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A new year brings exciting new developments for our power protection systems

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Perfectly suits a comprehensive range of ABB UPS solutions
Dear all,

On behalf of the product management team, I am very excited to welcome you to this edition of power magazine. Over the last five years, I have held several roles within Thomas & Betts and now ABB. After starting as an applications engineer, I transitioned to a new role as the development lead for an enhanced web-based CPQ tool. After launching this tool, I migrated to my current position as the Product Manager for Enterprise Data Center, supporting the development of power distribution products for North America.

Looking forward, 2018 promises to be an exciting year. We recognize the continuing trend of larger data center buildouts and the need for higher density power requirements. As data centers increase in overall size and power, many large colocation providers continue to look for ways to simplify their infrastructure without sacrificing efficiency. With the proliferation of applications requiring high performance computing, it’s no longer sensible to run some applications on a series of lower density server racks. By utilizing higher density 25 kW – 30 kW racks, operators can simplify their IT infrastructure. Additionally, these higher density racks are more power intensive and require increased cooling; therefore, opportunities exist to further simplify design and optimize white space utilization without sacrificing efficiency or redundancy through the use of higher density power distribution equipment.

On the NAM front, power protection sales, marketing, and engineering teams are continuously collaborating to develop uninterruptible power supply (UPS) and power distribution products designed specifically for the high-density data centers of tomorrow. This year, we have plans to expand the power distribution unit (PDU) product series to offer increased kVA power ratings in support of ultra-dense applications. Additionally, the industry leading Cyberex® SuperSwitch®4 digital static transfer switch (DSTS) will increase its power offering to support applications up to 2000 A. We will also continue optimizing the modular UPS product portfolio to support the UL market.

Highlighted in this issue are several outstanding articles that underline the strength of our power protection systems. Foremost is a case study of how ABB’s PowerLine DPA is now certified according to the European standard EN 50121 (“Railway applications. Electromagnetic compatibility”) and International standard IEC 62236 for fixed power supply installations and apparatus.

Read about how ABB’s single-phase UPS, the PowerValue 11 RT, has been selected by a private rail operator Rhaetian Railway (RhB) to regulate the power supply for one of Switzerland’s most demanding rail lines.

ABB launched a lithium-ion battery system that perfectly suits a comprehensive range of ABB UPS solutions. Read the press release within, then for further information visit the product brochure.

In this edition, you can read an interesting interview with Bruce Bennett, Global Channel Manager, ABB’s power conditioning team. As many of you would know, the way we process and package our food has undergone a huge change. With these changes, a high quality of electrical power is more critical than ever for the food and beverage industry. In his interview, Bruce Bennett talks about why power protection is hugely important to the food and beverage industry.

Stay tuned to power in 2018. As the year advances, we look forward to sharing our success stories and accomplishments. We have strong product development and event activities planned for this New Year.

Enjoy this issue of power
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ABB provides single-phase UPS for Swiss Alp railway

Contact Us – Power protection made easy

www.abb.com/ups

Scan our QR Codes with your smart phone to find web links, videos or event pages, providing further details about ABB's products and services.
ABB’s PowerLine DPA modular uninterruptible power supply (UPS) system is designed for use in light industrial applications that might be subjected to rough conditions. Powerline’s IP31-rated protection can easily cope with dust, water condensation, excessive humidity (up to 95 percent), corrosive air contamination and rough manhandling. The UPS is designed to operate in a temperature range of -5 to +45 C. High priority has been given to safety and the Powerline DPA features a high degree of protection for users and maintenance staff.

These capabilities make the PowerLine UPS ideal for railway applications.

However, before PowerLine can be deployed in a railway setting, it must pass stringent electromagnetic compatibility (EMC) certification tests to show it is immune to incoming electromagnetic disturbances emanating from other railway equipment (railways are electrically very noisy) and that the UPS itself does not emit electromagnetic radiation that could interfere with other devices.

