

DAVIS®

BUSWAY SYSTEMS

Always Ahead™

DEKRA KEMA



KLR 0403732



IEC CE BS

**40A - 6300A
EFFICIENT
POWER
DISTRIBUTION**



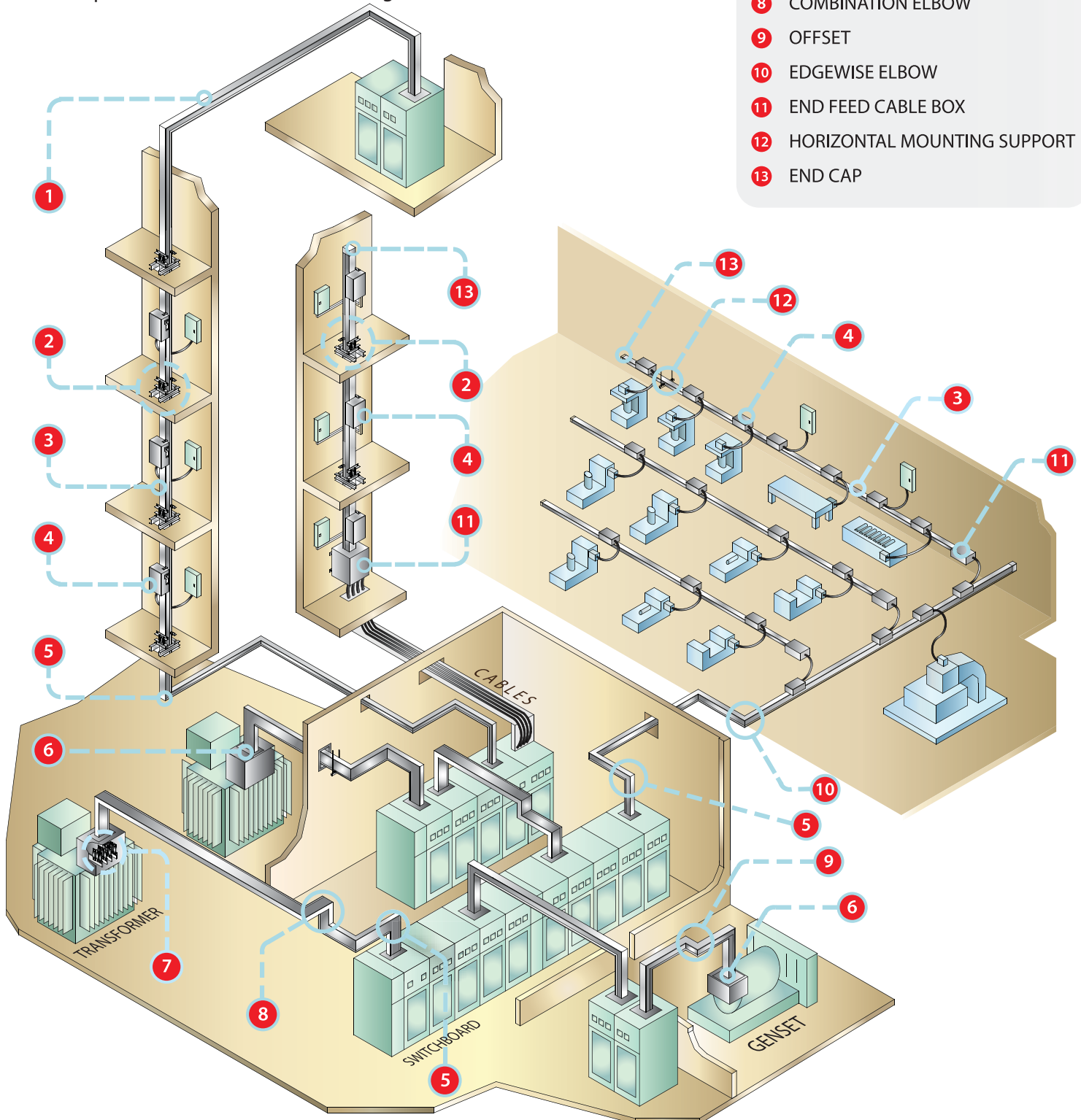
DAVIS Power Busway System is designed for efficient Power Distribution and to give the flexibility needed for modern high rise buildings, commercial complexes, industrial plants and production facilities. It provides a more efficient electrical power distribution system that gives added flexibility for today's commercial and industrial environments. DAVIS Power Busway System is designed with the following distinctive features:

Maintenance Free
Robust & Reliable
Epoxy Insulated
Low Impedance

Modular in Design
Ease of Planning
Ease of Installation
Flexible in Usage

Compact & Lightweight
Economical
Expandable
Relocatable

- 1 FEEDER
- 2 VERTICAL MOUNTING SUPPORT
- 3 PLUG-IN FEEDER
- 4 PLUG-IN BOX
- 5 FLATWISE ELBOW
- 6 FLANGED END
- 7 FLEXIBLE CONNECTION
- 8 COMBINATION ELBOW
- 9 OFFSET
- 10 EDGEWISE ELBOW
- 11 END FEED CABLE BOX
- 12 HORIZONTAL MOUNTING SUPPORT
- 13 END CAP



INTRODUCTION

DAVIS introduces its new version of Maintenance Free Epoxy Insulated Power busway system to meet the latest requirements of modern commercial buildings and industrial complexes. DAVIS Power busway can be easily installed in most site conditions to distribute electrical power efficiently. DAVIS Power busway is available from 100A to 6300A rated at 690VAC in a polyphase system.

COMPLIANCE OF DESIGN STANDARDS

DAVIS Power busway is designed, manufactured and tested in compliance with the latest international standards:

IEC 60439-1:2004 & IEC 61439-1:2011	Low Voltage Switchgear and Controlgear Assemblies
IEC 60439-2:2005 & IEC 61439-6:2012	Specific requirements for busway
IEC 60947-2:2003	Circuit Breakers
IEC 60331 & BS 6387	Resistance to Fire
IEC 60529:2001	Degree of Ingress Protection

SYSTEM VOLTAGES

DAVIS Power busway is designed to withstand a rated insulation voltage of 1000VAC at 50Hz or 60Hz frequency or dielectric voltage of 3.5KV. Higher insulation voltages including medium voltages (up to 11kV) and higher frequencies are also available.

BUSBAR CONDUCTORS

The conductors used in DAVIS Power busways are carefully selected to meet all electrical, thermal and mechanical properties and are in full compliance with the relevant international standards and requirements. The composition and conductivity of the busbars used are guaranteed as follows:

	Composition	Conductivity
COPPER	99.98%	>98% IACS
ALUMINIUM	99.98%	>61% IACS

BUSWAY ENCLOSURES

DAVIS Power busway enclosures are made robust in design to match their intended short circuit capabilities, to accommodate each busbar size, weight, mechanical strength, and to optimize heat dissipation. The sections of the enclosures, flanges and surfaces are efficiently engineered to maximize their heat dissipation capabilities from the busbars to their surrounding areas under natural ambient conditions. The enclosures are treated with anti-corrosive agents, baked and coated with epoxy polyester powder. The enclosures are available in the following materials:

- Galvanised Steel
- Extruded Aluminium
- Stainless Steel

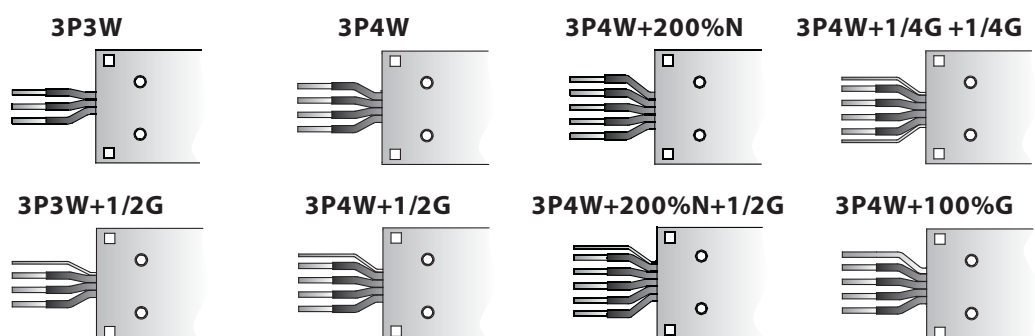
INGRESS OF PROTECTION

DAVIS Power busway enclosures are designed and manufactured by computerized CNC machines to achieve a very high degree of precision and accuracy. Various degrees of ingress of protection (IP) in compliance with IEC60529 are available and are verified by independent authorities. DAVIS also makes busways for outdoor installations.

Indoor Installation	IP42/43/44/54/55
Outdoor Installation	IP65/66/67
Plug-in Risers	IP65
Plug-in Boxes	IP55
IP for Plug-in Openings	IP2X

TYPES OF BUSBAR CONFIGURATION

DAVIS Power busway is constructed from high conductivity Copper or Aluminium conductors set in a totally enclosed STEEL or Extruded ALUMINIUM enclosure. The following types of busbar configuration are available in a super compact type design or sandwiched type design:



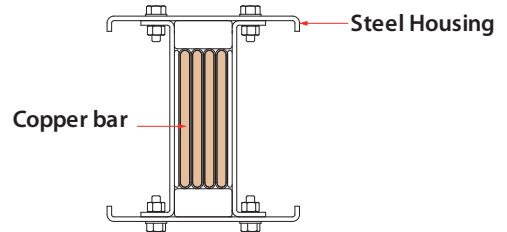
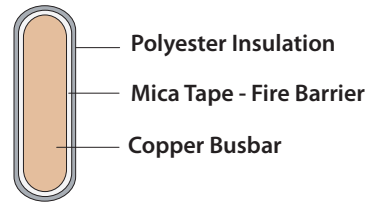
INSULATION

DAVIS uses a very special high thermal conductivity Epoxy insulation material, Class 'F' (155°C), which is able to withstand any glitches and spikes in an electrical system. The Epoxy insulation is non-hygroscopic, halogen free, resistant to water and chemicals, and has a high mechanical strength and complies with UL94V-0 standards. The epoxy insulation is self-extinguishing, impervious to acids, alkalis, acetones, mechanical oils and lubricants and has a long life span compared with other insulation materials. The Epoxy insulation is bonded strongly to the busbar conductor thus eliminating any air gaps between the insulation and the conductor.

Class 'H' Epoxy insulation material is also available.

FIRE RESISTANT BUSWAY

DAVIS Fire Resistant (FR) busway is specially manufactured for Essential Supply Circuits using high grade Mica insulation tapes with polyester outer insulation in accordance with IEC 60331, BS 6387 and JIS A 1304 standards.



Resistance to Fire Alone

IEC 60331 : 3 hours at 750°C

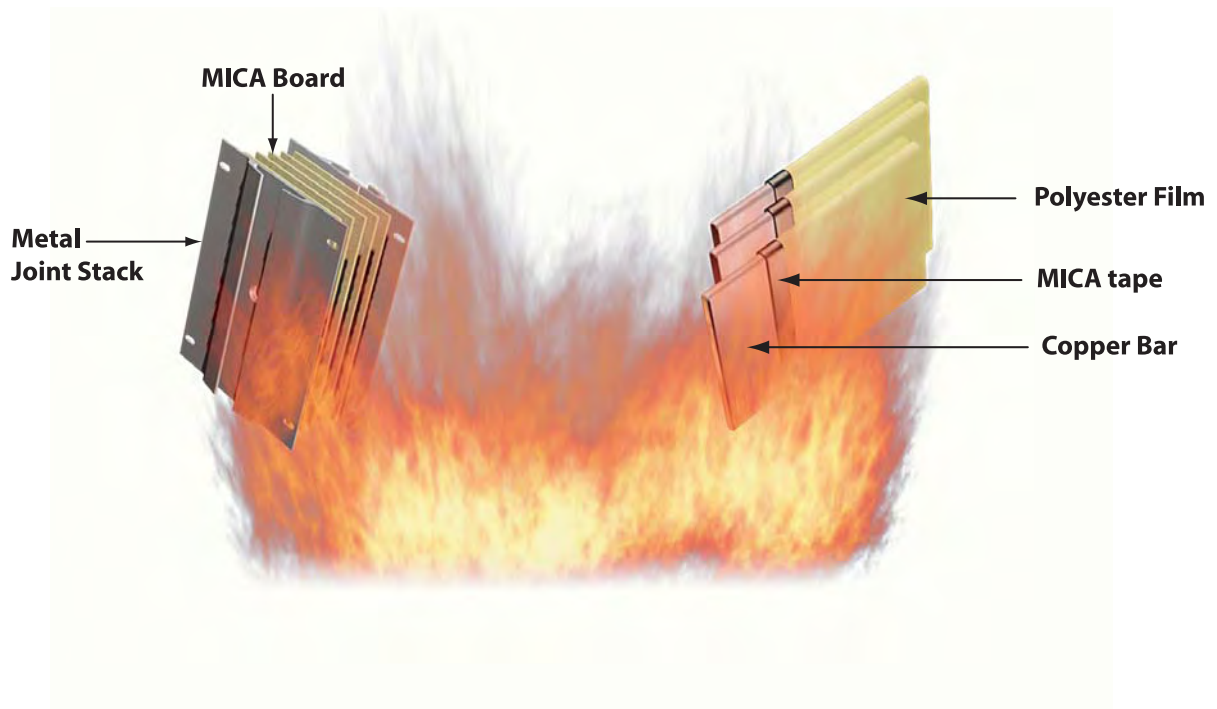
BS 6387 Category 'c' : 3 hours at 950°C

Resistance to Fire with Water

BS 6387 Category 'w' : 15 mins at 650°C (plus 15 mins with water spray)

