

40 YEARS AND GROWING IN AFRICA



Zest WEG's new purpose-built head office.

Zest WEG's four decades in Africa have produced a powerful local manufacturing base, and a growing footprint across sub-Saharan Africa – strengthening supply chains and local economies.

“Progress in skills development has been significant in the past few years, as we have invested heavily in technology and skills transfer between the company and our holding company WEG in Brazil,” says Juliano Vargas, chief executive officer of Zest WEG. “Leveraging WEG's global manufacturing productivity logic, we have also installed the latest equipment and systems to pave the way for a sustainable future.”

As a result, local content in the company's manufacture of transformers is now nearly 90%, while for products like E-houses and electrical panels, local content has exceeded 70%. Vargas highlights the strategic importance of local content not just in terms of the mining industry's commitment to the Mining Charter, but for the sustainability of the South African economy as a whole.

“Our local manufacturing capability has helped to strengthen the supply chain for our customers, making businesses more secure,” he says. “The value of this has been well demon-

strated by the economic impact of border closures during the COVID-19 pandemic.”

Vargas emphasises that Zest WEG's own supply chain has been actively nurtured through enterprise development initiatives, fostering the sustainability of local businesses. This local manufacturing ecosystem shields the company from market fluctuations and gives it a competitive cost advantage on locally manufactured products.

Success in South Africa has fostered growth into 47 other African countries, where customers are not only supported by wholly-owned operations, but also by Zest WEG's Value Added Resellers (VARs) in over 20 countries around the continent.

“These VARs understand their local markets and are skilled practitioners in their fields,” he says. “This ensures that they can apply Zest WEG solutions appropriately and optimally, to customers' specific needs.”

VARs are a key aspect of the company's strategy to become rooted all over sub-Saharan Africa, collaborating with in-country experts and enhancing technical expertise and local capacity for economic development. Vargas notes that WEG's range of products serves many industrial sectors, allowing Zest WEG and its VARs to explore oppor-



Juliano Vargas, CEO at Zest WEG.

tunities not only in mining, but also in oil and gas, agriculture, water, cement and general industry.

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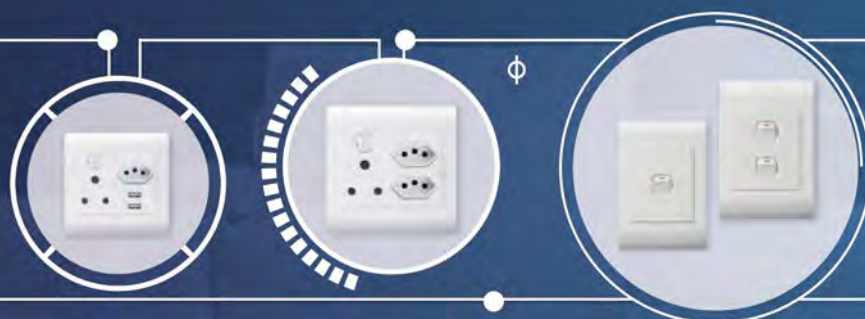
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ABB supports launch of engineering scholarship programme for Africa

ABB is proud to announce its support of the inaugural Ashesi-ETH Master's in Engineering programme in partnership with two of the world's leading universities for technology and the natural sciences, ETH Zurich in Switzerland and Ashesi University in Accra, Ghana.

Curated by ETH Zurich and Ashesi University and in close collaboration with leading global technology Swiss multinational companies ABB, Barry Callebaut, Bühler, LafargeHolcim and Nestlé, this programme for highly talented engineering students aims to ensure that graduates effectively contribute towards economic development across Africa through the transformation of society and industry in order to achieve a more pro-

ductive and sustainable future.

Once all upcoming milestones have been achieved, this first-of-its-kind master's programme is set to begin in August 2021 or as soon as possible thereafter and will be facilitated by Ashesi University. The education and lecture programme will be driven by both Ashesi University and ETH Zurich. This collaborative approach is designed to support capacity building through the development and strengthening of skills, processes and resources required to drive the success of the programme, establish its sustainability beyond this initial collaboration, and foster knowledge transfer between the two institutions.

"ABB is excited to be part of such an impactful initiative that aims to bridge the gap between higher education and the reality of working in industry", said Carolina Granat, head of People Development at ABB. "At ABB, we remain committed to educating and training highly-skilled leaders and entrepreneurs, who can accelerate economic and social development by applying global innovations to solve complex problems in Africa".

ABB's contribution to this programme continues the company's longstanding support for education in communities across the world, from providing mobile science laboratories for underprivileged students in India and mentoring young engineers in Hungary, to Instituto

ABB's 20+ years educating children from the favelas of São Paulo.

The programme is targeted at undergraduate students with an engineering background across any country in Africa. Intake is limited to 25-30 students, with the best candidates identified using an assessment process that will consider knowledge, skills, motivation and leadership potential. Parallel to the assessment process, the scholarships will be awarded purely based on academic merit. Students admitted to the programme will receive financial support in the form of a scholarship covering living expenses and tuition fees.

The curriculum for the collaborative master's programme is focused on providing a modern, interdisciplinary engineering education over six semesters and will include lectures and project work. It will focus on Mechatronics Engineering, with close attention to automation and production in the disciplines of design, optimisation, control and management of manufacturing processes, machines and systems.

Students will be expected to develop strong critical thinking and problem-solving skills that will enable them to apply their knowledge to new products and/or dedicated solutions for sub-Saharan Africa. They will also be required to complete an industrial internship with a partner such as ABB to continue to drive leadership in technology and innovation within the duration of the programme, to accumulate the credits required to graduate. Upon completion of the three-year programme, graduates will receive a degree title from both ETH Zurich and Ashesi University.

Enquiries: www.abb.com

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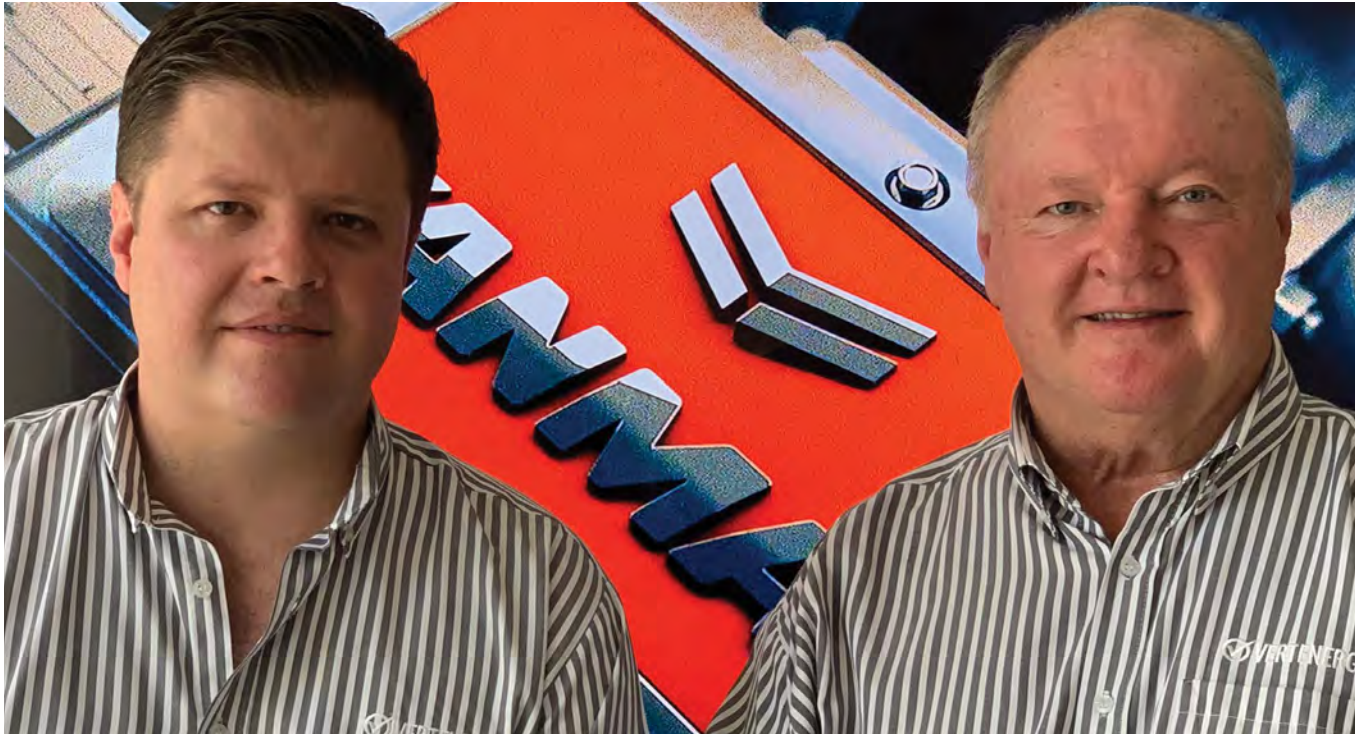
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Vert Energy to supply and support Yanmar industrial engines and power products in southern Africa



Vert Energy has been appointed by Yanmar as the official distributor in southern Africa for Yanmar industrial engines. Ryan Robertson (left), sales & marketing director, and Grant Robertson, managing director, Vert Energy.

VERT ENERGY has been appointed by Yanmar as the official distributor in southern Africa for Yanmar industrial engines as of 1 January 2021.

"What is exciting for the African market is easy access to the globally respected Yanmar brand through local specialists, offering a dependable service and technical support in line with stringent international standards," explains Vert Energy's sales and marketing director Ryan Robertson. "The addition of Yanmar diesel engines and power products to our electromechanical power generation range provides new markets and application opportunities. This development also extends our services not just to genset manufacturers, but to many sectors, including agricultural, mining, climate control and construction."

"At Vert Energy, we align ourselves with companies that vertically integrate with our energy and electro-mechanical business units and provide industry with products that are at the forefront of reducing carbon footprints for use in environmentally-conscious energy solutions. By selecting the best partners and products, we are able to meet our customers' exact requirements. Product efficiency, competitive market positioning, pristine quality standards and guarantees of extended service life, are our main selection criteria. In Yanmar, we have found a partner with whom we share all these important values."

"Our team strives to not just support the direct sale of Yanmar products,

but we will also work closely with global OEMs who integrate Yanmar engines in their equipment. Yanmar's extensive range of diesel engines provides a variety of solutions for new capital equipment manufacturers, as well as the option of potential retrofitting in certain ranges to engines that are now Tier 4 Final Stage 5 compliant with European emission standards."

"The addition of Yanmar's L Series diesel engines strengthens Vert Energy's position in the local pump industry. The company has been supplying electric motors to the pump industry for many years and the addition of a mechanical diesel-powered engine as an alternative represents an exciting opportunity for the company."

Yanmar's L-series air-cooled diesel engines and TN-series water-cooled diesel engines are key products now available through Vert Energy, which is geared to enhance the efficiencies of the power generation and electromechanical power transmission industries.

According to Vert Energy, although legislation surrounding emission levels in many African countries is not as stringent as in Europe or Asia, the need for cleaner, fuel-efficient solutions is at the forefront of product development locally, particularly in the underground mining environment.

Benefits associated with the Yanmar L-Series air-cooled diesel engines include longer service intervals and improved fuel consumption. Lower emission levels in the Tier 5 range of products present a strategic opportunity for

local manufacturing companies looking to export to emission-regulated territories.

Vert Energy's service to the electromechanical power generation sector also includes a repair and maintenance facility. The company has made a substantial investment in skills training to ensure technicians are able to service and support a wide range of products efficiently throughout the region. In addition, the company holds a comprehensive range of standard products and spare parts to support the local market.

Highly skilled technicians assist with inspections, diagnostics and repair procedures, re-assembly, installation and commissioning, as well as with the implementation of preventive and predictive maintenance programmes.

The combination of Yanmar's quality branded products and Vert Energy's technical expertise and broad distribution reach augers well for electromechanical power generation on the African continent.

Vert Energy also supplies and supports the entire Leroy Somer LS range of alternators and Nexus electric motors and power transmission components. The company is also the authorised sales and support partner for DEIF generator controls, NSM alternators and Energie power products.

Enquiries: www.vertenergy.co.za or www.yanmar.com/eu

Upskill your workforce with WearCheck training



WearCheck training consultant Jan Backer (third from left) recently conducted oil analysis training courses in Johannesburg for delegates from Glencore-Rhovan Vanadium Mine, NEA Mining and SPH Kundalila (pictured).

Condition monitoring technology is advancing so fast that ongoing training for staff working in the machinery maintenance arena is essential in order to stay abreast of current trends. So says WearCheck's technical manager Steven Lumley, who plays an instrumental role in developing the company's training schedule as well as ensuring that all courses are compliant with lockdown regulations.

"We have found that customers who invest in upskilling their staff definitely gain a higher return

on investment for their condition monitoring programme. For example, if maintenance staff know how to accurately interpret vibration readings or take an oil sample correctly or take proper care of the machinery, the efficacy of the condition monitoring programme is boosted hundredfold, and training plays a key role here."

"Due to the ongoing COVID-19 situation," says Lumley, "please contact us to confirm whether the courses will be held at a venue or online, as we strive to comply with lockdown

regulations and keep our course delegates safe and healthy."

WearCheck's range of oil analysis and condition monitoring training courses is geared for maintenance practitioners operating at various levels within an organisation. Many of these courses earn valuable CPD (continuing professional development) points for delegates.

For more details on course content and prices, visit the training section at www.wearcheck.co.za.

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Ledvance and Gelsa Lighting celebrate joint success

Ledvance South Africa recently awarded Gelsa Lighting the top distributor award for 2019 and 2020. The top distributor award has been awarded to Gelsa Lighting for three years running. Ledvance would like to thank Gelsa Lighting for its support and looks forward to growing the relationship and achieving greater success within the lighting industry in future.

Enquiries: +27 (0)11 207 5600



A little earthing

There's this guy, Clinton Ober. He had a midlife crisis and travelled around looking for enlightenment. In Arizona he had a sudden realisation while sitting on a park bench, watching tourists. He noticed that they were all wearing shoes. It occurred to him that they had lost contact with the ground and needed to be grounded. He grounded himself, slept better, felt better, tried it on friends and did research. This has sparked a whole movement and an industry of grounding products.

So, a serious flake. Or is he really? Read

on. At times, the charge of a cloud in the sky can be a few hundred thousand volts. If the earth is ground then the charge distribution over a normal human being on the ground is of the order of a few thousand volts. This doesn't kill us since we are forever neutralising this by touching metal objects and stuff. But we do carry round a charge.

This charge (in my explanation) polarises the synovial fluid in the joints in the body. Synovial fluid is a thick liquid located between your joints. The fluid cushions the ends of bones and reduces friction when you move your joints. When it is polarised the joints ache. We know this is all true because many people have been heard to say: "Hey, it's going to rain, I can feel it in my joints, they ache." We also know that the body can carry a charge – in Gauteng in winter people often get zapped by sparks off door handles and car doors when the static charge they are carrying is discharged. Thus, while Clinton Ober may be as new age as newly ripped and faded jeans, he may have a point. (Just as an aside, I have found that sitting in the sun, barefoot, drinking beer really helps me with sleeping better and being free of ailments).

