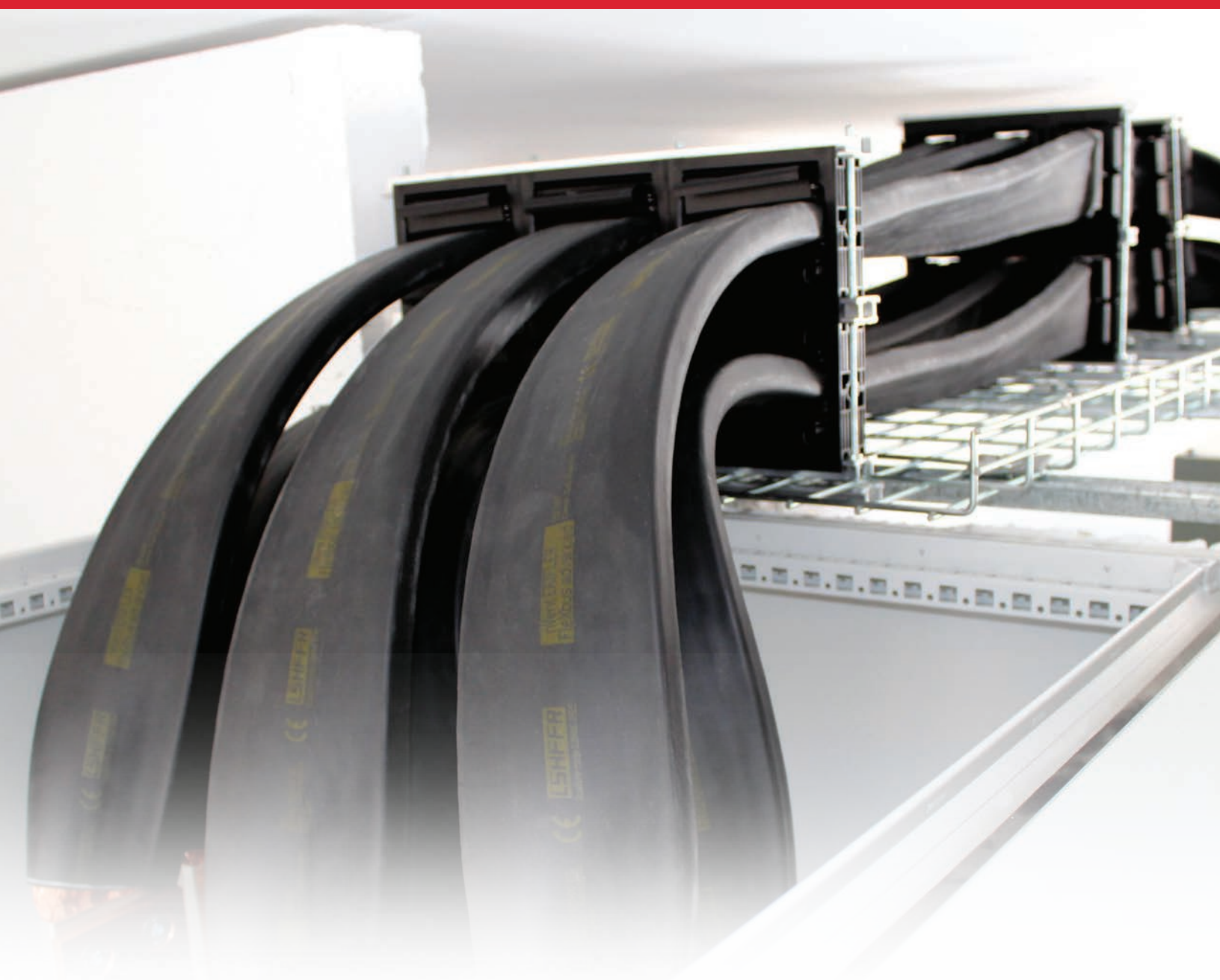


nVent ERIFLEX Flexbus (North America)

Advanced Technology Full Brochure

Solution to Simplify your 300 A to 5500 A electrical connections





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 uninterrupted power supplies (UPS).

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

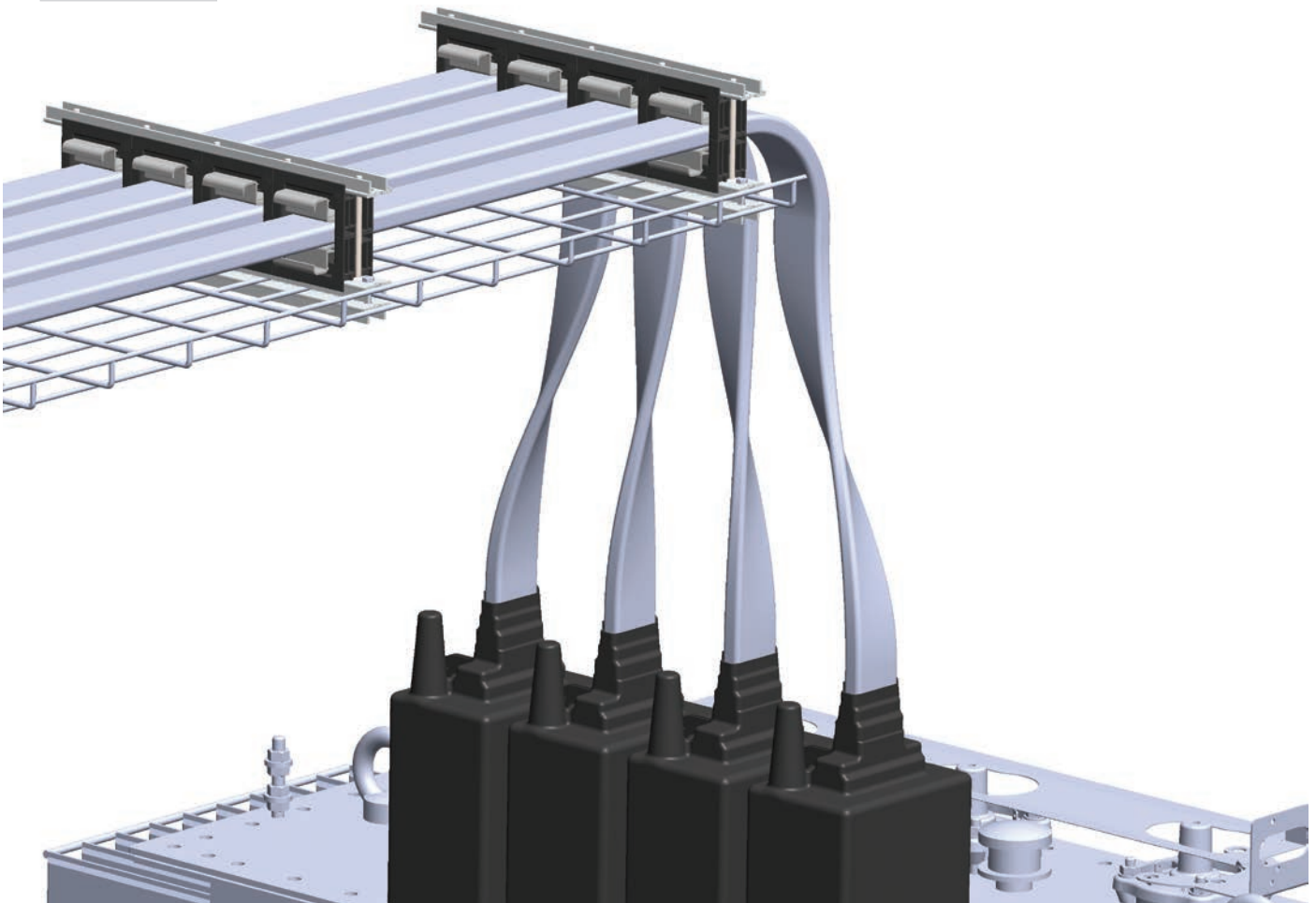
Flexbus incorporates nVent ERIFLEX Advanced Technology that provides unique features to create a conductor that is low smoke, halogen-free, flame retardant (LSHFFR) and high-temperature resistant.

