
INDUSTRY BROCHURE

Installation Products

Utility industry



Installation Products Division

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

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.

Table of contents

004–005	Designed to perform
006–007	Product selection guide
008–009	Challenge and commitment
010–011	Power quality, efficiency and reliability
012–013	Grounding and bonding
014–015	Safety
016–017	Power quality, efficiency and reliability
018–019	Homac® custom solutions
020–021	Services and training
022	Installation Products for applications
023	Installation Products for industries

Designed to perform

Utility industry



ABB understands the challenges faced in utility industry and is committed to providing innovative electrical solutions that not only reduce overall project costs, but also increase safety, promote sustainability and even improve cash flow.



Installation Products for the utility industry



Power quality,
efficiency & reliability



Continuous operation
& sustainability



Grounding & bonding



Space savings



Services & training

Whether it's labor-saving rough-in components, custom-designed electrical prefabrication systems, online cloud-based design tools or even our world-class logistics, ABB can help bring utility projects in on time, within budget and profitably.

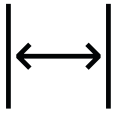
Product selection guide

for the utility industry



Product selection guide

Product description	Power quality, efficiency & reliability
Blackburn®	
Mechanical connectors, compression lugs and connectors, exothermic grounding systems	–
Motor lead disconnects	–
Automatic splices for overhead lines	–
Ergonomic compression tools	–
Elastimold®	
Solid-dielectric distribution switchgear for riser pole, vault and padmount applications	•
Switchgear automation and source transfer packages	•
Underground arresters	•
Underground cable accessories for 5 to 35kv, including elbows, joints and terminations	–
ComboT™ cable accessories	–
Reclosers	•
Fisher Pierce®	
Faulted circuit indicators, voltage and current sensors	•
Hi-Tech®	
Current-limiting fuses for overhead and underground transformers and capacitor banks	•
Homac®	
Low-voltage power distribution connectors for underground applications	–
Network transformer connectors	–
Substation connectors	–
Cable splices	–
Temporary service adapters	–
EZ-Keeper® transformer connector series	–
RAB 1/0 Series connectors	–
ZEEBAR® transformer connectors	–
Joslyn Hi-Voltage®	
Capacitor switches	•
Reclosers	•
Air disconnect switches and interrupter attachments	•



Continuous operation & sustainability	Grounding & bonding	Space savings	Services & training
•	•	-	•
•	-	-	•
•	-	-	•
•	•	-	•
•	-	•	•
•	-	-	•
-	-	-	•
•	-	-	•
-	-	-	•
•	-	-	•
•	-	-	•
•	-	-	•
•	-	-	•
•	-	-	•
-	-	•	•
-	-	•	•
-	-	•	•
-	-	-	•
-	-	-	•
-	-	-	•

Blackburn®

elastimold®

FISHER PIERCE®

Hi-Tech®

HOMAC®

JOSLYN®

Challenge and commitment

Transmission and distribution utilities worldwide are striving to ensure reliable, efficient and automated service while keeping their operations and maintenance costs low. They are trusted with managing a constant and growing flow of power across their entire system, from the transmission line to the final power consumer.

Electricity consumers expect and demand continuous delivery of quality power and the shortest possible downtime, regardless of whether an outage is caused by an equipment malfunction or a storm. As a business, power delivery utilities are also concerned with running their operations efficiently, cost effectively, safely and at peak performance.

However, achieving each of these goals requires overcoming common challenges, including:

- System faults and outages
- Power restoration
- High peak demand
- Safety
- Growing rate of energy consumption
- Changing government and industry standards

To better manage this responsibility, the industry is turning to increasingly intelligent electrical systems and smart controls that minimize the cost of installing, operating and maintaining electrical products while ensuring peak performance of the power system.

With the advent of the Smart Grid, transmission and distribution utilities are embedding intelligent communications, controls and monitoring systems in the power delivery infrastructure to automate previously manual tasks. They even have access to demand response and renewable energy programs that increase availability by allowing consumers to return or sell excess energy back into the grid.

