



Electrical Solutions  
for  
**Food and Beverage  
Processing Facilities**

Thomas & Betts. Your best connection for innovative solutions.

**Thomas & Betts**  
A Member of the ABB Group

*Across Canada, close to 8,000 facilities are engaged in the supply of processed foods and beverages, encompassing everything from poultry processing to soft drinks. These facilities employ thousands of workers and generate billions of dollars in annual sales.*



# Challenge and commitment

Today's food and beverage producers must remain competitive and profitable while facing:

- Higher energy and raw material costs
- Increased food safety and other legislation implemented by regulatory bodies such as Health Canada, CFIA, Environment Canada and CCOHS
- New foreign competition — some from third-world countries lacking strict food safety regulations

As new food and beverage processing equipment with complex and sensitive electrical systems, controls and automation, continue to replace older generation equipment, MRO expenses are rising with increasing maintenance time, technical support and power costs. Food and beverage processing plants require a high sustainability level from their electrical systems, because shutdowns can cost from minutes to days worth of production if a batch must be scrapped.

Plant capital expenditures are also increasing due to existing capacity constraints. They're being justified with process and packaging improvements using sanitary plant designs that reduce product contamination and facility cleaning times, while increasing operational equipment effectiveness (OEE), revenues and plant sustainability. To increase productivity and food safety, processing equipment must be designed to quickly shed contaminants and allow easy cleaning, often in harsh processing environments.

Food and beverage facility cleaning and sanitation crews often use high-pressure hosedown cleaning equipment with high-temperature caustic chemical

solutions that shorten the life of the facility and equipment. This is being offset by the use of corrosion-resistant materials such as stainless steel, aluminum, specialty alloys, high-tech nonmetallics and coated materials. Food and beverage plants often have extreme temperature ranges due to processing requirements. Thermal cycling issues from ovens directly in line with flash freezers can cause reliability issues in processing areas.

Shortened product-development cycles, smaller batch sizes, fast expiration dates and more frequent product-type changeovers require adding new automation technologies for better processing flexibility, keeping production costs down and getting products to customers quickly. With nearly 90% of food and beverage plants having fewer than 100 employees and many having been small, family-run businesses acquired by larger companies, the need for electrical system standardization has become more critical.

Thomas & Betts provides food and beverage electrical system solutions that:

- Increase your overall equipment effectiveness
- Extend the life of your electrical system
- Decrease electrical system changeover and downtimes
- Increase food safety, reduce product contamination and provide a safe workplace for your employees

These solutions enable food and beverage processors to increase revenue, plant sustainability, food safety and brand equity.

## Food Supply Chain



# Delivering value through system solutions based on engineering innovation

## Our Value Commitment

Food and beverage producers must meet demanding production and delivery schedules while working to improve manufacturing processes and plant flexibility. Key business drivers are increasing food and personnel safety, revenues, plant sustainability and brand equity. Thomas & Betts is committed to helping you meet the unique challenges encountered in food and beverage processing with electrical solutions, services and systems that deliver value. These include:

**T&B Engineered solutions** — Our products are designed to perform dependably under conditions such as constant moisture, harsh chemicals, extreme temperatures, high-pressure hosedown, ultraviolet exposure, hazardous areas, high-vibration equipment and continuous operation.

**Tested reliability** — Our products are rigorously tested for use in harsh environments, with proven results in thousands of installations.

**Expert support** — Thomas & Betts trained sales representatives and technical services experts are available at every stage of a project, from planning and site preparation through construction and MRO.

**Training and certification** — Thomas & Betts conducts training programs on specific products and systems and works closely with accredited electrical industry associations. Contact us for details.

**Product availability** — Our industry-leading distributor network assures you of reliable and on-time delivery. This global electrical product support system ensures that our solutions are available when and where you need them.

## Product Platforms

For over a century, Thomas & Betts has provided food and beverage companies with electrical system solutions to help protect their people, assets, brands and customers, while increasing food safety, plant sustainability and revenues.

**Wire and Cable Management** — Thomas & Betts invented the Ty-Rap® cable tie in 1958 and continues to lead the industry in innovative wire and cable management solutions. For food and beverage processors, we offer a unique group of products to meet the demands of high-temperature processing areas and help prevent product contamination.

**Cable Protection Systems** — Electrical systems in food and beverage facilities exist in harsh conditions, often including high-pressure hosedown processes, corrosive environments, extreme temperatures and hazardous locations.

Thomas & Betts has engineered, tested and certified raceway solutions for all types of wires, cables and cords, offering long life and safe, reliable, maintenance-free performance, regardless of environmental conditions.

**Power Connection and Control** — The advanced electronic and electrical systems used in today's automated manufacturing processes require signals and controls to be extremely accurate, consistent and reliable. Our power connection and control system solutions make this expectation a reality for your low-, medium- and high-voltage electrical system needs.

**Safety Technology** — Protecting lives and property requires state-of-the-art technology. Thomas & Betts is a worldwide leader in emergency lighting, and supporting central battery systems and lighting for hazardous locations. Our Safety Technology extends the life of your electrical system and protects your employees and assets.