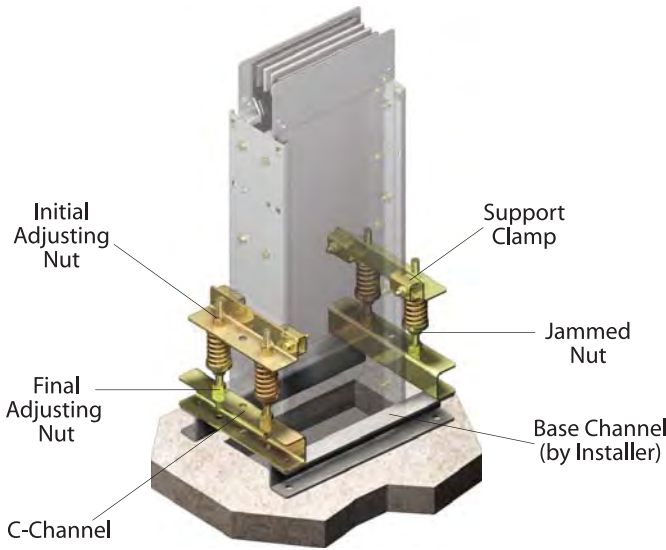
Resistance to Fire with Mechanical Shock

BS 6387 Category 'z' : 15 mins at 950°C



VERTICAL MOUNTING SUPPORTS

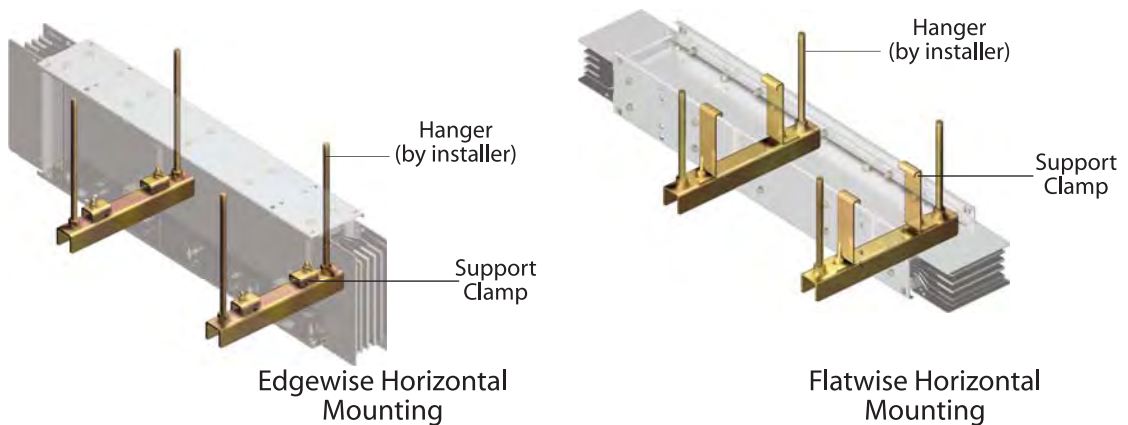
DAVIS Power busway vertical mounting supports are designed to retain the position of riser busways while withstanding a small degree of tilting movement as the conditions of the building and environment change. It comes with a double-spring mechanism to absorb any built-up stresses due to thermal expansion and normal defects in the floor and building structures.



BUSBAR TYPE	AMPERE RATING	No. of Springs Required per set
COPPER	100A to 1250A	2
	1600A to 3200A	4
	3500A to 5000A	6
ALUMINIUM	200A to 1600A	2
	1800A to 3200A	4
	3500A to 5000A	6

HORIZONTAL MOUNTING SUPPORTS

DAVIS Power busway horizontal mounting supports are designed to retain the position of feeder busway in an edgewise or a flatwise position.



TEMPERATURE RISE TESTS

DAVIS Power busway is capable of carrying its full rated current continuously at ambient condition with 95% relative humidity and a maximum ambient temperature of 40°C without exceeding the 55°C temperature rise.

Temperature Rise Tests is as per IEC 60439 ; IEC 61439 standards to ensure the maximum temperature rise of the busways especially that of the joints do not exceed the IEC 60439-1; IEC 61439-1 temperature rise limits.

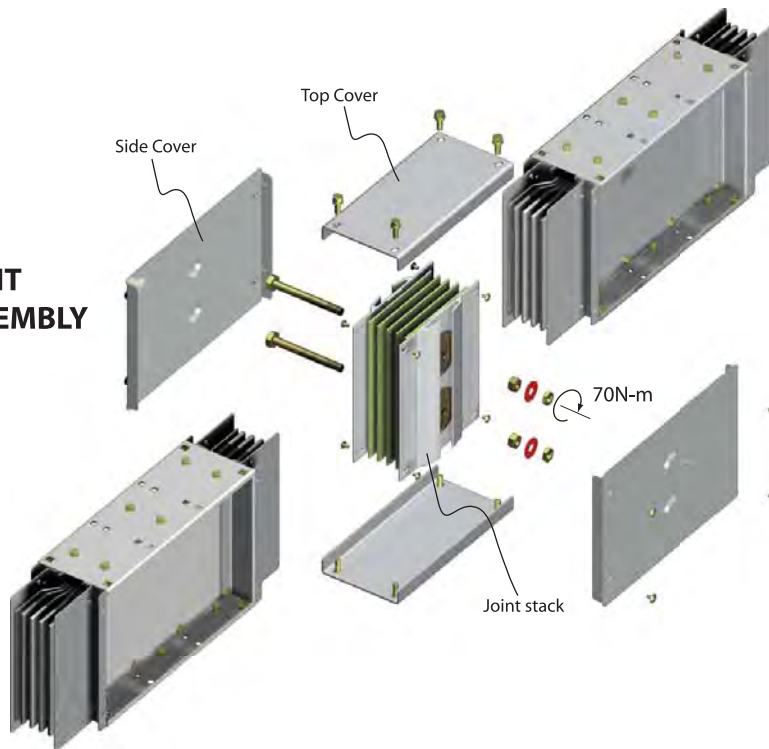
SHORT CIRCUIT TESTS

DAVIS Power busway is designed to be robust and protected against rated short circuit conditions. The short circuit tests have been independently certified and tested at KEMA/DEKRA and ASTA accredited testing laboratories in accordance with IEC 60439-1:2004; 60439-2:2005; IEC 61439-1:2011 and IEC 61439-6:2012.

FACTORY ROUTINE TESTS

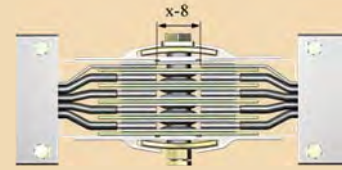
Every DAVIS Power busway section or part is subjected to Routine Factory Tests before they are delivered to customers. The tests also include 1000VDC Insulation Resistance Tests and 3.5kV Power Frequency Voltage Withstand Tests for 5 seconds.

JOINT ASSEMBLY

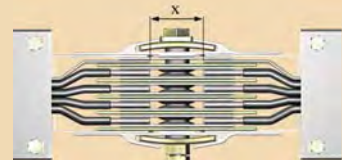


SPECIAL THERMAL COMPENSATION JOINT

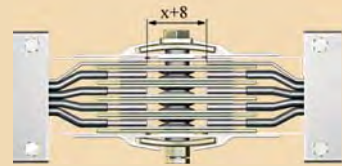
8mm Contraction: (-ve Expansion)



Normal: (zero Expansion)



8mm Expansion: (+ve Expansion)



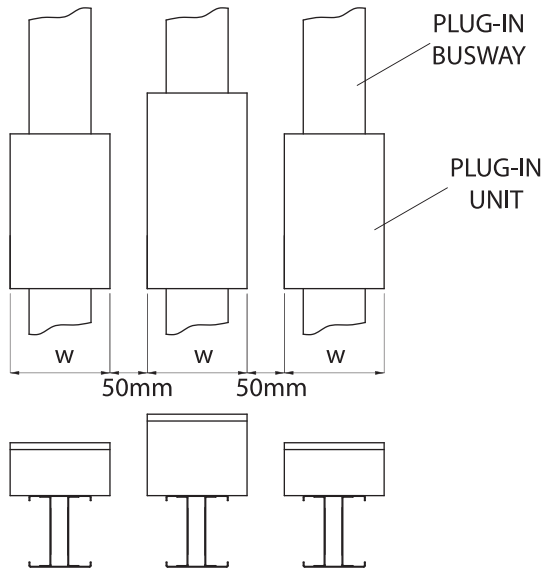
THERMAL COMPENSATION JOINT

The joint coupler is the most critical part of any busbar trunking system. DAVIS busway incorporates a proven MAINTENANCE-FREE thermal compensation joint design using a single or multiple high-tensile grade insulated through-bolt to tighten the current carrying conductors together. The bolt is specially made with a double-head hexagonal nut and a red indicator mark that breaks off at a predetermined torque value of 70N-m. The tightening torque label is always shown on the joint stack. Two opposing Belleville disc spring washers are put in place to maintain a constant contact pressure under all service conditions.

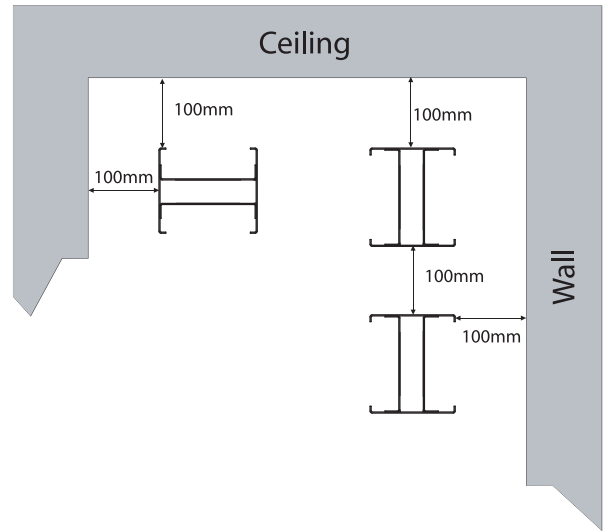


Every DAVIS busway section is factory-fitted with a joint-stack. After two adjacent sections of the busways have been joined together, the whole joint stack can be removed without removing the already installed busway. This unique feature will simplify any site alteration task. The joints can be inspected at any time by removing the joint covers. Each joint is designed to allow longitudinal busbar expansion or contraction by as much as $\pm 8\text{mm}$. The tightening force is calculated in such a way that the joint efficiency remains unchanged under all service conditions. This provides for cost-savings as expansion joints are no longer necessary for any length of the busway run.

CLEARANCE



Clearance between runs



Clearance from wall & ceiling

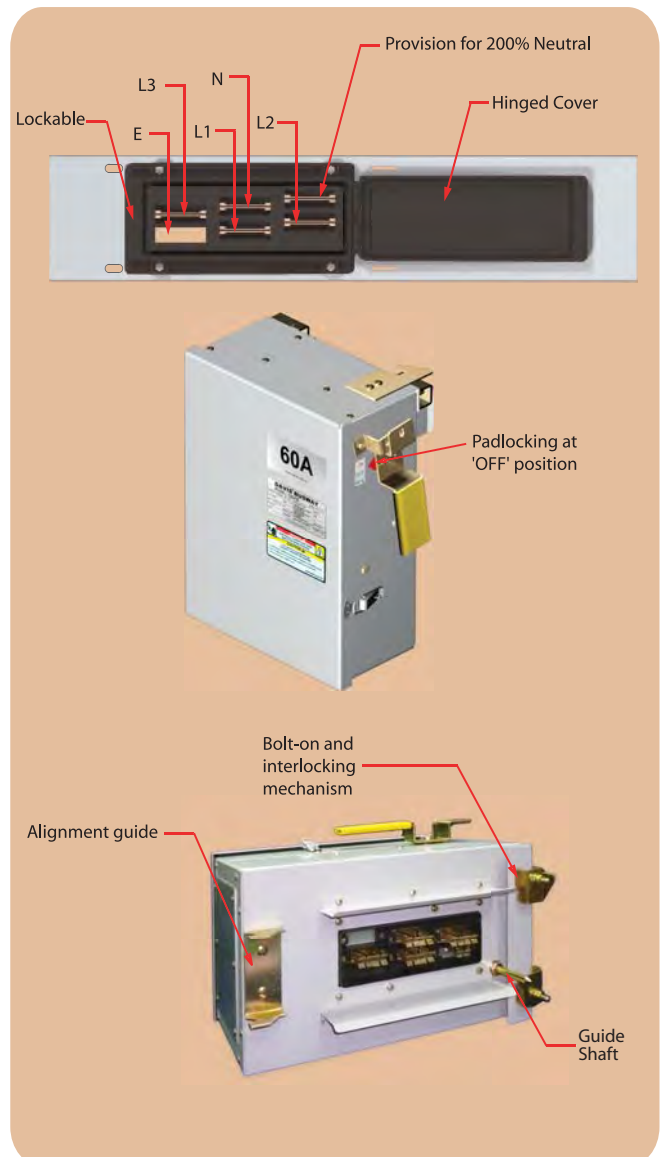
PLUG-IN BOXES

DAVIS busway plug-in boxes are available from 15A to 800A with different levels of fault protection. A maximum of five pieces of plug-in boxes can be mounted on a standard 3000mm plug-in busway. The maximum current rating of each plug-in opening is 400A. Above 500A, bolt-on plug-in boxes are recommended.

