



We connect and protect

nVent OEM Solutions

Electrical Connection and Protection Solutions for Electrical Systems and Infrastructure



CADDY ERICO HOFFMAN ILSCO SCHROFF TRACHTE

nVent.com

Connecting and Protecting the Electrification of Everything



At nVent, we believe safer systems ensure a more secure world. We design, manufacture, market, install and service high-performance products and solutions for mission-critical equipment, buildings and essential processes. Our solutions are helping build a more sustainable and electrified world.

Across our portfolio of brands, nVent provides innovative solutions that solve the common challenges OEMs face, working closely throughout the product development cycle to optimize the design. Our family of brands provide innovative, global solutions for electrical connection and protection including enclosures, climate control, cable management, design to manufacturing software, low-voltage connection and protection solutions, power connectors and tools, grounding and bonding components and surge devices.

nVent understands the unique challenges that manufacturers of critical power equipment face, including spatial limitations, higher power density, scalability, faster time-to-market and, most importantly, reliability and resiliency.

We Provide:



**Compact ecosystem
of solutions**



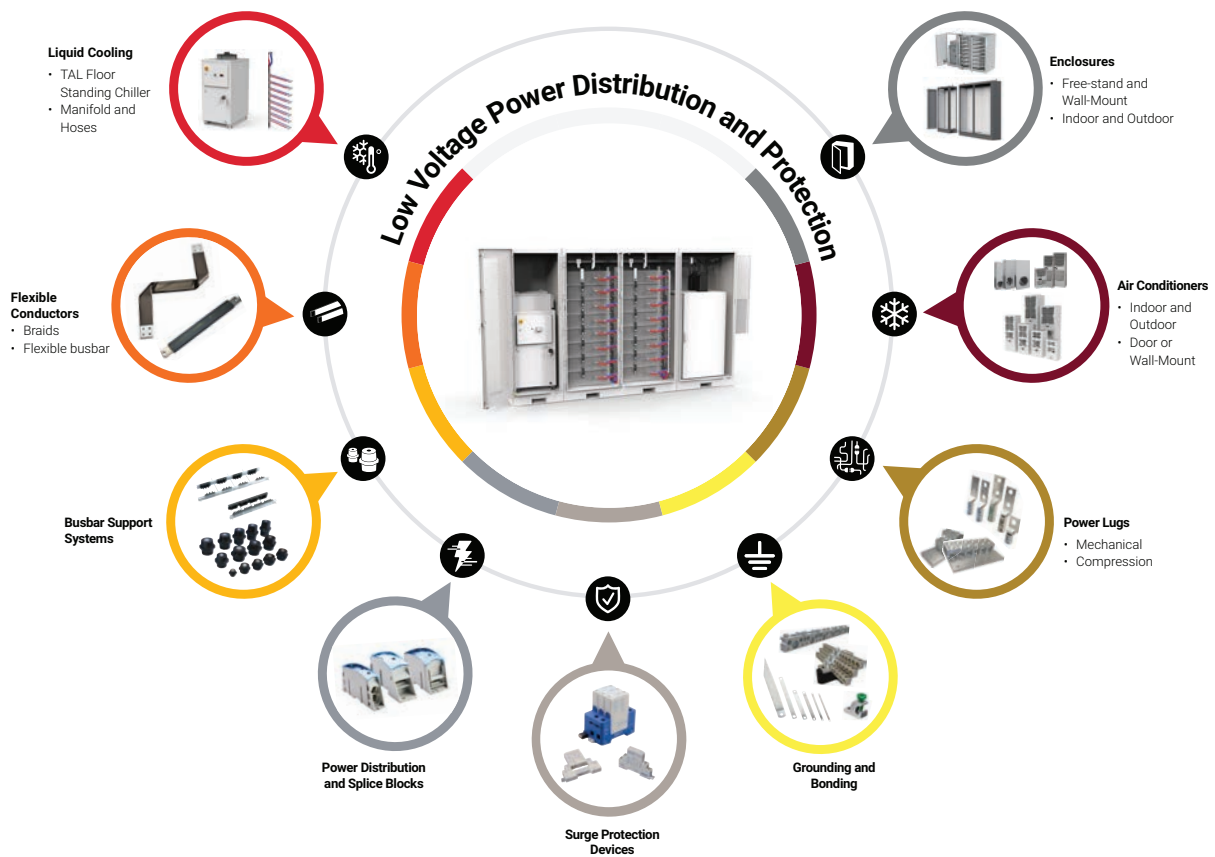
**Enhanced resiliency and
safety for mission critical
electrical systems**



**Reduced install time and
total cost of ownership**

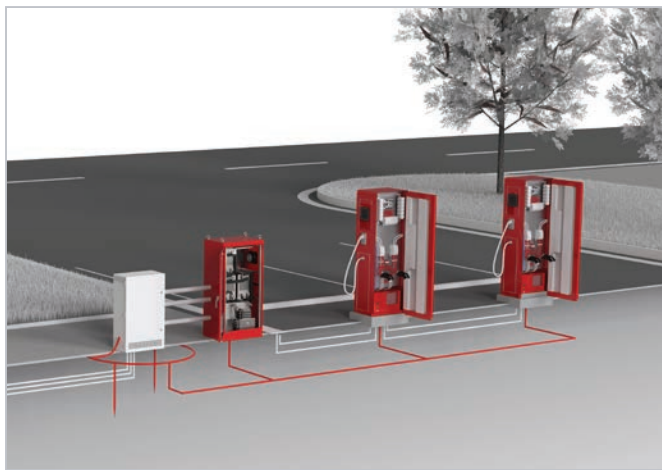


A compact ecosystem of solutions that connect and protect.



