



F&B CUSTOMER DAY 2018 | SURABAYA , SEPTEMBER 5, 2018

# Low Voltage Products

LV solutions for protection and enhanced productivity in F&B industry

Herlangga Arisanto, Technical Promotion, Electrification Products division



# Electrical Solution for Food & Beverages Industry

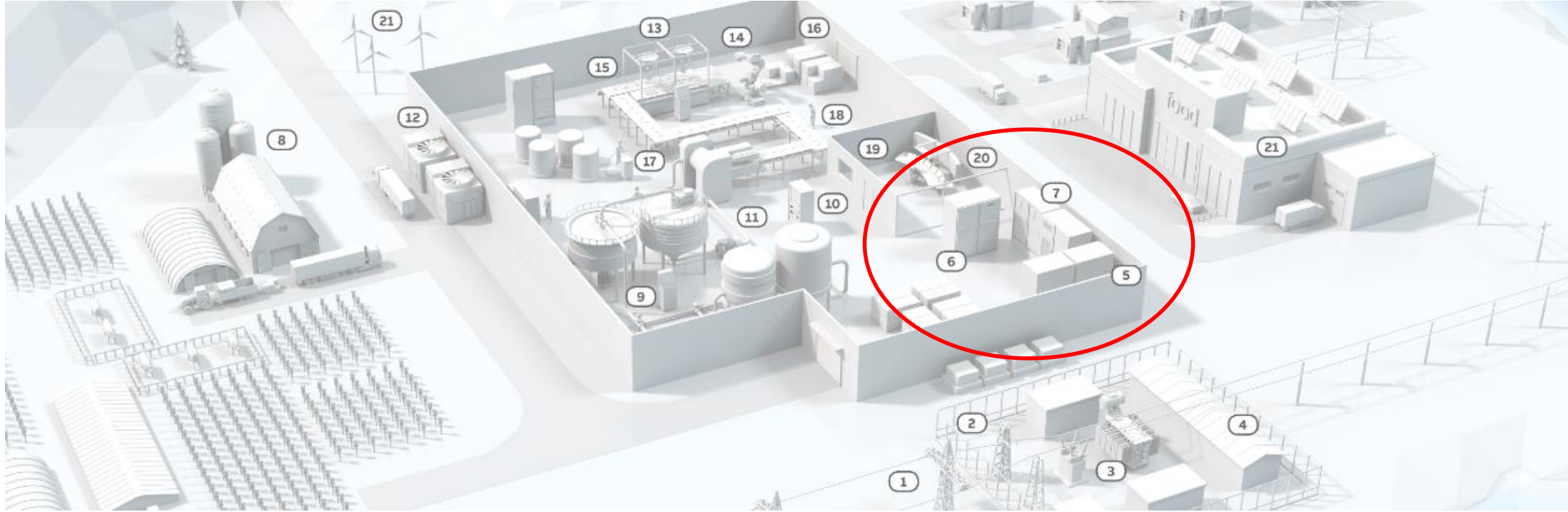
Solution for Every Application Area



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

# Continuous Operation & Sustainability

Plant-wide solutions to optimize productivity, efficiency and uptime.



- 1. Power generation, transmission & distribution.** Complete electrical portfolio from source to socket
- 2. Substations.** Transform and transmit electricity from the power system to your facility
- 3. Transformers.** High efficiency liquid-filled and dry type transformers
- 4. Protection & control.** Assure quality and reliability of electrical systems
- 5. Medium voltage switchgear.** Arc and non-arc resistant switchgear, controls, sensors and communication

