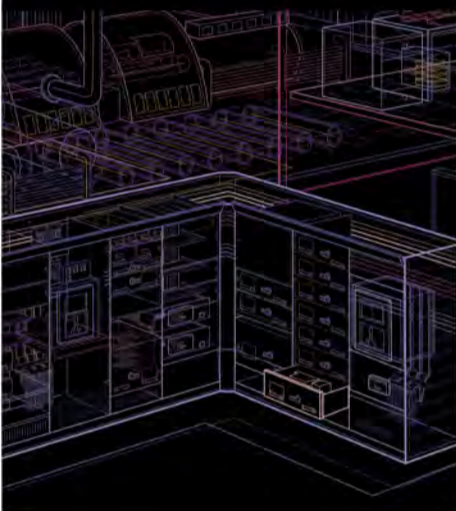


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ELECTRICAL STUDENTS MAKE THE GRADE AGAINST ALL ODDS



Well-known hospitality and gaming group, PeerMont Hotels Casinos and Resorts, contributes millions of Rands annually to the communities surrounding its business units and, on September 1, the group's second CSI Awards took place at Emperors Palace. Among those recognised were students from the PeerMont Lesedi Skills Programme, which provides youth from disadvantaged communities an opportunity to work while they learn at places such as Emperors Palace. Six young people who completed their NQF Level 4 electrical learnerships through the programme are: (front) Johan Ginge; Given Molefe; Clinton Sekate; (back) Sboniso Myeni; Portia Miya; and Tshepo Mbhalati with Nick du Plessis (left) of P&T Technology, the company that assists with the electricians' skills training. (Photograph by Yolanda van der Stoep)

NCC AND NRCS LAUNCH JOINT INVESTIGATION INTO UNSAFE ELECTRICAL DEVICES

THE National Consumer Commission (NCC) and the National Regulator for Compulsory Specifications (NRCS) have launched a joint investigation into the unsafe safety critical electrical devices that were sold by convicted importer, Abdool Kadar Omar Khan during 2009 and 2011.

Khan's conviction in a landmark case at the Specialised Commercial Crimes Court on June 2 this year sent shock waves through the electrical industry when court papers revealed that the people who live and work in at least 25 000 properties face the "significant risk" of fire, electrocution and death.

The SAFEhouse Association's chairman, Pierre Nothard, has issued an urgent appeal to the NCC, the NRCS and the resellers mentioned in court papers to recall the products from the market, and from users who may have had the products installed in their premises. Nothard appealed to the NRCS to institute the action required in terms of its mandate to protect users and he urged the NCC to act in terms of its mandate to protect consumers who may be potential victims.

NCC and NRCS

Trevor Hattingh, spokesperson for the NCC told *Sparks Electrical News*, "On 23 August 2016, the National Consumer Commission met with its sister agency, the National Regulator for Compulsory Specifications to get a briefing on the court judgement, and to decide

CONTINUED ON PAGE 4

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Refilwe Mokgasi.

REFILWE MOKGOSI is the deputy director of logistics and technical services at the City of Tshwane's Energy & Electricity Department and she wears other hats as the AMEU vice-president elect and chairperson of Women in Electricity (WIE).

Refilwe is as passionate about improving the electrical industry as she is about gender equality and, as chairperson of WIE, she is fully committed to making a positive contribution towards driving the AMEU mandate in creating an enabling environment for women to participate in the electricity sector. Guided by powerful mentors in the electrical industry, Refilwe is an enthusiastic and ambitious 'student' who works extremely hard to achieve her dreams and to pave the way for future generations of women who will step into the historically male-dominated arena of electrical engineering.

Sparks: Where were you educated?

RM: I attended Winterveld High and Holy Trinity High Schools and did my tertiary education at Pretoria FET College where I completed a National Diploma (Electrical Engineering: heavy current) and passed my trade test, becoming a qualified electrician in 2001. I furthered my studies through Unisa (National Diploma: Electrical Engineering) and I did my B-Tech degree (Electrical Engineering) at the University of Johannesburg.

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

RM: I've been in this industry for more than 15 years. I have gained broad experience working in various fields, such as maintenance and construction; planning; customer service; field services dispatch; control centres; power stations; and projects.

Sparks: When and where did you start your career?

RM: I started as a learner artisan in 2000 at the City of Tshwane and qualified as an artisan electrician. At that time, the municipality didn't have any positions available so I worked temporarily as a lecturer at Pretoria FET College. In October 2002, I was employed as an electrician for City Power.

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

RM: On a personal level, the greatest change has been my progression from being an electrician to where I am today. Generally, there has been an increasing number of women who are choosing to enter the electrical industry and more people within this industry are beginning

to accept and welcome women as colleagues.

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

RM: One of the major projects I'm proud of was when I was still working for Ekurhuleni Metropolitan Municipality and we built substations and electrified over 20 000 households in the Palm Ridge area. To have been part of building such an auspicious legacy for so many people was one of my most humbling experiences.

Sparks: Have you won any awards?

RM: I haven't won any awards *per se* but my dedication and attitude have earned me the title of 'best employee' in most of the positions I have held.

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

RM: I have had several mentors: at Ekurhuleni Metro, Serutle Ntlatleng and Hannes Roos; at City of Tshwane, Frans Manganye and others; and, through AMEU, I have learnt a great deal from women such as Jacqueline Chauke (head of electricity at Lesedi municipality), Bertha Dlamini (MD at EON), Neli Magubane (MD at Matleng Energy Consulting) and Sy Gourrah (GM at Actom). What continues to inspire me is the huge gap that still needs to be tackled in order to transform this male-dominated industry.

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

RM: Technically, we are faced with capacity constraints and, as a country, we still have a huge backlog of new customers who have to be connected to the grid. There is still a need for utilities to integrate renewable energy and the grid. Electricity supply is a major source of revenue and, if utilities are not ready to deal with this integration, there will be long term challenges ahead for those utilities.

Gender equity and the empowerment of women are still challenges and we are working to ensure that we nurture and develop a rich pool of skilled women to bridge the gap.

Sparks: What do you enjoy most about your job?

RM: What fascinates me is that I get to do the things I enjoy the most: standardising and rationalising technical specifications and annual contracts for the procurement of cost-effective electrical equipment for the construction; as well as maintenance and safe operation of the electricity distribution infrastructure in the City of Tshwane. I'm also involved in the development of standards, monitoring and research on new technologies in the industry; contract management; and compliance. I enjoy representing City of Tshwane within associations such as AMEU; WIE; the Power Institute for East and Southern Africa (PIE SA); and the South African Bureau of Standards (SABS) and working closely with internal and external stakeholders.

Sparks: How do you motivate your staff?

RM: I ensure that everyone takes responsibility for their work and I include them in decision-making processes. Because I'm task-driven, I set targets and deadlines that allow them to 'spread their wings'. I try to equip each person so they can perform optimally.

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

RM: I wouldn't change anything. I believe that everything happens for a reason and believe that I am where God has purposed me to be.

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

RM: Yes, I would. Electricity is a technology that never stops advancing, never stops evolving and never stops generating. I would urge them to work hard and do well, knock on those doors and find mentors who will guide them. We have already begun the process of carving the way to make it easier to enter the electrical industry – especially for young women – and we will continue to do so.

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

RM: Electrical contractors should invest in the right skills and resources to ensure that they deliver a first-class service and earn a good reputation. Electrical engineers should familiarise themselves with standards and policies and keep up-to-date with new technologies.

Sparks: What is your favourite quote?

RM: "Take it upon yourself – where you live – to make people around

you joyful and full of hope." - Nelson Mandela.

Sparks: Name three things on your 'bucket list' (things you want to do before you 'kick the bucket').

RM: My bucket list is long but the first three that will come under consideration in the near future are: do an ironman triathlon; climb Mount Kilimanjaro; and become a motivational speaker.

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NCC AND NRCS LAUNCH JOINT INVESTIGATION INTO UNSAFE ELECTRICAL DEVICES

CONTINUED FROM PAGE 1



on the best way to proceed with the matter and ensure protection of consumers who have been exposed to the counterfeit switches."

Joint investigation

"Given the respective mandates and enabling legislation of the entities, it was resolved that a joint investigation would be instituted.

"The outcomes of the investigation will guide the entities insofar as appropriate remedial actions concerned. Accordingly, we [the two entities] will update the media when it is opportune to do so. As you may know, we do not comment on investigations," says Hattingh.

SAFEhouse

Two SAFEhouse members began independent investigations.

Rashid Moosa, director at Kensington Electrical Wholesalers (KEW) sent out an email notification to clients on 10 August informing them that sub-standard devices had been sold through the company during 2012.

The email states: "As some years have passed since you bought the products, they probably have been installed in buildings and it may take some effort to identify their locations.

Because of the safety function the product is required to perform, we urge you to make every possible effort to locate the products and return them to us."

Moosa offered to replace the devices with genuine products that meet the required specifications at no charge to the customer. His email to clients included the CBI poster that illustrates the differences between genuine and counterfeit devices. Moosa says KEW was assured by Khan (the importer) that the products were "original" and Khan had been paid in full for all the devices bought by KEW. He says "a substantial" number of products were confiscated by authorities in 2012. He says KEW then issued an "immediate recall" on the units that had been sold and subsequently returned about 4 800 units to Khan.

In reply to questions from *Sparks Electrical News* regarding the other SAFEhouse member, Voltex, Pierre Nothard, chairman of the SAFEhouse Association, says that Voltex has tried, without success, to identify the transactions that implicated one of their branches in court documents.

The company is nevertheless considering a recall of products that may have been sold by that branch.

Editor's footnote:

Taking into consideration that nearly 124 000 unsafe circuit breakers and earth leakage devices were imported between 2009 and 2012, there is an interesting correlation that becomes apparent – which would have to be proved scientifically – when one looks at the 'dramatic increase' in the number of fires listed in the 2010 to 2013 fire statistics, released by the Fire Protection Association of Southern Africa. These were reported in the May 2016 issue of *Sparks Electrical News* under the headline, 'Burning issues for South Africa's electrical industry', which states:

"During 2010 and 2013, the number of fires increased a dramatic 60% from 26 574 to 42 343. In the same period, there was a sharp rise in the number of fatalities in fire-related incidents, from 224 to 578 in 2013, more than double."

The article continues: Pierre Nothard, chairman of the SAFEhouse Association, believes that, in South Africa, causes of electrical fires also include sub-standard electrical products, poor installation methods and the misuse of electrical products.

'Undetermined causes'

"While the FPASA statistics are not up-to-date, it is clear that there are about 3 800 electrical fires every year and, significantly, about 14 000 fires that are attributed to 'undetermined' causes.

"I would say that some of these are very likely to be electrical. What we don't know is to what extent the root causes are sub-standard products, poor installation or misuse of products," says Nothard.

"A further look at the figures reveals that – counter to general perception – there were 81% more electrical fires occurring in 'formal' dwellings than in 'informal' ones."

This is something that the NCC and NRCS must take into consideration when deciding whether or not to rescue a recall.

- Erika van Zyl

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Many products in electrical installations have been commoditized and it is mostly impossible to visually distinguish a safe product from a dangerous one.

The compulsory standards are there to protect users but compliance also protects electrical contractors against the risk of rework and much worse - such as damages claims arising from harm to persons and their assets.

Buying on price alone can expose you and your customers to the severe consequences that can arise from using sub-standard products. Selling and installing sub-standard products are criminal offences.

A SAFEhouse guide to avoiding the purchase and use of sub-standard, dangerous electrical products and services:

- Buy brands you know and can trust.
- Buy from reputable distributors and outlets.
- Beware of copies of prominent brands.
- Be suspicious of prices substantially lower than for other, similar products or services on offer.
- Be suspicious of lack of information on or with the product packaging and on the product itself.
- When dealing with an electrical contractor, ask about its membership of the ECA (Electrical Contractors Association) and call the ECA in your region to check credentials.
- Ask for proof of authorization by the National Regulator for Compulsory Specifications (NRCS) that issues a Letter of Authority (LOA) for compliant products
- Look for certification marks such as SABS, VDE and UL. (Note that the SABS mark is not necessarily a substitute for an LOA)
- Beware of fraudulent use of well-known certification emblems, such as the SABS mark.
- Report any electrical product failure to the dealer, manufacturer, the NRCS and, if applicable, the National Consumer Commission.

If you are uncertain about a product, contact the SAFEhouse Association.

SAFEhouse members have signed a code of conduct: Your assurance of commitment to offer only safe electrical products



The SAFEhouse Association is a non-profit, industry organisation committed to the fight against sub-standard, unsafe electrical products.

For more information contact:

Pierre Nothard: 011 396 8140

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A SOFT STARTER THAT'S LEADING PRODUCT CATEGORY EVOLUTION

ABB continues to examine real-world product performance and customer views to improve product lines. The highly successful PSTX range of low-voltage soft starters is an illustration of this approach.

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PSTX is designed to address some of the most common electrical problems that come from starting motors. It reduces starting current at the same time that it keeps the motor protected from load and network irregularities – a great component in any motor starting panel.

The built-in earth fault protection detects if there is an earth fault in the motor connection that may lead to damages. The current limiting function detects if the current has exceeded the set trip level and prevents heavy loads from creating unnecessary electrical stress during start.

Improving installation efficiency for panel builder and distributors

Installing and using the PSTX is fast and easy, saving time for everyone involved in installation and commissioning. Initial design decisions made were done so as to consider all aspects of the purchasing, operating and servicing lifecycle of the product.

With PSTX, much of the required functionality typically required for most applications is already built-in. The bypass will reduce energy consumption and heat generation while running motors at full speed. Having it built-in saves time on installation and space inside the panel.

The PSTX also has a detachable keypad that is easy to use, saving time during commissioning and operation. In a nutshell, PSTX soft starter is a complete motor starter in a compact package.



ABB soft starters are extensively used in a range of liquid moving applications and are particularly popular in the water and waste-water environment.

Increasing application productivity for end-users

PSTX takes motor starting to the next level, making it possible to get more out of the process and being more flexible. The PSTX also reduces the wear-and-tear on motor and equipment, saving time and money expended for service and maintenance.

With all its included functions such as: torque control to avoid water hammering, jog with slow speed to rotate motor slowly both forward and reverse as well as possibility to clean a pump by reversing the flow, PSTX is the complete motor starting solution. To increase reliability of the process, PSTX includes a limp mode that will allow the continuing of operation even where a thyristor fails. As a result, the end-user enjoys improved productivity and full-potential motor usage.

ABB's range of low-voltage soft starters has taken an enviable track record of motor reliability, installation efficiency and application productivity to a new level.

Enquiries: +27 10 202 5000

Business unusual revolutionising electrical construction

Enl Electrical, part of the Zest WEG Group, is on a drive to change the electrical contracting industry – and the larger South Africa construction landscape.

Its strategy is working considering that the electrical contractor enjoyed a record revenue year in 2015, while recording 404% growth rates since 2010. Importantly, as much as 60% of the company's projects last year comprised repeat customers, but this has come from approaching the construction environment differently.

"One of our success stories is that we are always invited back by our customers. This tells a very important story, especially in construction. In our industry, it also sends a very clear message to us and the market that we are definitely doing something correct," says Trevor Naude, managing director of Enl Electrical.

"We are not just supplying a product that meets a specific specification. As contractors, we are delivering something unique. If we do not understand their needs, it is going to cost us money," says Naude.

Transparency is also key for Naude, who is concerned by contractors' known exploitation of scope changes in projects for their own benefit. "It's a practice we have shunned and we are on a concerted drive to change this practice through the way we approach our contracts from bidding through to completion of the works," he says.

