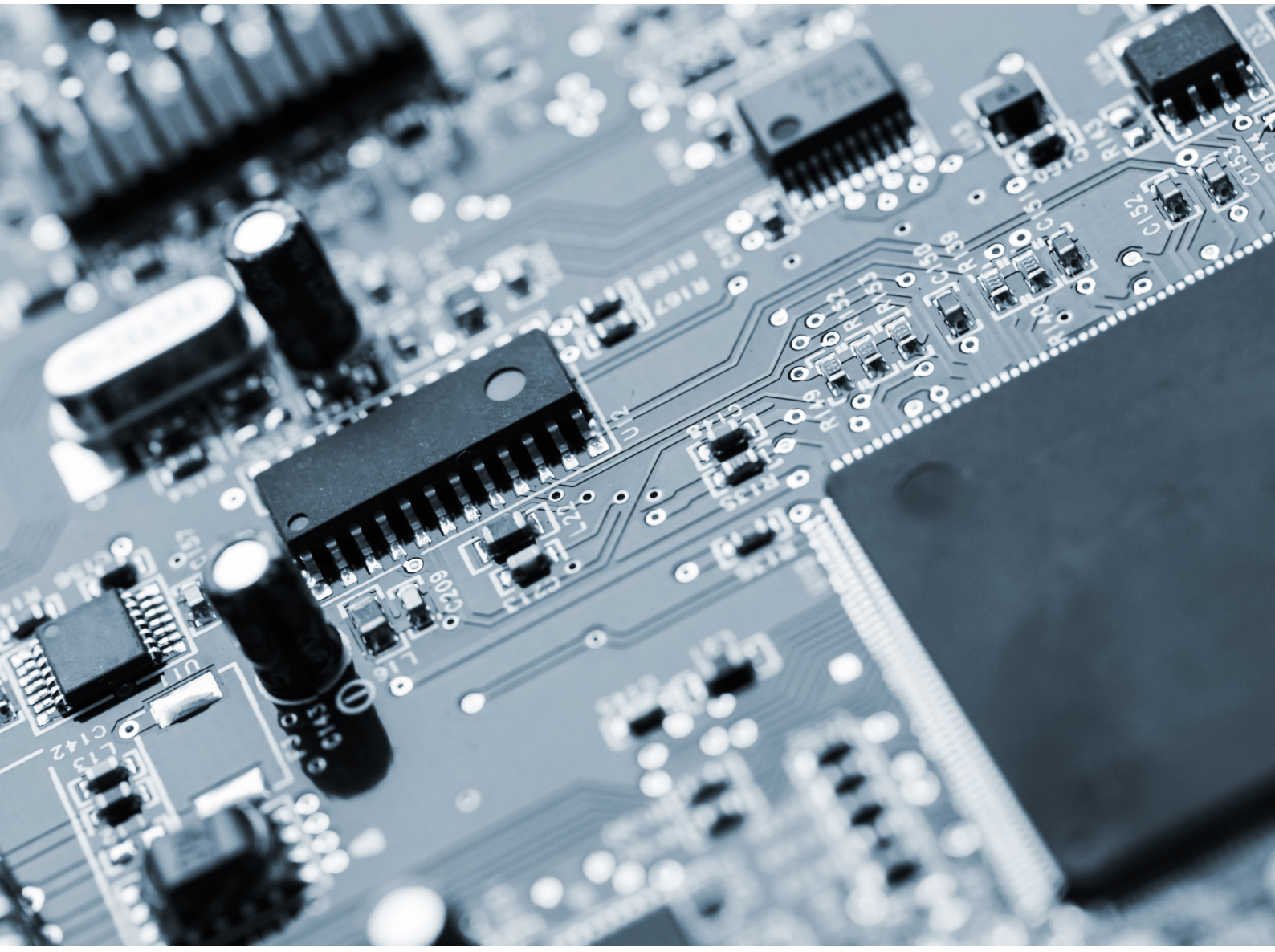
ELMDENE
Protecting People & Property

a POTTER company

SECURITY & FIRE INSTALLATIONS, YOUR POWER SUPPLY GUIDE

The importance of making the right selection and why



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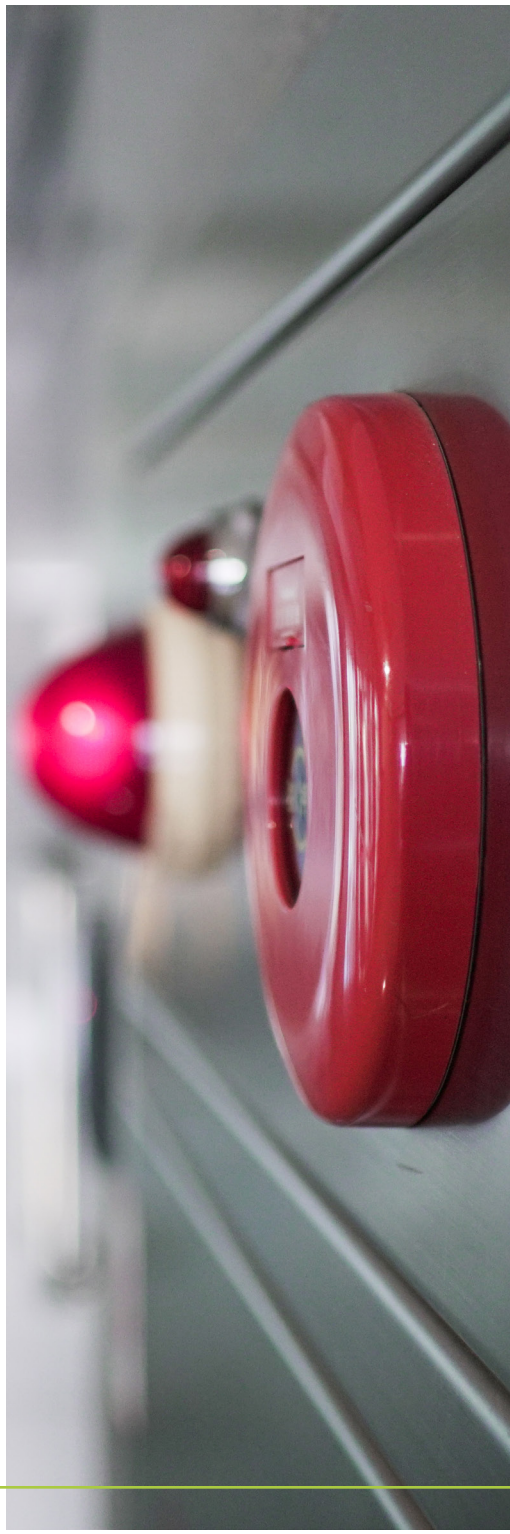


SECTION 01

INTRODUCTION

Entire security and fire systems with all the advanced features that come with them rely on the power supply! So it goes without saying that insisting on a high-quality PSU built for reliability and longevity is the obvious choice.

From design through to integration - make sure you work with manufacturers that keep the risks of losing everything connected to a power-supply as a priority. Let's expand...

SECTION 02

WHAT MAKES A GOOD **QUALITY POWER SUPPLY?**

DESIGN AND QUALITY CONTROL

Put simply - the overall design of the PSU needs to be made up of high-quality components assembled reliably and then tested extensively to ensure it can withstand your installation's environmental conditions.

When it comes to the enclosure used for the system, compatibility should be another priority factor. Always ensure that the enclosure is big enough to be fit-for-purpose and is designed to cater for a wide variety of integration possibilities.

Airflow is also an important consideration when it comes to design. Reputable manufacturers like Elmdene ensure that the PSU enclosure facilitates life-extending airflow!

SPECIFICATION OF LIFE-EXTENDING COMPONENTS

Within any product, there are key components that need to be extra-carefully considered from the perspective of quality and longevity, design and integration.

In PSU's, majorly key components are the capacitors:

