

VOLTEx BRANCHES BOAST ONE LOOK



See more of the new branches on page 7

In May, Voltex East Rand and Voltex George moved to new, bigger premises. These branches boast cutting-edge product, lighting and solar displays that enhance the customer experience.

The new home of the East Rand branch can be found at the corner of North Rand Road and Romeo Road in Boksburg. Voltex George, situated a stone's throw away from the old branch, is on 2 Glaze Street in George and boasts an active solar display installation and increased parking bays.

Voltex Wholesale Regional Managers, Natasha Wendelstadt (Gauteng) and Ronnie Landman (Eastern Cape) believe these branches offer a better customer experience, adding: "We look forward to welcoming all existing and new customers to our stores."

CONTINUED ON PAGE 7



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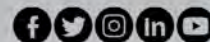
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Realising energy efficiency in a time of escalating costs

South Africa will soon see the fallout of the 15,63% energy tariff hike which came into effect on 1 April, impacting all customers apart from the poor, who will continue to use government's free basic energy (FBE) service.

The tariff increase comes after the National Energy Regulator of South Africa (Nersa) and Eskom reached an agreement following an order by the High Court of SA to add R10-billion to the utility's allowable revenue in 2021/22. This will undoubtedly have a considerable impact on tariff paying customers and put additional financial strain on an economy that is navigating the uncharted waters of the COVID-19 pandemic.

Energy is not only expensive but a liability

The question is therefore what can be done to mitigate the impending tariff hike's impact on SA's economy? For one, it's important to acknowledge that energy's increasing cost will continue to put the economy at risk as businesses and industry struggle to overcome the resultant financial impact of higher energy costs.

Costs, therefore, need be controlled, and energy efficiency and savings remain the answer. Fortunately, there are today numerous feasible options available that can go a long way in helping businesses and industry cut costs while improving ef-

ficiency and realising longevity.

Effective power management has emerged as an important enabler of organisational energy efficiency. An integrated power and energy management software platform, for example, enables organisations to optimise their power distribution infrastructure, maximise operational efficiency, and improve bottom-line performance.

So how does it work? A power and energy management solution analyses and mitigates quality related issues while tracking and optimising equipment performance. Importantly, it investigates energy consumption, uncovering potential savings and allocates



Taru Madangombe, vice president, Power Systems, Schneider Electric

energy-related costs accurately.

In real-world scenarios, power and energy management software can analyse and isolate the total energy usages from all electrical and piped utilities, identify waste and reduce costs.

Industry savings

The local Mining, Minerals and Metals (MMM) industries are major users of power and, as a result, will be impacted significantly by the tariff hike. The time is now for these industries to initiate and integrate sustainability to become successful resource companies in future.

However, to realise energy-efficient MMM industries, concrete steps based on an established sustainability strategy must be taken. At Schneider Electric we recommend these four important steps:

- Energy efficiency: reliable and efficient power distribution solutions;
- Yield improvement: digital integrated operations management;
- Low GHE technology adoption: renewable and microgrid technology;
- Green process: green products energy and automation: all part of the circular economy.

We will also see an increased shift by electro-sensitive users such as MMM towards self-generation options to save costs. A sound sustainability strategy can realise numerous benefits such as reducing energy costs by identifying and eliminating losses in energy usage and distribution. This is a significant amount that can go a long way in minimising the impact of the tariff hike.

With a strong sustainability strategy in place, MMM industries stand to benefit from considerable efficiency gains. Here, two pillars play critical roles: the minimisation of resource wastage, and the optimisation of operations management processes through the integration of process and energy management efficiencies.

Digital transformation

The key to unlocking business value from digital transformation is to consume less energy without sacrificing productivity or comfort. These two goals, often thought to be contradictory, have come into alignment through the digital transformation of energy management and automation.

Software management tools bring visibility and control over enterprise-wide energy consumption. For example, in the past, facility managers were unsure whether lights were being left on. Now, they can automate lighting, HVAC, and other systems to ensure that energy is used only when needed.

This also benefits utilities as it provides full visibility of their network to mitigate energy losses and improve grid performance. Businesses can now easily locate and execute performance enhancements via a central dashboard.

Ultimately, by taking a number of important steps, local business and industry can weather the tariff hike storm while also establishing operations based on energy-efficiency and sustainability processes and strategies.

By Taru Madangombe, vice president, Power Systems, Schneider Electric

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The top podcasts for electrical contractors

If you are on the road most of the day, driving between jobs, why not use your time to brush up on your electrical knowledge? We have compiled a list of the top podcasts for electricians, a blend of interesting, fun and knowledge building shows to keep you up-to-date and entertained.

The Electricians' Show

A podcast for electricians, by electricians. The Electricians' Show is a podcast/show that discusses the electrical topics of the moment. From plastic or

metallic consumer units to what type of RCD, they have it covered.

Ask the Grounding Experts

Join this podcast each week where their engineering experts answer your questions about the world of grounding and earthing. E&S Grounding Solutions' mission is to engineer, educate, and empower the world's leading technology professionals and companies to become safer, more successful, and more profitable every single day.

The Electrician Podcast – Powered by Schneider Electric

This podcast brings you the electrical industry experts you need to hear, to discuss the topics you need to know about. Schneider Electric is passionate about helping you to master your craft by connecting you with leading industry professionals so that you can grow your knowledge, your skills, and ultimately, your business.

Powered On

Powered On, brought to you by Electrical Review, is a

podcast designed to discuss the burning topics in the electrical industry. They educate, inform and share some laughs. Unlike other podcasts in the electrical industry, they want to give you a little bit of personality, alongside the usual informative gossip and debates that they will be hosting.

Electricians Podcast EGTE

The Electricians Guide To Everything! is a podcast for anyone interested in the electrical industry, with regular guests including influencers, experts and innovators.

Dynamic Discussions: Blue Nova's range of backup batteries

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Did you miss our May issue?

HIGHLIGHTS FROM THE ISSUE

Cover story

Cabstrut, who offers the world of business and industry sophisticated solutions to Cable Reticulation & Management through a comprehensive range of dedicated power distribution and cable support systems, turns 30 this year.

Working Knowledge with Terry Mackenzie Hoy

This issue Terry Mackenzie Hoy discusses how not to start an electrical business. There are two types of electrical business: selling labour (or time) and selling equipment. It is up to you. If you don't like manual labour or selling, then you shouldn't start at all. But otherwise, choose one or the other. This article is about what not to do.

New Cape Town premises for ACDC Dynamics

ACDC Dynamics, leading manufacturer, importer and distributor in electrical, electronics, tools and pumps, is pleased to announce

an addition to its premises in Richmond Park, Western Cape


Industry standard DMMs for electricians when uptime matters

Comtest is offering Fluke's 177 and 179 Digital Multimeters (DMMs), the two DMMs that are to be found finding on more tool belts, than any other comparable test tool.

Buyers' Guide

The May 2021 Buyers' Guide lists manufacturers and distributors of products and services in the Energy Efficiency sector.






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WearCheck helps companies comply with technical safety requirements

WearCheck's advanced field services (AFS) division offers a wide range of specialist monitoring techniques which include rope testing, technical compliance (TC) and non-destructive testing. Some of the different TC techniques are discussed here.

According to Johan Stols, WearCheck's TC manager, the ultimate goal of the TC division is to ensure that all the components that they monitor comply with stringent, pre-determined safety standards. The TC team plays a supporting role to customer operations by reducing risk using specialised and multidisciplinary services and resources, and they are on call at all hours.

TC customers predominantly operate in the mining sector, but other industries are beginning to realise the value of TC, too. The TC team's mining customers are generally the deep level mines – coal, gold, platinum and others – where vertical shafts (people movement), incline shafts (goods movement), ropes and many other components are tested.

The TC tests generally include level one winder and main fan compressor inspections; compliance level electrical inspections; headgear elevator electrical inspections; lock bell inspections; chairlift electrical inspections; secondary injection testing and conveyor belt compliances.

These components must undergo regular tests to ensure that they are constantly in a safe operating condition. Inspections are conducted using specialised testing equipment, highly skilled and experienced inspectors, and compliance to rigorous safety standards.

In South Africa, TC standards are legislated in many cases, but are also guided by industry-recognised best-practice values. Stols explains further, "We add value for our clients by providing quality services, and by identifying and mitigating risks associated with safety and production-critical equipment."

"WearCheck's TC team comprises six winder inspectors, who have around 140 years' combined experience between them. It is this team's responsibility to check that every component in a given machine is working exactly as it is supposed to. For example, on a lighting circuit, all lights must be working perfectly, and each safety

circuit must trip exactly when it is supposed to.

"If an error is found, this is reported to the engineer in charge of the particular component. Repairs are carried out by the engineer's maintenance team, and then the TC team returns to retest the faulty component.

"In dynamic testing, which is applied to license winders, the law states that physical testing must be conducted within every 200 days in order to comply with safety standards.

"There are two levels of testing. Level one is where general electrical and mechanical audits are conducted. Level two involves designer audits on OEMs. In level one testing, even though there is no specific law that stipulates the frequency of testing for winders, industry best-practice dictates that they should be tested at least four times a year.

"During a typical TC audit, which is normally done during a weekly examination in which around 100 items are tested, the safety circuit is tested for correct operation. The different circuits on each unit must be tested to ensure correct operation. A report is compiled with all findings and includes the previous three audit results so that a trend can be established. Recent repairs done on the machine are highlighted.

"Tracking the compliance status of each component enables the engineer and the maintenance team to keep the component in peak operating condition and avoid nasty accidents or costly downtime.

"What is important to note, for example, is that each winder has its own unique operating and protection system, which must be adhered to when it is undergoing testing. We make sure that we are acquainted with each component and its maintenance and compliance history.

"Our TC team is standing by to assist in any way possible to ensure that all moving machinery is audited according to best practice, and that all required safety standards are met. Due to the production-critical nature of our support work, we are on call 24/7/365."

Enquiries: www.wearcheck.co.za



This safety circuit is required to undergo technical compliance testing every time a level one audit is scheduled. Here, testing is conducted by WearCheck advanced field services technician, Joe Kies, to ensure that it is operating within the required safety regulations. After each audit, WearCheck prepares a report containing all findings and the previous three audit results to establish performance trends.



WearCheck advanced technical compliance technician, Joe Kies, measures the charging time of the hydraulic system for a winder.

An electrician's guide to becoming self-employed

If you are thinking about becoming a self-employed electrician, we would always recommend working with an experienced electrician first, once you have completed your training. This will allow you to gain confidence and experience before going it alone. You can do this by working as an electrician's mate, working for an electrical contracting firm, or you may have completed an apprenticeship.

Once you feel confident that you have gained enough experience and are competent to go it alone, you may be ready to take the next step.

Things to consider before becoming self-employed:

- Becoming self-employed effectively means that you are setting up a business. However, before you go much further, there are certain things you will want to consider, which include:
- How will I acquire new customers?
- How will I cope during quiet periods of no or little income?
- Do I have enough money to get set-up? (i.e., buying new tools and a vehicle).
- Can I get by without having the benefits of paid holiday, sick pay and pension contributions?
- Am I okay working on my own?
- Can I manage my cashflow, record keeping and tax returns?
- What insurances do I need?
- Do I need to join a competent person scheme?

The advantages of being self-employed

There are plenty of advantages to being self-employed and these include:

- Being your own boss: You get to have a more varied workload as you get to choose the type of work you take on.
- Being able to work with more flexibility: You will have more control over the hours you work, which will allow you to arrange your day around any other commitments you may have.

Being able to achieve a much higher income: If you put in the hard work, you will be able to earn more. This is mainly because you can charge hourly or day rates, which can be higher than some standard salaries. Day rates can vary depending on your experience and region.

Offset your tax liability: There are certain costs that you are able to deduct from income when calculating your tax, e.g. your equipment/tools, mileage, stationery and others.

The disadvantages of being self-employed

Of course, there will always be some disadvantages to being self-employed and these include:

- Start-up costs: You will need to have in place some money to get you started as you will most likely need to buy new tools, a van/car, insurance and others.
- Finding customers: This can be challenging to start, and you will need to find ways to advertise your services to get noticed.
- Income: Your income will no longer be consistent. You will need to ensure that you can keep up with bills, loans, mortgages, rents, etc. You will also need to bear in mind that during times when you are off work due to sickness or holiday, you will not be getting paid.
- Admin: When you work for yourself, you will be responsible for the admin side of your business, i.e., scheduling in work, quoting, invoicing, insurance, etc. You will have to ensure that you comply with regulations.

Sole trader or company?

Once you have decided to go the self-employment route, your next choice is whether to start up as sole trader or a limited company.

An advantage to becoming a sole trader is that it is relatively easy to set up. There are also certain expenses you can subtract from your income when calculating your taxable profit. You can check the government website for more details, but these include business related travel, business insurances, stock, and others.



