

APPLICATION BROCHURE

# Installation Products

## Liquid ingress protection



### Installation Products Division

- Wire and cable management
- Cable protection systems
- Boxes and fittings
- Connectivity and grounding
- Medium voltage

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**Thomas & Betts is now part of ABB's Installation Products Division, but our long legacy of quality products and innovation remains the same. From connectors that support wire buildings on Earth to cable ties that help put machines in space, we continue to work every day to make, market, design and sell products that provide a smarter, safer and more reliable flow of electricity, from source to socket.**

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The financial impact of allowing liquid to migrate into electrical systems can be significant – whether the result of downtime or having to replace damaged components.



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# Liquid ingress can wreak havoc

If your electrical components are buried underground, are continuously exposed to the elements, or operate in wet conditions, liquid ingress protection is a critical element in keeping your electrical systems operational.

Exposure to water in indoor or outdoor applications, condensation and accidental spills of machine oils and lubricants can all shorten the life of your electrical system. Effective protection of your electrical system can mean the difference between consistent operations, or unscheduled downtime while liquid-damaged components are replaced or the system is rebuilt.

**Consider the following issues related to liquid ingress:**

- Liquid ingress can deteriorate or short out an electrical system immediately or over time
- Electrical system components designed with round surfaces help to shed liquids and contaminants, rather than creating a shelf where they can collect
- Abrasive and corrosive contaminants present in many processing environments, combined with moisture, present extra challenges for liquidtight electrical components

Electrical systems with components that prevent liquid ingress – like fittings, electrical housings and conduit – help prevent corrosion and deterioration, meaning longer system life and higher operational reliability.



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## A complete system to keep you dry

ABB offers not only solutions for protecting your electrical system, but a complete catalog of components specifically designed to prevent liquid ingress at every level.

From T&B® Fittings Stainless Steel Liquidtight Fittings to Russellstoll® Waterproof Pin-and-Sleeve Interconnections, ABB provides components built to ensure that your equipment and systems are

protected from corrosion and deterioration caused by liquid ingress.

When building an electrical system or upgrading or maintaining your current system, trust ABB to provide the products and solutions that lead to long-lasting electrical systems that prevent liquid ingress – from the wires up.



# Designed to perform

## Installation Products business line

Thomas & Betts is now ABB Installation Products business line, but our long legacy of quality products and innovation remains the same. From connectors that help wire buildings on Earth to cable ties that help put machines in space, we continue to work every day to make, market, design and sell products that provide a smarter, safer and more reliable flow of electricity, from source to socket.

### **Wire and cable management**

- Industry's broadest range of innovative solutions for bundling, securing and routing wire and cable
- Designed to perform in the most demanding conditions
- Overview in fastening, bundling and managing wires
- For electrical installers, panel builders, OEM professionals and many more

### **Connectivity and grounding**

- Covering IEC/EN, NFC, UL and NFPA projects
- Reliable and high quality manufactured components
- Low installed costs through intelligent design
- Design services support and technical advice
- Protecting people, assets and electrical equipment

### **Boxes and fittings**

- Highest quality, most versatile, innovative range of boxes, fittings and enclosures
- Comprehensive line of boxes – metallic/non-metallic, indoor/outdoor, weatherproof and floor
- Fast and flexible enclosure solutions
- Specified in the industrial, construction and utility markets

### **Cable protection systems**

- Unsurpassed protection for wire and cables in the most demanding applications
- Customized specific solutions – through innovation & material science expertise
- Conform all international certifications – such as IRIS and end user approvals
- Comprehensive support service – worldwide close to the customer
- Over 12.000 high performance products – for outdoor & indoor, static & dynamic

### **Medium voltage**

- Intelligent control and reliable connection of electrical power
- Reducing maintenance, repair and operational costs in the field – overhead or underground
- Solid dielectric switchgear, solid dielectric reclosers, capacitor switches and controllers, air break switches, electric arc furnace switches, current-limiting fuses, fault current indicators, underground cable accessories, overhead connectors, underground and network connectors, substation connectors, and street lighting connectors
- Specified Industrial, construction and utility markets

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From wire protection to liquidtight conduit and connectors, ABB knows how to keep your systems safe from liquid ingress in the most demanding applications.



## Liquid ingress protection



### Russellstoll®

#### Russellstoll® – Waterproof pin-and-sleeve interconnections

- O-ring sealed pin and sleeves ensure protection against liquid ingress into the connector housing
- Standard Neoprene O-ringed interior components provide separation at the front of each device
- 24 single-rate device polarizations ensure exact voltage, frequency and phase differentiation
- All system components use mating screw collars

### PMA

#### PMA® – Flexible nylon conduit systems

- Snap-in installation provides a quick & secure connection, saving time & money
- Ingress protection conforms to recognized test methods
- Connectors are commonly IP66, IP68 or IP69 rated
- PMA® has nylon conduit systems specifically designed for extreme-temperature environments



### Sta-Kon®

#### Sta-Kon® –Shrink-Kon® Self-fusing insulation tape

- Quick and easy insulation – no heat or adhesive required
- Just two layers form a moisture-proof, abrasion-resistant, dielectric seal