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

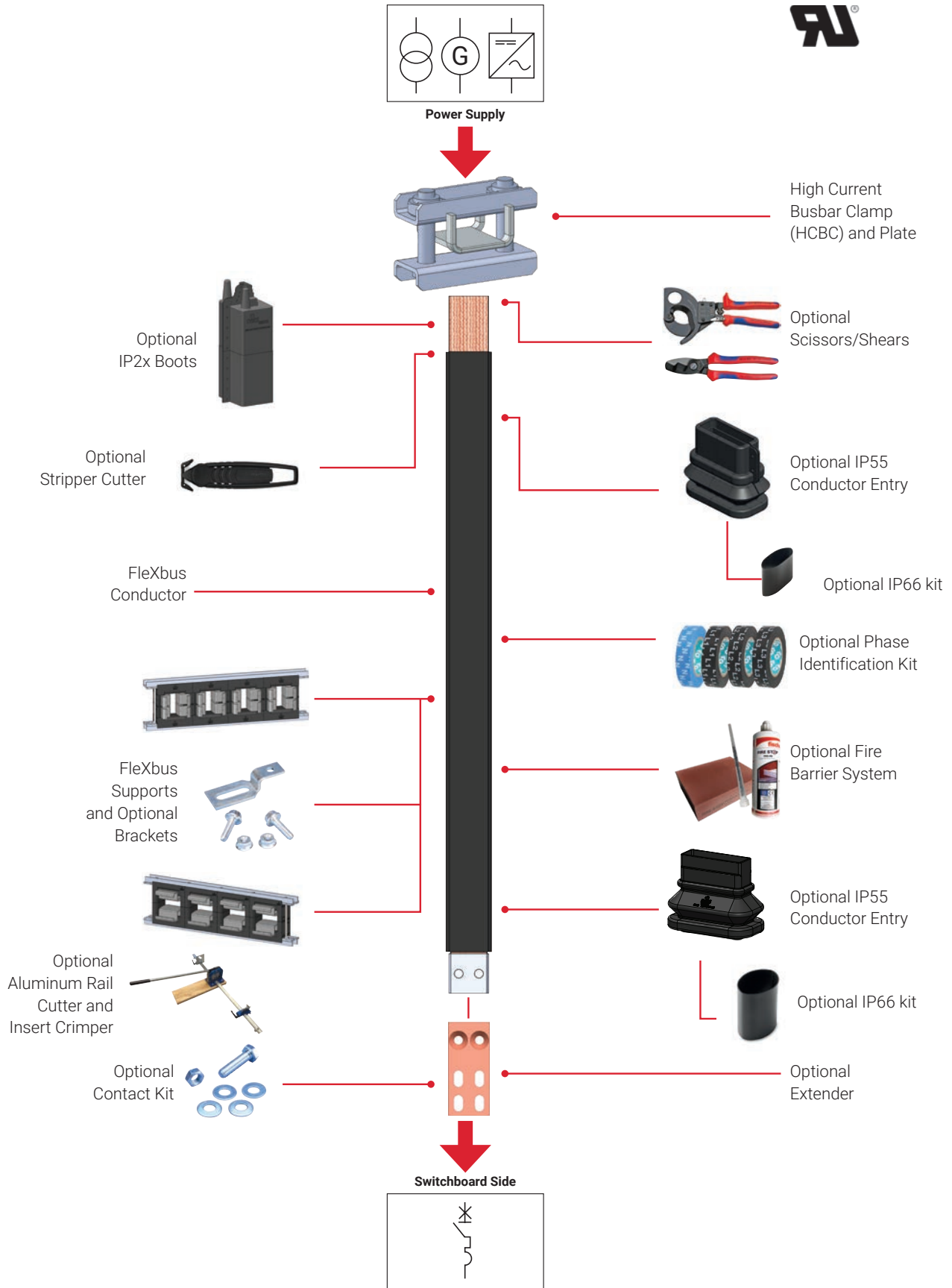
- Connections from transformers to switchgears
- Interconnection between transformers
- Connections from or to generators
- Switchgear interconnections
- Machine connections
- Other connections to fit your power needs



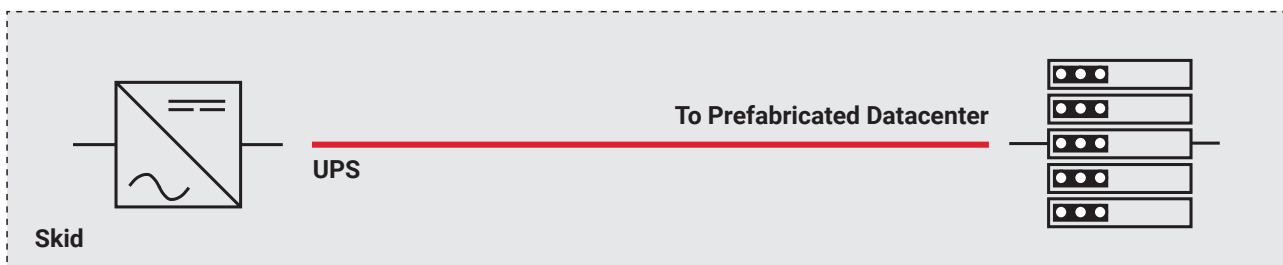
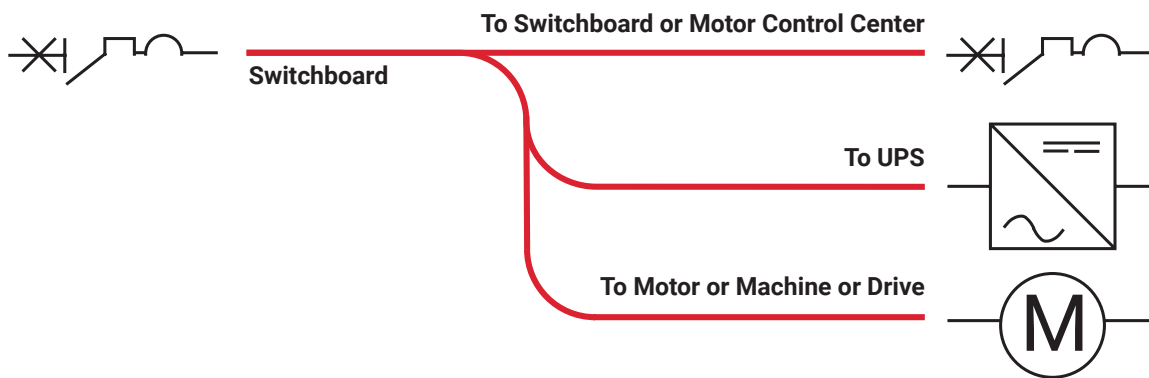
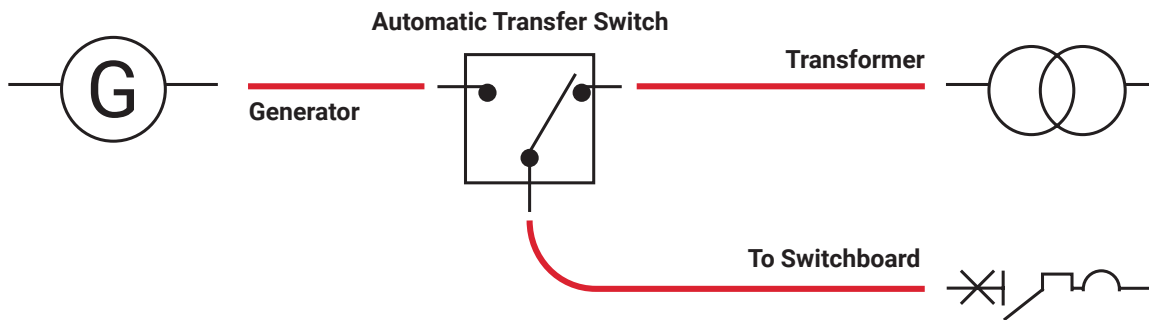
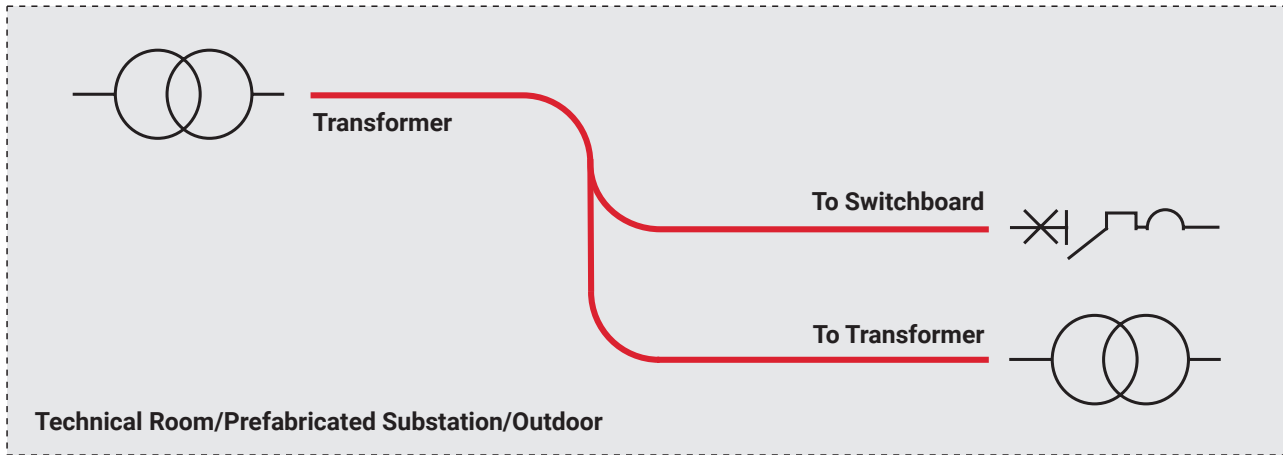
Our Calculation and Selection Tool is available online. Please contact your nVent ERIFLEX representative or register online. go.nVent.com/FlexbusConfigurator



System Index



Typical Applications



Features and Benefits



OPERATING ADVANTAGE

- Versatile, customizable, user friendly, no specific tool required. Attractive for short distances, up to 25 meters (27 yards).
- 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

- At 480V, usable as one conductor per phase from 300 kVA (360 A) to 1600 kVA (1925 A), or two conductors per phase for 1750 kVA (2100 A) to 3000 kVA (3600 A), or three conductors per phase for 3500 kVA (4200 A) to 4500 kVA (5400 A) when cable solution requires multiple conductors per phase.
- No need for specific engineering/study or strict installation measurement.
- Total installed cost reduction of 20% minimum.



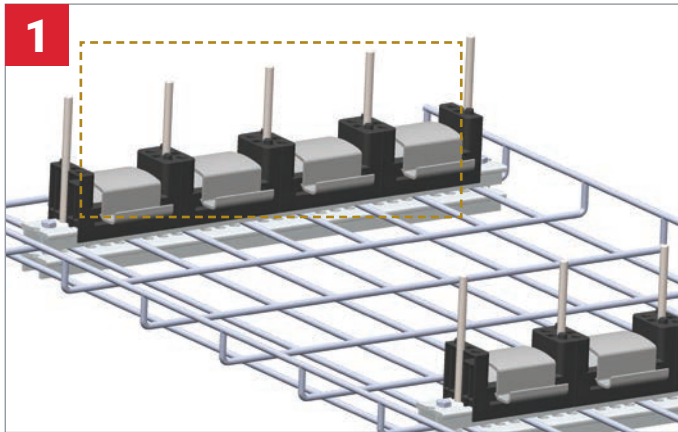
RELIABILITY AND SAFETY

- IEC / UL Recognized worldwide tested and certified.
- Low-smoke, flame-retardant, high-temperature (LSHFFR) and high-temperature resistant system.