For over 100 years, ABB has delivered customer-driven innovations that solve electrical system challenges faced by the power delivery industry. We offer a broad range of solutions for overhead and underground transmission, substation, distribution and service entrance applications that:

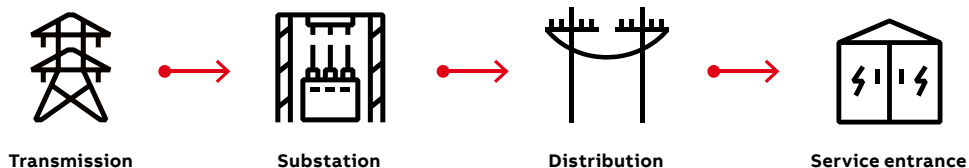
- Improve reliability
- Increase efficiency
- Reduce operations and maintenance costs
- Ensure power quality

For power transmission lines, whether overhead or underground, suitable strength and appearance for the given terrain are required, and right-of-way and installation limitations must be considered. Engineered steel structures provide an extended service life and minimize the impact on the environment.

Substations also have strength and aesthetic considerations. Simplifying connections in the substations and the local service entrance helps to control operating costs. Proper terminations for grounding and bonding connections safeguard people and property.

Distribution automation solutions with real-time monitoring and intelligent controls improve reliability and reduce system losses. Tools to actively manage power flow increase system capacity and reduce losses. Voltage optimization technologies improve power quality.

