

SYSTEM SOLUTIONS GUIDE

# Installation Products

## Data Center industry - USA



Proven installation solutions to  
drive scalable and sustainable  
data center deployment.

# System solutions for Data Centers

## Creating reliable electrical systems with a focus on efficiency and sustainability

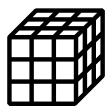
Over the last decade, the world has undergone a transformative digital revolution. Data centers are at the core of this, processing and storing massive amounts of data per second to keep up with an ever-increasing demand for information.



Continuous  
operation

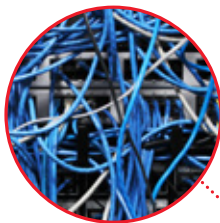


Security and  
reliability



Scalability  
and flexibility

**The rise of artificial intelligence** will only further stress the infrastructure on which it operates. With millions of customers relying on these centers for secure access to information, infrastructure design and uptime is paramount for effective data center operation.



### Continuous operation

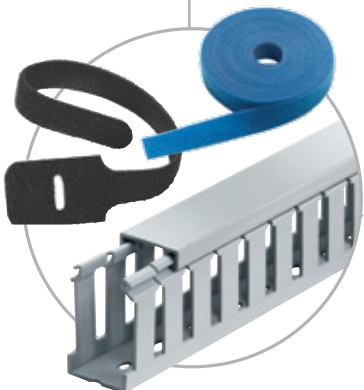
**Cable organization is more than aesthetics**



**Cause:** Once a data center is live, shifting wires around during maintenance or day-two expansion can impact operations and create a number of challenges. Unorganized cable management at the start of installation can create a path to system interruption.

**Impact:** Navigating through a nest of cables increases the time required to sort through wiring, as well as poses the threat of accidentally disconnecting live cabling and stopping system service.

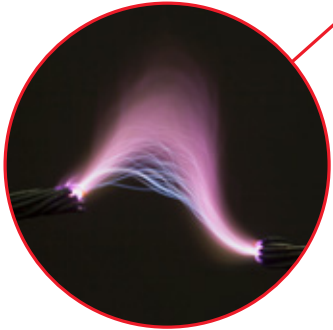
**Solution:** **Ty-Grip™ fastening** and **Ty-Duct® cable management** provides clean wire organization at the start of any deployment, offering easy accessibility for future maintenance and expansion.





## Security and reliability

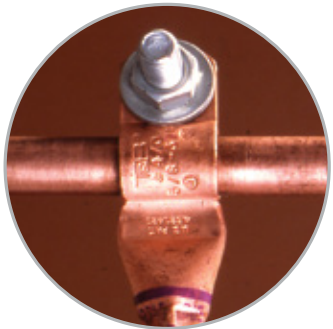
Safety and sustainability will only rise in importance



**Cause:** Exothermic welding provides robust molecular bonding between metallic surfaces but presents potential risk of splash back during cable installation.

**Impact:** Contact burns and eye injuries from standard welding practices can cause harm and result in costly downtime.

**Solution:** The **Blackburn® grounding** portfolio includes **EZGround™ grid ground compression connectors**, the sustainable, all-weather alternative to exothermic welding products for safe, easy connections.



## Scalability and flexibility

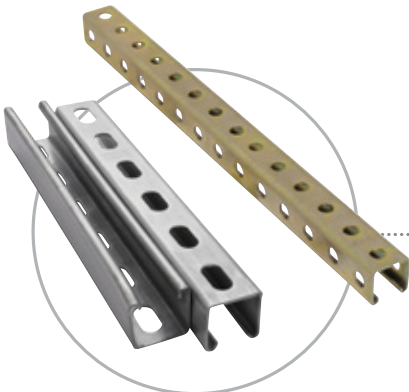
Because no two data centers are completely alike



**Cause:** Differing facility requirements and future planning uncertainties can create varying approaches to installation practices when implementing base electrical infrastructure.

**Impact:** Overlooking a design-agnostic approach to electrical layout can lead to interoperability risks and significant downtime as customized implementation requires additional engineering time and design validation.

**Solution:** **Superstrut®** and **Kindorf® metal framing** assures a modular system that can accommodate day-two expansion, while reducing cutting and installation time by as much as 40% over typical framing systems.