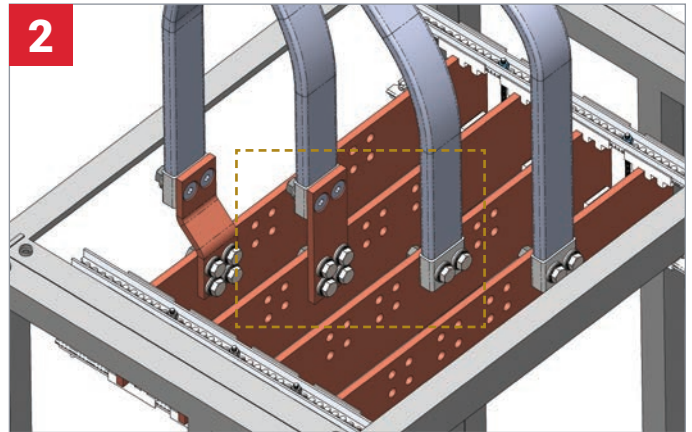
Technology Comparisons

	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	300 to 5500 A	< 2000 A	> 2000 A
Installation Time	< 1 Day	> 1 Day	> 1 Day
Number of Conductors Per Phase	1, 2 or 3	Multiple	1, 2, 3 or 4
Weight	Light	Medium	Heavy
Specialized Tools Required	None	Yes	Yes
Installation Preparation Time	None	Yes	Yes
Human Error Risk	Low	High	Medium
Total Installation Cost	Low	Medium	High


Installation Overview

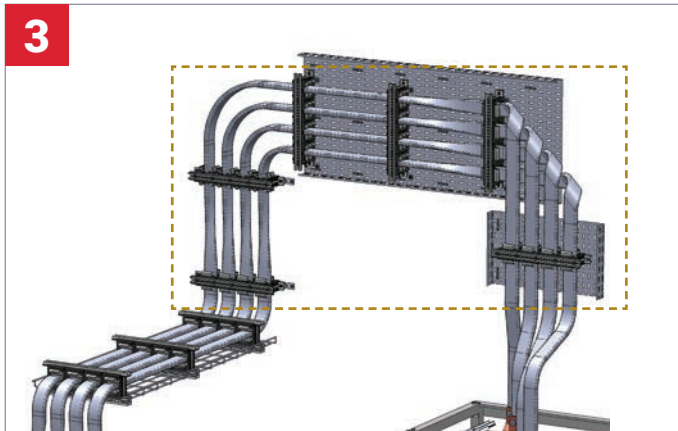


1 **Install** supports directly to the wall, ceiling or on any type of cable tray (wire basket/perforated/cable ladder). Use multiple possible mounting configurations to meet your installation configuration (flat/on-edge).

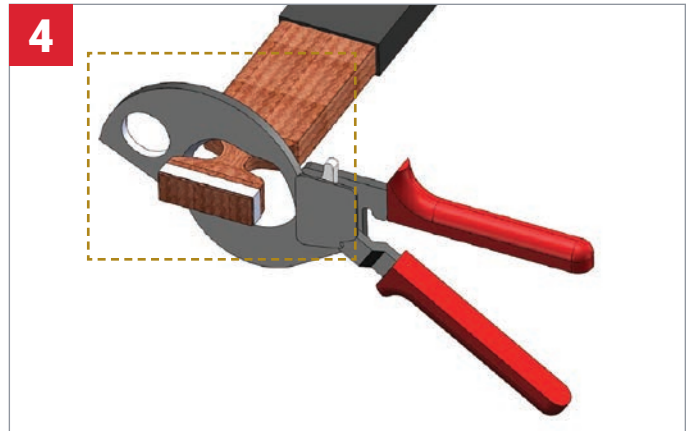


2 **Connect** the ready-to-use FleXbus conductor to the switchboard. This conductor has prepunched holes and can be connected directly to the busbar or to the circuit breaker palm.

Optional extenders are available. 

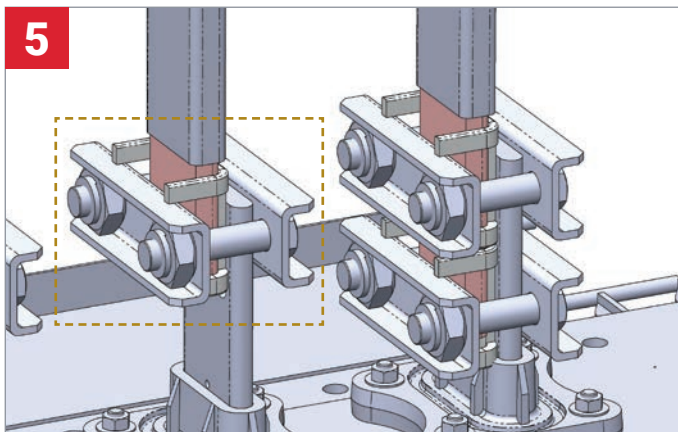


3 **Install** conductors into the supports and mount the top part of the supports. Leave conductors' excess length at the top of the transformer/power supply.

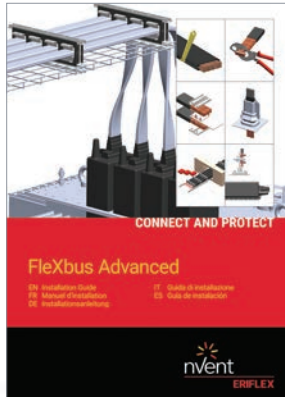


4 **Strip** FleXbus conductor insulation.


Cut FleXbus conductor excess length with FleXbus scissors or shears.



5 **Connect** FleXbus conductor with high-current Busbar Clamp (HCBC) and Plate.



See our **Installation Guide** for more details



System Overview



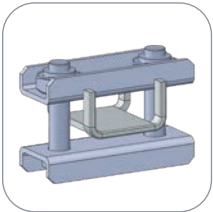
Advanced Technology
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Supports
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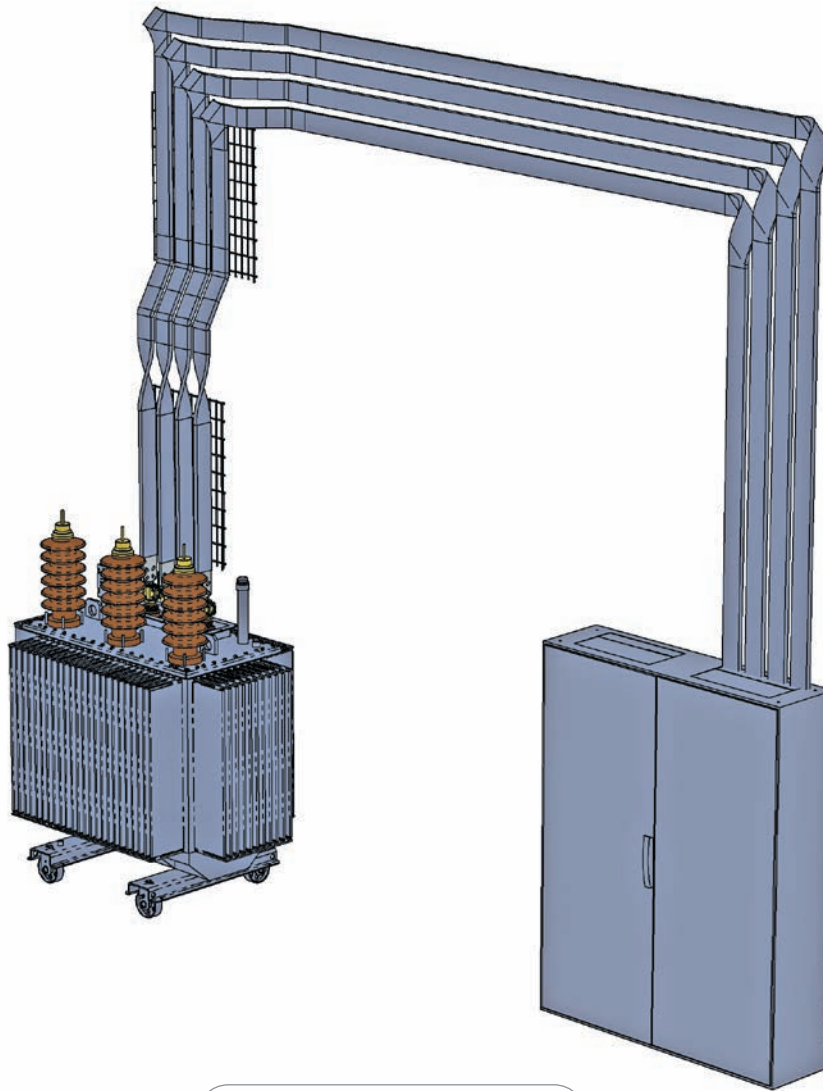
Conductor
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**High Current
Busbar Clamp
(HCBC) and Plate**
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IP2x Boots
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**IP55 and IP66
Conductor Entry**
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Fire Barrier System
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Palm Extender
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System Overview

Advance Technology Insulation



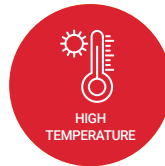
NVENT ERIFLEX ADVANCED TECHNOLOGY

The volume of power conductors and electrical devices drastically increases across industrial, commercial and residential environments. So 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.