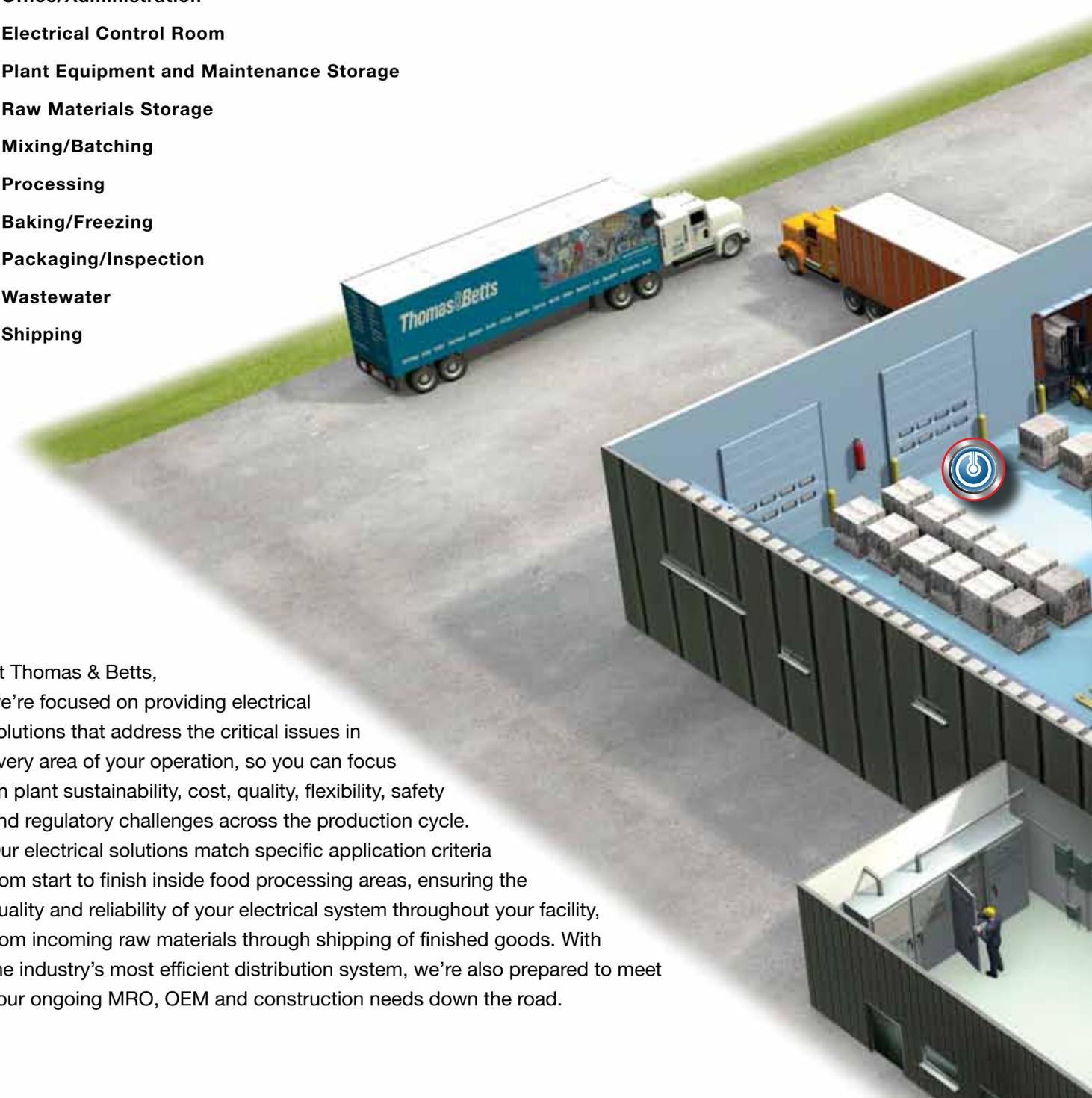
***Key Food and Beverage  
Business Drivers***

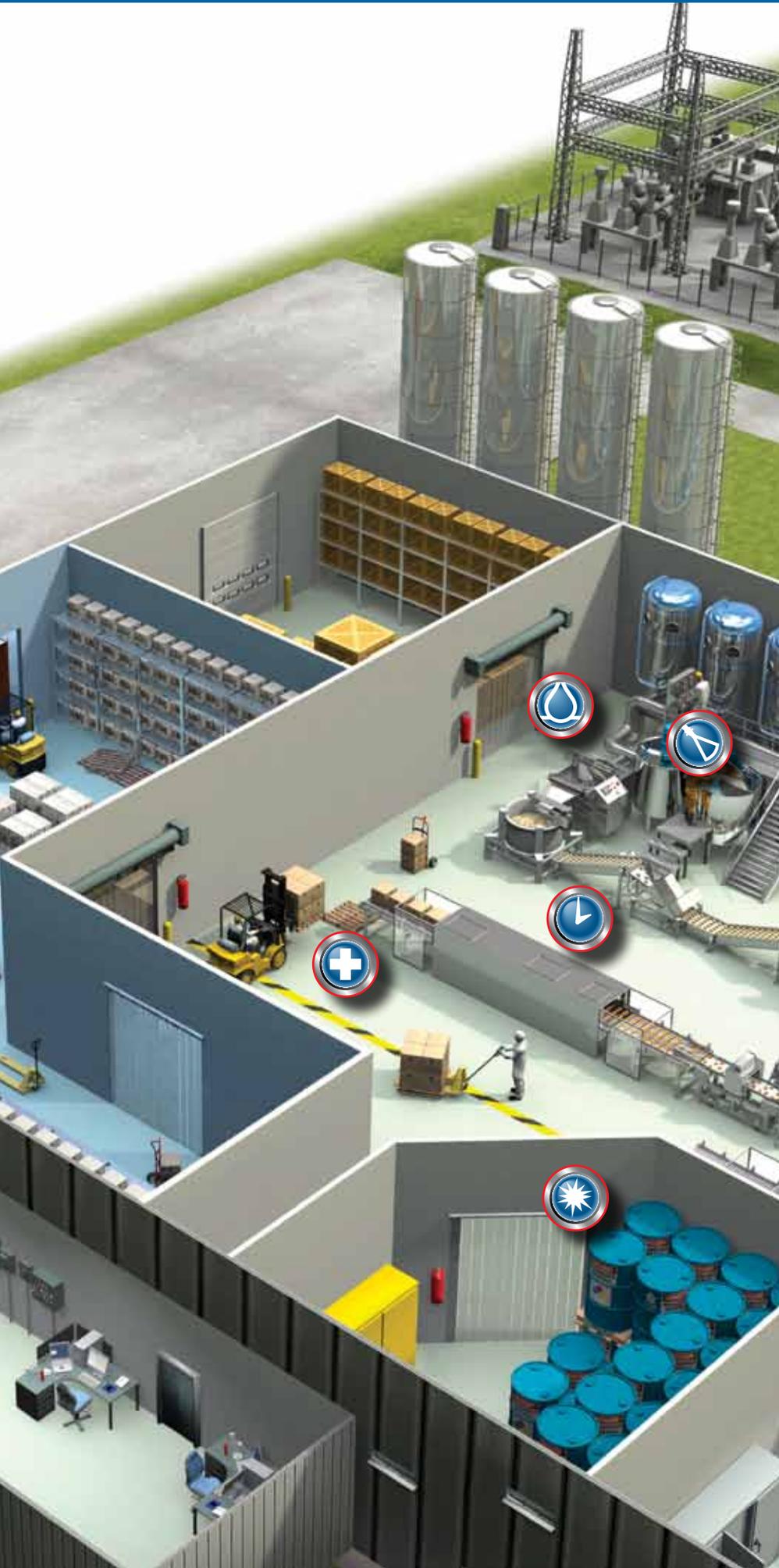
- ***Increase food  
and personnel safety***
- ***Increase revenues***
- ***Increase plant sustainability***
- ***Increase brand equity***

# ***T&B Engineered solutions for every application area***

- Receiving
- Office/Administration
- Electrical Control Room
- Plant Equipment and Maintenance Storage
- Raw Materials Storage
- Mixing/Batching
- Processing
- Baking/Freezing
- Packaging/Inspection
- Wastewater
- Shipping

At Thomas & Betts, we're focused on providing electrical solutions that address the critical issues in every area of your operation, so you can focus on plant sustainability, cost, quality, flexibility, safety and regulatory challenges across the production cycle. Our electrical solutions match specific application criteria from start to finish inside food processing areas, ensuring the quality and reliability of your electrical system throughout your facility, from incoming raw materials through shipping of finished goods. With the industry's most efficient distribution system, we're also prepared to meet your ongoing MRO, OEM and construction needs down the road.





