

**CONNECT AND PROTECT**

# nVent ERIFLEX Flexbus

Easy-to-Install Flexible Power Connection Solution  
from 500 A to 4700 A





## WHY

At nVent, we believe that **safer systems ensure a more secure world**. We connect and protect our customers with **inventive electrical solutions**.

## HOW

nVent ERIFLEX delivers low-voltage power distribution solutions that reduce total installed cost and increase design flexibility by providing **a comprehensive range of innovative and reliable products** through global end-user application expertise and intimacy.

## WHAT

**nVent ERIFLEX Flexbus is an innovative and patented connection solution between two electrical equipment installations**, such as transformers, switchboards, generators or large uninterruptible power supplies (UPS). Due to its unique concept, nVent ERIFLEX Flexbus is an alternative power connection solution for up to 50% quicker installation and 20% reduction in total installed cost at a minimum.



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# Introduction

**The nVent ERIFLEX Flexbus System is an innovative and patented connection solution between two electrical equipment installations, such as transformers, switchboards, generators or large uninterruptible power supplies (UPS).**

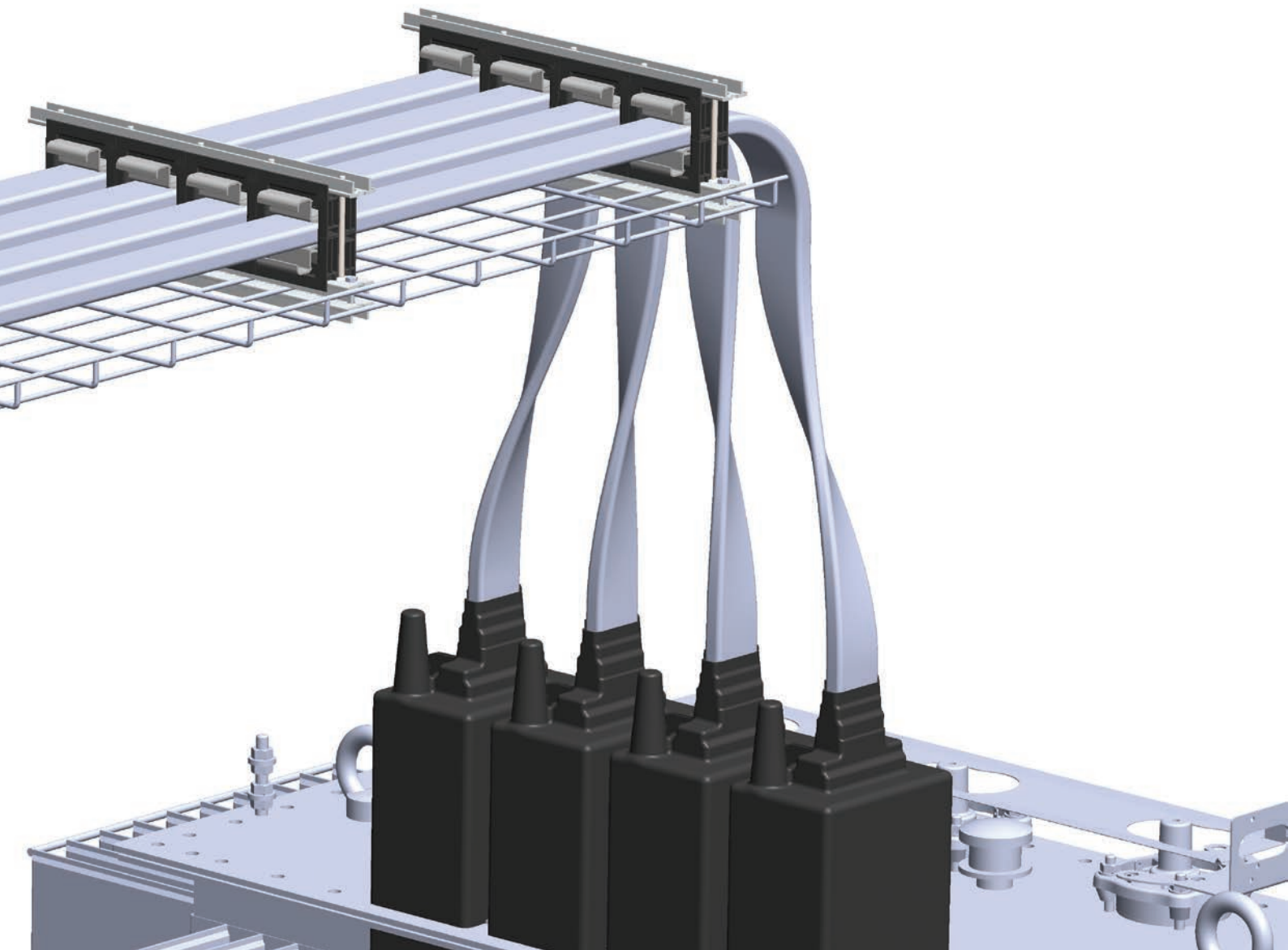
This unique concept brings an alternative solution to the market, providing faster installation and reducing total install cost.

Flexbus maintains a high level of reliability and creates an easy and customizable connection on-site without additional design study, specific specialized workforce or expensive tools.

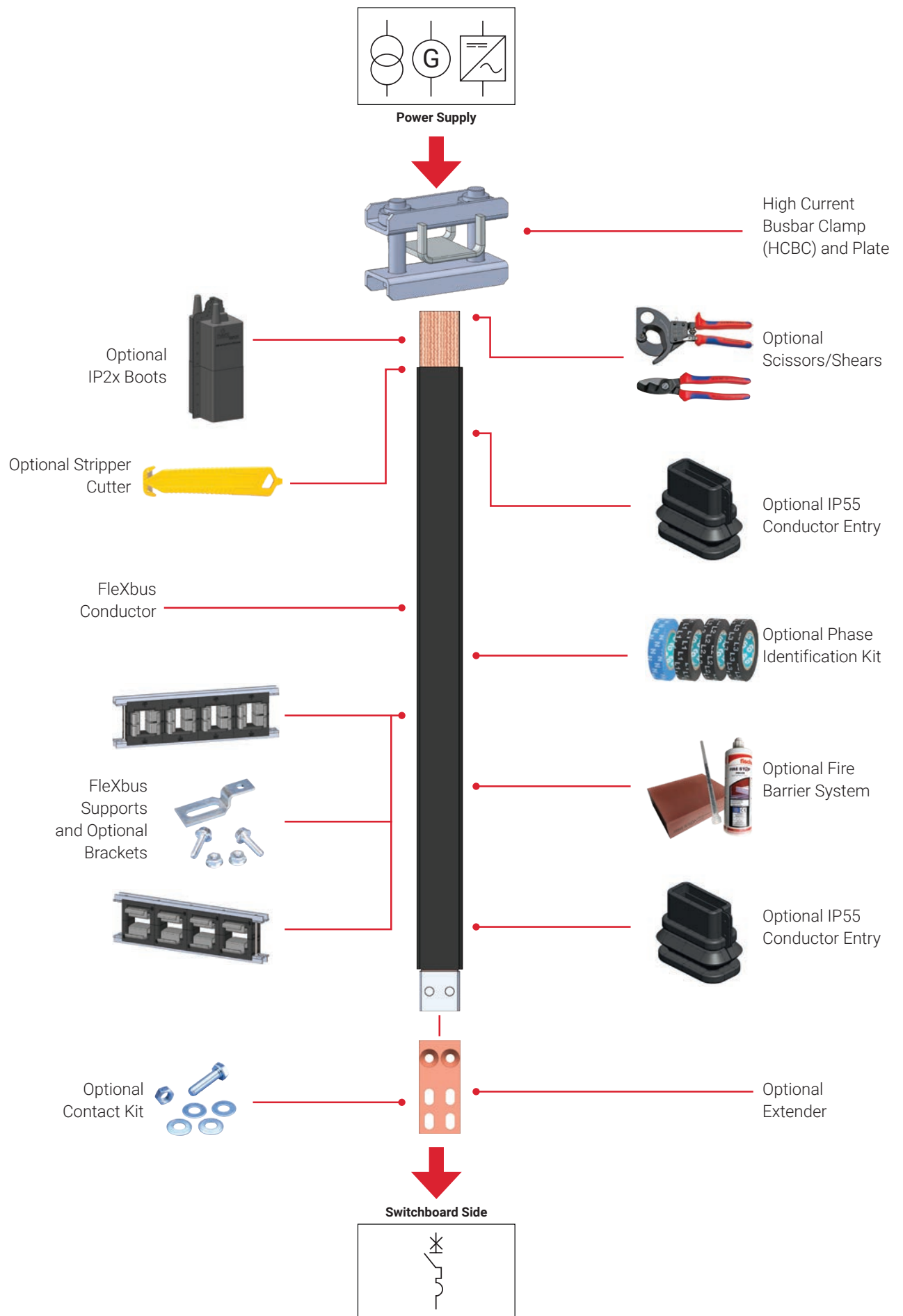
Flexbus incorporates nVent ERIFLEX Advanced Technology that provides unique features to create a conductor that is low smoke, halogen-free, flame retardant (LSHFFR) and high-temperature resistant.