### Ocal®

#### Ocal® Conduit body with NEMA 4X cover

- Double coated inside and out for corrosion protection
- Industry leading thread protection through a hot-dipped galvanizing process, and industry leading UL® Listed Type 4X PVC-coated conduit
- Stainless steel encapsulated cover screws can be hand-tightened – using only



- 15 in.-lbs. of torque – to achieve the UL® Listed Type 4X watertight rating
- UL® Listed Type 4X and NEMA 4X rating for excellent protection against washdown, moisture, rain, ice or snow

### HOMAC®

#### Homac® Flood-Seal® Insulating covers



- Ensure a fully insulated, watertight and submersible splice connection

#### Homac® Flood-Seal® multi-port connectors



- Ensure a fully insulated, watertight and submersible tap connection
- All connectors are 100% Hi-Pot Tested at 4000V for 60 seconds to ensure that connectors are 100% watertight and molded correctly

### Ty-Rap®

#### Ty-Rap® Deltec® Outdoor fastening system



- Weather-resistant materials
- Provides extremely long service life

#### Ty-Rap® Stainless steel cable ties

- Uncoated Type 302/304 and Type 316 stainless steel
- Also available in polyester-coated Type 316 stainless steel
- Secure, heavy-duty ball locking mechanism





## Liquid ingress protection

### T&B® Fittings

#### T&B® Fittings

##### BlueKote® Conduit bodies

- T&B® Fittings BlueKote® Conduit Bodies protect the electrical raceway against liquid ingress
- Marine-grade Type 316 stainless steel construction in rugged Form 8 design in sizes to 2" and LB, T, TB and LU® shapes
- Ferrous Form 7 and Form 8 designs in all popular sizes and shapes with triple-layer, corrosion resistant BlueKote® finish
- UL® Listed and CSA Certified

#### T&B® Fittings

##### Stainless steel liquidtight fittings

- Stainless steel construction resists corrosion
- Rounded gland nut deflects water from connector
- Continuous sealing ring ensures

#### T&B® Fittings

##### EMT Raintight fittings

- T&B's EMT Raintight conduit connectors provide a superior seal for demanding situations
- Feature a vibrant gland nut enabling inspectors to visually inspect conformance

#### T&B® Fittings

##### Liquidtight fittings

- Steel, aluminum, nickel plated brass and stainless steel construction
- UL/CSA Ingress Ratings: Type 3, 3R, 4, 4X, 6, 12, 13
- IEC Ingress Ratings: IP66, IP67, IP68, IP69

#### T&B® Fittings

##### Type A Liquidtight flexible non-metallic conduit with non-metallic or stainless steel fittings

- Fittings available in steel, stainless steel and non-metallic
- Stand up to those demanding liquid ingress applications
- Suitable for operating temperatures from -20° to 60° C

### Carlon®

#### Carlon®

##### PVC fittings

- One-piece body design requires no disassembly of components for installation

#### Carlon®

##### Flex conduit

- Liquidtight flexible non-metallic conduit
- Non-conductive, non-corrosive and resistant to oil, acid, ozone & alkaline

### red dot®

#### Red Dot®

##### Code Keeper

##### ® Weatherproof while-in-use covers

- The Code Keeper® series of while-in-use weatherproof products provides superior weather and liquid ingress protection
- "Extra-duty" metallic weatherproof while-in-use covers
- Alloy A380 aluminum and stainless steel springs for increased corrosion resistance and durability acid, ozone & alkaline

#### T&B® Fittings

##### Cord connectors

- Connects flexible cord or cable to an enclosure and provides adequate strain relief
- UL® Listed for liquidtight strain relief and as an outlet bushing
- Metal and plastic assemblies capable of accepting a wide range of cords
- •Black Beauty® non-metallic cord connector offers the convenience of tool-free installation, with a segmented chuck for high mechanical pullout performance, and neoprene bushings for a secure, liquidtight installation

# Installation Products for applications

01 Continuous operation and sustainability.

02 Corrosion and harsh environment protection.

03 Safety and contamination.

04 Emergency electrical solutions.

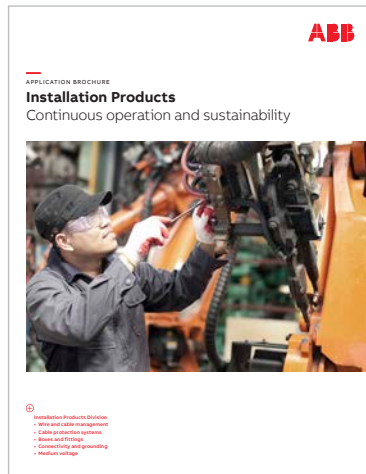
05 Total project cost reduction.

