Discover nVent ERIFLEX - NSRP

Low Voltage Power and Grounding Connections





Connecting and Protecting The Future of Electrification



We are One nVent, connecting and protecting the world's electrical systems, making them more efficient, more resilient and safer

nVent Solutions

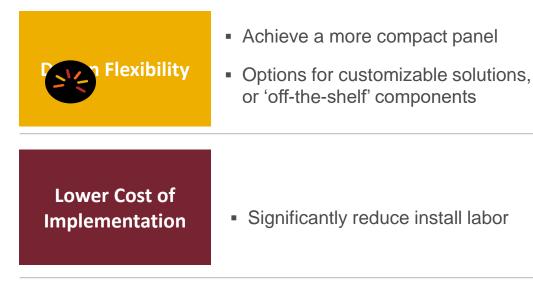
CONNECTION and PROTECTION Solutions for Electrical Systems





nVent Solutions Provide Key Advantages

- nVent provides innovative connection and protection solutions that are well-suited for eMobility, Energy Storage, and Renewables (solar and wind) applications
- We help our customers lower the overall cost of implementation, while increasing design flexibility as well as system safety and reliability







Low-voltage systems from 80A to 7400A and rated up to 1000V AC & 1500V DC

We deliver 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.

Safety and Reliability Gain peace-of-mind knowing nVent products meet the highest standards for safety and performance

Highlights about the nVent ERIFLEX Advanced Flat Conductors

- NVent ERIFLEX Flexibar Advanced Insulated Flexible Busbar
- From 125 to 6000 A
 Available in standard 2 or 3 meters
 - Other length on request



• nVent ERIFLEX IBSB Advanced – Insulated Braided Conductor



nVent ERIFLEX Flexible Power Conductors

nVent ERIFLEX Flexibar Advanced flexible busbar



Integral Palm Terminations

- Eliminates the need for crimped lugs, significantly reducing labor time (and cost)
- Connects directly to the circuit breaker without the lug

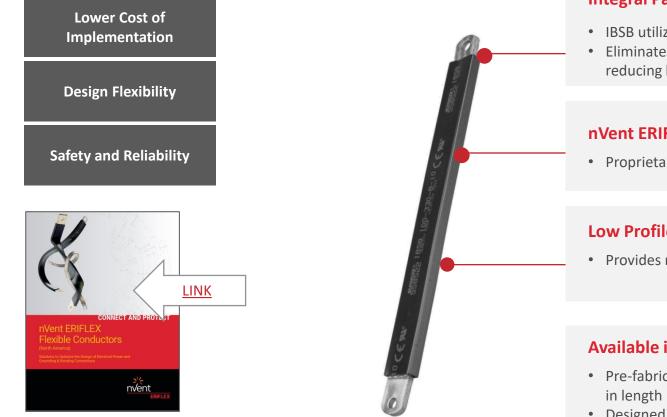
nVent ERIFLEX Advanced Technology Insulation

• Proprietary low smoke, halogen-free, flame-retardant insulation

Low Profile, Lightweight and Flexible

- Provides many ways to compress a panel
- No required bend radius
- Well suited for connections in tight spaces

nVent ERIFLEX IBSB Advanced Insulated Braided Conductor



Integral Palm Terminations

- IBSB utilizes a proprietary process to form the palms
- Eliminates the need for crimped lugs, significantly reducing labor time (and cost)

nVent ERIFLEX Advanced Technology Insulation

• Proprietary low smoke, halogen-free, flame-retardant insulation

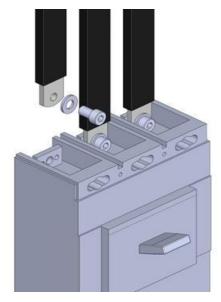
Low Profile, Lightweight and Flexible

• Provides many ways to compress a panel

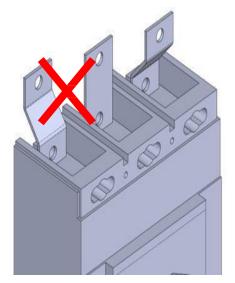
Available in Standard Sizes

- Pre-fabricated (off-the-shelf) standard sizes from 9 in to 40 inches in length
- Designed to connect to the most common circuit breakers

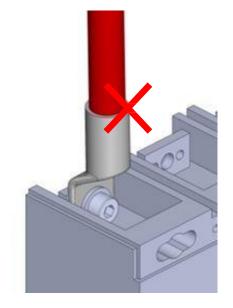
Ideal Circuit Breaker Connection



Direct connection with IBS & IBSB ADVANCED



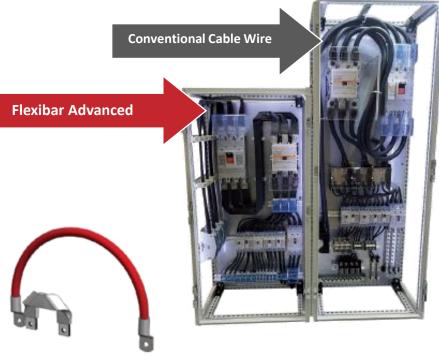
No spreader, no extender needed



Nolug, no tools needed

Panel Comparison: nVent ERIFLEX vs. Conventional Connections

nVent ERIFLEX Flexibar Advanced	Conventional Cable Wire	
::	1 C	Flexi
 Flexible to fit in tight spaces Can be customized (length and bend), arriving pre- formed 	 Rigid, Stiff, Limited Range of Bend 	1
 Low profile (flat), light-weight Flexibar Advanced consumes 20% LESS VOLUME than conventional cable wire which allows for more compact panels, and provides space to add more high value equipment within a panel 	 Round conductor, more spatial constraints 	
 Integral palm terminal not require cutting and crimping during installation, <u>REDUCING LABOR TIME</u> by as much as 40% 	 Cable/lug termination requires cutting and crimping during installation 	A N In a the pane