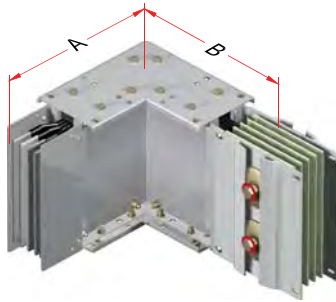
Safety Features:

DAVIS busway plug-in boxes are designed with full mechanical interlocks. This is to prevent any illegal insertion or removal when the plug-in box is in the "ON" position.

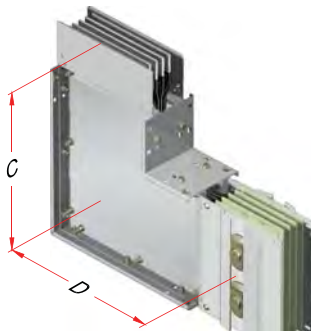
The front operating switch allows padlocking at the "OFF" position. This is to prevent switching "ON" accidentally during servicing or maintenance. The plug-in earth contact is designed to ensure the EARTH contact is made prior to LIVE contact of the busway in any situation. Plug-in boxes are rated at IP42 as a standard but IP55 plug-in boxes are also available.



TECHNICAL DATA FOR POWER BUSWAY AND ACCESSORIES



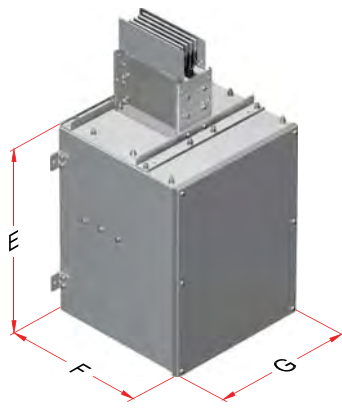
Edgewise Elbow



Flatwise Elbow

BUSBAR TYPE	AMPERE RATING	DIMENSIONS (mm)			
		EDGEWISE ELBOW		FLATWISE ELBOW	
		A	B	C	D
COPPER	400A to 1800A	300	300	300	300
	2000A to 2500A	300	300	350	350
	3000A to 4000A	300	300	400	400
	4500A to 5000A	300	300	450	450
	6300A	300	300	550	550
ALUMINIUM	400A to 1000A	300	300	300	300
	1250A to 1600A	300	300	350	350
	1800A	300	300	400	400
	2000A	300	300	450	450
	2500A to 3500A	300	300	500	500
	4000A	300	300	600	600
	4500A to 5500A	300	300	650	650

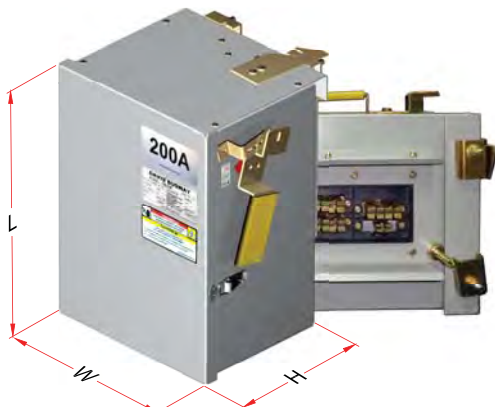
Table 1: Elbows



End Feed Cable Box

BUSBAR TYPE	AMPERE RATING	DIMENSIONS (mm)		
		E	F	G
COPPER	400A to 630A	500	400	450
	800A to 1600A	600	450	450
	1800A to 2500A	700	450	450
ALUMINIUM	400A	600	450	450
	630A to 800A	600	450	450
	1000A to 1600A	700	450	450
	1800A	700	500	450

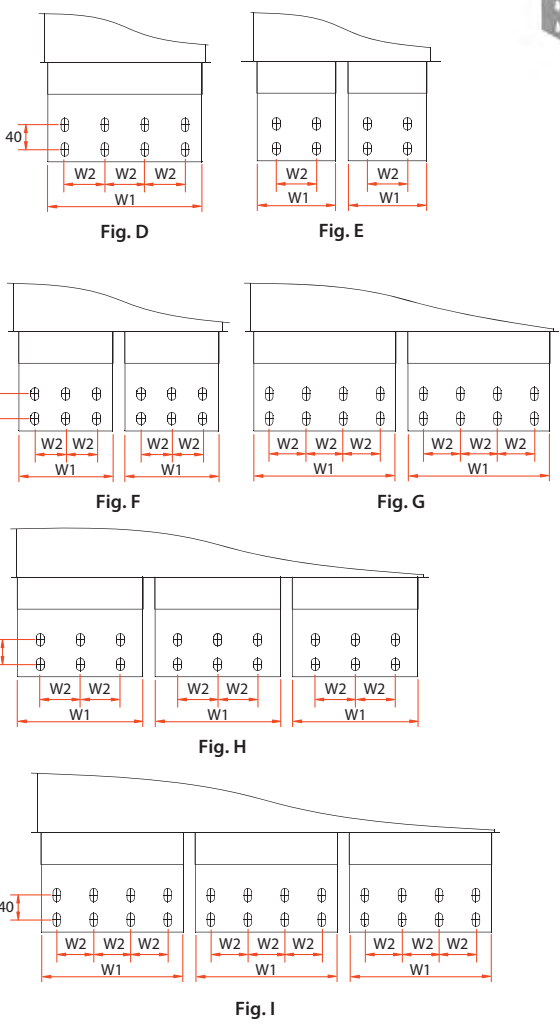
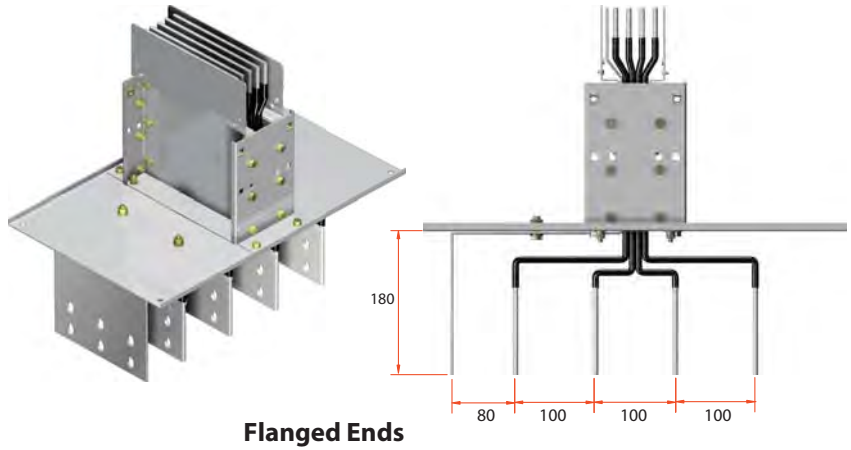
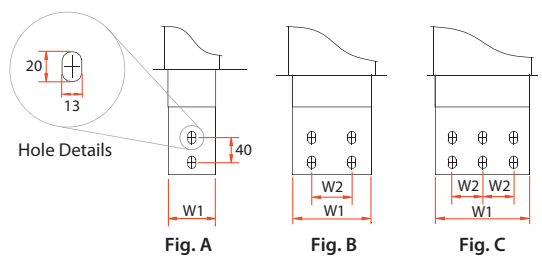
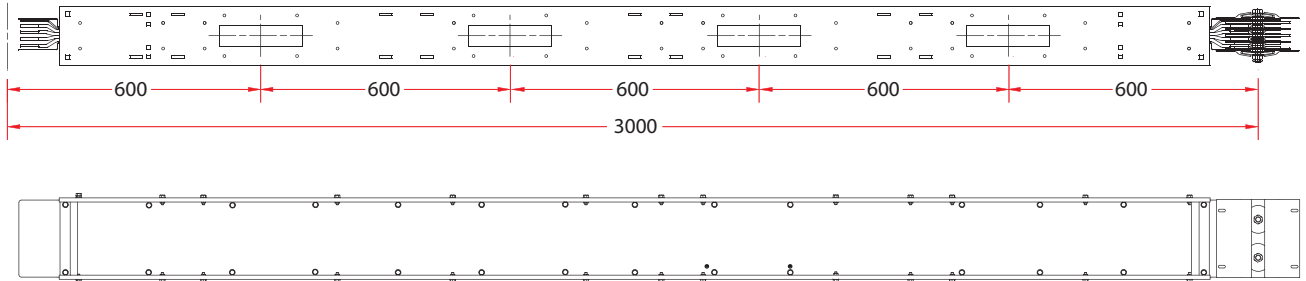
Table 2: End Feed Cable Boxes



Plug-in Boxes

AMPERE RATING	DIMENSIONS (mm)		
	L	W	H
15A to 225A	400	260	210
125A to 200A	400	260	210
250A to 400A	500	310	270
500A to 800A	1000	360	310
Exceed 800A	PLEASE CONSULT DAVIS FOR DETAILS		

Table 3: Plug-in Boxes

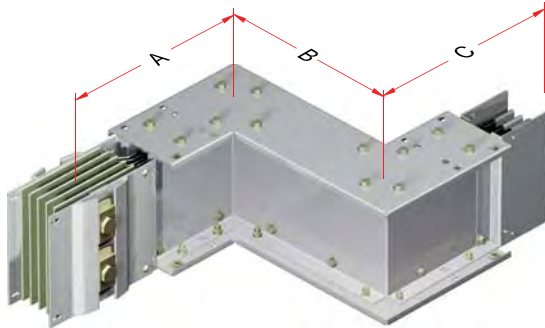


Flanged Ends

AMPERE RATING	COPPER DIMENSIONS (mm)			ALUMINIUM DIMENSIONS (mm)		
	W1	W2	FIGURE	W1	W2	FIGURE
400A	25	-	A	63	-	A
500A	30	-	A	-	-	-
630A	40	-	A	76	-	A
800A	50	-	A	100	50	B
950A	60	-	A	-	-	-
1000A	65	-	A	125	65	B
1250A	90	40	B	152	50	C
1600A	110	60	B	203	65	C
1800A	125	65	B	250	65	D
2000A	140	45	C	152	50	F
2250A	175	55	C	-	-	-
2500A	200	65	C	203	65	F
3000A	110	60	E	203	65	F
3200A	120	60	E	230	60	G
3500A	140	45	F	230	60	G
4000A	150	50	F	203	65	H
4500A	175	55	F	250	65	I
5000A	200	65	F	250	65	I
5500A	-	-	-	250	65	I
6300A	175	55	H	-	-	-

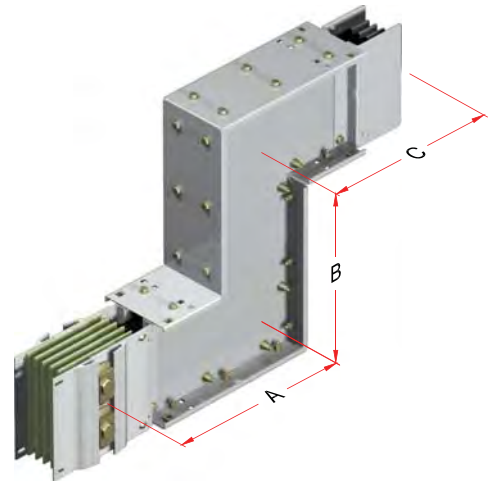
Table 4: Flanged Ends

TECHNICAL DATA FOR POWER BUSWAY ACCESSORIES



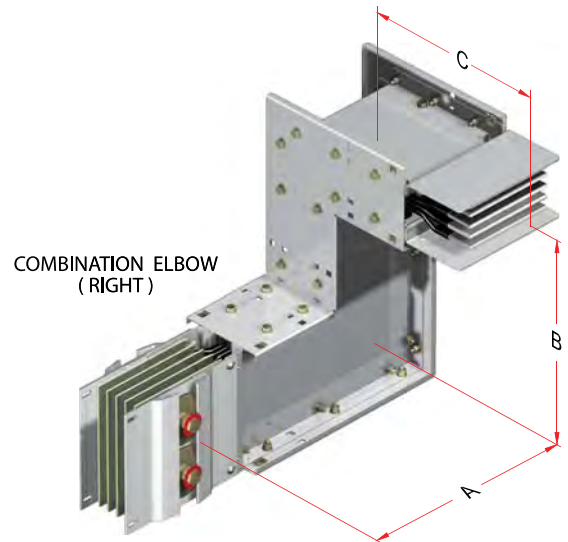
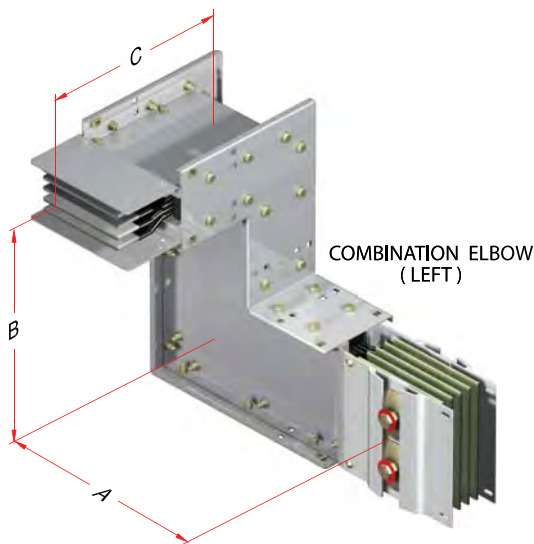
Edgewise Offsets

