



We connect and protect

nVent Solutions for Energy Storage



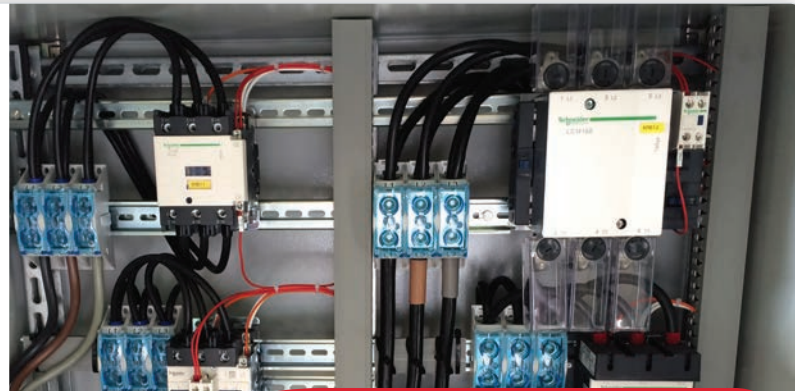
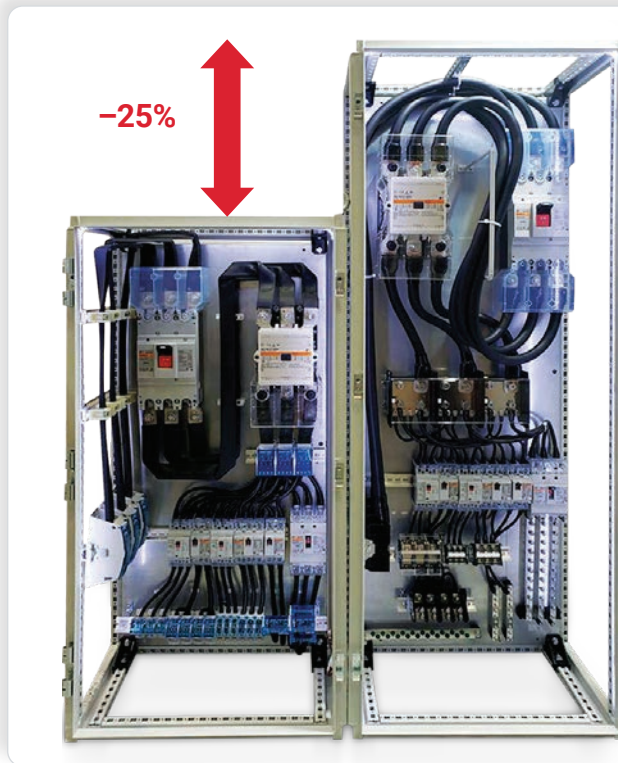
CADDY ERICO ERIFLEX

nVent.com

Discover nVent Energy Storage Solutions

AT NVENT, WE CONNECT AND PROTECT A MORE SUSTAINABLE AND ELECTRIFIED WORLD

nVent EFS solutions provide safe, resilient and cost-efficient solutions and services in Energy Storage applications. nVent EFS delivers complete and customisable expertise in reliable and easy-to-install solutions with a strong knowledge of international codes and standards and the uniqueness of the manufacturing process.



Space Savings for a Compact Footprint

Combining nVent solutions holistically yields significant space, labour, and reliability savings. Moreover, material and energy conservation contribute to a smaller environmental footprint.



Tests & Certificates

UL®

CSA®

IEC

EAC



ABS®

DNV

BUREAU VERITAS

CE



LOW
SMOKE



HIGH
TEMPERATURE



HALOGEN
FREE



TINNED
COPPER



FLAME
RETARDANT

Safety, Reliable Connections & Compliance to Universal Standards

Experience the confidence of safety, dependable connections, and adherence to universal standards through our nVent solutions.





Time Savings for Improved Manufacturing Efficiency

nVent provide ready-to-use solutions to help improve your manufacturing efficiency by reducing engineering & labour costs.



Customised Engineering Support with Design Optimisation




Rely on our nVent specialists for system design support, technical advice, and quotes across our solutions.




