



CONNECT AND PROTECT

Railway Certified Subracks, Cabinets and Enclosures

Electronics Packaging for Stuttgart 21


nvent

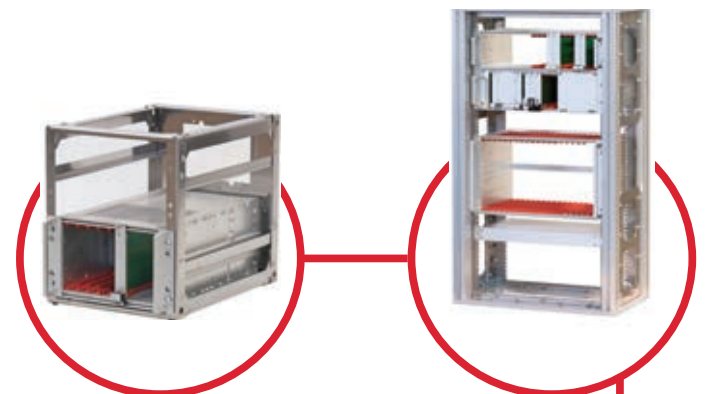
SCHROFF



Shaping the Future of Mobility

DIGITALIZATION, AUTOMATION AND INTERNET OF TRAINS

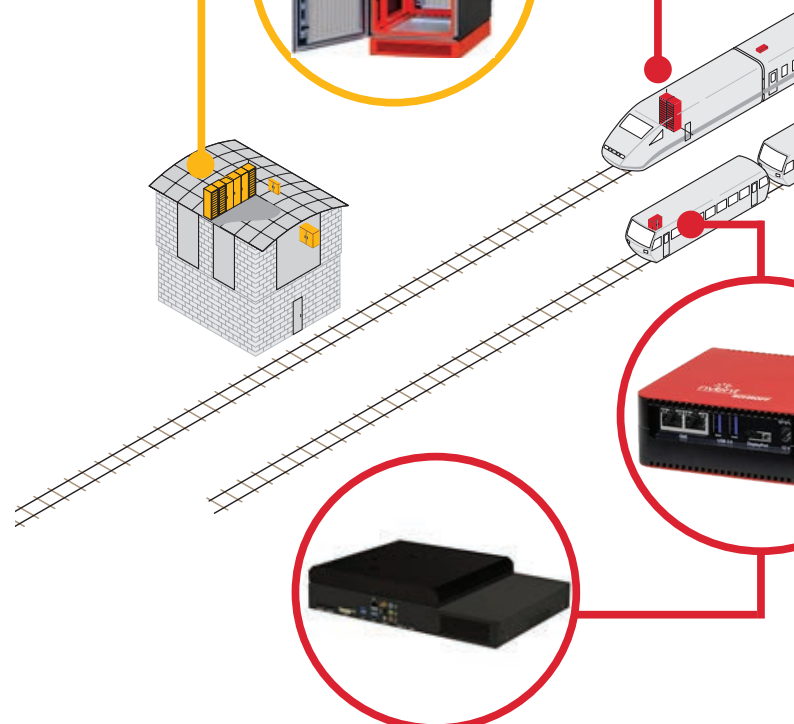
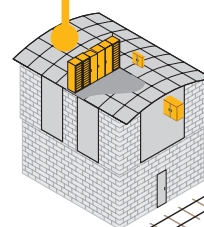
Railway communication equipment and systems are the foundation of railway signaling and communication. nVent SCHROFF supports digitalization and IoT by providing essential system platforms, including small form factor cases and Embedded COM systems, as well as a range of enclosure solutions that connect and protect sensitive electronics and infrastructure.



ON-BOARD



INDOOR



nVent offers a comprehensive range of niche electrical solutions that are critical to railway networks. With our powerful portfolio of brands that includes nVent ERICO, ERIFLEX, HOFFMAN, RAYCHEM and SCHROFF, railways throughout the world have come to rely on our expertise, and high quality products that meet strict global rail standards such as AREMA and CENELEC.

Our wide ranging portfolio includes electrical protection for rail infrastructure and equipment, connection solutions for trackside and on-board electrical infrastructure, enclosures for all types of railway signaling applications, and heating solutions that help railways operate in harsh winter conditions. Together, nVent makes an important contribution to safer, more reliable railway networks.