Back to grounding. Or earthing, which is the same thing. The reason I am telling all you hard bitten contractors about this is because sooner or later some new age hippy, some air breathing soul, some ill met by moonlight, proud Titania... will ask you, the electrical person, to connect their bed or bed sheet or something to ground or earth. Or they will ask you to wire up their bracelet to a wire which is connected to earth. So, what harm? Why not pander to their fanciful whims?

Well... The problem is that earth is not always at zero potential. If you connect the phase of an 11 kV power line to earth there will be a big bang. In that process current will flow from the place of the bang in all directions through the earth until it is dissipated. All along that path there will be a voltage gradient which will be 11000 volts at the point of the bang and diminish further away from that point. The voltage gradient is known as a 'step potential'. Now, if we take the concept of connecting a person to the ground somewhere in the path of this electrical discharge it is easy to see that they could easily receive an electric shock which may injure them. Okay, few people have an 11 kV line passing over their garden, so the possibility of an electric step potential is small. However, an induced earth voltage from a lightning strike is not.

Lightning strike voltage can be 300 million volts and thus will induce step potentials some distance from the strike. Thus, connection of a person to a point on the ground may well have effects far worse than one imagines. On the internet they sell 'grounding mats' which you can lay on your bed. I quote from an advert: "Earthing connection – our large grounding brand half sheet is 27" x 50" (may vary slightly), and includes a 16 foot grounding wire designed to plug into the ground port of your wall outlet or grounded rod, connecting you to the earth while you sleep." This, in a country which is relatively dry and has frequent lightning, is a poor idea. Don't do it. It is a very risky idea.

Correction

In the January 2021 issue of *Sparks Electrical News*, in the article, *Growing product offering as Swan Electric and Switch Technique KZN unite*, the impression is given that Illumine Electrical forms part of the merger. Illumine Electrical (Pty) Ltd is a separate legal entity and does not form part of the Mobicon Group.

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FOSPRO



Planting seeds for a profitable year ahead

There is something to be said for the New Year. Even when there are challenges on the horizon, even when there are problems that must be overcome, this is the time to look to the future and find opportunities that can help you build your business and your career. Even though the pandemic is still a reality, there is room for optimism. For electrical contractors, this new year is a chance to invest in solid foundations for growth by investing in a relationship that will help you expand your business and your client base.

"The next few months will be defined by change," says Carel Scheepers, General Manager: Sales at Citiq Prepaid. "Changes to how the country operates within the constraints of the virus, and how businesses approach their clients. This is the perfect time for electrical contractors to explore new opportunities and to work with partners that can help them make the most of these opportunities."

The Citiq Installation Club (CIC) was developed by Citiq Prepaid in 2018 as a platform to support electrical contractors and wholesalers, providing them with additional resources and benefits that are relevant to their businesses and their industry. With the CIC, registered electrical contractors gain immediate benefits from their installation of Citiq Prepaid sub-metering solutions.

"The CIC rewards contractors for their hard work and their commitment," explains Scheepers. "They get points for every Citiq Prepaid sub-meter installed, and when they reach 20 points, they receive a cash voucher worth R500 that can be redeemed at their preferred Citiq Prepaid wholesaler. The more a con-

tractor installs, the more he or she earns. And it rewards the wholesaler because they get the preferred business of those contractors registered on the CIC system."

Both wholesalers and retailers will need to register with the CIC to become part of the rewards programme. Fortunately, this is a quick and easy process, designed to use up as little of your free time as possible. Wholesalers benefit in that they can use the CIC to build long-standing relationships with trusted electrical contractors, and contractors benefit because they receive financial rewards for their hard work and loyalty.

"The CIC doesn't come with fine print, unnecessary delays or extensive paperwork," says Scheepers. "But it does come with connections, partnerships and opportunities. Contractors that are part of the CIC are welcomed to a network of people that share the same commitment to quality, customer service, and prepaid sub-metering service delivery."

The CIC has seen steady growth over the past three years and has already had a tangible difference to the lives of contractors around the country. Some of Citiq Prepaid's top installers are members of the CIC and have benefitted immensely from the platform and the rewards programme. Pride Rugwete installed 850 meters from July to November 2020, an impressive feat and one that was supported by his relationship with Citiq Prepaid.

"Citiq Prepaid sub-meters are so reliable, and the company is ethical in how they work with me and my customers," says Rugwete. "They understand the prepaid sub-metering market and they are always on

hand to answer my questions and to help my customers register for their prepaid electricity. Their call centre is quick and efficient – we don't sit on hold for a long time – and their products are of high quality,

which makes them the right choice for me and my business."

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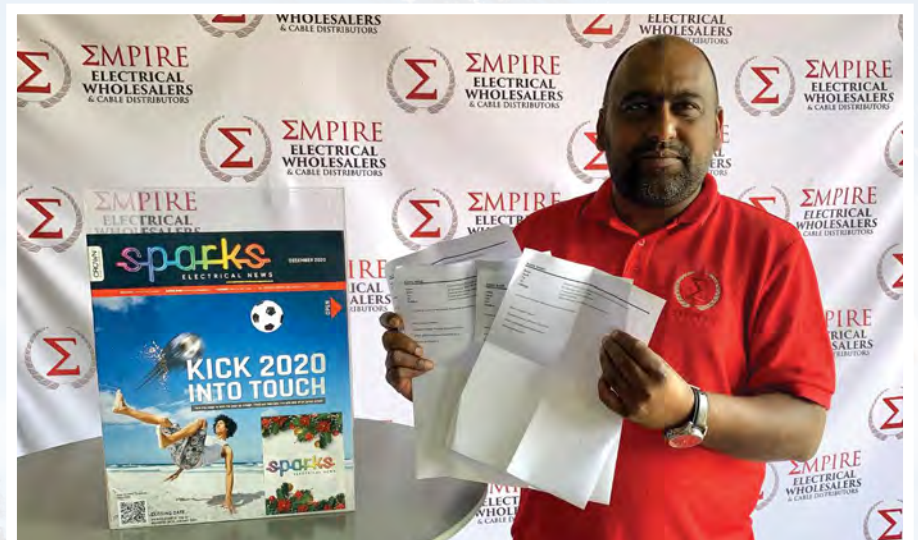
the winners are...

As with most things over the last 12 months, the annual *Sparks Electrical News* competition, this year under the theme, 'Kick 2020 Into Touch', did not go to plan. The response was great from our readers and we received hundreds of entries, yet COVID-19 decided to raise its head again and put a spanner firmly in the works.

Representatives from the 12 advertisers who offered up some amazing prizes for the year's competition, were due to meet the Sparks team for a few hours away from the office at the picturesque Royal Johannesburg Golf Club. Drinks, food and laughs would have been shared in-between drawing the lucky prize winners. But then Lockdown Level 3 happened.

While we could have still had a get-together with our clients, the team felt it would have been irresponsible to bring 20 people together at a time when the numbers of infections were indicating a 'second wave', so we decided to do things a bit differently. Instead of having the 12 advertisers come to one place to perform the draw, we hit the road and went to them – armed with masks and hand sanitiser, Sparks travelled across Johannesburg so that the advertisers could still draw the winners themselves. Did you walk away with one of the prizes?

Sparks Electrical News would once again like to convey our sincere thanks to the loyal advertisers who have made this competition a resounding success for over 10 years.



Denver Mahabeer from Empire Electrical Wholesalers.



Richard Huyerman from Citiq Prepaid.



Dale Engelbrecht from Vermont Sales.



Anthony Lloyd from Eurolux and Radiant Lighting.



Leanne Cole from Comtest.



Ingrid Nicolaus from HellermannTyton.



Ian Downard and Mark Jenkins from Three-D Agencies.



Vanessa Venter from Waco.



Lizel De Jager from Voltex.



Gillian Taylor and Pieter Knoetze from Crabtree Electrical.



Nadine Combrinck from Schneider Electric.

HERE ARE THE WINNERS

Citiq Prepaid

A Citiq Prepaid hamper including:

- Russell Hobbs Coffee Maker
- Coffee
- Mugs
- Boardgame
- Cookies

Winner: Gerhard Pool

Comtest

- 2 x Fluke 114 True-RMS multimeters

Winners: Rocco Viviers, SGA Trading and Rishichand Budram, Sonic Electrical Services

Crabtree Electrical

- A R2000 Makro gift voucher

Winner: Sean Millard, EPH Solutions

Empire Electrical Wholesalers

- 5 x CBI real-time electricity meters

Winners: Graham Busse, Graham's Electrical; Mpho Fidelia Mutoti, Davhi Four Trading; Pooven Reddy, Phoenix Contact, Simone Harker, City of Cape Town; and Pieter van Niekerk

Eurolux

- A Eurolux FS269 LED 35W 5000K work light

Winner: Mpho Solomom Moeng, Eskom

HellermannTyton

A HellermannTyton hamper including:

- Religel (REGILEL1L)
- SpeedyTies (pack of 5)
- Fospro
- Toolbag (with hammer and Allen keys)
- TBM27 Multimeter
- Engset

- Bottle

- License Discs Holders

Winner: Fathima Peer, Hope Fountain Investments

Radiant Lighting

- Hummer H3 Power Bank 6000mah

Winner: Moosa Peer, Early Light Trading

Schneider Electric

- 3 x Schneider Electric Mobyia Lights.

Winners: Zainub Goga, Early Light Trading; Zuko Mboza, Engen Petroleum and Adhir Ramborosa, Three-D Agencies