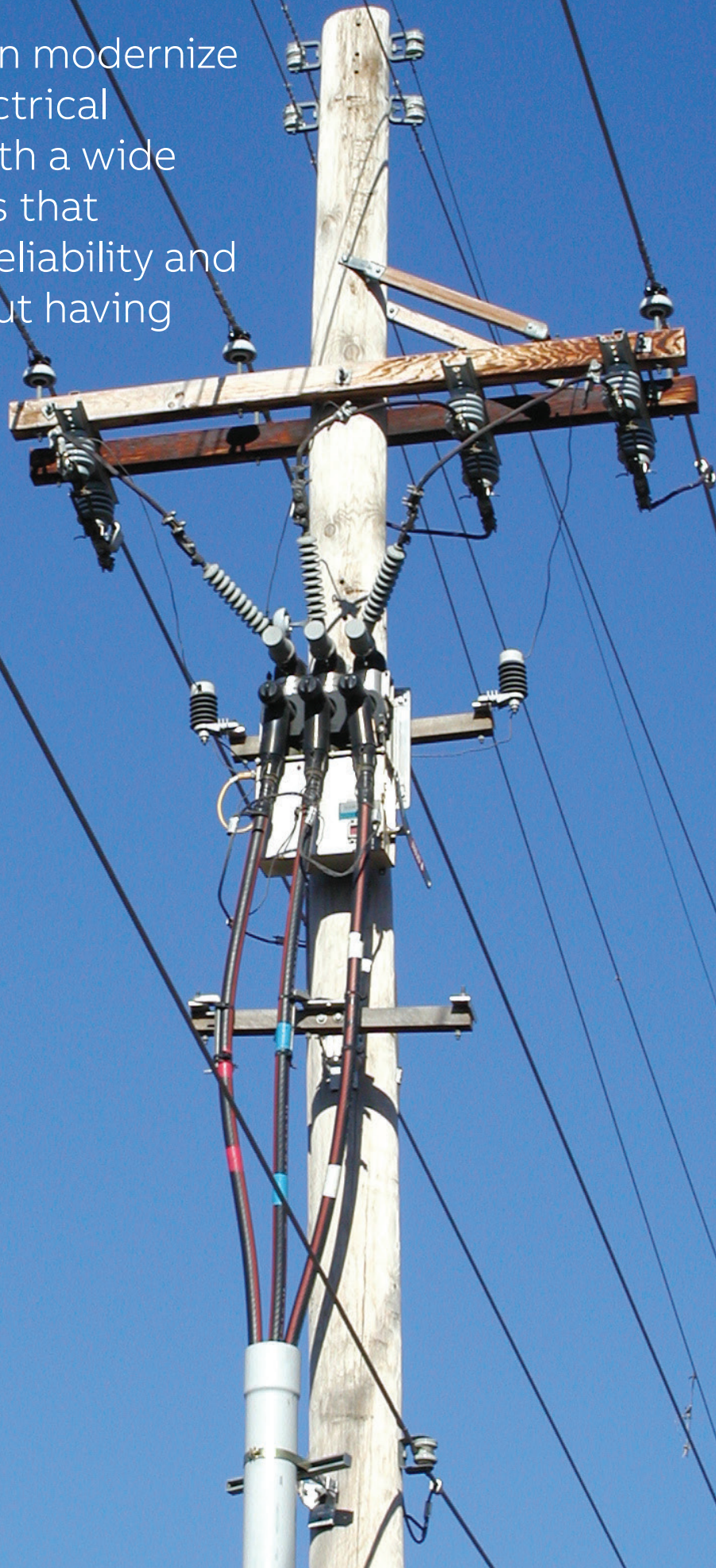
Power system





No other industry touches the lives of commercial, industrial and residential customers as directly as the utility industry. It must provide a continuous, reliable stream of quality electric power across the grid, because if the power flow stops, everyone notices.

With ABB, you can modernize your existing electrical infrastructure with a wide array of solutions that increase power reliability and efficiency, without having to rebuild.



Power quality, efficiency and reliability

The distribution industry’s foremost challenge is to provide reliable, quality power. In today’s electronics-oriented culture, it is virtually impossible for a power loss or power quality disturbance to go unnoticed, and the risks to the utility are great.

01 Joslyn Hi-Voltage®

- Capacitor switches reclosers
- Air disconnect switches and Interrupter attachments.

02 Elastimold®

- Solid-dielectric distribution switchgear for riser pole, vault and padmount applications.
- Switchgear automation and source transfer packages.
- Underground Arresters.
- Reclosers.

03 Fisher Pierce®

- Faulted circuit indicators, voltage and current sensors.

Risks

- Power quality disturbances cause equipment damage and blackouts
- Improper power factor control sacrifices energy efficiency
- Unreliable electric service reduces customer satisfaction and affects rates that T&D utilities can charge

Power delivery utilities must operate safely and with minimal impact on the population and environment even as they adapt to growing populations and expanding businesses in their service area. Smart Grid initiatives target improvements in reliability and efficiency. For example, new regulations and recommendations designed to reduce peak demand and control load flow are moving the industry toward greater energy efficiency. Enabling monitoring and control capabilities enhances energy efficiency and system reliability, including distribution automation volt/ VAR control, fault detection, overcurrent protection and demand-reduction programs.

Joslyn Hi-Voltage® – Capacitor switches

- Vacuum interruption and solid-dielectric insulation translate into maintenance-free and environmentally friendly designs – no oil, no gas
- Exclusive Vacstat® vacuum interrupter monitoring

Elastimold® – Distribution switchgear

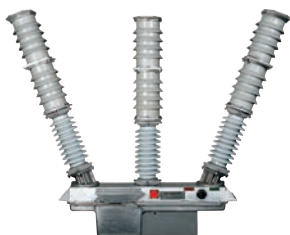
- Solid EPDM insulating media makes it maintenance-free and environmentally friendly – no oil, no gas
- Compact, modular, field-upgradable design enables smaller footprint and field assembly inside tight vaults

Fisher Pierce® – Faulted circuit indicators

- Adaptive trip reset logic reduces inventory and eliminates the need to replace FCIs as load changes
- Temporary fault detection option to help locate nuisance temporary faults

Hi-Tech® – Current-limiting fuses

- Greatly reduce energy let-through, minimizing the risk of catastrophic failures
- Interrupting capabilities up to 50,000A



Continuous operation and sustainability

Severe storms, ice accumulations, earthquakes and other natural disasters have the potential to wreak havoc on transmission and distribution system operation. Likewise, man-induced disasters such as terrorism and hacking could put the grid at risk.

Large-scale electrical service disruptions are felt immediately and the results of a blackout can be devastating, particularly if restoration is not timely.

01 Homac®

- Low-voltage power distribution connectors for underground applications.
- Network transformer connectors.
- Substation connectors
- Cable splices.
- Temporary service adapters.

02 Elastimold®

- Solid-dielectric distribution switchgear for riser pole, vault and padmount applications.
- Switchgear automation and source transfer packages.
- Underground cable accessories for 5 to 35kV, including elbows, joints and terminations.
- Reclosers.