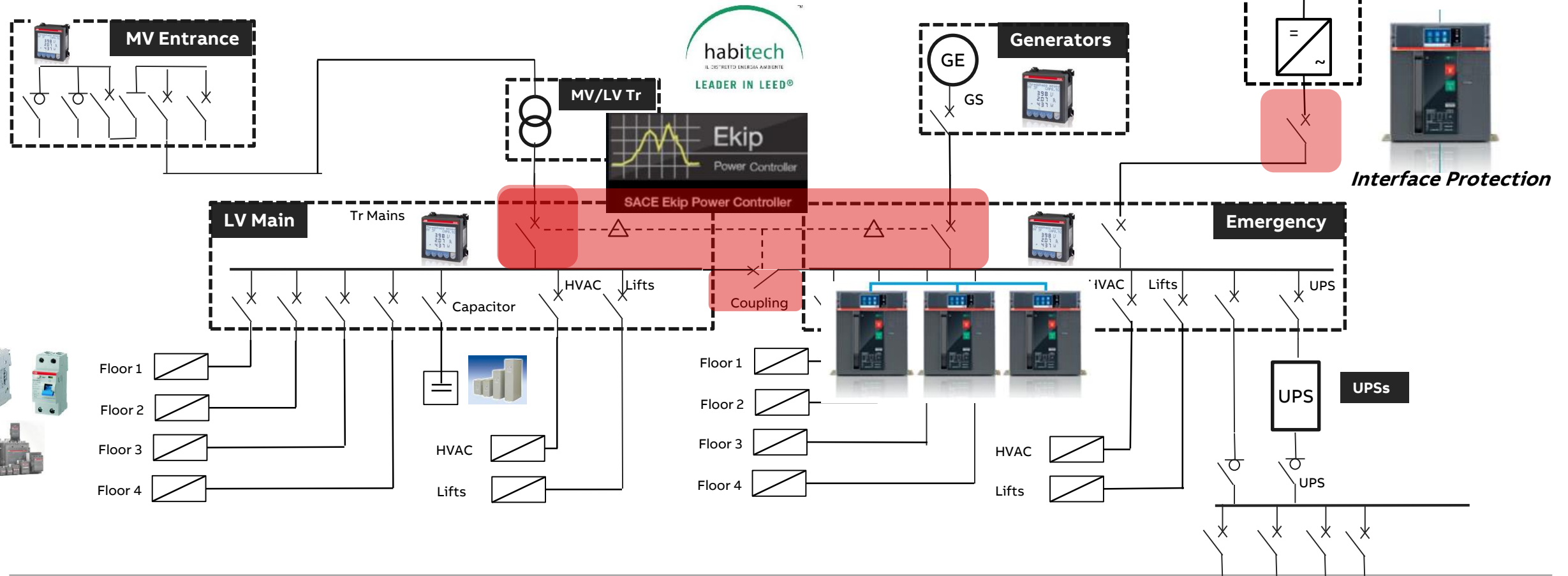
- 6. Low voltage switchgear.** Electrical distribution solutions including switches, sockets, breakers and arc protection
- 7. Capacitors & filters.** Improve power quality and efficiency, reduce costs
- 8. Measurement & analytics.** Flow, pressure, temperature and level solutions certified for direct contact with food
- 9. Instrumentation.** Accurate, reliable equipment, safe performance for measuring, monitoring, analysis or control
- 10. Drives.** Increase efficiency from small drives all the way to industrial drives

- 11. Motors, bearings, gearing.** Washdown and corrosion-resistant motors for the harshest environments
- 12. Chillers.** Improve machine efficiency and control, recover and use waste heat
- 13. Picker robot.** Picking accuracy unmatched by human counterparts
- 14. Packing robot.** State-of-the-art high speed robotic packing technology
- 15. Safety solutions.** Single solutions to complete safety systems; wash down rated
- 16. Traceability (MES/DCS).** Product and process genealogy; track quality, safety, compliance

- 17. Complete portfolio of IP69K solutions.** Ultimate solutions for harsh washdown conditions
- 18. Service.** Global installed base, domain expertise, performance across product lifecycle
- 19. Industrial Automation (MES/DCS).** Automation solutions to drive efficiency, productivity and capacity
- 20. Electrification products.** Full range of low- and medium-voltage solutions to connect, protect, control and measure
- 21. Renewable energy.** Sustainable, efficient and reliable power

# Product Mix Critical Power Application

## Management of Power Sources with ABB Ability



# Electrification Products - A leading and unique offering for food & beverage

## Low Voltage Protection and Connection



Thomas & Betts products



Circuit breakers



Connection devices



Electronic relays and controls



Cable protection solutions



Miniature circuit breakers



High performance circuit breakers



Modular DIN-Rail components



Motor protection and control



Residual current devices



Safety products



Switches

# Electrification Products - A leading and unique offering for food & beverage

## Low Voltage Building Products



Industrial plugs & sockets



Energy Meter



MCB

RCD

SPD



Anti Microbial conduit

# Safety monitoring for Critical power application

Safety and reliable to the supply of electric power



**MNS switchgear - MCC**



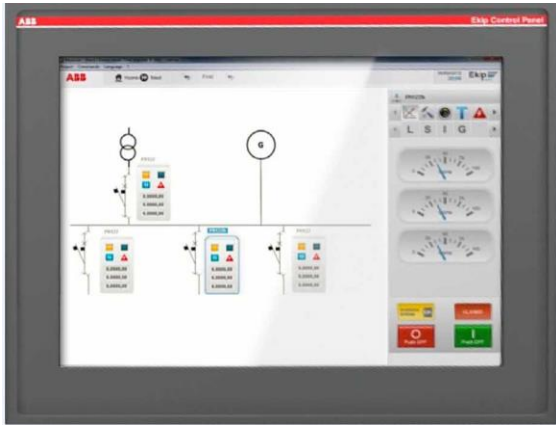
**Pro E Power Distribution**

- Design verified by testing (type-tested) including arc fault containment
- Special for MCC switchgear offer a modular withdrawable system that can be easily scalable from light to top solution
- Standard of reference : IEC 61439-1-2
- Up to 100kA at 480V and 65kA at 600V for 1 sec
- Monitoring plant network via ABB Ability with Cloud-based energy

