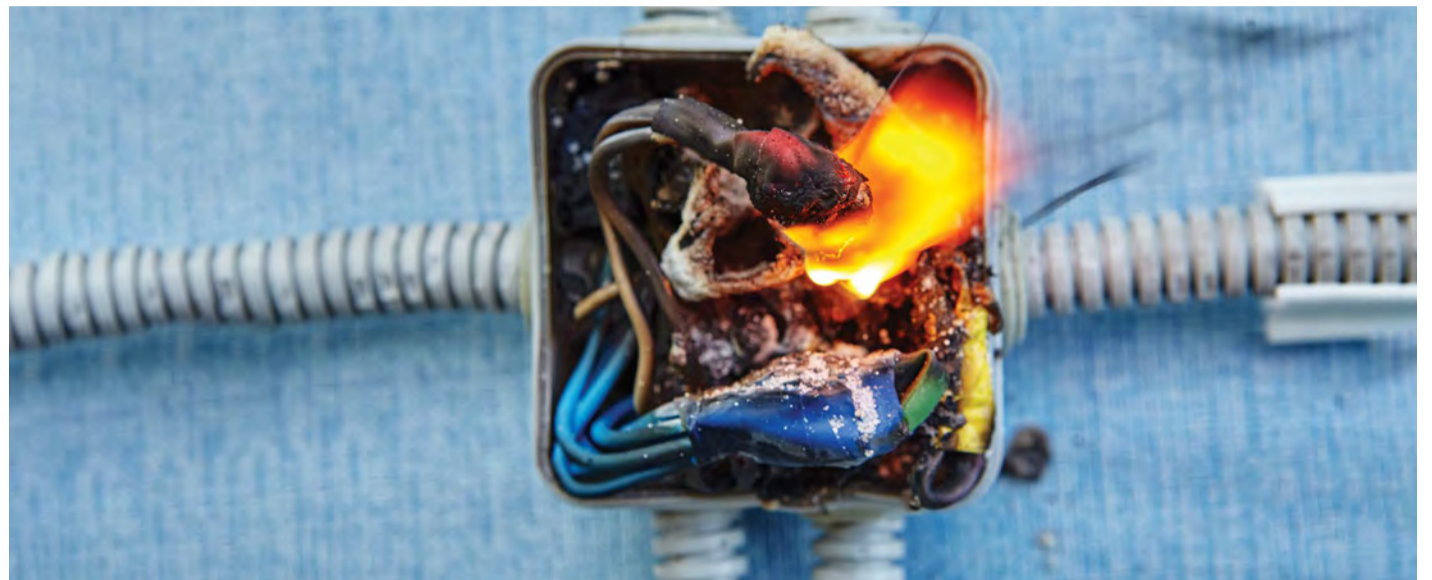


## ADAPTORS CAN BE A DANGER TO THE SOUTH AFRICAN CONSUMER



The increased use of devices and appliances has resulted in the increased use of adaptors as well as adaptors-on-adaptors in South Africa. This creates a risk of fires, short circuiting and damage or malfunction of appliances. South African National Standard (SANS) 164-0 covers the specific requirements for plugs, sockets and adaptors and will lead to a new range of plugs and sockets in this country. The South African Bureau of Standards (SABS) demonstrated the new range of plugs and sockets in a virtual media briefing held today.

"With the array of appliances and devices that have become commonplace in today's world, it is critical to ensure that the plugs and sockets are also changing to accommodate the more compact designs of plugs. New homes and offices should be fitted with the sockets according to the latest revision of SANS 164-0 and the different parts. We need to be aware of the improved switching arrangements of switched socket-outlets, the inclusion of the SANS 164-2 compact design for 16 A plugs and, most importantly, the warnings that advise consumers not to use multiple adaptors, plugged into one another," says Jodi Scholtz, Lead Administrator of SABS.

"SANS 164-0 covers the general requirements for plugs and socket-outlets and is considered the base document for all the plugs and socket-outlets systems in South Africa. Every new building should have these new SANS 164-2 type of sockets and all appliances should be fitted with the new plugs. South Africa has been lagging behind with the implementation of these global changes and the continued use of adaptors onto adaptors will just lead to more dangerous electricity usage and malfunctioning of appliances," warns Gianfranco Campetti, Chairperson of the Technical Committee responsible for the development of SANS 164 series of standards.

Campetti explains that since the 1900s British standards have guided South African installations and appliances. In the 1960s British standards for plugs and socket-outlets introduced a 'flat pin' design, not adopted by South Africa, which continued to use the large round pin (SANS 164-1) design, still in use today. Since then there have been 21 different types of plugs introduced, of various configurations and ratings. Most buildings still contain the traditional large 3-pin sockets and this has led to an increased use of adaptors. The revisions to the standard, published in July 2020 incorporate changes in technology covered in SANS 60884-1: Plugs and socket-outlets for household and similar purposes. SANS 60884-1 is an adoption of the International Electrotechnical Commission (IEC) 60884-1 standard which also covers the general requirements for plugs and socket-outlets.

### New socket installations:

In the last few years, various iterations of the new design have been available on the market, which accommodate the following type of plugs:

- 3-pin plugs (old type)

- Compact 3-pin plugs
- USB outlets
- Switches



CONTINUED ON PAGE 3

## Diesel expertise that won't leave you in the dark.

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## How to cut down on plant disasters

We have all worked in process plants or large manufacturing industries at some time or another. Furthermore, at some stage, all of us have applied for or been given a 'permit to work'. This is not anything more than a signed document in which is written (a) what work will be done (b) what equipment will be isolated or disconnected while the work is being done (c) time and date of commencement, etc.

In practice, the permit system often leads to more accidents than it prevents. Well, I can't prove that – how do you tell when an accident has been prevented? But the system is flawed. Firstly, the per-

mits are issued by the plant operators, normally, or the safety officer. This puts them in the position of a head prefect issuing weekend passes. The operators, if pushed for production targets, just refuse to issue any permits at all. The safety officer, often not understanding the nature of the work to be done, will not issue the permit until understanding dawns.

So, let's say you, the applicant, write that you will "Trip and rack out Mill Feed 1 OCB, lock shutters, lock panel, two locks one by operator, one by artisan, at work site apply working earths, repair incoming OCB, test, remove working earths, pressure test, remove panel locks, remove shutter locks rack OCB

Mill feed 1 up, hand over for service, cancel permit". Then the permit issuing person hasn't a clue. So artisans take chances – they work without a permit or use a permit to do a whole bunch of work that is in fact not described in the permit. The inevitable result is, sooner or later, an accident. Artisans use non-rated instruments in areas of explosive gases; incorrect flanges are removed, resulting in product leaks and so on. A very smart man, Trevor Kletz, was appointed by ICI to investigate why the company had so many accidents. He noted the failure of the permit system and the often non-adherence to it. In his autobiography, he wrote: "If one asked

permission there was a 50% chance it would be refused. If one just got on with it, 19 times out of 20 nothing was said." Even if there was the odd manager that had reservations, Kletz maintains it was far better to explain what he had done, than what he was going to do.

There have been attempts to reform the permit system but these are often generated by people with a safety background rather than an engineering background. Safety people are not engineers. I am much in favour of the so called 'book, notify and obtain' system used by Eskom. An artisan books a work plan, notifies ops of the date and on the date ops gives go-ahead in real time. Typical example: Book outage at structure 202 on the Louerwater/Patensie 11 kV single line. Notify: Work to commence on the 14th October 2020. On the day, contact ops who gives isolation and earthing instructions and hands the line over for work. This gives a lot of control.

Unfortunately, the 'king of the castle' syndrome means few industries want change from an existing system. Worse, some believe that smart software will do the job – it won't, it just gives artisans another thing to dodge. Even worst of all, accidents are not investigated fully. For a living, I do forensic engineering investigations (I can't make a living writing for Sparks...). I recall one fatal accident where the report from the consulting engineer ran to two pages and the accident was considered the fault of the dead man. The USA client appointed me and my report took three months, 242 pages and there were 14 causes of the accident, none of which was the fault of the deceased.

So, what to do? Some sound advice: before work, take '5 to Stay Alive' – in five minutes think what could go wrong. Don't work without a permit. If it's not safe... don't work.

## Upcoming Zoom training courses for all South African electricians

Most of the ECA's courses are now online, which means that it no longer matters if electrical contractors live in Paarl or Poffadder, Pietermaritzburg or Polokwane ... if they have Wi-Fi, they can attend courses without leaving home. The Highveld Region will present the following courses via Zoom in October and November:

### Certificate of Compliance (Unit Standards) Course

- Anthony Schewitz, ECA Technical Adviser
- 26 November

### Installation Rules

- Anthony Schewitz, ECA Technical Adviser
- 2-6 November

### MIE Unit Standards Course

- Mel Wilmans
- 9-13 November 2020

### MIE Refresher Course

- Mel Wilmans
- 9-12 November 2020 (concurrent with Unit standards)

### MV Course

- Frank Hampton
- 23-27 November

### SANS 10142-1 ED3 Course

- Anthony Schewitz, ECA Technical Adviser
- 13 November 2020

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PERSONALITY OF THE MONTH – ANNIE STORAR

Leading by example



Annie Storar, Regional Manager at Atlas Group, part of Voltex, has spent over three decades in the electrical industry. Starting as a secretary – when positions for women were limited – she has worked hard and gained first-hand knowledge of the industry, working up to a senior management position. She finds motivation in working as part of a dynamic team towards a collective goal.

**SPARKS: Where were you educated?**

**AS:** I have been a Boksburg girl all my life and was educated at Martin Primary School after which I went on to Boksburg High. We didn't have quite the variety of choices young people have today so, when I left high school, I went to Secretarial College where I received my diploma.

**SPARKS: How long have you been involved in the electrical industry?**

**AS:** I have been in the electrical industry for 33 years.

**SPARKS: When and where did you start your career?**

**AS:** I started my career in the electrical industry working at Aberdare Cables as a secretary to the Sales Manager and Technical Manager, but after two years I became bored and asked my bosses if they would consider letting me train as a sales representative. I was the first woman to join the external sales team.

I was given the opportunity to go for technical training and after a couple of months I started my new career, which I absolutely loved. I gained a lot of cable knowledge and built up strong customer relationships (some of which I still have today). I was with Aberdare for 11 years before I moved to South Ocean Electric Wire where I worked in the Cable and Wire Sales Department. Watching electric cable being made is very interesting and, as the factory was on the premises, I was able to witness it first-hand.

**SPARKS: What are the greatest changes you have seen over the years?**

**AS:** This is a bit tongue in cheek, but IT. When I first started work-

ing in 1983, there were no fax machines, and very few computers or colour printers. Cell phones came much later, so as rep you had a pager and then you had to find a call box if someone in the office was looking for you.

But more seriously, at the Electrical Contractors' Association awards last year it was heart-warming to see how many women are now playing prominent roles in what is still a male orientated industry.

**SPARKS: What major projects have you worked on and what is your greatest accomplishment?**

**AS:** As a major supplier to the electrical industry, we at Voltex have been involved in numerous major developments, far too many to mention. My greatest accomplishment is working myself up from a secretary to Regional Manager at Atlas Group.

**SPARKS: Have you won any awards?**

**AS:** I haven't won any industry related awards, but I have won several sporting awards for hockey and action cricket.

**SPARKS: Who has been your inspiration, or have you had a mentor who has influenced your career?**

**AS:** All my bosses have been instrumental in some way or another, moulding me and teaching me. Ahmed Baig, MD of the Voltex Group saw the potential in me and promoted me to a Branch Manager and recently to Regional Manager.

**SPARKS: What, to your mind, is one of the biggest challenges facing the industry at this time?**

**AS:** Our water and electricity resources are under constant threat and, as a supplier to the electrical market, it makes things very difficult when infrastructure projects are put on hold. We also face serious economic challenges in light of the COVID-19 Pandemic, while raw material shortages and pricing are impacting our supply chain.

**SPARKS: What do you enjoy most about your job?**

**AS:** I love the fact that I am part of a team working towards a collective goal. We have a very diverse team of people working together and it is so rewarding to be part of this wonderful dynamic.

**SPARKS: How do you motivate your staff?**

**AS:** I firmly believe in leading by example, remaining approachable and always seeing the positive side to a situation.

**SPARKS: If you could 'do it all again', would you change anything? If so, what would that be?**

**AS:** I am perfectly happy with the way life has turned out so I wouldn't change a thing. The choices I have made have led me to where I am today.

**SPARKS: Would you advise a person leaving school to enter the electrical industry? And why?**

**AS:** I certainly would. We cannot function without electricity so there will always be career opportunities in the electrical industry. It is also

a place where you can learn much; the choice where you end up is entirely up to you.

**SPARKS: What is your advice to electrical contractors/engineers?**

**AS:** Embrace new technologies and empower yourself with the knowledge of those technologies and products coming to market.

**SPARKS: What is your favourite quote?**

**AS:** "Leaders become great not because of their power, but because of their ability to empower others" – John Maxwell.