Disadvantages are that it could be hard to raise finance as lenders tend to prefer to lend to limited companies. The tax rates aren't always great, especially when you reach a certain level of earning. Something else to consider is that, as a sole trader, you are the sole owner of the business and, as such, have unlimited liability. This means that if your business finds itself in debt, you are personally liable and, if things go wrong, you could end up losing your personal assets.

A limited company has its own legal identity and, as such, is separate from its owners and directors. A limited company has the benefit of having limited liability, meaning that, should something go wrong, your personal assets would not be exposed.

Limited companies are also more tax efficient as you pay corporation tax on any profits rather than income tax. You can also claim tax relief on business expenses. There are more allowances and tax deductible costs that can be claimed against a limited company. Increased administration aside, there are other benefits:

- Once registered, your company name is protected.
- You will have limited liability.
- Increased tax-efficiency.
- You can take a yearly dividend.
- You will have greater borrowing power.
- Your reputation and credibility among customers should improve.

The disadvantages of a limited company are that there is a lot more paperwork and legal fees to consider. These include filing an annual return, as well as annual accounts. You can either take care of these yourself or hire an accountant to file them for you.

As a limited company there are certain things you will need to do if you are changing from sole trader:

- Decide if you are going to be the only director or whether you want others involved.
- Decide on a name for your company.
- Register your business.
- Set up a new business bank account specifically for your limited company.
- Let your insurer know that your legal structure has changed.

We would recommend speaking to a financial adviser or accountant for some sound tax advice before making your decision regarding which route to take.

Source: www.tradeskills4u.co.uk



Empowering the future

One of the most well-known quotes attributed to Steve Jobs says, "If you really look closely, most overnight successes took a long time." Success is rarely a sudden and explosive event – winning the lottery excepted – it's a slow burn of hard work, investment, commitment and focus. It requires relationships, networking, and planning. These rules apply to every industry and entrepreneur, from the multi-billionaire technology company creator to the dedicated electrical contractor. Those who focus on tools and solutions that empower them are those who will find long-term success.

For Millicent and Tebogo Mabena, the co-founders of Go Go Green Electrical, their success came from their collaboration with Citiq Prepaid. Since their move to prepaid sub-metering, the duo has established a solid and successful business that leverages their partnership with Citiq Prepaid to grow their customer base and expand their offering. As Millicent points out, "We wanted to build a company that was part of the green economy and that provided cost-efficient and well thought out services to our customers. Because we were always looking for ways to help our customers and provide them with trusted solutions, we ended up with Citiq Prepaid."

Go Go Green Electrical worked closely with Citiq Prepaid to grow their visibility and market share in new and previously unexplored markets. The prepaid sub-metering company provided them with marketing support and advice and helped them leverage their membership with the Citiq Installation Club (CIC).

This club is such a simple idea, but it makes such a difference," says Tebogo. "We get points for every Citiq Prepaid sub-meter we install and register on

the system, and when we hit 20 points, we receive a R500 cash voucher to redeem at our preferred Citiq Prepaid wholesaler. What makes this even more valuable is that our wholesaler is helpful and gives us amazing advice when we encounter a difficult problem or need more meters than we originally thought."

Go Go Green Electrical has built an ecosystem of networking and support with Citiq Prepaid and Xpress Electrical Wholesalers allowing them to provide exceptional customer service and always stay ahead of the game. They believe that the CIC plays a huge role in their success, and their view is shared by Lerato Ramushu, another CIC member.

"I was drawn into working with Citiq Prepaid when I was a landlord. The company helped me manage the admin and payments for my properties with their intelligent prepaid sub-metering system as these sub-meters transformed how we managed our utilities," she explains. "As I became more aware of how well these prepaid sub-meters worked and how much value they added, I decided to start my own installation business."

Ramushu only uses Citiq Prepaid because, she says, the experience has always been exceptional with reliable customer service and ongoing support. As one of Citiq Prepaid's top installers, she benefits immensely from the value-add provided by the CIC. "Citiq Prepaid is easy to manage, high quality and the CIC has plenty of extra features – why would I use anyone else when I'm so happy with the best?"

Valley Nkgapele is another happy CIC member who has relied on the club to build a solid and trusted business that provides customers with reliable installations and support. His business is built on a passion



for his work and a commitment to customer service.

"I like Citiq Prepaid because my customers like them," he concludes. "They don't complain about the quality, they like the way the unit works, and it gives them peace of mind. I love being a member of the CIC because I earn both sides – from my customers and from this easy-to-use reward system."

Citiq Prepaid has invested significant time and effort into building a loyalty platform that meets the needs of the electrical contractor and wholesaler, providing rewards and value-adds that allow them to grow their business and build long-term relationships.

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21 golden safety rules for electrical contractors

If you are working on electrical circuits or with electrical tools and equipment, you need to use following golden safety rules:

Rule no. 1

Treat all electrical devices as if they are live or energised. You never know.

Rule no. 2

Avoid contact with energised electrical circuits. Please do not make fun of this rule if you already know this (and you probably already do if you are reading these lines) and remember that if

something bad occurs – you probably will not have a second chance.

Rule no. 3

Disconnect the power source before servicing or repairing electrical equipment.

Rule no. 4

Never use metallic pencils or rulers, or wear rings or metal watchbands when working with electrical equipment. This rule is very easy to forget, especially when you are showing some electrical part pointing with metallic pencil. Always be aware.

Rule no. 5

Use only tools and equipment with non-conducting handles when working on electrical devices. This is easy to check.

Rule no. 6

When it is necessary to handle equipment that is plugged in, ensure that your hands are dry and, when possible, wear nonconductive gloves, protective clothes and shoes with insulated soles.

Rule no. 7

If it is safe to do so, work with only one hand, keeping

the other hand at your side or in your pocket, away from all conductive material. This precaution reduces the likelihood of accidents that result in current passing through the chest cavity. If you have ever read about current passing through human body you will know, so remember – work with one hand only.

Rule no. 8

Minimise the use of electrical equipment in cold rooms or other areas where condensation is likely. If equipment must be used in such areas, mount the equipment on a wall or vertical panel.

Rule no. 9

If water or a chemical is spilled onto equipment, shut off power at the main switch or circuit breaker and unplug the equipment. Never try to remove water or other substances from equipment while energised.

Rule no. 10

If an individual comes in contact with a live electrical conductor, do not touch the equipment, cord or person. Disconnect the power source from the circuit breaker or pull out the plug using a leather belt. It is a tricky situation, and you must be very calm in order not to make the situation even worse.

Rule no. 11

Equipment producing a 'tingle' should be disconnected and reported promptly for repair.

Rule no. 12

Do not rely on grounding to mask a defective circuit and don't attempt to correct a fault by inserting another fuse or breaker, particularly one of larger capacity.

Rule no. 13

Drain capacitors before working near them and keep the short circuit on the terminals while working, to prevent electrical shock.

Rule no. 14

Never touch another person's equipment or electrical control devices unless instructed to do so. Do not be 'too smart' or try your luck.

Rule no. 15

Enclose all electric contacts and conductors so that no one can accidentally come into contact with them.

Rule no. 16

Never handle electrical equipment when hands, feet or your body are wet or perspiring, or when you are standing on a wet floor.

Rule no. 17

When it is necessary to touch electrical equipment (for example, when checking for overheated motors), use the back of your hand. This way, you would not 'freeze' to the conductor if accidental electric shock were to cause muscular contraction.

Rule no. 18

Do not store highly flammable liquids near electrical equipment.

Rule no. 19

Be aware that interlocks on equipment disconnect the high voltage source when a cabinet door is open but power for control circuits may remain on. Read the single line diagram and wiring schemes – know your switchboard.

Rule no. 20

De-energise open experimental circuits and equipment to be left unattended.

Rule no. 21

Do not wear loose clothing or ties near electrical equipment. Act like an electrical contractor, you are not on the beach.

Source: www.electrical-engineering-portal.com

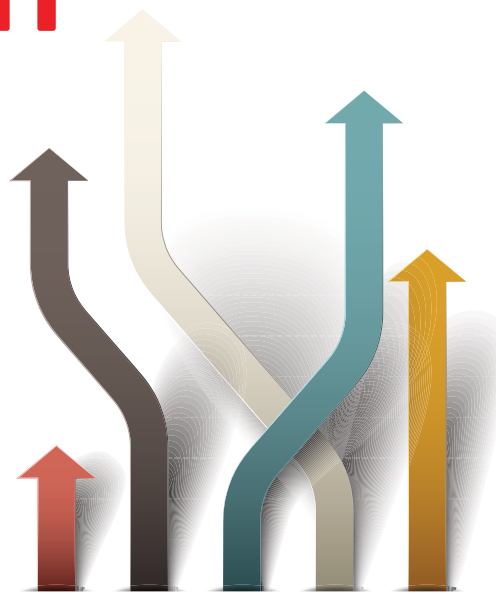
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WORKING KNOWLEDGE WITH TERRY MACKENZIE HOY

Lessons from refurbishing a crane

Large cranes have many moving parts and quite complex systems. In general, travelling cranes supplied over the past thirty years have a driver who sat high up in a cabin. In the cabin are the levers and controls which link the crane operating components which are (but not limited to) the following: Crane forward and aft travel; jib raise and lower; crane slew left or right; rope hoist.

In general, the crane functions are driven by using hoists and pulleys and wire ropes, driven by electric motors. The motors used to be direct current but now are alternating current. Due to the nature of the crane functions, each of the motors has to get up to speed slowly – things go wrong if the motor starts and ramps to full speed quickly. Thus the motors have to be fitted with a 'soft start' and 'soft stop' function.

Historically this was done with motors which had a wound rotor with the winding connections brought out. This is not very common these days but that's how they did it. The windings then are connected to a resistance box. When power is applied to the motor stator, the resistances are fully in circuit and the current in the rotor thus limited. The motor will turn slowly and then, as the resistances are shorted out (generally by a circuit connected to a driver's control lever) the motor will speed up and drive the

pulleys connected to the various wire ropes which control the crane. Up to eight such motors (or, exceptionally, more) are driven in this way.

Now it happened that a crane of this type had fallen out of service. Some of the motors had burnt out, some of the resistance boxes had failed, and, last but not least, the number of people who were willing to climb up to the crane cab and work there all day, was diminishing. Given the task of refurbish in the crane, the following was decided: no longer would the crane driver sit in a cab full of levers; instead he would stand or sit in a small cabin next to the crane. The control of the crane would be by using a hand-held radio remote control box (in this case a device made by Scanreco).

This control box would transmit signals to an interface box on the crane which would operate contactors supplying power to the various motors, via a variable speed drive. The variable speed drive would supply the necessary ramping up and down of motor speeds and, in addition, a further contact would allow the operator to set the motor to a 'crawl' mode. The resistors were scrapped and the motor rotor windings shorted out.

The result of the crane conversion was very satisfactory. The radio con-

trol unit was found to be very reliable and the operators found it easy to operate. No longer would the driver have to look down to where the load was, with the view obscured by wire ropes, steelwork and trusses. It was possible for the driver to look under the load and see how much clearance there still was so as to land the load accurately. 'Walking' a load was easy as the driver was right there.

One thing that surprises me is that the use of radio control to interface with large machines is not more widespread. Using radio controls does away with a great deal of control wiring and sub-systems. Typically on a large tug or other vessel, much of the control is done with hardwiring from the bridge to a relay cabinet where the relay outputs interface with a hydraulic system used for steering control or engine management.

The hardwiring itself is not a problem normally but, if there is a fire or local mechanical damage, it is very difficult to replace. Further, the use of levers to control hydraulic systems adds one more moving component to the system, and this, inevitably, can fail. In the past, electromagnetic interference would have made a radio system unreliable, but by coding and the use of selected frequencies, this is no longer the case. So, for a crane or hydraulic upgrade ... try it.

VOLTEx BRANCHES BOAST ONE LOOK

CONTINUED FROM PAGE 1

Voltex East Rand



Voltex George



The company invites you to 'Complete the Circuit' with Voltex's products which range from electrical, lighting, switches and sockets, cable and wire to solar and renewable technology and much more.

The contact numbers remain the same for both branches.

For added convenience, Voltex now also offers a 'click and collect' service from selected branches through the Voltex website and Voltex App.

If you would like to receive promotional or event information, register at: www.voltex.co.za/stayinformed

Enquiries: +27 (0)11 864 5255

CONTINUED FROM PAGE 3

The top podcasts for electrical contractors

Tradies In Business

This is literally a podcast for tradespeople in business. Whether you're a plumber, electrician, builder, motor mechanic, landscaper, tiler, glazier, painter, carpenter or any of the myriad trades and contractors, this podcast has been produced with you in mind. Your hosts, Warrick Bidwell and Nicole Cox, were both born into tradie families and have first-hand experience of the gut busting, money stress and pressures that trade businesses can place on their lives.

Stuff Electricians Should Know!

The podcast for electricians where they give you bite-sized bits of useful information, usually in the form of an answer to a question every electrician should know.

