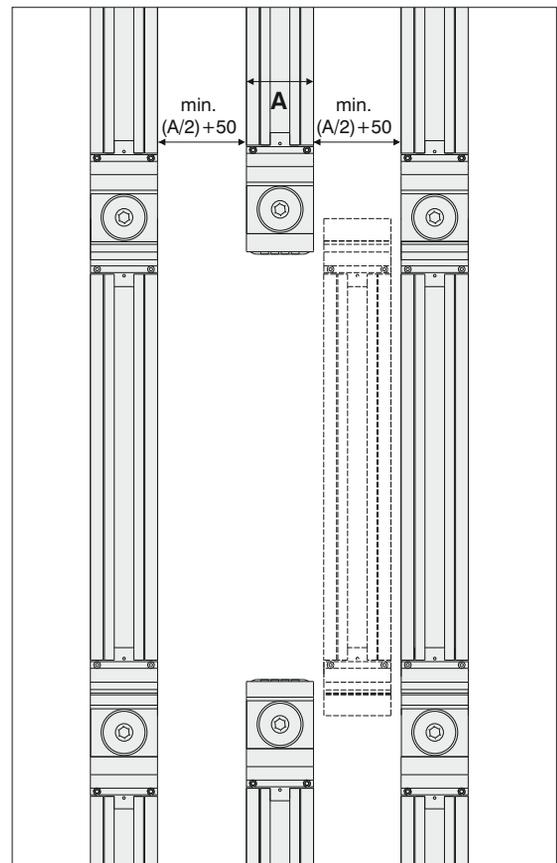
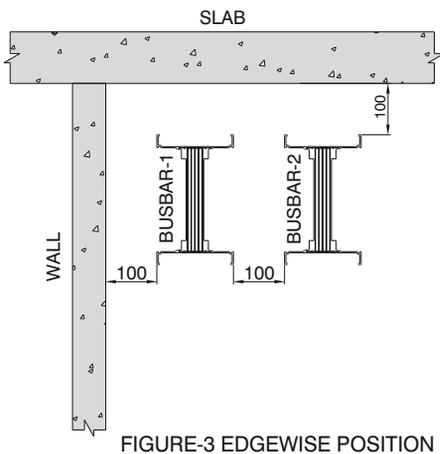


FIGURE-6 STANDARD WALL CROSSING



MINIMUM DISTANCE BETWEEN BUSBAR RUNS IN HORIZONTAL APPLICATIONS.

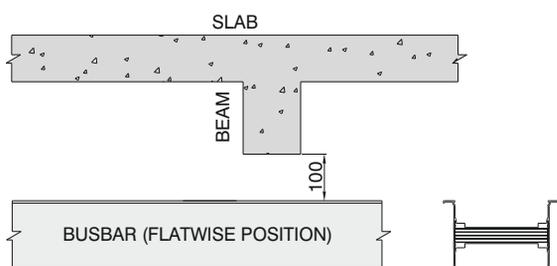


FIGURE-4 CROSSING UNDER A BEAM HORIZONTAL POSITION

The dimensions given above are minimum values.

All measures are given in mm.

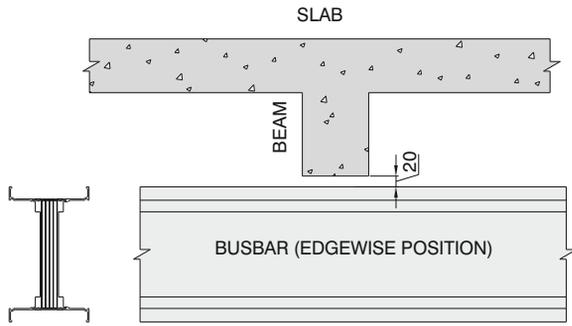


FIGURE-7 CROSSING UNDER A BEAM EDGEWISE POSITION

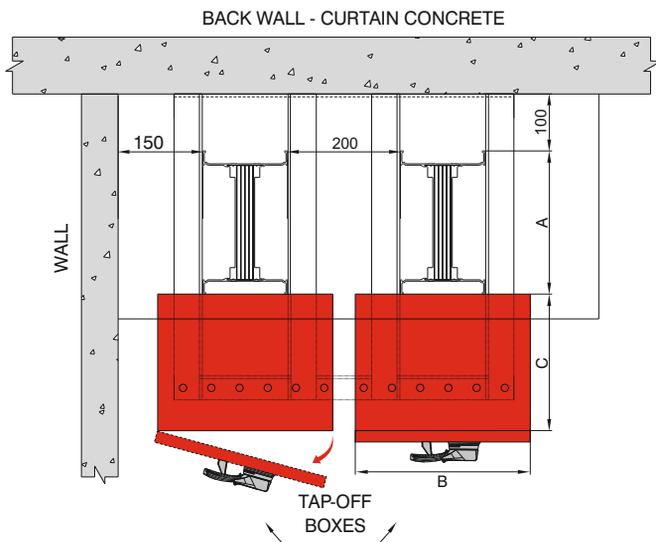


FIGURE-8 MINIMUM DIMENSIONS BETWEEN 2 TAP-OFF BOXES

Table For Outer Dimension of Busbars

KXA - Al Conductor	KXC - Cu Conductor	A
Busbar Code	Busbar Code	(mm)
04	05	77,5
05	06	82,5
06	08	91
08	10	106
-	12	121
10	14	131
-	17	146
12	-	161
14	23	176
17	-	211
-	21	211
20	25	251
27	-	301
-	22	202
-	26	252
25	32	312
-	36	342
32	40	372
33	-	412
-	43	412
40	50	492
50	63	732

NOTE: In order to accommodate the busbar systems in the riser shaft;

MDM= Minimum Distance from the wall

“A” dimension = All dimensions are for standard modules .

“C” dimension = Please see page 32-35 and special dimension for Tap-off box “C” dimension

“B” dimension = Max. opening distance for Tap-off box cover.

Shaft Dimension = $MDM + A + C + B + 100mm$
Shown as (Figure-8)

- The dimensions given above are minimum values.
- All measures are given in mm.

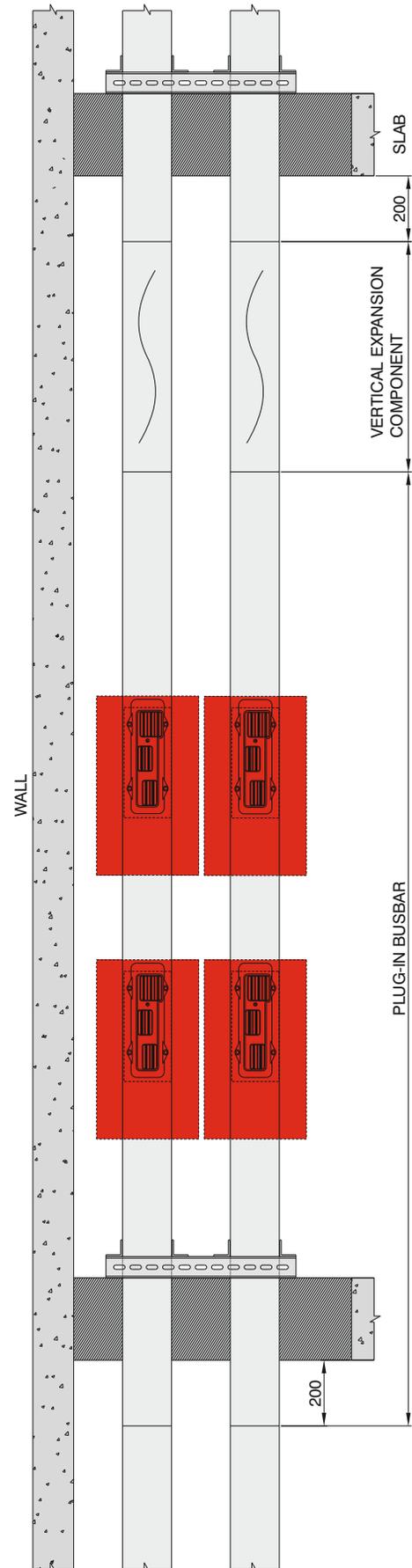


FIGURE-9 MINIMUM DIMENSIONS BETWEEN 2 RISERS

Cable Gland Plates

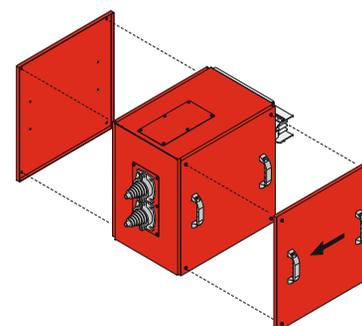
Busbar Housing Type	Cable Gland Plate	Type
		1
		2
		2
		3
		4

Feeder Box B10 - B 1 0

Sample Order:

5475A DC, Aluminium, Bolt-on, 4 conductors

KXA 32504 - B - B10-DC1



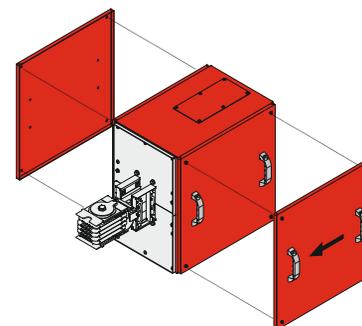
B10

Feeder Box B11 - B 1 1

Sample Order:

6250A DC, Copper, Bolt-on, 4 conductors

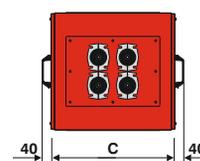
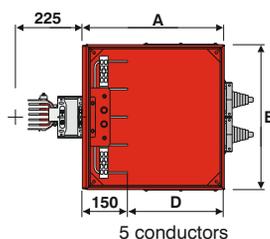
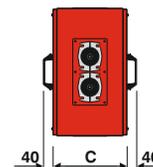
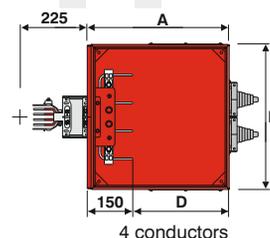
KXC 36504 - B - B11-DC1



B11

Ampere Ratings

KXA - Al Conductor	KXC - Cu Conductor	A	B	C	D	Gland Type
Busbar Code	Busbar Code	(mm)	(mm)	(mm)	(mm)	
04	05	500	520	355	350	1
05	06	500	520	355	350	1
06	08	500	520	355	350	1
08	10	500	520	355	350	1
-	12	500	520	355	350	1
10	14	500	520	355	350	1
-	17	500	520	355	350	1
12	-	500	520	355	350	1
14	23	500	520	555	350	2
17	-	500	520	555	350	2
-	21	500	520	555	350	2
20	25	500	520	555	350	2
27	-	500	520	555	350	3
-	22	500	520	555	350	2
-	26	500	520	555	350	2
25	32	500	520	555	350	3
-	36	500	520	555	350	3
32	40	700	520	770	550	3
33	-	700	520	770	550	3
-	43	700	520	770	550	3
40	50	700	520	770	550	3
50	63	700	520	950	550	4



■ The dimensions given above are minimum values

■ Please call us for special applications or for applications with MCCB's.

►► Feeder Boxes (Central Feeder Boxes BO)

Cable Gland Plates

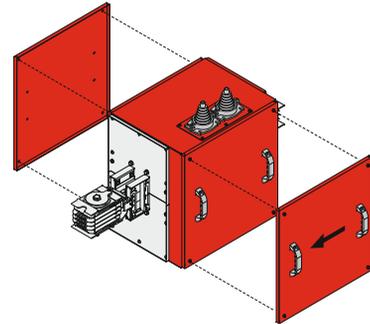
Busbar Housing Type	Cable Gland Plate	Type
		1
		2
		2
		3
		4

Central Feeder Box - B O

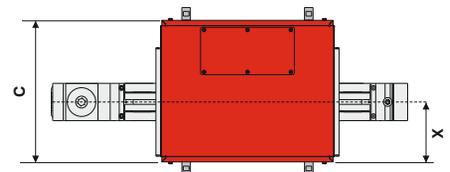
Sample Order:

4350A DC, Aluminium, Bolt-on
4conductors

KXA 25504 - B - BO-DC1

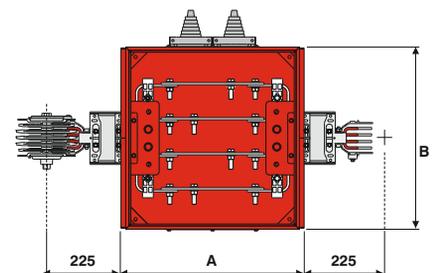


BO



Ampere Ratings

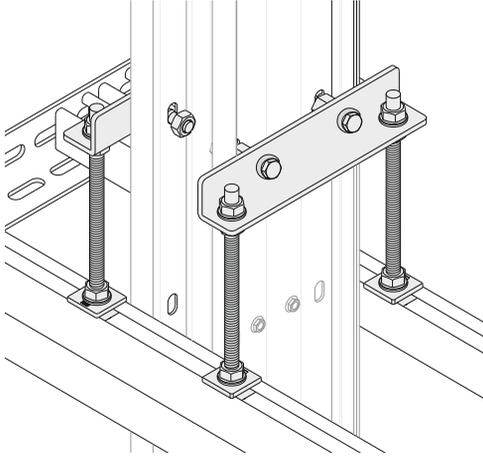
KXA - Al Conductor	KXC - Cu Conductor	A	B	C	X	Gland Type
Busbar Code	Busbar Code	(mm)	(mm)	(mm)	(mm)	
04	05	500	520	405	175	1
05	06	500	520	405	175	1
06	08	500	520	405	175	1
08	10	500	520	405	175	1
-	12	500	520	405	175	1
10	14	500	520	405	175	1
-	17	500	520	405	175	1
12	-	700	520	805	175	1
14	23	700	520	805	277,5	2
17	-	700	520	805	277,5	2
-	21	700	520	805	277,5	2
20	25	700	520	805	277,5	2
27	-	700	520	805	277,5	3
-	22	700	520	805	277,5	2
-	26	700	520	805	277,5	2
25	32	700	520	805	277,5	3
-	36	700	520	805	277,5	3
32	40	850	520	1005	385	3
33	-	850	520	1005	385	3
-	43	850	520	1005	385	3
40	50	850	520	1005	385	3
50	63	850	650	1005	385	4



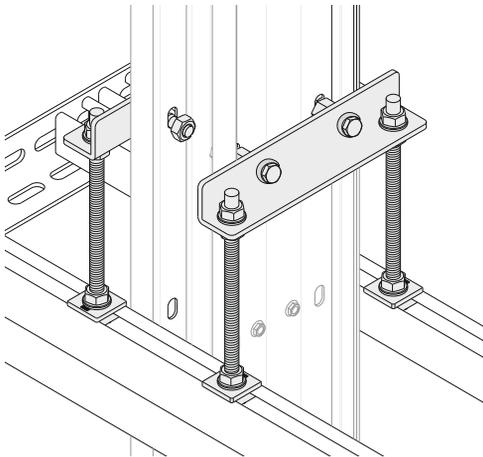
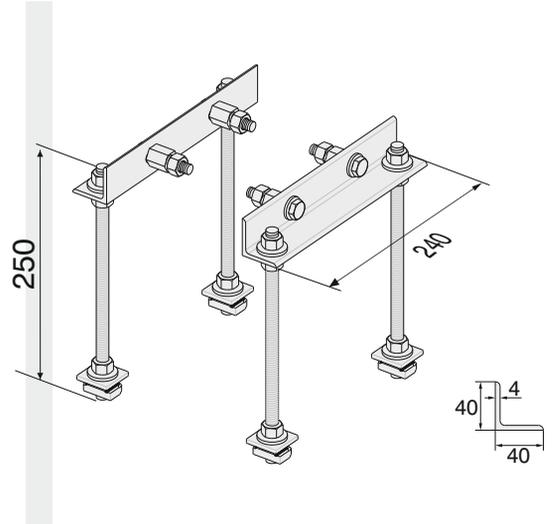
■ The dimensions given above are minimum values.

■ Please call us for special applications or for applications with MCCB's.

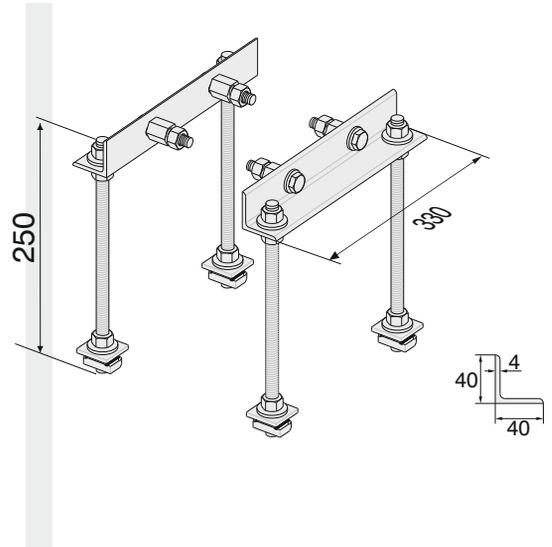
Supports



Description	Code
KX Vertical Riser Fixing Unit	3048475



Description	Code
KX Vertical Riser Fixing Unit (Fire Barrier)	3048709



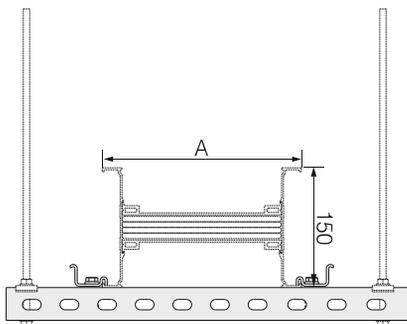
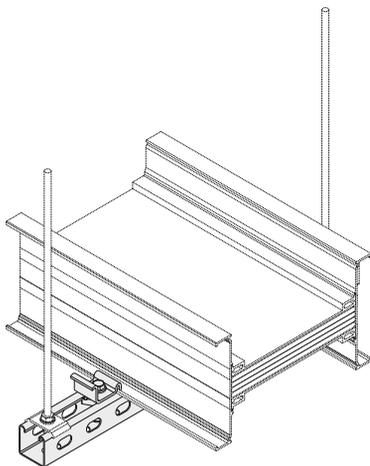
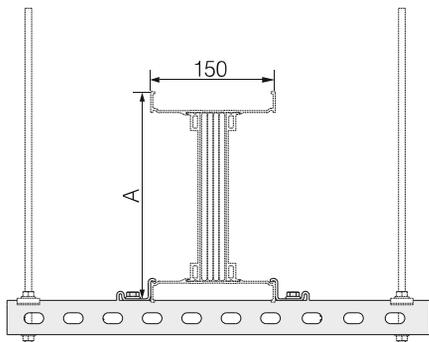
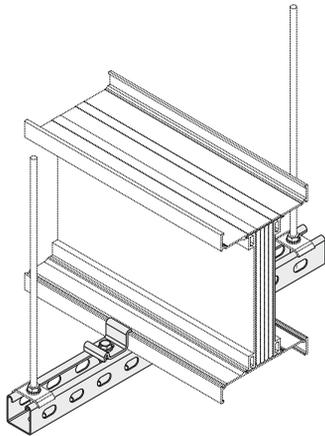
FIXING ELEMENTS



Description	Code
KX Fixing Clamp for Binrak(Unistrut) Channel	2011227

Description	Code
KX Fixing Clamp for Steel Angle Profile	2011226

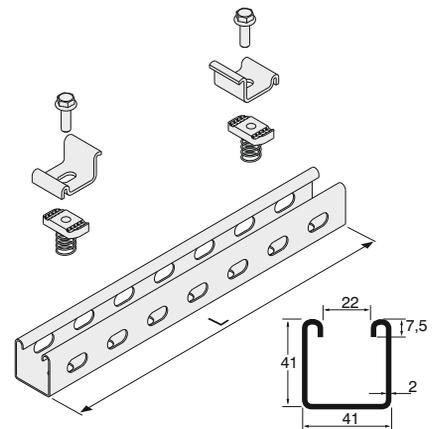
■ Please call us for non-standard components.



