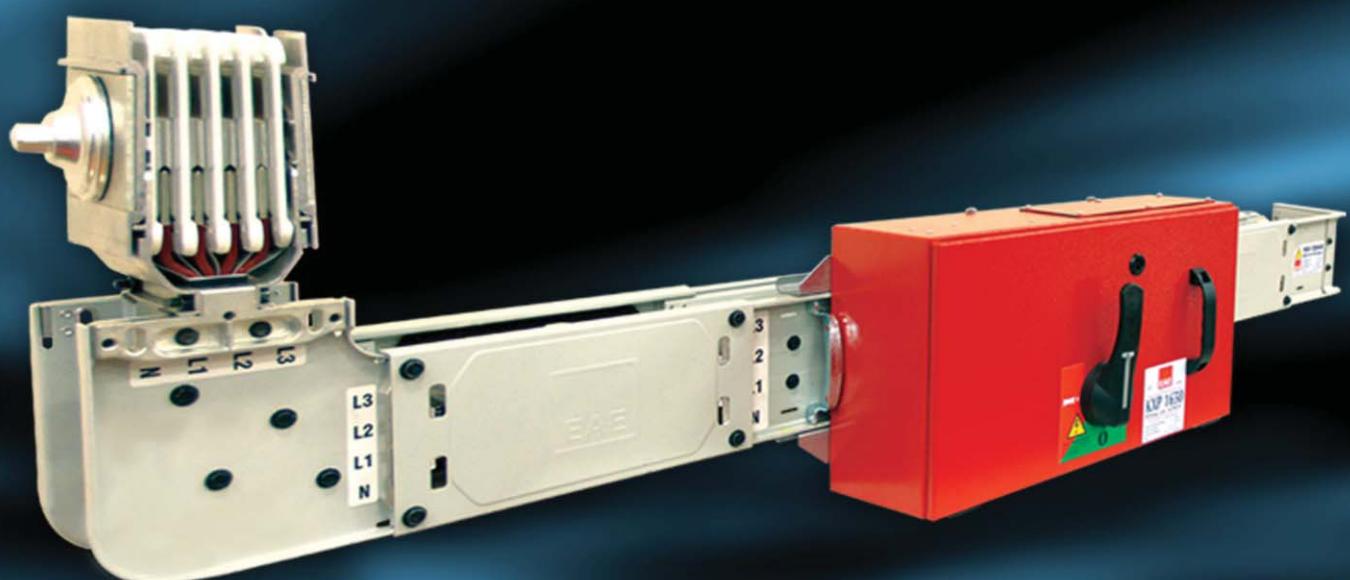




ELEKTRİK

E-LINEKX

Busbar Systems 630A...6300A



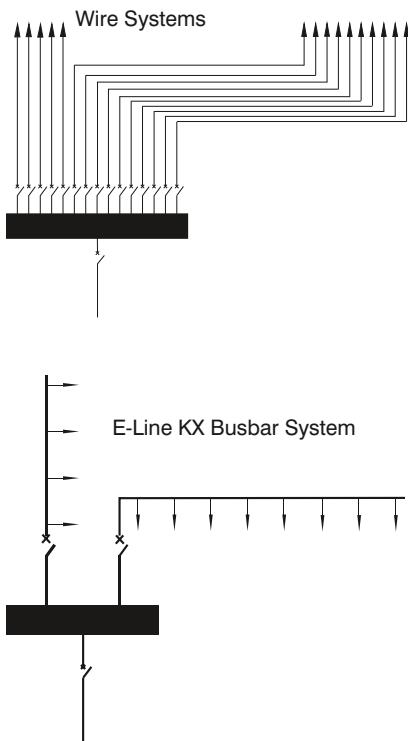
E-LINEKX

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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 6.300A 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.

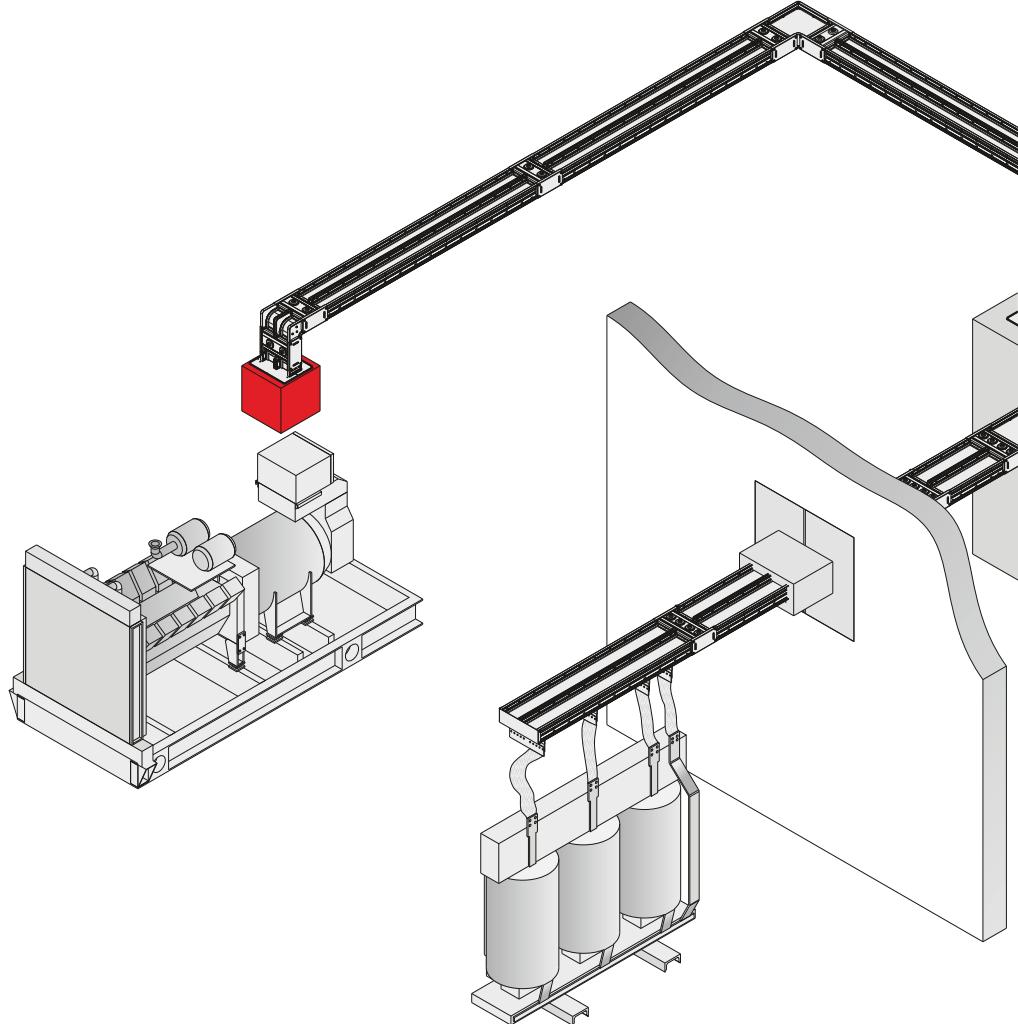
* Special components can be manufactured in one week on request.

Rapid and Efficient Installation

It has been important to keep abreast with the rapidly improving building technologies in civil engineering, the installation time was 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).

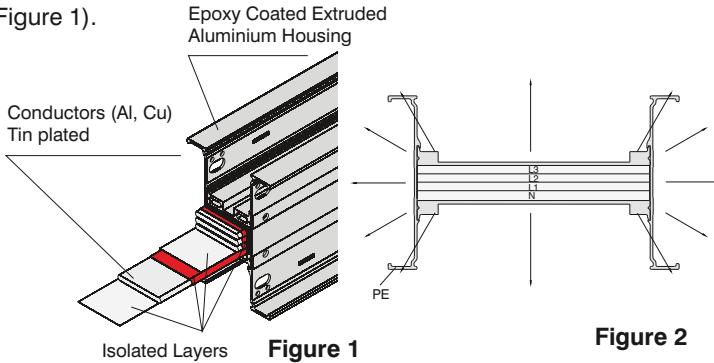
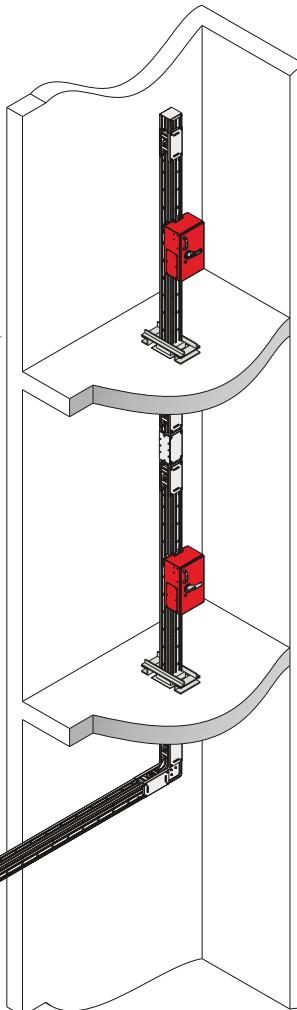


Figure 1

Figure 2



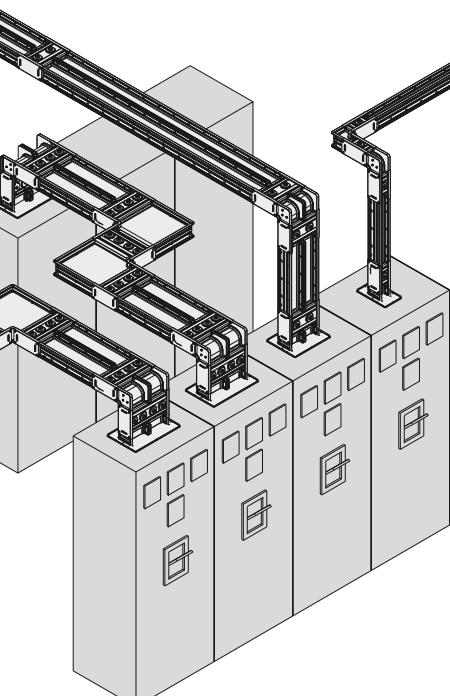
Heat Transfer

"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-shink (Figure 2).

Minimum Voltage Drop

In E-Line 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.



One Bolt Joint Ensures Safety and Easy Installation

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

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

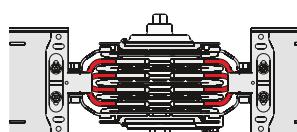


Figure 3

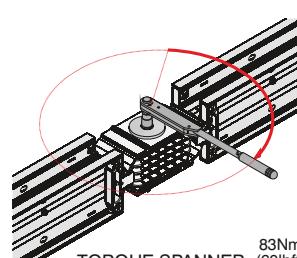


Figure 4

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).

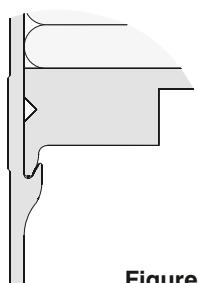


Figure 5

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).

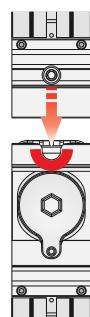


Figure 6

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

- Location, number, type and approximate ratings of loads,
- Transformer rates and short-circuit capacities, Utilization factor=a,
- System coordination with other distribution system (heat, water, etc),
- Determining the route of E-Line KX on layout, If necessary, coordination of E-Line 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:

$$I_B = \frac{P\alpha}{\sqrt{3} \cdot U \cdot \cos \varphi}$$

I_B = Operation current (A)

P = Installed load (W)

α = Utilization factor

U = Supply voltage (V)

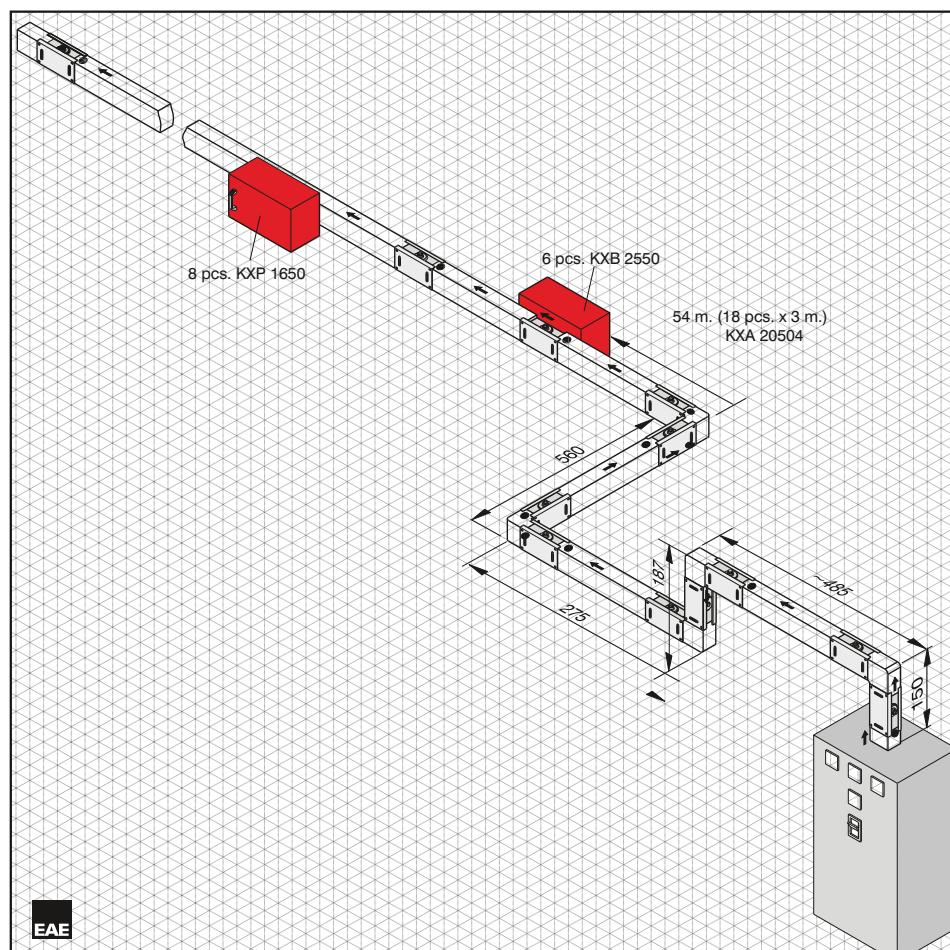
- Busbar current rating is chosen as equal to or higher than the calculated I_B current.
- After the voltage drop calculation if the chosen current rate is not convenient, a higher rating is chosen.

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.



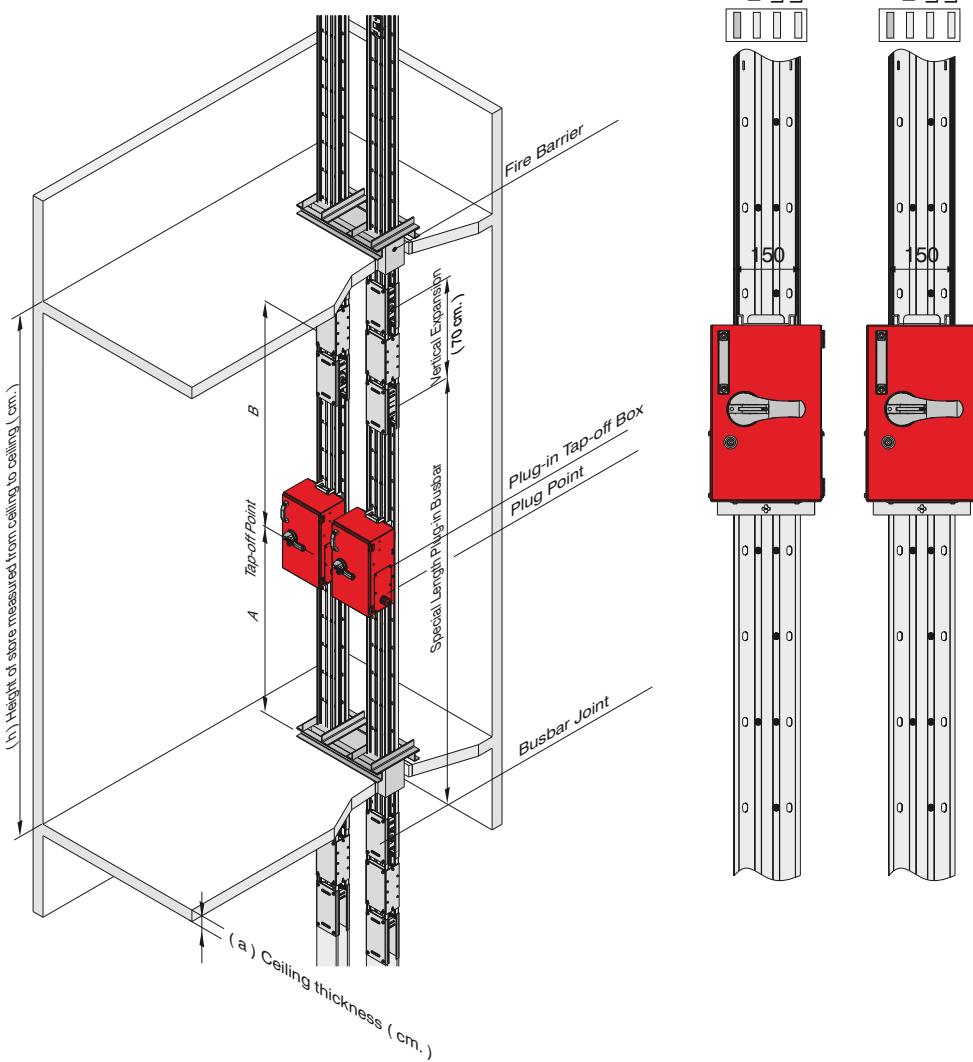
Components List		
Item	Components	Quantity
1	KXA 20504 - STD	Busbar (20 x 3m.)
2	KXA 20504 - D	Downwards Elbow
3	KXA 20504 - R	Right Elbow
4	KXA 20504 - U	Upwards Elbow
5	KXA 20504 - L	Left Elbow
6	KXA 20504 - P11	Panel Connection
7	KXA 20504 - S10	End Closer
8	KXA 20504 - X95	Special Straight Length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

Company	: Demir Makine
Project	: II.OSB Tesisleri
Project No	: 1128
Prepared by	Name : Abdullah ELDELEKLİ
	Date : 02 / 01 / 2009
	Signature:

► Riser & Vertical Applications

As each building's structure is different than the other for vertical applications of **E-Line 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.

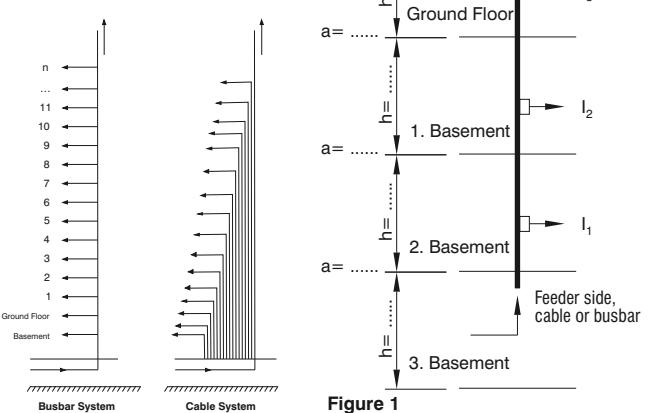


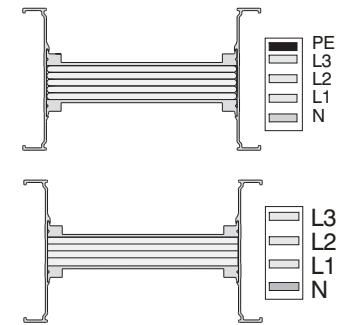
Figure 1

Aluminium Conductor (Al)

Rated Current	I _n	A	630	800	1000	1250	1350	1600	2000	2500	2500	3000	3200	4000	5000
Busbar Code			06	08	10	12	14	17	20	27	25	32	33	40	50
Standards			IEC 61439-6:2012 Ed.1 ; IEC 61439-1 Ed.2:2011, TS EN 61439-1: 2011												
Rated Isolation Voltage	Ui	V	1000	at Cat IV											
Max. Rated Operational Voltage	Ue	Vac	1000												
Rated Impulse Withstand Voltage	Uimp	kV	12												
Rated Frequency	f	Hz	50												
Pollution Degree		III													
Protection Degree		IP55													
External Mechanical Impacts (IK Code)*			Bolt-on Busbar 50J, Plug-in Busbar IK08												
Protection for Safety			Basic Protection (HD 60364-4-41, Clause A1)												
Rated Short-time Withstand Current (1s)	I _{cw}	kA	25	35	50	60	60	80	80	100	100	120	120	120	120
Rated Peak Withstand Current	I _{pk}	kA	52,5	73,5	105	132	132	176	176	176	220	220	264	264	264
Rated Short-time Withstand Current for Neutral Conductor (1s)	I _{cw}	kA	15	21	30	36	36	48	48	48	60	60	72	72	72
Rated Peak Withstand Current for Neutral Conductor	I _{pk}	kA	30	44,1	63	75,6	75,6	100,8	100,8	100,8	132	132	158,4	158,4	158,4
Rated Short-time Withstand Current for PE Conductor (1s)	I _{cw}	kA	15	21	30	36	36	48	48	48	60	60	72	72	72
Rated Peak Withstand Current for PE Conductor	I _{pk}	kA	30	44,1	63	75,6	75,6	100,8	100,8	100,8	132	132	158,4	158,4	158,4
MEAN PHASE CONDUCTOR CHARACTERISTICS AT RATED CURRENT In															
Resistance at a conductor temperature of 20 °C	R ₂₀	mΩ/m	0,121	0,088	0,061	0,044	0,040	0,031	0,026	0,021	0,022	0,018	0,015	0,012	0,008
Resistance at an ambient air temperature of 35 °C	R	mΩ/m	0,159	0,116	0,080	0,058	0,052	0,041	0,034	0,028	0,029	0,024	0,020	0,016	0,010
Reactance (Independent from Temperature)	X	mΩ/m	0,027	0,021	0,015	0,013	0,013	0,010	0,008	0,007	0,007	0,005	0,005	0,004	0,003
Positive and negative sequence impedances at an ambient air temperature of 35 °C	Z	mΩ/m	0,162	0,118	0,082	0,060	0,053	0,042	0,035	0,029	0,030	0,024	0,020	0,017	0,011
Positive and negative sequence impedances at a conductor temperature of 20 °C	Z ₂₀	mΩ/m	0,124	0,091	0,063	0,046	0,042	0,033	0,027	0,022	0,023	0,018	0,016	0,013	0,009
Rated Power Loss at 35 °C		W/m	189,3	222,7	240,6	271,9	282,7	315,6	412,8	517,5	547,5	708,5	599	787,2	772,5
DC Resistance at a conductor temperature of 20 °C for Phases	R _{phdc}	mΩ/m	0,124	0,087	0,060	0,043	0,039	0,030	0,024	0,019	0,022	0,018	0,015	0,012	0,009
DC Resistance at a conductor temperature of 20 °C for Neutral	R _{Ndc}	mΩ/m	0,126	0,090	0,061	0,044	0,039	0,031	0,025	0,020	0,023	0,018	0,017	0,013	0,008
DC Resistance at a conductor temperature of 20 °C for PE	R _{PEdc}	mΩ/m	0,028	0,024	0,028	0,024	0,026	0,033	0,035	0,020	0,018	0,026	0,023	0,018	0,015
SECTIONS															
L1,L2,L3,N		mm ²	240	330	480	660	750	960	1200	1500	1320	1680	1920	2400	3600
PE (4 ½ Conductors)		mm ²	120	165	240	330	375	480	600	750	660	840	960	1200	1800
PE (5 Conductors)		mm ²	240	330	480	660	750	960	1200	1500	1320	1680	1920	2400	3600
Aluminium Housing Section		mm ²	1686	1788	1894	2050	2128	2314	2518	2764	3912	4224	4411	4848	7128
Conductor Dimensions		mmxmm	6x40	6x55	6x80	6x110	6x125	6x160	6x200	6x250	2(6x110)	2(6x140)	2(6x160)	2(6x200)	3(6x200)
Busbar Weight (4 Conductors)		kg/m	7,9	9,2	11,3	13,9	15,2	18,3	21,7	28,5	27,3	32,5	35,9	42,9	63,9
Busbar Weight (5 Conductors)		kg/m	8,6	10,2	12,8	15,9	17,5	21,1	25,3	34,2	31,2	37,5	41,6	50	74,6
MEAN FAULT-LOOP CHARACTERISTICS															
Zero-sequence Impedance															
Zero-sequence impedance at a conductor temperature of 20 °C	Z _{(0)b20phN}	mΩ/m	0,572	0,419	0,291	0,214	0,194	0,153	0,130	0,103	0,108	0,086	0,074	0,060	0,040
Zero-sequence impedance at a conductor temperature of 20 °C	Z _{(0)b20phPE}	mΩ/m	0,326	0,268	0,245	0,208	0,199	0,161	0,158	0,131	0,101	0,092	0,101	0,084	0,061
Zero-sequence impedance at an ambient temperature of 35 °C	Z _{(0)bphN}	mΩ/m	0,742	0,540	0,371	0,274	0,245	0,195	0,167	0,135	0,140	0,113	0,094	0,078	0,050
Zero-sequence impedance at an ambient temperature of 35 °C	Z _{(0)bphPE}	mΩ/m	0,406	0,331	0,303	0,260	0,245	0,199	0,168	0,126	0,119	0,127	0,108	0,074	
Resistances and Reactances															
Resistance at a conductor temperature of 20 °C	R _{b20phph}	mΩ/m	0,249	0,184	0,125	0,092	0,083	0,065	0,054	0,042	0,046	0,036	0,031	0,025	0,017
Resistance at a conductor temperature of 20 °C	R _{b20phN}	mΩ/m	0,255	0,192	0,131	0,096	0,087	0,069	0,057	0,044	0,049	0,038	0,033	0,027	0,018
Resistance at a conductor temperature of 20 °C	R _{b20phPE}	mΩ/m	0,175	0,137	0,112	0,093	0,086	0,068	0,065	0,050	0,053	0,039	0,049	0,035	0,024
Resistance at an ambient air temperature of 35 °C	R _{bphph}	mΩ/m	0,328	0,241	0,164	0,120	0,107	0,086	0,072	0,057	0,059	0,049	0,040	0,033	0,021
Resistance at an ambient air temperature of 35 °C	R _{bphN}	mΩ/m	0,336	0,252	0,171	0,126	0,113	0,090	0,076	0,060	0,062	0,052	0,043	0,035	0,022
Resistance at an ambient air temperature of 35 °C	R _{bphPE}	mΩ/m	0,231	0,180	0,146	0,122	0,112	0,089	0,086	0,068	0,067	0,052	0,064	0,046	0,030
Reactance (Independent from temperature)	X _{bphph}	mΩ/m	0,043	0,042	0,032	0,024	0,023	0,018	0,017	0,013	0,012	0,010	0,009	0,008	0,004
Reactance (Independent from temperature)	X _{bphN}	mΩ/m</													