The Electrical Show Podcast

Join Thomas Nagy as he takes a look at all the latest topics from the world of electricals, including product launches, top tips, and special guests. Thomas will also be joined by some of the biggest names from across

the industry giving their view on the latest news and developments.

3PHASE Radio for Electricians

Your transformation station. A weekly educational programme to help you live your best life and accelerate your career.

Modern Electrician

The age-old tale of the wise master sitting on some far-away hillside, waiting for an eager apprentice to find them and learn all there is to know from them about their craft is as old as time itself. Today, that idea seems more a myth than reality, but in the world of the trades, the dynamic of master and apprentice is alive and well. Join Doug as he explores what makes someone a master by talking to tradespeople, comedians and business owners to learn the secrets of their success.

Marketing Secrets For Electricians

How do normal electricians, who are properly trained and licensed, not willing to cheat and take shortcuts, and who want to own successful elec-

trical businesses and compete against the big guys, get more work? Join host James Wrest and follow along to search for the answers.

Electrician's Success Podcast

The Electrician's Success Academy's will help you master the art of electrical business and the electrical trade. Greg Allan, founder of the Academy and Response Electricians is passionate about delivering valuable content to the industry to lift the standard from the bottom up and make it better for every electrician to work and learn in. Electrician's Success Academy is a platform where electricians can come to upgrade their trade skills in their own time and master the trade.

Electrium

Electrium is one of the UK's largest electrical installation equipment manufacturing and supply companies. This podcast series explores the people who make their industry and finds the stories that make their industry what it is. They also debate the latest industry topics, all with a little bit of a spark.

One-touch, advanced power quality analysis



Comtest is offering the Fluke's range of Three-Phase Power Quality Loggers – 1742, 1746 and 1748 – giving users fast, easy access to the data they need to make critical power quality and energy decisions in real-time.

Compact and rugged, these Three-Phase Power Quality Loggers are designed specifically for technicians and engineers who need the flexibility to troubleshoot, quantify energy usage and analyse power distribution systems. Fully compliant with international power quality standards such as IEC 61000-4-30 and capable of simultaneously logging up to 500 parameters while also capturing events, the Fluke 1740 Series helps uncover intermittent and hard-to-find power quality issues easily. The included Energy Analyze plus software quickly assesses the quality of power at the service entrance, substation, or at the load, according to national and international standards like EN 50160 and IEEE 519.

An optimised user interface, flexible current probes, and an intelligent measurement verification function allows for digital verification and correct connections make setup easier, considerably reducing measurement uncertainty. The devices also allow users to minimise time spent in potentially hazardous environments, while reducing the need to suit-up in PPE by using a wireless connection (WiFi) to view data directly in the field.

Measures all power quality and power parameters

The Fluke 1748 logs over 500 different parameters for each averaging period. This allows for the analysis of power quality in detail and the correlation of intermittent events with detailed waveform data, helping to identify the root cause of disturbances. For basic power quality logging, the Fluke 1746 captures all relevant power parameters for performing energy saving studies and electrical network planning with a full upgrade option to 1748 available. For simple load and energy studies the Fluke 1742 offers optimal performance in a rugged package and can be upgraded to 1746 or complete 1748 functionality.

Calculates current harmonics limits

When downloading data from the Fluke 1748 Power Quality Loggers, Energy Analyze Plus, can calculate the limits of current harmonics based on installation parameters to predict overload of the grid according to a wide range of international

standards. This powerful predictive maintenance feature enables current

harmonics to be observed before distortion appears in the voltage allowing users to prevent unexpected failures or non-compliance situations and increase system uptime.

Easy to use

Fluke power quality loggers are designed with the technician in mind. The four current probes are each connected separately allowing flexibility and simplicity, the instrument automatically detects, scales and powers the probes so users do not have to worry about ensuring the measurements are correct.

Analysis and reporting

Capturing logged data is just one part of the task. Once you have the data, users need to create useful information and reports that can be easily shared and understood by their organisation. Fluke Energy Analyze plus software makes that task as simple as possible. With powerful analysis tools and the ability to create customized reports in minutes users can communicate findings and solve problems to optimize system reliability and show savings. A range of built-in report templates for industry standards such as EN 50160, IEEE 519 and GOST enable one-click reporting to create high quality reports at the touch of a button. Reports can be modified as standards evolve, or new versions become available.

Rugged and reliable

The 1740 series products are built to withstand tough working environments. The flexible current probes are IP65 rated and suitable for most installation situations; the optional IP65 voltage adapter ensures safe, reliable operation even in harsh conditions. Standard 2 m leads simplify connection on difficult to access conductors, and optional 5 m leads are useful when installing in difficult locations. With the capability of powering the instruments from the power line up to 500 V, installation is simple.

Thoughtful design

The 1740 series power quality loggers include simple but effective accessories like the MA-C8 adapter making powering the instrument with a line cord easy when not in the field. Ports that aren't always needed in the field are IP65 protected including the Ethernet, USB, AUX and I/O ports protecting for both moisture and dirt ingress. The status LEDs give a clear indication of what the instrument is doing without having to touch any controls. Its compact size means that in most cases it will fit into the available space easily.

Enquiries: sales@comtest.co.za

3-Phase UPS, for efficient, resilient industrial power protection

Schneider Electric has announced the launch of its Galaxy VL 200-500 kW (400V/480V) 3-phase uninterruptible power supply (UPS) for industrial applications. Available worldwide, the newest addition to the Galaxy family offers a highly efficient and ruggedised, compact UPS, with up to 99-percent efficiency in patented ECOConversion mode, offering a full return on investment within two years (model dependent) for critical applications within industrial facilities. Schneider Electric unveiled its new Galaxy VL for industrial applications during the Hannover Messe virtual event.

With Galaxy VL, Schneider Electric introduces 'Live Swap', a pioneering feature which delivers a touch-safe design throughout the process of adding or replacing the power modules while the UPS is online and fully operational, which offers enhanced business continuity and no unscheduled downtime. Additionally, Live Swap's touch safe design offers increased protection for employees who no longer have to transfer the UPS to maintenance bypass or battery operation during the insertion or removal of the power modules.

"The new, energy-efficient Galaxy VL sets an extremely high standard for UPS innovation and is designed to help industrial customers maximize production outputs while minimising downtime and total cost of ownership," said Mustafa Demirkol, VP, 3-Phase Global Offer Management for Schneider Electric. "It is in keeping of our focus on the future requirements for industrial organisations, driving energy and process efficiency, while improving resiliency and production line reliability. As a Green Premium product, it also delivers best-in-class power protection while being designed for sustainable operations and inclusion within recycle, reuse, circularity, and traceability programs."

Key benefits of the new Galaxy VL:

Maximise space for critical production equipment: Galaxy VL is the most compact UPS in its class, 50-percent more compact than the market average at 8 m², meeting the demand for uninterruptible power in space-constrained industrial environments. Additionally, Galaxy Lithium-Ion Battery Cabinets deliver total space savings of up to 70-percent compared with VRLA battery solutions.

Rugged design for harsh environments: includes high operating temperatures of up to 40°C, dust filters, conformal coating on critical PCBA boards and seismic-ready system protection.

Save money: Galaxy VL's modular, scalable platform enables you to pay-as-you-grow, reducing CapEx investment, operating costs, energy consumption, and TCO. Scale power instantly in 50 kW increments from 200 to 500 kW with no extra footprint.

Reach sustainability goals: Up to 99-percent efficient in ECOConversion mode for a full return on investment within two



years in energy savings. As a Schneider Electric Green Premium product, it also includes the option for long-lasting Lithium-Ion batteries.

Increased Reliability through EcoStruxure: By connecting Galaxy VL to EcoStruxure –

Schneider Electric's open, interoperable, IoT-enabled system architecture and platform – industrial operators can benefit from EcoStruxure™ IT software and services. These EcoStruxure offerings enable customers to monitor, manage, and model their IT infrastructure and get service support 24/7 anywhere, anytime.

The Galaxy VL is available worldwide and can be purchased direct from Schneider Electric.

About Schneider Electric

Schneider's purpose is to empower all to make the most of our energy and resources, bridging progress and sustainability for all. The company call this Life Is On. Its mission is to be your digital partner for Sustainability and Efficiency.

Schneider Electric drive digital transformation by integrating world-leading process and energy technologies, endpoint to cloud connecting products, controls, software, and services, across the entire lifecycle, enabling integrated company management, for homes, buildings, data centres, infrastructure and industries.

Enquiries: www.se.com

Jobs, jobs, jobs: low-carbon, solar future set to deliver employment boost

In the build up to Workers' Day, a report was launched that details the impact of solar PV on South Africa's employment numbers. This report, the first ever of its kind, was launched by solar PV industry body SAPVIA (the SA Photovoltaic Industry Association) during a webinar on Thursday 29 April 2021.

Organised labour was vital in the struggle against Apartheid and this public holiday is an opportune time to reflect on the role labour movements have and continue to play in ensuring the prosperity and sustainability of our communities and individuals across South Africa.

Launching the Solar PV Industry Jobs Report, SAPVIA COO Niveshen Govender said, "The impact of COVID on the South African economy will be long lasting, but it also presents us with opportunities to rethink our economy and re-focus on a just energy transition. Renewable energy, and solar PV, specifically deliver for both the environment and the economy.

"SAPVIA has long recognised the need to quantify the jobs created by a transition to renewables, not least because we understand the impact that any move away from our traditional fuels such as coal will have on communities across South Africa."

The Solar PV Industry Jobs Report takes stock of the socio-economic impact that has resulted from the deployment of solar PV. The research was conducted by the CSIR on behalf of SAPVIA. Doctor Clinton Carter-Brown, Head of the Energy Centre at the CSIR stressed that, "It is important for South Africa to have a fact and evidence base supporting the job and eco-



Niveshen Govender, SAPVIA COO

nomical implications of the energy transition and the impacts that emerging industries such as solar PV are having on employment and job creation.

CONTINUED ON PAGE 12

The value of prepaid sub-meters: enabling energy and business efficiencies

South Africa's electricity supply has been under constraint for over a decade now, and while steps are in progress to correct this at the macroeconomic level, the issues with the utility providers continue to filter down to all consumers. The good news is that, from a business perspective, prepaid sub-metering systems can play a significant role in helping with energy efficiencies.

Zachariya Lockhat, Head of Business Development at Recharger, a leading supplier of prepaid electricity sub-meters, tokens and token vending solutions, states, "A possible solution to the problem of managing costs more efficiently is prepaid sub-metering, whereby customers buy electricity upfront and use it until the prepaid amount is consumed."

How prepaid metering works

The prepaid sub-meter draws its electricity supply directly from the utility provider's primary meter and is installed after the primary utility provider's meters, before the DB board in the tenant's premises. The private sub-meter does not replace the primary utility provider's meter.

Sub-meters are programmed to ensure that they will only supply electricity to tenants from the primary supply if there are units available on the sub-meter. Once the units have depleted, the supply will be cut off and the tenant would have to purchase a new voucher and load it onto the sub-meter in order to have electricity back on. The landlord is reimbursed for the electricity vouchers purchased by the tenant on the sub-meter to settle the bill / cost on the primary utility provider's meter. Lockhat clarifies that the government has passed a law (the Electricity Regulation Act, 2006) which ensures that only

the original property owner would receive a primary supply.

Prepaid sub-metering works across scale

Lockhat notes that the potential business efficiencies to be gained are very clear from the perspective of the individual as well as in a landlord-tenant arrangement. "However, we can and must think along bigger picture lines also. In addition to the residential sector of the market, prepaid sub-metering also lends itself extremely well to commercial and industrial usage. For commercial usage, we see the use of prepaid sub-metering systems in all commercial buildings, including hotels, offices and shopping malls. Industrial usage could include small product manufacturing facilities and processing plants.

"At the same time, prepaid sub-meter usage has advantages for the utility providers too: it will help to slow and hopefully reverse the poor monitoring and billing of electricity consumption, as well as illegal connections, which all result in an overall trend of poor revenue collection and even consumer disputes going to court."

Problem/solution scenarios

In 2019, the South African Local Government Association (SALGA) threw its hat into the ring to back a proposal from an inter-ministerial task team to install prepaid meters for electricity and water in order to recoup billions owed to municipalities. The debt is not only a problem for the utility providers but is also a broader national issue because it has huge implications for the economy of the country. Part of the solution to deal with the debt owed could lie in the installation of prepaid meters.

While this issue continues, a study published in 2015 in the American Economic Review, as a joint undertaking between representatives of the University of California and the University of Cape Town, discussed a local example in which over 4 000 customers on monthly electricity billing were assigned prepaid electricity meters for their electricity consumption.

The study found that: "Electricity use falls by about 13 percent as a result of the switch, a decrease that persists for the following year. This creates a trade-off for the utility: revenue from consumption falls but more of it is recovered on time and at a lower cost. The benefits to the electricity utility outweigh the costs, on average, though results are very heterogeneous. Poorer customers and those with a history of delinquent payment behaviour show the greatest improvement in profitability when switched to a prepaid meter. These findings point to an important role for metering technologies in expanding energy access for the poor."

