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FIVE POWER SUPPLY CONSIDERATIONS FOR ENERGY SECURITY (AND HOW ELECTRICAL CONTRACTORS CAN BENEFIT)



As South Africans settle into the routine and inconvenience of load shedding and planning their activities around shifting electricity supply, it is businesses that are taking the biggest hit through the loss of operational capabilities, productivity, and profitability. While individuals deal with manoeuvring their household times and sitting in gridlock traffic, local businesses, hospitals, schools, and industrial sites must find ways to remain operational despite limited generating capacity.

The electricity shortfall makes it crucial for organisations to reconsider their power supply systems, and that's where the expertise gained in the field by electrical contractors and electrical engineers comes in. According to Nick Oosthuizen, Managing Director at Inframid and consultant in energy efficiency, there is no silver bullet to solving this challenge. "Businesses need to take a holistic approach when looking at securing their power supply. There is no one-size-fits-all solution. A tailored system, based on a feasibility study that considers unique power supply elements for your organisation, will ensure the highest return on investment (ROI)," he advises. According to Oosthuizen, there are at least five essential aspects to consider.

Know your load

To ensure an optimal energy supply system, you first need to understand what it is you are currently dealing with. It is important to know your electrical demand, load content, and architecture. "Businesses should conduct an electrical audit before considering other energy sources. This will help avoid fruitless expenditure and help plan a low energy load. A good place to start is by considering the energy efficiency of the load elements," says Oosthuizen.

"For instance, the Coefficient of Performance (COP) is the efficiency of refrigeration, aircon, and water heating systems and is highly dependent on product quality. A higher COP equates to lower operating costs, so businesses should continuously consider the technology they are using, especially as part of maintenance replacement plans. The same considerations are relevant to light fitting technologies."

Check your utility connection

"Although utility-supplied power is highly unreliable at the mo-

ment, it is still the cheapest. As your main source of energy, you should validate that you have utility connections at the most cost-effective tariff scale. Acquiring and operating backup power can be rather expensive if not part of an overall plan, and all energy-saving initiatives should be considered."

CONTINUED ON PAGE 3

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Leaders in the design, development and manufacture of electronic equipment

Based in Linbro Business Park, Sandton, Telbit has positioned itself as a leader in the design and manufacture of electronic boards and systems. Telbit attributes its success to the ability to design, develop and manufacture products to customer specification, using latest analogue, digital, microprocessor and RF technology. An in-house software development team caters for all software integration requirements in some of its products.

Two years ago, Telbit entered the IoT (Internet of Things) market by becoming a Sigfox Channel Partner. The company designed the Smart-water device, which connects to any domestic or commercial water meter. The device transmits the meter reading over the Sigfox low power network to a central server either daily or hourly. By using an online platform called Skyview Utilities, building management companies and

body corporates can now read their water meters online without ever visiting the site.

Telbit was one of the founding pioneers of prepaid water metering in South Africa, providing solutions from as early as 1994. Today its prepaid water controllers are integrated and distributed by the two largest meter manufacturers in the country, namely Honeywell (formerly Elster Kent Metering) and Sensus (a Xylem company). Telbit's STS (Standard Transfer Specification) certified prepaid controllers are compliant with the international IEC standard for prepaid credit transfer. Its engineers were also key contributors at the working groups that formed the SANS as well as STS specifications for prepaid water meters.

Telbit is considered the leading manufacturer of Shaft Signalling equipment for the gold and platinum mining industries. Its Locked Bell

System consists of Onsetter, Banksman, Driver and CallBell units, based on the popular 3-wire communications system, which forms the backbone of all communications between the surface winder and below surface levels. The system successfully operates the world's deepest mines reaching over 3 km in depth. Telbit holds a patent that defines a unique multi-wire signalling platform, therefore the only company capable of manufacturing the Probell Signalling System.

Its product portfolio boasts a range of surge arresters for the lightning protection industry. These devices provide both outdoor and indoor solutions that give protection of 8 kA, 15 kA, 40 kA up to 100 kA, with various operating voltages. Some devices are tested according to IEC61643-1 specification.

Telbit designed a range of accessories to the very popular Maxim (Dallas) 1-Wire iButton memory devices and is registered with Maxim Integrated as a 'Third Party Solution Provider' complementing their products with Telbit's range of iButton sockets and readers. These products are mainly used for access control, time and attendance, as well as petrol attendant identification at fuel stations.

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Finding the balance of globalisation



Karin Visser

ANGLO ALLIED ENGINEERING is an importer and distributor of quality industrial electrical control and safety equipment to South Africa and Africa. Karin Visser joined the company, which her father purchased, 30 years ago as an admin clerk, and today is responsible for overseeing the entire operation.

Sparks: Where were you educated?

KV: I did my schooling in Roodepoort. I have no further official qualifications; everything I know was learnt hands-on and on the go.

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

KV: My dad bought Anglo Allied in 1976. As he was an electrical engineer, I had been surrounded by the industry for most of my life. My husband, Wiebe, also an electrical engineer, joined in 1988. I joined the company in 1990 as an admin clerk.

Sparks: When and where did you start your career?

KV: Starting as an admin clerk at Anglo Allied, my job description has changed dramatically since then. I am now in charge of all operations.

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

KV: The single biggest change over the years has been the computerisation of both product and business systems. When I began my work at

Anglo Allied, I was using typewriters and accounting machines. Nowadays, all of that is digitised, some of it even automated.

With regards to product, the ASI (actuator-sensor interface) has been the most notable evolution for me. These once entirely analogue switches can now be integrated into large, computerised, automated systems.

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

KV: Anglo Allied is my greatest project. Regardless of which installations our products end up in or where the products go, running this company to the best of my ability is one my greatest achievements. My other personal achievement would be that I managed to raise a family.

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

KV: My dad was my inspiration and mentor. He had such a great work ethic and I will never forget his thirst for knowledge.

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

KV: In my opinion, the biggest challenge is finding the balance of globalisation. There are pros and cons to international trade, and our business, Anglo Allied Engineering, is a supply company at its core.

We have this blessing of easily obtainable technology and yet there is the curse of direct-to-user online sales. It has become so easy to source international products, people expect 'instant coffee.' But, as soon as there are any international trade hiccups, products become harder to source, while expectations remain the same.

Sparks: What do you enjoy most about your job?

KV: I enjoy the logistics of the company the most, but I also really enjoy being able to find a solution to a problem. I enjoy the puzzle.

Sparks: How do you motivate your staff?

KV: We are a very small-staffed company. I believe that being able to lead means being able to perform all the necessary tasks yourself too. Leading by example.

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

KV: No, I don't believe that life works like that. Every decision will have its own consequences, good or bad. Every choice has brought you here.

FIVE POWER SUPPLY CONSIDERATIONS FOR ENERGY SECURITY (AND HOW ELECTRICAL CONTRACTORS CAN BENEFIT)

CONTINUED FROM PAGE 1

Consider your backup options

Popular backup power solutions include diesel generators, gas generators, and batteries. The chosen solution will largely depend on cost and usage requirements. "While backup power reduces your dependence on utility power – a feature in high demand at the moment – it comes at a price. Electrical teams need to motivate this investment to the decision-makers, and the best way to do this is through a financial feasibility study that weighs up all elements of power supply in relation to each other and the prevention of downtime," says Oosthuizen.

According to Oosthuizen, downtime can get very costly and should be measured when looking at the feasibility of a backup power solution. This also bears weight on the kind of backup power you decide to use and when it will kick in. "This varies between industries and applications. For example, one minute of downtime before backup power kicks in might be too much for certain manufacturing plant." He advises that organisations should do a breakdown of electrical loads and establish the normal load, the backup load, and the essential load. The essential load is where you can't lose a second and a seamless transfer will be needed.

Think about seamless transfer

"For organisations who can't afford a lapse in power supply, a seamless transfer system will be necessary. However, this seamless transfer might not be needed for all loads in the facility. The essential load would be the priority, and would need an uninterruptible power supply (UPS) for mission-critical systems. However, being an expensive commodity, it is important to apply UPS to essential loads only and after determining its feasibility."

Save energy where you can

Reducing your energy requirements is an obvious strategy when it comes to improving your security of supply and reducing costs. "When

it comes to saving energy, it is not just about the energy-efficiency of the technology you use. Supplementary power sources are something worth considering. Renewable energy generation in the form of solar, wind and other states of the art generation can be implemented. This has the potential to convert your load into a valuable asset," advises Oosthuizen.

He says: "One of the biggest mistakes we see is that organisations focus on the glaring symptoms of power cuts and try to heal these with specific power supply elements, without following a holistic approach. They overlook the bigger picture. Different industries have unique load structures serving specific operational needs, each needing different combinations of power supply elements. Each of these elements addresses a very specific area of energy efficiency, such as security of supply, protecting essential loads, saving energy, and avoiding expensive upgrades."

"An independent energy procurement process should be conducted to provide appropriate and competitive solutions, where tender documentation based on international standards is sent out to various suppliers of different power supply-, seamless transfer- and renewable energy sources to tender. This process will also increase the overall feasibility."

Oosthuizen advises that a good energy strategy is to utilise utility power augmented by other feasible energy elements and to shift loads to minimise energy usage. "A good energy efficiency strategy is a worthwhile investment as it helps companies to avoid costly downtime and saves energy usage, thus improving the return on the investment made," says Oosthuizen.

Electrical contractors have the knowledge and technical know-how to advise customers – from small households to big business – on the best routes to take to protect themselves in these times of electrical uncertainty.

Enquiries: www.inframid.co.za

Sparks: Would you advise a person leaving school to enter the electrical industry? And why?
KV: Yes, I would, the world needs us. It is a dynamically growing industry and very much a part of the future. We need our children to come up with new ideas to make this a better world.

Sparks: What is your advice to electrical contractors and electrical engineers?
KV: As a non-engineer, I can see that the engineers and contractors overthink the solutions to their problems. My advice, even to myself, is to take a breath, don't overcomplicate the problem, and then go for it.

Sparks: What is your favourite quote?
KV: "Don't waste your time looking back, you're not going that way."

Sparks: Name three things on your 'bucket list'.
KV: Travel. Travel. And travel. Let's hope the travel bans are over soon, I still want to see more of the world.

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Legrand launches new USB chargers units and monoblocs

LEGRAND'S new USB chargers, which meet the latest electrical standards in South Africa, have been developed for quick installation, enhanced safety, user convenience and modern design. Legrand's new 16 A RSA monoblocs feature the old and new RSA 2P and E sockets, as well as USB A-type and C-type connectivity for high-speed charging of all mobile devices.

A monobloc is a single mould of multiple wiring devices arranged together and factory-wired in a fixed form. According to Legrand specialists, the advantage is that multiple components can be powered-up with one termination connection.

While USB charging ports integrated into wall sockets is not a new concept, Legrand's latest monobloc design is one of the first two-gang design sockets available, with both USB type-A and type-C charging outlets. Previous technology catered for type-A ports only.

Global manufacturers of multimedia devices are aiming to standardise equipment with the use of USB type-C connectors – which are smaller than standard type-A outlets – with a higher power output, efficient charging performance and a reduced need for multiple mobile chargers. These reversible units ensure simplified connection, with

the flexibility for insertion on either side of the charging fitting.

As type-C connectors become the universal port, the type-C cord will enable a multitude of applications – including charging and data transfer. Arteor and Ysalis type-A and type-C USB chargers deliver up to 15 W to optimise charging and have an environmentally-friendly standby consumption of 0,07 W Level VI, which is the highest level on the TUVSUD certification scale.

Also available in the Arteor range are two-gang modules with the options of 2 x type-A and 2 x type-C units. In addition to the two-gang socket, Legrand's USB range includes one-gang versions, available with either type-A or type-C charging outlets.

Modular charging sockets with a type-C USB charging port comply with IEC-62684-2011-1 specifications and can be used to charge any mobile device – like smartphones, tablets and laptops. Also in the new range are modular double type-C USB chargers.

Arteor monoblocs are available in white, champagne, soft aluminium (soft alu) and magnesium, while Ysalis monoblocs come in white and champagne options. Legrand monoblocs are pre-wired



Legrand's new USB chargers, which meet the latest electrical standards in South Africa, have been developed for quick installation, enhanced safety, user convenience and modern design.



Legrand monoblocs are pre-wired for easy installation in both new-build projects and retrofit installations in any environment, including homes, offices, hotels and commercial applications.

for easy installation in both new-build projects and retrofit installations in any environment, including homes, offices, hotels and commercial applications.

Legrand and its distributor network offer a techni-

cal advisory and support service throughout southern Africa.

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ElectroMechanica launches its 2020 catalogue

Leading supplier ElectroMechanica (EM) has launched the latest edition of its biannual product catalogue, which covers a broad range of new developments across each of the various categories. "We place emphasis on the continued introduction of global innovations and solutions, combined with comprehensive and personalised local support and services," says EM Director Richard Nobbs.

The latest brands in the 2020 catalogue include Chauvin Arnoux, a European leader with over 120 years of specialist experience in portable test and measurement instruments. New products include an upgraded Lovato contactor range, and the introduction of a new frame size. The Delta ME300 drives are a range of econo compact vector-controlled drives that offer essential built-in functionality, including multi-pump control, built-in brake chopper, RS-485 (Modbus), and support for both IM and PM motors.

The CPT PSM series of surge protection devices monitors the earthing system from within the surge protection device to give an indication of the status of the earth loop via multi-state LEDs, confirming that the device is installed properly, and the effectiveness of the surge protection. The new Socomec A40 panel-mounted power-monitoring device has been designed for measuring, monitoring, and reporting electrical energy. It offers a range of functions for measuring voltage, current, power, energy, and quality, and allows for the analysis of single- and three-phase loads.

All new products became available when the catalogue was officially launched at a customer open day at the EM head office in Ormonde, Johannesburg, in February. The 2020 catalogue was simultaneously made available at all branches and on the EM website.

"EM has been serving the electrical industry for over 35 years and remains totally committed to its founding principle of supplying Africa with world-leading, high-quality products, brought to you by people passionate about service," Nobbs outlines.

CEO Dave van den Berg, who established the company in 1984, produced the very first catalogue by hand. Today, while he is still involved in the decision-making process as to what products to include in the catalogue, an extensive marketing, sales, technical, operations and finance team is involved in the two-year period it takes to compile and produce the catalogue. Customer feedback is considered critical to the team and to Van den Berg.

Enquiries: +27 (0)11 249 5000



A Chauvin Arnoux hand-held digital multimeter.



The Delta ME300 series is a new-generation compact vector control drive.



A CPT surge-protection device.

Some unanticipated results of Pratley's R&D efforts



Developing new products, and finding innovative answers to specific customer applications, is all in a day's work for the research and development (R&D) division at Pratley. This two-pronged approach has resulted in ongoing success for the manufacturer. "A strong R&D mind-set means the team is always open to finding solutions to problems," CEO Kim Pratley explains.

Together with sons Andrew and Charles, who are passionate about the R&D side of the business, Kim points out that Pratley as a company is predicated on its R&D capability. It also underlines its universal customer manifesto that any of its products will outperform its global equivalent.