Flexbus is a unique and complete low-voltage power connection system designed for multiple applications, including:

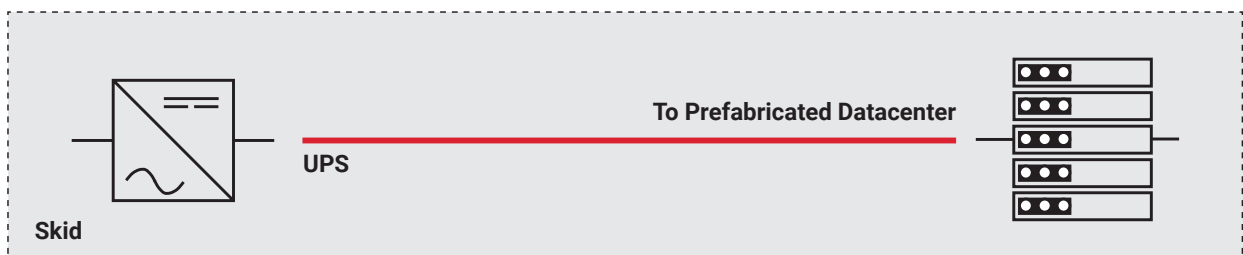
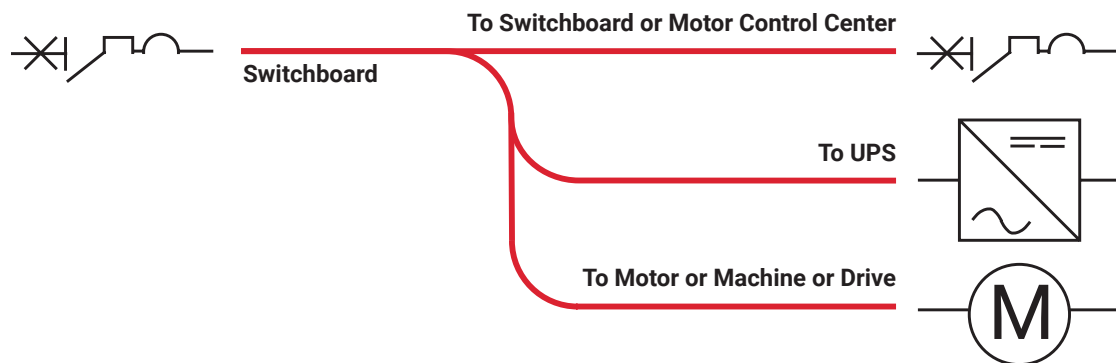
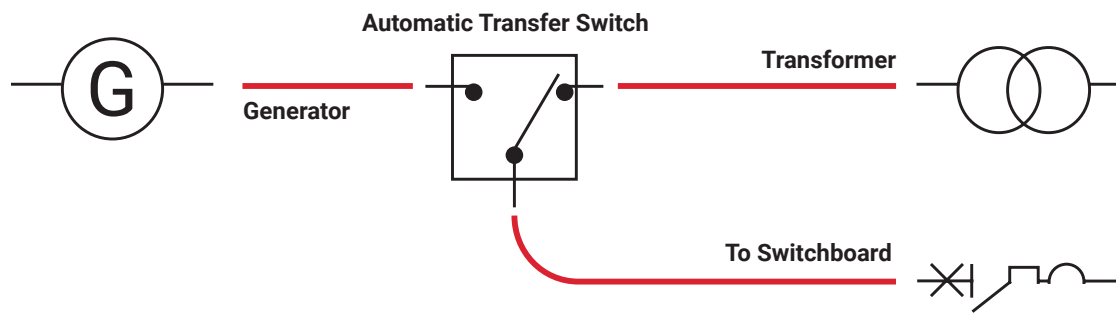
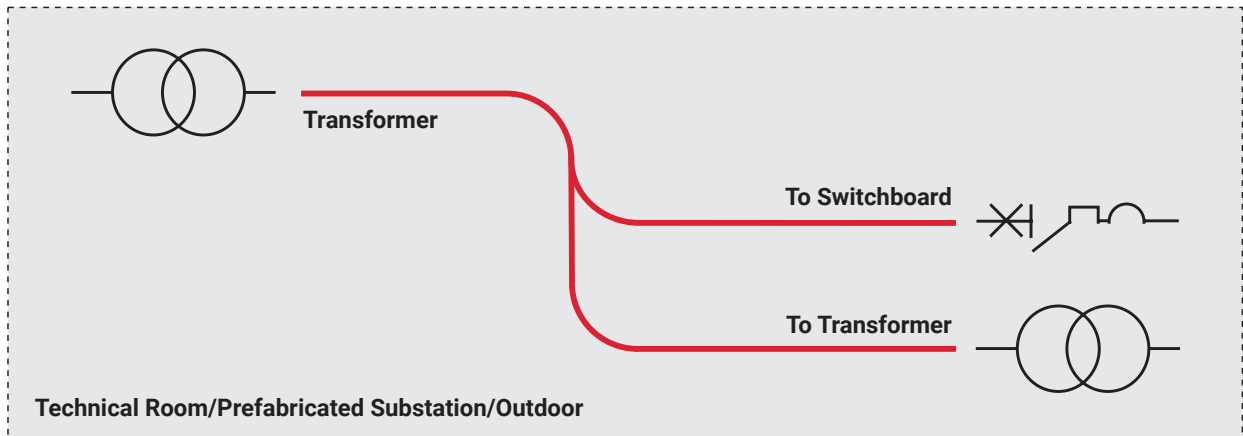
- Connections from transformers to switchgears
- Interconnection between transformers
- Connections from or to generators
- Switchgear interconnections
- Machine connections



# System Index



# Typical Applications





# Features and Benefits



## OPERATING ADVANTAGE

- Versatile, customizable, user friendly, no specific tool required. Attractive for short distances, up to 10 meters.
- No specialized labor force necessary with a ready-to-use solution.
- Very flexible conductor with no bending radius to follow.
- Achieve virtually any layout and overcome any imperfections that may be found on-site.
- No cable tray necessary to support Flexbus conductors.



## TIME SAVING

- Up to 50% quicker to install than busduct or wireway/cable tray with multiple cables and lugs.



## SPACE AND WEIGHT




- Only one conductor per phase from 400 kVA (560 A) to 1600 kVA (2250 A) and two conductors per phase for 2000 kVA (2800 A) to 3150 kVA (4435 A) when cable solution requires multiple conductors per phase.
- No need for specific engineering/study or strict installation measurement.
- Total install cost reduction of 20% minimum.



## RELIABILITY AND SAFETY

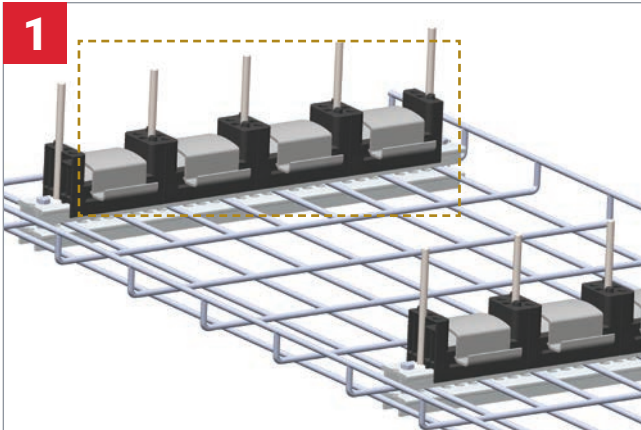
- IEC worldwide tested and certified.
- Low-smoke, flame-retardant, high-temperature (LSHFRR) and high temperature resistant system.

# Technology Comparisons

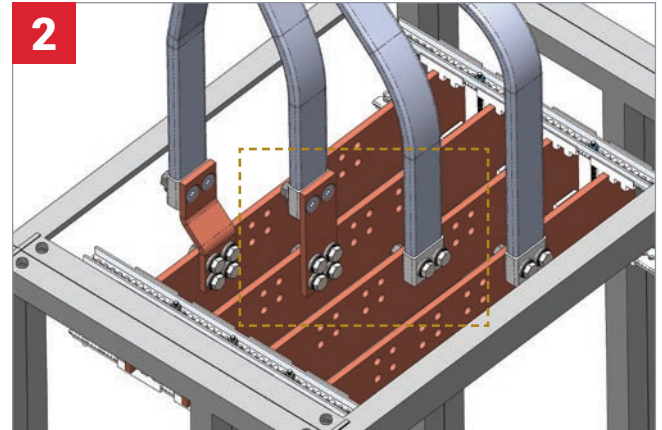
	Flexbus	Cables and Lugs	Busduct
			
Ready to Use	Yes	No	Yes
Field Customization	Yes	Yes	No
Delivery Time	Short	Short	Long
Bending Radius/System Rigidity	Easy	Difficult	N/A
Pre-Installation Measurement and Study	No	No	Yes
Qualified Workforce	No	Yes	Yes
Minimum People for Installation	1	2	2
Typical Current Usage	500 to 4700 A	< 2000 A	> 2000 A
Installation Time	< 1 Day	> 1 Day	> 1 Day
Number of Conductors Per Phase	1 or 2	Multiple	1 or 2
Weight	Light	Medium	Heavy
Tools Required	None	Multiple	Low
Installation Preparation Time	None	Low	High
Human Error Risk	Low	High	Medium
Total Installation Cost	Low	Medium	High




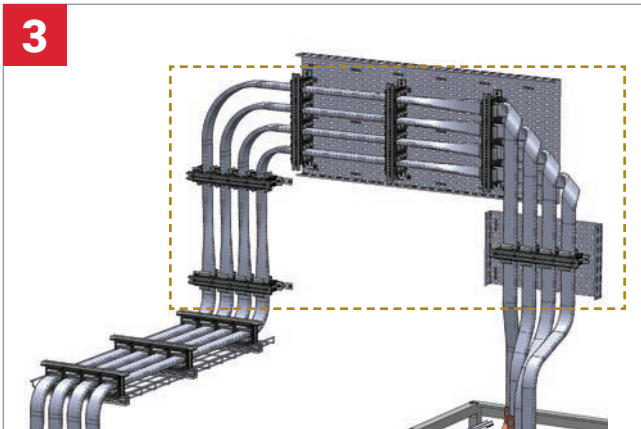
# Installation Overview



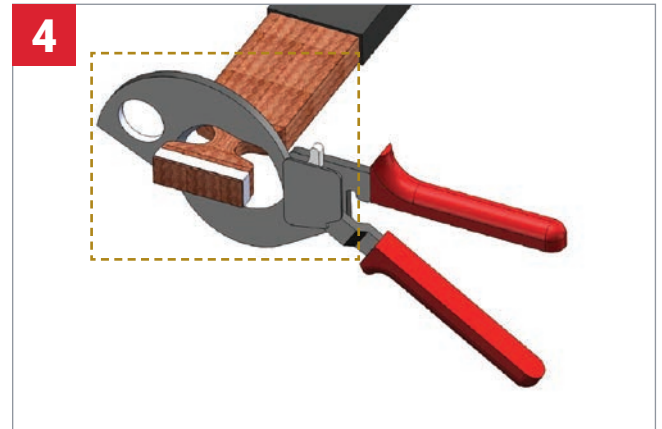
**1** **Install** supports directly to the wall, ceiling or on any type of cable tray (wire basket/perforated/cable ladder). Use multiple possible mounting configurations to meet your installation configuration (flat/on-edge).