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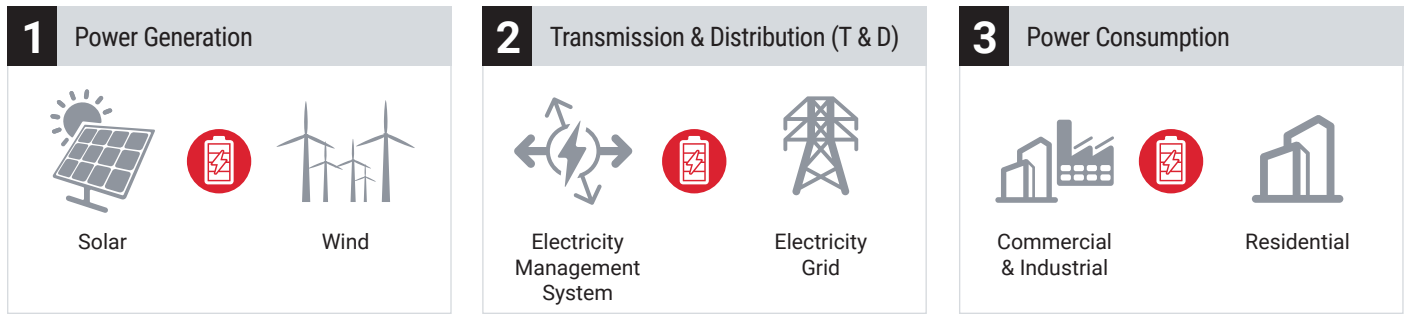


Have a need or requirement for an application?

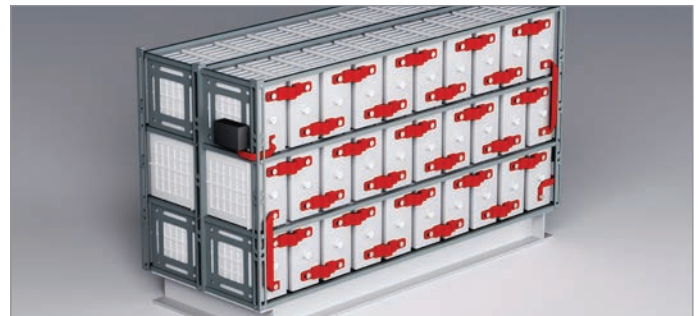
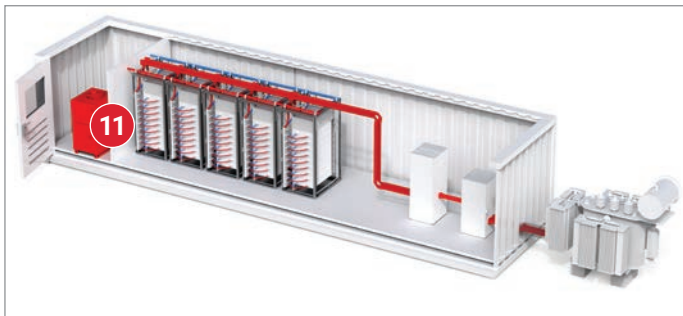
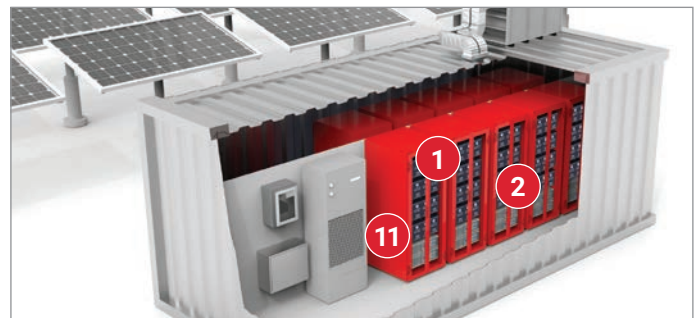
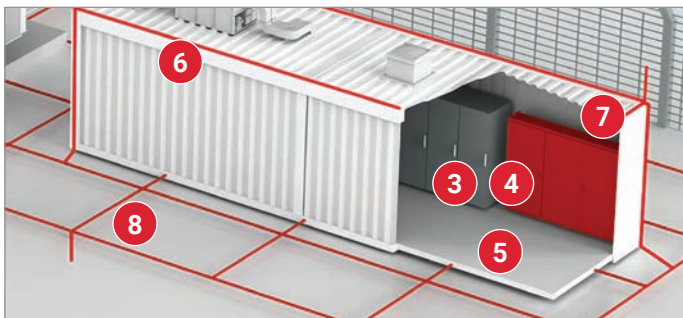
-  Submit a request and we will collaborate with your engineering team to find the best solution.
-  The team will collaborate from design concept to prototype to ensure the final design is able to be manufactured.
-  Once the design is finalised, the sales team will work with supply chain to ensure we meet the forecasted demands.