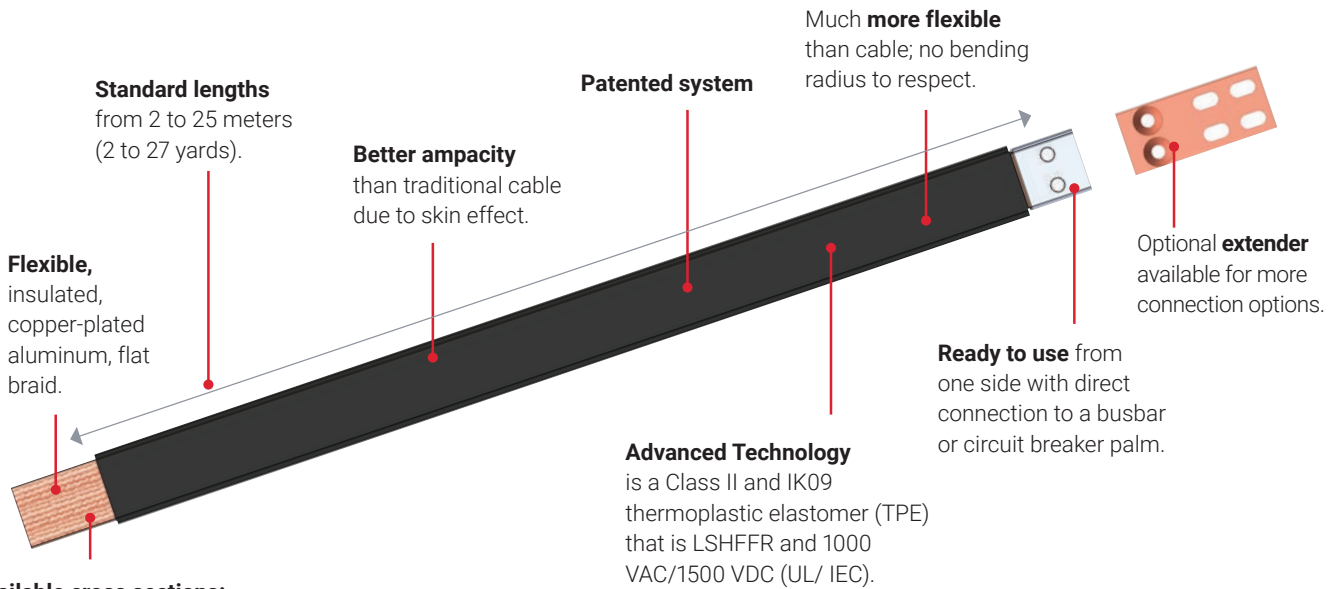
As further chemical research demonstrates halogen materials' highly corrosive and toxic nature, the demand for halogen-free solutions has risen to protect both electrical equipment and safety of people.

Advanced Technology meets halogen-free requirements according to UL 2885 and/or IEC 60754-1 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 safety and your electrical installation by reducing corrosion and toxic smoke generation.

System Overview

Conductor



Available cross sections:

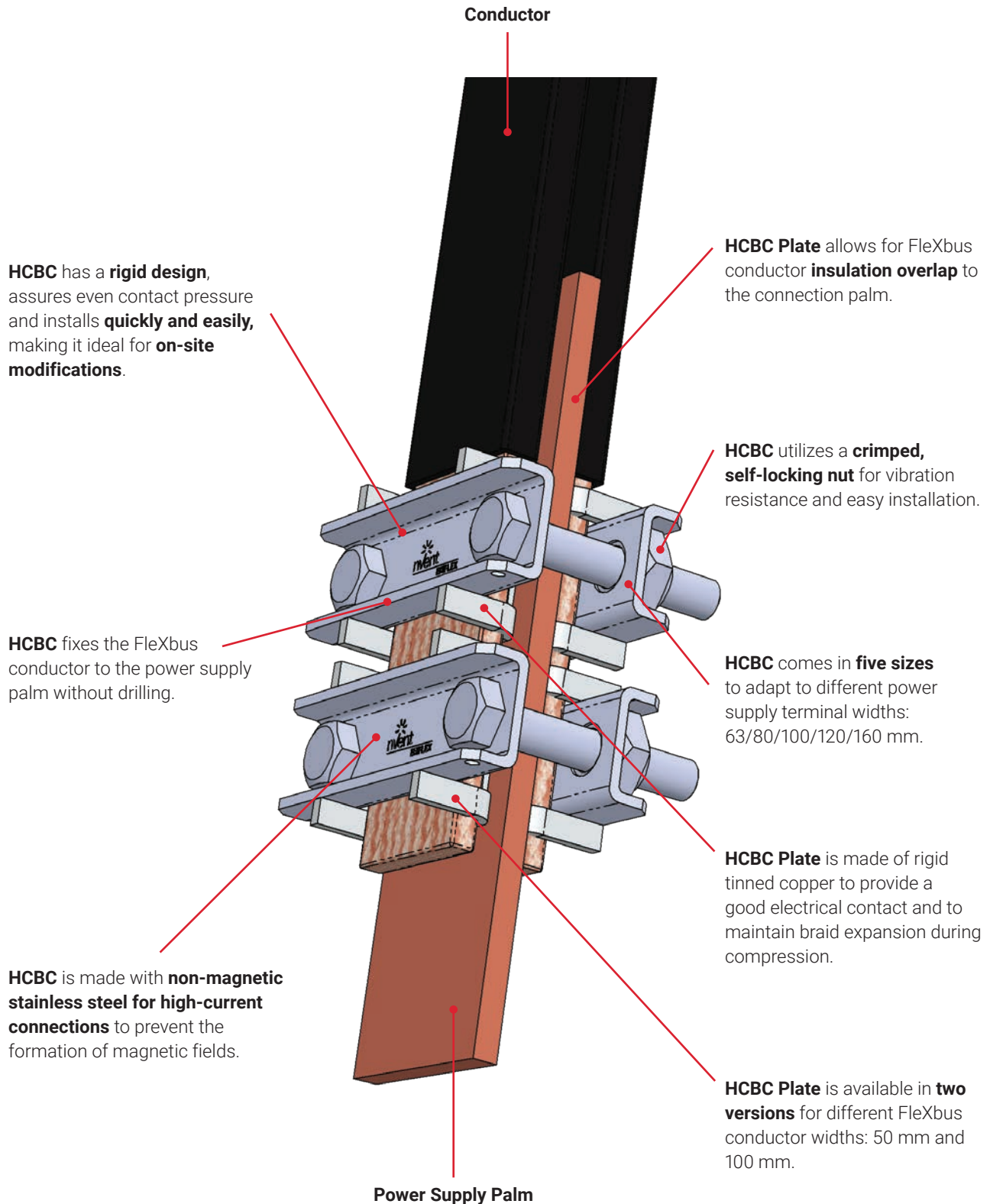
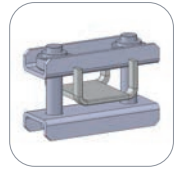
- 220 mm² (typical usage 500 kVA/600 A power supply)
- 360 mm² (typical usage 600 kVA/720 A power supply)
- 545 mm² (typical usage 750 kVA/900 A power supply)
- 640 mm² (typical usage 900 kVA/1080 A power supply)
- 960 mm² (typical usage 1250 kVA/1500 A power supply)
- 1280 mm² (typical usage 1400 kVA/1680 A power supply)
- 1810 mm² (typical usage 1650 kVA/1985 A power supply)

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

HV/LV Transformer 480V at secondary	Current LV – I _n (A)	Typical Usage Copper Cable/Phase		Typical Usage Aluminum Cable/Phase		Typical Power Busduct Usage	Flexbus Conductor/Phase
225 kVA	271	1 x 2/0 AWG	●	1 x 4/0 AWG	●		1 x 220 mm ²
300 kVA	361	1 x 4/0 AWG	●	1 x 300 kcmil	●		1 x 220 mm ²
500 kVA	601	1 x 400 kcmil	●	2 x 300 kcmil	●●		1 x 220 mm ²
600 kVA	722	2 x 250 kcmil	●●	2 x 400 kcmil	●●		1 x 360 mm ²
750 kVA	902	2 x 350 kcmil	●●	3 x 350 kcmil	●●●		1 x 545 mm ²
900 kVA	1,083	2 x 500 kcmil	●●	3 x 500 kcmil	●●●		1 x 640 mm ²
1000 kVA	1,203	3 x 400 kcmil	●●●	5 x 500 kcmil	●●●●●		1 x 960 mm ²
1250 kVA	1,504	5 x 400 kcmil	●●●●●	6 x 500 kcmil	●●●●●●	Busduct	1 x 960 mm ²
1400 kVA	1,684	5 x 500 kcmil	●●●●●			Busduct	1 x 1280 mm ²
1500 kVA	1,804	6 x 400 kcmil	●●●●●●			Busduct	1 x 1810 mm ²
1600 kVA	1,925	6 x 500 kcmil	●●●●●●			Busduct	1 x 1810 mm ²
1750 kVA	2,105	7 x 500 kcmil	●●●●●●●			Busduct	2 x 640 mm ²
2000 kVA	2,406	8 x 500 kcmil	●●●●●●●●			Busduct	2 x 960 mm ²
2500 kVA	3,007					Busduct	2 x 960 mm ²
3000 kVA	3,608					Busduct	2 x 1810 mm ²
3500 kVA	4,210					Busduct	3 x 960 mm ²
4000 kVA	4,811					Busduct	3 x 1280 mm ²
4500 kVA	5,413					Busduct	3 x 1810 mm ²