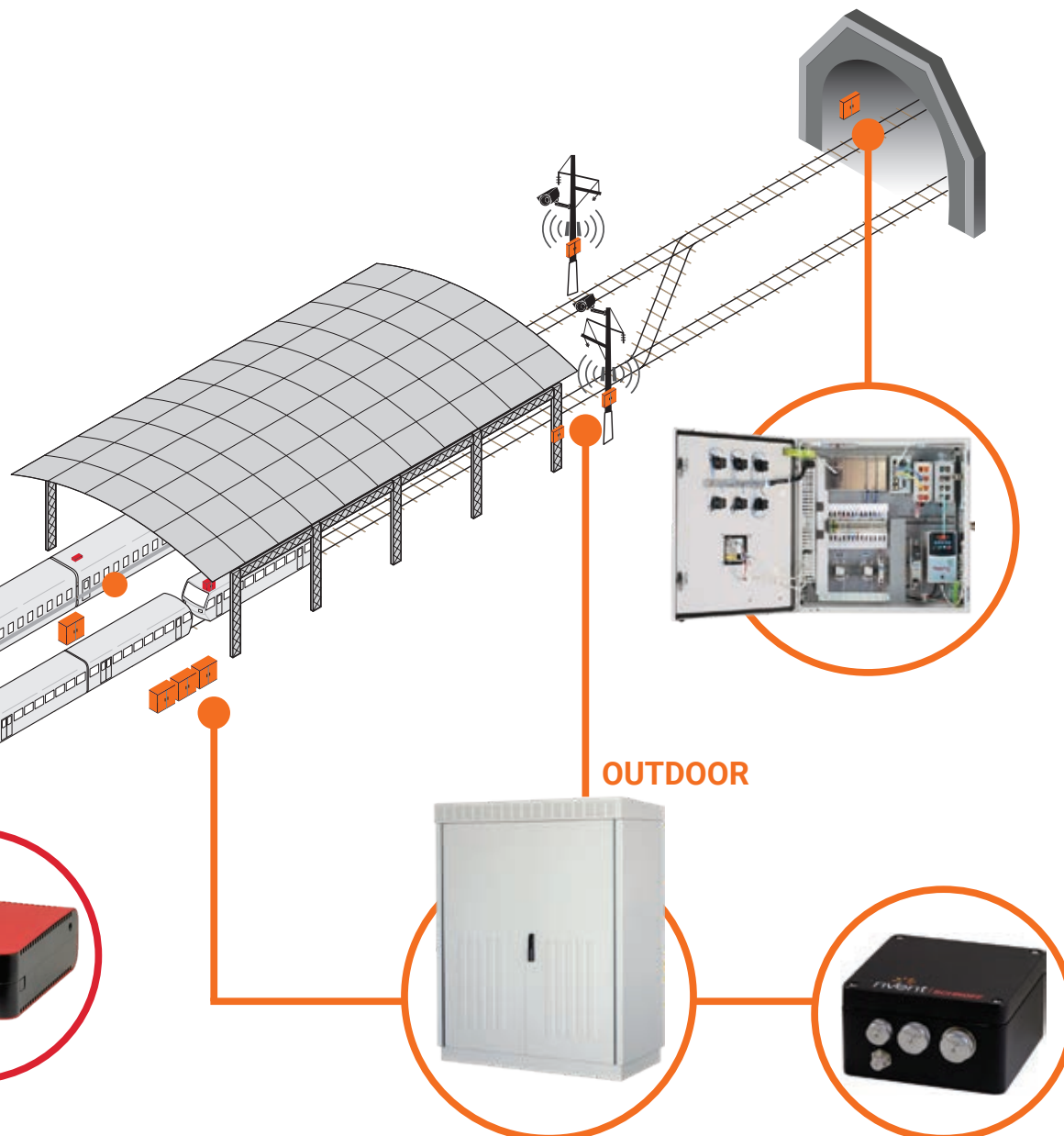
At nVent, we believe that safer systems make the world a safer place. We connect and protect our customers with innovative solutions.

Ensuring Efficiency, Reliability and Safety.

NEXT-GENERATION RAILWAY SYSTEMS

Implementing next-generation railway systems, such as communication based train control (CBTC) and 5G, require integrating advanced hardware and systems into new and existing equipment.

With many products specifically designed and certified for the railway and transportation industry, nVent offers solutions for indoor, on-board and outdoor trackside signaling and communication equipment.