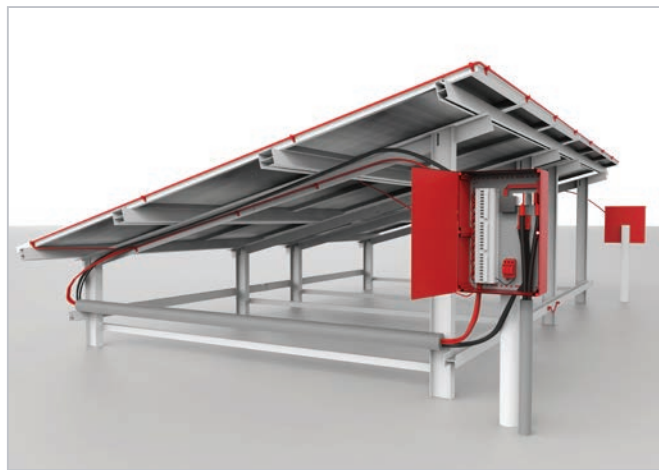
Solutions for Key Industries

nVent provides a range of solutions that connect and protect electrical systems across key industries, including eMobility, renewables, battery energy storage, data centers, transportation and more.



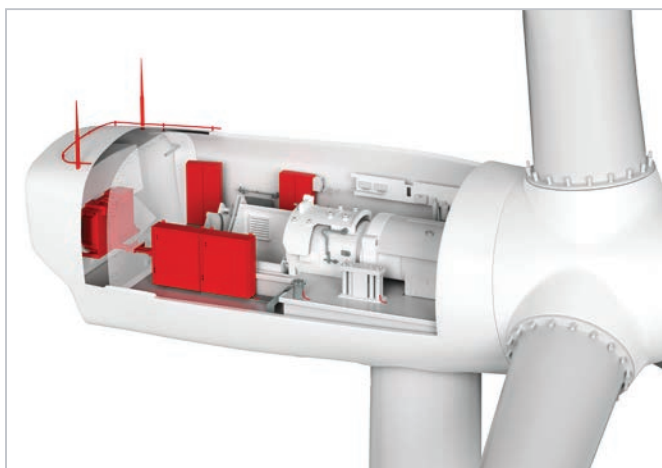
DC Fast Charging Stations

nVent provides solutions that connect and protect EV charging stations including EV inverters, switchgear, transformers and Level 3 DC fast charging solutions.



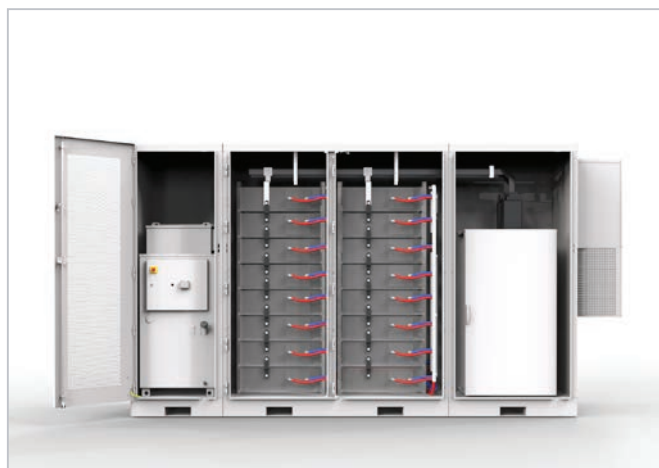
Solar Electrical Balance of Systems (eBOS)

nVent solutions play a critical role in grid-scale solar eBOS, connecting and protecting combiner boxes, trunk harnesses, disconnects, inverters and transformers.



Wind Turbine Electrical Systems

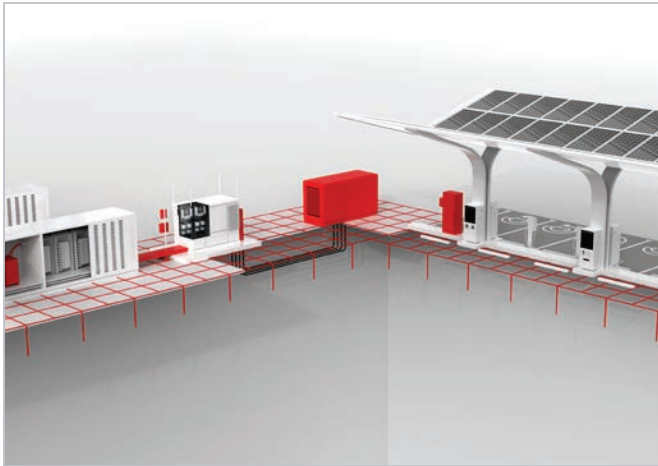
nVent offers a range of solutions for wind turbine electrical systems, including those inside the generator, power electronics and grid interconnection.