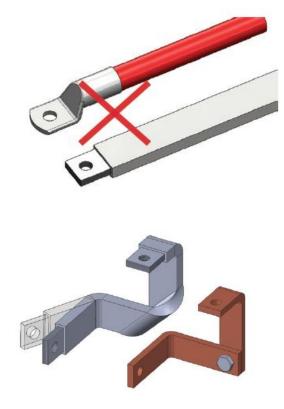


A More Compact Panel

In a side-by-side comparison of two similar electrical panels, the lefthand panel with **Flexibar Advanced** is **20%** smaller than the panel on the right featuring **Conventional Cable Wire**.

Highlights about the nVent ERIFLEX Advanced Flat Conductors

- Reduced assembly time and cost
- Higher throughput
- Number of hot spots reduced leading to greater reliability

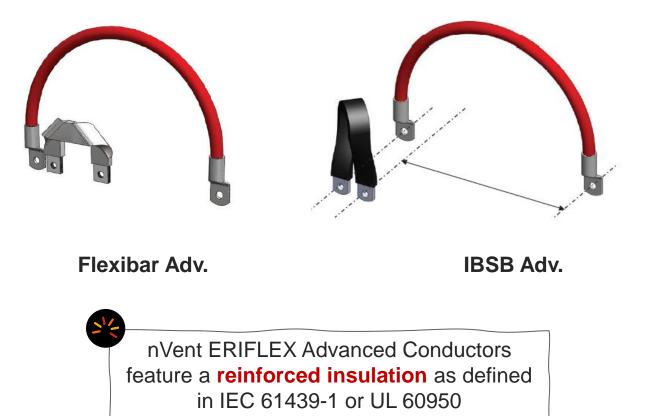


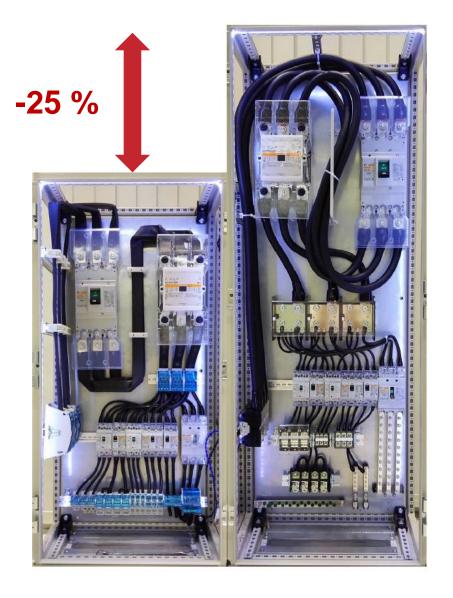


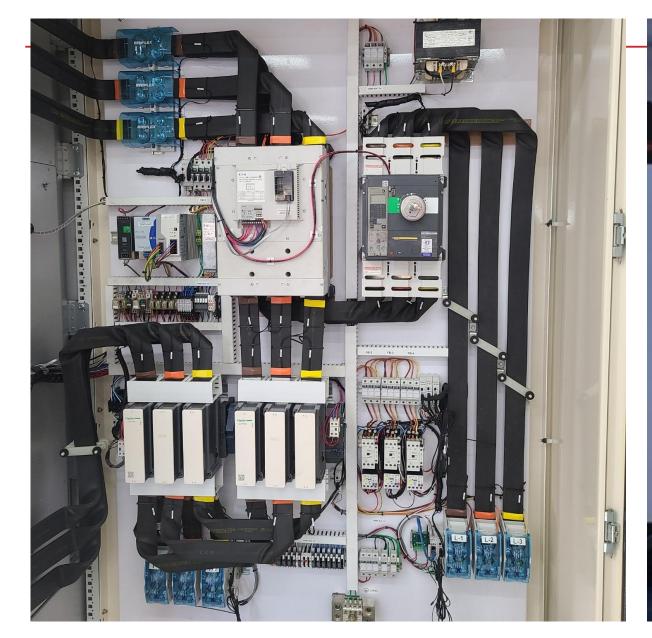


Highlights about the nVent ERIFLEX Advanced Flat Conductors

- Reduced cross-section leads to space and weight savings
- Field maintenance simplified