Sometimes Pratley's R&D efforts result in happy coincidences. For example, Pratliperl was originally developed with low-cost housing in mind. This lightweight, thermally-insulating cement aggregate is now widely used in high-end houses and structures as a fireproof plaster that doubles the thermal insulation of walls.

Such an eco-friendly application saves energy and running costs. It is also ideal as a screed where additional building floors are required. Such has been the success of Pratliperl that it is has been used in applications ranging from the Loftus Versfeld Stadium to the Sandton City parking lot.

However, a strong R&D component goes hand-in-hand with the ability to shelve products that aren't working in the market, and Pratley has had a few of those. "Sometimes even the best products don't find a product-market fit," Kim Pratley notes.

In one memorable case, this was simply because the product worked too well. "We launched a product called Wham a few years ago because customers kept requesting an ultra-quick superglue," Andrew Pratley recalls. "We wanted to design

the fastest adhesive in the world, and we did. But it ended up being practically unusable. It was just too quick for the end user. It was an interesting lesson for the team in giving customers what they need, and not necessarily what they ask for."

Kim Pratley's favourite experimental product was Palm Cleaner, essentially a glue that stuck to dirt and then rolled off the hands in little balls. "We wanted a solution for dirty palms after you have changed a tyre, for example." While extremely effective, consumers did not read the instructions, and thought it was a hand cleaner. The result was that Palm Cleaner got stuck to the fine hairs on the back of people's hands.

It's these experiments that make Pratley's R&D process so exciting, and occasionally unpredictable. "We look for problems that have not been solved, or where we can do it better. This involves a lot of trial and error, and we do not always get it right," Charles Pratley stresses. "That is the cost of R&D. You cannot let your ego or personal feelings get in the way of product research."

Pratley has a department that tests everything in every way that the market could use it. "Interestingly, we often find that we test a product for one thing and end up finding a host of other applications for it. Sometimes the larger market is the one we didn't originally develop the product for," Kim Pratley elaborates.

"It's an interesting process. You can't make assumptions about any market, even one you know well, and if you aren't looking at solutions from every angle, you could miss a huge opportunity. This thinking has become ingrained at Pratley," Kim Pratley concludes.

Enquiries: +27 (0)11 955 2190



Getting power to distant places

Every so often somebody (normally a farmer) has a need to get an electrical power supply to a distant point. It is normally for the supply for a pump or worker's cottage. The supply can be single-phase or three-phase. Depending on the current and the length of the cable, the volt drop from the sending end of the cable to the receiving end can be such that the voltage at the receiving end is too low to supply the load. A volt drop of 10% is borderline: more than this will cause problems. If you want the minimum voltage drop it is best to use a three-phase system (which requires a four core cable) since the current in any conductor for a three-phase system is less than a single-phase system (which requires a three core cable, live, neutral and earth). For example, for a 5 kW load in a single-phase system the current is about $5000 \text{ W} / 220 \text{ V} = 22,7 \text{ A}$. For a three-phase system the current is about $5000 \text{ W} / 380 \text{ V} / 1,732 = 7,59 \text{ A}$.

However, four core cables are more expensive than three core cables so a balance has to be struck between costs and volt drops. When the distance between the load and the receiver is significant, a cable can't be used – for example a 35 mm² three core cable supplying 80 A at 200 m would have a 10% voltage drop. At a greater distance the 35 mm² cable won't do the job and a bigger cable has to be used.

Cable volt drop is caused by the resistance and inductance of the cable. Thus, if a power line and not a cable is used to supply the load, things get simpler since the inductance of the power line is not that great. There

is a trap here – the power line has to be constructed (it can't be bought off the shelf) and it is very easy to mess up the construction of the power line. It would be thought that power line construction is not difficult, but this is deceptive: between power line pole cross arms the conductor hangs in a parabolic shape called a catenary. From one cross arm of one pole of the power line to the other the catenary will exert a certain weight. This weight must be balanced by the weight of the next catenary. If the ground is level and the poles evenly spaced there will be no problem. If not, the poles will pull each other towards each other. You can see this everywhere in this country. The simplest power line has a live and a neutral and the poles are earthed with grounding wires. The power line conductors are aluminium stranded reinforced conductor (ASCR), commonly available from suppliers. A three-phase power line has three conductors and a neutral.

If it is desired to supply a load which is really, really far (say 2 km) then it

is best to increase the voltage of the power line. To do this a single-phase 220 V/1000 V step-up transformer is used at one end and a 1000 V/ 220 V step-down at the other end (for three phase it would be 380 V/1000 V three-phase). Note well that in doing all this you must get a compliance certificate from a registered electrician.

A final way of supplying very, very far distant loads is to use a single wire earth return system (SWER). This is, by definition, a single-phase system with one conductor strung between poles and the neutral created by using the ground as a conductor. Here the power line voltage has to be at least 6600 V. SWER lines in southern Africa can be very long (~ 10 km). It hardly has to be said that electricity kills and in RSA deaths and fires result from people trying to steal copper or aluminium cables. Cables in the ground are protected to some degree. On power poles they are not. The possibility of injury, death or theft must always be considered...

12 UPS systems provided for local coal mine supplier

BECKER MINING SOUTH AFRICA has supplied 12 uninterruptible power supply (UPS) systems to a local coal mine supplier to enhance safety and prevent unnecessary downtime. The specially-designed UPS systems ensure uninterrupted operation of the mine's programmable logic controller (PLC), particularly during power outages.

"The UPS system was developed by Becker Mining specialists, as a dependable power back-up system for the PLC system, which controls critical functions at the mine. These operations include all installed conveyor belt safety systems, such as gas monitoring and speed, slippage and load control instrumentation," explains Nico de Lange, Vice President: Operations & Systems, Becker Mining South Africa. "In the event of a power outage, the PLC would be unable to function without the back-up of a reliable UPS system. The interruption of belt system and sensor monitoring would prevent normal operations and lead to costly downtime, and could also become a major safety issue."

During a power outage, the UPS system needs to supply the specified load to ensure the electrical system continues efficient operation, for a specified time period. In this project, the 3.5 kVA system, with a two-hour back-up time, has been designed to supply a full load current of 15 A at 220 V. This ensures the PLC system, with multiple outlets, runs efficiently in the event of a power failure.

As the PLC system consists of many electronic devices, a pure sine wave is required to reduce induced electrical noises generated from the circuit. Without this critical feature, electronic components could malfunction and become a major safety risk, also causing costly downtime.

The enclosures of Becker's UPS systems have an International Protection rating of IP 65, which guards against the ingress of dust and jets of water. This protection feature is particularly important in arduous underground conditions.

The inter-connected UPS systems, with Ethernet and RS232 connectivity, can be controlled or remotely managed and monitored from the control station. This means in the event of a system-failure, critical decisions can be made ahead of schedule, to prevent a disaster or unnecessary downtime.

Becker Mining South Africa offers a technical advisory and support service throughout the country to ensure total reliability of its extensive range of equipment.

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UCT chooses Tektronix instruments for electrical training laboratory

COMTEST, local partner to Tektronix, recently assisted the University of Cape Town (UCT) physics department to refurbish its electrical training laboratory.

All existing analogue oscilloscopes were replaced with 132 new Tektronix TB-S1052B-EDU digital oscilloscopes. These state-of-the-art instruments have the ability to load educational course notes and step-by-step guides for the students directly onto the scope, and are perfect for this application.

Under the direction of Physics Head of Department, Andy Buffler, a substantial investment was made to fully update the laboratory, just one of many steps taken to keep UCT ahead of the times with its education practices.

Recently, the first practical run in the new laboratory was carried out, and students were tasked with a practical test using the oscilloscope, function generator, power supply and some unknown resistors.

Comtest's Cape Town manager, Kristo Engelbrecht says, "Equipping and refurbishing UCT's electrical training laboratory was a very satisfying project, knowing that the equipment supplied will do the tasks required, and more besides. We are confident that UCT's physics students will be well-equipped for the workplace by virtue of the cutting-edge Tektronix equipment installed in the electrical training laboratory".



A workstation with Tektronix oscilloscope, function generator and power supply.



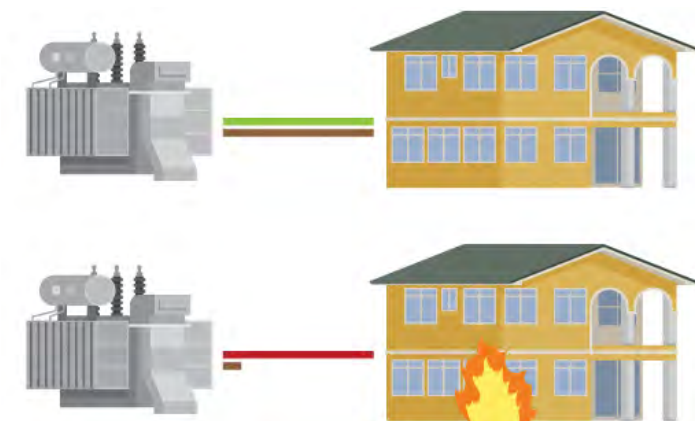
The first practical run at UCT's newly refurbished electrical training physics laboratory.



The Teaching Oscilloscope Users' graphic of basic features and functions.

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The impact of load-shedding



AVS15 micro, in single and 3-phase versions.

Load-shedding is just the tip of the iceberg when discussing bad power. We talk about the inconvenience of no power (blackout), but associated with this are other conditions causing damage and destruction to electrical and electronic equipment.

Poor maintenance and management of the distribution infrastructure results in load shedding, black outs (planned and unplanned), spikes and surges, power-back surges, over (high) and under (low) voltage, loss of neutral.

Load-shedding refers to the planned reduction of the country's demand on a limited supply of electricity. The motivation is to "avoid the total shutdown of the grid". But, to the general consumer we may appreciate it more when understanding that rather than the entire country receiving low (under) voltage (also known as 'brown out'), those who are being supplied with power are receiving the ideal nominal voltage (220-230 V).

South Africans traditionally understood the need for an Uninterruptible Power Supply (UPS) during those intermittent 'black-outs' and, for those with more drawn out power failures, the traditional solution was the generator. Now with escalating running costs of generators and the need for seamless continual power supply to essential loads, the demand for larger battery back-up (UPS) systems involving Inverters is coming to the fore. The rapid increase in the cost of mains power is resulting in alternative energy supplies such as wind and solar (photovoltaic) becoming popular. We are not talking IPPs (Independent Power

Producers), planning to supply the national grid, but private companies supplementing their daytime consumption with solar, and households adding solar to their grid tied Inverter-type back up power.

Power-back surges happen hand in hand with power cuts. When power is reconnected, it is usually accompanied by a surge which can be quite high and result in severe damage. Delaying the start-up and monitoring supply until it is safe is critical. The Sollatek AVS range protects against this event.

High voltage (also known as voltage swell or surge) – this is a sustained high level of voltage to typically >250V and up to 300+. This could be catastrophic if the voltage rises very high, very quickly. Here we would recommend using the Sollatek AVS range of products which will disconnect the power until it returns to normal.

Low voltage generally happens when the grid is overloaded, and you get excessive voltage drop on the distribution network. Sollatek's AVS range protects equipment, or where this is an irritatingly frequent occurrence Sollatek's voltage stabiliser would keep equipment working safer, for longer.

Loss of neutral happens due to an accident or sabotage. This results in the single-phase voltage rising to the three-phase level. Instead of getting a stable 230 V, the equipment will experience up to 415 V continuously, a common and serious event. The Sollatek AVS30 would protect against this.

Enquiries: sales@sollatek.co.za

Crabtree appoints new General Manager Operations

CRABTREE ELECTRICAL recently appointed Antony van Driel as General Manager Operations to oversee the operational side of the business and drive and maintain the already high-quality products from the company to the customer. Van Driel has an extensive history in Operations Management and was drawn to Crabtree being a market leader in the sector. "It is an excellent brand with superior quality, and I was impressed by the professional way daily business is conducted within the company," he says.

Van Driel's experience has come primarily in the food manufacturing industry, although he also has experience in motor manufacturing, chemicals and injection moulding. After matriculating at Dr. EG Jansen High School, van Driel studied Mechanical Engineering in Pretoria before completing an BBA degree. "I grew up with plastic injection moulding," he says, "And I believe my grandfather had one of the first plastic injection moulding machines in the country, making components for Kodak when it was still around."

His initial impression of the electrical industry is a, "very exciting, challenging and competitive market driven by price and quality". As a developing-country exporter, he believes Crabtree will be at an advantage by manufacturing high volume products locally, thus positioning Crabtree's extensive product range more competitively in the South African market. "In this context, developing countries such as us have started benefiting from a production shift away from China and having local stable supply will become increasingly important over time. The company hopes to invest in automation over time and to further strengthen its position as a global manufacturer of electrical devices; Crabtree is well placed, with backing from Siemens, to meet the challenges ahead and it is an exciting opportunity of growth that will benefit South Africa," he explains

Manufacturing; however, tends always to face



Antony van Driel, General Manager Operations

challenges and opportunities. The need to control costs continues to be a priority and supply capabilities will remain a core focus for Crabtree. The matter of imported and locally manufactured electrical equipment which does not conform to any recognised standard, but which is still sold to the unsuspecting end-user, is another challenge he foresees.

When asked about his goals for the company, van Driel states that his short-term goal is simply to break into the field. "I need to start building a strong presence in the industry, working for a company I respect and doing a job that I enjoy. My long-term goals are to earn new responsibilities within the company, ultimately helping the company to succeed in the long term."

On a macro level, he believes that the outlook for South Africa is currently driven by Eskom, which will be the main driver for business confidence, investments and eventually economic growth. "Should we see an improvement, then the growth will be in line. However, I am looking forward to this new adventure in the electrical industry."

Enquiries: +27 (0)11 874 7693

Ruggedized display for agriculture, industrial and construction applications



TOPCON POSITIONING GROUP has announced a pre-series release of its new OPUS B-Series display, available for the developer, systems integrator and manufacturer market for user-interface design and implementation research. It is the first of a new family of displays designed for rapid, customisable implementation in agricultural, industrial and construction applications.

"We believe the versatility of the display will make it very attractive for a wide range of machine manufacturer applications. Plus, the ability to quickly configure the look and functionality will contribute to faster delivery times to market for their products," says Thilo Nagel, general manager, Topcon Electronics.

The display features a five-inch touchscreen, aluminium housing and customisable frame that

can support the colour and branding choices of the manufacturer incorporating it into its products. Its IP-66 rating and operating range of -30°C to 75°C+ allow the display to be used in broad and extreme applications and environments.

"We are excited to introduce our newest ruggedized display to the market. We have integrated the best parts of two popular Topcon offerings in a new package. Screen size, high-performance processor and moderate pricing place the new device between our smaller A3 and larger A6 offerings," says Nagel.

The display can be customised using familiar programming languages and tools including OPUS™ Projektor, CODESYS © and C++/C++.