The PowerLine DPA UPS passed the relevant tests with flying colors. ABB’s PowerLine DPA UPS is now certified according to European standard EN 50121 (“Railway applications. Electromagnetic compatibility”) and International standard IEC 62236 for fixed power supply installations and apparatus.

The way is clear for ABB’s PowerLine DPA to deliver quality electrical power to railway signaling and rail infrastructure throughout the world and so ensure reliable and safe rail operation without causing electromagnetic disturbance to other railway equipment or being affected by other electrical equipment in the railway environment.

For further information, please contact:
ABB’s Power Protection SA
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diana.garcia@ch.abb.com
Powering ahead from 2017 to 2018

A new year brings exciting new developments for our power protection systems here at ABB
Power protection

UPS
The power protection UPS business based in Quartino, Switzerland has been thriving, thanks to a prudent combination of business strategy, sales and marketing initiatives, new product development and investments in infrastructure.

The big event of the year was undoubtedly the opening of the UPS test facility in the Quartino factory. The center boasts five test stations and can accommodate the largest - and in future, even larger – UPS system deliveries. The inauguration opened up a new chapter in ABB’s power protection capabilities. Now, even the largest UPS configurations can be tested as one system so that when they are delivered to the customer, they can be quickly and smoothly integrated into the power infrastructure. New products from Quartino include the feature, Xtra VFI, in which UPS modules that are not needed are dynamically switched in and out depending on the load demands, thus saving significant amounts of energy, especially under low-load conditions. Also, the PowerLine 33 range was completed to cover the full range from 20 to 120 kVA. PowerLine DPA is an online double conversion UPS and makes the advantages of ABB’s modular UPS architecture available for locations that are usually rough on electronic equipment.

PowerLine will feature in 2018 with certification for railway applications and the introduction of the PowerLine DPA 31 IEC industrial UPS for 20 to 80 kVA – i.e., a single-phase UPS for low- and medium-power applications. 2018 will also see the new PowerValue 11 T G2 and new models of the PowerValue 11 RT. Alternative storage systems such as lithium-ion batteries for ABB UPS will become a popular topic as well. Low cost of ownership, long lifespan, light weight, high safety level and compactness are just some of the advantages that lithium-ion technology has over the sealed lead-acid batteries that have been the workhorse of the industry until now. Last but not least, modularity is a key differentiator of ABB’s UPS products and innovations in this area are also promised in the near future.

Power conditioning
The power conditioning business based in Napier, New Zealand undoubtedly had a successful 2017 in all areas of the business. The key event for the year was the introduction of the next generation PCS120 Medium Voltage UPS. This product was launched simultaneously at Data Center World in London and at ABB’s customer world in Houston, Texas.

The ever increasing size and power demand of data centers requires a new approach to its power protection. ABB already offers static medium voltage UPS for critical industrial applications and has taken on the challenge and developed a new solution meeting the requirements of the data center industry. The PCS120 MV UPS is based on the impedance isolated static converter technology and offers complete power protection at medium voltage level, reducing the complexity of distribution and overcoming performance limitations of existing solutions.

ABB’s PCS100 product range has a growing order book as modern manufacturers rely more than ever on technology based systems. With the PCS100 product portfolio, ABB offer efficient power conversion solutions that are specifically designed to solve power quality problems and stabilize networks. Covering applications from data centers through to complete industrial plant protection, microgrid systems and shore-to-ship supply. The PCS100 product range is continually being improved. The business is dedicated in delivering advanced, reliable solutions to their customers that will provide a stable, high quality power supply for many years. Stay tuned for new product updates to follow in future issues of power.

Power solutions
From the US based team, the Cyberex® SuperSwitch®4 will extend its power range to support applications up to 2000 A. ABB’s high-capacity digital static transfer switches are designed to support the continuing demands for seamless power switching and transfers from 0 to 180 degrees out of phase between input sources. The team also plans to introduce a high capacity power distribution unit (PDU) that will support large multi-megawatt data centers throughout North America. Stay tuned for new product updates to follow in future issues of power.