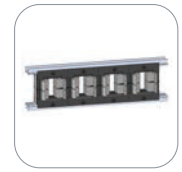
System Overview

High-Current Busbar Clamp (HCBC) and Plate



System Overview

Supports

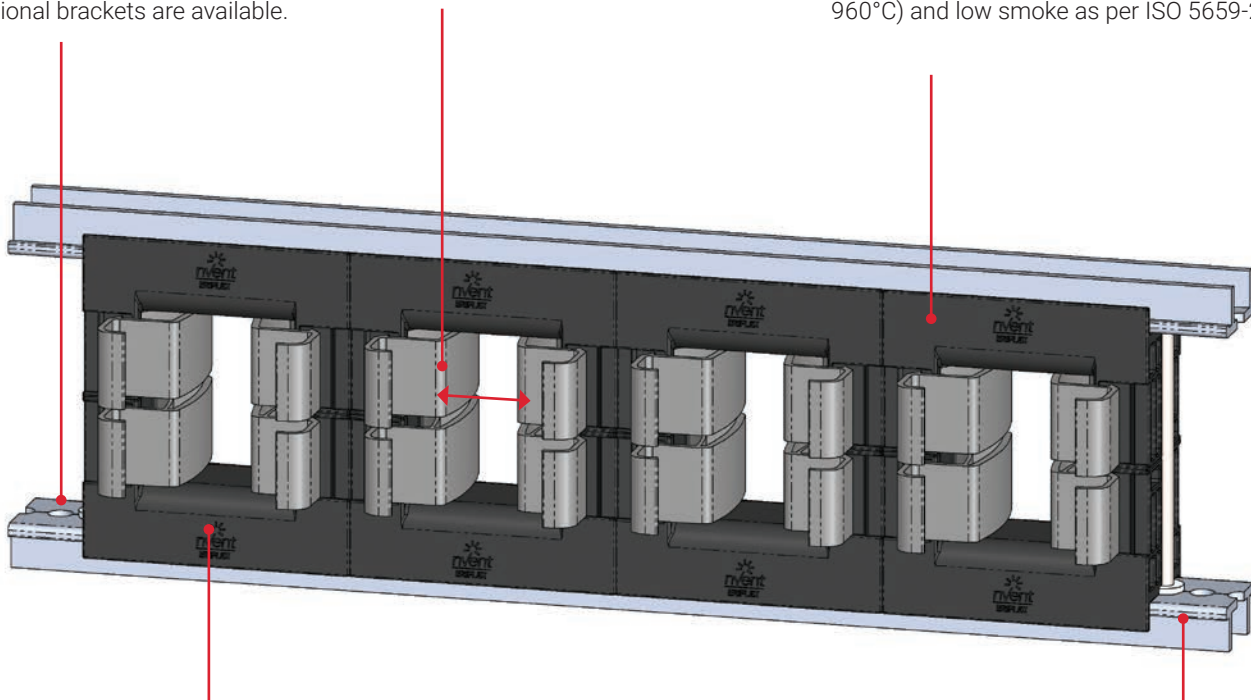


SUPPORT EDGE

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.

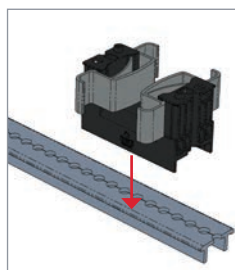
Adjustable clip to adapt the support with different conductor thicknesses (open/closed position).

Made with glass fiber-reinforced polyamide, **halogen-free**, RoHS compliant, working temperature of -40 F to 266 F, flammability rated to UL 94 V-0 and IEC 60695-2-11 (Glow Wire Test 960°C) and low smoke as per ISO 5659-2.

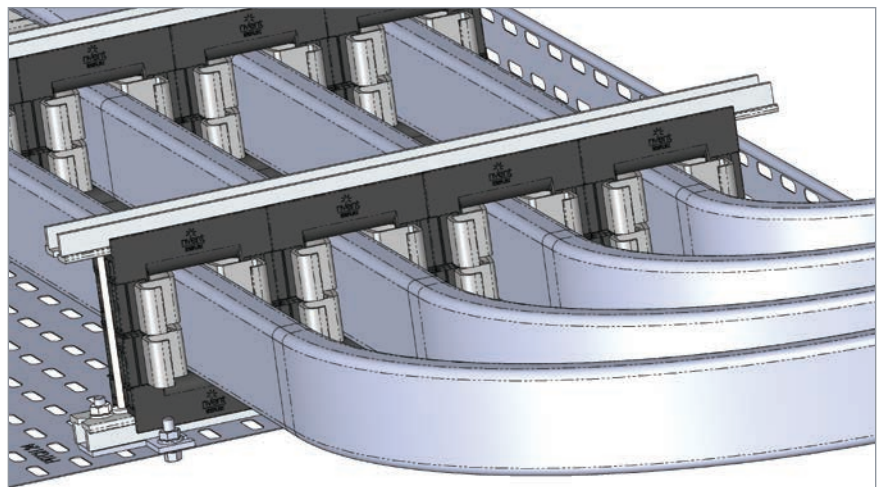
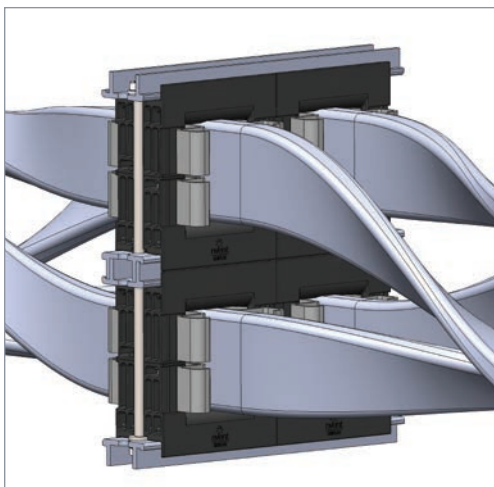


Flexbus support kits are easy to mount, with multiple configurations possible.

- 3P, 3P+N, 3P+N+PE
- One, two or three conductors per phase
- Side by side or on top
- Adjustable distance between each conductor (12.5 mm or 0.49 inch pitch)



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



System Overview

Supports

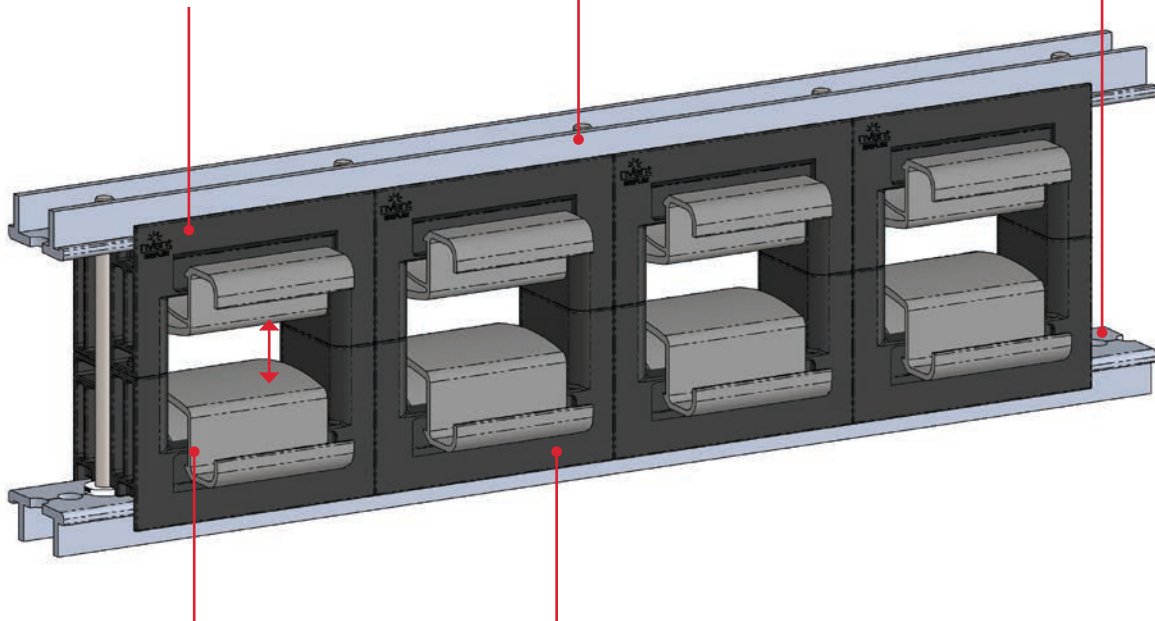


SUPPORT FLAT

Made with glass fiber-reinforced polyamide, **halogen-free**, RoHS compliant, working temperature of -40 F to 266 F, flammability rated to UL 94 V-0 and IEC 60695-2-11 (Glow Wire Test 960°C) and low smoke as per ISO 5659-2.

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

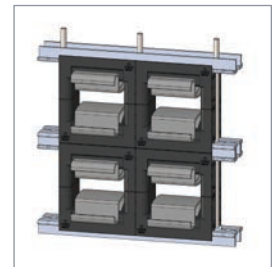
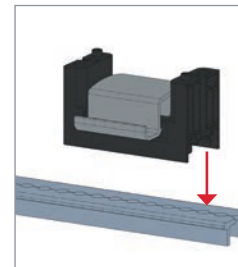
Punched-hole aluminum profile to fix the support directly on the wall, on the ceiling or on cable tray (wire/perforated/ladder cable tray). Optional brackets are available.



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

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

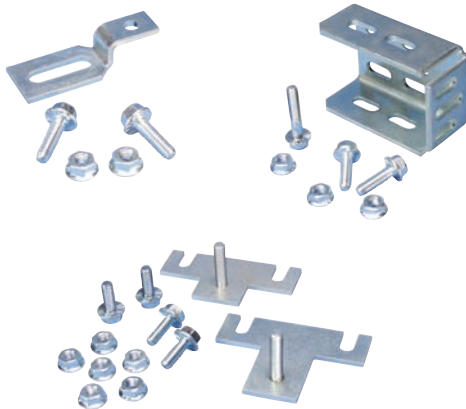
- 3P, 3P+N, or 3P+N+PE
- One, two or three conductors per phase
- Side by side or on top
- Adjustable distance between each conductor (12.5 mm or 0.49 inch pitch)



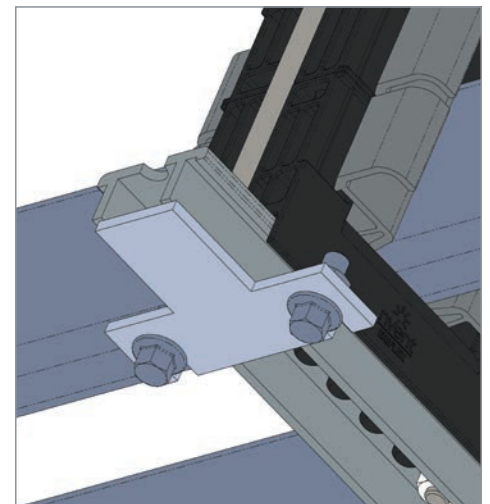
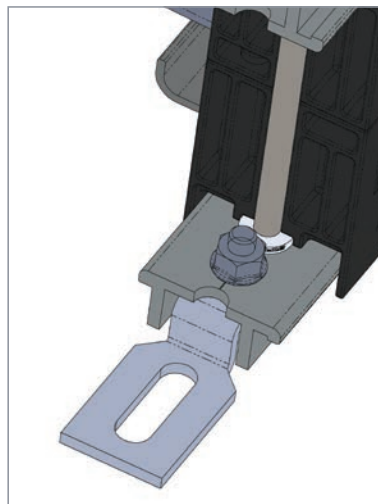
SUPPORT BRACKETS