Among the consequences are:

- Interrupted or corrupted industrial processes
- Food storage concerns
- Water quality concerns
- Traffic light hazards
- Life-or-death situations

For this reason, power delivery utilities are steadfast in their quest for continuous, sustainable operation. Best practices like proactive vegetation management combined with sophisticated electrical systems help to prevent and mitigate service outages. Distribution automation improves outage notification, fault isolation and planning and implementation of power reroutes and restoration, resulting in fewer and shorter outages and greater customer satisfaction. Burying at-risk lines and creating breakaway points to protect power poles accelerate service recovery.

Homac® – Transformer connectors

- Spade or stud mounted
- For copper and aluminum conductors to 1000 kcmil

Elastimold® – Cable accessories

- Elastimold® cable accessories are available from 5kV to 138kV and include solutions for protecting, grounding, connecting, splicing and terminating underground cable
- Starting with the first underground elbow connector ever sold, the Elastimold® brand was and continues to be the number one innovator of cable accessories with pioneer products such as extended and repair elbows, jacket seal elbows and shrink-fit joints to name a few



01



02

How much does a service outage cost you per minute?





Is your service area especially prone to lightning strikes? Are your electrical systems situated in corrosive environments?

Grounding and bonding

Today's power delivery utilities have become almost entirely dependent on electronic technologies. As a result, the need is greater to review and upgrade electrical systems with more emphasis on grounding and bonding.

- 01 **Blackburn®**
- Mechanical connectors, compression lugs and connectors, exothermic grounding systems.
 - Ergonomic compression tools.

When a grid's electrical systems are properly grounded, they will absorb current surges. Ineffective grounding can cause voltage variances that damage electrical equipment or sensitive electronic devices, leading to power loss and costly, unplanned downtime. Bonding removes dangerous current from electrically conductive materials when a ground fault occurs. If the metal parts are not bonded to an effective ground-fault current path, they can become dangerously energized.

Grounding and bonding systems must continually adapt to evolving industry standards, such as IEEE 837. Thomas & Betts provides long-lasting, codecompliant grounding and bonding systems and the training and technical expertise required to optimize grid availability. Our solutions enable you to:

- Reduce failure rates
- Extend the electrical system life cycle
- Increase overall equipment effectiveness
- Reduce project costs with a complete grounding package
- Ensure supplier product availability to minimize downtime

Blackburn®

- **Mechanical grounding connectors**
- Comprehensive line of pipe, ground rod and structure grounding solutions
- UL® Listed for direct burial applications

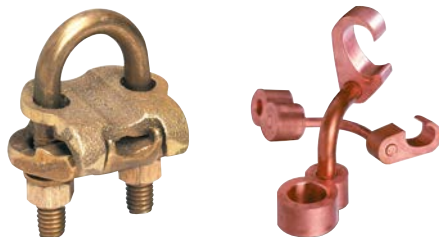


Compression grounding and bonding connectors

- Range-taking products will reduce the number of connectors and dies needed for your installation
- Featuring the Color-Keyed® Compression System that ensures proper connections

Exothermic Grounding Solutions

- Self-contained method of forming high-quality electrical connections
- Require no external power or heat source and are completely portable
- Will withstand repeated fault currents without loosening



Space savings

In power delivery applications where space is limited, compact electrical equipment and systems are required.



- 01 **Elastimold®**
- Solid-dielectric distribution switchgear for riser pole, vault and padmount applications.
 - ComboT™ Cable accessories.

- 02 **Homac®**
- Low-voltage power distribution connectors for underground applications.
 - Network transformer connectors.
 - EZ-Keeper® transformer connector series.
 - RAB 1/0 Series connectors.
 - ZEEBAR® transformer connectors.

Space-saving designs:

- Ensure sufficient operating clearance
- Accommodate load growth within the existing available space
- Enable you to retrofit older equipment without altering the surrounding infrastructure

The old adage that bigger is better does not hold true in all cases. For instance, compact substation footprints bring cost reductions during construction, operations and maintenance, have less environmental impact and limit the use of components that have high failure rates. Consequently, the utility benefits from lower life cycle costs and improved availability.