Building on the momentum from the 2017 expanded offering launch of the Conceptpower DPA 500 480V UL modular UPS, the US team plans to develop and launch the UL versions of the optimized Conceptpower DPA 120 system, extending the UPS power protection footprint in North America. They are also working on building the UPS product portfolio and offering new features for the UL market, so stay tuned for new product updates.

ABB’s power protection research and development team are constantly improving the technology of the platform. Setting trends for hardware and control platforms, ensuring the highest reliability, efficiency and the smallest footprint, will shape the future of power protection in commercial and industrial applications.

To find out more about ABB’s power protection solutions:
Web: www.abb.com/ups
Delivering intelligent power to secure the data needs of tomorrow.

The world around us is changing. An increasing reliance on data, computing power and connectivity means that optimum data center performance is crucial. At ABB, we can help you to meet the data demands of today and tomorrow, with solutions to support the continuous operation, efficiency, safety and security of your data center. Whatever the challenge, you’ll find future intelligent thinking at the heart of our offering. Intelligent data needs intelligent power. Discover more at www.abb.com/datacenters
ABB’s power protection portfolio

ABB has all bases covered when it comes to the power protection of sensitive loads. Covering applications from computer rooms, to large data centers and complete industrial plant protection. From a few kVA, right through to applications of many MVA and a wide range of supply voltages, ABB has the UPS and voltage conditioning technology for every need.
## Outage protection

<table>
<thead>
<tr>
<th>Products</th>
<th>UPS single phase</th>
<th>Power range</th>
<th>Main features</th>
<th>Single line diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>PowerValue 11 RT / 11 RT G2</td>
<td>1 kVA - 10 kVA Parallel to 20 kVA</td>
<td>Up to 95% efficiency</td>
<td>Protection against power outages and disturbances</td>
<td></td>
</tr>
<tr>
<td>PowerValue 11/31 T</td>
<td>10 kVA - 20 kVA Parallel to 80 kVA</td>
<td>Up to 98% (eco mode)</td>
<td>Battery energy storage</td>
<td></td>
</tr>
<tr>
<td>PowerValue 11T GT</td>
<td>1 kVA - 10 kVA Parallel to 30 kW</td>
<td>Protection against power outages and disturbances</td>
<td>Battery energy storage</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Products</th>
<th>UPS three phase standalone</th>
<th>Power range</th>
<th>Main features</th>
<th>Single line diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>PowerScale</td>
<td>10 kVA - 50 kVA</td>
<td>Up to 96% efficiency</td>
<td>Exceeding 98% (eco-mode) - PowerScale</td>
<td></td>
</tr>
<tr>
<td>PowerWave 33</td>
<td>60 kW - 500 kW Parallel to 5 MW</td>
<td>Protection against power outages and disturbances</td>
<td>Battery energy storage</td>
<td></td>
</tr>
</tbody>
</table>

## Modular UPS

<table>
<thead>
<tr>
<th>Products</th>
<th>UPS three phase modular</th>
<th>Power range</th>
<th>Main features</th>
<th>Single line diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPA UPScale RI</td>
<td>10 kW - 80 kW</td>
<td>Up to 95.5% efficiency</td>
<td>Exceeding 98% efficiency (eco-mode)</td>
<td></td>
</tr>
<tr>
<td>DPA UPScale ST</td>
<td>40 kW - 400 kW</td>
<td>Protection against power outages and disturbances</td>
<td>Battery energy storage</td>
<td></td>
</tr>
<tr>
<td>Conceptpower DPA</td>
<td>25 kVA - 250 kVA</td>
<td>Double conversion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conceptpower DPA 500</td>
<td>100 kVA - 500 kW Parallel to 3 MW</td>
<td>Double conversion</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Industrial UPS

