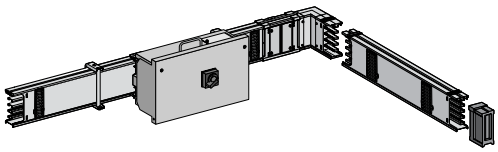
Medium power busbar trunking

Canalis® KS

(100 to 800A)

Catalogue



a brand of Schneider Electric

SQUARE D

Contents

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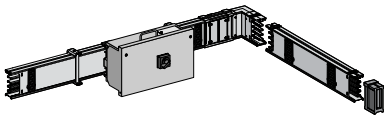

Canalis® KS busbar trunking is a powerful and reliable system for high density distribution in industrial and commercial buildings. As one of the major power distribution products, Canalis busbar has acquired a worldwide recognition, and has been used over 55,000km among 95 countries.

Canalis® KS busbar's rating range from 100A to 800A, conform to TT, IT, TNS and TNS system. It's designed to meet requirements from various customers.

It's available in two ranges: Live conductor with high purity copper bar (for KSC busbar) or high purity aluminium bar (for KSA busbar).

- "Five Bars" structure, special PE with a cross section ≥50%phase cross section.
- 7 ratings from 100A to 800A, in 3 frame sizes.
- Silver-plated contact tips and spring junction.
- Fibreglass reinforced insulator.
- Tap-off units protected with multi 9 MCB or NS MCCB.
- Standard rating of IP52 and can be easily upgraded to IP54.

Consultant's Benefits:

Conforms to all existing standards, with built-in safety features, environment friendly, reliable and durable.
You can design easier and quicker with Busbar trunking compared to cable, as standards are fully met.
Design of the installation is possible without knowing the final energy distribution and load layout. The only requirement is to take into account the characteristics of the source of supply and the loads.

Contractor's Benefits:

As you can cut installation time in half, Canalis Busbar trunking is ideal for "fast-track" projects and any job where a rapid completion time is vital.
Minimization of unforseen problems.
Canalis Busbar trunking's modular design, gives you the ability to meet the changing needs of your customer at the time of installation and after installation.
Schneider has an extensive, nationwide stocking distributor network guaranteeing you fast delivery time and easy ordering.
High production capacity guarantees you quick delivery time ex-work.
You can win more tenders and make more profit as Busbar trunking can take less than half the time to install than cable.

End User's Benefits:

If you need to reconfigure the power supply on an occasional or frequent basis, Canalis Busbar trunking can be modified quicker and more easily than cable, minimising "down-time" cost and inconvenience.
Contracts of maintenance are minimized.
Canalis Busbar trunking has a better fire rating than conventional cable.
Power and lighting can be installed very fast with Canalis Busbar trunking as it can take less than half the time to install than cable.
Protection devices are located in the tap-off unit close to each load so "down-time" during maintenance and repair is reduced.

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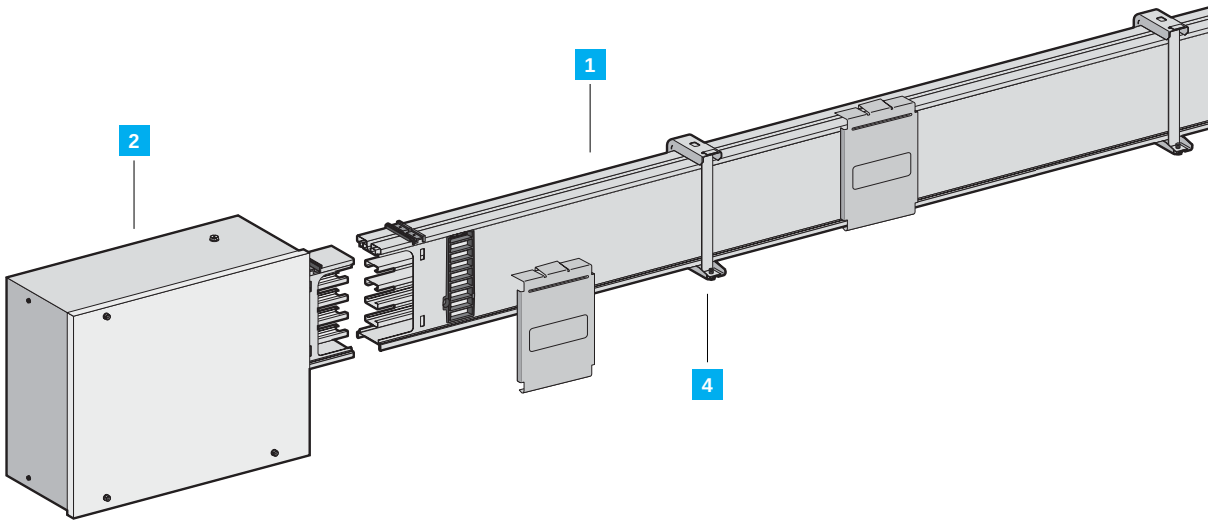
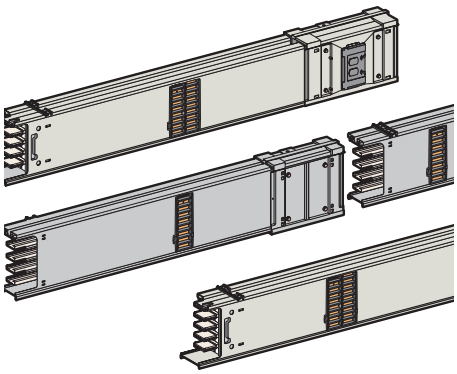


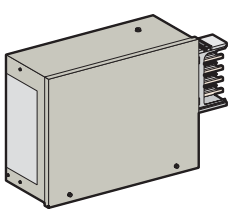
1 Run components

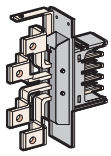
7 ratings:100, 160, 250, 400, 500, 630 and 800A, 4 live conductor. Straight lengths in fixed lengths of 1.5, 2 and 3m, cut to length from 0.5 to 1.995m.



2 Feed units and end covers

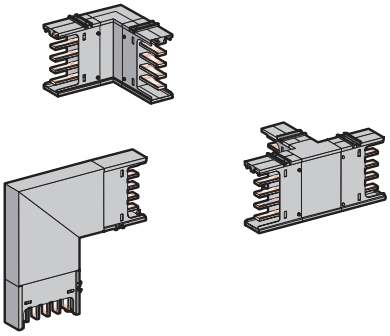
Feed the KS trunking from cable or copper bar.

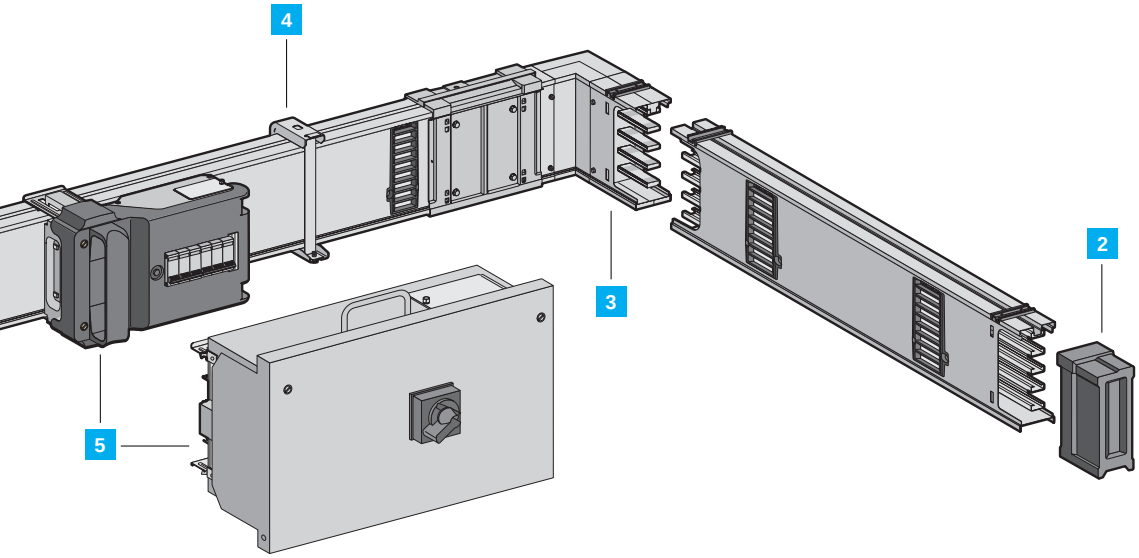




3 Elbows

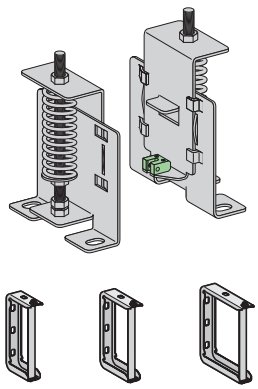
For adapting the Canalis® KS to installation requirement, elbows and tees.





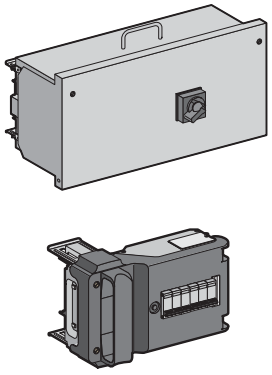
4 Fixing devices

fixing KS trunking vertically or horizontally.



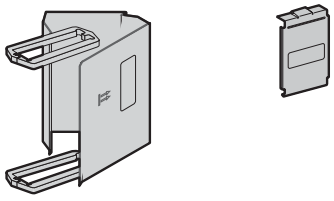
5 Tap-off unit

25 to 400A connectors and tap-off units, for circuit-breaker or modular equipments.



6 Accessories

IP54 dust and damp proofing accessories.