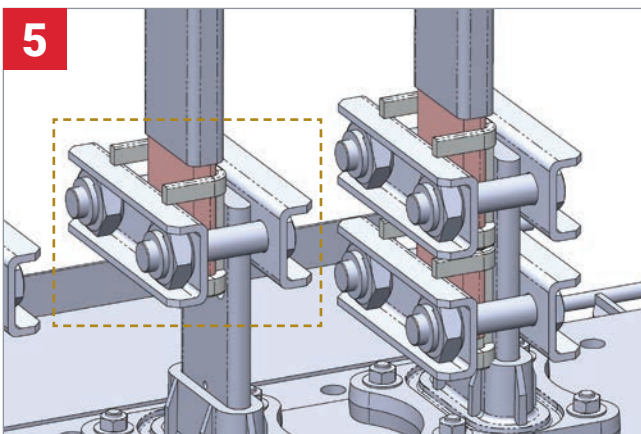
**2** **Connect** the ready-to-use Flexbus conductor to the switchboard. This conductor has prepunched holes and can be connected directly to the busbar or to the circuit breaker palm. Optional extenders are available. 



**3** **Install** conductors into the supports and mount the top part of the supports. Leave conductors' excess length at the top of the transformer/power supply.



**4** **Strip** Flexbus conductor insulation.  
**Cut** Flexbus conductor excess length with Flexbus scissors or shears.



**5** **Connect** Flexbus conductor with High Current Busbar Clamp (HCBC) and Plate.

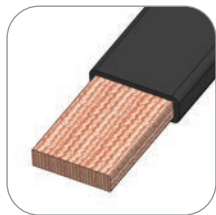
# System Overview



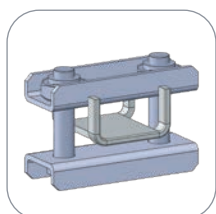
**Advanced Technology**  
**Page 11**



**Supports**  
**Pages 14-15**



**Conductor**  
Page 12



**High Current  
Busbar Clamp  
(HCBC) and Plate**  
**Page 13**



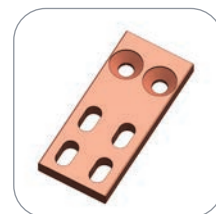
**IP2x Boots**  
Page 16



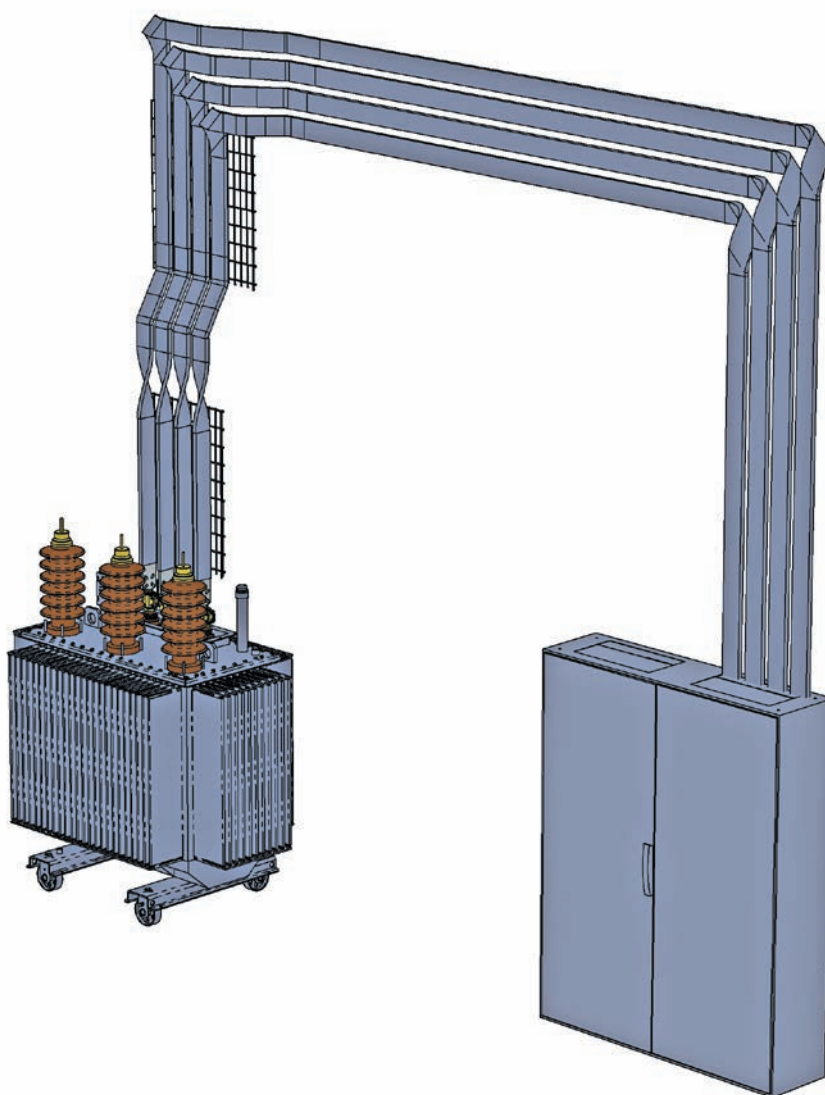
**IP55 Conductor Entry**  
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**Fire Barrier System**  
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**Palm Extender**  
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**Accessories**  
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# System Overview

## Advance Technology Insulation



### NVENT ERIFLEX ADVANCED TECHNOLOGY

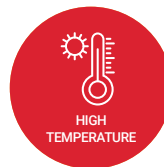
The volume of power conductors and electrical devices drastically increases across industrial, commercial and residential environments. So, too, does the demand for manufacturers to choose proper electrical protection for both equipment and people. Fires that involve dangerous plastic can produce toxic fumes, injuring people and damaging equipment.

[Learn more about nVent ERIFLEX Advanced Technology](#)

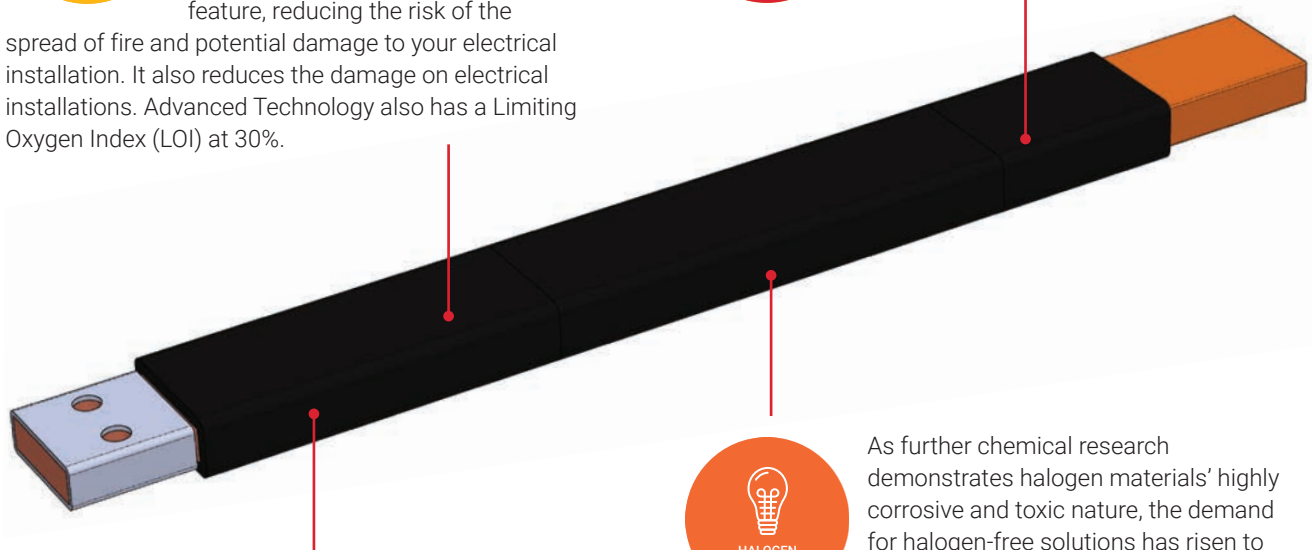


Advanced Technology is compliant to UL 94 V-0 and/or IEC 60695-2-11 (Glow Wire Test 960°C). The **flame-retardant** portion of the test illustrates the self-extinguishing feature, reducing the risk of the

spread of fire and potential damage to your electrical installation. It also reduces the damage on electrical installations. Advanced Technology also has a Limiting Oxygen Index (LOI) at 30%.



Thanks to its unique features, Advanced Technology used with Flexbus conductors is also a Class II conductor with a **high-temperature resistance** up to 115°C.



The **low-smoke** feature measures the quantity of smoke in case of an emergency such as combustion. This feature helps to determine the smoke density generated during a fire. Flexbus conductors comply

with UL 2885 and IEC 60754-2, meaning that the light transmittance improved the visibility.

**Advanced Technology** means greater safety for individuals, less damage for your electrical equipment and less environmental impact.



As further chemical research demonstrates halogen materials' highly corrosive and toxic nature, the demand for halogen-free solutions has risen to protect both electrical equipment and safety of people.