<table>
<thead>
<tr>
<th>Products</th>
<th>Power range</th>
<th>Main features</th>
<th>Single line diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCS100 UPS I low voltage</td>
<td>150 kVA - 3000 kVA</td>
<td>Exceeding 99% efficiency</td>
<td></td>
</tr>
<tr>
<td>PCS120 medium voltage UPS</td>
<td>2 MVA - 40+ MVA</td>
<td>Exceeding 98.5% efficiency</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Products</th>
<th>Power range</th>
<th>Main features</th>
<th>Single line diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>PowerLine DPA 3ph</td>
<td>20 kVA - 120 kVA Online double conversion topology</td>
<td>Modular DPA architecture Suitable for rough industrial facilities Reliable power and high availability (2N) Low MTTR and low inventory</td>
<td></td>
</tr>
<tr>
<td>PowerLine DPA 1ph</td>
<td>20 kVA - 80 kVA Online double conversion topology</td>
<td>Modular DPA architecture Suitable for rough industrial facilities Reliable power and high availability (N+1) Low MTTR and low inventory</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Products</th>
<th>Power range</th>
<th>Main features</th>
<th>Single line diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyberex® PowerBuilt™</td>
<td>10 kVA - 80 kVA Online double conversion technology (Active Voltage Conditioner for sag correction)</td>
<td>Fully rated digital static transfer switch Active current limitation in IGBT based PWM inverter Design life of 20 years</td>
<td></td>
</tr>
</tbody>
</table>

## Voltage Conditioning

<table>
<thead>
<tr>
<th>Products</th>
<th>Power range</th>
<th>Main features</th>
<th>Single line diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCS100 AVC-40 (Active Voltage Conditioner for sag correction)</td>
<td>150 kVA - 3.6 MVA</td>
<td>Exceeding 98% efficiency</td>
<td></td>
</tr>
<tr>
<td>PCS100 AVC-20 (Active Voltage Conditioner for voltage regulation)</td>
<td>250 kVA - 3 MVA</td>
<td>Serial connected Short circuit protected Rugged overload capability Low maintenance</td>
<td></td>
</tr>
</tbody>
</table>
## Outage Protection

<table>
<thead>
<tr>
<th>Frequency Conversion</th>
<th>Power Range</th>
<th>Main Features</th>
<th>Products</th>
<th>Single line diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCS100 SFC Static Frequency Converter</td>
<td>125 kVA to 10 MVA</td>
<td>High efficiency power conversion, Small footprint design, Clean sinewave output voltage, Built-in module redundancy, Lowest total cost of ownership</td>
<td></td>
<td><img src="image1.png" alt="Single line diagram" /></td>
</tr>
</tbody>
</table>

## Digital Static Transfer Switch

<table>
<thead>
<tr>
<th>Product</th>
<th>Power Range</th>
<th>Main Features</th>
<th>Products</th>
<th>Single line diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>SuperSwitch®3</td>
<td>200A – 4000A 2 or 3 source 3 or 4 pole</td>
<td>Improved reliability, High speed transfers between sources, Allows concurrent maintenance, True fault-tolerant architecture, SuperSwitch® algorithm provides unmatched transfers</td>
<td></td>
<td><img src="image2.png" alt="Single line diagram" /></td>
</tr>
<tr>
<td>SuperSwitch®4</td>
<td>200A – 1200A 208V, 480V 60Hz</td>
<td>Advanced SuperSwitch® platform, Touch screen controls, 25% faster DIIR transfer times, 40% lower inrush limiting, Enhanced power quality detection</td>
<td></td>
<td><img src="image3.png" alt="Single line diagram" /></td>
</tr>
<tr>
<td>SuperSwitch®GT</td>
<td>200A – 1000A Grid tie switch</td>
<td>Improved reliability, High speed transfers between sources, Allows concurrent maintenance, True fault-tolerant architecture, SuperSwitch® algorithm provides unmatched transfers</td>
<td></td>
<td><img src="image4.png" alt="Single line diagram" /></td>
</tr>
</tbody>
</table>