Three-D Agencies

- 2 x UT61B+ digital multimeters

Winners: Matha Brink, Brintech and Marius Swanepoel, Anything Electrical

- 2 x UT61D+ digital multimeters

Winners: Mandy Kamies, SAB and Nadine Kramer, Atlas Group

Vermont Sales

- Tork Craft 12 V cordless mini palm sander

Winner: Sue Charlton, SJC Creative

- Tork Craft HSS Tap and Die set

Winner: Johan Viljoen, ACE Instrumentation

Voltex

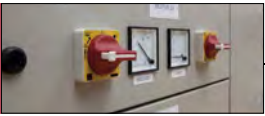
- A Voltex hamper

Winner: Russell Brummer, eThekweni Electricity

Waco

- Waco Solar Lantern and a complete Waco toolkit

Winner: Nikki Fitchet, Edison Power



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<p>ABB South Africa</p> <p>Allbro</p> <p>Brady South Africa</p> <p>Brother International SA</p> <p>C3 Technologies</p> <p>CBI-electric: low voltage</p> <p>Crabtree South Africa</p> <p>DEHN + SHöNE GmbH</p> <p>Denver Technical Products</p> <p>Elegen</p> <p>Eurolux</p> <p>George Switchboards</p> <p>HellermannTyton</p> <p>JB Switchgear Solutions</p> <p>Legrand</p> <p>Marechal Electric Africa</p> <p>McWade Productions</p> <p>O-Line</p> <p>Phoenix Contact</p> <p>Power Panels and Electrical</p> <p>Radiant Group</p> <p>Sabelco Electrical Industries</p> <p>Shuttle Lighting</p> <p>SIBA Fuses</p> <p>Siemens</p> <p>Superlume</p> <p>Surge Technology</p> <p>Switchboard Manufacturers</p> <p>The Switch Shop</p> <p>Telbit</p> <p>Vossloh Schwabe</p> <p>WEG</p> <p>World Power Products</p>	<p>Eurolux Sales</p> <p>Fusecomp Charmaine</p> <p>HellermannTyton Ingrid Nicolaus</p> <p>Hoi P'loy Lisa van Heerden</p> <p>JB Switchgear Solutions Johan Basson</p> <p>Khanyisa Electrical Supplies Dominic Kalil</p> <p>Legrand Johan Bosch</p> <p>Livecopper JP Gouws</p> <p>Marechal Electric Africa Sales</p> <p>McWade Productions Steven Naidoo</p> <p>Nordland Lighting Johann Lamprecht</p> <p>O-line Sales</p> <p>Phambili Steve Lea</p> <p>Phoenix Contact Carl Coetzer</p> <p>Power Panels and Electrical Freddie van der Merve</p> <p>R&C Instrumentation Steve Edwards</p> <p>Radiant Group Alfred Weldon</p> <p>Sabelco Electrical Industries Marc Moreau</p> <p>Shuttle Lighting Tracey Steyn</p> <p>SIBA Fuses H.L. Hassen</p> <p>Siemens Yullen Govender</p> <p>Stone Stamcor Mark Talbot</p> <p>Superlume Willie Garbers</p> <p>Surge Technology Paul van As</p> <p>Swan Electrical Albert Pienaar</p> <p>Switchboard Manufacturers Josh Berman</p> <p>The Switch Shop Michael Prasti</p> <p>Telbit Martin Hogan</p> <p>Three-D Agencies Mark Jenkins</p> <p>Vossloh Schwabe Barry Hamson</p> <p>Voltex Hugh Ward</p> <p>Voltex Hugh Ward</p> <p>Voltex LSis Rose Schulz</p> <p>Waco Jaco Coetzee</p> <p>World Power Products Chris du Preez/Jan Gortzen</p> <p>Zest WEG Group Switchgear call centre</p>	<p>Swan Electrical Full range of circuit breakers/earth leakage breakers</p> <p>Switchboard Manufacturers Full range of circuit breakers</p> <p>Voltex Full range of circuit breakers and earth leakage breakers</p> <p>Voltex LSis Full range of circuit breakers and earth leakage breakers</p> <p>Waco Full range of circuit breakers and earth leakage breakers</p> <p>Zest WEG Group Comprehensive range of miniature circuit breakers, moulded case circuit breakers, air circuit breakers and earth leakage devices</p>	<p>Phambili All sizes available or manufactured to client specifications</p> <p>Phoenix Contact Range of terminals</p> <p>Power Panels and Electrical Full range of distribution boards</p> <p>R&C Instrumentation Infrared inspection windows 24-7 differential temperature monitors inside v outside boards</p> <p>Sabelco Electrical Industries Complete range of distribution boards</p> <p>Siemens Full range of distribution boards</p> <p>Swan Electrical Full range of distribution boards</p> <p>Switchboard Manufacturers Full range of LV distribution boards</p> <p>Voltex Full range of distribution boards</p> <p>Voltex LSis Complete range of distribution boards</p> <p>Waco Broad range of distribution boards</p> <p>World Power Products Wide range of distribution boards, enclosures and floor standing cabinets (TTA/MCC)</p> <p>Zest WEG Group Full range of indoor and outdoor distribution boards, custom made to client specification</p>
DISTRIBUTORS		PROTECTION	LABELLING
<p>ACDC Dynamics</p> <p>ACTOM Electrical Products</p> <p>ARB Electrical Wholesalers</p> <p>Brady South Africa</p> <p>C3 Technologies</p> <p>Comtest</p> <p>Consolidated Electrical Distributors</p> <p>DEHN Africa</p> <p>Denver Technical Products</p> <p>Edison Lebone</p> <p>Electrahertz</p> <p>ElectroMechanica</p> <p>Electro-Test</p> <p>Elen Electrical Enclosures</p> <p>Eurolux</p> <p>Fusecomp</p> <p>HellermannTyton</p> <p>Hoi P'loy</p> <p>Khanyisa Electrical Supplies</p> <p>Livecopper</p> <p>Magnet Electrical Suppliers</p> <p>Major Tech</p> <p>MCE Electric</p> <p>Nordland Lighting</p> <p>Phambili</p> <p>R&C Instrumentation</p> <p>Sabelco Electrical Industries</p> <p>SIBA Fuses</p> <p>Stone Stamcor</p> <p>Superlume</p> <p>Surge Technology</p> <p>Swan Electrical</p> <p>Switchboard Manufacturers</p> <p>The Switch Shop</p> <p>Three-D Agencies</p> <p>Voltex</p> <p>Voltex LSis</p> <p>Voltex MVLV</p> <p>Waco</p> <p>Zest WEG Group</p>		<p>ABB South Africa Full range of protection devices</p> <p>ACDC Dynamics Full range of motor protection circuit breakers (MPCBs) from 32 A to 110 A frame high break capacity; all accessories and auxiliary contacts available including the Gewiss IEC309 HP range of connectors</p> <p>ACTOM Electrical Products Wide range of protection devices</p> <p>ARB Electrical Wholesalers Full range of protection devices</p> <p>Comtest IS meters; Atex equipment</p> <p>Consolidated Electrical Distributors Full range of protection devices</p> <p>Edison Lebone Range of protection devices</p> <p>Electrahertz Range of protection devices</p> <p>Elegen Range of protection devices</p> <p>ElectroMechanica Range of protection devices</p> <p>Eurolux Extensive range of protection devices available</p> <p>Fusecomp Range of protection devices</p> <p>Khanyisa Electrical Supplies Range of protection devices</p> <p>Legrand SA Complete range of protection devices</p> <p>Livecopper CBI-Electric; Schneider; Chint; Hager; DEHN; Cirprotec</p> <p>Magnet Electrical Suppliers Schneider and Eaton protection devices</p> <p>McWade Productions Full range of protection devices</p> <p>O-Line Full range of protection devices</p> <p>Phoenix Contact Range of surge protection devices</p> <p>R&C Instrumentation Infrared inspection windows 24-7 differential temperature monitors inside v outside boards</p> <p>Sabelco Electrical Industries Full range of protection devices</p> <p>Siemens Full range of protection devices</p> <p>Voltex Complete range of protection devices</p> <p>Voltex LSis Wide range of protection devices</p> <p>Zest WEG Group Full range of thermal and thermal/magnetic overload devices; electronic overload protection</p>	<p>ARB Electrical Wholesalers Full range of labelling products</p> <p>Brady South Africa Full range of identification solution – labels, printers, software</p> <p>Brother International SA Full range of labelling machines and consumables</p> <p>Consolidated Electrical Distributors Full range of labelling products</p> <p>Edison Lebone Full range of labelling products</p> <p>Electrahertz Range of labelling products</p> <p>ElectroMechanica Full range of labelling products</p> <p>HellermannTyton HTZ tape – black, black/white, black/yellow; Panel Plate labels – Thermal transfer (Helatag 1221 – Silver and Helatag 1220 – White)</p> <p>Khanyisa Electrical Supplies Range of labelling products</p> <p>Legrand SA CAB 3 and Memocab cable markers</p> <p>Livecopper Brother portable hand-held label printers and replacement tapes</p> <p>Magnet Electrical Suppliers Brady labelling products</p> <p>Phambili Full range of labelling products</p> <p>Phoenix Contact Marking materials and printers</p> <p>R&C Instrumentation APP-driven equipment tagging</p> <p>Voltex Complete range of labelling products</p>
CONTACTS	CIRCUIT BREAKERS / EARTH LEAKAGE BREAKERS	DISTRIBUTION BOARDS	FUSES
<p>ABB South Africa Customer contact centre</p> <p>ACDC Dynamics Elmari Erasmus/Dirk Klynsmith</p> <p>ACTOM Electrical Products Russel Ramsden</p> <p>Allbro Elani van Rensburg</p> <p>ARB Electrical Wholesalers Sales</p> <p>Brady South Africa Anica Moyo</p> <p>Brother International SA Munna Desai</p> <p>C3 Technologies Charles du Plessis</p> <p>CBI-electric: low voltage Aletta Olivier</p> <p>Comtest Sales</p> <p>Consolidated Electrical Distributors Danie Esterhuizen</p> <p>Crabtree South Africa Gillian Taylor</p> <p>DEHN Africa Kirk Risch</p> <p>Denver Technical Products Mervyn Stocks</p> <p>Edison Lebone Werner Schmal</p> <p>Electrahertz Frank Proude (Pta) Peet Lourens (Jhb)</p> <p>Elegen Christopher Hinckley</p> <p>ElectroMechanica Sales</p> <p>Electro-Test Winston Browning</p> <p>Elen Electrical Andy Kapral</p>	<p>ABB South Africa Full range of circuit breakers, earth leakage breakers</p> <p>ACDC Dynamics Full range of switchgear from 13 mm MCBs to MCCBs and ACBs; MCCBs rated from 20 A to 1 600 A; complementary isolator and earth leakage ranges also available</p> <p>ACTOM Electrical Products Full range of circuit breakers/earth leakage breakers</p> <p>ARB Electrical Wholesalers Full range of circuit breakers/earth leakage breakers</p> <p>CBI-electric: low voltage Full range of commercial/industrial, miniature circuit breakers; moulded case circuit breakers; earth leakage protection devices</p> <p>Consolidated Electrical Distributors Full range of circuit breakers/earth leakage breakers</p> <p>Edison Lebone Full range of circuit breakers and earth leakage breakers</p> <p>Electrahertz Range of circuit breakers and earth leakage breakers</p> <p>Elegen Range of circuit breakers and earth leakage breakers</p> <p>ElectroMechanica Wide range of circuit breakers and earth leakage breakers</p> <p>Eurolux Extensive range of circuit breakers and earth leakage devices, single and three phase</p> <p>Fusecomp Range of circuit breakers and earth leakage breakers</p> <p>Khanyisa Electrical Supplies Full range of circuit breakers/earth leakage breakers</p> <p>Legrand SA Complete range of circuit breakers up to 6 300 A, MCB, MCCB, ACB</p> <p>Livecopper CBI-Electric; Schneider; Chint; Hager; Vet</p> <p>Magnet Electrical Supplies Schneider and Eaton circuit breakers and earth leakage breakers</p> <p>Major Tech Full range of miniature circuit breakers, isolator switches, earth leakage breakers and populated pre-wired distribution boards according to SANS10142</p> <p>MCE Electric Onesto DIN rail circuit breakers and earth leakage devices; Schenker mini rail circuit breakers and earth leakage devices; Schenker 13 mm mini rail circuit breakers and earth leakage devices; Onesto dc circuit breakers</p> <p>McWade Productions Full range of circuit breakers, earth leakage breakers</p> <p>O-Line Full range of circuit breakers and earth leakage breakers</p> <p>Phoenix Contact Full range of circuit breakers</p> <p>Siemens Full range of circuit breakers/earth leakage breakers</p>	<p>ABB South Africa Range of fuses</p> <p>ACDC Dynamics BS and Din type fuses for fused isolators</p> <p>ACTOM Electrical Products Full range of fuses</p> <p>Allbro Full range of fuses</p> <p>ARB Electrical Wholesalers Full range of fuses</p> <p>Consolidated Electrical Distributors Full range of fuses</p> <p>Edison Lebone Range of fuses</p> <p>Electrahertz Range of fuses</p> <p>ElectroMechanica Range of fuses</p> <p>Fusecomp Full range of fuses and fuse holders</p> <p>Khanyisa Electrical Supplies Full range of fuses and fuse holders</p> <p>Legrand SA HRC, domestic and industrial fuses</p> <p>Magnet Electrical Suppliers Full range of fuses</p> <p>MCE Electric MCE fuses and fuse holders; Onesto fuses and fuse holders; Onesto dc fuses and fuse holders</p> <p>McWade Productions Full range of fuses</p> <p>Phoenix Contact Din rail mounted</p> <p>SIBA Fuses Complete range of LV and HV fuses for all applications</p> <p>Siemens Full range of fuses</p> <p>Swan Electrical Full range of fuses</p> <p>Voltex Wide range of fuses</p> <p>Waco Full range of fuses</p> <p>Zest WEG Group High speed fuses ranging from 20-1 000 A; fuse holders</p>	