Supports

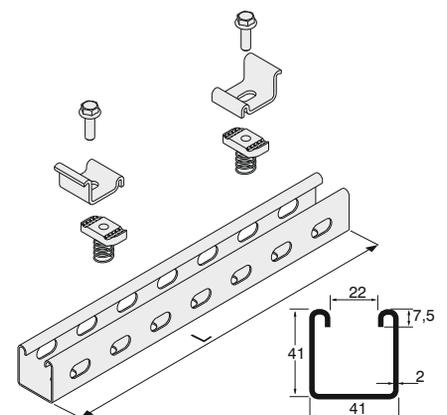
KX - BRA HANGER SET FOR EDGEWISE APPLICATION TO BINRAK (UNISTRUT) CHANNEL

Al Conductor	Cu Conductor	L	A	Order Code
Busbar Code	Busbar Code	(mm)	(mm)	
04	05	350	77,5	3025372
05	06	350	82,5	3025372
06	08	350	91	3025372
08	10	350	106	3025372
-	12	350	121	3025372
10	14	350	131	3025372
-	17	350	146	3025372
12	-	350	161	3025372
14	23	350	176	3025372
17	-	350	211	3025372
-	21	350	211	3025372
20	25	350	251	3025372
27	-	350	301	3025372

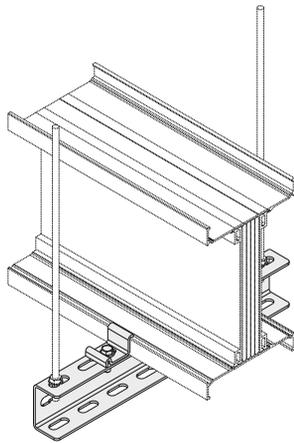


KX - BRA HANGER SET FOR FLATWISE APPLICATION TO BINRAK (UNISTRUT) CHANNEL

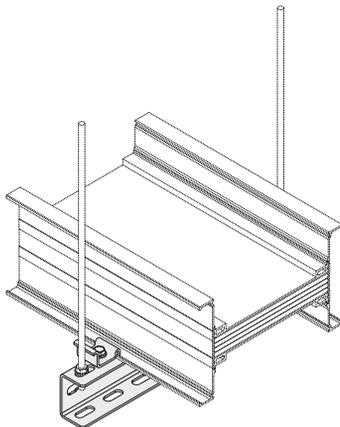
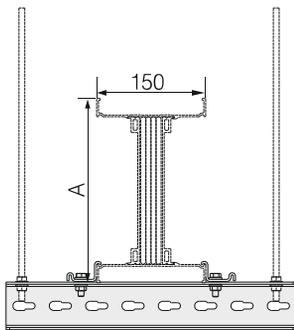
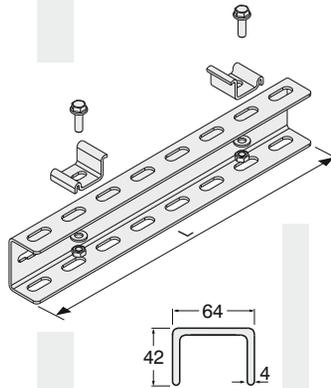
Al Conductor	Cu Conductor	L	A	Order Code
Busbar Code	Busbar Code	(mm)	(mm)	
04	05	300	77,5	3025372
05	06	300	82,5	3025372
06	08	300	91	3025372
08	10	300	106	3025372
-	12	300	121	3025372
10	14	300	131	3025372
-	17	350	146	3025373
12	-	350	161	3025373
14	23	400	176	3025374
17	-	400	211	3025374
-	21	400	211	3025374
20	25	450	251	3025375
27	-	450	301	3025375



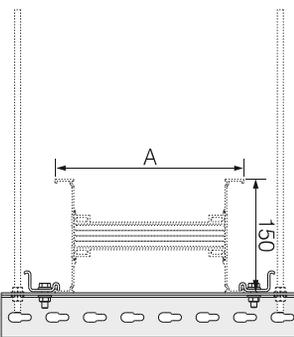
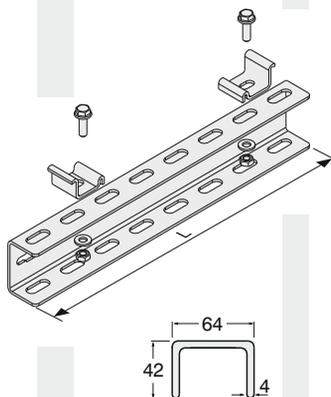
■ Please call us for non-standard components.



Supports
**KX - UT HANGER SET
 FOR EDGEWISE
 APPLICATION
 TO NPU CHANNEL**



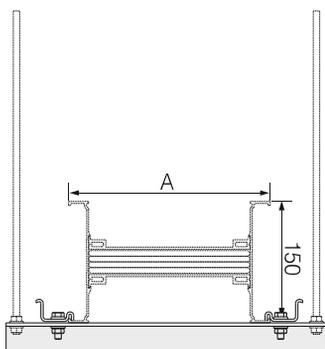
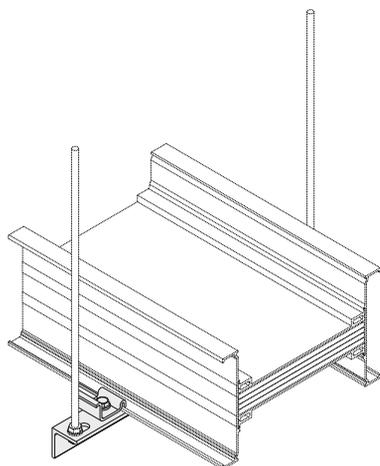
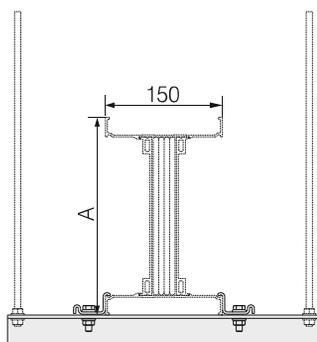
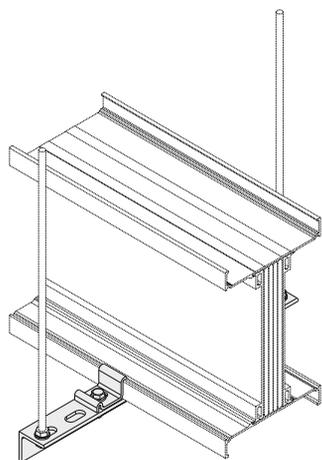
**KX - UT HANGER SET
 FOR FLATWISE
 APPLICATION
 TO NPU CHANNEL**



Al Conductor	Cu Conductor	L	A	Order Code
Busbar Code	Busbar Code	(mm)	(mm)	
04	05	350	77,5	3025348
05	06	350	82,5	3025348
06	08	350	91	3025348
08	10	350	106	3025348
-	12	350	121	3025348
10	14	350	131	3025348
-	17	350	146	3025348
12	-	350	161	3025348
14	23	350	176	3025348
17	-	350	211	3025348
-	21	350	211	3025348
20	25	350	251	3025348
27	-	350	301	3025348
-	22	350	202	3025348
-	26	350	252	3025348
25	32	350	312	3025348
-	36	350	342	3025348
32	40	350	372	3025348
33	-	350	412	3025348
-	43	350	412	3025348
40	50	350	492	3025348
50	63	350	732	3025348

Al Conductor	Cu Conductor	L	A	Order Code
Busbar Code	Busbar Code	(mm)	(mm)	
04	05	300	77,5	3025347
05	06	300	82,5	3025347
06	08	300	91	3025347
08	10	300	106	3025347
-	12	300	121	3025347
10	14	300	131	3025347
-	17	350	146	3025348
12	-	350	161	3025348
14	23	400	176	3025349
17	-	400	211	3025349
-	21	400	211	3025349
20	25	450	251	3025350
27	-	450	301	3025350
-	22	400	202	3025349
-	26	450	252	3025350
25	32	500	312	3025351
-	36	550	342	3025352
32	40	550	372	3025352
33	-	600	412	3025353
-	43	600	412	3025353
40	50	700	492	3025354
50	63	900	732	3025355

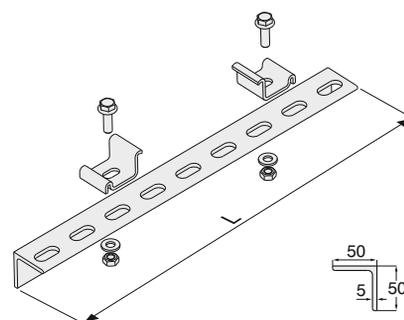
■ Please call us for non-standard components.