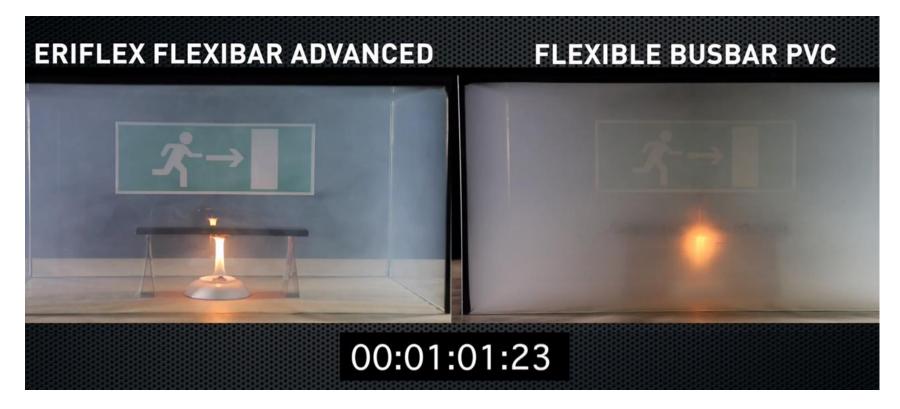




nVent ERIFLEX Flexibar Advanced vs. Cable Bend Radius Comparison for 860A Connections



Highlights about the nVent ERIFLEX Advanced Conductors

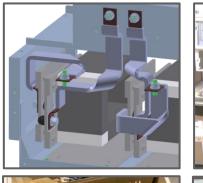


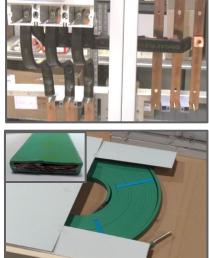
What does Advanced stand for?

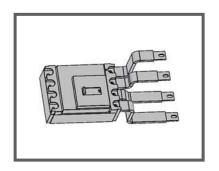
nVent ERIFLEX Engineering and Design Services



Engineering & Made-to-Order Capabilities









nVent ERIFLEX Engineering Support

- Provides technical and configuration advice
- Helps quote your complete low voltage power solution
- Trusted solutions include: nVent ERIFLEX Flexibar Advanced, Braids & IBS/IBSB Advanced
- All designed to meet your most challenging panel design and production requirements

nVent ERIFLEX Software Support

- Assisted product selection
- IEC Power losses (heat dissipation)
- <u>https://eriflex-configurator.nvent.com/eriflex/</u>

nVent ERIFLEX Blocks

• nVent ERIFLEX Distribution Blocks (1) and Power Blocks (2)





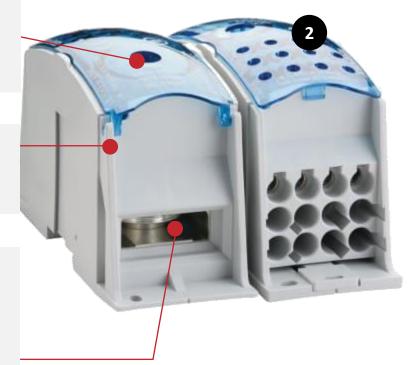
• Inspection window confirmation of the wire connection

Modular, Gangable

• Snap-together modules to built multipole blocks

Easy Installation, Compatibility

- Easily clips onto DIN rail or mounts to panel with screws
- Integrates well with nVent ERIFLEX conductors as well as conventional cable – righthand power block has flat input for nVent ERIFLEX Flexibar Advanced flexible busbar



Highlights about the nVent ERIFLEX Distribution Solutions

Old way vs. New Way







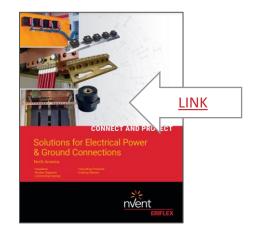
nVent ERIFLEX Busbar Supports

• nVent ERIFLEX CABS (1) and Insulators (2)

Lower Cost of Implementation

Design Flexibility

Safety and Reliability



nVent ERIFELX CABS Engineered, Configurable Solution

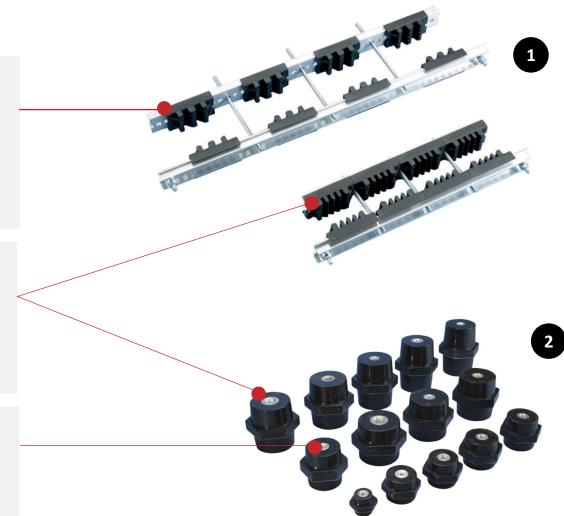
- Configurable using off the shelf nVent ERIFLEX components
- SCCR (short circuit current rating) up to 200 kA

nVent ERIFLEX Advanced Technology Insulation (both)

- Low Smoke, Halogen-Free, Flame Retardant
- Dielectric material

Easy Installation of nVent ERILEX low Voltage Insulators

- Features built-in hex
- Insulator voltages 1000 VAC / 1500 VDC



nVent ERIFLEX Busbar Supports



nVent ERIFLEX Flexibar Advanced

nVent ERIFLEX Power Terminals

nVent ERIFLEX Grounding and Bonding Braids

• NVent ERIFLEX MBJ Braid (1), CPI Stainless Steel Braid (2), and MBJYG Insulated Braid(3)