Copper Conductor (Cu)

Rated Current	I _n	A	800	1000	1250	1350	1600	2000	2250	2500	2000	2500	3300	3600	4000	4250	5000	6300
Busbar Code			08	10	12	14	16	20	21	25	22	26	32	36	40	43	50	63
Standards	IEC 61439-6:2012 Ed.1 ; IEC 61439-1 Ed.2:2011, TS EN 61439-1: 2011																	
Rated Isolation Voltage	Ui	V	1000	at Cat IV														
Max. Rated Operational Voltage	Ue	Vac	1000															
Rated Impulse Withstand Voltage	U _{imp}	kV	12															
Rated Frequency	f	Hz	50															
Pollution Degree	III																	
Protection Degree	IP55																	
External Mechanical Impacts (IK Code)*	Bolt-on Busbar IK09, Plug-in Busbar IK08																	
Protection for Safety	Basic Protection (HD 60364-4-41, Clause A1)																	
Rated Short-time Withstand Current (1s)	I _{cw}	kA	50	50	60	60	80	80	80	80	70	100	120	120	120	120	120	120
Rated Peak Withstand Current	I _{pk}	kA	105	105	132	132	176	176	176	176	154	220	264	264	264	264	264	264
Rated Short-time Withstand Current for Neutral Conductor (1s)	I _{cw}	kA	30	30	36	36	48	48	48	48	42	60	72	72	72	72	72	72
Rated Peak Withstand Current for Neutral Conductor	I _{pk}	kA	63	63	75,6	75,6	100,8	100,8	100,8	100,8	88,2	132	158,4	158,4	158,4	158,4	158,4	158,4
Rated Short-time Withstand Current for PE Conductor (1s)	I _{cw}	kA	30	30	36	36	48	48	48	48	42	60	72	72	72	72	72	72
Rated Peak Withstand Current for PE Conductor	I _{pk}	kA	63	63	75,6	75,6	100,8	100,8	100,8	100,8	88,2	132	158,4	158,4	158,4	158,4	158,4	158,4
MEAN PHASE CONDUCTOR CHARACTERISTICS AT RATED CURRENT I_n																		
Resistance at a conductor temperature of 20 °C	R ₂₀	mΩ/m	0,074	0,055	0,044	0,038	0,029	0,022	0,019	0,016	0,028	0,019	0,014	0,012	0,011	0,009	0,008	0,005
Resistance at an ambient air temperature of 35 °C	R	mΩ/m	0,097	0,071	0,057	0,050	0,038	0,029	0,026	0,021	0,036	0,025	0,019	0,016	0,015	0,012	0,010	0,006
Reactance (Independent from Temperature)	X	mΩ/m	0,028	0,023	0,019	0,016	0,016	0,011	0,010	0,008	0,012	0,009	0,007	0,006	0,005	0,005	0,004	0,003
Positive and negative sequence impedances at an ambient air temperature of 35 °C	Z	mΩ/m	0,101	0,075	0,060	0,053	0,041	0,031	0,028	0,022	0,038	0,026	0,020	0,017	0,016	0,013	0,011	0,007
Positive and negative sequence impedances at a conductor temperature of 20 °C	Z ₂₀	mΩ/m	0,079	0,060	0,047	0,041	0,034	0,025	0,022	0,018	0,030	0,021	0,016	0,014	0,012	0,011	0,009	0,006
Rated Power Loss at 35 °C		W/m	185,5	213,6	264,8	274,5	291,8	349,2	388,8	384,4	436,8	461,3	604,4	633,7	705,6	666,5	772,5	750,1
DC Resistance at a conductor temperature of 20 °C for Phases	R _{phdc}	mΩ/m	0,072	0,053	0,041	0,036	0,026	0,020	0,017	0,014	0,025	0,018	0,013	0,012	0,010	0,009	0,007	0,005
DC Resistance at a conductor temperature of 20 °C for Neutral	R _{Ndc}	mΩ/m	0,074	0,054	0,042	0,036	0,027	0,020	0,018	0,014	0,026	0,018	0,015	0,012	0,009	0,009	0,008	0,005
DC Resistance at a conductor temperature of 20 °C for PE	R _{PEdc}	mΩ/m	0,027	0,029	0,024	0,028	0,026	0,024	0,034	0,031	0,019	0,022	0,018	0,023	0,021	0,021	0,011	
SECTIONS																		
L1,L2,L3,N		mm ²	240	330	420	480	660	840	976	1200	660	960	1320	1500	1680	1952	2400	3600
PE (4 ½ Conductors)		mm ²	120	165	210	240	330	420	488	600	330	480	660	750	840	976	1200	1800
PE (5 Conductors)		mm ²	240	330	420	480	660	840	976	1200	660	960	1320	1500	1680	1952	2400	3600
Aluminium Housing Section		mm ²	1686	1788	1842	1894	2050	2206	2314	2518	3340	3600	3912	4068	4224	4411	4848	7128
Aluminium Housing Section (Cu Equivalent)		mm ²	1058	1122	1155	1188	1286	1384	1452	1579	2095	2258	2454	2552	2650	2767	3041	4471
Conductor Dimensions		mmxmm	6x40	6x55	6x70	6x80	6x110	6x140	6,1x160	6x200	2(6x55)	2(6x80)	2(6x110)	2(6x125)	2(6x140)	2(6,1x160)	2(6x200)	3(6x200)
Busbar Weight (4 Conductors)		kg/m	14,4	18,3	22	24,5	32,1	39,6	44,6	54,7	35,9	48,5	63,5	71,1	78,6	88,6	108,8	162,8
Busbar Weight (5 Conductors)		kg/m	16,8	21,5	26,1	29,2	38,5	47,9	54,1	66,5	42,4	57,9	76,5	85,8	95,2	107,5	132,4	198,2
MEAN FAULT-LOOP CHARACTERISTICS																		
Zero-sequence Impedance																		
Zero-sequence impedance at a conductor temperature of 20 °C	Z _{(0)b20phN}	mΩ/m	0,393	0,295	0,250	0,198	0,150	0,120	0,109	0,086	0,148	0,101	0,073	0,067	0,060	0,051	0,038	0,029
Zero-sequence impedance at a conductor temperature of 20 °C	Z _{(0)b20phPE}	mΩ/m	0,268	0,281	0,229	0,209	0,174	0,166	0,170	0,146	0,144	0,139	0,091	0,090	0,100	0,094	0,086	0,061
Zero-sequence impedance at an ambient temperature of 35 °C	Z _{(0)bphN}	mΩ/m	0,499	0,371	0,309	0,251	0,187	0,152	0,138	0,107	0,189	0,127	0,092	0,084	0,077	0,064	0,046	0,034
Zero-sequence impedance at an ambient temperature of 35 °C	Z _{(0)bphPE}	mΩ/m	0,324	0,345	0,286	0,259	0,212	0,206	0,213	0,181	0,176	0,172	0,113	0,112	0,128	0,121	0,106	0,075
Resistances and Reactances																		
Resistance at a conductor temperature of 20 °C	R _{b20phph}	mΩ/m	0,159	0,119	0,091	0,077	0,058	0,045	0,040	0,033	0,059	0,040	0,029	0,025	0,023	0,020	0,016	0,011
Resistance at a conductor temperature of 20 °C	R _{b20phN}	mΩ/m	0,167	0,126	0,097	0,083	0,062	0,049	0,043	0,035	0,063	0,044	0,031	0,027	0,025	0,021	0,017	0,012
Resistance at a conductor temperature of 20 °C	R _{b20phPE}	mΩ/m	0,123	0,112	0,137	0,083	0,067	0,061	0,068	0,053	0,061	0,053	0,035	0,034	0,044	0,039	0,032	0,023
Resistance at an ambient air temperature of 35 °C	R _{bphph}	mΩ/m	0,209	0,154	0,118	0,103	0,075	0,061	0,053	0,043	0,077	0,052	0,038	0,033	0,030	0,026	0,020	0,013
Resistance at an ambient air temperature of 35 °C	R _{bphN}	mΩ/m	0,219	0,163	0,126	0,110	0,080	0,066	0,057	0,046	0,083	0,057	0,041	0,036	0,033	0,028	0,022	0,015
Resistance at an ambient air temperature of 35 °C	R _{bphPE}	mΩ/m	0,161	0,145	0,178	0,111	0,087	0,081	0,091	0,070	0,080	0,069	0,047	0,044	0,059	0,052	0,041	0,028
Reactance (Independent from temperature)	X _{bphph}	mΩ/m	0,052	0,043	0,036	0,032	0,023	0,021	0,018	0,014	0,022	0,015	0,012	0,011	0,010	0,008	0,008	0,005
Reactance (Independent from temperature)	X _{bphN}	mΩ/m	0,071	0,059	0,050	0,045	0,035	0,030	0,028	0,022	0,029	0,022	0,018	0,015	0,014	0,013	0,011	0,008
Reactance (Independent from temperature)	X _{bphPE}	mΩ/m	0,070	0,061	0,054	0,050	0,040	0,036	0,036	0,028	0,033	0,028	0,020	0,018	0,018	0,015	0,014	0,010



Voltage Drop Calculation

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

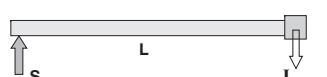
$$\Delta U = \sqrt{3} \cdot L \cdot I \cdot (R \cdot \cos \varphi + X \cdot \sin \varphi) \cdot 10^{-3} \quad [V]$$

ΔU = Voltage Drop (V)

L = Line Length (m)

I = Line Current or Load (A)

R = Resistance ($\text{m}\Omega/\text{m}$)

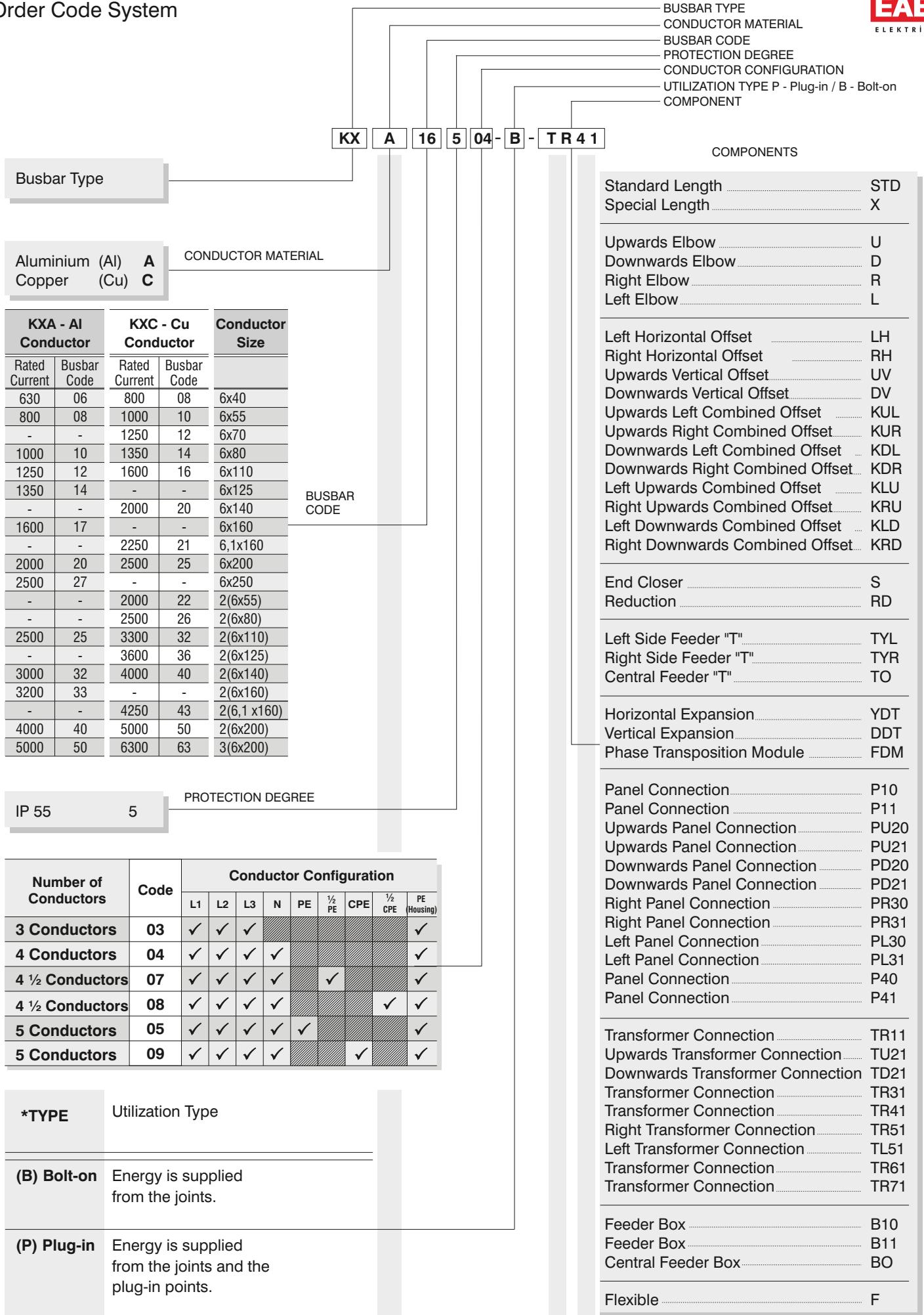


S = Supply Point

- All phase conductor characteristics had been determined according to Annex BB of IEC 61439-6.
 - Fault-loop zero-sequences impedances had been determined according to Annex CC of IEC 61439-6.
 - Fault-loop resistances and reactances had been determined according to Annex DD of IEC 61439-6.

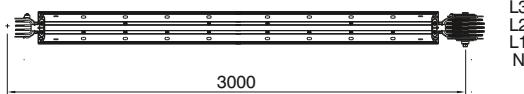
* IK10 corresponds to impact energy of 20J according to IEC 62262.

► Order Code System



► Standard Straight Length

Bolt-on

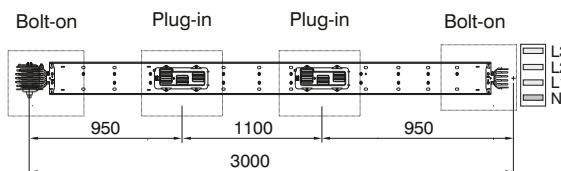


Electrical energy up to 1000 A can be supplied from the joints of bolt-on type by bolt-on tap-off boxes.

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

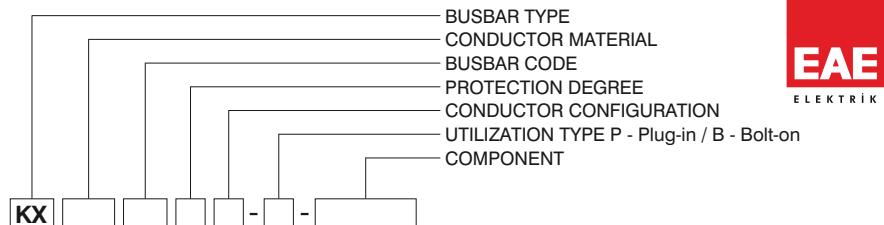
KXA - Al Conductor		KXC - Cu Conductor		A (mm)
Rated Current	Busbar Code	Rated Current	Busbar Code	
1) 630	06	1) 800	08	91
2) 800	08	2) 1000	10	106
-	-	1250	12	121
1000	10	1350	14	131
1250	12	1600	16	161
1350	14	-	-	176
-	-	2000	20	191
1600	17	-	-	211
-	-	2250	21	211
2000	20	2500	25	251
2500	27	-	-	301
-	-	2000	22	202
-	-	2500	26	252
2500	25	3300	32	312
-	-	3600	36	342
3000	32	4000	40	372
3200	33	-	-	412
-	-	4250	43	412
4000	40	5000	50	492
5000	50	6300	63	732

Important Notice for the Tap-off box use;

1) KXA 630A and KXC 800A busbar range are feeder only. It is not possible to install bolt-on or plug-in tap-off box.

2) KXA 800A and KXC 1000A busbar range may have plug-in windows at one side only. It is not possible to install tap-off box at both side.

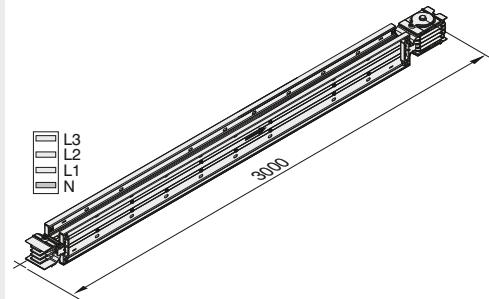
It is highly recommended to consider these points in your project designs.



Bolt-on Standard - STD Straight Length Busbar

Sample Order:
2500 A, Aluminium, Bolt-on, IP 55, 4 conductors

KXA 25504 - B - STD



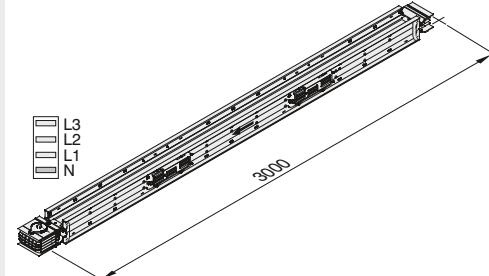
Applications:

- 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:
1250 A, Copper, Plug-in, IP 55, 4 conductors

KXC 12504 - P - STD



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:

2500 A, Copper, Bolt-on, IP 55, 4 conductors, 147cm

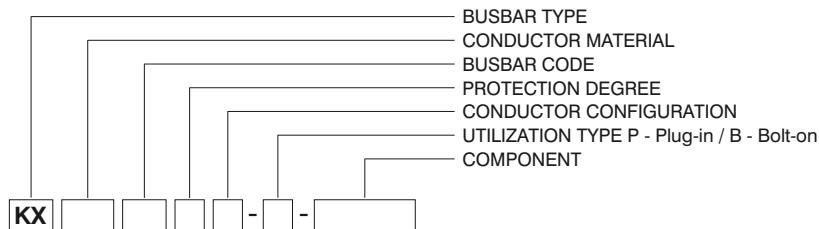
KXC 25504 - B - X - 147

Note:

Bolt-on Minimum Length = 35cm

Plug-in Minimum Length = 100cm



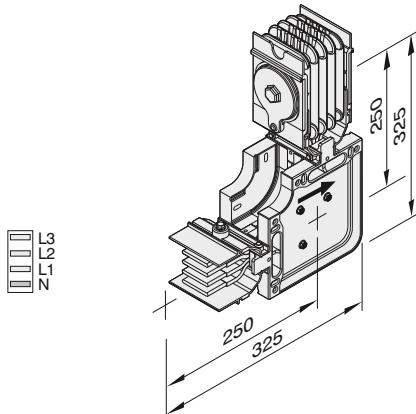


Upwards Elbow - U

Sample Order:

3300 A, Copper, Bolt-on, IP 55,
4 conductors

KXC 32504 - B - U

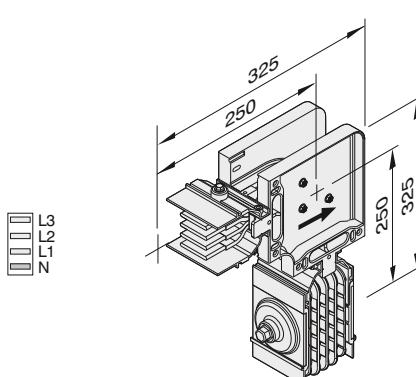


Downwards Elbow - D

Sample Order:

3300 A, Copper, Bolt-on, IP 55,
4 conductors

KXC 32504 - B - D

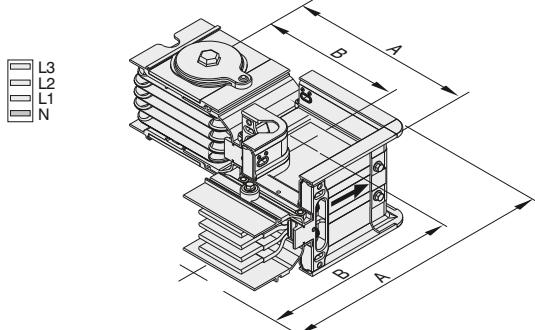


Left Elbow - L

Sample Order:

2000 A, Copper, Bolt-on, IP 55,
4 conductors

KXC 20504 - B - L

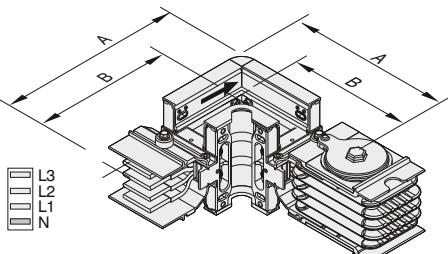


Right Elbow - R

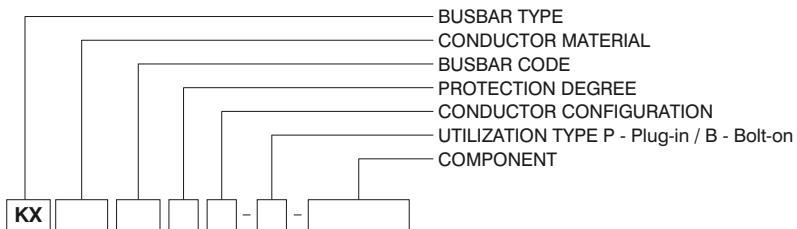
Sample Order:

2000 A, Aluminium, Bolt-on, IP 55,
4 conductors

KXA 20504 - B - R



■ The dimensions given above are minimum values. ■ Please call us for non-standard components.



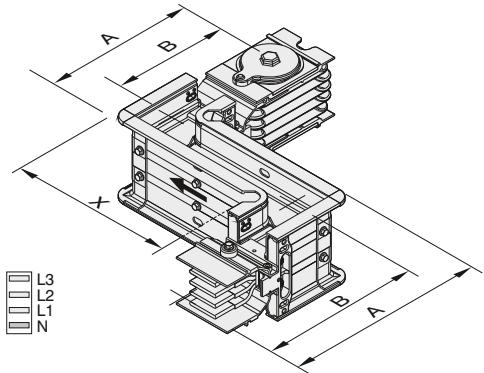
Left Horizontal Offset - LH

Sample Order:

X=60 cm, 3300 A, 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.



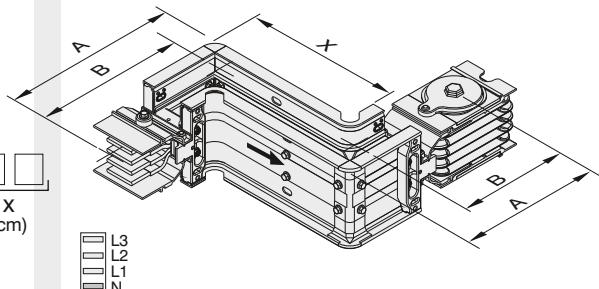
Right Horizontal Offset - RH

Sample Order:

X=60 cm, 3300 A, 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.