Medium power busbar trunking

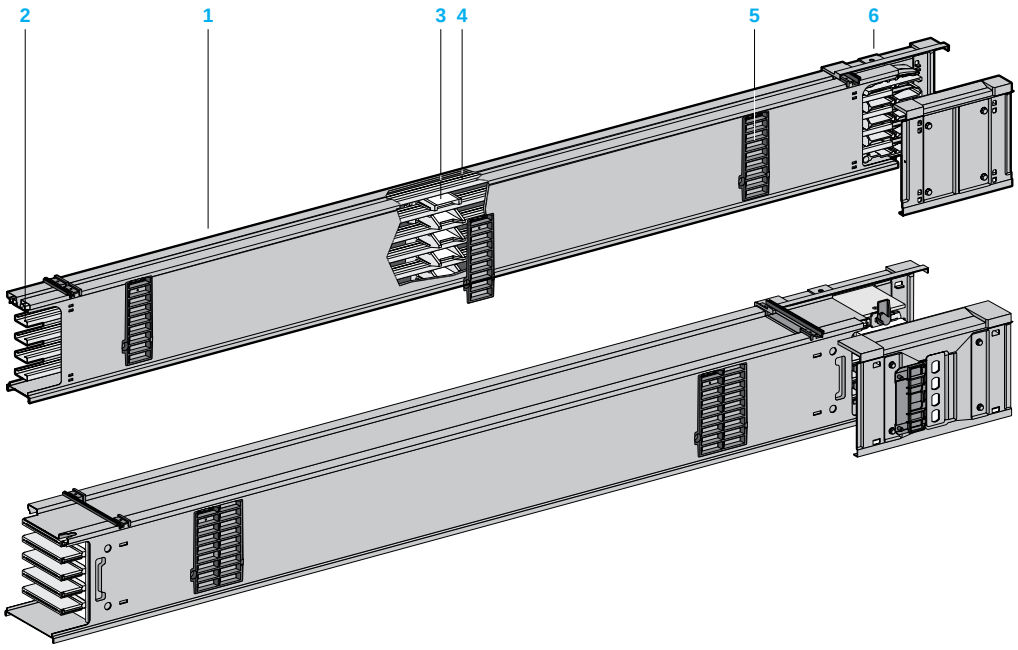
Canalis® KS (100 to 800 A)

General

Canalis® KS is designed for medium power distribution with high tap-off density in industrial and commercial buildings (exhibition halls, hypermarkets, office blocks, etc.).
The range is available in 7 ratings from 100 to 800 A.
The standard IP 52 degree of protection makes KS suitable for the majority of applications. It can be increased to IP 54 by the addition of dust and damp proof blanking plates on the tap-off outlets.
Tapping off is via tap-off units. These units, from 25 to 400 A, can be safely removed while live.
100 to 250 A trunking can take connectors and tap-off units up to 250 A.

Run components

Straight distribution lengths



Straight distribution lengths
Straight lengths are designed to carry current and feed loads with low or medium power. The straight lengths form the structure of the run. They comprise:

1 A casing of galvanized sheet steel, which is crimped closed.
This casing, shaped and ribbed by rolling, provides excellent resistance to bending and twisting.
Three casing widths cover the whole range. Casings are available in two finishes:
- 54 mm wide for 100, 160 and 250 A ratings (galvanized sheet steel for KSA series, galvanized sheet steel with RAL 9001cream white finish for KSC series).
- 75 mm wide sheet steel with RAL 9001 cream white finish for 400 and 500 A ratings.
- 113 mm wide sheet steel with RAL 9001 cream white finish for 630 and 800 A ratings.

2 4 live conductors of the same cross-section:
- High purity (≥99.9%)electrical copper bar for KSC 100 to 800A ratings.
- High purity aluminium bar with bimetal silver-plated copper/aluminium laminate for KSA 100, 160 A ratings.
- High purity aluminium bar with bimetal silver-plated copper/aluminium laminate riders electrically welded to junctions and tap off positions for KSA 250 to 800 A ratings.

3 Fibreglass reinforced polyester isolators, at 250 mm intervals.
These hold the conductors securely within the casing.

4 A special protected earth (PE) conductor with a cross-section≥1/2 of three phase cross-section. It is connected to the casing at each junction.

5 Tap-off outlets on both sides of the trunking, at 0.5 or 1 m intervals.
They have a shuttered outlet which is opened and closed automatically when connectors or tap-off units are plugged in or removed.

6 A mechanical and electrical jointing device.
Electrical connection is via a block with spring and silver graphite contacts. This block absorbs the differential con ductor/casing expansion of each length equally.
For 100, 160 and 250 A ratings, it automatically and simultaneously connects all the live conductors, ensures continuity of the protective earth conductor and its connection with the casing. For higher ratings (400 to 800 A), the electrical connection is made by a 1/4 screw turn for each conductor.

Medium power busbar trunking
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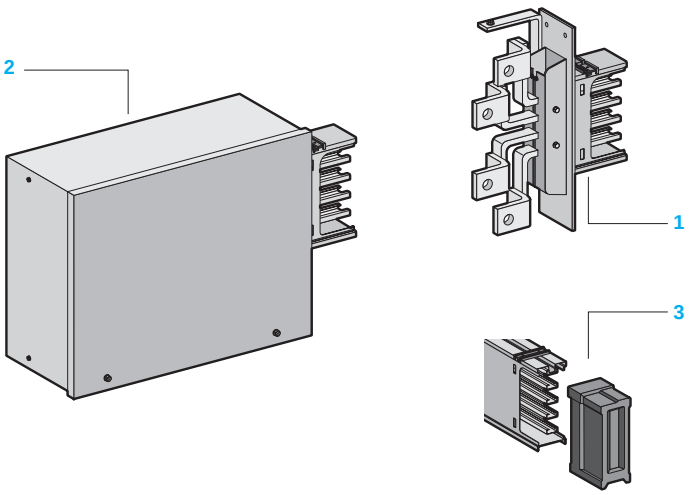
Special components

- Fire barrier length
  To cross a fire partition, between two areas of a building, avoiding "chimney effect".
  These components are manufactured, on request, from 900 mm to 2300 mm, in multiples of 5 mm.
- “Made to measure” length
  To alter the length of a run (for example, between two components for changing direction). These components are manufactured, on request, from 500 mm to 1995 mm, in multiples of 5 mm. They do not have tap-off outlets.

Connection components and feed units

Feed units

To feed a KS run by cables or directly from a distribution panel.



1 Flange feed unit
Fitted with splayed bars and a mounting plate. It is used for connection to a distribution panel. It can be mounted at either end of a component.

2 End feed units
For 100 to 250 A ratings : mounted to the left or right of a straight length.

3 End covers
To protect the end of busbar trunking.

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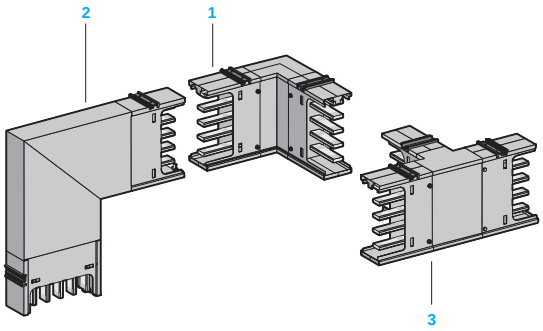
Components for changing direction

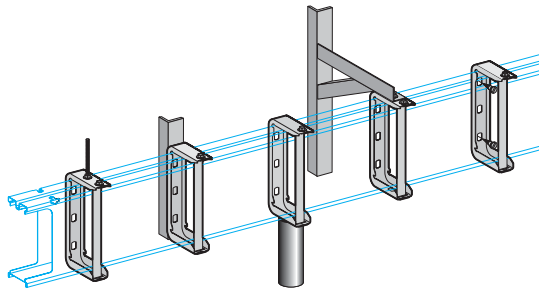


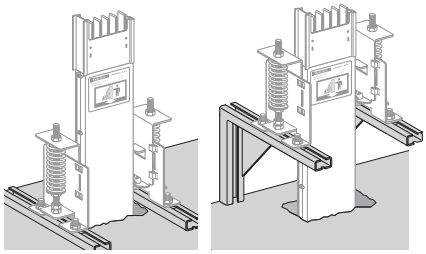
1 Edgewise elbow.
One model for each size of casing for turning to left or right.

2 Flatwise tee
Two models for each size of casing (one ascending, one descending).

3 Edgewise tee
For vertical branches on the main run.

Fixing devices

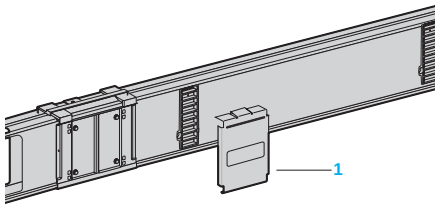


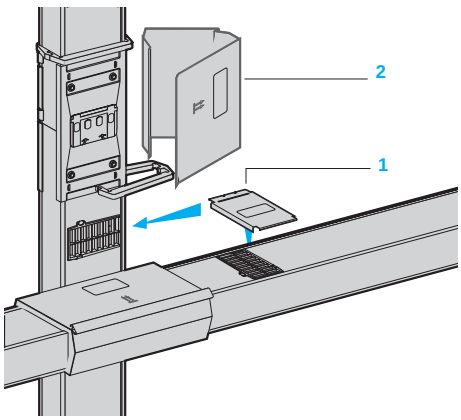


1 Universal brackets
These brackets are used to fix the distribution run to the structure of the building, directly or via a threaded rod, a bracket, etc.
There is one model for each size of casing which can be used for all mounting methods : ceiling mounted, suspended, wall mounted, etc.
Suspension on chains or steel cables is not recommended.
It is advisable to leave a space of 3 m between each bracket.

2 Spring brackets
These brackets are fixed on floor ground to support distribution run in vertical application, used in rising building such as rising apartment, commercial skyscraper, etc. For all ratings from 100 to 800A, there's only one model and must be used in couple.
The spring brackets can absorb the vertical construction expansion and adjust the busbar situation, so as to distributing equally and averagely on all floors.

IP 54 dust and damp proofing accessories





In normal mounting position (edgewise, horizontal installation) the degree of protection of the KS range is IP 52. In other positions (flat and vertical installation) the degree of protection is reduced to IP 50.
To achieve a higher degree of protection, IP 54, the following accessories must be added to the straight lengths.