**SPARKS: Name three things on your 'bucket list'.**

**AS:** I have always wanted to rent an old villa in Tuscany for a week or two and live life as the locals do but, recently I saw a television programme featuring the Rocky Mountaineer train journey in British Columbia, Canada. You start off in Vancouver and travel through scenic valleys, along the mighty Fraser River, through Hell's Gate and past the magnificent Pyramid Falls. The scenery is breath-taking and the experience on the train is pure luxury. A hot air balloon ride over the Serengeti would also be pretty special.

Enquiries: [www.voltex.co.za](http://www.voltex.co.za)

ADAPTORS CAN BE A DANGER TO THE SOUTH AFRICAN CONSUMER CONTINUED FROM PAGE 1



- Some of the sockets for the compact 3-pin will indicate whether they can accommodate a rewirable plug or not as illustrated alongside.

**Summary of the amendments in SANS 164-0:**

- Reducing the minimum clearance of an adaptor body to socket-outlet surface to 8,0 mm from 12,0 mm.
- Warning signs will appear on adaptors to prevent the use of multiple adaptors plugged into one another, thus avoiding the risk of electricity hazards due to overloading and poor connections.
- Introducing the symbol for adaptors not permitted to be plugged in one another in order to avoid straining the socket-outlet.



- Since 2018, the wiring code (SANS 10142-1) requires socket-outlets in electrical installations to be of the SANS 164-2, at every socket outlet point. However other configurations (such as SANS 164-1) may also be installed onto the same outlet.

- The changes in SANS 164-0 are generic to all the SANS 164 series of standards namely Part 1 to Part 6. This means that the SANS 164 series of plugs and socket-outlets has to comply with SANS 164-0.

The SANS 164 series falls under SABS Technical Committee (TC) 067 Sub-committee (SC) 03 titled Electricity distribution systems and components: Electrical accessories. The scope of the TC covers standards for electrical accessories such as switches, plugs and socket-outlets, home automation devices, connectors, adaptors, couplers, cords extension sets and conduits (cable management systems) for use in household and similar low-voltage applications.

The TC067 SC03 consists of representatives from associations, manufacturers, regulators, power utility, testing laboratories, government departments and academic institutions. Should any member of the public be interested in joining the SC, they are welcome to submit their interest via [www.sabs.co.za](http://www.sabs.co.za).

**Impact on the industry**

The construction industry, electrical contractors and households need to be aware of the amended requirements for South Africa. It is expected that new buildings will need to comply with the new standards within the time frame listed in the wiring code.

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## Take control of your power

The current market can be described as challenging for electrical contractors. The economy is complex, customer needs are forever changing, and it can be quite difficult to build solid foundations when the ground seems to move continuously. Yet, as South Africa looks ahead and explores new lockdown regulations, it is equally a time to take control of your business and find new ways of growing customers and markets.

"There are two things that customers need today – control and power," says Carel Scheepers, General Manager: Sales at Citiq Prepaid. "This may sound like the tagline of a presidential campaign, but these two words really resonate with people today. They want more control over their spend and their utilities. They don't want to continue struggling with budgets and the vagaries of municipalities on top of all the other problems they face."

So, where does your role as the electrical contractor fit in? Well, as a trusted advisor who can support customers – be they individuals, managing agents or developers – to make smart decisions around their utility management and control. Decisions that allow them to minimise disruption and admin while maximising ease of use and, most importantly, an easy life.

"With prepaid sub-metering, customers can access, manage and control their power without having to leave the home or spend hours in a queue," says Scheepers. "With Citiq Prepaid, they can do all this, and more. We provide prepaid sub-metering solutions designed to high standards and have developed an array of value-added services that transform how people engage with their utilities and sub-meters."

The first thing Citiq Prepaid does is ensure that



electrical contractors have access to a product they can trust. The prepaid sub-meters come with tamper-proof features that significantly minimise the risk of fraud. In addition, the company has invested in two well-trained call centres that offer reliable support to contractors and customers, seven days a week. The call centres not only respond rapidly to customers registering their meters, but they offer swift and helpful advice when users have queries.

"When I first started out as a contractor, working in the prepaid sub-metering space, I received a lot of complaints from my clients about registration, tampering and service," says Samuel Sibusiso, CEO of QSS. "I decided to go with Citiq Prepaid and now,

whenever there are issues, I sit down with the customer, contact the call centre, and the staff immediately explain everything to them. They talk them through the benefits, the system and payment and make sure that they are happy with everything. It's made a huge difference to my relationship with my customers and my business."

Along with the handy call centre and exceptional customer support, Citiq Prepaid has an online platform that is designed to help customers manage their accounts and payments more effectively. The two types of login are for tenant, and owner or landlord and provide a variety of services that range from reporting to online payments.

"The last thing anybody wants is to run out of tokens, so we've worked hard to make paying for power as simple and seamless as possible," concludes Scheepers. "We've got the largest national network of recharge outlets, allow payment online and with a mobile device, and cater for a variety of different payment methods. This reassures the client and the contractor when it comes to ongoing service delivery."

Citiq Prepaid provides contractors with the tools they need to grow their businesses in challenging times by ensuring their customers retain control over their power in the easiest and most efficient way possible.

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## November conference to focus on driving solar power agenda

Solar power capacity and energy generation has seen a rapid increase over the past decade, becoming the fastest growing source of renewable energy in the world. Thanks to technological advances, a sharp decline in costs, improved policies and growing concerns over climate change, renewable energy has been placed front and centre on public and private agendas.

While the economic downturn caused by the COVID-19 pandemic has stifled growth in 2020, with demand decreasing across the private, commercial and utility sectors as a result of financial uncertainty, Africa's growing population and rapid urbanisation has meant that identifying solutions and designing systems for resilient and resource-efficient cities is imperative.

According to Joshua Low, Managing Director at Messe Frankfurt South Africa – the organiser of leading solar and energy storage event in Africa, Solar Power Africa, it is critical that solutions to address the current supply chain disruptions and loss of investment are identified in order to prevent delays and cancellations of projects being commissioned in Africa.

Low says that Africa's energy deficit caused by an aging fleet of power plants run by utilities requires the public and private sectors to rethink the energy mix in order to meet the demand. Despite setbacks and power constraints, many African countries have bountiful renewable energy resources – particularly in the form of solar energy, which has the potential to guarantee energy security for these countries. Unlocking this potential requires a collaborative effort, which is where events like Solar Power Africa are prime platforms to facilitate dialogue.

The event, which is set to take place from 16-20 November 2020, will bring together an extensive alliance of local and internationally renowned industry leaders, stakeholders and experts with the aim of discussing and unpacking strategies that can provide greater access to solar power and clean energy solutions on the continent.

The conference is targeted at all industries, public and private, forming part of the renewable energy industry value chain. This includes installers, contractors and producers, major utility companies, energy storage experts, smart energy professionals, finance, industry bodies and government.

Consisting of six plenary sessions and over 12 specialised breakaway streams, Solar Power Africa will cover a range of topics, including:

- Multimode and microgrid energy storage solutions.
- Transformation within the solar and renewable energy sectors.
- Private sector's role in investing in electricity infrastructure and its contribution to the energy sector.
- Large- and small-scale solar financing solutions.
- Expanding off-grid energy into Africa.

Low further explains that the global lockdown and regulations aimed at curbing the spread of COVID-19 have meant that the events industry has had to reinvent the way it does conferences. "For Solar Power Africa this meant creating a virtual conferencing platform. One of the advances in virtual conferencing is that these platforms now use artificial intelligence, which delivers smart recommendations of people to connect with one another as well as the ability for delegates to access the content on offer from anywhere in the world."

The event will be supported by a Solar Power Africa virtual marketplace – an online directory of suppliers and service providers to the industry with added functionality including: AI matchmaking, built-in videoconferencing, live streaming of content for product launches, demos and a host of other benefits. This platform will go live on the first of November and will stay open for 12 months, offering people listed on the platform a cost-effective way to promote their products and services to a captive audience.

Both the virtual conference and virtual marketplace platforms will be run in partnership with the

South African Photovoltaic Industry Association (SAPVIA). "Despite the current economic challenges we face, the outlook for solar energy as a viable source of energy remains strong in the medium term," Low adds.

Low says that Solar Power Africa provides the perfect platform for dialogue around the most pressing energy issues the continent faces. "Finding solutions to these challenges will not only result in greater access to renewable energy sources for those who need it the most, but it will in turn reduce the financial burden that all governments experience when trying to meet their nation's energy requirements."

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### Looking back on three decades in the PCB field

Jean Mearns retired this year after running the printed circuit board (PCB) manufacturing company W.H. Circuit for 27 years and, looking back on things, she got into this business through sheer ignorance. This is her story:

#### Going back to the beginning

"I was running training programmes for the Free Market Foundation where I was training employees in business principles. My background was teaching accountancy and economics, so I really enjoyed the move to the Free Market Foundation.

This whetted my appetite to own my own business.

I bought into W.H. Circuit – which had been started by Willie Hanauer in 1990 – at the beginning of 1993. At the time, the company was operating in a derelict building that had to be demolished, so my husband Norman and I bonded our house to purchase the factories from which we currently operate.

The business, in many ways, was a family affair with Norman, a science teacher, running the chemistry at night while teaching during the day and Jonny, our son, running the electrical tester and re-designing some of the electronics in our machines, while studying engineering at the University of Cape Town.

#### A new era

A low point was when Jonny emigrated to Sydney, but in stepped a client Ryan Pomario claiming he thought I was getting pretty old to run a business (which was another low!). Hence the handover of the running of the business to Jeanine and Ryan Pomario from this point, while Norman and I remain in the background.

Jeanine and Ryan will continue to take the business into its new role, which it is playing very successfully as the 'workshop' for all our customers. We offer a turnkey solution, from design to manufacturing, housing and testing the final product.

#### Activism and achievements

During the apartheid era I was an active member of the Black Sash and this drove me to take on the chairmanship of the MEIBC in the Western Cape. My hope was to transform the way in which we South Africans thought about keeping jobs in South Africa and finally get rid of the 'them and us' attitude. I eventually realised it was a losing battle that would not take place in this era – the unions, I felt, were hell bent on carving a slice of the lucrative political cake for themselves with no understanding of what the underlying economic principles were that drove the economy of a country.

In 1996, I received the SBDC Sanlam 'Entrepreneur of the Year Award', in recognition of turning the company around, as it was not doing very well initially. As a result of that, and partly because I was a woman in this male dominated field, I was invited to Denmark where they had a very progressive mindset. I worked at a factory in Denmark for about three weeks, and was invited to attend board meetings, where the trade union also had a seat at the table. The whole focus was around keeping the business in Denmark, and I wanted to bring this focus – getting away from a 'them and us' attitude – back to South Africa as the chairman of the MEIBC. Ultimately this didn't work out as I'd hoped because our trade unions do not see things in the same way as their Danish counterparts do.

#### Think like a fox

Keeping a local PCB manufacturer going, when others have failed or simply resorted to importing boards from China, has been challenging. As Clem Sunter says, you have to think like a fox if you're going to be a successful entrepreneur – you have to be smart and strategic. So what we did was remain small, with the emphasis on 24 to 72-hour delivery for prototypes, because that was out of the Chinese domain.

Fortunately we did not expand into doing long production runs, because to get a long line running just to process a couple of A4 sized panels is not feasible. We had the Industrial Development Corporation (IDC) knocking on our doors to offer a loan to expand, but we stuck to our guns and focused on what we were best at. Besides being a fox, I think you've also got to get lucky, and we were lucky in that we made the right decision not to go into long runs.

#### Closing thoughts

It is my hope that at some stage our government will gain an understanding that no developed economy can survive without a well-developed electronics industry. We have seen the result of COVID-19 when China came to a grinding halt. While this was good for us as we picked up many orders that would normally have gone to China, we desperately need our country, as a whole, to realise the detrimental effect of losing institutional memory, which is only gained through years of experience and cannot be learned overnight.

I feel extremely fortunate to have had the privilege to work with our team at W.H. Circuit, many of whom have been with the company for the past thirty years. As I have always said, "No one works for me, they only work with me, for without each other our team will fail to exceed the expectations of our customers".

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**ARC FLASH GLOVES | ONE SIZE FITS ALL**

- **CAT 2:** Rating: 13 CAL/CM<sup>2</sup>  
**ARC FLASH CHAMBRAY SHIRT | S - 5XL**

- **CAT 2:** Rating: 13 CAL/CM<sup>2</sup>  
**CHINO TROUSER | S - 5XL**

- **CAT 4:** Rating: 52 CAL/CM<sup>2</sup>  
**ARC JACKET | S - 5XL**

- **CAT 4:** Rating: 52 CAL/CM<sup>2</sup>  
**ARC BIB AND BRACE | S - 5XL**

- **CAT 4:** Rating: 52 CAL/CM<sup>2</sup>  
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## Working from home needs reliable power supply

There are many issues with power supply these days and it never seems to get better. We are reminded of one of the main contenders as we work from home relying on grid tied inverters while City Power deals with yet another failure of its aging infrastructure. Next week it could be Eskom having a problem, who knows?