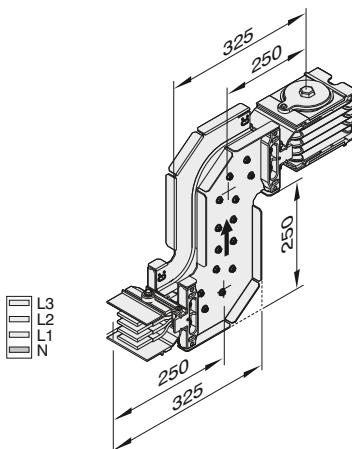
Upwards Vertical Offset - UV

Sample Order:

Y=25 cm, 2000 A, Aluminium
Bolt-on, IP 55, 5 conductors

KXA 20505-B-UV25 - UV

Note:
Y=min:25 cm max:49 cm



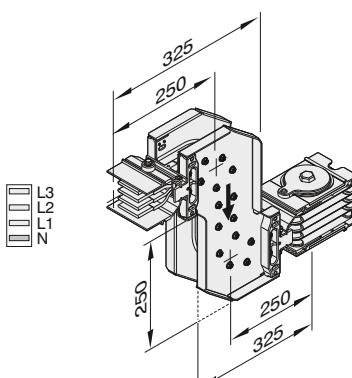
Downwards Vertical Offset - DV

Sample Order:

Y=25 cm, 2000 A, Aluminium
Bolt-on, IP 55, 5 conductors

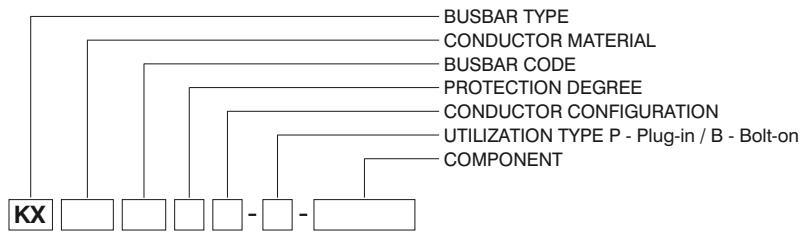
KXA 20505-B-DV25 - DV

Note:
Y=min:25 cm max:49 cm



KXA - AI Conductor		KXC - Cu Conductor		A	B	X
Rated Current	Busbar Code	Rated Current	Busbar Code	(mm)	(mm)	(mm)
630	06	800	08	267	222	442
800	08	1000	10	282	229	457
-	-	1250	12	297	236	472
1000	10	1350	14	307	241	482
1250	12	1600	16	337	256	512
1350	14	-	-	352	264	527
-	-	2000	20	367	271	542
1600	17	-	-	387	281	562
		2250	21	387	281	562
2000	20	2500	25	427	301	602
2500	27	-	-	477	326	652
-	-	2000	22	377	276	552
-	-	2500	26	427	301	602
2500	25	3300	32	487	331	662
-	-	3600	36	517	346	692
3000	32	4000	40	547	361	722
3200	33	-	-	587	381	762
-	-	4250	43	587	381	842
4000	40	5000	50	667	421	842
5000	50	6300	63	907	541	1082

■ The dimensions given above are minimum values.



Upwards Left - K U L Combined Offset

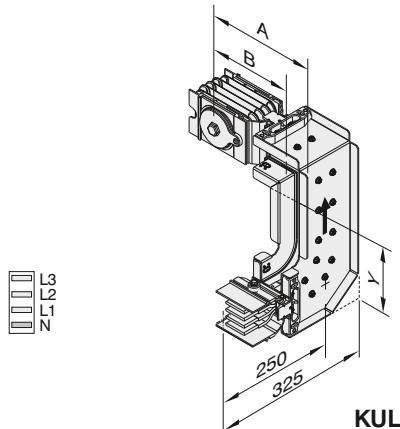
Sample Order:

3300 A, Copper
Bolt-on, IP 55, 4 conductors

KXC 32504 - B - KUL

Note:

Y=min. 30 cm



Upwards Right - K U R Combined Offset

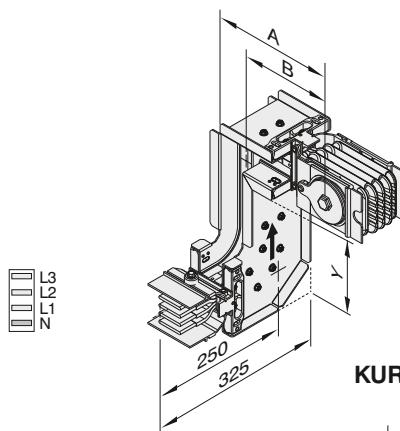
Sample Order:

3200 A, Aluminium
Bolt-on, IP 55, 4 conductors

KXA 33504 - B - KUR

Note:

Y=min. 30 cm



Downwards Left - K D L Combined Offset

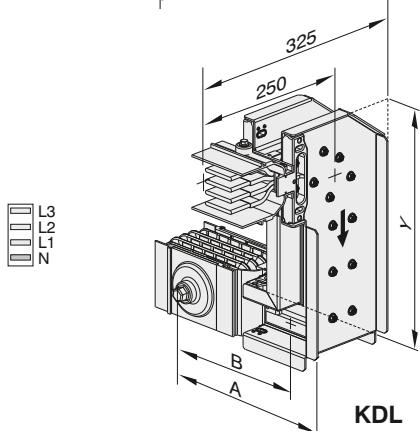
Sample Order:

3300 A, Copper
Bolt-on, IP 55, 4 conductors

KXC 32504 - B - KDL

Note:

Y=min. 30 cm



Downwards Right - K D R Combined Offset

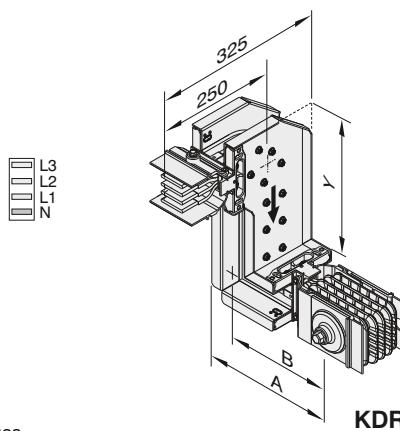
Sample Order:

3200 A, Aluminium
Bolt-on, IP 55, 4 conductors

KXA 33504 - B - KDR

Note:

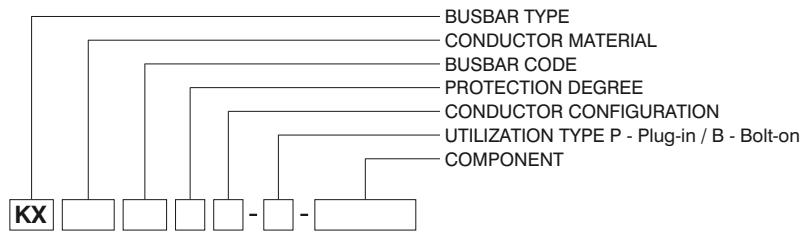
Y=min. 30 cm



KXA - Al Conductor		KXC - Cu Conductor		A	B
Rated Current	Busbar Code	Rated Current	Busbar Code	(mm)	(mm)
630	06	800	08	267	222
800	08	1000	10	282	229
-	-	1250	12	297	236
1000	10	1350	14	307	241
1250	12	1600	16	337	256
1350	14	-	-	352	264
-	-	2000	20	367	271
1600	17	-	-	387	281
-	-	2250	21	387	281
2000	20	2500	25	427	301
2500	27	-	-	477	326
-	-	2000	22	377	276
-	-	2500	26	427	301
2500	25	3300	32	487	331
-	-	3600	36	517	346
3000	32	4000	40	547	361
3200	33	-	-	587	381
-	-	4250	43	587	381
4000	40	5000	50	667	421
5000	50	6300	63	907	541

■ Please call us for non-standard components.

■ The dimensions given above are minimum values.



Left Upwards - K L U Combined Offset

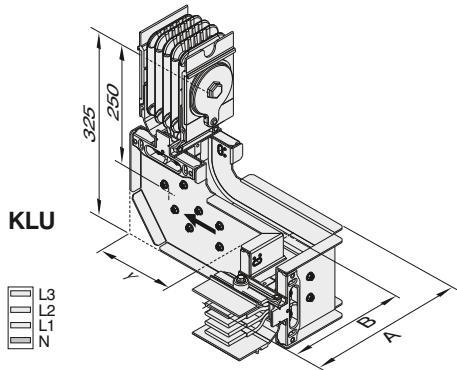
Sample Order:

3200 A, Aluminium
Bolt-on, IP 55, 4 conductors

KXA 33504 - B - KLU

Note:

Y=min. 30 cm



Right Upwards - K R U Combined Offset

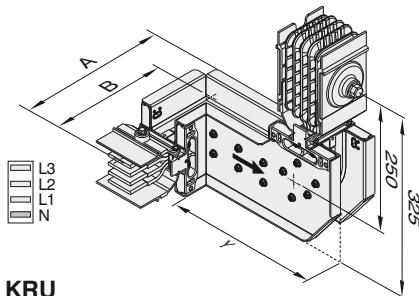
Sample Order:

3300 A, Copper
Bolt-on, IP 55, 4 conductors

KXC 32504 - B - KRU

Note:

Y=min. 30 cm



Left Downwards - K L D Combined Offset

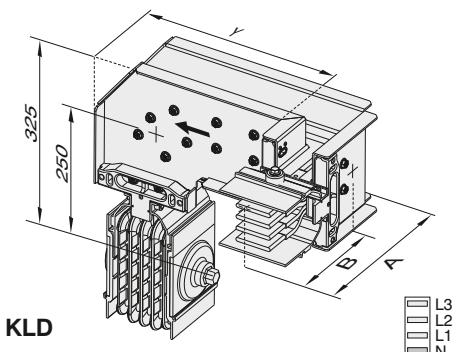
Sample Order:

3200 A, Aluminium
Bolt-on, IP 55, 4 conductors

KXA 33504 - B - KLD

Note:

Y=min. 30 cm



Right Downwards - K R D Combined Offset

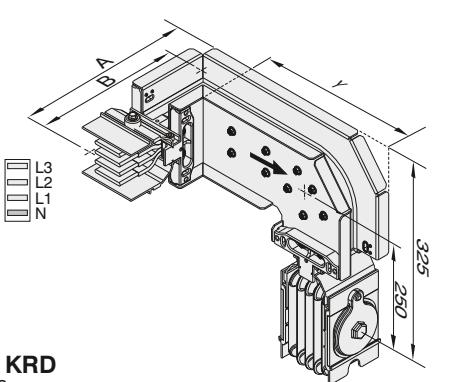
Sample Order:

3300 A, Copper
Bolt-on, IP 55, 4 conductors

KXC 32504 - B - KRD

Note:

Y=min. 30 cm



■ Please call us for non-standard components.

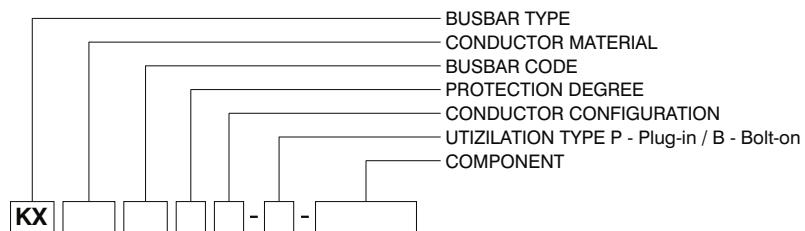
■ The dimensions given above are minimum values.

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.



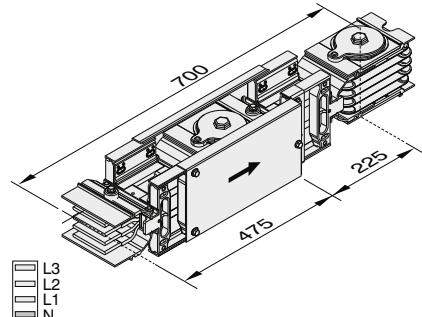
Reduction

- RD

Reduced Busbar Current

Sample Order:
2000A / 1600A, Aluminium, Bolt-on, IP 55, 4 conductors

KXA 20504 - B - RD17



Reducers Table

KXA - Al Conductor		Reduced Busbar Current									
Rated Current	06 08 10 12 14 17 20 25 27 32 33 40										
800	✓ - - - - - - - - - -										
1000	✓ ✓ - - - - - - - - - -										
1250	- ✓ ✓ - - - - - - - - - -										
1350	- - ✓ ✓ - - - - - - - - - -										
1600	- - - ✓ ✓ - - - - - - - - -										
2000	- - - - ✓ ✓ - - - - - - - -										
2500	- - - - - ✓ ✓ - - - - - - -										
2500	- - - - - ✓ ✓ - - - - - - -										
3000	- - - - - - ✓ ✓ ✓ ✓ - - - -										
3200	- - - - - - - ✓ ✓ ✓ ✓ - - - -										
4000	- - - - - - - - ✓ ✓ ✓ ✓ ✓ ✓ - -										
5000	- - - - - - - - - ✓ ✓ ✓ ✓ ✓ ✓ ✓										

2

See table below for ratings and busbar codes.

KXA - Al Conductor		KXC - Cu Conductor		A	B	C
Rated Current	Busbar Code	Rated Current	Busbar Code	(mm)	(mm)	(mm)
630	06	800	08	267	222	442
800	08	1000	10	282	229	456
-	-	1250	12	297	236	470
1000	10	1350	14	307	241	480
1250	12	1600	16	337	256	510
1350	14	-	-	352	264	525
-	-	2000	20	367	271	540
1600	17	-	-	387	281	560
2000	20	2250	21	387	281	560
2500	27	2500	25	427	301	602
-	-	-	-	477	326	702
-	-	2000	22	377	276	552
2500	25	2500	26	427	301	602
-	-	3300	32	487	331	662
-	-	3600	36	517	346	692
3000	32	4000	40	547	361	722
3200	33	-	-	587	381	762
-	-	4250	43	587	381	842
4000	40	5000	50	667	421	842
5000	50	6300	63	907	541	1082

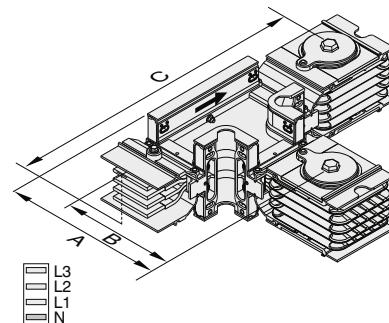
■ Please call us for non-standard components.

Right Side Feeder "T" - T Y R

Sample Order:

2500 A, Copper, Bolt-on, IP 55, 4 conductors

KXC 25504 - B - TYR

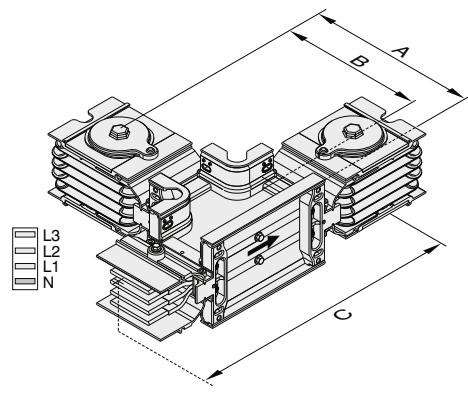


Left Side Feeder "T" - T Y L

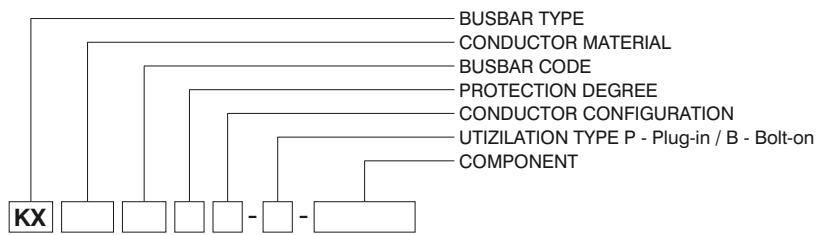
Sample Order:

2500 A, Aluminium, Bolt-on, IP 55, 4 conductors

KXA 25504 - B - TYL



The dimensions given above are minimum values.



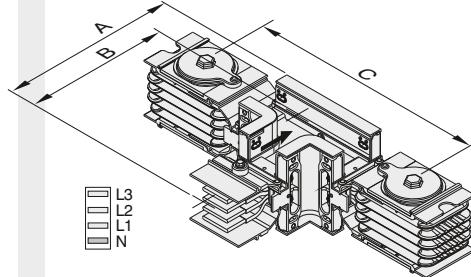
Central Feeder "T"

- T O

Sample Order:

3300 A, Copper, Bolt-on,
IP 55, 4 conductors

KXC 32504 - B - TO



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.

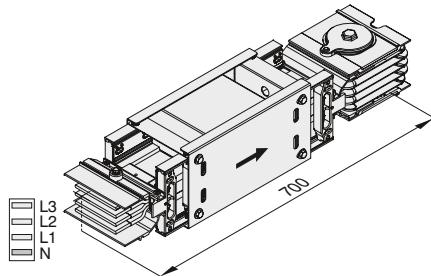
Vertical Expansion

- D D T

Sample Order:

2000 A, Copper, Bolt-on, IP 55
4 conductors

KXC 20504 - B - DDT



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.

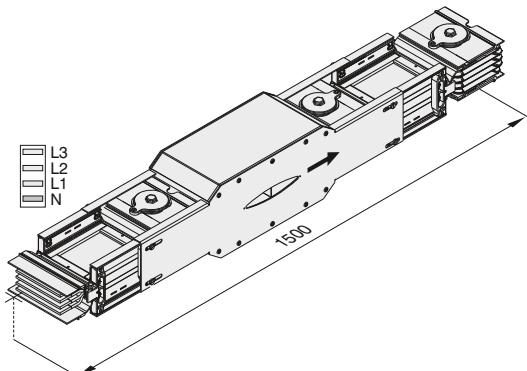
Horizontal Expansion

- Y D T

Sample Order:

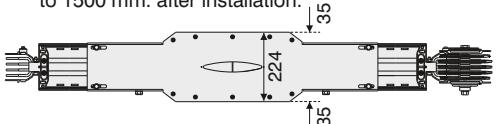
2500 A, Aluminium, Bolt-on,
IP 55, 4 conductors

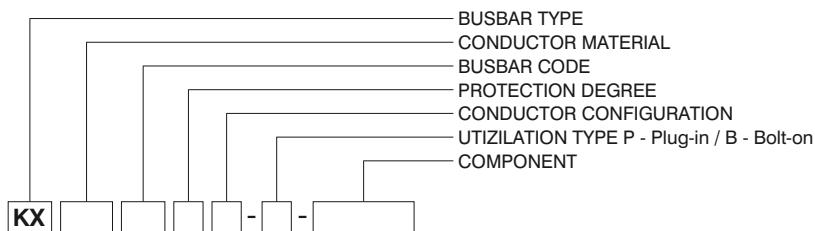
KXA 25504 - B - YDT



Attention!

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





Phase Transposition Module

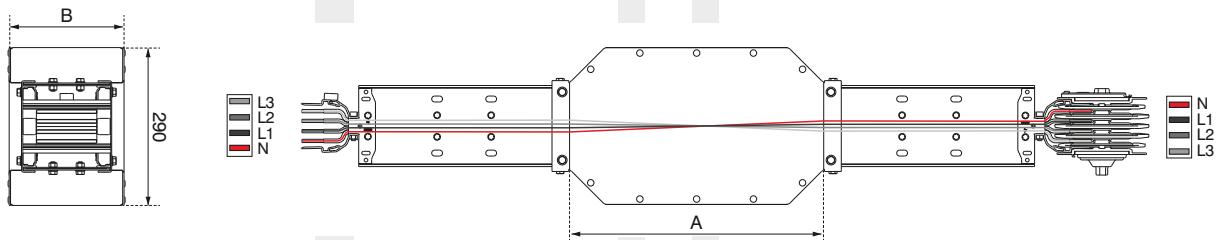
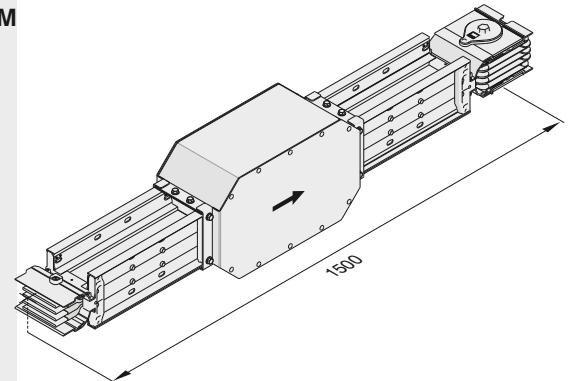
They used for transposition of phase sequence.

Phase Transposition Module - F D M

Sample Order:

2500 A, Aluminium, Bolt-on,
IP 55, 4 conductors

KXA 25504 - B - FDM



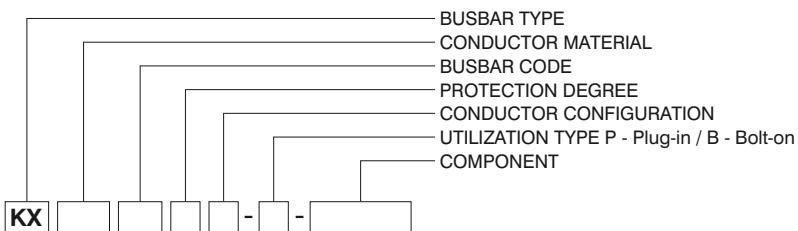
FDM Dimension Table

KXA - AI Conductor		KXC - Cu Conductor	Conductor	A	B	
Rated Current	Busbar Code	Rated Current	Busbar Code	(mm)	(mm)	
630	06	800	08	6x40	410	142
800	08	1000	10	6x55	410	157
-	-	1250	12	6x70	410	172
1000	10	1350	14	6x80	510	182
1250	12	1600	16	6x110	510	212
1350	14	-	-	6x125	510	227
-	-	2000	20	6x140	610	242
1600	17	-	-	6x160	610	262
-	-	2250	21	6,1x160	610	262
2000	20	2500	25	6x200	610	302
-	-	2000	22	2(6x55)	410	252
-	-	2500	26	2(6x80)	510	282
2500	25	3300	32	2(6x110)	510	342
-	-	3600	36	2(6x125)	510	372
3000	32	4000	40	2(6x140)	610	402
3200	33	-	-	2(6x160)	610	442
-	-	4250	43	2(6,1 x160)	610	442
4000	40	5000	50	2(6x200)	610	522

■ Please call us for non-standard components.

■ The dimensions given above are minimum values.

► End Closers



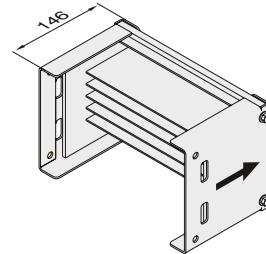
End Closer

Is used to close the end of busbar run.

AI Conductor		Cu Conductor		L1, L2, L3, N + Housing 04
Rated Current	Busbar Code	Rated Current	Busbar Code	L1, L2, L3, N, ½ PE + Housing 07
				L1, L2, L3, N, PE + Housing 05
630	06	800	08	6x40 50907B
800	08	1000	10	6x55 50908B
-	-	1250	12	6x70 50909B
1000	10	1350	14	6x80 50910B
1250	12	1600	16	6x110 50911B
1350	14	1600	16	6x125 50912B
-	-	2000	20	6x140 50913B
1600	17	2250	21	6x160 50914B
2000	20	2500	25	6x200 50915B
2500	27	-	-	6x250 50919B
-	-	2000	22	2(6x55) 50916B
2000	21	2500	26	2(6x80) 50917B
2500	25	3300	32	2(6x110) 50918B
-	-	3600	36	2(6x125) 50920B
3000	32	4000	40	2(6x140) 50921B
3200	33	4250	43	2(6x160) 50922B

End Closer

- S



Sample Order:

2000 A, Aluminium, 2500 A, Copper Bolt-on, IP 55, 4 /4½ / 5 conductors

KX 205A / 255C - B - S

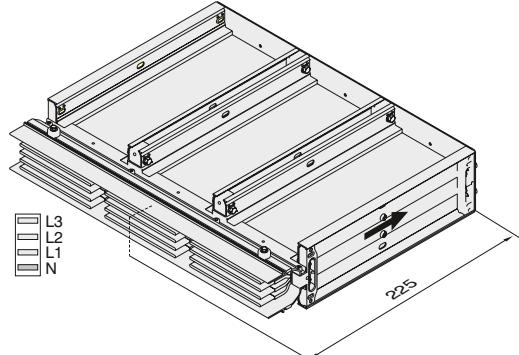


Note: S10 or S11 modules shall be used for Clean Earth and / or 200% N applications.