Edgewise horizontal installation

1 Each tap-off outlet which is not being used should be fitted with a sealed tap-off blanking plate.

Flat and vertical installation

1 Each tap-off outlet which is not being used should be fitted with a sealed tap-off blanking plate.

2 Each junction between components should be fitted with a jointing sleeve.

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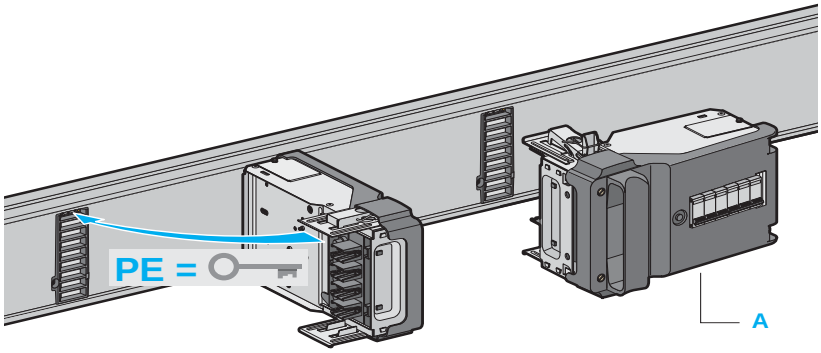
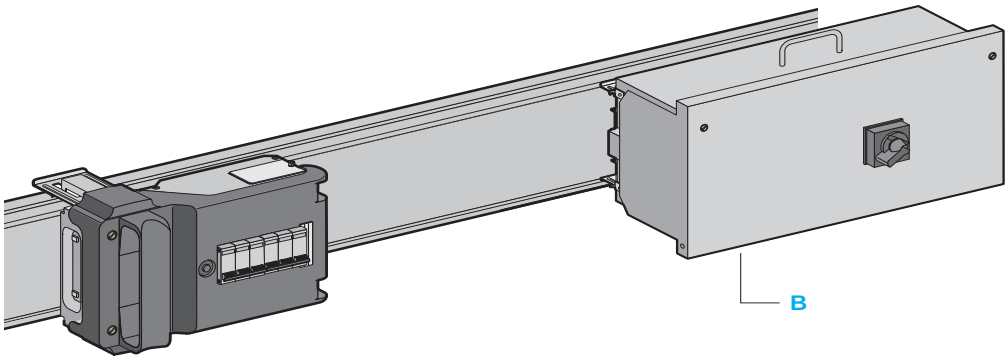
Tap-off units

These are used for instant connection of loads or secondary runs (for example, for low power distribution using Canalis KN). The connectors and tap-off units conform to installation standards and regulations whatever type of neutral point connection is used (TT, IT, TNS or TNC).

- They can be removed and moved whilst live, with no load.
- The tap-off outlets are opened and closed automatically when units are plugged in or removed.
- With the cover open, no live part can be accessed. Degree of protection IP 2X.
- A number of safety devices prevent the following:
  - Connection of the tap-off unit if the cover is closed,
  - Opening of the cover if the unit is not locked to the trunking,
  - Removal of the unit if the cover is closed,
  - Opening of the cover to position “I” (by locking) on units which have a switch or circuit-breaker.





A Tap-off unit with modular equipment
This tap-off will take 4 and 7.5 modulars equipment.

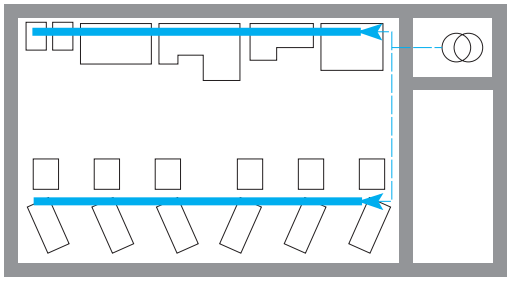
- Nominal current : 25 A, 50A
- With window in front panel (equipment can be seen and accessed) .

B Tap-off unit with Merlin Gerin circuit-breaker
These units are designed to take Merlin Gerin Compact NS or Easypact NSD circuit-breakers

- 25 to 400 A rating,
- Version N, H or L,
- 3P or 4P,
- With rotary switch.
- With interlock

Medium power busbar trunking
Canalis® KS (100 to 800 A)

1. Information required



- The types of load, and their characteristics and locations.
- The power source, and its characteristics and location.
- The structure of the premises (availability of fixing points for trunking).
- Any influences external to the installation site. (ambient temperature, dust, water, etc).

2. Distribution run layout

The siting of distribution runs depends on the position of the loads, the location of the general power supply and the availability of fixing points.
A single distribution run can serve an area 5 to 8 metres wide.

3. Selection of the trunking according to the rated operating current Ib

Ib = total current x k1
k1= average demand coefficient

Total current = sum of currents drawn by the loads on a run

Applications	k1
Lighting, heating	1
Distribution (Engineering shop floors)	
2 or 3 loads	0.9
4 or 5 loads	0.8
6...9 loads	0.7
10...40 loads	0.6
40 or more	0.5

Rated operating current Ib	Selected trunking
0...100 A	KS●-10
100...160 A	KS●-16
160...250 A	KS●-25
250...400 A	KS●-40
400...500 A	KS●-50
500...630 A	KS●-63
630...800 A	KS●-80

4. Permissible current Iz according to the ambient temperature (at the installation site)

The nominal current Inc of the trunking is specified for an average daily ambient temperature of 35°C . Depending on the actual temperature, an uprating or derating coefficient (f1) may be applied to the nominal current Inc : see the characteristics on page 11.

5. Checking the voltage drop

The voltage drop in Canalis® KS is given in V/100m/A in the characteristics table on page 11.

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6. Protecting the trunking against overloads

To enable it to be extended, prefabricated busbar trunking is generally protected to its nominal current Inc (or to its permissible current Iz if the K1 coefficient is applied according to the ambient temperature).

Protection using a circuit-breaker

Select the circuit-breaker setting current Ir so that : **Ib ≤ Ir ≤ Inc**

Note: Protecting trunking using a circuit-breaker makes it possible to use the trunking at full capacity.

7. Electrodynamic protection against short-circuit currents

The electrodynamic withstand of the trunking should be taken into account when selecting a protective device (permissible rated peak current).

■ Determine the 3-phase short-circuit current, prospective Icc 3 (kA) at the start of the Canalis® KS.

■ Check, on the current limitation curve of the selected protective device, that this limits the peak current (kÂ) to a value below the permissible rated peak current of the KS trunking.

Limited current ≤ Canalis current

Protection using a Merlin Gerin Compact circuit-breaker

The circuit-breaker/Canalis coordination table below gives the maximum short-circuit current for which the KS trunking is protected, according to the type of circuit-breaker.
Prospective Icc 3, max (Ka rms) voltage 380/415 V

Canalis® KS: rating (A)			100	160	250	400	500	630	800
Type of MG circuit-breaker	NS100	N	25						
		H	25						
		L		25					
	NS160	N	20	36					
		H	20	70					
		L	20	70					
	NS250	N		36	36				
		H		55	70				
		L		55	150				
	NS400	N			45	45			
		H			45	70			
		L			45	150			
	NS630	N				45	45	45	
		H				70	70	70	
		L				150	150	150	
	NS800	N						32	38
		H						32	38
		L						120	150
	NS1000	N							38
		H							38
		L							150

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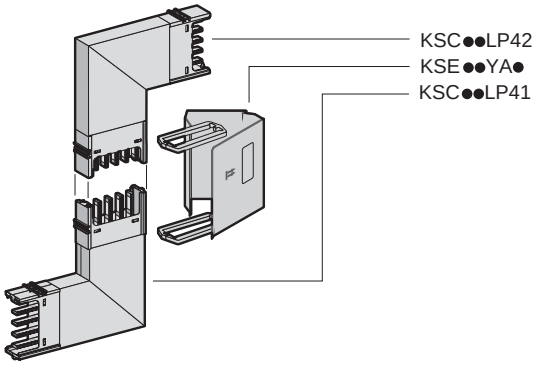
8. Selection of IP degree of protection

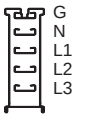
External influences are taken into consideration when setting the installation.
The IP 52 degree of protection of Canalis® KS means that it is suitable for installation in most industrial and commercial locations.
For locations or sites which may be subject to water splashes in any direction the degree of protection should be raised to IP 54, by installing KSE-80YB2 sealed tap-off blanking plates.

Changing levels in horizontal distribution



When trunking is mounted vertically, the degree of protection at a junction is IP 50.
To maintain a degree of protection higher than IP 50, if required, each junction installed vertically must be fitted with a sealed jointing sleeve (IP 54).

9. Mounting position



Edgewise

Flatwise

The preferred mounting position (for horizontal distribution) is edgewise. In some installation configurations false ceiling, false flooring, locations with very little space, etc.) it may be necessary to install trunking flat.

10. Selecting the power supply

■ 100A - 250A feed unit
□ mounted at either end of a run,
□ all types of neutral system.

■ 500 and 800 A feed unit.
Two types depending on position :
□ right hand mounting (fig. A),
□ left hand mounting (fig. B).
All types of neutral system.
Connected by means of lugs.

Medium power busbar trunking

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Type of trunking			KSC-10	KSC-16	KSC-25	KSC-40	KSC-50	KSC-63	KSC-80
General characteristics									
Conforming to standard			IEC 60439-1/2						
Number of live conductor			4	4	4	4	4	4	4
Nominal rated current to 35°C		**A**	100	160	250	400	500	630	800
Rated insulation voltage	Ui	**V**	660	660	660	660	660	660	660
Rated operating voltage	Ue	**V**	660	660	660	660	660	660	660
Rated frequency	F	**Hz**	50/60	50/60	50/60	50/60	50/60	50/60	50/60
Conductor characteristics									
Live conductors (per conductor)									
Average resistance, cold state (ambient temperature 20°C)	R20/Rb0 ph	**mΩ/m**	0.972	0.625	0.206	0.118	0.054	0.067	0.029
Average resistance at Inc (ambient temperature 20°C)	R1/Rb1 ph	**mΩ/m**	1.224	0.854	0.275	0.154	0.071	0.090	0.039
Average resistance at Inc and rated frequency	X1/Xb ph	**mΩ/m**	0.457	0.233	0.192	0.112	0.116	0.070	0.071
Protective Conductor									
Average resistance, cold state (ambient temperature 20°C)		**mΩ/m**	0.273	0.243	0.243	0.105	0.105	0.061	0.061
Fault loop characteristics									
Between live conductor									
Average resistance of loop (thermal stabilisation temp.ϕ1)	Rb1 ph ph	**mΩ/m**	2.448	1.708	0.550	0.307	0.142	0.180	0.077
	ph N	**mΩ/m**	2.448	1.708	0.550	0.307	0.142	0.180	0.077
	ph PEN	**mΩ/m**	1.458	1.052	0.408	0.218	0.115	0.128	0.063
Average resistance of loop (short-circuit convertional temp.)	Rb2 ph ph	**mΩ/m**	2.938	2.050	0.661	0.369	0.171	0.216	0.092
	ph N	**mΩ/m**	2.938	2.050	0.661	0.369	0.171	0.216	0.092
	ph PEN	**mΩ/m**	1.750	1.262	0.490	0.262	0.138	0.153	0.075
Average reactance of loop									
	Xb ph ph	**mΩ/m**	0.937	0.505	0.393	0.252	0.252	0.154	0.148
	ph N	**mΩ/m**	0.739	0.505	0.457	0.292	0.295	0.197	0.190
	ph PEN	**mΩ/m**	0.559	0.287	0.282	0.212	0.211	0.143	0.140
Between live conductor and PE									
Average resistance of loop (thermal stabilisation temp.ϕ1)	Rb1 ph PE	**mΩ/m**	1.513	1.112	0.533	0.265	0.183	0.155	0.103
Average resistance of loop (short-circuit convertional temp.)	Rb2 ph PE	**mΩ/m**	1.816	1.334	0.639	0.318	0.219	0.186	0.124
Average reactance of loop	Xb ph PE	**mΩ/m**	0.605	0.292	0.323	0.303	0.295	0.225	0.226
Other characteristics									
Short-circuit withstand capacity (maximum thermal limit)	Ph or N	**$A^2S.10^6$**	6.8	16.8	100	354	733	1225	1758
	PE	**$A^2S.10^6$**	6.8	16.8	20.2	354	354	1225	1225
	PEN	**$A^2S.10^6$**	10	25	110	500	800	2000	2500
Permissible rated peak current	Ipk	**kA**	17	20	22	45	52.5	65	71.5
Degree of protection	IP52	In normal mounting position, horizontal, edgewiseinstallation. Option IP54							
	IP50	Other positions: horizontal installation, flat, vertical installation. Option IP54							
Voltage drop	3phase50Hz with load distributed along the run. If the load is concentrated at the end of the run, the voltage drops are twice the values in the table.								
	Cos. φ = 1,0	**V/100 m/A**	0.10600	0.07395	0.02383	0.01331	0.00617	0.00779	0.00334
	Cos. φ = 0,9	**V/100 m/A**	0.11265	0.07535	0.02870	0.01621	0.00993	0.00965	0.00568
	Cos. φ = 0,8	**V/100 m/A**	0.10854	0.07127	0.02904	0.01647	0.01096	0.00987	0.00636
	Cos. φ = 0,7	**V/100 m/A**	0.10246	0.06618	0.02856	0.01624	0.01149	0.00978	0.00673
Derating/uprating factor	15°C	20°C	25°C	30°C	35°C	40°C	45°C	50°C	55°C
Determination of permissible Iz according to ambient temperature	**1.11**	**1.08**	**1.06**	**1.03**	**1.00**	**0.97**	**0.94**	**0.91**	**0.87**