The cost of a PSU's capacitors are a significant proportion of the total product cost. When looking for cost savings, manufacturers have the option to select low-cost, low-quality capacitors to make big savings, but this can greatly affect the lifespan and reliability of the PSU. Reputable manufacturers, such as Elmdene, know this and do not opt for the cheapest components.

Consider that the design lifetime of capacitors can vary from as little as 1,000 hours to well over 10,000 hours, which makes it critical to know what you're dealing with when opting for one PSU over another.

To avoid getting into the detail about how capacitors work - the important thing is to ensure your chosen manufacturer specifies capacitors that are stress tested to cope with higher temperatures than they would ever need to realistically deal with. This extends lifespan remarkably.

Another critical component is the Field Effect Transistor (FET), a three-terminal electronic device used to control the flow of current in a semiconductor by the voltage applied to its gate terminal. It is of course, a little more complicated than that, which brings us to our point: Often with increased complexity and electric fields more specifically, there is an increased importance of ensuring there are no weak links in the micro-system.
If longevity of a PSU isn't clearly defined within ambitious temperature ranges - don't be shy to ask your manufacturing partner questions surrounding capacitors and FETs!

> **Elmdene's average MTBF (mean time between failures) figure is 55 000 hours across the range!**

SECTION 03

HEAT AND POWER SUPPLIES **ARE NOT FRIENDS**

WHAT TO LOOK OUT FOR IN HOT CLIMATES

Firstly, the surrounding environment, whether an indoor room or an outdoor shed, needs to be considered when choosing a power supply. The general rule of thumb is that the power supply should be rated in temperatures higher than the environment it will actually be used in.