Battery Energy Storage System (BESS) eBOS

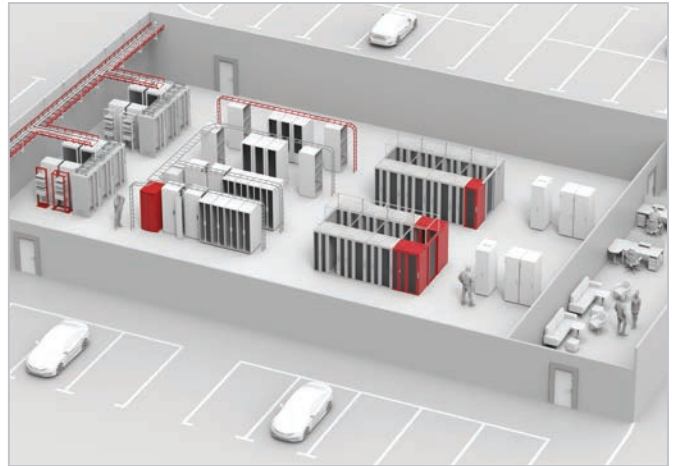
nVent offers solutions for grid-scale and commercial battery energy storage systems, including battery cell interconnections, power conversion systems and transformers.

Solutions for Key Industries



Microgrids

nVent is helping OEMs increase resiliency in distributed energy resources, providing solutions essential in microgrid applications, including renewable energy eBOS equipment, traditional energy sources (gen sets), energy storage systems and charging stations.



Data Center eBOS

nVent is a key partner in the fast-growing area of data centers, offering solutions for data center eBos, including within UPS systems, backup generators, battery banks, ATS (automatic transfer switches), transformers and switchgear, cooling and MCCs.



Battery Packs

nVent provides critical solutions for battery cell interconnections for specialized lithium-ion batteries.



Transportation

nVent supports transportation electrification with solutions that connect and protect electrical systems in railways, buses, and maritime vessels.

Space-Saving Power Distribution Solutions



nVent ERIFLEX Low Voltage Power Distribution Ecosystem

One of the most common challenges for OEMs of critical power equipment is how to design smaller electrical panels.

The nVent ERIFLEX ecosystem of low voltage power distribution solutions, including flexible busbars and braids, busbar support systems, power and distribution blocks and more, have space savings features that can significantly reduce the electrical footprint within a panel.



nVent ERIFLEX Flexibar Advanced

nVent ERIFLEX Flexibar Advanced is a proprietary laminated copper conductor designed to replace traditional cables and rigid busbars. Integral palm terminals allow for fast and easy connection. Featuring low-smoke, halogen-free and flame retardant insulation, Flexibar Advanced meets key safety features making it ideal for critical applications.



nVent ERIFLEX IBSB Advanced

nVent ERIFLEX IBSB Advanced insulated braided conductor is a low profile, flexible wire replacement solution that allows users to reduce the total size and weight of the installation.

Low-smoke, halogen and flame retardant insulation for critical applications including molded case circuit breakers.



nVent ERIFLEX Flexbus System

nVent ERIFLEX Flexbus is an innovative solution for connecting large electrical installations, such as transformers, switchboards, and generators. The highly flexible Flexbus utilizes single conductors per phase, eliminating the need for multiple cables and cable trays, consuming significantly less space. With no bending radius requirement and adaptability to various layouts, Flexbus streamlines installation in tight areas and enables connections to be made above ground that would otherwise require trenching.

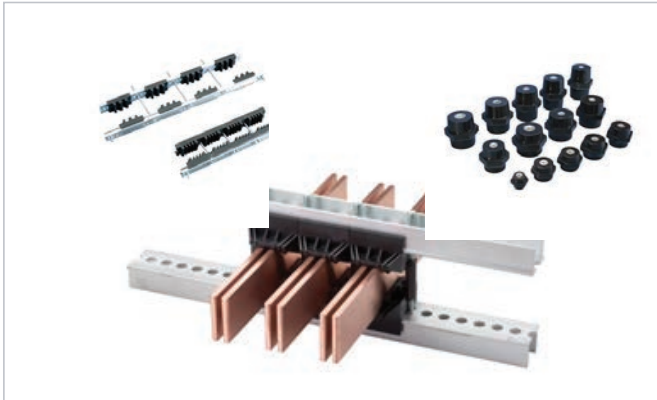
Design 20% Smaller Electrical Panels

Flexible, Low profile, Lightweight and Less Installation Space

Integral palm terminals for fast and easy installation.