Enquiries: www.topconpositioning.com



You get a reward. They get a reward. Everybody gets a reward!

The now-famous Oprah Winfrey car giveaway where every person in the audience got to win a car was all about rewarding loyalty. It was the ultimate recognition of the value to her audience, giving them something magnificent as a form of thanks. While that particular loyalty system isn't sustainable, the Citiq Installation Club definitely is. This loyalty system is designed to thank our suppliers and installers who are involved in our value chain. This loyalty programme was designed by electrical industry experts for electrical contractors and it's structured so that every business and individual is recognised for their contribution to Citiq Prepaid.

"We designed the Citiq Installation Club (CIC) to financially reward every partner at every level of the supply chain," says Carel Scheepers, General Manager: Sales at Citiq Prepaid. "It's the first reward programme of its kind as it not only recognises the value of the electrical contractor, but also the wholesaler and the installer. Using a points-based system that's accessible and easy to use, the CIC is focused on giving something back to the channel because we believe that our success is entirely thanks to their hard work."

Launched in July 2018, the CIC has been successfully giving something back to its channel for two years, with many partners appreciating the benefits it brings to the proverbial table. The system has been structured to make it very easy for contractors and wholesalers to earn points and get rewards. For Scheepers, ease of use was critical when designing the platform.

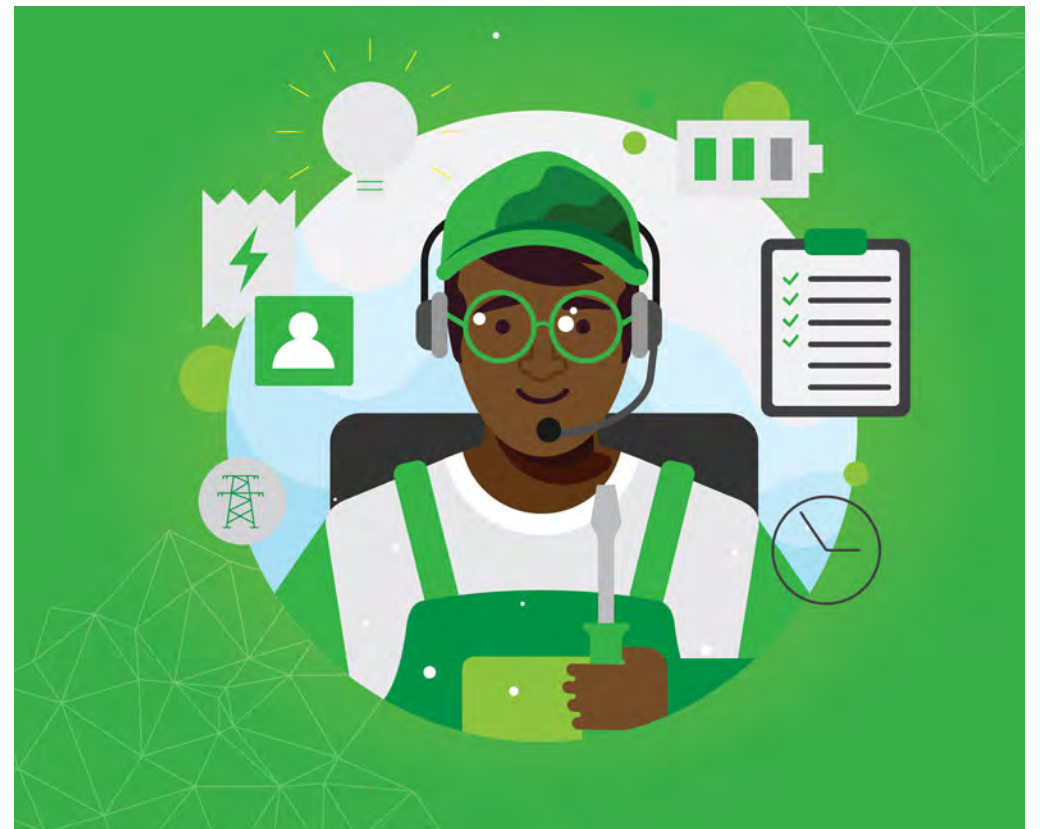
"We know that people are busy and that their lives

are filled with admin and that they're inundated with information and boxes to tick, so the CIC sidesteps complexity in favour of simplicity," he explains. "Contractors can join by visiting a wholesaler or electrical retail stockist of their choice, or by calling us. Our call centre agents will talk you through the process and get you set up on the system in only a few minutes."

Wholesalers that are interested in benefitting from the CIC platform can either call the Citiq Prepaid call centre on the number above or, if you're already a Citiq Prepaid member, log in at cic.citiqprepaid.co.za. Once that's done, your world of rewards awaits. The CIC offers you a variety of benefits dependent on your role. If you're an electrical contractor, you will receive a R500 voucher to redeem at your selected wholesaler once you reach 20 points. You gain one point per Citiq Prepaid meter you install. If you're a wholesaler, then you get rewarded for every contractor that selects you as their preferred outlet. The more contractors that select you as their preferred wholesaler, the greater your opportunity for rewards.

"The wholesaler and retailer benefit from the funds being brought into their stores by the contractors redeeming their reward vouchers while, contractors benefit because they get to spend up to R500," says Scheepers. "The entire process has been designed to be as cyclical as possible, providing everyone in the value chain with mutual benefit and support."

The CIC has seen strong traction in the market since its inception and continues to grow thanks to its solid and reliable reward system and accessible registration process. Contractors have benefitted



from the financial rewards while wholesalers have leveraged the loyalty programme to forge deeper relationships with their customers, the contractors.

"We have a geographically distributed sales team that can provide you with ongoing support throughout your time with us and CIC," concludes Scheep-

ers. "Our call centres are a dedicated resource for our contractors to ensure that they receive excellent service and personalised care when they join the CIC."

Enquiries: +27 (0)87 55 111 55



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Chrome industrial power-supply series from Delta

The Chrome series of industrial power supplies from power supply manufacturer Delta is available from ElectroMechanica (EM). The circuit breakers (h) 91 x (d) 55.6 mm, influenced by output 10 W/18 mm, 30 W/53 mm, 60 W/71 mm, and 91.2 W/90 mm. These compact, high-efficiency power supplies are ideal for installations in small cabinets and domestic and commercial distribution board applications.

It features Class II double insulation with a universal input voltage range of 90...264 Vac at 47 to 63 Hz, with no deration for the entire voltage range. Available with 5, 12 and 24 V dc outputs, it provides full power up to 55°C in 10, 30, 60 and 91.2 W NEC Class 2 and Limited Power Source approvals.

In addition, it conforms to harmonic current IEC/EN 6100-3-2 Class A, with safety approvals in accordance with IEC/EN/UL 60950-1 and UL 508 (industrial standard).

The power series is complemented by DC-UPS module DRU-2410ACZ suitable for 24 V systems when connected to an external battery, with zero switchover time from loss of DC input to battery operation for secure, maintained supply even after mains failure.

Additional features are built-in diagnostic monitoring and frontal LED indication of DC OK, Battery Charging, Battery Discharging, Battery Fail and Reverse Polarity.

Enquires: www.em.co.za



DIN rail redundancy power modules

RS Components has announced availability of a new series of DIN rail-mount redundancy power modules from TDK-Lambda, a group company of TDK Corporation and a maker of highly reliable power supplies for industrial equipment worldwide.

Designed for automation and general-purpose industrial applications, the DRM40 and DRM40B power modules offer 20 to 40 A current handling capability and can be used in N+1 redundancy systems and applications. Alternatively, two supplies can be placed in parallel for additional power.

A key feature of the higher-end DRM40 unit is a current-balancing LED indicator, which turns on when two power supplies have been adjusted to deliver the same current, thereby making it easier to ensure load sharing. In addition, two isolated alarm signals indicate the output voltage status of each power supply, making it simple to enable remote fault monitoring. However, a lower cost unit – the DRM40B – is also available for applications not demanding these advanced features.

Designed to take up less space on the DIN rail, the DRM40 series comes in a highly compact unit with dimensions of only 35 x 125 x 124 mm. Offering an operating temperature range of -40 to 70°C, key electrical characteristics include an internal voltage drop of only 200 mV at 40 A, enabling low power loss, a wide input voltage range of 10 to 30 V, and maximum input current of 20 A on each of the unit's two inputs, plus a peak input capability of 2 x 30 A for four seconds.

Enquires: +27 (0)11 691 9300



Protective extra-low voltage range added to drive portfolio

Simatic Micro-Drive F-TM Servodrive is the newest member of the Simatic Micro-Drive family. The servo drive system comprises a Simatic Micro-Drive F-TM Servodrive drive controller module, the Simatic ET 200SP and universal motors and plug-in cables. It adds to the Simatic Micro-Drive PDC (ProfiDriveControl) and completes the drive portfolio in the protective extra-low voltage range for EC motors from 24 to 48 V. The drive controller module supports dynamic and accurate positioning in a small amount of space in the performance range up to 280 W.

Simatic Micro-Drive F-TM Servodrive is integrated into the TIA Portal just like the Simatic Micro-Drive PDC. Easy connection with plug-in connections to

Simatic controllers and integration into the automation platform shortens engineering time for the Simatic Micro-Drive family and simplifies commissioning and servicing. Communication is via Profinet.

The Simatic Micro-Drive servo drive system is ideal for use in positioning tasks, in production machines, in shuttles for stacker cranes and in automated guided vehicle systems (AGVs). In order to meet customer requirements with maximum flexibility, Siemens uses products from the Siemens product partner program for Simatic Micro-Drive for the motors (Dunkermotoren, ebm-papst) and plug-in cables (Harting, KnorrTec).

Enquires: www.siemens.com/micro-drive

A completely unique local MCC solution



A WEG fixed pattern housed in an E-house fabricated by Zest WEG.

Assemblies that are correctly operated, properly maintained, well designed and verified in accordance with the IEC 61439 series very rarely incur an internal arcing fault in service. However, if periodic maintenance is not adhered to, the potential consequences when such a fault occurs become more severe. This, together with the ongoing pursuit for ever greater safety, is bringing internal arcing faults within assemblies to the fore.

In the belief that their personnel will be 'safe', increasingly, users of low-voltage assemblies are calling for them to comply with IEC 61641; *Enclosed low-voltage switchgear and controlgear assemblies – Guide for testing under conditions of arcing due to internal fault*. Since the document is a TR (Technical Report) it does not carry the full weight of the law in the same way that a full Standard can.

Whilst in some circumstances specifying that equipment has to 'comply' with IEC/TR 61641 will lead to greater operator safety and reduced down time in the event of an arcing fault within an assembly, it is not a 'cure for all ails'. Before specifying 'compliance' with this requirement an objective assessment should be carried out considering the whole application to determine if 'compliance' with 61641 brings worthwhile benefits.

Making the right choice in respect of an assembly 'complying' with IEC 61641 is complex. It requires a good understanding of the intended application for the assembly, knowledge of the design and use of assemblies and a detailed understanding of IEC 61641. WEG Automation Africa is positioned to provide everything from the entry level Motor Control Centres – still fully compliant with IEC 61439, right up to the most sophisticated Motor Control Centres in numerous configurations. "We can manufacture front

access, back access, and even back-to-back MCC in both fixed pattern and fully withdrawable," explains Bevan Richards, Executive of Zest WEG's division WEG Automation Africa. "We place a lot of focus on IEC 61641 and regularly explain to our clients that it is the best way to go to ensure safety for their staff. The traditional fixed pattern motor control centre that has been used extensively in the mining industry in Sub Saharan Africa, with the full specifications for IEC 61439, and IEC 61641 can be offered. On the other hand, we can also offer the most sophisticated fully withdrawable motor control centre for the very high-end users in petrochemical, gas and oil also with the full specifications for IEC 61439 and IEC 61641."

Tyrone Willemse, Business Development Consultant at WEG Automation Africa notes that while there have been numerous articles written on IEC 61641, there are always new people in the industry, and often, there is a misinterpretation of the information.

As a globally competitive local manufacturer in South Africa, Richards notes that you have to find partners or consultants to help you develop products which not only comply to the standards, but also meet customer's expectations. "As this industry is so technical, it takes a lot of time and you need a huge engineering team." Zest WEG is in the enviable position of being part of a global group which is at the forefront of technology. "Our R&D team in Brazil has just tested our most sophisticated MCC yet – it is a fully withdrawable Motor Control Centre, which they have tested successfully up to a fault level of 100 KA with IEC 61461," he says.

Enquires: www.zestweg.com

Causes of internal arcing faults

Internal arcing faults within assemblies occur for a number of reasons, for example:

- Insulation breakdown
- Contamination or moisture on insulation leading to tracking
- Faults in materials or workmanship
- Load current arcing across a loose or deteriorating joint
- A foreign object within the assembly, e.g. a tool
- Lack of, or inappropriate, maintenance
- Inappropriate operating conditions
- Incorrect operation
- Entry of vermin
- Operator errors while working adjacent to live equipment.

Effects of an internal arcing fault

When an internal arcing fault occurs within an assembly, a large amount of energy is released in a fraction of a second. The amount of energy released is a function of the prospective short circuit current, the arc resistance and the time it takes the protection upstream of the fault to operate, or, the time taken for the arc to self-extinguish. Typically, with a 400 V system the arc fault current is 60% of the prospective short circuit current. If the prospective short circuit current is reduced and/or protection upstream of the fault operates quicker, e.g. current limiting type

compared with the definite minimum time protection, the energy released and the consequences of the arcing fault are significantly reduced.

An arc within an assembly creates a very high temperature and a conducting ionised gas. Assuming the assembly is enclosed, the energy released causes a high gas pressure within the enclosure, often 'blowing' covers off or doors open. Generally, the magnetic forces associated with the fault current drive the arc away from the source of the current and towards the extremities of the assembly. Unless the arc is blocked by robust barriers it will generally be at the remote end of the main busbars or other main conductors. On some occasions the arc will burn clear before the upstream protection operates. Generally, it will cause significant damage to the assembly; allowing the emission of the high temperature ionised gas and vaporised metal. Gases and vapours emitted can, if a person is in the path of the emissions, cause serious burns and in extreme cases, death.

Unfortunately, low voltage arcs are not totally predictable. Seemingly identical conditions can give different results. On one occasion the arc can self-extinguish; on others, it can persist until interrupted by the protection. Alternatively, the arc can propagate in different ways for apparently identical conditions.



Game-changing plastic range of plugs and connectors

AMPCO, specialist industrial plugs and sockets manufacturer and supplier for over 30 years, proudly unveiled the innovative AMPCO Gen 2 plastic plug and connector range to the commercial, mining and industrial sectors across the African continent during a press conference at the end of last year at sister company, Powermite's head office in Roodepoort, Johannesburg.

"The motivation behind the introduction of this advanced plastic range stems from our mandate to further expand and add extra value to our current locally manufactured metal and plastic range," explains Powermite Director, Donovan Marks. "We are extremely proud to offer these state-of-the-art innovations which are poised to set the benchmark in robustness, efficiency and performance. This new-kid-on-the-block exudes premium quality and is competitively priced to ultimately benefit customers by cost-effectively maximising their productivity potential."