- Design verified by testing (type-tested) including arc fault containment
- Special distribution switchgear (LVMDDB) with offer a modular Fixed system
- Standard of reference : IEC 61439-1-2
- Up to 65kA at 480V for 300 msec
- Monitoring plant network via ABB Ability with Cloud-based energy

# Safety monitoring for Critical power application

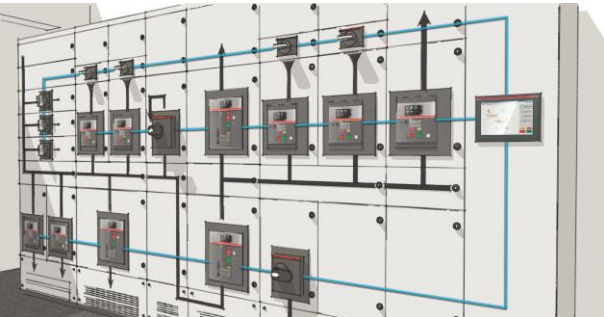
## Cubicle supervision: reading from the front of the switchboard


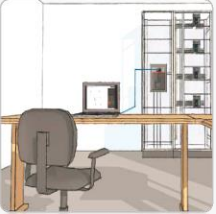

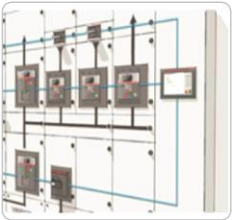
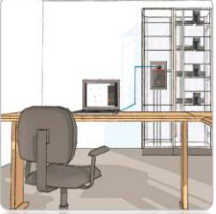



- The ability to communicate with, supervise and remotely access electrical systems and components is becoming increasingly important.
- Being able to view circuit-breaker or switchboard status throughout multiple points in the system and easily react to situations before they become a problem is invaluable.
- Emax 2 offers customers several options for communication that allow a solution to be customized for any application.



Ekip Link for Emax 2 – Air Circuit Breaker



Supervision level Industry size	Cubicle Supervision & Control	Switchboard Supervision & Control	Plant Supervision & Control
<b>Large Industry</b> (Oil and Gas, data centers, automated industrial processes, smart grids, etc.)			
<b>Medium Industry</b> (Food & Beverages, large factories, OEMs, shopping centers, UPS systems, office buildings, hotels, etc.)			
<b>Small Industry</b> (small factories, hospitals, ships, etc.)			



# Digitalization with ABB Ability™ Electrical Distribution Control System

## How it works

### Embedded solution

Plug-in the **Ekip Com Hub** module and start Ekip Connect wizard. In **less than 10 minutes** the panel is connected to the cloud.