Another study published by the IAE Business School in 2009 found that "...the advantages of the system are linked to a reduction of arrears in accounts receivable, and operational and financial costs on the part of the service provider, as well as to a better allocation of resources for the consumer."

Conclusion

"We believe that prepaid sub-metering offers an excellent solution for the developing world in terms of electricity consumption and its monitoring, billing and promotion of efficiencies," says Lockhat. "We know that high rates of customers defaulting on utility bills present a barrier to the expansion of electricity access in the developing world.

"Prepaid electricity sub-metering, on the other hand,

offers a technological solution to ensuring timely payment. We know that poorer households buy electricity more often and in smaller increments, and are most likely to buy on payday. These patterns suggest and reveal a preference for small, frequent purchases that is incompatible with a standard monthly electricity billing cycle. We propose that as a result of the wide-spread installation of prepaid sub-meters, the utility providers themselves, as well as the landlords of buildings, would not have to spend as much time chasing after payments, physically cutting people off and/or spending time in court. All parties could, instead, benefit from an increase in payments and a decrease in time-wasting initiatives that would therefore, in turn, allow them to be more efficient with their core businesses," he concludes.

Enquiries: www.recharger.co.za



Zachariya Lockhat, Recharger Head of Business Development

RECHARGERTM
PREPAID ELECTRICITY SUB-METERS

**THE ALL-IN-ONE
VENDING SOLUTION**

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*Terms and conditions apply. Meter configured to operate on Recharger Chainstore Vending only. Meter operates as a sub-meter and does not replace the Municipal or Eskom Meter.



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| CONTACTS | | | LOAD MANAGEMENT |
| <p>ABB South Africa Customer contact centre</p> <p>Aberdare Cables Annelene Naidoo</p> <p>ACDC Dynamics Elmari Erasmus/Dirk Klynsmith</p> <p>ACTOM Electrical Products Isabel Magalhaes</p> <p>ACTOM Protection & Control Faisal Hoosen</p> <p>Allbro Ryan Allan</p> <p>Alvern Cables Stephen Liasides</p> <p>Anglo Allied Engineering Karin Visser</p> <p>ARB Electrical Wholesalers Sales</p> | | | <p>ABB South Africa Full range of load management solutions</p> <p>ACDC Dynamics Full range of load management solutions</p> <p>ACTOM Protection & Control Load shedding relays</p> <p>Chint Global Full range of load management solutions</p> <p>Electrahertz Full range of load management solutions</p> <p>HellermannTyton TDDGT Geyser Timers; TWST2 – WIFI Timer Smart Relay; TWSTM2 – WIFI Smart Energy Meter Timer Switch; TDDT72L – 7-Day Digital Timer Dual Relay Contact</p> |





LOAD MANAGEMENT

Khanyisa Electrical Suppliers
CBI, Schneider, ACDC

Legrand
Full range of change-over and supply inverters

Magnet Electrical Supplies
Full range of load management solutions

MCE Electric
Onesto electronic load shed relay

Swan Electric
Full range of load management solutions

LABELLING

Bellco
Full range of labelling

Brady SA
Full range of labelling

Brother International South Africa
Complete range of labelling

Electrahertz
Full range of labelling

HellermannTyton
Large selection of PV Solar labels: Pre-printed, UV stable ink and materials; Heat shrinkable wire identification Thermal Transfer: TLFX DS; Wire identification clip (WIC Markers); Snap on markers; TIPTAG – identification tags for cable bundles – thermal transfer

Khanyisa Electrical Suppliers
Weidmuller, HellermannTyton, Brady

Legrand
CAB3 and Duplix cable markers

Phambili Interface
Full range of labelling

Phoenix Contact
Wire markers and terminal markers

Voltex
Full range of labelling

Zap Wholesalers
Full range of labelling

ENERGY BILLING

ABB South Africa
Full range of energy billing solutions

ACDC Dynamics
Full range of energy billing solutions

Bellco
Full range of energy billing solutions

Comtest
Full range of Fluke Industrial Power Quality Meters

HellermannTyton
TEMS100- Energy Meter Single Phase; TR1000P - 3-Phase Power Clamp ac/dc 1000 A; T60 Compliance/3-Phase Network and Power Analyser; T824/ T78 – 3-Phase Power Analyser; T824 3-Phase Power Analyser and Recorder

Invirotel
Range of energy billing solutions

Khanyisa Electrical Suppliers
Ideal Prepaid, Owl Meters, Ellies reader

Legrand
Legrand multi-function meters offer a precision class 1 for billing applications

Magnet Electrical Supplies
Full range of energy billing solutions

Voltex
Full range of energy billing solutions

Zap Wholesalers
Full range of energy billing solutions

BUILDING MANAGEMENT SYSTEMS

ABB South Africa
Range of building management systems

ACDC Dynamics
Full range of building management systems

Legrand
Legrand's reticulation systems can be incorporated into a BMS

Phoenix Contact
Building automation and control

Schneider Electric South Africa
Full range of building management systems

DBS, MAIN BREAKERS, CIRCUIT BREAKERS, OVERLOAD

ABB South Africa
Full range of DBs, contactors, circuit breakers and relays

ACDC Dynamics
Full range of DBs, main breakers and circuit breakers

ACTOM Protection & Control
LV air circuit breakers

Allbro
Distribution boards and ready boards

ARB Electrical Wholesalers
Full range of DBs, mains breakers, etc

Bellco
Full range of DBs, breakers

Chint Global
Full range of DBs, contactors, circuit breakers and relays

Crabtree South Africa
A range of 6 kA MCBs (includes isolators, earth leakages and miniature circuit breakers); a range of 12 and 18 DIN flush mount distribution boards

Electrahertz
Full range of DBs, main breakers, circuit breakers

Hamar Controls
Manufacturers of LV Distribution Boards and Motor Control Centres to Customer Specifications and Requirements

Khanyisa Electrical Suppliers
CBI, Schneider, Major-Tech, Vet, Swan

Legrand
Full range of distribution boards up to 6300 A as well as complete range of MCBs, MCCBs and ACBs

Magnet Electrical Supplies
Full range of DBs, mains breakers, circuit breakers

Major Tech
Full range of distribution boards including flush-mount Econo boards, surface-mount IP65 boards, IP65 clear/grey enclosures and IP55 junction boxes; specialists in populated ready boards, 3 kA and 6 kA mini circuit breakers, isolator and earth leakage switches

MCE Electric
Full range of DBs and steel enclosures; Onesto range of DBs, steel enclosures, moulded case circuit breakers and miniature circuit breakers

Megger
Megger test instruments for circuit breakers

Schneider Electric South Africa
Series 4 DBs and circuit breakers

SG Switchboard Group
Range of distribution products

Siemens
Full range of distribution boards, breakers and protection devices

Swan Electric
Full range of DBs, mains breakers, etc

Switchboard Manufacturers
Full range of distribution products

Voltex
Full range of circuit breakers

Voltex Lsis
Full range of circuit breakers

Waco
Wide range of circuit breakers

Zap Wholesalers
Full range of DBs, main breakers, circuit breakers, etc

Zest WEG Group
Full range of DBs, main breakers, circuit breakers, etc

MV TO LV TRANSFORMERS

ABB South Africa
Full range of MV to LV transformers

ACTOM Electrical Products
Distribution transformers from 16 kVA to 5 mVA; power transformers from 6 mVA to 315 mVA

Allbro
Transformer bushings and tap change switches, protection equipment

ARB Electrical Wholesalers
Full range of MV to LV transformers

Aurora
Full range of MV to LV transformers

Bellco
Full range of MV to LV transformers

Chint Global
Full range of MV to LV transformers

Electrahertz
Full range of MV to LV transformers

Khanyisa Electrical Suppliers
ABB

MV TO LV TRANSFORMERS

Legrand
Legrand offers standard and tailor made MV dry type transformers 100 KVA to 20 000 KVA and up to 36 KV transformers. Normal losses and green star rates solution, high efficiency

Magnet Electrical Supplies
Full range of MV to LV transformers

Schneider Electric South Africa
Electronic LV lighting transformers

Voltex
Full range of MV to LV transformers

Voltex MV/LV Solutions
Full range of MV/LV transformers

Zest WEG Group
Full range of MV to LV transformers

NEUTRAL EARTHING REACTORS

ABB South Africa
Range of neutral earthing reactors

PAVEMENT CUBICLES AND BOXES

ABB South Africa
Range of pavement cubicles and boxes

ACTOM Protection & Control
LV municipal, utility distribution and metering

Allbro
Pole mounted distribution boxes

ARB Electrical Wholesalers
Full range of pavement cubicles, boxes

Bellco
Full range of pavement cubicles, boxes

Voltex
Full range of pavement cubicles, boxes

MINI SUBSTATIONS

ACTOM Electrical Products
Compact mini substations; maximum rating: 22 kV up to 1 000 kVA available in mild steel, fibreglass or 3CR12 enclosures in Type A or B configuration

ARB Electrical Wholesalers
Full range of mini substations

Bellco
Full range of mini substations

Electrahertz
Full range of mini substations

Switchboard Manufacturers
Manufacturer of mini-subst

Voltex
Full range of mini substations

Voltex MV/LV
Full range of mini substations

Zest WEG Group
Full range of mini substations including specialised vandal-proof mini-substations

METERING (MEASURING INSTRUMENTS)

ABB South Africa
Full range of metering instruments

ACDC Dynamics
Full range of measuring instruments

ACTOM Electrical Products
Full range of metering instruments

ACTOM Protection & Control
Meter test blocks

ARB Electrical Wholesalers
Full range of metering instruments

Bellco
Full range of metering instruments

Chint Global
Full range of metering instruments

Comtest Distribution
Full range of Fluke Industrial and Amprobe meters

Denver Technical Products
Range of metering instruments

Electrahertz
Full range of metering instruments

METERING (MEASURING INSTRUMENTS)

HellermannTyton
TBM869: CATIV 1000 V, TRMS, Temperature, Crest Mode; TBM812: CATIV 1000 V, TRMS, Lifetime warranty; TBM197 2000 A ac/dc: CATIV 1000 V, TRMS, Temperature, Jaz size – 55 mm; T2000 Earth Resistance Clamp: CATI11 150V, Jaw size – 32 mm; THT60: 160 x120 Pixels, Thermal infrared Camera, PIP Function

Khanyisa Electrical Suppliers
HellermannTyton, Major Tech

Legrand
Full range of electrical energy meters including multi-function measuring units

Magnet Electrical Supplies
Catu MV and HV voltage detector complete with audible and visual alarm, contact type; Chauvin Arnoux current, power and harmonic clamp-on meters; Chauvin Arnoux Qualistar power quality analyser, digital with scope and 4 Mb of storage; Metrahit multimeters with optional data logging features

Major Tech
Compact power analysers; power quality analysers; current loggers; current and voltage loggers; leakage and loggers; full range of professional ac and ac/dc clamp meters; compact ac and ac/dc clamp meters

Siemens
Full range of measuring instruments

Swan Electric
Full range of measuring instruments

Voltex
Full range of measuring instruments

STANDBY/BACKUP SYSTEMS

ABB South Africa
Range of standby and backup systems

ACDC Dynamics
Full range of uninterruptible power supplies

ACTOM Electrical Products
Full range of standby/backup systems

ACTOM Protection & Control
General protection relays

ARB Electrical Wholesalers
Full range of standby/backup systems

Bellco
Full range of standby/backup systems

Electrahertz
Full range of standby/backup systems

Khanyisa Electrical Suppliers
Gensets, UPS, inverters, power packs

Lapp Group SA
Full range of standby/backup systems

Legrand
A comprehensive range of single phase and three phase UPS up to 800 KVA

Magnet Electrical Supplies
Full range of standby, backup systems

Phoenix Contact
Power solutions

Stone-Stamcor
Yuasa sealed lead acid batteries

Swan Electric
Full range of standby/backup systems

Switchboard Manufacturers
Changeover panels

Voltex
Full range of standby/backup systems

Voltex MV/LV Solutions
Full range of standby/backup systems

Zest WEG Group
Full range of standby/backup systems

OTHER

HellermannTyton
Complete range of tools for installation and maintenance of electrical installations



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+27 (0)11 879 2000



+27 (0)10 202 3300



+27 (0)11 452 1415



+27 (0)82 784 2607



+27 (0)11 723 6000



+27 (0)87 158 4800



measure with confidence

+27 (0)10 595 1821



New integrated geared motors for high efficiency

BMG's new Nord DuoDrive unit – an integrated geared unit that combines the recently launched NORD IE5+ synchronous motor and a single-stage helical gear unit in one compact housing – has been designed for optimum system efficiency.