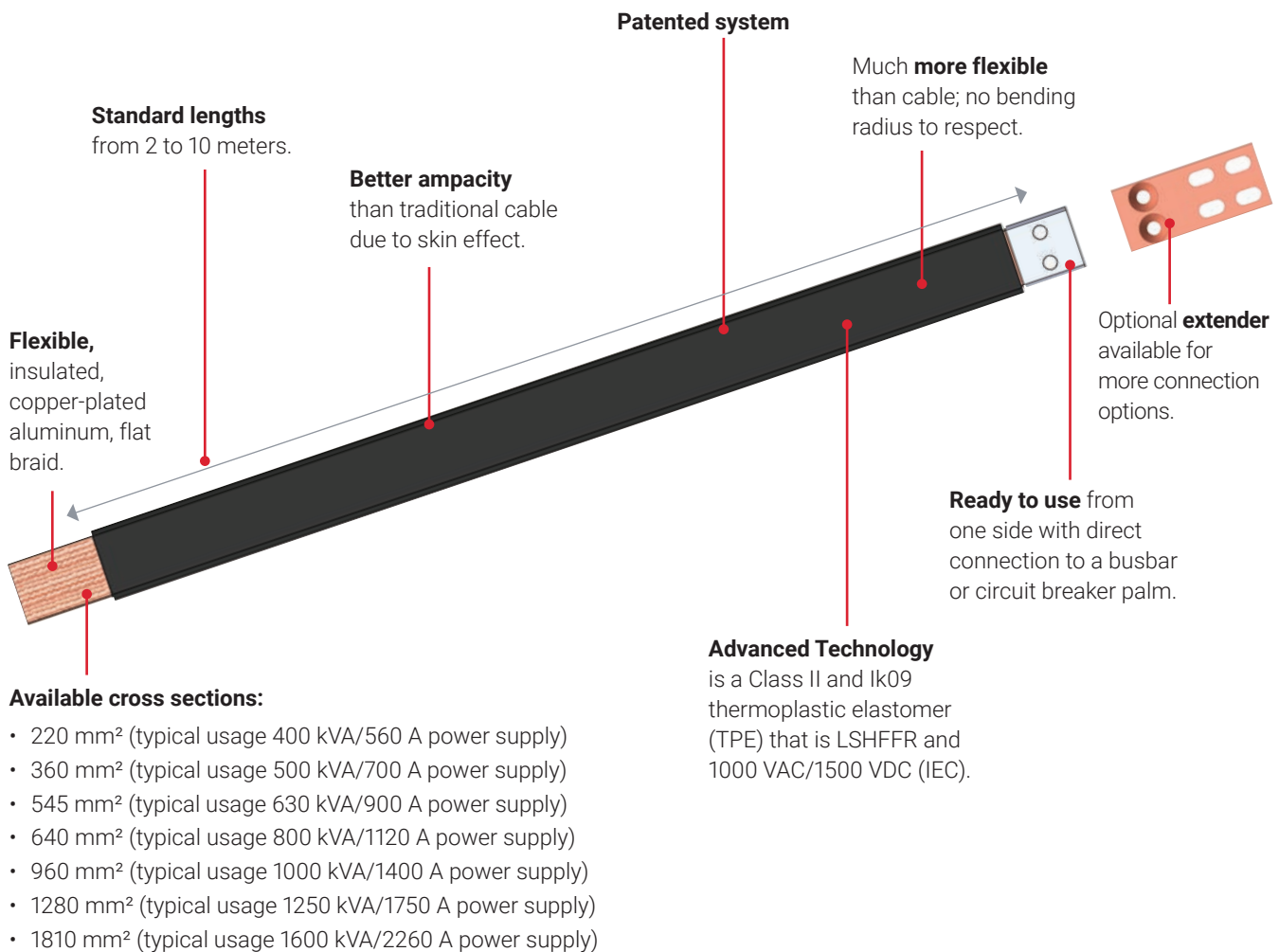
#### Advanced Technology meets halogen-free requirements

according to IEC 60754-1 and/or UL 2885 standards. In the case of a fire, Advanced Technology does not induce corrosive gases and instead produces mainly steam with a low level of carbon monoxide.

Advanced Technology contains halogen-free materials and offers better protection for people's safety and your electrical installation by reducing corrosion and toxic smoke generation.

# System Overview

## Conductor



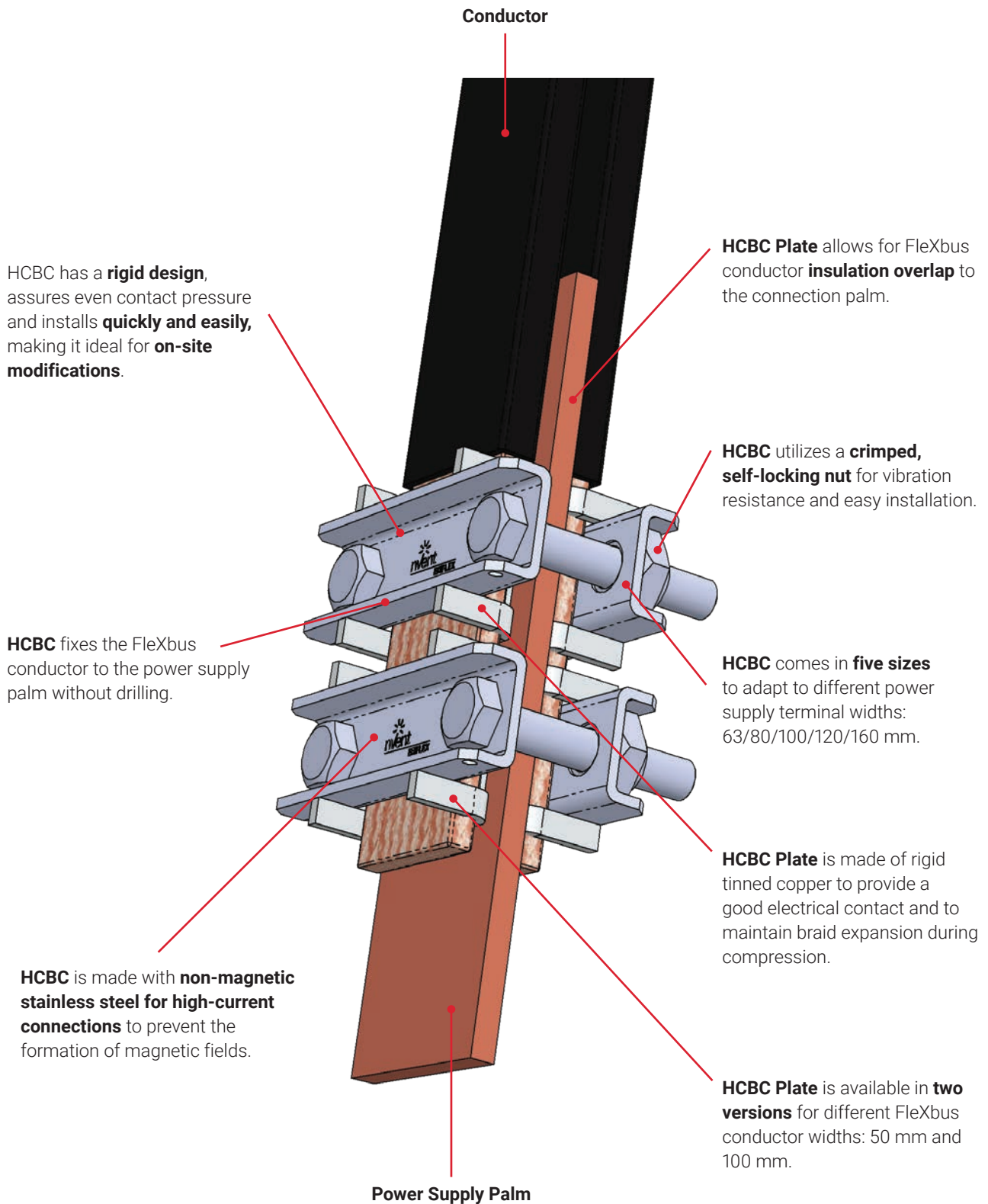
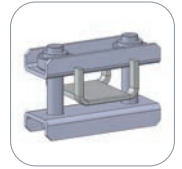
## TYPICAL ALUMINUM/COPPER CABLE AND BUSDUCT USAGE COMPARISON WITH FLEXBUS SYSTEM

HV/LV Transformer 400/410V at Secondary	Current LV – I <sub>n</sub> (A)	Typical Usage Copper Cable/Phase		Typical Usage Aluminum Cable/Phase		Typical Power Busduct Usage	FleXbus Conductor/Phase
400 kVA	560	1x240 mm <sup>2</sup>	●	2x240 mm <sup>2</sup>	●●		1x220 mm <sup>2</sup> ▮
500 kVA	704	2x185 mm <sup>2</sup>	●●	3x240 mm <sup>2</sup>	●●●		1x360 mm <sup>2</sup> ▮
630 kVA	900	2x240 mm <sup>2</sup>	●●	4x240 mm <sup>2</sup>	●●●●		1x545 mm <sup>2</sup> ▮
800 kVA	1120	3x185 mm <sup>2</sup>	●●●	4x240 mm <sup>2</sup>	●●●●		1x640 mm <sup>2</sup> ▮
1000 kVA	1400	4x185 mm <sup>2</sup>	●●●●	4x300 mm <sup>2</sup>	●●●●		1x960 mm <sup>2</sup> ▮
1250 kVA	1750	4x240 mm <sup>2</sup>	●●●●	4x400 mm <sup>2</sup>	●●●●	Busduct	1x1280 mm <sup>2</sup> ▮
1600 kVA	2253	5x240 mm <sup>2</sup>	●●●●●			Busduct	1x1810 mm <sup>2</sup> ▮
2000 kVA	2816	6x240 mm <sup>2</sup>	●●●●●●			Busduct	2x960 mm <sup>2</sup> ▮▮
2500 kVA	3520	8x240 mm <sup>2</sup>	●●●●●●●●			Busduct	2x1280 mm <sup>2</sup> ▮▮
3150 kVA	4435					Busduct	2x1810 mm <sup>2</sup> ▮▮