**ABB Installation Products solutions**  
**protect** your data center systems

# Connectivity, grounding and tooling

Easier installation without sacrificing system performance

## Connectivity, grounding and tooling

### Type / Description

#### Color-Keyed® compression lugs

- **Product range:**
  - Color-coded connectors and compression tool dies for easy die selection and proper lug installation
- **Modularity/scalability:**
  - Available in both copper and aluminum, one- and two-hole configurations, and 45° and 90° types
- **Labor savings and sustainability:**
  - Wide variety of mechanical, battery-powered and electrically powered hydraulic equipment

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**Color-Keyed®**



#### Color-Keyed® aluminum compression lug

- **High conductivity** wrought aluminum with electro tin plating – dual-rated for terminating aluminum or copper conductors
- **Narrow-tongue design** takes up less room - ideal for use in limited-space panels
- **Range-taking designs** accommodate 350-500 kcmil or 500-750 kcmil cable sizes with just one lug
- Color-Keyed® **color-coded identification system** for easy matching of connectors with correct crimp dies
- **Chamfered barrel design** helps eliminate wire hang-ups and maximizes crimp area
- **UL Listed, CSA certified, RoHS compliant**
- Provides a **UL Listed connection** when properly terminated with ABB compression tools and dies

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**Color-Keyed®**



#### Sta-Kon® wire termination

- **Electrical reliability:**
  - Terminals feature a deep serrated interior for a large area of contact, lowering electrical resistance
- **Design innovation:**
  - Anti-rotational tongues prevent terminal shorting by securing the terminal within the terminal block
- **Labor savings:**
  - Overlapped seam helps prevent wire strand loss or wire pullout after installation

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**Sta-Kon®**





# Connectivity, grounding and tooling

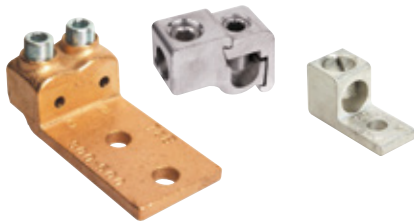
## Easier installation without sacrificing system performance

### Connectivity, grounding and tooling

#### Type / Description

##### Blackburn® mechanical connectors

- Provide a **robust and reliable** connection
- **Blackburn® cast, forged or formed** mechanical connections, produced in economical copper and dual-rated aluminum, provide a large variety of UL and CSA certified solutions for your electrical interface needs
- **Rugged split bolts:** by design, our Blackburn split bolts create a stronger and more resilient installation in both aluminum and copper options

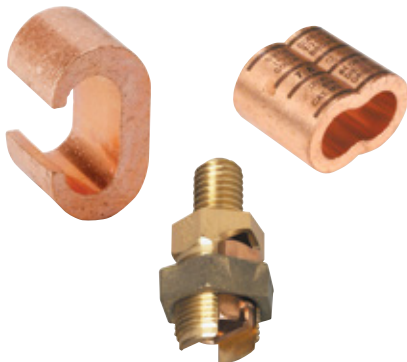

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**Blackburn®**



##### Blackburn® EZGround™ system - compression grounding connectors

- **Designed for direct burial** and offer a safe, efficient alternative to exothermic welding products
- These **range-taking products** will reduce the number of connectors and dies needed for your installation
- **Meets all applicable standards:** IEEE 837, UL 467, CSA 22.2. Connectors are prefilled with oxide inhibitor and sealed


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**Blackburn®**



#### Application tooling

- **Complete line of hand tools** for crimping, wire stripping and cable tie terminations
- **Tooling family supports all product families**, including Color-Keyed®, Sta-Kon®, Dragon Tooth®, Shield-Kon®, Ty-Rap® and Ty-Duct®
- **Options include:** manual tools, battery tools and pneumatic tools suitable for every application and volume of terminations


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Refer to the product catalog for details on specific products' certifications.

# Flexible fittings and conduits

Protect the electrical connectivity that powers your data center

## Flexible fittings and conduits



Series 5200/5300



Series 5300HT



Series 5300/9300SST6

### Type / Description

#### Series 5200/5300 Steel - liquidtight fittings

- **Steel and malleable iron, zinc chromate-plated**
  - Insulated and non-insulated version
  - IP66, IP67 rating
- **UL outdoor:** 3, 3R, 4
- **UL/CSA:** -4°F to +221°F

#### Series 5300-HT Steel - high temperature liquidtight fittings

- **For in/outdoor extreme temperature installations**
  - Steel and malleable iron, zinc chromate plated
  - Insulated and non-insulated version
  - IP66, IP67 ratings
- **UL outdoor:** 3, 3R, 4
- **Dynamic:** -13°F to +221°F, Static: -76°F to +302°F
- **UL/CSA:** -4°F to +221°F