As part of the company's drive to "transform the culture of the local contracting fraternity" even at the operational level, significant time and effort is spent by Enl Electrical in developing its well-known 'A-teams'.

Last year, these teams helped build a uranium mine in Namibia, a new gold mine in Ghana and a platinum mine project in Rustenburg, Northwest Province, as well as being involved in a Coca-Cola factory expansion programme in Dar es Salaam, Tanzania.

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Trevor Naude, managing director of Enl Electrical says the company is one of the fastest growing electrical contractors in the region.

NEW SIMPLIFIED SAFETY COMPLIANCE TESTING REDUCES THE RISK OF SHOCK AND ARC FLASH

COMTEST, local distributor of Fluke test and measurement tools, has introduced a unique tester to market, that sources ac and dc steady-state voltage for Hi-Z and Lo-Z instruments, thus simplifying safety compliance testing.

The new Fluke PRV240 Proving Unit provides a safe and convenient method for 'test before touch' TBT verification of electrical test tools without placing the electrician or technician in potentially hazardous electrical environments, which would generally involve using known live voltage sources.

In contrast to using a known live source, using the PRV240 does

not require personal protective equipment (PPE) for tester verification. Use of the PRV240 reduces the risk of shock and arc flash compared to verification of test instruments on high-energy sources in potentially hazardous electrical environments because the PRV240 provides a known voltage in a controlled, low-current state in accordance with safe work practices.

The pocket-sized PRV240 sources 240 V of ac and dc steady-state voltage for testing of high- and low-impedance multimeters, clamp meters, and two-pole testers, eliminating the need for multiple verification tools and the use of a known high-energy voltage source for test instrument verification. To avoid accidental contact, the voltage is supplied through recessed contacts that are activated only when test probes are inserted into the module's insulated access points. A single LED indicates the sourcing of the voltage to verify the test tool, simplifying test tool verification without the need for PPE.

The proving unit can perform up to 5 000 tests per set of four AA batteries and comes with a TPAK magnetic hanging strap for easy accessibility.

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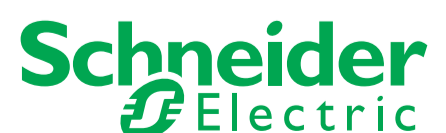
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Life Is On





IF SOMETHING DOESN'T MAKE ELECTRICAL SENSE TO YOU THEN OBSERVE AND THINK UNTIL IT DOES

LONG, long ago I used to work in substations testing circuit breakers rated at 11 000 V. Quite a few of the people – engineers and technicians – who worked for the same company on similar projects had, at some time, suffered an injury due to various items of electrical equipment exploding. I have a very vivid imagination and, consequently, I have always been super cautious when conducting tests before switching on any circuit breakers.

In the 1980s, during the time when the South African government had declared a state of emergency, all strikes were banned and any news of riots, police action, unrest, and so on, were not reported in the media. Because of the situation in this country,

labour was very cheap and since it was so cheap, coal production costs were low and, as a result of that, the price of electricity was also very low.

Times for the gold mines had never been better: cheap labour, cheap electricity ... and share prices kept on doubling. Consequently, there was continuous new investment in large plants and mines. This led to a steady demand for medium voltage circuit breakers and transformers and medium voltage motors, which all had to be installed, tested and commissioned – and that was the job that I was doing along with a group of people.

It was a lot of work. I don't think I was very good at the job; I

worked too slowly and often stopped when I thought things were unsafe. In point of fact, my imagination was too vivid. If I didn't understand something or how a circuit breaker worked, I would just examine it and re-examine it. This took time.

The problem was that in the supply construction, installation, test and commissioning chain there were definitely some weak links.

I remember a time I was at a mine sub-station, arranging for a circuit breaker truck to be filled with insulating oil and then testing the oil, all ready for the switch on in the morning.

To make sure that the truck filled with oil was the same one when we switched it on the next morning, I signed my name on the side of the truck. The following morning we arrived bright and early and, in the presence of the mine electrical engineer, the mine chief electrician and all the staff, we were ready to rack up the circuit breaker and close it. Just as they were about to do that, I just checked my signature ... and it wasn't there.

So I told them we were going to have to check that there was, in fact, oil in that circuit breaker. Everybody was upset, especially the mine staff who said we were wasting their time.

So, bolt by bolt, we undid the truck bolts and raised the circuit breaker ... there wasn't a drop of oil in it. If we had closed the circuit breaker there would all have been an almighty explosion and we would have all been injured, if not killed. It turned out that, during the night, the mine had had a problem with a circuit breaker somewhere else so they had come into the sub-station and 'borrowed' the one we had filled with oil. They had replaced it – but they hadn't filled the replacement breaker with oil.

There were other things that got caught 'just in time' ... I was working with the late John Locke on a goldmine when he noticed that the tap switch of a transformer was next to the low-voltage bushings. It was usually next to the high-voltage bushings.

We tested the transformer and found that someone had got the high-voltage and level connections swapped around. Another disaster avoided.

There are many other circumstances that I can recall in which observation prevented disaster and others where failure to observe correctly resulted in disaster.

I'm writing this as an appeal to young electricians – fortunately, these days just about everything you buy works.

But it is so common for things to work 100% that people fail to realise that sometimes things have not been put together correctly and they don't work.

So, if something doesn't make electrical sense to you, then observe and think until it does.

It does take time but it is the safest way.

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- Steel: 13mm
- Wood: 32mm
Blows per minute: 0 - 4,600
No load speed (r/min): 0 - 1,200
Net weight: 2,9kg
With carry case.
Bit sold separately

Type test certification for local switchgear company

JB Switchgear Solutions, Johannesburg, was recently awarded a contract by DRA in Cape Town for the design, manufacture and supply of numerous boards, variable speed drives and soft starters destined for the Elandsfontein Phosphate Mine project, which is currently being developed at its site located near Saldanha in the Western Cape. The project is supported technically and financially by EEM's major shareholder, Phosfanatia International, a European business with investments in the phosphate industry. In this instance, JB Switchgear supplied its proven and IEC 61439-certified Eagle series of motor control centres.

Enquiries: +2711 027 5804





GETTING TO GRIPS WITH SANS 10142-1 BY HANNES BAARD

THERE ARE GOOD ELECTRICIANS DOING THE RIGHT THING IRRESPECTIVE OF THE RATS AND MICE OUT THERE

In September, I continued discussing the Electrical Installation Regulation 5 (Design and Construction), which we started a month or so ago and, more specifically, sub-regulation (4) that deals with supervision and control over electrical installation work.

It reads:

(4) A registered person shall exercise general control over all electrical installation work being carried out, and no person may allow such work without such control.

I also elaborated on the competent person required to supervise certain categories of work as defined in the General Machinery Regulations.

This, of course, has its basis in the Occupational Health and Safety Act (Act 85 of 1993) and can be found in the Electrical Installation Regulations 2009 and General Machinery Regulations 1988.

So, there I was, ready to start where I left off last time, when I received a phone call. To tell you the truth, it was the kind of call that I dislike intensely. Why? Simply because there is absolutely nothing I could do about the caller's situation. If it had been up to me, I'm sure I'd rattle a cage or two and shake a few trees, but alas...it was the type of call that makes me ask the same old question: "Why am I still doing this?" We don't live in a perfect society but it seems the very fabric of the Department of Labour (the industry police) has disintegrated.

Halfway through this telephone conversation, the question is raised: "Why were the Eskom inspectors allowed to disappear?" The simplistic answer is that, at the time, the industry said they could police themselves. Did it work? Not as far as I am concerned. In other words, no! So, why can't municipal building inspectors do a basic electrical inspection when they inspect properties before issuing an occupation certificate or, at the very least, verify the electrical contractor's credentials?

They say they do not have the time to do this extra work.

Now, where can one complain about unregistered electrical contractors, workers and substandard work then? At the Department of Labour? You're not serious, are you? Try the Bargaining Council for the Electrical Industry. Now, why would I go there? Well, surely they can enter a building site and check out the credentials of the electrical workers seeing the officials at the Department of Labour don't think that it's their job? Forget it, the building contractor just refuses the representatives entry to the building site or the walled private residential complex. Oh I forgot ... those walled complexes have private companies selling pre-paid electricity to the residents. Do those re-sellers of electricity worry about standards? Are you crazy? They only worry about the profits. So, what about the Electrical Contractors' Association of South Africa - the ECA(SA)? Sorry to disappoint you again. See, the ECA(SA) is an employers' organisation, much like the Master Builders Association. It can only act against its own members in terms of its mandate. All complaints relating to non-members end up at the Department of Labour or a municipality; and, you guessed right, nothing happens. But why? I think the answer is quite simple: It seems that the whole of South

Africa does not want to take responsibility for anything anymore. Another truth is that officialdom has become plain lazy. Gravy train, you know ... Are you telling me it is essentially a free-for-all out there? Yes. You may ask me, "So, why are you still telling us the correct way of doing things?" It's easy - just as you get very good and conscientious policemen who, after 12 years still haven't been promoted from the lowest ranks but have to look up to the corrupt management and continue to do their jobs.

There are good electricians out there, too, doing the right thing, irrespective of the unregistered and unqualified rats and mice operating around them.

So, for those self-disciplined individuals we continue with Regulation 5, sub-regulation (5) from the Electrical Installation Regulations 2009 that reads:

(5) Where the voltage exceeds 1 kV, a person deemed competent in terms of paragraphs (b), (c) or (d) of the definition of a competent person in regulation 1 of the General Machinery Regulations, 1988, or a person registered in a professional category in terms of the Engineering Profession Act, 2000, shall approve the design of that part of an electrical installation.

Remember, I said earlier that a registered person shall exercise general control over all electrical installation work being carried out, and no person may allow such work without such control. Having said that, did you spot (a) is missing from this category of competent persons? It is clear that the legislator did not think a person with limited theory and only a completed apprenticeship is capable of supervising electrical installations above 1 000 V. The supervision of these types of electrical installations require someone with at least a T3 or N5 diploma, an engineering degree or someone with a 'government ticket', in other words, a certificated engineer.

Next, we move onto electrical installations in small residential complexes, blocks of flats, townhouses and subdivided erven in industrial areas, for instance.

(6) Where the intention is to supply five or more users from a new point of supply, the user shall appoint an approved inspection authority for electrical installations or a person deemed competent in terms of paragraph (b), (c) or (d) of the definition of a competent person in regulation 1 of the General Machinery Regulations, 1988, or a person registered in a professional category in terms of the Engineering Profession Act, 2000, who shall ensure the compliance contemplated in subregulation (1) from the commencement to the commissioning of the electrical installation.

This sub-regulation's 'competent persons' are the same as those of sub-regulation (5), but with the addition of the Authorised Inspection Authority. I'm not 100% sure how to reconcile this with Regulation 4 (2) though.

Next, we move onto sub-regulation (7) and the last one of the main Regulation 5:

(7) No supplier may restrict the application of a

health and safety standard referred to in subregulation (1) when an electrical installation is installed, except where the distribution system of the supplier may be adversely affected by the application thereof.

I have thought about this one long and hard and, believe me, I cannot think of any particular instance where a supplier of electricity would restrict the application of a health and safety standard. The only time I can think of where this could happen is when a foreign standard relating to a generator or alternative electricity supply has conflicting wiring colours and the supply authority requires the wiring colours to be changed to a locally accepted colour code. Perhaps.

Till next time...

NEW MD FOR CABLE GROUP



Tony Kinsella

Strutfast, a leading South African cable management company, has announced the appointment of Tony Kinsella as managing director for the group. Kinsella has taken over from founding director, Pieter Uys, who has moved into the role of chairman. Kinsella has held leadership positions at a number of global organisations, including as director of Unistrut EMEA, Bloomice Spain, Hirschmann Electronics and Schneider Electric. His experience and knowledge of global business development was forged in the cable management, industrial automation and telecommunication sectors.

Enquiries: +27 11 473 1212

Call for entries: ECA(SA) presidential excellence awards - 2016

THERE is still time to enter the Electrical Contractors' Association(SA)'s Presidential Excellence Awards, which will be held at Emperors Palace on 17 November - and Mark Mfikoe, national director, encourages ECA(SA) members to submit their entries to this prestigious event before 31 October.

Categories

This year there 14 categories:

- Installation of the Year - Industrial
- Installation of the Year - Residential (Houses)
- Installation of the Year - Residential (Complexes)
- Installation of the Year - Office Blocks
- Installation of the Year - Hotels and Hospitals
- Installation of the Year - Retail and Shopping Centres
- Energy Efficiency Award
- Reticulation Contractor of the Year
- Apprentice of the Year (male)
- Apprentice of the Year (female)
- Woman-Owned Business of the Year
- National Safety Award
- Special Innovative Projects Award
- Regional Excellence Award

Entries

Only member firms of the ECA(SA) may submit projects or nominations, unless otherwise invited.

Projects must have been undertaken between 1 July 2015 and 31 July 2016.

Projects undertaken within the borders of South Africa as well as projects in other southern African countries may be entered.

More than one project per category may be entered and entries can be submitted in more than one category.

Entry forms

Entry forms are available on the ECA(SA) website: www.ecasa.co.za

For more information about the awards, go to the ECA(SA) website or contact Florence Mabena, secretary, national marketing committee at florence@ecasa.co.za

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NEW GENERATION PROGRAMMABLE TIME SWITCH TECHNOLOGY FOR HEATING AND COOLING

Legrand's new generation of programmable time switch technology encompasses AlphaRex³ and MicroRex time switches for precise temperature control in domestic, commercial and industrial environments.

"Legrand's Rex time switches, with analogue and digital dials, are ideally suited for OEMs and panel builders who can pre-programme the time switch during installation. At a later stage when the panel or product is connected to power, all the end-user has to do is set the real time," says Marius Labuschagne, Legrand's technical and solutions manager.

"These programmable time switches ensure high clock precision,



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17 stylish finishes to compliment any design aesthetic, plus offering over 500 different functions!

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optimum reliability, maximum safety and enhanced aesthetics.

"In temperature control applications, these devices are used to switch an electric circuit on or off at selected times during a pre-programmed time period. These time switches also have an automatic return facility and a permanent forced switching on or off override control.

"Typical applications for time switches in heating and cooling installations include water heaters, air conditioners, heating and ventilation systems and swimming pool heaters."

AlphaRex³ programmable time switches have a user-friendly standardised text guided programming facility, with a high resolution digital display and backlight. There is a standard, single data key for all devices in this range to allow quick and easy transfer of programs to other time switches and for creating back-up copies.

These time switches are available with standard and multiple functions, with a daily or weekly program facility and a clock working reserve of six years.

Programming with clock precision to the second is controlled directly on the time switch, or outside the distribution board using a PC and Legrand's AlphaSoft programming software. Other features include an EEPROM memory, which prevents settings being lost and the facility to program the clock prior to despatch. Once the unit has been programmed, the information will remain installed even if the switch is not connected to power. The battery can be removed without having to uninstall the time switch from the distribution board.

MicroRex time switches offer easy plug-and-play installation for daily and weekly programming. By simply setting the analogue switching dial during start up, the time is automatically set using the fast-run mode. In the event of a power failure, the time is automatically reset.

MicroRex analogue and digital modules are 24-hour and seven-day time switches for DIN rail and wall mounting, with a 100-hour running reserve. These units have the capability for multiple programs, which ensures optimum time setting flexibility. MicroRex time switches have an LED status indicator, precision clockwork of 0.2 s/day and are controlled by either a quartz or synchronous motor. For increased safety and user convenience, there is an automatic and manual and advance and over-ride facilities.