In the power transmission and distribution industry's pursuit of a better grid, opportunities for devices that

work well in confined spaces – above ground and underground, outdoors and indoors – are growing. ABB offers space-saving and modular solutions for fusing, connectors and switchgear.

Elastimold® – ComboT™ Cable accessories

- When stacking 600A elbows, ComboT™ saves 2.7" of space for every two elbows
- Allow for more operating clearance in confined vaults
- Can be installed in existing switchgear without the need for larger enclosures

Elastimold® – Solid dielectric switchgear

- Compact and modular designs allow for smaller footprint and field assembly inside tight vaults
- Suitable for submersible installations and can be installed in any position
- Uses solid EPDM as the insulating media, making it maintenance-free and environmentally friendly – no oil, no gas
- Field upgradable to accommodate changes required by Smart Grid and compatible with Schweitzer electronic controls

Elastimold® – Small vault switchgear

- Allows for manual operation from street level
- 33% reduction in height and 14% reduction in width from standard switchgear

Homac® – ZEEBAR® Transformer connectors

- Compact bar design fits double the connections in the same space inside the transformer and halves the cantilever stresses
- Easy to install; all screws are on top and a 5/16" hex wrench does it all – including the streetlight outlet
- Dual-rated for copper and aluminum conductors





How do you fit switchgear through a manhole? Size constraints and confined spaces can be a real challenge.

Homac® offers a complete line of high-performance distribution connectors, including customized solutions for specific and unique applications.



Homac® custom solutions

For more than half a century, utilities have counted on Homac® connectors to provide safe and reliable products, including customized solutions for specific and unique applications.

01 **Homac®**

- Low-voltage power distribution connectors for underground applications.
- Network transformer connectors.
- EZ-Keeper® transformer connector series.
- RAB 1/0 Series connectors.
- ZEEBAR® transformer connectors.

02 **Homac®**

- Low-voltage power distribution connectors for underground applications.
- Network transformer connectors.
- EZ-Keeper® transformer connector series.
- RAB 1/0 Series connectors.
- ZEEBAR® transformer connectors.

03 **Homac®**

- Low-voltage power distribution connectors for underground applications.
- Network transformer connectors.
- EZ-Keeper® transformer connector series.
- RAB 1/0 Series connectors.
- ZEEBAR® transformer connectors.

Homac® is a complete line of Underground and Substation connectors and is recognized as an industry leader for its Flood-Seal™ technologies and custom solutions.

- **Homac Underground Connectors** – Homac® is ready with world-class product configurations to meet your specific needs for transformers, hand holes and/or pedestal applications.
- **Homac Substation Connectors** – With weldment and bolted products up to 500kV, Homac's® wide product offering includes a full line of couplers, taps, bus supports, terminals and expansion connectors.
- **Wide product offering** – Homac® is ready with world-class product configurations to meet your specific needs for transformers, hand holes and/or pedestal applications.
- **Quality and Reliability** – 100% of our Flood-Seal® bus connectors are subjected to a dielectric test at 4000 volts for 60 seconds to ensure insulation integrity.
- **Custom solutions** – Our product experts work directly with you to find customized solutions to meet your specific needs.

Homac® – Transformer connectors

- Spade or stud mounted
- For copper and aluminum conductors to 1000 kcmil

Homac® – ZEEBAR® Transformer connectors

- Compact bar design fits double the connections in the same space inside the transformer and halves the cantilever stresses
- Easy to install; all screws are on top and a 5/16" hex wrench does it all – including the streetlight outlet
- Dual-rated for copper and aluminum conductors

Homac® – Floodseal® Connectors

- Compact bar design fits double the connections in the same space inside the transformer and halves the cantilever stresses
- Easy to install; all screws are on top and a 5/16" hex wrench does it all – including the streetlight outlet
- Dual-rated for copper and aluminum conductors



Services and training

Managing and retaining a skilled workforce in the transmission and distribution industry is a greater challenge now than it has been in the past.

—
01 **Hi-Tech®**
• Current-limiting fuses for Overhead and underground transformers and capacitor banks.