# System Overview

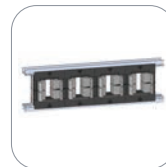
## High Current Busbar Clamp (HCBC) and Plate





# System Overview

## Supports

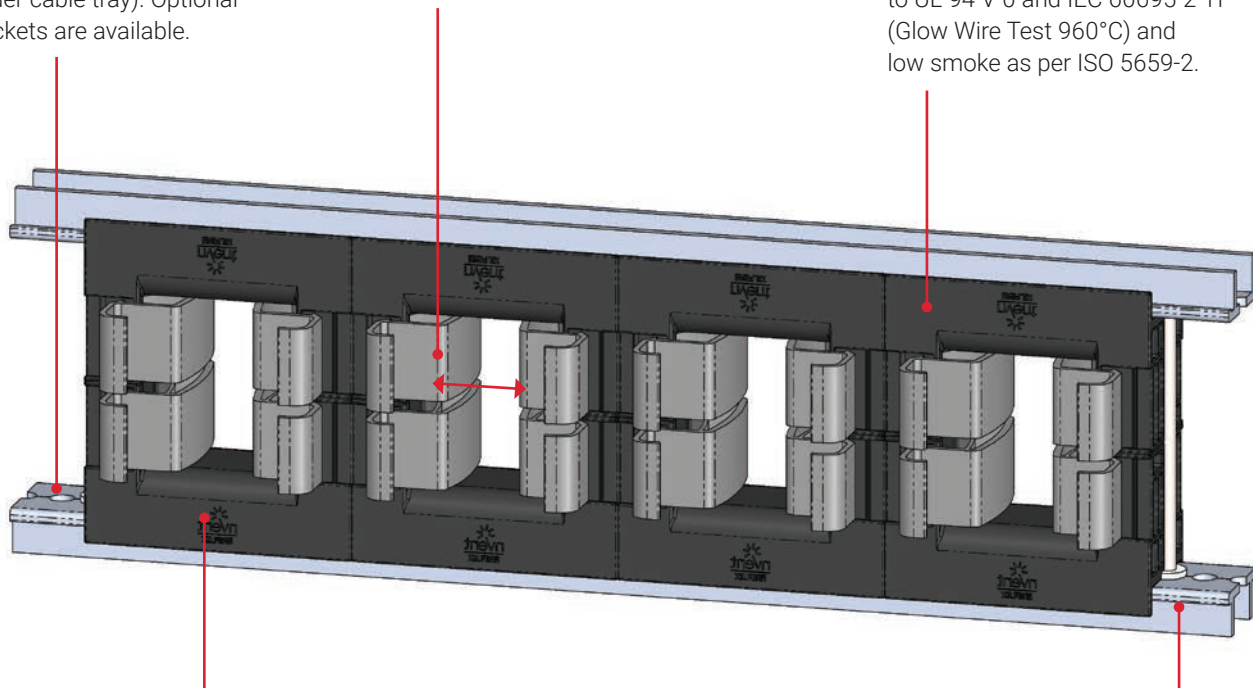


### SUPPORT EDGE

**Punched-hole aluminum profile** to fix the support directly on the wall, on the ceiling or on cable tray (wire/perforated/ladder cable tray). Optional brackets are available.

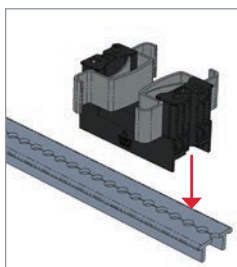
**Adjustable clip** to adapt the support with different conductor thicknesses (open/closed position).

Made with glass fiber-reinforced polyamide, **halogen-free**, RoHS compliant, working temperature of  $-40^{\circ}\text{C}$  to  $130^{\circ}\text{C}$ , flammability rated to UL 94 V-0 and IEC 60695-2-11 (Glow Wire Test  $960^{\circ}\text{C}$ ) and low smoke as per ISO 5659-2.

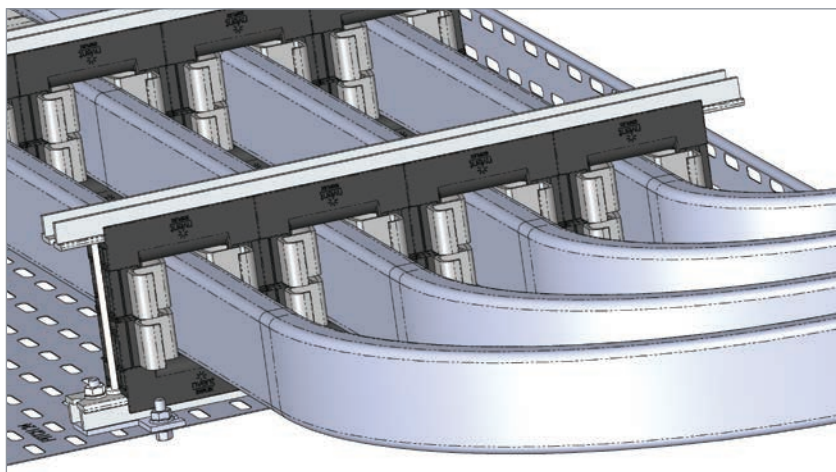
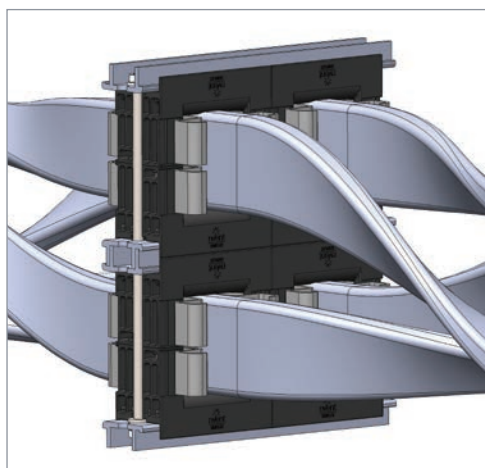


**Flexbus support kits** are easy to mount, with multiple configurations possible.

- 3P/3P+N/3P+N+PE
- One or two conductors per phase
- Side by side or on top
- Adjustable distance between each conductor (12.5 mm pitch)

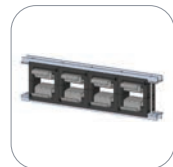


**Strong mechanical resistance** and short-circuit tested as per IEC 61914 up to 67 kA rms – 147 kA Peak.



# System Overview

## Supports

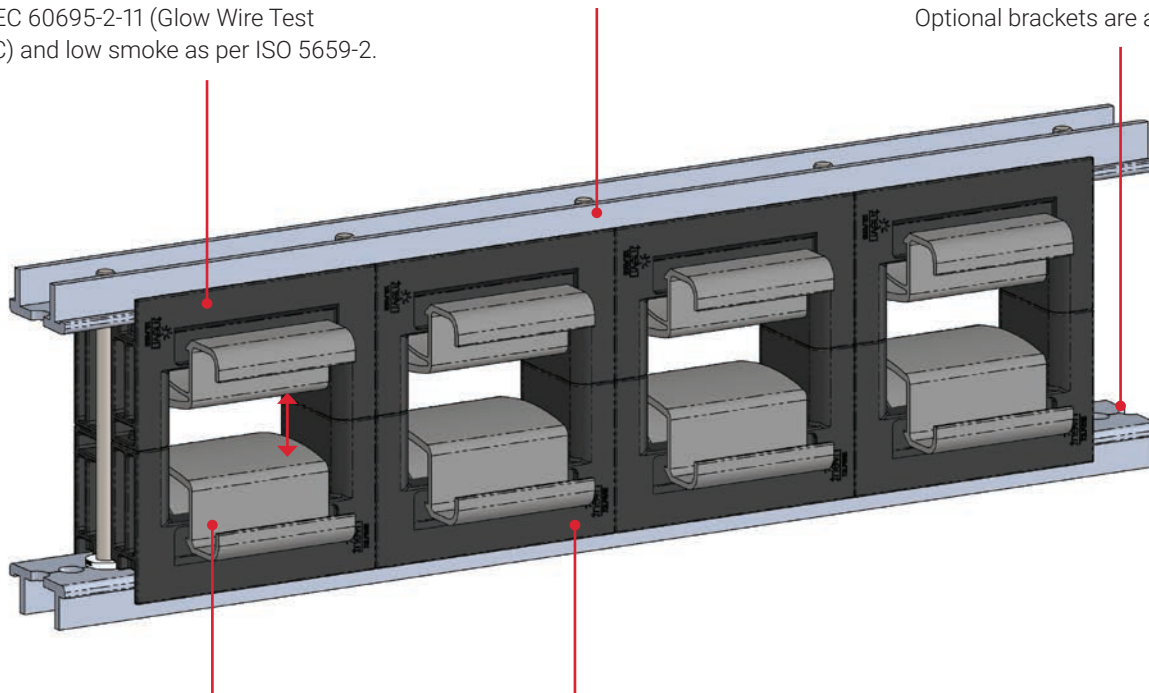


### SUPPORT FLAT

Made with glass fiber-reinforced polyamide, **halogen-free**, RoHS compliant, working temperature of  $-40^{\circ}\text{C}$  to  $130^{\circ}\text{C}$ , flammability rated to UL 94 V-0 and IEC 60695-2-11 (Glow Wire Test  $960^{\circ}\text{C}$ ) and low smoke as per ISO 5659-2.

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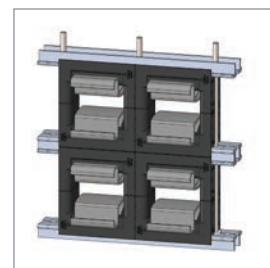
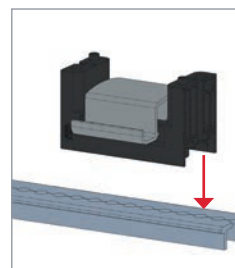
**Punched-hole aluminum profile** to fix the support directly on the wall, on the ceiling or on cable tray (wire/perforated/ladder cable tray). Optional brackets are available.