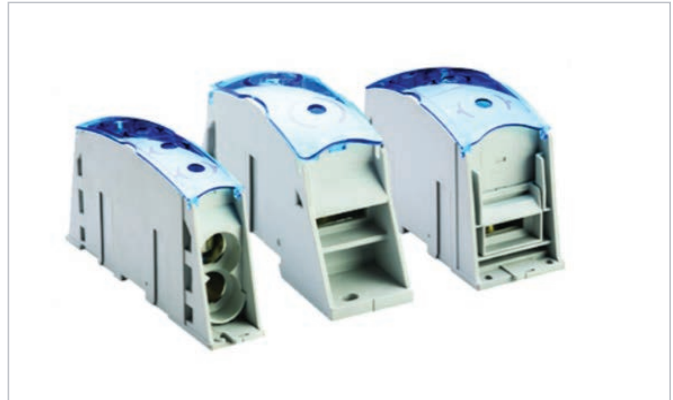
Alternative for connections up to **25 meters**, and up to **50% quicker** to install than busduct or wireway.

Space-Saving Power Distribution Solutions



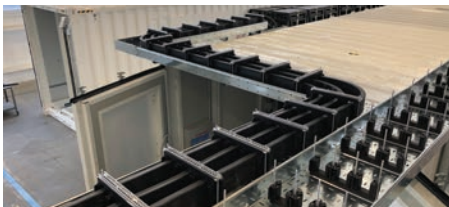
nVent ERIFLEX Busbar Support Systems

nVent ERIFLEX offers a range of busbar support solutions that provide stable and secure busbar mounting in critical electrical systems. From heavy-duty power connection insulators, flat busbar supports, spacers and accessories to the proprietary nVent ERIFLEX Compact Adjustable Support System, these busbar support solutions allow engineers to maximize power density and save space within electrical panels.





nVent ERIFLEX Power Blocks, Distribution Blocks and Power Terminals

nVent ERIFLEX offers power and distribution blocks and power terminals that are compact, efficient and feature a high short circuit rating. These modular snap-together blocks feature a transparent blue cover for visual inspection, and easily mount to DIN rail. The offering includes connection compatibility with traditional round cross-section cables or flat conductors like nVent ERIFLEX Flexibar Advanced or IBSB Advanced, achieving optimal power distribution, space savings, and improved overall aesthetics of electrical panels.



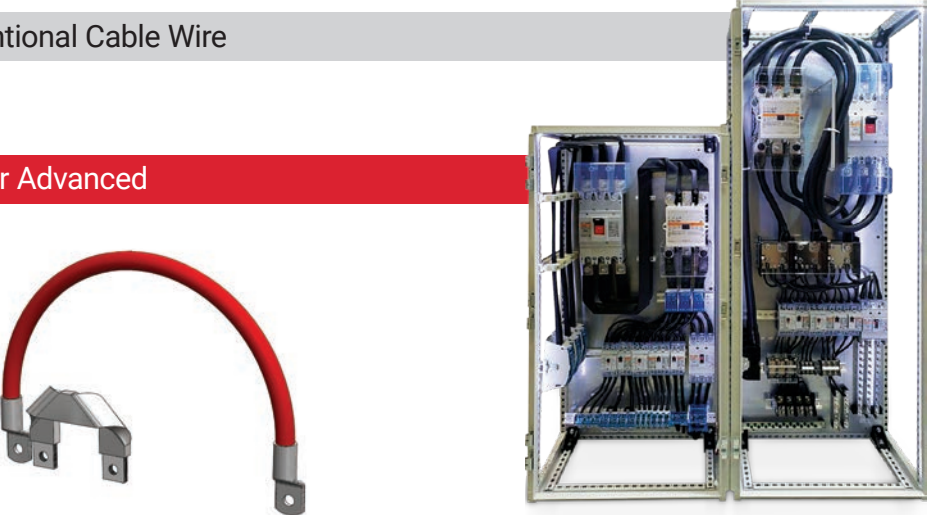
Powering A More Compact Electrical Panel

In a side-by-side comparison of electrical panels, an OEM-designed panel featuring nVent ERIFLEX Flexibar Advanced can be **20% smaller** than conventional cable-based systems, allowing manufacturers to create more compact, space-efficient solutions.

nVent ERIFLEX Flexibar Advanced	Conventional Cable Wire
	
<ul style="list-style-type: none">Flexible in tight spaces Length and bend can be customized, arriving pre-formedLow profile (flat) and lightweight More compact panels providing more space to add high-value equipmentIntegral palm terminal Does not require cutting and crimping during installation, reducing labor time by as much as 40%	<ul style="list-style-type: none">Rigid, stiff, limited range of bendRound conductor, more spatial constraintsCable/lug termination requires cutting and crimping during installation

Conventional Cable Wire

Flexibar Advanced



Solar Energy Compact Panel Case Study

EPEC Solutions (EPEC) and QT Corporation (QT), known as EPEC/QT, offer tailored panel solutions, including their AC combiner switchboards, combiners and recombiners designed for solar power applications. With the assistance of nVent, EPEC/QT has successfully **optimized space utilization, improved efficiency and achieved cost reduction** while maintaining reliability.

nVent provides enclosures, low-voltage conductors, surge protectors and insulators for their combiners, providing flexibility and customization to create enclosures that meet each solar project’s precise, unique requirements. The enclosures provided are X-type rated free-standing enclosures with specialized white gloss paint to lower the overall temperature of the enclosure and provide extended product longevity in the field.

