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Turn the page to end the year on a high - find out how you can win one of 24 great prizes



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CLOSING DATE
ENTRIES CLOSE AT END OF BUSINESS ON 15 JANUARY 2021

Citiq Prepaid

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WISHING YOU AND YOUR LOVED ONES A WONDERFUL FESTIVE SEASON!



What better way to say ciao, adios and hamba kahle to 2020, than to start 2021 as the winner of some fantastic prizes? Sparks Electrical News, along with our cherished advertisers, are offering readers the chance to win one of a number of great prizes.

HOW TO ENTER

Entering the competition is simple:

1. Scan the QR code on this page to go straight to the online entry form.
2. Log onto the Sparks website - www.sparkselectricalnewsmagazine.co.za - click on the competition banner and complete the online entry form
3. Email your name, company name, postal address and contact number to promotions@crowm.co.za



DRAW

All Entries received will go into a draw which the advertisers who have donated prizes will draw in January 2021. Winners will be notified by email and the names of the winners will be published in the February 2021 issue of Sparks Electrical News

CLOSING DATE

ENTRIES CLOSE ON 15 JANUARY 2021



Citiq Prepaid



Crabtree

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R2000 GIFT VOUCHER



WACO
industrial electrical distributor



**THREE-D
AGENCIES**
THE CABLE ACCESSORY COMPANY

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WHAT IS UP FOR GRABS? SEE BELOW!

Citiq Prepaid

- A Citiq Prepaid hamper including:
- Russell Hobbs Coffee Maker
- Coffee
- Mugs
- Boardgame
- Cookies

Comtest

- 2 x Fluke 114 True-RMS multimeters

Crabtree Electrical

- A R2000 Makro gift voucher

Empire Electrical Wholesalers

- 5 x CBI real-time electricity meters

Eurolux

- A Eurolux FS269 LED 35W 5000K work light

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- A HellermannTyton hamper including:
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- SpeedyTies (pack of 5)
- Fospro
- Toolbag (with hammer and Allen keys)
- TBM27 Multimeter
- Engset
- Bottle
- License Discs Holders

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Schneider Electric

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Three-D Agencies

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- 2 x UT61D+ digital multimeters

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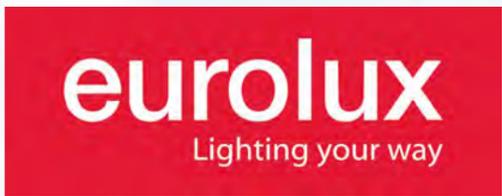
- Tork Craft 12 V cordless mini palm sander
- Tork Crafts HSS Tap and Die set

Voltex

- Golfshirt
- Hat
- Multi Plug
- Golf balls and pins
- Notepad

Waco

- Waco Solar Lantern with 12 white LED





Coca-Cola goes solar



Coca-Cola Beverages South Africa (CCBSA) has ramped up its solar power generation capacity, totalling seven out of 13 manufacturing facilities now using solar power around the country, as at the end of August. The company's target is to install solar power at 12 of these plants by the end of 2020.

In 2018, CCBSA initiated a renewable energy project as part of the company's sustainability commitment and strategic objectives, focusing on solar power at its manufacturing plants. The company began rolling out solar photovoltaic panels at its plants located across the Free State, Eastern Cape, Gauteng, KZN and Elgin, Western Cape. The company aims to generate up to

18 313 mWh per annum, or 11% of the company's total electricity demand based on 2019 usage.

"Due to delays as a result of the coronavirus pandemic, a total of only 1 860 mWh of solar energy had been generated by the end of August across all CCBSA plants," says CCBSA's Manufacturing and Technical Director, Henry Peek. "While this is behind our initial projections, we are well on our way to reaching (and surpassing) our 2019 total generation of 2 905 mWh, as we have an additional three plants generating solar power (up from four in 2019)."

CCBSA's Premier plant (in KwaZulu-Natal), as well as the Bloemfontein Tannery plant and Bloemfontein Gutsche plant commissioned their solar systems in 2020 with additional sites to be commissioned by year end. These added to the Devland, Heidelberg, Pretoria and Midrand plants that were already producing solar power.

Engineering teams are now preparing to complete additional projects at the company's Phoenix, Lakeside, Wadeville, Polokwane and Elgin sites.

"In order to make better use of this additional capacity, the next phase of our project will be to engage with municipalities to explore power export agreements, so that this much-needed energy can go back into the national grid for our communities to benefit from green energy," he adds.

Enquiries: www.ccbsaca.com

Significant wind farm milestone reached

Lekela, the renewable power generation company that delivers utility-scale projects across Africa, has announced that its 140 mW Kangnas wind farm has successfully reached commercial operations. This marks the completion of all five wind farms in a Lekela-led consortium across South Africa. Together, these total over 600 mW and will provide clean, cost-effective power for up to 485 000 homes over the next 20 years.

Kangnas follows the 110 mW Perdekraal East wind farm which entered operation in October. Perdekraal East was the first wind farm from Round 4 of the Renewable Energy Independent Power Producers Procurement Programme to do so, with Kangnas now following it. Despite the challenges presented by coronavirus, Lekela's overarching priority has been to support the health and safety of all employees, contractors and partners while continuing to provide clean, reliable power.

Enquiries: www.ccbsaca.com

ABB champions the future of EV charging in Africa

A decade ago, the concept of autonomous driving and full electric vehicle (EV) fleets was very much a vision. Now it is a reality, with ABB leading the charge in developing new technology and integrated solutions that will continue to drive our EV future. ABB helped to shape this young industry from the start, and over the years has delivered many first-to-market technologies in dc fast charging.

The foundations for a future of smarter, more reliable and emission-free mobility is a key focus for ABB South Africa, which showcased its electric EV charging capability and expertise in the run-up to the Smarter Mobility Africa Live virtual summit, according to Yuri Ramsamy, Product Marketing Specialist at ABB South Africa.

The event brought together mobility thought leaders from business and government to consolidate efforts and accelerate the transition to electric and smart mobility. The virtual summit



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PERSONALITY OF THE MONTH – JOSIAH MOLEFE

25 years of building knowledge



Josiah Molefe

JOSIAH MOLEFE, a sales representative from Crabtree Electrical, has recently celebrated 25 years with the company. He prides himself on his product knowledge and enjoys his interactions with the customers he meets.

Sparks: Where were you educated?

JM: I was educated at Katlehong High in Katlehong next to Germiston and did my Electrical Theory at Germiston College.

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

JM: I have been in the industry for over 25 years.

Sparks: When and where did you start your career?

JM: My first job in the electrical field was with Litemaster.

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

JM: The biggest changes I have seen in the electrical industry over the years have all involved technology, with a number of new machines replacing the workforce, and thus causing retrenchments.

Sparks: Have you won any awards?

JM: Not one in particular as a sales rep, although as a team we have managed to grow the brand of Crabtree products. In my personal life, I am a Comrades Marathon runner and have my green number already.

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

JM: Primarily, I am self-inspired although there have been a few people I have looked up to.

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

JM: A lack of skilled people in the industry and competition from products coming from outside the country.

Sparks: What do you enjoy most about your job?

JM: The things I enjoy most are increasing my product knowledge and meeting different people.

Sparks: How do you motivate your staff?

JM: One word: teamwork.

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

JM: I would not change much.

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

JM: Yes, I would definitely advise them to take electrical engineering, because electrical engineers are scarce in the country.

Sparks: What is your advice to electrical contractors and electrical engineers?

JM: I would advise electrical contractors and engineers to specify and install quality, locally manufactured products, such as Crabtree.

Sparks: What is your favourite quote?

JM: My favourite quote is: "The Lord is my strength and my shield; my heart trusts in Him."

Sparks: What is still on your 'bucket list'?

JM: To have my own business and achieve my second green number in the Comrades Marathon.

Enquiries: www.crabtree.co.za

highlighted currently available and future mobility solutions, including the latest technologies, policies, case studies, business models and the impact on health and the environment, to ensure that the correct decisions can be made to usher in the new world of e-mobility.

"We will see a marked shift, where everything is connected electrically, and shared mobility becomes the norm. As we transition towards e-mobility, fleet management will improve and we will see less traffic through a higher degree of car sharing, which will help to build our sustainable world," comments Frank Muehlon, Head of ABB's Global E-Mobility.

ABB entered the EV charging market in 2010 when it launched its pioneering dc charger. Now more than 14 000 ABB dc fast chargers are sold across more than 80 countries, from Peru to Rwanda. ABB is a global market leader in e-mobility charging solutions, with a strong market share in Europe, Asia Pacific and the US.

In 2013, ABB was the first company to develop networks of 50 kW chargers, spanning complete nations. This was paired with a unique cloud-based service for remote monitoring and servicing of chargers, which was a real game changer for connectivity and now forms part of the ABB Ability™ ecosystem.

More recently, in 2018, ABB was first-to-market with its liquid-cooled full 350 kW capable charging technology, which delivers higher power and charging speeds. Early 2020 saw the acquisition of Chinese EV charging provider Chargedot, giving ABB a stronger entry into the largest e-mobility market in the world and broadening its portfolio of dc and ac fast charging.

"Over recent years we have seen a marked shift in consumer perceptions, with the environment having a greater value than it has ever had before. People want to live in a cleaner, less noisy and less polluted environment and are willing to take steps to make this happen. This is where EV comes into its own. It will continue to drive increasing demand for EVs compared with traditional combustion engines, together with a demand for longer-range and higher-power charging through larger battery sizes," highlights Muehlon.

ABB offers a total EV charging solution from compact, high-quality ac wall-boxes and reliable dc fast-charging stations with robust connectivity to innovative on-demand electric bus-charging systems, with infrastructure solutions that meet the needs of the next generation of smarter mobility.

The ac charger portfolio ranges from 3.7 kW to 22 kW, while the dc charger portfolio ranges from 20 kW to 350 kW for light commercial vehicles and up to 600 kW for heavy vehicles such as buses. The ABB chargers are multi-standard to cater for the different types of vehicle using its charging stations. ABB's main product line is its Terra 50 range of 50 kW dc chargers. Latest product launches include the Terra 124 and Terra 184, a 120 kW and 180 kW dc charger respectively. This is based on market requirements and is anticipated to set a new benchmark for urban mobility.

In addition, ABB also offers Connected Services through its ABB Ability™ platform that allow charging station owners to monitor and configure charge points remotely, adapt business and pricing models over time; keep charging infrastructure up-to-date with the latest software; service the equipment efficiently and with minimal operational effort; increase charger uptime and the reliability of the charging network, and minimise investment in IT infrastructure and back-end software.

"Our Connected Services offering allows our customers to operate their charger network in the most efficient way to reduce the total cost of ownership and build a profitable business," comments Ramsamy. A recent project was carried out successfully for a client in Rwanda that procured ten EVs for marketing and resale that needed ac chargers. ABB supplied its ac wallbox chargers, which were subsequently installed and are currently in operation.

A major opportunity at present is dc fast charging for the heavy commercial vehicle segment. "We have a lot of trucks travelling between provinces transporting products all around the country. Moving these vehicles to electric would reduce emissions and possible running costs and, in turn, bring down the overall cost of the goods we purchase," elaborates Ramsamy.

ABB also supported the development of the CHAdeMO and the Combined Charging System (CCS) international EV charging standards. It is also one of the first EV charging station manufacturers to offer independent third-party verification of the CE certification of its products.

"From a customer point of view, this guarantees that you will always have access to the latest technology, including software updates," adds Ramsamy.

"The faster we transition to EV, the bigger the change will be, and we expect to see new players and OEMs entering the market. We will also see the merging of two worlds, where the automotive world becomes part of the electrical world. In the past, these were two distinct industries, but in the next ten years we will see them coming together to offer a better user experience.

"Looking ahead, we will also see a big shift in market share, with 25% to 30% of new vehicles hitting the market being electric. Some industry experts predict that this could be as high as 50%, which demonstrates the true potential of EV to create a more sustainable world," concludes Muehlon.

Enquiries: www.generationhq.com/smarter-mobility-africa



Yuri Ramsamy, Product Marketing Specialist at ABB South Africa.



Large customised genset for platinum mine

Accommodating the space constraints of a South African platinum mining customer, Zest WEG is constructing a large diesel-powered generator set to be delivered later this year.