## Power Distribution

<table>
<thead>
<tr>
<th>Product</th>
<th>Power Range</th>
<th>Main Features</th>
<th>Products</th>
<th>Single line diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyberex® PDU</td>
<td>50 kVA – 750 kVA</td>
<td>Three main cabinet sizes, Distributes, protects and monitors power to servers, Steps down voltage to utilization level, Nearly unlimited configurations of panelboards and sub-feeds, Support customization for diverse loads, Comprehensive system monitoring for data management</td>
<td></td>
<td><img src="image5.png" alt="Single line diagram" /></td>
</tr>
<tr>
<td>Cyberex® RPP</td>
<td>Up to 240 V Up to 400A Up to 168 circuits</td>
<td>Two main cabinet sizes, Distributes and protects power to single phase circuits, Reliable and flexible power distribution, Comprehensive system monitoring for data management, Circuit management available</td>
<td></td>
<td><img src="image6.png" alt="Single line diagram" /></td>
</tr>
</tbody>
</table>

## Integrated Systems

<table>
<thead>
<tr>
<th>Product</th>
<th>Power Range</th>
<th>Main Features</th>
<th>Products</th>
<th>Single line diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyberex® MC</td>
<td>200A – 800A 75 kVA – 300 kVA</td>
<td>SuperSwitch® platform integrated with PDU, Patented algorithm provides unmatched transfers, Maximizes reliability and availability, True fault-tolerant architecture, Dynamic inrush for applications with downstream transformers, Expert power management, Waveform capture, Software-guided breaker operation and bypass</td>
<td></td>
<td><img src="image7.png" alt="Single line diagram" /></td>
</tr>
<tr>
<td>Cyberex® ZF</td>
<td>400A – 800A 75 kVA – 300 kVA</td>
<td></td>
<td></td>
<td><img src="image8.png" alt="Single line diagram" /></td>
</tr>
</tbody>
</table>
PCS100 UPS-I

150 kVA to 3000 kVA Industrial UPS

Product overview

ABB’s PCS100 UPS-I is a high performance, high efficiency UPS system that ensures protection from power quality events, enabling continuous power supply to modern industrial processes.

To supply continuous power during utility events the PCS100 UPS-I uses a modular energy storage and inverter system. The energy storage is either batteries or ultracapacitors with the choice of technology dependent on the autonomy required. Battery systems can deliver autonomy up to several minutes. Ultracapacitors provide seconds of coverage for short power quality events, which are the most common problems encountered. Ultracapacitors have extremely high power density and long lifetime resulting in a very compact and low maintenance solution.

Harsh electrical environments are often found in modern industry. The PCS100 UPS-I uses a robust high speed power electronic disconnect switch to interface from the utility to the load. The modular inverter construction and failsafe electromechanical bypass provides the highest system availability. Coupled with the small footprint and easy serviceability, this low maintenance, high efficiency industrial UPS is the solution for all power protection applications.

User benefits

– Robust failsafe modular industrial design
– Long lifetime energy storage
– Small footprint
– Highest efficiency and availability
– Low maintenance requirements
– Easy serviceability

Features

– Very high efficiency (99 percent typical)
– Designed specifically for industrial loads (motors, drives, transformers, production tools)
– Modular design providing high reliability and typically 30 minutes MTTR (mean time to repair)
– Very high fault current capacity
– Advanced ultracapacitor or high discharge rate battery storage
– Generator walk-in algorithm for a controlled transfer of the load to backup generators
– Ratings from 150 kVA to 3000 kVA and voltages 208 Vac to 480 Va

Watch the video: The features of the PCS 100 UPS-I

To find out more about ABB’s power protection solutions:

Web: www.abb.com/ups

Email: powerconditioning@abb.com
The importance of power protection in the food and beverage industry

An interview with Bruce Bennett, Global Channel Manager, power conditioning

The way we process and package our food has undergone a huge change. With these changes, a high quality of electrical power is more critical than ever for the food and beverage industry. Companies must carefully consider their approach to power protection to avoid huge losses.