#### Plug & play:

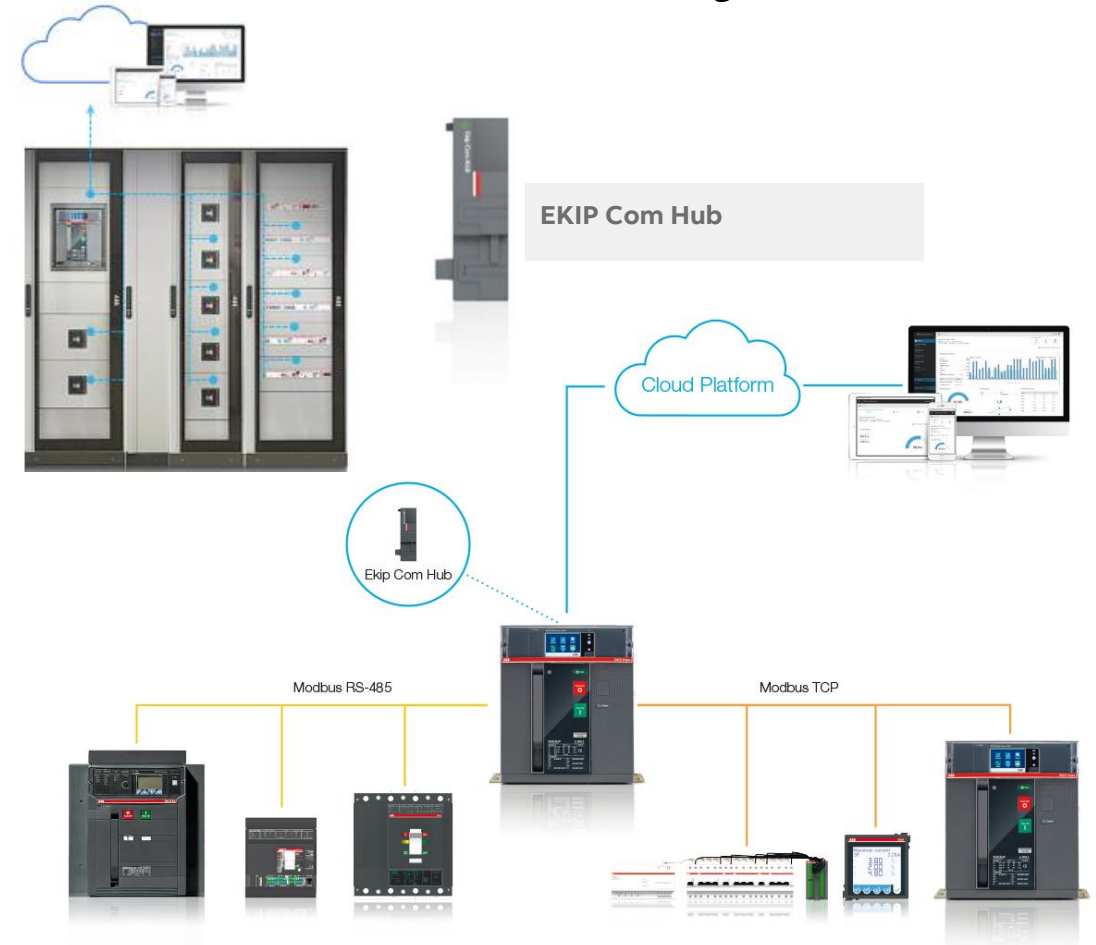
- ACBs
- MCCBs
- MCBs
- Energy and Power meters

### External Solution

Connect devices to **Ekip E-Hub** DIN rail module. **High flexibility** and **extended retrofitting**. Easy and fast configuration via Ekip Connect wizard.















#### Plug & play:

- ACBs
- MCCBs
- MCBs
- Energy and Power meters
- Analog and Digital meters



# ABB Ability™ Electrical Distribution Control System

## Available Widgets

			
			
			
 <b>Real Time Voltage</b> Show real-time data of the voltage for each connected devices.	 <b>States and Events</b> Display state, events and alarms linked to 3rd party products installed in the system via the Ekip Signalling Modbus module.	<b>Real Time Currents</b> Show real-time data of the currents for each connected devices.	<b>Real Time Power</b> Show real-time data of the power for each connected devices.
<a href="#">Add</a>	<a href="#">Add</a>	<a href="#">Add</a>	<a href="#">Add</a>

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# ABB Ability™ Electrical Distribution Control System

A simple shopping list

## Hardware

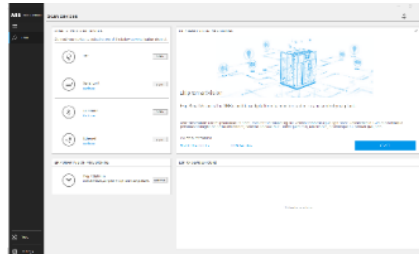
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- **Ekip Com Hub**
  - Emax 2 or Ekip UP embedded communication module for cloud-connectivity
- **Ekip E-Hub**
  - DIN-rail mounted communication module for cloud-connectivity

## Commissioning tool

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- Ekip Connect 3 Software available via free download

## Services

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- **ABB Ability™ EDACS**
  - subscription to monitor, optimize and control your systems
  - Each subscription is valid for one site, up to 15 users' access