Lower Cost of Implementation

Design Flexibility

Safety and Reliability



Integral Palm Terminations

• Eliminates the need for crimped lugs, significantly reducing labor

Flexible

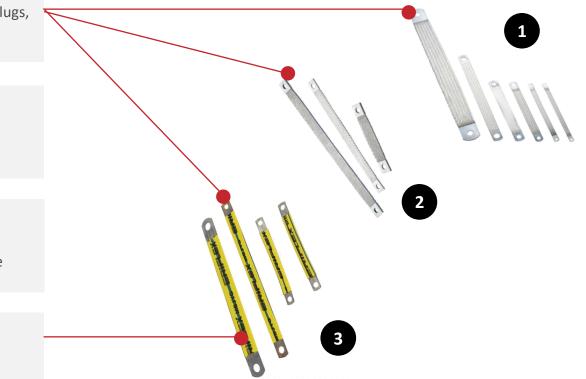
• Complete range of earth/ground flexible connections

Durable

• Resistant to vibration and fatigue

Halogen Free Insulation

ROHS compliant



Grounding Neutral Busbars and Accessories

• nVent ERIFLEX CB Connecting Bar (1), and wider Grounding Neutral Busbar and Accessories product group (2)

Lower Cost of Implementation

Design Flexibility

Safety and Reliability



Comprehensive Product Range

 Used to connect earthing conductors within a panels across a range of applications including renewables

Ideal for Solar

 nVent ERIFLEX CB Connecting Bars (pictured below) are idea for collecting DC current from a solar panel





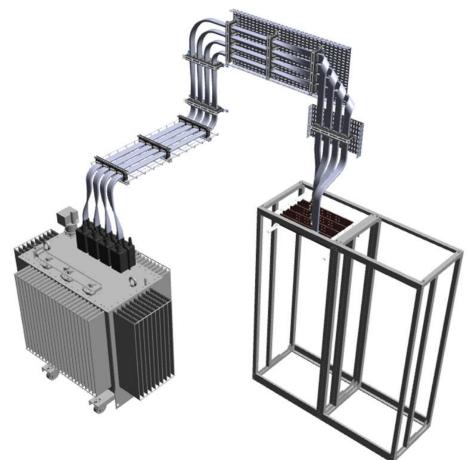
nVent ERIFLEX FleXbus System

To interconnect electrical equipment





- Innovative and patented connection solution between two pieces of electrical equipment, such as a transformer, switchboard, generator or large UPS
- From 500 A to 4,700 A
- An alternative solution on the market
- Quicker installation
- Reduction of total installed cost

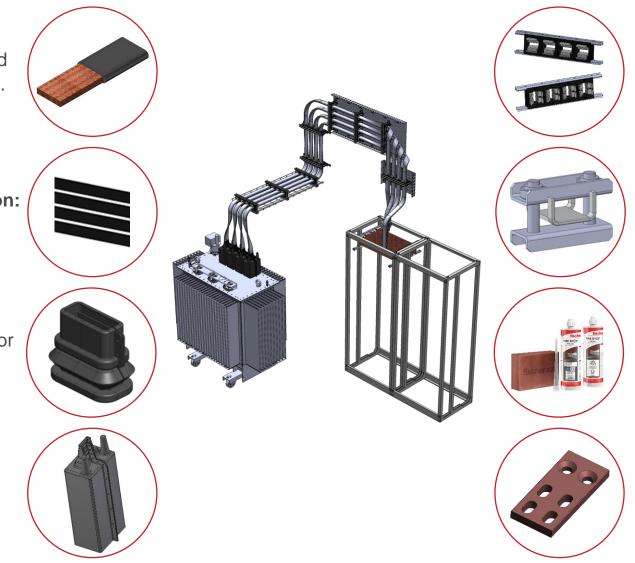


FleXbus Conductor: Flexible and flat braid copper-plated aluminum.

Advanced Technology Insulation: Thermoplastic Elastomer (TPE), LSHFFR and High Temperature.

nVent ERIFLEX FleXbus IP55 Conductor Entry: Can be used for switchboard and/or power supply cover (dust and waterproof).

nVent ERIFLEX FleXbus IP2x Boots and Cover: to cover the HCBC clamp connected on the power supply palms.