In this interview, Bruce Bennett, Global Channel Manager, from ABB’s power conditioning team, talks about why power protection is hugely important to the food and beverage industry.

Why is power protection important to the food and beverage industry?

The physical consequences of power interruptions are obvious when they occur, but what really matters to the food and beverage business is the financial cost of power interruptions. The Pan-European Power Quality Survey [1] concluded annual losses attributed to power quality issues may amount to 4 percent of the business turnover. For many, this loss runs to tens or hundreds of millions of dollars annually, but is mostly preventable!

Modern food and beverage manufacturers rely more than ever on technology based systems, machinery, and high speed continuous processes to reduce the time and cost of bringing goods to market, improving quality by reducing variability, while increasing specification and volume flexibility. Disturbances on the power supply to this precision machinery can result in unscheduled interruptions that can be very costly in terms of lost material, production units, non-delivery, and hours spent clearing and cleaning to restart. Even a momentary interruption of a process that then requires addressing a possible contamination issue can be very expensive.
High quality of electrical power is critically important. How can ABB's range of power conditioning systems protect food and beverage facilities from disturbances in electrical supply?

Simply put, the ABB PCS100 power conditioning system senses a power quality event, such as a voltage sag, and acts extremely quickly to correct the event before it can have any effect on the customers’ critical machinery. We do this with equipment installed on the customer’s premises upstream of the electrical supply to critical loads, and monitor the electrical voltage supply to the load. When a voltage supply error is detected the PCS100 corrects it so fast that machinery connected downstream continues to operate without interruption.

Tell us how ABB’s products can help processing and packaging applications in the food and beverage industry?

Automation plays a key role in high speed, high volume processing and packaging applications. Typically this machinery has very sensitive electronics and fast moving motors, and also relies on a very high level of synchronization between operations upstream and downstream. Mishaps can cause unexpected downtime throughout the entire operation. ABB’s PCS100 product range delivers the clean, stable power supply necessary for correct operation of automated machinery.

Why is stable power quality a vital component for dairy applications?

Because production of milk is time critical, any unexpected downtime in processing can result in dumping of valuable product. Machinery may become blocked or require clearing of product or packaging. As a result, and due to the extremely high hygiene requirements, lost production time while sterilizing takes place can be many hours and cost many thousands. The PCS100 AVC minimizes the risk of unscheduled interruption to processes in dairy applications by ensuring a high quality, stable voltage supply is delivered to the site at all times.

What are the consequences of ignoring power quality?

As mentioned earlier, the most concerning consequence is a financial loss. Around 4% of a company turnover can be attributed to poor power quality. This can be in lost product, time, damage to machinery, and increased maintenance costs.

An unstable or fluctuating electricity supply can not only be the cause of unexpected interruptions, but may also be observed throughout the factory as:

- Failure of components such as contactors, release switches, fuses etc.,
- Unexplained breakdowns, faults or malfunctions of machinery,
- Overheating of transformers, motors, etc. reducing the useful life,
- Damage to precision equipment (computers, PLC’s, sensors, etc.),
- Communication interference in electronic sensors and devices,
- Higher distribution system losses, or
- Light flickering.

How is ABB’s PCS100 AVC a solution to poor power quality?

Typically, the PCS100 AVC is installed on the customer premises between the incoming supply and the critical loads. The incoming supply voltage is continually monitored so that when a voltage disturbance is detected, the PCS100 AVC reacts with extreme speed to correct the voltage, up or down, to the nominal level by means of the inbuilt injection transformer and rectifier/inverter pairs.