Bracket CABS – E

Bracket CABS – M



Bracket CABS – T



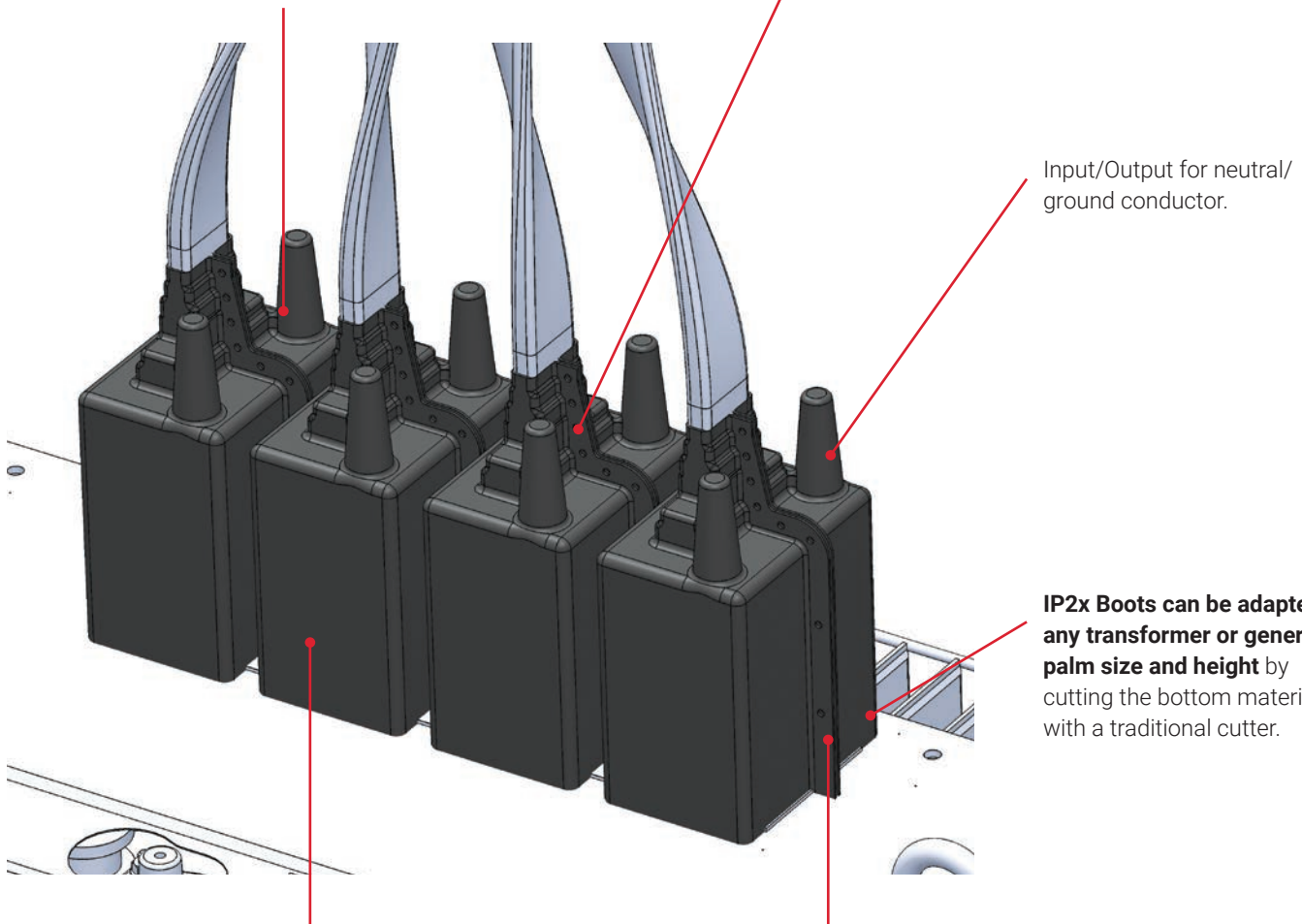
System Overview

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 12.5 mm (0.49 inch).

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

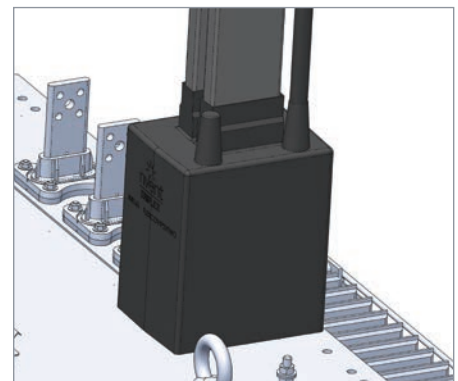
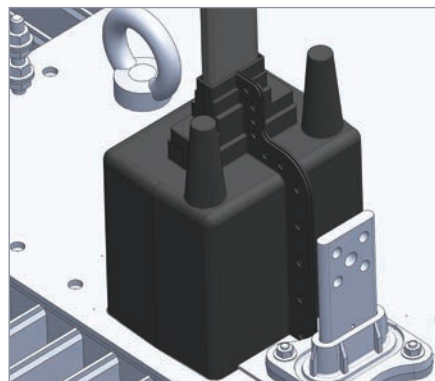
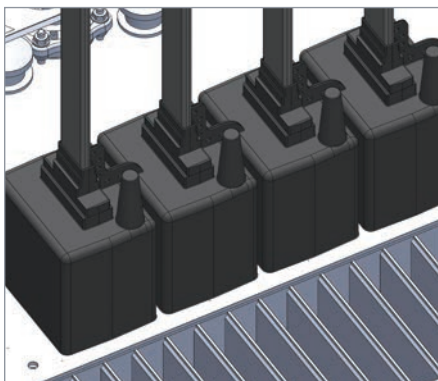


Input/Output for neutral/ground conductor.

IP2x Boots can be adapted to any transformer or generator palm size and height by cutting the bottom material with a traditional cutter.

Made with high-resistant and flexible PVC, **flame retardant and 284°F temperature resistant.**

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



System Overview

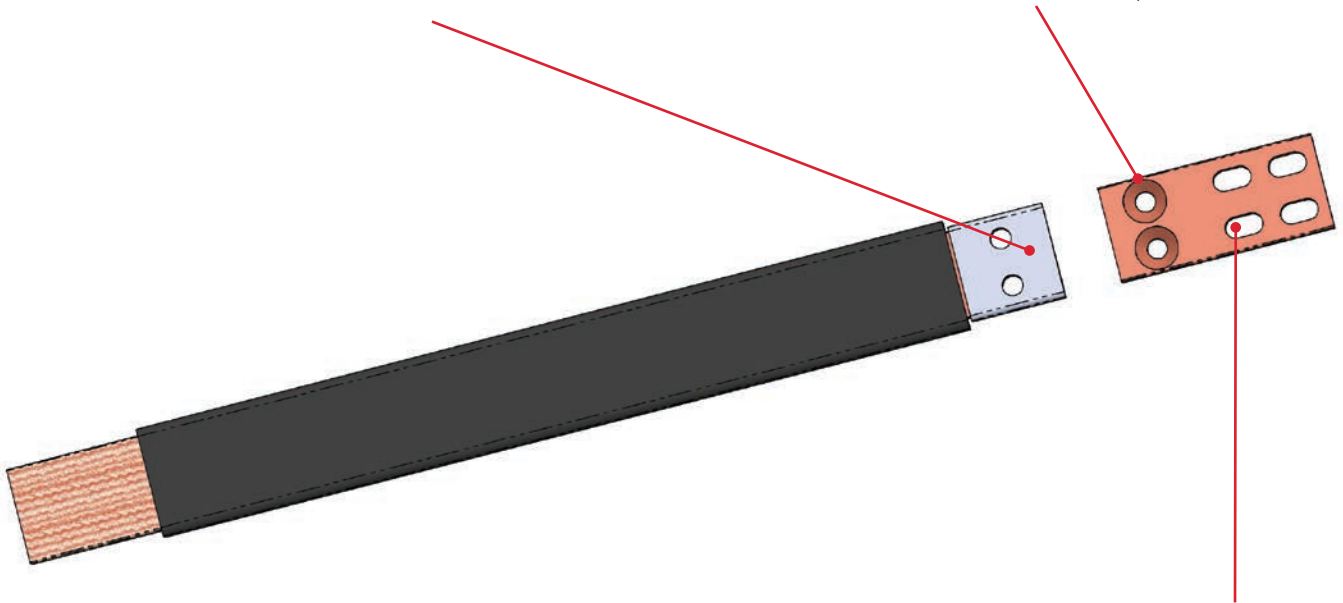
Palm Extender





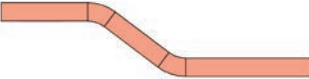
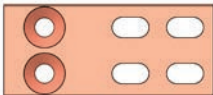


FleXbus conductor is ready to use from one side with direct connection on busbar or circuit breaker palm. However, optional **extenders** are available for more connection possibilities.