An analogue defrost switch is available for short periods of controlled defrosting. The timer can repeat one or two settable short programs within 24 hours and the defrosting time is from one to 60 minutes per contact.

Other time switches in the Legrand range are designed for precise control in security installations – for access points; electric fences and alarms – as well as for use in industrial installations, including pump stations, filters and conveyors. Legrand time switches are also used for the lighting of commercial boards and signage, as well as for street lighting. Time switches in agricultural applications are used for irrigation and sprinkler systems and for cyclical programs, such as animal feed systems.

Enquiries: +27 11 444 7971



MARK PALMER- ELECTRICAL APPROVED INSPECTION AUTHORITY SOUTHERN AFRICA (EAIASA)

THE SYSTEM AS IT IS ... UTOPIA IN THE ELECTRICAL INDUSTRY DOES NOT EXIST

I was somewhat astonished to read the comments made by one of my fellow columnists in the August issue of this journal when he referred to the Electrical Installation Regulation 4 – functions of Approved Inspection Authorities (AIAs) for electrical installations.

The realisation that someone of his standing still seems to be somewhat in the dark as far as AIAs are concerned made me re-evaluate my understanding of how electrical AIAs are perceived throughout this industry.

I would like to take this opportunity, therefore, to shed some light on the subject.

Although co-incident, my column published in *Sparks Electrical News* in the same month gave an outline of the AIA process currently being implemented by the Department of Labour, which I believe may assist my colleague in his understanding of AIAs.

Perspective

There are some principles that need to be put into perspective before targeting the AIA as an entity when referring to organisations used by the government “to do their work for them”. When “dissecting the Occupational Health and Safety Act” as a whole, reference is made to AIAs “performing work on behalf of the government” in other regulations but it appears that it is only the Electrical Installation Regulations (EIR) that are problematic here.

When looking at this principle, therefore, my colleague may be correct in his summation that if we pay taxes, why do we need an entity other than the one established by government to provide us with protection when regulations or laws are contravened?

In particular, I need to quote verbatim my colleague's statement: *“Now here's the thing: who pays this AIA for services rendered? Pardon me if I sound a little harsh or even blasé on this topic but if someone comes into my premises, he or she will need a very good reason and they would have to be in possession of all the required paperwork. Now, let's assume that because I am a good and obliging citizen, and after some contemplation, I allow the AIA onto my premises, it does not mean that I have to pay that AIA as, in my opinion there is no contract between us. But wait, does the government actually pay these AIAs? And does the entity that requests such an AIA to come and do an inspection, expect to pay for a service by an agent of the government? Maybe not ... It may be a little ridiculous to think like this, but it's like asking the SAPS to investigate a disturbance at your neighbour's house and then getting a bill for it.”*

Now, when dissecting the relevant regulation – that is, EIR 4(1) b – it is clear that an AIA would not enter my colleague's premises unless that AIA was invited by him to do so. A good reason may very well be that my colleague had an electrical installation that was considered unsafe and that required some form

of inspection; or, alternatively, he had been issued with a Certificate of Compliance (CoC), which did not measure up to minimum safety standards.

In such a case, I think that any obliging citizen (or otherwise) would, having invited the AIA to his/her premises, pay for such services. In terms of payment, that requires no further clarification as I am sure my colleague charges for the services he renders and, should I request him to perform a service for me, he would indeed charge for those services. I, as an obliging citizen, would be morally and legally obliged to pay him.

That aside, let's look at the services/payment issue in the context of governmental obligations.

My colleague used an interesting analogy when he mentioned the SAPS in the same breath as the AIA. So, let's look at this analogy in context: We have an established SAPS force that is mandated by government to look after the safety of this country's citizens by responding to our calls when we are the victim of criminal acts.

I, along with millions of my fellow citizens, choose to not rely on this government intervention (although I get it for free), but rather choose to pay for my own policing by appointing an armed response service (a private company, no less) that I invite to my premises when my safety is threatened rather than wait for the SAPS to arrive (even though this is a ‘free’ service).

We choose to pay for a service that is expedient, meets our requirements and achieves resolution long before the government reacts. This is certainly not Utopia, but we accept it as the world in which we live. It seems my colleague would like to see this Utopia in the electrical industry but, unfortunately, it does not exist.

When an electrical practitioner does not apply the legislated safety regulations – which is a criminal act – the affected person may report this to the Department of Labour and they can expect some form of intervention at no charge. But this may take some time.

The affected party has the right to decide to pay for the services of an AIA rather than wait for a DoL inspector. By choosing to pay an AIA, they receive services that are expedient, meet their requirements and, in most cases, achieve resolution long before governmental intervention.

So, there's no rocket science here. Any person may elect to invite an AIA to their premises, expect to pay for those services and look to the AIA as a consumer protection agency ... therein is the answer. My colleague need not fear that an AIA will enter his premises unannounced but should he at some point require an AIAs services, he may certainly invite one in, but be prepared to pay for those services.

One more thing: my colleague also appears to have some concerns about how I, as an AIA, can make money as I cannot operate as an electrical contractor. In referencing the AIA appointment throughout, it must emphasised that I am firstly an ‘Accredited

Inspection Body’ in terms of ISO/IEC 17020; 2012 and, as such, my independent findings are sought after by many ISO-accredited companies that are prepared to pay for professional inspection services.

That being said, I hope my colleague can finally drop the ‘hot potato’ and, considering the current system of things, that he will be granted *“the serenity to accept the things he cannot change, courage to change the things he can, and wisdom to know the difference”* (Reinhold Niebuhr).

UK VISITORS SEAL AGENCY DEAL



Stuart Murlis (Pico product specialist); Barend Niemand (Comtest CEO); and Paul Allen (Pico distribution sales manager).

NEWLY SIGNED Comtest agency, Pico Technologies – a leading UK-based design, development and manufacturer of affordable PC oscilloscopes and data loggers – recently sent two company representatives, Paul Allen (distribution sales manager) and Stuart Murlis (product specialist) to meet South African dealers and other stakeholders at Comtest's Linbro Park offices.

Paul Allen says Pico scopes are a modern, affordable alternative to traditional bench top oscilloscopes. “When technicians combine Pico's versatile, individually programmable hardware with Pico-Scope 6 software – which is free and includes a lifetime of free upgrades – we believe we have an attractive alternative to what is usually considered to be a large capital outlay.”

Comtest's CEO, Barend Niemand adds, “We welcome Pico's range to our product basket, where it meets an education sector requirement and are a cost saver for students in these tough economic times.”

Enquiries: +27 10 595 1821

NORTH-WEST UNIVERSITY SOLAR CAR NOW TO DEFEND AFRICA TITLE

Almost a year after the North-West University's solar car crossed the finishing line at the World Solar Challenge in Australia – the first African team to do so – the team will be defending its title as the best in Africa at the local Sasol Solar Challenge – but this time against even stronger international competition.

According to Prof Albert Helberg, team leader, they are not only focusing on competing against local teams this year but also on rubbing shoulders with world champions – such as the Nuon Solar Team of Delft University of Technology in the Netherlands and the Tokai University of Japan – on the winners' podium.

For the first time in the history of the Sasol Solar Challenge these world champions will be battling it out simultaneously.

From 24 September to 1 October this year, the NWU-team's car, the Sirius X25, will be competing against 12 other teams in the race from Pretoria to Cape Town. Six of these teams are international teams. “This year's Sasol Solar Challenge has the strongest international representation ever, among others the first and the third place winner of the World Solar Challenge in 2015. The NWU solar car team see it as a challenge to become the number-one South African team on the podium this year,” Helberg says.

The NWU-team comprises 25 engineering students who will be participating in this year's ‘Challenger Class’. The provisions of this class are that the entered car must have four wheels, may only use solar energy to complete the entire route and may only use a maximum surface area of 6 m² of solar panels.

NWU participated in its first Sasol Solar Challenge in 2012 with only three months' preparation and a very limited budget. Exceeding all expectations, they were the winners of the Olympia Class. They also improved the South African record for the longest distance covered. In addition, they received the coveted International Federation Internationale de l'Automobile (FIA) Award for Renewable Energy. They finished the race in fourth place in 2014 and again improved the record for the South African team by covering the longest distance in a single day.

Helberg says various improvements were made to the new solar car, thus enabling it to perform about 20% more effectively. “We are the first users of solar panels that are brand new on the market. We are using solar panel technology of Gochermann, a German company, which has given us exclusive rights to use it this year. Our students developed new electronics and, combined with new control systems that make this year's car some 4 kg lighter than its forerunner, we have a winning car,” he says.

Students built the entire Sirius X25 by hand. Several sponsors contributed to the hefty price tag of a little more than R1-million currently hanging on the solar car's steering wheel. This amount represents only the materials as the students do the construction and the labour without any payment.

Helberg says the biggest improvement since previous competitions is probably the team's strategy. “We approached students of the subject group Business Mathematics and Informatics (BMI) to build us a system that determines the car's optimum speed, given the road profile and the expected solar energy. The purpose is to find a recipe for optimal performance at minimum energy for the race. They succeeded,” says Helberg.

The system broke down the entire route of 2 000 km into 100 m ‘virtual segments’ – taking into account uphill, downhill, weather variables and altitude to determine exactly which sections of the route must be driven at what speed to minimise the vehicle's energy consumption as best as possible. This has to be done because the batteries may only be charged by the sun and no other external energy sources may be used.

In their first Sasol Solar Challenge in 2012, the team could travel slightly more than 1 000 km. In 2014, during the same competition, slightly more than 2 000 km and in last year's World Solar Challenge, they covered a little more than 3 000 km.

“Even though the direct route is only 2 000 km, we are aiming to cover more than 3 200 km by travelling additional routes because the race is against time and distance rather than against



other teams. The team covering the longest distance over the eight days is crowned the winner.”

The Sirius X25 and its batteries weigh a mere 196 kg. It can reach a top speed of 135 km per hour, is 4,5 m long and 1,8 m wide. It is built mainly of carbon-fibre, with selected aluminium components.

Students will be the drivers, and each one must weigh less than 80 kg. “However, they must not be too light because the driver's weight is adjusted up to 80 kg by means of weights. Most of our drivers have the perfect weight; the others still have to shed a kilogram or two,” says Helberg.

As in previous years, the Sirius X25 has the theme Proudly South African and will be ‘clothed’ in a (very thin) national flag.

Please visit the NWU Solar Car team at:

Website: www.nwu.ac.za/solarcar

Facebook: <https://www.facebook.com/NWUSolarCar/?fref=ts>

Twitter: @NWUSolarcar,

YouTube: <https://www.youtube.com/user/PUKKEtv>

Regular updates will be given on social media during the competition; please follow them.



ALCOHOL INTAKE – WHEN IS DISMISSAL FAIR?

The General Safety Regulations (GSR) of 1986, as amended in June 2003, contains provisions regarding duties of employers regarding intoxication. These provide that an employer shall not permit any person who is or appears to be under the influence of intoxicating liquor or drugs to enter or remain in the workplace and that no person at a workplace shall be under the influence of or have in his possession or partake of or offer any other person intoxicating liquor or drugs.

The focus of the GSR is safety of employees, the employer, other users and members of the public. It simply prescribes a prohibition consistent with its aim. The question that arises is whether an employer can dismiss an employee who is under the influence of alcohol or appears to be under the influence of alcohol. Is it a straightforward dismissible offence if the employee is found to be under the influence of alcohol in the workplace? What about instances where the employee has actually tested positive for alcohol? Is a positive test equivalent to being under the influence of alcohol?

In *Tosca Labs v CCMA 2012* the Labour Court found that a breathalyser test is not enough nor sufficient to prove that an employee is under the influence of alcohol. Greater emphasis is placed on whether or not the employee is actually impaired from performing his duties. The GSR also refers to prohibition of an employee from being at a workplace on the basis that he appears to be under the

influence of alcohol. This would be based on the 'sensual perception' of the observer, which may include the behaviour of the employee, whether the speech of the employee is slurred, whether the employee's breath smells of alcohol, whether the employee has bloodshot eyes, and whether the employee's movements are unsteady and show a lack of coherence.

In terms of the Labour Relations Act of 1995 as amended, an employee who arrives at work under the influence of alcohol and who sneaks out during a break to go and drink alcohol or who consumes alcohol in the workplace is committing a misconduct and would need to be dealt with in line with the general manner in which misconduct is handled.

This problem is not only caused by alcohol intake but also other intoxicating drugs or substances. How do we deal with this problem given the fact that the Labour Court ruled with authority that being under the influence of alcohol is by itself not a fair reason to dismiss the employee?

The best way to deal with this situation is to formulate a workplace rule which specifically prohibits employees from coming to work under the influence of alcohol, or smelling of alcohol or any substance with a narcotic effect. A workplace rule must adhere to the following requirements to meet the standard set in Schedule 8 of the Labour Relations Act (LRA).

In instances where there are proceedings against the employee and there is a need to adjudicate on a fair reason for a dismissal occasioned by an alleged contravention of a workplace rule, the following would be considered: (a) whether or not the employee contravened a rule or standard regulating conduct in, or of relevance to, the workplace, (b) if a rule or standard was contravened, whether such a rule was (i) a valid or reasonable rule or standard, (ii) whether the employee was aware of the rule or standard, (iii) whether the employer consistently applied the rule and (iv) whether dismissal is an appropriate sanction for the contravention of the rule or standard. This could also be incorporated into a workplace policy that all employees must adhere to.

The way to introduce these measures is through a consultative process, if they are not already in place. The policy must clearly state that the employer is adopting a zero tolerance strategy regarding alcohol and strict adherence to this policy is required of all employees. The policy must also state clearly in unambiguous terms that contravention of its provisions is a dismissible offence.

By applying these measures the employer would have effectively regulated the workplace against alcohol related misconduct and would not be required to demonstrate that the employee was actually impaired from performing his tasks as a result of the alcohol intake. A workplace rule of this nature is backed by the General Safety Regulations and cannot be said to be unreasonable.

NEW ERA BEGINS FOR ZIMBABWEAN OIL ANALYSIS LAB



The most recently opened WearCheck laboratory is in Harare, Zimbabwe, where the company acquired Zimbabwe Tribology. Equipped with the latest high-tech instruments and with all staff undergoing WearCheck training, the lab offers fast sample turnaround time and highly accurate oil analysis results. Some of the lab technicians took a break for a photograph – they are, from left Nikanori Chikati; Talkmore Siyengi; Admire Katanda; Frank Chakonda (laboratory manager); Rangarai Mlambo; Emanuel Mhari; and Victory Dumbura. Condition monitoring specialists, WearCheck, process in excess of 600 000 oil analysis samples each year in 11 laboratories.



WearCheck managing director, Neil Robinson.

Electrical operations and other industrial concerns in Zimbabwe now have their very own local WearCheck laboratory. WearCheck, recently acquired the long-established oil analysis laboratory in the form of Zimbabwe Tribology Services, and brought it into the WearCheck fold.

WearCheck managing director Neil Robinson says the Zimbabwean laboratory has been operating for 27 years, and already services a wide range of clients.

"The WearCheck way is to help customers save money and time via a convenient 'one-stop-shop' offering the full spectrum of reliability solutions to getting plant to perform at its peak. As well as traditional oil analysis, WearCheck Zimbabwe also conducts thermography, vibration analysis, balancing, laser alignment, motor current analysis and milling," explains Robinson, who adds that he is "pleased with the company's expansion".

"We are delighted to welcome all existing and new customers to use WearCheck Zimbabwe's services. The transition - smooth to date - benefits customers by giving access to the full range of WearCheck services. Our laboratory instruments are constantly upgraded to remain at the forefront of international standards, while our staff members attend ongoing training courses to keep ahead of global condition monitoring trends."

