WHITE
PAPER

LifeSafety Power®

February 2018

Why Specify Managed Power Solutions

Delivers intelligence and networking functionality for more reliable, consistent operations with greater system uptime for customers, better efficiency and cost savings for integrators

Contents

Preface

Power The heartbeat of any integrated security and life safety system. LifeSafety Power® Inc., Mundelein, Ill., is a perpetual innovator in the power and networking category. We understand how the market is changing and the role that proactive alerts, health statuses and other managed power solutions lend in providing critical uptime to access control, video and other physical security devices riding on the network. Now, managed power creates greater system uptime. This white paper: "Why Specify Managed Power Solutions?" has been written to provide an in-depth look at the critical need, and benefits, of including managed power in every integrated security specification. Our second white paper: "The Compelling ROI of Managed Power Solutions," provides real-world job costs and calculations for a managed versus non-managed system approach and the actual cost savings from managed power. For more information on LifeSafety Power, visit www.lifesafetypower.com.

Introduction

The movement of security devices to networks, along with the growing Internet of Things, has given rise to a host of issues and opportunities that not only enable these devices to work together to provide more effective security but also allow them to be monitored and supervised to ensure their continuing operation, and the increase of average uptime for the system.

Increasingly, we humans are presented with an array of devices which help us monitor our own bodily performance - pulse, heart, skin temperature, light exposure and noise levels, for example. Of these and others, cardiovascular functions are arguably the most important.

While the network may be compared to the body's nervous system, it is the power system that bears closest resemblance to the heart. The power supply is the heart of any system, for without power, there is no system. Monitoring and managing the current flows through the system can lead to increased longevity and performance, as well as avoidance of unexpected surprises in the form of device failures.

The concept of power monitoring and management is not new. For decades, electrical utilities have employed intelligent systems to maintain a continual flow of energy to their customers, constantly balancing the energy supply against user demand and rerouting flows when problems arise.

3

Over the past several years, this thought process has become germane to the electronic security market where random device failures or loss of power are simply not acceptable.

If the power supply can be compared to the heart, and current to blood flow, monitoring and managing the health of both will contribute to the continued safe operation of the security system.

What is Managed Power?

The ability to **Monitor—Manage—Report** system conditions automatically or on-demand. With Managed Power, the system is able to **directly monitor** incoming AC power, DC output voltage and current, unit temperature, surrounding air temperature, enclosure tamper switch, blown fuses and short circuit or system fault conditions, earth ground faults, and each individual lock voltage and current for deviation from a preset value range.

Of particular value is the ability to remotely test the system battery set on a scheduled or on-demand basis and report when the battery standby time no longer meets a preset minimum requirement.

Management capability provides the means to actively affect devices. For example, managed outputs may be individually activated or deactivated to shut down or recycle equipment through an embedded browser interface and then monitored for voltage and current values via network or internet.

Trigger points for outputs may be adjusted to generate an alert when that output is outside of selected parameters. An output might be configured to activate a connected HVAC function based on surrounding room temperature Systems may be configured to provide notifications for service due and battery replacement. The possibilities are endless.