The capacity of the 2 500 kVA genset will also make it the largest unit yet to be fully load-tested at the company's genset manufacturing facility in Cape Town, according to Craig Bouwer, projects and product manager at Zest WEG.

"In addition to functional testing, we will be equipping ourselves to conduct load testing to 11kV on this unit," says Bouwer. "With load-banks in-house, we will be stepping the voltage down to 400V during the testing, and drawing on MV specialists to ensure a safe and reliable process."

The genset is a highly technical solution to match the customer's specific needs, he says. Based on the available space, it is housed within a 12 m ISO shipping container with the electrically-driven radiator mounted on the roof.

Prime-rated at 11 kV and powered by an MTU diesel engine, the genset has been designed in close consultation with the customer over a number of months. Having concluded the engineering design, construc-

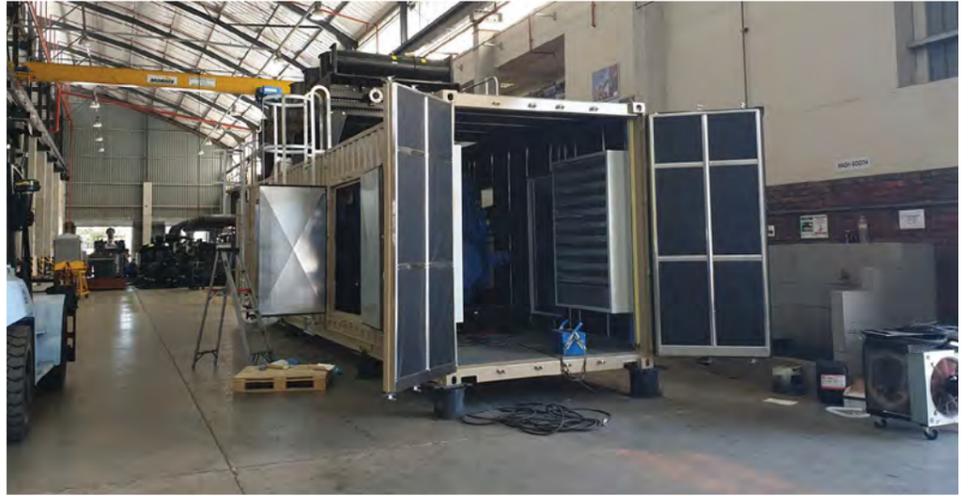
tion is currently underway in Cape Town. Bouwer highlighted the detailed and time consuming nature of engineering design for a project of this magnitude and complexity.

"Stringent technical requirements demanded lengthy and ongoing collaboration not only with the customer, but between our engineering team and production operations," he says. "The customer was particularly pleased with our flexibility and the extra effort we applied to ensure the optimal technical returnables for the project."

As one of the few Original Equipment Manufacturers (OEMs) capable of undertaking a customised genset of this capacity in-house, Zest WEG will also be supplying the control and protection panel from its extensive range of electrical equipment and products.

"To enhance safety and ergonomics, the control panel is in its own compartment within the ISO container," he says. "A 1 000 litre bunded day tank has also been installed inside a separate compartment within the container, including a fuel cooler and filtration system."

The COVID-19 lockdown has had minimal im-



act on the work schedule, he notes, as planning and communication with the customer could continue regardless, dealing with various technical clarifications. To facilitate the transportation of this large unit to site, it will be shipped as three separate components: the genset, radiator and exhaust sys-

tem. Once installation is complete – a process that Zest WEG specialists will supervise – its experts will conduct the cold and hot commissioning, and hand over to the customer.

Enquiries: www.zestweg.com

WearCheck's new transformer monitoring technology gives speedy results

Condition monitoring specialists WearCheck recently invested several million rand in four brand new laboratory instruments for their flourishing transformer division laboratories in Johannesburg, Durban and Cape Town.

WearCheck managing director Neil Robinson says the company's investment in the equipment has relieved some of the current sample volume pressure and reduced turnaround times in line with customers' expectations, ensuring that transformer oil samples are processed and analysed even faster than before.

WearCheck's transformer division now has an additional two new high-speed gas chromatographs (GCs) in the company's Johannesburg and Durban laboratories, an additional new PCB (polychlorinated biphenyl) chromatograph in the Cape Town lab, and an additional new HPLC (high performance liquid chromatography) in the Durban lab.

"Getting the analytical test results and diagnoses to our customers as fast as possible is a priority for us," says Robinson, "and our investment in the new instruments has ensured that our transformer sample testing capacity is more than doubled. Our transformer division also recently moved to a new, larger laboratory in Westville, where we offer a wide range of specialist transformer monitoring techniques."

The new Perkin Elmer GCs – designed and manufactured in the Netherlands – each has a carousel that can hold 120 prepared samples and standards. Added to the 80-sample capacity of the two existing GCs in the Durban laboratory, with more samples being processed at any one time, the sample turnaround time has been significantly reduced.

"One of the great advantages of the new GCs is that they can be pre-

loaded with samples before a weekend, and they will continue operating for 48 hours. Our older models require reloading every 24 hours," says transformer division manager Gert Nel. "The primary function of the GC is to perform dissolved gas analysis (DGA) – a highly effective preventive maintenance tool which has formed part of WearCheck's condition monitoring programmes for more than 10 years," says Nel.

"The new PCB instrument determines the presence of PCB in electrical equipment containing insulating oil, which must be tested at least once and after every maintenance event to determine the PCB level. According to the latest version of SANS 290:2017, the current maximum allowed PCB level in oil is 50 ppm (parts per million or mg/kg). If the PCB level exceeds this limit, the oil must be drained and disposed of in an approved manner. As PCB molecules are highly toxic, this is an important test in transformer maintenance and management.

"The additional HPLC," continues Nel, "separates mixtures of compounds in transformer oil to identify and quantify the individual furanic compound concentrations of the oil. The results enable our diagnosticians to predict the remaining useful life of the paper insulation of the transformer with high accuracy, giving a very good indication of the remaining useful life of the transformer itself."

Nel observes that new instruments have already reduced sample processing time.

"Our transformer customers in various business sectors such as mining, power generation, transport, manufacturing, industrial and marine maintenance are receiving their results at high speed, which enables them to make critical maintenance-related decisions in good time and reduce



WearCheck transformer laboratory technician, Zamaswazi Dlamini, operates the new high-speed gas chromatograph (GC) at the company's Durban laboratory.

the risk of unplanned transformer failure."

WearCheck operates a network of 16 world-class laboratories around Africa and beyond, each of which is fully-equipped with the latest available condition monitoring technology in line with global trends. The company has evolved into a condition monitoring hub specialising in used oil and fluid analysis, reliability solutions services, transformer monitoring and advanced field services.

Enquiries: +27 (0)31 700 5460

Cummins gas generator installations power the equivalent of 52 000 homes

With increased demand for low-carbon power generation, organisations across all industries are seeking alternative energy sources to reduce their carbon footprint while providing reliable and robust performance. To meet this need, Cummins invested heavily in expanding its gas range, launching the HSK78G gas generator range in March 2019.

With a power density of up to 2 mW, Cummins lean-burn gas generators are designed to provide reliable power for a diverse set of industries, from mining and manufacturing to shopping malls and hospitals. With fuel flexibility across the range, HSK78G generators use natural, low-cost, low-BTU free-fuel sources that would otherwise be considered waste products.

"We are seeing increased interest from a diverse range of industries, all of which are considering the switch to low-carbon alternatives for power generation. With market-leading thermal efficiency at 47.1% and 2 110 kW of thermal output for heating, cooling and steam generation, the generator series provides significant

environmental benefits. They can also run in parallel with combined heat and power (CHP) systems, which can convert 70% to 90% of the energy of the fuel that is burned into useful electricity or heat, further increasing sustainable credentials," explains Cummins Energy Management Executive Director, Ann-Kristin deVerdier.

The HSK78G has been successfully installed across a wide range of applications, from horticultural, logistics and manufacturing operations through to providing gas power for power stations and backup power to the national grid.

"We have worked hard to develop a solution that meets market expectations of performance, uptime and running costs, while also meeting the need to reduce emissions. The HSK78G generator series provides reliable power no matter how extreme the fuel source or operating conditions for both prime and peaking power applications," adds deVerdier.

The generator has proven itself in a number of prime power applications, most notably for a CHP application for Varegro, a Belgian horticultural company. With a to-

tal return greater than 100%, the company was able to meet all its energy needs, including lighting, carbon dioxide recuperation and hot-water requirements, all while producing sufficient excess power to sell back to the national grid.

Elsewhere, an agricultural industry in the US has selected Cummins to provide a cogeneration system that will supply 2 mW of continuous power to a greenhouse. The HSK78G 60 Hz installed generator set is designed to run in grid-parallel mode, offering a high electrical efficiency of up to 43.5%, which will provide higher fuel savings to the customer.

The HSK78G offers reliable power no matter the existence of a grid infrastructure. For a remote textile manufacturer in Pakistan, as well as for Walker & Son (Hauliers) Ltd, a transportation and storage company in the UK, the benefits are huge, providing both facilities with robust and cost-effective off-grid power generation capabilities coupled with a high electrical efficiency of up to 44.2%.

Suited to peaking power applications, gas generators can be used as back-up

power systems, supporting the grid during times of high demand, as well as offsetting the fluctuations of renewable power sources such as wind and solar energy. Working with TMS Grid Ltd, an engineering consultancy in the UK, ten HSK78G units will provide a total of 20 mW of uninterrupted back-up power.

Alongside the product's high efficiency, the generators' Grid Code Compliance (GCC) certification enabled TMS Grid Ltd. to demonstrate compliance to the G99 UK requirements. Additionally, the HSK78G units meet the latest emissions limits set by the new medium combustion plant directive (MCPD), removing the need for exhaust after-treatment systems which, in turn, offers a lower total cost of ownership.

A further 11 units have recently been installed in a hybrid power station in Western Australia, offering a total of 22 mW installed capacity. With a mix of solar, wind and battery technology, the HSK78G gen-



erator models will be used to stabilise the power supply, providing fewer voltage and frequency disturbances and faster recovery times.

In Myanmar, Cummins will be supplying eight HSK78G units to Petro & Trans, a petrochemical company operating as a retailer and wholesaler with a large distribution footprint. The units will be installed across two of its power plants, offering 16 mW in total. The power generated will be fed to the national grid, providing significant financial benefits to the company.

Enquiries: www.cummins.com



Partnering for long-term value

Congratulations! You have made it to the end of a long and difficult year. You have navigated national lockdowns, a pandemic, changing customer expectations, and demanding situations. It has been tough, and it has been a learning curve. For many people, the pandemic has emphasised the importance of relationships that deliver value, that give back and that recognise the importance of mutual benefit and growth. The criteria of transparency, support, shared interest, and mutual partnering are those that should define the business relationships that emerge from 2020.

"Do your suppliers constantly look for new ways to deliver value to your business? Are they focusing on helping you to overcome specific obstacles or enter new markets?" asks Carel Scheepers, General Manager: Sales at Citiq Prepaid. "These are important questions to ask and have answered. These are the kind of questions that help you define what kind of value you want from a service provider and whether or not you're working with the right people."

There is little doubt that tough times can breed bad behaviour. Some are quick to protect themselves at all costs, rather than go that proverbial extra mile. The former will likely emerge from the market recession and pandemic relatively unscathed thanks to the high walls built to protect the business from harm. The latter will emerge from the pandemic with relationships and opportunities that will allow for expansion, innovation and development. And this is the ethos upheld by Citiq Prepaid.

"We're always on the lookout for new ways to engage with our electrical contractor community and to provide

them with the support they need," says Scheepers. "If a contractor asks us a question about how a product works or how to expand their market footprint, we answer it and then turn it into a blog post so that anyone visiting our website can immediately get the right advice. If a contractor isn't sure on how our prepaid sub-meters work, we give them access to a call centre that's staffed with well-trained, passionate people."

Always on the lookout for new ways to engage with electrical contractors, Citiq Prepaid has put value at the forefront of its business proposition. It has also put 'no-tice' at the centre of its vocabulary.

"We want electrical contractors to feel heard, to have their questions answered, to be given the information that's relevant to them, and to do this we need to notice what they are saying, and to whom," says Scheepers. "This is why we engage with our contractors as often as we can, and recognise the value that they bring to our business. Regular profiles of our most successful contractors can be found on our website, and in our CIC newsletter – we notice the hard work that you put into your businesses."