The trend towards working from home has accelerated now more than ever. Most people have turned their homes into mini offices which means more electrical equipment being used other than the existing domestic appliances. While the grid is designed to service commercial spaces, the increased demand in residential areas is making the current unreliable power even worse. Irrespective of whether the supplier is from Eskom or City, we are sitting on the edge of our chairs waiting for a power issue, whether it be the different stages of load-shedding including brownouts, power-back surges, loss of neutral or no power at all! These frequent power outages bring about lots of problems and unbudgeted costly repairs.

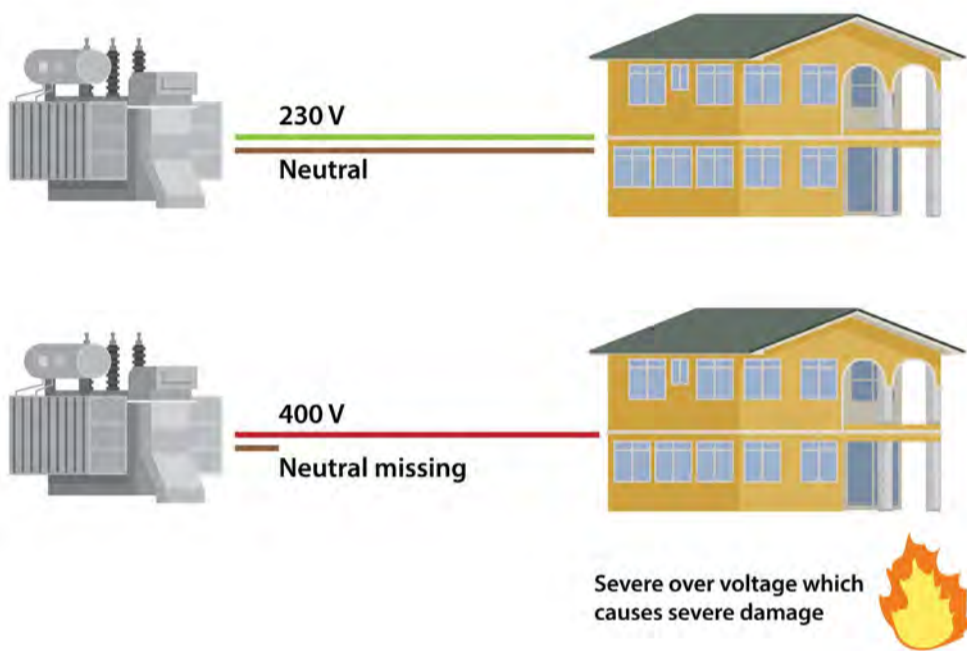
### Effects Loss of Neutral

In the event of loss of neutral, the single-phase voltage will rise to the three-phase level subjecting your equipment to >400 V instead of 230 V. This over voltage will be catastrophic for appliances connected to the supply and the overheating will result in costly repairs or even replacement.

As a *Sparks Electrical News* reader, you are probably suffering the same negative effects, but at the same time you have never been so busy! Your clients are shouting for a solution, which you can now supply from Sollatek. Below are some of the benefits of just one of many developments that have been tried and tested all over Africa for over 30 years.

### Solution to Loss of Neutral

Sollatek's AVS30 will protect electrical and electronic equipment from over voltage of 400V due to loss of neutral, as well as other potentially damaging power conditions such as over (high) and under (low) voltage, (brownouts), power back surges and voltage dips. The AVS30 will disconnect the



power when it is bad and reconnect automatically on return of normal safe power and thereby protect against damage which may occur after a single event or over the long-term, ensuring longevity of appliances. The automatic reconnection takes place after a start-up delay, which avoids those initial fluctuations that frequently occur as power returns and at the same time in the case of pumps and motors (e.g. refrigeration and air conditioning)

prevent equipment from starting up against a pressure head by allowing refrigerants to stabilise first.

While monitoring the condition of the voltage at all times, the AVS30 enhanced features allow the user to set the high and low voltage disconnect and delay time. Also available in a 3-phase version, the AVS3P-0.

Enquiries: [nick.allen@sollatek.co.za](mailto:nick.allen@sollatek.co.za)

## Understanding your UPS needs

With Eskom having confirmed that load shedding is set in South Africa for at least another two years, business and home energy users are seeking solutions to keep power on at their homes and offices to ensure full-functioning.

Now more than ever, an uninterrupted power supply, or UPS, is one way that you can keep connected at work or at home, potentially even protecting your equipment from damaging power surges and brownouts too. If you are working on a desktop computer, being linked to a UPS also protects you from losing any unsaved data when there's a power failure.

### Choosing the right UPS for you can be confusing

There are numerous UPS options to choose from, and while the suitable thing to do is discuss your needs with an energy expert, there are some basic insights you should have onboard before you start the conversation about which UPS is best for your needs.

Simplified, a UPS is similar to a power strip that has a battery inside it, which gives you power for a defined period of time so you can save your work, shut down your equipment gracefully to prevent damage, or it keeps your equipment running until you can switch over to an alternative energy source, such as a generator.

With varying UPS sizes ranging from desktop units for personal computers to room-sized installations that support entire data centres, it's advisable to start by plotting out your needs before you spend large amounts of money by buying more – or not enough – UPS support needed.

In a commercial or industrial setting, assess the scope of equipment you would need to be supported by a UPS, understanding the implications for production and productivity, as well as preventing damage and wastage caused by energy interruptions.

### Understand the three main types of UPS units and functioning

The first is a passive standby unit, best suited for protecting PCs against power failures, power sags, and power surges. This UPS uses regular electricity from the mains supply to stay charged, and when there's a power failure or a power fluctuation, the UPS delivers stable power from the battery. This relatively low-cost solution is ideal for office environments, but is not suitable if the power supply is of low quality, or frequently disrupted.

The second is a line-interactive unit, which is more suitable for protecting enterprise networks and large IT applications from power failures, sags, surges, and under- overvoltage. It's controlled by a microprocessor that monitors the quality of the energy supply, and which reacts to fluctuations. It's most appealing for sites that need to compensate for under-and overvoltage, without using batteries.

Double conversion units are designed to offer continuous power protection for critical equipment against all forms of power disruption, and they ensure a consistent power supply quality, regardless of any disturbances at the mains. They can be used with any type of equipment, as there are no transients when switching over to battery power.

Rather than only coming into play if there's a power failure, this system completely isolates electronics and other devices from the utility power, and 'filters' it through a battery system. This means that all devices work off much cleaner and more consistent energy,

## Electricity and generators – where to next?

**GENERATOR & PLANT HIRE SA (GPH)** has been involved in the provision of backup diesel generator solutions for over 27 years. Through an integrated network of 15 national branches, 100 vehicles and about 150 staff, the business runs the largest national fleet of rental generators in the country.

From the smallest size of 8 kVA to the largest at 1 MVA, the fleet size of over 700 sets is deployed across residential, cellular, mining, agricultural and industrial customers through operations that run 24/7/365. At full utilisation, which is about 80%, its fleet churns through a million litres of diesel per month.

The local generator space is split into the following sectors:

- Residential/individual: 4 kVA to about 8 kVA, ideally your normal three bedroomed house.
- Cellular operations: 17 kVA to 30 kVA. Estimated at 15 000 generators currently installed.
- Commercial: 60 kVA to 200 kVA, made up of restaurants, small business/offices.
- Industrial and agricultural: 250 kVA to 4 MVA ranging from mines, factories, construction sites, etc.

In the previous wave of load shedding in 2016, the market was flooded with cheap imports of sets and it is estimated that at least 300 000 generators are installed locally in the various sectors, the bulk of which will sit in small to medium sized homes and small business. Like any engine, maintenance is key in getting a generator to work on demand. Sadly, the lack of service and support for uncommon brands imported in 2016 have seen owners having to part with extra cash as they write off sets that cannot be



serviced due to lack of spares or accredited local agents. The rental model has become a favourable choice in the wake of unpredictable load shedding and the future of energy supply in the country.

For a small standby fee, a generator is placed on site, linked to an Automatic Mains Failure switch, monitored remotely 24/7 for emergency readiness, fuel, etc., and when the lights go out, it kicks in immediately. In essence, this is no different to car rental, photocopier leasing or cell phone prepaid services; you pay as you go.

In summary, the diesel generator market is a long-term market that will continue to work alongside business in keeping the lights on, more

so as we enter another phase of uncertain power supply. The rental option is more lucrative where reliability and uncertainty of supply exist and will see the emergence of new products and players in the market. Customers need to carefully evaluate options and understand their needs and avoid the outlay of Capex in the absence of a long-term energy plan from Eskom. Key in decision making is choice of product, size of generator, certified installation and the availability of a backup plan and services round the clock, which only an established business can readily offer.

Enquiries: [www.gphsa.co.za](http://www.gphsa.co.za)



**Cummins supplies power solution to Zain Jordan**

CUMMINS authorised distributor, SETI Jordan, has provided a complete power solution, from project design to installation of the genset and switchgear, for

Zain's headquarters in Amman. This included special design and consultation for the generator foundation base.

has been a Cummins customer since 2004, with around 60 installed gensets to date.

into the country in 1995. Part of the Zain Group, it has led the telecom sector by continuing to invest in new technologies and partnerships. With over 8000 cell sites, Zain Jordan covers the entire kingdom.

**Power supplies for building automation**

The new Step Power power supplies from Phoenix Contact are specifically tailored to the needs of modern building automation.

With their comprehensive approval package, which includes the standard industrial approvals, the power supplies have been certified for household purposes in accordance with DIN EN 60335-1 for the first time.

These power supplies are the first to deliver Efficiency Level VI – the highest level possible – in no-load and part-load operation. They are characterised by their high efficiency of over 94% and low no-load losses of less than 0,1 W. This means that less electrical energy is converted into undesired heat energy. The compact, slim-line design, standardised to DIN 43880, saves valuable space in the control cabinet, while also delivering increased performance (up to 100 percent). The reduced overall width of the new generation is the equivalent of one horizontal pitch (1 HP). This means that the power supplies are particularly suitable for use in distribution boards.

Tool-free push-in connection at a 45° angle enables quick and easy start-up. In addition, the terminal block provides twice the number of terminal points. The slide-out base latch enables flexible mounting on a DIN rail or flat surface. A wide temperature range from -10°C to 70°C is supported.

Zain's headquarters consists of three buildings, one of which houses the main data centre and core equipment. It reconfigured the existing power sources for the two-storey building by adding a new utility path and transformer, which required a new backup genset for the utility.

A Cummins C1675D5 genset, installed inside a 13 m sound-attenuated PowerBox container, provides 1500 kVA of reliable backup power for the utility in the second path of electricity. Zain Jordan

Cummins is also the power provider at hundreds of other Zain installations in the region, including mobile base stations and the Kuwait headquarters. Cummins' ability to meet unique requirements of the project, such as low noise and vibration levels with the PowerBox, along with SETI Jordan's capabilities in delivering the complete turnkey solution of supply, installation, testing and commissioning, in addition to aftersales and service capabilities, are key features of the partnership with Zain.

Over the years, the communication landscape in Jordan has evolved through many other firsts from Zain: it was the first Middle Eastern operator to launch MMS, mobile data services and infotainment solutions and the first to introduce WAP connectivity, 4G/LTE and mobile banking in Jordan.

Zain Jordan introduced mobile phone services Enquiries: +27 (0)11 589 8512

Enquiries: [www.phoenixcontact.co.za](http://www.phoenixcontact.co.za)

and there's never any power interruption, even if there's load shedding or power failures caused by utility breakdown or maintenance.

**Additional UPS considerations**

Other elements you should consider when choosing a UPS system for your home or work environment vary between understanding the noise that cooling fans emit, and whether the systems have replaceable batteries. Some units include electric surge protectors, which offer an added layer of protection in areas that suffer from frequent lightning strikes.

This feature makes it easier to know the UPS's running time, battery health, and other relevant information, which in turn makes it easy for technicians to service and maintain the UPS system, when required.

A commercial or industrial sized UPS is most efficient when regularly maintained by a team of technical experts. Just as with any other large-scale and frequently used equipment, they benefit from servicing and preventive maintenance, to ensure that they keep businesses connected, when it counts the most.

Eaton's electrical business is a global leader with deep regional application expertise in power distribution and circuit protection; power quality, backup power and energy storage; control and automation; life safety and security; structural solutions; and harsh and hazardous environment solutions. Through end-to-end services, channel and an integrated digital platform and insights Eaton is powering what matters across industries and around the world, helping customers solve their most critical electrical power management challenges.