AI Conductor		Cu Conductor		L1, L2, L3, N + Housing 04
Rated Current	Busbar Code	Rated Current	Busbar Code	L1, L2, L3, N, ½ PE + Housing 07
				L1, L2, L3, N, PE + Housing 05
4000	40	5000	50	2x(6x200)
5000	50	6300	63	3x(6x200)

End Closer

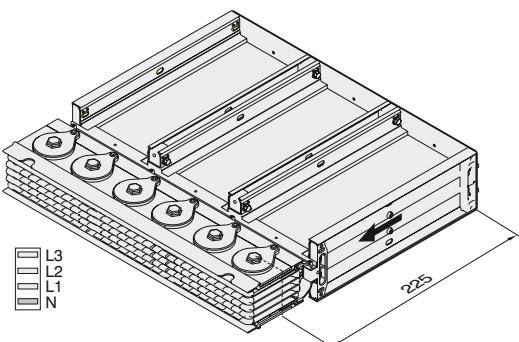
- S 10



Sample Order:

6300 A, Copper Bolt-on, IP 55, 4 conductors

KXC 63504 - B - S 10



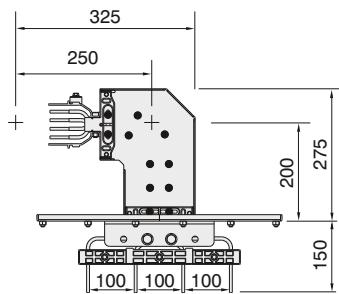
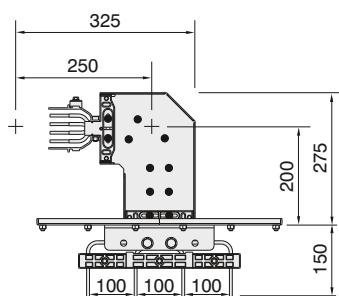
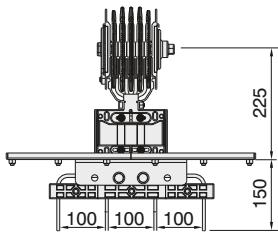
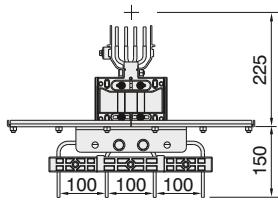
End Closer

- S 11

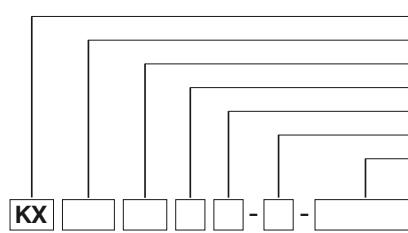
Sample Order:

5000 A, Aluminium, Bolt-on, IP 55, 4 conductors

KXA 50504 - B - S 11



For connection dimensions please refer to tables on pages 23,24 and 25.



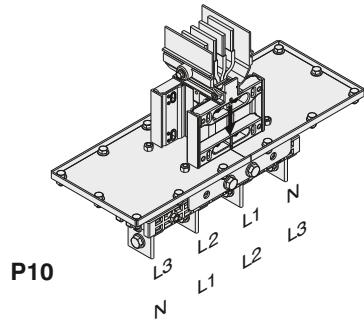
Panel Connection - P 1 0

Panel Feeder

Sample Order:

2500 A, Copper, Bolt-on,4 conductors for Panel Feeder

KXC 25504 - B - P10



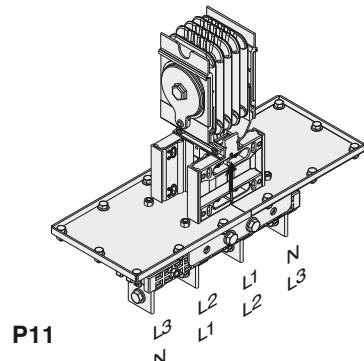
Panel Connection - P 1 1

Busbar Feeder

Sample Order:

2500 A, Copper, Bolt-on,4 conductors for Busbar Feeder

KXC 25504 - B - P11



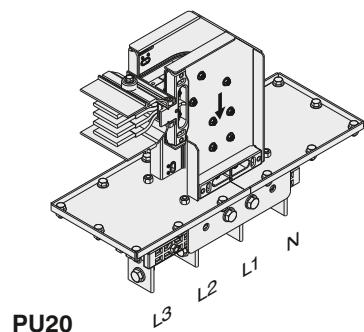
Upwards Panel Connection - P U 2 0

Panel Feeder

Sample Order:

3600 A, Copper, Bolt-on,4 conductors for Panel Feeder

KXC 36504 - B - PU20



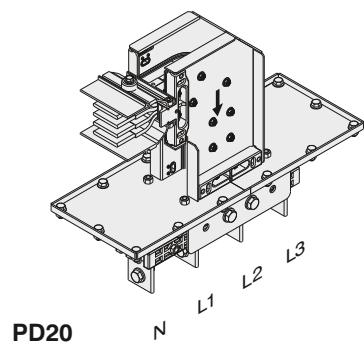
Downwards Panel Connection - P D 2 0

Panel Feeder

Sample Order:

4250 A, Copper, Bolt-on,4 conductors for Panel Feeder

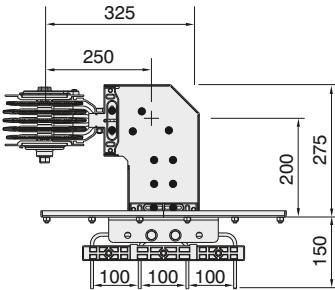
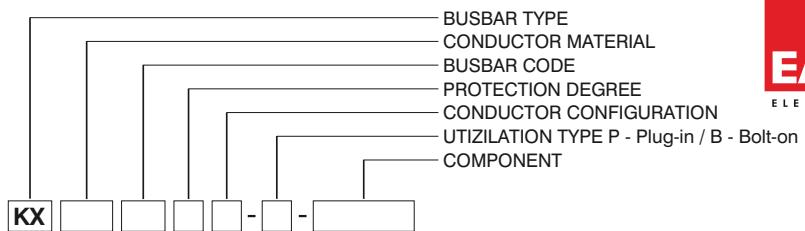
KXC 43504 - B - PD20



■ 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

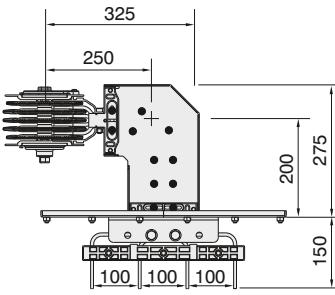
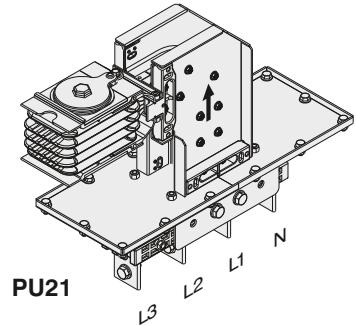
- P U 2 1

Busbar Feeder

Sample Order:

3600 A, Copper, Bolt-on, 4 conductors
for Busbar Feeder

KXC 36504 - B - PU21



Downwards Busbar Connection

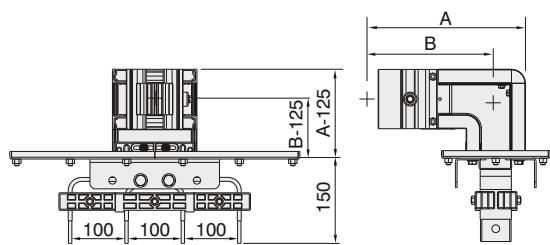
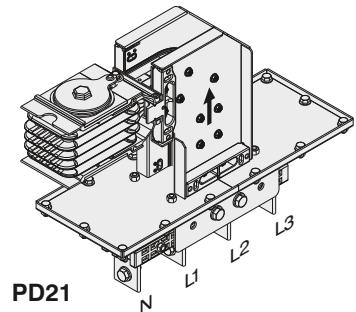
- P D 2 1

Busbar Feeder

Sample Order:

4250 A, Copper, Bolt-on, 4 conductors
for Busbar Feeder

KXC 43504 - B - PD21



Right Panel Connection

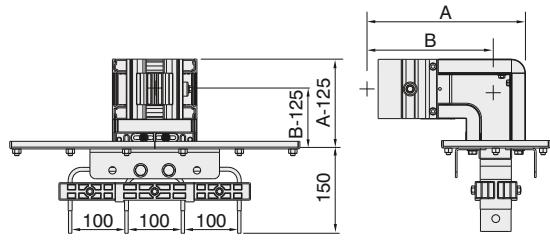
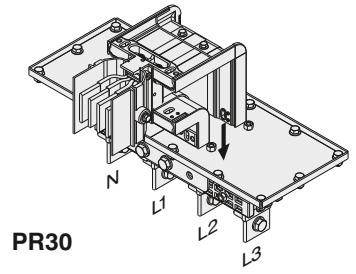
- P R 3 0

Panel Feeder

Sample Order:

2500 A, Copper, Bolt-on, 4 conductors
for Panel Feeder

KXC 25504 - B - PR30



Left Panel Connection

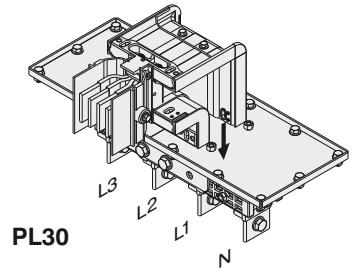
- P L 3 0

Panel Feeder

Sample Order:

2500 A, Copper, Bolt-on, 4 conductors
for Panel Feeder

KXC 25504 - B - PL30



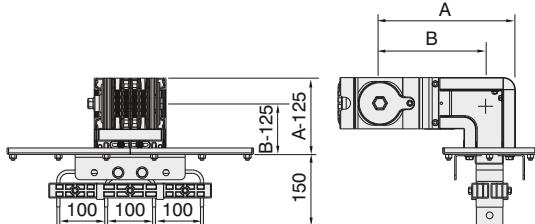
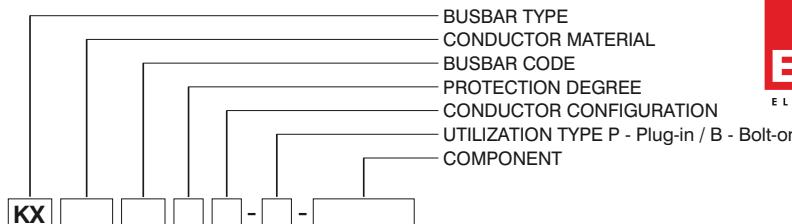
The "A" and "B" dimensions for PR30 and PL30 are the same dimensions as left and right elbows.
Please refer to page 12 for the dimensions.

For connection dimensions please refer to tables on pages 23,24 and 25.

■ Distance between conductors can vary in ± 5 mm.

■ Please call us for non-standard components.

■ The dimensions given above are minimum values.



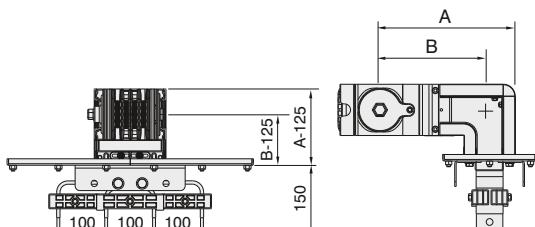
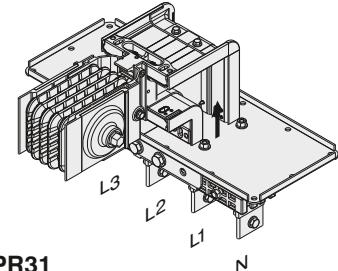
Right Panel Connection - PR 31

Busbar Feeder

Sample Order:

2500 A, Copper, Bolt-on, 4 conductors for Busbar Feeder

KXC 25504 - B - PR31



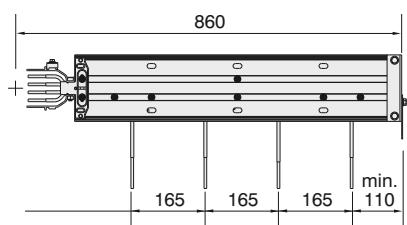
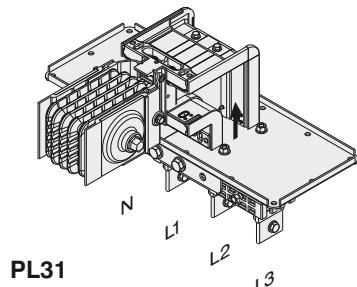
Left Panel Connection - PL 31

Busbar Feeder

Sample Order:

2500 A, Copper, Bolt-on, 4 conductors for Busbar Feeder

KXC 25504 - B - PL31



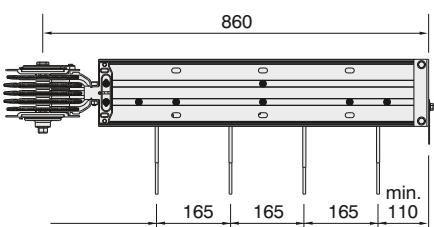
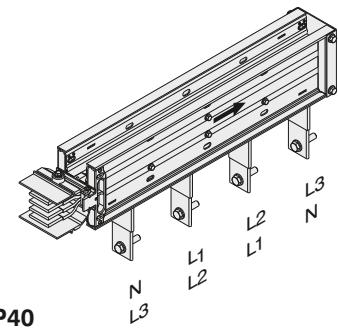
Panel Connection - P 40

Panel Feeder

Sample Order:

3300 A, Copper, Bolt-on, 4 conductors for Panel Feeder

KXC 32504 - B - P40



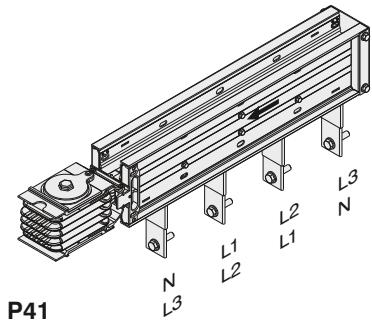
Panel Connection - P 41

Busbar Feeder

Sample Order:

3300 A, Copper, Bolt-on, 4 conductors for Busbar Feeder

KXC 32504 - B - 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 23,24 and 25.

■ Distance between conductors can vary in ± 5 mm.

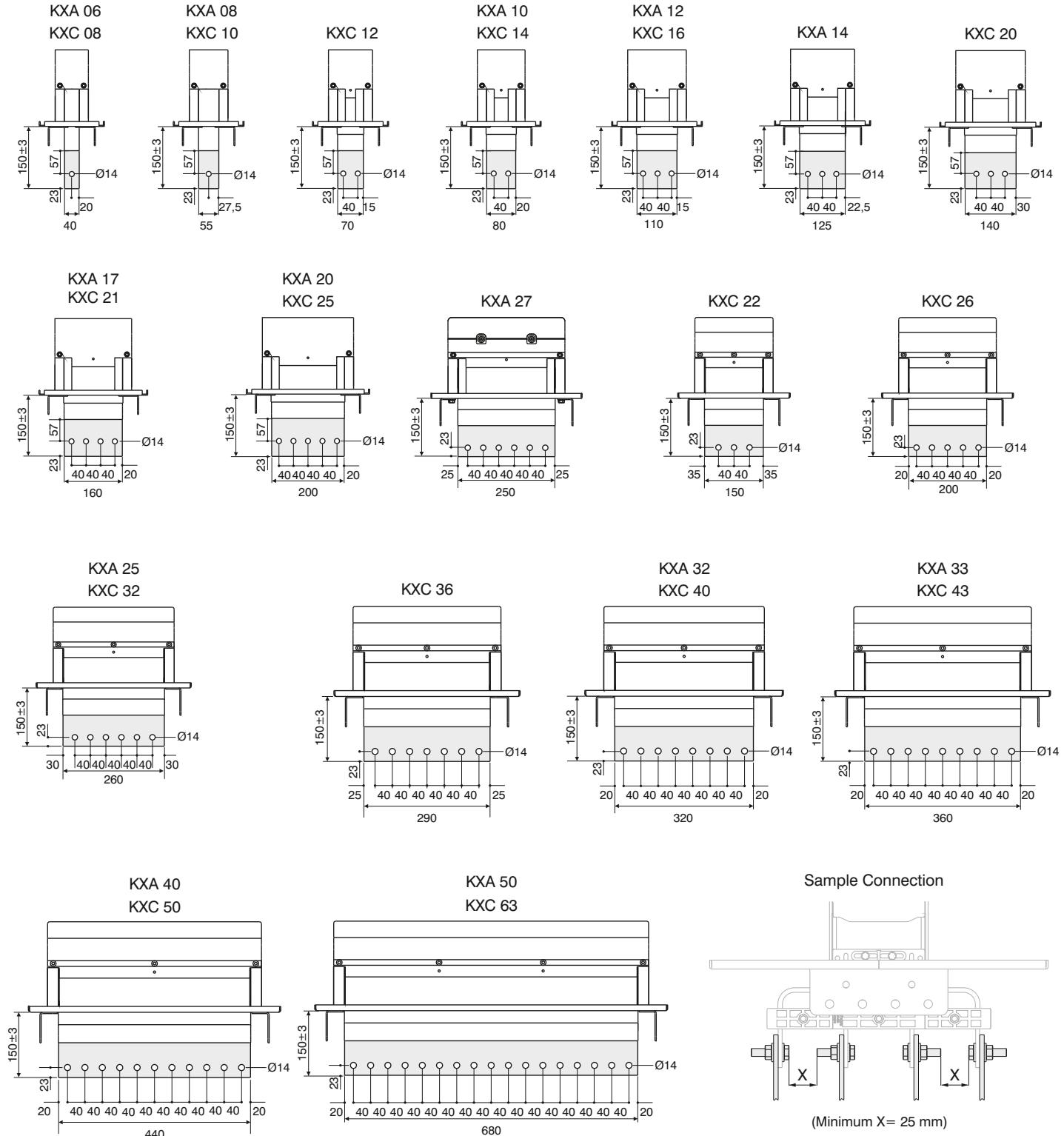
■ Please call us for non-standard components.

■ The dimensions given above are minimum values.

► Panel Connections

Panel Connection Units

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



■ Please call us for non-standard components.

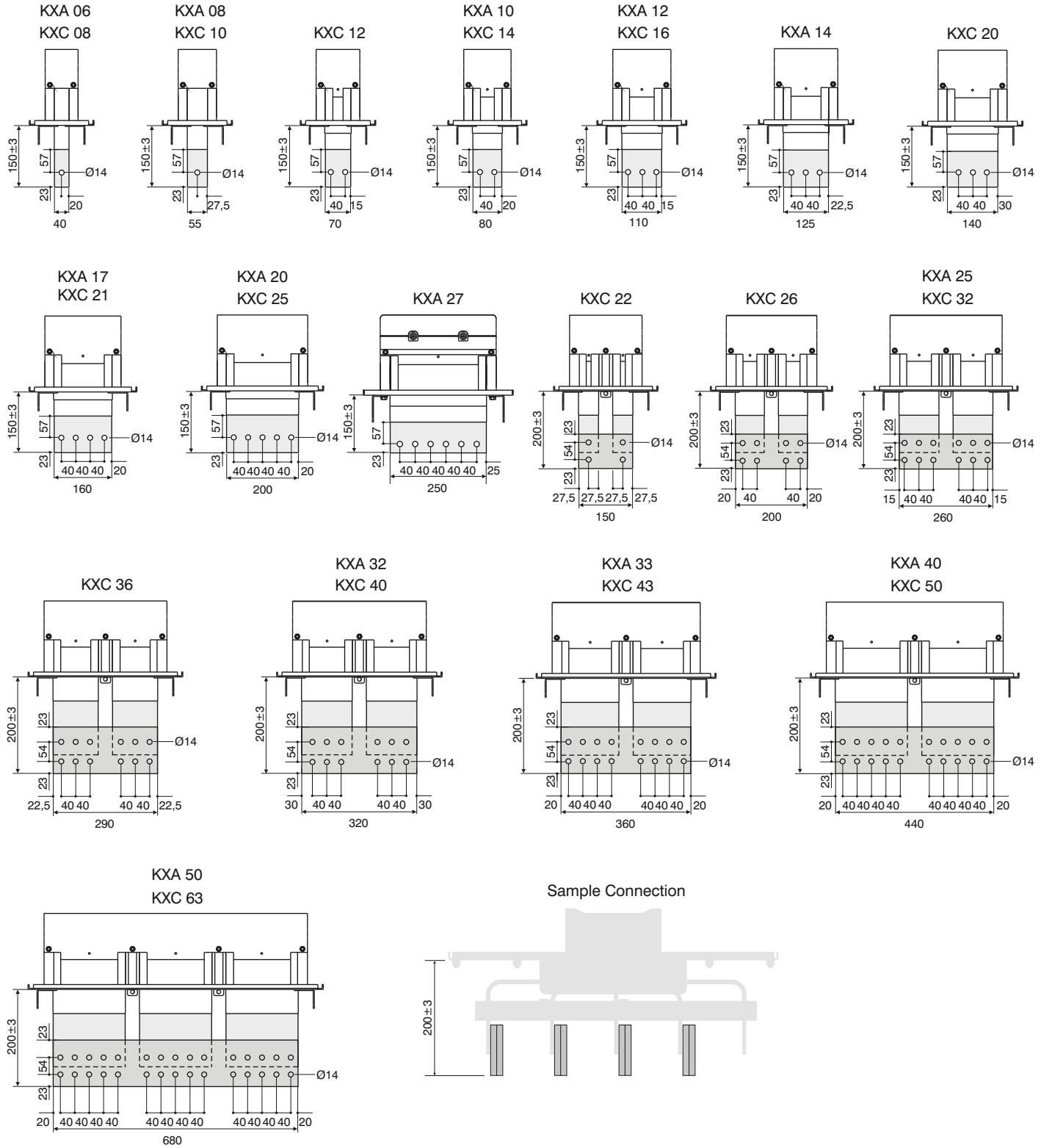
■ Distance between conductors can vary in ±5 mm.

■ The dimensions given above are minimum values.

► Panel Connections

Panel Connection Units

Panel Connection Units (P40,P41)

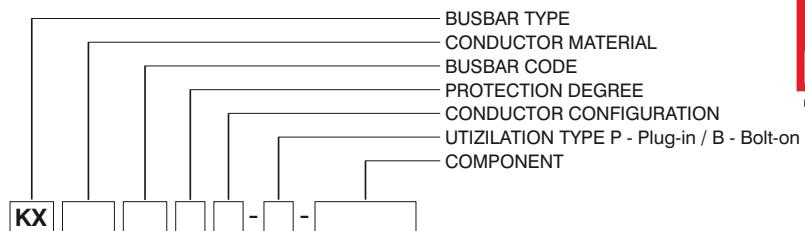


■ Please call us for non-standard components.

■ Distance between conductors can vary in ±5 mm.

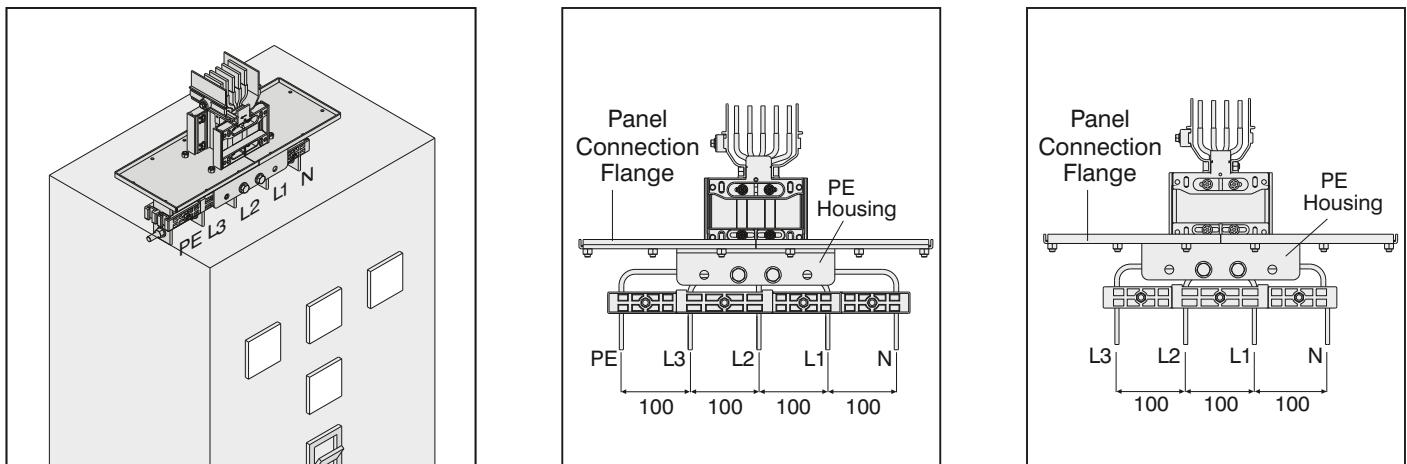
■ The dimensions given above are minimum values.