SWITCHES/ISOLATORS	SURGE PROTECTION DEVICES	METERS	HAZARDOUS AREAS
<p>Crabtree South Africa Complete range of switches and isolators</p> <p>Edison Lebone Range of switches/isolators</p> <p>Electrahertz Range of switches/isolators</p> <p>ElectroMechanica Range of switches/isolators</p> <p>Elegen Range of switches/isolators</p> <p>Eurolux Dimmer switches; plastic plate and switch packs; metal plate and switch packs; industrial switches; variety of isolators</p> <p>Fusecomp Range of switches and isolators</p> <p>Hoi P'loy Black & White in line switches</p> <p>Khanyisa Electrical Supplies Complete range of switches and isolators</p> <p>Legrand SA Domestic and industrial switches and isolators</p> <p>Livecopper CBI-Electric; Schneider Electric; Legrand; Vet1 1; Vet1 2; Crabtree; Lesco</p> <p>Magnet Electrical Suppliers Full range of Schneider and Eaton switches and isolators</p> <p>Major Tech VET1 complete switches in modular and assembled; VET1 complete isolator range; VET1 IS isolator series (one-pole to four-pole)</p> <p>Marechal Electric Africa 5 A-700 A 1000 V (DECONTACTOR™, Multi Contact connectors, Industrial Plugs & Socket Outlets)</p> <p>MCE Electric Onesto din rail isolators; Schenker mini rail isolators; Onesto dc isolators; MCE surface mount (IP66 and IP65) and base mount isolators</p> <p>McWade Productions Full range of switches/isolators</p> <p>Phoenix Contact Switches and isolators</p> <p>Shuttle Lighting LED dimmers</p> <p>Siemens Full range of switches and isolators</p> <p>Stone Stamcor Chilly toggle switches, Triton float switches</p> <p>Superlume New Smart WiFi light switches for the home. Support System: Alexa/Google Home/AliGenie/IFTTT</p> <p>Swan Electrical Range of switches and isolators</p> <p>Switchboard Manufacturers Full range of isolators</p> <p>The Switch Shop Range of switches/isolators</p> <p>Voltex Full range of switches and isolators</p> <p>Voltex LSis Complete range of switches/isolators</p> <p>Waco Full range of switches and isolators</p> <p>Zest WEG Group Comprehensive range of miniature and moulded case isolators ranging from 40-1600 A</p>	<p>Consolidated Electrical Distributors Full range of surge protection devices</p> <p>DEHN Africa DEHNgard 952 310; DEHNgard 952 110; DEHNgard 952 070; DEHNgard 952 030; DEHNventil 951 310; DEHNventil 951 110; DEHNshield 941 310; DENHshield 941 310; DEHNgard CI 952 322; DEHNgard CI 952 327; DEHNven CI 961 200; DEHNgap Maxi 961 180; DEHNCord 900 430</p> <p>Edison Lebone Range of surge protection devices</p> <p>Electrahertz Complete range of surge protection devices</p> <p>ElectroMechanica Range of surge protection devices</p> <p>Elegen Range of surge protection devices</p> <p>Eurolux IP66 isolators</p> <p>Fusecomp Full range of protection devices</p> <p>HellermannTyton Surge plugs: TSPIA and TSPIAF – high surge handling capabilities</p> <p>Khanyisa Electrical Supplies Complete range of surge protection devices</p> <p>Legrand SA Full range of surge protection devices</p> <p>Livecopper CBI-Electric; Schneider; Chint; Hager; DEHN; Cirprotect</p> <p>Magnet Electrical Suppliers Schneider and Eaton surge protection devices</p> <p>Major Tech MTD6 - appliance surge protector</p> <p>MCE Electric Onesto surge arresters; Schenker surge arresters; Onesto dc surge arrestors</p> <p>McWade Productions Wide range of surge protection devices</p> <p>O-Line Full range of surge protection devices</p> <p>Phoenix Contact Range of surge protection devices</p> <p>Sabelco Electrical Industries Full range of protection devices</p> <p>Siemens Full range of surge protection devices</p> <p>Surge Technology DEHN; Saltek; Copat; Tridelta</p> <p>Swan Electrical Range of surge protection devices</p> <p>Telbit 40kA and 8kA DIN-Rail Surge Arresters</p> <p>Voltex Full range of surge protection devices</p> <p>Voltex LSis Complete range of surge protection devices</p> <p>Zest WEG Group Fanox surge arrester Class C Type II</p> <p>Vossloh Schwabe Full range of surge protection devices</p>	<p>Edison Lebone Range of meters</p> <p>Electrahertz Range of meters</p> <p>ElectroMechanica Range of meters</p> <p>Electro-Test Complete range of meters</p> <p>Eurolux Digital multimeters; IR thermometer; Lux meter; laser distance meter; clamp meter</p> <p>HellermannTyton TBM series of multimeters and clamp meters to suit every application</p> <p>Khanyisa Electrical Supplies Full range of meters</p> <p>Legrand SA Electrical energy and multifunction metering</p> <p>Livecopper CBI-Electric</p> <p>Magnet Electrical Suppliers Schneider and Power Star meters</p> <p>Major Tech Full range of professional test instruments and DIY meters</p> <p>MCE Electric MCE ammeters and voltmeters</p> <p>McWade Productions Range of meters</p> <p>Phoenix Contact Energy power meters and CTs</p> <p>Siemens Full range of meters</p> <p>Swan Electrical Range of meters</p> <p>Switchboard Manufacturers Range of KHW meters</p> <p>Telbit Prepaid water meters</p> <p>Three-D Agencies Full range of multimeters and test equipment</p> <p>Voltex Voltex range of LSis panel meters</p> <p>Waco Complete range of meters</p> <p>Zest WEG Group Electronic range of power factor meters and power meters</p>	<p>ACDC Dynamics Full range of products for hazardous areas</p> <p>ARB Electrical Wholesalers Broad range of products for hazardous areas</p> <p>Comtest Full range of Fluke EX rated Meters</p> <p>Edison Lebone Wide range of products for hazardous areas</p> <p>Elen Electrical Enclosures Junction boxes Eex'e zone 1, 2, 21, 22</p> <p>Eurolux Hazardous luminaires HellermannTyton Multimeter – TBM812XEX and TBM811XEX, intrinsically safe; TSF14 – Ex and suitable for mining and petrochemical</p> <p>Khanyisa Electrical Supplies Wide range of products for hazardous areas</p> <p>Magnet Electrical Suppliers ATX products for hazardous areas</p> <p>Marechal Electric Africa Lighting, Control Stations, Junction Boxes, Flameproof Enclosures, Ex Industrial Plugs & Socket Outlets Nordland Lighting</p>
			<p>LIGHTING FOR HAZARDOUS AREAS</p> <p>Phoenix Contact Safety relays and Ex barriers</p> <p>R&C Instrumentation IS-certified Infrared thermometers</p> <p>Siemens Full range of products for hazardous areas</p> <p>Superlume A range of zone rate light fixtures</p> <p>Three-D Agencies Full range of multimeters and test equipment</p> <p>Voltex Full range of products for hazardous areas</p> <p>Waco Full range of products for hazardous areas</p> <p>Voltex LSis Broad range of products for hazardous areas</p>
		<p>DB BOARD ENCLOSURES</p> <p>ABB South Africa Complete range of DB enclosures</p> <p>ACDC Dynamics Wide range of DB enclosures in all colours, materials and sizes</p> <p>ACTOM Electrical Products Full range of DB enclosures</p> <p>Allbro Wide range of DB enclosures</p> <p>ARB Electrical Wholesalers Full range of DB enclosures</p> <p>C3 Technologies Manufacturers of LV distribution boards and all associated products</p> <p>CBI-electric: low voltage Flush mounted distribution boards</p> <p>Consolidated Electrical Distributors Full range of DB enclosures</p> <p>Edison Lebone Range of DB enclosures</p> <p>Electrahertz Range of DB enclosures</p> <p>ElectroMechanica Broad range of DB enclosures</p> <p>Elegen Range of DB enclosures</p> <p>Elen Electrical Enclosures Surface-mount distribution boards</p> <p>Eurolux Variety of steel and stainless steel electrical enclosures; surface- and flush-mounted distribution boards</p> <p>George Switchboards Specialised manufacturer of low and medium voltage enclosures; various distribution products for the electrical distribution network across Africa</p> <p>JB Switchgear Solutions Wide range of distribution board enclosures</p> <p>Khanyisa Electrical Supplies Full range of DB enclosures</p> <p>Legrand SA Complete range of flush- and surface-mount, waterproof, DIN rail boards</p> <p>Livecopper Custom sizes made to order: Gewiss; MCE; Hager; Vet1; CBI-Electric</p> <p>Magnet Electrical Suppliers Rittal and Allbro DB enclosures</p> <p>Major Tech Full range of IP 65 and IP 55 enclosures</p> <p>Marechal Electric Africa Boxes, Portable Power Distribution</p> <p>MCE Electric MCE distribution boards available in surface and flush mount from two-way to 36-way; Onesto distribution boards available in surface and flush mount from four-way to 36-way; Schenker distribution boards available in surface and flush mount from four-way to 20-way; adjustable flush mount distribution boards available in 20-way and 24-way</p> <p>Phambili Range of standard sizes available; manufacture to client specifications</p> <p>Power Panels and Electrical Wide range of distribution board enclosures</p> <p>R&C Instrumentation Infrared inspection windows</p> <p>Sabelco Electrical Industries Full range of distribution board enclosures</p> <p>Siemens Full range of distribution board enclosures</p> <p>Swan Electrical Range of distribution board enclosures</p> <p>Switchboard Manufacturers Range of DB enclosures</p> <p>The Switch Shop Full range of distribution board enclosures</p> <p>Voltex Full range of DB enclosures</p> <p>Voltex LSis Full range of distribution board enclosures and custom panels</p> <p>Voltex MVLV Complete range of DB enclosures</p> <p>Waco Broad range of distribution board enclosures</p> <p>World Power Products MCC: floor standing, 19" racks, kiosks</p> <p>Zest WEG Group Full range of indoor and outdoor distribution boards and DB enclosures, custom built to client specification</p>	
<p>CONTACTORS</p> <p>ABB South Africa Full range of contactors</p> <p>ACDC Dynamics Wide variety of contactors</p> <p>ACTOM Electrical Products Full range of contactors</p> <p>ARB Electrical Wholesalers Full range of contactors</p> <p>CBI-electric: low voltage Full range of magnetic contactors and thermal overload relays</p> <p>Consolidated Electrical Distributors Full range of contactors</p> <p>Denver Technical Products GIGAVAC dc contactors up to 1 000 A 1 000 V</p> <p>Edison Lebone Range of contactors</p> <p>Electrahertz Range of contactors</p> <p>ElectroMechanica Range of contactors</p> <p>Elegen Range of contactors</p> <p>Eurolux Extensive range of contactors</p> <p>Fusecomp Full range of contactors</p> <p>Khanyisa Electrical Supplies Full range of contactors</p> <p>Legrand SA Contactors up to 800 A</p> <p>Livecopper Schneider Electric; Chint</p> <p>Magnet Electrical Suppliers Schneider and Eaton contactors</p> <p>MCE Electric MCE ac magnetic contactors in 3- and 4-pole; MCE contactor accessories; S&C ac magnetic contactors in 3- and 4-pole; S&C contactor accessories</p> <p>Phoenix Contact Range of contactors</p> <p>Siemens Full range of contactors</p> <p>Swan Electrical Range of contactors</p> <p>Voltex Complete range of contactors</p> <p>Voltex LSis Complete range of contactors</p> <p>Waco Full range of contactors</p> <p>Zest WEG Group Complete range of contactors from 7-800 A, suitable for AC1 or AC3 use</p>	<p>ACDC Dynamics Wide variety of timers, including the Rhomberg range of timers</p> <p>ACTOM Electrical Products Full range of timers</p> <p>ARB Electrical Wholesalers Full range of timers</p> <p>CBI-electric: low voltage Standard electronic time switch with 24-hour reserve</p> <p>Consolidated Electrical Distributors Range of timers</p> <p>Edison Lebone Range of timers</p> <p>Electrahertz Wide range of timers</p> <p>ElectroMechanica Wide range of timers</p> <p>Eurolux Plug-in (24 hour) and time-switch timers</p> <p>HellermannTyton TWST – WIFI timer; TWSTM – WIFI and Energy meter; TDDT7 – 7 Day digital timer; TDT7 - Digital 3-Pin socket; TMT2 – 24 hour mechanical 3-pin socket</p> <p>Khanyisa Electrical Supplies Range of timers</p> <p>Legrand SA Complete range of analogue and digital timers</p> <p>Livecopper CBI-Electric; HellermannTyton; Major Tech</p> <p>Magnet Electrical Suppliers Schneider and Eaton timers</p> <p>Major Tech Complete range of analogue and digital timers</p> <p>MCE Electric MCE analogue and digital time switches; MCE seven day digital geyser time switch; Schenker mini rail seven day digital time switch</p> <p>O-Line Wide range of timers</p> <p>Phoenix Contact Din rail mounted timers</p> <p>Radiant Group Broad range of timers</p> <p>Siemens Full range of timers</p> <p>Stone-Stamcor SAIA-Burgess timers</p> <p>Superlume New Smart WiFi light switches with built in timer settings</p> <p>Swan Electrical Range of timers</p> <p>Voltex Full range of timers</p> <p>Waco Broad range of timers</p> <p>Zest WEG Group Electronic relays; RTW range timing; RPW range monitoring; RNW range level control</p>	<p>TIMERS</p> <p>ACDC Dynamics Wide variety of timers, including the Rhomberg range of timers</p> <p>ACTOM Electrical Products Full range of timers</p> <p>ARB Electrical Wholesalers Full range of timers</p> <p>CBI-electric: low voltage Standard electronic time switch with 24-hour reserve</p> <p>Consolidated Electrical Distributors Range of timers</p> <p>Edison Lebone Range of timers</p> <p>Electrahertz Wide range of timers</p> <p>ElectroMechanica Wide range of timers</p> <p>Eurolux Plug-in (24 hour) and time-switch timers</p> <p>HellermannTyton TWST – WIFI timer; TWSTM – WIFI and Energy meter; TDDT7 – 7 Day digital timer; TDT7 - Digital 3-Pin socket; TMT2 – 24 hour mechanical 3-pin socket</p> <p>Khanyisa Electrical Supplies Range of timers</p> <p>Legrand SA Complete range of analogue and digital timers</p> <p>Livecopper CBI-Electric; HellermannTyton; Major Tech</p> <p>Magnet Electrical Suppliers Schneider and Eaton timers</p> <p>Major Tech Complete range of analogue and digital timers</p> <p>MCE Electric MCE analogue and digital time switches; MCE seven day digital geyser time switch; Schenker mini rail seven day digital time switch</p> <p>O-Line Wide range of timers</p> <p>Phoenix Contact Din rail mounted timers</p> <p>Radiant Group Broad range of timers</p> <p>Siemens Full range of timers</p> <p>Stone-Stamcor SAIA-Burgess timers</p> <p>Superlume New Smart WiFi light switches with built in timer settings</p> <p>Swan Electrical Range of timers</p> <p>Voltex Full range of timers</p> <p>Waco Broad range of timers</p> <p>Zest WEG Group Electronic relays; RTW range timing; RPW range monitoring; RNW range level control</p>	
<p>SURGE PROTECTION DEVICES</p> <p>ABB South Africa Full range of surge protection devices</p> <p>ACDC Dynamics Wide range of surge protection devices</p> <p>ACTOM Electrical Products Full range of surge protection devices</p> <p>ARB Electrical Wholesalers Full range of surge protection devices</p> <p>CBI-electric: low voltage Clip-in dual mount surge protection devices</p>	<p>METERS</p> <p>ACDC Dynamics Digital panel meters ad digital process meters</p> <p>ARB Electrical Wholesalers Full range of meters</p> <p>CBI-electric: low voltage Rail mount meters</p> <p>Comtest Full range of Fluke Meters: Digital Multimeters , Clamp, Power Quality</p> <p>Consolidated Electrical Distributors Full range of meters</p>	<p>ABB South Africa Full range of surge protection devices</p> <p>ACDC Dynamics Digital panel meters ad digital process meters</p> <p>ARB Electrical Wholesalers Full range of meters</p> <p>CBI-electric: low voltage Rail mount meters</p> <p>Comtest Full range of Fluke Meters: Digital Multimeters , Clamp, Power Quality</p> <p>Consolidated Electrical Distributors Full range of meters</p>	

AECOM #1 on ENR 2020 Top 200 Environmental Firms list

AECOM has been ranked number one in Engineering News Record's (ENR's) 2020 Top 200 Environmental Firms, marking the fifth year in a row that AECOM has topped the global analysis. "Our team is passionate about the environment and sustainable development, and awards such as these validate our view of and approach to both," comments Elisabeth Nortje (Pri.Sci. Nat.), Market Sector Lead – Environment, Africa.

The AECOM environmental team in Africa consists of a group of dedicated environmental scientists, social scientists and climate-change advisors. It provides services to both internal and external clients, addressing the need for environmental and social impact assessments to meet international funder requirements; waste, water and air emissions licences; compliance monitoring and auditing; sustainability and climate change assessments, and stakeholder engagement, integrated environmental planning and environmental advisory services throughout South Africa, Africa and the Middle East.

"Our focus is on integrating the needs of the bio-physical and socio-economic environments with the vision of our clients," notes Nortje. "Our services are well-integrated within the company structure. As a result of the multi-faceted nature of our discipline, we are well-positioned to provide guidance and input to the various business units and market sectors."

Similarly, it engages with clients across various sectors, from power to transportation and water infrastructure to agriculture, mining and master-planning. "For us, it is fundamental that the environment be

considered an integral component of project execution from planning and design through to construction, operation and decommissioning," stresses Nortje.

"Environmental issues or challenges in South Africa are a factor of both our history and our current developmental needs. As a nation and a continent, we face challenges related to food security, power generation, the supply of clean water, the legacy of pollution, infrastructure maintenance and job creation.

"Addressing any of these will impact our environment. Added to this is the dimension of climate change, which will drive the rate of change and increase the impact on especially our vulnerable communities," points out Nortje. "Climate change and carbon tax should be on everybody's radar. South Africa's National Climate Change Bill is now at an advanced stage and is expected to be passed into law in the near future."

Looking at the latest trends, Nortje highlights that digital technology has the potential to actively engage South African citizens, particularly the youth, with their surroundings by making environmental information accessible on social media. If done correctly, it becomes a conversation tool between scientists and citizens that empowers them to render sustainable development tangible.

Software-enabled management of spatial data is also becoming increasingly important, incorporating information from satellite images, databases from government authorities as well as NGOs, and even drone footage and information from citizen scientists

to identify areas of potential sensitivity. "It is imperative that we build polyvocality into sourcing our spatial information, to bring the environmental assessment process into the open and allow interested citizens to investigate and understand the environmental impacts of projects that affect them and, in turn, to understand the environmental footprint and cost of their daily lives," elaborates Nortje.

The use of digital technology in community and stakeholder engagement is as important as the management of spatial data. Hence the environmental team always tries to innovate in terms of engaging people on projects. AECOM's Digital NEPA Tool is said to be the first-ever of its kind, providing an interactive, web-based environmental impact statement that is fully navigable for stakeholders.

"This is another example of how the collective effort of the larger team gives us a leading edge. The tool will allow us to hold virtual public meetings and engage with stakeholders across large geographic areas and with those who cannot attend in-person meetings during consultation periods due to social distancing measures related to the coronavirus outbreak," points out Nortje.

"We recognise the challenges faced in terms of high-speed internet access, access to IT infrastructure and expertise or something as elementary as access to electricity. Despite this, our aim must be to build the mechanisms and processes that ensure broad input into environmental governance."

In terms of Integrated Environmental Manage-

Elisabeth Nortje AECOM Market Sector Lead – Environment Africa.



ment, digital technology supports best practice through modern software, remote-sensing capability and Geographic Information System (GIS) mapping. In this context, it can transform the view of Environmental Impact Assessment (EIA) from a snapshot to a more robust assessment that considers change over time in conjunction with any planned new activity.

"When used effectively, these technologies can add value to the entire lifecycle of a project, from planning to impact assessment and authorisation and, finally, compliance," adds Nortje. The technological opportunities that may be realised by the Fourth Industrial Revolution, in conjunction with the knowledge systems already available, can create the foundation of a liveable future for the current and next generation of South Africans.

Enquiries: www.aecom.com

Mines can turn energy liabilities into assets

Energy cost, constraints and supply interruptions risk mining companies' productivity, output and profits. While mines are better prepared to operate on reduced power than they were during the 2008 electricity crisis, the sweeping blackouts at the end of 2019 impacted the industry severely, prompting the Minerals Council of South Africa (MCSA) to call on government to address the regulatory constraints on how mines can source power and allow them to develop more extensive self-generation facilities.