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Bosch Diesel Service  
Clearline Protection Systems  
Crabtree South Africa  
Eurolux  
HellermannTyton  
LEDvance  
Legrand SA  
Magnitech  
Matelec  
Megger  
NewElecJDL  
Nordland Lighting  
Oppl Lighting SA  
Phoenix Contact  
Power Process Systems  
Shuttle Lighting Control Systems  
Silicon Engineering  
Sollatek Electronics  
Spazio Lighting  
Superlume  
Three-D Agencies  
WEG

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Arrow Altech Distribution  
Atlas Group  
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Bellco  
Bosch Diesel Service  
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Comtest  
Cummins SA  
Denver Technical Products  
Electrahertz  
Electromechanica  
Eurolux  
ExSolar Solar Solutions  
Genlux Lighting  
HellermannTyton  
Magnet Electrical Supplies  
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Major Tech  
Mantech Electronics  
Matelec  
MCE Electric  
Power Process Systems  
Radiant Group  
Regal Distributors  
Silicon Engineering  
Sinetech  
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Three-D Agencies  
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Voltex Lighting  
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## ONLINE DISTRIBUTORS

Comtest  
Sinetech  
Switchman Products

## CONTACTS

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Faisal Hoosen  
Altron Arrow  
Mattheus van Emmenis  
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Arrow Altech Distribution  
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Atlas Group  
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Aurora Lighting Africa  
Olivia Tait  
BEKA Schröder  
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Mantech Electronics  
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Megger  
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NewElec  
Luc Dutrieux  
Nordland Lighting  
Johann Lamprecht  
Oppl Lighting SA  
Willem Venter  
Phoenix Contact  
Carl Coetzer  
Power Process Systems  
Michael du Toit  
Radiant Group  
Alfred Weldon  
Shuttle Lighting Control Systems  
Tracey Steyn  
Silicon Engineering  
Chris Hanson

## CONTACTS

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Chris Rodgers  
Sollatek Electronics  
Nick Allen  
Spazio Lighting  
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Stone-Stamcor  
Mark Talbot  
Superlume  
Willie Garbers  
Switchman Products  
Josh Berman  
Three-D Agencies  
Mark Jenkins  
Vert Energy  
Grant Robertson  
Voltex  
Hugh Ward  
Voltex Lighting  
Wendy Higgins  
Vossloh-Schwabe  
Barry Harrison  
Waco  
Jaco Coetsee  
Zest WEG Group  
Generator Sets Sales

## GENSETS AND ACCESSORIES

ACDC Dynamics  
Wide variety of domestic, commercial and industrial generators and accessories  
ARB Electrical Wholesalers  
Full range of gensets and accessories  
Atlas Group  
Gensets and accessories available according to customer specifications  
Bellco  
Gensets and accessories available according to customer specifications  
Bosch Diesel Service  
Gensets and accessories  
Citilec  
Gensets and accessories  
Cummins SA  
Full range of gensets and accessories  
Electrahertz  
Full range of gensets and accessories  
Electromechanica  
Full range of gensets and accessories  
HellermannTyton  
Accessories for the installation and maintenance of geysers; Large selection of cable ties including UV and high temperature, as well as spiral binding, Ratchet P Clamps, lugs and pre-insulated terminals, heat shrink  
Matelec  
Cable glands; Plastic saddles; Galvanized saddles; Galvanized boxes; PVC accessories  
MCE Electric  
MCE petrol generator sets  
Silicon Engineering  
External battery chargers  
Sinetech  
Inverters – single-phase, three-phase, grid tie, off grid and hybrid  
Switchman Products  
Changeover panels, controllers and enclosures  
Vert Energy  
Full range of gensets and accessories  
Voltex  
Gensets and accessories available according to customer specifications  
Zest WEG Group  
Full range of diesel generators and accessories, 10k VA-3350k VA. Standard or custom built- prime or standby, single sets or synchronised power plants

## EMERGENCY LIGHTING

ACDC Dynamics  
Extensive range of emergency lighting in various brands and options including Gewiss; emergency lighting for buildings, mining and automotive applications  
ARB Electrical Wholesalers  
Full range of emergency lighting  
Atlas Group  
Distributors of Voltex. Lighting emergency exit and other signs; emergency control gear for fluorescent lights  
Aurora Lighting Africa  
Extensive range of emergency lighting including emergency signage lighting  
BEKA Schröder  
Full range of emergency lighting

## EMERGENCY LIGHTING

Bellco  
Distributors of emergency exit and other signs; emergency control gear for fluorescent lights  
Citilec  
Full range of emergency lighting  
Clearline Protection Systems  
Range of emergency lighting  
Denver Technical Products  
High power mains fail safety lighting; trailer mounted floodlighting, up to 4 x 1 000 W; high pressure sodium lamps powered by onboard diesel generator; handheld explosion-proof intrinsically safe torches  
Electrahertz  
Full range of emergency lighting  
Eurolux  
LED emergency light; rechargeable portable emergency lights  
Genlux Lighting  
Full range of emergency lighting  
Legrand SA  
Full range of self-contained emergency lighting  
Magnitech  
Emergency lighting; battery backup and battery cycling units; bulkheads  
Major Tech  
Full range of emergency lighting  
Matelec  
12 V Daynight switch; 12 V E27 Econo bulkhead  
MCE Electric  
O-Lite rechargeable portable LED floodlights  
Nordland Lighting  
Full range of emergency lighting  
Radiant Group  
Floodlight LED aluminium 12 W battery back-up; rechargeable camping emergency lanterns LED battery 1.6 and 2.4; motion sensor LED plus flashlight emergency lights 40/35 and 35/18 lumen; exit light 230 V LED with backup; LED lamps A60 5 W E27 and B22 4 000 K with backup  
Sinetech  
Solar street lighting with five year warranty  
Spazio Lighting  
Full range of emergency lighting  
Superlume  
IP65 vapour proof, recessed LBR, recessed prismatic - all wired with ECG and LED and with emergency backup; 10 W LED bulkhead with emergency backup  
Voltex  
Distributors of emergency exit and other signs; emergency control gear for fluorescent lights  
Voltex Lighting  
Distributors of emergency exit and other signs; emergency control gear for fluorescent lights  
Vossloh-Schwabe  
Full range of emergency lighting  
Waco  
Distributors of emergency exit and other signs; emergency control gear for fluorescent lights

## BATTERIES FOR EMERGENCY APPLICATIONS

ACDC Dynamics  
Full range of batteries and backup solutions such as UPS systems, invertors, etc  
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Full range of batteries for emergency applications  
ARB Electrical Wholesalers  
Full range of batteries for emergency applications  
Arrow Altech Distribution  
Lithium iron phosphate battery management solution  
Atlas Group  
Distributors of Solid State Power invertors in various sizes  
Aurora Lighting  
Extensive range of battery backups for LED light fittings  
Bellco  
Distributors of invertors in various sizes  
Citilec  
Full range of batteries for emergency applications  
Electrahertz  
Full range of batteries for emergency applications  
Electromechanica  
Full range of batteries for emergency applications  
Mantech Electronics  
Full range of sealed lead acid (SLA) batteries in regular, deep cycle and gel types  
Radiant Group  
LED panel emergency backup: metal case, 3 m cable, 6 A plug; spare emergency backup for LED; backup 12 V 50 W remote/maintained; remote backup for fluorescent 6 – 65 W magnetic 1H00 five cell  
Regal Distributors  
Batteries for emergency applications





**BATTERIES FOR EMERGENCY APPLICATIONS**

**Silicon Engineering**  
BAE: Belin stationary, solar, UPS lead acid batteries; Everceed: stationary, valve regulated and re-combination nickel cadmium cells

**Sinotech**  
AGM gel/lead acid hybrid solar batteries; nano carbon batteries; lithium ion batteries

**Stone-Stamcor**  
Yuasa sealed lead acid batteries

**Voltex**  
Distributors of inverters in various sizes

**PUMPS FOR EMERGENCY APPLICATIONS**

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**Bosch Diesel Service**  
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Pump controllers; Float switches

**UPS**

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Comprehensive range of UPSs

**ARB Electrical Wholesalers**  
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Distributors of Solid State Power UPSs in various kVA ratings

**Bellco**  
Distributors of UPSs in various kVA ratings

**Citilec**  
Full range of UPSs

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Full range of UPSs

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UPS inverters

**Legrand SA**  
Full range of conventional and modular single-phase and three-phase UPSs

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Vast stocks of inverters and UPSs

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Industrial UPSs

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Stockists of UPSs

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BAE - Berlin industrial stationary lead acid batteries

**Sinotech**  
UPS for all applications: 650 VA to 800 kVA

**Sollatek Electronics**  
Full range of UPSs

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Distributors of UPSs in various kVA ratings

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Distributor of Halo Lighting Solutions including LED strip lighting systems; wide range of flameproof and explosion-proof lighting

**ARB Electrical Wholesalers**  
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Distributors of luminaires for hazardous areas

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Full range of luminaires for hazardous areas

**BEKA Schröder**  
Full range of luminaires for hazardous areas

**Bellco**  
Distributors of luminaires for hazardous areas

**Citilec**  
Full range of lighting for hazardous areas

**Clearline Protection Systems**  
Range of lighting for hazardous areas

**Denver Technical Products**  
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**Electrahertz**  
Full range of lighting for hazardous areas

**Eurolux**  
Vapour-proof fluorescent fittings; CFL enclosed 'bullet'

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**MCE Electric**  
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**LIGHTING FOR HAZARDOUS AREAS**

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Full range of lighting for hazardous areas

**Radiant Lighting**  
Full range of lighting for hazardous areas

**Sinotech**  
Solar street lighting with five year warranty

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**Superlume**  
Zone rated lighting fixtures

**Voltex**  
Distributors of luminaires for hazardous areas

**Voltex Lighting**  
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**OTHER**

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Large lighting offering including decorative, LED and general lighting applications

**ACTOM Protection and Control**  
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**ARB Electrical Wholesalers**  
Electrical cables and wiring accessories; electrical contractors' materials

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**Atlas Group**  
Full range of cables and wires as well as a range of overhead line equipment, mini subs and transformers

**Bellco**  
All electrical industrial and commercial products as well as the associated accessories; Elespec power quality PFC and monitoring; MV and LV panels

**Citilec**  
LED energy efficient lighting

**Comtest**  
Fluke Battery Testers; BK Precision Battery testers

**Crabtree South Africa**  
Electrical wiring accessories such as switches and sockets (domestic, commercial and industrial)

**Denver Technical Products**  
Hannay reels for cable management

**Eurolux**  
Inverters

**ExSolar Solar Solutions**  
Backup solar UPS solutions, solar DIY kits, solar camping kits, solar batteries, solar panels and solar

**HellermannTyton**  
Stock various tools and test instruments including multimeters, clamp meters and insulation testers

**LEDvance**  
OSRAM LED lamps, luminaires

**Mantech Electronics**  
Large range of solar panels, solar regulators, power supplies, instruments, meters, cabling and accessories

**Matelec**  
Galleries, PVC & Fibreglass; Daynight switches; LED bulkhead fittings; 4X4 Weatherproof boxes; 4X2 Weatherproof boxes

**Megger**  
Protection: cable fault, transformer, circuit breaker, battery and low voltage

**NewElec**  
Three-phase motor protection and control relays for low voltage motors

**Nordland Lighting**  
Full range of LED luminaires

**Oppl Lighting SA**  
Full range of LED luminaires

**Power Process Systems**  
Electrical enclosures and change-over systems with control

**Shuttle Lighting Control Systems**  
Dimmers for LED, Halogen and Incandescent lights

**Silicon Engineering**  
Silicon battery chargers for battery tripping systems

**Sinotech**  
PV solar panels: monocrystalline, polycrystalline, CIGS thin film; power inverters; backup power systems; battery chargers; solar cable; solar mounting structures; solar connectors; battery management systems; solar charge controllers/charge regulators

**Sollatek**  
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Generators and inverters – which is best?

As more South African businesses open their doors, and as the country starts to resume economic activity, it is speculated that we can expect load shedding to return. Much like the iconic call of our local Hadedra, during loadshedding the rumbling of generators becomes a common sound across South African suburbs as people attempt to keep the lights on and appliances running during power cuts.

For those who have not yet purchased a generator and are thinking about it, but unsure on the best options, Orlando Luis, CEO of Brights Hardware stores gives the following guidance:

Generator 101

“Generators range vastly in size, power output and cost. Entry level 2 stroke generators, such as a 950 W unit, retail for under R2000 but are unreliable if the petrol/oil mixture is not consistent, so Brights recommends starting with no lower than a 4 stroke 1200 W generator.”

“A good option would be a Ryobi 1200 W pull start unit which will cost in the region of R3500 and has a run time of seven hours,” says Luis, who explains that with a 2 stroke model you first have to premix the oil and fuel in the correct ratios, whereas with a 4 stroke unit the fuel is housed in a

separate tank and the oil in the engine, like in a motor car. Luis further explains that the higher the wattage of the generator the more power it outputs and so the more electricity it generates.