In addition to two call centres, plenty of supporting materials on the Citiq Prepaid website, and accessible Citiq Prepaid representatives, the company has also created the CIC – the Citiq Installers Club. This is a special initiative designed specifically for the Citiq Prepaid sub-meter installer. The focus of the club is to recognise the hard work put in by Citiq Prepaid electrical contractors using a reward system that gives back where it counts – financially.

"The CIC was designed by people who understand the ins and outs of the industry and exactly how people like to work," concludes Scheepers. "It forms part of



our value proposition to our electrical contractors and we will continue to evolve and adapt its potential to ensure that you get the most value from the service. Just like our call centre, support systems, website and

exceptional quality prepaid sub-meters – value is embedded into the core of Citiq Prepaid."

Enquiries: 087-55-111-55



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Mark Storer/Mark Rudman
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Juanita Kanagan
Waco
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INDOOR DECORATIVE LIGHTING

ACDC Dynamics
Full range of indoor decorative lighting: LED, LED glare-reducing and standard CFL options – downlights, chandeliers, wall mounts, spotlights, LED strip lights, wall washer LEDs, stainless steel light fittings
ACTOM Electrical Products
Distributors of Rabro brand imported and local manufactured product
ARB Electrical Wholesalers
Full range of indoor decorative lighting
Atlas Group
Distributor of a wide variety of reputable brands, designs and specifications eg energy saving and LED
Aurora Lighting Africa
Aurora Lighting and Enlite Lighting indoor decorative lighting
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Distributor of a wide variety of reputable brands, designs and specifications eg energy saving and LED
Citilec
Full range of indoor decorative lighting
Crabtree South Africa
Acrylic diffuser with conical light control prisms (single; double – new Econo narrow body; and wide body decorative)
Electrahertz
Full range of indoor decorative lighting
Electroweb
Full range of indoor decorative lighting
Eurolux
Full range of indoor decorative lighting
Genlux Lighting
Full range of indoor decorative lighting
Khanyisa
Full range of indoor decorative lighting
K. Light
Full range of indoor decorative lighting
Krilux
Extensive range of LED filament lamps available (G125, G95, ST64, PEAR, A60, C37, G45)
Lamps Electrical Distributor
Full range of indoor decorative lighting
Ledvance
Full range of indoor decorative lighting
Lumax Lighting
Full range of indoor decorative lighting
Major Tech
Full range of LED wall lights, picture and mirror lights, step lights and ceiling lights ideal for office, home, hotels and general lighting applications
MCE Electric
O-lite LED candle bulbs, globes and lamps; O-Lite LED Cyclops panel lights; O-Lite LED downlights with built-in drivers
Megalight Electrical
Full range of indoor decorative lighting
Power Panels and Electrical
Full range of indoor decorative lighting
Radiant Group
Full range of indoor decorative lighting
Shuttle Lighting Control Systems
Control systems for dimming of LED, halogen and incandescent lamps
Spazio Lighting
Full range of indoor decorative lighting
Superlume
A new Elor Decorative Indoor lighting range and new Bathroom lighting range.
Unique Lighting
Full range of indoor decorative lighting
Visionware
Full range of indoor decorative lighting
Voltex
Distributor of a wide variety of reputable brands, designs and specifications eg energy saving and LED
Voltex Lighting
Distributor of a wide variety of reputable brands, designs and specifications eg energy saving and LED
Waco
Distributor of a wide variety of reputable brands, designs and specifications, for example, energy saving and LED

OUTDOOR DECORATIVE LIGHTING

ACDC Dynamics
Wide range of outdoor decorative lighting: bulkheads, wall mounts, deck and floor lighting, floodlights, lanterns, garden lights, solar garden lights, security lights, decorative bollards
ACTOM Electrical Products
Distributors of Genlux brand imported and local manufactured product
ARB Electrical Wholesalers
Full range of outdoor decorative lighting
Atlas Group
Solar street lights, flood lights, bulkheads, sensor lights with conventional control gears; energy efficient and LED
Aurora Lighting Africa
Full range of outdoor decorative lighting
Ausma
Full range of outdoor decorative lighting

OUTDOOR DECORATIVE LIGHTING

BEKA Schröder
Full range of outdoor decorative lighting
Bellco
Solar street lights, flood lights, bulkheads, sensor lights with conventional control gears; energy efficient and LED
Citilec
Full range of outdoor decorative lighting
Crabtree South Africa
Totally enclosed, high impact, corrosion resistant fluorescent luminaires
Electrahertz
Full range of outdoor decorative lighting
Electroweb
Full range of outdoor decorative lighting
Eurolux
Full range of outdoor decorative lighting
Genlux Lighting
Outdoor lights; bulkheads; flood and security lights; solar lights
Khanyisa
Full range of outdoor decorative lighting
K. Light
Full range of outdoor decorative lighting
Krilux
PAR38 LED colour lamps available (red, blue, green, yellow)
Lamps Electrical Distributor
Full range of outdoor decorative lighting
Ledvance
Full range of outdoor decorative lighting
Legrand
Weatherproof and vandal resistant bulkhead lights
Major Tech
Full range of LED garden lights, wall lights ideal for office, home and hotels
Matelec
Centurion Bulkheads (LED, CFL); Mirage Bulkheads (LED, CFL); PAR 38 (single and double)
MCE Electric
O-lite outdoor LED aluminium fittings; O-lite outdoor E27 aluminium fittings; O-lite outdoor recessed step light; O-Lite bulkhead fittings
Megalight Electrical
Full range of outdoor decorative lighting
Nordland Lighting
Full range of outdoor decorative lighting
Power Panels and Electrical
Full range of outdoor decorative lighting
Radiant Group
Full range of outdoor decorative lighting
Spazio Lighting
Full range of outdoor decorative lighting
Superlume
A wide range of decorative outdoor lighting.
Unique Lighting
Full range of outdoor decorative lighting
Visionware
Full range of outdoor decorative lighting
Voltex
Solar street lights, flood lights, bulkheads, sensor lights with conventional control gears; energy efficient and LED
Voltex Lighting
Solar street lights, flood lights, bulkheads, sensor lights with conventional control gears; energy efficient and LED
Waco
Solar street lights, flood lights, bulkheads, sensor lights with conventional control gears; energy efficient and LED

EMERGENCY LIGHTING

ABB South Africa
Full range of emergency lighting
ACDC Dynamics
Full range of emergency lighting: wall mount, double-sided, legends, bulkhead and Eco Lights ranging from IP42 to IP65
ARB Electrical Wholesalers
Full range of emergency lighting
Atlas Group
Distributors of Voltex lighting: emergency and other signs; emergency control gear for fluorescent lights as specified in the OHS Act
Aurora Lighting Africa
Full range of emergency lighting
Ausma
Full range of emergency lighting
BEKA Schröder
Full range of emergency lighting
Bellco
Distributors of Voltex lighting: emergency and other signs; emergency control gear for fluorescent lights as specified in the OHS Act
Citilec
Full range of emergency lighting
Denver Technical Products
Mains fail safety lighting; track mounted lights
Eaton Electric
Full range of emergency lighting
Electrahertz
Full range of emergency lighting
Electroweb
Full range of emergency lighting
Eurolux
Full range of emergency lighting
Genlux Lighting
Full range of emergency lighting
Khanyisa
Full range of emergency lighting
Legrand
Full range of emergency lighting units ranging from fluorescent to LED including maintained and non-maintained
Major Tech
Full range of portable lighting – in LED and fluorescent – ideal for power outages, camping, fishing, hiking, hotel, office and warehouse applications
Megalight Electrical
Full range of emergency lighting
Nordland Lighting
Full range of emergency lighting
Power Panels and Electrical
Full range of emergency lighting
Radiant Group
Full range of emergency lighting
Spazio Lighting
Full range of emergency lighting
Superlume
A wide range of emergency lighting
Unique Lighting
Full range of emergency lighting
Visionware
Full range of emergency lighting
Voltex
Distributors of Voltex lighting: emergency and other signs; emergency control gear for fluorescent lights as specified in the OHS Act
Voltex Lighting
Distributors of Voltex lighting: emergency and other signs; emergency control gear for fluorescent lights as specified in the OHS Act
Waco
Distributors of Voltex lighting: emergency and other signs; emergency control gear for fluorescent lights as specified in the OHS Act

FLAMEPROOF/HAZARDOUS AREA LIGHTING

ACDC Dynamics
Full range of flameproof/hazardous area lighting: visual alarms and beacons
ARB Electrical Wholesalers
Full range of flameproof/hazardous area lighting
Atlas Group
Distributors of Zone 1, 2 and 22 specialised lighting for indoor and outdoor
Aurora Lighting Africa
Full range of flameproof/hazardous area lighting
BEKA Schröder
Full range of flameproof/hazardous area lighting
Bellco
Distributors of Zone 1, 2 and 22 specialised lighting for indoor and outdoor
Citilec
Full range of flameproof/hazardous area lighting
Eaton Electric
Full range of flameproof/hazardous area lighting
Electrahertz
Full range of flameproof/hazardous area lighting
Eurolux
Limited range of flameproof/hazardous area lighting
Genlux Lighting
Full range of flameproof/hazardous area lighting
Khanyisa
Full range of flameproof/hazardous area lighting
Lamps Electrical Distributor
Full range of flameproof/hazardous area lighting
Marechal Electric Africa
TECHNOR ITALSMEA: Full Range of Ex/ ATEX: Fluorescent, LED, Wellglass and Floodlights
Matelec
Norland agent for Western Cape
MCE Electric
O-lite LED floodlights
Megalight Electrical
Full range of floodlights
Nordland Lighting
Full range of flameproof/hazardous area lighting
Power Panels and Electrical
Full range of flameproof/hazardous area lighting
Superlume
A wide range of zone rated lighting fixtures
Unique Lighting
Full range of flameproof/hazardous area lighting
Visionware
Full range of flameproof/hazardous area lighting
Voltex
Distributors of Zone 1, 2 and 22 specialised lighting for indoor and outdoor
Voltex Lighting
Distributors of Zone 1, 2 and 22 specialised lighting for indoor and outdoor

ENTERTAINMENT LIGHTING

ACDC Dynamics
Full range of entertainment lighting: flexible and rigid LED strip lighting, LED bar lights (IP65), LED border lights (IP65), disco lights, stage flood lights, lasers and mini laser lights, colour changing LED strip lights, high power LED lights and various Christmas/festive lighting
ACTOM Electrical Products
Distributors of Oplee and OSRAM brand entertainment lighting
ARB Electrical Wholesalers
Full range of entertainment lighting
Atlas Group
Available on request, e.g. spotlights, follow spots and strobe lights
Aurora Lighting Africa
Aurora Lighting and Enlite Lighting entertainment lighting
Bellco
Available on request, eg spotlights, follow spots and strobe lights
Electrahertz
Full range of entertainment lighting
Eurolux
Full range of entertainment lighting
Genlux Lighting
Full range of entertainment lighting
Khanyisa
Full range of entertainment lighting
MCE Electric
O-lite LED strip and rope lights; O-lite LED plinth, cabinet and reading lights
Megalight Electrical
Full range of entertainment lighting
Power Panels and Electrical
Full range of entertainment lighting
Radiant Group
Full range of entertainment lighting
Voltex
Available on request, eg spotlights, follow spots and strobe lights

STREET LIGHTING

ACDC Dynamics
Full range of street lighting: solar lights, LED lights, traffic lights, high power LED street lights (IP65), high power single LED chip lights in die-cast aluminium and Technopolymer
ACTOM Electrical Products
Distributors Genlux brand imported and local manufactured product
ARB Electrical Wholesalers
Full range of street lighting luminaires
Atlas Group
Masts and poles available on request; solar street lights; floodlights; bulkheads; sensor lights with conventional control gear, energy efficient and LED
BEKA Schröder
Full range of street lighting luminaires
Bellco
Masts and poles available on request; solar street lights; floodlights; bulkheads; sensor lights with conventional control gear, energy efficient and LED
Citilec
Full range of street lighting
Eaton Electric
Full range of street lighting
Electrahertz
Full range of street lighting
Electroweb
Full range of street lighting
Eurolux
Limited range of street lighting
Genlux Lighting
Full range of street lighting
Khanyisa
Full range of street lighting
Krilux
Full range of HID lamps available (metal halide, HPS, mercury vapour, blended)
LS Lighting Structures
Masts and poles available on request; solar street lights; floodlights; bulkheads; sensor lights with conventional control gear, energy efficient and LED
Lumax Lighting
Full range of street lighting luminaires
Matelec
Nema Photocell