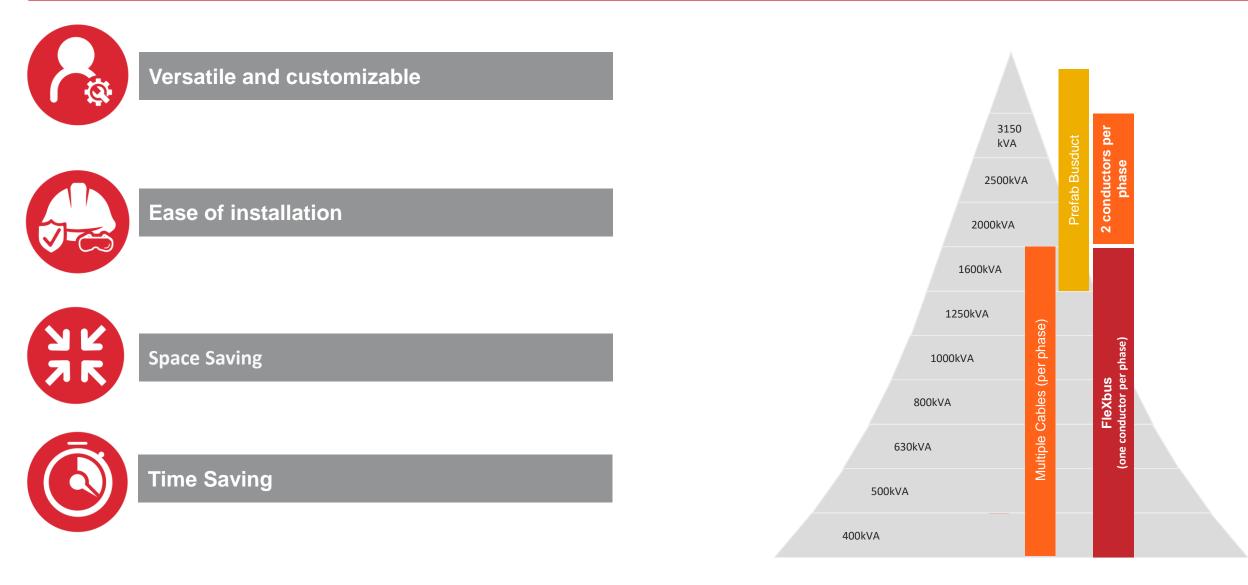


nVent ERIFLEX FleXbus Support Kits: Flat or edge.

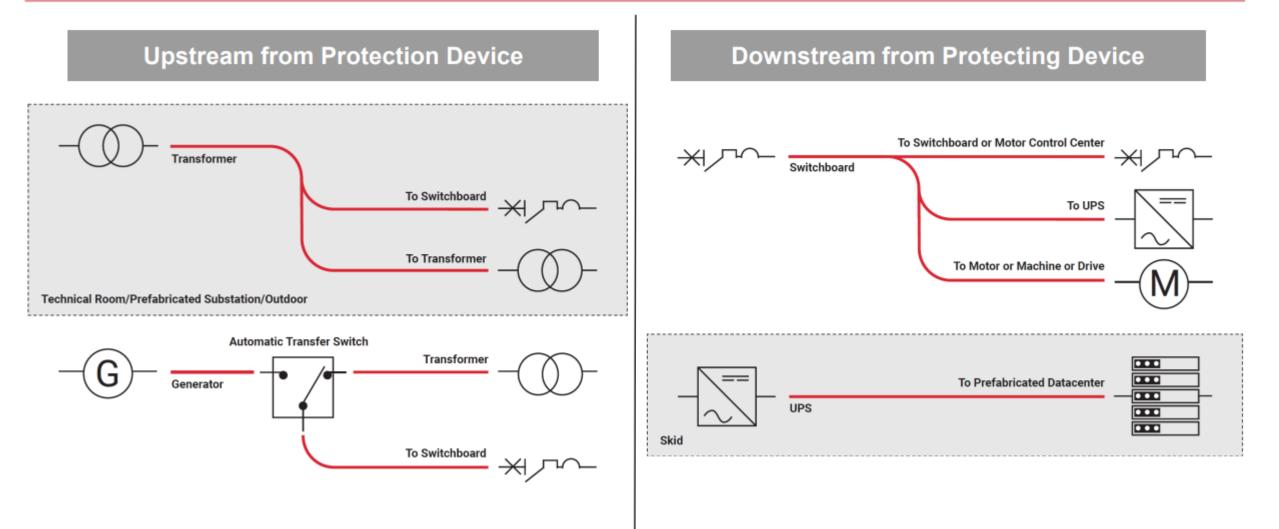
nVent ERIFLEX FleXbus HCBC Clamp and Plate for Power Supply Connection: Fix FleXbus conductor to the power supply palm or rigid busbar.

nVent ERIFLEX FleXbus Fire Barrier System: Quick and easy to install.

nVent ERIFLEX FleXbus Palm Extender for Switchboard Connections.



nVent ERIFLEX FleXbus Typical Applications



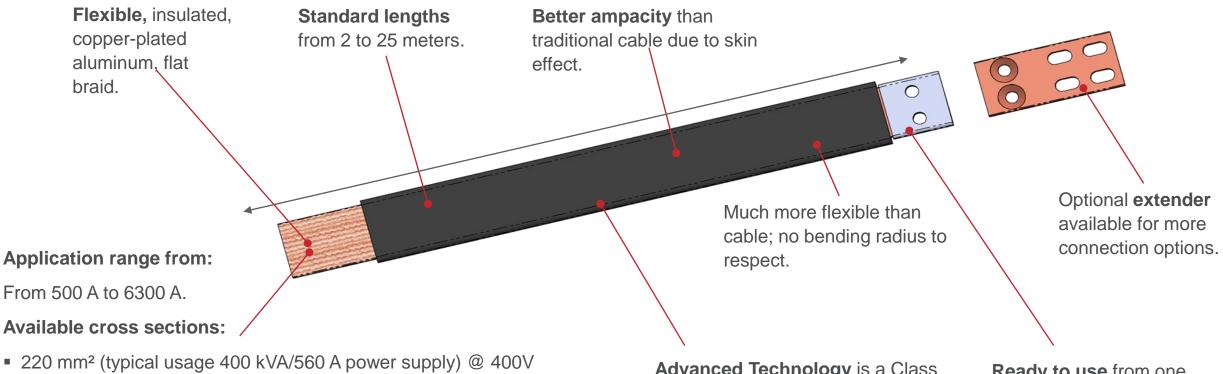
nVent ERIFLEX FleXbus vs. Cables and Busduct