Reporting can provide valuable insight into device or system history and is available on demand or as specifically defined periodically. Maintaining a site's operational history with data logging capability of 1,000 events is possible with today's managed power systems—providing more than a year of system history.
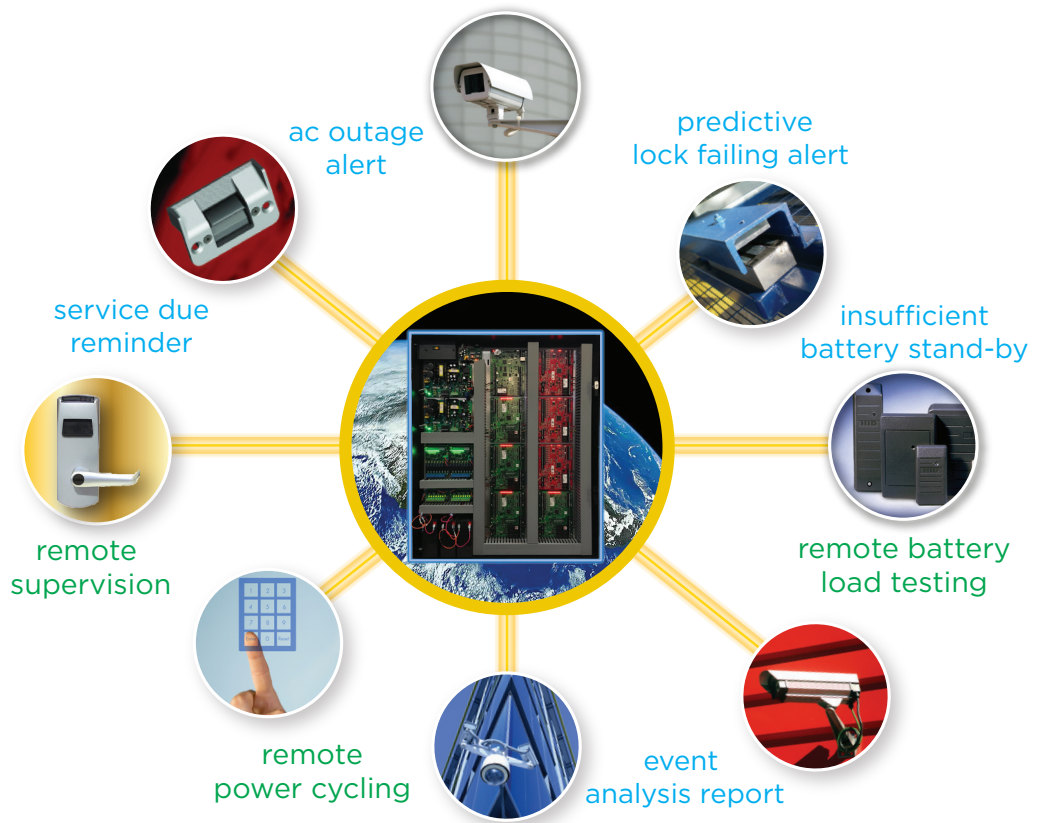
Why Specify Managed Power?

Consultants are charged with providing strong, effective, reliable security solutions for their clients and managed power from LifeSafety Power is the tool to do just that by implementing constant monitoring of critical system variables and providing an immediate alert mechanism when any of those variables move outside their preset range. Managed power provides maximum uptime and minimizes short-term problems with proactive techniques rather than reactive, after-the-fact processes.

ac outage
alert

predictive
lock failing alert

service due
reminder

insufficient
battery stand-by

remote
supervision

remote battery
load testing

remote
power cycling

event
analysis report

■ Local or enterprise power management
■ Remote servicing / Remote reporting

a) Strong Return on investment (ROI) from a Limited Investment

Managed power provides the opportunity to generate innovative ROI sources by creating new categories within the billable services portfolio. Remote battery test, continual system monitoring, history recording, are all billable services. Typically, the payback period for a managed power system investment is recouped in short order from increased operational efficiencies for both the integrator and the end user.

While managed power may not be right for every project, the added cost is low when compared to the overall cost of the job. The chart below shows the comparative costs of typical 4-, 8- and 16-door power systems in a non-managed base system, basic monitored system and fully monitored system. Typically, the added cost for managed power deployment ranges from $180 to $600 (MSRP prices) depending on the level of monitoring required, the number of doors being managed and other specifics of the protected premises.
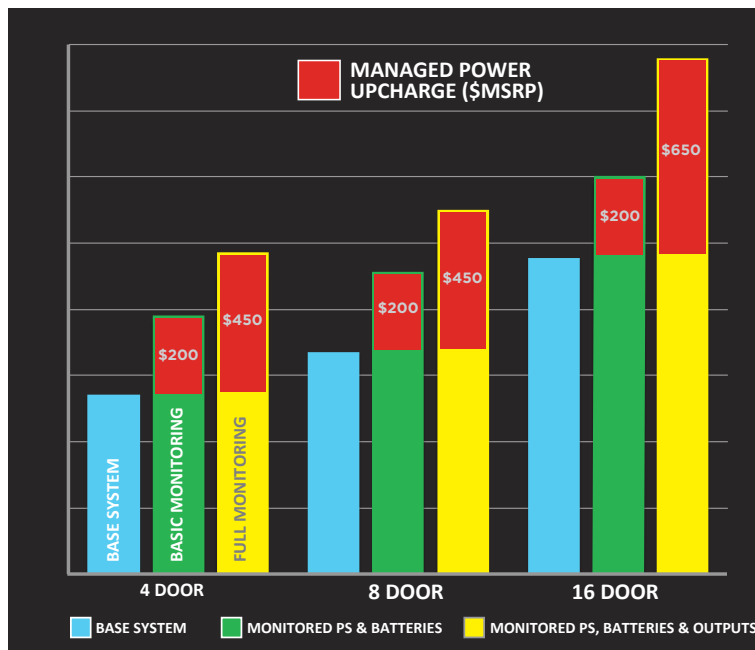
Looking at the 8-door example, the base system uses an isolation relay board (C8) for 8 lock outputs but has no network connectivity. To implement basic monitoring, the NL2 network communications module which