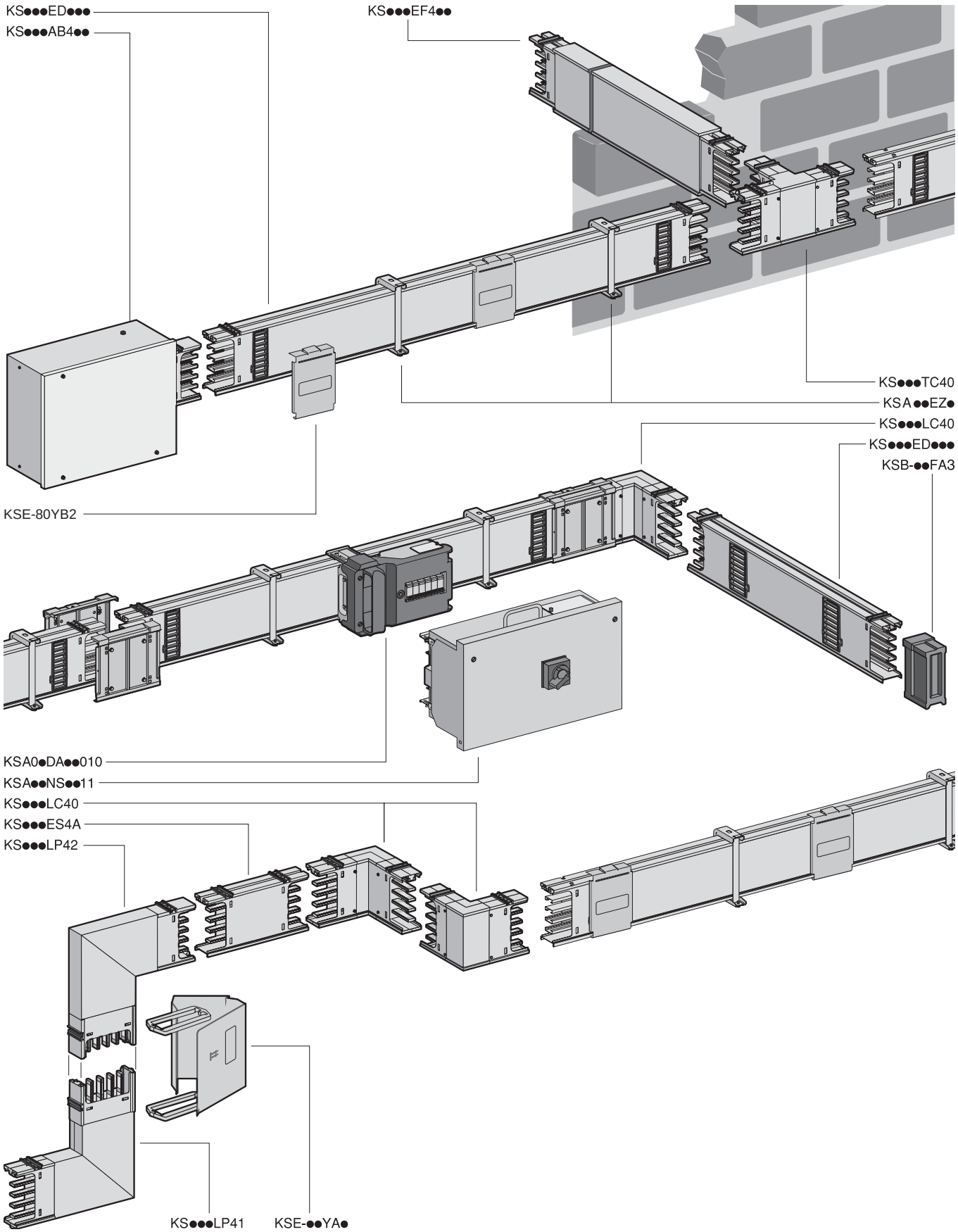
Medium power busbar trunking

Canalis® KS (100 to 800 A)

Type of trunking			KSA-10	KSA-16	KSA-25	KSA-40	KSA-50	KSA-63	KSA-80
General characteristics									
Conforming to standard			IEC 60439-1/2						
Number of live conductor			4	4	4	4	4	4	4
Nominal rated current to 35˚C		**A**	100	160	250	400	500	630	800
Rated insulation voltage	Ui	**V**	660	660	660	660	660	660	660
Rated operating voltage	Ue	**V**	660	660	660	660	660	660	660
Rated frequency	F	**Hz**	50/60	50/60	50/60	50/60	50/60	50/60	50/60
Conductor characteristics									
Live conductors (per conductor)									
Average resistance, cold state (ambient temperature 20˚C)	R20/Rb0 ph	**mΩ/m**	1.059	0.490	0.206	0.142	0.091	0.074	0.045
Average resistance at Inc (ambient temperature 20˚C)	R1/Rb1 ph	**mΩ/m**	1.395	0.661	0.294	0.190	0.123	0.101	0.061
Average resistance at Inc and rated frequency	X1/Xb ph	**mΩ/m**	0.457	0.233	0.192	0.112	0.116	0.070	0.071
Protective Conductor									
Average resistance, cold state (ambient temperature 20˚C)		**mΩ/m**	0.279	0.216	0.216	0.105	0.105	0.061	0.061
Fault loop characteristics									
Between live conductor									
Average resistance of loop (thermal stabilisation temp.ϕ1)	Rb1 ph ph	**mΩ/m**	2.790	1.322	0.588	0.380	0.246	0.202	0.122
	ph N	**mΩ/m**	2.790	1.322	0.588	0.380	0.247	0.202	0.122
	ph PEN	**mΩ/m**	1.632	0.842	0.431	0.261	0.182	0.141	0.093
Average resistance of loop (short-circuit convertional temp.)	Rb2 ph ph	**mΩ/m**	3.303	1.565	0.696	0.450	0.291	0.239	0.144
	ph N	**mΩ/m**	3.303	1.565	0.696	0.450	0.291	0.239	0.144
	ph PEN	**mΩ/m**	1.951	1.005	0.512	0.311	0.217	0.169	0.110
Average reactance of loop									
	Xb ph ph	**mΩ/m**	0.937	0.505	0.393	0.252	0.252	0.154	0.148
	ph N	**mΩ/m**	0.739	0.505	0.457	0.292	0.295	0.197	0.190
	ph PEN	**mΩ/m**	0.559	0.287	0.282	0.212	0.211	0.143	0.140
Between live conductor and PE									
Average resistance of loop (thermal stabilisation temp.ϕ1)	Rb1 ph PE	**mΩ/m**	1.681	0.911	0.549	0.304	0.238	0.167	0.128
Average resistance of loop (short-circuit convertional temp.)	Rb2 ph PE	**mΩ/m**	2.017	1.094	0.659	0.365	0.285	0.201	0.153
Average reactance of loop	Xb ph PE	**mΩ/m**	0.605	0.292	0.323	0.303	0.295	0.225	0.226
Other characteristics									
Short-circuit withstand capacity (maximum thermal limit)	Ph or N	**$A^2S.10^6$**	6.8	20.2	100	354	733	1225	1758
	PE	**$A^2S.10^6$**	6.8	20.2	20.2	354	354	1225	1225
	PEN	**$A^2S.10^6$**	10	30	110	500	800	2000	2500
Permissible rated peak current	Ipk	**kA**	15.7	22	28	49.2	55	67.5	78.7
Degree of protection	IP52	In normal mounting position, horizontal, edgewiseinstallation. Option IP54							
	IP50	Other positions: horizontal installation, flat, vertical installation. Option Ip54							
Voltage drop	3phase50Hz with load distributed along the run. If the load is concentrated at the end of the run, the voltage drops are twice the values in the table.								
	Cos. φ = 1,0	**V/100 m/A**	0.12081	0.05724	0.02546	0.01645	0.01065	0.00875	0.00528
	Cos. φ = 0,9	**V/100 m/A**	0.12598	0.06031	0.03016	0.01904	0.01397	0.01051	0.00743
	Cos. φ = 0,8	**V/100 m/A**	0.12039	0.05790	0.03034	0.01898	0.01455	0.01063	0.00792
	Cos. φ = 0,7	**V/100 m/A**	0.11283	0.05448	0.02970	0.01844	0.01463	0.01045	0.00805
Derating/uprating factor	15˚C	20˚C	25˚C	30˚C	35˚C	40˚C	45˚C	50˚C	55˚C
Determination of permissible Iz according to ambient temperature	**1.11**	**1.08**	**1.06**	**1.03**	**1.00**	**0.97**	**0.94**	**0.91**	**0.87**