STREET LIGHTING

- Megalight Electrical**
Full range of street lighting
- Nordland Lighting**
Full range of street lighting
- Power Panels and Electrical**
Full range of street lighting
- Superlume**
A wide range of street lighting options from HID to LED
- Unique Lighting**
Full range of street lighting
- Visionware**
Full range of street lighting
- Voltex**
Full range of street lighting luminaires
- Voltex Smart Solutions**
Masts and poles available on request; solar street lights; floodlights; bulkheads; sensor lights with conventional control gear, energy efficient and LED

INDUSTRIAL LIGHTING

- ACDC Dynamics**
Full range of industrial lighting: IP65 highbays, lowbays, bulkheads in aluminium and acrylic, surface-mounted and recessed fluorescent fittings, downlighting
- ACTOM Electrical Products**
Distributors of imported and local manufactured highbays, lowbays, bulkheads
- ARB Electrical Wholesalers**
Full range of industrial lighting
- Atlas Group**
Complete range available; bulkheads, floodlights and weatherproof; energy efficient high bays and low bays
- Aurora Lighting Africa**
Aurora Lighting and Enlite Lighting industrial lighting
- Ausma**
Full range of industrial lighting
- BEKA Schröder**
Full range of industrial lighting luminaires
- Bellco**
Full range of industrial lighting luminaires
- Citilec**
Full range of industrial lighting
- Crabtree South Africa**
Hi-bay luminaires
- Denver Technical Products**
Mains fail safety lighting
- Eaton Electric**
Full range of industrial lighting
- Electrahertz**
Full range of industrial lighting
- Electroweb**
Full range of industrial lighting
- ElectroMechanica**
IP65 4 ft Damp Proof and IP65 High Bay
- Osram**
Ledvance products.
- Eurolux**
Full range of industrial lighting
- Genlux Lighting**
Full range of industrial lighting
- Khanyisa**
Full range of industrial lighting
- Krilux**
Full range of HID lamps available (metal halide, HPS, mercury vapour, blended)
- Ledvance**
Full range of industrial lighting
- Legrand**
Weatherproof bulkhead lights as well as vandal-resistant units
- Lumax Lighting**
Full range of industrial lighting
- Major Tech**
Range of high power LED floodlights
- Matelec**
Zodion Photocell Nema
- MCE Electric**
O-lite LED floodlights; O-lite LED panel lights; O-lite LED tubes and fittings
- Megalight Electrical**
Full range of industrial lighting
- Nordland Lighting**
Full range of industrial lighting luminaires
- Power Panels and Electrical**
Full range of industrial lighting luminaires
- Radiant Group**
Full range of industrial lighting luminaires
- Spazio Lighting**
Full range of industrial lighting
- Superlume**
A wide range of industrial lighting options including LED, HID and fluorescent
- Unique Lighting**
Full range of industrial lighting luminaires
- Visionware**
Full range of industrial lighting luminaires
- Voltex**
Complete range available; bulkheads, floodlights and weatherproof; energy efficient high bays and low bays
- Voltex Lighting**
Complete range available; bulkheads, floodlights and weatherproof; energy efficient high bays and low bays

OFFICE LIGHTING

- Aberdare Cables**
Surface decorative fittings – switch start and electronic; recessed – prismatic and low brightness – switch start and electronic
- ACDC Dynamics**
Full range of office lighting: CFL and LED and high power LED downlights, surface and recess wall lighting; bulkheads, T5 and T8 linear lights, bay lights, glare reducing LED lamps
- ACTOM Electrical Products**
Distributors of imported and local manufactured downlighters, fluorescent
- ARB Electrical Wholesalers**
Full range of office lighting luminaires
- Atlas Group**
Recessed and surface lighting for all applications; energy efficient and LED light sources
- Aurora Lighting Africa**
Aurora Lighting and Enlite Lighting office lighting
- Ausma**
Full range of office lighting
- BEKA Schröder**
Full range of office lighting luminaires
- Bellco**
Recessed and surface lighting for all applications; energy efficient and LED light sources
- Citilec**
Full range of office lighting
- Denver Technical Products**
Mains fail safety lighting

OFFICE LIGHTING

- Eaton Electric**
Full range of office lighting
- Electrahertz**
Full range of office lighting
- ElectroMechanica**
Slim LED Panel 600 x 600 – 15 W Recessed Downlights. Osram Ledvance products.
- Eurolux**
Full range of office lighting
- Genlux Lighting**
Full range of office lighting
- Khanyisa**
Full range of office lighting
- K. Light**
Full range of office lighting
- Krilux**
Full range of LED lamps available (plastic+alu, LED filaments)
- Lamps Electrical Distributor**
Full range of office lighting
- Ledvance**
Full range of office lighting
- Lumax Lighting**
Full range of office lighting
- Major Tech**
Wide range of energy saving LED lighting products
- MCE Electric**
O-lite LED floodlights; O-lite LED panel lights; O-lite LED tubes and fittings
- Megalight Electrical**
Full range of office lighting
- Power Panels and Electrical**
Full range of office lighting
- Radiant Group**
Full range of office lighting luminaires
- Spazio Lighting**
Full range of office lighting
- Superlume**
A wide range of office lighting solutions, including a new 'Lighting Solutions for Business Parks' application on our website
- Unique Lighting**
Full range of office lighting
- Visionware**
Full range of office lighting
- Voltex**
Recessed and surface lighting for all applications; energy efficient and LED light sources
- Voltex Lighting**
Recessed and surface lighting for all applications; energy efficient and LED light sources
- Waco**
Recessed and surface lighting for all applications; energy efficient and LED light sources

RETAIL LIGHTING

- ACDC Dynamics**
Full range of retail lighting: downlights, LED flexible and rigid strip lighting, LED track lighting, under-counter LED fittings, LED single modules, light box high power LEDs, LED neon flex lights
- ACTOM Electrical Products**
Distributors of Oplee LED lighting solutions
- ARB Electrical Wholesalers**
Full range of retail lighting
- Atlas Group**
Full range available; troffer fittings; track lights; downlights and spots
- Aurora Lighting Africa**
Aurora Lighting Africa retail lighting
- Ausma**
Full range of retail lighting
- BEKA Schröder**
Full range of retail lighting luminaires
- Bellco**
Full range available; troffer fittings; track lights; downlights and spots
- Citilec**
Full range of retail lighting
- Denver Technical Products**
Mains fail safety lighting
- Eaton Electric**
Full range of retail lighting
- Electrahertz**
Full range of retail lighting
- Electroweb**
Full range of retail lighting
- Eurolux**
Full range of retail lighting
- Genlux Lighting**
Full range of retail lighting luminaires
- Khanyisa**
Full range of retail lighting luminaires
- K. Light**
Full range of retail lighting
- Lamps Electrical Distributor**
Full range of retail lighting
- Ledvance**
Full range of retail lighting
- Lumax Lighting**
Full range of retail lighting
- Major Tech**
Wide range of LED lighting to meet retail applications
- Matelec**
Gladiator LED utility light (12 W)
- MCE Electric**
O-lite LED floodlights; O-lite LED panel lights; O-lite LED tubes and fittings
- Megalight Electrical**
Full range of retail lighting
- Power Panels and Electrical**
Full range of retail lighting
- Radiant Group**
Full range of retail lighting
- Spazio Lighting**
Full range of retail lighting
- Superlume**
Full range of retail lighting
- Unique Lighting**
Full range of retail lighting
- Visionware**
Full range of retail lighting
- Voltex**
Full range available; troffer fittings; track lights; downlights and spots
- Voltex Lighting**
Full range available; troffer fittings; track lights; downlights and spots
- Waco**
Full range available; troffer fittings; track lights; downlights and spots

STADIUM LIGHTING

- ACDC Dynamics**
Full range of stadium lighting, including Gewiss Horus and Titano floodlights
- ACTOM Electrical Products**
Distributors of imported and local manufactured product

STADIUM LIGHTING

- ARB Electrical Wholesalers**
Full range of stadium lighting
- Atlas Group**
Floodlights; masts; poles for mounting
- Aurora Lighting Africa**
Full range of stadium lighting
- BEKA Schröder**
Full range of stadium lighting luminaires
- Bellco**
Floodlights; masts; poles for mounting
- Crabtree South Africa**
All-purpose energy saving floodlights
- Eaton Electric**
Full range of stadium lighting
- Electrahertz**
Full range of stadium lighting
- Electroweb**
Full range of stadium lighting
- Eurolux**
Full range of stadium lighting
- Genlux Lighting**
Full range of stadium lighting
- Khanyisa**
Full range of stadium lighting
- Krilux**
Full range of HID lamps available (metal halide, HPS, mercury vapour, blended)
- Lamps Electrical Distributor**
Full range of stadium lighting
- LS Lighting Structures**
Floodlights; masts; poles for mounting
- Lumax Lighting**
Full range of stadium lighting
- Major Tech**
Range of high power LED floodlights
- Nordland Lighting**
Full range of stadium lighting
- Megalight Electrical**
Full range of stadium lighting
- Power Panels and Electrical**
Full range of stadium lighting
- Superlume**
A range of stadium floodlights
- Unique Lighting**
Full range of stadium lighting
- Visionware**
Full range of stadium lighting
- Voltex**
Floodlights; masts; poles for mounting

EXHIBITION LIGHTING

- ACDC Dynamics**
ACDC supports exhibition stand builders with a wide range of lighting, spots, downlighting and floodlights
- ACTOM Electrical Products**
Distributors of LED lighting solutions
- ARB Electrical Wholesalers**
Full range of exhibition lighting

EXHIBITION LIGHTING

- Atlas Group**
Available on request to customer specifications
- Aurora Lighting Africa**
Full range of exhibition lighting
- Citilec**
Full range of exhibition lighting
- Eaton Electric**
Full range of exhibition lighting
- Electrahertz**
Full range of exhibition lighting
- Electroweb**
Full range of exhibition lighting
- Eurolux**
Full range of exhibition lighting
- Genlux Lighting**
Full range of exhibition lighting
- Khanyisa**
Full range of exhibition lighting
- Major Tech**
Wide range of LED lighting from spotlights, downlighting and floodlights
- MCE Electric**
O-lite LED floodlights; O-lite LED panel lights; O-lite LED tubes and fittings; O-lite LED downlights; O-lite plinth and cabinet lights
- Megalight Electrical**
Full range of exhibition lighting
- Power Panels and Electrical**
Full range of exhibition lighting
- Radiant Group**
Full range of exhibition lighting

SMART LIGHTING

- Aurora Lighting Africa**
Full range of smart lighting
- BEKA Schröder**
Full range of smart lighting
- Electrahertz**
Full range of smart lighting
- Electroweb**
Full range of smart lighting
- Eurolux**
Limited range of smart lighting
- HellermannTyton**
Lux meters: T630 – digital lux meter (0-200 000 lux, data hold) T8000- lux meter (LCD display, auto power off)
- Khanyisa**
Full range of smart lighting
- Krilux**
AG0 and GU10 with built-in day/night sensor function Matelec
- Dimmable 12 W LED bulkhead**
Megalight Electrical
- Full range of smart lighting**
Power Panels and Electrical
Full range of smart lighting
- Radiant Group**
Full range of smart lighting
- Superlume**
New range of Smart WiFi switches



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Why IR thermal imaging can be an electrician's best friend

Heat is a by-product of operating any sized electrical circuit. Most problems in electrical systems display themselves in terms of heat. Electricians must be able to classify a circuit as normal when the load is on or identify when it is abnormal and identify the issues that present – finding hot spots that need attention. In recent years, new infrared thermography – also called thermal imaging – has come to market. The non-contact method includes cameras that help electricians and service technicians find and solve problems quicker and more safely. The newest cameras combine both thermal imaging and electrical measurement features in one inspection, as well as troubleshooting and a diagnostic tool that speeds up the process and provides much better information on which to base repair work.

