

# DAVIS<sup>®</sup>

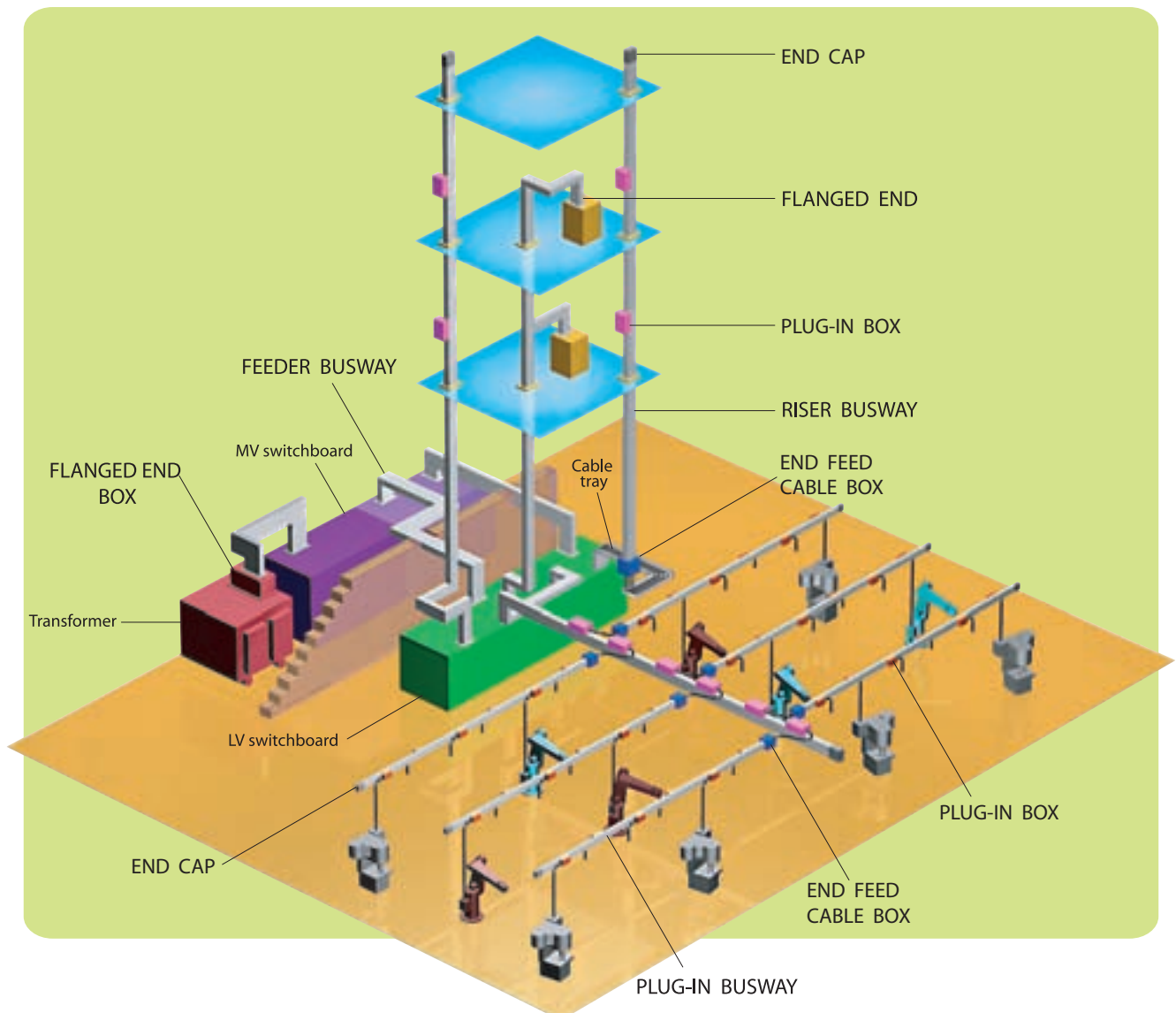
## POWER BUSWAY SYSTEM

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**



**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:

<b>IEC 60439-1:2004</b>	Low Voltage Switchgear and Controlgear Assemblies
<b>IEC 60439-2:2000</b>	Specific requirements for busway
<b>IEC 60947-2:2003</b>	Circuit Breakers
<b>IEC 60331 &amp; BS 6387</b>	Resistance to Fire
<b>IEC 60529:2001</b>	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:

	<b>Composition</b>	<b>Conductivity</b>
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**

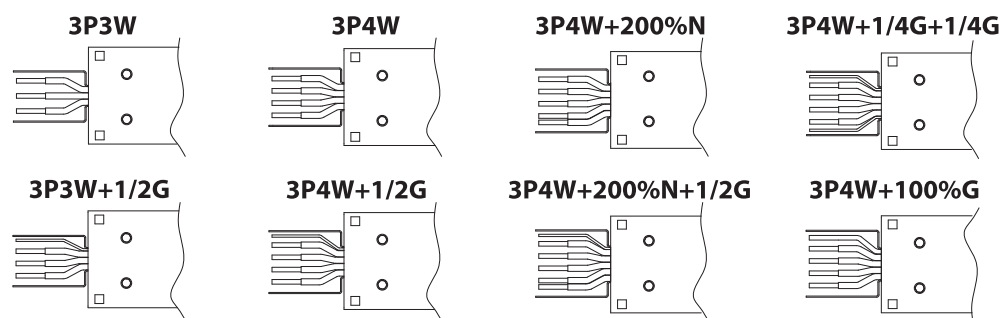
**INGRESS OF PROTECTION**

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.

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

**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:



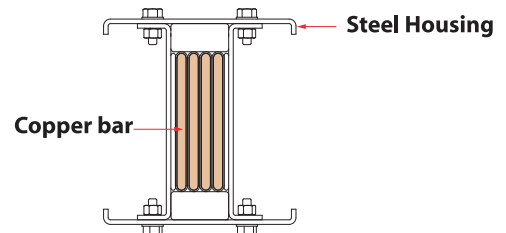
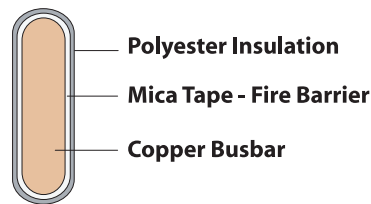
### INSULATION

DAVIS uses a very special high thermal conductivity Epoxy insulation material 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 gap between the insulation and the conductor.

DAVIS also makes Class 'B' (130°C) Polyester film insulated busways, Class 'F' (155°C) Mylar insulated busways and Class 'H' (180°C) Teflon insulated busways.

### 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, BS6387 and JIS A 1304 standards.



Resistance to Fire Alone

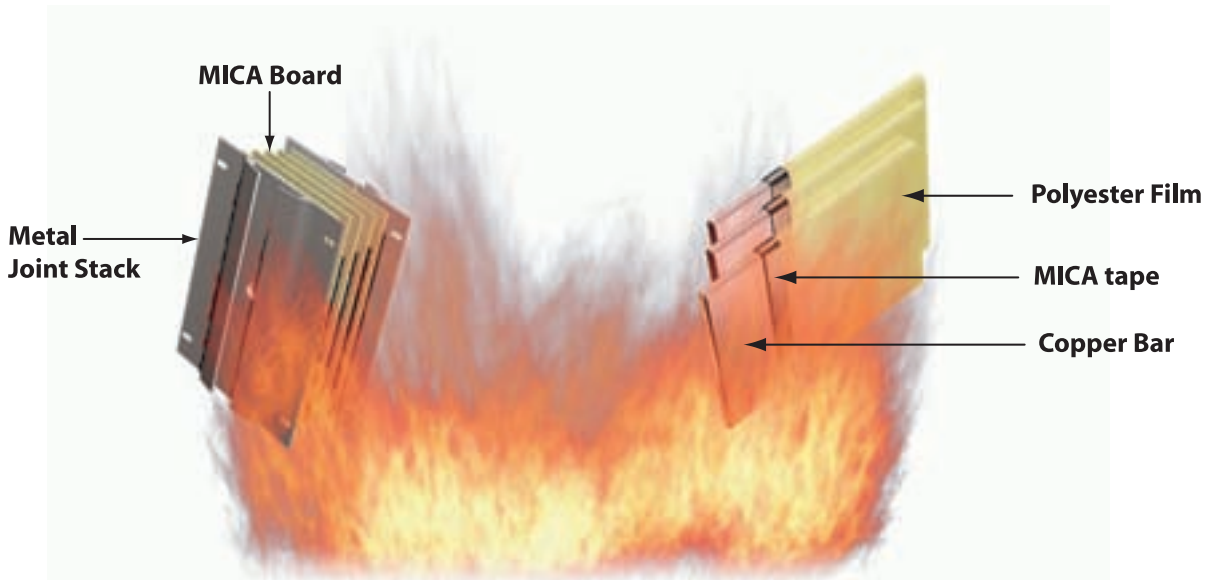
**IEC 60331** : 3 hours at 750°C  
**BS 6387 Category 'c'** : 3 hours at 950°C