# Digitalization with ABB Ability™ Electrical Distribution Control System

User can monitor schedule Predictive maintenance

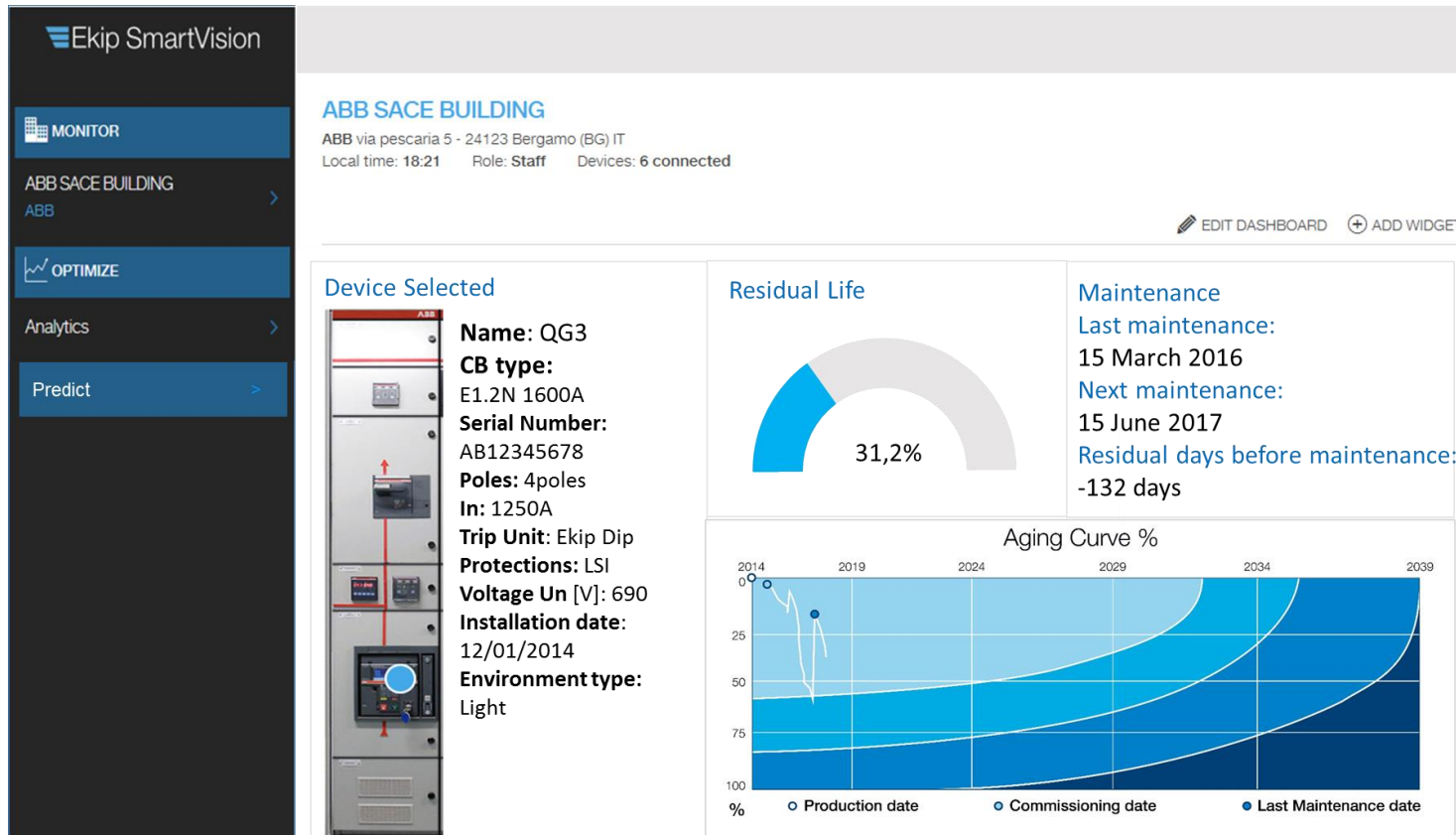


ABB Ability solutions ensure that a factory's power supply is clean and reliable, preventing unplanned downtime and lost production

# Digitalization with ABB Ability™ Electrical Distribution Control System

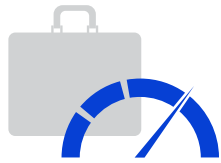
Who it benefits

## Benefits by target



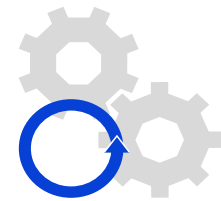
### End User

Save up to 30% on the operational costs



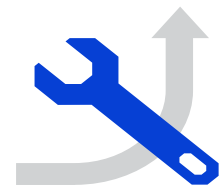
### Consultants

Boost your projects and increase their value



### Facility Manager

Take action in 1 minute anywhere, any time



### Panel builder

Connect your panel to the cloud in only 10 minutes



# Electrification solutions contribute towards energy efficiency

## Case Study of ABB Ability™ Electrical Distribution Control System

### First pilot



The 1st pilot installation of ABB Ability™ Electrical Distribution Control System was carried out with an Italian public water company, Consorzio di Bonifica Veronese.