Since the 2008 energy crisis, mines have responded by implementing energy reduction tactics such as shifting loads to off-peak periods, switching to more efficient equipment and having better maintenance programmes to improve energy efficiency and reduce energy wastage. Some have been trying to limit their reliance on utilities by generating their own power.

However, according to Nick Oosthuizen, managing director at Inframid, there is an opportunity for mines to turn their energy liabilities into assets.

"Strategic decisions on energy management can't happen in silos. Mining companies have massive potential to reduce costs and limit their reliance on national utilities by getting their energy mixes right. For this to be achieved, it is important to take a holistic, engineering approach to energy mixes and look at the total load, how different loads are supplied, and what can be done to apply the flow of energy in the most feasible way."

Mines have numerous loads that require various sources including utility, back-up supplies, renewable energy and seamless (UPS) changeover supplies. There must be a feasible combination of these energy sources to ensure that they are used efficiently. For instance, by providing the most appropriate backup, viable renewable energy and UPS power where it is needed, without overcompensating. Over-sizing UPSs to provide backup, for example, is an expensive and inefficient use of stored energy which drives up costs unnecessarily.

"A comprehensive analysis will show how different types of electrical load can be satisfied and optimised in such a way that energy savings turn into bottom-line profits. Instead of being a liability, these high loads can be transformed into assets," says Oosthuizen.

Analysing the total load will also reveal opportunities to save on costs by managing different loads optimally.



Power factor correction, changing utility connections to the correct tariff scales and insertion of renewable energy are just some of the opportunities to drive efficiencies that are often overlooked.

"The bottom line is that the detail of the total load must be interrogated before deciding on energy supplies or investing in energy efficiency technologies, including renewable and backup energy. It is only once you understand the loads, both day and night, that you can intelligently determine how your energy sources can be applied economically.

"For example, you can supplement your 'base load' with solar power to provide renewable energy during the day, so that the energy sources that peak during daytime can be brought down," explains Oosthuizen, adding that mines normally have vast unused areas that can be utilised to develop renewable energy stations in order to supply large-scale energy.

"The adoption of renewable energy sources in the mining sector has been low, mainly due to the high cost of establishing it and storing the power that is generated. However, technologies have advanced and prices started to drop, making renewable energy more attractive for mines.

He concludes: "A comprehensive feasibility study is where it should begin as this helps decision makers to determine their energy-efficiency concept, based on realistic and actual feasibility. This includes procuring quality systems independently from the best suppliers, at reasonable prices. All cost elements must be considered, such as total lifecycle management. For equipment to be feasible and offer high returns on investment, it must work for at least 25 years."

Enquiries: www.inframid.co.za

Learn, network and discover at virtual energy event

The 2021 edition of the Africa Energy Indaba, will be hosted virtually to ensure the safety of all participants. It will be held between 1-5 March. Africa is a continent endowed with untapped human capital and significant conventional and renewable energy resources that can be deployed to design more sustainable energy systems if barriers to trade and regional integration can be overcome. Energy leaders see decentralised systems, digitalisation and trade barriers as the three main Critical Uncertainties. The Africa Energy Indaba will host a series of events aimed at learning, networking and discovering.

- Africa Energy Indaba Conference – The Africa Energy Indaba remains the continent's most esteemed energy summit. The conference has demonstrated invaluable initiatives in fostering significant business liaisons, forging gateways for stakeholders into new markets and exploring challenges and opportunities to promote innovation in energy operations. All these factors pave the way for accelerating economic growth in Africa, however, the conversation needs to factor in the impact of COVID-19 on this leading market sector.
- Africa Energy Indaba Exhibition – Meeting and engaging exhibiting companies to facilitate doing energy business. The exhibitors are supported by using the Indaba's meeting platform to host one-one-one meetings in order to finalise dealflow.
- Africa Gas Forum – Gas resources have been

identified in 14 countries in sub-Saharan Africa. Already, several governments in sub-Saharan Africa are actively pursuing programmes to grow their gas economies through the development of industrial and transport gas markets, in conjunction with gas-to-power programmes. If planned facilities are completed, gas could become the dominant fuel for generating power in Africa.

- World Energy Council Forum – The WEC Forum offers a timely opportunity to reflect on the challenges of investing in Africa in the wider context of the global energy transition and the emerging social issues and impacts agenda, while also engaging with the council's new insights on innovation, integrated policy path finding and scenarios.
- Nuclear Forum – South Africa is currently the only country on the continent with commercial nuclear power. However, Africa has an active nuclear science and technology sector, including several research reactors, and significant government interest in starting commercial nuclear programmes.
- IPP & PPA Conference – Many African countries view IPPs as a way to address the burgeoning shortage of power supply and this is one of the rapid growth markets to be discussed and explored for the continent. IPPs remain essential to electrify Africa and an understanding the PPA framework is crucial to developing IPPs.

Enquiries: www.africaenergyindaba.com



MEA Energy Week conference draws world-class line-up to advance energy transformation agenda

Siemens Energy and its partners held a major Middle East and Africa-focused virtual conference, titled "Shaping the Energy of Tomorrow" at the end of 2020, to drive forward the sustainability and decarbonisation agenda at a defining moment in the energy industry.

With the long-term impacts of COVID-19 and a fundamental shift in energy markets still being realised, now is the moment for the energy industry to collaborate to realise a future that is sustainable, efficient, affordable and accessible, in line with the ideals laid out by UN Sustainable Goal 7.

The MEA Energy Week conference was held in partnership with the Association of German Chambers of Industry and Commerce (DIHK); the Arab-German Chamber of Commerce and Industry (Ghorfa); the Global Manufacturing and Industrialisation Summit (GMIS), and Masdar, a global leader in renewable energy and sustainable urban development and a wholly-owned subsidiary of the Abu Dhabi government's Mubadala Investment Company.

The world-class speaker line-up featured numerous regional ministers, CEOs, energy and finance industry leaders and Siemens Energy experts for the eight panel sessions. Ministers from Benin, Iraq, Jordan, Morocco, Nigeria and the UAE participated in the conference along with senior executives from Abu Dhabi Transmission and Despatch Company, ADNOC, Crescent Petroleum, DEWA, Euler Hermes, Masdar, Mubadala and Saudi Aramco.

The panellists addressed the numerous challenges and opportunities that the energy industry faces amid the twin goals of improving access to energy and meeting growing demand on the one hand, while also doing so in an environmentally and financially sustainable manner. At the forefront of the panel discussions were topics such as financing sustainable energy projects, integrating re-

newables into grids, incorporating digitalisation and automaton, decarbonising hydrocarbon intensive industries, and the use of green hydrogen.

"Around 850-million people on our planet still lack access to reliable electricity. This must be improved. As an independent company, Siemens Energy has the entrepreneurial flexibility to help shape the global transformation of the energy markets in a sustainable and economically successful manner," said Dietmar Siersdorfer, Siemens Energy Middle East managing director. "But this change can only be achieved with global awareness, willingness to adapt and strong partnerships. That is what makes this event so important. The impressive list of participants highlights the desire to

collaborate on finding solutions to the challenges."

"The Shaping the Energy of Tomorrow virtual conference is a remarkable initiative that aims to create an excellent platform to discuss the essential economic challenges of today and tomorrow. The event brings together energy industry leaders and policymakers at a time of potentially drastic change for the energy industry," said Dr. Volker Treier, chief executive of Foreign Trade and a member of the Executive Board, DIHK.

"Together with Siemens Energy, Arab decision-makers and energy experts joining this conference, we are aiming to generate more collaborations to advance a sustainable energy future through the implementations of ambitious agendas and the adop-

tion of new technologies and innovations," said Abdulaziz Al-Mikhlaifi, secretary-general Ghorfa of the Arab-German Chamber of Commerce and Industry. "Shaping the path of the energy transition could be realised only via dialogue and addressing challenges, to ensure sustainable transformation and support the economic recovery following COVID-19.

"If 2020 has taught us anything, it is that we need to prepare today to deliver a sustainable future tomorrow – we need to work together to make the transition to a clean energy world," said Mohamed Jameel Al Ramahi, CEO of Masdar.

Enquiries: www.siemens-energy.com

Imperial Wanderers Stadium goes green

The Imperial Wanderers Stadium is excited to partner with Imperial and the SolarSaver Group to bring much-needed solar power to South Africa's most iconic multipurpose entertainment lifestyle venue through the installation of a customised 250 kWp solar photovoltaic system. The venue is one of the first stadiums in South Africa to 'go green'. The partnership with Imperial and the SolarSaver Group has enabled the installation of this system at Johannesburg's Imperial Wanderers Stadium, and will reduce grid reliance for the purposes of powering the 28 000 capacity stadium.

"This is a huge step towards reducing the stadium's carbon footprint," says stadium manager Cyril Martin. "The stadium now boasts three sources of power, namely grid, generator and solar energy, which produce enough energy to run the stadium, especially on big international match days and non-cricket events."

The solar installation was completed by the SolarSaver Group in partnership with Imperial – the naming rights sponsor to the stadium and leading integrated market access and logistics provider. The SolarSaver Group was founded with a view to offering clients a unique solar solution that does not require any capital or financial guarantees. The SolarSaver Group runs the largest fleet of self-financed solar installations in southern Africa.

"The partnership forms part of the stadium's long-term strategic intent to go green," said Central Gauteng Lions CEO Jono Leaf-Wright. "This means helping to protect the environment and sustaining its natural resources for current and future generations. As stadium management, it is imperative to utilise more environmentally and ecologically friendly practices to sustain future generations. Everything we can do as society to help our country and planet, we must."

Enquiries: www.solar-saver.net

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The benefits of digital timer switches

ACDC Dynamics is proud to present the range of DIN mounted digital timer switches from Orbis.

A timer switch operates an electric switch controlled by a timing mechanism. The switch may be connected to an electric circuit operating from mains power, including via a relay or contactor, or low voltage. It may be built into power circuits (as with a water heater timer).

The timer may switch equipment on, off, or both, at a preset time, after an interval, or cyclically. A cyclical timer switches equipment both on and off at preset times over a period, then repeats the cycle; the period is usually 24 hours or seven days. For example, a heating timer may supply heat for a specified period during the morning and evening every weekday, and all day on weekends.

Time switches can be used for many purposes, including saving electricity by consuming it only at times when it is required, switching equipment on, off, or both at times required, and for security purposes (for example switching lights in a pattern that gives the impression that someone is present on the premises) to reduce the likelihood of burglary. Additionally, they work well for irrigation applications, alternation of water pumps, automatic feeding systems in farms, ventilation systems in factories and garages, controlling of access barriers and doors, shift change sirens in schools and factories, control of lighting and purification in swimming pools and water features.

Digital timer switches specifically offer various advantages over other options. They allow daily,

weekly or monthly programming, with one or two channel versions, for independent control of circuits. They allow for pulse programming, perfect for ringing sirens, as well as cycle programming for alternation of water pump equipment or CO₂ extraction in industrial environments. They allow for the inclusion of a holiday setting, perfect for seasonal applications. Random switching can also be used for presence simulation. Digital timers can also be locked with a PIN code to avoid unauthorised handling. The backlit screens also allow for programming in bad lighting, without the need for any other light source, useful when working in distribution boxes.

Specifically, there are two ranges of Orbis timer switches available from ACDC Dynamics:

Data Log timer switches:

This unit can fit on any DIN rail, requiring only two modules of space. It is easily programmable with an easy to navigate menu. The Data Log range can hold up to 40 daily or weekly programs. It can be easily activated or deactivated

manually, either temporarily or permanently. These units have an interchangeable backup battery, with up to 10 years of operation. Most incredibly, it can be programmed via a tablet or smartphone, using the Bluetooth dongle connection and the related app, making programming of even the most complex instructions, an absolute pleasure.

Astro Nova time switch:

In addition to all the features offered by the Data Log range, this time switch is designed to automatically calculate sunrise and sunset as a function of the geographic location that is input through its menu. This is perfect for lighting applications, and removes the need for any day/night sensors that would normally be required for these applications.

Enquiries: +27 (0)10 202 3500



Compact universal dc power supplies

The three new PS power supply series from Beckhoff comprise a total of 18 devices. The single- and three-phase DIN-rail mountable power supply units are compact and supply output currents from 2,5 to 40 A. With a temperature-optimised device design, these power supplies ensure excellent convection cooling, long service life, maximum reliability and up to 96% efficiency. The versatile PS series features a wide-range input and comes with a number of different technical approvals, making it suitable for worldwide and universal use in 24 and 48 V dc applications.

With the PS device series, Beckhoff offers high-quality power supplies for almost all applications in both the 24 V and 48 V dc range, including motion control applications with stringent requirements for handling back EMF (electromagnetic force). Excellent convection, minimised power loss and high efficiency optimise the service life and reliability of the devices. The peak power capability of up to 150% makes it possible to provide up to 1,44 kW output power for short periods of time. Together with the space-saving design and high immunity to transients and over-voltages, this allows efficient and cost-effective use even in harsh industrial environments. In addition, the power supplies can switch off circuit breakers quickly and accurately through a precise tripping function to avoid unnecessary machine downtime.

The power supply portfolio includes the following device series:

- PS1000 with six single-phase power supply units for smaller and cost-sensitive applications (24 V dc, 2,5/3,8/5/10/20 A, efficiency up to 95%).
- PS2000 with five single- and three-phase power supply units for standard applications (24/48 V dc, 5/10/20 A, efficiency up to 96%).
- PS3000 with seven single- and three-phase power supply units for de-

manding applications (24/48 V dc, 10/20/40 A, efficiency up to 95%).

The UL-approved power supplies can also be used in highly specialised industries, e.g., with approvals according to SEMI 47 (semiconductor industry) or DNV GL (shipbuilding). They can also be used in hazardous areas requiring explosion protection (Class I Division 2, IECEx and ATEX).

Optimised design to manage heat and back EMF

The devices are specifically designed with good convection cooling properties in mind. The number of components has been minimised to allow sufficient space for air convection. In addition, components that are particularly temperature sensitive and prone to rapid ageing are placed at the bottom of the unit, i.e., as close as possible to incoming cool air. This temperature-optimised design means that the components used are subjected to less thermal stress, thus achieving a long service life. In addition, components that are subject to less stress retain their technical characteristics for longer, and the influence of external heat is minimised. All of these features also improve reliability.

Due to the high tolerance to electrical feedback, the power supply units are ideally suited for motion applications. They also have exceptional peak power capability to operate motors, capacitors and other loads that require more power at start-up than in the nominal range. In most cases, the power supplies from a lower and more cost-effective power class in the portfolio will be adequate for this purpose.

Enquiries: www.beckhoff.co.za

Integrating technology with elegantly functional solutions

The essential styling of the Grid Range from D4 offers a clean, functional presence with an almost limitless selection of customised options to meet individual needs. The Grid Range increases efficiency and can suit any office environment with an anodised aluminium body for strong and robust durability.

Single and dual power circuits offer dedicated applications (two completely independent circuits within a single housing), while through wiring allows for 'daisy chain' installations via interconnect leads and splitter block.