Resistance to Fire with Water

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

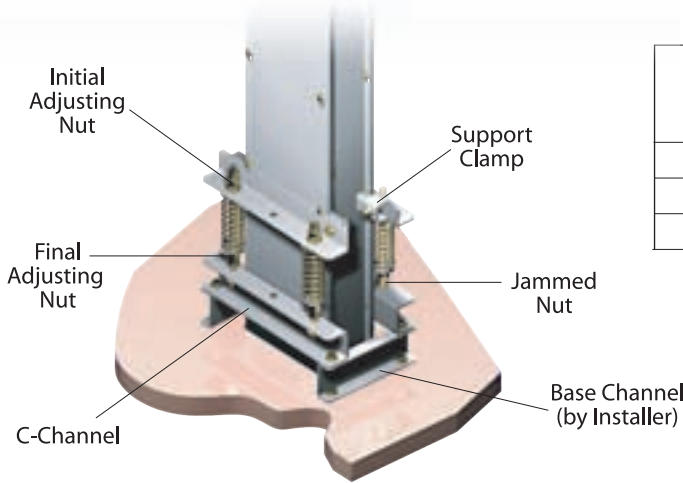
Resistance to Fire with Mechanical Shock

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



**VERTICAL MOUNTING SUPPORTS**

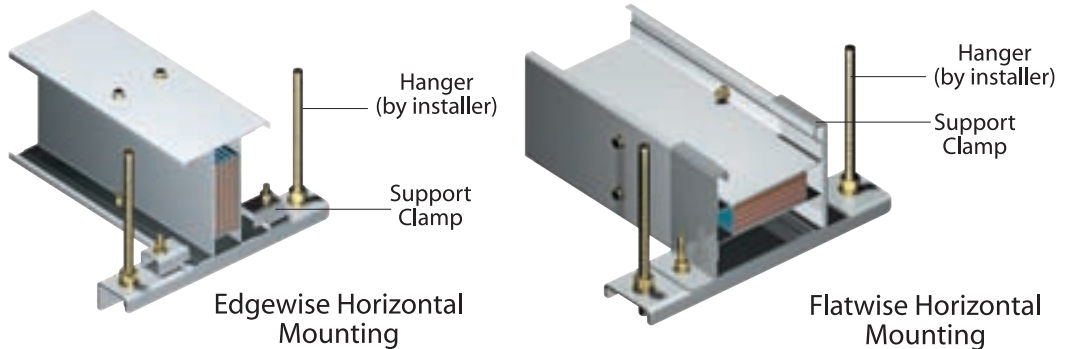
DAVIS Power busway vertical mounting supports are designed to retain the position of riser busways while withstanding a small degree of tilting movement as the conditions of the building and environment change. It comes with a double-spring mechanism to absorb any built-up stresses due to thermal expansion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



Copper Busway Rating (Amp)	No. of Springs Required per set (2) of vertical support	Aluminium Busway Rating (Amp)
200 - 1600	2	200 - 2000
1800 - 3200	4	2500 - 5000
3500 - 6300	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 may also be carried out at the request of our clients as per IEC 60439 standards to ensure the maximum temperature rise of the busways especially that of the joints does not exceed the IEC 60439-1(7.3):2004 temperature rise limits.

**SHORT CIRCUIT TESTS**

DAVIS Power busway is designed to be robust and protected against rated short circuit conditions. Such short circuit tests have been independently certified and tested at ASTA accredited testing laboratories in accordance with IEC 60439-1:2004 ; 60439-2:2000.

**FACTORY ROUTINE TESTS**

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