How nVent Improves Energy Storage

WHERE CAN NVENT ENERGY STORAGE SOLUTIONS HELP?



TYPICAL LAYOUT OF A BATTERY-BASED CONTAINERIZED/INDOOR ENERGY STORAGE SYSTEM



Whether you are on the DC side or on the AC side of your energy storage system (up to 1000 VAC and 1500 VAC), a wide range of nVent solutions can be used in the following subsystems:

- 1 Battery to battery and battery to BPU with nVent ERIFLEX Flexible Conductors.
- 2 Connections inside BPU/BMS using nVent ERIFLEX Flexible Conductors.
- 3 Full range of nVent ERIFLEX products inside DC aggregator.
- 4 Full range of nVent ERIFLEX products inside power conditioning system.
- 5 Full range of nVent ERIFLEX products inside LV switchgear and transformer (LV side).
- 6 nVent ERIFLEX Flexbus System* between LV switchgear and transformer (LV side).
- 7 Full range of nVent ERICO surge protection devices for power and data communication circuit.
- 8 Full range of nVent ERICO grounding and bonding solutions for indoor and outdoor uses.
- 9 Full range of nVent HOFFMAN cooling and thermal management products.
- 10 Full range of nVent HOFFMAN non-metallic, stainless steel, and mild steel enclosures to protect critical components.
- 11 Full range of nVent SCHROFF enclosures.

* Please check availability of nVent ERIFLEX Flexbus in your region.



See more information and assets about nVent Energy Storage solutions at:
nVent.com/energy-storage.

Low Voltage Power Distribution and Grounding Connections



Space Savings



Time Savings



Safety and Reliability

We deliver low voltage power distribution solutions that reduce total installed cost and increase design flexibility. Our deep knowledge of global end-user applications provides you a wide range of safe and reliable products suited for practically any electrical system need.

POWER AND DISTRIBUTION BLOCKS



- Primary DIN-mounted output/input device for a range of applications.
- Multiple connection types with up to four cables.
- IP50.
- Easy visual inspections.

EARTHING AND GROUNDING BARS AND BRAIDS



- Ready-to-Use.
- Customizable solid palms.
- Flexible.

LOW VOLTAGE INSULATORS



- Efficient performance.
- High dielectric withstanding voltage.
- Halogen-free.

FLEXIBAR ADVANCED



- Available in standard sizes or made-to-order configurations.
- Low smoke, halogen-free and flame retardant insulation.
- Direct connection for easy installation.
- Low profile, light weight and flexible.
- High ampacity.
- Customisable to different colours (orange, ...etc.)

POWER BRAIDS AND SHUNTS

IBSB Advanced



- Replaces conventional wire.
- Low-smoke, Flame retardant and halogen-free.
- Integral palms for easy installation no need additional crimps or lugs.
- Complies with key standards.
- Customisable to different colours (orange, ...etc.)

By choosing nVent ERIFLEX Advanced Technology products, you are selecting products that provide reliability, safety, and worldwide certification. Along with having Class II certification for conductors with high temperature resistance up to 115°C, our product line with Advanced Technology holds certifications from these standards:



nVent ERIFLEX Flexbus Solution

nVent ERIFLEX Flexbus is an innovative and patented connection solution between two electrical equipment installations, such as transformers, switchboards, generators or large uninterrupted 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.