### Key value



**Security  
guaranteed**

ABB Ability™ Electrical Distribution Control System helps the customer to achieve:

- **24.000 €** grants (Energy Efficiency Certificates)
- **40%** savings on maintenance time
- **30%** savings on operational costs

**Safety – Cost – Quality – Sustainability in your production**



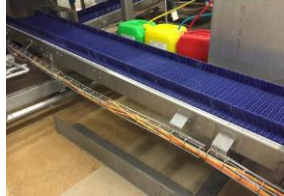
# Food & Beverage

Identifying the risk

Transfer Equipment



Conveyor systems



Enclosure connections



CIP Systems



Drives & Motors



Electrical cables very close to direct contact with raw materials.



Control cables very close to food transfer belts.



Motor drive cables very close to beverage transfer belts.





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# Innovative Cable Protection System for the Food & Beverage Industry

## Product Range Rationale

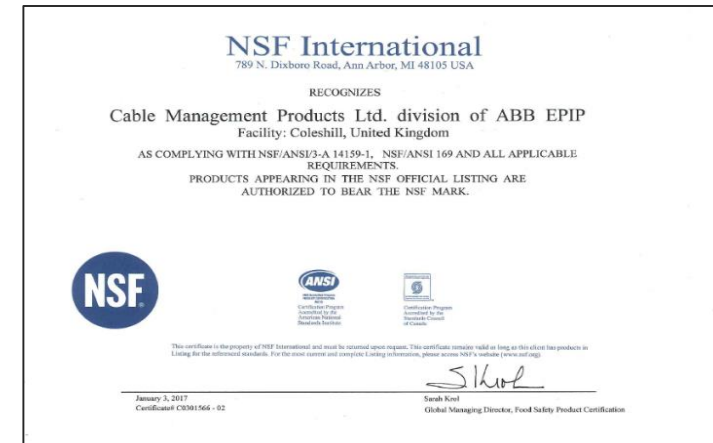
- Food and beverage facilities are designed to run smoothly this means dealing with multiple equipment maintenance challenges. For maximum productivity, you need high-performance products that can help you reduce unplanned maintenance, fight corrosion, resist water washout, and remain stable under hot and cold temperatures. These materials must meet industry regulations.
- EN ISO 14159 Safety of Machinery. Hygiene requirements for the design of machinery.
- Legislative drive is that of greater demands from governments protecting general health – costs & liabilities.
- Increase the operational equipment efficiency – optimize uptime by protecting cables & equipment that enable data transfer and power.

# Innovative Cable Protection System for the Food & Beverage Industry

Standards associated with the food processing industry

## NSF International - National Sanitation Federation

- NSF/ANSI 14159:1 - Hygiene requirements for the design of machinery
- *NSF/ANSI 169:09 - Special purpose food equipment and devices*
- The purpose of this Standard is to establish minimum food protection and sanitation requirements for the materials, design, fabrication, construction, and performance of special purpose food handling and processing equipment and devices not fully covered by other individual standard



# F&B Quality Focused on Corrosion Resistance & Food Safety

## Food Safety

### Type 316 Stainless Steel Liquidtight Fitting

- Domed Gland Nut to prevent pooling of liquids
- 316SS Ground Cone for additional corrosion resistance



**T&B Liquidtight Systems™**

### Ag+® Cable Ties

- Made with FDA-compliant, fungal-inert Nylon 6.6 resin
- Blended with bacteria-resistant silver ion additives



**Ty-Fast®**



### Sand Cast Aluminum Conduit Bodies

- Made from Corrostatl™ aluminum for superior corrosion resistance
- Stainless steel screws and washers on covers

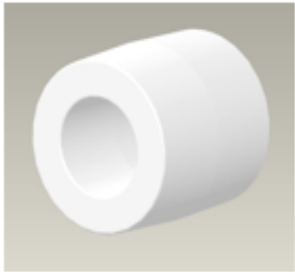


# F&B Quality - Food Safety / Ease of Cleanability

## Ease of Cleanability

### SuperClean Wall Offset

- FDA's Food Safety Modernization Act requires all items attached to walls in F&B facilities to be offset to enable proper sanitization
- 1"x1" cylinder with 3/8" and 1/2" holes
- Spacers are stackable to offer 1-3" offset from wall
- Ag+ Bacterial Resistant Nylon is a less costly and modular alternative to stainless steel alternatives



### SuperClean

- Sloped strut shed cleaning fluids and debris
- Slotted pieces assemble quickly with minimal fabrication required
- Coated, pre-threaded assembly rods available for quick installation
- Ag+® resistant wall offsets reduce microbe growth
- Complete array of accessories makes planning easy