BUSBAR TYPE	AMPERE RATING	DIMENSIONS (mm)		
		A	B	C
COPPER	400A to 2500A	300	300	300
	3000A to 5000A	300	300	300
	6300A	300	300	300
ALUMINIUM	400A to 1800A	300	300	300
	2000A to 3500A	300	300	300
	4000A to 5500A	300	300	300



Flatwise Offsets

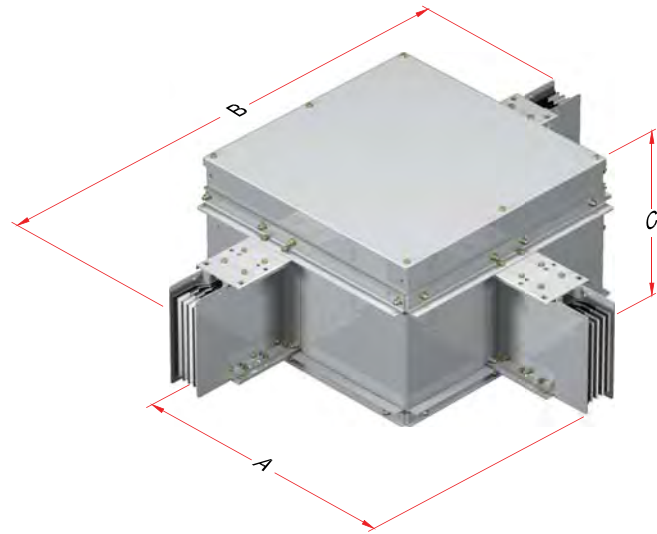
BUSBAR TYPE	AMPERE RATING	DIMENSIONS (mm)		
		A	B	C
COPPER	400A to 2500A	350	300	350
	3000A to 5000A	450	350	450
	6300A	550	450	550
ALUMINIUM	400A to 1800A	400	300	400
	2000A to 3500A	500	400	500
	4000A to 5500A	650	550	650



Combination Elbows

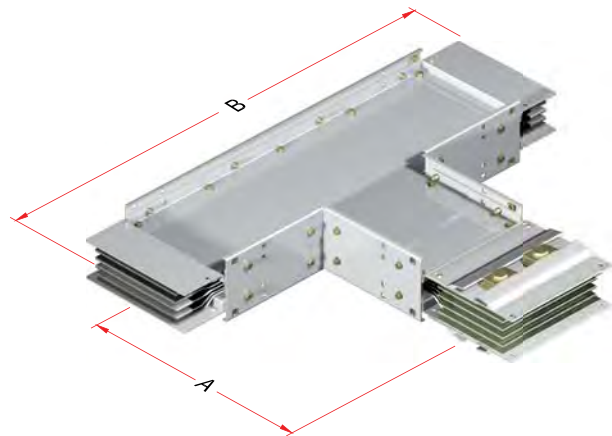
BUSBAR TYPE	AMPERE RATING	DIMENSIONS (mm)		
		A	B	C
COPPER	400A to 2500A	350	300	300
	3000A to 5000A	450	350	300
	6300A	550	450	300
ALUMINIUM	400A to 1800A	400	300	300
	2000A to 3500A	500	400	300
	4000A to 5500A	650	550	300

*All dimensions are in millimeters.



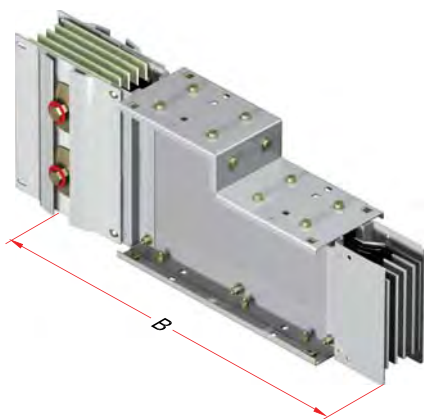
Edgewise Tees

BUSBAR TYPE	AMPERE RATING	DIMENSIONS (mm)		
		A	B	C
COPPER	400A to 2500A	500	1000	400
	3000A to 5000A	500	1000	600
	6300A	500	1000	800
ALUMINIUM	400A to 1800A	500	1000	500
	2000A to 3500A	500	1000	700
	4000A to 5500A	500	1000	1000



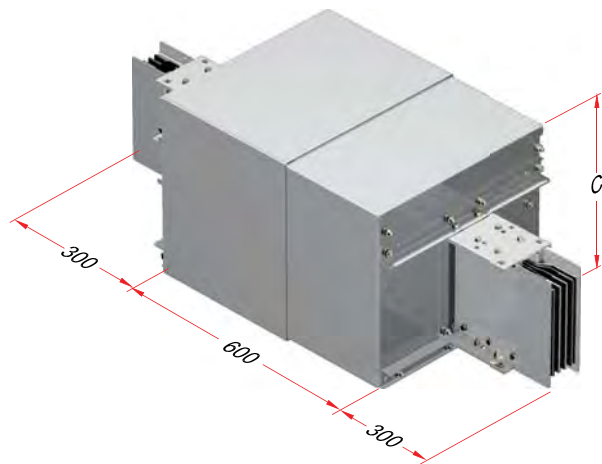
Flatwise Tees

BUSBAR TYPE	AMPERE RATING	DIMENSIONS (mm)	
		A	B
COPPER	400A to 2500A	350	700
	3000A to 5000A	450	900
	6300A	550	1100
ALUMINIUM	400A to 1800A	400	800
	2000A to 3500A	500	1000
	4000A to 5500A	650	1300



Reducer Units

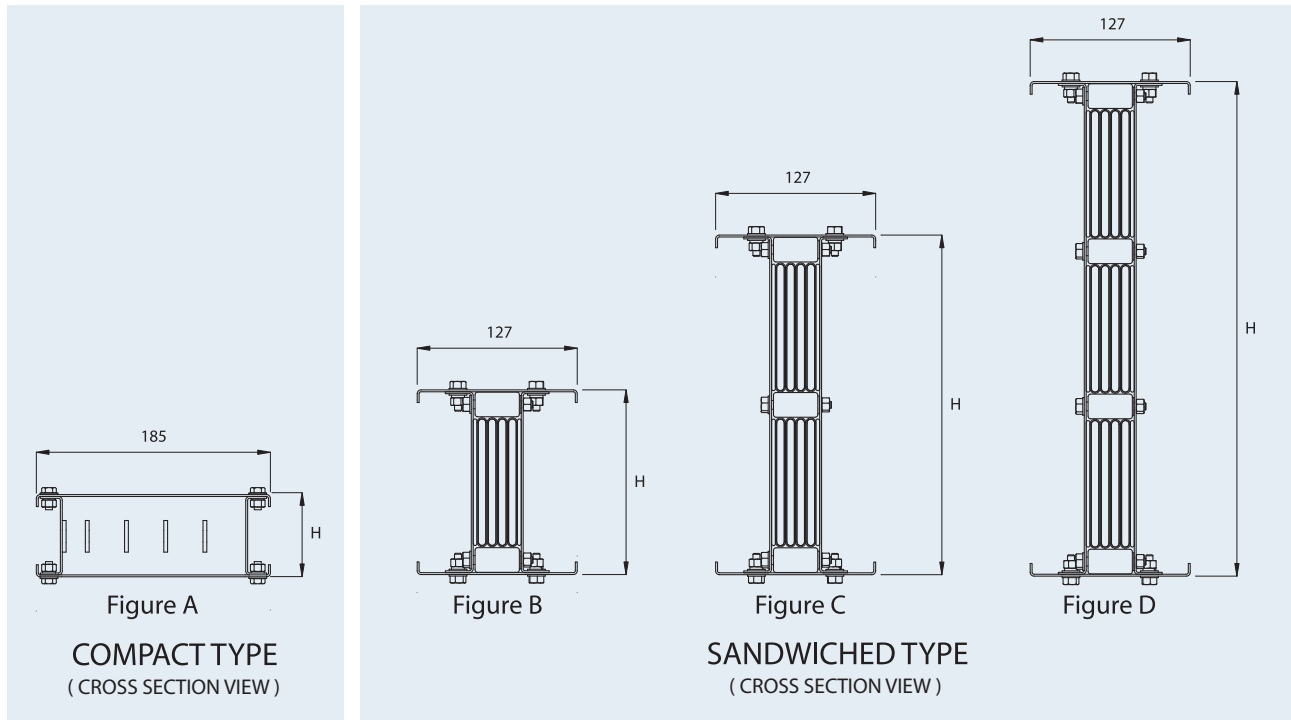
BUSBAR TYPE	AMPERE RATING	DIMENSIONS (mm)
		B
COPPER	400A to 2500A	600
	3000A to 5000A	600
	6300A	600
ALUMINIUM	400A to 1800A	600
	2000A to 3500A	600
	4000A to 5500A	600



Expansion Units

BUSBAR TYPE	AMPERE RATING	DIMENSIONS (mm)
		C
COPPER	400A to 2500A	400
	3000A to 5000A	600
	6300A	800
ALUMINIUM	400A to 1800A	500
	2000A to 3500A	700
	4000A to 5500A	1000

COPPER BUSBARS ~ DIMENSIONS AND WEIGHTS



DIMENSIONS AND WEIGHTS OF FEEDER AND PLUG-IN FEEDER IN METAL HOUSING

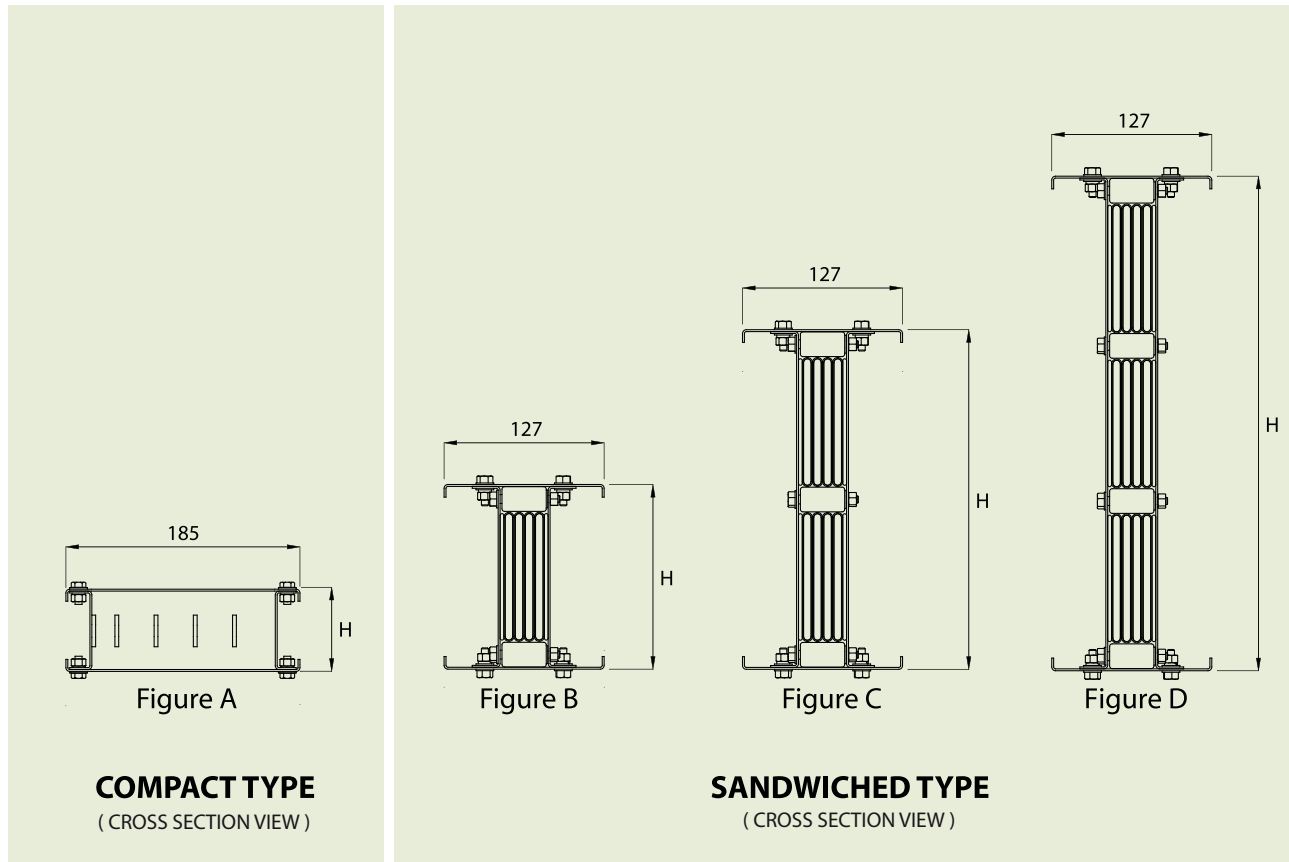
TYPE	MODEL	AMPERE RATING	COPPER BUSBAR SIZE/ PHASE	DIMENSION 'H' (mm)	APPROXIMATE WEIGHT (kg/m)					
					3W	3W + 1/2G	4W	4W + 1/2G	5W	5W + 1/2G
'FIGURE A' COMPACT TYPE	CB-100	100	3X20	60	10	11	11	11	11	12
	CB-200	200	3X25	65	11	11	11	12	12	13
	CB-300	300	6X25	65	13	13	14	15	16	16
	CB-400	400	6X25	65	13	13	14	15	16	16
	CB-500	500	6X30	70	14	15	15	16	17	18
	CB-630	630	6X40	80	16	17	18	19	20	21
	CB-800	800	6X50	90	18	19	20	22	23	24
'FIGURE B' SANDWICHED TYPE	SB-400	400	6X25	80	13	14	14	15	16	16
	SB-500	500	6X30	80	14	15	16	16	17	18
	SB-630	630	6X40	85	16	17	18	19	20	21
	SB-800	800	6X50	95	18	19	21	22	23	25
	SB-950	950	6X60	105	20	22	23	25	27	28
	SB-1000	1000	6X65	110	21	23	25	26	28	30
	SB-1250	1250	6X90	135	26	29	31	34	36	39
	SB-1600	1600	6X110	155	30	33	36	39	43	46
	SB-1800	1800	6X125	170	33	37	40	44	48	51
	SB-2000	2000	6X140	185	36	40	44	48	52	56
'FIGURE C' SANDWICHED TYPE	SB-2250	2250	6X175	220	44	48	54	58	64	68
	SB-2500	2500	6X200	245	49	54	60	66	72	77
	SB-3000	3000	2X6X110	287	56	59	69	72	82	85
	SB-3200	3200	2X6X120	307	60	63	74	78	89	92
	SB-3500	3500	2X6X140	347	69	73	85	89	102	106
	SB-4000	4000	2X6X150	367	73	77	91	95	109	113
'FIGURE D' SANDWICHED TYPE	SB-4500	4500	2X6X175	417	84	89	105	110	126	131
	SB-5000	5000	2X6X200	467	94	100	118	124	142	148
'FIGURE D' SANDWICHED TYPE	SB-6300	6300	3X6X175	614	129	134	162	167	195	200