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**Flexbus support kits** are easy to mount, with multiple configurations possible.

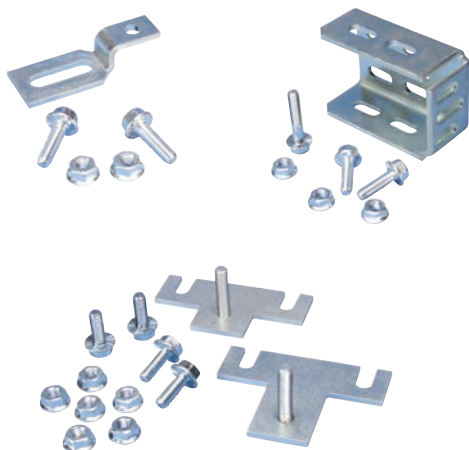
- 3P/3P+N/3P+N+PE
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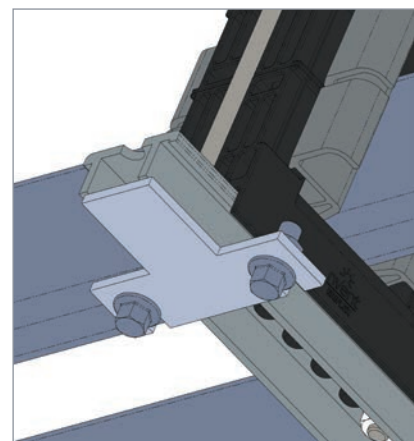
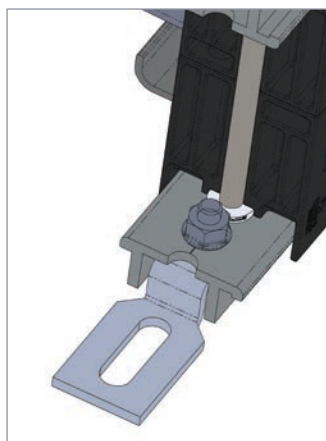
### SUPPORT BRACKETS

Bracket CABS – E

Bracket CABS – M



Bracket CABS – T



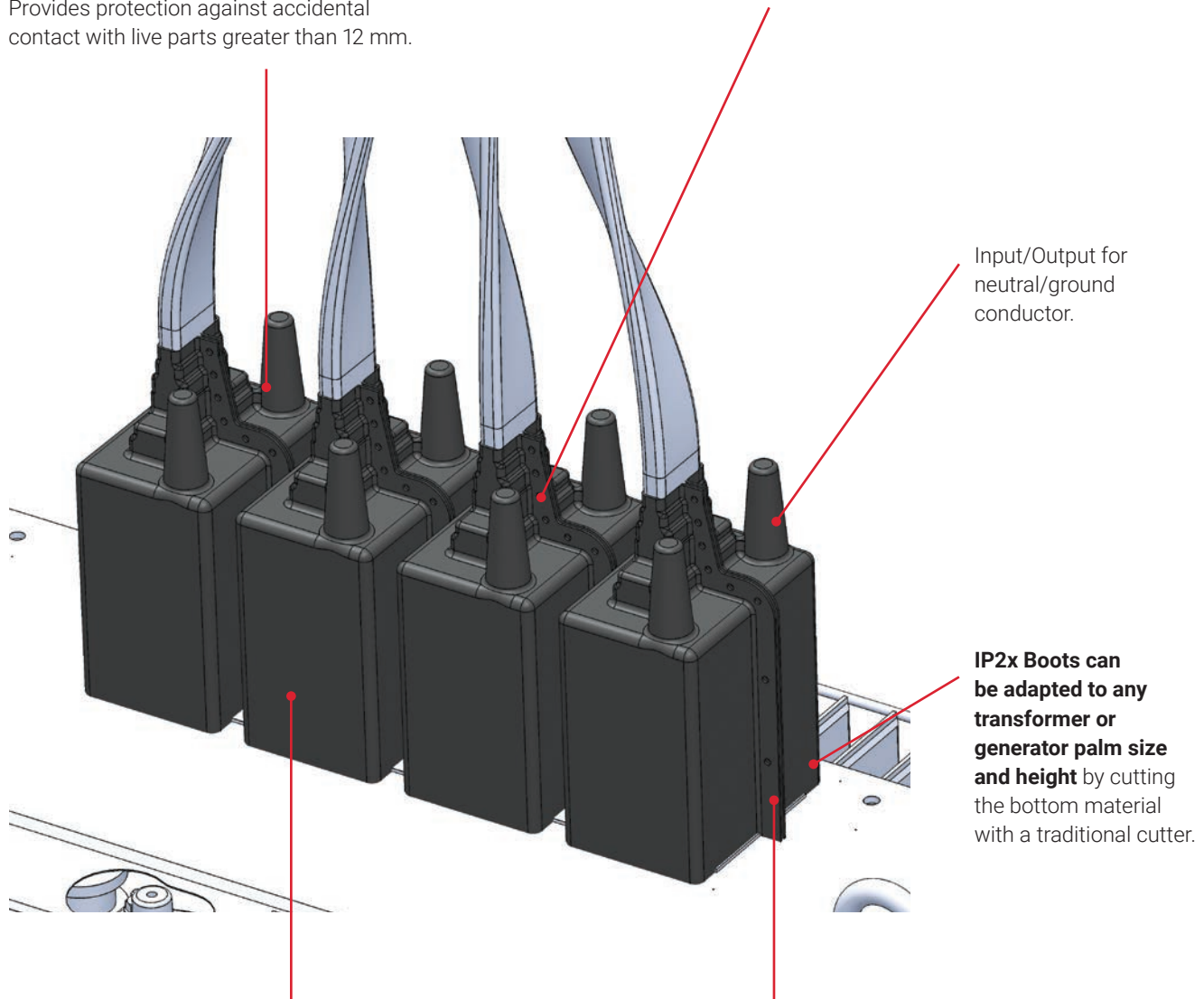
# System Overview

## IP2x Boots



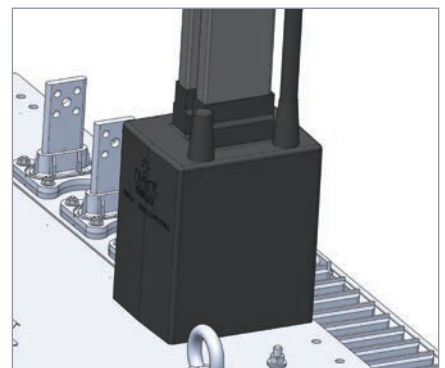
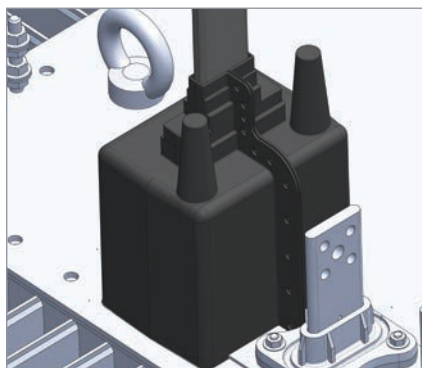
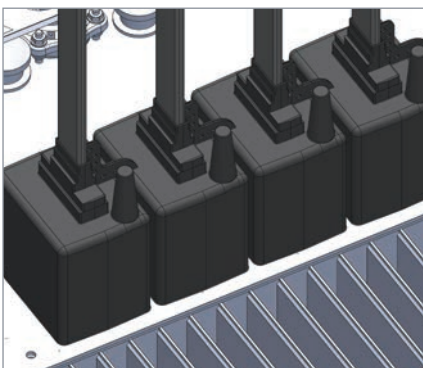
**IP2x Boots** for use when a transformer or generator is not equipped with its own cover. Provides an IP2x protection (finger safe) to the low-voltage connecting point. Provides protection against accidental contact with live parts greater than 12 mm.

**IP2x Boots can be adapted to any conductor cross section** by cutting the top material with a traditional cutter.



Made with high resistant and flexible PVC, **flame retardant and 140°C temperature resistant.**

**Easy and quick to install** with closing clips, after conductor installation.





# System Overview

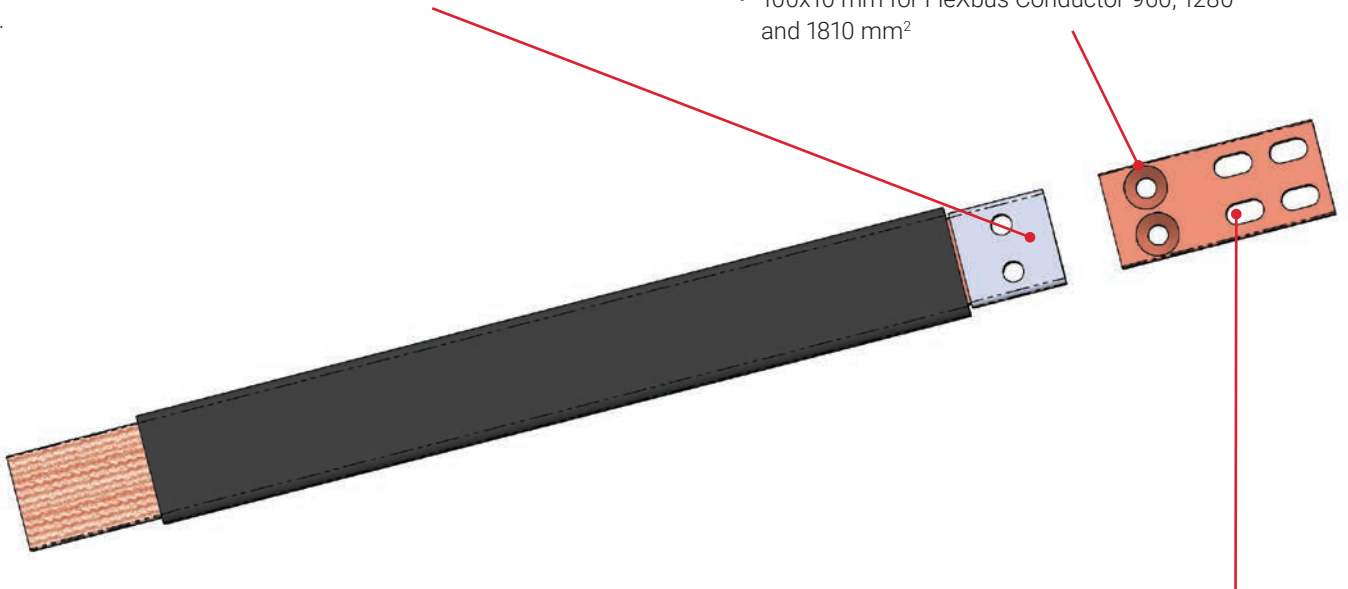
## Palm Extender





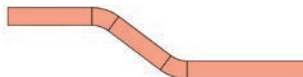
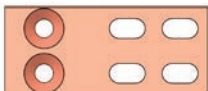


**FleXbus conductor is ready to use** from one side with direct connection on busbar or circuit breaker palm. However, optional **extenders** are available for more connection possibilities.