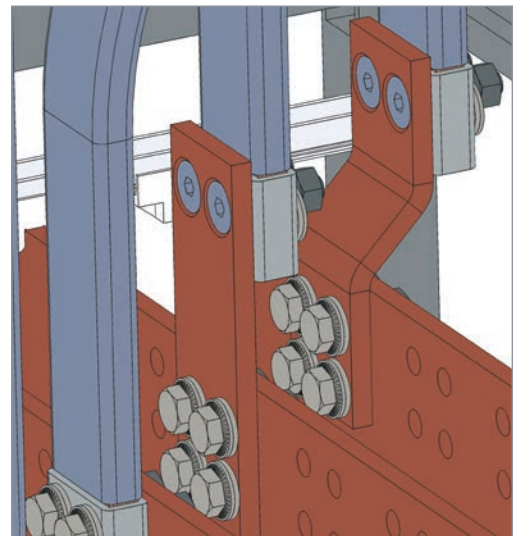
Extender Cross Sections:

- 50 x 10 mm for FleXbus Conductor 220, 360, 545 and 640 mm²
- 100 x 10 mm for FleXbus Conductor 960, 1280 and 1810 mm²



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

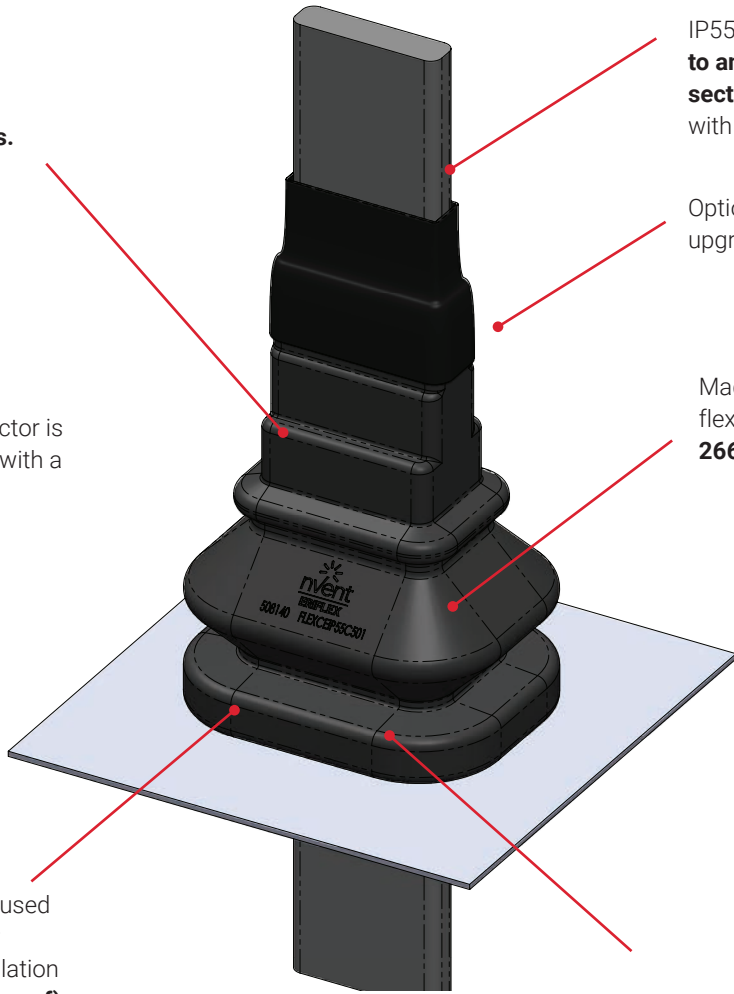
IP55 and IP66 Conductor Entry



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

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

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



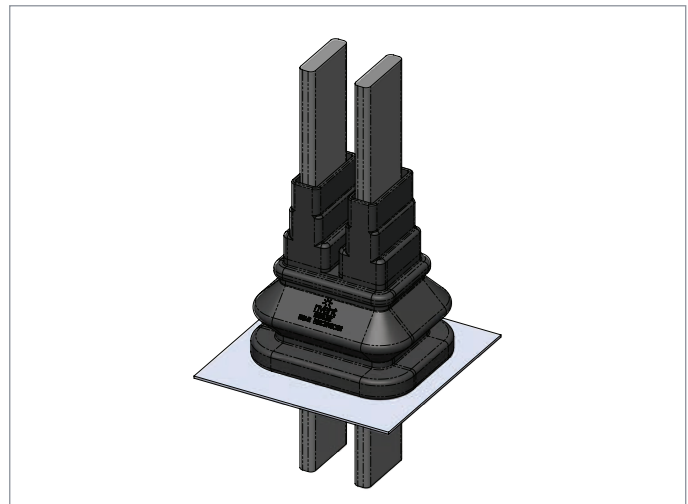
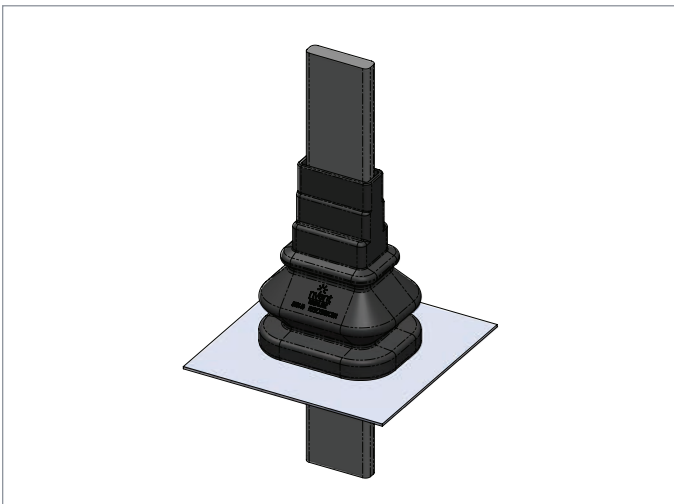
IP55 Conductor entry **can be adapted to any Flexbus Conductor cross section** by cutting the top material with a traditional cutting tool.

Optional heat shrink tubing to upgrade from IP55 to IP66

Made with highly resistant and flexible PVC, **Flame retardant, and 266°F temperature resistant.**

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

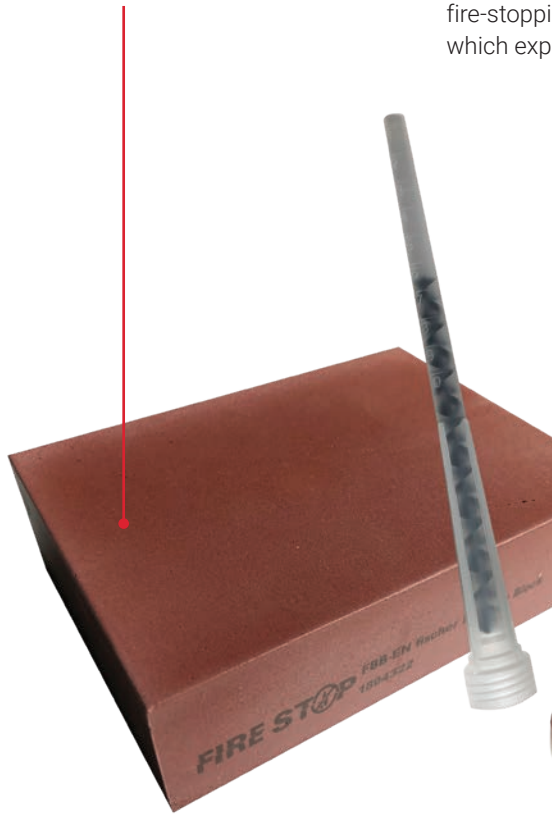


System Overview

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 up to five times its volume.



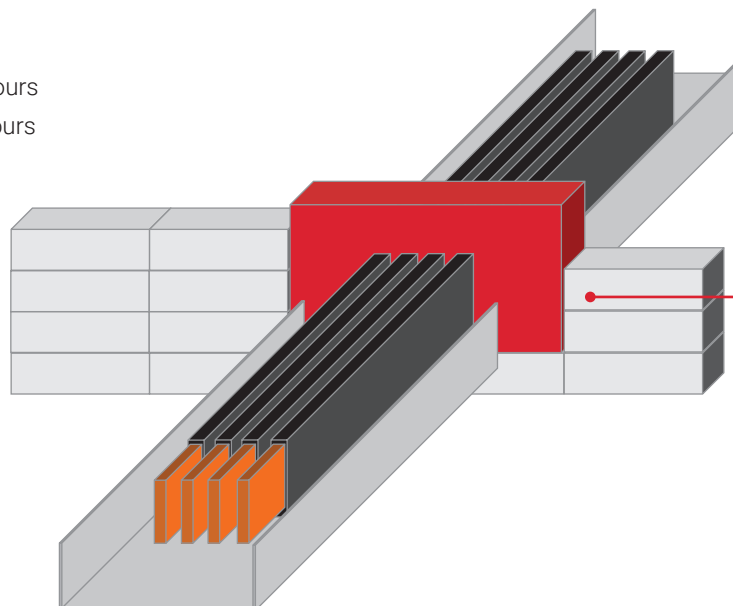
Flexbus Insulating Bandage (FIB): Intumescent wrap on the basis of butyl rubber with intumescent fire protection additives and glass fabric reinforcement. To be used around Flexbus conductors if the thickness of the penetration seal is < to 200 mm.



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).



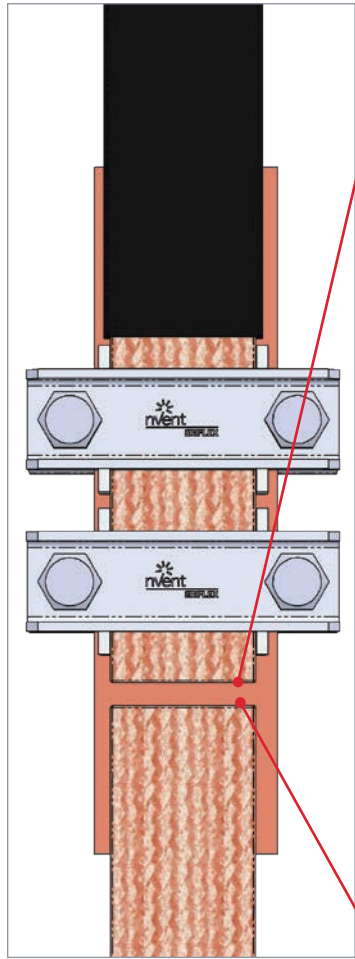
Building material:

- 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.