## **Food and Beverage Processing Facility Electrical System Issues**

-  **Continuous Operation  
& Sustainability**
-  **Corrosion & Harsh  
Environment  
Protection**
-  **Liquid Ingress  
Protection**
-  **Safety  
& Contamination**
-  **Extreme Temperature  
Protection**
-  **Hazardous Location  
Protection**



# Continuous Operation & Sustainability

The costs associated with downtime in a food and beverage plant can be very high. If power is lost during production, the current production batch may have to be scrapped. Production batch cycles can range from only a few minutes to as long as several days, resulting in expensive loss of man hours, raw materials and finished goods.

Due to the high cost of downtime, most food and beverage facilities use higher performance materials and products to extend equipment life and conduct regular preventive maintenance. To minimize plant downtime, Thomas & Betts offers you the following solutions:

- Long-lasting electrical systems to extend the plant lifecycle
- High-performance electrical systems to work in clean-in-place (CIP) sanitation processes
- Installation training certification to help ensure plant sustainability
- Qualified technical personnel to assist you in quickly getting your plant back online
- A deep electrical solution offering to standardize your electrical system and ensure that you have the products you need on hand at your local supplier

## Sta-Kon®

### Crimped Wire Termination Systems

- High-temperature terminals and wire joints
- Heat-shrinkable terminals, splices and disconnects
- Long barrel selectively annealed
- CSA Certified and UL Listed

## T&B® Fittings

### Liquatite® Flexible Metallic and Nonmetallic Conduit

- Ideal for continuous flexing or vibration applications
- Creates a liquid-, dust- and oil-tight seal
- Suitable for operating temperatures from -20° to 60°C



## Blackburn®

### Motor Lead Disconnects

- Quick reliable change-out of electric motors with no bolting, taping or loose connections
- Complete line of motor lead disconnects for 600 V–5 kV applications, covering wire ranges from #16 through 500 kcmil
- Total assembly fits into tight motor housings
- Featuring the Color-Keyed® Compression System that ensures proper connections

## T&B Cable Tray Systems

### Wire Management Systems

- A more cost-efficient, reliable alternative to traditional conduit
- Adapt easily to changing needs; easy to maintain
- Prevent moisture from channeling to electrical systems – prevent corrosion and equipment failure
- Prevent channeling of corrosive, explosive or toxic gases
- Available in aluminum, HDG, PVC-coated, SS 316 and fiberglass



Sta-Kon®  
Crimped Wire  
Termination Systems



T&B® Fittings  
Liquatite®  
Flexible Conduit



Blackburn®  
Motor Lead Disconnects  
Color-Keyed® Compression System



T&B Cable Tray Systems  
Wire Management Systems



## **Thomas & Betts products for continuous operation and sustainability**

**Do you frequently move  
equipment or motors?**

**What is the cost associated  
with scrapping an entire  
production batch?**

**How would a 40-50%  
reduction in downtime  
affect your bottom line?**

### **Blackburn®**

- Mechanical Connectors
- Color-Keyed® Compression System Lugs and Splices
- KUBE® Power Connectors and Motor Lead Disconnects
- Mechanical Grounding Connectors
- E-Z-Ground® Compression Connectors
- Exothermic Grounding Systems

### **Carlton®**

- ENT System
- Rigid Nonmetallic Conduit Systems
- NEMA 4X Nonmetallic Enclosures

### **Emergi-Lite®**

- EMEX Central Battery Systems

### **Homac®**

- Copper Flood-Seal™ Compression Splice Kits
- Substation Connectors

### **Iberville®**

- FS/FD Boxes
- Liquidtight Fittings
- EMT Concrete-Tight Fittings

### **Kopex-Ex™**

- Stainless Steel Flexible Conduit

### **Lumacell®**

- ARGES Central Battery Systems

### **Ocal®**

- PVC-Coated Conduit and Fittings

### **PMA®**

- Nylon Cable Protection Systems

### **Ready-Lite®**

- Central DC Battery Systems

### **Red-Dot®**

- Code Keeper™ While-In-Use Covers

### **Russellstoll®**

- DuraGard® Pin-and-Sleeve Plugs, Connectors and Receptacles

### **Shrink-Kon™**

- Heat-Shrinkable Insulation
- Splice Insulators
- Self-Fusing Insulation Tape

### **Sta-Kon®**

- Nylon-, Vinyl- and Non-Insulated Wire Terminals
- Ergonomic Comfort Crimp® Tools
- High-Temperature Wire Joints
- Heat-Shrinkable Terminals

### **Superstrut®**

- 316 Stainless Steel, Aluminum, PVC-Coated and Nonmetallic Modular Framing Channel, Pipe Hangers and Beam Clamps

### **T&B Cable Tray Systems**

- Aluminum, Stainless Steel and Fiberglass Support and Wire Management Systems

### **T&B® Fittings**

- Steel, Stainless Steel, Aluminum and Nonmetallic Liquidtight Conduit and Cord Fittings
- Silver Grip® Tray Cord Fittings
- Wire-Mesh Strain-Relief Cord and Conduit Grips
- XD Expansion/Deflection Coupling
- BlueKote™ and Stainless Steel LU™ Conduit Bodies
- STAR TECK® and STAR TECK XP® Fittings for Jacketed Metal-Clad and Teck Cables
- Liqueatite® Flexible Metallic and Nonmetallic Conduit

## **Thomas & Betts products for continuous operation in your onsite electrical substation**

### **Elastimold®**

- High-Voltage Separable Connectors
- High-Voltage Solid-Dielectric Switchgear

### **Fisher Pierce™**

- Faulted Circuit Indicators

### **Joslyn Hi-Voltage®**

- Capacitor Switches and Air Disconnect Switches



# Corrosion & Harsh Environment Protection

Corrosion — the enemy of electrical systems — costs an estimated \$2.1 billion annually in lost equipment, labour and downtime. Problems caused by corrosion include:

- Equipment failure and shortened life
- Poor electrical system reliability caused by high-resistance connections
- Long maintenance repair time due to corroded parts
- Safety hazards and product contamination

Corrosive agents such as acidic food products, moisture and harsh cleaning chemicals are everyday realities in food and beverage processing. This makes the use of corrosion-resistant materials the key to extending the life and reliability of your electrical system. Thomas & Betts offers aluminum, stainless steel, specialty alloys, nonmetallic, PVC or PVC-coated materials as a solution to your corrosion issues.