► Panel Connection Dimensions

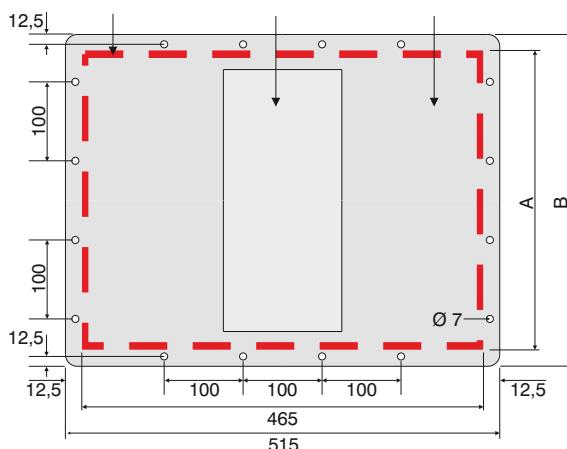


Flange Dimensions

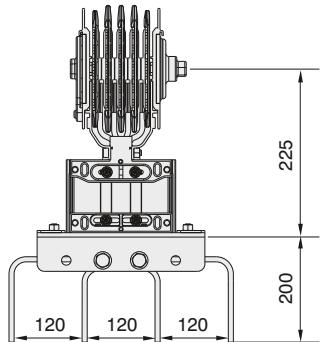
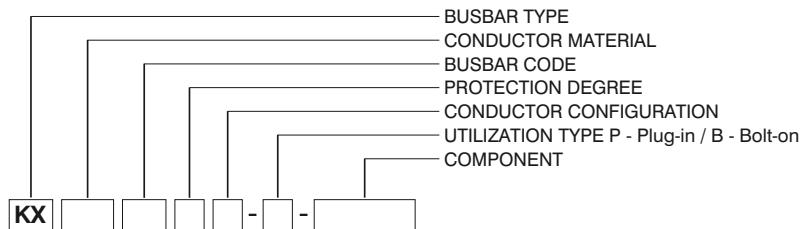
Panel Connection Units are supplied with suitable flange as standard.



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



Aluminium (Al)		Copper (Cu)		Conductor Size	A (mm)	B (mm)	Number of the holes along B length
Rated Current	Busbar Code	Rated Current	Busbar Code				
630	06	800	08	6x40	135	180	2
800	08	1000	10	6x55	150	195	2
-	-	1250	12	6x70	165	210	2
1000	10	1350	14	6x80	175	220	2
1250	12	1600	16	6x110	205	250	3
1350	14	-	-	6x125	220	265	3
-	-	2000	20	6x140	235	280	3
1600	17	-	-	6x160	255	300	3
-	-	2250	21	6,1x160	255	300	3
2000	20	2500	25	6x200	295	340	4
2500	27	-	-	6x250	345	390	4
-	-	2000	22	2x(6x55)	245	290	3
-	-	2500	26	2x(6x80)	295	340	3
2500	25	3300	32	2x(6x110)	355	400	4
-	-	3600	36	2x(6x125)	385	430	4
3000	32	4000	40	2x(6x140)	415	460	5
3200	33	-	-	2x(6x160)	455	500	5
-	-	4250	43	2x(6,1x160)	455	500	5
4000	40	5000	50	2x(6x200)	535	580	6
5000	50	6300	63	3x(6x200)	775	820	8

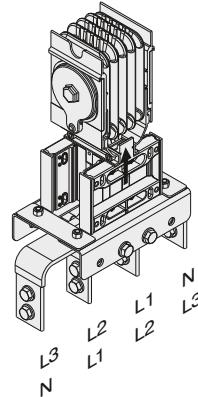


Transformer Connection

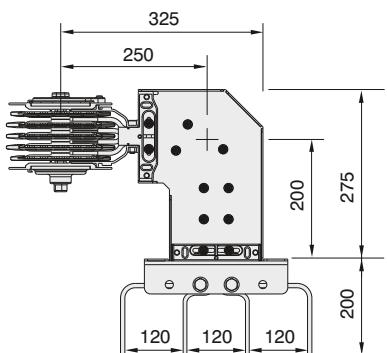
- T R 11

Sample Order:

2500 A, Aluminium, Bolt-on, 4 conductors
KXA 25504 - B - TR11-120



TR11

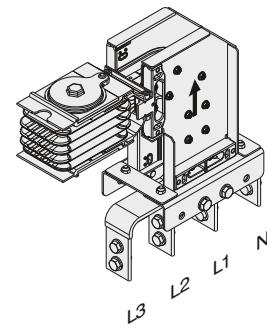


Upwards Transformer Connection

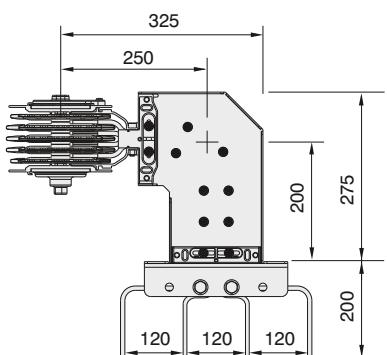
- T U 21

Sample Order:

2500 A, Copper, Bolt-on, 4 conductors
KXC 25504 - B - TU21-120



TU21

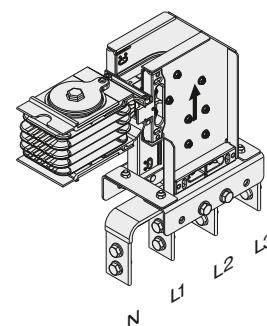


Downwards Transformer Connection

- T D 21

Sample Order:

2500 A, Aluminium, Bolt-on, 4 conductors
KXA 25504 - B - TD21-120



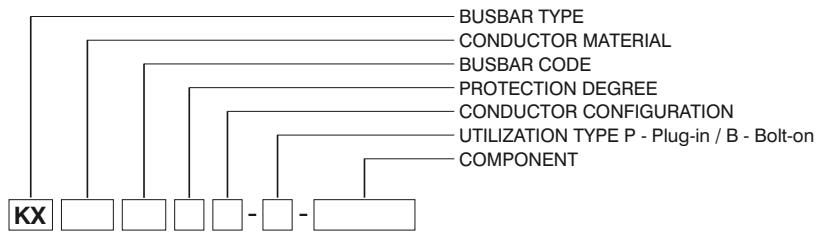
TD21

For connection dimensions please refer to tables on page 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.

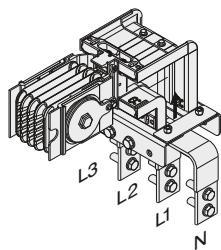
For the design, the following information is required:

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

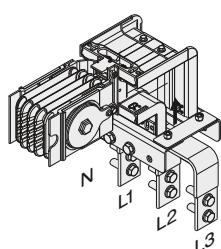
For connection dimensions please refer to tables on page 29.

Flexible are used for

- Transformer - busbar,
- Panel - busbar connections.



TR51



TL51

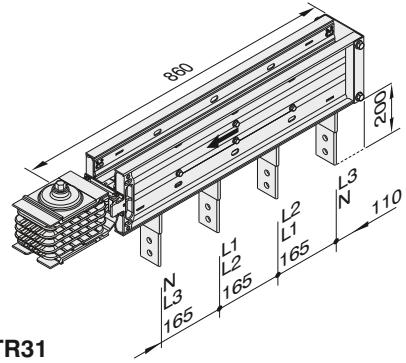
Transformer Connection

- T R 3 1

Sample Order:

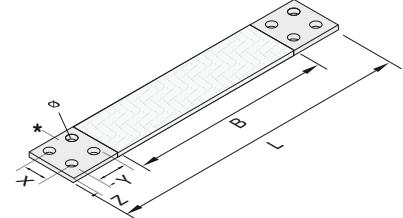
2500 A, Copper, Bolt-on, 4 conductors

KXC 25504 - B - TR31



- F L (cm)

Flexibles



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

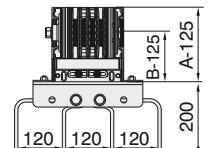
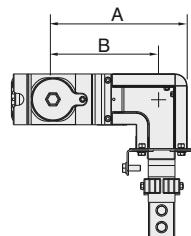
Right Transformer Connection

- T R 5 1

Sample Order:

2500 A, Copper, Bolt-on,
4 conductors

KXC 25504 - B - TR51



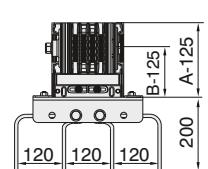
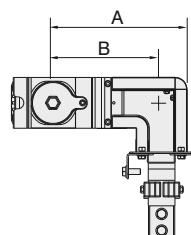
Left Transformer Connection

- T L 5 1

Sample Order:

2500 A, Aluminium, Bolt-on,
4 conductors

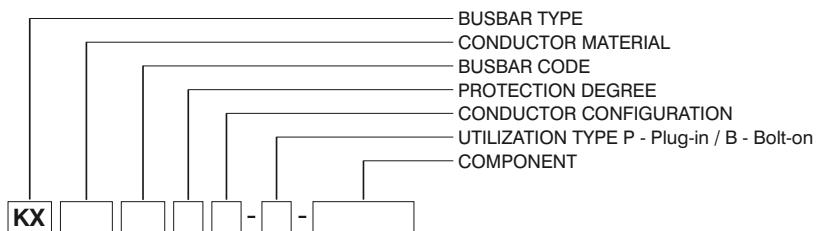
KXA 25504 - B - TL51



■ Distance between conductors can vary in ± 5 mm.

■ Please call us for non-standard components.

■ The dimensions given above are minimum values.



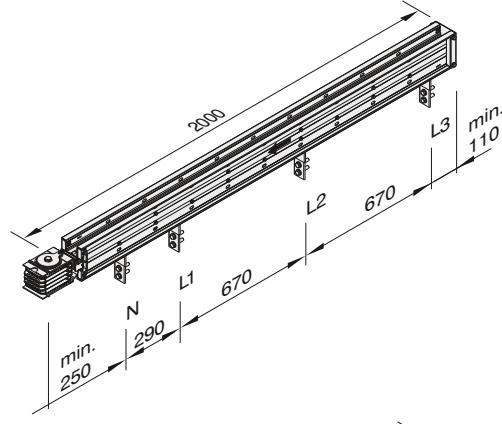
Transformer Connection

- T R 41

Sample Order:

2500 A, Copper, Bolt-on, 4 conductors

KXC 25504 - B - TR41



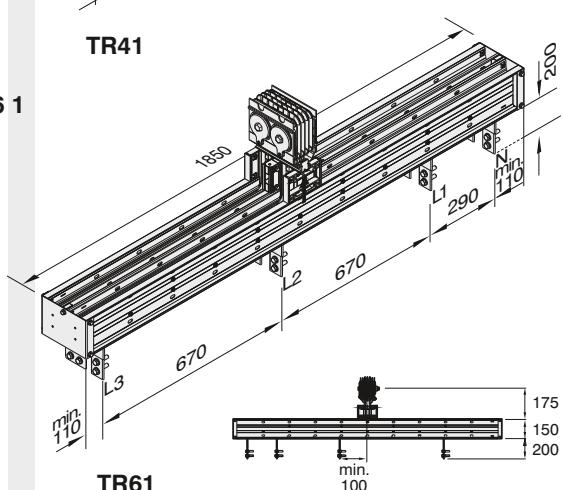
Transformer Connection

- T R 61

Sample Order:

3600 A, Copper, Bolt-on,
4 conductors

KXC 36504 - B - TR61



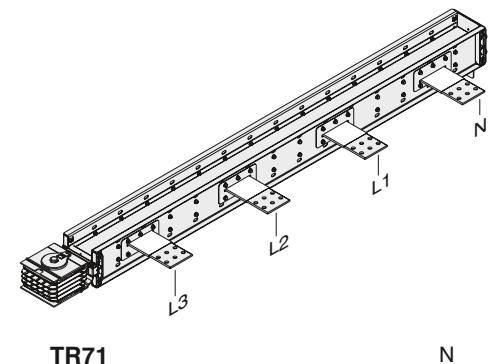
Transformer Connection

- T R 71

Sample Order:

4000 A, Copper, Bolt-on,
4 conductors

KXC 40504 - B - TR71



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 29.

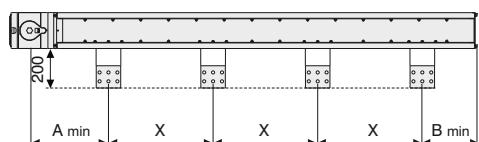
TR71 Dimension Table

KXA - AI Conductor		KXC - Cu Conductor		Conductor	A min	B min	X min
Rated Current	Busbar Code	Rated Current	Busbar Code		(mm)	(mm)	(mm)
630	06	800	08	6x40	270	130	100
800	08	1000	10	6x55	277,5	137,5	115
-	-	1250	12	6x70	285	145	130
1000	10	1350	14	6x80	290	150	140
1250	12	1600	16	6x110	305	165	170
1350	14	-	-	6x125	312,5	172,5	185
-	-	2000	20	6x140	320	180	200
1600	17	-	-	6x160	330	190	220
-	-	2250	21	6,1x160	330	190	220
2000	20	2500	25	6x200	350	210	260
2500	27	-	-	6x250	375	235	310
-	-	2000	22	2(6x55)	277,5	137,5	115
-	-	2500	26	2(6x80)	290	150	140
2500	25	3300	32	2(6x110)	305	165	170
-	-	3600	36	2(6x125)	312,5	172,5	185
3000	32	4000	40	2(6x140)	320	180	200
3200	33	-	-	2(6x160)	330	190	220
-	-	4250	43	2(6,1 x160)	330	190	220
4000	40	5000	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.



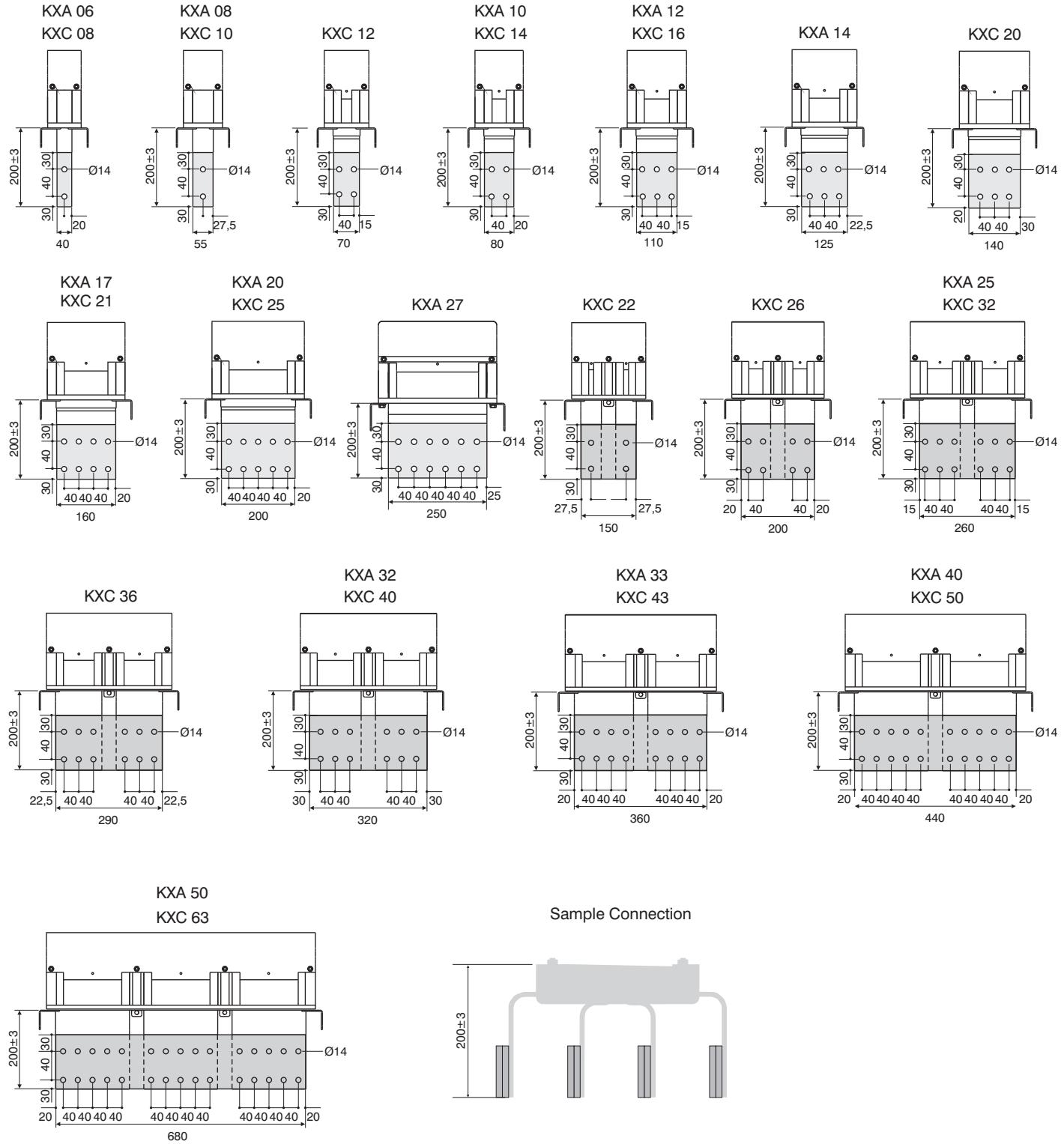
► Transformer Connection

Transformer Connection Units

Transformer Connection Units (TR11, TU21, TD21, TL31, TR31, TR41, TR51, TL51, TR61)

Note:

No flange supplied with transformer connection units.



■ Please call us for non-standard components.

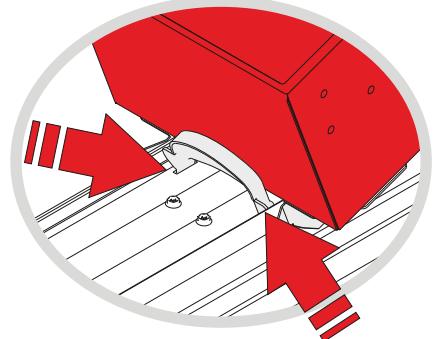
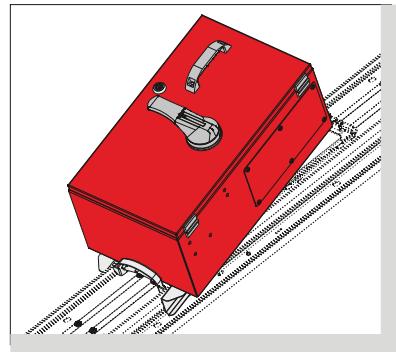
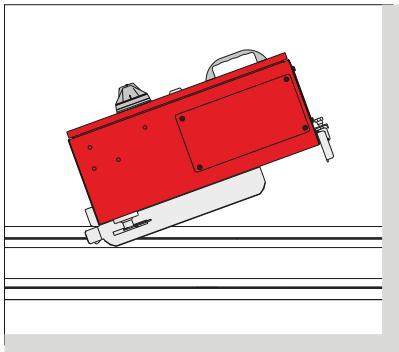
■ Distance between conductors can vary in ±5 mm.

■ The dimensions given above are minimum values.

► Tap-off Boxes

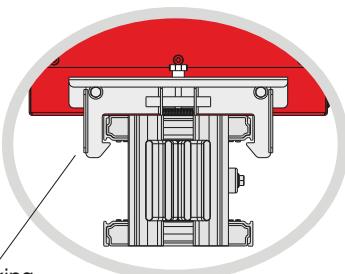
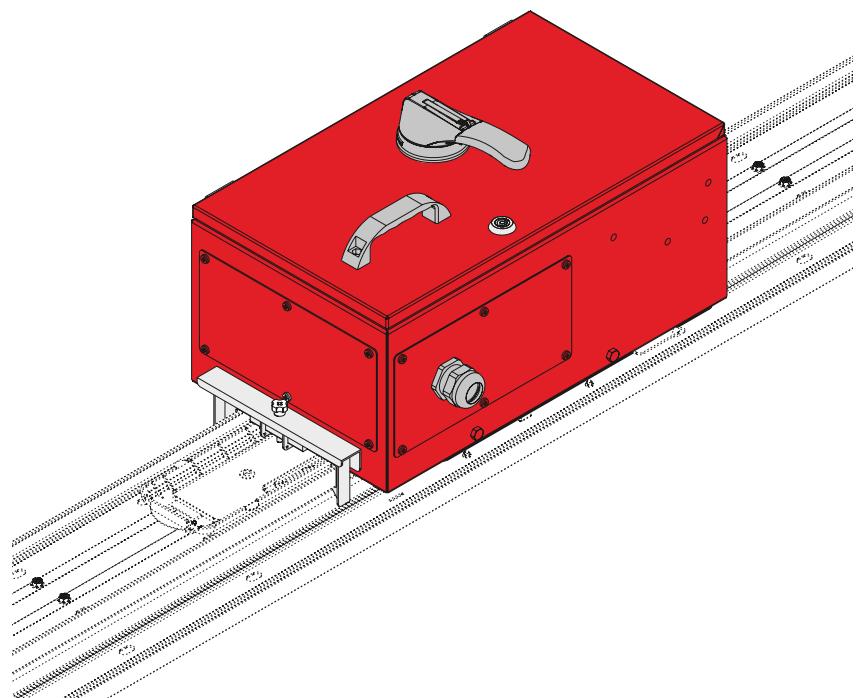
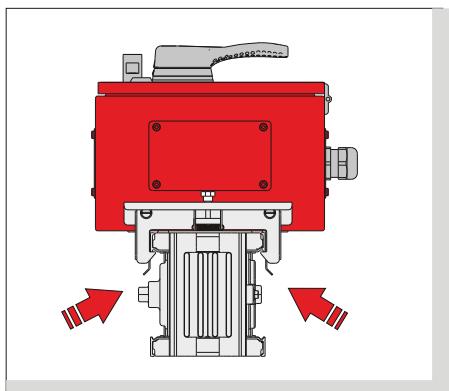
Easy Installation System of Tap-off Boxes

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

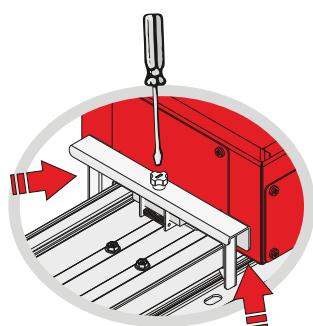


Fixing System of Tap-off Boxes to Busbars

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



Locking Point



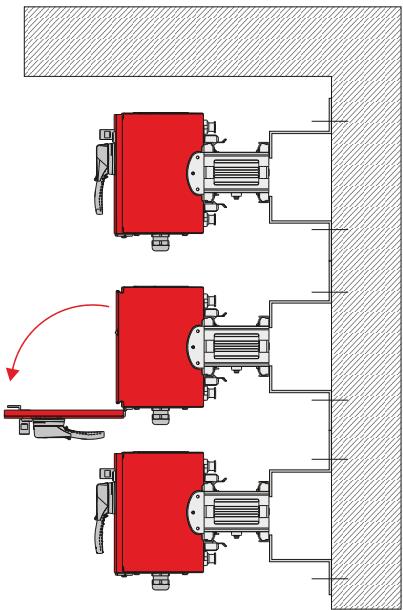
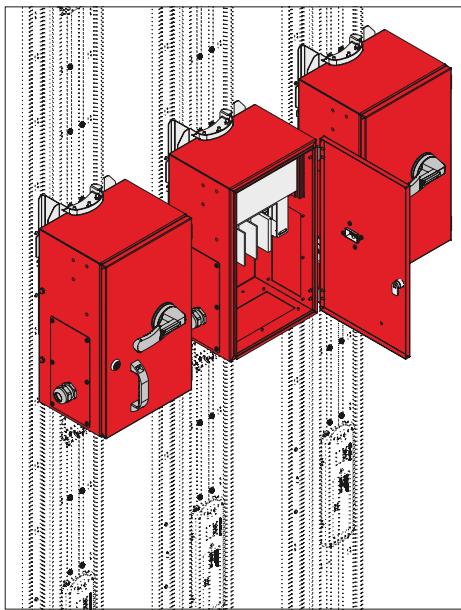
Universal Tap-off Boxes

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

► Technical Features

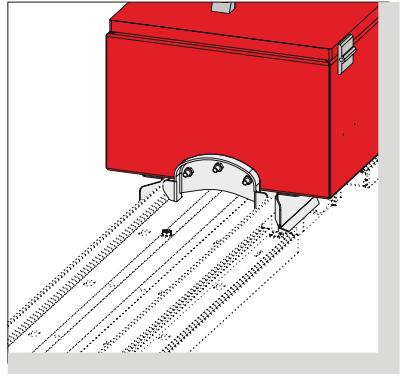
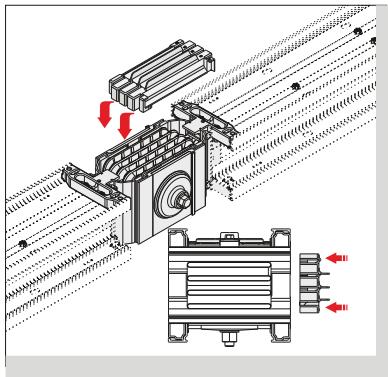
Side Opening Box Lids

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



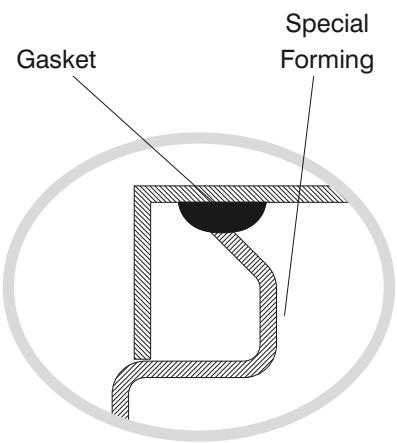
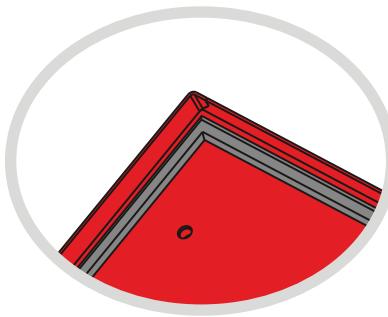
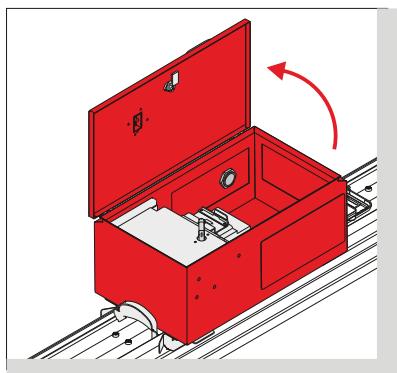
Bolt-on Tap-off Boxes

- 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 160A upto 1.000A.
- Busbar run must be de-energized before installing bolt-on tap-off boxes.