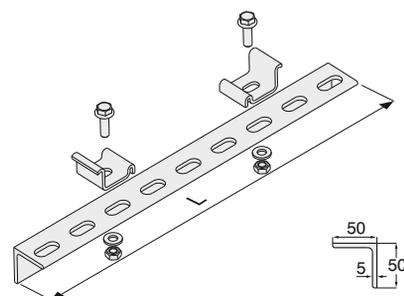
Supports KX HANGER SET FOR EDGEWISE APPLICATION TO STEEL ANGLE PROFILE

KX HANGER SET FOR FLATWISE APPLICATION TO STEEL ANGLE PROFILE

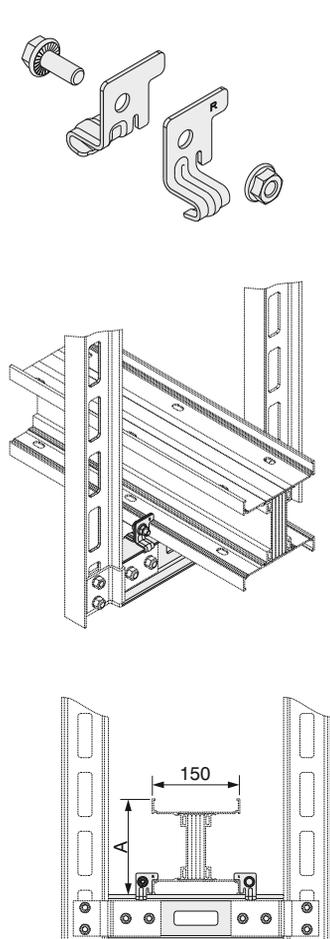
Al Conductor	Cu Conductor	L	A	Order Code
Busbar Code	Busbar Code	(mm)	(mm)	
04	05	350	77,5	3025344
05	06	350	82,5	3025344
06	08	350	91	3025344
08	10	350	106	3025344
-	12	350	121	3025344
10	14	350	131	3025344
-	17	350	146	3025344
12	-	350	161	3025344
14	23	350	176	3025344
17	-	350	211	3025344
-	21	350	211	3025344
20	25	350	251	3025344
27	-	350	301	3025344



Al Conductor	Cu Conductor	L	A	Order Code
Busbar Code	Busbar Code	(mm)	(mm)	
04	05	300	77,5	3025343
05	06	300	82,5	3025343
06	08	300	91	3025343
08	10	300	106	3025343
-	12	300	121	3025343
10	14	300	131	3025343
-	17	350	146	3025344
12	-	350	161	3025344
14	23	400	176	3025345
17	-	400	211	3025345
-	21	400	211	3025345
20	25	450	251	3025346
27	-	450	301	3025346

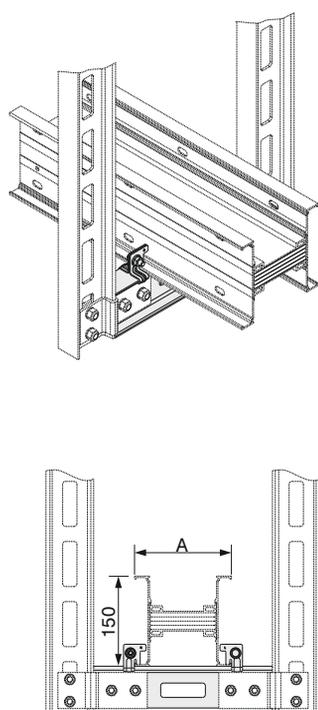
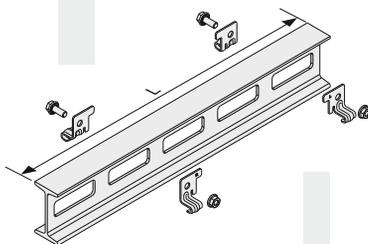


■ Please call us for non-standard components.

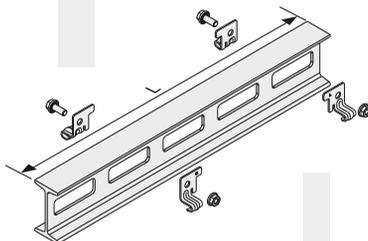


Supports

**KX - IDY TWO-WAY
FOR EDGEWISE
APPLICATION
TO NPI CHANNEL**



**KX - IDY TWO-WAY
FOR FLATWISE
APPLICATION
TO NPI CHANNEL**

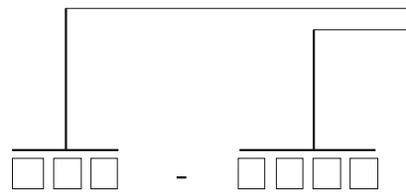


Description	Code
KX IDY Support Set	2054590

Al Conductor	Cu Conductor	L	A	Order Code
Busbar Code	Busbar Code	(mm)	(mm)	
04	05	300	77,5	3113547
05	06		82,5	
06	08		91	
08	10		106	
-	12		121	
10	14		131	
-	17		146	
12	-		161	
14	23		176	
17	-		211	
-	21		211	
20	25		251	
27	-		301	
-	22		202	
-	26		252	
25	32		312	
-	36		342	
32	40		372	
33	-		412	
-	43		412	
40	50	492		
50	63	732		

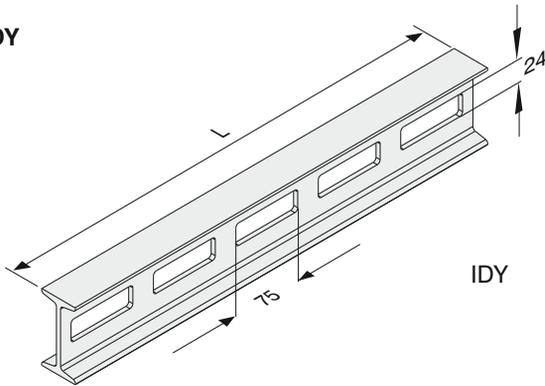
Al Conductor	Cu Conductor	L	A	Order Code
Busbar Code	Busbar Code	(mm)	(mm)	
04	05	300	77,5	3113547
05	06		82,5	
06	08		91	
08	10		106	
-	12		121	
10	14		131	
-	17		146	
12	-		161	
14	23		176	
17	-		211	
-	21	211		
20	25	400	251	3113548
27	-		301	
-	22		202	
-	26		252	
25	32	500	312	3113549
-	36		342	
32	40		372	
33	-	600	412	3113550
-	43		412	
40	50		492	
50	63	900	732	3113553

■ Please call us for non-standard components.



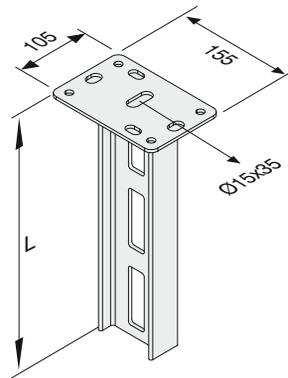
Supports

IDY



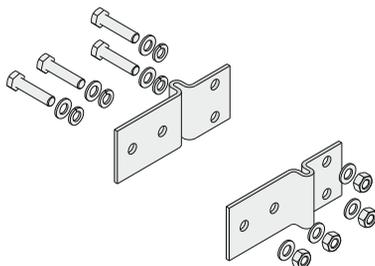
IDY

IDD



IDD

IDT

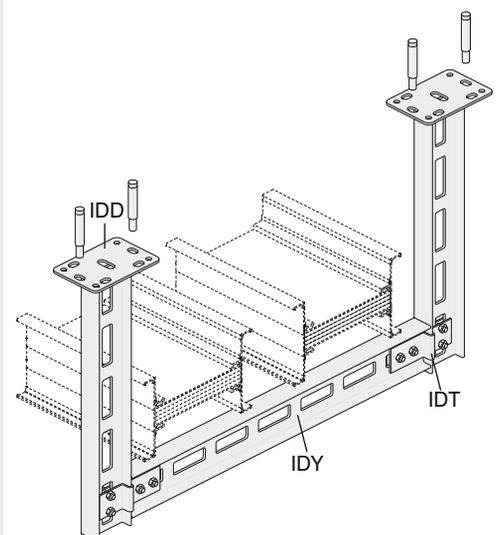


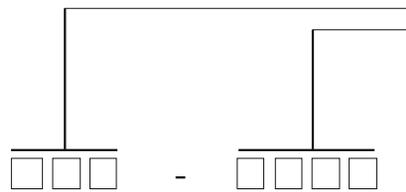
IDT

Description	L (mm)	Code
IDY 300	300	3008242
IDY 400	400	3008290
IDY 500	500	3008289
IDY 600	600	3008288
IDY 700	700	3008287
IDY 800	800	3008286
IDY 900	900	3008285
IDY 1000	1000	3008284
IDY 1100	1100	3008283
IDY 1200	1200	3008282
IDY 1300	1300	3008236
IDY 1400	1400	3008281
IDY 1500	1500	3008280
IDY 1600	1600	3008241
IDY 1700	1700	3008240
IDY 1800	1800	3008239
IDY 1900	1900	3008238
IDY 2000	2000	3008237

IDD 300	300	3008314
IDD 400	400	3008313
IDD 500	500	3008312
IDD 600	600	3008311
IDD 700	700	3008310
IDD 800	800	3008309
IDD 900	900	3008308
IDD 1000	1000	3008307
IDD 1100	1100	3008306
IDD 1200	1200	3008305
IDD 1300	1300	3008304
IDD 1400	1400	3008303
IDD 1500	1500	3008302
IDD 1600	1600	3008301
IDD 1700	1700	3008300
IDD 1800	1800	3008299
IDD 1900	1900	3008298
IDD 2000	2000	3008297