## Ocal™

### OCAL-BLUE™ PVC-Coated Conduit

- PVC-coated, hot-dipped galvanized conduit and threads
- Provides superior corrosion protection against many harmful elements
- Interior blue polyurethane provides corrosion protection around cables

## Hazlux®

### Haz-Cote® Kynar® Coated Lighting Fixtures

- Enclosed, gasketed, sealed fixtures for adverse, wet and marine locations
- Cast aluminum with Haz-Cote® corrosion protection
- Silicone-coated safety-glass globe to restrain glass particles in case of breakage



## T&B Fittings

### Stainless Steel Form 8 and BlueKote™ Conduit Bodies

- 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
- CSA Certified and UL Listed

### Liquatite® Liquidtight Nonmetallic Conduit and Bullet® Fittings

- Rugged PVC construction ensures fast, easy installation and long-lasting high performance
- Black conduit supports operating temperature range of -18° to 105°C (grey -18° to 80°C)
- Bullet® liquidtight fittings offer corrosion-resistant nonmetallic construction with a rounded profile for easy cleaning

## Ty-Rap®

### Stainless Steel Cable Ties

- Strong, fireproof and easy to apply for safe cable bundling
- Resist corrosion and UV light, with the ability to withstand extreme temperatures
- Provide a strong, safe installation with a unique dual-locking mechanism



**OCAL™**  
OCAL-BLUE™  
PVC-Coated Conduit



**Hazlux®**  
Haz-Cote® Kynar® Coated  
Lighting Fixtures



**T&B® Fittings**  
Stainless Steel Form 8  
and BlueKote™  
Conduit Bodies



**T&B® Fittings**  
Liquatite® Nonmetallic  
Conduit and Bullet®  
Fittings



**Ty-Rap®**  
Stainless Steel  
Cable Ties



*Have you experienced downtime caused by corrosion issues in your processing areas?*

*The right conduit and fitting system solution can extend the life of your electrical system by up to 300%.*

## **Thomas & Betts products for corrosion and harsh environment protection**

### **Carlon®**

- Rigid Nonmetallic Conduit Systems
- Polycarbonate NEMA and JIC Enclosures

### **Emergi-Lite®**

- Hazardous Location Emergency Lighting and Exit Signs

### **Hazlux®**

- Haz-Cote® Kynar® Coated Lighting Fixtures

### **Iberville®**

- FS/FD boxes
- Liquidtight Fittings
- EMT Concrete-Tight Fittings

### **Kopex-Ex™**

- Stainless Steel Flexible Conduit

### **Lumacell®**

- Hazardous Location Emergency Lighting and Exit Signs

### **Ocal™**

- PVC-Coated Conduit and Fittings
- OCAL-BLUE™ NEMA Type 4X Form 8 Conduit Bodies
- PVC-Coated Strut, Straps and Clamps

### **PMA®**

- Flexible Nylon Conduit Systems

### **Ready-Lite®**

- Hazardous Location Emergency Lighting and Exit Signs

### **Red•Dot®**

- Code Keeper™ Weatherproof While-in-Use Covers and Boxes

### **Russellstoll®**

- DuraGard® Pin-and-Sleeve Plugs, Connectors and Receptacles

### **Shrink-Kon™**

- Wire, Cable and Connector Insulation Products

### **Sta-Kon®**

- Corrosion-Resistant, Nickel-Plated Wire Terminals
- Heat-Shrinkable Terminals

### **Superstrut®**

- 316 Stainless Steel, Aluminum, PVC-Coated and Nonmetallic Modular Framing Channel, Pipe Hangers and Beam Clamps

### **T&B Cable Tray Systems**

- Aluminum, Stainless Steel and Fiberglass Support and Wire Management Systems

### **T&B® Fittings**

- Stainless Steel Form 8 and BlueKote™ Conduit Bodies
- Stainless Steel and Aluminum Hubs
- Stainless Steel and Aluminum Liquidtight Conduit Fittings
- Liquatite® Flexible Metallic and Nonmetallic Conduit
- Silver Grip® Stainless Steel Tray Cord Fittings
- STAR TECK® Stainless Steel, Aluminum and PVC-Coated Fittings for Jacketed Metal Clad and Teck Cable
- Ranger™ Series Stainless Steel and Nonmetallic Liquidtight Cord Fittings
- Bullet® Nonmetallic Flexible Tubing Fittings

### **Ty-Rap®**

- Coated and Uncoated Stainless Steel Cable Ties
- Cable Ties for Harsh Environments

*Kynar is a registered trademark of ARKEMA, Inc.*



# Liquid Ingress Protection

Many food and beverage processing plants have water and other liquid exposure due to high-pressure hosedown, condensation, accidental spills or machine oils and lubricants, all of which can shorten the life of your electrical systems. When specifying electrical systems for food and beverage processing facilities, consider the following issues relating to hosedown areas and liquid exposure in general:

- Liquid ingress can deteriorate or short out an electrical system immediately or over time
- Electrical system components designed with round surfaces help to shed contaminants, rather than creating a shelf where they can collect
- Processing equipment that hangs on a wall is often mounted on stand-off wall brackets to enable cleaning of all surfaces, including the back and bottom sides

Thomas & Betts electrical solutions offer protection against liquid, moisture and dust ingress.

## T&B Fittings

### Stainless Steel Liquidtight Conduit and Cord Fittings

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

## Ocal™

### OCAL-BLUE™ PVC-Coated NEMA Type 4X Form 8 Conduit Bodies

- Complete systems solution for superior corrosion protection and ease of wiring in conduit applications
- All product meet or exceed applicable industry ratings or specifications
- OCAL-BLUE™ conduit, couplings and conduit bodies
- OCAL-BLUE™ FS/FD device boxes and covers
- Ocal™ liquidtight fittings and large-radius elbows
- Ocal™ XJG expansion couplings
- PVC-coated teck fittings



## Russellstoll®

### DuraGard® Pin-and-Sleeve Connectors

- Not just watertight, but waterproof, mated or unmated
- Tested to 1000 psi for washdown applications
- Full line of 20–60 A (600 VAC/250 VDC max.) connectors, plugs and receptacles in UL94V-0 flammability-rated, corrosion-resistant, nonmetallic housings

## Shrink-Kon™

### Self-Fusing Insulation Tape

- Instant low-cost durable solution for repairs to deteriorated insulation on cables and conductors
- Insulates and seals underground and above-ground bonding installations
- Insulates harnessing, bundling, cabling and wiring in industrial machinery and equipment
- Ideal for motor connections
- Protects against vibration, scratching and moisture

## Carlton®

### Circuit Safe® JIC Series Nonmetallic NEMA Enclosures

- Excellent resistance to a wide range of corrosive agents, acids, alkaline and salts
- Temperature range from -40°C to 85°C
- Manufactured with structural foam thermoplastic, providing high impact strength, to eliminate dents and deformation
- High dielectric strength
- Meet NEMA Types 1, 3, 3S, 3X, 3SX, 4, 4X, 12 and 13

T&B Fittings

Stainless Steel Liquidtight Conduit and Cord Fittings

Ocal™

OCAL-BLUE™ PVC-Coated NEMA Type 4X Form 8 Conduit Bodies

Russellstoll®

DuraGard® Pin-and-Sleeve Connectors

Shrink-Kon™

Self-Fusing Insulation Tape

Carlton®

Circuit Safe® JIC Series Nonmetallic NEMA Enclosures



## **Thomas & Betts products for liquid ingress protection**

### **Carlon®**

- Polycarbonate NEMA and JIC Enclosures
- PVC Fittings and Conduit
- Flexible Conduit