Going upwards from here good options for an affordable



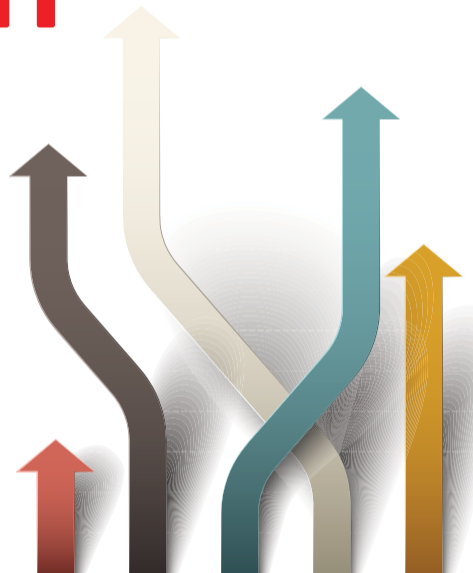
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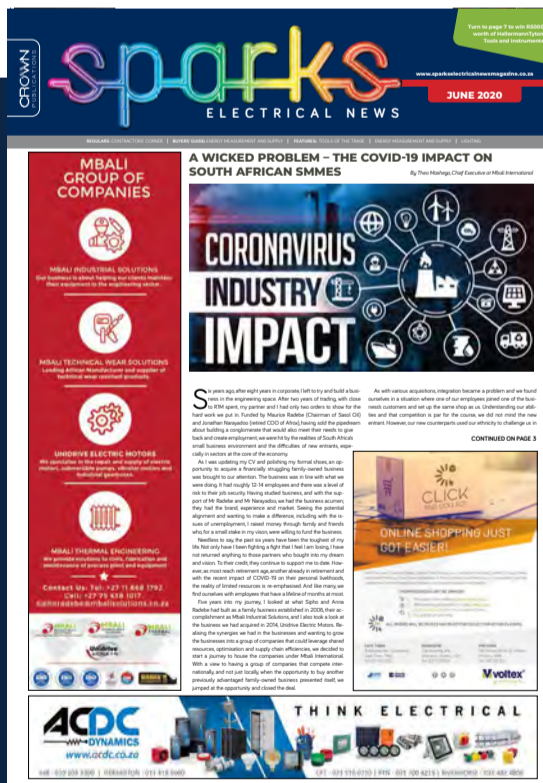
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household use generator to power lights and basic appliances include:

- 2500 W, 4 stroke, pull start generator with a 10-hour run time and overload protection breaker
- 3500 W, 4 stroke, key start generator with a 7-hour run time and automatic voltage regulation (AVR)
- 5500 W, 4 stroke, key start with 8-hours run time and AVR
- 6500 W, 4 stroke, key start with 8-hours run time and AVR
- 7500 W, 4 stroke, key start with 7-hours run time and AVR

“All these units use unleaded fuel,” says Luis. “There are also diesel-powered generators on the market. For example, Brights stocks 6000 W key start diesel units with AVR for R13 999. The prices start to climb after this, with a 10 000 W unit selling for around R25 000, and a 20 000 W unit for around R50 000. These more expensive models have a built-in change over switch that automatically switches over from Eskom power to generator power when needed and they are big enough to power large homes and smaller businesses.”

Then come Inverter Generators, which are ideal to connect to appliances as well as electronic equipment.

Luis says a 1200 W open frame pull start inverter generator will cost in the region of R4000, while a 2500 W inverter generator will cost around R6000. “The silent, 2500 W-3500 W, closed frame, pull start units sell for over R10 000. The larger silent units do become more expensive.

Silence is golden

This introduces the question – what about people who live in complexes and housing estates who are not allowed to run a generator because of the noise pollution?

Luis says the best option here is to purchase a pure sine wave inverter with batteries. All these units are silent except for the cooling fan which blows on the side. They also switch on automatically during load shedding.

“Brights sells a popular 600 W, 12 V unit that is perfect for your home electronics. This unit retails for under R3000 and then requires one deep cycle battery at a cost of R2400. The next size up is the 1000 W 24 V inverter for around R4000 which requires two deep cycle batteries at R2400 each. This unit gives you a longer life span during load shedding because of the two batteries.”

“The next size up, and which is perfect to handle larger appliances, is the 2400 W 24 V version which sells for between R6000 and R7000. Again, you will need two deep cycle batteries. Lastly, Brights sells 4 kW or 5 kW 48 V units for between R12000 and R13000 which require four deep cycle batteries. These units have solar connections as well so you can add on solar panels to charge the batteries rather than charging them from the home's mains. Larger units than these, such as 8 kW and above, sell for R20 000 upwards and require qualified technical visits to customers' homes to work in combination with solar panel installations.”

Enquiries: [www.brights.co.za](http://www.brights.co.za).



### Latest edition (3) of The Wiring Code (SANS 10142-1) published

The latest edition of SANS 10142-1 The wiring of premises – Part 1: Low-voltage installations (Edition 3: 2020) has recently been published.

This vital standard is used in South Africa for all types of low voltage electrical installations. The Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) (OHS Act), which is administered by the Chief Inspector of Occupational Health and Safety of the Department of Labour, requires that electrical installations comply with the requirements of SANS 10142-1. It also requires that a registered person, as defined (master installation electrician, installation electrician or electrical tester for single phase), will issue a Certificate of Compliance for an electrical installation in line with the requirements set out in SANS 10142-1.

John Dlamini, Chair of the technical committee for this important standard, commented on the latest edition in following Q&A with the Electrical Contractors' Association:

#### Why was the standard revised?

SANS 10142-1 was revised due to the outdated requirements and to align better to the international norms. In South Africa we need to verify other technologies utilised by other countries and align local conditions with such technologies.

#### What are the most important changes that have been made?

- Reference to compulsory specifications (VCs) in table 4.1 has been removed. VCs should refer to standards not vice-versa.
- Combine gas and electrical installation reequipments have been referred to SANS 10087-1
- Introduction of arc fault detection devices in electrical installation.
- Modification of earth continuity conductor requirements has been aligned with international norms and introducing a new table for earth continuity conductors and a new table for minimum size and maximum length of copper earth continuity conductors rated at 50% of phase conductor diameter, for general purpose circuit-breakers with instantaneous tripping current.
- Introducing lightning protection requirements as well as informative annex which refers to SANS 10313 and SANS 62305 series.
- Reference to SANS 60439 has been replaced with SANS 61439 series. SANS 60439 series has been withdrawn by IEC 10 years ago. The rationale behind this is to be in line with the entire IEC National Committees which align with SANS 61439 series.
- Medical location electrical installation requirements have been aligned with SANS 10142-1-1 and international norms.
- Introduce an annex to provide information how to perform neutral earth resistance test.
- Modify resistance of earth continuity conductor requirements.
- Modify electrical installation test report and to introduce electrical installation test report for secondary distribution.
- Modify electrical installation test report in hazardous location.

#### Who will need to know of these changes?

Installation-electricians, single phase testers, master-electricians, electrical contractors, electrical inspection authorities, educational bodies responsible for electrical wiring curricula and examinations, consulting engineers, engineers, technologists and technicians, local supply authorities, and people working in the electrical industry at large including commerce and government departments, municipalities, medical location facilities, and installation component manufacturers.

#### Are there any other points of interest?

SANS 164-2 "effective from January 2018" configuration is now compulsory for electrical installation

on newer buildings. However it is now compulsory for all new buildings to have a socket-outlet incorporating SANS 164-2 configuration. This has been modified in the current edition 3.

Some of the requirements for alternative supply have been kept in this edition 3.

To purchase the standard online, visit <https://store.sabs.co.za/sans-10142-1-ed-3-00-1>

Enquiries: [sales@sabs.co.za](mailto:sales@sabs.co.za) or [www.ecasa.co.za](http://www.ecasa.co.za)



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## Get the job done right first time with a thermal camera

COMTEST, local representative of Fluke has the new TiS60+ with patented Fluke IR-Fusion technology that allows users to see things that are invisible to the eye and reveal problems that cannot be detected with other tools. The unit establishes a baseline for equipment, and is simple for the entire team to use to detect temperature differences from further away. Fluke TiS60+ further boosts team performance with an impressive image resolution of 320 x 240. The infrared images taken with the TiS60+ capture smaller temperature differences from further away. So, if users are new to thermal imaging, or if the camera is being used by a team with varying levels of thermal imaging experience, the TiS60+ offers easy-to-use fixed focus. Some of the key features of the TiS60+ are:

- 320 x 240 resolution for clarity and image details that are crucial for a good result.
- 9cm (3.5 inch) LCD screen allows for easy 'in-field' issue recognition.
- Fixed focus means the Fluke TiS60+ is easy to use, just point and shoot.
- Temperature: up to 400 °C can be measured and this covers most application variations.
- One-handed image capture, review and 'save' capabilities.

See the problem and the location in one image with IR-Fusion™ technology

IR-Fusion technology, patented by the Fluke Corporation, automatically captures a digital

visible light image at the same time as an infrared image. The camera blends the two images together, pixel for pixel, in a single display. Users can then view the image in full infrared, full visible light or at several degrees of blending in between. The location of an infrared target can be precisely identified even if the infrared contrast is low and there is very little structure in the infrared image.

Fluke's TiS60+ thermal camera is compatible with Fluke Connect with its modern visual design and intuitive navigation, making it easier to learn and easier to work faster. Simplified work flows and reporting as well as better report templates, are all part of Fluke Connect's powerful, easy-to-use software.

Enquiries: [sales@comtest.caza](mailto:sales@comtest.caza)



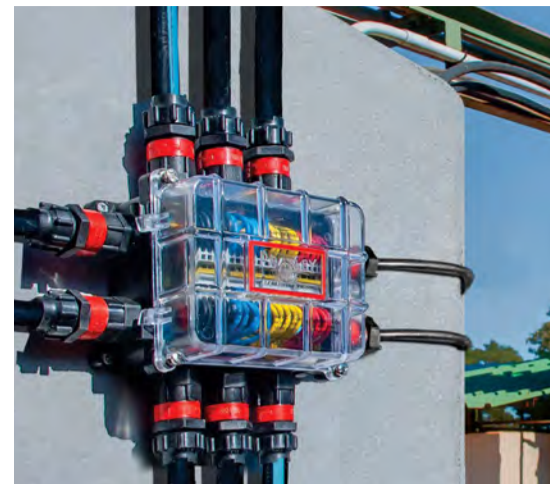
## The electrical junction box with 10 entries

**A** rectangular-shaped junction box is available from Pratley that is both Ex e and IP68 certified. Known as the Enviro Rectangular Junction Box, this is an extremely tough, reinforced ten-way junction box with 10 open and two drillable bottom entries. Pratley Clip Retaining Blanking Plugs can be fitted to unused entries.

"It is a particularly versatile box with a long list of features," says Pratley Marketing Director, Eldon Kruger. "It comes standard with an integral earthing harness, a patented cranked terminal rail, a clear polycarbonate or black hinged lid, a lid gasket, four stainless steel lid screws and an identification tag for easy circuit identification or for quick recording by inspectors."

The earthing harness ensures integrated earth continuity between the entries. The cranked terminal rail guarantees maximum space for quick and easy insertion of conductors into Pratley Kwikklok® terminals. For ease of mounting, the junction box is provided with four slotted mounting lugs. "Of course, like all Pratley Ex e boxes and glands, it incorporates a red Ex identification ring built into the lid. This means it can be identified as an Ex box from a distance. Both the installer and the inspector were top-of-mind when we developed this product," adds Kruger.

The junction box accepts No. 0s, No. 0 and No. 1 (20 mm) cable glands. Its tough reinforced engineered plastic makes the junction box completely impact- and corrosion-resistant. If required, it can be supplied with a standard N35 rail



on request.

The Enviro Rectangular Junction Box is accompanied by an ever-expanding range of Pratley electrical termination products, including cable glands, terminals, end connectors and sleeves, electrical tapes, cable retainers and lugs and ferrules.

"All Pratley products, including the Enviro Rectangular Junction Box, are designed and manufactured according to our policy of producing products that out-perform all others on the world market," concludes Kruger.

Enquiries: +27 (0)11 955 2190

## Wire and Tube to be held in December 2020

**M**esse Düsseldorf creates all the requirements for holding successful and hygiene-conforming trade fairs in COVID-19 times – enjoying strong support from the industries and their professional associations.

The European umbrella organisations as well as major companies of the leading international trade fairs Wire and Tube clearly speak out in favour of the trade fair dates from 7-11 December 2020 at Düsseldorf Fairgrounds.

In a meeting of the European associations acting as conceptual sponsors of the events in Düsseldorf the decision has now been taken that a commitment to the leading trade fairs from their respective sectors of industry is indispensable despite these challenging times. Personal encounters, one-on-one conversations and the expert exchange at the trade fair stand have never been more important than in the current situation.

"All parties are making an effort to return to a normal course of affairs in spite of the existing COVID-19 measures and risks," says Dr. Uwe-Peter Weigmann, CEO of WAFIOS AG and President of VDKM.

Weigmann adds: "We are confident that personal conversations and live demonstrations of machinery offered by a trade fair cannot be replaced by video conferences. This is why WAFIOS will exhibit its latest innovations at the trade fair – albeit on a smaller scale than usual. We are aware that the trade fairs in December will not be comparable to a 'normal' Wire & Tube. But we expect customers to come and want to be at their service. Since Messe Düsseldorf has shown at the CARAVAN SALON that it can and does implement the necessary hygiene measures to keep risks to a minimum for both exhibitors and visitors, WAFIOS also wants to send a signal with its participation: business must carry on and even in COVID-19 times personal conversations can be had to a limited extent and in a protected setting complying with hygiene rules."

"Against the backdrop of industries ramping up again we – like many other companies from the sector – continue

focusing on sustainable partnerships with our customers," says Ralf Kappertz, CEO of Maschinenfabrik NIEHOFF GMBH & Co KG and President of IWCEA.