#### Series 5300/9300SST6 Stainless steel 316 - liquidtight fittings

- **Insulated version**
  - NPT and ISO metric threads
  - IP66, IP67 rating
- **UL outdoor:** 3, 3R, 4, 4X
- **UL/CSA:** -4°F to +302°F

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**T&B Liquidtight Systems®**



### T&B Liquidtight Systems® - liquidtight conduits

- **Design reliability**
  - Conduit and fittings protect connections between critical infrastructure of the data center and backup power systems
- **Multi-faceted application support:**
  - Ideal for general purpose, temperature-sensitive applications, as well as cooling-centric systems
- **Ease of use and labor savings:**
  - Conduits provide colored options for easy circuit identification

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**T&B Liquidtight Systems®**



CEC - configurable



CEF - fixed

### T&B Liquidtight Systems® - cable entry plates

- An **easy and efficient solution** to organize cables, ideal for high-density applications
- An **economical solution** where high strain relief is not required
- **UL 508 Listed**, cURus UL recognized
- **Ingress ratings:** UL Type 4, 4X, 12, 13, IEC IP66
- **Type "CEF" fixed:** pierced membrane
- **Type "CEC" configurable:** onion peel split grommet

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**T&B Liquidtight Systems®**

# Flexible fittings and conduits

Protect the electrical connectivity that powers your data center

## Flexible fittings and conduits



**Star Teck®**

### Type / Description

#### Star-Teck® cable fittings

- **Metal-clad, teck and ACWU cable fittings** for harsh and hazardous locations
- Provides means for passing **jacketed metal-clad cables through a bulkhead or enclosure** in industrial and hazardous areas, including data centers where metal-clad cables are specified
- Available in **PVC-coated version** for increased corrosion resistance

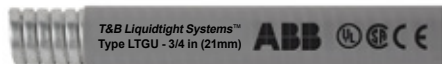


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Type CLGE



Type LTGU

**Steel City®**

### Steel City® liquidtight series - LT steel fittings, straight, 45° and 90°

- **LT steel - straight, 45° and 90°**
  - 3/8 to 4" trade sizes
  - NPT
- **Meets UL 514B, CSA C22.2 No. 18.3** for liquidtight fittings
- Suitable for use in Class 1 Division 2, Class 2 Division 1 and 2, and Class 3, Division 1 and 2 hazardous locations per NEC
- Suitable for use in **zone 2, 20, 21, 22** hazardous locations per NEC
- **Jacketed conduits** offer solutions for a variety of industrial applications, hazardous applications available, direct burial options including earth or cement, as well as options for non-UL approved applications



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Series XC



Series 200



Series 300

**Steel City®**

### Steel City® liquidtight series - straight, 45° and 90° fittings

- **XC Squeeze type connectors**
  - UL 3/8" to 4" trade sizes, NPS 1/2" to 4"
  - Meets UL 514B, CSA C22.2 No. 18.3
  - Die cast zinc: insulated and non-insulated
  - Straight and 90°
- **200 Steel Squeeze connectors**
  - UL 3/8" to 4" trade sizes, NPS 1/2" to 4"
  - Meets UL 514B, CSA C22.2 No. 18.3
  - Steel/malleable iron: insulated and non-insulated
  - Straight and 90°
- **300 "Steel" tite-bite**
  - UL 3/8" to 4" trade sizes, NPS 1/2" to 4"
  - Meets UL 514B, CSA C22.2 No. 18.3
  - Steel/malleable iron: insulated and non-insulated
  - Straight and 90°
- **General purpose steel - flexible metal conduits**
  - Full compliance with IEC/EN 61386-1 requirements
  - Trade sizes from 3/8" to 4"
  - Suitable for use with T&B Fittings® and Steel City® Connectors, listed for use with flexible metal conduits



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# Cord connectors and rigid fittings

## Rigid corrosion-resistant cable protection systems

### Cord connectors and rigid fittings

#### Type / Description



**Ocal®**

#### Ocal-Blue® standard-radius elbows

- Factory bent to save time and material
- Fabricated from Ocal® PVC-coated conduit
- Standard radii in 30°, 45°, 60° and 90° available
- Color-coded thread protectors for easy identification of conduit size

#### Ocal-Blue® large-radius elbows

- Choose the size and angle to meet your exact requirements
- Fabricated from Ocal® PVC-coated conduit
- Large radius in 90° available for immediate shipment
- Special radii and angles not listed available upon request
- Color-coded thread protectors for easy identification of conduit size