OPERATING ADVANTAGE

- Versatile, customisable, user friendly and no specific tool required. Attractive for short distances, up to 25 meters.
- No specialized labour 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.



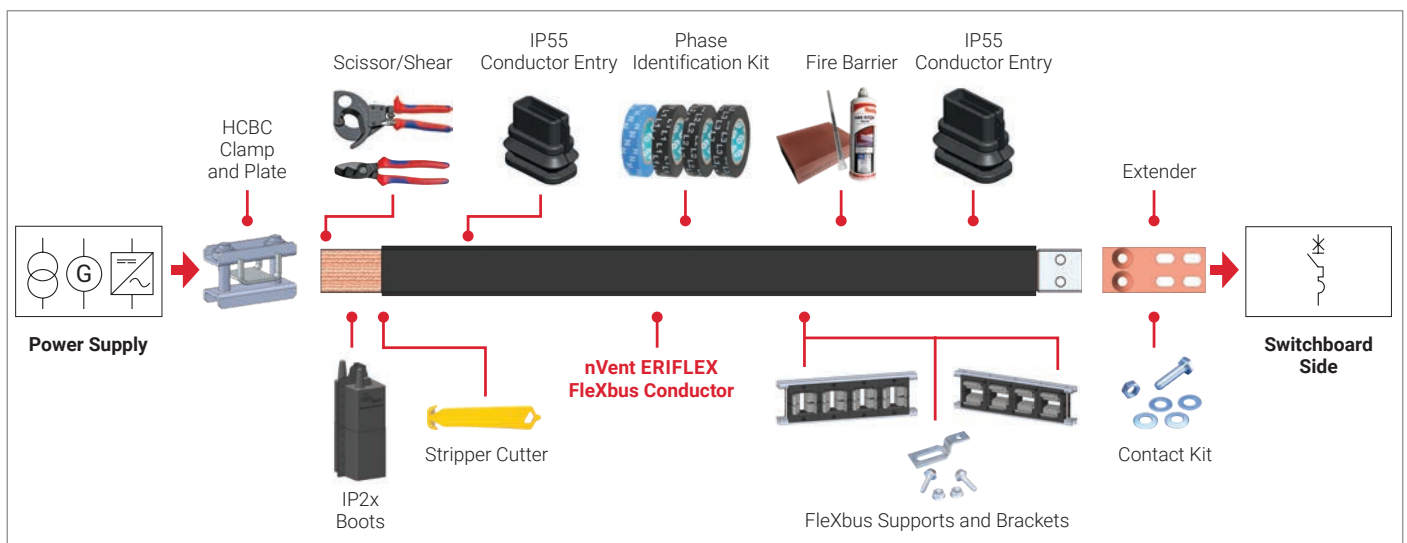
SPACE AND WEIGHT

- 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.
- 3 Flexbus conductors per phase for 5000 & 6300 A.
- No need for specific engineering/study or strict installation measurement.
- Total installation cost reduction of minimal 20%.



RELIABILITY AND SAFETY

- IEC worldwide tested and certified.
- Low smoke, halogen-free, flame retardant and high-temperature resistant.



More information: nVent ERIFLEX Flexbus Catalog and Technical Guide >

Please contact your nVent ERIFLEX representative or contact us at

ERIFLEX.Flexbus@nVent.com



nVent ERICO Surge Protective Devices



Surge protection devices for power distribution, discrete signals (inputs and outputs) and communication (data and RF) equipment that offer:

**Efficient,
Compact Design**



**Reliable
Performance**



**Critical
Protection**



**Key Standards
Compliance**



nVent ERICO Power Protection



The first stage of defense is the installation of primary protection devices at the main supply service entrance, followed by secondary protection at distribution branch panels and at point-of-use applications.

nVent ERICO Specialized Power Protection



Some applications require more specialized SPDs to reduce noise, resolve harmonic distortion and provide maximum protection in the most extreme environments.

nVent ERICO Data and Signal Surge Protection



Lightning or induced surges can destroy or compromise signal communication systems and data. Data and signal surge protection devices are designed to provide transient protection for equipment from induced surges in a compact design.

nVent ERICO LPSD 4.0 Design Solution Lightning Protection System Design (LPSD) 4.0 software includes



- Increased velocity and reduced design lead-time.
- Conventional and active system design capability.
- Complete submittal package, including drawings, BOM, component cut sheets and risk assessment.
- Capable of accepting and returning 3D project models in AutoDesk Revit and SketchUp compatible formats.