### **Elastimold®**

- Switchgear and Cable Accessories

### **Emergi-Lite®**

- Survive-All™ NEMA 4X Rated Emergency Lighting
- SIPE Wet Location Fluorescent Fixture

### **Homac®**

- Flood-Seal™ Insulating Covers
- Flood-Seal™ Multi-Port Connectors

### **Iberville®**

- FS/FD Boxes
- Liquidtight Fittings
- EMT Concrete-Tight Fittings

### **Kopex-Ex™**

- Stainless Steel Flexible Conduit

### **Lumacell®**

- LN Series NEMA 4X Rated Emergency Lighting
- SIPL Wet Location Fluorescent Fixture

### **Ocal™**

- PVC-Coated Conduit and Fittings
- OCAL-BLUE™ NEMA Type 4X Form 8 Conduit Bodies

### **PMA®**

- Nylon Cable Protection Systems

### **Ready-Lite®**

- N-TUF NEMA 4X Rated Emergency Lighting
- SIPR IP65 Linear Fluorescent Fixture

### **Red•Dot®**

- Code Keeper™ Weatherproof While-in-Use Covers
- Weatherproof Boxes

### **Russellstoll®**

- DuraGard® Pin-and-Sleeve Plugs, Connectors and Receptacles

### **Shrink-Kon™**

- Submersible Insulation Products

### **Sta-Kon®**

- Heat-Shrinkable Terminals

### **Steel-City®**

- MopTite™ Floor Boxes

### **T&B® Fittings**

- Stainless Steel Form 8 and BlueKote™ Conduit Bodies
- Liqueatite® Flexible Metallic and Nonmetallic Conduit
- Stainless Steel and Nonmetallic Liquidtight Conduit Fittings
- Ranger™ Series Stainless Steel and Nonmetallic Liquidtight Cord Connectors
- Silver Grip® Stainless Steel Tray Cable and Cord Fittings
- STAR TECK® and STAR TECK XP® Stainless Steel and PVC Coated Fittings for Jacketed Metal-Clad and Teck Cable

### **Ty-Rap®**

- Coated and Uncoated Stainless Steel Cable Ties

***What NEMA/IP ratings are required to withstand high-pressure hosedown cleaning and sanitizing processes in your facility?***

***Many food and beverage processing facilities use high-pressure hosedown cleaning at pressures up to 3,500 psi and temperatures up to 70°C.***

# Safety & Contamination

Safety in the food and beverage processing industry encompasses food, equipment and personnel safety issues. These include:

- Accidental or intentional contamination in food/beverage processes
- Electrical shock from exposed wiring
- Personal injury from sharp objects and repetitive motion
- Exposure to harsh chemicals and extreme temperatures

In the area of food safety, brand deterioration is a key concern. As a result of food safety recalls, which have increased over the past several years, most consumers can remember the name of a recalled brand, and many will stop buying that brand, at least temporarily, if not permanently.

In addition to offering solutions to help reduce the chance of product contamination, Thomas & Betts can also help you develop Good Manufacturing Practices (GMPs) to significantly reduce potential for employee injury or equipment damage.

## Ty-Rap®

### Detectable Nylon Cable Ties and Mounting Accessories

- Detectable by X-ray equipment and by metal detectors set as low as 1.5 mm ferrous sphere setting
- Bright blue color allows easy visual detection, especially on white conveyor systems
- Buoyant polypropylene version available for liquid-processing applications
- Smooth, notchless body sheds contaminants

## E-Z-CODE®

### Safety Labels, Tags, Signs and Barricade Tapes

- Help to ensure personnel and workplace safety, as well as regulatory compliance
- Highly visible and long-lasting materials
- Custom labels, tags and signs available



**Ty-Rap®**  
Detectable Cable Ties and Accessories

**E-Z-CODE®**  
Safety Labels, Tags, Signs and Barricade Tapes



## EMERGI-LITE® / LUMACELL® / READY-LITE®

### Emergency Lighting Systems for Ordinary, Wet and Hazardous Locations

- Energy efficient and aesthetic, concealed or surface mount
- Custom signage with special wording configurations
- Designed to withstand damp, corrosive conditions
- Safe to use in explosive environments
- Energy efficient with long, low-maintenance service life

## T&B Cable Tray Systems

### Wire Management Systems

- A more cost-efficient, reliable alternative to traditional conduit
- Adapt easily to changing needs; easy to maintain
- Prevent moisture from channeling to electrical systems — prevent corrosion and equipment failure
- Prevent channeling of corrosive, explosive or toxic gases
- Available in aluminum, HDG, PVC-coated, SS 316 and fiberglass

## T&B Fittings

### STAR TECK XP® Explosion-Proof Teck Cable Fittings

- Easy to fill, integral sealing chamber and disconnecting design requires minimal cable preparation
- Benchmark for ease of installation in hazardous locations
- Provide grounding continuity of cable armor



**Emergi-Lite®/Lumacell®/Ready-Lite®**  
Emergency Lighting Systems

**T&B Cable Tray Systems**  
Wire Management Systems

**T&B® Fittings**  
STAR TECK XP® Fittings



## **Thomas & Betts products for safety and contamination**

### **Blackburn®**

- E-Z-Ground® Compression Connectors
- Mechanical Grounding Connectors
- Exothermic Welding System
- Metallic Gradient Control Mat
- Ground Rods

### **Carlton®**

- Hal-Free Riser Gard™ Nonmetallic Flexible Raceway

### **Emergi-Lite®**

- Nexus® Emergency Lighting Management Systems
- Emergency Lighting and Exit Signs for Hazardous Locations

### **E-Z-CODE®**

- Machine Warning Labels
- Danger and Warning Signs
- Reflective Industrial Markers
- Barricade and Burial Marking Tapes
- Electrical Wire and Cable Markers

### **Hazlux®**

- Industrial Lighting Fixtures for Hazardous and Adverse Environments

### **Kopex-Ex™**

- Stainless Steel Flexible Conduit

### **Lumacell®**

- Nexus® Emergency Lighting Management Systems
- Emergency Lighting and Exit Signs for Hazardous Locations

### **Marrette®**

- Luminaire Disconnects

### **PMA®**

- Nylon Cable Protection Systems

### **Ready-Lite®**

- Nexus® Emergency Lighting Management Systems
- Emergency Lighting and Exit Signs for Hazardous Locations

### **Red•Dot®**

- Code Keeper® Weatherproof While-in-Use Covers
- Explosion-Proof Boxes, Conduit Fittings, Unions and Sealing Fittings