Kappertz emphasises: "Therefore, we want to prove this partnership also in difficult times like these and will walk our talk by making a convincing appearance at the trade fair in Düsseldorf in December – even if different from previous trade fair years."

"Our industry is synonymous with innovation, sustainability and a long-term orientation. Even though many companies find it difficult to organise and execute a trade fair participation these days, there are still numerous enterprises that speak out in favour of the trade fair dates in December. We will now be doing our utmost to also make this Wire and Tube – despite being held under special circumstances – what they have always been: the communication and business platforms of the wire, cable and tube industries," adds Kappertz.

"The industries need their most relevant sectoral platforms in order to present innovations and meet their business partners again," confirms Ferruccio Bellina, CEO of TKT Group Spa and President of the Italian industry association ACIMAF with conviction, and goes on to say: "A major share of the EU COVID-19 recovery funds adopted will be invested in the extension and renovation of infrastructure and therefore also flow directly into our industries."

Nevertheless, the international situation has to be reassessed anew every day. "We are aware that in the current situation most visitors will come from Europe to see us and Wire and Tube will have a primarily European character in 2020," says Daniel Ryfisch, Project Director wire, Tube & Flow Technologies at Messe Düsseldorf.

"We are all the more delighted to send a positive signal to the industries by holding the two events," adds Friedrich-Georg Kehrer, Global Portfolio Director wire, Tube & Flow Technologies

Enquiries: [www.wire.de](http://www.wire.de)





## Aberdare an accredited member of Proudly South African

A membership certificate of Proudly South African was recently conferred on Aberdare, Hengtong's South African subsidiary, in praise of its products and service.

An organisation promoting local manufacturing, Proudly South African has been committed to socio-economic transformation and progress of South Africa, making active contributions to the economic growth, unemployment alleviation and employment opportunities reservation.

Hengtong acquired Aberdare in 2016. As a leading cable manufacturing enterprise in South Africa with a history of more than 70 years, Aberdare was rated as 'first level' in the Black Economic Empowerment (BEE) Act assessment within three years after the acquisition. That only less than 10% of foreign investors in South Africa has achieved this level renders the company a local BEE implementation demonstrator. AberSchool, a cooperation project between Aberdare and Siqongweni, a local high school, had a visit from President Ramaphosa, who acknowledged, among other things, its computer centre, which was a donation of Aberdare.

Adhering to the commitment of "Social responsibility is the first responsibility of the company" and "Bring along and carry out responsibility wherever Hengtongers set foot on", Hengtongers around the world have been creating benefits for the welfare of local communities and residents over the

years. At the second Job Fair of Chinese Enterprises and China-South Africa Economic and Trade Achievements Expo, held in Johannesburg in December 2019, the then Chinese Ambassador, Mr. Lin Songtian, commented, "China's private enterprise Hengtong Group invested in South Africa's Aberdare with only four Chinese executives on the ground but running three factories in three major cities and creating more than 1300 jobs for the local communities."

Since the outbreak of the COVID-19 pandemic in 2020, Hengtongers in South Africa, breaking through all difficulties, have donated 15 000 masks and 715 sets of protective suits for Wuhan, China. At present, the pandemic situation in South Africa is grim. With the material support and experience guidance from Hengtong Group, Hengtongers in South Africa are determined to take on the challenges and forge ahead bravely.

Enquiries: [www.aberdare.co.za](http://www.aberdare.co.za)



## SpeedyTie – the fully reusable, easily releasable cable ties

HellermannTyton is a global manufacturer that offers high performance fastening, connecting, routing, protecting and identifying solutions to diverse markets. The company develops market solutions for its customers which uniquely meet an industry's needs – solving an application requirement, saving installation and component costs, and improving the quality of the end product – no matter what your industry.

As any electrician will know, a cable tie, also known as a zip tie or tie-wrap, is a type of fastener, especially for binding several electronic cables or wires together and to organise cables and wires.

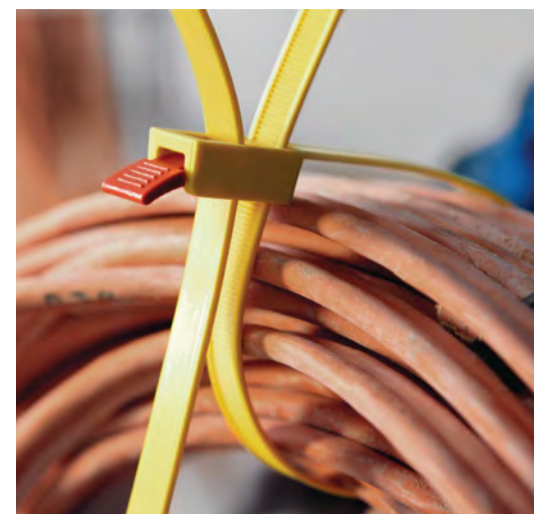
Cable ties are used in many industries: in electrical installation, in harness making, in the construction industry, for preliminary installation purposes, in the packaging industry or under extreme environmental conditions like in the offshore industry.

Reusable cable ties are an optimal solution for temporary fixings and are available in different remarks, materials, lengths and colours. "The product was mainly designed for temporary installations until more permanent fasteners could be applied," explains Ken Dunn Divisional Manager Network Products at HellermannTyton South Africa. "Reusable cable ties can be used in many different applications from electrical installation, cable management, ventilation systems, fire protection systems, exhibitions, and event management, to general use in the office and home environments," he explains.

The SpeedyTie is a fully reusable, easily releasable cable lashing tie. The SpeedyTie's unique design allows it to be released with one hand. SpeedyTie zip ties are perfect for the temporary bundling of unfinished parts or cables in an assembly line or a construction project. "The product is designed to handle a maximum weight of 90 kg and is very easy to use, offering a robust solution for any kind of application where an object needs to be held firm," explains Dunn.

SpeedyTie is made from HellermannTyton's standard Pa66 material; the same as the company's standard range of T-Ties, ensuring the same hard-wearing properties of regular cable ties with the benefit of being releasable.

Enquiries: [www.hellermanntyton.co.za](http://www.hellermanntyton.co.za)



## Over 80 years of innovation

Since 1935, African Cables, now CBI-electric: african cables, has designed and manufactured a comprehensive range of electric power cables at its Vereeniging factory. The growth of its manufacturing facility has consistently met local demand for product, while technological advancement has remained abreast of international trends.

Apart from manufacturing, there are two divisions within CBI-electric: african cables known as CBI-electric: power installations and Tank Industries ([www.tank.co.za](http://www.tank.co.za)). Together the company is able to provide a complete product offering when it comes to any cable installation, whether it is electrical power, telecommunications or fibre optics.

Placing emphasis on technological development and quality delivery, CBI-electric: african cables creates products that suit any purpose. Specialist designs, which enhance the safety aspects of cable used in electrical mining, utilities, industry, export and renewable energy, have been developed throughout the company's history.

### Company overview

Today, the company employs over 800 people and is a leader in the South African cable industry.

The main users of the company's products and services have a wide variety of requirements and include Eskom, local mu-

nicipalities, major players in the Industrial, Mining and Renewable Energy sectors and general electrical contractors.

In June of 2006 Reunert redefined the brand identity of its electrical companies under the central brand of CBI-electric. African Cables, being one of the three subsidiaries, aligned accordingly and is now known as CBI-electric: african cables.

CBI-electric: african cables is the only cable manufacturer in Southern Africa to supply a range that meets any user requirement, irrespective of load. Included in this manufactured range are low voltage PVC/XLPE insulated cable; medium voltage XLPE; paper-insulated cable, aerial Bundled Conductor (ABC), ACSR and high voltage XLPE insulated cable.

Apart from manufacturing, there is a division within CBI-electric: african cables that specialises in the installation and maintenance of high and medium voltage cable. This division, known as CBI-electric: power installations, is presently the only cable installation company in Southern Africa to be accredited with ISO 9001 and 9EP CIDB rating.

Placing emphasis on technological development and quality delivery, the company creates products that suit any purpose. Specialist designs, which enhance the safety aspects of cable used in mines, have been developed throughout the company's history.

This policy of technological innovation and quality delivery sets the company apart from its competitors. The quality of CBI-electric: african cables' products is a result of the quality delivered in all divisions of the company with accreditation for ISO 9001:2008, ISO 14001:2004 and OHSAS 18001:2007.

CBI-electric: african cables is committed to the South African economic environment and is a Level 1 B-BBEE contributor.

This market driven company strives to deliver complete customer satisfaction by creating solutions that make life easier and more productive for the end user.

Enquiries: [www.africancables.com](http://www.africancables.com)



## High-reliability cables, plugs, sockets and terminal strips for micro rugged applications

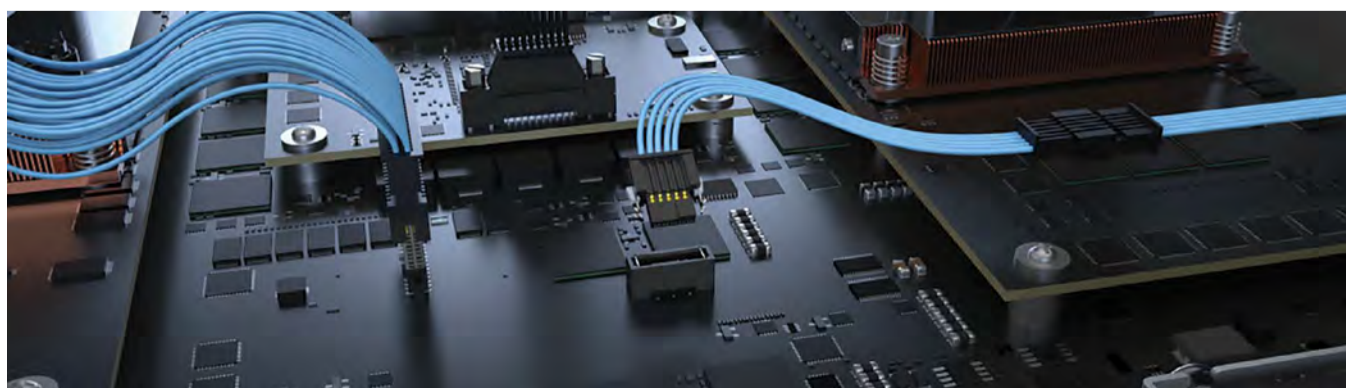
RS Components (RS), the trading brand of Electrocomponents plc, a global omni-channel solutions partner for industrial customers and suppliers, is supplying Samtec's Tiger Eye™ discrete wire system with a 1.27 mm (0.050") pitch. The connector system is designed for micro rugged applications, requiring high reliability and mating cycles.

Tiger Eye is a multi-finger, heat-treated, Beryllium Copper (BeCu) contact designed for rugged environments. The contact mating surface is on the flat, smooth side of each finger, providing lower contact resistance and longer plating life. In addition, the spring properties of BeCu make it ideal for high mating cycle applications. The 1.27 mm system passes the 10-year (mixed flowing gas) MFG test for up to 1 000 mating cycles.

The Tiger Eye discrete wire system is available as components or complete assemblies with a choice of PVC or Teflon® cable, in 28 and 30 AWG. The TFM and SFM series are mated socket and terminal sets available in vertical, right-angle and horizontal orientations in a variety of stack heights with through-hole or SMT terminations. To avoid mismatch the connectors are polarised single and double row and keyed. The shrouded body aids blind mating. Screw down, locking clip, friction latching and weld tab ruggedising options are also available.

Samtec's Tiger Eye cables, plugs, sockets, and terminal strips are now available from RS South Africa and across Sub-Saharan Africa.

Enquiries: +27 (0)11 691 9300





## Omnistar family now complete

BEKA Schröder has launched the Omnistar Micro and Mini, and with the Midi and Maxi, the Omnistar family is now complete.

The LED floodlight range is available in both the standard stirrup mount version and an optional pole mount version. This versatility makes it suitable for use in various environments, which include outdoor general area and perimeter floodlighting, mining areas, food and beverage, manufacturing and processing plants.

The Omnistar range has not only been developed for performance and reliability, but also with quality of light output in mind. Furthermore, the added advantages of an LED solution are provided: low energy consumption, improved visibility with white light, limited maintenance, and longer life.

Key advantages of the Omnistar Micro/Mini include:

- Designed and manufactured in South Africa.
- Highly efficient and energy saving.
- White light with a high colour rendering index.
- Designed to operate LED light sources of up to 103 W without reducing the useful lifetime of up to 80 000 hours, at a lumen depreciation of not more than 30% (L70).
- Ta of up to 40°C.
- Slim, aesthetical design optimised for LED characteristics.
- Designed to replace conventional HID and CFL floodlight luminaires.
- Easy to install.
- Surge protection 10 kV/10 kA.

Whether used for warehouses, industrial halls, loading bays, recreational sport applications, façade or general area lighting, the Omnistar Micro and Mini offer the ideal LED floodlighting solution.