See more information and assets about nVent Energy Storage solutions at:
nVent.com/energy-storage.

Full Lightning Protection Systems and Surge Protective Devices



NVENT ERICO LIGHTNING PROTECTION

The comprehensive nVent ERICO Lightning Protection Solution product offering improves safety and provides critical protection while being reliable day in and out. All lightning protection products offer design flexibility to solve your challenges.

nVent ERICO System 1000 (ESE Standard System)



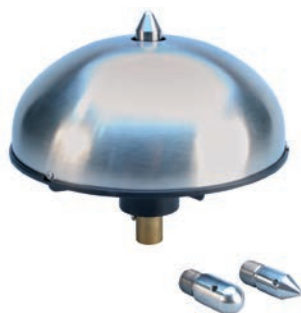
- Complies with NFC 17-102.

nVent ERICO System 2000 (Conventional Protection)



- Easy to select and configure.
- Complies with Key Standards: UL®96 and NFPA®780.

nVent ERICO System 3000 (Collection Volume Method (CVM))



- Efficient air terminal placement in accordance with the Collection Volume Method (CVM).
- Advanced lightning protection system.
- Cost-efficient.

nVent ERICO ESE Air Terminal Remote Testing System for Use with System 1000



- Offers on-demand insight to the status and performance of your air terminal system.
- No additional costly software, hardware, monitoring or interface systems required.
- Fully hands-off, autonomous monitoring.
- Solar-powered for sustainability.
- Easily identifiable color-coded LED alerts, visible up to 50 meters away.
- Remote capability for ensuring operation and complete protection at any time.



See more information and assets about nVent Energy Storage solutions at:
nVent.com/energy-storage.

Grounding and Bonding Solutions – Protected from the Ground Up



Space Savings



Time Savings



Safety and Reliability

Grounding, equipotential bonding, surge protection and lightning protection are all interdependent disciplines. Reliable protection of property and personnel demands a systematic approach to minimizing threats caused by transients. nVent ERICO can help you design a comprehensive protection plan from the ground up.

nVent ERICO GROUNDING AND BONDING

nVent ERICO offers a comprehensive product offering of grounding and bonding products that are reliable, easy to install and provide critical protection including:

- Ground Rods.
- Ground Enhancement Material.
- Grounding Connectors – Exothermic and Mechanical.
- Theft-deterrent Grounding Solutions.

nVent ERICO Ground Rods



- Manufactured straighter with a harder steel core, making installation easier.
- Continuous electro-plating process over the steel core that results in a permanent molecular bond that provides decades of reliable performance.

nVent ERICO GEM Ground Enhancement Material



- Low-resistance, non-corrosive, carbon-based superior conductive material that improves grounding effectiveness, especially in areas of poor conductivity.
- Key in situations where ground rods can't be driven or where limited land area makes adequate grounding difficult with conventional methods.

nVent ERICO Cadweld Exothermic Welding Systems



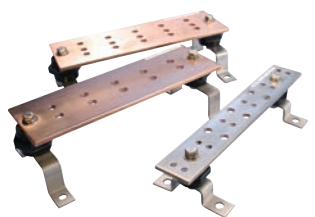
- Exothermically welded connections engineered to provide a permanent, molecular bond that will not loosen or corrode.
- Has a current carrying capacity equal to or greater than that of the conductor and will withstand repeated fault currents without failing during operation.

Theft-Deterrent Grounding Conductors



- Outer strands comprised of tinned copper bonded steel for corrosion resistance and theft deterrence.
- Inner copper stranding is tinned for superior corrosion resistance.

nVent ERICO Grounding Busbar



- Provides a convenient, single-point grounding and bonding location.
- Conductors are welded to the bar using a Cadweld exothermic connection or are mechanically fastened by using lugs.

nVent ERICO Hammerlock Ground Clamp



- Grounding connector connects the grounding conductor to the ground rod.
- Machined from highly conductive copper, providing a low-resistance connection designed to withstand ground fault currents and lightning transients.