The compact and robust AMPCO Gen 2 plastic range is forged from Polyamide 6 and PC/ABS. According to Marks, these virgin grade plastic materials put the Gen 2 in a league of its own and provide a host of enhanced benefits: Impact resistance combined with high robustness; high thermal stability (self-extinguishing); great insulating qualities; high disruptive strength; UV resistance according to ISO 4892-2 as well as high abrasion and weather resistance. The plug and socket ranges are internationally standardised by the International Electrotechnical Commission, the world organisation for international standardisation of electrical equipment: IEC 60309-1 and IEC 60309-2 equivalent to the European Norms EN 60309 part 1 and EN 60309 part 2.

With a focus on extending product lifespan, the material also delivers excellent resistance to an array of chemicals and is free from cadmium and halogen. The IP44 and IP67 rated Gen 2 range is suited to arduous applications where portable electrical equipment is used such as electric motor driven and heating machinery, welding, emergency generator supplies, IT installations, quarrying, mining, water purification as well as portable site and stage lighting.

The comprehensive AMPCO Gen 2 plastic range is offered in screw less quick connect and standard screw terminal connecting and includes industrial plugs and sockets 16 A-125 A, connectors, plastic cable extension reels (XREEL®), heavy-duty engineering plastic site distribution boxes with socket outlets, heavy-duty rubber distribution combination boxes, couplers, wall and flanged sockets 16 A-125 A, switched interlocked sockets as well as the PRCD-S+ inline portable protection device.

Breaking the cable reel barrier, AMPCO's high impact resistance XREEL® is packed with superior-quality components and features an ergonomic handle, a thermal circuit breaker, a brake mechanism with central spindle, drum openings for water drainage, a stable crank and two parking positions for the plug.

The AMPCO Gen 2 heavy-duty engineering plastic and rubber site distribution boxes with socket outlets can be customised and are at home in gruelling working conditions such as petrochemical plants, dock yards and heavy engineering conditions.

The advanced PRCD-S+ (earth leakage) 30 mA at 230 V is a portable inline mobile personal protection device to prevent electrical injury especially in construction sites. With operators regularly connecting electrical equipment, the risk of accidents is high. Thanks to its ability to recognise measurement errors, under- and over-voltage, conductor interruptions and wiring errors from the source system, the PRCD-S+ will not switch on, safeguarding operators against incorrect electrical installations. This easy-to-use, handheld protection device features an LED signal unit which senses error situations, displays a permanent status indication, and disconnects the supply.

Complementing the Gen 2 plastic range is AMPCO's market leading metal and existing plastic range. Complying with the highest European quality standards, the range consists of plugs, socket outlets and isolators, with and without earth leakage protection. The metal single phase socket outlets are perfectly suited to ports

and harbours as well as for applications in high humidity areas.

Wrapping up, Marks says that are extremely excited about the new Gen 2 plastic range. "We are confident that these advanced products will play a key role in customers achieving their productivity and profitability goals."

AMPCO, part of the prominent Hudaco group of companies, became a sister company of Powermite in the early 1970s. AMPCO produces products renowned for their quality, reliability and safety; the company's range of CEE products is manufactured to SANS 60309 Part 1 and Part 2 standards. AMPCO supports its extensive product range from branches located in Rustenburg, Witbank, Durban, Richards Bay and Cape Town, supported by a distributor network to deliver exceptional product and service solutions to the customer's doorstep.

Enquiries: www.powermite.co.za



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MANUFACTURERS	CONTACTS	CABLE SUPPORT SYSTEMS	MOTOR PROTECTION/SURGE PROTECTION
<p>ABB South Africa ACTOM Protection and Control Allbro Alvern Cables Brady SA/Grafo CCG Cable Terminations Danfoss Dry Ice International Electrical Boards SA HellermannTyton JB Switchgear Solutions Legrand Matelec Mimic Components O-Line Phambili Interface Phoenix Contact Pratley Sabelco Electrical Industries Siemens Schneider Electric South Africa South Ocean Electric Wire Company Stone Stamcor Superlume SW Products WEG</p>	<p>Matelec Yann Leclezio Mimic Components Edwin Wakefield O-Line Sales Phambili Alex Lockyer Phoenix Contact Carl Coetzer Pratley Eldon Kruger Pretoria Motor Control Gear Products (PMCG) Hannes Swartz/ John Vorster Sabelco Electrical Industries Marc Moreau Schneider Electric South Africa Sales SEW-Eurodrive Clive O'Reilly Siemens Kaylin Pather South Ocean Electric Wire Company Yasmin Mahomed Stone Stamcor Mark Talbot SW Products Louis Pelser Superlume Willie Garbers Swan Electrical Distributors Albert Pienaar Voltex Steve Lea Waco Jaco Coetzee Zap Wholesalers Sales Zest WEG Group Sales</p>	<p>Cabstrut Full range of cable support systems DM Agencies Legrand products Electrahertz Full range of cable support systems HellermannTyton Slotted and solid trunking Magnet Group Range of cable support systems Matelec Cable glands; plastic saddles; galvanised saddles; hospital saddles O-Line Full range of cable support systems Phoenix Contact Trunking; tubing; spirals; cable clamps; plastic protective tubing; variety of saddles SW Products Steel saddles Voltex Full range of cable support systems Zap Wholesalers Full range of cable support systems</p>	<p>DRH Components Newelec electronic motor protection relays; customised protection relays to suit motor application Electech LSis Full range of motor and surge protection Electrahertz Full range of motor protection relays Electrical Boards SA Full range of motor and surge protection HellermannTyton Full range of motor and surge protection Inher SA P&B Protection Relays Legrand Motor protection; circuit breakers; surge protection Magnet Group Motor and surge protection equipment Major Tech MTD6 – appliance surge protector MCE Electric Hyundai electronic motor protection relay; Onesto surge arresters; Schenker mini rail surge arresters Mimic Components Manufactures and distributes range of motor and surge protection equipment O-Line Full range of motor and surge protection equipment Phambili Full range of motor, surge protection Phoenix Contact Full range of surge protection Pretoria Motor Control Gear Products (PMCG) Full range of motor protection Sabelco Electrical Industries Full range of motor protection equipment Schneider Electric South Africa Full range of motor protection Voltex Full range of motor and surge protection Waco Full range of motor and surge protection Zest WEG Group Full range of thermal and thermal/magnetic overload protection devices as well as electronic overload protection. Fanox surge arrester range Class C Type II</p>
DISTRIBUTORS	DRIVES/SOFT-STARTERS	GEARBOXES FOR MOTOR APPLICATIONS	CABLE MANAGEMENT ACCESSORIES
<p>ACDC Dynamics ACTOM Electrical Products ARB Electrical Wholesalers Atlas Belco Cabstrut Consortium Cables Crabtree South Africa Denver Technical Products DM Agencies DRH Components Dry Ice International Electech LSis Electrahertz Eurolux HellermannTyton Inher SA Magnet Group Major Tech Matelec MCE Electric Mimic Components Phambili Interface Pretoria Motor Control Gear Products (PMCG) Sabelco Electrical Industries SEW-Eurodrive Stone Stamcor Superlume Swan Electrical Distributors Voltex Waco Zap Wholesalers Zest WEG Group</p>	<p>ABB South Africa Full range of drives and soft-starters ACDC Dynamics Vacon range of VSDs and accessories; Aucom range of soft starters and MV soft-starters; Itegra Intelligent energy efficient range of soft starters ACTOM Protection & Control VSD panels; soft-starters Atlas Full range of drives, soft-starters Belco Full range of drives, soft starters ARB Electrical Full range of drives/soft starters Danfoss Full range of drives/soft starters Electech LSis Full range of drives, soft starters Electrahertz Full range of drives/soft starters Magnet Group Range of drives/soft starters MCE Electric Hyundai N-series variable speed drives Schneider Electric South Africa Full range of drives/soft starters SEW-Eurodrive Range of drives and softstarters Siemens Range of drives Voltex Full range of drives, soft-starters Zap Wholesalers Full range of drives, soft-starters Zest WEG Group Full range of drives/soft starters: VSDs – Low Voltage Drives 0 – 2 850 A, single phase and three phase; Medium Voltage Drives 85 – 30648 A; Soft Starters – Low Voltage Soft Starter 0 – 2 424 A; Medium Voltage Soft Starters 70 – 360 A</p>	<p>ABB South Africa Full range of gearboxes for motor applications ARB Electrical Wholesalers Gearboxes for motor applications Dry Ice International Cleaning of motors and gearboxes with dry ice blasting SEW-Eurodrive Range of gearboxes for motor applications Siemens Range of gearboxes for motor applications Stone Stamcor Gearboxes for motor applications</p>	<p>ABB South Africa Range of cable accessories ACDC Dynamics Brady labelling solutions; cable tie and cable management systems ACTOM Electrical Products Complete range of accessories for all types of installations Allbro Full range of cable management accessories ARB Electrical Wholesalers Full range of cable management accessories Belco Full range of cable management accessories Brady SA/Grafo Cable and wire identification solutions, labels, printers Cabstrut Full range of cable management accessories Consortium Cables Trench covers DM Agencies Legrand products Electrahertz Full range of cable management systems Eurolux Range available HellermannTyton Full range of cable ties; protective sleeves and labels including printers Legrand Full range of cable ties and marking systems Magnet Group Range of cable ties Mimic Components Manufactures and distributes range of cable management accessories O-Line Full range of cable management accessories Phambili Full range of marking and label systems Phoenix Contact Cable ties; marking and labelling Pretoria Motor Control Gear Products (PMCG) Full range of cable management accessories Schneider Electric South Africa Full range of cable management accessories SW Products Steel conduit fittings Voltex Full range of cable management accessories Waco Full range of cable management accessories Zap Wholesalers Full range of cable management accessories</p>
CONTACTS	ARMOURED/SHIELDED CABLES	CONTACTORS/BREAKERS/RELAYS	DISPLAYS
<p>ABB South Africa Customer contact centre ACDC Dynamics Elmari Erasmus/Dirk Klynsmith ACTOM Electrical Products Russel Ramsden ACTOM Protection & Control Faisal Hoosen Allbro Sales Alvern Cables Stephen Liasides ARB Electrical Wholesalers Sales Atlas Annie Storar Belco Shiraj Wentzel Brady SA/Grafo Morne Louw Cabstrut Juanita Kanagan CCG Cable Terminations Arthur Cameron Consortium Cables Martin Modlin Crabtree South Africa Sales Danfoss Stephen Brown Denver Technical Products Mervyn Stocks DM Agencies David Alhadeff DRH Components Rob Hare Dry Ice International Johan van den Bergh Electech LSis Rose Schulz Electrahertz Frank Proude (Pta) Peet Lourens (Jhb) Electrical Boards SA Josh Berman Eurolux Sales HellermannTyton Ingrid Nicolaus Inher SA Johan van Staden JB Switchgear Solutions Johan Basson Legrand Johan Bosch Magnet Group Kevin Govender MCE Electric Sales Major Tech Werner Grobbelaar</p>	<p>ABB South Africa Range of armoured and shielded cables ACTOM Electrical Products Full range of armoured and shielded cables Alvern Cables Full range of armoured and shielded cables Atlas Full range of armoured and shielded cables Belco Full range of armoured and shielded cables Consortium Cables Full range of armoured and shielded cables DM Agencies Legrand products Electrahertz Full range of armoured/shielded cables HellermannTyton Rotary stripper; wire stripper and cutter Phoenix Contact Range of shielded cables Siemens Range of armoured, shielded cables South Ocean Electric Wire Company Range of armoured, shielded cables Swan Electrical Distributors Range of armoured, shielded cables Voltex Full range of armoured, shielded cables Zap Wholesalers Full range of armoured cables</p>	<p>ABB South Africa Full range of contactors, circuit breakers, relays Atlas Full range of contactors, breakers, relays ACDC Dynamics Gewiss, TC C&S and Terasaki contactors, breakers and relays; contactors in DIN, mini and vacuum; single pole, two-, three and four-pole; switchgear from 13 mm MCBs to MCCBs and ACBs; MCCBs rated from 20 A to 1 600 A; relays and accessories, MCB and MCCBs; TC; The Control Group India; Rele Italiana ACTOM Electrical Products Complete range of low voltage circuit breakers, isolators, earth leakage devices and wiring accessories ACTOM Protection & Control TAIAN contactors/relays ARB Electrical Wholesalers Full range of contactors, breakers, relays Belco Full range of contactors, breakers, relays Crabtree South Africa Schrack Technik range Denver Technical Products Hermetically sealed contactors for high current load up to 350A carry DM Agencies Legrand products DRH Components NL75 earth fault relay; DIN rail mounting relay; Auto ranging control voltage 24 to 230 Vac/dc; Six trip settings 30 mA to 3 A; Five trip delay settings 20 ms to 3 s; LED tell-tale trip indicators; Onboard or remote core balance CT option; local or remote rest Dry Ice International Cleaning of electrical apparatus with dry ice blasting Electech LSis Full range of contactors, breakers, relays Electrahertz Full range of contactors, breakers, relays Electrical Boards SA Full range of contactors, breakers, relays Eurolux Range available Legrand Full range of contactors, breakers, relays Magnet Group Range of contactors, breakers, relays Major Tech Comprehensive range of miniature circuit breakers 3 kA MCB series; 6 kA MCB series; earth leakage and isolator series MCE Electric MCE ac magnetic contactors; Onesto DIN rail modular contactors; Onesto circuit breakers; Schenker mini rail circuit breakers; relays and bases; Hyundai MCCBs and air circuit breakers Phambili Full range of contactors, breakers, relays Phoenix Contact Safety relays; interposing relays; motor starters Pretoria Motor Control Gear Products (PMCG) Full range of contactors, breakers, relays Schneider Electric South Africa Full range of contactors, breakers, relays Swan Electrical Distributors Full range of contactors, breakers, relays Voltex Full range of contactors, breakers, relays Waco Full range of contactors, breakers, relays Zap Wholesalers Full range of contactors, breakers, relays Zest WEG Group Complete range of contactors ranging from 7 - 800A, suitable for AC1 or AC3 use; miniature circuit breakers, moulded case circuit breakers, air circuit breakers and earth leakage devices</p>	<p>ABB South Africa Display units ACDC Dynamics Rhombberg, Entes, Sele, Contrel, Iskra, EzView and Orbis meters and displays; ammeters, volt meters; running hour meters, watt meters, frequency meters, digital and programmable ammeters and voltmeters, and multi-function meters ARB Electrical Wholesalers Full range of displays Atlas Full range of displays Belco Full range of displays DM Agencies Legrand products Electrahertz Full range of displays Mimic Components Manufactures and distributes range of display meters Phoenix Contact Full range of displays Pretoria Motor Control Gear Products (PMCG) Full range of displays Schneider Electric South Africa Full range of displays for meter readings Swan Electrical Distributors Complete range of meters Voltex Full range of displays Waco Full range of displays Zest WEG Group Electronic range of power factor meters as well as power meters</p>