COPPER BUSBARS ~ IMPEDANCES AND VOLTAGE DROPS

FREQUENCY 50HZ											
COPPER CONDUCTOR											
AMPERE RATING (AMP)	No. of BARS	BUSBAR SIZE (mm)	IMPEDANCE AT 95°C (micro-Ohm/m)			LINE TO LINE VOLTAGE DROP IN MILLI-VOLT PER METER AT RATED CURRENT AND VARIOUS POWER FACTORS					
			R	X	Z	1.0	0.9	0.8	0.7	0.6	0.5
100	1	3 X 20	368.37	132.11	391.34	63.80	67.40	64.77	61.00	56.59	51.72
200	1	3 X 25	294.70	120.70	318.46	102.09	110.10	106.76	101.32	94.70	87.25
300	1	6 X 25	147.35	114.41	186.55	76.56	94.82	96.92	96.05	93.50	89.77
400	1	6 X 25	147.35	43.49	153.63	102.09	105.01	99.75	92.98	85.35	77.14
500	1	6 X 30	122.79	38.65	128.73	106.34	110.30	105.16	98.34	90.58	82.16
630	1	6 X 40	92.09	31.66	97.38	100.49	105.50	101.12	95.01	87.93	80.16
800	1	6 X 50	73.67	26.83	78.41	102.09	108.08	103.97	98.01	90.99	83.24
950	1	6 X 60	61.39	23.29	65.66	101.02	107.63	103.81	98.09	91.28	83.70
1000	1	6 X 65	56.67	21.86	60.74	98.16	104.84	101.24	95.75	89.18	81.86
1250	1	6 X 90	40.93	16.72	44.21	88.62	95.53	92.61	87.88	82.13	75.66
1600	1	6 X 110	33.49	14.08	36.33	92.80	100.54	97.66	92.83	86.90	80.20
1800	1	6 X 125	29.47	12.59	32.05	91.88	99.80	97.06	92.36	86.54	79.94
2000	1	6 X 140	26.31	11.39	28.67	91.15	99.23	96.60	91.99	86.26	79.75
2250	1	6 X 175	21.05	9.32	23.02	82.03	89.66	87.41	83.35	78.27	72.46
2500	1	6 X 200	18.42	8.24	20.18	79.75	87.34	85.22	81.32	76.41	70.80
3000	2	2 X 6 X 110	16.74	7.04	18.16	87.00	94.25	91.56	87.03	81.47	75.19
3200	2	2 X 6 X 120	15.35	6.53	16.68	85.07	92.33	89.76	85.39	79.98	73.87
3500	2	2 X 6 X 140	13.16	5.70	14.34	79.75	86.83	84.52	80.49	75.48	69.78
4000	2	2 X 6 X 150	12.28	5.36	13.40	85.07	92.74	90.32	86.05	80.73	74.67
4500	2	2 X 6 X 175	10.52	4.66	11.51	82.03	89.66	87.41	83.35	78.27	72.46
5000	2	2 X 6 X 200	9.21	4.12	10.09	79.75	87.34	85.22	81.32	76.41	70.80
6300	3	3 X 6 X 175	7.02	3.11	7.67	76.56	83.68	81.59	77.80	73.05	67.63

FREQUENCY 60HZ											
COPPER CONDUCTOR											
AMPERE RATING (AMP)	No. of BARS	BUSBAR SIZE (mm)	IMPEDANCE AT 95°C (micro-Ohm/m)			LINE TO LINE VOLTAGE DROP IN MILLI-VOLT PER METER AT RATED CURRENT AND VARIOUS POWER FACTORS					
			R	X	Z	1.0	0.9	0.8	0.7	0.6	0.5
100	1	3 X 20	368.37	158.53	401.03	63.80	69.39	67.52	64.27	60.25	55.68
200	1	3 X 25	294.70	144.84	328.37	102.09	113.75	111.77	107.29	101.39	94.50
300	1	6 X 25	147.35	137.29	201.40	76.56	100.00	104.06	104.54	103.01	100.06
400	1	6 X 25	147.35	52.19	156.32	102.09	107.64	103.36	97.28	90.18	82.35
500	1	6 X 30	122.79	46.38	131.26	106.34	113.21	109.17	103.12	95.94	87.96
630	1	6 X 40	92.09	37.99	99.62	100.49	108.51	105.26	99.94	93.45	86.14
800	1	6 X 50	73.67	32.19	80.40	102.09	111.32	108.43	103.32	96.94	89.68
950	1	6 X 60	61.39	27.95	67.46	101.02	110.97	108.41	103.56	97.41	90.34
1000	1	6 X 65	56.67	26.23	62.45	98.16	108.14	105.78	101.15	95.24	88.42
1250	1	6 X 90	40.93	20.06	45.58	88.62	98.69	96.96	93.05	87.92	81.93
1600	1	6 X 110	33.49	16.90	37.51	92.80	103.94	102.34	98.41	93.15	86.96
1800	1	6 X 125	29.47	15.11	33.12	91.88	103.23	101.77	97.96	92.82	86.75
2000	1	6 X 140	26.31	13.67	29.65	91.15	102.68	101.33	97.62	92.57	86.59
2250	1	6 X 175	21.05	11.18	23.83	82.03	92.82	91.77	88.54	84.08	78.75
2500	1	6 X 200	18.42	9.89	20.91	79.75	90.45	89.51	86.42	82.13	76.98
3000	2	2 X 6 X 110	16.74	8.45	18.76	87.00	97.44	95.95	92.26	87.33	81.52
3200	2	2 X 6 X 120	15.35	7.83	17.23	85.07	95.49	94.10	90.55	85.77	80.13
3500	2	2 X 6 X 140	13.16	6.84	14.83	79.75	89.84	88.67	85.42	81.00	75.76
4000	2	2 X 6 X 150	12.28	6.43	13.86	85.07	95.97	94.77	91.35	86.66	81.09
4500	2	2 X 6 X 175	10.52	5.59	11.92	82.03	92.82	91.77	88.54	84.08	78.75
5000	2	2 X 6 X 200	9.21	4.95	10.45	79.75	90.45	89.51	86.42	82.13	76.98
6300	3	3 X 6 X 175	7.02	3.73	7.94	76.56	86.63	85.65	82.64	78.47	73.50

ALUMINIUM BUSBARS ~ DIMENSIONS AND WEIGHTS



DIMENSIONS AND WEIGHTS OF FEEDER AND PLUG-IN FEEDER IN METAL HOUSING

TYPE	MODEL	AMPERE RATING	ALUMINIUM BUSBAR SIZE/ PHASE	DIMENSION 'H' (mm)	APPROXIMATE WEIGHT (kg/m)					
					3W	3W + 1/2G	4W	4W + 1/2G	5W	5W + 1/2G
'FIGURE A' COMPACT TYPE	CB-200-GA	200	6X31	71	10	11	11	11	11	12
	CB-400-GA	400	6X63	103	13	13	14	14	15	16
	CB-630-GA	630	6X76	116	14	15	15	16	17	17
'FIGURE B' SANDWICHED TYPE	SB-400-GA	400	6X63	108	13	14	14	15	15	16
	SB-630-GA	630	6X76	121	14	15	16	16	17	18
	SB-800-GA	800	6X100	145	17	17	18	19	20	21
	SB-1000-GA	1000	6X125	170	19	20	21	22	23	24
	SB-1250-GA	1250	6X152	197	21	23	24	25	27	28
	SB-1600-GA	1600	6X203	248	26	28	30	31	33	35
'FIGURE C' SANDWICHED TYPE	SB-1800-GA	1800	6X250	295	30	32	35	37	40	42
	SB-2000-GA	2000	2X6X152	371	38	40	45	46	51	53
	SB-2500-GA	2500	2X6X203	473	49	50	57	59	66	68
	SB-3000-GA	3000	2X6X203	473	49	50	57	59	66	68
	SB-3200-GA	3200	2X6X230	527	54	56	64	66	74	76
'FIGURE D' SANDWICHED TYPE	SB-3500-GA	3500	2X6X230	527	54	56	64	66	74	76
	SB-4000-GA	4000	3X6X203	698	78	79	92	94	107	109
	SB-4500-GA	4500	3X6X250	839	93	95	111	114	129	132
	SB-5000-GA	5000	3X6X250	839	93	95	111	114	129	132
	SB-5500-GA	5500	3X6X250	839	93	95	111	114	129	132

ALUMINIUM BUSBARS ~ IMPEDANCES AND VOLTAGE DROPS

FREQUENCY 50HZ			ALUMINIUM CONDUCTOR								
AMPERE RATING (AMP)	No. of BARS	BUSBAR SIZE (mm)	IMPEDANCE AT 95°C (micro-Ohm/m)			LINE TO LINE VOLTAGE DROP IN MILLI-VOLT PER METER AT RATED CURRENT AND VARIOUS POWER FACTORS					
			R	X	Z	1.0	0.9	0.8	0.7	0.6	0.5
200	1	6 X 31	195.27	104.53	221.49	67.64	76.66	75.84	73.21	69.55	65.18
400	1	6 X 63	96.09	22.41	98.67	66.57	66.68	62.57	57.69	52.36	46.73
630	1	6 X 76	79.65	19.25	81.94	86.91	87.38	82.14	75.84	68.95	61.65
800	1	6 X 100	60.53	15.29	62.44	83.88	84.73	79.81	73.84	67.27	60.28
1000	1	6 X 125	48.43	12.59	50.04	83.88	85.00	80.19	74.29	67.78	60.83
1250	1	6 X 152	39.83	10.58	41.21	86.22	87.59	82.73	76.72	70.07	62.96
1600	1	6 X 203	29.82	8.13	30.91	82.64	84.20	79.63	73.94	67.61	60.84
1800	1	6 X 250	24.21	6.70	25.12	75.49	77.05	72.93	67.76	62.01	55.84
2000	2	2 X 6 X 152	19.91	5.29	20.60	68.98	70.07	66.18	61.38	56.05	50.37
2500	2	2 X 6 X 203	14.91	4.07	15.45	64.56	65.78	62.21	57.77	52.82	47.53
3000	2	2 X 6 X 203	14.91	4.07	15.45	77.48	78.94	74.66	69.32	63.39	57.04
3200	2	2 X 6 X 230	13.16	3.62	13.65	72.94	74.39	70.40	65.39	59.82	53.85
3500	2	2 X 6 X 230	13.16	3.62	13.65	79.78	81.37	76.99	71.52	65.43	58.90
4000	3	3 X 6 X 203	9.94	2.71	10.30	68.87	70.17	66.36	61.62	56.35	50.70
4500	3	3 X 6 X 250	8.07	2.23	8.37	62.91	64.21	60.77	56.47	51.67	46.53
5000	3	3 X 6 X 250	8.07	2.23	8.37	69.90	71.34	67.53	62.74	57.41	51.70
5500	3	3 X 6 X 250	8.07	2.23	8.37	76.89	78.48	74.28	69.02	63.16	56.87