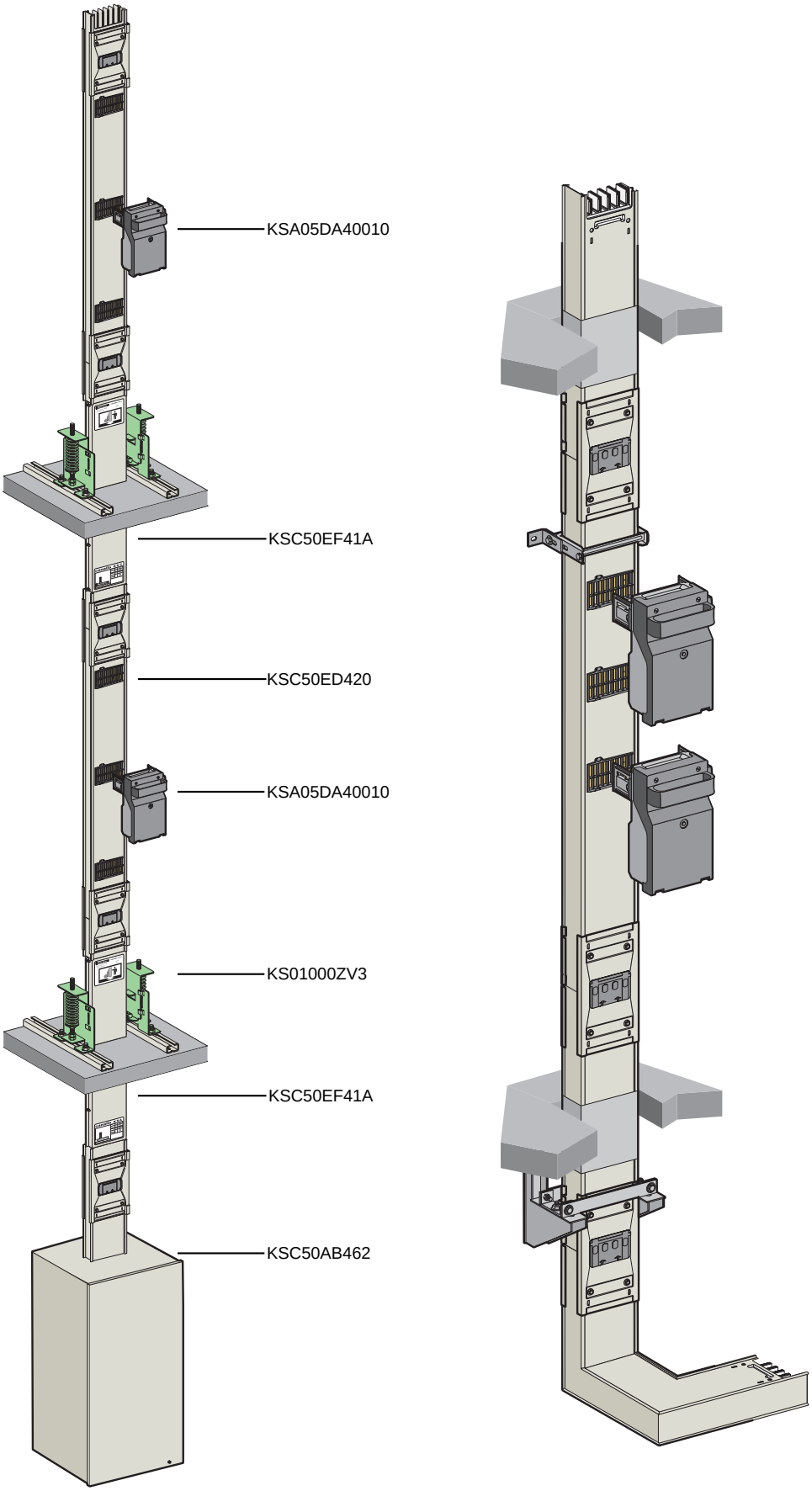
Medium power busbar trunking

Canalis® KS (100 to 800 A)

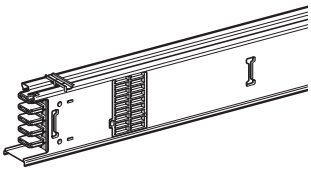


Medium power busbar trunking

Canalis® KS (100 to 800 A)

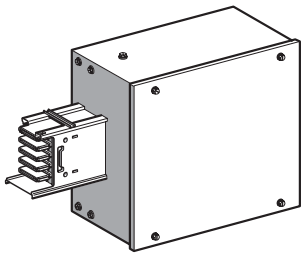


Medium power busbar trunking
Canalis® KS (100 to 250 A)



Straight length

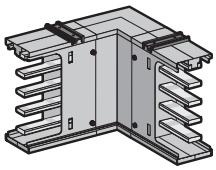
Description	Rating (A)	Length (m)	Number of tap-offs (double sides)	References 3L + N + PE	Weight (kg)
Standard straight length					
	100	3	6	**KSC10EA430**	12.60
		2	8	**KSC25ED420**	13.20
		1.5	6	**KSC25ED415**	10.30
	160	3	6	**KSC16EA430**	14.50
		2	8	**KSC25ED420**	13.20
		1.5	6	**KSC25ED415**	10.30
	250	3	6	**KSC25EA430**	19.30
		2	8	**KSC25ED420**	13.20
		1.5	6	**KSC25ED415**	10.30
Special straight length					
(with fire barrier)	≤250	0.9-2.3	–	**KSC25EF41A**	9.30
(without fire barrier)		0.5-1.995	–	**KSC25ES4A**	9.30



Feed unit

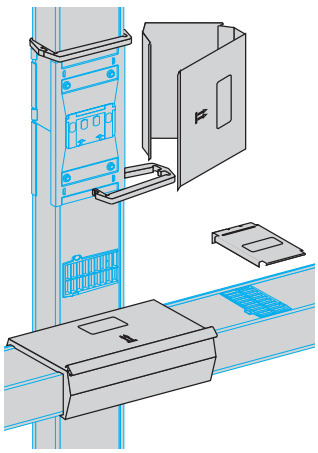
Description	Rating (A)	Connection Max.cross section(mm²)	Mounting	References	Weight (kg)
End feed unit					
Left or right	≤250	6.35x38.1	Cable-Busbar	**KSC25AB42**	7.50
Flange feed unit					
	≤250	6.35x38.1	Panel-Busbar	**KSC25ER4**	1.70

Description	Rating (A)	Length (m)	Mounting	References	Weight (kg)
End cover					
	≤250	0.015	-	**KSB25FA3**	0.15



Elbows

Description	Rating (A)	Length (mm)	Mounting	References	Weight (kg)
Elbows					
	≤250	165	Edgewise	**KSC25LC40**	3.90
		250	Flat upwards	**KSC25LP41**	5.80
		250	Flat downwards	**KSC25LP42**	5.80
Tee					
	≤250	165	Edgewise	**KSC25TC40**	5.00



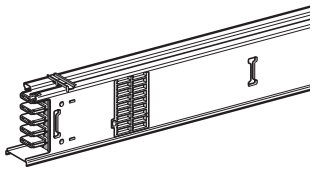
Fixing device

Description	Rating (A)	Mounting	References	Weight (kg)
Fixing bracket				
	≤250	Flat	**KSA25EZ1**	0.30
Spring bracket in couple	100-800	Vertical	**KS01000ZV3**	3.50

Accessories

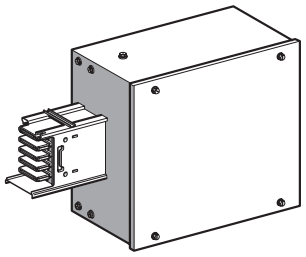
Description	Rating (A)	References	Weight (kg)
Tap-off blanking plate			
	100-800	**KSE80YB2**	0.08
Sealed jointing sleeve			
	≤250	For standard length **KSE25YA2**	1.28
		For non-standard length **KSE25YA3**	1.28

Medium power busbar trunking
Canalis® KS (400 to 500 A)



Straight length

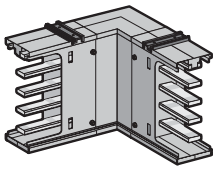
Description	Rating (A)	Length (m)	Number of tap-offs (double sides)	References 3L + N + PE	Weight (kg)
Standard straight length					
	400	3	6	**KSC40ED430**	25.00
		2	6	**KSC50ED420**	20.00
		1.5	4	**KSC50ED415**	15.90
	500	3	6	**KSC50ED430**	28.00
		2	6	**KSC50ED420**	20.00
		1.5	4	**KSC50ED415**	15.90
Special straight length					
(with fire barrier)	400	0.9-2.3	–	**KSC40EF41A**	8.59
(without fire barrier)		0.5-1.995	–	**KSC50ES4A**	15.00
(with fire barrier)	500	0.9-2.3	–	**KSC50EF41A**	15.00
(without fire barrier)		0.5-1.995	–	**KSC50ES4A**	15.00



Feed unit

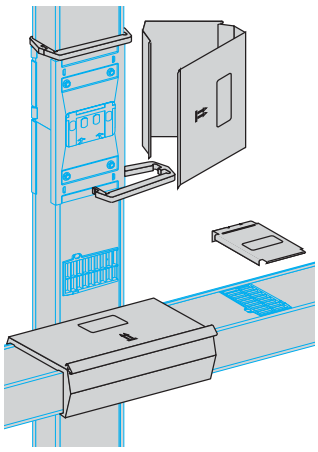
Description	Rating (A)	Connection Max.cross section(mm²)	Mounting	References	Weight (kg)
End feed unit					
right	400-500	8.0x41mm	Cable-Busbar	**KSC50AB452**	23.00
Left		8.0x41mm	Cable-Busbar	**KSC50AB462**	23.00
Flange feed unit					
	400-500	8.0x41mm	Panel-Busbar	**KSC50ER4**	5.20

Description	Rating (A)	Length (m)	Mounting	References	Weight (kg)
End cover					
	400-500	0.02	-	**KSB50FA2**	0.44



Elbows

Description	Rating (A)	Length (mm)	Mounting	References	Weight (kg)
Elbows					
	400-500	290	Edgewise	**KSC50LC40**	12.00
		290	Flat upwards	**KSC50LP41**	12.20
		290	Flat downwards	**KSC50LP42**	12.20
Tee					
	400-500	290	Edgewise	**KSC50TC40**	17.90



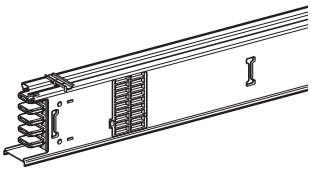
Fixing device

Description	Rating (A)	Mounting	References	Weight (kg)
Fixing bracket				
	400-500	Flat	**KSA50EZ3**	0.33
Spring bracket in couple	100-800	Vertical	**KS01000ZV3**	3.50