PROTECTED AGAINST
ENVIRONMENTAL CONDITIONS



SECURITY & INTRUSION
PREVENTION



SCALABILITY &
FLEXIBILITY



OPTIMAL THERMAL
PERFORMANCE



INTEGRATION
SERVICES



RAILWAY
CERTIFICATIONS



GLOBAL
AVAILABILITY & SUPPORT

Robust On-Board Solutions

For a precise and highly repeatable operation.

EUROPACPRO SUBRACK

nVent SCHROFF's EuropacPRO 19" subracks are easily configured and designed to house and protect your electronic equipment. With a modular platform and a wide range of standard, modified and also customized solutions, EuropacPRO subracks are ideal for a variety of requirements ranging from cost-saving up to ruggedized shock and vibration resistant options.

- Shock and vibration resistance per EN 50155, MIL-STD-167, IEC 61587 DL 3, MIL-STD-810G, MIL-STD-901D, NF F 60-002
- EMC shielding with stainless steel or textile gaskets
- Modular subrack with a wide portfolio of compatible standard components
- Broad portfolio of compatible front panels, plug-in units and accessories



Standard EuropacPRO Subrack



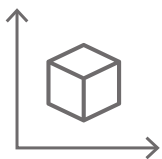
Custom EuropacPRO Subrack



DIGITAL EMPOWERMENT FOR FASTER RESULTS

Check out our Online Subrack and Front Panel Configurators

- Intuitive Design with a 3D drag and drop functionality
- Automated error checking logic
- Free instant CAD and BOM documentation
- Instant price and 24/7 stock availability



IEC 60297-3/-100.x
and IEEE 1101.x



VG 95373



up to 25g

EN 50155,
NF F 60-002,
MIL 810G,
MIL 901D,
IEC 61587 DL3

Overcoming Spatial Limitations

Ensuring accessibility to electronics without obstruction.

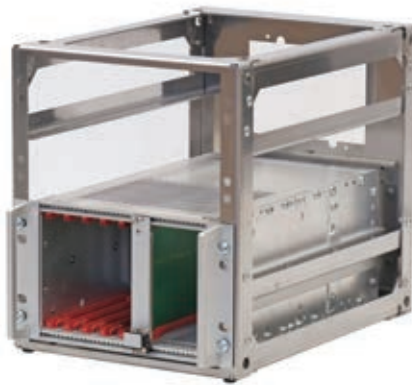
ON-BOARD RACKS

Innovative On-Board Racks (OBR) from nVent SCHROFF bring space-saving efficiency to on-board electronics and can also reduce transportation costs.

- Suitable for 3 or 6 U SNCF and DB subracks (NF F61-005, NF F60-002), (BN 411002, BN 411003)
- Suitable for ongoing vibrations, shock, high temperatures, and high humidity
- Height 3, 6, and 9 U, width 36 and 84 HP, depth 341.8 mm
- Welded to EN 15085 (CL2) and AWS standards
- Rear side is equipped for standard connectors; crossbar can be custom-coded for the SNCF coding pins