Methods for inspecting and analysing electrical systems

In the past, the only way electricians had to inspect and analyse electrical systems was with hands-on testing – usually done after turning off the power to make sure it was electrically safe. Electricians typically go in with testing equipment and tools to connect test leads to determine if there are any issues. Many used contact measurement techniques featuring thermocouples, which produce a temperature-dependent voltage that can be interpreted to measure heat.

With these traditional inspection and maintenance methods, electricians cannot see all the possible issues, but instead must rely on guesswork, checking out connections one by one. This method does not guarantee that heat-related conditions will be solved as turning off the power removes the load. One can measure if a circuit is overloaded, but when the power is off it is not always possible to know for sure if the problem in the circuit was fixed.

In recent years, electricians also began using spot radiometers: small hand-held, non-contact devices that can be pointed at a target to obtain a temperature measurement. Radiometers provide acceptable measurements within certain limits, but no visual imagery is available.

A step up from direct measurement and spot radiometry is thermal imaging, which detects infrared energy emitted from an object, converts it to temperature and displays an image of temperature distribution, called a thermogram. Since infrared radiation is emitted by all objects with a temperature above absolute zero, thermography makes it possible to see the environment with or without visible illumination.

Thermal imaging provides electricians with a far higher ability to analyse, recommend and diagnose. With thermal imaging, one can use a camera on a circuit breaker to determine if connections are loose, if there

is too great a load on the breaker, and if there are any issues with the breaker contacts. Electricians can find the problem, fix it, then go back with the thermal camera and take an image to verify that the work done has actually solved the problem. In the past, it was very difficult to assure customers that work done had really fixed the problem. Now electricians frequently provide their customers with “before” and “after” imagery.

A wide range of electrical equipment can be inspected with thermal imagers, including transformers; switchgear components; breakers; fused disconnects; non-fused disconnects; conductors; terminations; contactors; control wiring terminations; bus duct (open and enclosed); distribution and branch circuit breaker panels and motors.

Benefits and advantages of thermal imaging

In effect, thermal imaging allows electricians and electrical technicians to picture heat that the eyes cannot see. This has three main benefits. First, it is a non-contact approach, so electricians do not have to actually touch electrical equipment to determine if the heat is within normal operating temperatures or has moved into abnormal temperatures.

Second, electricians can use thermal cameras as a visual tool to demonstrate to customers the severity of electrical problems. Infrared cameras produce an image of a target that is similar to visual photographs. Many also produce a visual image that can be placed next to the thermal image for a side-by-side comparison. This helps the electrician show customers the exact location and nature of potential faults.

The third benefit is that thermal imaging can be performed in real time. Over the past decade, video-capture technology for infrared cameras has greatly improved. This allows electricians to observe and analyse electrical equipment as it heats up and begins to operate, as it operates under normal conditions over time, and as the target cools down. There is also the ability to watch fast-moving targets, as the recording speed, or frames-per-second (FPS), has improved. Cameras that record at higher frame rates allow the user to observe targets that are changing temperature rapidly, or those that are moving very fast. The equipment now allows us to see that fast transition of temperatures or fast transition of the targets.

Key application areas for thermal imaging

Thermal imaging is used in three general application areas. Utilities rely on it extensively for medium and high voltage equipment (overhead lines and connections), and for substation equipment (breakers, switches, transformers, capacitors and voltage regulators), to name a few. Thermal imaging is also used for voltages below 1000 V, largely for enclosed equipment that supports industrial and commercial operations.

The third category, the newest level of application, is the residential market. Home inspectors and electrical service and HVAC service companies have started to purchase and use thermography for troubleshooting and inspection of residential electrical systems. The growth in this market is due to IR cameras becoming more affordable over the past decade.

Thermal imaging equipment available to electricians

There is a wide range of thermography equipment for electricians, varying from low resolution cameras to more expensive, high resolution cameras. The difference among thermal imaging resolutions affects how close one needs to stand to image the target and the different accessories available for viewing and adjusting the camera and measuring temperature.

At the low end, one can simply select an attachment to a smartphone (both iOS and Android). For example, the Flir One Pro is a device containing an 80 x 60 pixel resolution, long-wavelength infrared (LWIR) camera.

Higher-end thermal imaging technology such as the Flir T1K can produce up to 1024 x 768 pixel images. Dynamic focus control, continuous autofocus and a user-friendly interface with an ergonomic design and rotating optical block make it easier to do numerous inspections in one day and to scan at difficult angles.

Another option that has recently come to market are meters that combine thermal imaging with electrical measurement features in one inspection, troubleshooting and diagnostic tool. These new meters can take voltage, current and millivolt drop measurements while also taking an infrared image with the same device. This offers more information for the electrician or technician to make a determination, provides images to confirm the electrician's diagnosis, and offers proof showing where the problems are. Combining several tools in one reduces the total amount of time it takes to diagnose issues and increases the technician's speed, while making them more skilful at troubleshooting, repair and maintenance work.

One example is the Flir DM285, which offers 18 measurement functions, including true-RMS (root-mean square), LoZ (low impedance), and non-contact voltage (NCV). This device also includes a thermocouple input and allows users to view thermal and electrical measurements simultaneously. The combined meter uses IGM (infrared guided measurement) thermal imaging technology to visually guide users to the precise location of a problem.

Thermal imaging solves real problems

Thermal imaging has been used all over the world to diagnose and solve electrical system problems. The accompanying image shows a large junction box where one conductor was hotter than the eight others. Using the thermal imaging camera, technicians located it not in the box, but 45 m back. It would not have been possible to locate this serious issue any other way.

Enquiries: www.flir.com



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Ptytrade 228 (Pty) Ltd boasts over thirty years of experience, which is used to find the best solution for its customers. Because the company sources its electrical items both locally and internationally, its range of products increases almost daily. If there is an obscure electrical product that you need, chances are, the company will be able to source it with its extensive network of global suppliers.

The company stocks a wide range of circuit breakers and associated products used in the manufacture of distribution boards. Brands include Schneider, Eaton, ABB and CBI to name a few.

Ptytrade 228 believes that the electrical industry has long been in need of an organisation offering more than cheap prices on mediocre products. Its aim is to provide customers with quality products and services.

“Our knowledge of the market allows us to complete

expert needs analyses based on your requirements. You can also take advantage of expert technical support that includes troubleshooting any process issues you may find challenging,” explains owner Brendon Chalmers.

As far as challenges for electrical contractors are concerned, Chalmers believes there are few when it comes to distribution boards. “DBs are one of the simpler panels to work on, but it also greatly depends on how good the installation was. If the installation was done well initially and the products used are of good quality, then you should not have any challenges,” he says.

As an independent, family-run business with over 50 years' experience collectively, Ptytrade 228 (Pty) Ltd combines ability, expertise and associated product knowledge to provide the best possible solutions.

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WORKING KNOWLEDGE WITH TERRY MACKENZIE-HOY

Discussing switch socket outlets

In 1998 I designed the electrical reticulation for a hotel in Mossel Bay. The owner and developer of the hotel was a very forceful man and had opinions about everything. In fact, were he still alive I would not write about this at all since he would have reacted explosively.

Anyway, we were reviewing my design and he pointed to the row of socket outlets above the dressing table and asked why there were four socket outlets in a row? I said, "Oh, one is a South African outlet, one German, one UK and one Australian." His face went all red and he started shouting: "Can't these idiots use an adaptor? We have 75 rooms and we're wasting money on socket outlets!"

So I told him that he would be surprised that there were people who chose their hotels on the basis of the fact that the wife could plug in her hair dryer and not use the one in the hotel. He started shouting again. Finally, he agreed that we could leave off the Australian socket outlet but keep the rest (he said Australian women did not use hair dryers).

The South African socket outlet has been around since I was born. The British BS 546 (15 A) standard was introduced in the 1920s in South Africa. It specified an outlet with three pins, the earth pin being a greater diameter than the live and neutral pins. The original outlets did not have

shutters and so it was quite easy for young children to push objects (like pencils or their fingers) into the live or neutral socket. Shutters are now standard – these cover the outlet holes and only open when the plug is inserted. Most RSA houses did not have earth leakage protection until the 1970s, so the shutter issue was serious (or the kids were more robust. Still, about 30 deaths a year occurred due to low voltage electrocutions). A defect was that the RSA three-pin was compatible with no other socket internationally. An advantage was that it could comfortably be loaded to 15 amps.

For the three-pin, the plug pins should be half insulated to protect users from touching the conductive parts when inserting or pulling it from the socket outlet. However, very often this is not the case. This puts end-users in danger of being electrocuted.

This year, South Africa adopted a new compulsory plug and socket system – the SANS 164-2. This is again a live/neutral, earth and centre pin and has the advantage that the socket accepts Europlugs, which is a great step forward.

These days, all new buildings must have the old three-pin outlet, as well as the new one. In years to come, it is hoped that the old three-pin

sockets will be phased out. Which leads to a question: If SANS 164-1 (the old three-pin) is replaced by SANS 164-2 (the new three-pin), will it be necessary to change all the socket outlets in a premises to get a Certificate of Compliance on change of ownership? I hope not, but I can see some sneaky devil telling a client that this has to happen and charging accordingly (it happens right now – the contractor tells the gullible client that the earthing is not to spec, knocks in a few spikes and submits a hefty invoice).

Specifications for socket outlet types aside, what I would like to see is a standard for the mounting height of a socket outlet above the floor. In my house, the socket outlets are all 200 mm above floor level. I think more people have strained their backs from stooping down to insert or remove a plug at low height than we can appreciate. I suppose it is to make the socket outlet less obtrusive visually.

Oh, the Mossel Bay hotel. After the hotel was finished, I overheard the owner telling a prospective guest: "Oh yes, we thought of everything ... for guest comfort we even have international socket outlets in the rooms so ladies can use their own hair dryers instead of the hotel one." Oh well. As they say, you really can't win them all...

RS Components announces availability of Phoenix Contact range

RS Components (RS) has announced a significant expansion of its 'Complete line' portfolio of products and essential accessories for control cabinet applications from Phoenix Contact, one of the world's leading makers of industrial automation technologies.

This expansion of more than 2500 new devices means that RS is the first high-service distributor to offer the full 'Complete line'. This means customers will gain full access to a unique portfolio that will help to reduce handling costs and minimise planning and installation times for control cabinet construction and maintenance.

The 'Complete line' system comprises an entire suite of coordinated hardware and software products that help panel builders optimise their work processes in control cabinet development. The system brings together all of the manufacturer's control panel products and essential accessories in one range, making it significantly easier to purchase, install and operate existing and new control cabinet solutions.

Due to the range's standardised design, haptics and functionality, along with standardised marking, bridging and testing accessories, the system also results in simple and intuitive handling of all the hardware, saving engineers significant installation, start-up and maintenance time. More than 3000 devices in the 'Complete line' range use the same push-in connection technology, helping to reduce connection time by up to 70%. In addition, the manufacturer's planning and marking 'Project' software has an intuitive user interface that makes it easy in the planning, automatic checking and ordering of terminal strips.

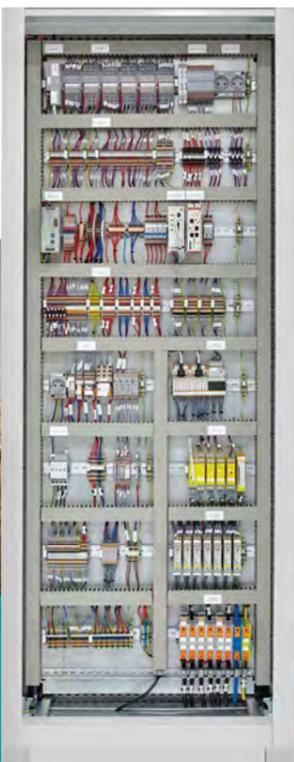
Aimed at switching, connection and discon-

nection, as well as measuring, controlling and automation applications, the extensive portfolio comprises thousands of devices including DIN rails and terminals, PLCs and HMIs and heavy-duty connectors. Highlights include the latest PTFIX distribution blocks with push-in connection, machine safety devices including the latest release PSR series of safety relays and I/O and PLC expansion modules, all of which is part of the PLCnext ecosystem from Phoenix Contact.