Accessories

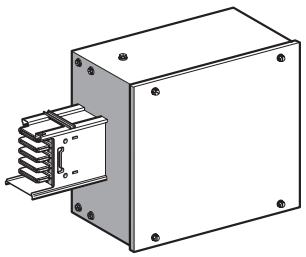
Description	Rating (A)	References	Weight (kg)
Tap-off blanking plate			
	100-800	**KSE80YB2**	0.08
Sealed jointing sleeve			
	400-500	**KSE50YA2**	2.25

Medium power busbar trunking
Canalis® KS (630 to 800 A)



Straight length

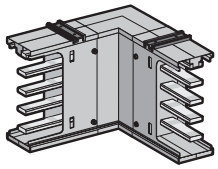
Description	Rating (A)	Length (m)	Number of tap-offs (double sides)	References 3L + N + PE	Weight (kg)
Standard straight length					
	630	3	6	**KSC63ED430**	50.10
		2	6	**KSC63ED420**	34.30
		1.5	4	**KSC63ED415**	25.60
	800	3	6	**KSC80ED430**	64.80
		2	6	**KSC80ED420**	44.80
		1.5	4	**KSC80ED415**	34.70
Special straight length					
(with fire barrier)	≤250	0.9-2.3	–	**KSC63EF41A**	24.20
(without fire barrier)		0.5-1.995	–	**KSC63ES4A**	24.20
(with fire barrier)	500	0.9-2.3	–	**KSC80EF41A**	26.70
(without fire barrier)		0.5-1.995	–	**KSC80ES4A**	26.70



Feed unit

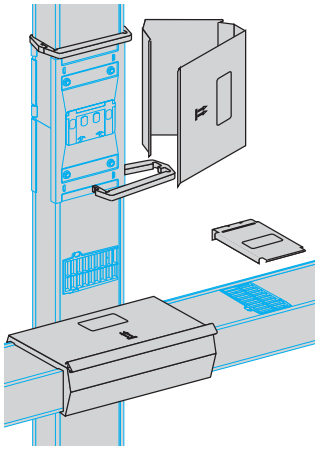
Description	Rating (A)	Connection Max.cross section(mm²)	Mounting	References	Weight (kg)
End feed unit					
right	630-800	8.0x71mm	Cable-Busbar	**KSC80AB452**	38.60
Left		8.0x71mm	Cable-Busbar	**KSC80AB462**	38.60
Flange feed unit					
	630-800	8.0x71mm	Panel-Busbar	**KSC80ER4**	8.60

Description	Rating (A)	Length (m)	Mounting	References	Weight (kg)
End cover					
	630-800	0.02	-	**KSB80FA2**	0.51



Elbows

Description	Rating (A)	Length (mm)	Mounting	References	Weight (kg)
Elbows					
	630-800	290	Edgewise	**KSC80LC40**	19.30
		290	Flat upwards	**KSC80LP41**	18.00
		290	Flat downwards	**KSC80LP42**	18.00
Tee					
	630-800	290	Edgewise	**KSC80TC40**	23.90



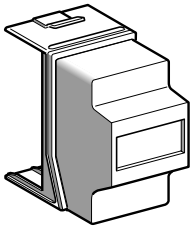
Fixing device

Description	Rating (A)	Mounting	References	Weight (kg)
Fixing bracket				
	630-800	Horizontal	**KSA80EZ3**	0.40
Spring bracket in couple	100-800	Vertical	**KS01000ZV3**	3.50

Accessories

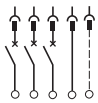
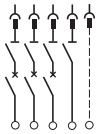
Description	Rating (A)	References	Weight (kg)
Tap-off blanking plate			
	100-800	**KSE80YB2**	0.08
Sealed jointing sleeve			
	630-800	**KSE80YA2**	2.60

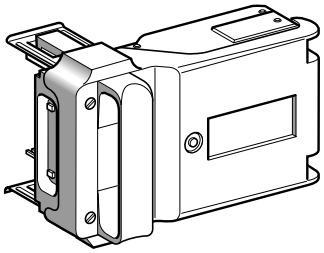
Medium power busbar trunking
Canalis® KS (25 to 40 A)



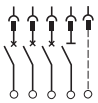
Run components

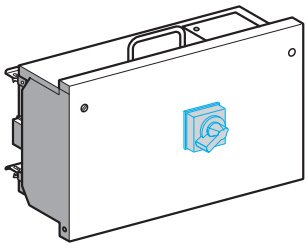
Tap-off unit with modular equipment (Multi9 breaker not supply)

Rating (A)	Scheme	Number of modules	References 3L + N + PE	Weight kg	Isc kA	Remark
25		4	**KSA02DA50010**	0.50	10	
50		7.5	**KSA05DA40010**	2.40	10	



Tap-off unit with MCCB

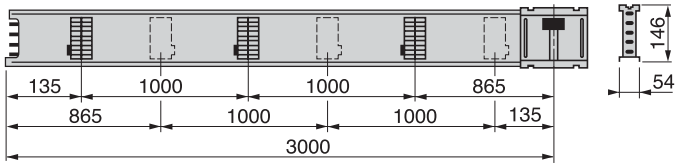
Rating (A)	Scheme	NSD breaker 3P		NSN breaker 3P		NSN breaker 4P		NSH breaker 3P		NSH breaker 4P	
		Weight kg	**Isc KA**	**Weight kg**	**Isc KA**	**Weight kg**	**Isc KA**	**Weight kg**	**Isc KA**	**Weight kg**	**Isc KA**
											
25		**KSA02NSD311**		**KSA02NSN311**		**KSA02NSN411**					
		6.48	25	10.6	25	11.1	25				
40		**KSA04NSD311**		**KSA04NSN311**		**KSA04NSN411**					
		6.48	25	10.6	25	11.1	25				
50		**KSA05NSD311**		**KSA05NSN311**		**KSA05NSN411**					
		6.48	25	10.6	25	11.1	25				
63*		**KSA06NSD311**		**KSA06NSN311**		**KSA06NSN411**					
		6.48	25	10.6	25	11.1	25				
80		**KSA08NSD311**		**KSA08NSN311**		**KSA08NSN411**					
		6.48	25	10.6	25	11.1	25				
100		**KSA10NSD311**		**KSA10NSN311**		**KSA10NSN411**		**KSA10NSH311**		**KSA10NSH411**	
		6.48	25	10.6	25	11.1	25	10.6	45	11.1	45
160		**KSA16NSD311**		**KSA16NSN311**		**KSA16NSN411**		**KSA16NSH311**		**KSA16NSH411**	
		10.6	35	10.6	36	11.1	36	10.6	45	11.1	45
250		**KSA25NSD311**		**KSA25NSN311**		**KSA25NSN411**		**KSA25NSH311**		**KSA25NSH411**	
		15.1	35	15.4	36	15.8	36	15.4	45	15.8	45
400		**KSA40NSD311**		**KSA40NSN311**		**KSA40NSN411**		**KSA40NSH311**		**KSA40NSH411**	
		19.5	35	19.5	45	21.3	45	19.5	70	21.3	70



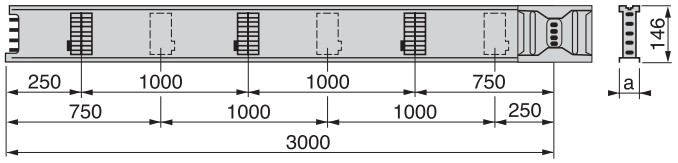
*For **KSA06NSD311** the rated current is 60A, for **KSA06NSN311** and **KSA06NSH311** the rated current are 63A.

Medium power busbar trunking
Canalis® KS (100 to 800 A)

KSC●●EA430 Straight Length (≤ 250A)

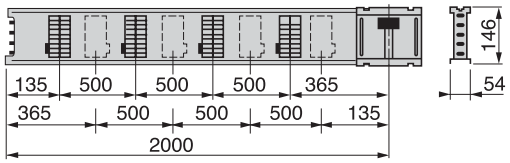


KSC●●ED430 Straight Length (400 - 800A)

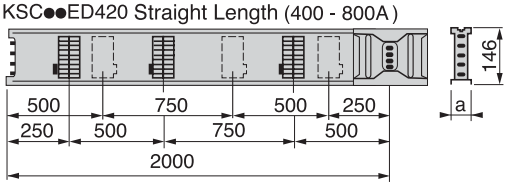


Rating (A)	a
100 - 250	54
400/500	75
630/800	113

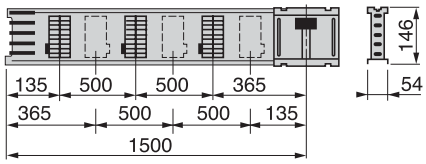
KSC25ED420 Straight Length (≤ 250A)



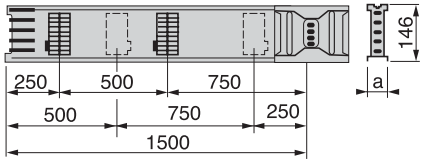
KSC●●ED420 Straight Length (400 - 800A)



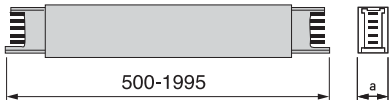
KSC25ED415 Straight Length (≤ 250A)



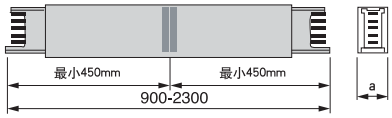
KSC●●ED415 Straight Length (400 - 800A)



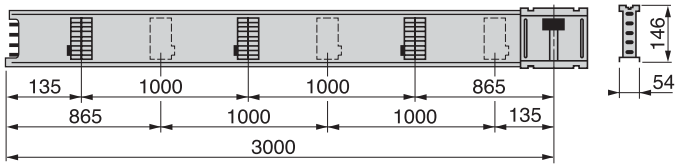
KSC●●ES4A Special Straight Length (without fire barrier)



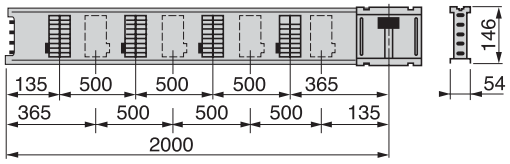
KSC●●EF41A Special Straight Length (with fire barrier)



KSA-25●●430 Straight Length (≤ 250A)