FANS FOR MOTOR APPLICATIONS

ABB South Africa
Range of fans for motor applications

ACDC Dynamics
Various fans and ventilation solutions

ARB Electrical Wholesalers
Full range of fans for motor applications

Atlas
Full range of fans for motor applications

Bellco
Full range of fans for motor applications

Electrahertz
Full range of fans for motor applications

MCE Electric
MCE panel fans

Phambili
Full range of fans for motor applications

Sabelco Electrical Industries
Fans for motor applications

Schneider Electric South Africa
Full range of fans for motor applications

SEW-Eurodrive
Range of fans for motor applications

Voltex
Full range of fans for motor applications

WIRING AND WIRING ACCESSORIES FOR MOTOR APPLICATIONS

ABB South Africa
Full range of wiring and wiring accessories for motor applications

ACDC Dynamics
Wiring solutions for all applications

ACTOM Electrical Products
Full range of wiring and wiring accessories for motor applications

Allbro
Full range of wiring and wiring accessories for motor applications

Alvern Cables
Full range of wiring

ARB Electrical Wholesalers
Full range of wiring and wiring accessories for motor applications

Atlas Group
Full range of wiring and wiring accessories for motor applications

Bellco
Full range of wiring and wiring accessories for motor applications

DM Agencies
Legrand products

Electrahertz
Full range of wiring accessories for motor applications

HellermannTyton
Full range of wiring accessories, including tools

JB Switchgear Solutions
Full range of wiring and accessories for motor applications

Legrand
Full range of wiring accessories for motor applications

Magnet Group
Range of wiring accessories

MCE
Onesto industrial plugs, couplers, interlocked sockets IP44 and IP65

O-Line
Full range of wiring and wiring accessories for motor applications

Phambili
Full range of wiring and accessories for motor applications

Phoenix Contact
Range of wiring and wiring accessories

Schneider Electric South Africa
Full range of terminal blocks, disconnectors, cable ducting and enclosures

South Ocean Electric Wire Company
Range of wiring and wiring accessories for motor applications

Voltex
Full range of wiring and wiring accessories

Waco
Full range of wiring and wiring accessories

CABLE GLANDS/LUGS/FERRULES

ABB South Africa
Full range of cable glands, lugs and ferrules

ACDC Dynamics
Cable glands, lugs and ferrules in various materials for all applications

ACTOM Electrical Products
All termination and jointing requirements

ARB Electrical Wholesalers
Full range of cable glands, lugs and ferrules

Atlas Group
Full range of glands, lugs, ferrules

Bellco
Full range of glands, lugs, ferrules

CCG Cable Terminations
Wide range of cable glands

DM Agencies
Legrand products

Electrahertz
Full range of cable glands, lugs, ferrules

HellermannTyton
Full range of cable glands, lugs, ferrules

Legrand
IP68 cable glands; Cabstop cable glands

Magnet Group
Range of cable glands

O-Line
Full range of cable glands, lugs, ferrules

Phambili
Full range of cable glands, lugs, ferrules

Phoenix Contact
Full range of cable glands, lugs and ferrules

Pratley
Cable glands; Junction boxes

Schneider Electric South Africa
Cable ends; cable markers; crimping tools; wiring accessories; trunking

Stone Stamcor
Full range of copper, aluminium, bi-metallic compression lugs and ferrules; 11kV and 36 kV mechanical lugs and ferrules

Superlume
IP65 Cable connection glands straight, T-gland and X-gland

Swan Electrical Distributors
Range of cable glands, lugs, ferrules

SW Products
Copper lugs and ferrules

Voltex
Full range of cable glands, lugs and ferrules

Waco
Full range of cable glands, lugs and ferrules

Zap Wholesalers
Full range of cable glands, lugs and ferrules

FLAMEPROOF

ACDC Dynamics
Flameproof lighting and beacons supplier: audible and visual alarms; beacons; industrial lighting; gas sensors; safety sensors, conveyor pull-wire trip switches, glands, isolators, motor starters, pushbuttons; pilot lights, sirens; LED and energy efficient light solutions for industrial applications

FLAMEPROOF

Allbro
Flameproof products

ARB Electrical Wholesalers
Full range of flameproof products

Bellco
Full range of flameproof products

CCG Cable Terminations
Range of flameproof products

DM Agencies
Legrand products

Electrahertz
Full range of flameproof products

Eurolux
Range available

Magnet Group
Range of flameproof equipment

Mimic Components
Distributes range of flameproof indicators

Phambili
Full range of flameproof products

Superlume
Zone rated lighting fixtures

Voltex
Full range of flameproof products

Waco
Full range of flameproof products

CONTROLS FOR MOTOR APPLICATIONS

ABB South Africa
Controls for motor applications

ACDC Dynamics
C&S, Gewiss, Pompei and Deca ranges of pushbuttons, switches and controls for various applications

ACTOM Electrical Products
Full range of controls for motor applications

ACTOM Protection & Control
Control desks; control panels; selector switches

Allbro
Full range of controls for motor applications

ARB Electrical Wholesalers
Full range of controls for motor applications

Bellco
Full range of controls for motor applications

Electech LSis
Full range of controls for motor applications

Electrahertz
Full range of controls for motor applications

JB Switchgear Solutions
Full range of controls for motor applications

Magnet Group
Range of controls for motor applications

MCE Electric
MCE mini and steel pushbuttons, pilot lights, selector switches, key switches, emergency stops, buzzers, plastic control devices

Mimic Components
Distributes controls for motor applications

Phambili
Full range of controls for motor applications

Pretoria Motor Control Gear Products (PMCG)
Full range of controls for motor applications

Schneider Electric South Africa
Full range of controls for motor applications

SEW-Eurodrive
Range of controls for motor applications

Stone Stamcor
Johnson Electric push-button switches

Swan Electrical Distributors
Complete range of controls for motor applications

Voltex
Full range of controls for motor applications

Waco
Full range of controls for motor applications

Zest WEG Group
Pushbuttons, selector switches and pilot lights; IP 66 protection; high reliability auxiliary contacts lighting block with integrated LED

CABINETS FOR MOTOR APPLICATIONS

ABB South Africa
Full range of cabinets for motor applications

ACDC Dynamics
Ilinox, Quadritalia, Perano, Quadrovisu; Ilatronix; LAP and Gewiss ranges: flush-mounted, wall-mounted, floor standing; plastic, steel, aluminium explosion and fireproof; waterproof and water tight; polyester, mobile and desk solutions

Allbro
Full range of cabinets for motor applications

Atlas Group
Full range of cabinets for motor applications

ARB Electrical Wholesalers
Full range of cabinets for motor applications

Bellco
Full range of cabinets for motor applications

DM Agencies
Legrand products

Dry Ice International
Cleaning of cabinets with dry ice blasting

Electrahertz
Full range of cabinets for motor applications

Electrical Boards SA
Enclosures for motor control applications

JB Switchgear Solutions
Full range of cabinets for motor applications

MCE Electric
Onesto mild steel and stainless steel enclosures, floor standing, mild steel enclosures

Mimic Components
Manufactures and distributes range of cabinets for motor applications

Phambili
Full range of cabinets for motor applications

Sabelco Electrical Industries
Sabelco-Cubic type tested assemblies complying to IEC 61439, SANS 1973-1, SANS 1973-3, SANS/IEC60439, manufactured in mild steel, 3CR12, 304 stainless and 316 stainless, IP rating up to IP65, form factor up to form 4B, in any colour to client specification.

Schneider Electric South Africa
Full range of cabinets for motor applications

Siemens
Range of cabinets for motor applications

Swan Electrical Distributors
Full range of steel enclosures

Voltex
Full range of cabinets for motor applications

Voltex MV/LV
Full range of cabinets for motor applications

Waco
Full range of cabinets for motor applications

Zest WEG Group
Full range of distribution boards; motor control centres; electrical panels for indoor and outdoor use, custom built to client specification



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+27 (0)11 677 2500



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How to safety-check your meter in the field

Digital multimeters are designed to assist users to carry out simple to highly complex test and measurement functions on the bench or, increasingly, remotely in the field. From time to time, users should test meters and other equipment in the field, and attention to the following quick steps, could help ensure the safety and efficiency of the meter.

Use common sense: Before starting, take a closer look at the equipment and its accessories. Are they shabby and badly worn? If so, perhaps the unit is beyond functional and cannot safely be used.

Inspect leads: Before using test leads, perform an inspection to ensure the leads can safely and accurately conduct electricity for the job at hand. Be sure the leads have:

- Shrouded connectors

- Finger guards
- CAT ratings that equal or exceed those of the meter
- Double insulation
- Minimum exposed metal on the probe tips

Continuity testing: Use the meter's own continuity testing function to check for internal breaks. Check test lead resistance by:

- Inserting leads in V/ Ω and COM inputs
- Selecting Ω , touching probe tips and being sure the leads are 0.1-0.3 Ω

Choose accessories that are suitable for industrial work, and check for abrasions and other damage that eventually occur with use: This way, users will never have to worry about the failure of a test lead or probe – or the consequences thereof.

Inspect test lead insulation:

- Check that the insulation is not nicked or cracked. With age, the insulation material – whether PVC or silicone – can become dried out, brittle and susceptible to cracking.
- A visual inspection will usually show any part of the lead that has this problem.
- Ensure there are no signs of gaps or cracks at the junction between the insulated wire and the moulded banana plugs or probes at each end.

Verify correct voltage rating: Verify that the meter and its accessories are appropriately rated and designed for the system and equipment to which they will be connected.

- Check for the IEC rating (e.g., CAT III or CAT IV) on the tester, and only purchase leads and other accessories that meet or exceed that rating.

Safety checking equipment in the field can reduce hazards and ensure that equipment is safely functional. Whether the equipment is a voltage tester or a digital multimeter, users could benefit greatly by carrying out a quick safety scan before commencing work.

Enquiries: +27 (0)10 595 1821



CAT ratings can be found between the input jacks on most tools.

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Aberdare Cables is South Africa's leading and trusted power cables manufacturer since 1946.

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Alternate Energy Solutions

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ENERGY STORAGE SYSTEM

(ESS)



ENERGY STORAGE SYSTEM

LAPP expands in Africa

“For us, Africa is a sleeping giant. We see great opportunities for growth in the long term. We want to be a part of that,” says Andreas Lapp, Chairman of the Board of LAPP Holding AG.

Indeed, experts are already predicting that the African market will be among the world's fastest growing markets in just a few years. With its 54 countries, wealth of raw materials deposits and around 1.3 billion inhabitants, Africa offers great potential. In some countries, growth rates (GDP) of between 6 and 10 percent were achieved in 2018.

Expansion of the sales network

All the indicators are pointing to growth: This is why LAPP is continuing the strategic expansion of its sales network this year. Andreas Lapp knows that the almost important thing for a successful entry into the market is to establish long-term and trustworthy relationships: “Africa is anything but homogeneous. While some countries are already very developed, others are not even connected to a power grid. Some countries are currently developing so rapidly that they are skipping whole stages of technological development. This makes access to this market a major challenge for us at LAPP. At the same time, we also benefit from the enormous prospects that come with such diversity.”

The demand for connection solutions from LAPP is constantly growing: In some regions of Africa, LAPP was able to achieve up to 50 percent turnover growth in the last financial year. The demand is particularly high for automation, the food industry and the energy sector with the expansion of power grids and the use of renewable energies such as wind and solar energy.

LAPP has had its own subsidiary in South Africa since 2010, which its 30 local employees use as a base to serve seven countries in southern Africa. At the end of last year, LAPP Southern Africa moved to a new location in Johannesburg. With 2 700 square metres of storage space, it is four times as large as its old location.

In North and West Africa, sales have so far



All Aberdare products comply with the SANS (South African National Standard) and many carry the SABS (South African Bureau of Standards) mark, ensuring the highest levels of quality and safety. Our reputation is built on producing quality, safe and reliable electrical products.

www.aberdare.co.za



The wire and cable top 10 themes for the current year

Chenfei Wang from CRU Wire and Cable gives insight into the top 10 cable and wire themes of 2020.

China's electricity grid investment will remain static

Chinese grid investment suffered a contraction of 9.6% in 2019 compared to the previous year. The country's utility sector consumes approximately 1.9 Mt conducts of cable a year, with the expected low investment levels in 2020 weighing heavily on power cable demand.

Coronavirus outbreak will impact Chinese demand

With China currently under lockdown because of the virus outbreak, a further slowdown is expected in Chinese cable demand which, in turn, will drag down key sectors such as construction and automotive that make heavy use of cables.

Global automotive industry will face another turbulent year

2019 was a year to forget for the global automotive industry, and it looks as though the situation will not change much in 2020. According to the CRU's outlook the European automotive industry is supposed to improve slightly, while their Asian and North American counterparts will fall short.

Trade tensions will keep impacting the global value chain

The 'Phase One' trade deal, also known as USMCA, struck by China and the US won't bring any drastic changes to the current low level of US imports from China in the near term; and China will still have to divert its production to other countries.

Switch to renewable energy will support power cable demand

Power cable demand was the fastest growing segment last year and this trend will continue in 2020 (excluding China), marking the second year in a row. The outlook partially reflects a strong global renewable project pipeline, particularly in the cable-intensive offshore wind sector.

India's cable demand will improve from the 2019 low

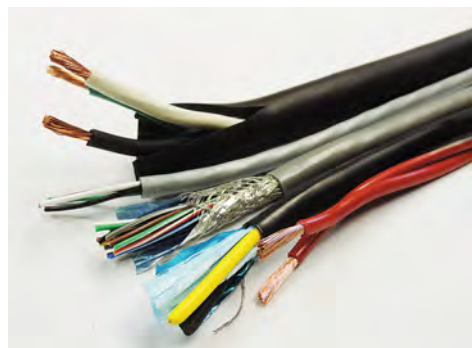
India will have a strong 2020 as last October's five year investment plan (US\$1,427 bn) will start to pay off. US\$47 bn will be invested this year in the cable end-use sector, particularly power related. This, combined with lack of general elections and other fiscal and monetary stimuli, will result in considerable growth for the Indian market.

Brexit uncertainty will remain a key risk to the Western European market

As London and Brussels negotiate future business relationships, the situation between the UK and Europe remains unclear. What is certain is that disconnect between the two markets will have strong direct and indirect impacts on the European market, especially when taking into account the risks tied to the weak automotive sector.

Russia's residential financing policy change will limit demand

Russian LVE cable consumption is expected to contract this year, as the past year's housing financing policy change is weighing negatively on the building



been handled by the Portuguese company LAPP Policabos. In these regions, LAPP is supported by sales partners and local staff in Morocco, Tunisia, Algeria, Egypt, Senegal, Ivory Coast, Ghana and Nigeria. In order to increase the market opportunities in Africa, a separate sales company will be opened in West Africa. In the near future, LAPP will also expand in East Africa. At the same time, the company's network of partnerships and digital presence are being continuously expanded.