PRO TIP:

Watch out for manufacturers who test at 25°C and rate products based on operating at 25°C. The lifespan related stats are not nearly as meaningful compared to products stress-tested at full load, at 55°C, and rated at 40°C!

ELMDENE'S HEAT MANAGEMENT IMPLEMENTATIONS

- Elmdene only manufactures products using high-quality, proven and continuously verified components.
- We stress-test our products at 55°C.
- We rate our products at 40°C.
- We always design enclosures with airflow and heat management.
- Elmdene uses V0 rated plastic for all our plastic components. This is one of the safest plastics to use as it is fire resistant.

INSIDE INSIGHT:

"As part of our rigorous testing process, we install a sample of our products in our hot-soak facility. This is a hot 40°C room, where PSUs are powered to their full capacity and left to run – forever.

We monitor these products very closely to ensure we're always offering the very best PSUs and to ensure continuous improvement."

> **We have PSUs that have been running for over 10 years at full capacity**

SECTION 04

WHAT IS SWITCH MODE TECHNOLOGY, **AND WHY IS IT IMPORTANT?**

A switch mode power supply (SMPS) is an electronic circuit that converts power using switching devices that are turned on and off at high frequencies. Storage components such as inductors or capacitors supply power when the switching device is in its non-conduction state.

Replacing inefficient linear technology using copper transformers, switch mode power supplies have rightfully become the industry standard because of their superior efficiency and longevity. Elmdene prides itself as being a leader in switch mode power supplies.

Using switch mode technology, you'll consume about 40% less electricity

SECTION 05

CLARIFYING IMPORTANT **PRODUCT STANDARDS (EN Vs UL)**

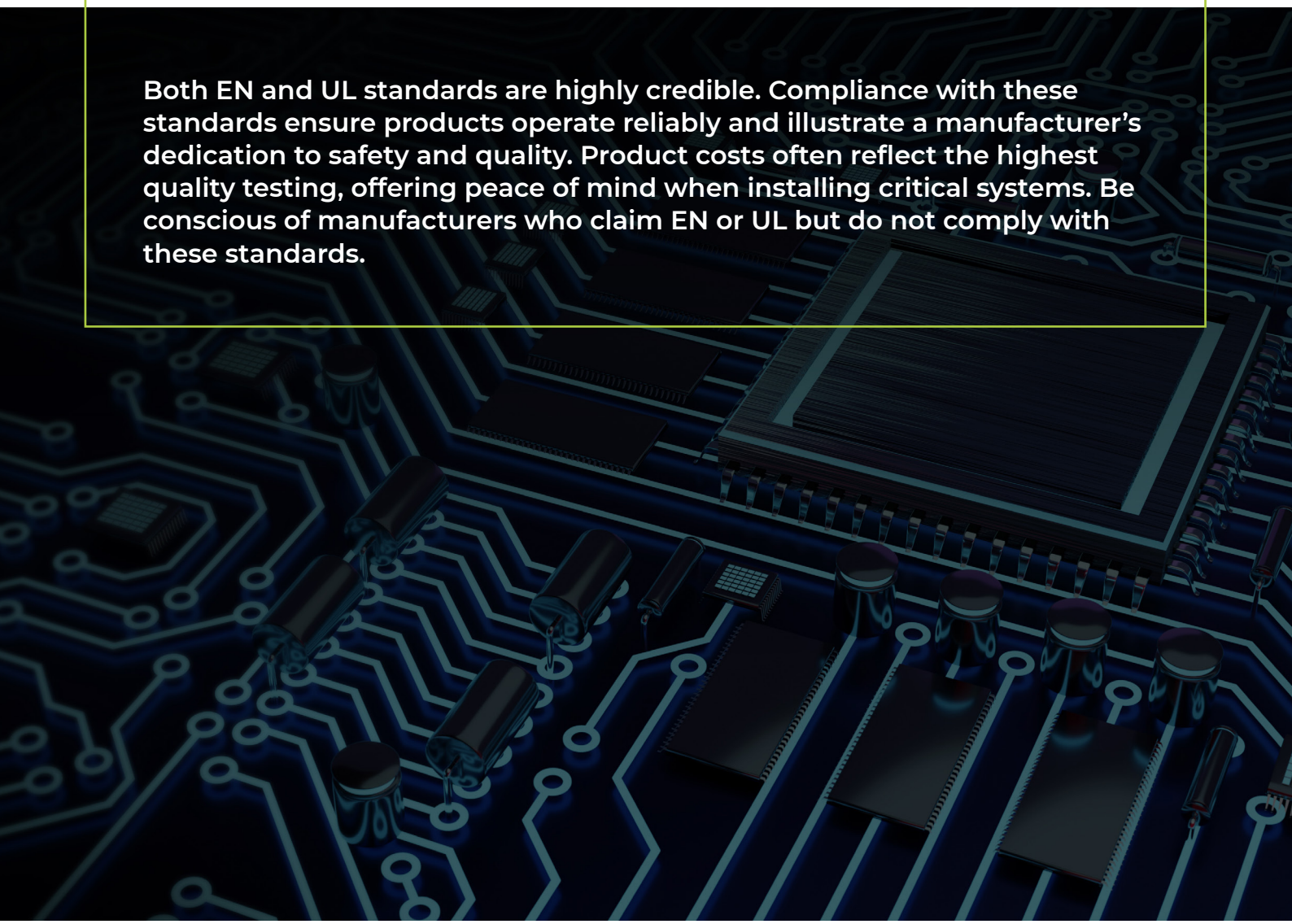
WHAT ARE THEY?