Lightweight OBR with a welded frame

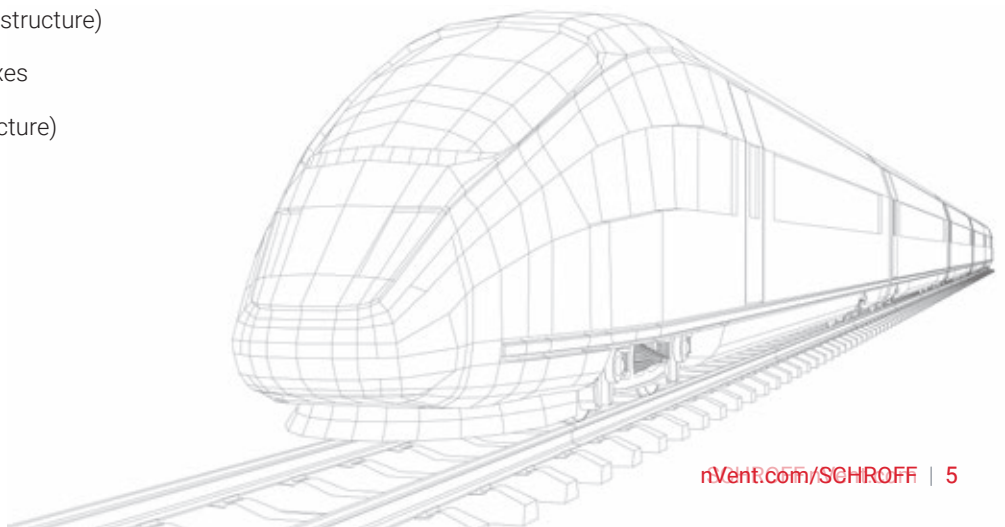


Vehicle OBR with a bolted frame

VEHICLE ON-BOARD COMPUTER FOR SIGNALING APPLICATIONS

The VOBC by nVent SCHROFF is unique, because it is bolted together instead of being welded. The bolted design provides a compact solution that can be shipped via flat pack saving on shipping and storage costs globally. The rack can then be assembled on site, making the installation easier and faster on the train in confined spaces.

- AREMA 11.5.1 for equipment class 1
- CENELEC EN 61373 (Category 1, Class A-B)
- EN 15085 (CL2)
- EN 45545 (Product Class A1 according to EN 13501-1)
- Shock: 5g in all axes (when part of train structure)
- Shock: 5g in one axes / 3g in all other axes (when not fully integrated into train structure)



Reliable Signaling & Track Control

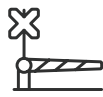
Optimized for predictive maintenance.

OUTDOOR MODULAR TRACKSIDE CABINET

The nVent SCHROFF Outdoor Modular Cabinet ensures a smooth and dependable functioning of sensitive electronics in outdoor trackside environments and is specifically tested and certified for outdoor trackside railway applications.



Digital
Interlocking



Level
Crossings



Axle
Counting



Robust and highly functional

- IEC 61969-3 and EN 50125-3 for protection against environmental conditions
- EN 50125-3 for shock & vibration (1-3 m from the rail)
- EN 60529 for ingress protection up to IP55
- IEC 61587-2 and IEC 61969-3 for Seismic Belcore Zone 4
- EN 50125-3 for wind resistance (180 km/h)
- EN 1627 and EN 1630 for vandalism protection
- EN 50121 for electromagnetic compatibility (On request)
- IEC 61969-2 for coordination dimensions
- IEC 60068-2-75, IEC 62262 and IK 10 for impact/hammer test



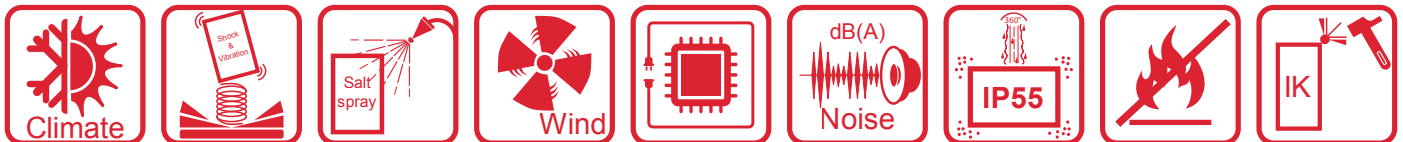
Certified for Railway Telecoms

Supporting real-time communications.

OUTDOOR MODULAR TELECOMMUNICATION CABINET

The nVent SCHROFF Outdoor Modular Cabinet platform helps Telecom industry leaders deploy best-in-class fixed line broadband projects (FTTC to FTTH), Wireless Network projects (WLAN's to WWAN's) and Mobile Communications Network projects (4G-LTE and 5G).

- Double wall design
- Vandalism, corrosion and graffiti proof
- Advanced thermal management with active and passive cooling
- RC0 & RC2 (RC3 on demand) certified
- Patented door hinges for high stiffness
- Steel or aluminium cladding
- Easy maintenance and replacements
- Multiple cable entry options
- Level 3 integration
- High grade locking with vandal proof handles



COMPLETE LIGHTNING PROTECTION KIT FOR RAIL ENCLOSURES

The nVent ERICO Modular Lightning Protection kit for outdoor railway enclosures is a comprehensive solution used to **PROTECT CRITICAL ASSETS** and **PERSONNEL**.



Station Control & Train Monitoring

Vibration and shock resistant.



MULTI-PURPOSE ELECTRONICS CABINETS

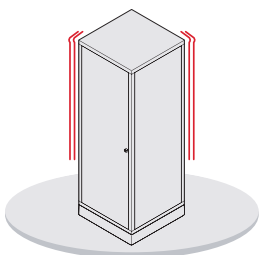
nVent SCHROFF offers steel and aluminum frame cabinet platforms with a wide range of dimensions and cover parts. Choose from different IP / NEMA protection levels, as well as options such as perforated doors, fan units and air-to water heat exchangers. A RFI shielding option for up to 60 dB at 1 GHz / 40 dB at 3 GHz or earthquake resistance up to Bellcore Zone 4 is also available to withstand extreme environments while meeting the strictest safety requirements.