Electrical connection solutions offer space-saving benefits within enclosures and easy installation for labor savings, enhancing overall efficiency. By leveraging these products, they have achieved up to a **40% reduction in footprint, maximizing space usage and increasing renewable energy production**. This collaboration has been pivotal in the success of EPEC/QT in delivering top-notch switchboards for solar applications.

nVent Mechanical and Compression Power Lugs



nVent ILSCO Mechanical Connectors

nVent ILSCO Panelboard Lugs are designed to provide reliable and efficient connections for both copper and aluminum conductors.

- **High-Quality Materials and Construction:** Made from high-strength 6061-T6 aluminum alloy, which offers excellent conductivity and corrosion resistance.
- **Dual-Rated for Versatility:** Compatible with copper and aluminum conductors.
- **Compliance and Certification:** UL 486A/B 90°C Listed and CSA Certified, making them suitable for circuits rated up to 35 KV.
- **Customizable:** Provide custom lugs, with options for port and hole number, bolt size and more.



nVent ILSCO Compression Connectors

nVent ILSCO SureCrimp Compression Connectors offer a wide-ranging line including copper and aluminum compression connectors featuring an optimized crimp profile that ensures a strong, long-lasting connection. SureCrimp connectors are available in a wide range of sizes and configurations to accommodate various wire gauges and applications, and are UL-listed, CSA-certified, and are color-coded for easy die identification.



nVent ILSCO Cutting and Crimping Tools

nVent ILSCO offers a comprehensive range of cutting and crimping tools and compression dies designed to provide precision and reliability. nVent tools include battery-powered hydraulic tools, manual hydraulic tools, and remote hydraulic tools. The dies produce strong and durable circumferential crimps, providing a secure electrical connection on every crimp.

- **Longer Lasting:** Made from corrosion-resistant, aircraft-grade stainless steel for durability and longevity, the dies solid body designs and robust components prevent wear and extend lifespan.
- **Minimal Maintenance:** Built to minimize maintenance time and costs. The durable components require fewer replacements, and the life cycle between reconditionings is much longer.
- **Easy-to-Use:** Ultra-durable cutting and crimping tool components are precisely engineered to endure harsh environments while delivering power, speed, efficiency and ergonomics that make any job faster and easier.

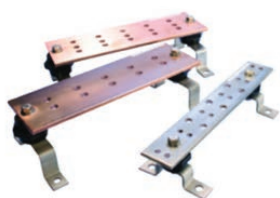


Keep People and Equipment Protected with Grounding Solutions

nVent plays a critical role in protecting critical electrical equipment and systems, offering grounding components, surge protection and enclosure solutions that deliver resiliency and reliability.

Grounding Busbars and Braids

nVent offers a wide range of grounding busbars and braids suitable for various electrical applications. Grounding busbars and braids provide a safe and low-resistance path for electrical current to flow in case of a fault.



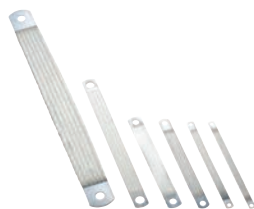
Electrical Busbars

- nVent ERICO electrical busbars provide a convenient, single-point grounding and bonding location. Offering includes a wide range of hole patterns, dimensions and configurations. Custom bars can be designed and manufactured to customer specifications.



Grounding and Neutral Busbars

- Grounding, earthing and neutral busbars are used to connect several earthing conductors within a panel and can be used in a variety of different applications including switchgear and control equipment, electrical equipment, wind and solar power generation and data centers.



Grounding and Bonding Braids

- nVent ERIFLEX MJB Grounding and Bonding Braids are a reliable and convenient grounding solution for applications that require flexibility and durability. The tinned copper ground braids feature an integral palm design that eliminates the need for lugs and provides superior electrical contact, moisture resistance and flexibility, material and weight savings, and quick and easy installation.



Surge Protection Devices

nVent ERICO offers DIN-rail mounted surge protection devices (SPDs) to safeguard sensitive electronics from damaging voltage spikes. nVent ERICO DIN rail mounted surge protection devices, including the DT, EDT and PVT series, specifically designed for solar PV applications, ensure uninterrupted operation and improve equipment longevity.

