

PORTFOLIO OVERVIEW

Installation Products

Food and beverage industry - USA



**Installation Products Division
for Food and beverage industry**

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

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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ABB Installation products for food and beverage

F&B plants are continuously challenged. F&B process equipment should operate as efficiently, safely and hygienically as possible, without compromising critical power and data connections. ABB offers you F&B dedicated installation products to protect and connect sensitive electrical wiring in complex processing equipment. Matching the high demanding environmental requirements in each product, to help your plant continuity and food safety.



Corrosion resistance

Harsh chemicals, pressurized washdowns and dissimilar metals in contact with one another accelerate the corrosion process. Save time and replacement costs with an array of corrosion preventive conduits, fittings, cable glands and cable ties that resist chemical attacks, extreme temperatures and washdown incursions.



Dust and liquid tight

Exposure to dust, water, condensation and accidental spills of machine oils and lubricants can all shorten the life of your electrical system. ABB provides you a broad range of materials from metallic / non metallic flexible conduits, explosion protective conduit systems and cable glands to fittings, to keep your system running.



Extreme temperature protection

ABB has created electrical components that work outside of standard temperature ranges, to make them effective in both the extreme cold and heat. Our offering ranges conduits, fittings, cable glands and cable ties are designed with extreme temperatures, condensation protection and repeated thermal expansion / contraction in mind. Allowing you to run your operations no matter what the operational environment requires.



Chemical resistance

Harsh washdowns can quickly lead to failure. That is why ABB fittings, conduits and cable glands undergo rigorous testing in our state-of-the-art labs to help them meet the highest standards of ingress protection. ABB offers you a wide range of flexible metallic / non metallic conduits, explosion protective conduit systems / cable glands and fittings.



Liquid ingress protection - IP69

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. ABB offers you dedicated ranges of flexible liquidtight metallic / non metallic conduits as well as fittings and cable glands systems.