Robinson says all the original staff members at the laboratory have remained, and have undergone WearCheck training. "We are currently equipping the laboratory with extra analytical instruments to align the test profiles with other WearCheck laboratories – next on the list for Zimbabwe is a new viscometer."

WearCheck Zimbabwe offers on-site sampling, as well as a 24-hour sample turnaround. Contact WearCheck Zimbabwe at 23 Amby Drive, Msasa, Harare, or telephone +263 4 446-369/71, mobile +263 712 631-026, or email service@tribology.co.zw

Enquiries: +27 31 700 5460



Admire Katanda, lab technician at WearCheck Zim operates a viscometer.

First order for compact voltage transformers



Nick de Beer (product manager, instrument transformers) and Etienne Venter (design engineer, voltage transformers) of ACTOM High Voltage Equipment stand next to a compact 132 kV voltage transformer, which is substantially smaller than the conventional units around it, as the picture shows.

ACTOM High Voltage Equipment's (HVE) first contract for the manufacture and supply of compact 132 kV voltage transformers (VTs) was awarded to it recently by leading infrastructure company Consolidated Power Projects (CONCO) for supply to Tshwane Metropolitan Municipality.

HVE developed the new competitively priced and efficient compact VT in-house and introduced it into the local market in 2015. The new product is 35 to 40% smaller than the conventional unit and is accordingly about 15% lower in price.

The compact VTs are available with standard porcelain insulators or glass-core and silicon composite insulators – the latter being pollution-resistant and less subject to damage than the conventional product.

The contract to HVE, awarded by CONCO early this year, is for the manufacture and supply of 12 compact VTs fitted with porcelain insulators. The VTs form part of a range of HV equipment that Tshwane Municipality ordered under a three-year frame contract, awarded to CONCO last year.

"It was fortunate for us that we completed development and testing of the compact VT when we did as it comfortably comes in at the right price as quoted by CONCO to Tshwane Municipality on their frame contract. We couldn't have accepted the order for our traditional VTs at that price," says Nick de Beer, HVE's product manager, Instrument Transformers.

Enquiries: +27 11 820 5369



SPORT GROUND LIGHTNING PROTECTION FROM TOUCH AND STEP POTENTIALS

SOUTH AFRICA is a sports loving nation and when there are major tournaments, thousands of people gather at sports fields. Statistics show that the highest frequency (45%) of South African lightning strikes occur in open areas – including sport fields – and sports fields are ranked highest when it comes to frequency of lightning strikes.

As a recommendation, DEHN Africa advises that effective lightning protection is installed for playing fields and sport grounds, as well as the nearby spectator galleries.

The damage that can be caused by increased thunderstorm frequency has resulted in greater emphasis being placed on protection measures against lightning strikes on floodlights, spectator galleries, fences or even playing fields, which can endanger sports persons and spectators. People who are directly hit by lightning, or stand next to lightning current carrying objects or who, as a result of a flashover may even be carrying partial lightning current themselves, could sustain serious injuries or possibly die. Moreover, those who are not directly hit by the lightning, but are standing next to the point of strike (potential gradient area) bridge a life-threatening voltage difference with their legs (step voltage) or by touching other people. This may result in injuries such as ventricular fibrillation, cardiac arrhythmia and injuries caused by fright. Hence the lightning protection installation requires the following protection measures to be considered:

- Structures that could easily be struck by lightning must be adequately equipped with permanent effective lightning protection systems.
- It is crucial to recognise these areas as hazards, so that dangerous areas can be evacuated and buildings or designated shelters can be sought in the event of a thunderstorm.
- Additional lightning protection measures reduce the risk of injuries in critical areas that contain floodlights, metal fences and escape routes.

Lightning protection for buildings or lightning equipotential bonding

Covered stands, locker rooms and clubhouses provide shelter in case of unexpected heavy rainfall and thunderstorms. A lightning protection system (LPS) according to Lightning Protection Level (LPL) III as per SANS 62305-3 (IEC & EN62305-3) is, at least, required for these types of structures. In the event of a lightning strike, partial lightning current may also flow through metal fences, parts of the spectator gallery and flagpoles or even the scoreboards. This could result in an uncontrolled flashover which may cause fire and jeopardise people and animals in close proximity. In order to prevent this, all conductive elements in LPS, like railings down conductors, fencing, etc. should be equipotentially bonded to earth. After this, the installation of a LPS to the 230/400 V power supply system at the entry point of the main low-voltage distribution board, such as a DEHNventil or a DEHNshield combined arrester, is required. In addition, the associated lightning equipotential bonding system for metal and electronic systems prevents fire in these structures.

Isolated air-termination system

According to the latest lightning protection standards, an isolated air-termination system can be used to protect metal floodlight pylons, parts of the spectator gallery, scoreboards and flagpoles against direct lightning strikes. These parts are conductively connected with sensitive electronics. Isolated air-termination systems, such as the DEHNconductor HVI system (high-voltage-resistant, insulated conductor), can prevent flashover. Consequently, no lightning currents will travel through these structures, thus preventing dangerous lightning currents from flowing into sensitive electrical systems. The height of the air-termination tip depends on the relevant class of LPS, which must be determined in advance. The HVI conductor can be directly installed at the pylon in line with the installation instructions using system-specific accessories to prevent lightning currents from flowing through the pylon and the electrotechnical installation.

Lightning protection for floodlights

Floodlights next to the side-lines or spectator galleries should also be provided with lightning protection systems. The earth-termination systems of the individual pylons should be connected to each other and to the

earth-termination systems of the sports buildings (club houses, locker rooms or technical buildings). These additional connections improve equipotential bonding and the efficiency of the individual foundation earth electrodes. If correctly installed, they form a protected volume in case of a direct lightning strike to the cable routes of the floodlight.

Standing surface insulation, touch and step voltage (potential control)

People standing directly next to lightning current-carrying floodlight pylons, fences, flagpoles or covered stands during a lightning strike are exposed to high potential differences with their legs (step voltage) or may directly touch conductive structures (touch voltage). The potential risk and injury can be reduced by insulating the standing surface (standing surface insulation), and this measure reduces the risk of impermissibly high touch and step voltages following a light-

ning strike. According to SANS 62305 (IEC/EN 62305), an insulating asphalt layer of at least 50 mm around these parts is sufficient. As an alternative, CUI conductors with dielectric strength of 100 kV (12/50 μs) can be used.

Potential control also allows for step voltages to be reduced and additional earthing conductors are buried around the pylons or metal spectator galleries and they are interconnected.

Consequently, the potential difference in the probable control area is reduced and the lightning current is evenly distributed in the ground. When the distance from the pylon increases, the depth increases as well by 0.5 m. The more evenly the earth electrodes are installed, the lower the potential difference (step voltage). Thus, the risk of injury is considerably reduced.

Enquiries: +27 11 704 1487



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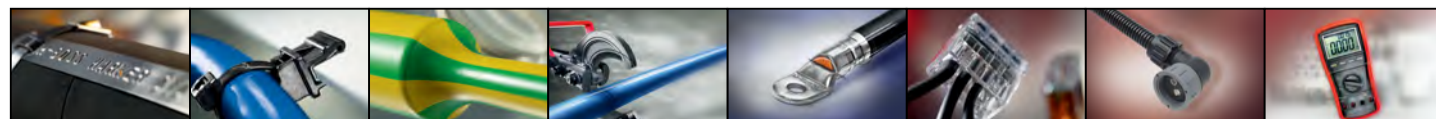
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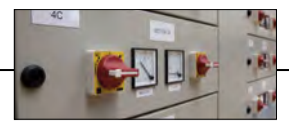
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MANUFACTURERS	CONTACTS	CABLE SUPPORT SYSTEMS	MOTOR PROTECTION AND SURGE PROTECTION
ABB SA Aberdare Cables ACDC Dynamics Alstom Protection and Control Alvern Cables Crabtree Electrical Accessories Danfoss HellermannTyton Lapp Group Legrand Power Process Systems Radiant Group Sabelco Electrical Industries Schneider Electric South Ocean Electrical Wire Co Stone Stamcor Switchboard Manufacturers Voltex Waco Industries Zest WEG Group Africa	Phambili Alex Lockyer Power Process Systems Sales Radiant Group Gerard Pillay R&C Instrumentation Gerhard Otto Sabelco Electrical Industries Marc Moreau Schneider Electric Sales South Ocean Electrical Wire Co Yasmin Mahomed Stone Stamcor Mark Talbot Superlume Willie Garbers Switchboard Manufacturers Josh Berman Versalec Roland Fry Voltex Hugh Ward Voltex LSis Gary Paterson Waco Jaco Coetzee Zest WEG Group Africa Sales	ACTOM Electrical Products Cable support systems to suit all installations ARB Electrical Wholesalers Full range of cable support systems Atlas Group Full range of cable support systems Bellco Full range of cable support systems Cabstrut Full range of cable support systems Citilec Full range of cable support systems JDL Electric Full range of cable support systems Power Process Systems Full range of cable support systems Voltex Cabstrut range of cable support systems	Bellco Full range of motor and surge protection CBI-electric: low voltage Motor protection standard and electronic up to 65 A; DC protection for solar applications up to 63 A JDL Electric Full range of motor and surge protection Legrand Full range of MCBs, MCCBs, ACBs and contactors MCE Global Suppliers Onesto surge arrestors, Schenker surge arrestors; Onesto dc surge arrestors Phambili Full range of motor and surge protection Power Process Systems Full range of motor and surge protection Sabelco Electrical Industries Full range of motor surge protection Schneider Electric Acti9 DIN-mounted iPF Type 2 or 3 LV surge arrestors; Acti9 DIN-mounted iPRD Type 2 or 3 LV withdrawable surge arrestors; Tesys power control and switching contactors, Tesys T motor management system Switchboard Manufacturers Power factor correction boards to reduce electricity bills as a result of high reactive charges Voltex Full range of motor and surge protection Voltex LSis Full range of motor and surge protection Zest WEG Group Africa Full range of motor and surge protection
DISTRIBUTOR		GEARBOXES FOR MOTOR APPLICATIONS	
ACDC Dynamics ACTOM Electrical Products ARB Electrical Wholesalers Atlas Group Bellco Cabstrut CBI-electric : low voltage Citilec Crabtree Electrical Accessories HellermannTyton Invirotel JDL Electric Jeff Forman Lapp Group Major Tech MCE Global Suppliers Phambili Power Process Systems Radiant Group R&C Instrumentation Sabelco Electrical Industries Stone Stamcor Superlume Versalec Voltex Voltex LSis Waco Zest WEG Group Africa	DRIVES AND SOFT STARTERS ABB SA Full range of drives, soft-starters ACDC Dynamics Full range of Vacon VSDs and Aucom soft starters Alstom Protection & Control VSD panels; soft-starters ARB Electrical Wholesalers Full range of drives/soft starters Bellco Full range of drives/soft starters CBI-electric : low voltage (Automation and Controls) Eaton drive range: (LV) 0.75 – 2.2 kW; 0.75 – 250 kW; LS drive range (LV) 0.1 – 2.2 kW; 0.1 – 800 kW; (MV) 3 – 11 kV; soft starters: 7.5 – 277 kW; 18.5 – 525 kW; 30 – 900 kW Danfoss Danfoss and Vacon variable speed drives; Danfoss soft starters JDL Electric Full range of drives and soft starters MCE Global Suppliers MCE manual motor starters, direct online starters, star delta starters, reversing starters Power Process Systems Full range of drives/soft starters Voltex Full range of drives/soft starters Zest WEG Group Africa Full range of drives and soft starters	ARB Electrical Wholesalers Full range of gear boxes for motor applications Bellco Full range of gear boxes for motor applications JDL Electric Full range of gear boxes for motor applications Stone Stamcor Hydro Mec gearboxes R&C Instrumentation Vibration switches and transmitters Voltex Full range of gear boxes for motor applications	
CONTACTS		CONTACTORS, BREAKERS, RELAYS	CABLE MANAGEMENT ACCESSORIES
ABB SA Sales Aberdare Cables Jyoshtie Dhunes ACDC Dynamics Elmarie ACTOM Electrical Products Russel Ramsden Alstom Protection & Control Faisal Hoosen Alvern Cables Stephen Liasides ARB Electrical Wholesalers Arvi Ramdass Atlas Group Annie Storar Bellco Fred Wilson Cabstrut Juanita Kanagan CBI-electric: low voltage Jaco Viljoen Crabtree Electrical Accessories Sales Danfoss Stephen Brown HellermannTyton Andrew Edwards JDL Electric Shaun Singh Invirotel Modishane Sebona Lapp Group Sales Legrand Johan Bosch Major Tech Rhodam Evans MCE Global Suppliers Sales	ARMOURED/SHIELDED CABLES Aberdare Cables Bells & Mains ARB Electrical Wholesalers Full range of armoured and shielded cables Atlas Group Full range of armoured/shielded cables Bellco Full range of armoured/shielded cables Citilec Full range of armoured/shielded cables JDL Electric Full range of armoured and shielded cables Lapp Group Unitrionic data communication cables; Olfex power and control cables Power Process Systems Full range of armoured and shielded cables South Ocean Electrical Wire Co Flame retardant (FR) armoured cable 600/1 000 V; low halogen (LHFR); flame retardant (ECC FR) armoured cable; armoured cable (FR) 1.9/3.3 kV; single core PVC AWA cable; aluminium flame retardant armoured cable; Surfux wires Voltex Full range of armoured and shielded cables	ABB SA Full range of contactors, breakers, relays ACDC Dynamics Covering all low to medium voltage needs from brands including TC, C&S, Gewiss and Teraskai ACTOM Electrical Products Complete range of low voltage circuit breakers, isolators, earth leakage devices and wiring accessories Alstom Protection & Control TAIAN contactors/relays ARB Electrical Wholesalers Full range of low voltage circuit breakers, isolators, earth leakage devices and wiring accessories CBI-electric: low voltage Mini contactor relays up to 12 A; contactors and contactor relays three- and four-pole; AC-1 contactors up to 2 600 A; AC-3 contactors up to 1 600A; overload relays, bi-metal up to 630 A; electronic units up to 1 600 A Citilec Full range of contactors, breakers, relays JDL Electric Full range of contactors, breakers, relays Legrand Full range of MCBs, MCCBs, ACBs and contactors Major Tech Full range of 3 kA and 6 kA MCBs, isolator switches, RCCBs, populated and ready boards MCE Global Suppliers MCE ac magnetic contactors three-pole and four-pole; MCE thermal overload relays; MCE relays and bases; Onesto MCCBs; Hyundai MCCBs; Hyundai air circuit breakers Power Process Systems Full range of contactors, breakers and relays R&C Instrumentation Full system power management local and via Internet Schneider Electric Full range of contactors, breakers and relays Switchboard Manufacturers LV distribution boards that contain contactors, breakers, relays, changeovers and can be used to supply power to motors and motor controllers Voltex Full range of contactors, breakers, relays Voltex LSis Full range of contactors, breakers, relays Zest WEG Group Africa Full range of contactors, breakers, relays	ABB SA Full range of cable management accessories ACDC Dynamics Full range of wiring accessories ACTOM Electrical Products Full range of accessories for all types of installations ARB Electrical Wholesalers Full range of cable management accessories Atlas Group Full range of cable management accessories Bellco Full range of cable management accessories Citilec Full range of cable management accessories Crabtree Electrical Accessories Full range of cable management accessories HellermannTyton Full range of cable accessories: inside and outside serrated cable ties, colour releasable and stainless steel cable ties; assorted various labels for the marking of cables including custom marked solutions and printers for stainless steel labelling etc JDL Electric Full range of cable management accessories Lapp Group Cable accessories including UV resistant cable ties, steel cable ties and twist tail cable ties; Fleximark cable marking products Legrand Full range of cable management systems Phambili Full range of cable management accessories Power Process Systems Full range of cable management accessories Radiant Group Full range of cable management accessories Stone Stamcor Brady cable identification marking systems Voltex Full range of cable management accessories
		MOTOR PROTECTION AND SURGE PROTECTION	DISPLAYS
	ACDC Dynamics Wide range of Gewiss and Ardic cable support systems	ABB SA Full range of motor and surge protection ACDC Dynamics Extensive range of motor and surge protection products Alstom Protection & Control Micom motor protection relays ARB Electrical Wholesalers Full range of motor protection/surge protection Atlas Group Full range of motor and surge protection	ABB SA Full range of displays ACDC Dynamics Comprehensive range of displays, energy meters, digital multimeters, network analysers and panel meters – digital and analogue ARB Electrical Wholesalers Full range of displays Citilec Full range of displays Invirotel Full range of displays JDL Electric Full range of displays Legrand EMDX3 meters MCE Global Suppliers MCE ammeters, MCE voltmeters