Enquiries: www.lappkabel.com

sector. Many small and mid-size construction companies are still facing the policy's aftermath and having to deal with severe financing difficulties.

ASEAN market will be the world's fastest growing region

While a weak Asian automotive market will negatively impact the ASEAN region's cable harness sector, on the upside, the region's urbanisation and industrialisation will continue, with significant benefits for domestic cable demand. Commodity price will remain volatile in the near term.

The coronavirus outbreak has caused many enduring geopolitical tensions, which will keep commodity prices volatile throughout 2020, especially for copper and Brent crude.

CRU Wire and Cable provides independent business intelligence, outlooks, price assessments, and more. All information is gathered first hand by a team of experts and analysts and compiled into well thought out and in-depth articles to help customers in their decision-making strategy.

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A world first with a 30-year success story

CCG first launched its Posi Range of corrosion-proof cable glands in 1989 after a direct request from senior SASOL engineers for CCG to come up with a solution to the problem of corrosion to brass cable glands on their petrochemical plants. The corrosion of cable glands and the subsequent failure of the related electrical installation's explosion proof protection rating was a major ongoing concern for SASOL engineers at the time.

After much design work and testing, CCG came up with an innovative solution in the form of the Posi Range of cable glands. The design centred around the idea of having all the brass components of the gland, which are needed for earth continuity and mechanical strength, encapsulated in a non-metallic, corrosion-resistant, polymeric compound. The gland also incorporated the trusted CCG Captive Component Gland design whereby all the

critical components such as seals, cones and cone rings are held captive within the gland at the time of installation, ensuring that they are not left out or wrongly fitted.

SASOL was so impressed with the product that it then specified Posi Glands for all its new projects and for use as replacements of existing glands during maintenance shutdowns. Within a few months of its launch, the Posi Range was specified by Fluor for use at the Moss gas Project.

The Posi range, which consisted of the both the Posi Gland for armoured cable and the Posi Grip Gland for unarmoured cable, was a world first and revolutionised the cable gland market, not only in hazardous areas, but also in the highly corrosive metal mine and minerals process industries.

CCG soon launched the gland internationally where it was

accepted with the same enthusiasm as the South African market. In 1991, the range was specified for use by a major Australian aluminium refinery project and by China Light and Power in Hong Kong for use on all their outdoor installations.

Because of the Posi Grip Gland's superior tapered seal and cable retention performance, Stolt Comex, an international manufacturer of remote-operated underwater vehicles, used the glands on its subsea systems. In 1992, a ROV with CCG Posi Grip Glands installed was operating at depths of 670 m off the West Australian coast and continued to operate without fault for a period of five years. Independent tests were conducted in the UK last year on the same CCG tapered gland seal for use at a record-breaking depth of 850 m.

With such success, it was inevitable that the opposition would copy the range, so in 1993 CCG launched an improved design. For use with SWA cables, the Corrosion Guard Gland had a screw-on outer protective covering, which is separate in function from the inner metal gland and armour clamping components. This allowed the gland to be inspected without dismantling the whole gland. This was a major improvement over the previous Posi Seal gland and, unlike its copy, which has plastic to metal threads, CCG's Corrosion Guard Gland has true metal-to-metal thread contact through the whole of the gland. This is critically important for maintaining earth continuity and short circuit fault currents. Independent tests conducted in the UK have shown that CCG's metal-to-metal threads with a captive cone pass the IEC 62444 and IEC 60947 tests whilst

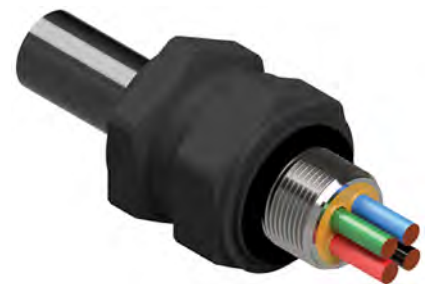
a gland with plastic on metal threads and a floating cone does not.

Over the years the Corrosion Guard and Posi Grip range of glands have been steadily improved and a few more 'world firsts' and acclaims have been added to its list. In 2007, it won an award for product innovation at the HazardEx conference in the UK.

It was the first gland range of its type for both armoured and unarmoured cables to be 'quadruple certified' to Ex e, Ex d, Ex t and Ex nR protection levels with certification to ATEX, IECEx, SANS, Australian, Brazilian and Russian standards. It is also the first to have Ex d barrier glands for both armoured and unarmoured cables using CCG's award-winning QuickStop Injection Resin technology which won the best user category at the Hazard Ex conference in the UK in 2017.

These features, combined with the full range for both armoured and unarmoured cables, full comprehensive international certification and a proven design, has meant that after 30 years, the CCG Corrosion Proof Range of glands continues to gain the trust of specifiers and installers around the world.

Enquiries: +27 (0)11 394 2020



CCG Posi Grip Ex e, Ex d, Ex t, Ex nR Injection Resin Barrier Gland.

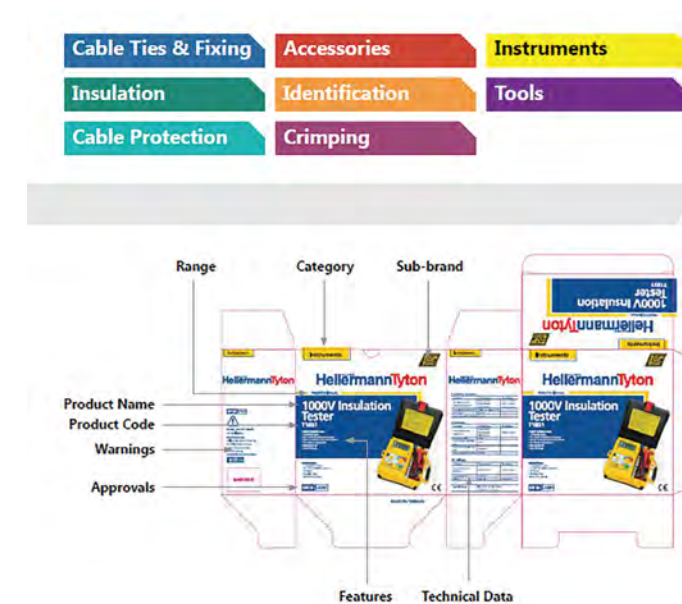
HellermannTyton premieres new packaging

HellermannTyton South Africa recently embarked on an extensive repackaging campaign across all the company's products. "Previously our packaging did not have the same look and feel and there was no consistency across the range of products, explains HellermannTyton South Africa Marketing Manager, Ingrid Nicolaus. "The new packaging takes into consideration all the different types of packaging and substrates meaning that our new design can be applied across our full product range."

It was identified in many cases that the HellermannTyton logo was small and people did not realise that they were buying a HellermannTyton product. "The new packaging ensures that our brand is bold and clear and also alerts people to the fact that we have been around for a long time – we were established in 1933," she says.

Over the past few years there have been many changes/reforms and new trends in packaging, which the company has now incorporated into the packaging, notes Nicolaus. For example, a cleaner design, the use of diagrams and visuals, and easy to read text. "Our previous packaging did not meet the expectations of both wholesale and retail – our new packaging, however, has been designed with the consumer and his or her needs in mind," she says.

Where possible HellermannTyton have considered what impact its packaging has on the environment, and in some cases,



were able to reduce the packaging size. Furthermore, the packaging, which is easy to read and allows customers to understand the products at a glance, also includes approvals, certificates and warnings.

When it comes to cable ties, Nicolaus notes that the new cable ties bags now feature a Ziploc. "The reason for this feature is that if not all cable ties are used after opening the bag, the bag can be closed to ensure the cable ties remain flexible as they are moisture sensitive. By including the Ziploc the cable ties will be protected as well as the packaging preventing spillage or loss of ties," she says.

HellermannTyton's improved packaging means that customers now get more 'bang for their buck'. "Our package has changed but the product has not changed and the consumer can still expect the same high quality product they have come to expect but in even better packaging," concludes Nicolaus.

Enquiries: +27 (0)11 879 6648

Identify cables three times faster

Experienced operators can print and manually apply a flag label on a cable in 15 seconds. With the new BradyPrinter A5500 Flag Printer Applicator they can significantly increase production output by flagging cables in five seconds.

A wide range of cables

The BradyPrinter A5500 is very flexible and, without any adjustment, can identify cables with 1.52 mm up to 15.24 mm in diameter and apply labels with widths up to 50.8 mm and lengths between 19.05 mm and 76.20 mm. Its full colour touch screen and modern user interface further enhance the printer's flexibility and ease of use.

Easy to implement

USB-ports and ethernet connectivity make the BradyPrinter A5500 practical to implement in a variety of production environments. Coupled with Brady Workstation apps for easy flag label design, barcoding and serialisation, the BradyPrinter A5500 becomes a highly practical process efficiency increaser. Calculate your return on investment on the Brady website.

Enquiries: +27 (0)11 704 3295





INDUSTRIAL CABLE GLANDS

CAPTIVE COMPONENT GLANDS



A2 COMPRESSION GLAND



BW CAPTIVE CONE GLAND



CW INTEGRAL EARTH GLAND



IPLUS CORROSION GUARD GLAND

TESTED PROVEN PERFORMANCE

- EMC Tested
- Corrosion Tested
- High Fault Current Tested
- Low Smoke Fire Retardant Tested
- Environmental Conditioning Tested
- Extreme Temperature Tested -65°C to +175°C
- Ingress Protection Tested IP68 (100m 14-days, 850m -24hrs)



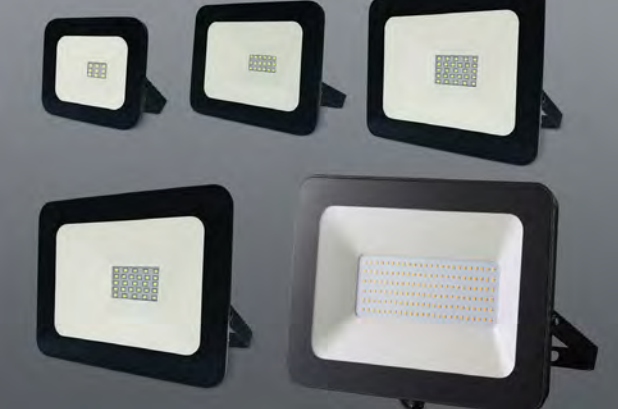
QUALITY DECLARATION
"The tested, proven performance of CCG Glands exceeds all others on the South African Market"
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HEAD OFFICE AND MANUFACTURING FACILITY
33-37 FORGE ROAD, SPARTAN INDUSTRIAL AREA, KEMPTON PRK, 1619

Tel: 011 394 2020
Fax: 011 394 2202

Outdoor lighting requirements for coastal areas in South Africa



iPlast 2 Floods.



Block P – Down and Up or Down.



Ozo Range.



Carlo 800 and 250 bollard.



Composite Floods.



Marta 90 and Marta 160.



Neo buried.

SPAZIO LIGHTING stocks a wide range of high-quality outdoor lighting with extensive warranties, suitable for both inland and coastal applications. The South African weather conditions are quite extreme at the coastal areas and therefore special care has to be taken when ordering outdoor lighting to ensure that the fittings do not corrode. Coastal areas can be classified as any location closer than 10 km from the shoreline.

The South African coastline is famous for its extreme weather conditions, including strong winds, high humidity and thus, high levels of moisture in the air. Humidity is influenced by temperature and geographic location. Warmer air holds more moisture than cooler air, and warmer weather promotes evaporation. Due to daytime heat close to the sea, a lot of evaporation occurs on the surface of the water body causing high levels of moisture in the air. The high levels of salt in the evaporated water from the sea act as an electrolyte which disperses ions into the water, which in turn causes corrosion. Metal products at the coast can corrode up to ten times faster than in other parts of the country.

It is important, when purchasing outdoor fittings for a coastal application, to ensure that the fitting is marked as being coastal quality as opposed to inland quality. In order for a fitting to be classified as coastal quality the fitting needs to be made up of polycarbonate or 304 Stainless Steel or higher. Any fittings made up of aluminium, even if they are powder coated, will eventually corrode when installed too close to the sea.

Spazio Lighting has done its best to ensure that it can cater for its coastal customers by supplying a coastal quality alternative to most of its IP rated fittings. Some notable inclusions are the iPlast 2 and Composite ranges of LED floods, Block P and Marta exterior wall fittings, Ozo footlights, Focal and Carlo bollards, Minitommy garden spots and Neo buried fittings.

Enquiries: www.spazio.co.za

SATURN CTC

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6W RECESSED
2276.0631D
2276.0631
450 - 550Lm
Dimmable
Non-Dimmable



12W RECESSED
2276.1231D
2276.1231
1000 - 1200Lm
Dimmable
Non-Dimmable



18W RECESSED
2276.1831D
2276.1831
1700 - 2000Lm
Dimmable
Non-Dimmable



24W RECESSED
2276.2431D
2276.2431
2200 - 2400Lm
Dimmable
Non-Dimmable



6W SLIM
2277.0631
840 - 910Lm
Non-Dimmable



12W SLIM
2277.1231
1680 - 1820Lm
Non-Dimmable



18W SLIM
2277.1831
1625 - 1750Lm
Non-Dimmable



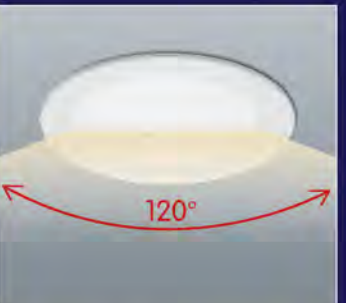
30W SLIM
2277.3031
3000 - 3250Lm
Non-Dimmable



18W SLIM
2277.1831MW
1625 - 1750Lm
Microwave Sensor



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Coping in the time of COVID-19

When preparing the subject for my column in this edition, I had considered three topics. It is always a time of mental wrestling trying to select the most appropriate and useful topic for the time.

Never in my wildest dreams did I realise how the entire world would be turned on its head with the outbreak of the coronavirus, COVID-19. Without doubt, it will impact every one of us in many ways, even if we ourselves do not get infected.

The call has been made to South Africans to work from home if possible. For most individuals and companies, that is an almighty and massive challenge. Of course, working at home has many challenges too. Many employees have children who demand some attention because the schools are closed. Many employees simply cannot work at home because their role and function is such that working at home is impossible, for example a shop assistant.

Yes, I know how those who run successful businesses or professional practices are probably feeling. Perhaps you are overwhelmed by this modern threat, or you may be a denialist and think that it will not get too bad here at the southern tip of Africa and will eventually quietly disappear.

It is time to get real, to gear up, to regain your positive mind-set, to look for the opportunities amidst this 'thing' and to move into top gear to find the ways and means to continue to be successful, even if times get even tougher for business.

Our businesses, both in the lighting design and illumination engineering fields, have been working in the online environment since 2013. Working from home is, therefore, totally familiar to us. Yes, we continuously look for ways to do things differently. Our success can be ascribed to our awareness that we, in fact like every business, need to 're-invent' ourselves from time to time.