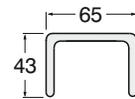
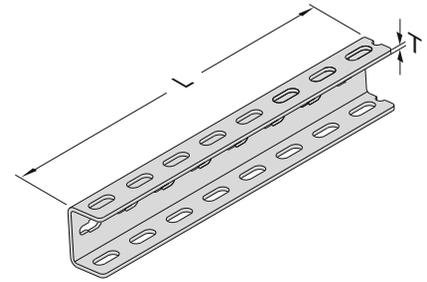
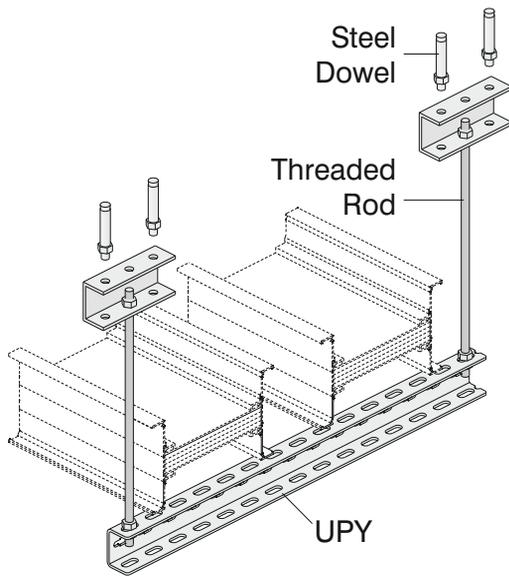
IDT Support Fitting	-	3008279
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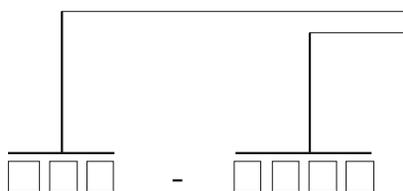
Supports

UPY



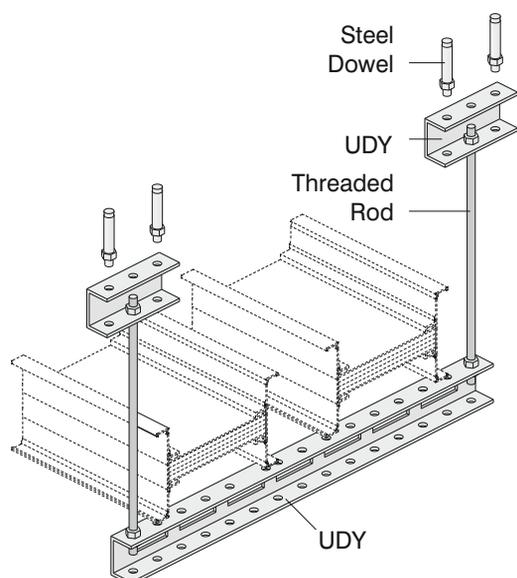
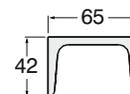
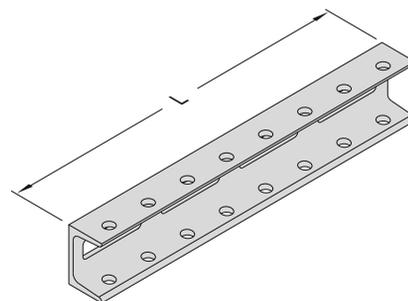
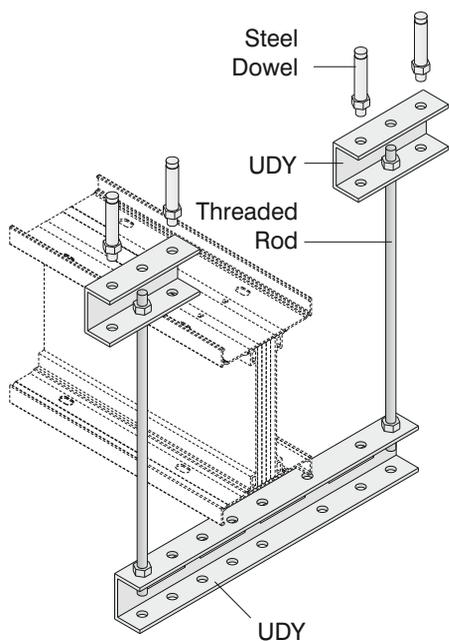
Description	T (mm)	L (mm)	Code
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UPY 400	4	400	3004489
UPY 500	4	500	3004491
UPY 600	4	600	3004493
UPY 700	4	700	3004495
UPY 800	4	800	3004496
UPY 900	4	900	3004497
UPY 1000	4	1000	3004498
UPY 1100	4	1100	3004499
UPY 1200	4	1200	3004500
UPY 1500	4	1500	3004503

■ Please call us for non-standard components.



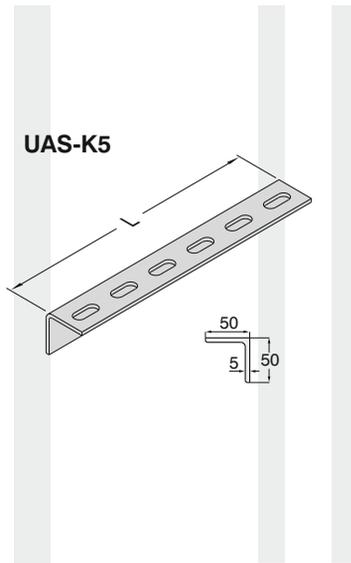
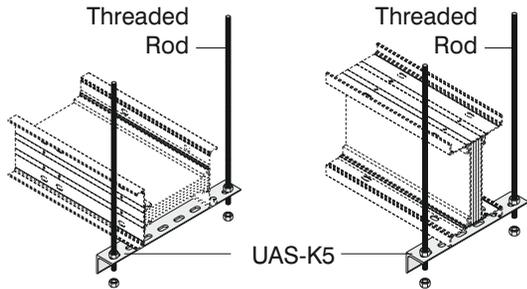
Supports

UDY



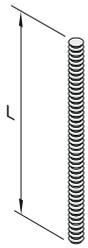
Description	L (mm)	Code
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UDY 400	400	3008024
UDY 500	500	3008025
UDY 600	600	3008026
UDY 700	700	3008027
UDY 800	800	3008028
UDY 900	900	3008029
UDY 1000	1000	3008030
UDY 1100	1100	3008031
UDY 1200	1200	3008032
UDY 1300	1300	3008033
UDY 1400	1400	3008034
UDY 1500	1500	3008035
UDY 1600	1600	3008036
UDY 1700	1700	3008037
UDY 1800	1800	3008038
UDY 1900	1900	3008039
UDY 2000	2000	3008040

■ Please call us for non-standard components.



Supports

Description	L (mm)	Code
UAS-K5 SUPPORT (1)	200	3005324
UAS-K5 SUPPORT (2)	250	3005323
UAS-K5 SUPPORT (3)	300	3005322
UAS-K5 SUPPORT (4)	350	3005321
UAS-K5 SUPPORT (5)	400	3005320
UAS-K5 SUPPORT (6)	500	3005319
UAS-K5 SUPPORT (7)	600	3005318
UAS-K5 SUPPORT (8)	700	3005317
UAS-K5 SUPPORT (9)	1100	3005316