The PCS100 AVC draws additional energy from the utility to make up the correction voltage at sub-cycle speed thanks to ABB’s leading edge power electronics, which means only one moving part; the cooling fan. Requiring no batteries, the footprint is extremely small and is easily installed in equipment rooms or confined spaces.

What are the benefits of PCS100 AVC?

Perhaps the biggest risk too many food and beverage companies is the risk of non-supply downstream due to unscheduled process interruption, and long delays to restart and catch-up. No matter where in the world, or how modern it is, all electricity networks will suffer some power quality issues to some degree. The PCS100 AVC minimizes the risk of production delays and maximizes uptime.

Research shows that over 90 percent of power quality events that cause industrial equipment malfunction are a voltage sag, where the supply voltage drops markedly for a very brief period. Most voltage sags are caused by external factors, such as weather events, e.g. high winds, heavy rain, or snow and ice build-up, traffic accidents and construction works.
The PCS100 AVC is designed to work in electrical supply networks throughout the world. With robust industrial design, the PCS100 AVC-40 has a very high overload capability for the harshest of factory electrical loads and protects all the components of a critical process load including conveyors, pumps, fans, or other motors, plus the control electronics, sensors and other devices necessary to keep the process running.

Are there any other food and beverage applications that will benefit from ABB’s PCS100 AVC system?
Any process that relies on continuity of operation can benefit from the PCS100 AVC system. In addition to the examples above are such operations as baking where there is a risk of fire if a loaded conveyor stops in an oven, or where gas fired ovens and boilers do not automatically reignite costing valuable downtime.

Other businesses that supply food and beverage manufacturers can also benefit, especially when the time critical nature of the supply chain is considered. Packaging products such as glass, foil, and other specialty packaging products all have continuous processes that can cause long and expensive delays. These industries can also benefit from the PCS100 AVC system protection.

What does ABB’s technology mean for the future of the food and beverage industry?
The PCS100 AVC provides the food and beverage industry surety of high quality, stable power supply no matter where in the world the operation is. ABB is the industry leader in voltage sag and surge protection with proven technology that continues to protect many businesses, with heavy industrial load profiles in the worst supply networks in the world.

ABB’s power conditioning products are continually being improved and we are dedicated to delivering advanced, reliable solutions to our customers that will provide a stable, high quality power supply for many years.

Where can our readers go to find out more?
You can find more information, including technical data, key applications, and case studies on ABB’s website Link.

PCS100 AVC-40
Superior voltage conditioning for commercial and industrial applications

The PCS100 AVC-40 designed for sag correction in large commercial and industrial applications. Available in ratings from 150 kVA to 3600 kVA, the PCS100 AVC-40 offers continuous protection from the most common utility voltage problems found in modern power networks. Failsafe worry free operation even in harsh electrical environments and a faster return on investment due to low operation costs will ensure your business is protected from power quality events. abb.com/ups
ABB provides single-phase UPS for Swiss Alp railway

One of Switzerland’s largest private railway operators calls on ABB to safeguard travel across country’s harshest environments
ABB’s single-phase UPS, the PowerValue 11 RT, has been selected by private rail operator Rhaetian Railway (RhB) to regulate the power supply for one of Switzerland’s most demanding rail lines.

The Bernina Railway runs across the Bernina Pass, which at an altitude of 2,253 meters means any train not only has to contend with very low temperatures, but also a severe level of vibration that comes from travelling across such rugged terrain.

To prevent highly disruptive breakdowns, it was therefore essential that a reliable source of quality electrical power be provided, and ABB’s PowerValue 11 RT offered the perfect solution. Guaranteeing up to 10 kVA of clean, reliable power, the double conversion PowerValue RT also conditions incoming power to eliminate spikes, swells, sags, noise and harmonics, making it ideal for the challenging Bernina Railway route.

Mr. Cotti of RhB comments: “We were very satisfied with the product, support and contact at ABB. For me, it is particularly important that we always have the same competent ABB staff at our disposal who know the equipment history and can suggest preventive maintenance measures.”