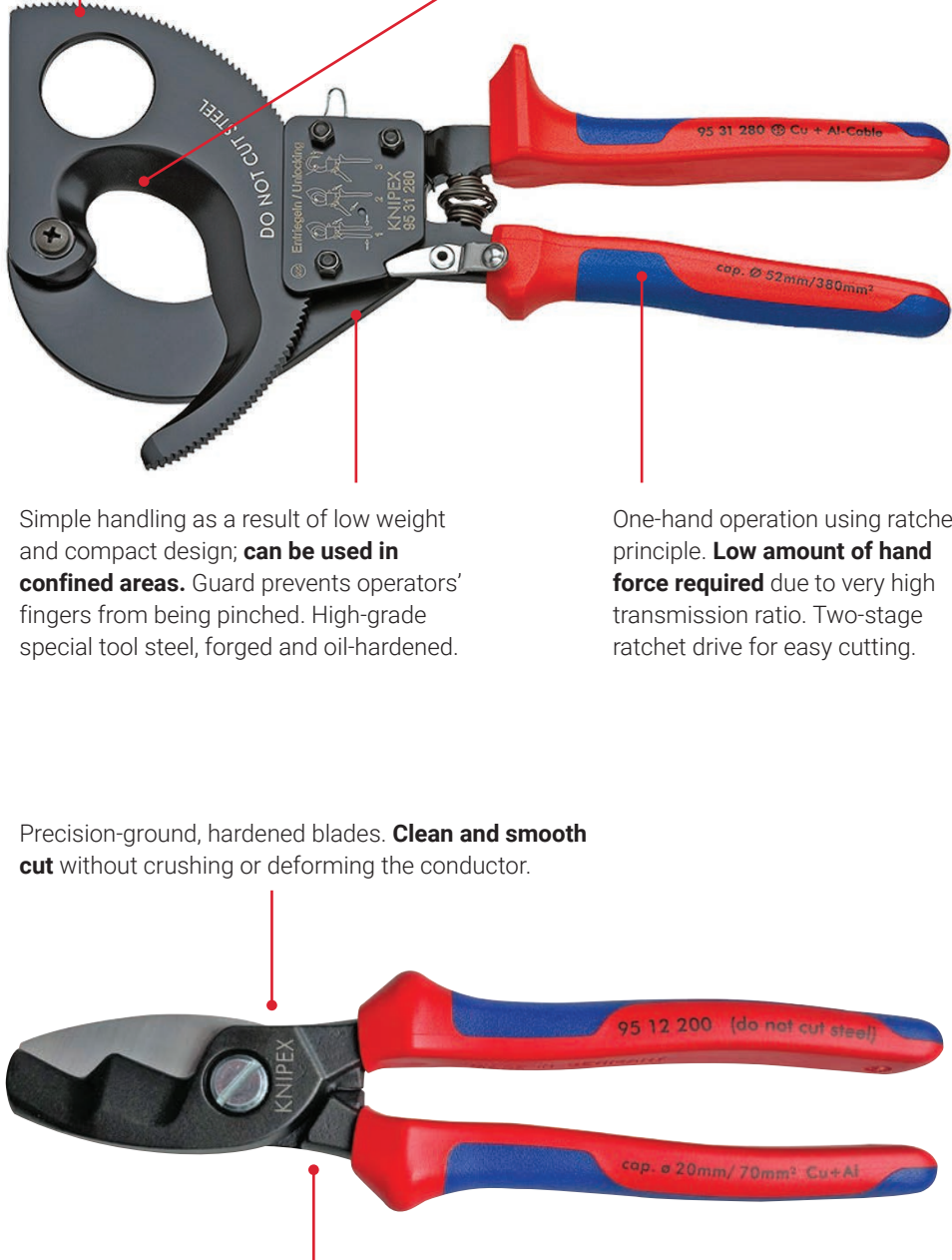
Precision-ground, hardened blades. Clean and smooth cut without crushing or deforming the conductor.

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

FLEXBUS ALUMINUM RAIL CUTTER AND INSERT CRIMPER

Cuts FleXbus Aluminum Perforated Profile without burrs or deformation and chip-free

Crimps the threaded rods insert on the aluminum rail (from top or bottom)

Safe usage and conditions

Includes ruler, guide, and end stops

Precise and repetitive cuts

Provided with wooden floor plate and transportation box

Cuts M6 threaded rods

Can be fixed on a table or workbench or used on the floor with the supplied wooden plate



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**

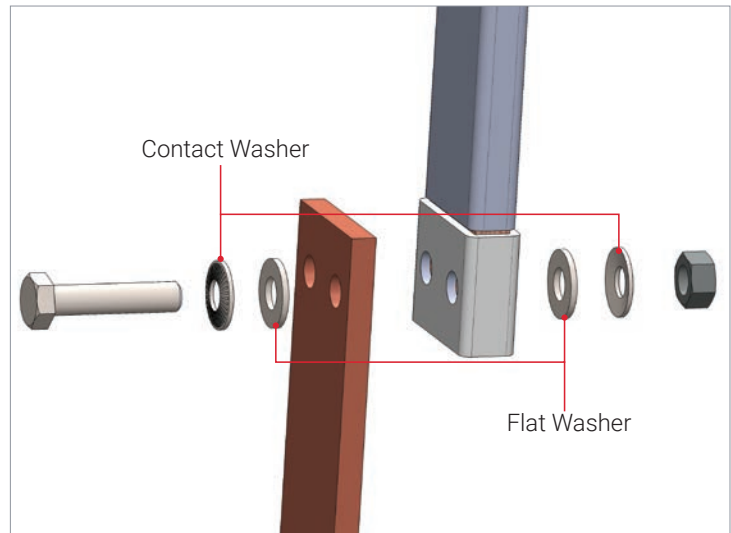
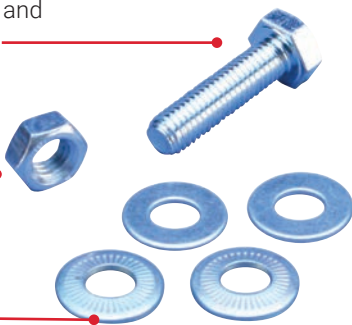


CONTACT KIT

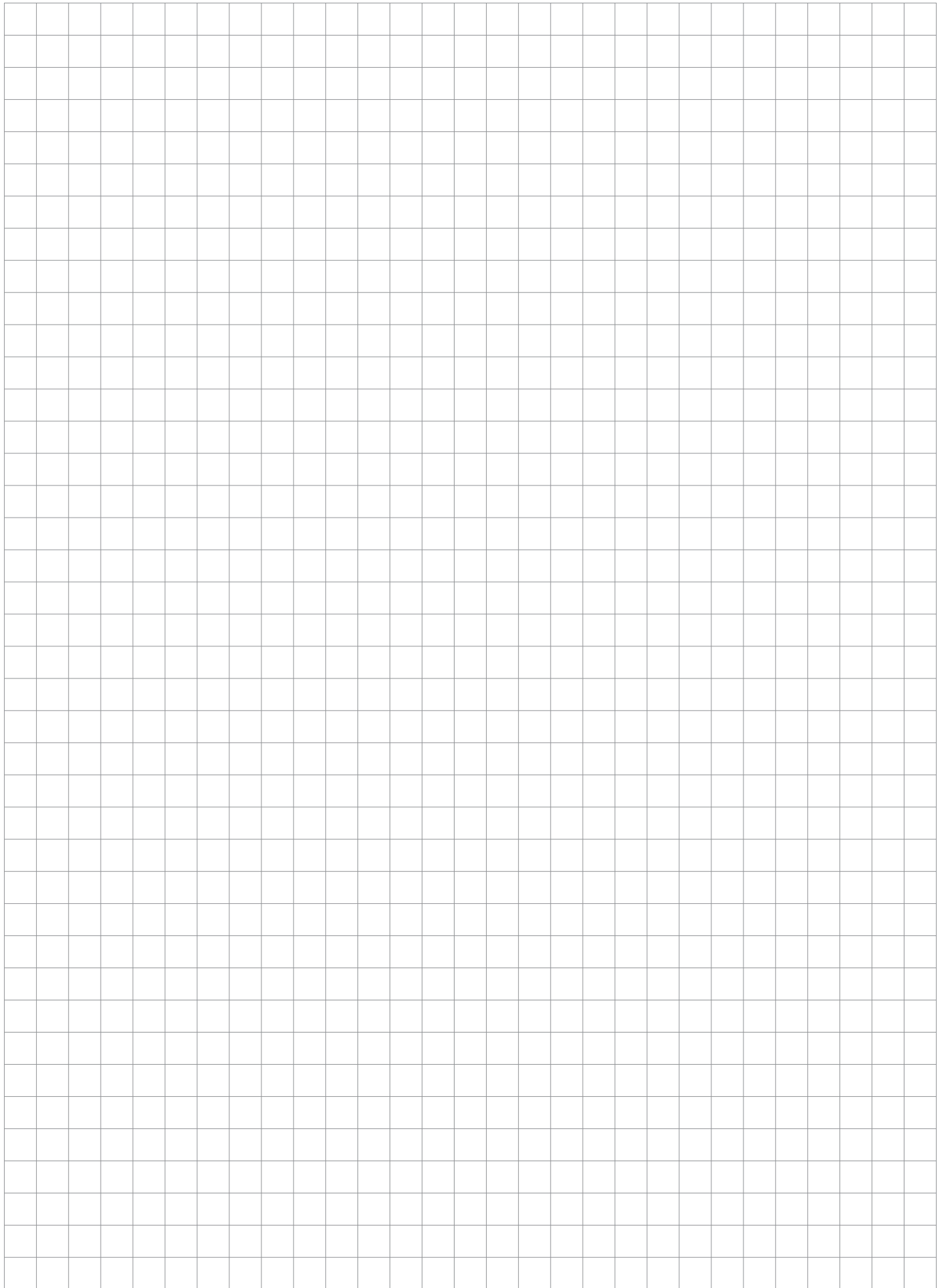
Available in M6/M8/M10 and M12 in different lengths.

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 8C





Our powerful portfolio of brands:

CADDY ERICO HOFFMAN ILSCO RAYCHEM SCHROFF