Three primary trends are affecting employee retention:

- High attrition
- Aging workforce
- Skills gap

For decades, the power delivery industry operated with incremental and relatively minor changes to its systems and processes. Employees became experts at their responsibilities and enjoyed long careers with their utility.

Now, new devices and systems are streaming into the market, designed to add intelligence and automation throughout the power delivery chain. From transmission and distribution to the substations and service entrance, innovations are transforming the way power is delivered. Baby Boomer employees are working to adapt to the changes or heading into retirement. Younger employees entering this highly sophisticated field require experience that is not taught in schools.

Because the recent technological advancements require specialized training, power delivery utilities are increasingly relying on manufacturers like ABB to provide high-tech electrical product training, services and support.

Our services

Blackburn®

- The QTP program provides a guaranteed two-week shipment of Blackburn® products
- Configurator enables special connectors to be designed with a guaranteed two-week shipment
- Product specification specialists and the Mobile Solutions team train in the proper use and installation of Blackburn® and Homac® products
- Inside Tech Support group provides 24/7/365 expertise for Blackburn® products
- Tool service and loaner and tool leasing programs

Hi-Tech® – Current-limiting fuses

- Power & High Voltage Field Service group provides field maintenance for Hi-Tech® equipment

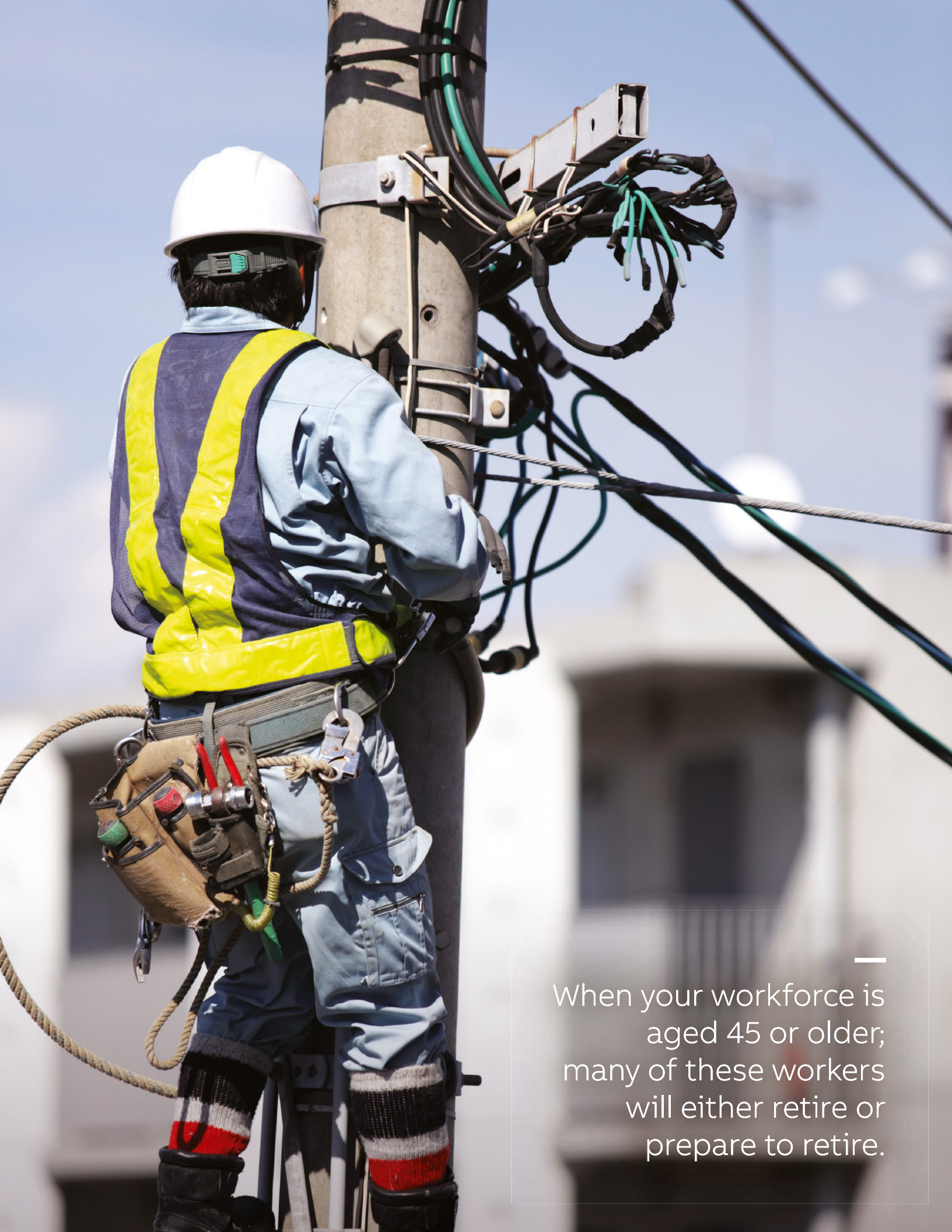
Joslyn Hi-Voltage / Elastimold®

- Power & High Voltage Field Service group provides field maintenance for Joslyn Hi-Voltage® and Elastimold® equipment

Additional services & training

- Onsite grounding & bonding training
- Onsite NEC® update training
- Free online CAD library for downloadable 2D and 3D models
- T&B® Mobile solutions team





When your workforce is aged 45 or older; many of these workers will either retire or prepare to retire.

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.