Threaded Rod



Extension Unit



Steel Dowel

Diameter of the hole to be drilled
M10.....Ø14
M12.....Ø16



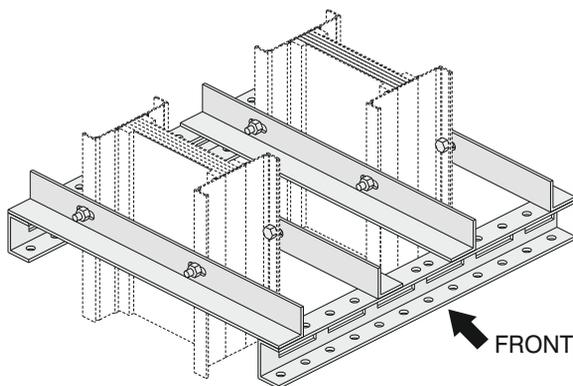
Steel Nut



Washer

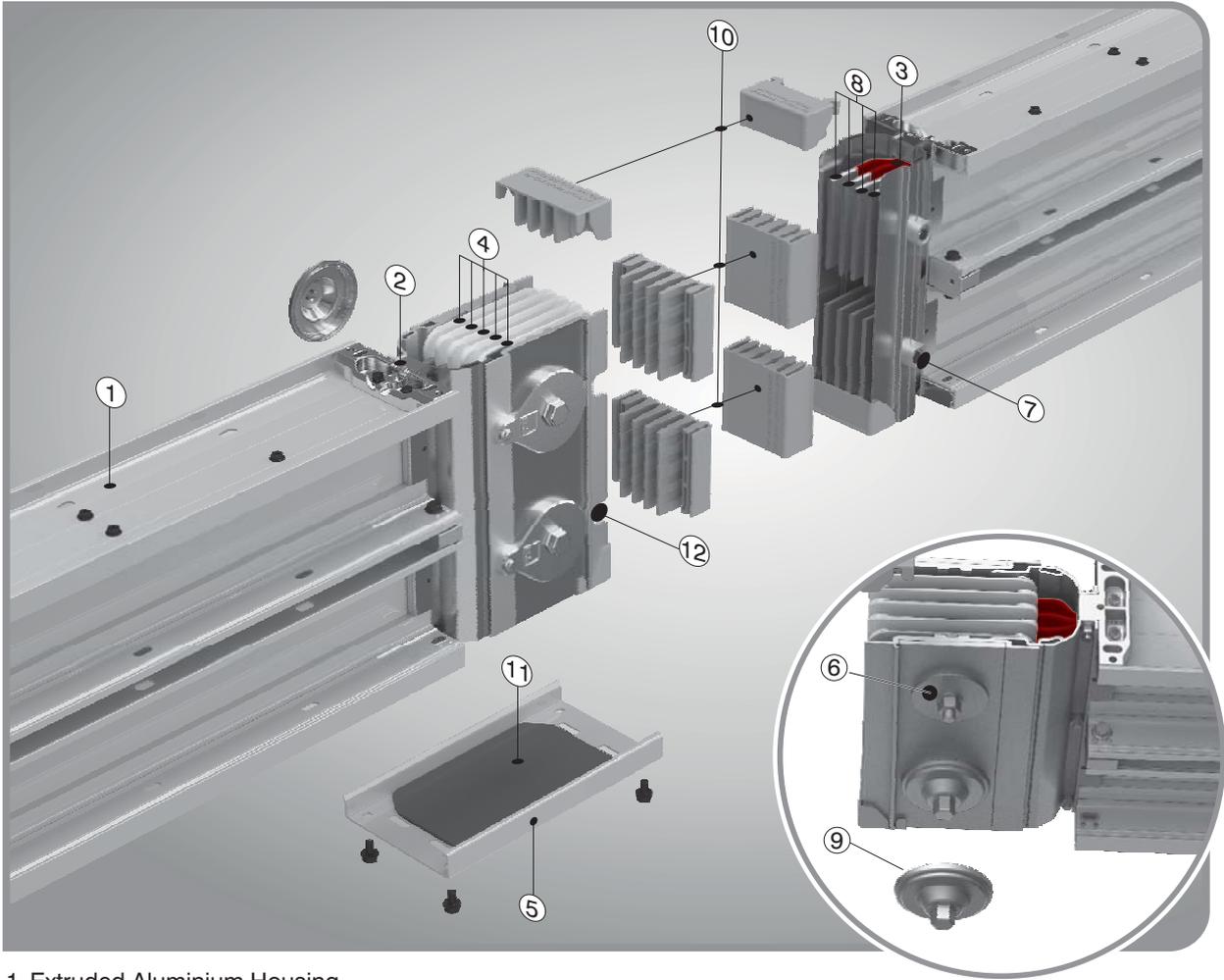
Connection Units

Description	L (mm)	Code
BRA 12-05 Threaded Rod (M10)	500	5000037
BRA 12-10 Threaded Rod (M10)	1000	5000032
BRA 14-05 Threaded Rod (M12)	500	5000026
BRA 14-10 Threaded Rod (M12)	1000	5000034
BRA 13 Extension Unit (M10)	-	1004312
BRA 13 Extension Unit (M12)	-	1004282
BRA 9 Steel Dowel (M10)	-	5000023
BRA 9 Steel Dowel (M12)	-	5000022
M10 Steel Nut	-	1000522
M12 Steel Nut	-	1000964
M10 Washer	-	1000504
M12 Washer	-	1000505



Vertical Riser Application
Sample Order Hanging
(Special to project)

■ Please call us for non-standard components.



- 1- Extruded Aluminium Housing
- 2- PE Fixing Piece
- 3- Insulation Layers (Epoxy+B class polyester film)
- 4- Joint Insulators
- 5- Joint Cover
- 6- Belleville
- 7- Alignment Pin (removable)
- 8- Conductors
- 9- IP55 Nut Locking Piece
- 10- Protection Plastic
- 11- IP55 Joint Cover Gasket
- 12- Alignment Pin Slot

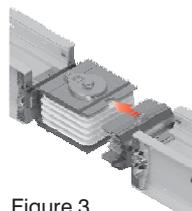


Figure 3

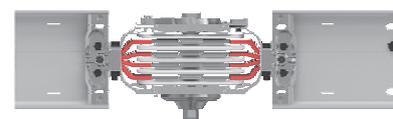


Figure 4
Joint assembly

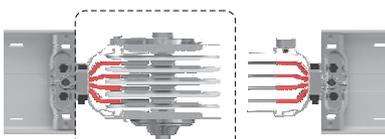


Figure 1
Block Joint

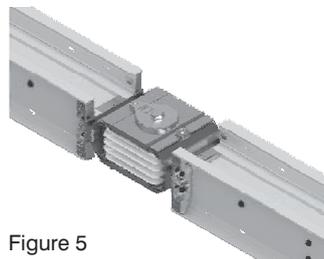


Figure 5

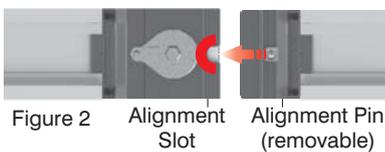


Figure 2
Alignment Slot
Alignment Pin (removable)

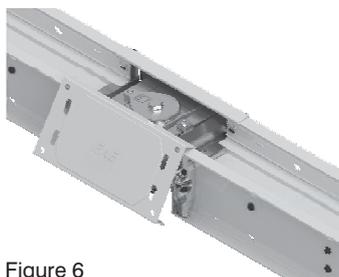
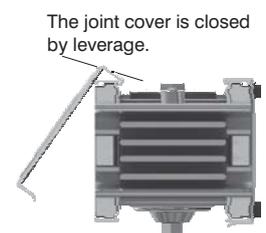


Figure 6



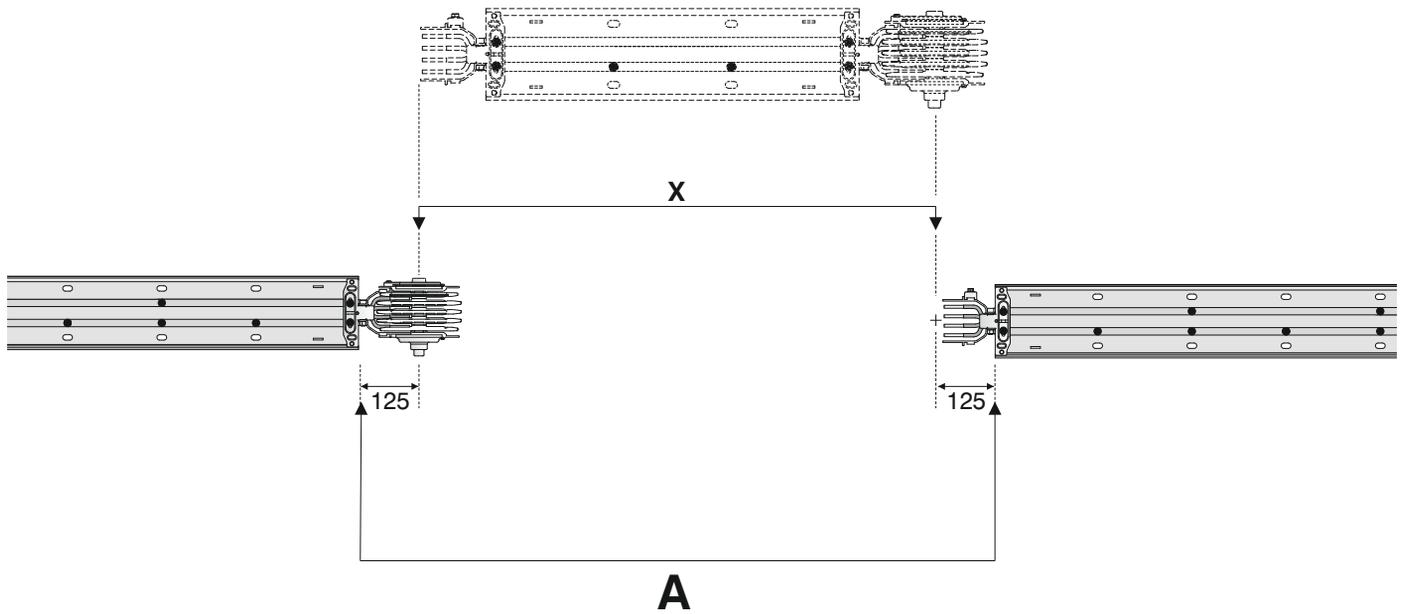
Please check related installation manual for details.

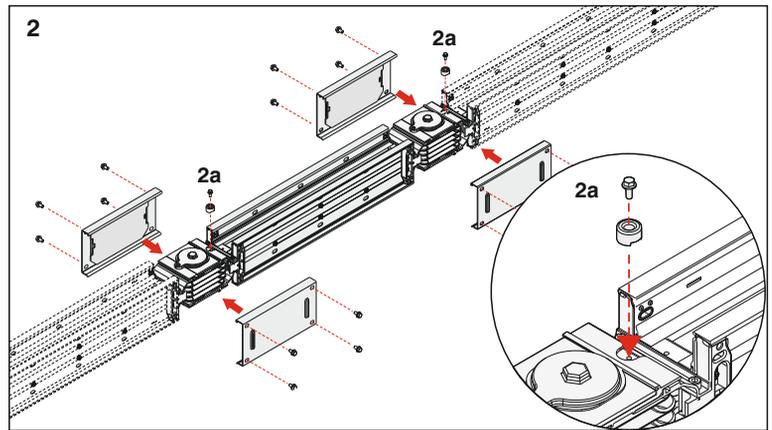
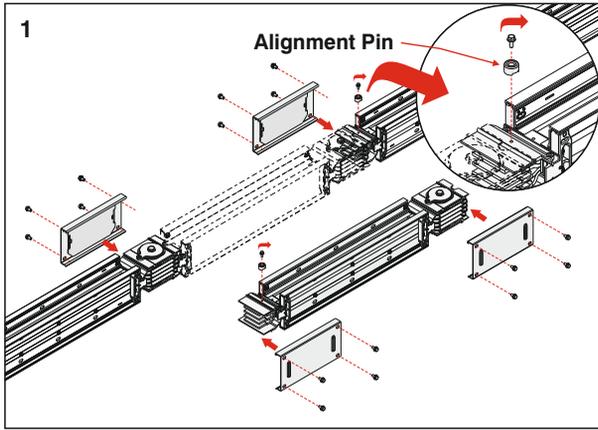
►► Measuring a Special Length

After installation of standard busbar 3m lengths, you will be in need of special lengths which are smaller than 3m. The minimum length for these special elements can be 35 cm. Please measure the lengths of these modules as shown below.