GUIDE

DISPLAYS

Power Process Systems

Full range of displays

Radiant

Full range of displays (meter reading, etc)

Voltex

Full range of displays

FANS FOR MOTOR APPLICATIONS

ACDC Dynamics

Extensive range of fans - QErre and others

ARB Electrical Wholesalers

Full range of fans for motor applications

Bellco

Full range of fans for motor applications

JDL Electric

Full range of fans for motor applications

MCE Global Suppliers

MCE panel fans

Power Process Systems

Fans for motor applications

Voltex

Full range of fans for motor applications

WIRING AND WIRING ACCESSORIES FOR MOTOR APPLICATIONS

Aberdare Cables

Housewire/Panel flex (wiring inside the terminal box)

Alstom Protection & Control

Customised enclosures and starters

Alvern Cables

Permotrail; Permo power; ALVK R-vK trailing cable; HO7; Singleflex

ARB Electrical Wholesalers

Full range of wiring and wiring accessories for motor applications

Bellco

Full range of wiring and wiring accessories for motor applications

Citilec

Full range of wiring accessories for motor applications

JDL Electric

Full range of wiring and wiring accessories for motor applications

Legrand

Full range of wiring accessories for motor applications

MCE Global Suppliers

MCE contactors, overloads and accessories

Phambili

Full range of wiring accessories for motor applications

Power Process Systems

Full range of wiring and wiring accessories

R&C Instrumentation

Infrared inspection windows

Voltex

Full range of wiring and wiring accessories

Voltex LSis

Full range of wiring and wiring accessories

CABLE GLANDS, LUGS, AND FERRULES

ACDC Dynamics

Full range of cable glands, lugs ferrules

ACTOM Electrical Products

Full range of termination and jointing requirements

ARB Electrical Wholesalers

Full range of cable glands, lugs ferrules

Atlas Group

Full range of cable glands, lugs, ferrules

Bellco

Full range of cable glands, lugs, ferrules

Citilec

Full range of cable glands, lugs, ferrules

HellermannTyton

Full range of SABS approved cable glands, lugs, ferrules and new range of XLPE lugs and ferrules

JDL Electric

Full range of cable glands, lugs, ferrules

Lapp Group

Skintop cable glands

Legrand

IP68 cable glands; Cabstop cable glands

Major Tech

Comprehensive range of pre-insulated crimp terminals, up to 6mm²

Power Process Systems

Full range of cable glands

Stone Stamcor

Manufacturer of Stamcor lugs and ferrules tested to IEC61238-1

Superlume

Paddy gland IP 65 external polycarbonate wire gland 10 mm; Jazzy gland IP65 external polycarbonate fitted wired gland 10 mm

FLAMEPROOF

Voltex

Full range of cable glands, lugs ferrules

Waco

Full range of cable glands, lugs ferrules

Aberdare Cables

Flamosafe

ACDC Dynamics

Full range of flameproof products; lighting enclosures, limit switches, plugs, sockets, pushbuttons, fans, sirens, basons and accessories

ARB Electrical Wholesalers

Full range of flameproof products

Atlas Group

Full range of flameproof products

Bellco

Full range of flameproof products

JDL Electric

Full range of flameproof products

Phambili

Full range of flameproof products

R&C Instrumentation

Ex-certified infrared thermometers

Voltex

Full range of flameproof products

Waco

Full range of flameproof products

Zest WEG Group Africa

Full range of flameproof products

CONTROLS FOR MOTOR APPLICATIONS

ABB SA

Full range of push buttons, pilot lights, switches and emergency stop buttons and accessories

ACDC Dynamics

Full range of controls for motor applications

Alstom Protection & Control

Control desks; control panels; selector switches

ARB Electrical Wholesalers

Full range of controls for motor applications

Bellco

Full range of controls for motor applications

CBI-electric: low voltage

RMQ pilot devices (16 - 22.5 mm); emergency stop push buttons illuminated and non-illuminated; FAK foot and palm switches; signal towers; full range of push buttons including key operated, illuminated, LED, activators and accessories

Citilec

Full range of controls for motor applications

JDL Electric

Full range of controls for motor applications

Legrand

Complete range of control and signalling units; industrial sockets, plugs, appliance inlets and interlocked switched sockets

MCE Global Suppliers

MCE pushbuttons and control stations; MCE time switches and temperature controllers, MCE pendent stations; Onesto aluminium control stations and vandal-proof stainless steel pushbuttons

Phambili

Full range of controls for motor applications

Power Process Systems

Full range of controls for motor applications

Voltex

Full range of controls for motor applications

Voltex LSis

Full range of controls for motor applications

Zest WEG Group Africa

Full range of controls for motor applications

CABINETS FOR MOTOR APPLICATIONS

ABB SA

Full range of cabinets for motor applications

ACDC Dynamics

Full range of cabinets and enclosures for all purposes

Alstom Protection & Control

MCCs; special and standard starters

ARB Electrical Wholesalers

Full range of cabinets for motor applications

JDL Electric

Full range of cabinets for motor applications

MCE Global Suppliers

Onesto steel enclosures, MCE steel enclosures

Phambili

Full range of cabinets for motor applications

Power Process Systems

Full range of cabinets for motor applications

R&C Instrumentation

Infrared inspection windows

Sabelco Electrical Industries

Full range of cabinets for motor applications

Voltex

Full range of cabinets for motor applications

CABINETS FOR MOTOR APPLICATIONS

Voltex LSis

Full range of cabinets for motor applications

Waco

Full range of cabinets for motor applications

Zest WEG Group Africa

Full range of cabinets for motor applications

DISCLAIMER: Information will be published as supplied. Only manufacturers who meet the deadline are included in the guide. The onus is on manufacturers to ensure that the editor is notified of any changes to existing listings.



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MILL MOTORS REPAIRED CHOP-CHOP

MARTHINUSEN & Coutts, a division of Actom, recently repaired two large mill motors for leading uranium producer, Rössing Uranium in Namibia.

Marthinusen & Coutts' field service team was requested by Rossing to inspect two brush mill motors on site. The team found that the starting cage winding on one of the motors had moved and rubbed against the stator winding, while an insulation test conducted on the second motor indicated that the stator winding was down to earth. This necessitated having both motors repaired at Marthinusen & Coutts' facility in Cleveland. As no spare motor would be available to the mine in the event of a further breakdown while the two spare motors were being attended to by Marthinusen & Coutts in Johannesburg, the first of the two 1 586 kW 3 300 V, 1875 rpm, brush motors to be repaired was treated with the greatest urgency.

Craig Megannon, Marthinusen & Coutts' general manager says the repairs carried out on the two motors consisted of rewinding the stators incorporating use of a resin-rich winding system, overhaul of the rotors and complete replacement of the rotors' electronic diode and synchronising hub.

Repair of the second motor was completed at the end of March. In addition to the stator rewind with resin-rich windings, the rotor was overhauled and the quadrants on a damaged damper winding of the rotor were replaced.

Enquiries: +27 11 607 1700



Alpheus Mtshali, from Marthinusen & Coutts, is pictured with the 1 586 kW 1875 rpm, 3 300 V, 278 A stator.

Petrol power cutter takes the rough with the smooth



The new Makita EK8100WS 405 mm industrial power cutter is a valuable addition to industries such as construction, road building, civil engineering, emergency services and other applications where there is a need to cut precisely and effectively through concrete, stone, asphalt, steel and other building materials. With the possibility of power outages and load shedding always present, utilising this petrol model makes perfect sense, as work can continue unhindered.

The EK8100WS power cutter has been designed for continuous heavy duty use. It is perfectly balanced and weighs only 10.6 kg. The power cutter is powered by a 81 cc engine and features a five-stage, foam-paper-nylon system that uses advanced directional air flow to provide clean air for a better saw performance.

It is easy to change the cutting arm position from centre position to flush (outboard) position, allowing for cuts that are directly adjacent to curb edges, walls or directly above the ground. The on-off-choke operating switch is located on one single lever for added operator convenience.

An improved decompression valve and metering spring provides for precise fuel regulation, enhanced by a microchip controlled carburettor engineered to compensate engine timing according to work load. The ignition coil with start support function, stores electrical energy with each pull for a more efficient and easier start up.

Operator comfort is taken care of by utilising four vibration-absorbing rubber engine mounts as well as two mass-dampening systems that deliver reduced vibration. The improved exhaust has emissions are achieved with the Scavenging Losses Rejection (SLR) muffler which recycles unburned fuel vapour and improves fuel consumption by up to 15%. The Makita EK8100WS is supplied with an abrasive wheel for cutting stone.

For further information or your nearest Makita dealer, visit www.makita.co.za or www.facebook.com/MakitaPowerToolsSA

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P-touch	TZe tapes	Heat Shrink tapes (HSe)
PT-E300VP	6 / 9 / 12 / 18mm	5.8 / 8.8 / 11.7 / 17.7mm
PT-E550VP	6 / 9 / 12 / 18 / 24mm	5.8 / 8.8 / 11.7 / 17.7 / 23.6mm



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SMC ENCLOSURES WITH INSIDE DOOR FOR ADDED SAFETY

THE Allbro range of SMC enclosures – now available from Mimic Components – offers exceptional quality and value and has many advantages over traditional steel enclosures says Edwin Wakefield, marketing director at Mimic Components

“Although slightly more expensive than steel, these enclosures are more economical than stainless steel, which they can, in many cases, effectively replace. The ratings are generally quite high with an IP66 rating for indoor and outdoor applications, and this includes the windowed enclosures.”

He says the availability of an inside door and windowed front door extends the usefulness of these electrical boxes, which can be locked as an added safety feature, and the state of the equipment inside can be viewed in order to decide on any appropriate action that needs to be taken. “The enclosures are available with a circuit breaker cover sheet or a hinged lockable inner door, which is ideal for many applications where equipment needs to be insulated. In coastal conditions they offer an ideal alternative to stainless due to the low rust factor,” says Wakefield, adding that EPDM (ethylene propylene diene monomer) is used for door seals.

“This rubber is not ‘memory foam’ and because there is no memory effect, the lid seal is effective because EPDM gives a better, longer lasting seal than in most other enclosures.”

The Allbro modular system with clip-in DIN rails and SMC chassis plates are available on request. Wakefield adds that Allbro enclosures are environmentally friendly – “a green alternative” – and contain no heavy metal, asbestos, or halogen. “The glass fibre used for reinforcing is greater than 14 micron and is not hazardous to health.

In outdoor conditions the temperature inside the enclosure does not vary as much as with steel enclosures.

He says the weight loading differs with the various box sizes, that the larger boxes are available in portrait or landscape and a good range of sizes are available from: (w) 235/250 x (h) 310/350 x (d) 200 to (w) 906/1 000 x (h) 706/800 x (d) 320.

Apart from the box enclosures, Mimic Components also offers a full range of other Allbro products and accessories such as resin insulators, relay systems, standard small distribution



Enquiries: +27 83 300 5959

Save time with durable cable and component identification



Brady offers fast label printers that need only a few seconds to print the identification label you need. Built to resist dust, moisture and the occasional bump, these reliable printers help to quickly identify any cable or component with durable identification labels, available in a wide range of label types, sizes and colours.

Wide range of labels

In the hands of a professional, the right tools always get the job done faster and with greater result. That is why every Brady printer has a wide variety of labels to handle every situation. To fit a lot of information on a tiny label, insert blank flag labels in the printer. To protect a vital barcode on a cable label from abrasion, dirt or moisture, use a self-laminating label or cable sleeve material. Consider different colours to quickly identify every cable in a cable bundle. All of these identification solutions are available in the right sizes, and in easy to insert printer consumables.

Extreme durability

Cable and component labels should stick, stay attached and remain legible. Few things seem more agonising than watching the last label fall to the floor when opening an electrical cabinet during a business emergency. Brady invests heavily to continuously develop labels, inks and adhesives that really stick and remain legible, even in demanding environments. Brady has captured the 10-time winners and wasters in cable and component identification.

Email emea_request@bradycorp.com for your copy!

Enquiries: +27 11 704 3295

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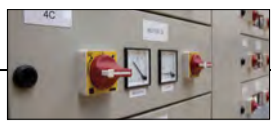
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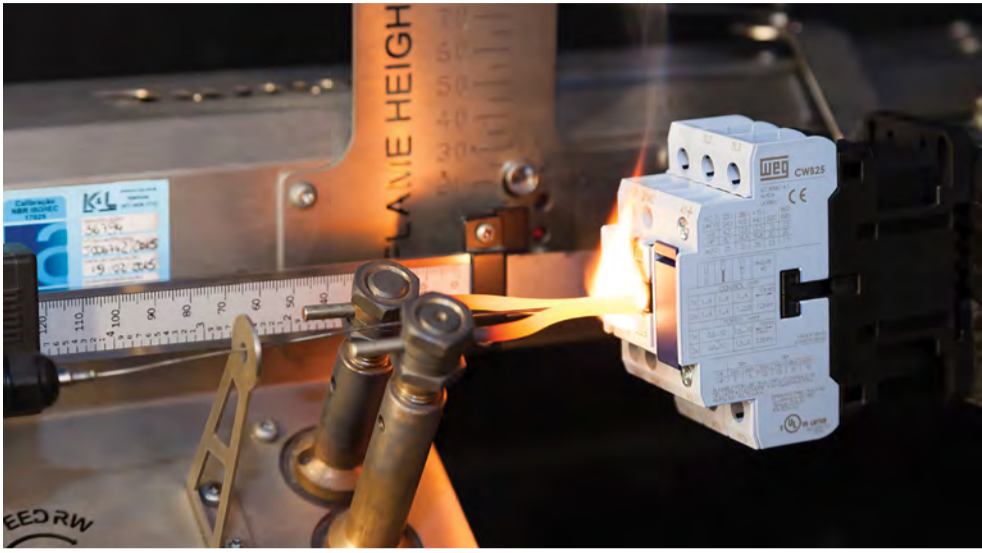
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LOW VOLTAGE SWITCHGEAR COMPLIES WITH TYPE 2-COORDINATION



The WEG CWB range of contactors undergoing a glow wire flammability test according to IEC 60695-2-11.

Zest WEG Group has announced that as part of WEG Brazil's ongoing commitment to meet customer requirements worldwide WEG low voltage switchgear now complies with Type 2-coordination.