See more information and assets about nVent Energy Storage solutions at:
nVent.com/energy-storage.

Seismic Bracing Systems



To help ensure the availability and operation of safety systems after an earthquake event, many building and industry codes now include requirements for the design and installation of seismic sway bracing for non-structural components, such as fire sprinkler, mechanical, electrical and plumbing systems.

1

Email your drawings to your sales representative or complete our contact form online



2

Receive a fully, engineered, turn-key seismic solution customized to meet all code requirements



3

Work with one of our trusted distributors for easy ordering and fast delivery



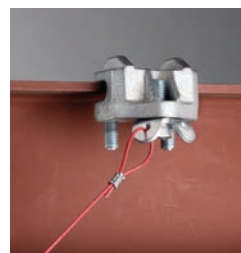
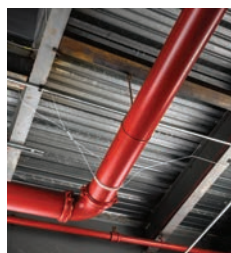
RIGID BRACING

The nVent CADDY line of innovative rigid bracing products was designed to provide superior performance and meet the highest seismic load requirements. The products have been designed with the end user in mind and provide contractors with labor-saving features to promote quick and easy installation. The system of products supports lateral and longitudinal bracing and offers a wide range of structural and pipe attachments.