Length A is measured between housing of 2 busbars in cm. A. The special length is calculated by deducting 25 cm from this measured length.

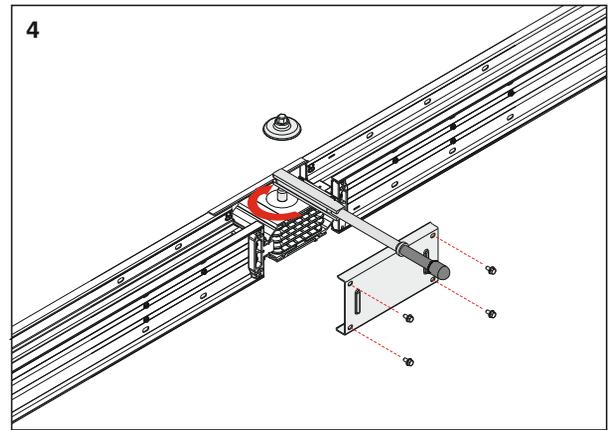
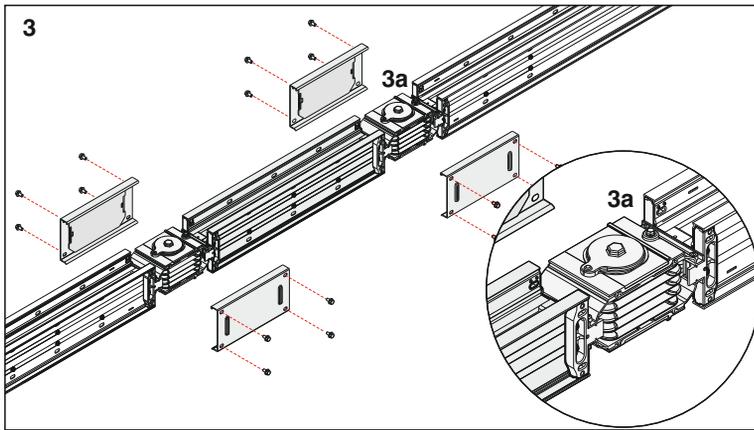
$X = A - 25$ (cm) X = Length of Special Busbar (The busbar module will be manufactured as per X value.)





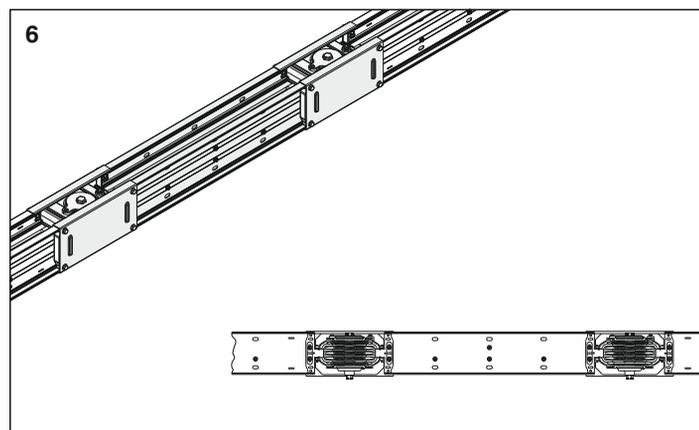
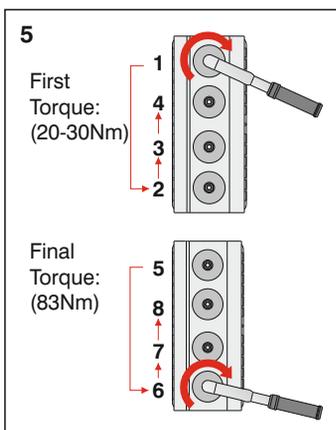
1- Remove Alignment Pin on the busbar, without block joint.

2- Insert the piece aligning conductors correctly. Fix back the Alignment pin.



3- Make sure busbar piece is aligned according to alignment pin.

4- Fix one of the joint cover to stabilize joint. Apply 83Nm to the main bolt.



5- If there are more than one bolt for the same phase, bolts shall be tightened by hand approximately 20-30Nm as per above sequence, then 83Nm shall be applied at final torque with the same sequence.

6- Fix the remaining joint cover. Joint installation is completed.

Note: If the final joint cover does not close correctly, it indicates the busbar is not completely aligned. Release the bolts and reapply the sequence from figure 4 to complete the joint.

Please check related installation manual for details.

CE DECLARATION OF CONFORMITY

Product Group E-Line DC-KX Busbar Energy Distribution System

Manufacturer EAE Elektrik Asansor End. Insaat San. ve Tic. A.S.
Akcaburgaz Mahallesi, 3114. Sokak,
No:10 34510 Esenyurt-Istanbul

The objects of the declaration described below is in conformity with the relevant Union harmonisation legislation. This declaration of conformity is issued under the sole responsibility of the manufacturer.

Standard :

EN 61439-6

Low-voltage switchgear and controlgear assemblies - Part 6: Busbar trunking systems

IEC 61439-6

Low-voltage switchgear and controlgear assemblies - Part 6: Busbar trunking systems (busways)

CE - Directive

2014/35/EU "The Low Voltage Directive"

2014/30/EU "Electromagnetic Compatibility (EMC) Directive"

2011/65/EU "Restriction of the use of certain hazardous substances (RoHS)"

Date

20.04.2016

EAE Elektrik A.S.



EAE Elektrik Asansor End. Insaat San. ve Tic. A.S.

Akcaburgaz Mahallesi, 3114. Sokak, No:10 34510 Esenyurt-Istanbul
Tel: +90 (212) 866 20 00 Fax: +90 (212) 886 24 20 <http://www.eae.com.tr>

700A ... 18900A DC COMPACT BUSBAR PRODUCT OVERVIEW (E-LINE KX)

1- Standards & Certification:

- Busbar system shall be designed and manufactured as per IEC 61439-6 standard, which requires below listed tests. Each busbar rating shall have a separate type test certificate from an independent internationally accredited laboratory including below tests:
- 10.2- Strength of material and parts, 10.2.2- Resistance to corrosion, 10.2.3- Properties of insulating materials, 10.2.3.1- Verification of thermal stability of enclosures, 10.2.3.2- Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects, 10.2.6- Mechanical impact, 10.2.7- Marking, 10.2.101- Ability to withstand mechanical loads, 10.2.101.1- Test procedure for a straight busbar trunking unit, 10.2.101.2- Test procedure for a joint, 10.2.101.3- Resistance of the enclosure to crushing, 10.3- Degree of protection of assembly, 10.4- Clearances and creepage distances, 10.5- Protection against electric shock and integrity of protective circuits, 10.5.2- Effective earth continuity between the exposed conductive parts of the assembly and the protective circuit, 10.5.3- Short-circuit withstand strength of the protective circuit, 10.9- Dielectric properties, 10.9.2- Power-frequency withstand voltage, 10.9.3- Impulse withstand voltage, 10.10- Verification of temperature rise, 10.11- Short-circuit withstand strength, 10.101- Resistance to flame propagation, 10.102- Fire resistance in building penetrations, Annex BB Phase conductor characteristics, Annex CC Fault-loop zero-sequences impedances, Annex DD Fault-loop resistances and reactances.
- Busbar system shall have CE marking.
- The manufacturer of busbar system shall have ISO 9001 and ISO 14001 certification.
- Each product shall have a "Type Label" including coding system, which identifies the brand, type of the unit, number of conductors and electrical details. The same coding shall be on the related certificate and catalogue.