VARISTAR EMC – INDOOR ELECTRONICS PROTECTION

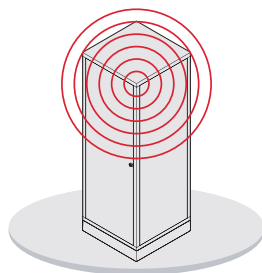
The nVent SCHROFF Varistar EMC is one of the very few electronic cabinets which has been tested successfully according to **EN 61000-5-7 up to 18 GHz** in addition to **IEC 61587-3** and offers best-in-class shielding protection: Attenuation of 40 dB at 3 GHz and 30 dB at 10 GHz with a solid door.

The nVent SCHROFF Varistar EMC cabinet has a robust, welded, heavy-duty frame and is specifically tested and certified for railway trackside indoor applications:

- IEC 61 587-1 for robust mechanical structure & physical performance
- EN 61000-5-7 and IEC 61587-3 for advanced EMC shielding up to 18 GHz
- IEC 60529 for ingress protection up to IP55
- EN 45545-2 for Low Smoke Zero Halogen compliance
- CENELEC EN 50125-3 certification for smooth performance against shock & vibration for trackside use (1-3 m from the track)
- AREMA 11.5.1 class C (designed to meet US railway standards for trackside use in bungalows)



Shock & Vibration



EMC Protection



Ingress Protection



RoHS Compliance

Ready for Stuttgart 21

We accompany you - for the entire life of the product.



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WHATEVER CHALLENGES YOU HAVE TO OVERCOME – TOGETHER WE CAN FIND THE RIGHT SOLUTION.

For almost six decades, nVent SCHROFF has been a world leader among developers and manufacturers of electronics packaging components and systems. Our products and complete solutions combine the know-how of our specialists in the integration of mechanics, electronics and climate control together with many years of experience with the most diverse application requirements. They are based on globally standardized product platforms that support rapid, future-proof and cost-effective development.



nVent ERICO is your reliable source for grounding, bonding, lightning protection solutions.



nVent ERIFLEX provides low voltage power distribution solutions that reduce total installation cost and increase design flexibility.



nVent HOFFMAN stands for protection manufactured for the highest standards.



nVent RAYCHEM is a provider of electrical heat tracing solutions to protect people, processes and infrastructure.



nVent SCHROFF is known for more than 50 years of experience in electronics packaging solutions: for 19" and beyond.