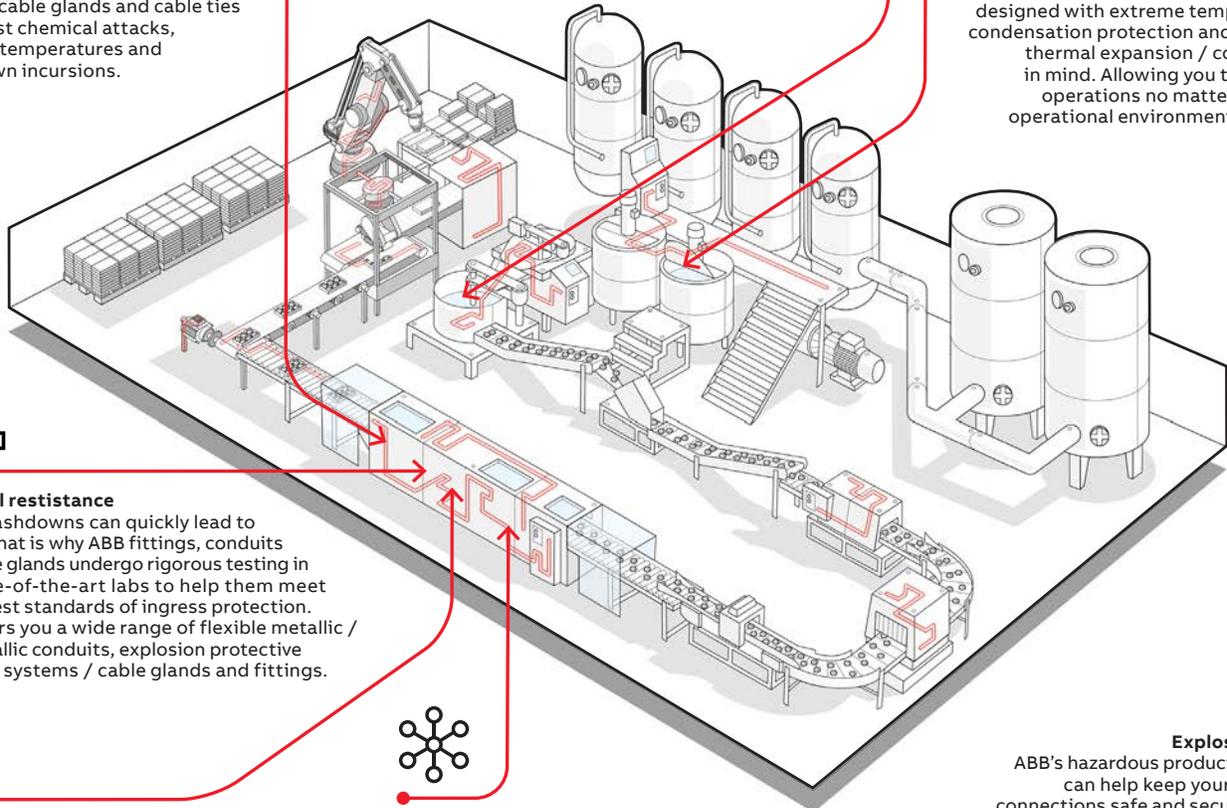
Anti-microbial

A single bacterial outbreak can eliminate decades of consumer trust and confidence, meaning the cleanability of all components and machinery is crucial. Our antimicrobial installation products are suitable for food zone non-contact areas. Integrating ionic silver antimicrobial protection into a new generation of cable protection and wire and cable management.



Explosion proof

ABB's hazardous product solutions can help keep your electrical connections safe and secure, even in areas where potentially hazardous dust, gases or chemicals are a concern. Our wide variety of high-performance, explosion protective conduit systems, fittings and accessories are specifically designed to protect electrical equipment in NEC-defined hazard zones, even if frequent washdowns are involved.



Innovative technologies for daily practice

Hygiene and stringent health and safety standards are a core part of achieving the required efficiency and security levels throughout the F&B supply chain. ABB Installation Products offer you the latest technologies and state-of-the-art materials conform the worldwide certifications and standards to keep your plant running: now and in the future.

	Product description	Part no. / SIM no.	Product features
	SuperClean™ bacteria-resistant wall offset spacers	SC-WO-3/8 61601313434(4)	<ul style="list-style-type: none"> - Industry's first wall offset spacers that inhibit bacterial growth on the spacer surface - Made from food-compliant nylon resin - Cylindrical design with no exposed flat surfaces to prevent the collection and retention of liquids or debris - Promotes a clean environment – 99.9% effective for bacterial reduction on the spacer surface - Easy to install with no on-site fabrication required
	Ty-Fast® Ag+ bacteria-resistant cable ties	TY175-50-ANTI 78621008509(8)	<ul style="list-style-type: none"> - The industry's first cable tie that inhibits microbial growth - Protects itself against bacteria, mold and fungus which helps to reduce infection rate and spread of bacteria by not hosting microbial growth - Promotes a clean environment – 99.9% effective for bacterial reduction - Offers reliable Ty-Fast cable tie design for easy cable management - UL® Listed, RoHS, FDA compliant, made from FDA-approved nylon resin, Patent pending
	Ty-Met™ stainless steel cable ties	YLS4.6-200A 78621027201(6)	<ul style="list-style-type: none"> - High mechanical strength combined with chemical durability and temperature resistance - International approvals such as UL, Germanischer Lloyd, Lloyd's Register and Det Norske Veritas - All types are available in 316 grade (marine grade) stainless steel, for extra corrosion resistance - Available in uncoated version for high temperature applications or in fully coated version with non-toxic, halogen free coating, for a superior protection of cables and installer's hands and for an improved insulation between dissimilar materials
	Ty-Rap® Detectable cable ties	TY525M-NDT 78621097671(6)	<ul style="list-style-type: none"> - Detectable by metal detectors set at minimum 1.5 mm diameter ferrous sphere - Detectable by X-Ray equipment - Bright blue colour for an easy visual detection - Help achieve the HACCP EU-Directive and to comply to the Food Safety Modernization Act (FSMA) - Available in standard Polyamide 6.6 or in buoyant Polypropylene version for liquid-processing applications - Available in 5 different sizes in convenient small bags with Euroslot: 5 NDT, 4PDT
	½ Inch non-metallic Orange Type A liquidtight conduit	TYPEA50-20 78621097671(6)	<ul style="list-style-type: none"> - UL Listed to standard 1660, Type A non-metallic conduits (File: E95745) - Use with T&B Type A Fittings (Steel, Stainless Steel & Non-Metallic) - Trade Sizes 3/8 to 2" - Ideal for continuous flexing, tight bend radius or vibration applications - Smooth, seamless PVC inner core and outer jacket, with woven nylon mesh for strength and reinforcement - Meets NEC Article 356 for flexible, liquid-tight non-metallic conduit - Working Temperature: -20 to +60°C