2- Electrical Characteristics

- Busbar systems nominal insulation voltage shall be 1000 V.
- As per ampere rates, minimum short circuit values shall be as given below;

DC1 Single Busbar

For Aluminium Conductors;	700-875A	:1 sec/rms	16kA, Peak	32kA
	1100A	:1 sec/rms	25kA, Peak	52.5kA
	1400A	:1 sec/rms	35kA, Peak	73.5kA
	1750A	:1 sec/rms	50kA, Peak	105kA
	2170-2350A	:1 sec/rms	60kA, Peak	132kA
	2800-3500-4350A	:1 sec/rms	80kA, Peak	176kA
	4350-5475A	:1 sec/rms	100kA, Peak	220kA
	5550A and above	:1 sec/rms	120kA, Peak	264kA

For Copper Conductors;	950-1125A	:1 sec/rms	24kA, Peak	50.4kA
	1400A	:1 sec/rms	40kA, Peak	84kA
	1750A	:1 sec/rms	50kA, Peak	105kA
	2170-2350A	:1 sec/rms	60kA, Peak	132kA
	2800-3500A	:1 sec/rms	80kA, Peak	176kA
	3500A	:1 sec/rms	70kA, Peak	154kA
	3900-4350A	:1 sec/rms	100kA, Peak	220kA
	5750A and above	:1 sec/rms	120kA, Peak	264kA

DC2 Plural Busbar

For Aluminium Conductors;	1200-1500A	:1 sec/rms	16kA, Peak	32kA
	1890A	:1 sec/rms	25kA, Peak	52.5kA
	2400A	:1 sec/rms	35kA, Peak	73.5kA
	3000A	:1 sec/rms	50kA, Peak	105kA
	3750-4050A	:1 sec/rms	60kA, Peak	132kA
	4800-6000-7500A	:1 sec/rms	80kA, Peak	176kA
	7500-9450A	:1 sec/rms	100kA, Peak	220kA
	9600A and above	:1 sec/rms	120kA, Peak	264kA

For Copper Conductors;	1650-1950A	:1 sec/rms	24kA, Peak	50.4kA
	2400A	:1 sec/rms	40kA, Peak	84kA
	3000A	:1 sec/rms	50kA, Peak	105kA
	3750-4050A	:1 sec/rms	60kA, Peak	132kA
	4800-6000A	:1 sec/rms	80kA, Peak	176kA
	6000A	:1 sec/rms	70kA, Peak	154kA
	6750-7500A	:1 sec/rms	100kA, Peak	220kA
	9900A and above	:1 sec/rms	120kA, Peak	264kA

2.1- Housing

- Busbar system shall have "Sandwich-Compact" structure. Conductors shall be packed and placed into the housing without leaving air gap in order to provide low reactance.
- Housing shall be made of thermal processed, extruded aluminium, RAL7038-Electrostatic painted.
- Compact structure of the housing shall be provided by M6 screws applied at every 19cm along the entire length.
- The sandwich-compact structure shall continue at the plug-in points too. There shall not be air gap between conductors at the plug-in points.

2.2- Conductors

- Aluminium or Copper conductors shall be epoxy coated and tin plated at the joints upon the wire configuration and required numbers, which are described below.
- Compact busbar system shall have aluminium conductors between 700A – 15000A DC.
- Compact busbar system shall have copper conductors between 950A – 18900A DC.
- Compact busbar system shall have the following number of conductors and wire configuration;
- a) 4 Conductors: (4 full size conductors + PE (housing)).
- b) 5 Conductors: (5 full size conductors + PE (100% earth conductor + housing)),
- "+" conductors and "-" conductor shall have the same cross-section and they shall be insulated.
- Aluminium conductors shall be of EC grade aluminium. Minimum conductivity shall be 34m/mm².Ω.
- Copper conductors shall be minimum 99,95% electrolytic copper. Minimum conductivity shall be 56m/mm².Ω.

2.3- Insulation

- Insulation system shall be suitable for 1.000V continuous operation. Conductors shall be minimum thermo-set epoxy coated. Conductor size shall be designed so that temperature rise on the conductors shall not exceed 100C degree at nominal current, which helps to global heating problem. With this reason, insulation class shall be "B class".

2.4- Joint Structure

- Electrical and mechanical connection shall be made by placing conductor joints into the joint blocks of the connected conductors and followed by tightening and fastening of the joint bolts.

2.5- Protection

- Protection degree of the housing and joints shall be IP55/IP65.

2.6- Accessories

- Busbar system shall have all necessary accessories (elbows, offsets, panel-transformer connections, reductions, etc.) Manufacturer shall supply special dimensioned units in short time, if the project conditions requires.
- For horizontal runs, a horizontal expansion unit shall be used at every 40m and expansion points of the building.
- For vertical applications, a vertical expansion unit shall be used at every floor. Busbar system shall be rigidly fixed by supports at every floor.

3- Tap Off Boxes

- Both, Feeder and Plug-in busbar systems shall be suitable for bolt-on type tap off box connections at the joints up to 1750A DC.
- Bolt-on tap off boxes shall be installed to the joints without changing or adding any piece. Bolt-on tap off boxes shall be able to be moved between different rated busbars.
- Plug-In busbars shall have minimum 2 plug-in points on each 300cm length. Plug-in tap off box sizes shall be up to 1100A DC. Unused plug-in points shall have covers, which can provide IP55 protection degree.
- Plug-in tap off boxes shall be suitable to install or removed from busbars without switching off the power on the busbar.
- Contacts of plug-in tap off box shall be plated by silver.
- Tap off boxes shall be manufactured of sheet steel and epoxy painted RAL3020 colour.
- Plug-in tap off boxes shall have electromechanical safety interlock system. Which means;
- a-) Electromechanical interlock mechanism shall ensure that the tap off box cannot be removed mechanically from the busbar, when the switch is at "ON" position.
- b-) Electromechanical interlock mechanism shall ensure that, cover of the box can be opened only, when the switch is at "OFF" position.
- c-)When the cover is opened, inside protection degree shall be minimum IP2X against accessing to live conductors.
- d-) While inserting the contacts of plug-in tap off box, earth contact shall make the first touch. While removing, it shall be disconnected last.
- Tap off boxes shall be suitable for any brand of MCCBs. Electromechanical interlock mechanism shall be suitable for all these MCCBs too.

4- Installation and Commissioning

- Busbar systems shall be installed as per Single-Line drawings respect to required ampere rates and manufacturer installation guide (torque values, lockers, etc.). Electrical installer shall run an insulation test after installation according to manufacturers test procedures. The results of the test shall be reported to the manufacturer. Minimum insulation value shall be 1 Mohm.

Component List	Quantity
Item	Component
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Company :
Project :
Project No :

Prepared by
Name :
Date :
Signature :

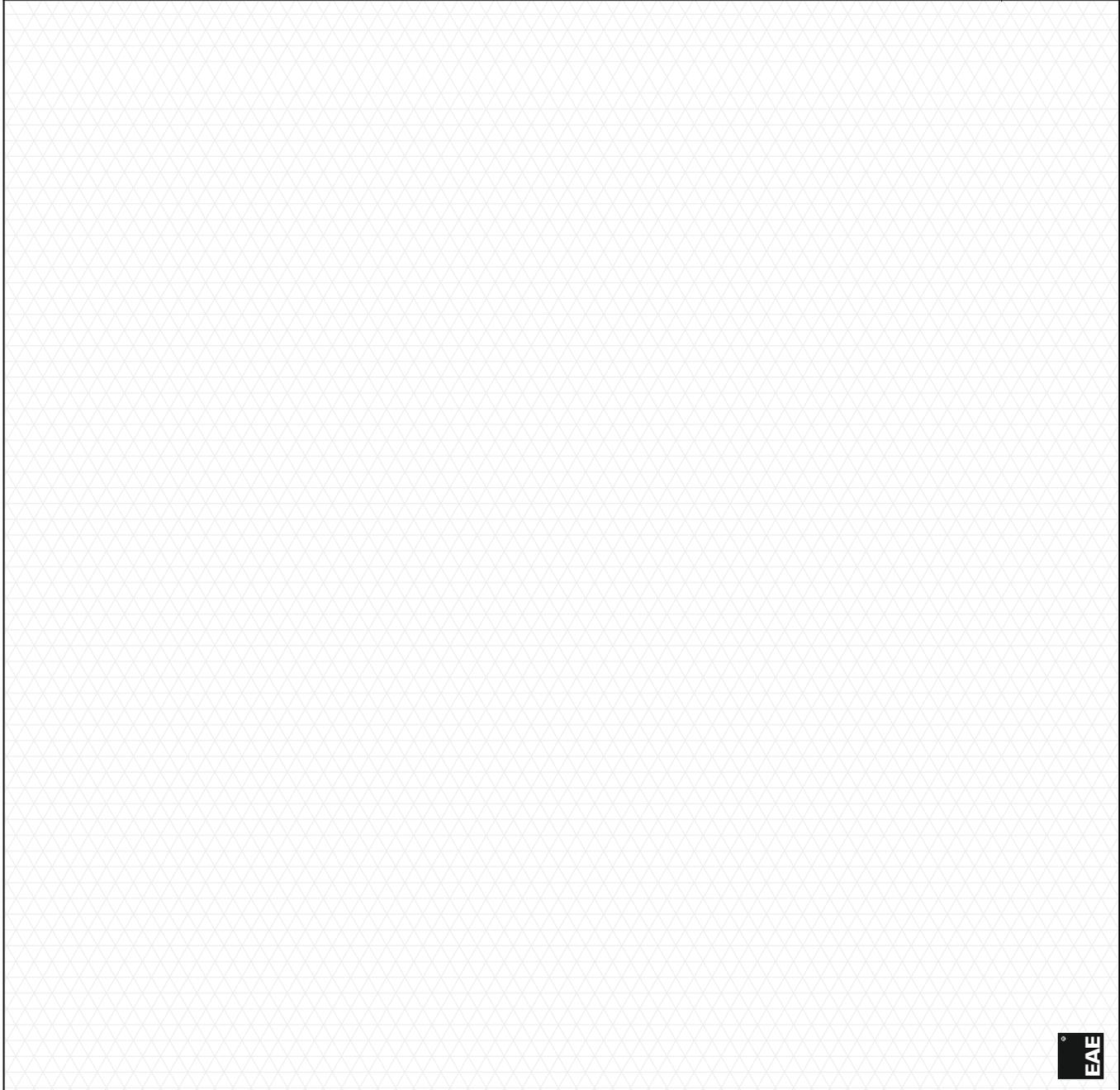


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Component List	Quantity	Component
Item		

Company :
Project :
Project No :

Prepared by
Name :
Date :
Signature :





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PRODUCT TYPES



BUSBAR ENERGY DISTRIBUTION SYSTEMS



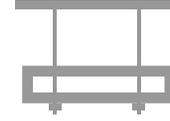
CABLE TRAYS



TROLLEY BUSBAR ENERGY DISTRIBUTION SYSTEMS



INDOOR SOLUTIONS



SUPPORT SYSTEMS

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