Stephen Cook, switchgear manager at Zest WEG Group, says that the journey to obtain Type 2-coordination involved the in-house testing of products as well as the independent verification of the test results to ensure that the product solutions meet IEC 60947-4-1. The substantial investment on the part of WEG Brazil included the construction of a purpose-built testing facility for Type 2-coordination testing in Brazil.

"The majority of the other players in the market depend on external third party laboratories to do these tests and having our own facility will facilitate the future testing of low voltage switchgear combinations. This will allow Zest WEG Group even greater flexibility in terms of servicing our customer base," Cook says.

The rationale behind this large investment to have WEG low voltage switchgear Type 2-approved is in line with the Zest WEG Group level of commitment to participation within the African market and it was therefore important to be able to offer its customers access to this level of specified switchgear.

The most important advantage when using Type 2-coordination

switchgear is that under short circuit conditions there is no danger to installations or personnel, and that the motor starter (contactor and overload relay) will endure the short circuit and still allow for further use.

"It is all about continuity of service with Type 2-coordination switchgear," Cook says.

He says that Zest WEG Group's in-depth understanding of the operating conditions in Africa enabled the testing of a range of switchgear combinations that would meet customer needs and ensure a reliable solution.

"Being able to participate in the specified switchgear market will enable us to offer a major advantage to our customer base whereby product packages can be tailored for specific applications," Cook continues.

An example would include the supply of motors, VSDs, soft starters, low voltage and high voltage switchgear and MCCs to a greenfields mine development.

Zest WEG Group offers a comprehensive range of low voltage switchgear including miniature circuit breakers, moulded case circuit breakers, contactors, thermal and electronic overload protection, isolators, push button and pilot lights as well as full range of signalling devices. WEG

low voltage switchgear is designed and manufactured to the same high standards that have long ensured that WEG motors and VSDs are considered benchmarks in their product categories.

All WEG low voltage switchgear products are available ex-stock across Zest WEG Group network of branches and backed in the field by a 24/7 technical support service.

Once again, WEG has displayed its commitment by investing in continuous product development and while Type 2-coordination may not be new, this move has levelled the playing field and given customers wider options.

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The current wave of power outages in South Africa means that your transformer is working harder than ever, which could accelerate ageing. Serious damage to a transformer could spell disaster – involving costly repairs or replacement of the whole unit. Not to mention lost process time. And think of the environmental impact, should your transformer explode or catch fire.

- Transformers have a degradable paper core that needs to be monitored via furanic analysis.
- The oil should be monitored for dissolved gases and corrosive sulphur, long before this becomes a serious, expensive problem.
- Contamination of transformer oil by water or dirt needs to be closely monitored as contaminants may cause grave transformer problems.
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Thermal imaging services reduce downtime, improve safety



Magnet Electrical Projects offers a thermal imaging service designed to reduce plant breakdowns, minimise costly repairs, optimise the production process and improve safety in the workplace. Johan Roets, training and site inspection manager, says onsite services encompass power quality analysis, electrical compliance auditing and power factor correction, as well as onsite electrical installations and the retrofit of air circuit breakers. He says the thermal imaging service has been designed to reduce plant breakdowns, minimise costly repairs, optimise the production process and improve safety in the workplace. By detecting irregularities that are usually invisible to the naked eye, thermal imaging – which is one of the most valuable diagnostic tools for industrial applications – allows corrective action to be taken before costly system failures or fires occur.

Enquiries: +27 31 274 1998

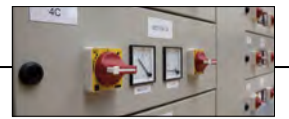
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NEWLY-LAUNCHED NETWORK REPAIR AND MAINTENANCE BUSINESS WITH ACQUISITION OF POWER SOLUTIONS COMPANY

SOUTH AFRICA'S largest electro-mechanical equipment and services group ACTOM has acquired the operational assets of Gauteng-based WPI Power Solutions, a company specialising in the repair and maintenance of electrical networks.

The acquisition is effective from July 2016. WPI Power Solutions retains its name but is to be merged into ACTOM MV Switchgear based in Knights, Germiston. WPI has been in operation for over 20 years and has branches in Carletonville, eMalahleni (Witbank), Secunda and Vanderbijlpark.

ACTOM MV Switchgear, a leading manufacturer and supplier of medium voltage indoor switchgear and outdoor miniature substations, recently diversified into the maintenance of electrical networks. It won its first major contract in this field in December last year when it was awarded a R34-million three-year contract by Ekurhuleni Metropolitan Municipality for the repair and maintenance of electrical distribution equipment and related assets in the municipality's southern region, including Boksburg, Germiston and Alberton.

Martin Kelly, ACTOM MV Switchgear's divisional CEO, says the acquisition of WPI provides "just what the business unit requires to strengthen and accelerate its advance into the electrical network repair and maintenance field".

"WPI brings with it a well-established customer base that includes several large mining groups and a variety of blue chip industrial companies. It is equipped with a strong branch infrastructure and expert staff," he says.

"It has extensive experience and expertise in undertaking large scale projects involving preventative maintenance and repairs of networks up to 132 kV."

Enquiries: +27 11 820 5343



ACTOM MV Switchgear's Divisional CEO Martin Kelly (left) with leading members of the business unit's extended repair and maintenance operation (from left): Songezo Mfeya (branch manager, Witbank); Avrille Cape (after sales manager); Dewald Loretz (business development manager); Jacques Smith (branch manager, Carletonville and Vanderbijlpark); Marius Lombard (regional manager); Casper Coetzer (manager, Rustenburg); and Dirk McLaren (branch manager, Secunda).

Thermal imaging solution for precise measuring and documenting

THE GISmeasure&document app, supported by the GIS 1000 C professional thermos detector, is a one-of-a-kind package from Bosch Measuring Tools that includes a standalone thermal detector device and app that gives professional contractors the opportunity to set multiple measurement points, insert notes, add project information and get more detailed measurement information.



Bosch Measuring Tools SA brand manager Sebastian Johannes explains that the GIS measure&document app is a mobile solution for documenting temperature measurements. It allows the user to share the generated data via email or store it in the app.

"It boasts a measurement point to view all corresponding measurements, a measurements tab for number of measurements and surface temperature and a value list for importing measurements. It includes colours to indicate the status according to the measurement mode chosen on the GIS 1000 C, while the connection status at the top indicates if it is connected via Bluetooth," he says.

The tool also features a 'sketch and measure' function, which allows the user to take a picture, set measurement points in the picture and add temperature measurements from the GIS 1000 C, using Bluetooth. The corresponding data, such as the dew point and ambient temperature, is then shown for each measurement point, according to the measurement mode chosen in the device.

According to Johannes, the user can share their project as a PDF document via email. "The user can create a new or open an existing project, sort and delete projects, add or edit project information, search for projects, files and notes with the search function."

In order for the wizard in the application to be connected, the user must activate Bluetooth on both devices, select the GIS 1000 C device and finally make a sample measurement. "Users can create their own projects, and add relevant project information such as project name, customer name and contact information. A file can be created by taking a picture or choosing one from the gallery, editing it, adding text notes, and deleting or moving the measurement points," he continues

The GIS measure&document app is available free for iOS and Android smartphones and tablets. The free app is available from the Apple App Store and Google Play Store.

Enquiries: +27 11 651 9600



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TIME-SAVING AND EFFECTIVE WAY OF EVALUATING NEW AND IN-SERVICE POWER CABLES



TDM 45 Base module

TDM 4540 Base and Boost module

PDS 60 PD module

THE new TDM 45 series from Megger is a revolutionary breakthrough in testing and diagnosis of MV cables. The patented concept addresses the increasing utilities need in flexibility in use of test and measuring equipment based on the type of application.

The modular concept allows the engineer to individually set-up the unit based on the type of job that needs to be executed. If, for example, withstand testing on short cable lengths need to be performed then only one module is needed. When part of the task is also to perform a partial discharge diagnosis then an additional module is needed.

Depending on your needs, one, two, or a maximum number of three modules are needed:

- Base module: VLF Sinus 45 kV for standard compliant withstand testing of short cables and dielectric loss measurements.

- Boost module: VLF Booster 40 kV for standard compliant withstand testing of long cables up to 20 km length at maximum test voltage and 0.1 Hz test frequency.

Partial discharge module: PDS 60 for partial discharge (PD) diagnosis can either be used with the base module only, or also in conjunction with the boost module to perform PD measurements at Damped ac voltages or 50/60 Hz slope.

Key facts and features

The TDM 45 series combines the following features and functionalities in one single test system:

- High testable capacity of 5 μF at 0.1 Hz and 40 kVrms up to 10 μF at lower test voltage levels.
- Ac/dc testing in compliance with DIN VDE, EN, IEEE and with up to three different voltage waveforms.
- Dc voltage test with positive and negative polarities up to 45 kV.
- Sheath testing and sheath fault pinpointing with up to 20 kV negative dc voltage acc. to IEC 60229.
- Continuous duty cycle (testing without operational interruptions).
- Manual and automatic frequency adjustment.
- Leakage current measurement in dc voltage, rectangular voltage and cosine rectangular voltage test modes.
- Breakdown detection with automatic disconnection of test voltage and discharging of the test object if the charging current is too high.
- Maximum user safety through automatic discharge of the test object and earth loop ground monitoring.
- Intuitive user software with large internal memory.
- Quick, easy logging into Easyprot software and firmware updates via USB interface.

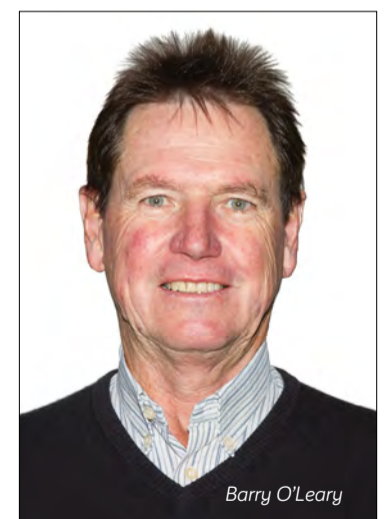
tanDelta diagnosis

- Optional fully-fledged, internal tanDelta step test with automatic result interpretation according to IEEE 400.2.
- Meaningful voltage withstand diagnosis (VLF test and tanDelta diagnosis in one step).

Partial discharge diagnosis:

- Powerful database. Simplified searching, browsing and administration of measurement and cable data.
- Fully automatic calibration with the option of calibrating according to cable length or, if the cable length is unknown, by propagation velocity.
- Clear display of measurement results and live PD localisation. A time-consuming post-processing of the measured data is no longer necessary.
- Phase resolved partial discharge (PRPD) pattern display.
- Monitored withstand testing in VLF sine wave, VLF CR and DAC mode.
- Report generation by mouse click.

Enquiries: mesales@megger.com



Barry O'Leary

BARRY JOINS SAFEHOUSE ASSOCIATION

Barry O'Leary has joined the SAFEhouse Association. He recently retired after 15 years as operations manager at Major Tech. Pierre Nothard, who will be retiring from the industry next year, will still be responsible for the SAFEhouse membership growth and communications until then while O'Leary will focus on product cases and administration for the Association.

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A GREEN LIGHTING SYSTEM FOR COMMERCIAL AND INDUSTRIAL CONTEXTS

In recent decades, the global increase in energy consumption and the pollution caused by CO₂ emissions has resulted in, amongst others, the development of new lighting technologies that have introduced optimised lighting systems with light being efficiently produced and effectively used. "This encourages the use of energy-saving sources and at the same time, favours the production and use of lighting devices that exploit the primary lux in the most efficient way possible," says ACDC Dynamics' Gewiss product specialist, Nelen Govender.

"In other words, to produce an ergonomic lighting strategy that offers good performance and visual comfort, it's not enough to just use high-efficiency sources. The lux must be directed and 'shared out' to create a bright environment that is, at the same time, compatible with the physical wellbeing of people and minimises glare while reducing eyestrain and headaches," he says. "In this regard, the most recent technical writings (CIE TR 205/213) focus on the qualitative aspects of indoor lighting: LED lighting cannot be evaluated solely on a basis of quantitative parameters because the visual comfort aspect plays a fundamental role in work environments. This means that average illumination and uniformity are not sufficient for defining the performance of indoor lighting systems," explains Govender.

The Gewiss Smart [4] system

He says that, to meet these needs, Gewiss has launched a range of products that take full advantage of these particular features of LED technology, ensuring excellent energy savings and optimum visual comfort. "Smart [4] is multifunction, rational, sustainable, extremely lightweight and versatile," continues Govender, "it can be 'transformed' from floodlights to ceiling lights, offering different performance levels in different contexts." "The practicality of the device guarantees maximum lighting performance in any area of application – from industrial to sports environments, indoor and outdoor. And the horizontal and vertical modularity of this product allows for easy installation and maintenance and the use of 'green' construction materials (plastics and aluminium)."

He says Smart [4] is "innovative technology enclosed in a minimalist sharp, linear style with a definite Italian feel". "The design aim, in fact, was to emphasise the typical characteristics of LED lamps: lightweight, small, practical and robust. These features of Smart[4] provide unequalled performance levels," Govender says. "The use of power LEDs with high colour performance, high efficiency optical system (high bays and lenses) and availability of multiple configurations make Smart [4] an ideal instrument for minimising costs – for operation and maintenance – and maximising lighting performance."

Designed for upgrades

Recent statistics show that most lighting systems in industrial and commercial environments are based on technologies and regulations that are now obsolete. In the case of existing systems though, the current technologies can only be adopted if the hardware is intrinsically flexible. "To achieve a good upgrade means using products that adapt to the pre-existing situation."

The distance – longitudinal and transversal – between the lighting devices usually can't be modified without reconstructing the supply lines and/or junctions. The preservation of the existing geometries requires devices with:

- A series of photometric curves, for example, with rotational symmetry – with different beam widths – asymmetric and elliptic.
- Several nominal fluxes, that can be selected according to the illuminations and uniformity the installer wants to produce on the surfaces.
- Anti-glare devices for installation at lower heights.

The Smart [4] system can take six different optics: four with rotational symmetry (100°, 60°, 30° and 10°), one elliptic (60° x 120°) and one asymmetric (52°). In the various types, the light lux ranges from 2 800 lumen to 25 500 lumen (31°± 258 °W, losses included). From a mechanical viewpoint, this system can be held in place in a number of ways: In the plate/spring version, the body is installed after the plate has been fixed, pressing slightly to trigger the steel spring; the quick watertight connector is then used to connect the device to the mains supply, without opening the power supply compartment. All this means a complete lighting system, not just a device.

"After all, smart [4] was designed and developed as a system for making upgrades truly sustainable so that lighting systems could be adapted in a quick, easy and cost effective manner," adds Govender.

The range

- The Smart [4] low bay or high bay: ceiling-mounted luminaire: technopolymer frame; die cast aluminium dissipator with a low copper content; galvanised iron fixing plate; fixing spring in pre-stressed steel wire; IP66 and IK08 degree of protection; glow wire 650 °C/850 °C.
- Smart [4] floodlight: technopolymer frame; dissipator, glass-holder and bracket coupling in die-cast aluminium with an adjustable low copper content; tempered glass (4 mm thick); galvanised iron fixing plate; fixing spring in pre-stressed steel wire; IP66 and IK10

degree of protection; glow wire 850 °C. "The production processes and materials used all meet the most recent environmental sustainability requisites. The entire range is purposely designed and developed to ensure simplified installation and easy retrofit on existing systems."

Conclusions

Govender says the Smart [4] meets the most advanced needs in the field of industrial and commercial lighting for indoors and outdoors. "It guarantees energy savings of between 50 and 80%; lighting quality and visual comfort; easy, quick replacement of devices installed in existing systems; notable savings – as routine maintenance is needed; and investment pay-back in 18 to 36 months," he concludes.