manages the power supply and battery set is added. The fully managed system replaces the C8 isolation relay board with the M8 managed version and the NL2 with the more advanced NL4 network module. The basic power supply and enclosure are consistent across all three systems, so the only added cost for monitoring is $120 for basic power management and a slightly higher $225 for full 8-door management.

With the cost of sending a technician to the site, including trip time, gas and other loaded labor charges, fully managed systems are often times recouped completely with only one or two saved service trips. In the instance of being able to provide remote battery load testing, this functionality alone offsets the cost of adding intelligent power management. Rather than having to do on-site visits, technicians can now remotely monitor and test the standby time of battery sets without having to leave the office or expending field labor. Actual battery standby time is measured against the user-prescribed system standby and alerts are automatically sent out for under-performing systems. This feature alone can be responsible for maximizing the system uptime by assuring that the battery set is always up to the system requirement.

b) Enables Local or Remote Monitoring

Whether monitoring is performed from the Local Area Network (LAN) or outside the LAN, managed power systems with appropriately provisioned web browser interfaces provide the capability to not only predict but to implement actions in critical situations. For example, an impending environmental event may call for constant monitoring or perhaps shutdown of selected devices.

c) Improves Security of Equipment, Protected Assets and People

It's simple. Non-functioning or failing equipment cannot provide its intended function. By monitoring voltage and current to a device and being alert to system values moving to an unacceptable range, the chances of sudden catastrophic failure of security equipment are minimized and intermittent problems can be localized to a specific device, on a specific date, at a specific time.

d) Enhanced System Reliability

Monitoring voltage, current and power draw of attached devices can help spot performance degradation and predict impending failure. Problems may relate to device temperature, fan performance, mechanical or component issues.

e) Enables Battery Management to Maximize System Uptime

Batteries attached to power supplies will degrade over time and become incapable of providing backup power for the required period of time. A system that can remotely test and verify battery performance, optimize its charge profile and maintain its history helps ensure that proper system stand-by is maintained when needed.

f) Supports Compliance

UL standards for security devices specify voltage ranges, standby time and other parameters directly related to power. Power management supports ongoing compliance and provides a hard copy record and historical data of that compliance.

g) "Empowers" the Security and Facilities Staff

When armed with important information about their low-voltage power system, the security director and facilities staff can be proactive about maintenance, repair and device replacement. For example, if there are periodic or sporadic problems with incoming AC power, facilities should be brought in to communicate with the local power utility or provide appropriate power conditioning or surge protection.

h) Supports Situational Awareness

Network monitoring and management systems typically rely on the Simple Network Management Protocol (SNMP). When a managed power system supports SNMP, it becomes eligible to be monitored, and possibly controlled, by a higher level system. This creates the opportunity for IT to have greater ownership in addressing selected problems affecting security. Through the development of security industry standards, such as the Physical Security Interoperability Alliance (PSIA), which encourage "plug and play" interoperability, managed power systems can share the information and intelligence they generate with a wide range of other devices, services and systems.

i) Supports Cyber Security

An appropriately provisioned managed power system supports strong cybersecurity. Since not all power systems are created equal, look for:

• Salted password hashing to provide secured user login and lock out a user account when a password has been entered incorrectly several consecutive times.

• HTTPS (secure, encrypted HTTP web access) requirement

• Protection algorithm against Cross Site Request Forgery (CSRF)

• SNMP v3 support for enhanced security

• Definitive customer guidance from the manufacturer

j) Supports LEED

By understanding the power consumption of its low voltage power network, security can be an active contributor to Leadership in Energy and Environmental Design (LEED) objectives. For example, Houle Electric, Vancouver, B.C., offers intelligent power to its customers. With its deployed power solutions, Houle Electric measures load distribution and peak usage, among other things, which helps meet requirements of LEED projects and green objectives. It also helps the company better plan for and anticipate any challenges or issues with remote monitoring of product.

k) CSI MasterFormat Provision

MasterFormat 2016 Division 28 now provides a category for Power Source Monitoring and Power Source Monitoring Appliances under the category Power Sources for Electronic Safety and Security (see 28 05 00). Managed power now has a natural place to be specified and should be included where possible.