06 Liquid ingress protection.

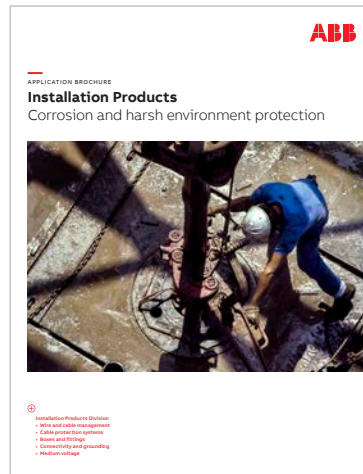
07 Extreme temperature protection.

08 Grounding and bonding.

09 SKU Reduction.



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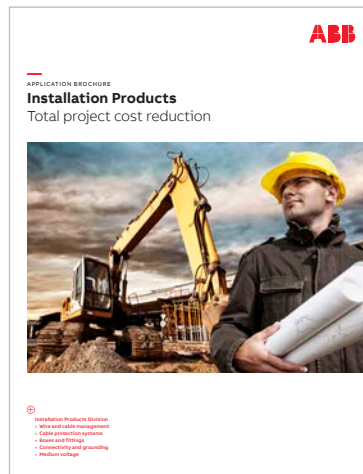
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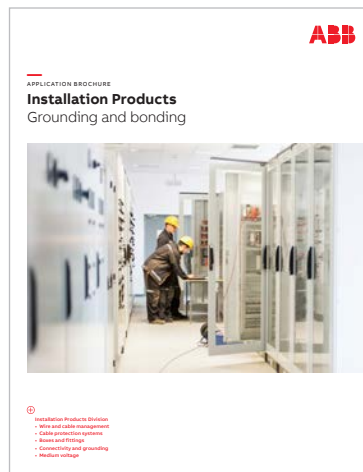
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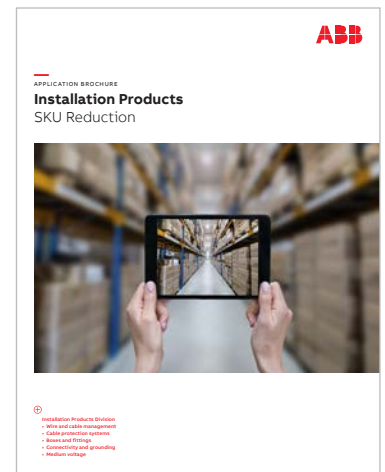
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# Installation Products for industries

01 Commercial and institutional buildings.

02 Data centers.

03 Food and beverage industry.

04 Food and beverage industry - plant assessment.

05 Utility industry.

06 Power generation industry.

07 Chemical industry.

08 Oil and gas industry.

09 Wind power industry.

10 Renewable energy industry.

11 Water and wastewater treatment industry.

12 Single and multi-family housing industry.

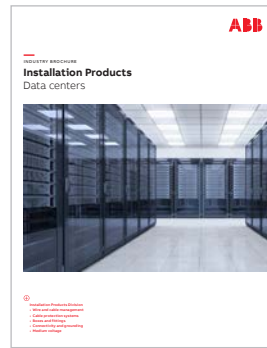
13 Rail industry.

14 Civil infrastructure industry.

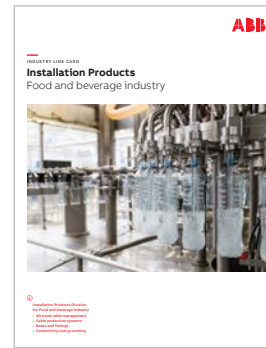
15 Metals and mining industry.



01



02



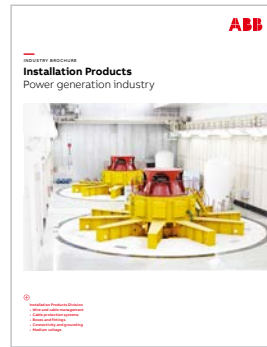
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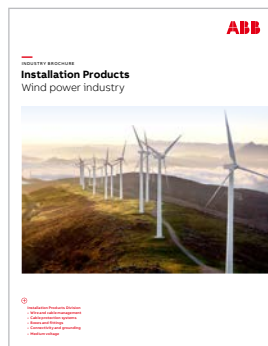
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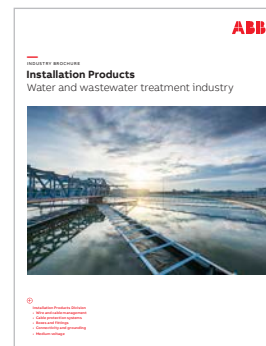
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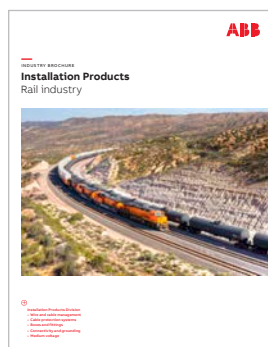
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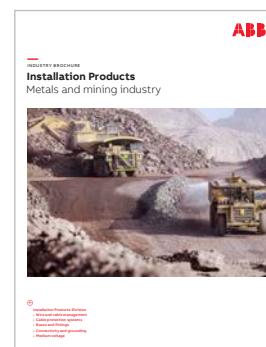
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**US**

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