"By installing the motor and the gear unit in one single housing, the lightweight DuoDrive offers many benefits, including high power density, low noise emissions and reduced installation space," says Deon Crous, National Product Specialist, Nord Drive Systems, Electromechanical Drives division, BMG. "With the launch of this new integrated system, Nord Drivesystems is setting new energy efficiency standards of drive systems in food and pharmaceutical production, as well as the intralogistics sector.

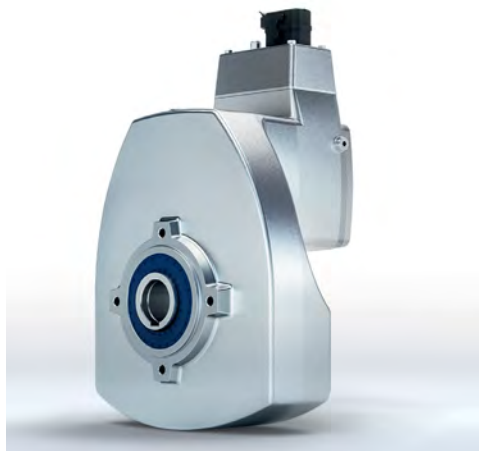
"Other important benefits of BMG's new DuoDrive are fewer wearing parts, which reduces maintenance requirements and the simple commissioning of a complete solution via plug-and-play, decreases the Total Cost of Ownership (TCO) compared to existing drive systems.

"This corrosion resistant unit has an advanced wash-down design and is suitable for safe use in hygiene-sensitive and harsh environments. Because this unit is easy to wash, cleaning costs are reduced."

The DuoDrive system currently offers the highest efficiency of a gear unit/motor combination in this power class and achieves high system efficiency in the partial load range. This is an advancement on Nord's LogiDrive concept, where the IE5+ synchronous motor is combined with a Nordbloc.1® bevel gear unit.

DuoDrive units available from BMG cover gear unit speed ratios of $i = 3.24$ to $i = 16.2$ and are designed for torque ranges of up to 80 Nm and speeds of up to 1,000 min⁻¹.

As with all products in the NORD portfolio, DuoDrive is compatible with NORD drive electronics



and can be equipped with common hollow shaft dimensions (20 to 40 mm) and flange versions (B5 and B14) or a torque arm. Depending on specific requirements, Harting HAN connectors, M12 round plug connectors or direct wiring are provided for the motor connection. Other options include an encoder feedback or holding brakes.

Nord Drivesystems – developed by Getriebebau Nord and assembled locally by BMG – comprise optimum drive configurations, to ensure high-performance of mechanical speed control for specific applications, in almost every industry.

BMG's team of technicians, with extensive experience in gearing, offers a technical advisory and support service throughout Southern Africa, which is tailored to meet the precise specifications of contractors, designers and the end-user. Local assembly at BMG World in Johannesburg enables prompt delivery of drive systems and the quick availability of spare parts.

Enquiries: +27 (0)21 492 7070

CONTINUED FROM PAGE 8

Jobs, jobs, jobs: low-carbon, solar future set to deliver employment boost

"This requires the creation and maintenance of related datasets supporting the analysis of the solar PV value chain so that policy and decision makers have well informed analytics of historical and present day jobs in the solar PV sector, and an understanding of the future potential and how policy decisions and localization can directly support job creation. In addition to providing low-cost sustainable power, solar PV is also making a direct and significant contribution to job creation, now and into the future."

Govender continued, "The study will allow us to estimate the job creation opportunities from solar PV given the focus on deployment of renewables through the IRP and the current policy directive for enhanced localization. The results of the study show that in the long term the Solar PV industry has the potential to create substantial sustained Operations & Maintenance jobs which accounts for almost 30% of the total current jobs in Solar PV. In the near-term, as we scale up solar PV, job creation will be predominantly in the construction period of projects."

Through the research, the CSIR clearly shows "The rate of growth of jobs in the Solar PV sector is linked to the localization of manufacturing [and other services] and the opportunity to increase the job intensity. Increasing local content requires a consistent year on year new build of capacity, as is evident from the modelling results in the report.

"The study further confirms that the Small Scale Embedded Generation (SSEG) market will present considerable opportunity for increased job creation, but the ability to achieve such will be dependent on related policy certainty and enabling frameworks. The SSEG market segment supports 39 Full Time Equivalent (FTE) jobs for every MW installed compared to the 17 FTE jobs per MW created through the implementation of utility scale projects.

The ability of local Solar PV developers and supply chains to support both the utility scale and em-

bedded SSEG markets will provide agility to move between these markets and sustain jobs in periods where new build capacity in one market may be lower in any particular period of time."

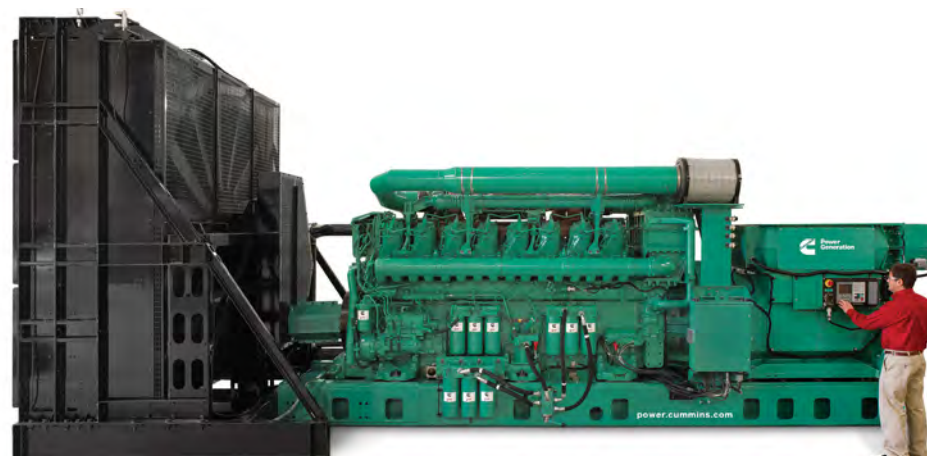
Wido Schnabel, SAPVIA Chairperson added, "This Jobs Report has clearly demonstrated the contribution the solar PV industry has already made to job creation and the potential trajectory over the next few years. As uptake of solar PV continues to increase, the sector will deliver enhanced skills development for South Africans as we transition away from fossil fuels and other traditional fuel sources and provide youth and local communities with additional employment opportunities.

"The solar PV industry is an enabler for affordable energy, and will support a cleaner environment and create a sustainable pipeline of future-proofed jobs for generations to come. For this to happen we need bold steps and commitment from the government and from the private sector."

"A lot of effort and work has gone into delivering this unique research and we must commend the CSIR on a job well done and share our appreciation to the sponsors (BioTherm Energy, Canadian Solar, Enel Green Power, Enertrag, Genesis Eco-Energy, Globeleq, juwi, Scatec and SOLA Group) for their support to get us to this stage."

The Solar PV Industry Jobs Report is the start to understanding the status quo of employment benefits of renewable energy and solar PV specifically and SAPVIA will continue to build on this research to track the growth of the industry. "Solar PV will not be a silver bullet that addresses all our unemployment issues, but with targeted planning, clear policy direction and the support of government and industry, the solar PV sector can contribute decent, skilled jobs now, in the medium and long-term," says Schnabel."

Enquiries: www.sapvia.co.za



Diesel generators in the data centre – when is bigger better?

Finding the best combination of generator size and system architecture is a goal for all data centre designers. Many times, a larger generator can provide unique advantages. When you combine large generators into a paralleling system, you can achieve a whole new level of advantages. The data centre designer should carefully analyse all options to optimise the generator system design.

There are many factors to consider when designing the generator system for your data centre. Two of the most important items to consider in your design are the optimal size of the generator and the architecture of how your generators integrate into the overall power system. In some installations you have no choice but to go with a larger generator due to the size constraints of the site.

This can be especially true when installing additional power generation into an existing building. Using a greater number of smaller generators would not have been a good option in this example. The higher power density of large generators was the better choice. In addition to the unique challenges in metropolitan areas, sometimes the footprint advantages of using large generators are also desired in new construction.

Paralleling generators in a data centre design can have many advantages. It does not fit every situation, but paralleling does provide many benefits over a single generator design. The advantages have varying degrees of importance in a data centre application, but efficiency (reducing your stranded generator power capacity), can be the most attractive. The generator system is one of the more expensive systems to procure, install and maintain. Making this system as efficient as possible will have a significant effect on reducing data centre cost.

An important challenge in a paralleling system architecture is achieving concurrent maintainability. This is due to the common paralleling bus required in a generator paralleling system. Various system architectures have been developed to address this

challenge. One of the more common architectures is adding tie breakers (or sometimes tie switches) to the paralleling bus. These tie breakers provide segments in the bus that allow you to partially shut down the switchgear for maintenance.

For example, if you have an N+2 design, you can completely isolate one segment of switchgear for maintenance or repair. This design is also used in an N+1 design with tie breakers in-between each generator on the paralleling bus. The protective relaying on a segmented bus can be designed to eliminate the paralleling bus as a single point of failure. This is most commonly achieved with a current differential scheme.

Another way to achieve concurrent maintainability is that each generator can be switched from one paralleling bus to an alternative paralleling bus. In an N+1 design, there would be one additional generator and corresponding transfer switch. Any one component, including the paralleling bus, can be shut down for maintenance and there will still be the full 'N' capacity available from the generator system. There is another architecture for paralleling generators being used in data centres. This is sometimes called '3 to make 2' (or '4 to make 3', etc.)

About the author

David Matuseski is the Mission Critical Technical Leader for Cummins in the Strategic Accounts group specialising in the data center segment. He provides technical expertise on the implementation of generator systems and total power systems. Dave has been working in the power industry since 1996 and is a registered Professional Engineer in the state of Minnesota. He graduated from the University of Minnesota with a Bachelor of Electrical Engineering. Within Cummins, Dave has held the positions of Design Engineer, Project Manager, Engineering Manager and Chief Engineer.

Enquiries: www.cummins.com.

Countries that consume more or less electricity than Bitcoin in 2021



The map above shows which countries consume more or less electricity than Bitcoin as of April 2021. It was inspired by a map which made the rounds a few years ago during the last Bitcoin hype cycle. According to the Bitcoin Energy Consumption Index, Bitcoin is currently consuming 91.52 TWh of electricity per year. This is just slightly less than the entire electricity consumption of the Philippines (population 110 million).

In 2017, Bitcoin electricity usage would have put it in 61st place globally. In 2021, it's now in 35th place ahead of countries like Belgium, Switzerland, Israel, New Zealand and Ireland. South Africa consumes 210.03 TWh of electricity per year.



Beware of imitations of HellermannTyton's Insulok Cable Ties

HellermannTyton is synonymous with quality. Its HellermannTyton Insulok Cable Ties are made locally to the highest international standards and the company uses only top-grade, 100% virgin nylon in the production of HellermannTyton Insulok Cable Ties. This is done in its IATF 16949 accredited factory in Johannesburg, which ensures all products are produced under the most stringent quality control processes to comply with all industry norms and standards.

"It has recently come to our attention

that some competitors are using our product codes and descriptions on their cable tie packaging," says Ken Dunn, Divisional Manager Network Products. "These copies are not HellermannTyton Insulok Cable Ties and are not necessarily made to the same quality standards as our cable ties. If it does not say HellermannTyton Insulok T18R, T30R, T50R, T50I, T50L, T120R, T120S or LK5 on the packaging, then they are not our high-quality cable ties and we cannot accept any liability for these copies. If not in packaging, our HellermannTyton

Insulok Cable Ties can be easily identified by our 'TCA' or 'TCJ' marking behind the cable tie head."

With more than 80 years of proven reliability, the HellermannTyton Insulok Cable Tie brand is trusted globally. Insist on HellermannTyton Insulok Cable Ties and do not get caught out by copies offered in the market.

"Our knowledgeable sales team is always available to assist you," says Dunn.

Enquiries: www.hellermanntyton.co.za



Wide range of instant and structural bonding adhesives available from BI

Bearings International (BI) carries a wide range of instant and structural bonding adhesives throughout its extensive branch network in South Africa, reports Offer Marketing Manager Victor Strobel.

The range of instant-bonding adhesives available gives a varied fixture time from two to 50 seconds. These are versatile, and able to bond dissimilar products with a high-strength bond. For structural bonding, two-component adhesives are available that can bond a wide variety of materials such as wood, metals, plastic and glass.

"We have been an authorised distributor of LOCTITE® products from Henkel Adhesives for a very long time," comments Strobel. Henkel Adhesives operates globally with a well-balanced and diversified portfolio. The company holds leading positions with its three business units in both the industrial and consumer sector thanks to strong brands like LOCTITE®, together with its ongoing innovation and latest technologies.

LOCTITE® is extremely well-known in the industrial and engineering market segments, and is often asked for by name or specified by both manufacturers and OEMs. The entire basket of products meets all the needs of BI's customers, from threadlocking and gasketing to surface treatment and bonding.