FREQUENCY 60HZ			ALUMINIUM CONDUCTOR								
AMPERE RATING (AMP)	No. of BARS	BUSBAR SIZE (mm)	IMPEDANCE AT 95°C (micro-Ohm/m)			LINE TO LINE VOLTAGE DROP IN MILLI-VOLT PER METER AT RATED CURRENT AND VARIOUS POWER FACTORS					
			R	X	Z	1.0	0.9	0.8	0.7	0.6	0.5
200	1	6 X 31	195.27	125.43	232.09	67.64	79.82	80.19	78.38	75.35	71.45
400	1	6 X 63	96.09	26.89	99.78	66.57	68.03	64.44	59.90	54.85	49.42
630	1	6 X 76	79.65	23.10	82.93	86.91	89.21	84.66	78.84	72.31	65.29
800	1	6 X 100	60.53	18.35	63.25	83.88	86.57	82.36	76.87	70.66	63.95
1000	1	6 X 125	48.43	15.11	50.73	83.88	86.90	82.81	77.41	71.27	64.61
1250	1	6 X 152	39.83	12.70	41.80	86.22	89.59	85.48	80.00	73.73	66.93
1600	1	6 X 203	29.82	9.76	31.38	82.64	86.16	82.34	77.16	71.22	64.74
1800	1	6 X 250	24.21	8.04	25.51	75.49	78.87	75.43	70.75	65.35	59.46
2000	2	2 X 6 X 152	19.91	6.35	20.90	68.98	71.67	68.38	64.00	58.99	53.54
2500	2	2 X 6 X 203	14.91	4.88	15.69	64.56	67.32	64.33	60.28	55.64	50.58
3000	2	2 X 6 X 203	14.91	4.88	15.69	77.48	80.78	77.19	72.34	66.77	60.70
3200	2	2 X 6 X 230	13.16	4.35	13.86	72.94	76.14	72.80	68.26	63.03	57.33
3500	2	2 X 6 X 230	13.16	4.35	13.86	79.78	83.28	79.63	74.66	68.94	62.71
4000	3	3 X 6 X 203	9.94	3.25	10.46	68.87	71.80	68.62	64.30	59.35	53.95
4500	3	3 X 6 X 250	8.07	2.68	8.50	62.91	65.72	62.86	58.96	54.46	49.55
5000	3	3 X 6 X 250	8.07	2.68	8.50	69.90	73.03	69.85	65.51	60.51	55.05
5500	3	3 X 6 X 250	8.07	2.68	8.50	76.89	80.33	76.83	72.06	66.56	60.56

Notes:

- The values computed above are based on ambient temperature of 40°C and max temperature of 95°C.
- The line-to-line voltage drop of the busbar trunking system can be calculated using the formula:

$$\Delta V = k \times \sqrt{3} \times (R_0 \cos \phi + X_0 \sin \phi) \times I_0 \quad (\text{V/m})$$

where I_0 = rated current, $\cos \phi$ = load power factor, $\sin \phi = \sqrt{1 - \cos^2 \phi}$, k = load distribution factor, ($k = 1$ for concentrated load, $k = 0.5$ for distributed load)

- The AC resistance, R at load current I can be calculated using the formula:

$$R = R_0 \times \frac{1 + \alpha (55 \times (I/I_0)^2 + 20)}{1 + 75\alpha} \quad (\Omega/m)$$

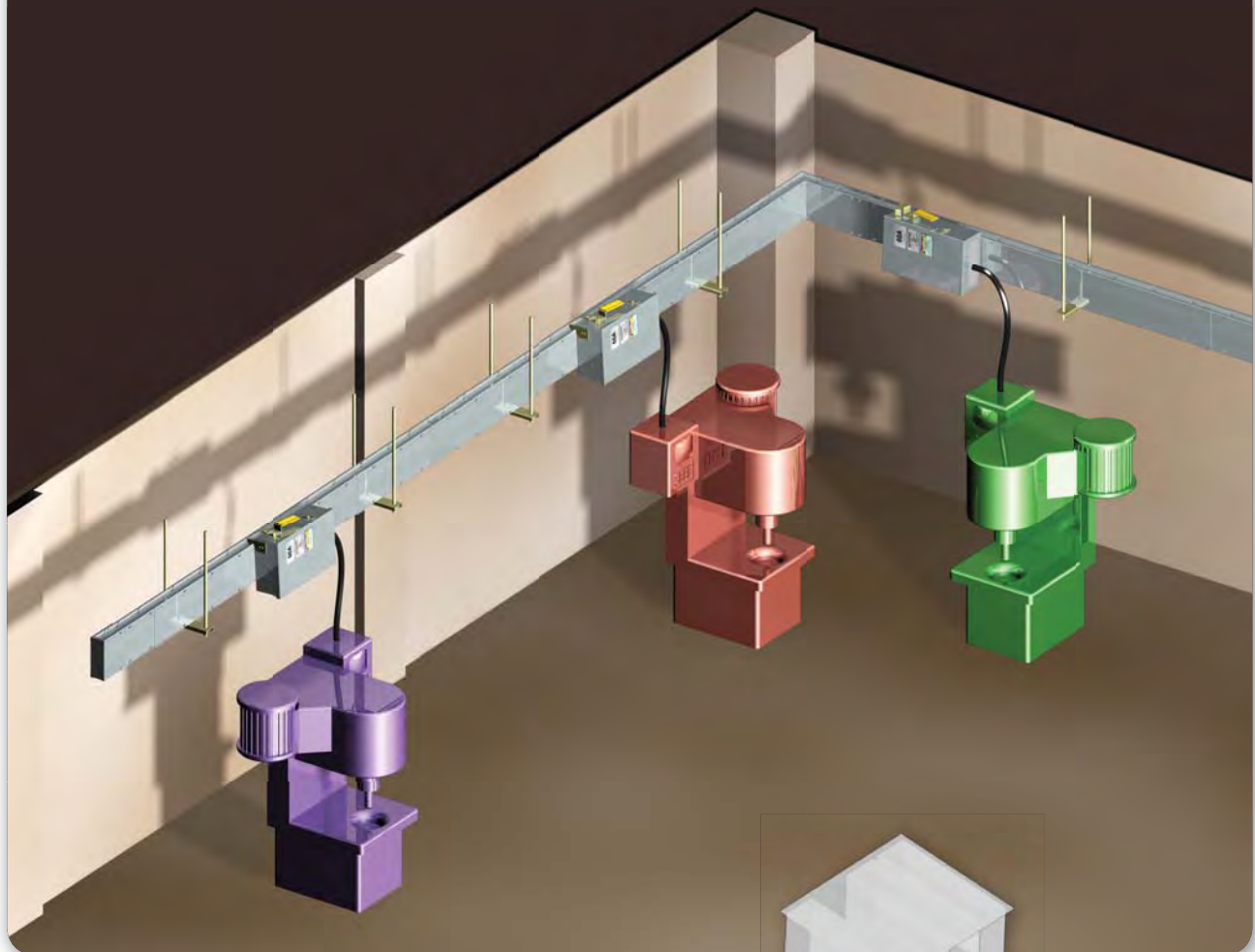
where R_0 = AC resistance at I_0 , α = temperature co-efficient of conductor at 20°C (Copper ~ 3.94×10^{-3} , Aluminium ~ 4.00×10^{-3})

- To determine line-to-neutral voltage drop, multiply line-to-line voltage drop by **0.577**.

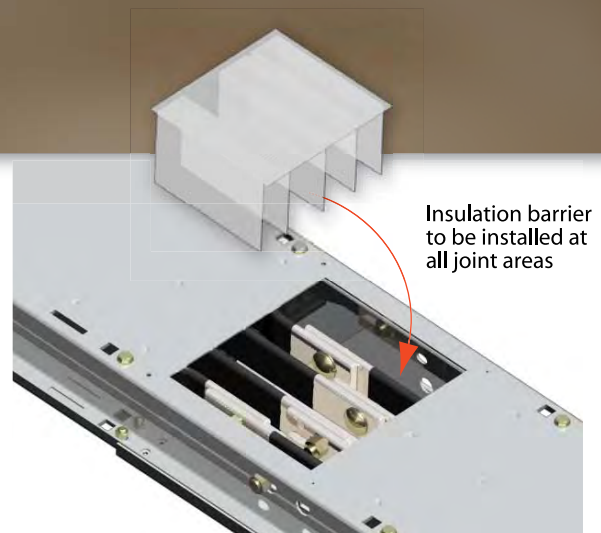
100A - 800A COMPACT BUSWAY

DAVIS Compact Busway System is a low ampere air insulated busway designed to distribute electrical energy economically between 100A to 800A. This is a very economical busway designed for efficient energy distribution in a wide area especially in textile mills and small and medium industries or assembly lines where production machines and equipment are needed to be constantly relocated to improve production workflow and productivity.

The compact busway system allows easy repositioning of machines to improve workflow and hence productivity

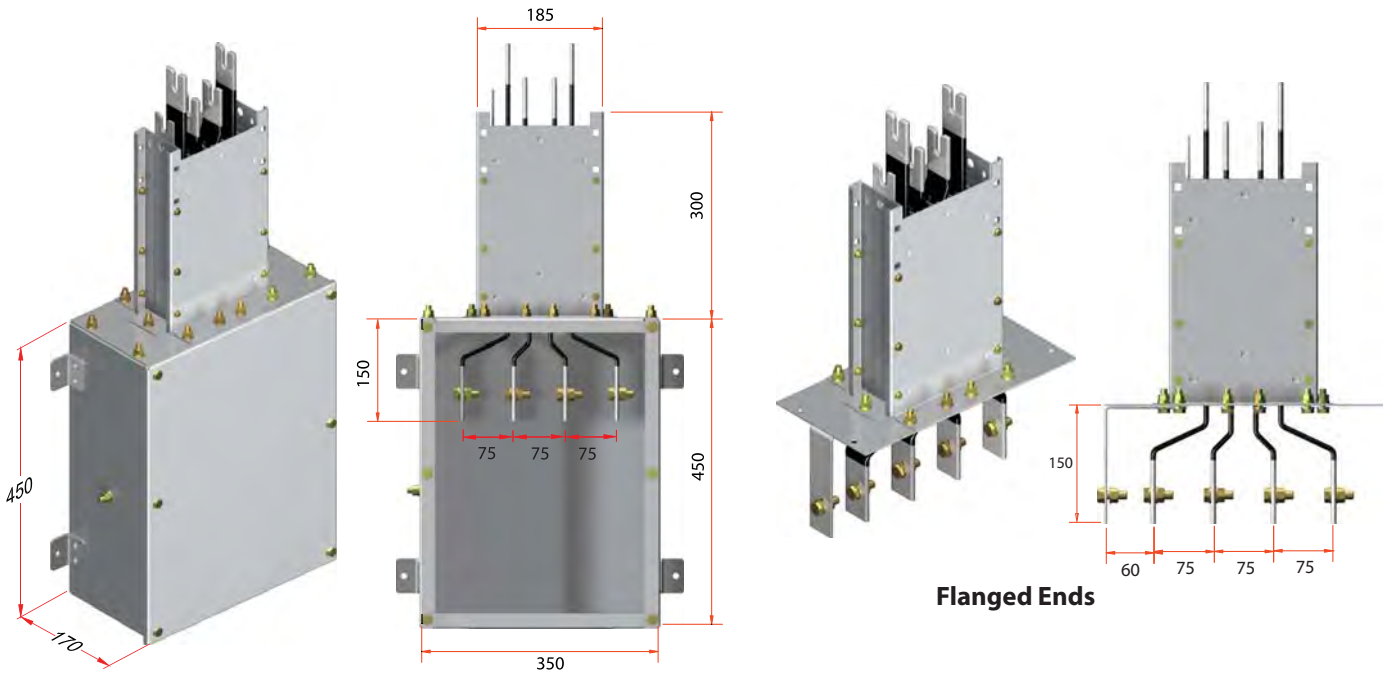
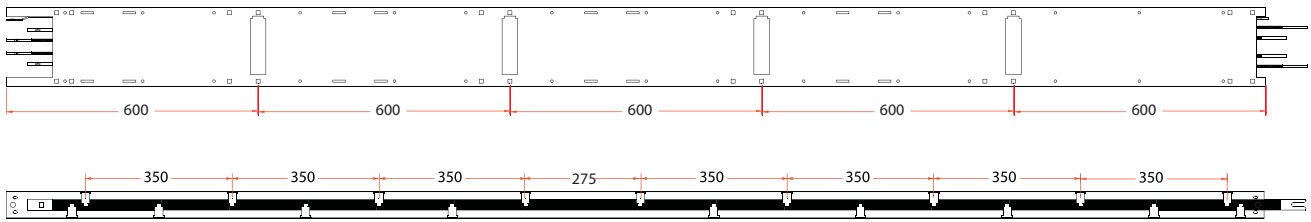