On Sunday afternoon, I watched the TV when the business organisations and groupings were interviewed on the steps of the Union Buildings in Pretoria. One of the statements made was that it was now time for us to look out for each other. This statement immediately struck a chord with me.

It is for this reason that I decided to deviate from any of the topics I had conceptually prepared for my column so that I could share what we have done since 2013 and what we continue to do. It may help some of you, the readers, to be prompted to act.

As most of you know, I am an accredited international educator in the field of illumination engineering. That we

have students from around the globe, is only possible because we use the world's best software platform to teach. The software has continuously evolved, been enhanced, been updated (as recently as this last week) to provide our students with the best possible e-learning experience. It allows for video content to be embedded, for student to student messaging and student to teacher messaging from within the system without ever having to leave and use other software.

Student mentoring is essential. There are ways for that to take place – telephonic via landline (seldom used now), WhatsApp messaging or calls, Skype for business, Clickmeeting, Zoom, Microsoft Teams and so on. One of the excellent software suites is Microsoft Office 365. This includes the complete suite of Microsoft software, including Teams I have already referred to, plus the ability to save all work directly to the Cloud. Students can arrange for private lessons where some of the software suites above is used.

It is also extremely important to ensure that your websites are regularly reviewed, are updated and adapted to the changing needs of your audiences. We have found that this is incredibly important for us because we are exposed in many ways to the international audience of people in the lighting arena. Use the best possible branding companies to make that you are on target.

For those of you who work within the built environment and project management fields, the software that we use is equally appropriate and useful to be able to hold project and coordinating meetings with the design team, clients and others.

I will always remember the slogan used by the Kat Leisure group of hotels and resorts many years ago, "If you snooze, you lose". That is so true now that this need to change has been thrust on us. When thinking about the need for businesses to find ways for their staff to work from home and yet still be able to have meetings to keep track of sales or other information, it reminded me of the title of the 1982 Pieter Dirk Uys production "Adapt or Die". I appreciate it referred to a very different time in the history of South Africa, but it is equally applicable to us now in 2020, except in a different way. Adapt new systems and methods to ensure that your business continues and indeed, survives.

I make no claim to be an expert in the field of all types of software. I only relate this to share my experience and to 'look out for each other'. I would be happy to speak to any readers who would like to know more about the above software we use and how we use it.

ABOUT PHILIP HAMMOND

Philip Hammond is the Director and Principal of BHA School of Lighting which offers a variety of courses from entry level Foundation Lighting right through to Advanced Diploma and Master Diploma in Illumination Engineering Courses. Other courses include Photometry, Lighting Economics, Relux Lighting Design Software courses, and more. Visit www.bhaschooloflighting.co.za



RLS appoints lighting controls specialist

Lighting Controls is a key strategic area for Regent Lighting Solutions, and the recent appointment of Wayne James as the company's lighting controls specialist will ensure improved solutions. With his many years of experience in the industrial and commercial controls applications sector, the company welcomes James to the Regent family and looks forward to offering lighting controls solutions in the months and years ahead.



Enquiries: www.regentlight.co.za

Energy-efficient LED street lighting for Cape Town highway intersection



BEKA Schröder recently supplied the LED street lighting solution for the N2/M3 intersection at Hospital Bend, which forms part of the City of Cape Town's LED streetlight retrofit programme.

As part of the City of Cape Town's ongoing Energy Efficiency Programme, the HID streetlight installation was retrofitted with BEKA Schröder's LEDlume-maxi. The new installation provides an energy saving of more than 50%, without compromising the required lighting levels.

The LEDlume-maxi is the largest of the LEDlume family, a high-performance LED street lighting range designed and manufactured in South Africa and thus taking the continent's harsh thermal and corrosive environments into account. The LEDlume range offers optimised photometrical performance with a minimum total cost of ownership. It provides customers

with the ideal tool to generate energy savings, improve lighting levels and reduce maintenance costs.

A variety of high-performance optics optimises the photometric distribution for each application to achieve minimum energy consumption. The LEDlume range offers flexible combinations of LED modules, a choice of currents, and dimming options to further maximise energy savings and provide the most cost-effective solution.

BEKA Schröder locally develops and manufactures energy-efficient LED lighting products, designed and suitable for local conditions. The company is proud to be associated with the City of Cape Town Energy and Climate Change Directorate in providing a successful energy-efficient street lighting solution for this project.

Enquiries: +27 (0)21 510 8900

What is visible light communication?

Visible Light Communication is a variant of data communication that utilises visible light between the intensity of 400-800 THz. It is a type of wireless communication technologies. Under this technology, fluorescent light is used to transmit signals at 10 kbit/s and LED lights are used to transmit 500 Mbit/s over a small distance.

VLC can be used as a medium of communication for ubiquitous computing. The reason behind is that lighting devices such as lamps, TVs, traffic signs, commercial billboards, and headlights are present everywhere. So, it will be more convenient and less dangerous to use visible light for high power applications that's because humans can perceive it.

Impact of visible light communication technology in retail industry

VLC is a futuristic communication lighting technology which has the potential to change the dynamics of WiFi technology which is used ubiquitously these days.

Attracting customers

It is an ideal scenario for customers and retail store owners – when customers are able to go directly to the place where the merchandise that they are looking for is located. Retail store owners can use VLC to highlight the products they want to promote and direct the attention of customers as they walk into the store. This technology has helped a grocery store in Germany to increase its sales by 28% as compared to its competitors.

Increased productivity

VLC helps to improve the productivity level

of retail store owners as they can accomplish numerous tasks with a flick of the finger. For instance, store owners can change prices and roll out discounted prices across stores countrywide from a central location. They can even update stocks on shelves and record merchandise movement quickly so they can swiftly decide to update stock.

High speed

The technology is fast and powerful, which can be useful for commercial lighting. Under a controlled environment, over 100 Gbps can be achieved using VLC. However, in the retail environment, it is possible to transmit 1 Gbps data, sufficient to increase the efficiency of the retail sector.

Better security

Retail store owners need to establish a secure environment for their merchandise and customers. Here, VLC can be better than WiFi as light does not penetrate through walls which makes it easier to maintain and control network security.

Efficient and safe

LEDs are used to transmit data in this system which will reduce the energy consumption level and make the retail business efficient by reducing electricity bills. Moreover, LEDs don't emit any harmful RF waves.

Visible Light Communication technology is still new and its impact on the retail sector cannot yet be properly recorded. Yet, in the near future, this technology will surely impact the commercial sector.

The shape-shifting Shed

The Shed, an extraordinary new shape-shifting cultural space in Hudson Yards on the West Side of Manhattan, has been one of the most talked about buildings of 2019. Designed by Diller Scofidio + Renfro in collaboration with Rockwell Group, The Shed is connected to the High Line on 30th Street, and aims to bring performances and art to New York's newest neighborhood.

Listed by ArchDaily as one of the most important new architecture projects in 2019, The Shed has been described by its chief executive and artistic director Alex Poots as a new-model cultural institution; 'a place for invention, for curiosity, for risk-taking'. The eight-level base building – with two large gallery spaces, a 500-seat theatre, rehearsal space, artists' lab and skylit event space – features a 37 m telescopic shell that can extend out to create space for larger performances. A steel structure clad in ethylene tetrafluoroethylene (ETFE) cushions, the outer shell deploys from over the base building, gliding along rails onto an adjoining plaza to double the building's footprint. Known as the McCourt, the space can be used for large-scale performances, installations and events, accommodating a seated audience of 1 250, or more than 2 000 standing.

Unusual challenges

The nature of the structure posed a series of unusual challenges and requirements for the lighting, in terms of the translucency of the material, the mobility of the structure (in that the fixture had to withstand the outdoor environment) and the importance of sight lines and glare in a space that can be reconfigured in several ways. Ease of installation, operation and maintenance in such a large structure were also crucial considerations. ERCO worked with Tillotson Design Associates to create a solution that met all the criteria.

The answer to a luminaire that could provide the right intensity and uniformity to illuminate the 'skin' from either end of the section was the ERCO Grasshopper projector. These 18 W fittings – just under 750 in all – are mounted within all the corners of the beams in the moveable outer shell. In line with ERCO's concept of individual service, all of them were customised with a remote driver box, necessitated by the location of the fixtures within the cramped corner spaces. The fixture heads had to be installed as close as possible to the mounting surface, so a special mounting bracket was created and the driver positioned remotely to reduce the space occupied by the fitting. A 5000 K colour temperature conveys a contemporary, literally cool aesthetic.

Exceptional light output

The Grasshopper has exceptional light output, high visual comfort, easy aimability – it can be tilted and rotated in any direction – and, with its compact physical size, emerged as the ideal choice after an early mock-up. A highly versatile exterior range, with precise photometrics to prevent spill light, it can be used for accent lighting, floodlighting and wallwashing.

Lighting the East Facade are round-shaped Kona 48 W projectors, a total of 66, specified in the same 5000 K colour temperature. The range also comprises projectors, floodlights and wallwashers, and was developed to deliver high luminous flux with maximum visual comfort. The powerful output allows the fittings to be spaced further apart. Like Grasshopper, the fittings can be customised.

In addition to The Shed, ERCO has recently worked with Tillotson Design Associates on a range of US schemes in New York and beyond, including the Museum of Modern Art (MoMA), Ruby City, the Seignouret-Brulatour Mansion and Rhode Island School of Design (RISD).



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Making car parks safer, smarter and brighter

With the darker winter months approaching, lighting is even more of a pressing issue for car park managers. Many will be considering the steps they can take to provide safer and more welcoming parking spaces without increased maintenance and energy costs. Here, well-controlled LED lighting can be an asset.

As an example, in the UK in 2004, the British Parking Association launched the Safer Parking Scheme. This awarded a 'Park Mark' to facilities which met specific criteria for deterring criminal activity and vehicle theft. One of the four award criteria listed is 'Appropriate Lighting.'

As of 2016, one in four car parks had been deemed worthy of the award, an impressive figure that assures car park users that facilities have been designed and managed with care. It also suggests though that more could be done to make both public and private car parks safer facilities. Whether for stores, businesses or offices, the unique features of LED lighting including its energy-efficiency, illumination and reliability, are perfectly suited to meet the specific needs of car parks.

A visible improvement

Car parks require bright lighting that not only illuminates the space adequately for it to be shared safely by drivers and pedestrians, but also enables security cameras to spot anti-social behaviour. LED lights offer an even spread of light without shadowing or glare, while also delivering the required brightness.

In the case of outdoor car parks, LED lighting can respond swiftly through wireless control systems to different environmental changes such as weather condi-

tions and light levels, all vital to keep the facility safe and well-lit at all times.

Controlled solutions

The benefits of a tightly controlled lighting system extend beyond swift responses to the external environment. These systems can also be wireless and of great benefit to facilities managers, who need to respond to lighting problems in car parks quickly to avoid damaged vehicles or injured pedestrians.

Issues can be identified through automated wireless LED lighting control systems which cater for 'active' maintenance support, in addition to delivering 'reactive' lighting maintenance solutions fast and effectively. Many of these systems, can be coupled with infrared cameras to allow for security management too, something facilities managers will also find helpful. It should also be noted that wireless lighting control systems are easier to install than wired-in systems, providing minimal inconvenience to car park owners and users.

Not only does LED technology simplify maintenance but it also lowers the associated maintenance costs. Automated LED lighting control systems reduce the need for surveys and site visits, especially with self-test features that alert facilities managers to faults as soon as they occur.

In addition, the LED lights themselves have an impressive lifespan and quality LED lighting manufacturers now offer a five-year guarantee on their products. In fact, LED lamps and luminaires rated at 50 000 hours last three times longer than typical fluorescent lights, giving further savings to site operators.



Overall, automated wireless LED lighting control systems give the flexibility that car park managers need to operate their sites effectively and substantially decrease their maintenance costs.

Energy costs

Whilst the benefits of installing LED lighting are clear, stretched capital budgets unfortunately hold many car park operators back from embracing the technology. However, the installation of LED technology can be funded through the savings made each year on energy bills via a tax-efficient lease-purchase scheme.

For example, a car park which implemented LED lighting and controls under such a scheme could expect to save 87% on its energy bills

and pay back their installation costs in under two years. In the case of the recent station car parks project, the new lighting provided up to 80% energy savings, upgrading to LED lighting alone.

Furthermore, as consumers become more attuned to their carbon footprints, a 'greener place to park' is something that parking providers could potentially use as a selling-point to promote their facilities against competitors.

With significant benefits to car park users and managers, and a straightforward path both to implement and fund the transition, LED lighting in car parks will eventually become the norm.

Enquiries: www.goodlight.co.uk

The evolution of lighting control

From a user perspective, the transition from mechanical switch to high-tech went moderately smoothly. Compared to the early days of the PC, when copious volumes of hair were removed and paper wasted as users tried to resolve the battle between printer and computer, the introduction of networking protocols such as DALI went relatively smoothly... from the perspective of the user, anyhow.

That was less true for installers. Used to the interconnection of traditional analogue wiring harnesses, network-based lighting control systems were sometimes challenging. In a way similar to old-school telephone engineers transitioning to the resolution of internet 'issues', the problem was not so much to do with competence but with the introduction of a new way of thinking; a way of thinking that included the control of lighting zones along with a host of new capabilities, limitations and innovations.

These innovations have tended to fall into four categories:

1. Innovations that improve the 'fit' between the technology and the environments into which it is destined to be installed.
2. Increasing ease of installation and reducing the costs of commissioning and ownership.
3. Improving the ease and flexibility of the user experience.
4. Reducing the intrusive nature of the new technology (particularly when retrofitted into older buildings).

Improving the 'fit'

Early DALI-based lighting control systems coped well with simple, one storey, self-contained installations. Such installations had no need for computer (head-end) control or to interface with other management systems. However, they did not cater for many environments.

A new or refurbished office or industrial building, for instance, with one landlord and several storeys that may be leased to different tenants, with common areas, perhaps including the carpark, is a typical environment requiring lighting control systems. This scenario presents challenges to many traditional systems. For instance, a lighting control system requires completion for a whole building (the CAT A fit out), which is sufficiently versatile for future leased spaces to be controlled independently.

However, a landlord's responsibilities, although

they may vary according to use, invariably do not end with ensuring common areas are well lit. For example, to be fully protected, the landlord may need to ensure that emergency lighting checks are carried out and documented in a timely fashion throughout the whole building. On the other hand, tenants will not feel comfortable with the landlord having control over the lighting programming in leased spaces. There may also be times when a tenant needs certain common areas to be lit outside normal business hours; a sales conference may need ground floor corridors and the carpark lit during a particular weekend, for instance.