The PowerValue UPS can operate in temperatures of 0 to 40 C and is rigorously tested – including a vibration test that ensures the device can withstand rough environments. The UPS can be connected to up to four parallel battery modules for extended runtime and batteries can be added or replaced easily.

Alex Stasolla, UPS business manager for Swiss market at ABB added: “The lifeblood of electric rail is a reliable source of quality electrical power, because even minor disturbances in power supply or quality can create major network disruptions. ABB’s power protection solutions are critically important because the electricity they safeguard not only powers the trains, but many other essential rail applications as well.”

The compact design of the PowerValue means it takes up little of the limited space available on a train. It has been installed in a railway wagon that has been converted to measure the wireless coverage of various providers - Polycom, UKW, DAB+ - as well as RhB’s train radio communications network. Should the wagon’s diesel generator drop out for any reason, the PowerValue will take over and supply power to the measurement infrastructure. The PowerValue UPS is now being accepted into RhB’s portfolio of approved standard products.
ABB launches new lithium-ion battery systems for ABB UPS solutions
ABB launches a lithium-ion battery system that perfectly suits a comprehensive range of ABB uninterruptible power supply (UPS) solutions.
Low cost of ownership, long life span, lightweight, high safety level and compactness are just some of the advantages that lithium-ion technology has over the sealed lead-acid batteries that have been the workhorse of the industry until now.

Valve-regulated lead-acid (VRLA) batteries – sometimes known as sealed lead–acid batteries – have traditionally been the battery of choice for backup power in UPS systems. However, lithium-ion battery technology has progressed rapidly in recent years, making it an attractive option – especially where high-energy density and low weight are important.

Other advantages over VRLA batteries - such as longer life span, better availability, smaller size, shorter recharging times and continually falling prices - only add to the appeal of lithium-ion battery solutions. Lithium-ion batteries are much more tolerant to changes in environmental temperature and can operate over a broad temperature range - a decisive factor in hot countries and a feature that keeps cooling costs down.

ABB’s lithium-ion battery solution is accommodated in a standard 19" cabinet. All connectors are front-facing for ease of installation, maintenance and replacement. A single cabinet configuration of 34.6 kWh comprises a switchgear element, a switched-mode power supply (SMPS) and 17 battery modules. Each module contains eight series-connected 67 Ah, 3.8 V cells and a dedicated battery management system (BMS) with cell balancing functionality. The switchgear collects all information about each battery cell, calculating the state of charge (SoC) and state of health (SoH). The SMPS supplies the power for the BMS and communicates with the UPS and other connected cabinets. Battery cabinets are compact, thus saving real estate and increasing power density, and may be connected in parallel to achieve the power needed.

Lithium-ion batteries are easy to handle - they do not contain mercury, lead, cadmium, or other hazardous materials. In most cases, traditional batteries would need to be replaced multiple times before a lithium-ion battery is replaced once. These characteristics lower maintenance overheads.

Federico Resmini, product manager for ABB’s Energy Storage Solutions, said: “Lithium-ion battery systems employ the very latest in battery technology and directly address the two top concerns of critical power users: availability and total cost of ownership.”

The high-reliability and high-availability lithium-ion battery solution provides peace of mind for operators using UPSs in data centers, hospitals and medical centers, offices, banks, education centers, transportation and manufacturing, to name but a few.
Active power

06. Product launch for critical power facilities

10. ABB technology helps semiconductor manufacturer improve productivity
    PCS100 AVC-40 power protection system supports production increases

15. Elastic data center infrastructure
    Maximizing energy efficiency across all operating conditions with no uptime compromise. The Xtra VFI case.

Seemless power

06. Keeping up with the growing demand of data centers
    An interview with Domagoj Talapko

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    PCS100 AVC-40 protecting against voltage sags at a leading semiconductor test assembly company in Malaysia

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