Installation mounting options: On Desk, Under Desk and 'Peep-through' Desk. Standard body colours include:

- Polar: Anodised silver body with white end caps.
- Graphite: Texture powder coated black body with black end caps.
- Titanium: Anodised silver body with black end caps.

D4 is a brand of Design 4 Technologies (Pty) Ltd, a level 2 BEE company which was established in 2010. D4 leads the industry with approval by the South African National Regulator of Compulsory Standards (NRCS)

D4 specialises in customised electrical furniture, bringing electrical and data services to your desk. D4's furniture integration solutions are both stylish and functional. Our fully customised products are ready for installation within 10 working days.

All product ranges are manufactured from high grade anodised aluminium, designed with

emphasis on aesthetics and compactness. Metallic housings give the units a robust durability. All products are designed and manufactured in South Africa.

Enquiries: info@design4.co.za



Automated marking of terminal strips

The Mark Master terminal strip marking system from the Phoenix Contact ClipX product range uses patented high-speed technology for the fast and efficient processing of marking tasks.

In control cabinet manufacturing, marking terminal strips is an exacting process with a high proportion of added value, which is facing increasing cost pressure and growing demand for ever-shorter delivery times. Common sources of error include the manual installation process for marking labels and even their incorrect printing. The solution here is an end-to-end digital chain and automation of the marking process.

The digital core of the high-speed technology supports connection to the Project complete engineering tool. This ensures the flow of data from engineering directly into production. The ClipX product range is part of the Complete line system solution for the control cabinet.

Enquiries: +27 (0)11 801 8200

Local manufacturer pushes boundaries

South African manufacturer Pratley aims to launch at least three unique electrical termination products in 2021 aimed specifically at the offshore, oil and gas, industrial and shipping industries, all of which present particularly arduous and hazardous operating environments. "It is a really exciting time for us," comments Sven Breed, who heads up the electrical R&D division.

"The offshore market represents some of the most challenging conditions you can encounter, with extreme cold and air saturated with corrosive salt. Currently, most equipment used in this sector is manufactured from specialised materials. We think we have some improved solutions for these problems that will result in some unique products," elaborates Breed.

At the beginning of the year, Pratley launched its world-first Ex d/e corrosion-resistant Enviro compression cable gland. "We have had a lot of international enquiries and are currently certifying this product for use in the US and the European Union. Indeed, the feedback we have received has resulted in the latest developments we are bringing to the market to supplement our range."

While cable glands are relatively low-cost items compared to some other electrical equipment, they are safety-critical elements in any electrical reticulation setup. "We push the boundaries in what we can achieve in terms of design engineering and safety, from the materials themselves to an array of cost-effective measures incorporated into our products," points out Breed.

Pratley operates two test and research laboratories at its Krugersdorp manufacturing facility, which places it in the top league of electrical-equipment manufacturers globally. The fully-equipped laboratories are staffed by world-class scientists and technicians such as Breed, who is regarded as a global expert in the science and standards of electrical equipment for hazardous areas.

The electrical testing laboratory has the distinction of having more state-of-the-art equipment than the SABS itself, even to the extent that other accredited laboratories approach the company to make use of its advanced equipment. Here, Breed oversees product development and research, including the complete product lifecycle, with his department designing all the necessary tooling and machinery for production.

Enquiries: sales@pratley.co.za



Regulation in SA: are you simply accepting the existing norm?

By Connie Jonker, The SAFEhouse Association

To protect consumers against unsafe products, regulatory processes were first introduced in South Africa during the 1980s and these processes became formalised by the publication of compulsory safety specifications for various products.

Implementation of these specifications was first driven by the SABS Regulatory Department, which was supported by extensive surveillance testing services provided by the various SABS test laboratories to verify the compliance status of products sampled from the open market.

In parallel to the compulsory processes, many manufacturers operated under a Type 5 – SABS Mark scheme, providing ‘proof of compliance’ of SABS mark bearing products, which accepted under the regulatory process, to ensure product safety to the consumer. Other non-mark bearing products, locally manufactured or imported, were regulated under a random sampling process from products available on the open market.

With the support of stakeholders and other manufacturers, who were able to pre-test suspect products utilising their in-house test facilities, the detection of unsafe products was reasonably effective, and responses to consumer complaints were treated by the SABS Regulatory Department as high priority and were speedily attended to. Non-compliance notices were issued to suppliers to limit sales of unsafe products and, if necessary, serious non-compliances were communicated to the consumer by the Regulatory Department, via press releases.

Verification testing of suspect products was often dealt with through SABS partial testing to focus on the specific deviation from specified requirements, enabling speedy confirmation in case of non-compliance.

‘Proof of compliance’ measures were later introduced, whereby a supplier/manufacturer was obliged to provide ‘proof of compliance’ in the form of a test report, if requested, by a regulatory inspector. This test report could be from in-house or 3rd party testing, but was aimed at making inspection more effective, and to place the responsibility onto the supplier to ensure better control over product safety. The effect was that many suppliers requested some partial or full pre-testing at 3rd party laboratories, including SABS, before placing products on the market.

Globalisation of trade and the implementation of WTO Technical Barriers to Trade Agreements had a significant impact on the South African technical infrastructure and, in addition to political changes in South Africa, transformation and re-structuring of public entities was on the cards.

SABS re-structuring and the NRCS act

Motivation for the re-structuring of the SABS to limit conflict of interest between standards development, product testing and regulation, led to the formation of the new NRCS structure, which was aimed at following International Best Practice. Development of compulsory specification was purported to be an open and transparent process, through active consultation with all stakeholders.

The new regulatory control model was based on pre-approval and issue of Letters of Authority (LOA) of regulated electrical products based on type testing by Accredited Test laboratories. Under the WTO TBT Agreement, many countries maintained their well-established product certification systems such as VDE, UL, KEMA, SGS and many others.

The new NRCS management, however, interpreted the existence of the SABS Mark scheme as being in conflict with the WTO TBT Agreement and immediately rejected the SABS Mark on regulated products as ‘proof of compliance’ with the new LOA process. In hindsight, it is clear that this interpretation was highly influenced by financial considerations to establish a broader income base, which would enable NRCS to also levy SABS Mark bearing products. Regulation of R999, which previously exempted SABS Mark products from levies, was rescinded and SABS permit holders were forced to make a choice between LOA + SABS Mark or LOA only. Many approaches to NRCS by industry members and industry associations to recognise SABS Product Certification have so far been unsuccessful.

International trends which were mainly based on

3rd party certification gradually made way for self-certification systems (SDOC) for products with lower safety risk, where the supplier takes full responsibility for product safety compliance, but are monitored by regulatory authorities. The standard for Suppliers Declaration of Conformity, SANS/ISO 17050:2014 which defines international practice for product regulation, was adopted as a South African National Standard, but its implementation has clearly not been considered by NRCS.

In the more than 40 countries, where SDOC has been introduced, severe penalties are applicable in the event false declaration and continued non-compliance of products. The claims that NRCS follows International Best Practice is a misinterpretation and is based on the process of mutual recognition of Type Test reports under the IECEE CB Scheme, which does not apply to product certification. This is also confirmed by the statement made by the NRCS CEO during the 2019 Parliamentary Portfolio Committee meeting: “There was no comparable structure in the world, as NRCS was a single body doing all standards whereas other bodies dealt with only one standard.” He acknowledged that there was, however, room for improvement.

He explained that the NRCS had concluded a Memorandum of Understanding (MoU) with SABS. The model of the infrastructure of the entities was such that the mandate of the four entities overlapped. For example, he relied on SABS for testing capacity for compulsory specifications. If the SABS did not test, he would not be able to enforce compulsory specifications.

Incapacity, Manipulation and Consumer Choice

Due to escalation of the number of product types and models to be regulated under the LOA process, it has become clear that a central pre-approval process does not have the capacity and has resulted in extensive manipulation by many of the parties affected.

Applications for pre-approval covering extended product ranges are often based on type test reports applicable to prototype samples or even ‘golden samples’ specially prepared and selected for the type test. While test laboratories cannot establish the origin of the sample tested, the report only applies to the tested sample. It is a once-off test for all subsequent production. Subsequent quality control and regular verification, if implemented, becomes the responsibility of the supplier. Product coding and branding, and in some instances, grouping similar products from different manufacturers, are methods applied by unscrupulous suppliers to get access to the market.

The total lack of random surveillance sampling and testing aggravates the situation and opens the South African market to dumping without consequences to unscrupulous suppliers.

Dubious LOAs

The incapacity and inability of NRCS to cover each type and model in the LOA process, has led to the introduction of variables in product codes, and not only makes product identification impossible, but also invalidates the type test report scope that now is applied to thousands of models on one LOA. The result is manipulation of processes leading to dubious LOAs that do not clearly define the product type and model.

The non-recognition of 3rd party certified products, which are manufactured under quality control processes, and the limited number of pre-approvals being conducted at unacceptable delays, is an indication of severe shortcomings within the NRCS’s pre-approval process, which makes it virtually impossible for suppliers and manufacturers to fully comply with the NRCS’s administrative and technical requirements.

Out-of-Scope stoppages

Many suppliers are advised by LOA agents, who arrange LOA applications on behalf of suppliers, to have products tested, even against non-applicable specifications, to obtain a LOA to prevent inadvertent out-of-scope stoppages by NRCS appointed Border Management Agencies (BMAs). Discussions with Accredited Test Laboratories have confirmed that importers often request test reports even if the products fall outside the scope of the compulsory specification.

Product concerns

A key element in any regulatory process, is feedback from consumers on product non-compliances and concerns, followed up by effective intervention by the regulatory authority through public disclosure of safety risk.

Feedback on various cases of pre-proven non-compliant products that were reported to NRCS is withheld as this information is regarded as confidential. Even high-risk cases are not attended to and in some instances LOA renewals are issued on reported non-compliant items.

Compliant product selection

The NRCS inspectors and the consumer are now in many instances unable to distinguish between reliable and safe products or to determine the validity of the ‘proof of compliance’. With the virtual cancellation of 3rd party product certification, product selection can only be based on the integrity and reliability of the product brand or that of the supplier.

Impact assessments

The schedule to the NRCS Act, Regulation R924 Section 10, specifies that in the development of compulsory specifications or amendments to a compulsory specification, an Impact Assessment must be conducted to determine the impact that the implementation of such a specification or amendment will have on all stakeholders. This aspect is also clearly reflected in the NRCS internal procedure CSP 350 for the development of specifications.

In addition to the Impact Assessment, the levy associated with the specification must be determined in consultation with stakeholders as part of the specification development process. The omission of these legally specified action has become a serious concern to stakeholders. In spite of various requests to discuss the impact of the LOA policy, any discussion has been denied by NRCS and ruled out of order.

The development of the draft specification for luminaires (VC9012), which was started during 2013, has been put on hold by Dti at industry’s request in a written confirmation dated 7 March 2018, that VC9012 will not be published pending an Impact Assessment to be conducted by NRCS. In spite of the Dti instruction to NRCS, the Impact Assessment for the regulation of luminaires, has not yet been conducted because “NRCS has not budgeted for a VC9012 Impact Assessment”. Financial support offered by industry associations towards the Impact Assessment was denied, as “this would not be allowed under the Public Finance Management Act (PFMA)”. Significant amendments to VC8055, and various other compulsory specifications have also not followed the Impact Assessment process.

The reluctance by NRCS to follow stipulations of the regulations can only be construed as being an attempt to prevent the public disclosure of the inefficacies of the regulatory process.

New MEPS project for Lighting Products

The introduction of a new project, Minimum Energy Performance Standards (MEPS) for lighting products, which is funded under the United Nations Development Program (UNDP), was recently subjected to a Socio-Economic Impact Assessment.

The Impact Assessment was conducted by an independent service provider, appointed under the UNDP, to evaluate the introduction of Minimum Energy Performance Standards (MEPS) for General Service Lamps. The Impact Assessment study highlighted many of the regulatory key shortcomings.

An extract from the Impact Assessment study shows the following:

- The enforcement agencies (NRCS) have insufficient resources to introduce and enforce the proposed MEPS regulation;
- To date these agencies have undertaken very limited market surveillance;
- Reports of non-compliance submitted to the relevant authorities have not been investigated;
- Border control is weak;
- There are no consequences, such as severe penalties that can be legally applied to non-compliant suppliers;

- There is insufficient capacity to test products for compliance with the present and proposed new regulations.

The above issues, which equally apply across the entire regulatory product scope, have been under discussion with NRCS by stakeholders and industry associations from many industry sectors and in many forums since the formation of the NRCS in 2008 and are again confirmed by the independent international consulting group. Needless to say, all previous discussions have not been heeded and the irrational and ineffective NRCS policy of ‘One Test Report – One LOA’ has never been reviewed in consultation with stakeholders.

Requests from industry to improve market surveillance, monitoring, verification and evaluation (MVE), followed up by transparent regulatory action, have, to date, been ignored. The MEPS Consultants finally make recommendations: “These include:

- The streamlining and automation of the pre-certification process;
- Improving the human resource capacity of control officers to increase their effectiveness – including communication and awareness;
- Setting a clear strategy for compliance monitoring – with specific goals and targets and timely transparent reporting on results; and
- Consider whether it is feasible to introduce self-declaration for certain categories of products, where risks associated with non-compliance are relatively low.

Exclusion of industry representation

The NRCS Act defines the structure of NRCS to be under supervision of the NRCS Board, and supported by an Advisory Forum as follows:

12. (1) *The Board must establish an Advisory Forum with a balance of interests consisting of representatives of organisations who have an interest in the matters contemplated in the Act.*

(2) *The Advisory Forum must advise the Board on:*

(a) *matters in respect of which the National Regulator could play a role; and*

(b) *any other matter on which the Board requests advice.*

(3) *The Board must establish a constitution and, if necessary, rules for the Advisory Forum.*

The 2019 Parliamentary Portfolio Committee for Trade and Industry report reflects that the NRCS Board was disbanded following an amendment of the NRCS Act (Act 5 of 2008), through the Legal Metrology Act (Act 9 of 2014) dated 19 May 2014, due to alleged corruption by the NRCS Board. NRCS reports directly to the Minister of Trade and Industry since 2014.

The formation of other oversight structures such as an Advisory Forum, where representatives of organisations who have an interest in matters contemplated in the NRCS Act, and Specialist Consultative Committees that could deal with matters of concern and which could fulfil an ‘Ombudsman’ function, have never materialised, although many requests from industry associations were made to that effect. These structure deficiencies directly affect the openness and transparency of the regulatory processes and hamper reviews.

Many matters such as out of scope stoppages, unjustified regulation of products that do not pose a safety risk and irregular interpretations of regulatory requirements that could be resolved through consultation or arbitration, are not being resolved.