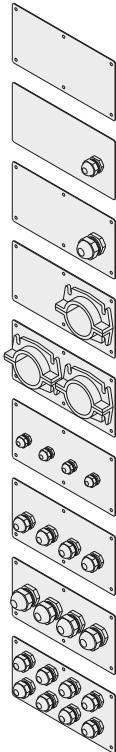
Effective Gasket

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

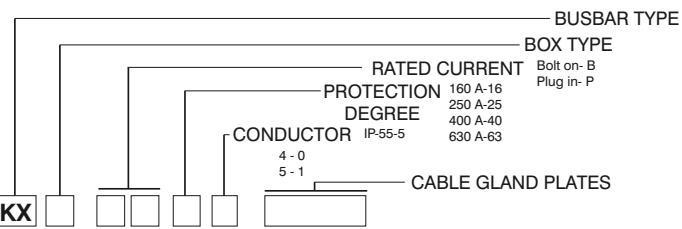


► Tap-off Boxes with Fused Switches (Bolt-on-KXB)

Cable Gland Plates



Mat. Sheet	Cable Gland Type ----	Order Code 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



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 / 630 A / IP-55 / 4 conductors

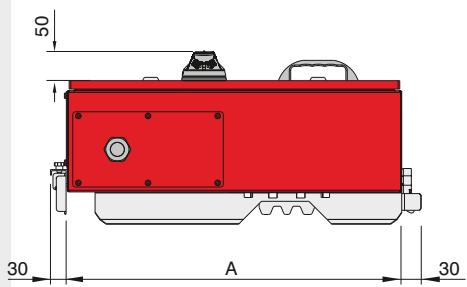
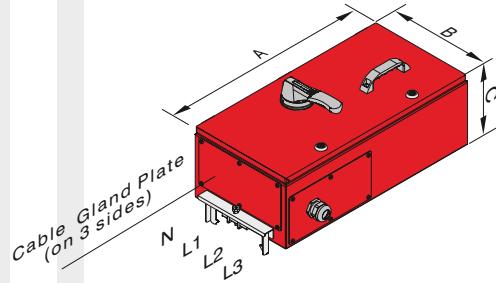
KXB 6350

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 / 630 A / IP-55 / 5 conductors

KXB 631



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.

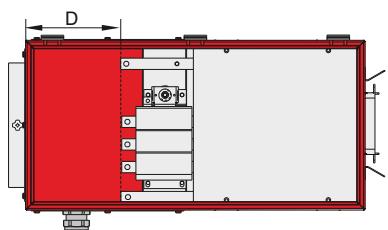
- Tap off boxes shall not be used empty. Fused switches, MCCBs or similar protection devices must be installed into tap-off boxes before they are installed to the busbar runs.

Tap-off Boxes	A (mm)	B (mm)	C (mm)	D (mm)	Fuse Size	Standard Gland
KXB 16	750	380	240	265	NH00	RP2
KXB 25	750	380	240	265	NH 1	RP3
KXB 40	850	420	260	265	NH 3	RP4
KXB 63	850	420	260	265	NH 3	RP4

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

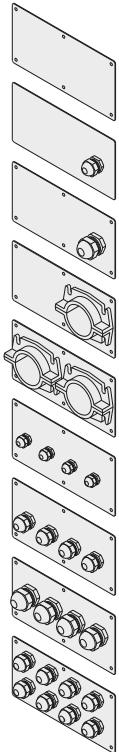
Please call us for non-standard tap-off boxes and detailed information.

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

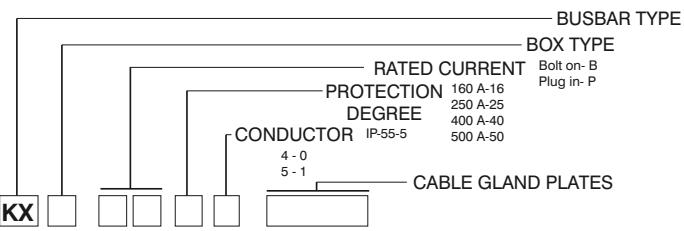


► Tap-off Boxes with Fused Switches (Plug-in-KXP)

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 5 0 5 0

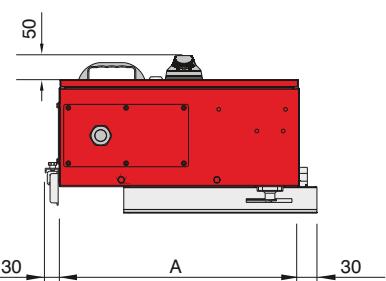
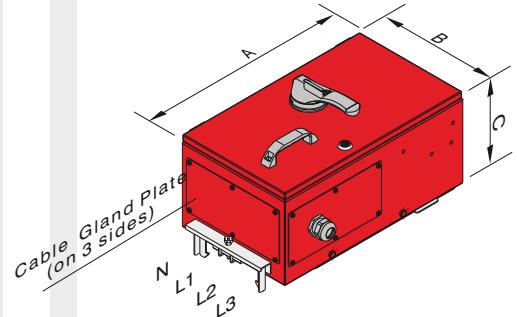
Sample Order:
Plug-in / 400 A / IP-55 /
4 conductors

KXP 4050

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

Sample Order:
Plug-in / 500 A / IP-55 /
5 conductors

KXP 5051



Notes:

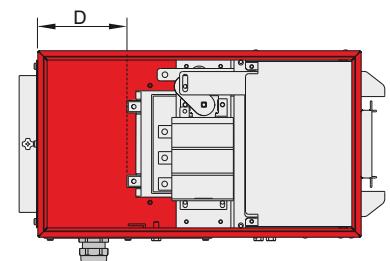
EAE Plug-in Tap Off Boxes are secured with an interlocking mechanism. This protects against attaching them to or removing them from the busbar in the "ON" position. When in the "OFF" position they are safe to attach to or remove from the busbar.

- 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
KXP 16	520	300	210	250	NH00	RP2
KXP 25	670	380	270	310	NH 1	RP3
KXP 40	750	420	300	285	NH 3	RP4
KXP 50	750	420	300	285	NH 3	RP4

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

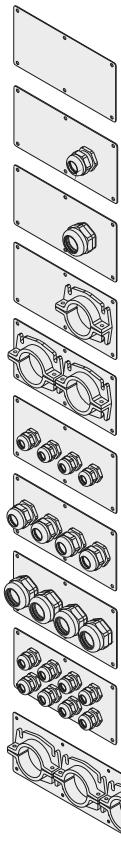
Please call us for non-standard tap-off boxes and detailed information.



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

► 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 1650 - B
KX B 2550 - B
KX B 4050 - B
KX B 6350 - B

KX B 1650 - M
KX B 2550 - M
KX B 4050 - M
KX B 6350 - M

Sample Order:
Bolt-on / 630 A / IP-55 /
4 conductors, empty tap-off box

KXB 6350 - B1

KX B 1651 - B
KX B 2551 - B
KX B 4051 - B
KX B 6351 - B

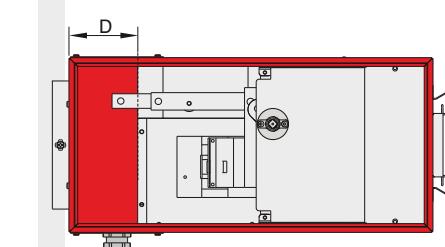
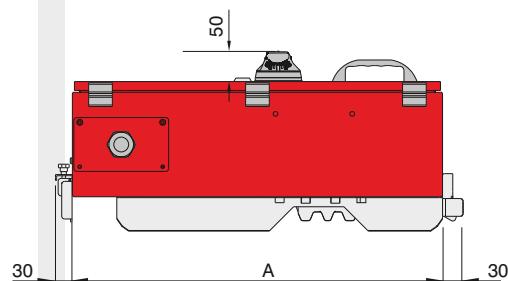
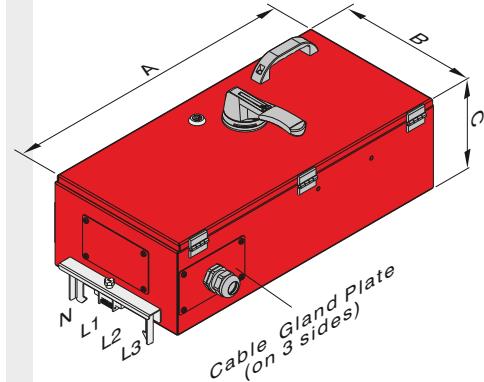
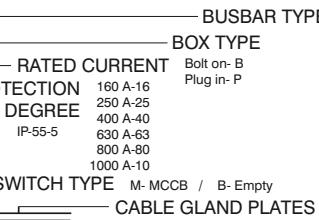
Sample Order:
Bolt-on / 630 A / IP-55 /
5 conductors, empty tap-off box

KXB 6351 - B1

KX B 8050 - B1
KX B 1050 - B1
KX B 8050 - M1
KX B 1050 - M1

Sample Order:
Bolt-on / 800 A / IP-55 /
4 conductors, empty tap-off box

KXB 8050 - B1



KX B 8051 - B
KX B 1051 - B
KX B 8051 - M
KX B 1051 - M

Sample Order:
Bolt-on / 800 A / IP-55 /
5 conductors, empty tap-off box

KXB 8051 - B1

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

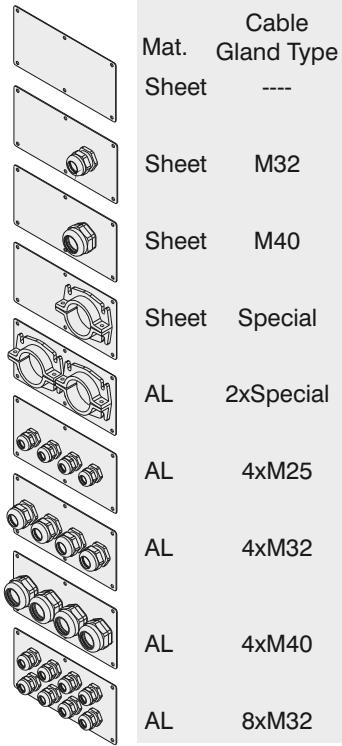
* D value varies as per the used switch.

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

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

► 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

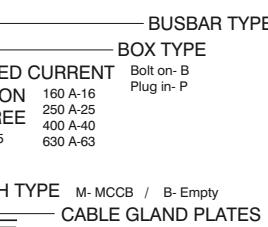
Plug-in Tap-off Boxes

KX P 1650 - B1
KX P 2550 - B1
KX P 4050 - B1
KX P 6350 - B1
KX P 1650 - M1
KX P 2550 - M1
KX P 4050 - M1
KX P 6350 - M1

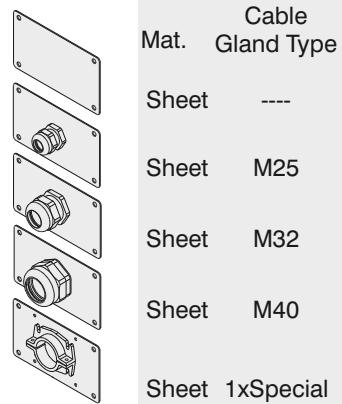
Sample Order:

Plug-in / 400 A / 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 1651 - B1
KX P 2551 - B1
KX P 4051 - B1
KX P 6351 - B1
KX P 1651 - M1
KX P 2551 - M1
KX P 4051 - M1
KX P 6351 - M1

Sample Order:

Plug-in / 400 A / IP-55 / 5 conductors, empty tap-off box

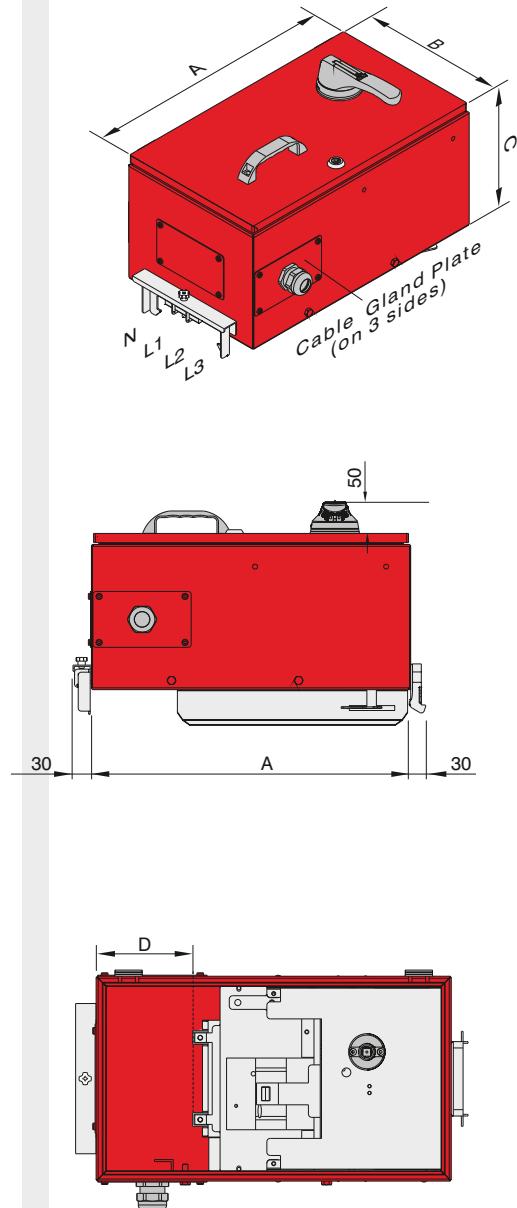
KXP 4051 - B1

Tap-off Boxes	A (mm)	B (mm)	C (mm)	*D (mm)	Standard Gland
KXP 16	520	300	250	150	RPK3
KXP 25	520	300	250	150	RPK4
KXP 40	700	300	250	255	RP4
KXP 63	700	300	250	255	RP4

* 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.



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

► Vertical and Horizontal Busbar Applications

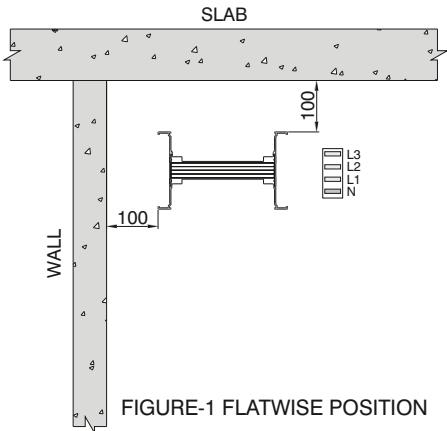


FIGURE-1 FLATWISE POSITION

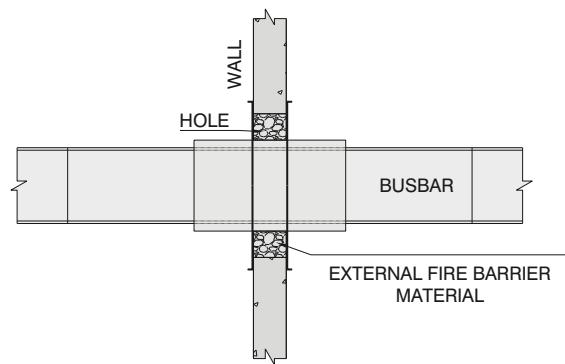


FIGURE-5 SAMPLE WALL CROSSING WITH FIRE BARRIER

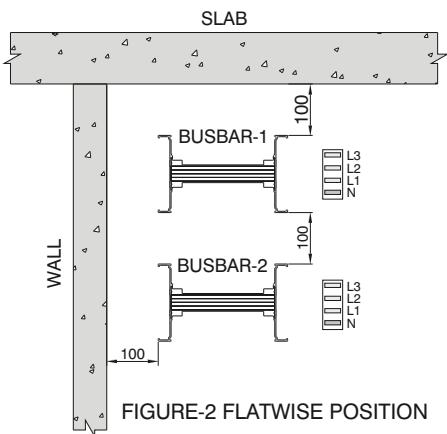


FIGURE-2 FLATWISE POSITION

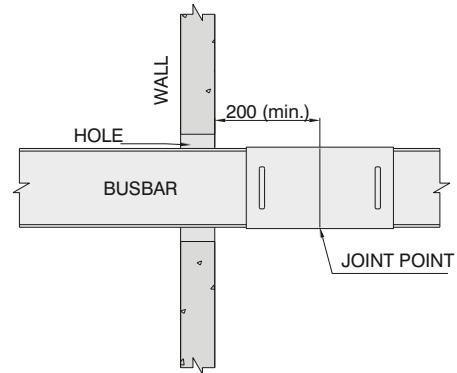


FIGURE-6 STANDARD WALL CROSSING

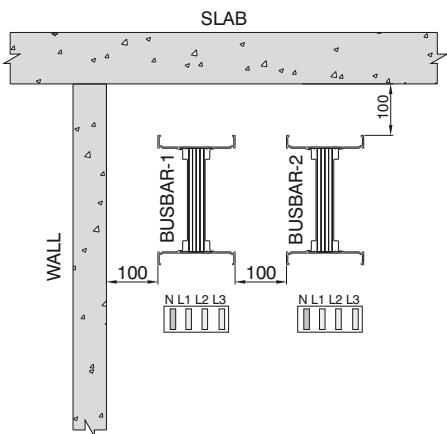


FIGURE-3 EDGEWISE POSITION

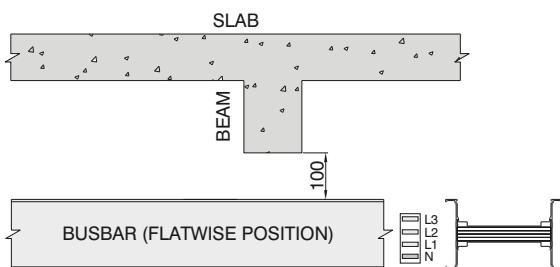
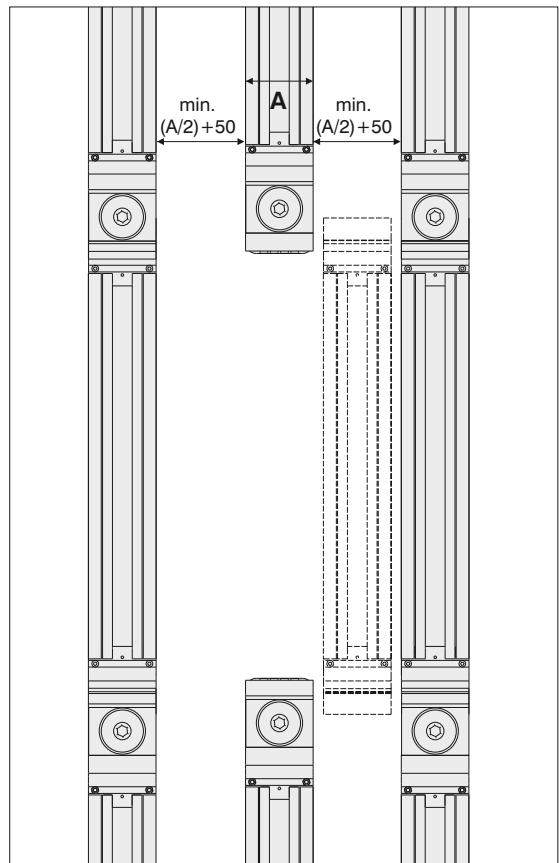


FIGURE-4 CROSSING UNDER A BEAM HORIZONTAL POSITION



MINIMUM DISTANCE BETWEEN BUSBAR RUNS IN HORIZONTAL APPLICATIONS.

The dimensions given above are minimum values.

All measures are given in mm.

► Vertical and Horizontal Busbar Applications

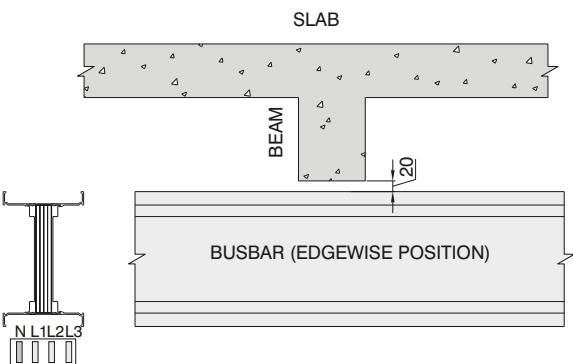


FIGURE-7 CROSSING UNDER A BEAM EDGEWISE POSITION

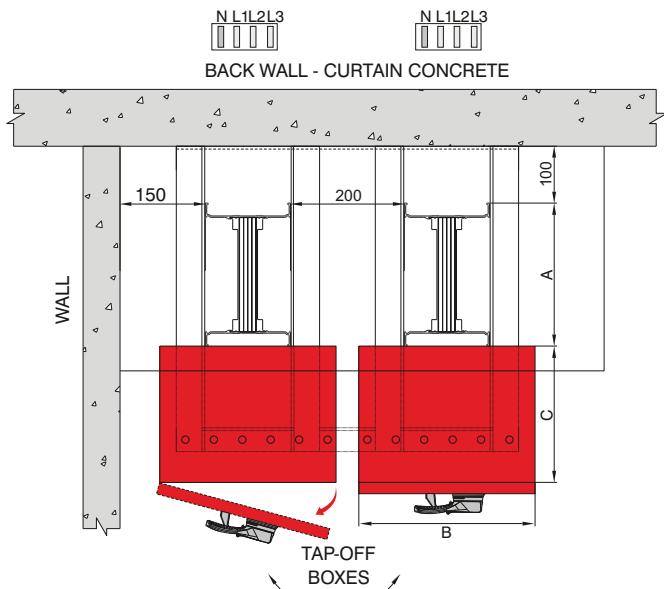


FIGURE-8 MINIMUM DIMENSIONS BETWEEN 2 TAP-OFF BOXES

Table For Outer Dimension of Busbars

KXA - Al Conductor		KXC - Cu Conductor	A	
Rated Current	Busbar Code	Rated Current	Busbar Code	(mm)
630	06	800	08	91
800	08	1000	10	106
-	-	1250	12	121
1000	10	1350	14	131
1250	12	1600	16	161
1350	14	-	-	176
-	-	2000	20	191
1600	17	-	-	211
-	-	2250	21	211
2000	20	2500	25	251
2500	27	-	-	301
-	-	2000	22	202
-	-	2500	26	252
2500	25	3300	32	312
-	-	3600	36	342
3000	32	4000	40	372
3200	33	-	-	412
-	-	4250	43	412
4000	40	5000	50	492
5000	50	6300	63	732

NOTE: In order to accomodate 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.