JOINT DETAILS



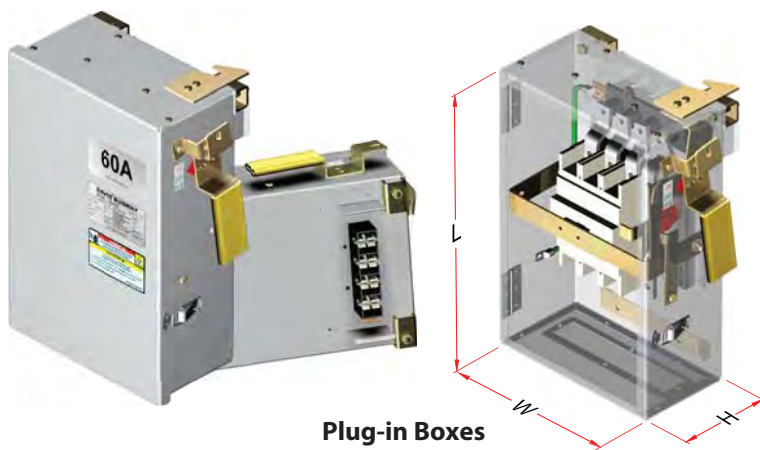
TECHNICAL SPECIFICATIONS FOR AIR INSULATED WITH EPOXY COMPACT BUSWAY

PLUG-IN FEEDER 3.0m

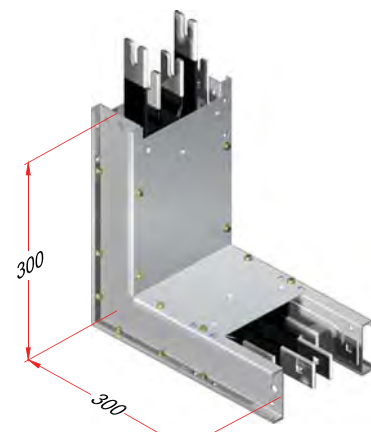


End Feed Cable Boxes

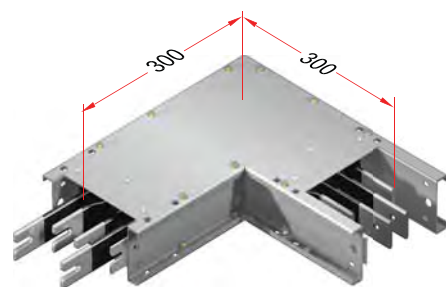
Flanged Ends



Plug-in Boxes



Flatwise Elbow



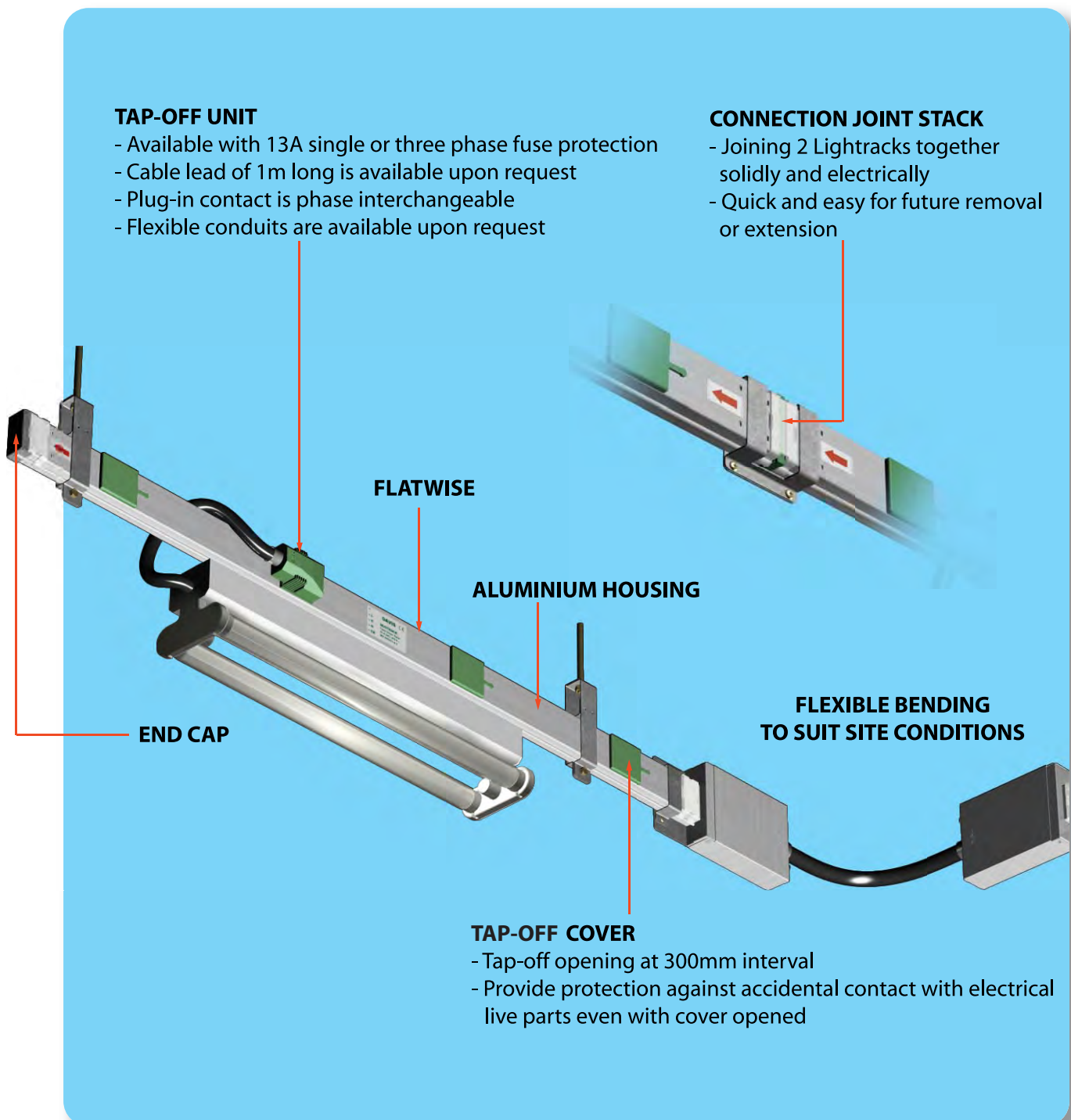
Edgewise Elbow

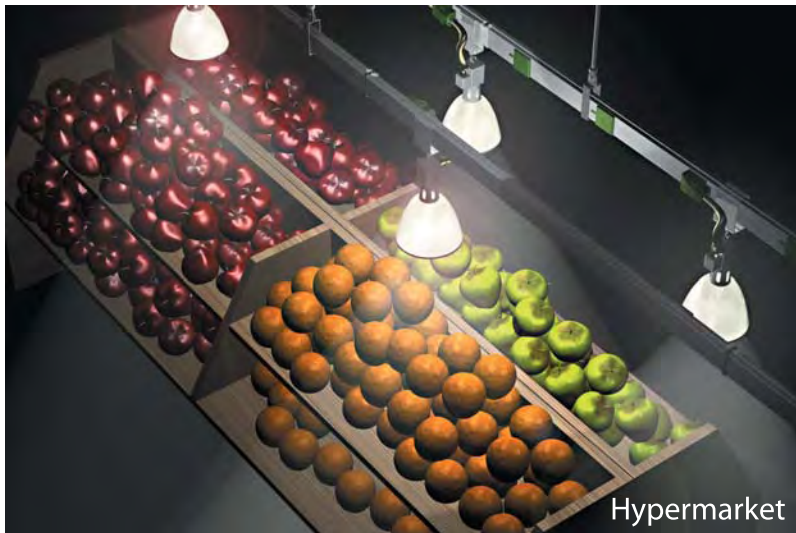
AMPERE RATING	DIMENSIONS (mm)		
	L	W	H
15A to 100A	400	260	140
125A to 200A	400	260	140
225A to 250A	400	260	140
300A to 400A	500	310	210

Table 5: Plug-in Boxes

40A - 63A LIGHTRACK BUSWAY

DAVIS Lightrack Busway System is designed for special applications where electrical energy can be shared efficiently and with flexibility for lighting fixtures especially in hypermarkets, shopping malls, greenhouses, exhibition halls, display areas, theatres, workshops or any other facilities that may require such features. In places where flexibility is greatly needed, DAVIS Lightrack busway is ideal to meet such continuous lighting load changes.





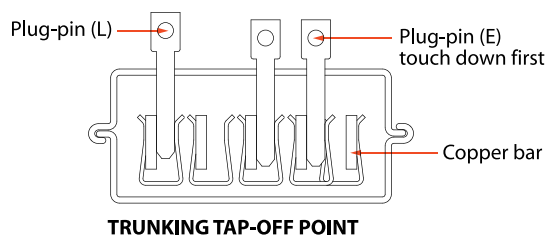
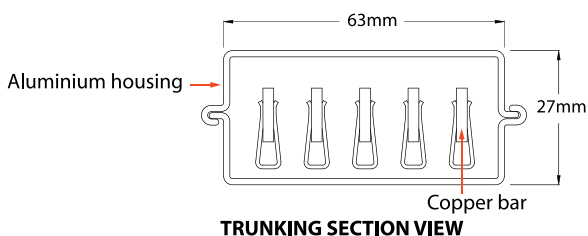
Ceiling Mounted

Hypermarket

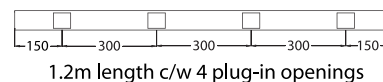
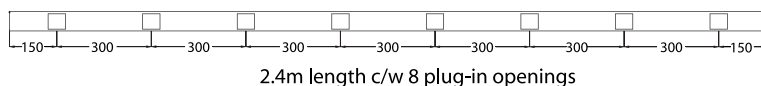
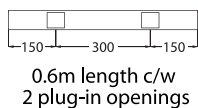


Wall Mounted

Conference hall



- Small size (27 X 63mm), light weight, quick and easy to install.
- Enclosure is manufactured from rigid extruded aluminium with aesthetic features.
- protection against electric shock.



40A - 63A Lightrack Busway

Track Length	No. of Tap-offs	3 bars-240V 1 CIRCUIT (Grey)	4 bars-240V 2 CIRCUITS (Green)	5 bars-240V 3 CIRCUITS (Black)
0.6m	2	SFLT-3-63-0.6	SFLT-4-63-0.6	SFLT-5-63-0.6
1.2m	4	SFLT-3-63-1.2	SFLT-4-63-1.2	SFLT-5-63-1.2
2.4m	8	SFLT-3-63-2.4	SFLT-4-63-2.4	SFLT-5-63-2.4

*The interconnector is included in each length of trunking unit

*The connection between two lengths of Lightracks can be assembled without using tools

40A, 63A & 80A 3-PHASE 50Hz POWERTRACK BUSWAY

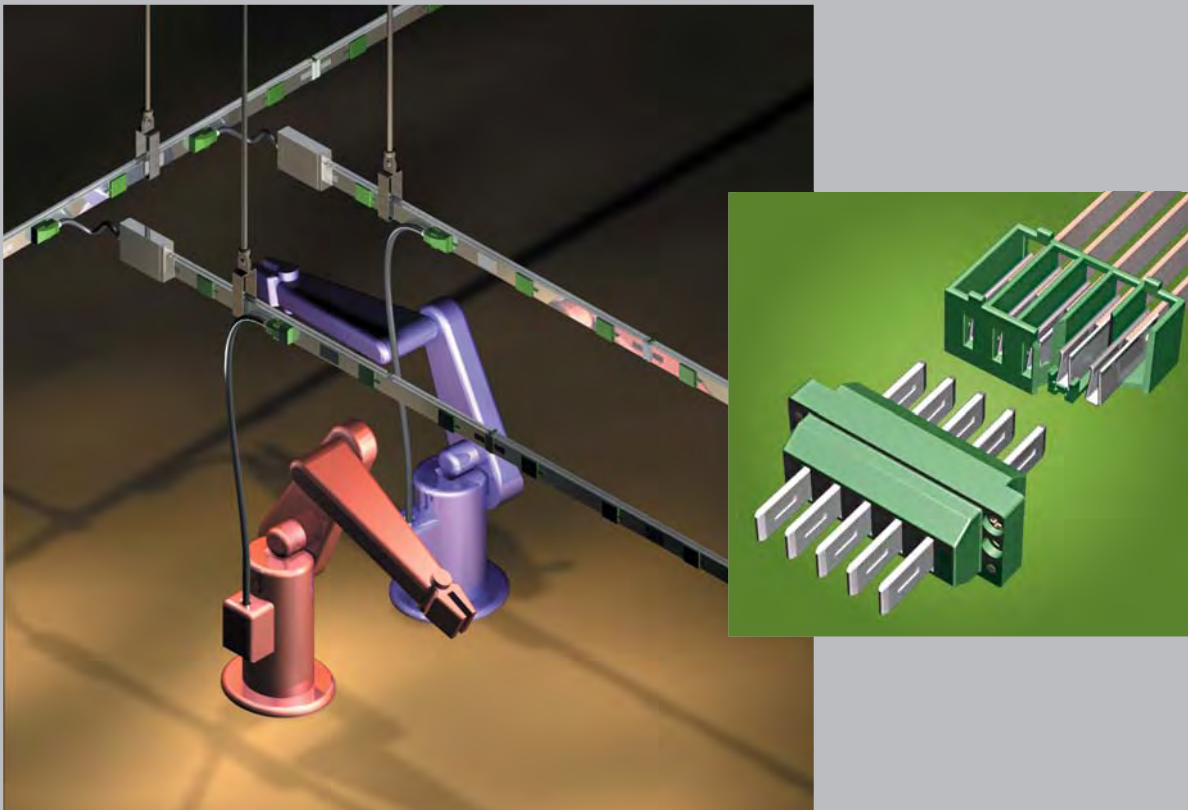
DAVIS also manufactures low ampere 40A, 63A & 80A Powertracks specially designed for small and medium industries including workshops where energy requirements are low but require a lot of flexibilities as quick changes in production workflows often necessitate relocation of machinery, equipment or exhibition items.

DAVIS Powertrack Busway is suitable for:

- Small and medium industrial premises
- Business centres
- Exhibition centres
- Workshops
- Display areas
- Theatres

Joint Connector

The joint connector allows for easy push-fit connection of Powertracks without the need for special tools during installation



Powertrack Busway is ideal for Flexible Manufacturing System (FMS) environments

POWERTRACK BUSWAY

Davis Powertrack Busway is designed to comply with IEC 60439-2:2000.

CURRENT RATING

40Amp, 240/415V, 50 Hz three-phase

63Amp, 240/415V, 50 Hz three-phase

80Amp, 240/415V, 50 Hz three-phase

SHORT CIRCUIT RATING

The short circuit protection is provided by fuselinks Fuse BS 88, 100 Amp Fuse or 100 Amp MCCB.