Conclusion

In summary, given the criticality of maintaining security equipment and system uptimes, it makes good operational and financial sense to ensure that everything possible is being done to maintain and monitor the health of the electronic security power system and back-up power sources. Consultants, designers, engineers and integrators owe it to their clients to provision the best possible power system.
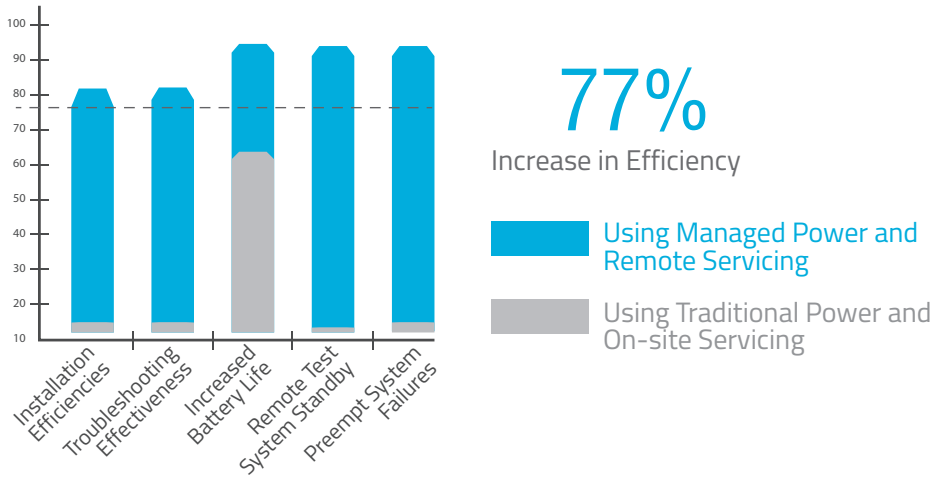
End User benefits:

- Gain 100% visibility to power and battery health
- Monitor in real-time; globally or locally
- Optimize and extend battery life
- Powerful historical data and analytics
- Enhanced cybersecurity protection

Integrator benefits:

- Reduced labor cost and technician guesswork
- Increased access integrity and minimized onsite service times
- Preempt system failure
- Customizable to A/E specifications
- Standardized operation at every location

WHAT CUSTOMERS ARE SAYING

POWERFUL ANALYTICS

"One of the biggest overlooked but most critical features is the ability to monitor power solutions over the network. We can receive a proactive health report or diagnosis that a magnetic lock has failed or is beginning to fail, prior to a security issue or loss."

Shaun Castillo, President
Preferred Technologies
Houston, TX

INTELLIGENT POWER

"Intelligent power helps meet LEED requirements by measuring load distribution and peak usage."

Houle Electric,
Vancouver, BC

PROACTIVE SOLUTIONS

"LifeSafety Power allows us to remotely view, control and reboot our non-responsive electronic security system assets"

Chris Bauer
Systems Mgr, Dropbox
San Francisco, CA

INCREASE EFFICIENCY

"Integrators can elevate their business to new levels, garner more RMR and help keep the customer's system healthy and ready at a moment's notice during a security or life safety event."

Siemens Building
Technologies
Buffalo Grove, IL

Managed Power Efficiencies

77%

Increase in Efficiency

Using Managed Power and Remote Servicing

Using Traditional Power and On-site Servicing

Chart x-axis labels: Installation Efficiencies, Troubleshooting Effectiveness, Increased Battery Life, Remote Test System Standby, Preempt System Failures

About LifeSafety Power — Power is Knowledge™

LifeSafety Power is the leader in Smart Power Solutions and patented remote monitoring capabilities, providing modular AC, DC, and PoE power systems that meet the growing needs of the life safety and security industries. Realizing that network technology presents new opportunities for active monitoring and management of power supplies connected to access control systems, fire systems, video surveillance and more, the company has built its products from day one with intelligence and functionality in mind. LifeSafety Power's current product offering and planned future innovations in battery test, display and diagnostics represent an important step in providing overall system reliability and uptime.

All of the product features discussed in this white paper are available within LifeSafety Power's product line.

Visit www.lifesafetypower.com for more information.

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