Conclusion

It is quite clear that the impacts to consumers and suppliers of regulated products and to the South African Economy at large, have become unbearable. The NRCS regulatory processes and its funding model are in dire need of an extensive review to reflect international best practice and to minimise conflict of interest and to align with the NRCS Mandate of protection to the environment and the public, while ensuring fair trading.

Regulatory changes can only be achieved through continued active liaison and cooperation between industry, the NRCS and Dti. Are you as industry member or industry association prepared to take up the challenge, or are you accepting the existing norm?

Enquiries: www.safehousesa.co.za



More design freedom for stylish lighting solutions

In retail shops, state-of-the-art office landscapes and hotels and hospitality businesses, spotlights and downlights in ever smaller dimensions are nowadays in great demand to create particularly slim and filigree designs. The LED drivers of the new OT FIT NFC product range are perfectly in line with this general trend. The Compact SELV LED drivers (available in 15, 25 and 40 W and with output currents of up to 1 A) come in highly compact dimensions – simply ideal for integrating them into small luminaire housings. Both luminaire manufacturers and lighting designers therefore benefit from increased design freedom when it comes to the layout of lighting systems. And thanks to optimal strain relief, SELV

drivers are also the right choice for independent installation.

Superior lighting quality and flexible programming

The devices comply with the requirements of the latest PSTLM and SVM regulations – and thanks to the low output ripple current, they achieve superior lighting quality and high efficiency. Their wide operating window makes them highly versatile for use in numerous luminaire types and applications. This allows luminaire manufacturers and lighting planners to reduce the number of different types and use the product range flexibly for all kinds of projects.

The T4T software from Osram

makes driver programming quick, user-friendly and convenient via the NFC interface (current setting in steps of 1 mA possible across the entire operating window).

Enjoy more freedom in designing your individual luminaire systems.

Enquiries: www.osram.com



Major deal with R50-billion US corporation brings anti-bacteria lighting revolution to SA

A South African company has clinched a deal to distribute a revolutionary lighting technology able to suppress bacteria in the air and on surfaces using a narrow spectrum of visible light.

The licencing agreement covering the innovation, named SpectraClean, involves Johannesburg-based Genstar Emergency Lighting Solutions (GELS) and Hubbell Lighting, a lighting manufacturer headquartered in South Carolina, USA.

GELS director Drew Donald highlights the crucial timing of the transaction, given South Africa's halting emergence from the depths of the Covid-19 pandemic. "Indeed, every person, every industry and government have a moral and economic obligation to develop new methods of thinking to prevent similar negative spinoffs from the next health crisis."

He explains that the SpectraClean technology cleans every area of a room at different rates, based on the distance from the light source and the time taken to disinfect the relevant area.

"Laboratory experiments and case studies show a more than 90% microbe reduction in treated environments in one day. In actively used facilities SpectraClean continuously reduces microbes at all times and significantly reduces the frequency of manual chemical cleaning. Unlike UV-C, SpectraClean is harmless to humans, materials and surfaces. "The ramifications are immense, both in term of hygiene, safety and cost savings."

GELS's licence agreement with Hubbell enables GELS to assemble the relevant control board in South Africa, with the 405 nm chips being supplied exclusively by Hubbell. Accordingly, GELS has

appointed a KZN manufacturer to populate the board. Donald says such an arrangement means positive ramifications for employment in particular, and for the KZN economy in general.

He expects the initial agreement with Hubbell to yield many additional benefits to GELS owing to Hubbell's position as the exclusive licensee to selected applications of Scotland's University of Strathclyde lighting technology.

"Strathclyde's high intensity narrow spectrum lighting technology boasts a world-class research team at the cutting edge of global innovation. Its close ties to Hubbell and our new association with the Americans bode well for prospective new horizons. Our licence allows us to link the technology back to the University of Strathclyde such that we will participate in any new research/developments."

David Early, director at Hubbell Lighting Components, says: "With more than 130 years of experience in illuminating and electrifying the world, Hubbell has a rich history of making product innovations that support customers in key markets and industries."

He maintains that the South African deal will provide added global coverage to Hubbell's suppression of harmful bacteria growth.

"Instructively, our lighting technology provides significantly greater reductions of bacterial pathogens in the environment than can be achieved by cleaning and disinfection alone, providing a huge step forward in preventing the spread of infection."

The agreement with GELS covers all of southern Africa.

Enquiries: +27 (0)11 321 0198

SHEDDING LIGHT WITH PHILIP HAMMOND

Focus on the positives

I write this article on the first day of work at the start of a wonderful new year, and would therefore like to take this opportunity to wish you, your family and staff a very successful 2021.

When we take a few steps back and look at our world, it is overflowing with bad, negative and upsetting news. There is no end to it. It causes many individuals and businesses to become distracted, demoralised, depressed, anxious and to lose focus on those aspects in their individual and business lives that are far more important.

Yes, I cannot deny the fact that we live in strange, uncertain times, however we must not allow that to consume us and our thought processes.

It is time we all went back and refreshed our memories of Maslow's Hierarchy of Needs, which can easily be applied to our individual lives and our respective businesses. I encourage you to do this right now before you proceed to revise your strategy, plan, budget and business forecasts for 2021. The following link will help you do that quickly: <https://bit.ly/3sneOGO>

If you follow my recommendation and refresh your mind so that you can focus on only positive thoughts, you will be amazed to see how your revised strategy, plan, budget and business forecasts will be more positive.

In the previous paragraph, I touched on focusing on positive thought. Let me expand on that a little further:

- 2020 came and it went. We are at the start of a brand-new year which must hold much opportunity. We survived 2020, yes, perhaps with a little more effort, reduced turnover and less annual profit. Nevertheless, we made it.
- The South African economy, although impacted by the pandemic, made it through to the new year.
- Many businesses accepted various forms of government assistance as did many sport

clubs and NGOs. What is more amazing is that the various avenues that were available for assistance, perhaps with the exception of TERS, still have funds that can be disbursed to deserving applicants.

- We were able to get through every month with less.
- We learnt to shop wisely, to compare the prices and quality of products before parting with our hard-earned cash.
- We learnt to appreciate being together as families at home for extended periods during lockdown.
- We experienced the importance of being able to exercise.
- We realised that home cooking was great and even wondered why we had eaten out at restaurants so frequently.
- We learnt to be careful socialising in groups.
- We learnt to have greater respect for each other by complying with the protocols, wearing masks, sanitising and maintaining social distancing.
- We learnt to be efficient working from home.
- We mastered numerous new software applications such as Zoom, Microsoft Teams, Skype, Google Chat, ClickMeeting and more.
- I have not nearly exhausted the list of positives from 2020.

I was surprised to see how many positives can be drawn from 2020. That is how we should approach life – focus on the positives. Positives are much more enjoyable, rewarding and better for our personal well-being and health.

If you do not have an experienced person to whom you can turn as a business mentor or confidante, there are many business and life coaches who have helped business owners turn their businesses into incredible successes.

Have a positive year!

Enquiries: www.bhaschooloflighting.co.za



Exterior lighting for Skukuza Safari Lodge

Skukuza Safari Lodge is located in the world-renowned Kruger National Park, a South African National Park and is, with 19 485 km² one of the largest game reserves in Africa. The newly-built Skukuza Safari Lodge offers world-class tourism facilities for local and international visitors and boasts 128 units.

BEKA Schröder has supplied some of the exterior lighting, which includes LED bollards, which are installed throughout the lodge's facilities, as well as the LED bulkhead luminaires, which are installed at the 'back of house' areas, both providing energy-efficient outdoor area lighting.

The BEKA LEDPOST is a bollard luminaire that has been designed for orientation lighting and security marking. Locally manufactured, this robust LED bollard takes Africa's harsh thermal and environmental conditions into account,



ensuring a long lifetime. The BEKA LEDPOST has been equipped with a highly efficient LED light source. The distinct design shields pedestrians and drivers from glare and prevents spill light from being emitted in the upward

direction.

The BEKA SERIES 30 is a round LED bulkhead, manufactured from high-quality materials and designed for ease of installation and low maintenance requirements. Due to LEDs being the light

source, high energy savings are achieved.

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 SANPARKS

Technical Team and Tom Hattingh Architects in providing a successful outdoor area lighting solution for this prestigious project.

Enquiries: +27 (0)11 238 0000





The new Spazio Canon LED Track Spot

Spazio Lighting aims to stay at the forefront of innovation in the South African lighting sector and therefore has imported the latest technology items. There is an ever-increasing need for LED light fittings that carry a long life span as well as an extended, valid warranty that does not break the bank.

One of the latest innovative products recently acquired is the Canon LED spot for 3-wire track. This fitting has a high power 30 W LED chip accompanied by an impressive lumen output of 3800 lm or 130 lumen per watt. This spot is available in black and white and in 3000 K and 4000 K. The Canon has an aluminium body and polycarbonate diffuser as well as an integrated driver and it also comes complete with a 3-wire track adaptor.

This fitting has a clean design with a diameter of 80 mm and is 195 mm long. It can rotate 350° and tilt up to 90° which means that you can change the direction of the spot to any desired direction with ease.

What makes this fitting so ground-breaking is the fact that it has an impressive 50 000-hour lifespan accompanied by a 5-year warranty. The benefit of installing this fitting in a commercial space requiring a high-power LED spot is that

the Canon LED spot will not require frequent maintenance or replacement because even if it is switched on for long periods of time, it will still last for more than five years. In that period a traditional light source would have needed to be replaced multiple times and even most other retrofit LED fittings would have failed within this time frame.

You would expect an integrated LED fitting with all these features and benefits to be quite costly, but the Canon LED is extremely well priced compared to similar high power LED spots that are available in the South African market, making the Canon LED spot cost effective and good value for money.

Enquiries: www.spaziolighting.com



Smarter lighting, better driving

Signify is transforming the Spanish isle of Gran Canaria's most important highway, the GC-1, into a smart highway with Interact City. The Cabildo (council) of Gran Canaria has upgraded the lighting system to LEDs that provide a 2700 K colour temperature. This supports its main objective of preserving the outstanding conditions for viewing the night sky as required by the Canarian Observatories. It also helps to respect the island's biodiversity and reduces CO₂ emissions and the island's carbon footprint without compromising road safety and driving experience. The new lighting has already resulted in positive reactions from road users, who report having a better driving experience.

The highway was illuminated in 1990 with Philips Traffic Vision streetlights. As the luminaires reached the end of their lifetime, the Cabildo seized the opportunity to improve lighting performance and reduce energy consumption. The Cabildo wanted a high-quality luminaire with a long lifetime and chose to install Philips DigiStreet LEDs with Interact City connected lighting software.

"We have developed a clear and sustainable project for our lighting system. It is a major revolution in energy efficiency and cost savings. Upgrading to the Philips DigiStreet LEDs with Interact City results in economic savings in installed power of 50%, amortizing the cost of installation in less than the luminaires' lifetime," says Antonio Morales, president of the Cabildo de Gran Canarias.

With Interact City, the Cabildo de Gran Canarias can monitor the lighting in real time, collect and analyse data, and assign maintenance tasks to technicians. The Philips DigiStreet LED luminaires avoid glare, improve visual comfort, offer greater uniformity of light distribution, and render colours accurately. Combining Philips DigiStreet Large LED lights with standardised Zhaga connectors and Interact City provides highway operators with ultimate control.

"The luminaires with Zhaga connectors make the highway ready for the future, enabling sensing capabilities for monitoring environmental conditions such as motion, tilt, vibration, and noise. This helps the Cabildo to gain insights into issues to support decision-making and act where possible," says Josep Martínez, market leader Iberia at Signify.

The system allows for simple maintenance, point-by-point management and enables real-time adjustment to deal with any situation on the highway – for example, increasing light in an area where an accident has occurred or dimming the lights to 30% when no vehicles are on the road.

The luminaires comply with all regulations of the Instituto Astrofísico de Canarias (IAC) and the Light Pollution Regulation for the Canary Islands.

Enquiries: www.signify.com



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Electric



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Buildings Vice President

Schneider
Electric



James Calmeyer
Business Development
and Strategy Vice
President

BEKA Schröder



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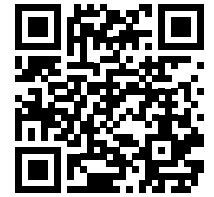


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BRIGHT SPARK

TAKE A GUESS

It goes in dry, it comes out wet, the longer it is in, the stronger it gets. What is it?

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- Flashlight
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- Continuity Buzzer
- Low Battery Indication
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UT200A 200A CLAMP METER

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- AC Voltage: 600V
- Resistance: 20kΩ
- Manual Range
- Jaw Capacity 28mm
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- Continuity Buzzer
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- Phase Rotation
- Low Ohm Measurement
- Loop Impedance
- ELCB Test (Time & Sensitivity)
- Auto Power Off
- Backlight
- Low Battery Indication
- ELCB: 10/30/100/300/500 mA



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UT804 BENCHTOP TRMS MULTIMETER

- AC/DC Voltage: 1000V
- AC/DC Current: 10A
- Resistance: 40mΩ
- Capacitance: 40mF
- Frequency: 40Hz ~ 400MHz
- Temperature: -40°C ~ 1000°C
- Data Recall: 4 ~ 20mA
- Auto Ranging
- Analog Display Bar
- Diode
- Overload Protection
- Duty Ratio
- LCD Backlight
- Input Protection
- APO
- Low Battery Indication
- Peak/Data Hold
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- Voltages and Current: AC + DC Measurement
- Auto/Manual Alarm
- 40 000 Display Count
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- Range: 30dB ~ 130dB
- Accuracy: +/- 1.5dB
- Frequency Response: 31.5Hz ~ 8kHz
- Resolution 0.1dB
- Sampling Rate: Fast: 125ms, Low: 1000ms
- Weight Curve A Type
- Data Hold
- APO
- MAX/MIN
- Low Battery Indication
- LCD Backlight
- Overload Indication



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UT33D+ PALM SIZE MULTIMETER

- AC/DC Voltage: 600 V
- DC Current: 10A
- Resistance: 20MΩ
- NCV
- APO
- Diode
- Continuity Buzzer
- LCD Backlight
- Relative Mode
- LCD Size 53mm x 28mm
- Probe Placing Slots
- 2000 Display Count



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UT682D WIRE TRACKER

- Wire Types: Telephone Lines/Twisted Pair/ Electric Wire
- Telephone Wire Test Distance $\geq 3000\text{m}$
- Polarity Indication for Phone Lines
- Transmitter Output Voltage: 8V DC
- Transmitter Power Supply: 9V Battery
- Receiver Power Supply: 9V Battery
- Polarity Indication for Telephone Wires
- Max Receiver Operating Current 40mA
- Max Receiver Standby Current 10mA



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UT71D INTELLIGENT TRMS MULTIMETER