- **Key Technologies:** MOV and TD technology for comprehensive surge protection.
- **Certified Performance:** Meets IEC Class II and UL Type 1 standards.
- **Space-Savings:** Compact, modular design with replaceable modules.

Keep People and Equipment Protected with Electrical Enclosures

Projects in the utilities sector have stringent guidelines and safety requirements to meet local codes. nVent helps to safely enclose mission-critical electrical systems, controls, instrument transformers and branch circuits to maximize uptime with a wide range of electrical enclosures to meet those code requirements.

Key Benefits



Unmatched Durability

Built to withstand extreme environments with corrosion-resistant materials



Flexible Design

Available in multiple configurations and models that can be modified for a variety of OEM needs



Easy Installation

Easy to install components reduces installation time and costs for manufacturers and integrators



Enhanced Safety

Ensures the secure housing of equipment is in compliance with safety standards



EV Inverter Free-Stand Enclosure

- NEMA 3R rated electrical enclosures suitable to house Electric Vehicle Inverters and BESS applications
- Made in the USA with US steel for BABA infrastructure projects



Extreme Environments Enclosures

- Corrosion-resistant stainless steel enclosures that provide ultimate protection, durability, and easy maintenance in demanding environments



Seismic Enclosures

- Provide enclosure frame strength and rigidity in environments subjected to vibration and other motion which may over-stress equipment framework, components and connections



Modular Enclosures

- Strong, fast, and easy, modular solutions provide durability with the quick and simple installation to customize and assemble



Non-Metallic Enclosures: Fiberglass and Thermoplastic

- Lightweight enclosures that provide excellent impact resistance and strength and are capable of withstanding corrosive and harsh environments
- These enclosures do not impede WiFi or WLAN signals



Disconnect Enclosures

- Help mitigate arc flash occurrences when working inside the enclosure by isolating incoming power
- Wide range of wall-mounted, free-standing, mild steel, stainless steel and fiberglass options

Peak Performance with Climate Control Solutions

nVent HOFFMAN Climate Control Solutions help create optimal conditions for the reliable operation of electronic and electrical components in Industrial applications. These solutions offer OEMs the means to maximize uptime, performance, safety and reliability of their control systems.



Industrial Chillers

- Provides targeted liquid cooling optimized to fit specific equipment needs across a variety of industrial and infrastructure industries.
- 40 configuration options.
- A precision of up to $\pm 1^{\circ}\text{F}$ ($\pm 0.5^{\circ}\text{C}$) can be achieved for high-quality production and system reliability.

Fluid Distribution System: Manifolds and Hoses

- UL-listed design that is scalable with several hose lengths available.
- Insulated to minimize condensation.
- Made in the USA with US steel.

Air Conditioners

- Helps create optimal conditions for the reliable operation of electronic and electrical components.
- Models with 800 to 20,000 BTUs/Hr cooling capacity for indoor, outdoor, and harsh environments.
- Locally stocked cooling products supported by a vast distribution network for fast delivery.

Heaters

- Protect mechanical, electrical and electronic equipment from low temperatures, condensation and corrosion with this thermostatically controlled, fan-driven heater that maintains a stable enclosure temperature.

Filter Fans

- Available in a wide selection of Type 1 and Type 12 configurations offering a compact, click-fit design.
- Can also be converted to Type 3R or Type 4/4X with our easy-to-use Filter Fan Shrouds.

Thermoelectric Coolers

- Minimize downtime and component loss by removing heat around critical components within an enclosure.
- Compact, low-profile coolers use the Peltier effect to allow for cooling of small indoor and outdoor enclosures.

AFTERMARKET SERVICES & SUPPORT

With nVent HOFFMAN, you're assured of the most complete maintenance and service offerings. That means reduced downtime, higher levels of overall system performance, and maximum operational life for your protected equipment. Our product quality and complete aftermarket care keeps your equipment running.

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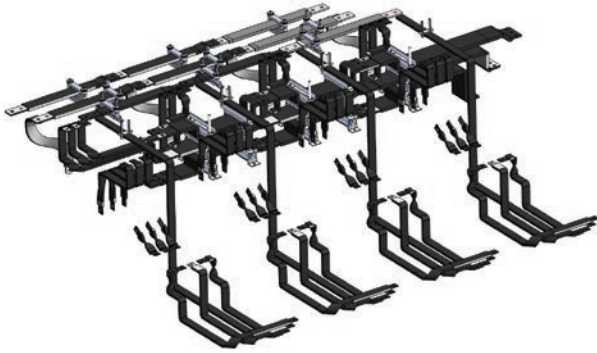
AUTHORIZED
TECHNICIANS
WORLDWIDE