"Making the full Complete line available is fully aligned with our ambition of providing factory automation customers with end-to-end industrial control solutions from build through to maintenance," said Kristian Olsson, Vice President Automation & Control at RS. "Our customers will quickly realise the benefits from deploying it, helping them to reduce space and to design and install new control cabinets faster than ever before."

"We have enjoyed a close partnership for more than 15 years with RS, a long-time distribution channel partner for Phoenix Contact," said Lars Kleinegees, International Channel Partner Manager at Phoenix Contact. "Through all its various channels, RS offers its large and global customer base fast and easy access to more than 25 000 products from Phoenix Contact."

Enquiries: +27 (0)11 691 9300



Ready for the holidays?

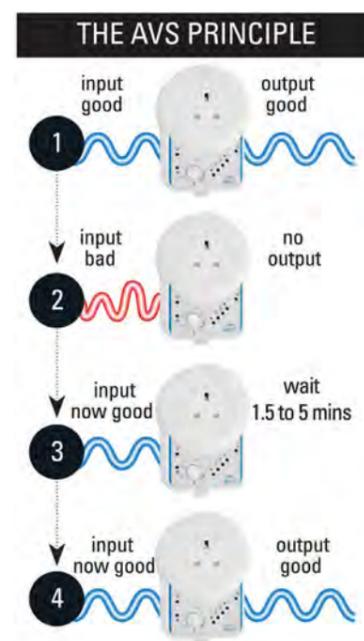
Summer is here, Christmas is around the corner and children are at home on school holidays. It is probably the most wonderful time of the year for all except your electronic equipment. Other than the normal (always-on) appliances, Christmas lights, electronic games and air-conditioners are now adding to electricity consumption. Furthermore, following the current times, most people are working from home and office appliances such as computers, monitors and printers have also been introduced into homes. The increased demand on the grid prompts frequent power problems, resulting in very unreliable supply.

With power stations struggling due to their ageing infrastructure, together with planned maintenance works, electricity suppliers have been forced to carry out load shedding to avoid breakdown of the nationwide power system. Load shedding can introduce problems such as power back surges. Post load shedding, all appliances connected to the grid try to turn on simultaneously, causing significant dips in voltage or brownouts which can also cause damage. Repeated minor incidences may only result in noticeable damage over time, shortening the operating life or necessitating costly repairs at shorter intervals, while a single major incident may result in the immediate and complete destruction of equipment.

This unpredictability of the power quality requires a practical, cost-effective solution to avoid otherwise inevitable damage to domestic and industrial electrical and electronic equipment. Sollatek is a world leader in voltage protection and power control, with a primary focus on protecting electrical and electronic equipment against unstable and unreliable voltage. Its products are designed by engineers in the United Kingdom and sold globally.

The Sollatek Automatic Voltage Switcher (AVS) range provides complete power protection and is available in single and 3-phase options for a cost-effective solution. The AVS will switch off the equipment connected to it if the mains power goes outside pre-set acceptable limits and will re-connect automatically when the mains power returns to normal.

Additionally, there is a delay when power returns to normal. This will ensure that the appliance is not switched on/off repeatedly during fluctuations, nor is it subjected to the massive surge normally experienced when power returns after power cuts. Re-connection takes place after a delay (the "start-up delay") to ensure stability of the mains. The start-up delay provides protection against power-back surges.



The AVS is the most popular power protection device combining over-voltage, under-voltage, power-back surges and spike/surge protection. It will prevent any damage to your electrical equipment caused by unstable and insecure voltage.

Enquiries: nick.allen@sollatek.co.za



Voltshield

DON'T LET BAD POWER RUIN THE HOLIDAYS

Excessive power demand, summer storms and cable theft can quickly turn Christmas cheer into the holiday blues. Bad power can have a catastrophic effect on electrical appliances such as fridges, freezers and air conditioners.

Protect them against major power problems with the **Sollatek AVS15** – a plug and play device for complete peace of mind this holiday.

Protects against:






Features:

- Suitable for all domestic applications
- Plug & Play installation
- Disconnects load during bad power
- Automatically reconnects load once supply has returned within limits
- Start-up delay ensures power has stabilised

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sales@sollatek.co.za
www.sollatek.co.za





Essentials for the electrical contractor

When leaving the house or office for the site or a job knowing that you have everything you will need to complete the work in one handy, easily accessible place means peace of mind for electricians.

"The ELECKT 16-piece electrical tool kit from HellermannTyton includes all the essentials for an electrician to carry out their day's work, including a multimeter, cutters and pliers," says Ryan Burger, divisional product manager – Tools and Instruments at HellermannTyton. Notably, all tools carry a lifetime warranty, giving electrical contractors the reassurance that if anything goes wrong with the tools through normal use, the company will replace them.

Burger notes that the ELECKT kit is receiving an upgrade for 2021. "All new toolbag kits from HellermannTyton will come with the next generation T235H digital multimeter. Features of the True RMS T235H include an LCD screen size of 61 x 36 mm; transistor testing; a flashlight; non-contact voltage detection (NCV); no on/off button (auto on/off), as well as a tougher protective cover.

Along with the T235H, electricians will have all the essentials tools easily at hand in a polyester zip case. Additional tools included are:

- 200 mm adjustable spanner
- Utility knife
- Allen key 1.5; 2; 2.5; 3; 4; 5; 5.5 and 6.8
- ECOSET 7-piece 1000 V insulated screwdrivers
- 5 LED headlight with adjustable settings
- 180 mm diagonal cutter
- 160 mm long-nose pliers
- 180 mm pliers
- Indent crimper 38 cm (H) x 24 cm (W)

"A handy tool for the electrician is the neon voltage tester included in the 7-piece ECOSET," explains Burger. "It can be used to check to see if a wire is live. It is not good practice to simply check that a wire is not live as there could be a fault, and the voltage tester can be used to prove that a wire is live. Do not simply believe that a wire is dead – further testing with a multimeter will be in order if it indicates no voltage."

If further tools are required, a bigger, 32-piece backpack is also available from HellermannTyton.

Enquiries: www.hellermanntyton.co.za



Generation cordless power tools

After recently launching the first of the new WORX products – the Pegasus, Jawhorse and Side Kick worktables – and stating that these will be followed by an exciting range of new innovative power tools at the end of the third quarter of 2020, Ryan Hunt, Director at Vermont Sales, says the company is very excited about this new brand.

"Looking at the new WORX's product range, it is mind boggling, there are many very exciting, very clever, good looking and unique products that will certainly excite all our customers," says Hunt.

"Our company is winning not only because of our knowledge, but because of our passion," says WORX President and CEO, Tom Duncan. "It is easy to work hard when you love what you are doing. And I absolutely love what I am doing. Other companies build things, at WORX, we create. After all, it is all about the idea. To do what has never been done. Or taking what has always been done and reimagining it being done better. Faster, easier and more efficiently."

WORX takes pride in the recognition it has received, such as the World Wildlife Fund's Platinum Award for Low Carbon Manufacturing and the LEEDS-NC Platinum Distinction for its green building. It is proof that the company is not only talking the talk, but walking the walk too. The new generation WORX cordless power tools; Hydro Shot power washers; Hyper Turbo blowers; accessories and an exciting range of corded powered tools arrived at the end of November.

Products include:

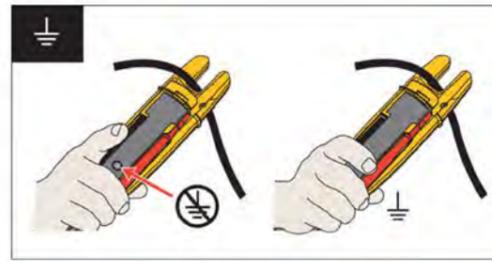
- 2 x cordless 20 V Hydro Shot 22 BAR 120/h power washers.
- A unique 20 V cordless Hyper Turbo blower.
- A selection of batteries with various outputs and charger options plus accessories for all the tools.
- 20 V cordless impact drill and jigsaw twin pack promo kit.
- 20 V cordless impact drill and angle grinder twin pack promo kit.
- 20 V cordless angle grinders.
- A comprehensive range of 20 new technically advanced 20 V cordless drills units, kits and sets with accessories including Rotary hammer, impact, and the new unique 20 V dual head switch driver.
- A complete corded range of impact drills and angle grinders.

"We have a great introductory launch offer on all the new units while stocks last, so it is advisable to order now," says Hunt.

Enquiries: www.vermontsales.co.za



New technology enables simultaneous voltage and current measurements – without metallic contact



FieldSense technology works by providing a capacitive path from a contact point on the back of the tester and the operator's hand to earth ground



For many years, electricians and technicians looking for a quick current reading have reached for the trusted Fluke T5 Electrical Tester, a personal everyday tool seen in tool belts the world over. Now Fluke's T6 with FieldSense technology improves the open fork functionality by allowing for ac current, ac voltage and frequency measurements to be made on one device at the same time, in real-time. The Fluke T6 Electrical Tester with FieldSense technology is the first handheld test tool using this new patent-pending technology.

Safer way to test voltage

FieldSense technology is a safer way to measure voltage accurately. Contacting electrical conductors with test leads or alligator clips requires metal-to-metal contact, which as any electrician or technician knows, carries the potential for arc flash. FieldSense eliminates that step. Because the measurement tool and the voltage source under test are isolated, the person performing the test is safer from potential electrical shock. This is performed by means of galvanic isolation or separation, the principle that isolates functions of an electrical current to prevent current flow. FieldSense takes a measurement of voltage without voltage flowing through the meter. Instead, the Fluke instrument, such as the T6-1000, senses an electrical field in the open fork to make the measurement – a safer method.

Since the measurement is performed through the cable's insulation, users reduce exposure to metallic conductors and decrease the potential for errors or for making contact with the wrong conductor.

How FieldSense works

FieldSense technology is a breakthrough in how voltage is measured. While the technology in the T5 detects a magnetic field to derive an ac current measurement, the new technology detects an electrical field. Fluke Research and Development teams first developed the open-fork voltage sensing technology, which involves transducing and calculating a known signal to derive measurements for the source voltage.

This was done by designing the device to generate a reference signal of known amplitude and frequency. Then, when grounded, the resulting composite waveform is detected by an electronic sensor built into the tester. After amplification, processing and digital calculations, voltage and frequency measurements are derived.

In the next step after developing voltage sensing, the teams were challenged to combine these two different physical phenomena – magnetic field sensing and electrical field sensing – into one device. After months of prototyping and testing the team was able to determine the optimal design so these two technologies could be paired together. The result is that, for the first time in a Fluke meter, voltage and current can be measured and displayed at the same time.

The difference between a voltage detector and FieldSense

It is important to distinguish the FieldSense measurement technology from the variety of voltage detectors on the market. These voltage detectors range from pen-style devices which light up when voltage is present to clamp meters which beep or vibrate when a voltage signal is present. The distinction is that a volt-



The new Fluke T6 with FieldSense technology

age detector generally shows users that voltage is simply present, whereas the FieldSense technology allows for actual, accurate voltage measurement.

How to use FieldSense technology

The open fork form factor is intuitive and easy to use. First, if necessary, separate individual hot and neutral wires. Then, slide the open fork over the hot wire (or neutral if the equipment is in operation). You now get a measurement. The open fork also makes it easier to isolate individual wires in a panel, which can be difficult when many wires are bundled. In many cases, the measurement can be made with one hand, which is also a safer practice.

The benefits include safer voltage measurements without having to connect meters in parallel, faster troubleshooting by being able to measure through the fork directly around a conductor, and the ability to make voltage and current readings at the same time.

Open fork test tools that can measure voltage, current and frequency are helpful for electrical troubleshooting workflows in many job roles. Electricians, electrical contractors, HVAC technicians, field service engineers and maintenance technicians will find the T6 extremely versatile for troubleshooting and maintenance while gaining access to previously inaccessible measurement points such as a junction.

Residential applications include measurement of loads on a branch circuit at a service panel, measurement of the load side voltage of a circuit breaker or fuse and the mapping outlets to breakers. Industrial applications include checking circuit loading at panel boards (including feeder cables, branch circuits and neutrals) and the integrity of a grounding circuit, as well as checking the feed circuits coming into motors (up to 200 amps).

Enquiries: +27 (0)10 595 1821



Ladder safety for electrical work

When working with electricity or an electrical circuit or equipment, ladder safety should be observed. There are many different types of ladders, and they are made of different materials. Metal ladders should never be used when dealing with electricity; rather choose a nonconductive ladder.