### **Shrink-Kon™**

- Insulation Products

### **Sta-Kon®**

- Luminaire Disconnects
- Heat-Shrinkable Terminals

### **Steel City®**

- Fire Alarm Boxes and Fittings

### **Superstrut®**

- Seismic Bracing Systems
- Loc-King™ Cobra® Cable and Pipe Clamp

### **T&B Cable Tray Systems**

- Aluminum, Stainless Steel and Fiberglass Support and Wire Management Systems

### **T&B® Fittings**

- STAR TECK XP® Explosion-Proof Teck Cable Fittings
- Liquatite® ZHLA and ACEA Non-Halogen Flexible Conduit

### **Ty-Rap®**

- Detectable Cable Ties and Mounting Accessories
- Fluoropolymer (Halar) Low-Smoke Cable Ties

## **Thomas & Betts products for safety in your onsite electrical substation**

### **Elastimold®**

- High-Voltage Separable Connectors
- High-Voltage Solid-Dielectric Switchgear

***How has new food safety legislation affected your company?***

***Do you use metal detectors, X-ray equipment or vision detection systems to help avoid product contamination?***

***Are electrical systems located in high-traffic areas of your plant?***



# Extreme Temperature Protection

As plant floor usage increases, ambient temperatures increase around the electrical system. Lighting fixtures have become more compact in design, which also raises temperatures. Food and beverage processing areas can have dryers and coolers or ovens and flash freezers directly in line with one another, causing rapid temperature swings that negatively impact electrical systems. Thomas & Betts' electrical solutions address issues that can result from extreme temperatures, including:

- Components near ovens can soften and fail due to high temperatures
- Components melt and destroy other nearby equipment or contaminate food product
- Components can become brittle and fail at low temperatures, particularly with frozen food processing
- Repeated thermal expansion and contraction damages conduit systems

## Ty-Rap®

### Extra High-Temperature Nylon Cable Ties

- For use in temperatures from -40° to 150°C
- Smooth body sheds contaminants

### Heavy-Duty Stainless Steel Cable Ties

- For use in temperatures from -80° to 538°C
- Available in both Type 304 and Type 316 stainless steel

## Sta-Kon®

### High-Temperature Wire Joints and Terminals

- Rated for temperatures up to 150°C, 600 V maximum
- Molded, one-piece nylon construction for electrical insulation, rated UL94V-2



## T&B® Fittings

### Liquatite® Flexible Metal Conduit

- Suitable for operating temperatures from -60° to 150°C
- Flammability rating of UL94-HB and UL94V-2
- Conduit features standard flexible metallic core with temperature-resistant elastomeric outer jacket

### XD Expansion/Deflection Coupling

- Ideal for use in rigid conduit runs subject to movement due to external forces or temperature changes
- Suitable for use indoors, outdoors, direct buried or embedded in concrete
- Accommodates axial expansion/contraction, parallel deflection and angular misalignment

## Shrink-Kon™

### Self-Fusing Insulation Tape

- Quick and easy insulation — no heat or adhesive required
- Two layers form a moisture-proof, abrasion-resistant, dielectric seal — resistant to UV, moisture and saltwater



**Ty-Rap®**  
Extra High-Temperature  
and Stainless Steel Ties



**Sta-Kon®**  
High-Temperature Wire  
Joints and Terminals



**T&B® Fittings**  
Liquatite®  
Flexible Metal Conduit



**T&B® Fittings**  
XD Expansion/  
Deflection Coupling



**Shrink-Kon™**  
Self-Fusing  
Insulation Tape



## ***Thomas & Betts products for extreme temperature protection***

### **Carlton®**

- Polar Gard™ PVC Conduit
- Nonmetallic NEMA Enclosures

### **Emergi-Lite®**

- Survive-All™ Series Exit Signs

### **Kopex®**

- High-Temperature Conduit Systems

### **Lumacell®**

- LER 3000 Series Exit Signs

### **Marrette®**

- Black™ High-Temperature Wire Connectors
- Porcelain Extreme High-Temperature Wire Connectors

### **PMA®**

- Nylon Cable Protection Systems

### **Ready-Lite®**

- N-TUF Series Exit Signs

### **Shrink-Kon™**

- Self-Fusing insulation Tape

### **Sta-Kon®**

- High-Temperature Wire Joints and Terminals

### **T&B® Fittings**

- High / Low Temperature Liquidtight Fittings
- Liqueatite® ATX High / Low Temperature Flexible Metallic Conduit
- XD Expansion/Deflection Coupling For Rigid Conduit

### **Ty-Rap®**

- Extra High-Temperature Nylon Cable Ties
- Flame-Retardant UL94V-0 Nylon Cable Ties
- Coated and Uncoated Stainless Steel Cable Ties
- Deltec™ Fastening System

***Does your food and beverage  
processing facility have extremely  
hot or cold zones and/or rapid  
temperature cycling?***



# Hazardous Location Protection

The Canadian Electrical Code defines hazardous locations as areas where the possibility of explosion and fire is created by the presence of flammable gases, vapors, dust, fibers or flyings. In food and beverage facilities, hazardous locations may be present due to gases or chemicals, which fall under Class I, or due to the presence of combustible dust, classified as Class II. Typical hazardous locations include:

- Grain elevators, flour and feed mills
- Producers of starch or candies
- Spice-grinding, sugar and cocoa plants
- Chemical storage areas
- Gas-fired ovens

To protect both your facility and your employees, Thomas & Betts offers a wide variety of high-performance explosion-proof solutions designed to prevent or contain explosion in classified hazardous locations.

## KOPEX-EX™

### Stainless Steel Flexible Conduit

- Available for oil-resistant, high-temperature and low and limited fire hazard applications
- Made from Type 316 stainless steel

## Hazlux®

### Hazardous Location Lighting

- Explosion-proof fixtures for Class I, II and III hazardous locations
- Enclosed, gasketed and rated NEMA 4X, IP66 and UL1598 for wet and marine locations



## Russellstoll®

### Max-Gard® Explosion-Proof Interlocked Receptacles

- Copper-free, cast-aluminum, epoxy-coated housing
- O-ring-sealed interior components ensure watertight protection whether connections are mated or not
- Explosion-proof systems for 30 A, 60 A and 100 A

## T&B® Fittings

### STAR TECK XP® Explosion-Proof Teck Cable Fittings

- Easy to fill, integral sealing chamber and disconnecting design requires minimal cable preparation
- Benchmark for ease of installation in hazardous locations
- Provide grounding continuity of cable armor



**Kopex-Ex™**  
Stainless Steel  
Flexible Conduit



**Hazlux®**  
Hazardous Location  
Lighting



**Russellstoll®**  
Max-Gard® Explosion-Proof  
Interlocked Receptacles



**T&B® Fittings**  
STAR TECK XP®  
Explosion-Proof  
Teck Cable Fittings



## **Thomas & Betts products for hazardous location protection**

### **Emergi-Lite®**

- Hazardous Location Emergency Lighting and Exit Signs

### **E-Z-CODE®**

- Danger and Warning Signs
- Reflective Industrial Markers
- Barricade and Burial Marking Tapes
- Electrical Wire and Cable Markers