The main products that BI focuses on are threadlocking and thread sealing, adhesives, gasketing, retaining and metal compounds. Threadlocking and sealing are used in applications where bolts come loose due to constant vibration, such as the bolts in car engines or coupling bolts.

Looking at the latest products available from BI, Strobel points to the new LOCTITE® 518 pen, which combines the leak-fighting properties of 518 flange sealant with a roll-on applicator. This makes applying a liquid flange sealant easier than ever, with no waste or mess. The pen forms a flexible, high-strength, chemical-resistant seal that fills all voids and will not tear or decay. It can be used on rigid iron, aluminium and steel flanged mating surfaces, including surfaces that have minor contamination.

In terms of growth opportunities in the adhesives and sealants sector, most factories and mines in South Africa operate in a harsh climate that takes its toll on moving machinery, meaning that breakdowns are inevitable. "BI's focus on customer service and satisfaction means we aim to be right there with a solution, whenever a customer requires us. We also ensure the proper surface treatment before the adhesive or sealant is applied," highlights Strobel. LOCTITE® offers a full range of surface treatment for a wide range of materials.

LOCTITE® has technical support teams and sales representatives countrywide for fast and professional technical support. "Just contact your BI branch or representative, and we will be able to give you the right LOCTITE® product for your application," concludes Strobel.

Enquiries: +27 (0)11 899 0000

HellermannTyton
www.HellermannTyton.co.za

Insist on HellermannTyton Insulok Cable Ties



HellermannTyton Insulok Cable Ties are made locally



Only top-grade, 100% virgin nylon material used



All cable ties are produced in our IATF 16949 (ISO 9001) accredited factory



Trusted globally with more than 80 years of proven reliability



A first-of-its-kind multifunction PV insulation tester

Is my rooftop installation safe, or would it ignite a fire and burn my property? Is my ground installation properly done, or will a fire destroy my investment? Can I sleep soundly or should I worry? These are doubts that probably most owners of PV systems have.

Solar energy is electric power, and as with any electric power it can be unsafe. A primary cause of solar PV fires is electrical arcing occurring anytime there is a compromise of the electrical system's wiring or connections. Risk for arcs to occur increases over time. This can be attributed to the normal 'wear and tear' that a solar PV system is subjected to, making system maintenance a priority. There are many factors that contribute to this condition:

- Corroded cables and connections (cables rubbing against vegetation or roof, birds/rats/insects, saltiness).
- Loose wiring.
- Improper cable support.

IEC/EN 62446 requires the installation to be tested and certified by qualified solar installer. Only professional licensed solar installers using the right measuring instruments can grant the PV installation to be fully compliant.

At the beginning of the PV era the array output voltage used to be up to 600 V dc. This benchmark was replaced by 1000 V dc about a decade ago. Now it is surpassed by the new standard 1500 V dc. Voltage increases to higher values, such as 2000 V dc, are unlikely due to the significant cost to develop products specifically designed for high-voltage use. In fact, the IEC considers 1500 V as the low-voltage limit.

The PVISOTEST, available from HellermannTyton, is the first and only solar installation tester specifically designed to test the safety of PV installations up to 1500 V. According to IEC/EN 62446, PVISOTEST measures the insulation resistance of the whole installation at once by generating up to 1500 V dc, and by withstanding the voltage generated by the installation under test, regardless of its dimension and power generated. This means there is no need for external devices such as expensive dc-rated switches, and no need to section combiner boxes to perform the test string by string, thus saving time. It is also safer for the user while carrying out

measurements.

"This multifunction device, for checking electric safety and performance of a photovoltaic system, saves both time and costs," explains Ryan Burger Divisional Product Manager – Tools and Instruments at HellermannTyton. "We have received and demonstrated the first samples and customers have been impressed with their capabilities."

PVISOTEST also measures polarization index (PI) and dielectric absorption ratio (DAR) to assess the quality of the insulation. PI and DAR are particularly important when measuring the insulation of long cables in operation for many years. In fact, the insulation resistance value may change over the years due to electrical and mechanical stresses, creating an increase in leakage currents.

PI is a ratio of the megohms after 10 minutes divided by the megohms after a minute, DAR is the ratio of the megohms at one minute divided by the megohms at 30 seconds. High values of PI and DAR means satisfactory insulation conditions.

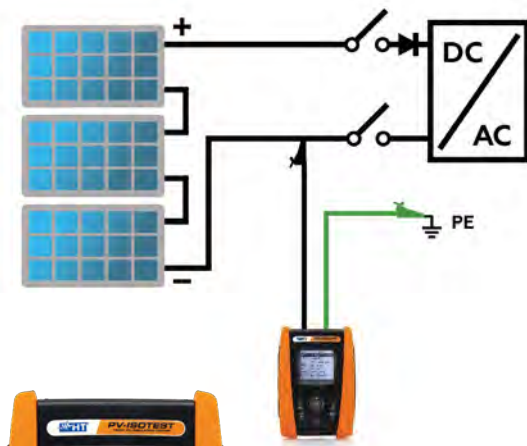
"To cut troubleshooting time, PVISOTEST is provided with an innovative Ground Fault Locator function, indicating to the user which module has a poor insulation to the ground across the string tested," says Burger. This allows the user to immediately identify the poorly insulated module for further replacement.

PVISOTEST also measures the continuity of the protective/equipotential conductor, as required by IEC/EN 62446. These features make PVISOTEST the first and only solar installation tester able to test the safety of PV installations up to 1500 V.

Features at a glance:

- Insulation measurement up to 1500 V dc even on live systems
- Ground Fault Locator function for localization of the faulty module
- Continuity of the protective conductor with 200 mA
- Dielectric absorption ratio D.A.R
- Measurement of polarization index P.I.
- Backlit Display 128 x 128 pixels
- Optical/USB interface

Enquiries: www.hellermanntyton.co.za



Essential new technologies for the contractor

Comtest, local representative of Fluke, has recently released two new products, Fluke's T6-1000 PRO Electrical Tester and the Fluke 787B and 789 ProcessMeter™, specifically for those involved in the electrical field.

See voltage and current on one screen without touching a wire

The new Fluke T6-1000 PRO True-RMS Electrical Tester measures voltage up to 1000 V ac and current up to 200 A ac, all through the open fork and without test lead contact to live voltage. Users connect the black lead to ground with the included heavy-duty alligator clip, slide the wire into the open fork and can see both voltage and current at the same time. The T6-1000 PRO works with most wires up to AWG 4/0 (120 mm²), carrying as much as 200 A and 1000 V ac. It can even be used with gloves. The electrical tester will change how you do your job.

The T6-1000 PRO allows electricians to test in impossible places. Instead of pulling wire nuts, users just slide the open jaw over a single conductor. It is much faster and safer than working to find a metallic contact point. Plus, voltage and current measurements can be made at the same time. The T6-1000 PRO measures and displays both voltage and current at the same time, simply by sliding the open jaw over the conductor.

The T6-1000 PRO is equipped with Fluke FieldSense technology, which is a proprietary method of measuring the actual voltage value without making live electrical contact. Unlike other non-contact voltage testers and detectors, the T6-1000 PRO uses FieldSense technology to provide an actual voltage measurement. Users get measurements that are more reliable and more accurate than existing go/no-go testers.

Not having to probe live conductors also makes jobs safer. Since there is no need to make electrical contact, the chance of human contact with an energized wire is greatly reduced. This also reduces the chance of making contact with the wrong conductor, which can produce unexpected results.

The T6-1000 PRO is especially designed for

electricians working in potentially dangerous environments. Since users will almost always be wearing gloves or other PPE, the T6-1000 PRO is designed to use an external ground clip 100% of the time. In addition, the area where FieldSense technology measures voltage is extended further down the open fork. This means getting consistent, accurate voltage and current measurements without touching a live wire is easier than ever before.

Fluke doubles troubleshooting power and lightens the load

The Fluke 787B and 789 ProcessMeter™ that doubles the troubleshooting capabilities by combining the power of a safety-rated, digital multimeter and mA loop calibrator into a single, compact test tool.

Based on the trusted measurement capabilities of the Fluke 87 DMM, the 787B and 789 add the ability to measure, source and simulate mA with the accuracy and resolution that can be expected from a Fluke mA loop calibrator, giving users the ideal tool for troubleshooting and calibrating current loop applications.

The 787B and 789 key features:

- 20 mA dc current source/measure/simulate.
- Simultaneous mA and % of scale readout.
- DMM designed to meet 1000 volt IEC 61010 CAT III and 600 V CAT IV standards.
- Precision 1000 V, 440 mA true-rms digital multimeter.
- Frequency measurement to 20 kHz.
- Min/Max/Average/Hold/Relative modes.
- Diode test and continuity beeper.
- Manual step (100%, 25%, Coarse, Fine) plus Auto Step and Auto Ramp.
- Externally accessible battery for easy battery changes.
- The 789 has the additional features of 24 V Loop power supply and HART mode setting with loop power (adds 250 ohm resistor).
- Save time and improve the reliability of maintenance data by wirelessly syncing measurements using the Fluke Connect® system. Preventive maintenance is simplified

and 'reworks' are eliminated.

- Data-entry errors are eliminated by saving measurements directly from the tool and associating them with the work order, report or asset record.
- Maintenance decisions are made with trustworthy and traceable data.
- Access baseline, historical and current measurements by asset.
- Move away from clipboards, notebooks and multiple spreadsheets with a wireless one-step measurement transfer.
- Share measurement data with Team using ShareLive™ video calls and emails.

Enquiries: +27 (0)10 595 1821



The Fluke T6-100 PROs open-jaw application.



The Fluke 787B ProcessMeter™.

Legrand's Starfix ferrules, crimping tools and applicators



Legrand's Starfix ferrules, cable crimping tools and applicators, which form part of the company's comprehensive cable management system, are designed for new installations and renovations in commercial installations, offices and domestic environments.

According to Legrand, the outstanding feature of this hand tool is that it efficiently performs four functions in one operation, offering time savings of more than 50% compared with traditional tools that complete the same tasks. The Starfix crimping tool cuts, strips (with a side thrust), twists and automatically crimps each Starfix ferrule onto the cable.

This easy-to-operate tool has a fully adjustable wheel which is set to the cross section of the cable. The cable is then cut to the required length, automatically stripped and then twisted by tightening the tool and pulling the cable to remove the insulation. Ferrules, with an insulating flange, are then dispensed and crimped. The flexibility of this tool enables right and left-handed users to easily perform these functions.

For immediate recognition of the appropriate cross-section of ferrules, they are colour matched with applicators which have a transparent, removable protective cover. Ferrules are manufactured in strips for simultaneous separating and crimping. For easy handling and convenience on site, they are supplied in sachet or box packing. As the last remaining ferrules are held firmly in the box packing option, there is never any wastage. Accessories include cutting and crimping blades, as well as fixing components.

Enquiries: +27 (0)11 444 7971



Innovative ARC Flash PPE range provides unprecedented safety in electrical environments



Local safety wear manufacturer Bova, a BBF Safety Group brand has launched its range of BOVA Arc Flash Protection garments. The range has been designed to provide the best balance of inherent protection against the hazards of an arc flash, with lightweight, comfortable and durable garments.

An arc flash is the sudden release of electrical energy through the air when a high-voltage gap exists and there is a breakdown between conductors. This release of energy comes in the form of an explosion that creates intense heat, force, noise and light. Temperatures have been recorded as high as 20 000°C, and it is this intense heat and flames that can cause fatal burns – the risk of which is greatly reduced by using the correct PPE.

The Bova ARC range incorporates Beier's I-ARC fabric; an innovative solution in thermal protection fabrics that was developed in collaboration with Lenzing™, a global leader in inherently Flame Resistant (FR) fibres.

The I-ARC material gives the Bova Arc range a significant advantage in both comfort and its inherent FR protection, as if it is built into the fabric's DNA. With the Bova brand priding itself on being Engineered with Purpose, the significant benefits of having inherently FR properties were seen as a non-negotiable as opposed to having garments with a chemical FR treatment. Inherent materials maintain their FR qualities and these cannot wash or wear away, even when subjected to everyday household detergents and bleach. The fabrics also offer strong abrasion resistance and low shrinkage.

"Power generation and distribution, maintenance industries and electrical contractors don't always realise how important it is to wear the right protective garments. An arc flash is extremely dangerous and can affect people as far as 7 m away from the blast. The shorter the person's exposure to the resultant flame, the better the chances of survival and of less severe injuries, which is why the garments must have the ability to self-extinguish as quickly as possible," explains JW Eggink, Technical Sales Specialist for Thermal Protection at BBF Safety Group.

The standard for arc rated garments is that they can self-extinguish within 2 seconds once the exposure to a flame has been removed. However, this is normally measured in laboratory conditions on an unused garment, Bova wanted to emulate these tests with more real-life laundering scenarios. Internal tests were conducted after washes with an everyday household detergent that includes stain removal and fine print advising against washing FR materials. The chemically treated FR fabrics representative of a number of popular arc garments currently in use, failed after as few as 15 washes and completely burnt out, whereas the I-ARC fabric at 15 washes didn't ignite at all. The bigger concern is that the treated fabrics showed no noticeable deterioration prior to their failure.