Flexible liquidtight metallic conduits

01 LTFE - Food & beverage, CE certified.

02 LTFU - Food & beverage, UL listed.

03 LT6FE - Food & beverage 316L stainless steel, CE certified.

04 Series 5300 9300SST6 Stainless steel.

05 Series 5300 9300SST6HT High temperature.



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T&B Liquidtight Systems®

Strength and flexibility for motion, vibration and bending.

The next generation in liquidtight conduits.

- **Dust and liquidtight.** Stainless steel 316 liquidtight and system solutions for the most demanding corrosive environments, where extreme temperatures are encountered.

01 Type SSAMHL Antimicrobial stainless steel core conduit.

02 Type SAMHURL Antimicrobial UL recognized conduit.

03 Type SAMHL Antimicrobial CE conduit.

04 SSPLHC High and low temperature 316 stainless steel conduit.

05 SSPL 316 Stainless steel core conduit.

06 SPLHC High and low temperature conduit.

07 LFH-SPL Low fire hazard and halogen free conduit.

08 SPUL UL compliant conduits.

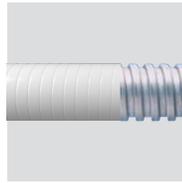
09 SPL Oil resistant conduit.

10 Type SAM one piece fitting.

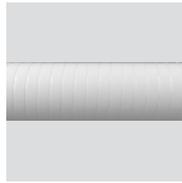
11 Type SSPL 316 Stainless steel fitting.

12 F&B P-Clip Stainless steel - for liquidtight conduit.

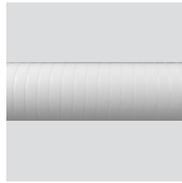
13 F&B Locknut.



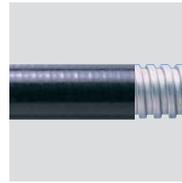
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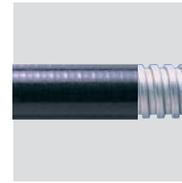
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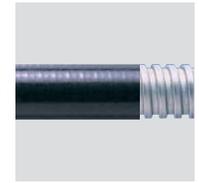
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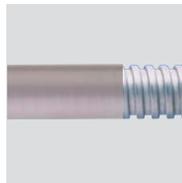
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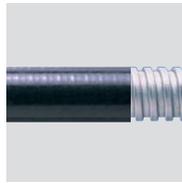
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ABB flexible conduits boost food safety and fight corrosion, which is the number one cause of downtime.

Adaptaflex®

Designed to protect complex equipment with sensitive electrical wiring.

- **Food Safety.** Bacteria-eliminating protection reduces the level of microbes on the surface of Adaptaflex® conduit by up to 80% in the first 15 minutes and by 99% in just two hours.
- **Corrosion resistance.** Stainless steel and chemical resistant materials inhibit corrosion.
- **High Motion.** Nylon flexible conduits move with your machines, with a uniquely cleanable surface.

Flexible conduit systems - non metallic

01 JFBD nylon conduit.

02 JENQ-316L Stainless steel fitting.

03 Type JKNH Nylon fitting - PMA®.

04 JSGB P-Clip stainless steel - for JFBD conduit.

05 GME Stainless steel lock nut.



PMA

Flexibility and cleanability for the food and beverage industry.

