How Manufacturers Can Cut Downtime and Energy Costs with Programmable Power™.

EMPOWERING THE ELECTRIC EVOLUTION

Executive Summary

Many factories still rely on outdated electrical systems and a "fix it when it breaks" approach to maintenance. This leads to unplanned downtime, higher energy bills and wasted man-hours.

This white paper explores how BL!XT's solid state energy switches (called "Zero") solve these everyday issues using real-time monitoring, predictive alerts and automated control. Through the real-world example of Sanmina's 10,000 sqm facility in Örnsköldsvik – with over 200 machines producing for the MedTech and Defense sectors – we demonstrate how small, targeted upgrades can deliver major results in productivity, energy efficiency, and operational control.

The Daily Problems Factory Teams Deal With

Unexpected Machine Failures
Breakdowns in critical equipment like pumps, ventilation, or pressure systems can stop production completely. Often, signs of wear are not discovered until it's too late.

Power Surges or Drops
Voltage fluctuations from the grid can damage machines and electronics, yet factories often have no protection or data to identify and report the issue.

Time-Wasting Restarts
Power outages mean walking the factory floor to manually reset breakers, wasting time and risking overloads during simultaneous restarts.

Inefficient Forklift Charging
Forklifts are charged using fixed timers, often during peak energy hours. Overcharging wears out batteries faster, increasing replacement costs.

High Energy Bills
Machines and lights remain on outside of working hours and when not in use. Older equipment can’t be integrated into modern energy-saving systems.

Wasted Opportunities with Energy Tariffs
Machines start regardless of electricity prices. Factories miss the chance to time operations towards cheaper spot prices.

Missed Revenue from Grid Participation
Many grid providers pay companies to reduce consumption during high-load periods — but most plants can't respond fast enough to qualify. Overcharging wears out batteries faster, increasing replacement costs.

What BL!XT Solid State Energy Switches Do Differently

BL!XT Zero® devices are connected retrofitable smart energy switches that offer electrical protection but also so much more:

Live Monitoring: Tracks electricity consumption and equipment behavior extremely granular in real time at the machine level.

Anomaly Alerts: Catches issues early—such as irregular power use from a failing pump — before downtime occurs.

Predictive Maintenance: Fingerprints normal usage patterns and notifies when something seems off.

Smart Automation: Automatically shuts off machines when they're not in use, or after work hours.

Retrofit for Old Machines: Make older, non-digital machines smart by just adding BL!XT Zero® to the power supply — no replacement needed.

Energy Optimization: Coordinate energy use with spot prices and avoid charging or operating during peak tariffs.

API & Software Integration: Connect to EMS, SCADA or cloud platforms for seamless automation and reporting.

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CASE IN FOCUS:

Sanmina's Transformation in Örnsköldsvik

Sanmina, a global manufacturing leader, installed BL!XT Zero® in their 10,000 sqm plant with over 200 machines. Here's what issues are being addressed:

Power outage occur 2-3 times per year and when power is back several breakers trip and some machines break. Costly machine repair and valuable time is spent to walk around in factory to find and reset breakers. BL!XT Zero® blocks inrush currents when power is back and brings the machines back in the desired order starting with coffee machine, lights and communication to allow work stations to start operation. Then heavier loads are brought back stepwise to avoid any tripping or machine break down.

Liquid cooling systems has broken without pre-warning cause production to stop. In addition spare parts have a long lead time worsening the issue. Same challenge applies to several supporting systems in the factory such as ventilation. Here BL!XT Zero® monitor, fingerprint and detect any anomaly allowing time to repair before breakdown occurs.

Soldering pot heating machine is on all day, also when not in use. By allowing BL!XT Zero® to monitor voltage, ampere and frequency the usage and consumption levels are mapped enabling energy optimization. By comparing consumption to heat up vs keeping heater on and mapping against usage an optimal energy balance is reached. Energy savings are also sometimes as simple as turning machines or lights off when on break or during night.

Charging of electrical trucks in the facility without visibility of the time needed to charge creates a situation of over charging. Even when a timer is used it never becomes optimal and truck batteries needs replacement at a high cost. By using BL!XT Zero® to monitor charging pattern the charging can be paused when batteries are full and even battery degrading can be discovered.

Over voltage supply from grid provider occurs quite frequently causing some machines to break. Situations with up to 460 VAC power supply instead of normal 400 VAC creates a massive stress on equipment and without any detection, protection or proof about the issue it becomes a costly effort to repair. With BL!XT Zero on the power supply automatic detection and protection is enabled as well as logfiles to prove the issue towards the grid provider.

In the end a reduction of production stops and lower energy usage are main benefits by just adding BL!XT Zero® to the power supply of machines and sections of the facility.

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CONT'D -> "Case in focus: Sanmina's Transformation in Örnsköldsvik"

Use Cases

- Detect cooling pump failure before it shut down production.
- Controlled machine restart order after power outages.
- Tracked voltage spikes and prevented equipment damage.
- Time forklift charging to avoid battery wear.
- Shut down idle machines and lights during off-hours
- Sync energy use with spot price electricity price data.
- Qualify for grid flexibility payments by offering non-critical load reductions.

How This Helps Your Team

If you're in charge of keeping machines running, cutting waste, or reducing downtime, BL!XT can help you:

- See machine behavior in real-time with easy-to-understand data.
- Act before machines break, not after.
- Cut energy costs by running smarter and avoiding waste.
- Improve factory performance without big investments.

Start Simple. Scale as You Go.

You don't need to overhaul your whole operation to get results:

1. Start with one or two key machines where downtime or energy use is a problem.
2. Install BL!XT Zero®, track usage, and set alerts.
3. Use the data to fix small issues before they become big ones.
4. Expand gradually across your factory.

Factories are already using this step-by-step method to improve uptime and energy efficiency.

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Make Your Factory Smarter —One Switch at a Time.

You don't need a digital overhaul.
You just need better tools.

BL!XT's smart energy switches turn your everyday electrical system into a powerful tool for reducing downtime, cutting energy bills, and building a smarter factory.

Let's talk. Book a free consultation today and take the first step.

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About us

As the creators of **Programmable Power™**, we enable new ways to control electricity—setting a new standard for how power is used and managed.

Our hardware replaces thousands of single-function devices with intelligent, software-defined electronics that give you full control over every circuit, every sine wave, at every moment. Our solid-state technology includes **BL!XT Zero®** for current control and **X-Verter®** for voltage control and energy storage.

Our components act like the smartphone of energy management—programmable, customizable, and capable of enabling entirely new services and efficiencies.

From remote control and automation to real-time optimization, BL!XT technology transforms how energy is managed—making it dynamic, responsive, and intelligent.

In a static world of electricity, we bring the dynamics. Together, we're shaping the future—for good. Ready to take charge? *THIS WAY FORWARD.*

BL!XT

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