"This is probably the scariest factor," adds Eggink. "Wearers may believe they are protected against potential burns when in fact their FR treated garments have lost their protective abilities. It is also the major benefit of inherently FR fabrics – so long as the garment is visually intact the wearer is protected, the FR quality does not wash or wear away. The other major benefit with the Bova range specifically over other inherent FR garments is the comfort factor."

In any working environment, it is important to work comfortably. The Bova ARC range offers a superior weight to protection ratio – the lighter weight of the garments across both Category 2 and Category 4 compared to leading competitors add to the proven comfort provided by the fabric's breathable properties and good moisture management; ensuring the wearer can still feel cool and dry while benefiting from the inherent FR protection.

For example, ARC CAT 2 garments utilise fabric weighing just 215 grams/m² (gsm) which is almost 100 grams lighter than a number of other offerings with a similar Arc Thermal Performance Value (ATPV) rating. Furthermore, the Lenzing™ blended materials contain both hydrophilic (water absorbing) and hydrophobic (water resistant) fibres to create an evaporative cooling effect.

The Bova ARC range offers garments suited for both Category 2 and Category 4 arc hazards with ATPV ratings of 13 Cal/cm² and 52 Cal/cm² respectively. This allows wearers across different industries and arc hazard levels to benefit from the superior balance of inherent protection, durability and comfort.

As part of its economic and social responsibility, Bova ARC garments are already locally manufactured and Bova has undertaken to increase its local development of the fabrics further through the ongoing collaboration with the Beier Group and Lenzing™. For added peace of mind, Lenzing FR fibres are made of botanic materials that come from sustainable managed forestry projects, ensuring the Bova ARC range is sourced through environmentally friendly channels.

Enquiries: www.bova.co.za/arc

World-first sensor platform for mobile machines



Heat, cold, shock, vibration, water, mud or dust – however dire or adverse the conditions are, mobile machines must work reliably under the harshest of conditions. To ensure uninterrupted performance, these machines need sensors that detect and provide data continuously under all conditions. To acquire and send this data, Instrotech, instrumentation & process control specialists representing Siko locally, proudly announce the world's first modular sensor Pure.Mobile, developed exclusively for use in commercial vehicles.

Siko's Pure.Mobile promises more flexibility, robustness and security than ever before. This technology platform was designed and developed exclusively for position-detection in mobile machines.

Unlike many of the sensors on the market that come from industry and are then merely adapted for mobile machines, sensors from Siko that use the technology platform have been developed exclusively for applications of this sort. Every Pure.Mobile sensor meets the EMC requirements for construction, agricultural and forestry machines, the requirements of E1 (UN ECE R10) for road vehicles, and is based on wear-free, robust, magnetic sensing technology. The flexibility of the extendible modular design is also unique.

The rotary encoders that use the Pure.Mobile platform can be extended to include additional functions through option cards selected by the user; these include, for example, an integrated inclinometer, DIP switches for parameterization, and digital in-

puts and outputs. All of the sensors with Pure.Mobile technology are also available in a safety version for applications up to Performance Level d (PLd). These features are rounded off by a large number of analog and digital interfaces to choose from. This means greater flexibility, resilience and safety than ever before. With Pure.Mobile, the focus is on the future of SIKO customers, providing support for automation, digitization and efficiency.

Advantages of the Pure.Mobile technology:

- Developed exclusively for mobile machines for linear, rotation, speed and inclination detection.
- Protection ratings: IP65 to IP6K9K.
- Wide temperature range (-40 to +85° C or 105° F; -40 to +185° F or 221° F).
- High EMC (construction machines, agricultural and forestry machinery).
- High shock and vibration resistance.
- Safe sensors up to Performance Level d (PLd).

SIKO's range of sensors are specifically and exclusively developed for mobile machines and mobile hydraulics, with the focus on the application itself. Siko is regarded as a system supplier in position detection, working with customers to provide customer-specific solutions, and ensuring best efficiency at low process costs.

Enquiries: +27 (0)10 595 1831

Extended range of range of RS PRO sensors

RS Components (RS) has announced the expansion of its popular RS PRO sensors range to give customers a comprehensive choice of sensors for use in factory automation applications. The range consists of high-quality sensors and accessories that deliver excellent reliability and great value.

Ultrasonic proximity sensors and fibre optical sensors have been added to complement the existing photoelectric proximity sensors (through-beam, retro-reflective and diffuse), inductive proximity sensors and capacitive proximity sensors. Depending on the sensor technology selected, RS PRO products can be used to detect a wide range of materials including metals, plastics, paper, liquids, powders and particles. They are ideal for incorporation into quality and verification systems: for example, to count units accurately, detect the presence or absence of an object, or to measure parameters such as pressure, flow, and viscosity. Applications range from product manufacturing, laboratories, and food and beverage production to automated packaging and distribution warehouses.

In addition to all these sensor options, the RS PRO range encompasses a wide selection of load cells, rotary encoders, thermocouples, sensors switches and cables. It also includes essential accessories such as mounting brackets and a sensor tester switch. This makes it easy for engineers responsible for testing, design or maintenance to source compatible products from a single supplier to meet all their automation requirements.

All RS PRO products are audited against demanding international standards, inspected for durability and consistency and tested by leading engineers. They are covered by the RS PRO Seal of Approval and come with a three-year warranty, to indicate their ability to deliver the quality, reliability and durability necessary to perform effectively in industrial environments.

The extended range of RS PRO sensors is now available from RS South Africa and across Sub-Saharan Africa.

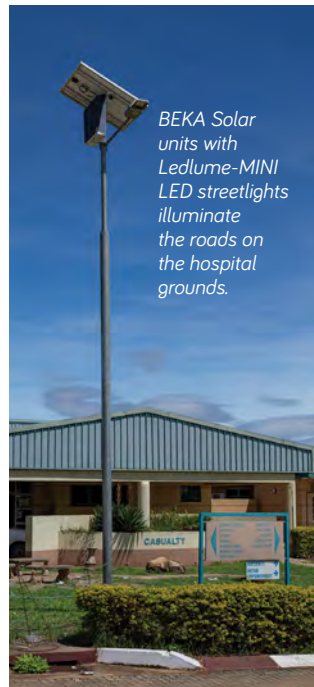
Enquiries: +27 (0)11 691 9300



Two successfully completed projects for BEKA Schröder



BEKA Solar units with decorative ZELA LED post tops provide area lighting in front of the staff housing.



BEKA Solar units with Ledlume-MINI LED streetlights illuminate the roads on the hospital grounds.



BEKA Solar units with Ledlume-MINI LED streetlights illuminate the roads on the hospital grounds.



BEKA Schröder luminaires illuminate the loading bays of the new RTT Warehouse in Polokwane.

BEKA Schröder has supplied the security lighting at Letaba Hospital in the Limpopo Province, South Africa. Since this new lighting installation, security levels have increased, and the number of incidents has reduced dramatically.

The lighting solution consisted of BEKA Solar units and the BEKA Series 30 LED bulkheads for general area lighting. The BEKA Solar units were supplied with Ledlume-MINI LED streetlights to illuminate the roads on the hospital grounds. Area lighting in front of the staff housing was provided with BEKA Solar units supplied with decorative Zela LED post tops. A solar lighting solution was chosen in order to provide security for the patients, while not being negatively impacted by load shedding. Furthermore, energy savings were an added benefit.

The BEKA Solar has been designed and manufactured in South Africa and offers a renewable lighting solution to operate reliably in any of our very challenging African environmental conditions. It has sufficient autonomy to cater for up to four continuous overcast or rainy days, to continue its reliable night operation. The BEKA Solar is theft and vandal resistant. Various battery technologies are available to meet specific customer requirements.

The BEKA Series 30 has been installed around the exterior of the buildings. This LED bulkhead luminaire range has been designed for decorative and efficient bulkhead lighting applications in modern architectural environments. It has been locally manufactured from high-quality materials, and due to LED technology, it is energy-efficient and requires very low maintenance.

The company is proud to be associated with the Department of Health and Welfare and Leshika Consulting Engineers in providing a successful lighting solution for this project.

Area lighting solution for warehouse

A new goods distribution warehouse required a South-African-manufactured, energy-efficient lighting solution for general area lighting to increase the feeling of safety and well-being. Various BEKA Schröder LED luminaires were chosen to achieve this. The RTT Group is a leading logistics partner specialising in multiple distribution strategies.

The loading bays were illuminated with the OMNIFLOOD and OMNISTAR-MIDI LED floodlights, and the BEKA VAPOURLINE linear LED luminaire. The aesthetic, locally designed and manufactured OMNIFLOOD, combined with a variety of optical distributions, makes it versatile and thus the perfect choice for various types of applications, such as lighting recreational sports areas, industrial areas, service stations, campuses, business parks, car parks, building façades and billboards.

The OMNISTAR-MIDI has been designed to provide an unrivalled combination of performance and flexibility for lighting areas where high lumen packages are needed while offering maximum savings in energy and maintenance costs with a short payback time.

Designed to provide a long-term solution for harsh industrial environments, the BEKA VAPOURLINE has a strong mechanical design that makes it highly resistant to shock and vibration while its IP rating makes it ideal for dusty and wet locations. This high-performing luminaire provides an energy-efficient lighting solution. With a lifetime five times longer than a fluorescent tube, this modern linear LED luminaire lowers the total cost of ownership of a lighting installation and eliminates the need for maintenance. The BEKA VAPOURLINE creates safe and comfortable working conditions thanks to its low glare and high colour rendering index to optimise productivity.

The inner warehouse was illuminated with the ECOBAY. The ECOBAY is the ideal luminaire for lighting industrial facilities at optimized light levels. It delivers the best solution for lowbay and highbay applications. The ECOBAY offers substantial energy savings, high performance, and

is able to operate at high ambient temperatures.

Available with four typical lumen packages and various light distributions, the ECOBAY is perfectly suited for multiple indoor lighting applications. The ECOBAY not only lowers your initial investment. It maximises it by providing a comfortable environment for your staff while limiting energy consumption to what is absolutely necessary. Thanks to its reliable performance, low dust accumulation and no need for relamping and regular maintenance, the ECOBAY is the luminaire of choice.

The parking area is illuminated with the ZIYA-2, an economical energy-efficient LED streetlight. Compact yet powerful, light yet robust, affordable yet highly efficient, the ZIYA range provides the fastest return on investment in road and area lighting.

The ZIYA range offers a superior lumen/watt ratio to deliver a high-performing, energy-efficient lighting solution at an affordable price for various landscapes, including pedestrian zones, streets, roads and car parks.

The ZIYA range comprises of the ZIYA-1 and ZIYA-2 with aluminium housing, and the ZIYA-E with calcium-filled Polypropylene housing. The range incorporates a universal side-entry mounting for 42mm diameter spigots. Precise on-site setting is facilitated through an incorporated inclination system. Built to withstand high ambient temperatures and vandalism (IK 10) and with a high Ingress Protection level (IP 65), the ZIYA range provides a sustainable performance over time.

The SERIES 300 LED bulkhead has been installed around the office block and guard house. The SERIES 300, with its modern and simple design, allows this LED bulkhead to blend into any areas by day, and to make an impact when it is dark. It is the ideal solution to beautify buildings and to provide area lighting for commercial developments, retail areas, shopping malls and public buildings.

High-quality materials are used to ensure a high ingress protection and non-discolouring diffuser. This, together with the long lifetime of the LEDs, and an easy installation procedure, makes the SERIES 300 the bulkhead of choice.

The LEDNOVA-MIDI was installed to provide general outdoor area lighting. The LEDNOVA is a robust and versatile LED bulkhead range, and offers optimal photometric performance and high reliability to reduce energy consumption and maintenance in all types of lighting applications.

The LEDNOVA range is suitable for use in various environments, which include outdoor mining areas, oil and gas refineries, food and beverage plants, manufacturing process plants and any application that requires robust and well-built luminaires. Indeed, the LEDNOVA range has been developed to reduce disability glare and thus improve the quality of light.

This LED bulkhead is also available in the standard surface mount version, and an optional pole mount version, which makes it truly versatile.

The BEKA LEDDUO up- and downlighter illuminates the entrance signage. This luminaire has been manufactured from high-quality materials and is available in a wide or medium beam distribution. The luminaire housing is robustly constructed, weatherproof, hail proof, corrosion proof and vandal resistant. It is manufactured from corrosion-resistant aluminium, ensuring a long product lifetime.

BEKA Schröder locally develops and manufactures energy-efficient LED lighting products, designed and suitable for local conditions. The company, along with Pienaar & Erwee Polokwane and S2 Electrical, ensured a successful lighting solution for this project.

Enquiries: +27 (0)11 238 0000

Kitchen lighting FAQ



Are you in the process of wiring a kitchen for lighting? Read on to hear what the experts from Eurolux suggest for the best kitchen lighting.