Unique solution that fits all power supply applications

HV/LV Transformer 410V at	Current					
secondary	LV - In (A)	Typical usag	ge Copper cable / phase	Typical usage Aluminum cable / phase	Typical power Busduct usage	FleXbus conductor / phase
400 kVA	560	1x240mm ²	•	2x240mm² 🔍 🔍		1x220mm²
500 kVA	704	2x185mm ²	00	3x240mm² 🔍 🔍 🔍		1x360mm²
630 kVA	900	2x240mm ²	00	4x240mm² 💿 💿 💿 🜑		1x360mm²
800 kVA	1120	3x185mm²	000	4x240mm² • • • •		1x545mm ²
1000 kVA	1400	4x185mm²	0000	4x300mm² 🔍 🔍 🔍 🜑		1x960mm ²
1250 kVA	1760	4x240mm ²	0000	4x400mm² 🔍 🔍 🔍 🜑	Busduct	1x960mm ²
1600 kVA	2253	5x240mm ²	00000		Busduct	1x1810mm ²
2000 kVA	2816	6x240mm ²	000000		Busduct	2x960mm ²
2500 kVA	3520	8x240mm ²	00000000		Busduct	2x960mm ²
3150 kVA	4435				Busduct	2x1810mm ²
3600 kVA	5069				Busduct	3x1280mm ²
4000 kVA	5632				Busduct	3x1810mm ²
4500 kVA	6336				Busduct	3x1810mm ²

Reduce the number of conductors

nVent ERIFLEX FleXbus Conductor



- 360 mm² (typical usage 500 kVA/700 A power supply) @ 400V
- 545 mm² (typical usage 630 kVA/900 A power supply) @ 400V
- 640 mm² (typical usage 800 kVA/1120 A power supply) @ 400V
- 960 mm² (typical usage 1000 kVA/1400 A power supply) @ 400V
- 1280 mm² (typical usage 1250 kVA/1750 A power supply) @ 400V
- 1810 mm² (typical usage 1600 kVA/2260 A power supply) @ 400V

Advanced Technology is a Class II and Ik09 thermoplastic elastomer (TPE) that is LSHFFR and 1000 VAC/1500 VDC (IEC) for all low voltage applications. **Ready to use** from one side with direct connection to a busbar or circuit breaker palm.

nVent ERIFLEX FleXbus High Current Busbar Clamp (HCBC) and Plate

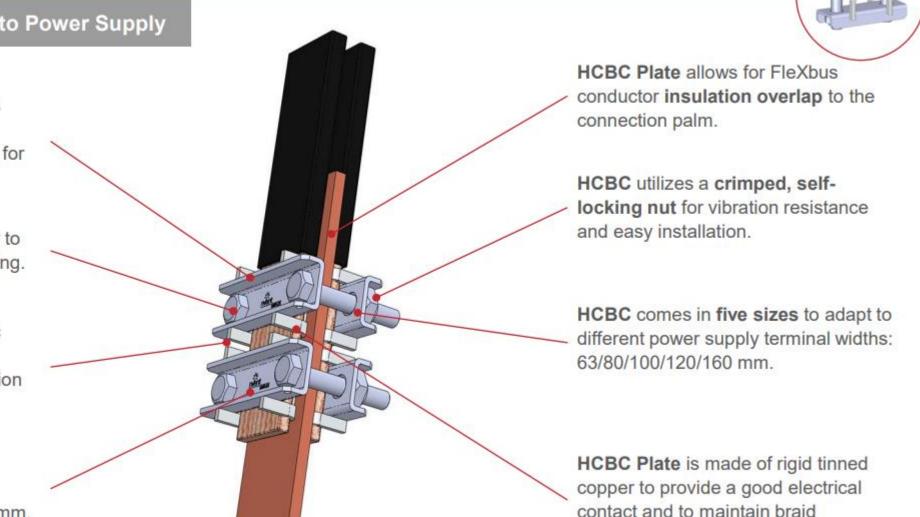
Easy and Quick Connection to Power Supply

HCBC has a **rigid design**, assures even contact pressure and installs **quickly and easily**, making it ideal for **on-site modifications**.

HCBC fixes the FleXbus conductor to the power supply palm without drilling.

HCBC is made with non-magnetic stainless steel for high-current connections to prevent the formation of magnetic fields.

HCBC Plate is available in two versions for different FleXbus conductor widths: 50 mm and 100 mm.



expansion during compression.

nVent ERIFLEX FleXbus Conductor Support Kits

Flat and Edge Supports

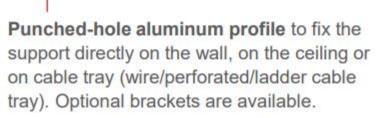
Adjustable clip to adapt the support with different conductor thicknesses (open/closed position).