Prospective current	16 kA
Mechanical withstand	10 kA peak
Thermal withstand	1200 A 0.4 seconds

EARTH FAULT LOOP IMPEDANCE

The IEE wiring regulations require that the total earth loop impedance of any circuit must be low enough to ensure that the protective device will operate within the time specified. The earth fault loop impedance for Davis Powertrack Busway System is as follow:-

Phase Busbar	1.20 mΩ/m
Earth Busbar & Housing	0.70 mΩ/m
Interconnector	0.20 mΩ
Cable Feed Unit 32A Tap-Off (4mm ² x 3m)	0.30 mΩ
Line & Earth	30.0 mΩ

DEGREE OF PROTECTION

Powertrack	IP 4x
Tap-Off Unit	IP 4x
Cable Feed Unit	IP 4x

VOLTAGE DROP

Busbar (line & neutral)	2.1 mV/A/m
Interconnector	0.2 mV/A
Cable Feed Unit 32A Tap-Off (4mm ² x 3m),	0.3 mV/A
Line & Earth	11.0 mV/A/m

EARTH BONDING

The earth conductor is connected directly to the Powertrack extrusion at both ends of the earth bar.

CONSTRUCTION SPECIFICATIONS

Powertrack Casing	Extruded Aluminium
Fixing Bracket	Galvanised Steel
Cable Feed Unit	Galvanised Steel
Busbar	99.9% high conductivity Copper (2x10mm)
Insulator	Polyester & Polycarbonate
Tap-Off	Polyester/metal
Shutter	Polyacetal
Tap-Off Flexible Conduit	Galvanised conduit steel & PVC insulated

TAP-OFF UNITS

The 32A tap-off unit is normally unfused with 3 metres of 4mm² cable in galvanised flexible conduit steel with PVC insulation. 15A and 40A unfused tap-off units are also available.

40A, 63A & 80A POWERTRACK BUSWAY

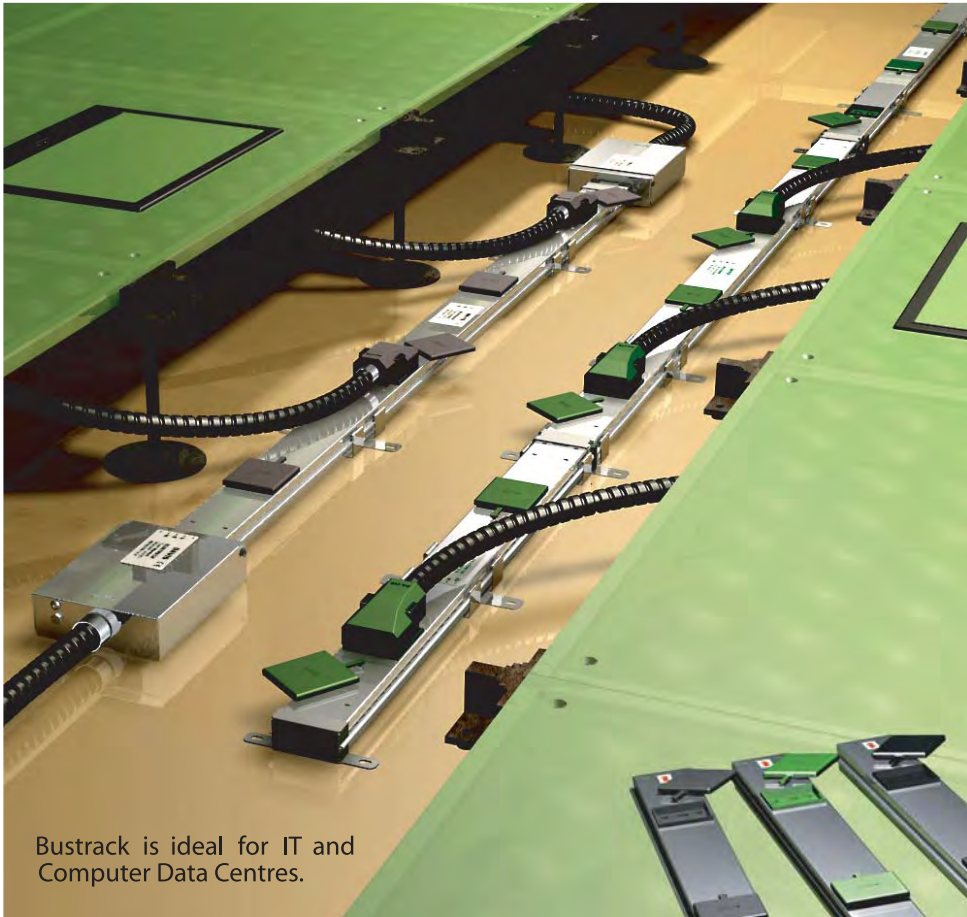
Track Length	No. of Tap-offs	3 bars-240V Single phase (Grey)	5 bars-415V Three phase (Black)
0,6m	2	SFPT-3-63-0,6	SFPT-5-63-0,6
1,2m	4	SFPT-3-63-1,2	SFPT-5-63-1,2
2,4m	8	SFPT-3-63-2,4	SFPT-5-63-2,4

*The interconnector is included in each length of trunking unit

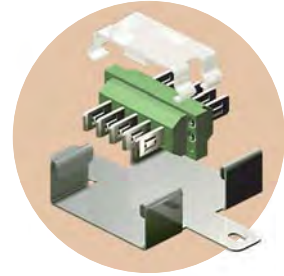
*The connection between two lengths of Powertracks can be assembled without using tools

63A BUSTRACK

DAVIS Bustrack System is designed for today's modern office environment which demands a highly reliable and flexible power distribution system to be used under a raised-floor environment. The bustrack is designed for single-phase, multi-phase or multi-circuit power distribution system and comes with a standard earth or an extra clean earth.



Bustrack is ideal for IT and Computer Data Centres.



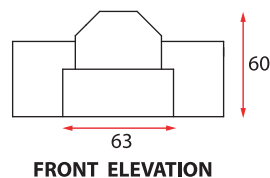
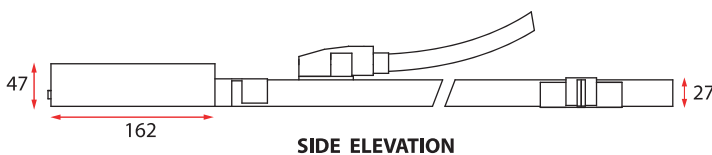
INTERCONNECTOR

The interconnector allows rapid push-fit connections of bustracks without the need for any tools. A trunking lock device provides for additional security of each connection. The fixing bracket helps to secure each interconnector unit onto the floor.

Type	Product Code
Standard Earth	SFBT-3-63-IC
Clean Earth	SFBT-5-63-IC
3-phase	SFBT-5-63-IC

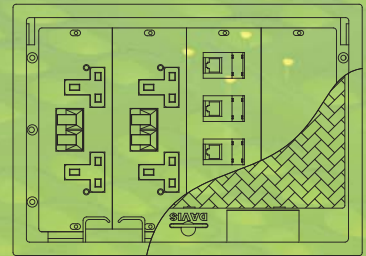
DAVIS BUSTRACK is rated at 63A single-phase or three-phase with standard tap-offs at intervals of 300mm pitch. The bustrack sockets are fully shuttered and each come with a dust proof cover and a positive locking device to ensure that the plug is in full electrical contact when pushed in.

Track Length	No. of Tap-offs	3 bars-240V Standard Earth (Grey)	4 bars-240V Clean Earth (Green)	5 bars-415V 3-phase (Black)
0.6m	2	SFBT-3-63-0.6	SFBT-4-63-0.6	SFBT-5-63-0.6
1.2m	4	SFBT-3-63-1.2	SFBT-4-63-1.2	SFBT-5-63-1.2
2.4m	8	SFBT-3-63-2.4	SFBT-4-63-2.4	SFBT-5-63-2.4

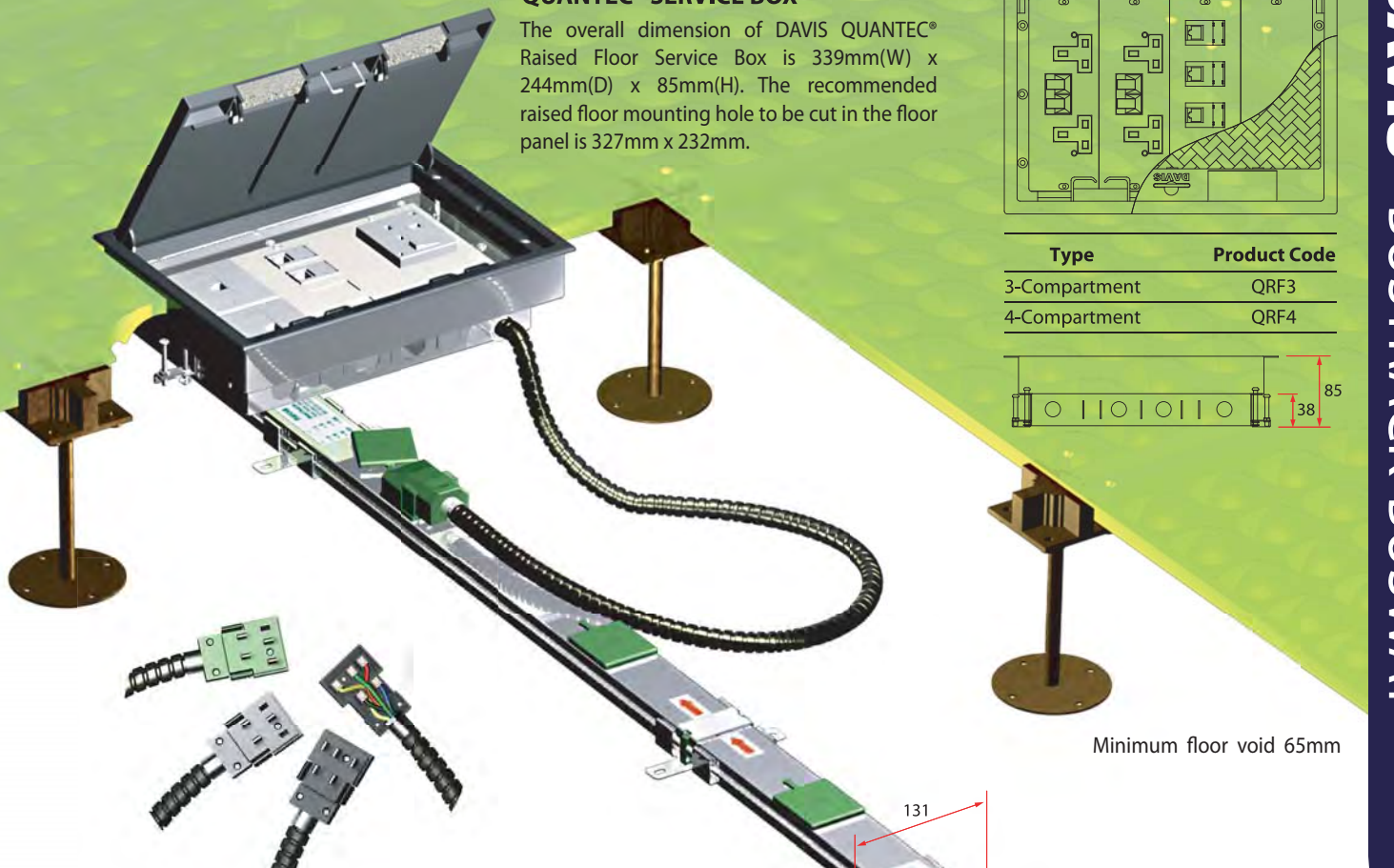


QUANTEC® SERVICE BOX

The overall dimension of DAVIS QUANTEC® Raised Floor Service Box is 339mm(W) x 244mm(D) x 85mm(H). The recommended raised floor mounting hole to be cut in the floor panel is 327mm x 232mm.



Type	Product Code
3-Compartment	QRF3
4-Compartment	QRF4



Minimum floor void 65mm

TAP-OFF UNIT

The tap-off unit comprises a 32A unfused tap-off plug fitted with a 3m length 4mm² PVC cable enclosed in a 16mm flexible conduit. Colour coded plugs and sockets are used to differentiate between standard earth system (Grey), clean earth system (Green) and normal 3-phase system (Black).

Conduit Length	3 pins - 240V Standard Earth (Grey)	4 pins - 240V Clean Earth (Green)	5 pins - 415V 3 Phase (Black)
3m	SFBT-3-63-TO	SFBT-4-63-TO	SFBT-5-63-TO



FIXING BRACKET

The fixing bracket is used to hold the bustrack onto the floor slab which can be raised off the slab to clear any obstruction from other cables or services when needed.

Track Length	No. of Pcs Req.	Product Code
0.6m	1	SFBT-FB
1.2m	1	SFBT-FB
2.4m	3	SFBT-FB



CABLE FEED UNIT

A flexible oversized cable feed unit is designed to ease the termination of cables feeding the bustrack system. Each unit comes with a trunking lock device for additional security.

Type	Product Code
Standard Earth	SFBT-3-63-FU
Clean Earth	SFBT-4-63-FU
3-phase	SFBT-5-63-FU



CORNER UNIT

A corner unit comes with two numbers of cable feed unit. It may be used for bends or as a flyover over an obstacle.

Type	Product Code
Standard Earth	SFBT-3-63-CU
Clean Earth	SFBT-4-63-CU
3-phase	SFBT-5-63-CU



TRUNKING END CAP

The trunking end cap completes the bustrack run without any cable termination.

Type	Product Code
Standard Earth	SFBT-TC
Clean Earth	SFBT-TC
3-phase	SFBT-TC

*All dimensions are in millimeters