- AC/DC Voltage: 1000V
- AC/DC Current: 10A
- Resistance: 40M Ω
- Frequency: 40Hz ~ 400MHz
- Capacitance: 40mF
- Temperature: -40°C ~ 1000°C
- Loop Test: 4 ~ 20mA
- AC + DC Dual Display
- Bluetooth & USB Interface
- Diode
- Continuity Buzzer
- Low Battery Indication
- Data Logging - 10 000
- MAX/MIN/REL
- K-type Temperature Probe
- APO
- Smart Phone APP
- Peak / Data Hold
- Analog Bar Graph
- 40 000 Display Count



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R4 999.⁰⁰
incl VAT R5 748.⁸⁵

UT89X TRMS MULTIMETER

- AC/DC Voltage: 1000 V
- AC/DC Current: 20A
- Resistance: 60M Ω
- Capacitance: 100mF
- Frequency: 10MHz
- Temperature: -40°C ~ 1000°C
- Diode
- Continuity Buzzer
- Low Battery Indication
- Transistor hFE
- Data Hold
- Dual Range NCV Test
- Flashlight
- Auto Backlight
- Audible / Visual Alarm
- Capacitor Charging Indicator
- Live Wire Test
- Duty Cycle
- Relative Mode
- APO
- Input Alarm
- 6000 Display Count



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UT301A+ INFRARED THERMOMETER

- Temperature: -32°C ~ 420°C
- Accuracy: $\pm 1.5^\circ\text{C}$
- Repeatability: 0.7°C
- D:S Ratio: 12:1
- Response Time: $\leq 250\text{ms}$
- Emissivity: 0.1 ~ 1.0
- Spectral Response: 8 μm ~ 14 μm
- Laser Power: < 1mW
- Selection °C/°F
- Data Hold
- APO
- Low Battery Indication
- MAX/MIN/AVG/DIFF
- LCD Backlight
- High/Low Temp LED & Audible Alarm
- Lock Measurement
- LCD Display Colour EBTN
- Single Laser



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UT533 TRMS INSULATION RESISTANCE MULTIMETER

- 1000V AC/DC
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- Frequency 1MHz
- Temperature -40 ~ 537°C
- Resistance 40M Ω
- Short Circuit Current: < 2mA
- Diode Test
- Auto Range
- Data Logging 99
- Insulation Resistance (50/100/250/500/1000V)
- Continuity Buzzer
- Low Battery Indication
- Data Hold
- LCD Backlight
- 6000 Display Count
- APO



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UT705 SINGLE FUNCTION LOOP CALIBRATOR

- DC Voltage: 30V
- DC Current: 24mA
- Loop Current: 24mA
- Loop Power Function
- Ramp Function
- Step Function



excl VAT
R7 155.⁰⁰
incl VAT R8 228.²⁵

UT202+ 400A TRMS CLAMP METER

- AC Current: 400A
- AC/DC Voltage: 600V
- Resistance 40M Ω
- Capacitance: 4000 μF
- Temperature: -40°C ~ 1000°C
- MAX/MIN
- NCV
- Relative Mode
- Backlight
- Display Size: 35 x 27mm
- Auto Ranging
- Data Hold
- Jaw Capacity 28mm
- APO
- 4000 Display Count



excl VAT
R649.⁰⁰
incl VAT R746.³⁵

UT620A MICRO OHM METER

- Resistance: 120m Ω /5A - 6k Ω /100 μA
- Resolution: 10 $\mu\Omega$
- Four-wire Measurement
- Wire Length Measurement
- High/Low Limit Alarm
- Data Storage 1000
- USB Data Transmission
- Manual Range
- Backlight
- Relative Value
- Low Battery Indication
- 60 000 Display Count



excl VAT
R9 995.⁰⁰
incl VAT R11 494.²⁵

UT665 BORESCOPE

- Pixels: 640 x 480
- Field of view: 60°
- Image brightness: 6 levels - adjustable
- Illumination: 4 levels - adjustable
- Image rotation
- Battery power indication
- Video signal: Analog
- IP67 (Probes Only)
- Focal length: 20mm ~ 100mm
- 4 LED Lights
- Probe length: 1m
- Lens Dia.: 9mm
- LCD Size: 60mm
- Screen Type: TFT
- Depth Of View: >20mm



excl VAT
R2 250.⁰⁰
incl VAT R2 587.⁵⁰

UT658A USB TESTER

- Input & Output Ports: USB Type A
- Voltage Range: 4 - 24VDC
- Current Range: 0.05 ~ 3ADC
- Capacity: 0 ~ 99999mAh
- Energy: 0 ~ 1000Wh
- Circuit Equivalent Resistance Measurement: 1 ~ 480 Ω
- USB Data Cable Voltage (D+, D-): 0 ~ 3.3V
- Data Storage 10
- Maximum Recording Time: 99h, 59min, 59sec
- Fast Charge Protocol: Type A: Supports USB 2.0 Data Transmission & QC1.0/2.0/3.0 Fast Charge Protocol



excl VAT
R303.⁰⁰
incl VAT R348.⁴⁵

UT204+ 600A TRMS CLAMP METER

- AC/DC Current: 600A
- AC/DC Voltage: 600V
- Frequency: 10Hz ~ 10MHz
- Resistance 60M Ω
- Capacitance: 60mF
- Temperature: -40°C ~ 1000°C
- MAX/MIN
- Live Wire Test
- Diode
- Data Hold
- APO
- NCV
- Continuity Test
- Relative Mode
- Jaw Capacity 28mm
- 6000 Display Count



excl VAT
R1 399.⁰⁰
incl VAT R1 608.⁸⁵

UT205E 1000A TRMS CLAMP METER

- AC Current: 1000A
- AC/DC Voltage: 1000V
- Resistance 60M Ω
- Capacitance: 60mF
- MAX/MIN
- NCV
- Live Wire Test
- Continuity Test
- Auto/Manual Range
- Flashlight
- Diode
- Relative Mode
- Jaw Capacity 42mm
- APO
- 6000 Display Count



excl VAT
R1 739.⁰⁰
incl VAT R1 999.⁸⁵

UT208B 1000A TRMS CLAMP METER

- AC/DC Current: 1000A
- AC/DC Voltage: 1000 V
- LoZ ACV: 1000V
- Resistance: 60M Ω
- Capacitance: 60mF
- Temperature: 40°C ~ 1000°C
- Auto/Manual Range
- Continuity Buzzer
- Diode Test
- Analog Bar 31
- Continuity Test
- APO
- Jaw Capacity 42mm
- Low Battery Indication
- Relative Mode
- 6000 Display Count



excl VAT
R3 402.⁰⁰
incl VAT R3 912.³⁰

UT161D MULTIMETER

- AC/DC Voltage: 1000 V
- AC/DC Current: 20A
- Resistance: 60M Ω
- Frequency: 10Hz ~ 10MHz
- Capacitance: 60mF
- Temperature: -40°C ~ 1000°C
- MAX/MIN
- Diode
- Continuity Buzzer
- hFE Transistor
- Relative Mode
- Analog Bar
- USB Communications
- Data Hold
- Peak Hold
- LoZ ACV
- LCD Backlight
- Low Battery Indication
- Auto Power Off
- Display Count 6000
- NCV



excl VAT
R2 722.⁰⁰
incl VAT R3 130.³⁰

UT161B MULTIMETER

TRUE
RMS

NEW

- AC/DC Voltage: 1000 V
- AC/DC Current: 10A
- Resistance: 60MΩ
- Frequency: 10Hz ~ 10MHz
- Capacitance: 60mF
- MAX/MIN
- Diode
- Continuity Buzzer
- hFE Transistor
- Relative Mode
- Analog Bar
- USB Communications
- Data Hold
- LCD Backlight
- Low Battery Indication
- Auto Power Off
- Display Count 6000



excl VAT
R2 268.00
incl VAT R2 608.20

UT890C TRMS MULTIMETER

NEW

TRUE
RMS

- DC Voltage: 1000 V
- AC Voltage: 750V
- AC/DC Current: 20A
- ACV Frequency: 10Hz ~ 10kHz
- Resistance: 60MΩ
- Frequency: 9.999MHz
- Capacitance: 100mF
- Temperature: 1000°C
- NCV
- MAX/MIN
- Diode
- Continuity Buzzer
- hFE Transistor
- High Voltage Phase Detection
- Data Hold
- LCD Backlight
- Low Battery Indication
- APO
- Test Pen Holder
- 6000 Display Count



excl VAT
R756.00
incl VAT R869.40

UT516B 12KV INSULATION RESISTANCE TESTER

NEW



- 12KV Digital Insulation Resistance Tester
- Output Voltage: 500V ~ 12000V
- Load Current: 1mA ~ 1.2mA
- Short Circuit Current: 5mA
- DC Voltage: 30V ~ 1000V
- AC Voltage: 30V ~ 750V
- PC Software for data analysis
- Backlight Function
- Data storage 999 sets
- Dielectric Absorption Ratio (DAR): 0.0 ~ 999
- Polarization Index: 0.0 ~ 999
- Low Battery Indication
- Over-range Alarm
- 9999 Display Count



excl VAT
R32 585.00
incl VAT R37 472.75

UT195EX PROFESSIONAL IP65 TRUE RMS MULTIMETER

PRO

NEW

- AC/DC Voltage: 1000 V
- LoZ ACV: 600V
- AC/DC Current: 20A
- Resistance: 60MΩ
- Capacitance: 60mF
- Frequency: 10MHz
- Ex Rating: Ex ia I/IC t3 Ma Ga
- Ex tb I/IC T200°C Db IP65
- Duty Ratio
- Display Count 6000
- Flashlight & Auto LCD Backlight
- Analogue Bar Graph



excl VAT
R4 914.00
incl VAT R5 651.10

UT61D+ MULTIMETER

TRUE
RMS

- AC/DC Voltage: 1000 V
- AC/DC Current: 20A
- Resistance: 60MΩ
- Frequency: 10Hz ~ 10MHz
- Capacitance: 60mF
- Temperature: -40°C ~ 1000°C
- MAX/MIN
- Diode
- Continuity Buzzer
- Relative Mode
- Analog Bar
- NCV
- Data Hold
- Peak Hold
- LoZ ACV
- LCD Backlight
- Low Battery Indication
- Auto Power Off
- Display Count 6000



excl VAT
R1 960.00
incl VAT R2 254.00

UT61B+ MULTIMETER

TRUE
RMS

NEW

- AC/DC Voltage: 1000 V
- AC/DC Current: 10A
- Resistance: 60MΩ
- Frequency: 10Hz ~ 10MHz
- Capacitance: 60mF
- MAX/MIN
- Diode
- Continuity Buzzer
- Relative Mode
- Analog Bar
- NCV
- Data Hold
- LCD Backlight
- Low Battery Indication
- Auto Power Off
- Display Count 6000



excl VAT
R1 568.00
incl VAT R1 803.20

UT315A VIBRATION TESTER



- Vibration Acceleration(O - P): 0.1 ~ 199.9m/s²
- Vibration Velocity(RMS): 0.1 ~ 19.9cm/s
- Vibration Displacement(P - P): 1 ~ 1999μm
- Data Hold
- Low Battery Indication
- APO
- Battery Life: > 8hrs
- 2000 Display Count

excl VAT
R12 215.00
incl VAT R14 047.25

UT256A 200A TRMS FORK METER

NEW

- AC/DC Current: 200A
- AC/DC Voltage: 1000 V
- Resistance: 20MΩ
- Capacitance: 60mF
- Frequency: 10 ~ 10kHz
- Auto Range
- Data Hold
- NCV
- LCD Backlight
- APO
- Continuity Buzzer
- Low Battery Indication
- 6000 Display Count



excl VAT
R1 664.00
incl VAT R1 913.60

UTi85A THERMAL IMAGER

- Display: 2.8" LCD
- Temperature Range: -10°C ~ 400°C
- IR Resolution: 80 x 60 Pixels
- NETD: ≤ 150mK
- Spatial Resolution: 11.1mrad
- Frame Rate: <9Hz
- PC Analysis Software
- FOV: 51°(h) * 38°(V)



excl VAT
R7 111.00
incl VAT R8 177.65

UTi165A THERMAL IMAGER

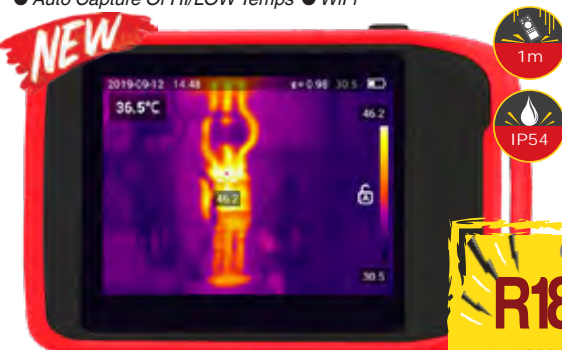
- Display: 2.8" LCD
- Temperature Range: -10°C ~ 400°C
- IR Resolution: 160 x 120 Pixels
- Palettes: Iron, Rainbow, Grey
- NETD: ≤ 150mK
- Spatial Resolution: 11mrad
- Frame Rate: <9Hz
- PC Analysis Software
- FOV: 56°(h) * 42°(V)
- High and Low Temperature Tracking



excl VAT
R9 429.00
incl VAT R10 843.35

UTi120T THERMAL IMAGER

- Display: 3.5" LCD
- IR Resolution: 120 x 90 Pixels
- Spatial Resolution: 7.6mrad
- PC Analysis Software
- Display Modes: Thermal, Image blending, Visible light
- Auto Capture Of HI/LOW Temps
- Temperature Range: -20°C ~ 400°C
- NETD: ≤ 60mK
- Frame Rate: <9Hz
- FOV: 50°(h) * 38°(V)
- WiFi



excl VAT
R18 155.00
incl VAT R20 878.25

UTi165K THERMAL IMAGER

- Display: 2.8" LCD
- Temperature Range: 30°C ~ 45°C
- IR Resolution: 160 x 120 Pixels
- Palettes: Iron red, Rainbow, White, Black, Red, Lava, High-contrast rainbow
- NETD: ≤ 50mK
- Spatial Resolution: 6mrad
- Frame Rate: <9Hz
- PC Analysis Software
- FOV: 56°(h) * 42°(V)
- Visible Light
- Real-time Image Transmission
- USB
- APO



excl VAT
R13 999.00
incl VAT R16 098.85

UTi80P POCKET SIZE THERMAL IMAGER

- Display: 60mm TFT LCD
- Temperature Range: -10°C ~ 400°C
- IR Resolution: 80 x 60 Pixels
- Palettes: Iron, Rainbow, Grey
- Emissivity: 0.1 ~ 0.99 Adjustable
- NETD: ≤ 150mK
- High/Low Temperature Alarm
- Tripod Mounting Hole
- Size: 76mm x 76mm x 22mm
- FOV: 51°(h) * 38°(V)
- High and Low Temperature Tracking
- Rechargeable Lithium Battery
- PC Analysis Software
- Stores Photos to SD Card
- Display: 320 x 240 pixels
- Backlight: High/ Medium/ Low



Promotion runs from 1 January 2021 to 30 April 2021 or while stocks last . E & OE.

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