Made with glass fiber-reinforced polyamide, **halogen-free**, RoHS compliant, working temperature of -40°C to 130°C, 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 shortcircuit tested as per IEC 61914 up to 67 kA rms – 147 kA Peak

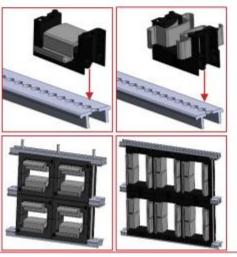
Flat

Edge



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

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

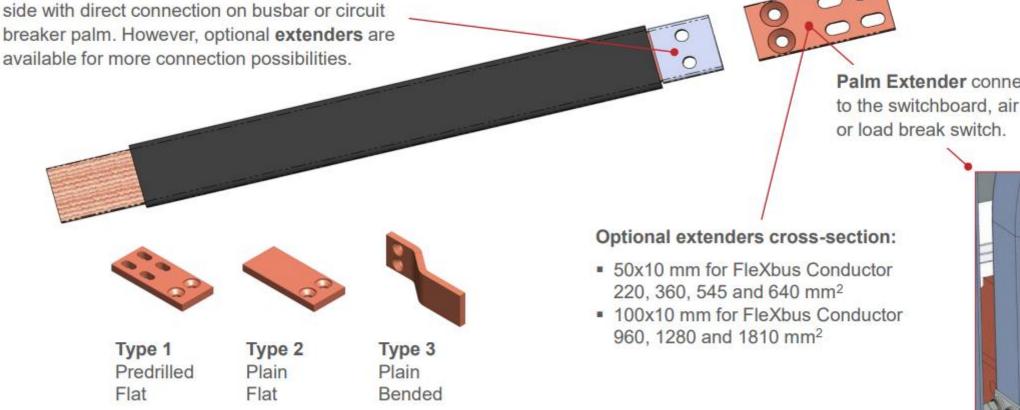




nVent ERIFLEX FleXbus Palm Extender

Unlimited Connection Capability

FleXbus conductor is ready to use from one



Palm Extender connects the busbar to the switchboard, air circuit breaker

Ready-to-use conductor

nVent ERIFLEX FleXbus Fire Barrier System

Minimize the Spread of Fire

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

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

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

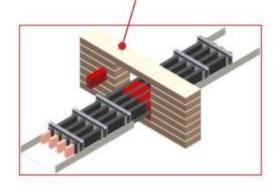
FleXbus Insulating Bandage (FIB):

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.



Building material:

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



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).

According to IEC 60364

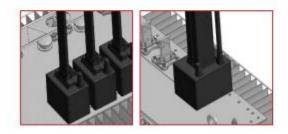


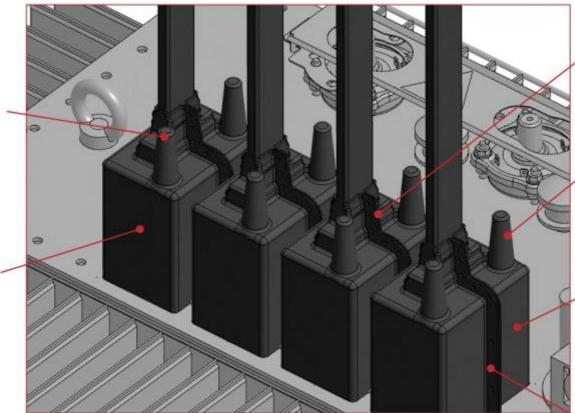
nVent ERIFLEX FleXbus IP2x Boots

Prevent Unintentional Contact

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.

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





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

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

Safety feature

nVent ERIFLEX FleXbus IP55 Conductor Entry

Protect Against Water and Condensation

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 waterproof).

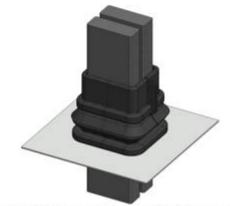
High acid and basic resistance Good resistance to solvent and hydrocarbon splashes Good UV resistance.

Optional IP66 upgrade Kit



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

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



*Also available as two conductors per phase

nVent ERIFLEX FleXbus Accessories

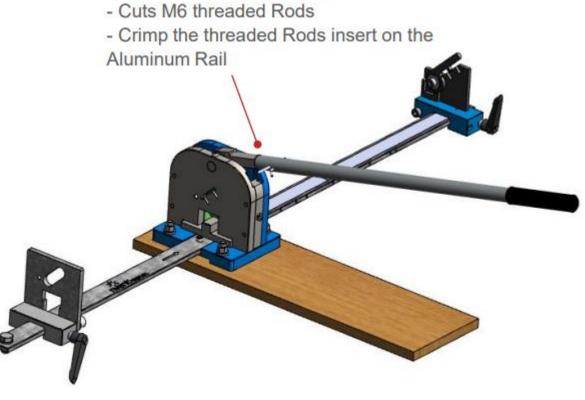
Stripper Cutter, Scissors and Shears

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

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

Aluminum Rail Cutter and Insert



- Cuts FleXbus Aluminum Perforated

- Precise and repetitive cuts

Profile without burrs or deformation and

Crimper :

chip-free



nVent ERIFLEX FleXbus vs. Cables and Busduct



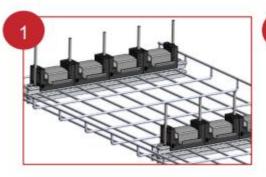
Pre installation measurement and study	No	No	Yes	
Ready-to-use	Yes	No	Yes	
On-site Customization	Yes	Yes	No	
On-shelve availability	Yes	Yes	No	
Bending radius / System rigidity	Flexible	Rigid	n/a	
Experienced / Non experienced workforce	1 + 1	2 + 0	2 + 0	

nVent ERIFLEX FleXbus vs. Cables and Busduct



Typical current usage	From 500 to 6,300 A	< 2,000 A	> 2,000 A
Installation time	< 1 day	>1 day	> 1 day
Number of conductors per phase	1 or 2 up to 4500A	Multiple	1 or 2
Tools needed	No	Multiple	Low
Site preparation time	No	Low	High
Reduce error risk	Low	High	Medium
Total installation cost	Low	Medium	High

How to Install nVent ERIFLEX FleXbus



Fix supports directly on the wall, ceiling or on cable tray (wire basket/ perforated/cable ladder).