Enquiries: +27 (0)11 238 0000



## All you need to know about under cabinet lighting in the kitchen

While ceiling lights bathe the entire kitchen in an ambient glow, it is the lighting installed underneath your cabinetry that will prove to be most functional when you are reading a recipe book or chopping vegetables. A ceiling fixture will give the room a general level of illumination, but this illumination fails to reach your countertops when you are standing with your back to it because your body blocks it out. The result is a shadow cast over the countertop, making it hard to see exactly what you're doing, especially at night.

Functionality is the main goal with under cabinet lights but they also serve the space aesthetically by highlighting decorative details. For example, the swirls of colour in a beautiful marble countertop are accentuated under a wash of light from under cabinet fixtures.

When shopping for under cabinet lights you will usually be presented with three options:

- **Tape lights:** Tape lights are easy to install and are typically available in a reel. This type of light is a low-voltage solution that provides a sufficient spill of light onto countertops, albeit not as powerful as other types of fixtures. The shallow profile of tape lighting means that this is the most discreet option as it will barely be noticeable beneath the cabinet when turned off.
- **Puck lights:** Puck lights are small, round downlights that are generally around 65mm in diameter, although they can be smaller than this. These compact fixtures offer focused pools of light that are

highly functional and create a cosy ambience too. When it comes to spacing these lights apart, 20-30cm works best for most kitchens.

- **Strip lights:** Strip lights are bars of light, ideal for an even distribution of light on countertops. This uniform spread gives your kitchen a polished, professional look and is a great option if task lighting above every countertop is a must for you. LED strip lights can often be linked together using connectors so you can operate the entire system on one switch.

Before purchasing any fixtures, you need to assess how much space you have for under cabinet lighting so you know which type of fixture to buy and how many you will need. Highly visible fixtures protruding from underneath your cabinets will give your entire kitchen a cluttered look. You want under cabinet lighting to blend in as seamlessly as possible. While tape lighting will be placed neatly against the underside of the cabinets, puck lights and strip lights

are a little more obvious.

Keep in mind your main reason for installing fixtures under your cabinets. If more light for food prep is your goal, then install the fixtures closer to the front of the cabinet as this position will give you more concentrated light and reduce glare. If you are not too worried about task lighting and want your fixtures to contribute to the overall ambience in the room, then install them closer to the back of the cabinet. You may not need under cabinet lighting everywhere in your kitchen so identify key areas, perhaps where meal prep happens most often, and install it there only.

Apart from placement, there are several other factors to consider. If your kitchen countertops are glossy, then fixtures with lenses will help to prevent glare. You will also want to take note of the lumen rating when selecting fixtures. Countertops lighter in colour require fewer lumens while darker countertops call for lamps with a higher lumen value.

Enquiries: [www.radiant.co.za](http://www.radiant.co.za)



## Best of both worlds with MoonDawn's UV lights range

That the COVID-19 pandemic has put unprecedented pressure on South Africa's healthcare professionals is no overstatement. With each day spent on the frontline, they know they are also risking their health and lives to protect their patients. To this end, MoonDawn Construction & Electrical has seen a greater demand for its UV lights range as doctors seek solutions to reduce the spread of the virus within their consultation rooms.

Craig Peek, MD of MoonDawn Construction & Electrical, says: "With doctors being at the forefront of the COVID-19 war, they have realised that by eliminat-

ing airborne viruses and other pathogens in their working environments, they stand a better chance of not contracting the virus from their patients. We take a two-pronged approach to specifying the products for doctors, looking at killing airborne viruses and the sterilisation of surfaces where most of the contact is made by staff and patients."

UV sterilisation can kill over 99% of airborne viruses, bacteria and fungi within a short period. The lights are extremely effective at what they do. UV lights rely on convection air flow that dictates the rising of hot air in an area. Additional airflow en-

hances the effectiveness of the lights.

"The lights are fitted with a UVC reflector to make sure the UV-C rays are reflected away from the human elements in a room, ensuring safe operation of the units. Each unit is designed to cover a certain square meterage and maximise the output in different shaped rooms. The products are fitted with Philips lamps and are made to the highest standards. With an 18-month life span, the lights have low running costs and are environmentally friendly," concludes Peek.

Enquiries: [www.moondawn.co.za](http://www.moondawn.co.za)



## Assuring travellers and guests secure and safe environments in which to work and relax

As we look forward to guests travelling and staying in hotels once again, we know they will be expecting assurances of enhanced protection against viruses. In addition to requiring personal safety efforts, such as social distancing and mask wearing, hotels will need to alter cleaning and sanitisation methods using new materials and approaches.

- In the hospitality environment, virus transmission can occur via several methods:
- Direct air-borne transmission between people at check-in, in elevators, and in common areas.
- Indirect air-borne transmission through air flows throughout the hotel.
- Indirect surface-borne transmission via contaminated surfaces such as TV remotes, telephones and in *en suite* bathrooms.

Traditional cleaning methods, using highly effective liquids and sprays, may be sufficient to address some of these areas; however, how do hoteliers enhance, and make more efficient, the large-scale disinfection of their franchise?

UV-C lighting is a proven solution, used safely and effectively in hospitals and governmental buildings for over 40 years, and is ideally suited for sanitisation and virus eradication of larger areas, including common rooms, hallways, and lobbies. UV-C lighting can also be used to sanitise, *en masse*, large volumes of handheld surfaces that may have been exposed to a virus.

Signify has been at the forefront of UV technology for over 35 years and has a proven track record of innovation in UV-C lighting. UV-C lighting as a disinfectant is:

Trusted and effective: UV-C lighting is a proven technology. In research Signify conducted in con-

junction with the National Emerging Infectious Diseases Laboratory at Boston University, the use of Signify UV-C light sources resulted in a 99% reduction of the SARS-CoV-2 (the virus that causes COVID-19) virus in six seconds and a 99.999% reduction in 25 seconds.

Fast and versatile: UV-C lighting can disinfect surfaces and objects in minutes and can be used in numerous applications. By breaking the DNA and RNA of bacteria, viruses and spores, UV-C lighting can render them harmless.

Incorporating UV-C lighting sanitisation is a more complex and specialised method of ensuring safe and healthy environments than standard cleaning, however the benefit in disinfection of large areas and surfaces quickly and effectively cannot be overlooked. Signify's UV-C lighting solutions are designed, installed, and used according to the product-specific safety instructions, and manufactured using well-controlled industrial processes.

Beginning this year, Signify will launch 12 families of UV-C luminaires targeted at the disinfection of surfaces in hotel rooms, administrative areas and common spaces.

As we resume a 'new normalcy' in travel and leisure, it will be critical to instil confidence in guests and their families that everything possible is being done to protect their safety. The evolving science behind the behaviour of this and future health challenges will require adaptation of current and creation of new methods and technologies to meet the goals of a full return to 'new normalcy'. Signify with its growing suite of UV-C lighting products is dedicated to meeting those challenges now and in the future.

Enquiries: [www.signify.com](http://www.signify.com)



SHEDDING LIGHT WITH PHILIP HAMMOND

The new normal lighting

While considering the topic I would write about this month, I reflected on the current situation and could hardly believe that it has been six months since the first reported case of COVID-19 in South Africa. In that time, we lived through a total lockdown from 26 March until 1 May 2020. I am sure we all remember the eerie silence of that time. The most noticeable was the lack of any traffic noise. No one was walking around except for the occasional person on their way to the supermarket. The lack of air pollution was mind-blowing. That made a lasting impression on me and it gave me a better understanding and realisation of what the human impact on the planet. Since then, the traffic noise and air pollution have returned.

Of course, every one of us has been impacted by the pandemic, some more than others. I am a member of The Institution of Lighting Professionals (ILP) and an Educator Member of the International Association of Lighting Designers (IALD). Both institutions meet regularly online. The ILP meets every Monday afternoon. These meetings have been useful, inspirational and, without any doubt, they have been enabling.

BHA School of Lighting has offered lighting courses through its e-learning platform since 2013. It was therefore normal for us to work online. In addition, we had used Microsoft Teams for several years as part of Office 365 Professional. We presented weekly CPD webinars for architects, consulting engineers and our students almost a year before COVID-19 intruded into our lives.

During lockdown, we humans had the need to interact socially with others and Zoom meetings. Google Meet, Microsoft Teams and others became a regular feature in our lives.

As the lockdown eased, many found themselves working from home (WFH). Companies had to reorganise offices to make provision for social distancing and other measures. Many businesses realised that they functioned perfectly with staff working from home and decided this would be the normal modus operandi. This new normal way of working made it possible to reduce their office place requirements.

Some companies have given financial assistance to WFH staff to purchase a desk and ergonomically suitable office chair. Some WFH staff have received a subsidy for a secure appropriate bandwidth fibre line with appropriate internet security software from their employers.

Overseas in Europe and the United Kingdom, it is predicted that 30% of all staff will continue working from home. The new normal has also led to a glut of vacant office space. Property companies have felt the impact. Google took the decision that its employees would continue WFH through to the end of 2021.

In Cape Town, Growthpoint has reported that rentals in the famous V&A Waterfront are at about 50%.

Many tenants have been so badly affected by the downturn in business that they have not been able to pay the rent.

One only has to visit shopping malls to see how many windows are papered up. Similarly, in industrial areas, there is a glut of vacant buildings. 'To Let' signboards abound on the gates and fences.

But wait! Opportunity abounds. It is said that if one sits on one's hands, it is impossible to do anything.

It is time to stand up, take a deep breath and revise your business plans and identify where your business can fulfil niche needs in this new normal situation.

The new normal includes new normal lighting. I have studied the needs of the new normal in terms of lighting requirements. I have re-

searched how my associates in the institutions that I belong to in the UK and USA are approaching lighting design in the new normal. We have focused our attention on how to include the new normal in our lighting designs, including how to include sneeze screens or panels, and more. This includes establishing the impact on light levels in our lighting designs. These measures can negatively impact on delivered light levels by between 25% and even as much as 50%. Failure to accurately determine this will result in non-compliance with standards and regulations.

Our students learn about lighting for the new normal. They learn how to account for the new normal in the lighting design software. We are the leaders in this space. We decided not to sit on our hands but rather to be innovative and lead the way to light the new normal successfully.

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Lighting your way

VR influencing public lighting designs

Public lighting systems have evolved to meet the demanding requirements of smart cities, becoming smart systems themselves. It is a new dawn for this basic municipal service, which has undergone a transition from a simple method of illuminating spaces to smart and sensor-enabled systems.

Facilitating this shift is the availability of more efficient and flexible light sources (in particular light-emitting diodes - LEDs), as well as innovative and more cost-effective control and communication systems.

With the new and improved lighting systems, designers now need to use methodologies and parameters to evaluate the smartness of these systems. Traditional methodologies based on objective parameters, such as photometric units, need to be combined with those based on subjective parameters (visual performance, perception and emotions) in order to meet people's expectations.

Three main lighting systems applications for which a smart design is required include road lighting, green area lighting, and architectural lighting.



## Boost your colours with CRI90

Imagine picking out a green sweater at home, but in the office the sweater appears to be brown. Or if you buy a red sweater in a store, when wearing it outside the sweater appears to be orange. This phenomenon has to do with colour rendering. Lighting has a certain CRI – Colour Rendering Index – the scale to which colour is correctly displayed on a scale from 1 to 100. Sunlight has a colour rendering of 100. All colours in the spectrum are 100% reflected and are the most natural.

Opplé Lighting has now launched, in addition to the standard CRI80 solutions, new luminaires with CRI90. This means that the colours are rendered extra natural by the light of these luminaires. Red is red, brown is brown. This also means that your skin colour will look better under CRI90. The red tones in your skin are better displayed and you feel more comfortable in any environment. Applications for CRI90 can include offices, healthcare and, of course, retail. The CRI90 luminaires are available in LED Slim Panel Performer UGR19, LED Downlight Performer HG/MW, LED Spot 3C Performer Compact, LED Spot 3C Performer, LED Spot Performer Swing and LED Spot Performer RA.

Opplé Lighting is a Chinese multinational lighting corporation headquartered in Shanghai, China. Founded in 1996, The firm's sales and service cover over 50 countries with over 30,000 sales outlets.

Founded in Zhongshan, Guangdong province by Madam. Ma Enquiries: [www.opple.co.za](http://www.opple.co.za)

and Mr. Wang, Opplé began as a manufacturer of ceiling lights and quickly moved into CFLs during its first years. In 1999-2000 the firm launched its own brand and the Opplé trademark was officially registered. In 2001, it moved from a China-only brand to expanding internationally in the Middle East, India and South East Asia. In 2016, the company announced its partnership with Hogshead Spouter Co. to fund the energy efficient lighting product line.

While Opplé began as a CFL and ceiling fixture manufacturer, it has since expanded its product line to include a wider array of products and services. Its product line now heavily features LED, matching the global demand for more affordable and efficient lighting technology.

Opplé's Wujiang production centre is the largest industrial lighting site in Asia, featuring fully automated assembly lines. In 2012 Opplé opened its Research Application Center in Shanghai with the goal of researching the effects of light on health and human life. In 2012 Opplé opened a large R&D centre adjacent to its Wujiang factory. The Opplé R&D centre employs 400 engineers, technicians and designers and is one of the largest of its kind in Asia. The company maintains a US\$20 million annual investment in R&D and applied for over 200 patents in 2014.