Global technology leader in cable protection systems.

- **Corrosion resistant.** Stainless steel and chemical resistant materials inhibit corrosion.
- **Dust and liquidtight.** Exposure to dust, water, condensation and accidental spills of machine oils and lubricants.
- **Ingress protection.** IP 69 rating for wash downs
- **Chemical resistance.** High resistance to chemicals and cleaning agents.
- **High strength.** For dynamic or static applications in the food & beverage industry.

Explosion protective conduit systems, cable glands and accessories

01 HA-G1 Barrier fitting.



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KOPEX-EX

For use in hazardous areas or where hazardous manufacturing processes are performed.

Liquidtight hazardous area flameproof conduit fitting.

- **Corrosion protection.** Stainless steel and chemical resistant materials inhibit corrosion.
- **Dust and liquidtight.** For high hygienic requirements.
- **Chemical resistance.** High resistance to chemicals and cleaning agents.
- **Extreme temperatures.** For more demanding applications there is a wide temperature range
- **Explosion proof.** Group I flameproof glands, ideal for all hazardous area applications.

Wire and cable management

01 Ty-Rap® Detectable cable ties.

02 Ty-Fast® Ag+® bacteria-resistant cable ties.

03 Ty-Met™ stainless steel cable ties and tools.

04 ABB Cable tray.

05 SuperClean™ bacteria-resistant wall offset spacers.



Ty-Rap® Ty-Met®

T&B® Cable Tray

Innovative design and engineered materials for safety and continuity.

Easily bundle, secure and manage your cables.

- **Bacteria-resistant.** ABB nylon wall offsets are infused with microbe-fighting silver ions that help keep their surfaces clean between washdowns.
- **Safety and contamination.** Industry's first cable ties to inhibit microbial growth, which helps to reduce infection rates and the spread of bacteria by not hosting microbial growth.
- **Secure and easy.** ABB Cable tray® provide secure support with minimal onsite modification and can be used in non-washdown areas.

ABB's no-cost confidential plant assessment

The ABB Plant Electrical System Assessment (PESA) is a no-cost, confidential service that helps food and beverage processors find and address existing and potential electrical issues. After assessing your facility's electrical system concerns, ABB provides a customized proposal of solutions that can help your plant.

1

Consultation and plant walkthrough

After consulting with your team about plant electrical challenges, ABB Electrical System Assessors will evaluate your facility's electrical system assets. Plant walkthroughs average 2-4 hours per 500,000 sq. ft. The objective is to identify existing and potential threats to your plant's uptime and profitability.

2

Findings and recommendations

Next, ABB prepares a Final Value Proposition (FVP) document that focuses on key application areas and challenges, including food safety and facility sustainability. The FVP matches your plant's challenges with proven ABB food and beverage solutions – your company is under no obligation to implement the recommendations.

Fittings and cable glands

01 Cable glands - FSCG Series.

02 Cable glands - FSEM Series.

03 Explosion proof cable glands - C1 Series.

04 Explosion proof cable glands - C2 Series.



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Fittings, cable glands and accessories for use in hazardous areas.

High performance solutions for safety critical areas.

- **Corrosion resistance.** Stainless steel and chemical resistant materials inhibit corrosion.
- **Dust and liquidtight.** Exposure to dust, water, condensation and accidental spills of machine oils and lubricants.
- **Chemical resistance.** High resistance to chemicals and cleaning agents.
- **Extreme temperatures.** For more demanding applications there is a wide temperature range.
- **Explosion protection.** Group I flameproof glands, ideal for all hazardous area applications.

Rigid conduit systems

01 T&B® Fittings and cast aluminum form 7 conduit bodies.

02 Ocal® Corrosion-resistant conduit systems.

03 Carlon® PVC elbows & fittings.

04 TNB® Fittings - Stainless steel rigid UL certified conduits and fittings.



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T&B® Fittings

Carlon® Ocal®

Rugged systems for tough conditions.