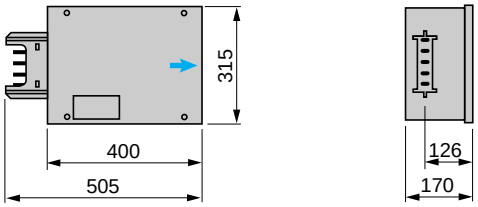


KSA-25ED Straight Length (≤ 250A)

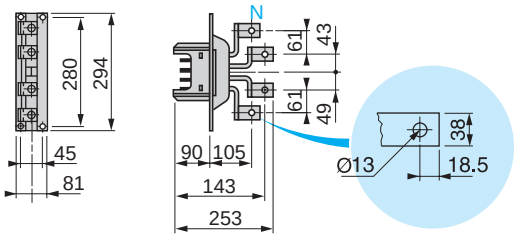


Medium power busbar trunking
Canalis® KS (100 to 800 A)

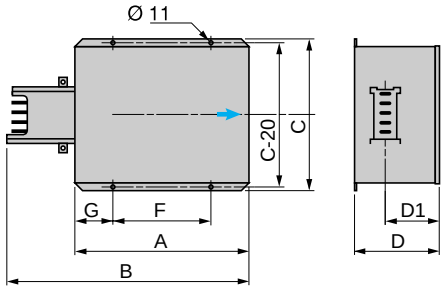
KS●25AB452 End feed unit **(≤ 250A)**



KS●25ER4 Flange feed unit **(≤ 250A)**

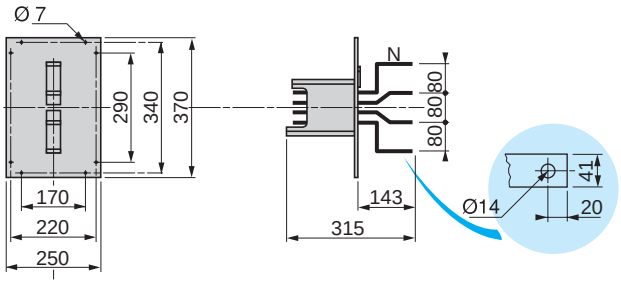


KSC●●AB●4●2 (400-800A) End feed unit

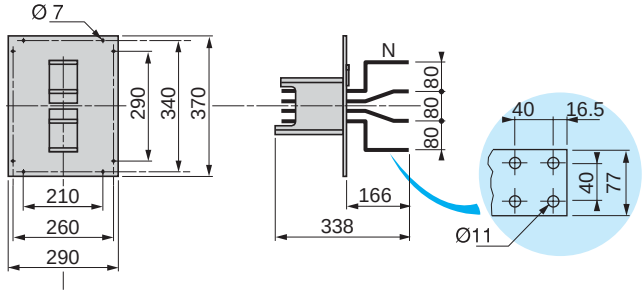


Rating (A)	A	B	C	C-20	D	D1	F	G
400-800	615	778	421	401	227	172	300	150

KSC50ER4 Flange feed unit **(400-500A)**

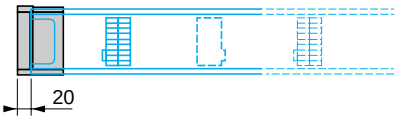


KSC80ER4 Flange feed unit **(630-800A)**

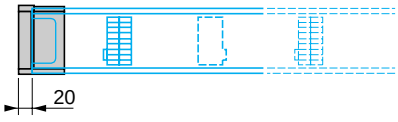


KSB-25FA3 End cover **(≤ 250A)**

KSB-50FA2 End cover **(400-500A)**

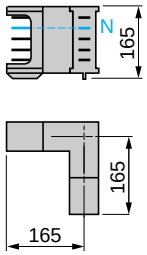


KSB-80FA2 End cover **(630-800A)**

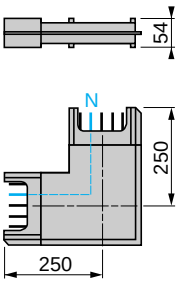


Medium power busbar trunking
Canalis® KS (100 to 800 A)

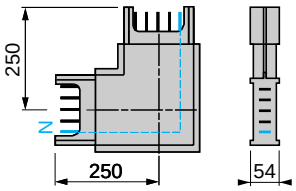
KS●25LC40
Edgewise elbows **(≤ 250A)**



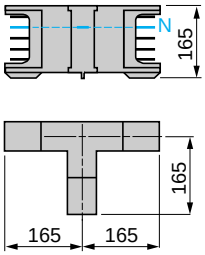
KS●25LP41
Flat upwards elbows **(≤ 250A)**



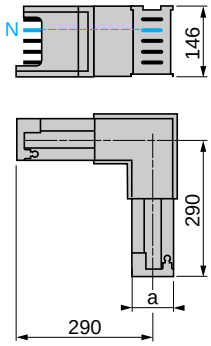
KS●25LP42
Flat downwards elbows **(≤ 250A)**



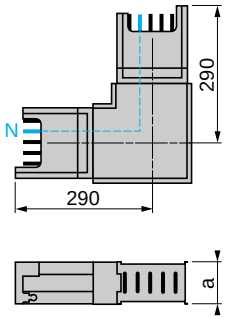
KS●25TC40
Tees **(≤ 250A)**



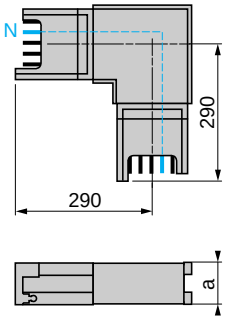
KSC●●LC40
Elbows **(400-800A)**



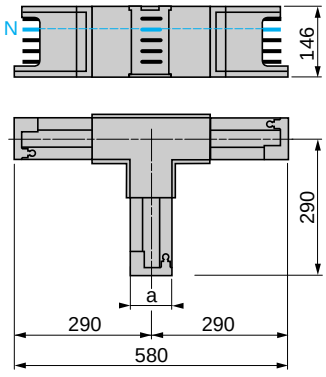
KSC●●LP41
Flat upwards elbows **(400-800A)**



KSC●●LP42
Flat downwards elbows **(400-800A)**



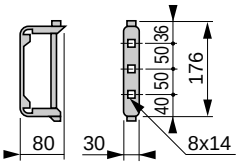
KSC●●TC40
Tees **(400-800A)**



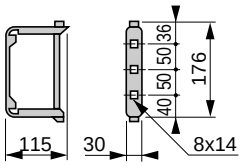
Rating (A)	a
100 - 250	54
400/500	75
630/800	113

Medium power busbar trunking
Canalis® KS (100 to 800 A)

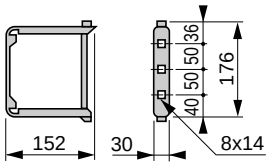
KSA-25EZ1 Fixing bracket **(≤ 250A)**



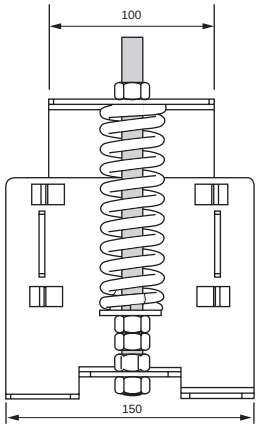
KSA-50EZ3 Fixing bracket **(400-500A)**

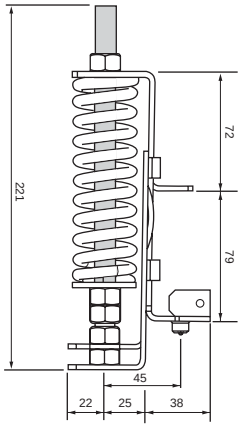


KSA-80EZ3 Fixing bracket **(630-800A)**

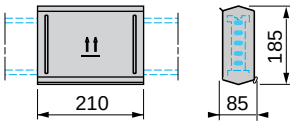


KS01000ZV3 Spring bracket **(100-800A)**

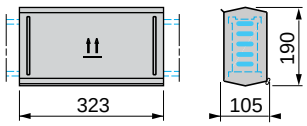




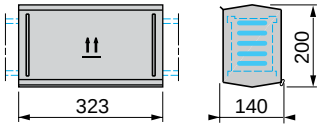
KSE-25YA2 Sealed jointing sleeve **(≤ 250A)**



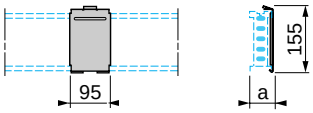
KSE-50YA2 Sealed jointing sleeve **(400-500A)**



KSE-80YA2 Sealed jointing sleeve **(630-800A)**



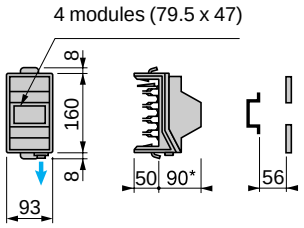
KSE-80YB2 Tap-off blanking plate



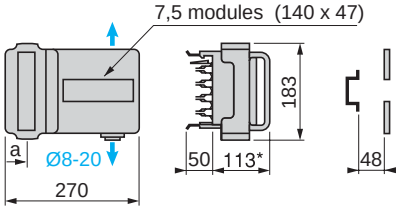
Rating (A)	a
100…250	70
400…500	90
630 and 800	125

Medium power busbar trunking
Canalis® KS (100 to 800 A)

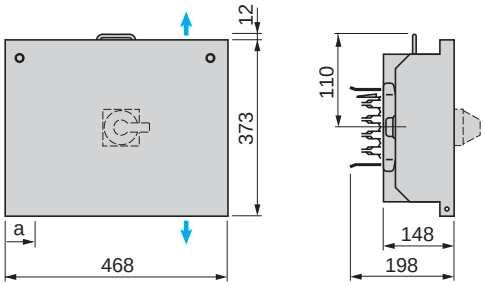
Tap-off unit with MCB
KSA02DA50010



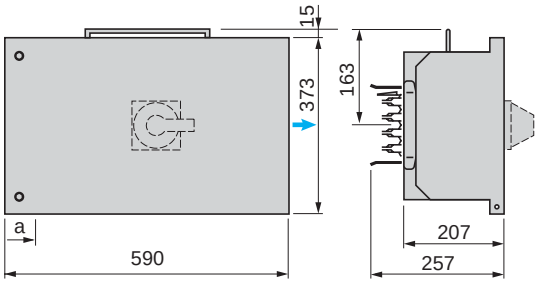
Tap-off unit with MCB
KSA05DA40010



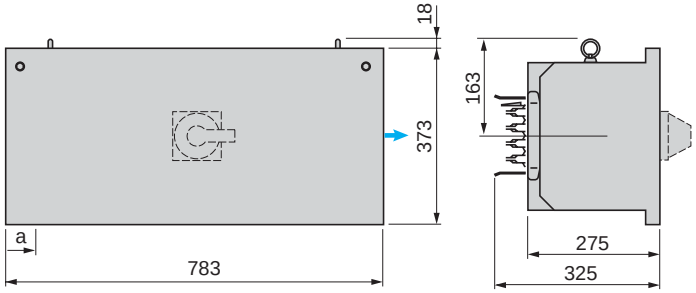
Tap-off unit with MCCB
KSA16NS●●11



Tap-off unit with MCCB
KSA25NS●●11

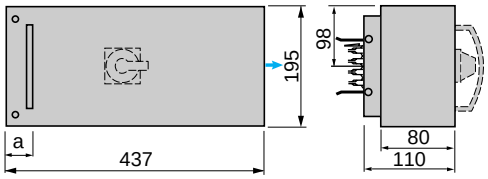


Tap-off unit with MCCB
KSA40NS●●11



Tap-off unit with MCCB

KSA10NSD311

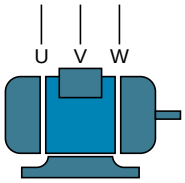


Distance from the center of tap-off to the left side of box (unit: mm)

references	a
KSA02DA50010	0
KSA05DA40010	40
KSA10NSD311	60
KSA16NS●●11	70
KSA25NS●●11	70
KSA40NS●●11	70