FACTORY-AUTHORIZED
SERVICE AVAILABLE
AROUND THE GLOBE

Engineering and Design Support

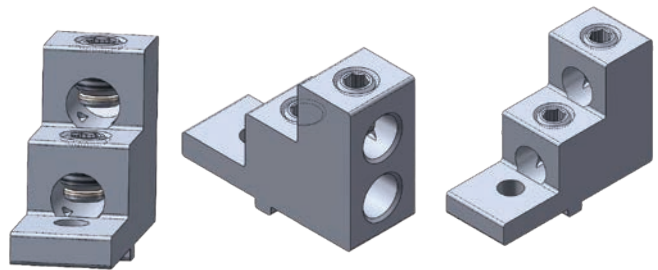
nVent ERIFLEX MTO for Flexible Busbars, Braids and Shunts

We partner with our customers, from initial design and prototyping to installation and ongoing support, producing customized, low-voltage power distribution that allows the customer to design more compact electrical systems.



nVent ILSCO Customization for Lugs, Neutral Bars and Ground Bars

Partner with nVent on your next customized connection solution. nVent ILSCO can manufacture to the customers' exact plans or design and manufacture a connector around custom criteria. We make the process cost-effective and timely.



nVent HOFFMAN DTM Software: Streamlining Design to Manufacturing



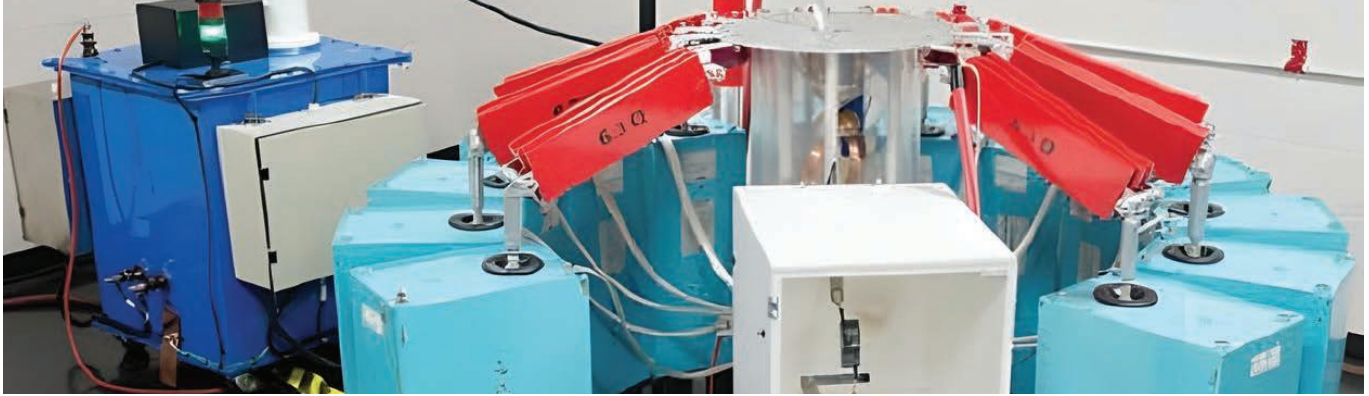
The nVent HOFFMAN Design to Manufacturing (DTM) Software is a proven and simple engineering solution for designers and manufacturers to plan and design electrical enclosures, machines, and factory systems to automate panel building through intelligent 2D/3D workflow, enabling the digital twin. With its easy-to-use intelligent central parts library, designers can efficiently work on a single project while the software automatically ensures the data is synchronized

making the design and planning process easy while reducing errors. All so you can maintain a single source of truth while simplifying processes and increasing productivity.

With nVent HOFFMAN DTM software, you can streamline your design to manufacturing process, reduce errors, and improve efficiency, making it an invaluable tool for OEMs looking to enhance their design and production capabilities.

Testing and Validation Capabilities

nVent is home to testing and validation capabilities for both internal and external customers, ensuring that our products meet the highest quality, safety, and performance standards. By leveraging these extensive testing facilities, we accelerate new product introductions, mitigate risks, and deliver solutions that our OEM partners can trust for their most demanding applications.



Electrical Engineering Lab

- **Capabilities:**
 - Short circuit, heat rise, current cycling tests
 - Surge and dielectric voltage testing
 - UL® Client Test Data Program participation
 - In-house IEC® conformance testing
- **Testing Standards:**
 - UL: 1449, 467, 486A/B, 96, 1059, 1953
 - IEC: 62561, 61643, 60947, 61439, 8205, 40A
- **Equipment:**
 - Surge generators: 40-150kA, 8x20 & 10x350
 - 6.5 KA continuous / 15 kA short-time current
- **Advantages:**
 - Accelerates new product introduction (NPI)
 - Ensures compliance and quality assurance

UL/CSA/ANSI Testing Lab

- **Capabilities:**
 - Tests for mechanical secureness, electrical current, current surge, grounding, water submersion, impact, environmental temperature and humidity, product flame, product fire, and water submersion
- **Testing Standards:**
 - UL, CSA, ANSI
- **Advantages:**
 - Ensures products meet regulatory standards
 - Identifies potential safety hazards and addresses them proactively
 - Streamlines the certification process, reducing time and costs

Prototype Lab

- **Capabilities:**
 - CNC machining (milling, turning, grinding)
 - Manual machining (milling, turning, grinding)
 - Forming (kick press, brake press)
 - Fabrication (general fabrication processes)
 - Additive manufacturing (3D printing)
- **Key Equipment:**
 - Haas CNC Mill and Lathe
 - Kick press, brake press
 - 3D printer, and more

These labs and their capabilities are critical to nVent's research and development efforts, helping to accelerate new product introductions, ensure compliance with standards, and maintain high quality and reliability in their products.