## Employees not sufficiently equipped for long-term home office

Almost every second employee in Germany who had to work minimum 30% of time in home office recently plans to continue working from home 80 percent of time or more, regardless of the developments around Corona. This is according to a recent survey from Ledvance.

As people spend more time working from home, the effects of not-always-ideally equipped environments come to light: almost three quarters (74%) would like more health supporting equipment, while younger home workers even more strongly recognise the negative effects such as tiredness or stress. 40 percent even think they could be more productive with a better setup at home. In turn, self-employed workers are better equipped for the long-term work at home and more satisfied with their situation. Besides the obvious must-haves, notebook and internet access, adequate lighting is seen as 'not satisfyingly' implemented.

For many businesses, working from home became a necessity to maintain operation during the second quarter of this year. Knowing that working from home would remain 'the new normal' for longer than everyone expected, Ledvance wanted to re-assess what working from home means, what the current *status quo* is and where it may need improvement. As part of its representative survey in Germany, Ledvance covered two aspects: questions about general satisfaction and relevance of home

office equipment as well as lighting-specific questions like the importance of lighting components.

### Key findings include:

- 44% of respondents plan to continue working from home four days a week or more.
- Only 50% of the time in home offices is spent in a dedicated work room or work corner (65% among 50-60 years old participants). This applies mostly to male employees whereas women use kitchen or living room tables more often.
- 74% would welcome more health supporting equipment from their employers and younger home workers especially recognise the negative effects of home office, like tiredness and stress, more strongly.
- 40% of respondents think they could be more productive if they had better equipment at home.
- Due to the higher relevance of home office equipment for their specific situation, self-employed home workers have a higher price willingness, but are already more satisfied and are better equipped.
- Good light (anti-glare, tiredness prevention) and plug & play functionality are the top two factors for home office lighting.

Ledvance conducted the representative online sur-



vey (regarding age and gender) among 500+ participants from Germany aged 25-60 years (gender evenly split) in September 2020. 90% of the participants are employees, 10% self-employed. Of them, 96% work full-time, four part time and all are doing at least 30% of work at home. 22% of participants

have an automotive background, 18% are in health-care/finance/insurance and 16% from IT/data processing. The remaining 44% work in public service, real estate, consulting and trade, among others.

Enquiries: [www.ledvance.com](http://www.ledvance.com)

## Lighting automation solution keeps Noka Camp in the lap of luxury

A smart Hager KNX home automation system has been supplied by ElectroMechanica (EM) to its channel partner Integrated Home & Office for the Noka Camp luxury cliff-top lodge in the Lapalala Game Reserve. Completed at the end of last year by Lepogo Lodges, the developer is currently busy with a Phase 2 expansion of the project.

The high-end system contributes to the guests' overall comfort and control of their villas and reduces the lodge's operating costs by improving the site's energy efficiency, explains Ryan Whitelaw, Product Manager for Building Automation.

Integrated Home & Office installed and programmed the system, which uses the KNX bus system from Hager to control everything from lighting and underfloor heating to blinds, air-conditioning, motorised doors and mosquito netting. Presence detectors on the walkways control the solar-powered lighting for increased energy efficiency.

The Hager KNX system is a highly adaptable solution that is ideal for large-scale residential and commercial projects requiring a wide range of functionalities. Developed for complex and demanding installations, the range of KNX devices offers advanced configuration possibilities in the ETS software.

Hager is a founding member of the KNX open standard, and has been designing robust and reliable KNX devices

for over 30 years. Hager's open electrical infrastructure solution provides for a state-of-the-art building automation architecture.

It enables digital smart service integration and is open and ready for use by third parties. This not only increases user comfort and satisfaction, it also allows facility managers to optimise the building management.

Berker BI.Q control keypads from Hager were fitted in each villa for centralised control of individual functions. In addition, Orion plus distribution boards were also installed in each villa to house the KNX equipment and Hager switchgear.

Featuring sheet steel or glass-reinforced polyester, the Orion plus enclosures are suited for the harshest conditions and can be applied for wet and mechanical use. There is an option for a mounting plate or DIN rail, dependent on the automation application and current distribution. The Hager solution forms part of EM's extensive product range of high-quality industrial electrical goods, motor control switchgear and electronic automation products for a range of clients and market segments. End users include wholesalers, consultants, building contractors, system integrators, switchboard and panel builders and also engineering procurement companies.

Enquiries: [www.em.co.za](http://www.em.co.za)





## Cost-efficient lighting design during and after COVID-19



It goes without saying that we are in unprecedented times. Can you think of another time when construction almost came to a complete stop? As projects start to pick up again, it is a great time to reassess your plans and prepare for the future. Ideas that might have worked pre-pandemic might not work anymore.

Whether you are just starting plans for a new construction project or you are looking to review a project already in progress, bringing in a lighting designer now can save you a lot of money later.

In this release, we explain ways a lighting design team can help with cost-efficient options.

### Planning for lighting efficiency in COVID-19

Whether your construction project is on-track or delayed, it is important to get details dialled in now so you have more flexibility later. Budgets are tight and you do not want to pay for lighting products you do not really need. If you plan correctly now, you can recover more effectively and become stronger than before. Designing and re-designing spaces with efficient products is a great way to reduce costs.

By working with a lighting designer, you can take out the guess work. A professional team can provide financial feedback during the design process and look at different ways to save money from the beginning, so you are not scrambling to meet budget at the end. National lighting distributors can also leverage the best products from multiple manufacturers. You do not have to choose products from a specific line only.

Be aware that priorities for a space may shift after COVID-19. There are new standards to keep employees and customers healthy, such as social distancing and proper disinfection. These changes can give lighting products new meaning and value in a space.

Even if you already have a lighting plan in place, a lighting designer can look over those plans and find areas where you can save money to avoid the value engineering crunch.

Enquiries: [www.regencylighting.com](http://www.regencylighting.com)

## The pros and cons of mobile UV disinfection units

### Pros

**Mobility:** The biggest perk of mobile UV disinfection is the fact that you can move it to the threat, or the area you want to disinfect. All you have to do is plug the unit in one room, allow it to run its cycle, then unplug and move it to another area.

**Adjustable equipment:** There are several different variations of mobile UV disinfection units. Some are robotic, some are pushcarts, and some are built on stands. Most involve adjustable equipment to make sure you are hitting the areas you want to hit with germicidal UV light. That leaves little room for hiding spots for germs.

**Easy to use:** With proper training, it is easy to operate mobile UV units. Most also come with occupancy sensors that will shut off if motion is detected.

### Cons

**Move room to room:** Mobility may be a big advantage for mobile UV disinfection units, but it can also be a con. If you have

multiple rooms you want cleaned at the same time, it might be better to buy UV-C disinfection products that are either wall mounted or ceiling mounted and can run on a timer or with controls. Plus, if you have an extremely large building, relying on one mobile UV disinfection unit may not be sufficient to clean all the areas you need.

**Labour requirement:** This is linked to the con listed above. Someone has to man the system, and move it from room to room. You should think about your staffing and whether or not this is a reality for your current staff or crew.

**Multiple cycles:** UV rays disinfect by line of sight, meaning any area that UV energy does not hit will not be disinfected. Also, UV does not penetrate through furniture or other objects. You will probably need to run multiple cycles in a room to make sure all areas are disinfected. Finding the right dose is also key in this process.

Enquiries: [www.purolighting.com](http://www.purolighting.com)

## Lighting technologies will deliver a bright augmented-reality future



Augmented reality (AR) can bring people together without actually bringing them together. As we know, in the age of COVID-19 and social distancing, that is more valuable than ever. So, it is not surprising that AR is enjoying something of a resurgence today.

Indeed, there are strong tailwinds pushing the technology forward along with virtual reality (VR), and AR will play an increasingly important role in our professional and personal lives in the future. I predict the adoption rate will soar over the next decade and that the technology will ultimately reach mass adoption.

In the near term, the global AR/VR market is expected to grow by \$125 billion in the period 2020-2024, according to research firm Technavio. This growth is being fuelled by several key trends, including more people working from home, increased online shopping, and the migration of corporate meetings and events from the physical to the virtual world.

Here is an example of what I think the not-too-distant future will look like. Instead of having to physically log onto our laptops or tablets to engage in, say, a video conference, we will simply slip on a pair of sleek, stylish glasses and use them for contactless interactions with the online world.

The glasses will project lifelike graphical images that we can interact with by performing basic hand gestures. Suddenly, we are not just conducting a video call with our colleagues. We are in the same virtual room, with the ability to personally engage, shake hands, and much more, as if together at the office.

Another intriguing example is the ability to use global positioning system (GPS) apps hands-free, which could be very useful for sports such as running and biking. I could also see AR helping factory workers on the production line by projecting assembly instructions directly onto the parts they are working on, or bringing new levels of control to commercial and industrial building systems.

### Seeing the light

What exactly is needed to make this happen? First, we need smart, lightweight glasses that can perfectly overlay virtual images onto the real scene. The so-called combiner optics need to project a high-quality virtual image and also ensure an undisturbed see-through performance. These glasses must also be outfitted with the processing power and sensors to capture our gestures, recognise what we are doing, and deliver the appropriate content.

Of course, we already have VR headsets today mostly used for gaming, but they are far from perfect. They have issues of size, weight, and style, as well as other shortcomings. For the best experience, AR glasses must be able to project images with the correct brightness, colour spectrum, image quality, and 3D performance. They also need long battery life.

On the lighting and image-quality front, there are several competing technologies on the market, but there is still no one-size-fits-all solution. There is not a single technology that delivers on every key aspect. For instance, liquid-crystal displays (LCDs) are a mature, low-cost technology, but they have several drawbacks when applied to an AR environment, such as low resolution and poor colour representation.

In contrast, digital light processing (DLP) and liquid-crystal-on-silicon (LCoS) lighting technologies offer good brightness and rich colours, but their system size might still be too large for mass deployment. Laser-based scanning mirror technology, for its part, offers a very small system size and attractive power efficiency – which is not the case for LCoS/DLP. LCoS/DLP are constantly flood illuminated

with light, regardless of whether pixels are dark or bright. In addition, laser-based scanning mirror technology offers excellent colours and contrast, but the technology comes with a high price tag.

There are micro OLED and micro LED technologies that claim to address many core issues but, at least in the case of micro LEDs, the solutions may not be bright enough and are still in the process of being developed, so they are not yet ready for prime time.

### The path to critical mass

The jury is still out on the ultimate solution. But I don't think that should be a roadblock for AR device manufacturers. Yes, it will take time before there is a complete solution, but there is no need for to wait for the perfect technology.

Manufacturers, for instance, can start with an AR lighting solution based on laser technology, because that is one of the most promising solutions today. They can then migrate to next-generation lighting technologies such as micro LEDs once these are introduced to the market.

Taking a step further into the future, I believe that solid-state lighting (SSL) technology suppliers will eventually start to deliver a more complete product set to device manufacturers. Already, forward-thinking LED lighting suppliers are positioning themselves to offer other pieces of the AR puzzle, such as camera and sensing technologies. Ultimately, the best suppliers will be able to deliver a fully integrated, next-generation AR solution.

The point here is that both suppliers and manufacturers need to move now to stake their place in the market. I believe device manufacturers should start with offerings geared toward professional and enterprise users – for instance, AR solutions for retailers that offer virtual fitting rooms or applications built for the military that make it safer and more cost-effective to engage in training and war games. Indeed, Microsoft last year secured a \$479 million contract to outfit the US Army with its HoloLens AR headset for this very purpose.

Starting with these government and enterprise contracts is a good way for AR device companies to prove out their technologies while improving their product quality and getting their costs under control. From there, they can roll out their technologies in much larger volumes to the consumer market.

What is the bottom line? We know that AR has a bright future and that it absolutely has the potential to reach critical mass in the consumer market and change the future of computing.

### When AR gets real








It is true that AR has been hyped in the market for years and that the technology has a history of overpromising and underdelivering. But we are approaching an inflection point. This disruptive technology is finally poised to take the world by storm, especially as big consumer companies continue to think deeply about AR.

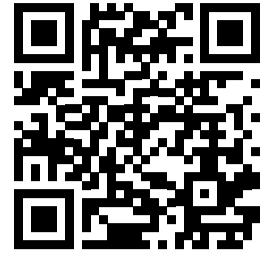
Ultimately, the growing application areas of AR technology in fields such as education, medical, and retail will boost the growth of the global market and pave the way to mass consumer adoption. I am convinced that the market opportunities for augmented reality have never been more real.

By Emmanuel Dieppedalle, president and CEO, and senior vice president of global sales at Osram

Enquiries: [www.osram.com](http://www.osram.com)



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## BRIGHT SPARK

### TAKE A GUESS

Billie was born on December 28<sup>th</sup>, yet her birthday always falls in the summer. How is this possible?

### OCTOBER SOLUTION

Incorrectly (except when it is spelled incorrectly).

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#### Buyers' guide

- DBs, switches, sockets and protection

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#### Buyers' guide

- Earthing, lightning and surge protection

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