### **Hazlux®**

- Explosion-Proof Lighting Fixtures for Hazardous Locations
- Strobe Lighting Fixtures

### **Kopex-Ex™**

- Flame-Proof Cable Protection Systems for IEC Applications
- Explosion-Proof Conduit and Coupling Systems

### **Lumacell®**

- Hazardous Location Emergency Lighting and Exit Signs

### **Ready-Lite®**

- Hazardous Location Emergency Lighting and Exit Signs

### **Red-Dot®**

- Explosion-Proof Conduit Fitting Unions and Sealing Fittings

### **Russellstoll®**

- Max-Gard® Pin-and-Sleeve Connectors and Explosion-Proof Interlocked Receptacles
- GSUL Ground Indicator System

### **T&B Cable Tray Systems**

- Aluminum, Steel, Stainless Steel and Fiberglass Support/Wire Management Systems

### **T&B® Fittings**

- STAR TECK XP® Explosion-Proof Fittings for Jacketed Metal-Clad and Teck Cables
- Explosion-Proof Flexible Couplings
- Tray Star™ Explosion-Proof Tray Cable and Flexible Conduit Fittings

***Do you have explosion risks from grain, sugar dust, flammable gas or liquids?***

# T&B Engineered system solutions for food and beverage processing applications

When it comes to corrosion-resistant materials to support, connect and protect your electrical system, Thomas & Betts has you covered with a complete solution, whether you prefer aluminum, PVC-coated, nonmetallic or stainless steel.

## Aluminum Solutions

Aluminum provides the advantages of high strength-to-weight ratio, superior resistance to certain corrosive environments and ease of installation. Aluminum typically weighs about 50% less than steel and requires no maintenance after installation.

- Conduit, cable and cord fittings
- Cable tray
- Framing channels, hardware and accessories



**T&B Fittings T&B Cable Tray Systems Superstrut®**



**T&B Fittings Carlon®**

## PVC-Coated Solutions

The comprehensive line of Ocal™ products provides a systems solution for superior corrosion-resistant protection and ease of wiring in conduit applications. All Ocal™ products meet or exceed applicable industry ratings or specifications. Look for the distinctive Thomas & Betts blue colour.

- Ocal-BLUE™ Conduit, Couplings and Conduit Bodies
- Ocal-BLUE™ FS/FD Device Boxes and Covers
- Ocal™ Liquidtight Fittings
- Ocal™ Large-Radius Elbows
- Ocal™ XJG Expansion Couplings



**Ocal™**

## Stainless Steel Solutions

For corrosion resistance combined with strength, durability and ease of installation, stainless steel offers performance that's hard to match. Thomas & Betts' complete line of stainless steel products is designed to safeguard your electrical system against corrosion to avoid costly downtime and repairs.

- Cable tray and cable ties
- Framing channels, hardware and accessories
- Conduit, cable and cord fittings

### **T&B Fittings T&B Cable Tray Systems Superstrut® Ty-Rap®**



**Ty-Rap®**



## Wire and Cable Management Systems

Through its Ty-Rap® brand, Thomas & Betts offers a complete high-performance wire and cable management solution designed specifically to meet the needs of food and beverage processors in dealing with high-temperature areas and preventing product contamination.

- Extra-high temperature nylon cable ties
- Detectable nylon and polypropylene cable ties
- Ergonomic installation tools and Ty-Rap Tote™ dispensers

## Grounding Systems

Blackburn® connectors deliver reliable grounding from the grid to power equipment and machinery to instrumentation.

The Blackburn® product line includes:

- E-Z-Ground® Compression Connectors
- Mechanical Connectors



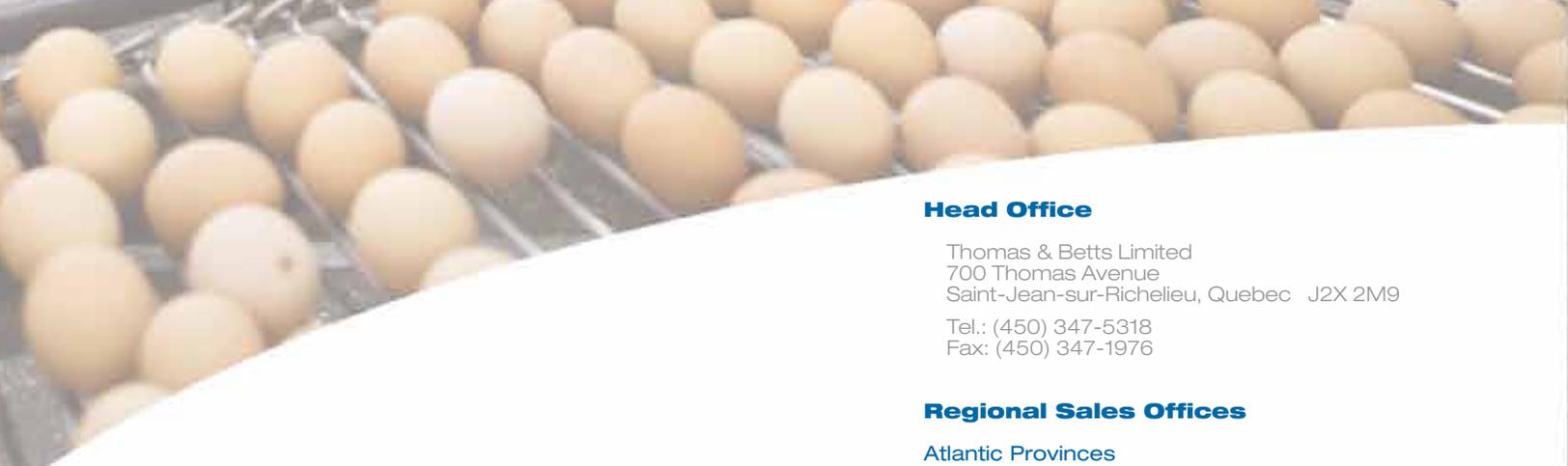
**Blackburn®**

# High-quality products to address key issues in food and

| Thomas & Betts Brands                               | Products   | Continuous Operation & Sustainability |
|---|--|---------------------------------------|
| <b>Blackburn® Compression/ Blackburn® Grounding</b> | Compression Lugs, Splices, Tools and E-Z-Ground® Compression and Mechanical Grounding Systems        | •                                     |
|   | KUBE™ Power Connectors and Motor Lead Disconnects  | •                                     |
| <b>Carlton®</b>                                     | PVC Conduit and Fittings   |                                       |
|   | Polycarbonate NEMA and JIC Enclosures  |                                       |
| <b>Elastimold®</b>                                  | High-Voltage Separable Connectors and Solid-Dielectric Switchgear                                    | •                                     |
| <b>Emergi-Lite®</b>                                 | Emergency Exit Lighting  |                                       |
| <b>E-Z-CODE®</b>                                    | Danger and Warning Labels and Signs, Industrial Markers, Barricade and Burial Tapes and Wire Markers |                                       |
| <b>Fisher Pierce™</b>                               | Faulted Circuit Indicators   | •                                     |
| <b>Hazlux®</b>                                      | Lighting Fixtures — Haz-Cote® Kynar® Coated and Explosion-Proof for Hazardous Locations              |                                       |
| <b>Iberville®</b>                                   | FS/FD Boxes  | •                                     |
|   | Liquidtight Fittings   | •                                     |
|   | EMT Concrete-Tight Fittings  | •                                     |
| <b>Joslyn Hi-Voltage®</b>                           | Capacitor Switches and Air Disconnect Switches   | •                                     |
| <b>Kopex-Ex™</b>                                    | Flame-Proof Cable Protection Systems for IEC Applications  |                                       |
| <b>Lumacell®</b>                                    | Emergency Exit Lighting  |                                       |
| <b>Ocal™</b>  | PVC-Coated Conduit and Fittings and OCAL-BLUE™ NEMA Type 4X Form 8 Conduit Bodies                    | •                                     |
| <b>PMA®</b>   | Nylon Cable Protection Systems   | •                                     |
| <b>Ready-Lite®</b>                                  | Emergency Exit Lighting  |                                       |
| <b>Red•Dot®</b>                                     | Code Keeper™ Weatherproof While-in-Use Covers and Boxes  |                                       |
| <b>Russellstoll®</b>                                | DuraGard® Pin-and-Sleeve Plugs, Connectors and Receptacles   | •                                     |
|   | Max-Gard® Pin-and-Sleeve Connectors and Explosion-Proof Interlocked Receptacles                      |                                       |
| <b>Sta-Kon®</b>                                     | Nylon-, Vinyl- and Non-Insulated Wire Terminals  | •                                     |
|   | High-Temperature Wire Joints and Terminals   | •                                     |
|   | Corrosion-Resistant, Nickel-Plated Wire Terminals  |                                       |
|   | Luminaire Disconnects, Comfort Crimp® Tools and Disconnect Installation Tools                        | •                                     |
|   | Heat-Shrinkable Terminals and Shrink-Kon™ Wire and Connector Insulation Products                     | •                                     |
| <b>Steel City®</b>                                  | Red Fire Alarm Boxes   |                                       |
| <b>Superstrut®</b>                                  | 316 Stainless, Aluminum, PVC-Coated or Nonmetallic Modular Framing Channel, Hangers and Clamps       | •                                     |
|   | Seismic Bracing Systems  | •                                     |
| <b>T&amp;B® Fittings</b>                            | Type A Liquidtight Flexible Conduit and Fittings   | •                                     |
|   | ATX High-/Low-Temperature Liquidtight Conduit and Fittings   | •                                     |
|   | Stainless Steel and BlueKote™ Conduit Bodies and XTRA FLEX® Conduit and Bullet® Fittings             |                                       |
|   | Stainless Steel and Aluminum Hubs  |                                       |
|   | Stainless Steel, Aluminum and Nonmetallic Liquidtight Conduit Fittings and Ranger® Cord Connectors   |                                       |
|   | Explosion-Proof Boxes, Elbows, Fittings and XP Explosion-Proof Flexible Couplings                    |                                       |
|   | Silver Grip® Tray Cord Fittings  |                                       |
|   | Wire-Mesh Strain-Relief Cord and Conduit Grips   | •                                     |
|   | CorroStall™ Aluminum Conduit Boxes   |                                       |
|   | STAR TECK® and STAR TECK XP® Fittings for Jacketed Metal-Clad and Teck Cables                        |                                       |
| XD Expansion/Deflection Coupling for Rigid Conduit  | •  |                                       |
| <b>Ty-Rap®</b>                                      | Coated and Uncoated Stainless Steel Cable Ties   |                                       |
|   | Extra-High Temp and Flame-Retardant UL94V-0 Nylon Cable Ties, Deltec™ Outdoor Fastening System       |                                       |
|   | Detectable Cable Ties, Ty-Rap Tote™ Cable Tie Dispensers and Ergonomic Installation Tools            |                                       |

Kynar is a registered trademark of ARKEMA, Inc.





## Visit the Thomas & Betts world of electrical product solutions

Visit our web site for more information about Thomas & Betts solutions and our newest products. For a user-friendly catalogue and competitive part number search, application and technical support and other useful information, go to: [www.tnb.ca](http://www.tnb.ca)

## Industry codes and specifications

All Thomas & Betts products for use in food and beverage processing facilities meet or exceed applicable industry specifications or codes detailed in the appropriate Thomas & Betts product literature.



## Online CAD library

Thomas & Betts offers free download of two- and three-dimensional CAD models of many of its products in more than 90 native CAD formats at: [www.tnb.com/cadlibrary](http://www.tnb.com/cadlibrary)



All information and specifications contained in this catalogue are subject to change due to engineer design, errors and omissions. Illustrations and diagrams within this catalogue may vary from actual products.

Paper Logo Here.

### Head Office

Thomas & Betts Limited  
700 Thomas Avenue  
Saint-Jean-sur-Richelieu, Quebec J2X 2M9  
Tel.: (450) 347-5318  
Fax: (450) 347-1976

### Regional Sales Offices

#### Atlantic Provinces

Thomas & Betts Limited  
106 Chain Lake Drive, Unit 2C  
Halifax, Nova Scotia B3S 1A8  
Tel.: (902) 450-1307  
Toll Free: 1-877-862-4357  
Fax: (902) 450-1309

#### Quebec

Thomas & Betts Limited  
7900 Taschereau Boulevard  
Building D, Suite 108  
Brossard, Quebec J4X 1C2  
Tel.: (450) 466-1102  
Toll Free: 1-800-465-1399  
Fax: (450) 466-1163

#### Ontario

Thomas & Betts Limited  
2000 Argentia Road  
Plaza 5, Suite 500  
Mississauga, Ontario L5N 2R7  
Tel.: (905) 858-1010  
Toll Free: 1-877-291-7771  
Fax: (905) 858-1080

#### Manitoba / Saskatchewan

Thomas & Betts Limited  
6531 - 148<sup>th</sup> Street, #1  
Surrey, British Columbia V3S 3C5  
Tel.: (604) 598-9811  
Toll Free: 1-866-540-8220  
Fax: (604) 598-9840

#### Alberta

Thomas & Betts Limited  
4836 Eleniak Road  
Edmonton, Alberta T6B 2S1  
Tel.: (780) 424-7092  
Toll Free: 1-888-664-5666  
Fax: (780) 424-7093  
Toll Free: 1-866-424-4082

#### British Columbia

Thomas & Betts Limited  
6531 - 148<sup>th</sup> Street, #1  
Surrey, British Columbia V3S 3C5  
Tel.: (604) 598-9811  
Toll Free: 1-866-540-8220  
Fax: (604) 598-9840

Thomas & Betts. Your best connection for innovative solutions.

Wire & Cable Management • Cable Protection Systems • Power Connection & Control • Safety Technology