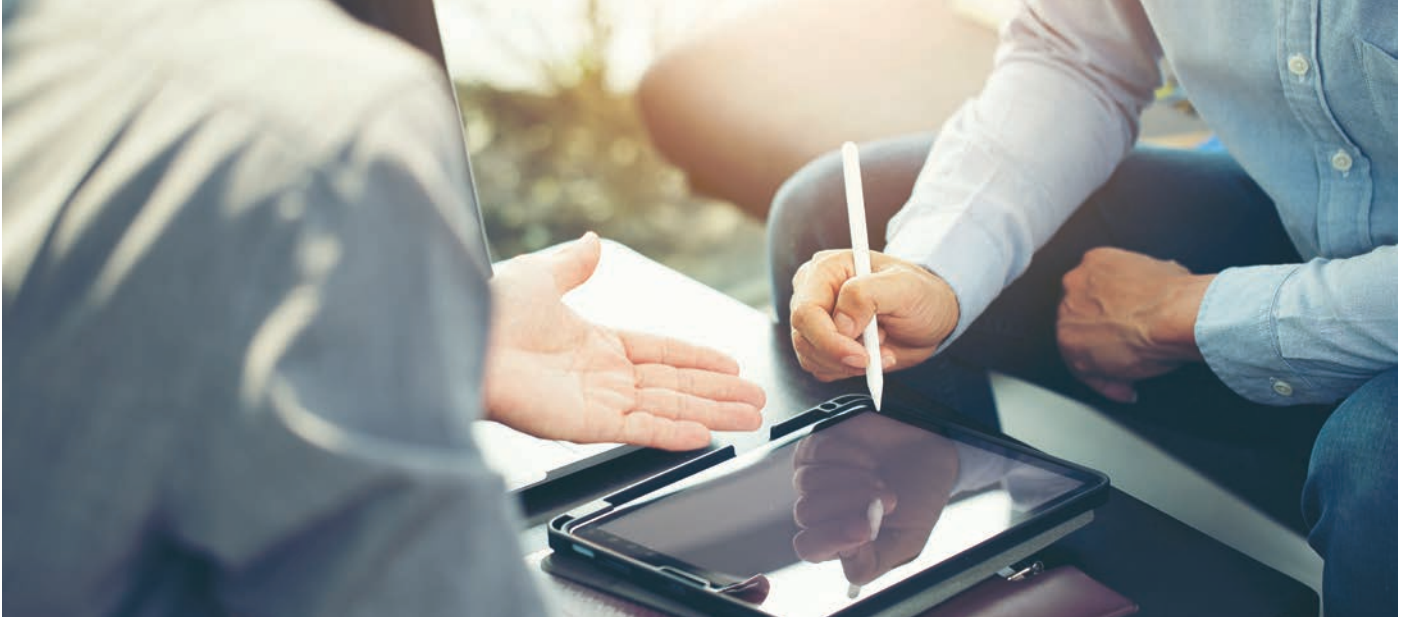


CABLE BRACING

nVent CADDY cable bracing is a simple seismic bracing method for mechanical, electrical, plumbing (MEP) and fire sprinkler systems, including CPVC pipe systems. Cable bracing is the only option when brace lengths exceed the brace length limitation of 9'-7" (3 m) for strut or when confined/crowded spaces make rigid systems difficult to install. The system includes steel cables complying with the ASCE® 19 pre-stretching requirements, attachment fittings, swaged oval sleeves & related tools, as well as pre-assembled kits.



Custom Solutions and Training



ENGINEERING AND DESIGN SERVICES

By leveraging nVent solutions and using our engineering expertise, designers and manufacturers can reduce their total installation costs while improving safety and reliability and meeting stringent customer requirements.

Let our in-house experts assist by supporting your system design, providing technical and configuration advice or quoting for complete low-voltage power solutions.

To assist with assembly manufacturing, our nVent team provides:



Design support



Our proprietary interactive panel software



Early involvement



Training and assistance during installation

ELECTRICAL ENGINEERING LAB

nVent has invested in state-of-the-art equipment and expanded the in-house Engineering Electrical Lab to meet evolving regional trends and needs. By increasing capability, nVent can support major development and commercial opportunities.

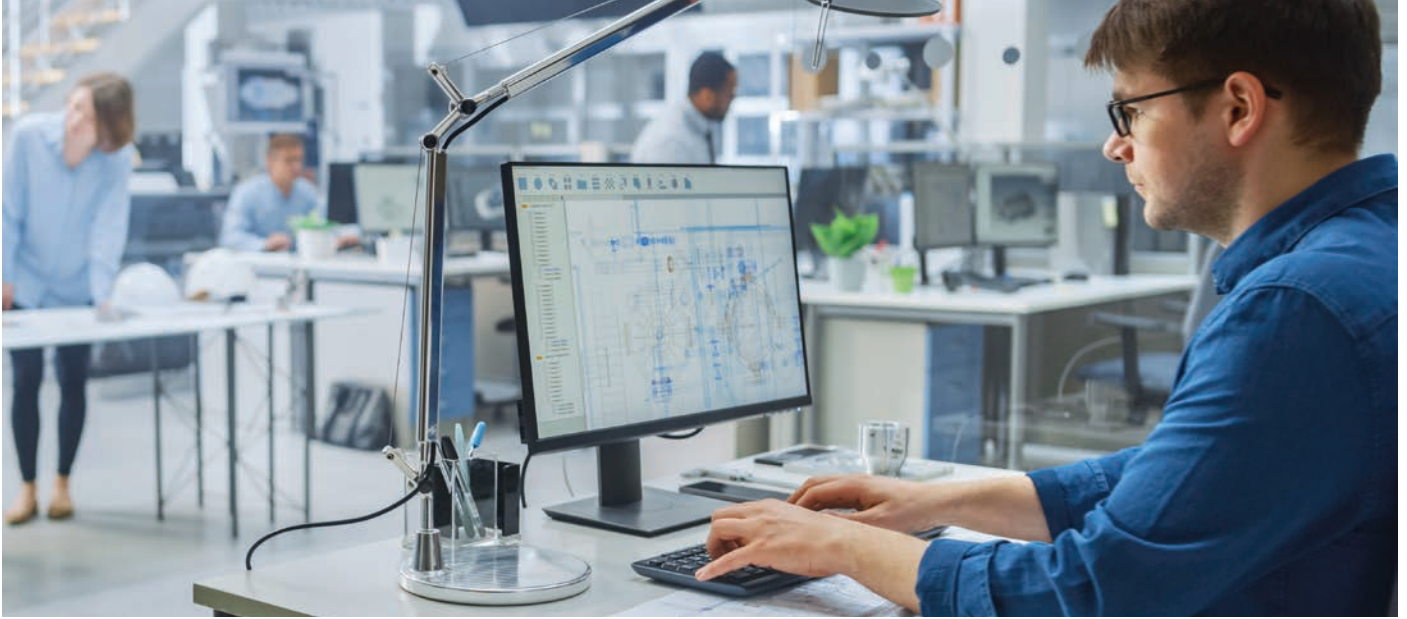
With the lab, nVent can:

- Support the testing of new applications using nVent brand products.
- Participate in the UL Client Test Data Program.
- Conduct competitive product testing.
- Enhance the internal development of innovative products.
- Support key commercial opportunities.
- Reduce time to market.
- Test and evaluate to IEC standards.

TRAINING

nVent application engineers and researchers have decades of domain expertise and continue to develop new products for improved performance and installation efficiency for the ever-evolving Energy Storage industry. We are trusted to deliver cost-effective, long-term solutions through turn-key, rapid-response engineering, design and integration services for the unique demands of the Energy Storage industry.

Custom Solutions and Training



CUSTOMISED ENGINEERING SOLUTIONS

nVent engineering experts can support your system design, provide technical and configuration advice, and help quote your complete grounding, lightning protection or surge solution.

- Design-to-order for your specific job to meet project requirements and code requirements.
- Custom product configurations.
- Design services.

SYSTEM DESIGN ASSISTANCE

nVent experts can assist engineers and designers with selecting the right solutions for their designs and projects.

Lightning protection system design assistance

- Assist in designing and selecting the right lightning protection system for your project.
- Import and export 2D and 3D drawings directly into your design submittal.
- Add product details in 2D and 3D based on your custom-tailored design.

Grounding and bonding system design

- Assist in designing and selecting the right grounding and bonding components for your project.
- Import and export 2D drawings directly into your design submittal.
- Add product details in 2D based on your custom-tailored design.

NVENT SPECIALIZES IN:

- Custom design and packaging of lightning protection assemblies.
- Grounding and bonding applications.
- Design and manufacture of lightning protection down conductors and connection systems.
- Computer grounding layouts and analysis for the foundation.

nVent provides extensive training and consultative services to OEMs, engineers and contractors on our product capabilities and installation techniques to help ensure optimum performance.



See more information and assets about nVent Energy Storage solutions at:
nVent.com/energy-storage.

Our Commitment to Sustainability

PROGRESS TOWARD OUR PLANET GOALS

2030 Planet Goals

Achieve a **50%** reduction in Scope 1 and Scope 2 GHG emissions.

Reach **>25%** renewable energy consumption.

*Progress shown is since our baseline year, which is 2019. Includes all acquisitions through 2022. Scope 1 includes emissions from natural gas, diesel, propane, heating oil and gasoline. Scope 2 includes emissions from electricity.

Our Progress*

31% reduction in CO₂ emissions.

11 percentage point increase, for a total of **13%**.



OUR PLANET VISION

At nVent, being a good steward of the environment is integral to operating. Innovation, adaptability and our continuous improvement approach allow us to help protect natural resources and provide value to our customers and the communities where we live and work.

13%

of our total energy use came from renewable sources, up from 11% in 2021.

7%

reduction in total CO₂ emissions relative to 2021.

20%

reduction in normalized CO₂ emissions in 2022 compared to 2021

WE CONNECT AND PROTECT A MORE SUSTAINABLE AND ELECTRIFIED WORLD

As the electrical systems that power our world become more sustainable and electrified, we must adapt to changing technologies and changing needs. At nVent, we help improve energy efficiency, provide end-user safety, reduce installation time, add resilience and protect mission-critical systems. We help our customers innovate for our electrified world. We drive energy efficiency and cooling innovation in data centers, we bring resiliency and cutting-edge protection to power utilities and renewable energy operations, and we provide labor saving solutions for industrial automation - but that only scratches the surface. With high-quality solutions and decades of industry expertise across all our key verticals, we are equipped to meet the demands of a more electrified world and help our customers prepare for a sustainable future.



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Our powerful portfolio of brands:

CADDY ERICO HOFFMAN ILSCO SCHROFF TRACHTE