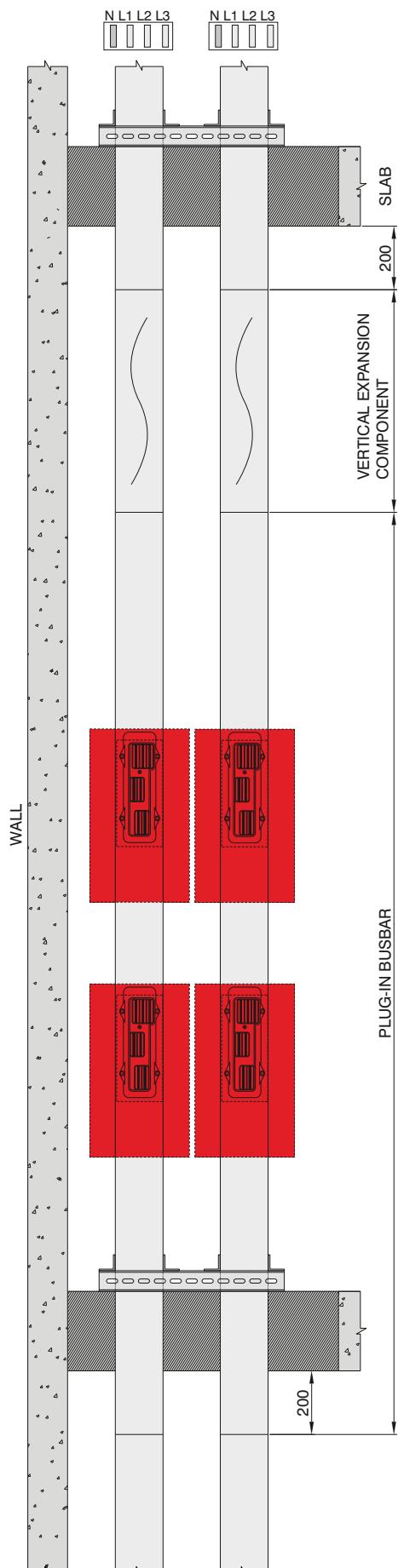
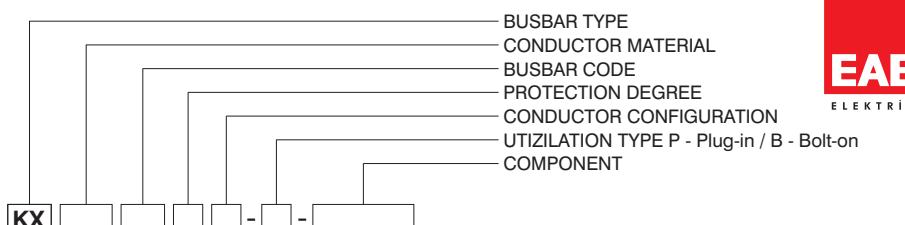


FIGURE-9 MINIMUM DIMENSIONS BETWEEN 2 RISERS

► Feeder Boxes (B10,B11)

Cable Gland Plates

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

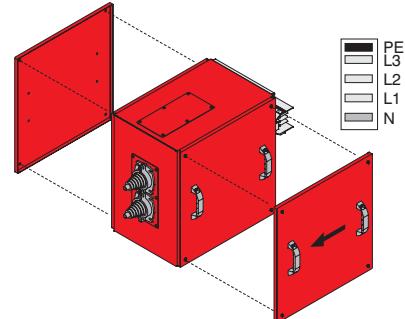


Feeder Box B10 - B 1 0

Sample Order:

3200 A, Aluminium, Bolt-on
4 conductors

KXA 32504 - B - B10



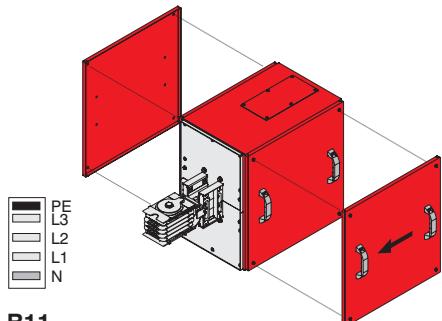
B10

Feeder Box B11 - B 1 1

Sample Order:

3600 A, Copper, Bolt-on, 4 conductors

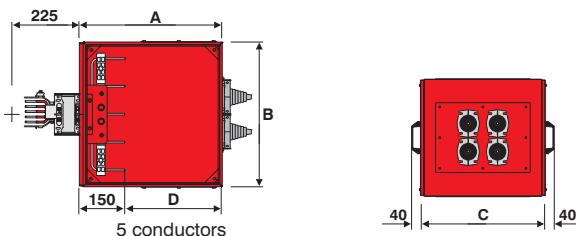
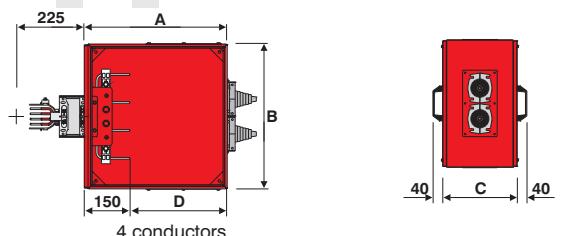
KXC 36504 - B - B11



B11

Ampere Ratings

KXA - Al Conductor		KXC - Cu Conductor		A	B	C	D	Gland Type
Rated Current	Busbar Code	Rated Current	Busbar Code	(mm)	(mm)	(mm)	(mm)	
630	06	800	08	500	520	355	350	1
800	08	1000	10	500	520	355	350	1
-	-	1250	12	500	520	355	350	1
1000	10	1350	14	500	520	355	350	1
1250	12	1600	16	500	520	355	350	1
1350	14	-	-	500	520	555	350	2
-	-	2000	20	500	520	555	350	2
1600	17	-	-	500	520	555	350	2
-	-	2250	21	500	520	555	350	2
2000	20	2500	25	500	520	555	350	2
2500	27	-	-	500	520	555	350	3
-	-	2000	22	500	520	555	350	2
-	-	2500	26	500	520	555	350	2
2500	25	3300	32	500	520	555	350	3
-	-	3600	36	500	520	555	350	3
3000	32	4000	40	700	520	770	550	3
3200	33	-	-	700	520	770	550	3
-	-	4250	43	700	520	770	550	3
4000	40	5000	50	700	520	770	550	3
5000	50	6300	63	700	520	950	550	4



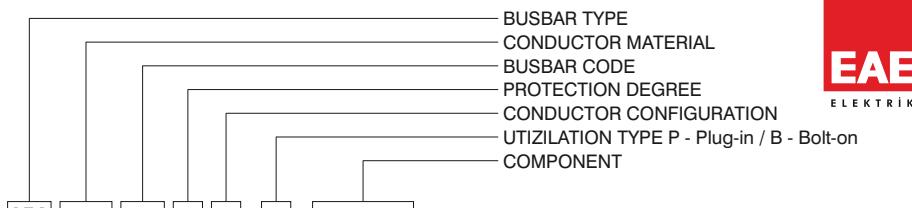
■ The dimensions given above are minimum values

■ 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

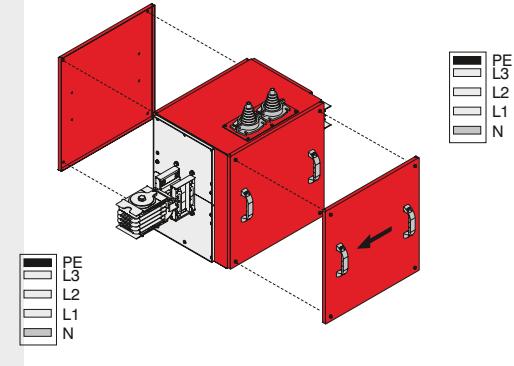


Central Feeder Box - B O

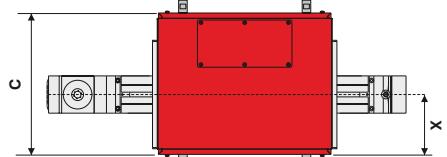
Sample Order:

2500 A, Aluminium, Bolt-on
4conductors

KXA 25504 - B - BO



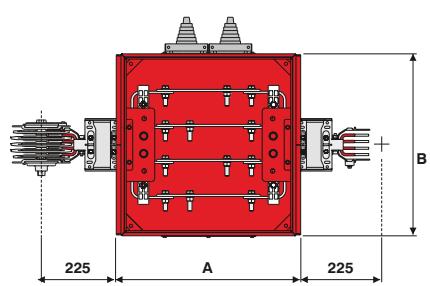
BO



Ampere Ratings

KXA - AI Conductor		KXC - Cu Conductor		A	B	C	X	Gland Type
Rated Current	Busbar Code	Rated Current	Busbar Code	(mm)	(mm)	(mm)	(mm)	
630	06	800	08	500	520	405	175	1
800	08	1000	10	500	520	405	175	1
-	-	1250	12	500	520	405	175	1
1000	10	1350	14	500	520	405	175	1
1250	12	1600	16	500	520	405	175	1
1350	14	-	-	700	520	805	277,5	2
-	-	2000	20	700	520	805	277,5	2
1600	17	-	-	700	520	805	277,5	2
-	-	2250	21	700	520	805	277,5	2
2000	20	2500	25	700	520	805	277,5	2
2500	27	-	-	700	520	805	277,5	3
-	-	2000	22	700	520	805	277,5	2
-	-	2500	26	700	520	805	277,5	2
2500	25	3300	32	700	520	805	277,5	3
-	-	3600	36	700	520	805	277,5	3
3000	32	4000	40	850	520	1005	385	3
3200	33	-	-	850	520	1005	385	3
-	-	4250	43	850	520	1005	385	3
4000	40	5000	50	850	520	1005	385	3
5000	50	6300	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 FIXING ELEMENTS

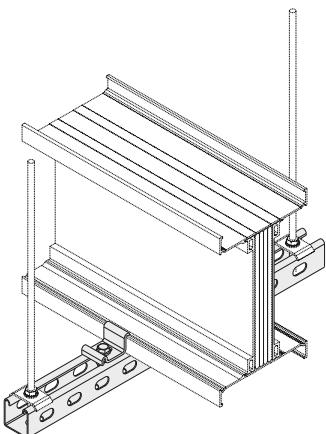
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KX Fixing Clamp for Binrak(Unistrut) Channel	2011227



Description	Order Code
KX Fixing Clamp for Steel Angle Profile	2011226

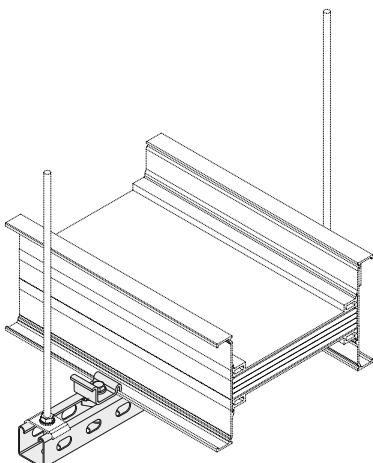
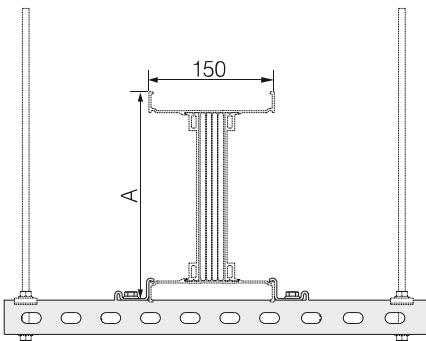


■ Please call us for non-standard components.

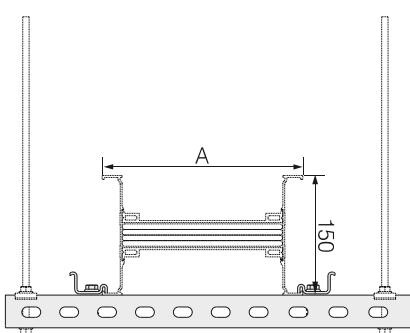


Supports

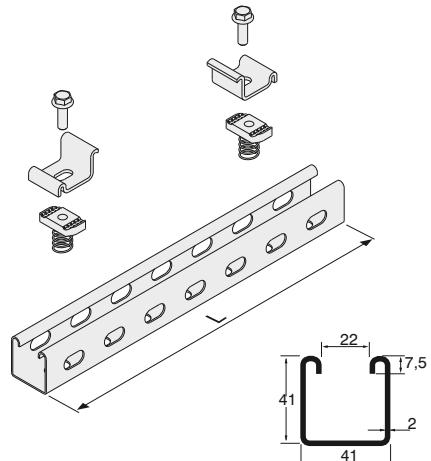
**KX - BRA HANGER
SET FOR EDGEWISE
APPLICATION TO
BINRAK (UNISTRUT)
CHANNEL**



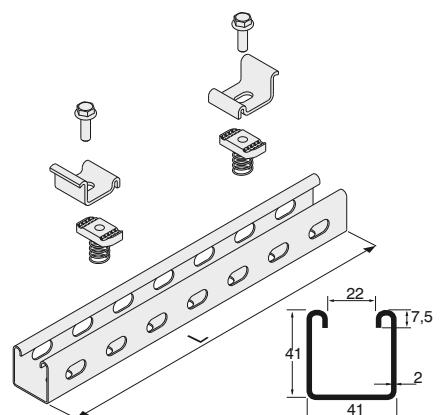
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SET FOR FLATWISE
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CHANNEL**

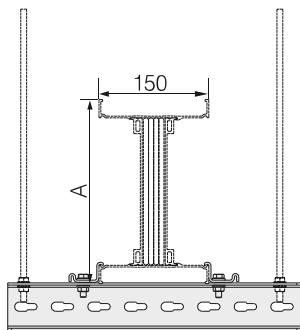
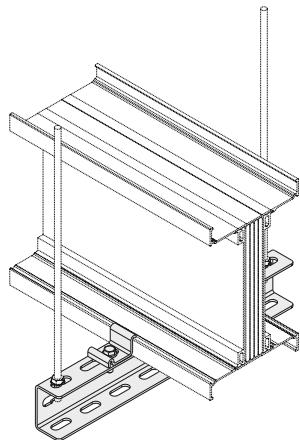


Al Conductor		Cu Conductor		L	A	Order Code
Rated Current	Busbar Code	Rated Current	Busbar Code	(mm)	(mm)	
630	06	800	08	350	91	3025372
800	08	1000	10	350	106	3025372
-	-	1250	12	350	121	3025372
1000	10	1350	14	350	131	3025372
1250	12	1600	16	350	161	3025372
1350	14	-	-	350	176	3025372
-	-	2000	20	350	191	3025372
1600	17	-	-	350	211	3025372
-	-	2250	21	350	211	3025372
2000	20	2500	25	350	251	3025372
2500	27	-	-	350	301	3025372



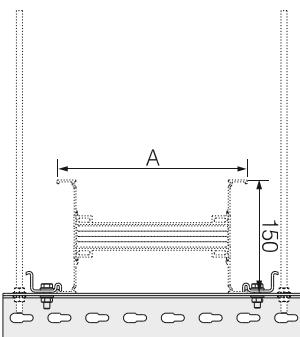
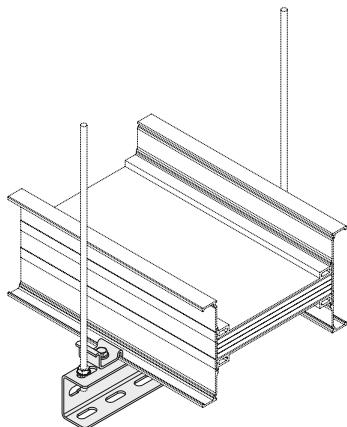
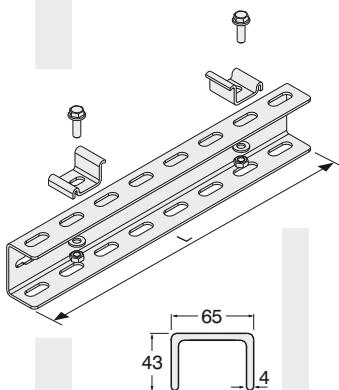
Al Conductor		Cu Conductor		L	A	Order Code
Rated Current	Busbar Code	Rated Current	Busbar Code	(mm)	(mm)	
630	06	800	08	300	91	3025372
800	08	1000	10	300	106	3025372
-	-	1250	12	300	121	3025372
1000	10	1350	14	300	131	3025372
1250	12	1600	16	350	161	3025373
1350	14	-	-	350	176	3025373
-	-	2000	20	400	191	3025374
1600	17	-	-	400	211	3025374
-	-	2250	21	400	211	3025374
2000	20	2500	25	450	251	3025375
2500	27	-	-	450	301	3025375



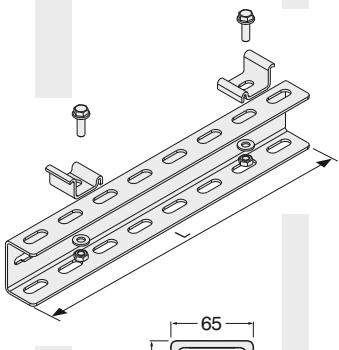


Supports

KX - UT HANGER SET FOR EDGEWISE APPLICATION TO NPU CHANNEL



KX - UT HANGER SET FOR FLATWISE APPLICATION TO NPU CHANNEL



AI Conductor

Cu Conductor

L

A

Order Code

Rated Current	Busbar Code	Rated Current	Busbar Code	(mm)	(mm)	
630	06	800	08	350	91	3025348
800	08	1000	10	350	106	3025348
-	-	1250	12	350	121	3025348
1000	10	1350	14	350	131	3025348
1250	12	1600	16	350	161	3025348
1350	14	-	-	350	176	3025348
-	-	2000	20	350	191	3025348
1600	17	-	-	350	211	3025348
-	-	2250	21	350	211	3025348
2000	20	2500	25	350	251	3025348
2500	27	-	-	350	301	3025348
-	-	2000	22	350	202	3025348
-	-	2500	26	350	252	3025348
2500	25	3300	32	350	312	3025348
-	-	3600	36	350	342	3025348
3000	32	4000	40	350	372	3025348
3200	33	-	-	350	412	3025348
-	-	4250	43	350	412	3025348
4000	40	5000	50	350	492	3025348
5000	50	6300	63	350	732	3025348

AI Conductor

Cu Conductor

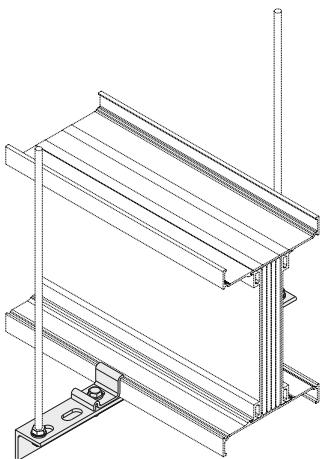
L

A

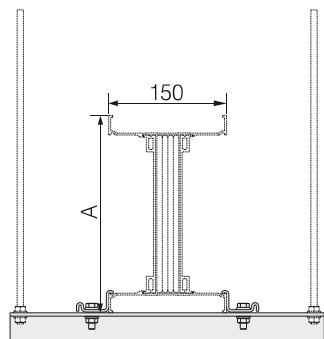
Order Code

Rated Current	Busbar Code	Rated Current	Busbar Code	(mm)	(mm)	
630	06	800	08	300	91	3025347
800	08	1000	10	300	106	3025347
-	-	1250	12	300	121	3025347
1000	10	1350	14	300	131	3025347
1250	12	1600	16	350	161	3025348
1350	14	-	-	350	176	3025348
-	-	2000	20	400	191	3025349
1600	17	-	-	400	211	3025349
-	-	2250	21	400	211	3025349
2000	20	2500	25	450	251	3025350
2500	27	-	-	450	301	3025350
-	-	2000	22	400	202	3025349
-	-	2500	26	450	252	3025350
2500	25	3300	32	500	312	3025351
-	-	3600	36	550	342	3025352
3000	32	4000	40	550	372	3025352
3200	33	-	-	600	412	3025353
-	-	4250	43	600	412	3025353
4000	40	5000	50	700	492	3025354
5000	50	6300	63	900	732	3025355

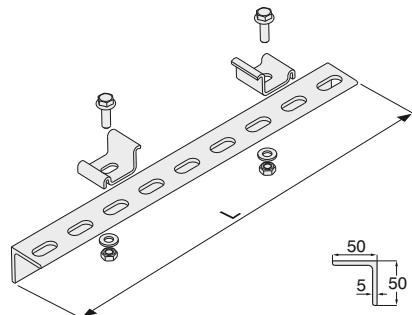
■ Please call us for non-standard components.



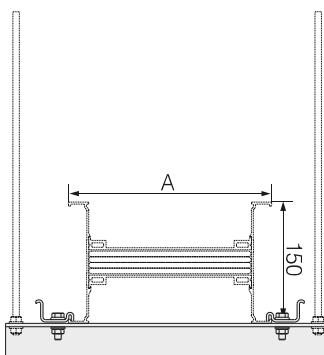
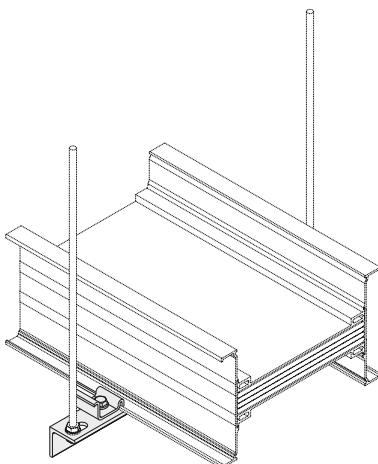
Supports
KX HANGER
SET FOR EDGEWISE
APPLICATION
TO STEEL ANGLE
PROFILE



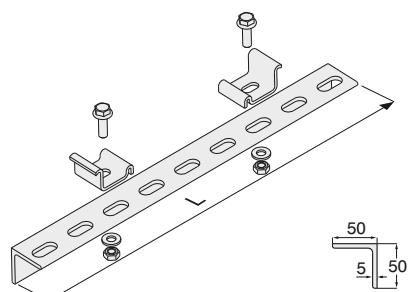
Al Conductor		Cu Conductor		L	A	Order Code
Rated Current	Busbar Code	Rated Current	Busbar Code	(mm)	(mm)	
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800	08	1000	10	350	106	3025344
-	-	1250	12	350	121	3025344
1000	10	1350	14	350	131	3025344
1250	12	1600	16	350	161	3025344
1350	14	-	-	350	176	3025344
-	-	2000	20	350	191	3025344
1600	17	-	-	350	211	3025344
-	-	2250	21	350	211	3025344
2000	20	2500	25	350	251	3025344
2500	27	-	-	350	301	3025344



KX HANGER
SET FOR FLATWISE
APPLICATION
TO STEEL ANGLE
PROFILE

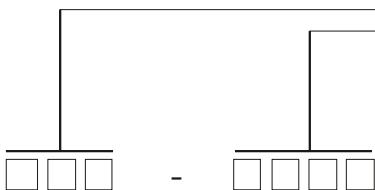


Al Conductor		Cu Conductor		L	A	Order Code
Rated Current	Busbar Code	Rated Current	Busbar Code	(mm)	(mm)	
630	06	800	08	300	91	3025343
800	08	1000	10	300	106	3025343
-	-	1250	12	300	121	3025343
1000	10	1350	14	300	131	3025343
1250	12	1600	16	350	161	3025344
1350	14	-	-	350	176	3025344
-	-	2000	20	400	191	3025345
1600	17	-	-	400	211	3025345
-	-	2250	21	400	211	3025345
2000	20	2500	25	450	251	3025346
2500	27	-	-	450	301	3025346



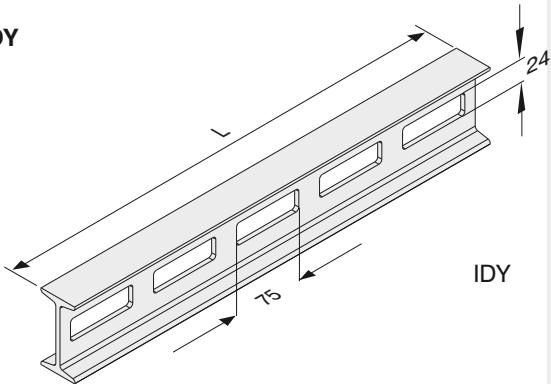
■ Please call us for non-standard components.

ORDER CODE
LENGTH L (mm)



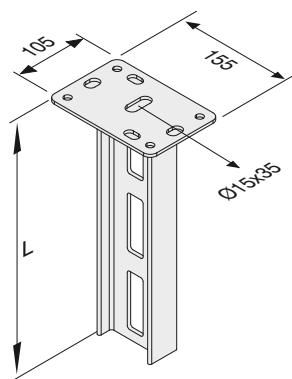
Supports

IDY



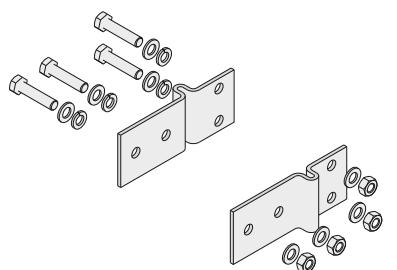
IDY

IDD



IDD

IDT

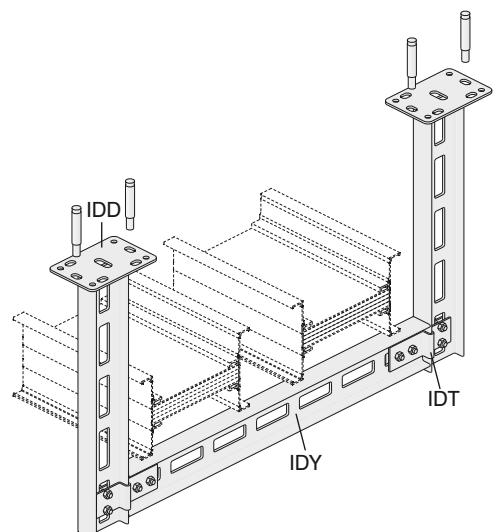


IDT

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

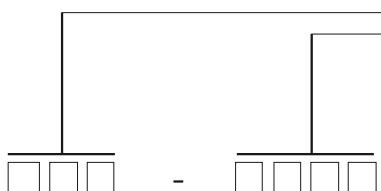
IDD 300	300	3008314
IDD 400	400	3008313
IDD 500	500	3008312
IDD 600	600	3008311
IDD 700	700	3008310
IDD 800	800	3008309
IDD 900	900	3008308
IDD 1000	1000	3008307
IDD 1100	1100	3008306
IDD 1200	1200	3008305
IDD 1300	1300	3008304
IDD 1400	1400	3008303
IDD 1500	1500	3008302
IDD 1600	1600	3008301
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IDD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

IDT Support Fitting - 3008279



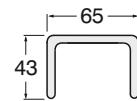
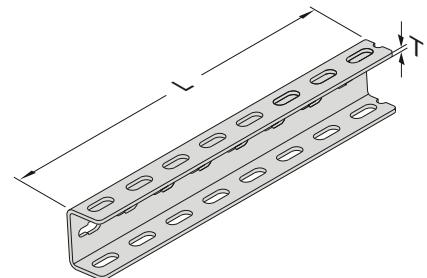
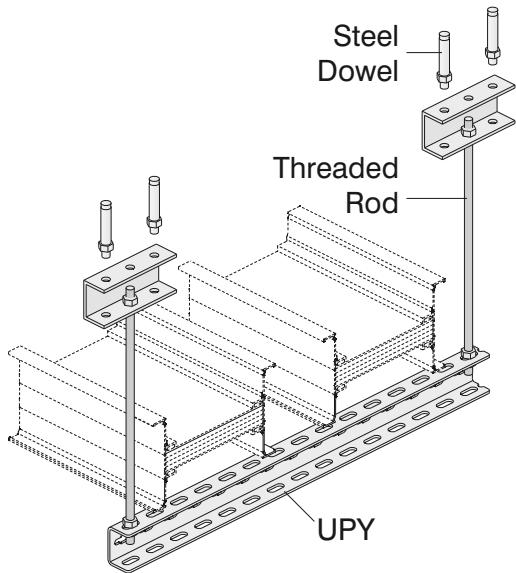
■ Please call us for non-standard components.