When it comes to lighting in a kitchen, what is considered an ideal layered combo and why?

As with all other rooms in the home, you want your layered lighting to consist of ambient lighting, task lighting, and accent lighting. Layering your lighting in the kitchen serves a functional purpose, but it also brings a room to life visually – a combination of lights prevents your room from appearing boring.

How does one decide where downlights belong and is there a guide as to how they should be spaced?

To start with, you should note the following questions:

- How large is the kitchen?
- How high is the ceiling?
- Is it one room or an open plan space?
- Which areas of the kitchen require special focus?

Draw a plan of your kitchen and measure the space to determine how many lights you need. You will probably need one recessed light for every 1,2 to 1,8 square metres of ceiling space. Place your recessed downlights 30 cm apart from each other and 30 to 45 cm away from any cabinets to illuminate counter areas.

Where are pendants, chandeliers and wall lights best placed in the kitchen?

A common place for pendant lighting in the kitchen is over the kitchen island or above the sink. Chandeliers also work over the island. If you have a dining table in your kitchen, a chandelier will work here too, depending on the available space. Wall lights are not common in the kitchen as the wall space is usually occupied by cabinets and shelving.

Is task lighting in a kitchen the main priority or should atmospheric lighting also be considered, as one would do for a living area or bedroom?

You need both. Atmospheric/ambient lighting will give the space its general illumination so that you can move around it safely, but task lighting will provide you with focused lighting necessary for activities like chopping vegetables and reading recipe books.

Enquiries: www.eurolux.co.za

Ledvance launches new street lighting lamp family, Osram NAV LED



Ledvance launches the new lamps family Osram NAV LED as a direct LED retrofit for traditional high-pressure sodium vapour lamps (NAV). They offer compelling benefits for areas of application such as streets, area lighting, pedestrian zones or parks.

The new Osram NAV LED retrofit lamps increase efficiency on two different levels: consumption and maintenance. Not only do they consume up to 52 percent less energy than conventional high-pressure sodium vapour lamps, but they also reduce maintenance costs thanks to their lifetime of up to 50 000 hours. Besides cost savings, another bonus of the new product family is its ease of replacement, thanks to compatibility with conventional control gear (CCG), and a compensation capacitor and an ignitor without rewiring. So-called 'night-time switching' allows additional dimming at low traffic density.

Finally, the Osram NAV LED also offers a very high efficiency of up to 185 lm/W.

Enquiries: www.ledvance.com



New LED suppliers in the South African market

There is no denying the fact that the introduction of LEDs has completely changed the lighting industry for the better and that LEDs are here to stay. In the past 10 years or so we have seen phenomenal strides made in the improvement of this technology to the point where we are today, where LED alternatives can be found for most, if not all, types of luminaires. LED fittings can be found in domestic, commercial, retail and hospitality applications.

LED lighting has a number of benefits including small size, long lamp life, low heat output, easy installation, energy saving, etc. As a result of these benefits, the demand for LED light fittings at affordable rates in the South African market has increased exponentially.

This demand has seen quite a few new, small suppliers popping up all over the place, selling LED light fittings at ridiculous prices. This of course seems very attractive to the consumer who is not aware of the possible repercussions of buying LED light fittings from one of these suppliers.

Importing LED light fittings can be quite a timeous and expensive exercise due to a number of tests and safety standards that needs to be adhered to before the goods can legally be sold in the country.

It all starts with choosing a reputable supplier in China that is EMC (Electromagnetic compatibility testing) approved and can provide you with valid IEC

certification. Seeing as this is a South African requirement, the factory may need to apply for IEC certification.

Before any LED light fittings can be legally sold and distributed in South Africa, the fitting needs to be tested locally and approved by the NRCS (National Regulator for Compulsory Standards) after which a valid LOA (Letter of Authority) will be issued. This testing needs to be done in order to ensure the safety and energy efficiency of all electrical products for sale in South Africa based on internationally accepted standards. Note that you cannot apply for an LOA if you are not able to provide them with IEC certification from the factory where the goods were originally manufactured. The LOA is only valid for three years, after which it will have to be renewed.

Being in the South African lighting industry for more than 30 years,

Spazio Lighting ensures that all fittings imported adhere to all of the abovementioned standards and have all required certification in place.

Unfortunately, this is something that most of the new players in the South African market do not adhere to, firstly because it is very costly to put all your products through all the required tests and secondly because it can prove to be a very time-consuming process.

This can have a massive impact on the end user, especially when items are installed in commercial or retail applications without adhering to the necessary safety standards. Therefore, it is advisable always to check with your supplier that their products are NRCS compliant before you go ahead with your purchase.

Enquiries: www.spazio.co.za

New slim luminaire gives 360° light emission

Designed by Austrian-based Zumtobel Lighting, the ECOOS II slim Luminaire gives infinite light, making 360° brilliant light re-defined. The holistic light body makes light appear almost infinite and three-dimensional.

The atmosphere in offices or educational institutions feels more relaxed and spacious thanks to the homogeneous illumination. The 360° light emission gives the luminaire a floating character and makes it seem as if the light is everywhere.

The system has been thought through down to the smallest detail and makes a significant contribution to visual comfort.

The high CRI value of 90 and perfectly glare-free light with an UGR value of < 19 improve the impact of the lighting throughout the room.

Thanks to tunable White technology, ECOOS II meets even the most specific requirements with its excellent white quality. The illuminated surfaces of the light body generate high vertical or cylindrical illuminances and immerse the room in a very pleasant, soft light.

Controlled via Bluetooth, lighting conditions can be intuitively and individually adapted to requirements.

Designer end caps in black, white, silver and bronze make an essential contribution to the 3-dimensional light body, thanks to their innovative depth effect.

Translucent continuous row connectors give the impression of an optically closed luminous object when installed to form continuous rows.

The compatible mechanical concept and the largely identical components of the two luminaire variants in the original and slim versions make for easy luminaire installation and configuration.

Individual luminaires in a linear design can be connected to form an optically closed continuous row. The minimalist, linear luminaire for the perfect, extensive illumination of offices and schools. The luminaire is available as a slim, modern lightweight version or in the tried-and-tested original with its classic design, with extensive installation options.

Enquiries: www.zumtobel.com





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willowlamp illuminates new sconces ahead of the Cape Town Design Trail

Branching out from its signature chandeliers, willowlamp has introduced an exciting range of wall-mounted designs. These standalone sconces will be on show as part of the inaugural Cape Town Design Trail presented by Decorex, which runs from June 1-30.

For the entire month of June, willowlamp will throw open the doors of its Salt River studio and factory to interior design professionals and members of the public alike. The company's Creative Director and founder Adam Hoets will design and mount a display of pieces while his team continues to work on commissions for local and international projects.

This provides a unique opportunity for you to see how and where these iconic lights are made – and perhaps acquire one for yourself! Alongside the sconces, selected samples will also be available for purchase at reduced rates. While the samples have been gently used, they are still in prime showroom condition. Also on show are three new minimalist pendant designs that are sleek and streamlined.

The willowlamp sconces are a welcome and versatile addition to the company's ever-expanding collection of artful ceiling-mounted fittings. To date, willowlamp has been known primarily for its hanging lights – dramatic suspended creations that form the centrepiece of a

space. The wall-mounted lamps facilitate a new design dynamic between directional lighting, artworks and object d'art, allowing for more exciting décor possibilities.

Visitors can expect to see all-new standalone sconce designs such as the Half Pipe, Quarter Pipe and the Langarm. There is also a selection of other sconces that directly reference the existing willowlamp classics, allowing these pendants to be complemented by matching wall-fittings.

The full list of sconces that will be in show, as well as the sample sale pieces, is published on willowlamp's website. The exhibition is open Monday to Friday, from 10am-3pm, and can be found at 6 Spencer Square on

Spencer Road in Salt River, Cape Town.

In addition to the month-long exhibition, willowlamp hosted a special preview of the show. Here, guests had the opportunity to meet willowlamp's Creative Director in person and take advantage of the first opportunity to purchase lights on display, ahead of the public opening.

Enquiries: www.willowlamp.com

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Give security lighting the attention it deserves

How often have you been asked to provide security lighting for a client? How often have you heard a client say, "I don't want anything fancy or expensive, just stick up a few little floodlights here and there."

I have certainly heard it far too often. Whenever I am asked to go to a site to discuss security lighting, I first ask the client or facility manager if they have a security plan. That usually gets a response such as, "What do you mean?" or "I do not need a security plan". Perhaps you are also asking a similar question as you read this article.

Every business facility anywhere in the world, but particularly here in South Africa, has probably experienced threats of some nature to its security. Those threats could vary from internal theft, external theft, crime syndicates or other more serious threats such as armed robbery, violent protest action and other serious threats.

Essentially, security lighting is only one small but nevertheless important element within a much larger security plan.

As lighting professionals, consulting engineers and specialists, it is important to make certain that the risk category of the facility has been properly identified before proceeding further. That is the starting point for the security analysis. These are steps that we have to go through to ensure that when we decide on the type of security lighting, it will be the most appropriate.

Then follow steps to assess the security threat and the physical aspects of the facility itself. These will include the application of the appropriate Standards and Guidelines, and then, by making use of an *Aide Memoire*, assess the incidence of crime at the facility and in the neighbourhood over the previous twelve months.

Now it is time to put on your walking boots! It is time to assess the physical part of the facility. How secure is the building/s, what is the condition of boundary walls, fences, and more aspects? The list is long and may vary from facility to facility.

Finally, the third part of the process is to look at the level of housekeeping at the facility which may include disposal of junk, normal refuse, recycling collections, cash handling and more.

When it eventually gets to the security lighting plan, it is important to "Get the Light Right". Lighting must be effective and appropriate for the area. Remember, poor lighting can even work in the criminal's favour.

At all costs, there should be no obtrusive light or worse still nuisance light. No lighting should be directed above the horizontal measured from the lower face of the flood light. Remember that poorly aimed or over-powered flood lights can blind or dazzle CCTV cameras and security personnel.

Equally important is the use of the correct Correlated Colour Temperature (CCT) of the flood light. Old technology light sources can result in incorrect identification of people and vehicles such as when using high pressure sodium lamps (HPS) where a blue car may appear to be purple or a red car may appear to be brown, and most humans appear to be the same skin colour. If old technology lighting is still in use, recommend that all security lighting be upgraded to LED. It will not only allow for a unified lighting plan but will also contribute to lower maintenance costs for the facility.

In the case of security lighting, there is much more than meets the eye!

If you need more information about the Standards for compliance or the assessment of the facility, you are welcome to contact me without obligation or cost.

Enquiries: www.bhaschooloflighting.co.za



The ultimate flexibility of on-site articulation of luminaires

Philips Corporate Design and the Signify Design team have designed a new adventure in lighting design with the Ledalite ModiFly suspended and wall lighting fixtures. The new Signify lighting won a recent 2020 Good Design Award from The Chicago Athenaeum. The new fixtures liberate light. From the depths of creativity comes something powerful and original.

The agile and sophisticated fixtures harness the ultimate flexibility of on-site articulation of luminaires and create one-of-a-kind designs with unique shapes and precision angles. ModiFly lets vision fly free and unencumbered. Whether it be pods of pendants floating under sky-high ceilings, a canopy of suspended hexagons linking in a luminous web or well-defined squares perched at varying heights for a geometric yet whimsical space.

These fixtures offer a backup plan for lighting challenges that may even inspire exciting new concepts or rejuvenate routine patterns. They allow for ultimate flexibility, making lighting the key element of architectural design.

The fixtures come in bold and striking new metallic finishes: Hero Gold, Silver Nova or Venom Black – as well as the traditional choices of black, white and titanium.

Enquiries: www.signify.com

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TAKE A GUESS

A woman had two sons. They were born at the same hour on the same day of the same month in the same year. However, they were not twins. How could this be?

MAY SOLUTION

The items were used by children to build a snowman that has now melted.

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- Standby and emergency power
- Lighting

Buyers' guide

- Cables and cable accessories

AUGUST FEATURES

- MCCs and motor protection
- Energy efficiency
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Buyers' guide

- Lighting (lamps and controlgear)

Editor:
Gregg Cocking

Advertising:
Carin Hannay

Design:
Anoonashe Shumba

Publisher:
Karen Grant

Deputy publisher:
Wilhelm du Plessis

Published monthly by:
Crown Publications (Pty) Ltd
P O Box 140

Bedfordview, 2008

Tel: (011) 622-4770

Fax: (011) 615-6108

e-mail: sparks@crown.co.za

Website: www.crown.co.za

Printed by: Tandy Print

The views expressed in this publication are not necessarily those of the editor or the publisher.

This publication is distributed to electrical contractors, wholesalers, distributors, OEMs, panel builders, Eskom, mining electricians and consulting engineers (electrical) as well as libraries, members of IESSA and public utilities.

abc Total 10 151 per month.