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**Ocal®**

#### Ocal-Blue® Form 8 UL 4X LU® universal conduit body

- Replaces LL, LR, LB and C conduit bodies - 4-to-1 SKU reduction
- Includes injection-molded, PVC-coated cover with integral O-ring seal
- Double corrosion protection - bodies and covers coated inside and out with nominal 2 mil blue urethane, then exterior coated with nominal 40 mil PVC
- Radius is the same as bent conduit - pull wire through the body
- Rated for 40% wire fill - avoids conduit system de-rating



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**Ocal®**

#### Ocal® PVC-coated rigid conduits and fittings

- NEMA RN-1 full undisturbed **zinc coating** under the **PVC coating**
- **UL Listed**, including UV resistance testing, meets NEMARN1
- **PVC-coated conduit system** provides superior corrosion protection against many harmful elements
- **Local** installation training and certification



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**T&B Fittings**

#### Blackjack® grounding bushings

- **Simply put in place:** No need to thread the bushing on the conduit
- **Grounding and bonding:** Lug is integral to the body for peace of mind that your bond and ground are good
- **SKU reduction:** A single SKU can be used with threaded conduit, threadless conduit, 150°C copper wire and aluminum wire
- **Ease of installation:** No need to thread the bushing on the conduit. Simply put in place
- **Stainless steel hardware** vs. galvanized crews for corrosion resistance
- **Smooth round edges** produce an easy glide with minimal risk of skinning wires



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# Cord connectors and rigid fittings

## Rigid corrosion-resistant cable protection systems

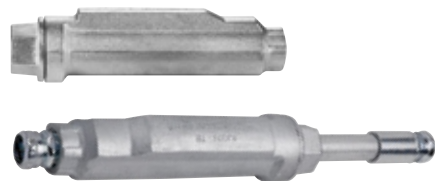
### Cord connectors and rigid fittings



#### Type / Description

##### T&B® Fittings XD expansion/deflection coupling for rigid conduit

- **Watertight**, flexible elastomeric outer jacket
- **Erickson®-type** conduit union
- **Stainless steel** inner sleeve
- **Enclosed** copper ground mounting plates
- **Tamperproof** stainless steel jacket straps
- **Internal flexible** copper braid grounding bonding jumper

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##### T&B® Fittings XJG conduit expansion couplings for rigid conduit and EMT

- **Just a few turns** and you're done, **no disassembly** necessary to install
- **Fast, simple** and requires fewer steps
- **True internal bonder jumper** - no external grounding strap required
- **Tamper-proof** internal jumper protected from the environment
- **Exceeds** code requirements for long conduit runs to permit linear movement

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##### BlueKote® Form 7 and Form 8 conduit outlet bodies

- **Faster, easier** wire pulling
- **Extra** corrosion resistance
- Provides a **slick, easy-glide** internal surface
- **Significantly lowers** the amount of force required to pull wires
- **Reduces installation time** and the risk of installer strain
- **Eliminates rough internal surfaces** that can cut into cable jacket, insulation and conductors during pulling
- **BlueKote® Form 7** pre-assembled conduit bodies, includes conduit body, cover and gasket

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##### T&B® Fittings sand cast aluminum Form 7

- **Ideal for use in corrosive environments**
  - Form 7 sand cast aluminum is made with a special aluminum alloy, providing superior corrosion resistance as cast
  - **No protective coatings** needed

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## Fastening and wire protection

Optimized wiring paths for easy scalability and expansion

### Fastening and wire protection

#### Type / Description

##### Ty-Rap® cable ties



- **“Grip of Steel”:**
  - Corrosion resistant, stainless-steel barb provides secure cable locking
- **Durability and reliability:**
  - Nylon composition provides structural integrity and proven performance in humidity-controlled environments
- **Easy installation:**
  - Specially designed tail with grips facilitates installation even with gloves

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**Ty-Rap®**



##### Catamount® cable ties



- **General purpose ties:**
  - Commercial value-priced ties in a wide range of sizes, styles and colors
- **Easy to install:**
  - Provides low insertion force for ease of installations
- **Complete solution:** cable clamps, clips, spiral wrap, grommeting, wire sleeving and harnessing accessories
- **Catamount® Twist Tail™:** cable ties that can be installed securely without tools
  - UL Listed
- **Plenum rated** for air handling applications