Helpful Resources

Web - SCHROFF.nVent.com

Downloads - go.nVent.com/rail-downloads

Blog - blog.nVent.com/rail

Customer Service - SCHROFF.de@nVent.com

We Connect and Protect

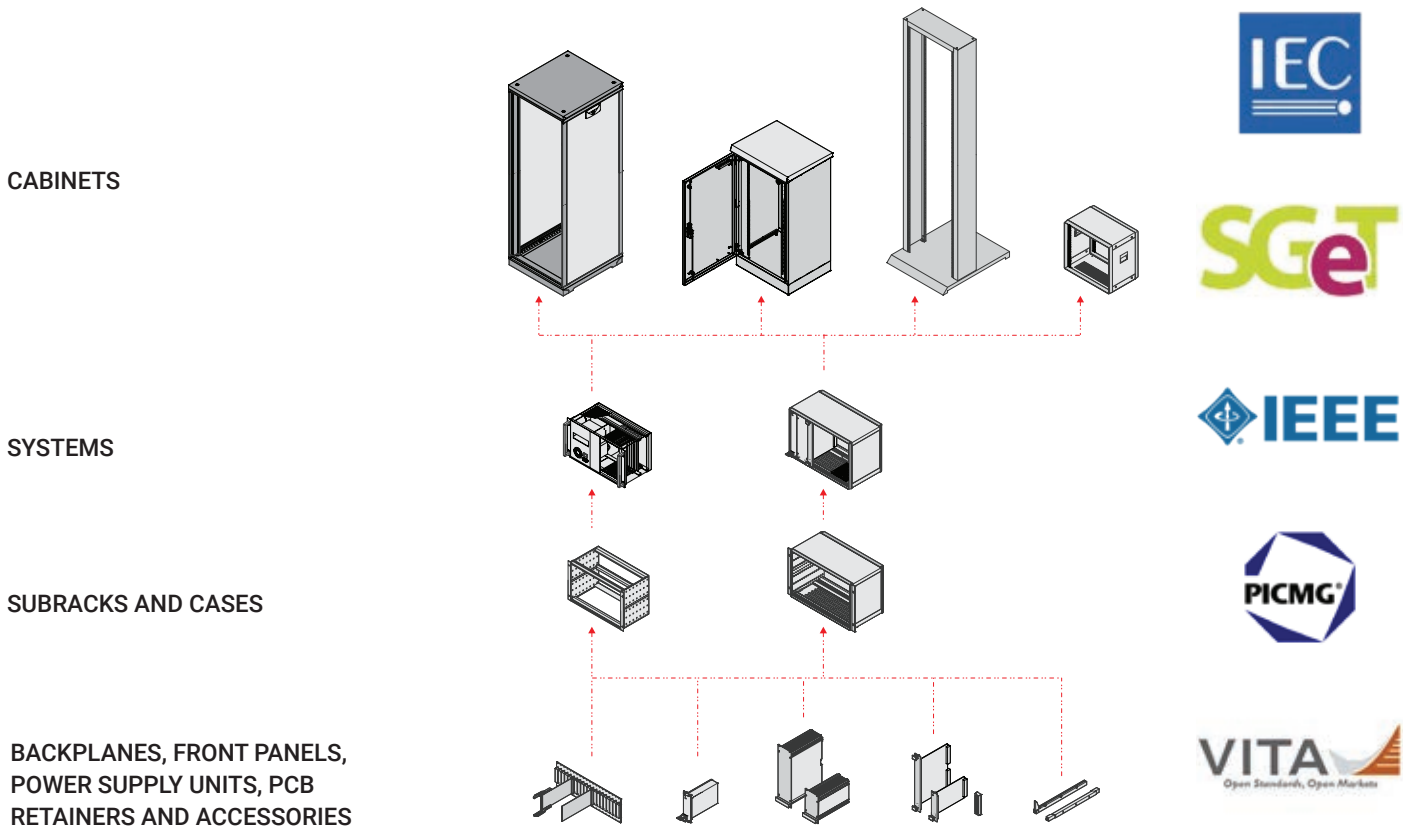
We accompany you - for the entire life of the product.

ABOUT NVENT

nVent Electric is a leading global provider of electrical connection and protection solutions. We believe that safer systems ensure a more secure world. We design, manufacture, market, install and service high-performance products and solutions that connect and protect some of the world's most sensitive equipment, buildings and critical processes. We operate three business segments: Electrical & Fastening Solutions, Thermal Management, and Enclosures.

ABOUT NVENT SCHROFF

The SCHROFF brand is nestled within the Enclosures business segment of nVent. nVent SCHROFF contains a broad portfolio of products from printed circuit board (PCB) accessories, such as card retainers, conduction cooled frames, front panels and handles to subracks, cases, backplanes, power supplies, cabinets and pre-assembled chassis for embedded computing systems.



NVENT SCHROFF PROTECTS ELECTRONICS: IN 19" AND BEYOND.