Ladder safety basics

Step ladders are often used both for inside and outside electrical connections. Extension ladders allow the user to reach heights that step ladders cannot reach. Before climbing any ladder, some ladder safety basics should be considered. Level and secure footing, as well as securing ladders and locking safety arms, are essential. Overhead obstacles and a clear, debris-free area below and around the ladder base makes for a safe work area.

Lock the ladder

Ladders should always be opened fully and the locking arms locked into place before climbing the steps. This is true for both step ladders and extension ladders. On step ladders, they incorporate two locking arms, one on either side, that allow each ladder leg side to securely lock into place so that the ladder legs will not close back up. Extension ladders come in two sections. The bottom section has the feet, and the top section has plastic end caps or wings to secure it to the side of the building or pole. The top section also has two spring-loaded locking arms that attach to the legs of the bottom section of the ladder. These arms lock the top section from sliding back down as you climb.

Level and solid ground for the ladder base

Place a ladder on level working surfaces or level the area before attempting to climb the ladder. This ground should be solid ground. If adding dirt or gravel to level the surface, make sure it is compacted and solid. Sometimes the situation calls for blocking material to level the ladder base. Choose flat, solid boards or timbering as opposed to sticks or some other materials that could easily slide from the bottom of the ladder base.

Know the climbing limits

Never climb on the top or the second last step of the ladder. Never put yourself in a position where you have to stretch to reach what you are working on. Get a taller ladder to complete the task and play it safe. Working with power tools can add to the dangers of standing on top of a ladder. If a drill bit sticks and jars you around, you may fall right off of the ladder. Ladders also become unstable when your full weight is atop the ladder causing the top to shift and in turn causing your feet to push the top of the ladder in one direction. This causes you to come tumbling down.

Look around for hidden dangers

Beware of hidden dangers such as bare wires and obstacles that you may bump your head on while climbing the ladder. Many times, there are electrical lines like overhead service lines in the area you are working. Not only that, but there could be pipes and other things sticking out of the ground that are dangers of injuring you if you fall from a ladder onto them. If at all possible, move these dangers before you begin.

Foot the ladder

Have a helper hold the ladder for support if at all possible. Having someone foot the ladder and hold the ladder from sliding is always a plus in safety when someone is going up for the first time. That way the ladder is secure for them to climb up and tie the ladder off. Also, remember to hold the ladder for the last one off of the roof. This allows them to untie the ladder and exit safely.

Choosing the right ladder

Ladders are made of one of three materials: wood, aluminium, or fibreglass. Aluminium ladders are dangerous around electricity because they conduct electricity, although it is the least likely to break

down over years of use. Wooden ladders are not conductive to electricity, but they can rot when exposed to moist conditions over time. Fibreglass ladders offer the best choice for both for long life and safety from electrical conductivity. The drawback is that fibreglass ladders are also the most expensive.

Types of ladders

There are three basic portable ladder types:

- Type I – Industrial: Heavy-duty with high load capacity.
- Type II – Commercial: Medium-duty with medium load capacity.
- Type III – Household: Light-duty with a low load capacity.

Tie off ladders for safety

When using an extension ladder, tie off the top of the ladder if at all possible. This keeps the ladder from sliding off of the edge of the wall or roof. There is nothing worse than coming off of the roof onto an unsecured ladder and riding it to the ground with a large thump when you hit the ground! Simply place a nail or screw under a single or tie off to a solid structure on or next to a roof like an antenna or bracket. If climbing onto another surface, make sure the ladder extends at least three feet past the platform you are climbing onto.

Climbing and standing on a ladder precautions

Climbing and standing on a ladder may seem simple enough, but these tips should be followed to ensure safety.

- Always face the ladder when climbing or descending.
- Keep both feet on the ladder – never put one foot on a rung and the other foot on a different surface.
- Do not climb higher than the second rung on stepladders or the third rung on straight or extension ladders.
- Never stand on the top of the paint shelf of a stepladder.

Use proper ladder angles

Don't place an extension ladder's angle too steep or spanned too far away from the work area. Follow the ladder's recommended angle guides for ladder safety. Too much angle puts pressure on the centre of the ladder and often forces the bottom legs to press out away from the structure that you are working on. Not having enough angle on the ladder causes the ladder to be off centre. As you climb, it is as if you are falling backward as you climb. When you reach the top, the gravity could pull you and the ladder from the roof.

Source: *The Spruce*



Advice when buying tools

Tools for electrical work are expensive, and so you should be careful about maintaining each of them. Even when the tools are not in use, make sure that you lock them up in order to keep them safe. When buying tools, look for the right quality of material used in the manufacturing of the appliance; this will ensure that you can work efficiently.

You can also buy a locking toolbox in order to store your tools carefully. Even if it is a bit expensive, it will help to maintain your tools in the long run. In addition to this, if you get cheaper tools, you might have to replace it after some time, so rather not waste your time and money on poorly designed tools.

Since there are many brands available on the market, it is important that you get your hands on the right one. This will ensure that you can use the appliance for many years. When it is an electrician's tool,

finding the right one might seem to be a challenging task. Therefore, whether buying a drill set, a knife or any other electrical tool, it should be of a good quality and from a reputable supplier. Tools with warranties and guarantees are preferable.



Must-have tools for electricians

The electrical contractor uses different types of tools as they have to deal with extreme power supply. In addition, they have to use different types of machinery, basic tools, and devices to complete the task in a smart way. Therefore, it is important to choose the right tool. If they fail to use the right one, it might result in severe problems.

Retractable trimming knife

This knife is also known as a Stanley knife and it has plenty of applications for an electrician. Different types of blades can be fixed in it. It has sharp ends that make it easy to cut the items required in an electrician's work. Also, the size of the tool makes it a portable one. The blades can be replaced, and it can be folded within its handle.

Combination plier

It is important that the pliers of an electrician should be an insulated one. It would help to maintain safety measures. Stanley is one such popular brand famous for its tools. In this regard, it is advised to use good quality VDE tools that would help when doing electricity related tasks. Cutting and gripping are one of the two main functions of this appliance. Make sure the handles are prepared with good quality so that the user has a comfortable grip.

Screwdriver set

A quality set of screwdrivers is worth purchasing. Make sure that you opt for the right set of screwdrivers which include a variety of head types including a range of shaft lengths.

Mole grips

This tool, also known as locking pliers, is a versatile one. It has a locking mechanism that can be used to hang on bags or tools used in the workplace. In addition, it helps to keep both your hands-free when you are working. These hand tools are useful for much electric work.

Insulated Lineman's pliers

These are adjustable pliers which are perfect to be used by electricians. In addition, it can be used for blue, yellow and red electrical crimp connectors and can also be used for interlocking the connectors properly. You can also interlock terminals with the help of this plier. Ensure that the rivet of the plier is made from a good quality material so that it can be used for a long time. Also, the recess located on the back side of the appliance has an oval shaped design, meaning it works best on thick or oval shaped cable making the work easy for the electrician.

Flat steel fish tape

In the list of electrician tools, this is a perfect add-on. It is easy to pull this fish tape as it made from a good quality material that ensures durability and easy usage. It should come with a high-quality case and carrying handles. The efficient design of the tool makes it suitable for the electrician to work with, offering both easy rewind and unwinds.

Long needle nose mini plier

This plier is a much-used tool for cutting wires. It is suitable to work with in confined spaces. The slim design of the appliance helps it to get into tight places and cavities and cut the wires appropriately. The plier should be made from high-grade steel material making it a suitable one to use in electrical work and for the lineman.

Non-contact voltage alert pocket pen

This tool is among the must-have appliances for an electrician. It helps to maintain safety measures when they are working with electricity connections. The tip of the voltage detector comes with a neon lamp which lights up when it detects voltage. In this way, you can check for the presence of voltage in cables, light fittings, plaster walls, sockets, and others. You need not dismantle anything in order to check the presence of voltage. You can trace the electricity flow easily with the help of the voltage detector. In addition to this, you can also detect the break of electricity flow in cables.

Impact drill

This is one of the compact forms of drill used by an electrician. Most come with an auxiliary handle and dual mode functionality of the drill which makes it easy for the electrician. They generally have a slim and compact design.

Electrician trade knife

This is a short scaling knife which is used by an electrician on many jobs. An ergonomically designed handle will make it easy for the electrician to use. The angle of the blade of the knife is fixed in such a way that electrician can cut wires and tapes easily.

Safety glasses

Safety glasses with anti-fogging polycarbonate lenses with impact resistance are suitable for electrical work. They are lightweight and the padded temples give extra protection from any dirt particles or dust from entering your eyes.

Enquiries: www.toolbeltguru.com

Advocating the use of Human Centric Lighting

Many South Africans no longer focus on COVID-19 as the talking point in every conversation. If any mention is made, it will usually be to complain about the wearing of masks, something that everyone knows is essential to curb the spread of the virus.

What we do know is that it has had a devastating effect on the economy of the country, business, and many individuals. Apart from those who have lost their employment and those still being made redundant, many have suffered emotional stress and continue to live with uncertainty.

With that background, it is more important than ever to provide a more pleasant working environment, one that will make a positive contribution to the well-being of all employees. One that will lift the spirit and mood of the employees. I have written on the subject of lighting having to cope with changing office environments to include social distancing. The improved working environment must include appropriate artificial lighting which embraces natural daylight. This is nothing new.

I have been advocating the use of good lighting which embraces natural daylight. As time advanced and LED lighting has made it possible, Human Centric Lighting (HCL), which embraces natural lighting, now has a very real role to play.

In South Africa, developers, clients and professionals in the built environment are not even considering this option. Perhaps this is due to lack of knowledge or to not knowing how to show the economic case for HCL which will benefit clients.

I attend many webinars, not simply to pass time, but to learn more about how overseas lighting professionals do their lighting designs now. It is always essential to continue to learn, to adapt and apply best prac-

tices to benefit all stakeholders in any project. Most recently, I attended an IES webinar in the USA, a US Green Building Council webinar, also in the USA, and an International Association of Lighting Designers (UK) webinar specifically on the provision of lighting for health, wellbeing and productivity of the occupants of buildings.

On 9 July, a friend and colleague in the UK, Terry John, presented an excellent webinar for BHA School of Lighting on the subject 'Light Nutrition'. It is amazing to consider light as a form of nutrition. Well, of course, since the beginning of time, homo sapiens has derived Vitamin D from sunlight.

The importance of ensuring that daylight plays a role in all office buildings cannot be over-stressed. We always include calculations for daylight autonomy, continuous daylight autonomy, spatial daylight autonomy and now Annual Daylight Exposure calculations for offices before commencing the artificial lighting design.

Perhaps I should explain to readers what HCL is defined as by lighting professionals. HCL is a continuously evolving symphonic amalgamation and integration of electronics, software, sensor and other IoT technologies with the central aim to optimise the positive impact of lighting on human health in harmony with available natural daylight.

According to vast research and the findings that were published in the Journal of Circadian Rhythms, altering the intensity of the light, the distribution of the light, the spectrum of the light and how the light is presented at different times of day, directly impacts health and wellbeing. It directly impacts the timing of an individual's circadian rhythms, their mood, their ability to focus on tasks and, for the employer, their productivity.

It is generally and internationally accepted that business operating expenses include 90% for staff and 1% for energy. If lighting uses 20% of that 1% total energy cost, the use of LEDs can eliminate 50% of that cost.

In a study by the University College of London, an experimental workplace – complete with circadian lighting or better known as Human Centric Lighting – was created. It was populated with a group of office workers, while there was also a control group in conventional old-type office lighting. The results were astonishing.

Both groups were measured for various aspects. The experimental group productivity improved by almost 20%, the employees were 38% calmer and 10% more focused than those performing the identical tasks in the control group.

What does this mean in real terms? A 20% improvement in productivity translates into benefits of at least 18% of the total expenses versus 0.1% from energy savings. The good news is that HCL products are available in South Africa from a leading manufacturer. The lighting controls needed to create the HCL environment are readily available. There can now be no excuse for not ensuring that every office lighting project be based on Human Centric Lighting.

COVID-19 has elevated performance expectations for buildings and their occupants throughout the world. Sustainability standards such as LEED and WELL scoring systems have been adapted to include HCL. More recently, UV-C disinfection is being included in some luminaires.