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**Catamount®**



##### Ty-Grip™ hook & loop



- **Continuous operation:**
  - Simple cable organizing solution that optimizes ventilation within data hall enclosures
- **Scalability-focused:**
  - Quick-bundling, re-adjustable tension allows for easy maintenance of cabling during data center retrofits
- **Labor optimization:**
  - Provides a cut-free fastening solution that protects fiber-optic jackets or insulation from damage

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**Ty-Grip™**

# Fastening and wire protection

Optimized wiring paths for easy scalability and expansion

## Fastening and wire protection

### Type / Description

#### Deltec® cable strap

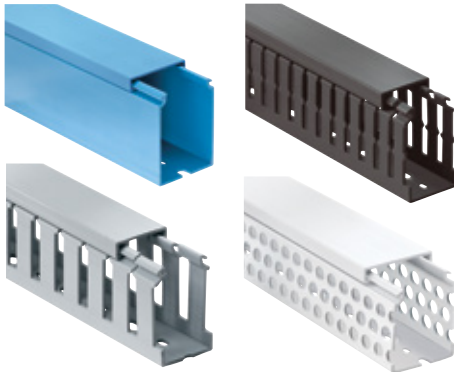


- **Customized fastening** in harsh outdoor environments
- **Select and customize strap length for any application**
- **Cut to desired length** for total flexibility and no waste
- **Easy storage** and reduced inventory
- **Safe and easy to install** with a guaranteed weatherable life
- **Corrosion protection** to withstand demanding conditions
- **Flammability rating:** UL 94 HB

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**Deltec®**

### Ty-Duct® wiring duct



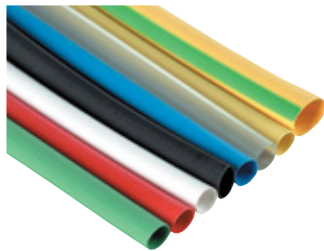
- **Ease of installation:**
  - Slotted or adhesive-backed channel options both provide quick, reliable installation
- **Modular channel design:**
  - Channel covers, corner and joining strips, and divider walls provide flexible data center wiring layouts
- **Diverse array of accessories:**
  - One-size-fits-all mounting clips or plastic rivets secure duct position without the need for additional hardware
- **UL recognized** continuous-use temperature from -40°F up to 140°F
- **Complies with:**
  - UL flammability rating UL94V-0, CSA certified file no. 110176, CE compliant, RoHS compliant

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**Ty-Duct®**



### Shrink-Kon® heat shrink tubing



- **Heat shrink tubing** protects wires against moisture, corrosion and abrasion
- For **heavy, medium, and thin wall** tubing
- **Heat and radiation** protection by Polyolefin material
- **Options with or without adhesion** by length or reel
- **Protects end caps** against liquid and dirt

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**Shrink-Kon®**



Refer to the product catalog for details on specific products' certifications.

## Boxes and non-metallic conduits

Essential building blocks for effective cable management

### Boxes and non-metallic conduits

#### Type / Description

##### Steel City® metallic series

- **Innovative enclosures:**
  - Unique bracket designs simplify positioning and mounting of electrical outlet boxes
- **Multi-service floor boxes:**
  - Accommodates power, data, voice and A/V devices for data center conference and meeting rooms
- **Durable commercial fittings and finishes:**
  - Comprehensive portfolio



**Steel City®**



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##### Steel City® metallic boxes

- **Steel City electrical boxes** and accessories deliver simplicity and ease of use with a comprehensive industry-leading product line engineered for safety and compliance
- **Wide variety of options** and hardware, including welded, stamped, gangable, old work / new work, utility, adjustable, ceiling and fire alarm system boxes and bracket options
- **Metallic Boxes:** UL 514A
- UL File: E2969



**Steel City®**



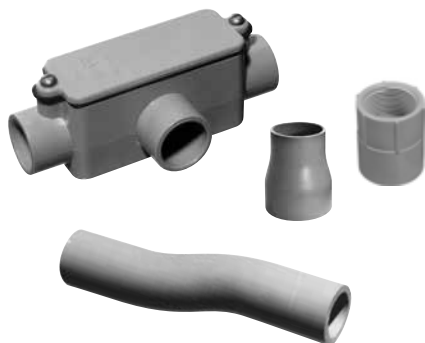
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##### Carlton® PVC conduit fittings and accessories