Enter computer control

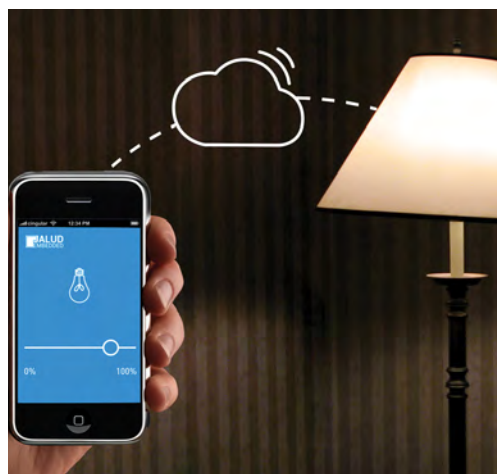
Computer, or head end, control of the DALI network has been with us for some time, but is only now sufficiently versatile to address the above problems in such a way as not to require a PhD in computer science to program and operate. This advance has been achieved in a number of ways. First, more user-friendly programming enables the use of a tablet or smart phone so that the person making the adjustment can actually be in the area for which the programming is being adjusted. In other words, it's 'Plug'n'Play'; you can see what you are doing as you are doing it.

The second way in which simplicity of use has joined forces with sophistication of control is by divesting control away from a central computer, by, for instance, giving area-controllers computing power. This enables an authorised user in a particular area to easily adjust lighting programming in that area without having access to a central head-end control system.

Ease of installation

Several relatively small innovations have had quite a dramatic impact on saving time and money. The latest area controllers, for instance, allow for the testing of area lighting and DALI strings immediately after the network wiring is completed. This enables a building's lighting to be functional before a fitout is completed, saving time and pre-commissioning costs.

Another example of time saving innovation is in the assignment of DALI addresses to luminaires. This can now be done after installation with a handheld device using Bluetooth or Wi-Fi. This increases versatility and can make an installation easier and quicker.



Cost of ownership

Having a computer-based control network enables remote diagnosis in case of a problem. Savings in time and money resulting from this can be dramatic. Also, if there is a faulty component – a lighting control module, for instance – an innovation such as a replaceable memory module can make installation of a new module trivial.

Keeping technology discreet

To those that take pride in, and win prizes for, designing the spaces in which we work, technology is not always their friend. Whether new build or refurbishing a listed building, keeping technology discreet is a priority. Thankfully several evolutionary innovations have helped this cause.

For instance, older style motion sensors can be replaced by much smaller PIRs some of which can be almost invisible when mounted within a luminaire. There are also ultra-slimline switch interfaces that can enable architectural switches to be interfaced with the DALI network, dramatically simplifying the task of updating older buildings during refurbishment.

Considerable progress has been made, in the past couple of years particularly, regarding making the customer interface more user-friendly, reducing the cost of installation and ownership, and ensuring increasing the compatibility with other building management and building automation systems. This trend can only continue.

Source: www.lightingcontrols.ltd.uk

Take your lighting plan to the next level

An architectural project or renovation is made up of a number of varying elements, each needing careful consideration to ensure a cohesive end result. Lighting is one of these elements and it can have a dramatic impact on how the finished project is perceived. A successful lighting plan calls for the contractor, developer and light fitting supplier to enter into a dialogue and reach an understanding about what is required and how those requirements will be met. The Radiant Lighting team boasts extensive knowledge about project lighting and knows exactly how to source unique fixtures to suit all sorts of installation requirements. Quality project lighting is based on the balance of the following three pillars:

Human need

It is no secret that the quality of lighting in a building affects the people in it. A happy, healthy, and productive office environment relies on appropriate lighting and sufficient, strategically-placed office systems. Places such as public facilities, shopping centres and parks attract more visitors and shoppers when they're well-lit.

Architectural considerations

Modern architecture is complex and often features technological advancements not found in the buildings of decades gone by. This calls for lighting that is seamlessly integrated into the architecture. In fact, lighting design is now seen as a creative extension of architecture with the main objective being to complement the style, shapes, and colours used throughout the building.

Energy efficiency

Most modern-day lighting project briefs will ask for a sustainable lighting solution. This results in a smaller ecological footprint and a lower energy bill, so it's a win-win situation for the client and the environment. LED lighting set on a dimmer switch, timer, or motion-sensor is often used to achieve this.

Enquiries: www.radiant.co.za



UPCOMING INDUSTRY EVENTS

ECA(SA) Regional Diary 2020

National Office, Meadowdale

Address: 91 Newton Road, Meadowdale Ext 2, Germiston, 1401
Telephone: +27 (0)11 392 0000
Email: info@ecasa.co.za

NEC meetings

27 May
 29 July
 30 September
 19 November
 20 November AGM

Presidential Excellence Awards

13 November

National Golf Day

18 November

NOTE: Meeting and course dates are subject to change. Please confirm the dates with your regional office.

Highveld Region

Address: 91 Newton Road, Meadowdale Ext 2, Germiston, 1401
Contact person: Leola Petersen or Angeline Lubbe
Telephone: +27 (0)10 271 0686
Email: leola@ecasa.co.za/
 angeline@ecasa.co.za

April

7: Vaal Branch meeting
 15: CoC course
 16: West Rand branch meeting
 20: LRA course
 22-23: PV solar course
 22-24: Electric Fence Installer course
 29: CoC Refresher course

May

4-8: MIE Unit Standards course
 11-12: Earthing and bonding course
 14: CoC course
 18-22: MV Course
 25: Construction Rules
 28-29: Estimating & Tendering course

June

4-5: PV Solar course
 9: Highveld Exco meeting
 18: CoC course
 22-26: Installation rules course
 30: CoC Refresher course

July

1: Mahikeng branch meeting (North West North)
 2: Potchefstroom branch meeting (North West South)
 7: Mpumalanga branch meeting
 14: Wits branch meeting
 16: CoC course
 21: Vaal branch meeting
 23-24: Earthing & Bonding course
 28: West Rand branch meeting

August

3-7: MV course - ORHVS
 13: CoC course
 19: CoC Practical Refresher course
 20-21: PV Solar course
 24-28: MIE Unit Standards course

September

3-4: Earthing and bonding course
 8: Highveld Exco meeting

10: CoC course
 11: Highveld (Wits) charity golf day
 21-23: MIE course
 29: Mahikeng Branch AGM
 30: Potchefstroom Branch AGM

October

6: Mpumalanga branch meeting AGM
 8-9: PV Solar Course
 13: Wits branch meeting AGM
 15: CoC Course
 20: Vaal branch meeting AGM
 22-23: Earthing & Bonding course
 27: West Rand branch meeting AGM
 29: CoC Refresher course

November

2-6: Installation Rules Course
 10: CoC course
 11: Regional technical meeting

Bosveld Region

Address: 1074 Francis Baard Street, Hatfield, Pretoria, 0001
Contact persons: Julie Lerm (membership) and Rika Nel (training)
Telephone: +27 (0)12 342 3242/342 3358
Email: infopta@ecasa.co.za

Pretoria

April
 1-2: Earthing and Bonding course
 2: Bosveld golf day
 6: CoC Refresher course

May

20: CoC course

June

10: CoC course
 24: Tzaneen branch meeting
 25: Polokwane branch meeting

July

2: Rustenburg branch meeting
 9: Pretoria branch meeting
 16: Witbank branch meeting
 15: CoC course
 23: Nelspruit branch meeting

August

19: CoC course

September

16: CoC course

October

1: Nelspruit branch meeting AGM
 8: Middelberg branch meeting AGM
 15: Pretoria branch meeting AGM
 14: CoC course
 22: Brits branch meeting AGM
 28: Tzaneen branch meeting AGM
 29: Polokwane branch meeting AGM

November

18: CoC course

KwaZulu-Natal Region

Address: 188 Lilian Ngoyi Road, Morningside, Durban, 4001
Contact person: Resheka Sewpersadh
Telephone: +27 (0)31 312 6313
Email: ecakzn@ecasa.co.za

May

22: KZN Charity golf day

June

18: Durban general meeting
 23: Zululand general meeting

25: Natal Midlands general meeting

October

22: Zululand Annual general meeting
 27: Natal Midlands AGM
 29: Durban Annual general meeting

Western Cape Region

Address: 46 Newmarket Street, Cape Town, 8001
Contact person: Michelle Digre
Telephone: +27 (0)21 462 2690
Email: ecact@iafrica.com

NB: Dates are provisional

April

2: North Boland general meeting
 6-9: M2 Installation of Cables
 7: Boland general meeting
 14-17: M3 Wiring of Premises
 16: Cape Town general meeting
 20-24: M4 Three-phase Transformers

May

4-15: M5 Motors and starters
 18-22: M6 Testing of Installation
 25-29: Unit Standards

June

1-5: M0 Induction
 8-12: M1 Installing wireways
 15-19: M2 Installation of cables
 22-26: M3 Wiring of premises

July

7: North Boland general meeting
 14: Boland general meeting
 16: Cape Town general meeting

November

10: North Boland branch AGM
 12: Boland branch AGM
 17: Cape Town branch AGM

Port Elizabeth

Address: Unit 10, Brydon Business Park, 3 Third Avenue, Newton Park, Port Elizabeth, 6001
Contact person: Wilmarie Smith
Telephone: +27 (0)41 363 1990
Email: adminpe@ecasa.co.za

April

30: SANS course

May

20: Estimating & Tendering course
 28: Branch meeting

June

TBC: Regional Executive committee
 4: Earthing & Bonding course

August

27: Branch meeting

September

TBC: Regional Executive committee

November

TBC: Regional Executive committee
 5: Branch meeting AGM

South Cape

May

14: Branch meeting

August

13: Branch meeting

October

22: Branch meeting AGM

East London

Address: Unit 40, Frame Park, Phillip Frame Road, Chiselhurst, East London, 5201
Contact person: Ellen Mare
Telephone: +27 (0)43 726 6359
Email: adminel@ecasa.co.za

April

6: SANS course

May

21: Branch meeting

August

20: Branch meeting

October

29: Branch meeting AGM

Free State/Northern Cape Region

Address: 8 Protea Street, Old East End, Bloemfontein, 9300
Contact person: Doreen Gwabini
Telephone: +27 (0)51 447 0859
Email: doreen@ecasa.co.za

April

2: Kimberley branch meeting

June

3: Upington branch meeting
 4: Kuruman branch meeting
 11: Kimberley branch meeting
 18: Welkom branch meeting
 25: Bloemfontein branch meeting

September

2: Upington branch AGM
 3: Kuruman branch AGM
 10: Welkom branch AGM
 17: Bloemfontein branch AGM
 24: Kimberley branch AGM

October

2: Kimberley Branch AGM

P&T Technology 2020 course calendar

Inspect, test and certify and single phase electrical installations

8-10 June
 5-7 October

Inspect, test and certify and three phase electrical installations

20-22 April
 8-10 June
 3-5 August
 5-7 October

Inspect, test and certify and hazardous electrical installations

18-22 May
 17-21 August
 19-23 October

Refresher course: Testing & Inspecting Single & Three phase

24 April
 12 June
 7 August
 9 October

Electric fence installer

11-13 May
 20-22 July
 14-16 September

KNX Basic course
 18-22 May
 17-21 August
 19-23 October

Enquiries: www.pandttechnology.co.za

ECA Electric Fence System Installer courses

The ECA(SA)'s second Electric Fence System Installer course for 2020 will be held from 16-18 March at the Meadowdale Training Centre and it's an opportunity for Installation Electricians (IEs) to qualify with EWS-ETA and be registered with the Department of Labour as Electric Fence System Installers (EFSIs). This three-day course is an RPL (Recognition of Prior Learning) course for persons who have been in the Electric Fence Installation field for more than two years.

Electric fence installations may only be done (and a Certificate of Compliance therefore issued) by registered Electric Fence System Installers (EFSIs) and anyone who would like to register as an EFSI in terms of the Electrical Machinery Regulations 12 - 14, can attend the ECA(SA)'s EWSETA-accredited Electric Fence Installer course, which is presented at the Highveld Training Centre eight times a year.

Venue: The course is presented at the ECA(SA)'s Meadowdale Training Centre, 91 Newton Road, Meadowdale Ext 2, Germiston, 1401.

Next course date: 22-24 April

Enquiries:
 Keabetswe.matolong@ecasa.co.za

IESSA 2020 Course Calendar

- 2-3 April: Photometry (KZN)
- 20-21 April: Exterior Lighting Course (Johannesburg)
- 7-8 May: Lighting Concepts, Vision, Lamps & Colour (Cape Town)
- 18-19 May: Lighting for Energy Efficiency in Industry (KZN)
- 21-22 May: Quality Assurance - Public Framework (Johannesburg)
- 9-10 July: Interior Lighting Course (Cape Town)
- 13-14 July: Lighting for Roads & Precincts (KZN)
- 30-31 July: Photometry
- 3-4 August: RELUX Lighting Design (KZN)
- 27-28 August: Lighting for Energy Efficiency in Industry (Johannesburg)
- 10-11 September: Exterior Lighting Course (Cape Town)
- 29-30 September: Lighting for Roads & Precincts (Johannesburg)
- 8-9 October: Retail & Shop Lighting (KZN)
- 15-16 October: Quality Assurance - Public Framework (Cape Town)
- 19-20 October: RELUX Lighting Design (Johannesburg)
- 16-17 November: Retail & Shop Lighting (Johannesburg)
- 12-13 November: Lighting for Energy Efficiency in Industry (Cape Town)

Planning any training courses or events for 2020? Publicise them in the monthly *Sparks Electrical News* Industry Events page. Email the event details to sparks@crowns.co.za



Aurecon Africa

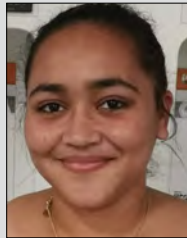


Dr. Lulu Gwagwa
Chairperson

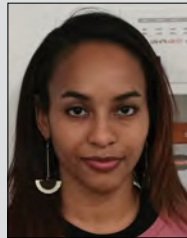
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WearCheck



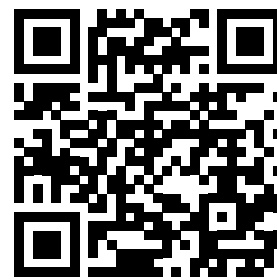
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Chemist



Gert Nel
Divisional manager,
transformer section



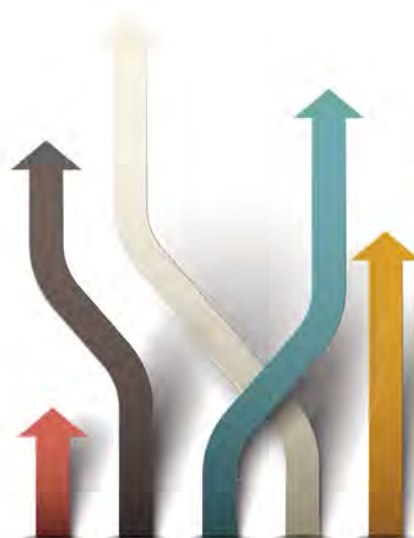
Lester Chetty
Laboratory instrument
technician



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MARCH SOLUTION

When you add two hours to eleven o'clock, you get one o'clock.

MAY FEATURES

- DBs, switches, sockets and protection
- Energy efficiency
- Lighting

Buyers' guide

- Energy efficiency

JUNE FEATURES

- Tools of the trade
- Energy measurement and supply
- Lighting

Buyers' guide

- Energy measurement and supply

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