Enquiries: +27 10 202 3300

TRULY SUSTAINABLE LIGHTING



Industrial environments



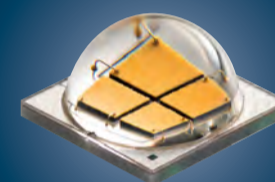
Logistic Centers



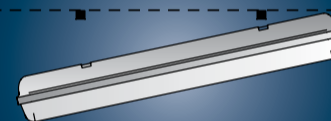
Shopping Centres



Tunnels



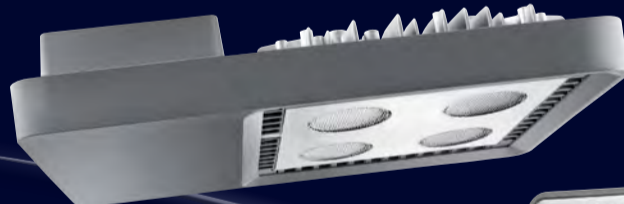
Innovative POWER LED system



Ease of installation and replacement



Comprehensive lighting solution



Smart [4]

LED SYSTEMS FOR INDUSTRIAL LIGHTING AND PROJECTION



SMART[4] is the new Gewiss lighting range that can be used as a floodlight, high-bay or ceiling light, offering different photometric characteristics depending on your installation requirements. With the unmistakable Italian styling, you are ensured of an easy and effective installation with a vertical or horizontal installation option. SMART[4] delivers you energy efficiency, cost savings, superior light quality with fast and easy installation.

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ULTRAFLAT DALI LED DRIVERS FOR ULTRAFLAT LUMINAIRES

The new 35 and 75 W OTi DALI LED drivers stand out due to their ultra-flat design – just 11 mm – and retain the excellent thermal characteristics of the 21 mm high OTi DALI drivers says OSRAM's Eric Hall. "They can be dimmed down to 1% of their luminous intensity, comply with the upcoming DALI Ed.2 standard and can be programmed via the DALI interface or even wirelessly via an NFC interface," he explains. In addition to their large output current range, they provide an efficiency of > 92%, low standby <0.25 W, a service life of up to 100 000 h/Tc-10 K, and bear the EL mark. Typical applications include ultra-

flat standing luminaires, suspended luminaires as well as surface-mounted ceiling fixtures in office, hospitality and healthcare applications, says Hall, adding that design-in examples and first pilot systems are available and that the ultra-flat light/presence sensors will be available soon.

Product benefits

- Ultra-flat housing (11 mm height) for innovative luminaire designs and applications.
- Easy and fast wireless luminaire programming.
- Versatile DALI window driver for up to 75 W output with flexible characteristic.

- Very high efficiency and reliability.
- Protection of the system thanks to thermal management and smart control.
- Higher quality of light due to low output ripple current.

Versatile scope of application due to OSRAM DALI technology

- Easy to use in corridors and restrooms because of three-level corridor function.
- Touch dim application that is easy to control via pushbutton or sensor.
- Energy efficient touch dim operation due to auto-

matic switch-off at sufficient residual light.

- Suitable for emergency Installations (comply with EN 60598-2-22 and IEC 61347-2-13, Appendix J) due to dc detection (0 Hz, pulsating dc), on/off switchable.
- Feedback of power consumption and operating hours (fit for smart grid).
- Suitable for buildings according to EPBD/BREEAM/LEED due to automatic constant lumen output setting.

Areas of application

- Ideal for use in applications and luminaires with slim design.
- Floor-standing, pendant and surface-mounted luminaires, and LED panels.
- Installation in emergency lighting systems according to IEC 61347-2-13, Appendix J.
- Suitable for use in luminaires with flexible current setting (DALI, CLO, LEDset).
- Suitable for luminaires of protection Class I.

Product features

- Supply voltage: 220...240 V.
- Line frequency: 0 Hz, 50...60 Hz.
- Line voltage: 198...264 V.
- Safety according to EN 61347-1, 61347-2-3, 61347-2-13, 62384.
- RI suppression according to EN 55015:2007+A1:2007/CDN.
- Line harmonics according to EN 61000-3-2.
- Immunity according to EN 61547.
- Lifetime: up to 100 000 h (temperature at Tc = 65 °C, max. 10% failure rate).

Enquiries: +27 010 221 4000

'CLEVER' PRODUCT SPECIFICATION AT VAAL MALL

Cove lighting in shopping centres can, at the best of times, be an incredible challenge, says Cape Town-based LED Lighting's national sales and marketing manager, Shawn Godfrey. "But, at the end of 2015, RWP Engineering Consultants presented LED Lighting with a task that ensured we put our best foot forward."

"After more than nine large scale shopping centres, one would expect this to be just another request, but there were some interesting challenges," says Godfrey. "The requirement set out was to gain a set lux level while reducing the direct lighting proportion to almost zero. This poses a massive challenge when reflecting light off a ceiling as the proportion of lost light is very high. However, through clever product specification and engineering, a solution was found that matched the client's brief," he explains.

Lighting objectives

"The main objective was to drastically increase lighting levels throughout the mall while reducing the required maintenance and overall wattage of the installation – and this all had to be achieved whilst still utilising the same lighting positions of the original lighting design. Another important client request was to have an even wash over the ceilings with no dark patches between installed fittings," explains Godfrey.

Lighting solutions

He says that originally, a FRT5 linear plug-and-play rigid cove solution was specified. "While this was the correct product, adjustments needed to be made in order to meet the brief. The problem brought forward to the engineering team was that the standard strip wattage and lumen package was not achieving the average lux required by the customer," he says, adding that, "through careful high lumen LED selection, the FRT5 light engines were produced specifically for the Vaal Mall shopping centre."

Enquiries: +27 21 510 0028

www.osram.com



Light is comfort

ULTRAFLAT DALI LED drivers for ultraflat luminaires

The new, just 11 mm flat OTi DALI LED drivers (35 W and 75 W) stand out due to their ultra-flat design while still retaining the excellent thermal characteristics which you already know from the 21 mm high OTi DALI drivers.

Product benefits

- Ultra-flat housing (11 mm height) for innovative luminaire designs and applications
- Easy and fast wireless luminaire programming
- Versatile DALI window driver for up to 75 W output with flexible characteristic
- Very high efficiency and reliability
- Protection of the system thanks to thermal management and Smart Control
- Higher quality of light thanks to low output ripple current

Light is OSRAM

OSRAM



UBER STYLISH VINTAGE FLAIR

WELL known for its chic lighting fixtures, Eurolux has a new collection of vintage EGLO indoor pendants and family ranges that is inspirational. These EGLO products are included in the updated catalogue, which Eurolux will make available to distributors and customers in the next few weeks.

Talking about the Austrian range's Vintage collection, Shaun Bouchier, director at Eurolux says the products have a nostalgic, yet uber-stylish flair: "Each of the luminaires has a distinct 'feel' - it's a mix of retro and urban design that is extremely popular right now. These are lights that make a statement and make any room inviting."

Tarbes

This particular EGLO collection consists of a wide variety of designs and materials, suitable for every room in the house or office, restaurant and retail spaces. The trendy Tarbes pendant lamp is a point in case: it features a single black or copper coloured steel 'cage', suspended from a black cord and ceiling canopy. It is a simple but appealing fitting that makes excellent use of geometric shapes to complement the exposed globe and which reflects fragments of light.

The Tarbes features an E27 socket but it is supplied without a light source and is suitable for a maximum of 60 W, and Bouchier points out that traditional globes and energy saving lamps and LED lamps can be used in this fitting. "The Tarbes' modern, industrial design - available in two finishes - is perfect for use in living rooms, bedrooms, kitchens and dining areas," says Bouchier.

Cossano

A striking lighting fixture for the kitchen or foyer, the EGLO Cossano pendant features matte nickel strips of brushed steel, which allows light to shine freely through the shade and reflect off its nickel finish. It requires a 60 W globe, but different sizes of globes add versatility to this design. It is hard-wired for adjustable height and available in varying sizes. The Cossano family of lights offers a modern design with the option of using a single lamp, clustering lamps together at different heights or selecting a three lamp strip. The product is dimmable but a dimmer is not included.

Carlton1

The faceted Carlton1 fixture is a perfect fit within the

vintage theme. Its black finished steel shade with three contrasting inner shade colours to choose from - copper, silver or yellow - with a black ceiling rose. This pendant is fitted with an E27 max 60 W lamp holder, which is compatible with an energy saving globe and LEDs. The Carlton1 will look especially great over a dining room table but it is also suitable for use in retro-modern restaurants and retail spaces.

Hapton

The sophisticated design of the EGLO Hapton pendant - with its polished copper finish - features a black cable with a polished copper ceiling rose to match the shade. The height of this fitting can be adjusted on installation and it requires a single 60 W E27 incandescent lamp or LED equivalent. The diameter of the fitting is 290 mm and it offers a maximum cable drop of 1 100 mm. Bouchier suggests that the Hapton

will be "a real eye catcher" above a dining room table or a kitchen island, but it could also complement any stylish bedroom.

Biandra

The Biandra pendant light features a unique laser cut fabric shade in dark tan. The inner shade is white in colour, which makes the 'coffee bean' laser cut design of the outer shade stand out. This pendant is fitted with a E27 lamp holder, which is compatible with LED and CFL globes. Subtle yet packed with style, the Biandra would be an excellent choice to add a touch of class to any home.


The Biandra range is available as a single light ceiling pendant, table lamp and floor lamp. For more about this range, log onto www.eurolux.com.

Enquiries: +27 21 528 8400




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Smart lighting solution for St Elizabeth Hospital Resource Centre

BEKA Schröder supplied a holistic exterior and interior lighting solution to St Elizabeth Hospital Resource Centre that was recently officially opened in Lusikisiki, Eastern Cape.

BEKA Schröder's Peter Badenhorst explains that the Research Centre was built by the Eastern Cape Department of Health

in collaboration with the Walter Sisulu University. "The centre has multiple functions: It serves as a training centre for medical students and offers library, conference and video conferencing facilities. It is also accessible to the community of Lusikisiki to be used for conferences, meetings, workshops and community outreach programmes," says Badenhorst, adding that this is the fifth resource centre in the province.

He says BEKA Schröder supplied "a holistic lighting solution" for this resource centre. "The locally designed and manufactured LEDlume-midi street light luminaires illuminate the parking area, providing effective lighting for safety and comfort. The LEDpost, an LED bollard, lights up the walkway in stylishly and efficiently," he explains.

"The entrance of the building is enhanced by LEDduo up- and down-lighters, and the Accento in-ground up-lighter. Furthermore, the exterior of the building is accented by the Series 21 bulkhead."

He says the Resource Centre is a "smart building" in that there are no light switches for the interior lighting installation and the lights turn on with the help of motion sensors, and all of them can be dimmed remotely.

"Various interior luminaires illuminate the resource centre, amongst them the DARL, an energy efficient LED ceiling panel that ensures maximum visual comfort and even distribution of light.

"The BEKAQUAD and BEKA CUBO downlights ensure an even lighting level in the conference facilities. Furthermore, BEKARONDO downlights and Series 70



BEKA Schröder supplied a holistic exterior and interior lighting solution.

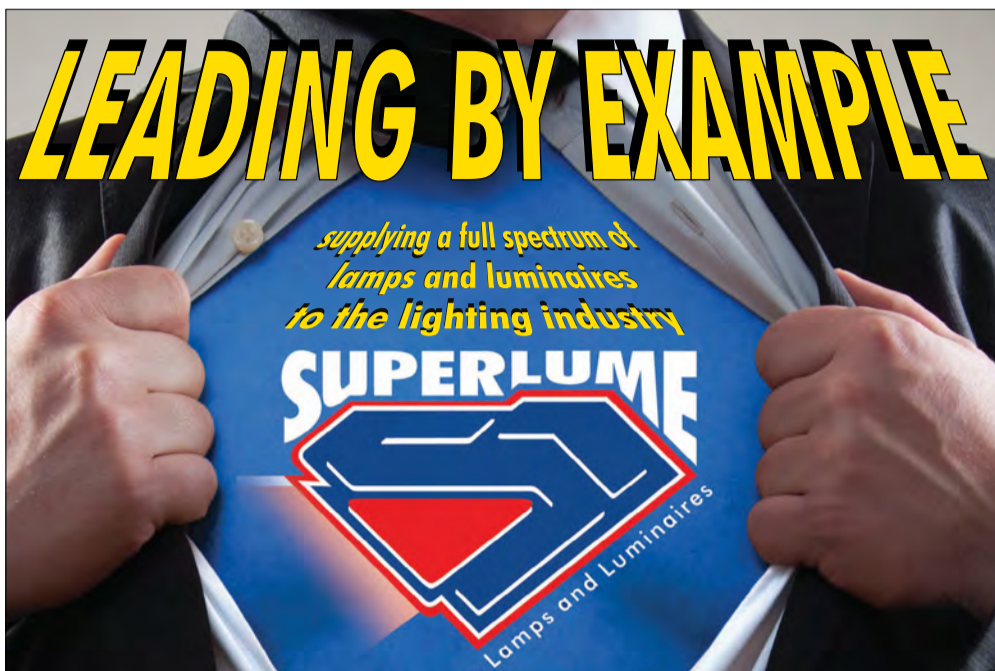


The BEKAQUAD and BEKA CUBO downlights ensure an even lighting level in the conference facilities.

bulkheads provide elegant lighting in the building amenities," explains Badenhorst. He adds: "This is believed to be by far the most advanced lighting installation in any hospital precinct in the Eastern Cape."

BEKA Schröder locally develops and manufactures LED lighting products, designed and suitable for local conditions. BEKA Schröder is proud to be associated with MEC Consulting, TJ Architects South Coast and the Eastern Cape Department of Health in providing a successful lighting solution for this project.

Enquiries: +27 43 726 0493



SKY-SML-01 - SOLAR LED floodlight IP65



SKY-ESL-06 - SOLAR LED brick light IP65



NLG036 - GU10 LED UP & DOWN 304 stainless steel decorative outdoor wall light.



YSE/LED HI-BAY 100W, 150W, 200W IP65 LED Hi-Bay



TVPA IP65 SMD LED VAPOUR PROOF stainless steel clips PC/PC - available in single and double 2ft, 4ft & 5ft

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ROBUST FLOOR STAND LIGHTS FOR COMMERCIAL AND RESIDENTIAL ENVIRONMENTS

SLV's extensive portfolio of German-engineered interior and exterior lighting products encompasses outdoor path lights and floor stands.

"Bookat outdoor floor stands have a modern, vertical aluminium structure, which are anthracite in colour, with an integrated LED lamp," says Sheldon Payne, national

sales manager - SLV.

"LED technology offers many advantages, including energy savings and extended service life. Light performance of this range is enhanced by the latest chip-on-board (COB) light source technology

which offers design flexibility and wide area light distribution, perfect for outdoor applications.

"Other benefits of these single module 12.5 W COB LED lamps are effective colour mixing for a warm lighting effect and low thermal resistance."

The robust floor stands - with a height of 100 cm, width of 30 cm and depth of 6 cm - are designed for surface floor mounting. The luminaire has an open-ended supply line and is ready for direct connection to 230 V electrical mains.

Other features include a colour temperature of 3 000 Kelvin, a colour rendering index of 80 and a luminous flux of 1 100 lm. These units, with an IP44 ingress protection rating against the intrusion of water, offer about 50 000 hours of service life.