ORDER CODE
LENGTH L (mm)

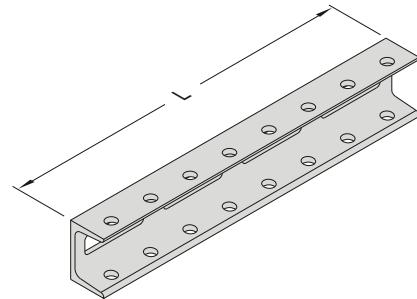


Supports

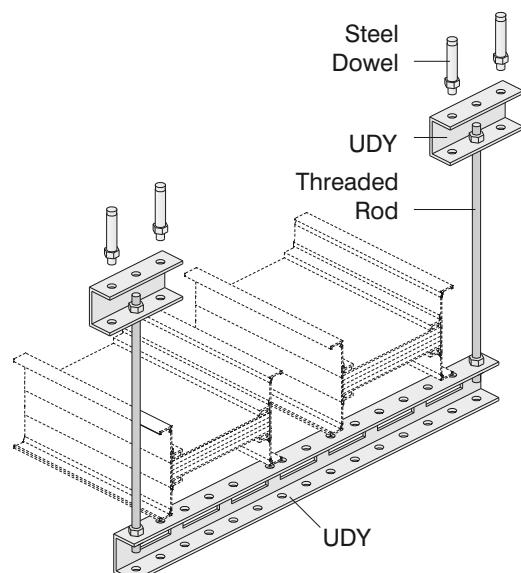
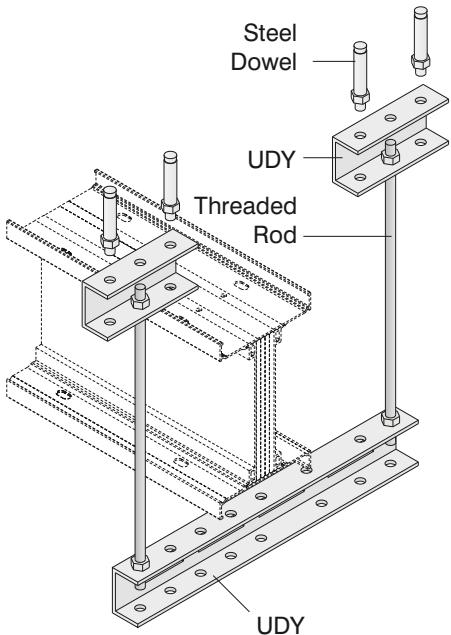
UPY



Description	T (mm)	L (mm)	Code
UPY 300	4	300	3004487
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



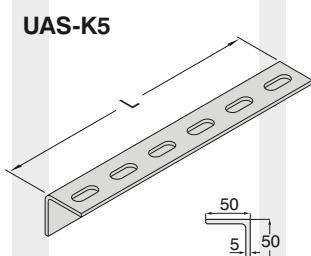
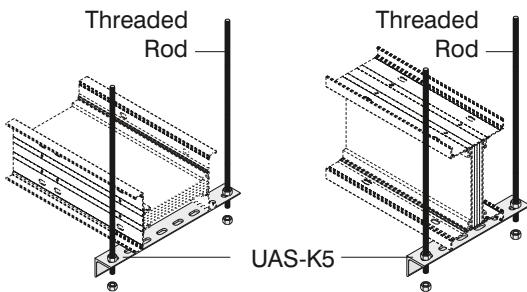
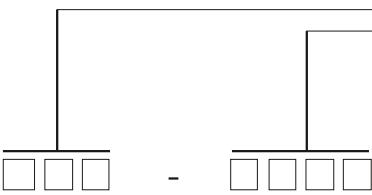
65
42



Supports

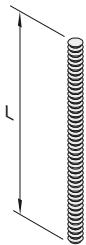
UDY

Description	L (mm)	Code
UDY 300	300	3008023
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



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



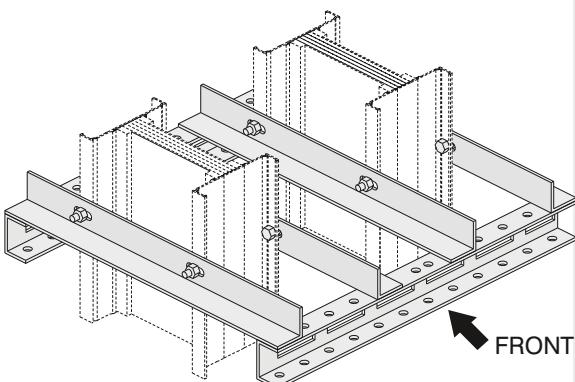
Steel Dowel	<u>Diameter of the hole to be drilled</u>
	M10.....Ø14
	M12.....Ø16



Steel Nut



Washer



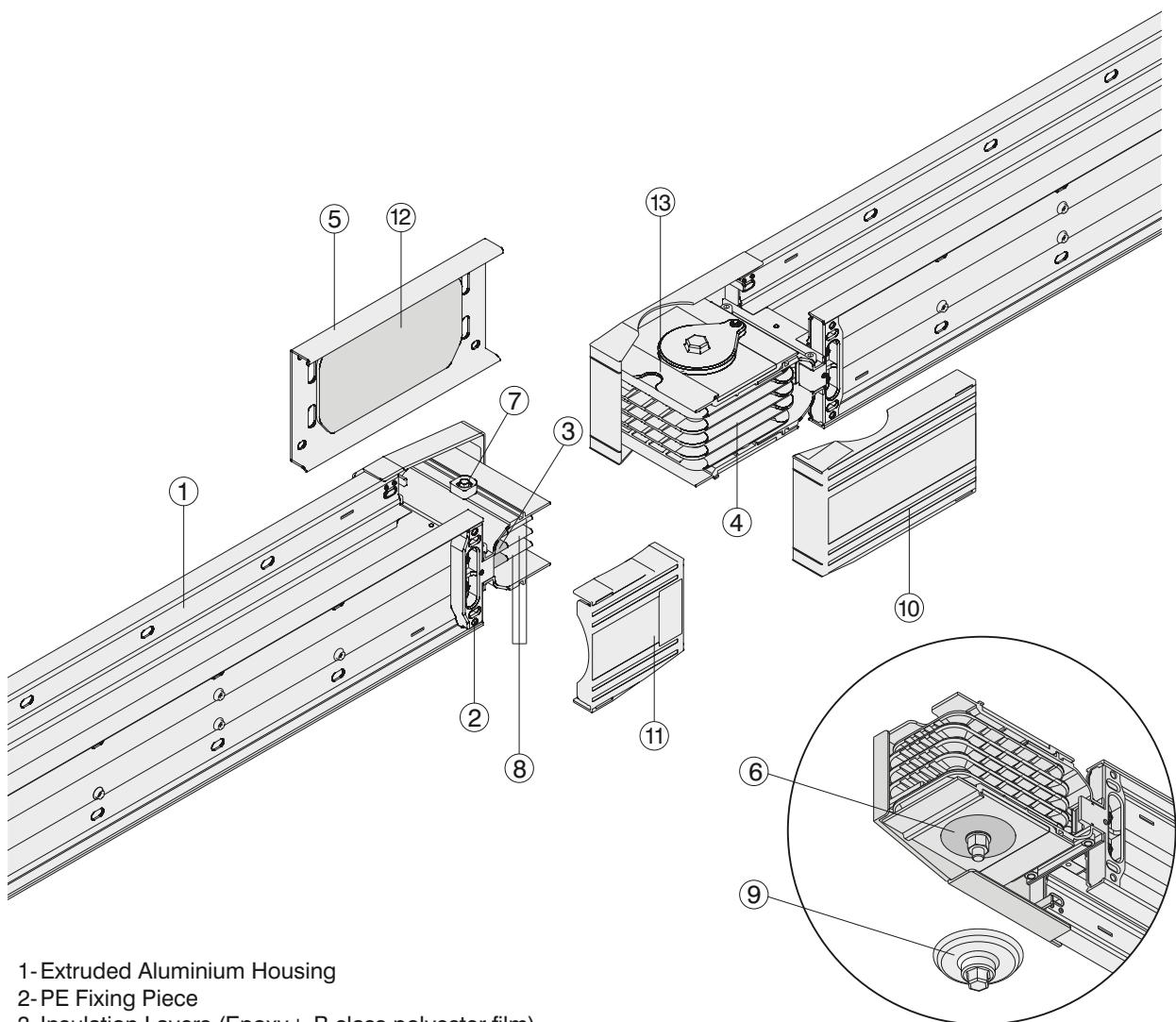
Vertical Riser Application Sample Order Hanging (Special to project)

■ Please call us for non-standard components.

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

►Joint Structure



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 (For the joint)

11-Protection Plastic (End)

12-IP55 Joint Cover Gasket

13-Alignment Pin Slot

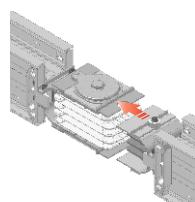


Figure 3

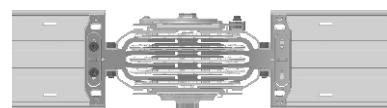


Figure 4

Joint assembly

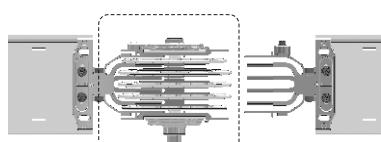


Figure 1
Block Joint

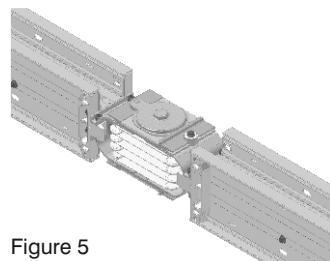


Figure 5

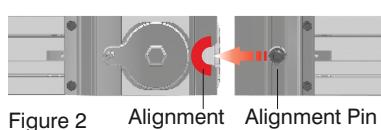


Figure 2
Alignment Slot
Alignment Pin (removable)

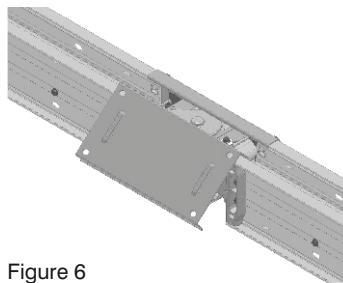


Figure 6

The joint cover is closed by leverage.

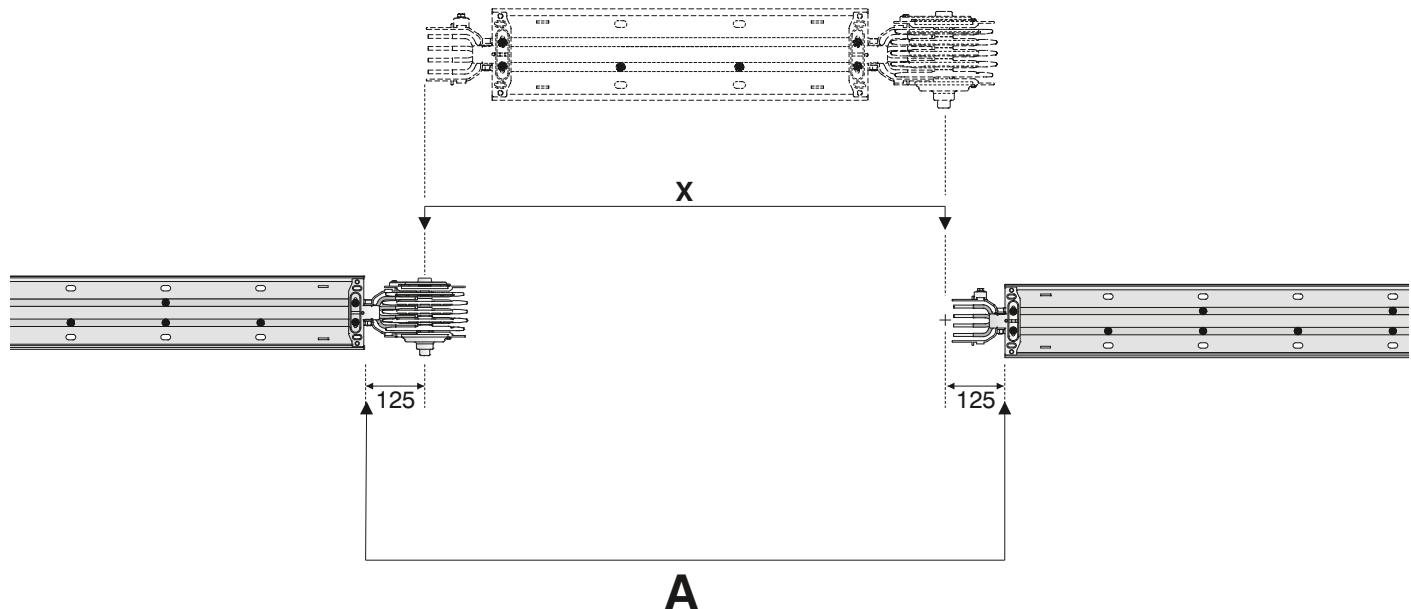
Please check related installation manual for details .

► Measuring a Special Length

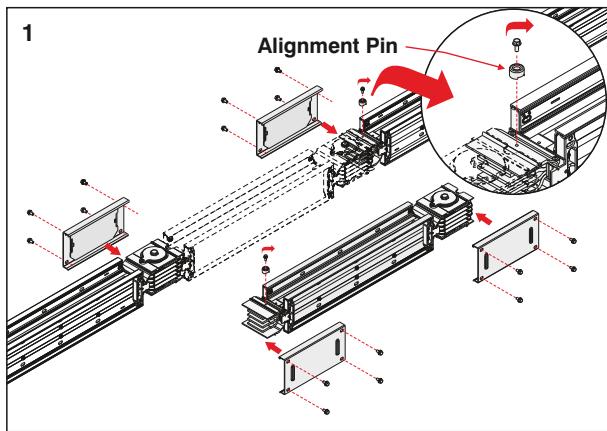
After installation of standard busbar 3m lengths, you will be in need of special lengths which are smaller than 3m. The minimum length for these special elements can be 35 cm. Please measure the lengths of these modules as shown below.

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.

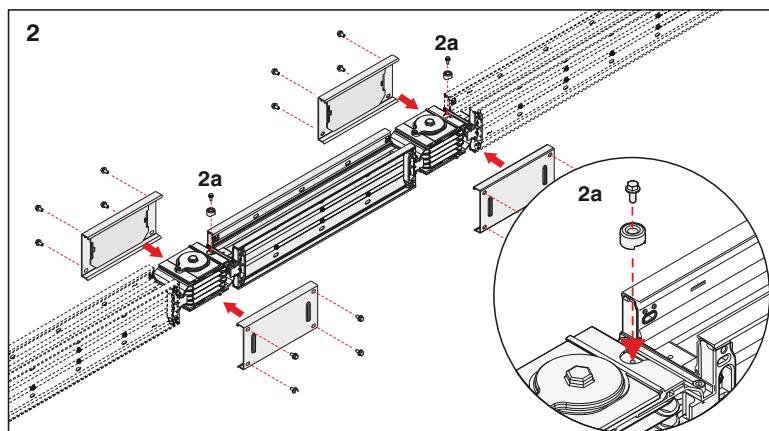
X=A-25 (cm) X=Length of Special Busbar (The busbar module will be manufactured as per X value.)



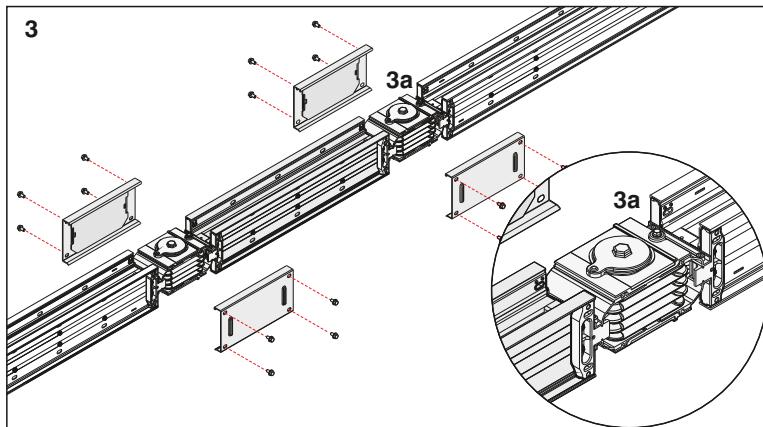
► Inserting "Make up Section"



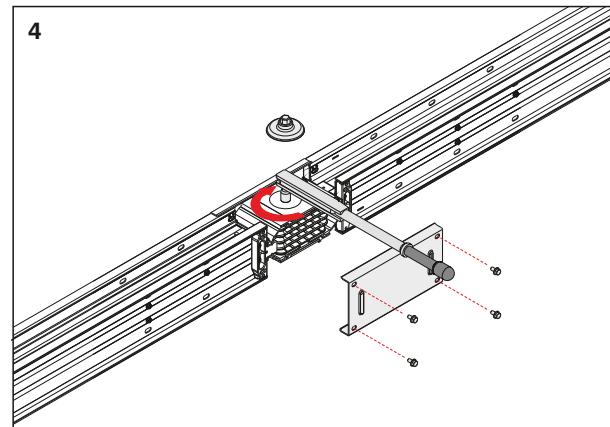
1- Remove Alignment Pin on the busbar, without block joint.



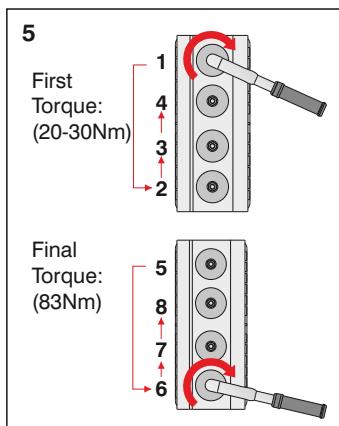
2- Insert the piece aligning conductors correctly. Fix back the Alignment pin.



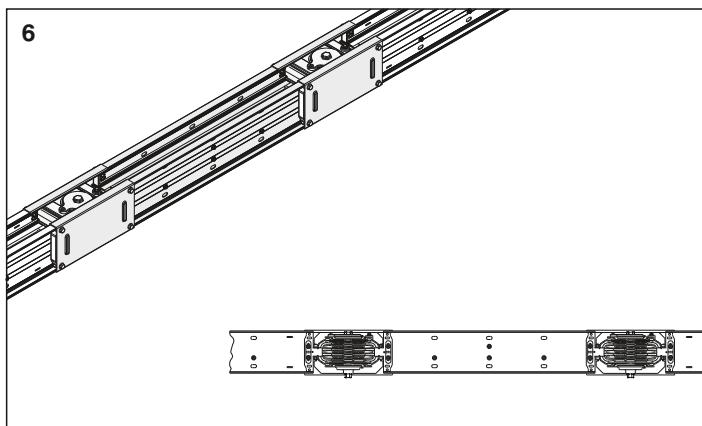
3- Make sure busbar piece is aligned according to alignment pin.



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 tighten 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 KX Busbar Energy Distribution System

Manufacturer EAE Elektrik Asansor End. Insaat San. ve Tic. A.S.
Akcaburgaz Mahallesi, 119. Sokak,
No:10 34510 Esenyurt-Istanbul

This is to attest, under our sole responsibility, that the aforementioned products conforms with the determined regulations, guidelines and the below standards.

Standard :

TS 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

2006/95/EC "Electrical equipment designed for use within certain voltage limits"

EAE Elektrik A.S.

Date

30.08.2013



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

Akcaburgaz Mahallesi, 119. Sokak, No:10 34510 Esenyurt-Istanbul
Tel: +90 (212) 866 20 00 Fax: +90 (212) 886 24 20 <http://www.eae.com.tr>

TEST CERTIFICATE

Model no.: CAA Elektro Antrag Zrt.
Subject: Low-voltage busbar trunking system
Type/Model: CRA06
Trade name: CAA Elektro Antrag Zrt.
Manufacturer by: CAA Elektro Antrag Zrt.
Subject: Design verification
Requirements: IEC 61439-6:2012, Clause 10.2.3, 10.2.6, 10.2.7, 10.2.10.1, 10.3, 10.4, 10.5, 10.9, 10.10, 10.11 and Annex BB, CC, and DD
Number: 2191801_101

DEKRA Certification B.V.

► Inspection of this certificate and adjoining pages is advised.

TEST CERTIFICATE

Model no.: CAA Elektro Antrag Zrt.
Subject: Low-voltage busbar trunking system
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For the product:

Low-voltage busbar trunking system

EAE

CRA06

Ue 1000 V, Ui 10
IP68, IK: 50J, for

EAE Elektrik Asa
Insaat San. ve Ti
Akçaburgaz Mah
34510 Esenyurt
Turkey

Design verification

Requirements:

IEC 61439-6: 2012; Clauses: 10.2.3, 10.2.6, 10.2.7, 10.2.10.1, 10.3, 10.4, 10.5, 10.9,
10.10, 10.11 and Annex BB, CC, and DD

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DEKRA Certification B.V. Utrechtseweg 310, 6812 AR Arnhem P.O. Box 5185, 6802 ED Arnhem, The Netherlands
T +31 88 96 83000 F +31 88 96 83100 www.dekra-certification.com Company registration 09085396

630A ... 6300A 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;

For Aluminium Conductors;	630A :1 sec/rms 25kA, Peak 52,5kA
	800A :1 sec/rms 35kA, Peak 73,5kA
	1000A :1 sec/rms 50kA, Peak 105kA
	1250-1350A :1 sec/rms 60kA, Peak 132kA
	1600-2000A :1 sec/rms 80kA, Peak 176kA
	2500A :1 sec/rms 100kA, Peak 220kA
	3200A and above :1 sec/rms 120kA, Peak 264kA

For Copper Conductors;	800A :1 sec/rms 50kA, Peak 105kA
	1000A :1 sec/rms 50kA, Peak 105kA
	1250-1350A :1 sec/rms 60kA, Peak 132kA
	1600-2000-2250-2500A :1 sec/rms 80kA, Peak 176kA
	2000A :1 sec/rms 70kA, Peak 154kA
	2500A :1 sec/rms 100kA, Peak 220kA
	3300A 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 aluminum, 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 630A – 5000A.
- Compact busbar system shall have copper conductors between 800A – 6300A.
- Compact busbar system shall have the following number of conductors and wire configuration;
 - a) 4 Conductors: (4 full size conductors + PE (housing)).
 - b) 4 ½ Conductors: (4 full size conductors + PE (50% earth conductor + housing)),
 - c) 5 Conductors: (5 full size conductors + PE (100% earth conductor + housing)),
- Phase conductors and neutral 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 1.000A.
- 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 630A. 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.

Item	Component	Quantity	Company :	Project :	Project No :	Prepared by	Name :	Date :	Signature :

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Item	Component	Quantity	Company :	Project :	Project No :	Prepared by	Name :	Date :	Signature :

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PRODUCT TYPES



E-LINE CR

Compact Busbar Distribution System
630...6300 A



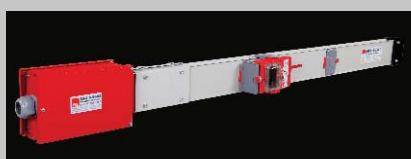
E-LINE KB

Compact Busbar Distribution System
800...6300 A



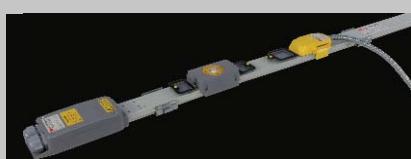
E-LINE KO

Plug-in Busbar Distribution System
160...800A



E-LINE MK

Small Power Plug-in Busbar Distribution System
100-160-225A



E-LINE DABLINE

Underfloor Busbar Systems
63-80A



E-LINE KAP

Plug-in Busbar Distribution System
40-63A



E-LINE DL

Multi-Conductor Lighting Busbar System
25-32-40A



E-LINE KAM

Lighting Busbar System
25-32-40A



E-LINE TB

Multi Conductor Trolley Busbar System
35...250A



E-LINE DK

Underfloor Ducting Systems



E-LINE UK

Cable Tray Systems, Cable Ladder Systems,
Binrak (Unistrut) and Tray Support Systems

EAE Elektrik A.Ş.

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