# F&B Quality - Anti-Microbial Flexible Conduit

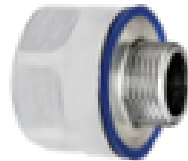
**Non-Metallic Over-Extruded Conduit**



**316 Stainless Steel 'Standard' & EMC Cable Glands**



**Non-Metallic Over-Extruded Conduit  
316 Stainless Steel Fitting**



**Galvanised/Stainless Steel Anti-Microbial  
Hytrel® Coated Conduits**

**316 Stainless Steel Fitting**

With NSF Certification



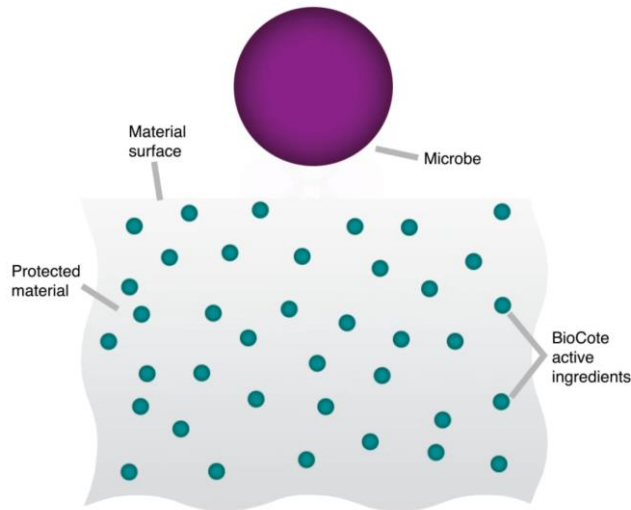
**Non-Metallic Fitting  
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# Innovative Cable Protection System for the Food & Beverage Industry

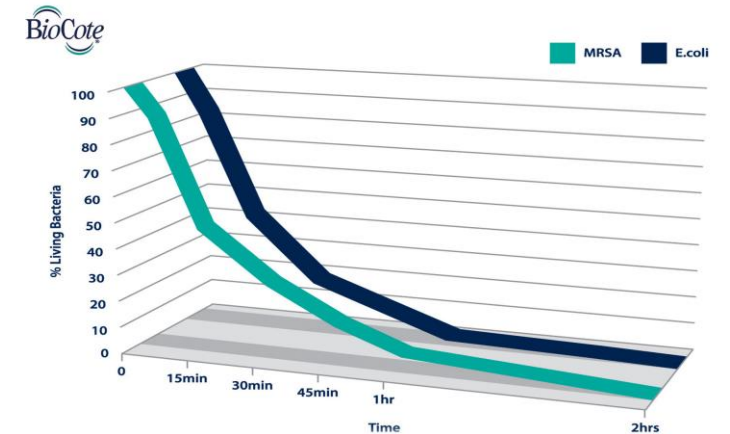
Anti-microbial protection, how it works.

The anti-microbial protection is based on a silver glass powder matrix. The additive provides a slow release of silver ions to the surface of the product protecting against bacterial contamination (see video below).



- Based on the work and materials BioCote provided to ABB, in addition to in-house testing, it's been proven that the effectiveness of the anti-microbial treatment does not degrade over time, throughout storage, or during repeated wash-downs
- The integral anti-microbial protection, which neither wears off or washes away, attacks both gram negative and gram positive bacteria, such as MRSA and E.coli

- Is proven effective against a wide range of bacteria, fungi & the H1N1 virus
- Tests completed by BioCote, see the level of bacteria reduced by up to 80% in the first 15 minutes and by 99% in just two hours.



# Capabilities

Adding value to our customers

After Sales Service

Technical support

Training

Engineering software

Marketing support



## Our customer focus

The broadest global portfolio of electrical solutions to deliver reliability, productivity and efficiency

Pre-engineered, packaged solutions tailored to customers' exacting requirements

Tools and services to make it easier to do business with ABB

Becoming the supplier of choice

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# Service

Fast customer support across the entire value chain

## Integration of all segments and customer channels

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### Rapid response

- Repairs
- Spares and consumables
- Replacement
- Training
- Service agreements



### Lifecycle management

- Installation and commissioning
- Maintenance
- Extensions, upgrades and retrofits
- Replacement
- Training
- Spares and consumables
- End of life services
- Service agreements



### Operational efficiency

- Engineering and consulting
- Maintenance
- Advanced services
- Extensions, upgrades and retrofits
- Training
- Service agreements



### Performance improvement

- Advanced services
- Engineering and consulting
- Extensions, upgrades and retrofits
- End of life services
- Service agreements