This range, which incorporates the latest technologies and lighting effects, are available in various designs, colours, shapes and light sources, to suit individual requirements in commercial and residential environments.

SLV lighting products are available exclusively in South Africa from Magnet's SLV Pro-Partners: Diva Luce, Glo Lighting, Cool Lighting, Okavango Lighting, Plumstead Electrical, Newport Lighting and ELDC.

Enquiries: +27 11 397 7936

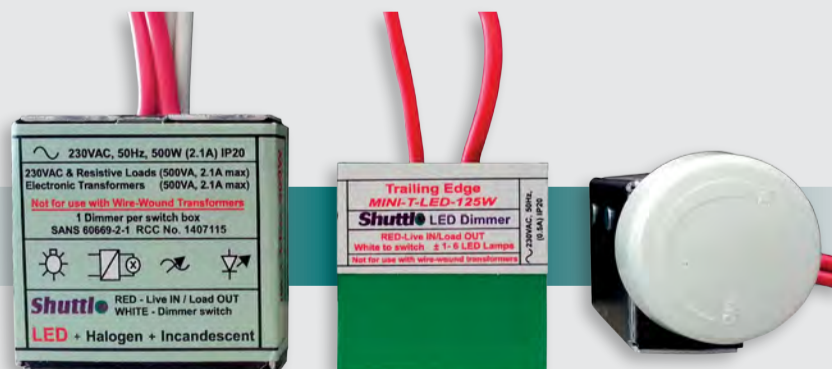


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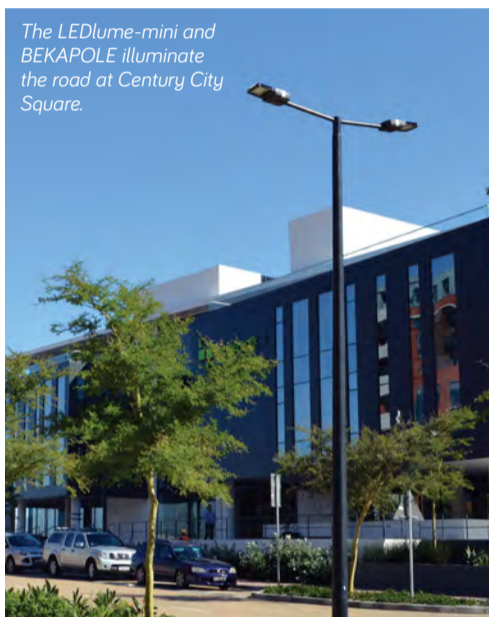
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ILLUMINATING CENTURY CITY EFFICIENTLY



The ambiance on Century City Square is enhanced by the locally designed and manufactured LEDpost.



The LEDlume-mini and BEKAPOLE illuminate the road at Century City Square.

BEKA Schröder supplied an energy-efficient LED lighting solution for the newly developed Century City Square in Cape Town. As part of Century City's commitment to sustainable development aimed at reducing the precinct's carbon footprint, Century City Square was developed based on green principles. Because of this, LED was chosen as the light source for the outdoor lighting of the area.

BEKA Schröder was awarded the contract to supply the exterior lighting for Century City Square and internal roads. The ambiance on Century City Square is enhanced by the locally designed and manufactured LEDpost 23 W LED bollard luminaire. One quadrant of the bollard uses blue LEDs to complement the water feature, and the rest uses white LEDs. The distinct design of the LEDpost shields pedestrians and drivers from glare and prevents spill light from being

emitted above the horizontal. To maximise the reliability of the LEDs, the photometric engine is completely sealed to IP 66. This ensures that the photometric performance is maintained over time. Electronic temperature monitoring prevents overheating of the LEDs and power supply. It has been designed for energy saving and low maintenance applications.

BEKA's Riaan Bubb says the high-performance LEDlume-mini 36 W LED streetlight on 5 m mounting height glass fibre reinforced polyester (GRP) poles illuminate the road. "Both are locally designed and manufactured, ensuring that they withstand the harsh coastal climate. The

LEDlume-mini forms part of the LEDlume family, which sets a new benchmark in LED lighting with performing and flexible solutions that lead to the shortened payback time," explains Bubb. "With its tremendous efficiency, its long lifespan and its limited maintenance requirements, the LEDlume range minimises total cost of ownership."

Bubb adds that there are many advantages of using a BEKA Schröder GRP Pole, including that they are non-corrosive and maintenance free, and their high bending strength ensures that they withstand the wind pressure experienced at the Cape. "They are sustainable since the manufacturing process is much kinder to the

environment than metal or timber products. The BEKAPOLE is vandal-resistant and its light weight saves handling, transport and erection costs during installation," says Bubb.

BEKA Schröder locally develops and manufactures LED lighting products, designed and suitable for local conditions. "We are proud to be associated with Descom and QDP Lighting & Electrical Design - the Century City Square Precinct lighting designers - in providing a sustainable lighting solution for this project," concludes Bubb.

Enquiries: +27 21 510 8900



LED FLOODLIGHTS WITH IP65 PROTECTION

Major Tech offers the latest innovation, style and quality-designed LED floodlights to the market.

These quality corrosion resistance IP65 LED Floodlights are available in 10 W, 20 W, 30 W and 50 W and are wall-, ceiling- and floor-mountable. Features include 360° rotation; 120° beam angle; >0.9 power factor; and 4 000 K daylight colour temperature.

Enquiries: +27 11 872 5500



TECEO - ROAD AND AREA LUMINAIRE

The newly launched Teceo range is known for its aesthetic looks, excellent performance and versatility. It is ideally suited to lighting residential streets, urban roads, business parks, bike paths and car parks. The range offers optimised photometrical performance with a minimum total cost of ownership. It offers towns and cities the ideal tool to improve lighting levels, generate energy savings and reduce their ecological footprint. A control system can also be incorporated in order to achieve even higher energy savings.

The Teceo is equipped with the second generation LensoFlex®2 photometric engine which offers a high-performance photometry optimised for each specific application with minimum energy consumption. The Teceo range offers flexible combinations of LED modules, a choice of currents and dimming options to further maximize energy savings and provide the most cost-effective solution.

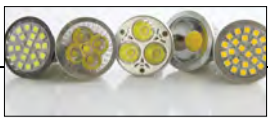
BEKA Schröder proudly takes lighting to the next level, contributing to more vibrant and engaged communities.

FOR MORE INFORMATION:



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WAREHOUSE LIGHTING – WHAT WORKS AND WHAT DOESN'T WORK

By Tristão Abra, Relight Energy

For many companies, warehouse lighting has always been a grudge cost. However, to keep a business running effectively and efficiently, warehouse lighting must be efficient and as cost effective as possible. Businesses that keep lighting expenditure to a minimum and buy cheaply can ultimately carry a far greater cost. For example, poor lighting means that products contained in a warehouse could be misread and reading labels correctly in this environment is a fundamental requirement. Spending as little as possible on warehouse lighting is a 'lose-lose' situation for everyone.

Under-investing in suitable lighting or failing to maintain the lighting solution, will result in additional returns, damaged goods, staff turnover and general incompetence. That's because warehouse staff would prefer to be able to see what they're doing and at least be able to read the label on the box.

Lighting levels in a warehouse environment are dictated by the level of work detail that is expected and required from staff. It is much more efficient for them to be able to read accurately without squinting or resorting to additional light sources like torches. Imagine if on an item the reference number is read as a '3' instead of an '8'. It could be a reputational and financial disaster for the company involved. Fortunately there are lighting design guidelines available from OSHA and SANS 10400-O that can assist businesses to know what lighting is required. Even better, a reputable and professional industrial lighting supplier can determine the exact amount of lux levels required for each warehouse design.

Warehouse space

Let's have a closer look at the physical warehouse space. Most warehouses tend to have high vertical storage to maximise space. It stands to reason that the closer the storage space gets to the roof, the more lighting is required. The rule of thumb is that a dedicated aisle layout is more expensive than an installation that provides overall illumination, but the added cost is offset against the greater storage efficiency achieved by multiple storage tiers.

Similarly, creating harmony between warehouse staff and management or its accountants can be achieved through a number of solutions that companies can employ to reduce the cost and efficiently light a warehouse. Lighting controls can be installed to reduce the load during times when no one is present in the workspace.

Another way to reduce costs but not sacrifice lighting is to install high quality LED fittings. These are exceptionally efficient at converting electrical energy into illumination, making them up to 90% more efficient compared to traditional lighting while reducing mainte-

nance costs to nothing. To better understand the three main sources of warehouse lighting, it is useful to know the differences. Metal halide light sources were the success story of the 1990s, however everything that the metal halide lamp delivered on can now be provided by LED lighting. An important feature added to LED sources over the old metal halides is the ability for LEDs to be dimmed.

In the past, fluorescent tubes became 'mainstream' in warehouse lighting as they demonstrated a much better lighting efficiency over the metal halide sources but modern LED technology has already proven to outperform and outlast fluorescent tubes. The LED has taken over in almost every lighting sector. It is a very efficient source, and its future continues to get ever brighter. A good LED fixture will hold its own against any other type of lighting source even in extreme conditions. Besides the advantages already mentioned, they do not take time to warm up and provide instant 'on' light. LEDs also have the ability to be switched on and off frequently without affecting their lifespan. LED fixtures come in a wide range of forms and optical properties to produce highly effective illumination while producing little infrared light, almost no UV light, and contain no toxic materials making them 100% recyclable. Alternative light sources also need investigating. Industrial skylights for example can reduce energy consumption by up to 65% and studies have proven that natural light can increase productivity by as much as 40%.

If a warehouse has a soft roof, it would be advisable to really look into the benefits of 'free light'. A credible supplier will be able to advise on a skylight solution that is durable, able to adequately block out glare and heat gain, while ensuring energy savings as a result of lights being turned off. In any commercial setting, energy audits are the first step towards reducing energy costs, and increasing operational savings. Good lighting should be at the heart of every warehouse and there are sound financial reasons why companies should see the investment in their warehouse environment as being very good for their bottom line.

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BUILDING ON A CENTURY OF SUCCESS

JAMES Clifford, marketing and communications manager at LEDVANCE, the new partner for OSRAM general lighting products, says that, as an independent company, LEDVANCE bundles the former OSRAM lamps business with new LED product lines under one roof.

"Combining traditional and LED bulbs and modern LED luminaires, the LEDVANCE portfolio is aimed at professional users and private customers alike."

"Our independence means

we will be able to operate with greater agility in the global lighting market. We can also respond more quickly to ever-shorter life-cycles in the consumer market while capitalising on new growth opportunities in the lamps and luminaires business," he explains.

"As LEDVANCE, we will be building on more than a century of OSRAM's success in the general lighting market and are now gearing up to fulfil clients' individual needs even better in the future". He explains: "In a dynamic market environment we have the strength and agility to master new challenges while delivering the same excellent

standard of quality our clients have come to know and expect from OSRAM. And although LEDVANCE is a new company, the team is the same as before – we know the market and we know our clients. "We combine OSRAM's 100-year heritage and vast expertise in general lighting products with our global footprint to create new and compelling value for our customers. Our offering includes the same excellent customer service and product guarantees, as well as effective consumer marketing and support".

Enquiries: +27 11 207 5600

INCREASED SECURITY, SAVINGS AND EXTERNAL ILLUMINATION WITHOUT COMPROMISING ON AESTHETIC APPEAL

Security can be a concern for property owners but one way to enhance it is through a well-lit surrounding area. "One requirement for many is to have a floodlit garden – or building exterior – for security purposes. But as the garden is a place to enjoy visually as well as a space to carry out lifestyle activities, many aim to create one that offers visual pleasure in addition to illumination. Floodlights are the ideal solution but finding ones that are attractive can be a challenge," says Warwick Webber, Aurora's managing director for South Africa.

Well-positioned floodlights come into their own in three ways: They accentuate key external features; provide a view after dark that can be appreciated all year round; and offer a measure of safety and security.

Enlite has launched QuaZar™ – a range of attractive, modern, slim LED floodlights with an appealing design that offer excellent performance.

Webber explains, "Lighting the exterior of a property falls into the same three categories as internal schemes: The 'ambient' lighting function is to provide light to the space at an accepted level; 'accent' lighting highlights certain features and/or attributes; and 'task' lighting illuminates specific areas so that users can see what they, or others, are doing."

Latest technology

Enlite's range of IP65 driverless QuaZar floodlights incorpo-

rate the latest in LED technology and can deliver on all three, says Webber. They are available in 10 W, 20 W, 30 W and 50 W versions including black and white housing finishes. The 10 W measures only 90 (h) x 130 (w) x 33 mm (d) and is the ideal substitute for a 60 W halogen alternative. Energy savings scale up throughout the range so a traditional 200 W fitting can be exchanged for a 50 W.

The QuaZar range can be used as both ambient and accent lighting, the latter creating scenes that can be viewed from different aspects, such as a border set against the backdrop of the wider landscape or a specimen tree, which can be subtly floodlit after dark. "Remember, it's illumination of selected features that provide the 'wow' factor, not the fitting itself!" says Webber, adding, "Luckily, these small LED floodlights can easily be screened from direct sight so as not to ruin a lovely view."

Safety and security fittings are classified under task lighting. Used for this purpose, QuaZar helps deter any unwanted visitors. The range can be found on page 38 of the Enlite Edition 4 catalogue. To download the latest catalogue, visit enlitelighting.com.

Engineered by Aurora, an international LED lighting organisation that was voted 'Manufacturer of the Year' at the 2015 Lux Awards for its quality, value-for money products, Enlite is a brand of value-driven LED lamps and luminaires at competitive prices.

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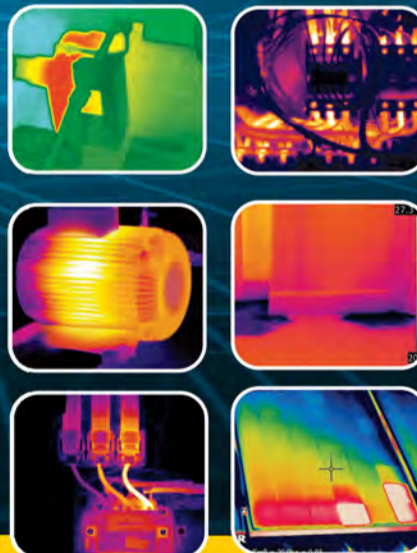
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BRIGHT SPARK

A MIXED COLLECTION

Tommy's collection of pets was his pride and joy. He had snakes, several birds, rabbits, and also some cats. Altogether his entire collection of animals had 15 heads, six wings and 38 legs. How many snakes did he keep?

SEPTEMBER SOLUTION

MAGIC SQUARE

There is only one basic solution, but by turning this diagram round you can get seven more solutions. The sum of every row and every column is 15.

8	1	6
3	5	7
4	9	2

NOVEMBER FEATURES

- Cables and cable accessories
- Earthing, lightning and surge protection
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Deadlines

- Advertising booking: 23 September
- Editorial: 26 September
- Advertising material: 3 October 2016

Editor:

Erika van Zyl

Advertising:

Carin Hannay

Design:

Anoonashe Shumba, B.Tech Hons Creative Art & Design (CUT) Zim

Consultant:

Ian Jandrell PrEng, BSc(Eng), GDE, PhD, FSAIEE, MIEEE

Publisher:

Karen Grant

Deputy Publisher:

Wilhelm du Plessis

Published monthly by:

Crown Publications cc
P O Box 140
Bedfordview, 2008
Tel: (011) 622-4770
Fax: (011) 615-6108
e-mail: sparks@crownc.co.za
Website: www.crownc.co.za

Printed by: Tandy Print

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

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



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