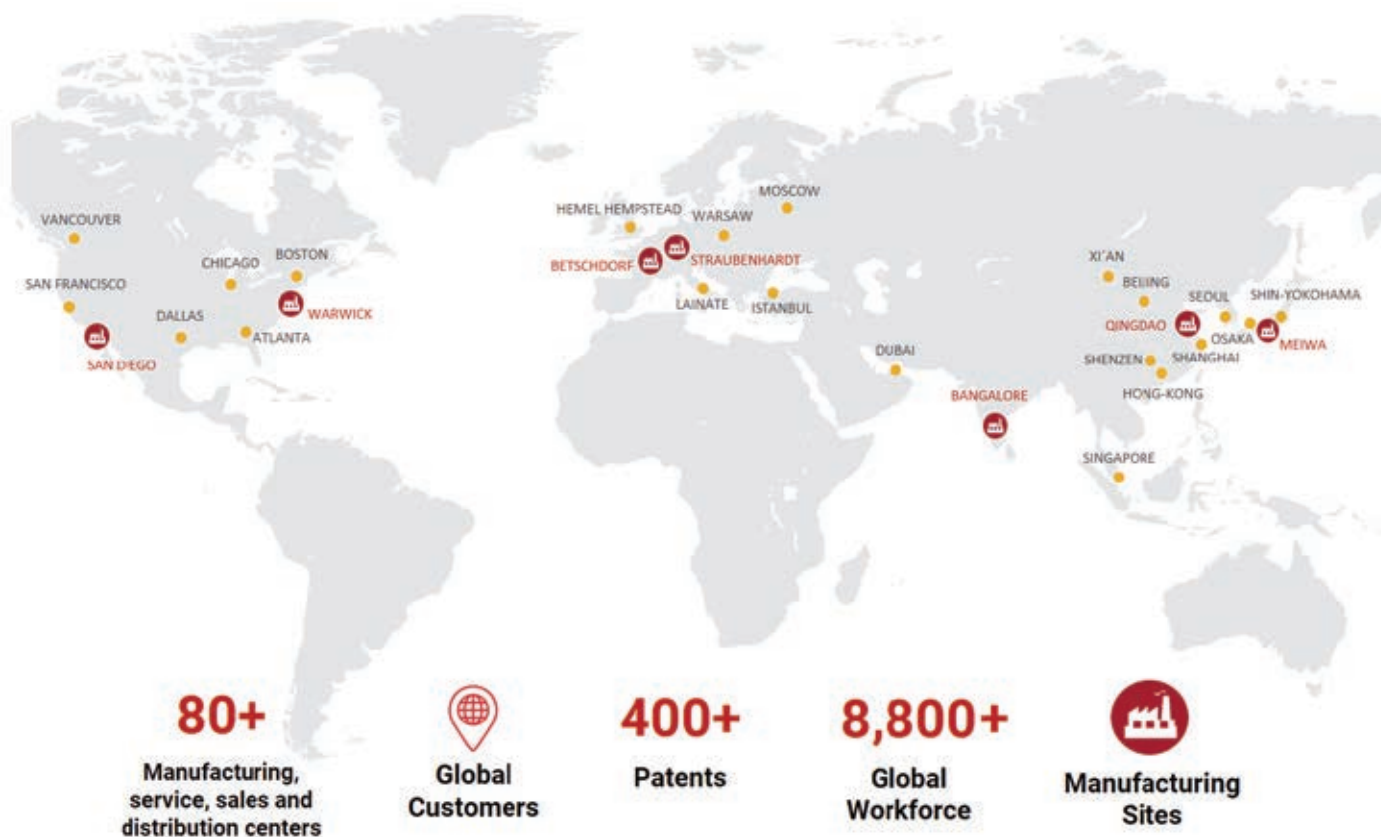
As one of the leading innovators in 19", nVent is expanding its product range to other small form factor solutions beyond the classic 19" technology. nVent's SCHROFF branded Interscale product family reduces integration time with its innovative case design and accessories, and can be tailored to meet individual requirements. It's our way of offering flexibility for small and non-standard PCBs, and to deliver exactly what you need, when you need it.

STANDARDIZATION

Since 1978, we have been actively involved with standardization committees pertaining to mechanical, electrical and communication interfaces for electronics equipment.

One nVent

Explore nVent – backed by more than 100 years of excellence.



As nVent, established electrical brands that previously were part of the diverse Pentair offerings joined forces in 2018 under a single mission: At nVent, we believe that safer systems ensure a more secure world. We connect and protect our customers with inventive electrical solutions.

The nVent name reflects the collective legacy of its trusted brands, which have helped set the global standard for innovative electrical components and systems for more than a century.

Maximize your productivity.
Minimize downtime.
Reduce operating costs.

Trust nVent to connect and protect your electrical infrastructure.

Europe

Germany

Tel.: +49.7082.794.0

France

Tel.: +33.3.88.90.64.90

Poland

Tel.: +48.22.209.98.35

Italy

Tel.: +39.02.932.714.1

North America

All locations

Tel.: +1.800.525.4682

Middle East & India

United Arab Emirates

Tel.: +971.4.823.8666

India

Tel.: +91.80.6715.2001

Turkey

Tel.: +90.541.3680941

Asia/Pacific

PR China

Tel.: +86.21.2412.6943

Singapore

Tel.: +65.6768.5800

Japan

Tel.: +81.45.476.0271

Our powerful portfolio of brands:

CADDY ERICO HOFFMAN RAYCHEM SCHROFF TRACER



SCHROFF.nVent.com