ABB

APPLICATION BROCHURE

Installation Products
Continuous operation and sustainability



① Installation Products Division

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

01

ABB

APPLICATION BROCHURE

Installation Products
Corrosion and harsh environment protection



① Installation Products Division

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

02

ABB

APPLICATION BROCHURE

Installation Products
Safety and contamination



① Installation Products Division

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

03

ABB

APPLICATION BROCHURE

Installation Products
Emergency electrical solutions



① Installation Products Division


- Easy-clearing cables and cables protection for each-down areas
- Supporting and diverting power to temporary structures
- Cable bundling/strapping and identification components
- Temporary power systems

04

ABB

APPLICATION BROCHURE

Installation Products
Total project cost reduction



① Installation Products Division

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

05

ABB

APPLICATION BROCHURE

Installation Products
Liquid ingress protection



① Installation Products Division

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

06

ABB

APPLICATION BROCHURE

Installation Products
Extreme temperature protection



① Installation Products Division

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

07

ABB

APPLICATION BROCHURE

Installation Products
Grounding and bonding



① Installation Products Division

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

08

ABB

APPLICATION BROCHURE

Installation Products
SKU Reduction



① Installation Products Division

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

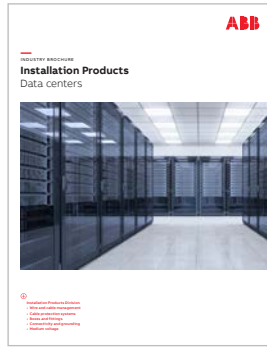
09

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



03



04



05



06



07



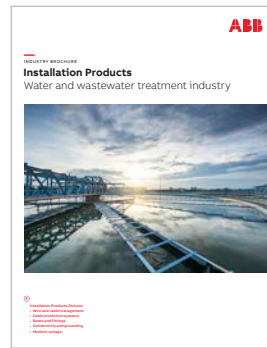
08



09



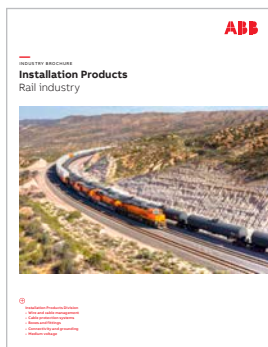
10



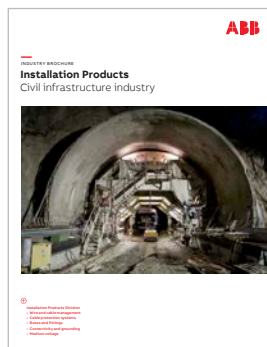
11



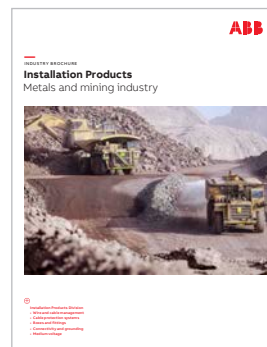
12



13



14



15



—
US

ABB Installation Products Inc.

electrification.us.abb.com