ABB has conduit and accessories for a complete corrosion protection package.

- **Corrosion resistance.** Stainless steel and Ocal® PVC-coated conduit protects wiring from harsh environments and extends useful life.
- **Heavy Use.** Rugged metallic conduits protect against strikes, dings and heavy loads.

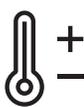
Product selection guide

for food and beverage industry



Product selection guide

Product description	ABB Brand	Corrosion resistance	Dust and liquid tight
Flexible liquidtight metallic conduits			
Type SSAMHL Antimicrobial stainless steel core conduit	Adaptaflex	•	•
Type SAMHURL Antimicrobial UL recognized conduit	Adaptaflex	•	•
Type SAMHL Antimicrobial CE conduit	Adaptaflex	•	•
SSPLHC High and low temperature 316 stainless steel conduit	Adaptaflex	•	•
SSPL 316 Stainless steel core conduit	Adaptaflex	•	•
SPLHC High and low temperature conduit	Adaptaflex	–	•
LFH-SPL Low fire hazard and halogen free conduit	Adaptaflex	–	•
SPUL UL compliant conduits	Adaptaflex	–	•
SPL Oil resistant conduit	Adaptaflex	–	•
Type SAM One piece fitting	Adaptaflex	•	•
Type SSPL 316 Stainless steel fitting	Adaptaflex	•	•
F&B P-Clip Stainless steel for liquidtight conduit	Adaptaflex	•	–
F&B Locknut	Adaptaflex	•	–
Explosion protective conduit systems, cable glands and accessories			
HA-G1 Barrier fitting	Kopex-Ex	•	•
Flexible metallic conduits			
LTFE - Food & beverage, CE certified	T&B Liquidtight Systems®	•	•
LTFU - Food & beverage, UL listed	T&B Liquidtight Systems®	•	•
LT6FE - Food & beverage 316L stainless steel, CE certified	T&B Liquidtight Systems®	•	•
Series 5300 9300SST6 Stainless steel	T&B Liquidtight Systems®	•	•
Series 5300 9300SST6HT High temperature	T&B Liquidtight Systems®	•	–
Flexible conduit systems - non metallic			
JFBD Nylon conduit	PMA	•	–
JENQ 316L Stainless Steel fitting	PMA	•	•
Type JKNH Nylon fitting	PMA	•	•
JSGB P-Clip Stainless steel for JFBD conduit	PMA	–	–
GME Stainless steel locknut	PMA	–	–
Fittings and cable glands			
Cable glands - FSCG series	ABB	•	–
Cable glands - FSEM series	ABB	•	–
EXN... C1 + EXS... C1	Kopex-Ex	•	•
EXN... C2 + EXS... C2	Kopex-Ex	•	•
Rigid conduit systems			
T&B® Fittings sand cast aluminum form 7 conduit bodies	T&B® Fittings	•	–
Ocal® Corrosion-resistant conduit systems	Ocal®	•	–
Carlon® PVC Elbows & fittings	Carlon®	•	–
Wire and cable management			
Ty-Rap® Detectable cable ties	Ty-Rap®	–	–
Ty-Fast® Ag+® Bacteria-resistant cable ties	Ty-Rap®	•	–
Ty-Met® Stainless steel cable ties and tools	Ty-Met®	•	–
Summary for all types	T&B® Cable Tray	•	–
Bacteria-resistant wall offset spacers	SuperClean™	–	–



Ingress protection IP 69

Chemical resistance

Extreme temperatures

Anti-microbial

Explosion proof

Ingress protection IP 69	Chemical resistance	Extreme temperatures	Anti-microbial	Explosion proof
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For optimum performance, we recommend that our products are used together as an integrated system for their designed application. Installation should be carried out with reasonable care and to recommended guidelines and products should be used within their published recommended working tolerances, working conditions and environmental factors, which are outlined in the table.



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US

ABB Installation Products Inc.

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