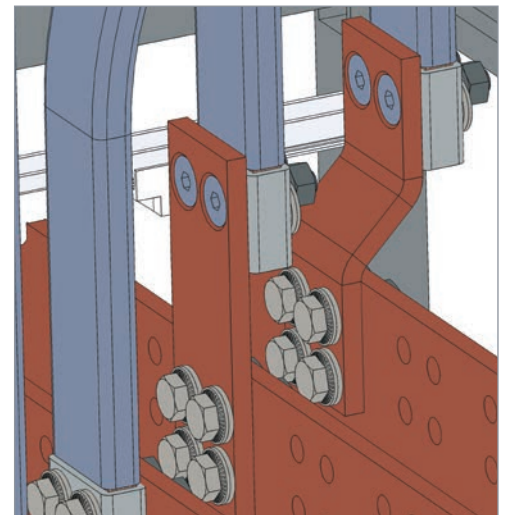
### Extender Cross Sections:

- 50x10 mm for FleXbus Conductor 220, 360, 545 and 640 mm<sup>2</sup>
- 100x10 mm for FleXbus Conductor 960, 1280 and 1810 mm<sup>2</sup>



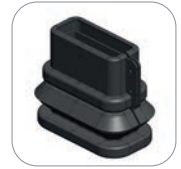
**Palm Extender** connects the busbar to the switchboard, air circuit breaker or load break switch.

Type 1	Type 2	Type 3
Predrilled	Plain	Plain
Flat	Flat	Bended
		
		



# System Overview

## IP55 Conductor Entry



Made with soft PVC to **follow any conductor bending radius.**

IP55 Conductor entry **can be adapted to any Flexbus conductor cross section** by cutting the top material with a traditional cutting tool.

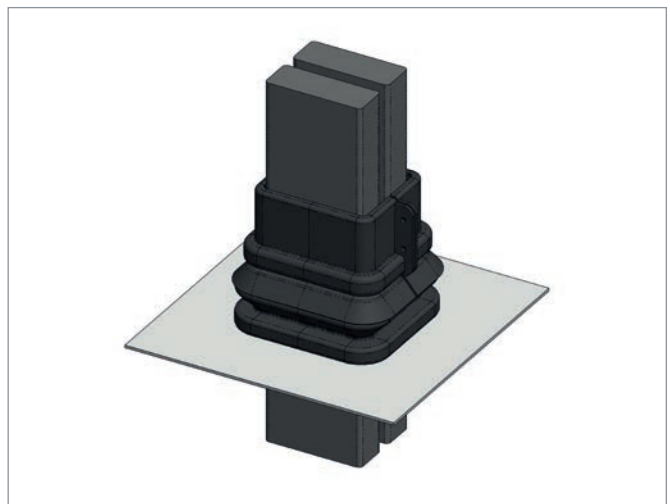
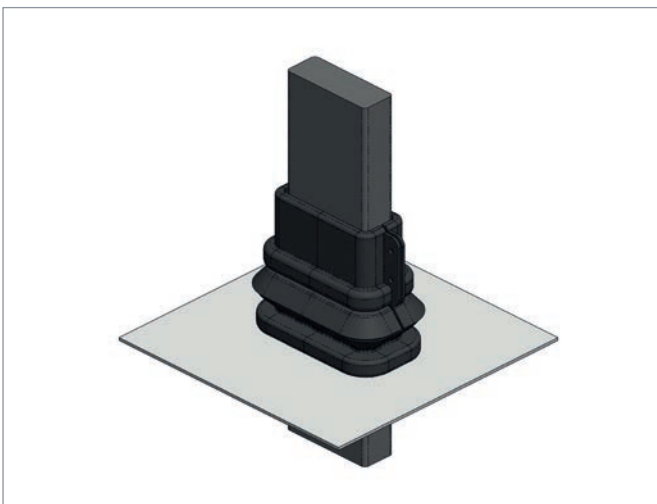
The sealing around the conductor is made with a **self-fusing tape** with a strong adhesive.

Made with highly resistant and flexible PVC, **Flame retardant**, and **140°C temperature resistant.**

**IP55 Conductor entry** can be used for switchboard and/or power supply cover to upgrade installation to IP55 level (**dust and water proof**)

High acid and basic resistance Good resistance to solvent and hydrocarbon splashes Good UV resistance

Available in two variations for one conductor or two conductors per phase





# System Overview

## Fire Barrier System



**Fire Barrier Blocks (FBBs)** are highly elastic moldable blocks.

**Foam Barrier System (FBS)** is a two-component, polyurethane, expanding, sound-, smoke- and fire-stopping seal for hard-to-reach locations, which expands to up to five times its volume.

### **FleXbus Insulating Bandage (FIB):**

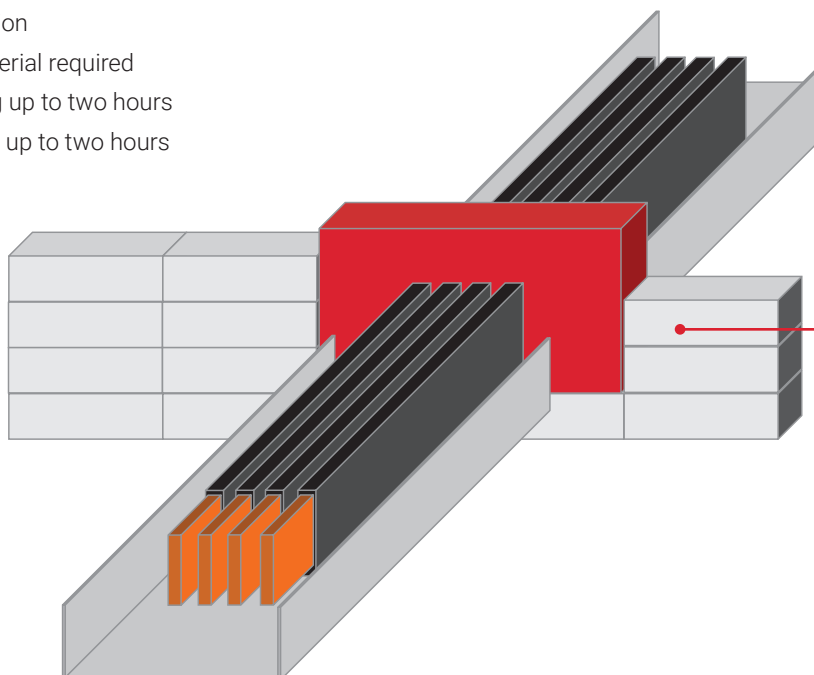
Intumescent wrap on the basis of butyl rubber with intumescent fire protection additives and glass fabric reinforcement. To be used around FleXbus conductors if the thickness of the penetration seal is < to 200 mm.



**Easy access** for difficult-to-reach openings. Various applications with only two products:

- Aging resistant
- Smoke resistant
- Damp resistant
- Re-enterable and repairable
- Excellent adhesion
- No backing material required
- F-rating/E-rating up to two hours
- T-rating/L-rating up to two hours

**Fire Barrier:** Quick and easy to install. Up to two-hour fire resistance (EI 120), with ETA (CE Marked) and EN 1366-3 tested or UL-Certified ASTM E-814 (UL 1479).