Mechanical Engineering Lab

- **Capabilities:**
 - Tensile, slip, and compression testing
 - Cyclic/seismic testing, dead lift
 - Mechanical sequencing
- **Testing Standards:**
 - UL: 96, 203/A, 486A/B/E, 514A, 1598, 2239, 1565
 - FM: 1950, 195
 - ICC AC133, ISO15835, UK/CARES TA1B/C
- **Key Equipment:**
 - Surge generators: 40-150kA, 8x20 & 10x350
 - 6.5 KA continuous / 15 kA short-time current

Aluminum Extrusion Capabilities

nVent is a leader in the aluminum extrusion industry, offering a range of standard and custom aluminum extrusion products and services, plus consistent lead times and a collaborative and responsive culture. nVent engages with customers throughout all stages of the process, including extrusion, precision cutting, machining, finishing, inventory management, and creative long-term supply arrangements. Our state-of-the-art Greenville, PA facility boasts over 200,000 sq. ft., allowing nVent to provide domestically manufactured aluminum extrusions.

Design and Engineering

With thousands of custom profiles, nVent brings the experience and design know-how to help customers meet their unique requirements. nVent can help optimize geometry, allowances and material properties. nVent also offers CAD and Solid Works 3D design services to bring ideas to reality.

Extrusion

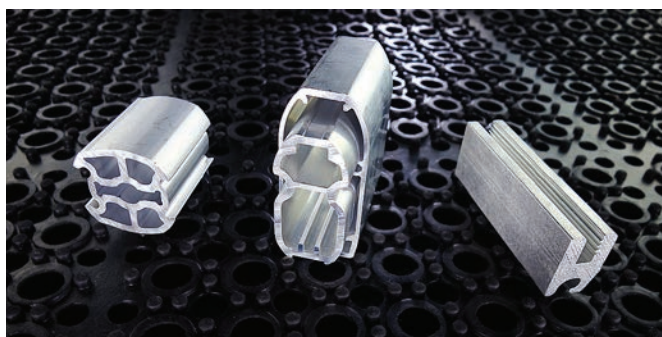
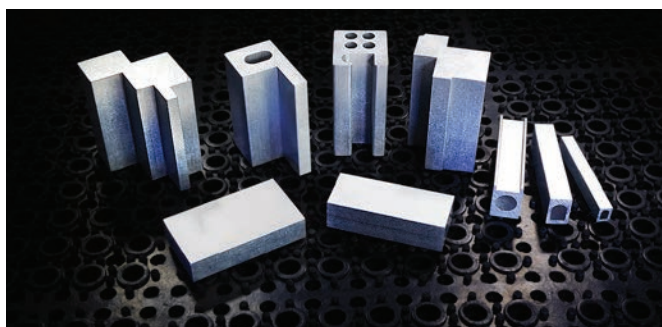
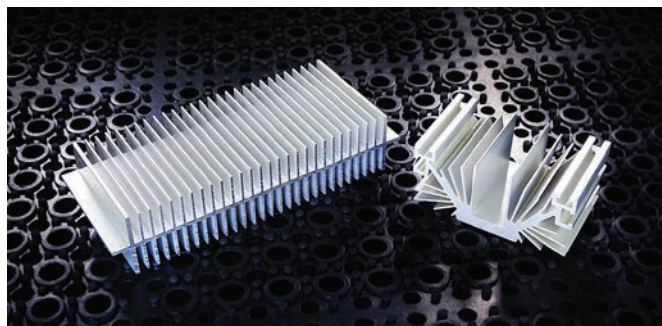
With a variety of press sizes, nVent can match the customer's profiles to the correct equipment for optimum yield and cost performance. nVent profile capabilities range from less than 0.1 pound per foot to over 12.5 pound per foot, and circle sizes from 0.2 to 12.0 inches.

Featured Solution: Custom Aluminum Extruded Busbars

nVent has expanded its range of capabilities to include aluminum extrusion and custom aluminum extruded busbars, offering several advantages over copper for busbar applications.

- **Lightweight:** Reduced weight compared to copper.
- **Cost-Effective:** More economical than copper.
- **Sustainable:** Highly recyclable with minimal property loss.
- **Easy to Work With:** Improved workability and reduced manufacturing costs.
- **Thermal Management:** Good thermal conductivity.

Current alloy offerings include: 1350, 6005, 6005A, 6061, 6063, 6070, 6082, 6101, and 6105.





Our powerful portfolio of brands:

CADDY ERICO HOFFMAN ILSCO SCHROFF TRACHTE