EN refers to technical European standards, ratified by one of the three European standards organisations, and UL refers to US standards, which the Middle East often accept as well. Underwriters' Laboratories (UL) tests and evaluates components and products that allow a certification mark to be placed by the manufacturer.

HOW IMPORTANT ARE THEY?

These certifications are very important, because they assure you that an objective, regulated third party has vetted and rigorously tested products according to the same standards (the same level playing field). So overall, it's important for the product to be certified by third party testers.

Both EN and UL standards are highly credible. Compliance with these standards ensure products operate reliably and illustrate a manufacturer's dedication to safety and quality. Product costs often reflect the highest quality testing, offering peace of mind when installing critical systems. Be conscious of manufacturers who claim EN or UL but do not comply with these standards.



NOTABLE SIMILARITIES ON POWER SUPPLY **SPECIFIC CERTIFICATIONS INCLUDE:**

INTRUDER PRODUCTS:

EN 50131 is a common standard for intrusion and hold-up alarm systems. **EN 50131-6**, is the specific standard applicable for the power supply component of such systems.

To be compliant with **EN 50131-6**, Elmdene products undergo rigorous testing by a third-party test house to ensure the reliability and performance of our power supplies within an intruder application. Our power supplies are also subject to harsh environmental tests such as their performance under extreme temperatures and humidity conditions. As well as product testing, the notified test body also carries out a Factory Production Control (FPC) audit to ensure our products continue to adhere to these standards.

Elmdene range of **EN 50131-6** power supplies.

Find out more

FIRE PRODUCTS:

EN54 is a mandatory standard for fire detection and fire alarm systems and refers to compliant power supply equipment for fire detection and fire alarm systems.

To be compliant with **EN54-4** (the power supply component) Elmdene products are evaluated and tested by an independent, 3rd party notified body. This testing includes battery charge/discharge profile assessments, a wide range of functional tests, extensive environmental testing, and extremely thorough EMC testing. To be fully compliant the notified bodies also audit our manufacturing sites.

There is another standard known as **UL864** which undergoes similar testing to **EN54**. Unless specified, it is a personal choice if you select an **EN54** or **UL864** power supply, both will offer a high-quality standard and provide assurances against a product that has no product approval.

Elmdene offers a wide range of **EN54-4** power supplies certified by notified bodies including VdS, UL, and CNPP.

Find out more

ACCESS CONTROL PRODUCTS:

UL 294 is a common standard for Access Control System Units, particularly the construction, performance, and operation of physical access control equipment and systems, including power supplies.

Elmdene has a range of **UL 294** certified products.

Find out more

SECTION 06

WHAT ARE THE RISKS OF **INSTALLING A POOR-QUALITY PSU?**

SAFETY OF PEOPLE

The failure of a security system could put people at risk to intruders. However, the consequence of a fire system failure could potentially be life-critical.

RISK TO PROPERTY IN TERMS OF POTENTIAL THEFT BECAUSE OF PSU FAILURE

Consider that the property may also be unprotected for a period before the system is fixed. For example: While waiting for suppliers parts.

REPUTATION AND CREDIBILITY

End-users will quickly lose faith in their system integrators if complete systems or sections fail.

COSTLY TO END-USERS AND UNNECESSARY OUT OF HOURS ENGINEER CALL-OUTS DUE TO SYSTEM POWER FAILURE

LEGAL RISKS ASSOCIATED WITH SERVICE INADEQUACY

WHY INVEST IN A HIGH QUALITY SECURITY OR FIRE SOLUTION IF THE POWER SUPPLY LETS YOU DOWN?

YOU DON'T WANT TO CUT CORNERS WITH SYSTEMS THAT PROTECT YOUR MOST VALUABLE ASSETS.

WE HOPE YOU GAINED SOME VALUABLE INSIGHT

WE LOOK FORWARD TO STAYING IN TOUCH!

To discover more about Elmdene, or any of our product ranges, get in touch with our team of experts who will be happy to talk about finding an ideal solution for your unique needs.

Get in touch

If you haven't downloaded our full product brochure just yet - we highly recommend it:

Download

To stay up-to-date with our latest news and updates, follow us on social media, or visit our website

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