### **Building material:**

- Concrete (wall and floors)
- Masonry
- Flexible wall

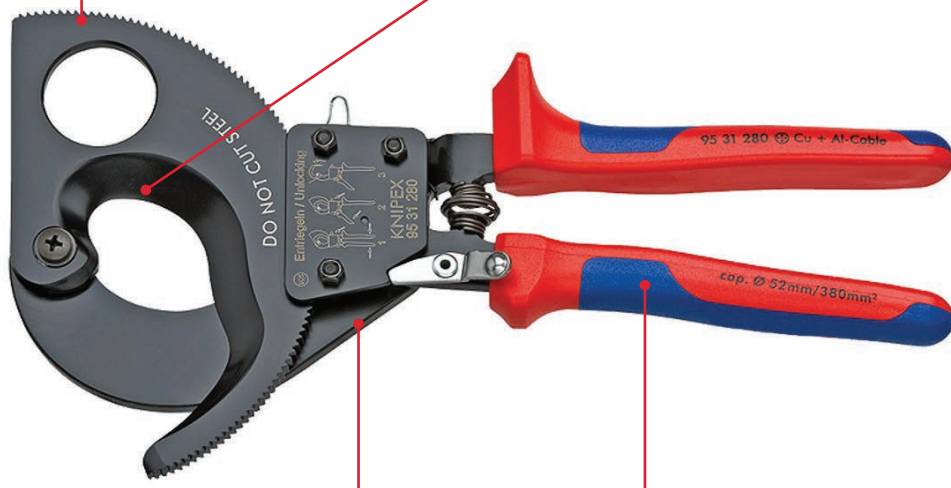
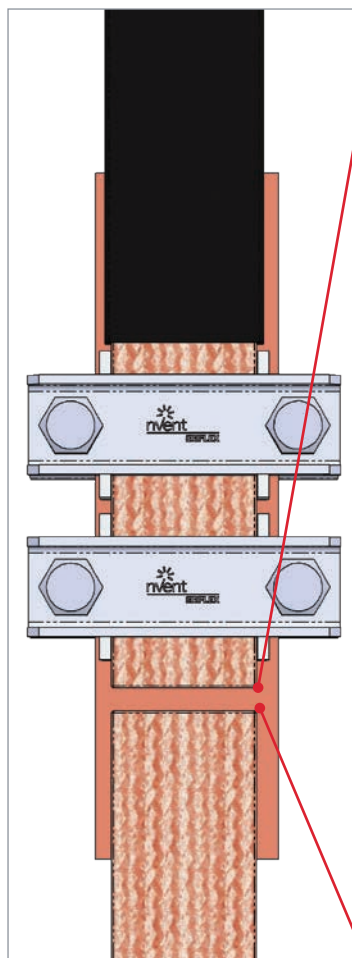
# System Overview

## Accessories

### SCISSORS AND SHEARS

Scissors **to cut the excess conductor length** at the power supply palm.

Precision-ground, hardened blades. **Clean and smooth cut** without crushing or deforming the conductor.



Simple handling as a result of low weight and compact design; **can be used in confined areas**. Guard prevents operators' fingers from being pinched. High-grade special tool steel, forged and oil-hardened.

One-hand operation using ratchet principle. **Low amount of hand force required** due to very high transmission ratio. Two-stage ratchet drive for easy cutting.

Precision-ground, hardened blades. **Clean and smooth cut** without crushing or deforming the conductor.



Less effort required due to favorable lever ratio and optimized cutting-edge geometry.

Guard prevents operators' fingers from being pinched.

Adjustable bolted joint, self-retaining screw.

High-grade special tool steel, forged and oil-hardened.

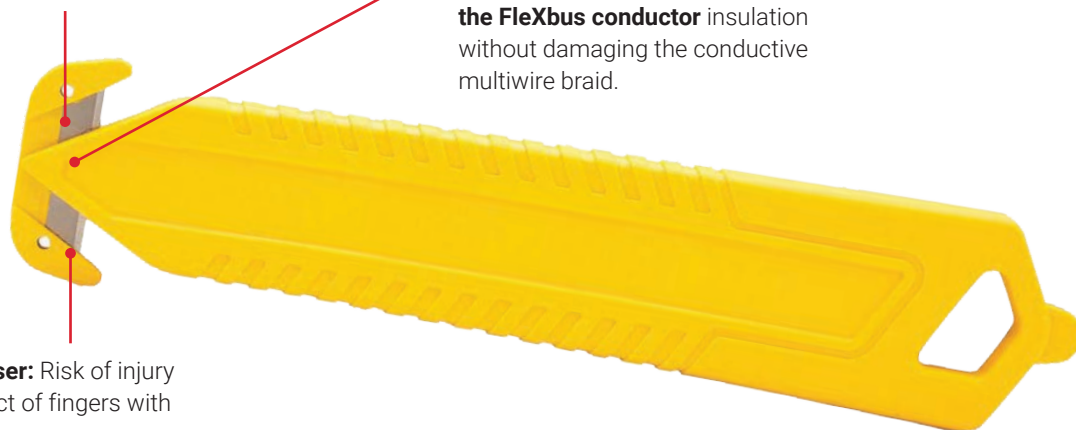
# System Overview

## Accessories

### STRIPPER CUTTER

**Double-blade**, high-quality carbon steel and advanced plastic polymers.

Recessed blade reduces cut injuries and allows **stripping of the Flexbus conductor** insulation without damaging the conductive multiwire braid.



**Protection of the user:** Risk of injury is eliminated; contact of fingers with blades is impossible.

### PHASE IDENTIFICATION KIT

- Rubber tape N
- Rubber tape L1
- Rubber tape L2
- Rubber tape L3
- Flexbus sticker



- Flame retardant
- Self-extinguishing
- Conformable
- Abrasion resistant
- UV resistant
- Non-corrosive adhesive

System connected with  
**Flexbus Advanced**



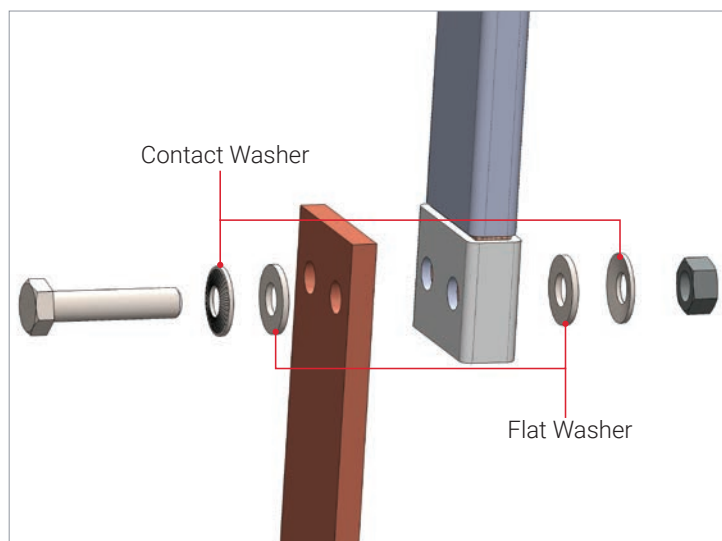
### CONTACT KIT

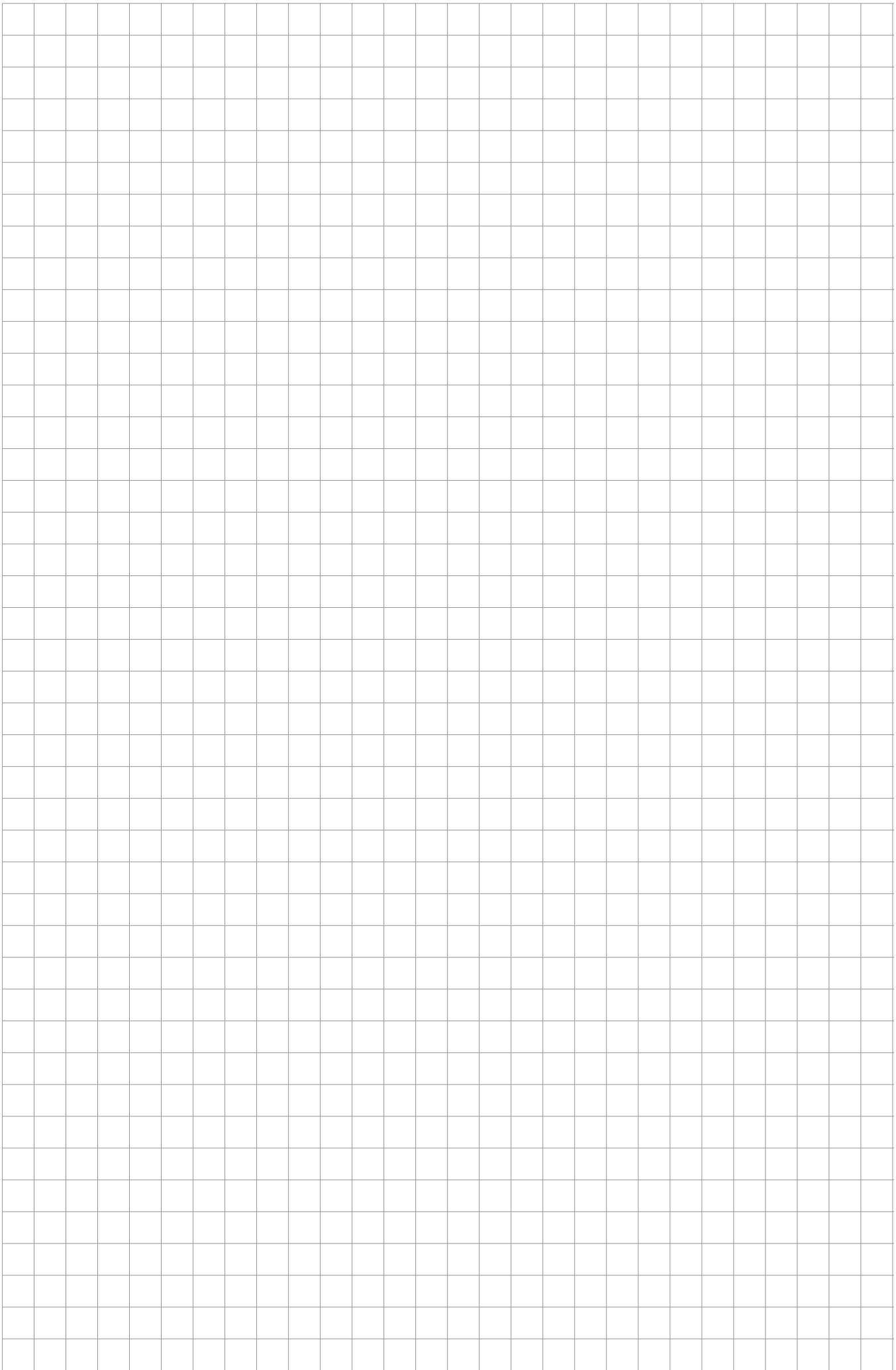
Available in M6/M8/M10 and M12 in different lengths.

Kit includes 100 bolts, 100 nuts, 200 flat washers and 200 contact washers.

For **optimal** electrical connections.

**Material:** Steel  
**Finish:** Electrogalvanized  
**Quality Class:** 8.8  
**Coating Class:** Zn 80









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