- **One of the most comprehensive lines** of PVC conduit and fittings available in the industry
- **Full selection of PVC Schedule 40 and 80 elbows,** conduit bodies and more
- **Polycarbonate enclosures** provide excellent corrosion and impact resistance



**Carlton®**



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# Metal framing and weatherproof boxes

## Essential building blocks for effective cable management

### Metal framing and weatherproof boxes



**Kindorf®**

#### Type / Description

##### Kindorf® modular strut system

- **Design agnostic:**
  - Compatible with 1-5/8" strut
- **Labor savings:**
  - Unique punched framing channels reduce installation time by as much as 40%
- **Material savings:**
  - 1 1/2" width profile requires fewer fittings for framing installation, lowering required job-site inventory
- **Reduced waste:**
  - Integrated measurement system means exact cuts and reduction in scrap requiring haul-away

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**Superstrut®**

#### Superstrut® metal framing

- **Design agnostic:**
  - Compatible with 1-5/8" strut
- **Design flexibility:**
  - Extensive range of finishes from GoldGalv® and SilverGalv® to hot-dip and standard pre-galvanized
- **Unmatched protection:**
  - Clean finishes with protected holes and ends deliver high corrosion resistance, easier handling and storage flexibility, and long-lasting performance

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**red dot®**

#### Red Dot® Weatherproof boxes and covers

- **The industry's preferred choice** for outdoor boxes for more than fifty years
- **Durable die-cast aluminum** to withstand the harshest elements
- **Single- and double-gang rectangular** and round configurations, with a wide variety of hub sizes
- **Help ensure trouble-free** installation and performance
- **Reduce specialized inventory** with universal adapter plates to support horizontal and vertical mounting options
- **Complies with:** NEC® Section 406.9(B), UL® Listed, CSA Certified

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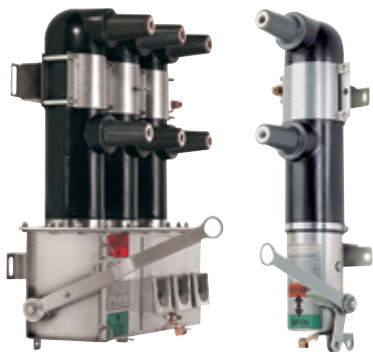
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# Utility solutions

Connect, protect and control power continuity

## Utility solutions



### Type / Description

#### Elastimold® molded vacuum interrupters

- **Compact**, lightweight
- **Predictable tripping** for ease of coordination with upstream/downstream protection
- **Self-powered electronic control** monitors the circuit condition and tripping

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Refer to the product catalog for details on specific products' certifications.



#### Elastimold® distribution switchgear to 38 kV

- **Uses no oil** or SF6 gas
- Solid **EPDM insulation** is maintenance free
- **Compact** and **modular** designs allow for smaller footprint
- **Field-reconfigurable** with field-replaceable components

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Refer to the product catalog for details on specific products' certifications.



#### Elastimold® cable accessories

- **200A and 600A loadbreak** elbows and separable connectors incorporate safety features, increase range flexibility, and improve cost reduction over the life cycle
- **Elastimold fully shielded surge arresters** provide fully submersible lightning and switching surge protection
- **Elastimold 35 kV grounding aid device (GAD)** provides permanent, reliable and safe operation
- IEEE 386 compliant, ANSI certification, Rural Utilities Service (RUS) acceptance

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Refer to the product catalog for details on specific products' certifications.



#### Homac® substation connectors

- **Full line** of couplers, taps, bus support terminals and expansion connectors
- **Tested - 100%** of the Flood-Seal® bus connectors are subjected to a dielectric test at 4,000 volts for 60 seconds to ensure insulation integrity

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## Download your catalog

— Color-Keyed®  
compression connectors



— Blackburn® mechanical  
connectors



— Blackburn®  
grounding systems



— T&B® Liquidtight  
Systems



— Steel City®  
conduit systems



— Ocal® corrosion-resistant  
conduit systems



— T&B® Fittings rigid  
conduit and fittings



— Ty-Rap® fastening  
solutions



— Ty-Duct®  
wiring duct



— Sta-Kon® power,  
connection & control



— Steel City® metallic  
boxes and covers



— Carlon® PVC conduit,  
elbows and fittings



— Kindorf® modular  
strut system



— Superstrut® metal  
framing system



— Red Dot® weatherproof  
boxes and covers



— Elastimold® reclosers  
and switchgear



— Elastimold®  
cable accessories



— Homac® substation  
connectors





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**Technical support &  
sample request**