Enquiries: www.bhaschooloflighting.co.za

Warehouse revamp delivers ultimate savings

Prime Light Electrical, a distributor of electrical components to the lighting industry and other related markets for over 25 years, invited Aurora Lighting to upgrade its warehouse lighting. Its aim was to reduce energy costs significantly and to improve visual appearance and visibility. To ensure that all client objectives were met, a lighting design was undertaken with products selected from Aurora's catalogue.

In the warehouse there is a mezzanine level where high-powered lighting had previously been used. So, as maximum energy savings were highly desirable, Aurora specified more suitable lighting with a much reduced energy consumption and then proposed sensors, ensuring the lights were only on when the aisle was in use, increasing energy savings further. Prime Light Electrical agreed to the product proposal and lighting design and were pleased to learn that their costs would be greatly reduced.

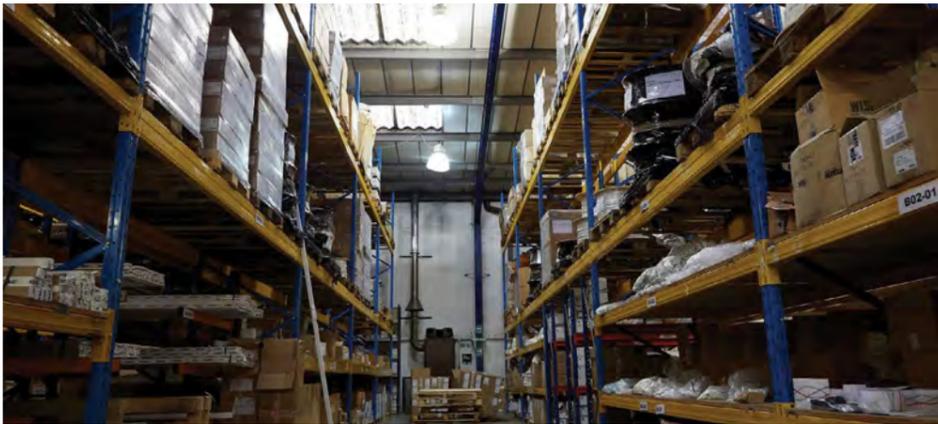
The Aurora products used were the BatPac™ Pro linear, which provides over 40% energy savings compared to traditional fluorescents, and AriaH™ Pro high bay, which produces a market leading 150 lm/W that

can now replace a traditional 400 W industrial fixture.

The visible difference between the previous and new lighting is vast. The warehouse feels brighter, cleaner and fresh in appearance and Prime Light Electrical was extremely impressed with the outcome. The sensors in the AriaH™ HighSense were extremely useful as some areas were not being used very often; the client could see the immediate savings they would achieve. In addition to savings on energy costs, Prime Light Electrical was pleased to learn that the installation of the BatPac™ Pro and AriaH™ Pro will also reduce maintenance costs, as the high ceiling of the warehouse previously required a cherry picker for the upkeep.

"Our warehouse now looks more vibrant than we had expected. The Enlite lighting has certainly made an impact and we are pleased with the costs we are going to be saving. Aurora's service was second to none and we will be keeping them in mind for any future lighting project," says Sean Hounslow at Prime Light Electrical.

Enquiries: www.auroralighting.com



Before



After

New range of high-lumen solar security lights

Security lighting is an essential part of any outdoor lighting plan. A strategically illuminated outdoor area is off-putting for any would-be home intruders as there are no dark spots for them to lurk in and hide. But with a sometimes unpredictable load shedding schedule in South Africa and soaring electricity costs, implementing a security lighting system that doesn't rely on grid electricity is a sensible way forward.

Our new range of solar security lights will keep the exterior of your home well-lit because they deliver high-lumen illumination. The lumen value of a lamp tells you how bright it will shine – the higher the lumen, the brighter the illumination. There are three more top reasons to install high-lumen solar security lighting:

They have a long lifespan and deliver bright light

When you install lighting for security and safety purposes you want it to be bright and reliable so that key areas around your home are well-illuminated exactly when you want them to be. For some people, this may mean throughout the night and for others, it may just be when motion is detected. In the early days of solar technology, a common complaint was the level of illumination – many felt it simply was not bright enough. But advancements now mean that a solar-powered security light can offer incredibly bright light. Each fixture in our new range of solar security lighting boasts a high lumen value, guaranteed

to cast bright light where you need it most. Choose from fixtures that will remain on throughout the night or select a design with a motion sensor. Additionally, most lamps in this range have a 35 000-hour lifespan so you need not worry about replacing them regularly.

They are easy to install and maintain

Solar security lighting is easy to install because there is no wiring. An electrical security light would require you to dig a trench to hide the wires, but that hassle is eliminated because solar lights are powered by the sun. This lack of wires also means you can get creative with the placement of the fixture, as long as it is located in a spot that receives sufficient sunlight. Maintaining these fixtures is simple, too. Pollen, dust and dirt will settle on the solar panel as time goes by, hampering its charging capabilities. To clean, just wipe with a cloth.

They are made from durable materials

Solar security lighting is durable and is made to withstand long-term exposure to the elements. Our new range of fixtures is made from a variety of robust materials such as aluminium alloy and polycarbonate/acrylonitrile butadiene styrene. These fixtures all have an IP65 weather rating and will continue performing optimally despite wet weather and extreme temperatures.

Enquiries: www.eurolux.co.za

Healthcare workers send a clear message about lighting control

A study undertaken by Pacific Northwest National Laboratory (PNNL) researchers surveyed 138 representatives of medical-surgical nursing staff as to environmental lighting factors and needs in med-surg patient rooms. Four hospital sites were compared, with various combinations of lighting equipment, controls, and number/form factor of fixtures.

An earlier analysis focused on the quantitative aspects of the questionnaire, whereas the current work analyses open-ended responses that more closely reflect how a lighting designer/specifier might query the end-user customer for a lighting project in a healthcare setting.

A key theme that emerged from the responses was control. "Despite the differing standards in the four facilities, nurses generally perceived a sense

of control, for themselves and their patients, to be most important, followed by adequate daylighting (preferably through windows)," the report stated.

With regard to what could improve performance of duties and work experience, the researchers observed that "It would seem that most nurses desire better control in order to increase or decrease light level, indicating that their perceptions of brightness and control are very closely related as attributes that ought to be optimised in patient rooms."

The LED and solid-state lighting (SSL) industry can take these evaluated perspectives many steps further down the road, with white-light tunability and even coloured light for specific needs.

Enquiries: www.doi.org



Outdoor lighting trends

It is important to find the right balance between functional and attractive. When you use lighting that offers the right amount of brightness and is placed strategically to highlight certain areas, you can create an attractive mood and ambience with warm, rich tones, as opposed to stark, white light that gives you more of a clinical feel.

The current trend in outdoor lighting is sleek lines, compact designs and aesthetically pleasing beam angles. However, there is still a high demand in the market for timeless, classic outdoor lanterns, but with a modern twist.

Environmentally friendly lighting including low energy consuming fittings (LED) and even solar powered fittings are all the rage, since we must all do our bit in the fight against the current energy crisis.

It is important when lighting up your garden to steer away from overpowering light that just lights up the whole space. Rather use subtle lighting that puts the focus on certain feature elements of your garden. For example, use small, hidden lights or bollards to light pathways, and garden spots to light up certain trees, water features etc.

There are a number of driving forces behind these latest trends, one of the big ones being light pollution. 'Light pollution' is a term that is not well known but it is a very real issue facing the world. It can be described as the excessive or inappropriate use of outdoor light in urban areas. It can affect human health, the behaviour of wildlife, as well as our ability to see stars at night. For this reason, we have made the shift towards focus lighting instead of lighting up a whole exterior area. Not only is this new trend better for the environment, but it also creates an appealing ambience and mood.

Outdoor lighting has evolved from only being functional to a feature with the aim of providing, not only a sense of security, but also to highlight certain elements of your garden or outdoor area. We will be seeing more variety in terms of solar powered fittings in the near future. They are economical, good for the environment and very easy to install, as no wiring is required. Spazio has a wide range of outdoor lighting that is in line with the current trends.

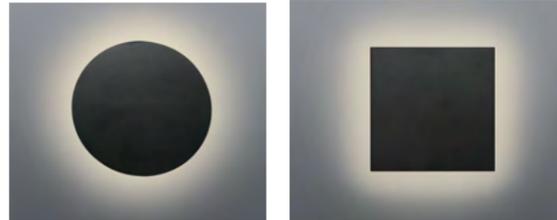
When looking to invest in outdoor lighting, be aware of the

warranty and lifespan of integrated LED fittings; there are a lot of sub-standard products on the market that will fail in a short period of time, without proper supporting warranties.

The corrosion quality of fittings, especially close to the coast, is something you should consider carefully when buying an outdoor light fitting. In the South African coastal climate, anything that is not polycarbonate, corrosion proof resin or 316 stainless steel will soon start to corrode.

The colour rendering index (CRI) rating of a light source determines the quality of the light that a fitting produces, as well as how faithfully the colours of objects appear in this light in comparison to a natural light source such as the sun. Anything higher than CRI >80 is considered to be a good colour representation. All of Spazio's outdoor lighting produces CRI >80 or higher.

Enquiries: www.spaziolighting.com



Focal wall fitting and bollard with its indirect beam gives off a phenomenal lighting effect. 8 W LED (wall) and 6 W LED (bollard), available in black and white, in both warm and natural white.



Anna Aldo Buried available in three options. It has a corrosion-proof body, comes complete with G9 LED lamp, and is available in warm white and natural white. These fittings are perfect for lighting pathways.



The Lesse and Daria are classic wall lanterns made with corrosion-proof resin with PMMA diffusers. Suitable for E27 LED lamps.



Anna Mikrolot and Anna Bisso wall mounted and post top fittings made with corrosion-proof resin and PMMA diffusers. The Anna Mikrolot can be wall mounted with the bracket in two possible positions. Suitable for E27 LED lamps.

New range of high-lumen solar security lights



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Enquiries: www.eurolux.co.za

Introducing the LEDTEC range

BEKA Schröder is excited to announce the expansion of the LEDTEC range. The cost-effective ECOTEC is the new addition to the range.

The LEDTEC is an LED lowbay range designed for energy-efficient lighting in industrial, commercial and petrochemical retail environments. The LEDTEC range is optimised to deliver the best overall performance for lowbay applications. It outperforms all other LED lowbay luminaires thanks to the substantial energy savings it generates and the performance it delivers over time.

The LEDTEC range is perfectly suited to multiple indoor and outdoor lighting applications with its typical lumen packages per product range, various light distributions and mounting options.

Key advantages of the LEDTEC range include:

- Designed and manufactured in South Africa.
- Designed to operate LED light sources of up to 138 W in an ambient temperature (Ta) environment of up to 40°C.
- The expected useful lifetime is 100 000 hours, at a lumen depreciation of not more than 30% (L70) at an ambient temperature (Tq) of 25°C.
- Designed for easy, reliable and energy efficient canopy and ceiling installation to replace up to 400 W HID light sources.
- Easily accessible power supply/driver compartment.
- Glare-reduced light distribution.
- Flicker-free lighting.

Whether used for service stations, warehouses, industrial halls, assembly lines, retail areas or sport areas, the LEDTEC range offers the ideal LED lowbay lighting solution.

Enquiries: +27 (0)11 238 0000



LOCALLY manufactured



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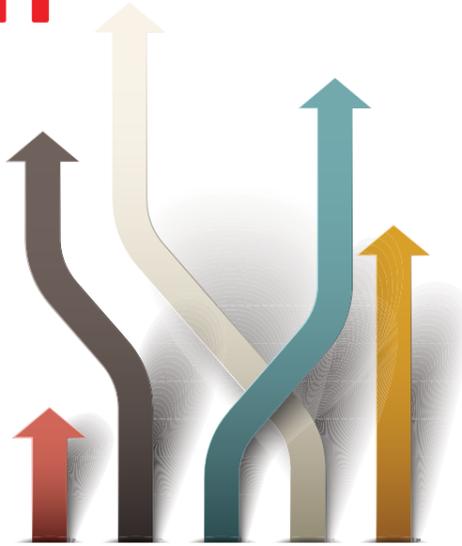
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