Use multiple possible mounting configurations to fit your installation (Flat/Edge).



Connect the ready-to-use FleXbus conductor with pre-punched holes to the switchboard. This connection can be made directly onto the busbar or circuit breaker with optional palm extenders.





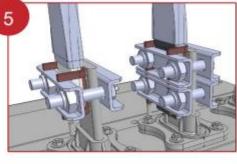
Install conductors into the supports and mount the top part of the supports. Leave excess conductor length at the top of the

transformer/power supply.



Strip FleXbus conductor.

Cut excess length of the FleXbus with scissos or shears.



Connect FleXbus conductor with HCBC clamp and plate.

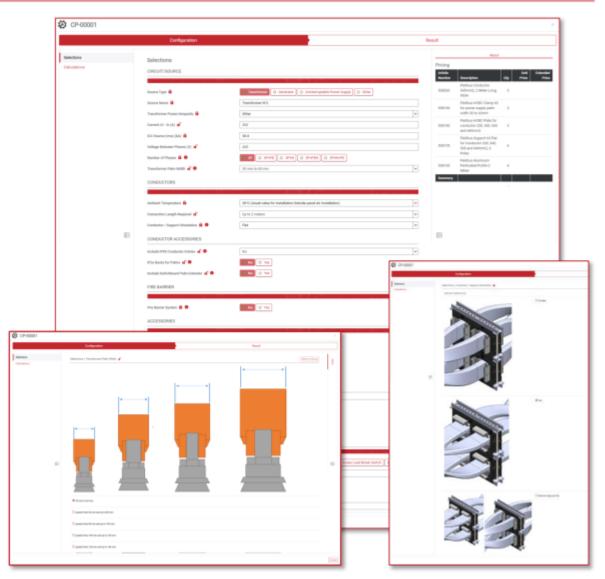
Easy and quick installation sequence overview

nVent ERIFLEX FleXbus Calculation and Selection Tool

 Our calculation and selection tool is available online. Please contact your nVent ERIFLEX representative or register online at:

go.nvent.com/FleXbusConfigurator

- This tool allows users to:
 - Determine the bill of material (BoM)
 - Provide calculation note according to:
 - IEC 60364, Low Voltage Installations
 - Related European Standard, HD384
 - National Standards, NFC 15-100, DIN VDE 0100, RGIE/AREI, CEI 64-8, BS7671 and more.



FleXbus Application Pictures

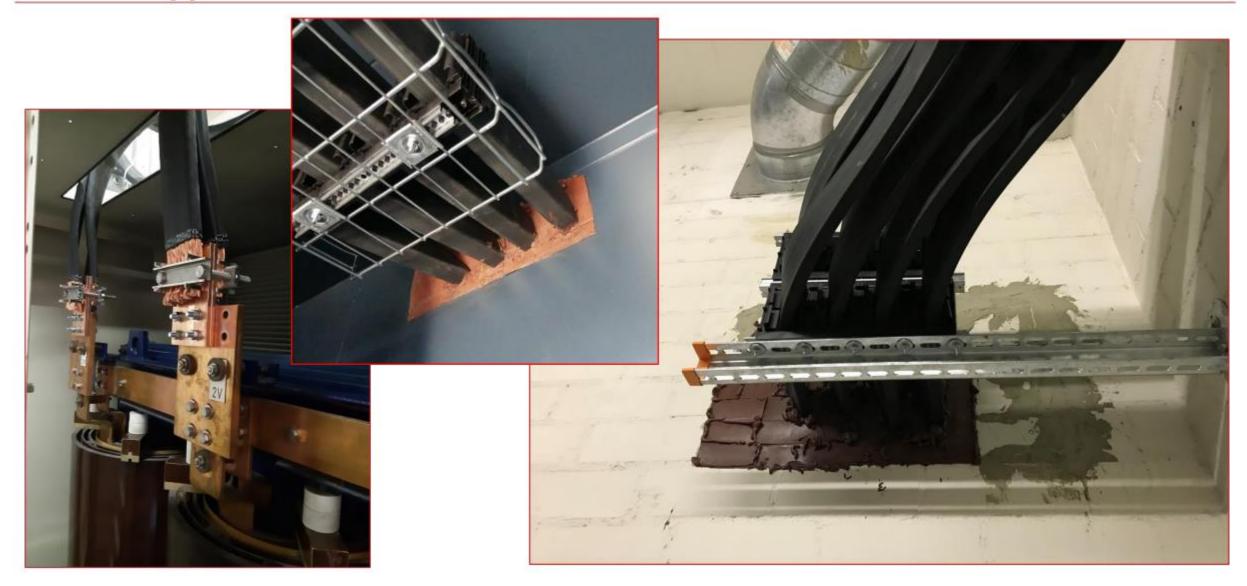




FleXbus Application Pictures



FleXbus Application Pictures









nVent Electrical Solutions Marketing Materials



nVent ERIFLEX Digital Content