Technical Data

Average full-load currents of 3-phase squirrel cage motors



3-phase 4-pole motors, 50/60 Hz

Power in volts		200/208	220	230 (1)	380	400	415	433/440	460 (1)	500/525	575 (1)	660	690	750	1000
kW	***HP***	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**
0.37	*0.5*	2	1.8	2	1.03	0.98	–	0.99	1	1	0.8	0.6	–	–	0.4
0.55	*0.75*	3	2.75	2.8	1.6	1.5	–	1.36	1.4	1.21	1.1	0.9	–	–	0.6
0.75	*1*	3.8	3.5	3.6	2	1.9	2	1.68	1.8	1.5	1.4	1.1	–	–	0.75
1.1	*1.5*	5	4.4	5.2	2.6	2.5	2.5	2.37	2.6	2	2.1	1.5	–	–	1
1.5	*2*	6.8	6.1	6.8	3.5	3.4	3.5	3.06	3.4	2.6	2.7	2	–	–	1.3
2.2	*3*	9.6	8.7	9.6	5	4.8	5	4.42	4.8	3.8	3.9	2.8	–	–	1.9
3	–	12.6	11.5	–	6.6	6.3	6.5	5.77	–	5	–	3.8	3.5	–	2.5
–	*5*	–	–	15.2	–	–	–	–	7.6	–	6.1	–	–	–	3
4	–	16.2	14.5	–	8.5	8.1	8.4	7.9	–	6.5	–	4.9	4.9	–	3.3
5.5	*7.5*	22	20	22	11.5	11	11	10.4	11	9	9	6.6	6.7	–	4.5
7.5	*10*	28.8	27	28	15.5	14.8	14	13.7	14	12	11	6.9	9	–	6
9	–	36	32	–	18.5	18.1	17	16.9	–	13.9	–	10.6	10.5	–	7
11	*15*	42	39	42	22	21	21	20.1	21	18.4	17	14	12.1	11	9
15	*20*	57	52	54	30	28.5	28	26.5	27	23	22	17.3	16.5	15	12
18.5	*25*	70	64	68	37	35	35	32.8	34	28.5	27	21.9	20.2	18.5	14.5
22	*30*	84	75	80	44	42	40	39	40	33	32	25.4	24.2	22	17
30	*40*	114	103	104	60	57	55	51.5	52	45	41	54.6	33	30	23
37	*50*	138	126	130	72	69	66	64	65	55	52	42	40	36	28
45	*60*	162	150	154	85	81	80	76	77	65	62	49	46.8	42	33
55	*75*	200	182	192	105	100	100	90	96	80	77	61	58	52	40
75	*100*	270	240	248	138	131	135	125	124	105	99	82	75.7	69	53
90	*125*	330	295	312	170	162	165	146	156	129	125	98	94	85	65
110	*150*	400	356	360	205	195	200	178	180	156	144	118	113	103	78
132	–	480	425	–	245	233	240	215	–	187	–	140	135	123	90
–	*200*	520	472	480	273	222	260	236	240	207	192	152	–	136	100
160	–	560	520	–	300	285	280	256	–	220	–	170	165	150	115
–	*250*	–	–	600	–	–	–	–	300	–	240	200	–	–	138
200	–	680	626	–	370	352	340	321	–	281	–	215	203	185	150
220	*300*	770	700	720	408	388	385	353	360	310	288	235	224	204	160
250	*350*	850	800	840	460	437	425	401	420	360	336	274	253	230	200
280	–	–	–	–	528	–	–	–	–	–	–	–	–	–	220
315	–	1070	990	–	584	555	535	505	–	445	–	337	321	292	239
–	*450*	–	–	1080	–	–	–	–	540	–	432	–	–	–	250
355	–	–	1150	–	635	605	580	549	–	500	–	370	350	318	262
–	*500*	–	–	1200	–	–	–	–	600	–	480	–	–	–	273
400	–	–	1250	–	710	675	650	611	–	540	–	410	390	356	288
450	*600*	–	–	1440	–	–	–	–	720	–	576	–	–	–	320
500	–	–	1570	–	900	855	820	780	–	680	–	515	494	450	350
560	–	–	1760	–	1000	950	920	870	–	760	–	575	549	500	380
630	–	–	1980	–	1100	1045	1020	965	–	850	–	645	605	550	425
710	–	–	–	–	1260	1200	1140	1075	–	960	–	725	694	630	480
800	*1090*	–	–	–	1450	–	1320	1250	–	1100	–	830	790	–	550
900	*1220*	–	–	–	1610	–	1470	1390	–	1220	–	925	880	–	610

(1) Values conforming to the NEC (National Electrical Code).

These values are given as a guide. They may vary depending on the type of motor and manufacturer.

Technical Data

Degrees of protection provided by enclosures

Degrees of protection against the penetration of solid bodies, water and personnel access to live parts

The European standard EN 60529 dated October 1991, IEC publication 529 (2nd edition - November 1989), defines a coding system (IP code) for indicating the degree of protection provided by electrical equipment enclosures against accidental direct contact with live parts and against the ingress of solid foreign objects or water.
This standard does not apply to protection against the risk of explosion or conditions such as humidity, corrosive gasses, fungi or vermin.
Certain equipment is designed to be mounted on an enclosure which will contribute towards achieving the required degree of protection (example : control devices mounted on an enclosure).
Different parts of an equipment can have different degrees of protection (example : enclosure with an opening in the base).
Standard NF C 15-100 (May 1991 edition), section 512, table 51 A, provides a cross-reference between the various degrees of protection and the environmental conditions classification, relating to the selection of equipment according to external factors.
Practical guide UTE C 15-103 shows, in the form of tables, the characteristics required for electrical equipment (including minimum degrees of protection), according to the locations in which they are installed.

IP ●●● code

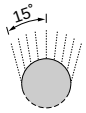
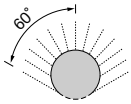
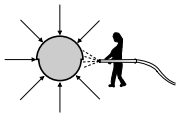
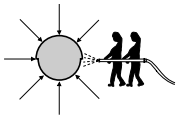
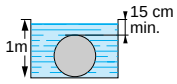
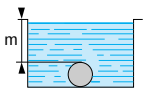
The IP code comprises **2 characteristic numerals** (e.g. **IP 55**) and may include **an additional letter** when the actual protection of personnel against direct contact with live parts is better than that indicated by the first numeral (e.g. IP 20C).

Any characteristic numeral which is unspecified is replaced by an X (e.g. IP XXB).

1st characteristic numeral : corresponds to **protection of the equipment against penetration of solid objects** and **protection of personnel against direct contact with live parts.**

	Protection of the equipment	Protection of personnel
0	Non-protected	Non-protected
1	Protected against the penetration of solid objects having a diameter greater than or equal to 50 mm.	Protected against direct contact with the back of the hand (accidental contacts).
2	Protected against the penetration of solid objects having a diame - ter greater than or equal to 12.5 mm.	Protected against direct finger contact.
3	Protected against the penetration of solid objects having a diameter greater than or equal to 2.5 mm.	Protected against direct contact with a Ø 2.5 mm tool.
4	Protected against the penetration of solid objects having a diameter > 1 mm.	Protected against direct contact with a Ø 1 mm wire.
5	Dust protected (no harmful deposits).	Protected against direct contact with a Ø 1 mm wire.
6	Dust tight.	Protected against direct contact with a Ø 1 mm wire.

2nd characteristic numeral : corresponds to **protection of the equipment against penetration of water with harmful effects.**

0	Non-protected	
1		Protected against vertical dripping water, (condensation).
2		Protected against dripping water at an angle of up to 15°.
3		Protected against rain at an angle of up to 60°.
4		Protected against splashing water in all directions.
5		Protected against water jets in all directions.
6		Protected against powerful jets of water and waves.
7		Protected against the effects of temporary immersion.
8		Protected against the effects of prolonged immersion under specified conditions.

Degrees of protection against mechanical impact

The European standard EN 50102 dated March 1995 defines a coding system (IK code) for indicating the degree of protection provided by electrical equipment enclosures against external mechanical impact.
Standard NF C 15-100 (May 1991 edition), section 512, table 51 A, provides a cross-reference between the various degrees of protection and the environmental conditions classification, relating to the selection of equipment according to external factors.
Practical guide UTE C 15-103 shows, in the form of tables, the characteristics required for electrical equipment (including minimum degrees of protection), according to the locations in which they are installed.

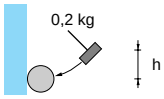
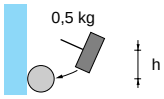
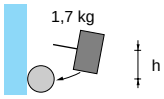
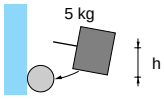
Additional letter : corresponds to **protection of personnel against direct contact with live parts**.

A	With the back of the hand.
B	With the finger.
C	With a Ø 2.5 mm tool.
D	With a Ø 1 mm wire.

IK ●● code

The IK code comprises **2 characteristic numerals** (e.g. **IK 05**).

2 characteristic numerals : corresponding to a **value of impact energy**.

		h (cm)	Energy (J)
00	Non-protected		
01		7.5	0.15
02		10	0.2
03		17.5	0.35
04		25	0.5
05		35	0.7
06		20	1
07		40	2
08		30	5
09		20	10
10		40	20

Note

Note

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As standards, specifications and designs change from time to time, please ask for confirmation of the information given in this document.