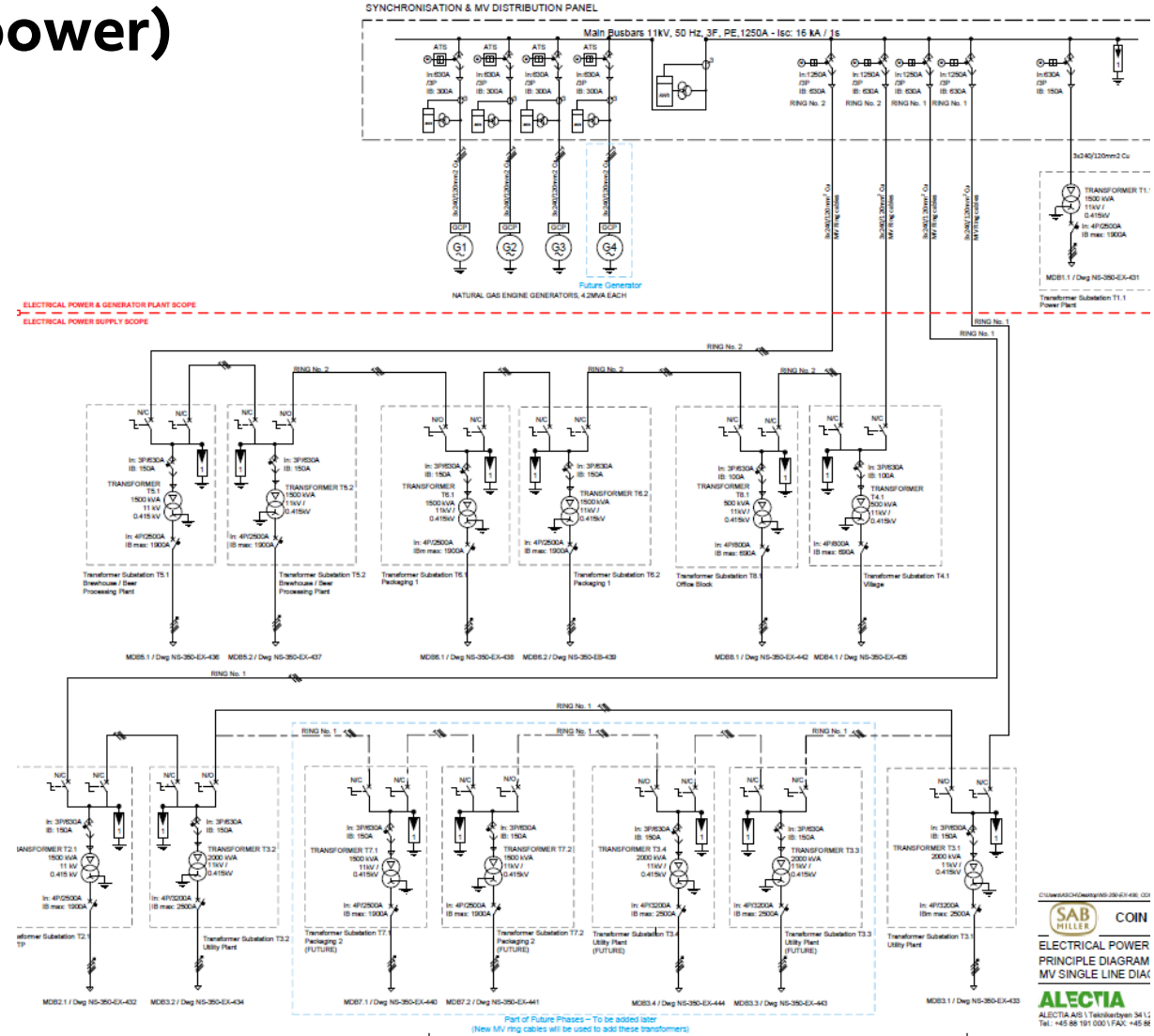
# Experience in CHP (combined heat and power) in Beer Plant

## ABB solution and scope of supply overview

### Solution

#### Solution overview

- Complete solution with Packaging including: MV Switchgears, LV Switchgears, small generators and transformers and service (commissioning and installation)
- Critical Power Applications needs: Uninterrupted service continuity -> no outages are allowed
- Remote control and monitoring to ensure control/actions on the status of the equipment installed (enhance service continuity)
- Preventive maintenance -> keep under control the installed base and advise the customer about maintenance program



# Experience in Ajinomoto

## ABB solution and scope of supply overview

### Solution

#### Production of tapioca starch and cane molasses products

EPMV content:

- UniGear ZS1
- Loadshedding controller PML630
- Relays of new generation Relion 615 + Remote I/O unit
- MicroSCADA Control System

ABB Solution:

- Load Shedding System
- Control Management System
- MV Switchgears



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**So let's talk**



**ABB**