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Positive plans for the ECA(SA)'s future



The ECA(SA)'s national executive committee consisting of member representatives and senior management from all regions who considered the strategic options of the association for the next five years. They are: (Back) Dirk Engelbrecht; Graham Clarke; Cliff Davis; (standing) Danie Esterhuizen; Louis Pretorius; Jimmy van Rooyen; Glyn Manley; Lucas Bowles; Pierre Foot; Pieter du Toit; Giel Labuschagne; John Theo; (seated) Tembe Mwemba; Florence Mabena; Johnny Cunniff; Mark Mfiko; Michael Straton; Thursdon Duncan; Shantonette Naidoo; and Cecil Lancaster. (Also present at the conference, but absent for the photo, Stephen Khola.)

IMPORTANT decisions about the future of the ECA(SA) were made at the association's recent strategic conference, held from 3 to 5 March. The National Executive Committee (NEC) – consisting of member representatives and senior management from all regions – considered the strategic options to take the association forward over the next five years.

The strategies include a new identity for its members that intends to inspire the public's trust; extending its training network; promoting membership for previously disadvantaged electrical contractors; registering an accredited 'Diploma in Electrical Contracting Management' with the appropriate training authorities; and provide expert services to ECA(SA) members who want to explore their options in the Southern African Development Community (SADEC) and the rest of Africa.

"This strategic conference painted, in broad strokes, the goals, objectives, strategies and action plans of the ECA(SA) for the next five years to ensure better cohesion and direction throughout the association," says Michael Straton, president of the ECA(SA).

"The conference focused on the identity of the ECA(SA) as a national organisation: our role within the broader South African community, our relationship with the African continent and key growth areas for the association," explains Straton.

Consistent with these focus areas, Straton says the following major decisions were taken:

- To register the ECA(SA) as a professional body at the Southern African Qualifications Authority (SAQA), in order to standardise and formalise non-statutory, job specific roles in the industry, which include 'site supervisor', 'team leader', 'foreman', 'contract manager' and 'project manager'.
- An accredited 'Diploma in Electrical Contracting Management' will be registered with the appropriate training authorities.
- ECA(SA) members will be given a new 'identity' that will distinguish them "from the rest" and inspire the public's trust by shifting emphasis from the current slogan, 'Hands of Safety', to 'Trusted Electrical Contractors'. Straton says the association will work tirelessly to ensure that this new identity will be in place by mid-2015.
- To promote the ECA(SA) in the public domain, to ensure members become the contractors of choice by 'Joe Public'.
- To actively promote the ECA(SA) as the leading association representing electrical contractors in all spheres of influence, including government and professional services.
- To ensure that members are able to access all of the various services offered by the ECA(SA) no matter where they are in the country and that these services will be at the required level of professionalism.
- Promote and encourage membership for all electrical contractors with special emphasis on previously disadvantaged electrical contractors.
- Establish and register an ECA(SA)-owned training company, managed by a properly instituted board of directors, in order to extend the ECA(SA)'s training network.
- Provide members and their employees with comprehensive

training in new technologies – including renewable energy and energy efficiency.

- To seek alliances with similar organisations within the SADEC region as a 'launching pad' into the rest of the African continent; and to provide expert services to electrical contractors who wish to contract cross-border into SADEC and the rest of Africa.
- To grow the existing property portfolio to ensure that each region has a self-sustaining ECA(SA)-owned property consisting of a training centre, offices and rentable space.

Straton admits that these strategies will mean a lot of hard work for the ECA(SA) and its NEC. He says that achieving these goals will not only enhance the standing of the ECA(SA) but, more importantly, that these envisaged changes will provide its members with a much better chance of succeeding in the future while building profitable businesses. "And members will be assured of the continued support of the ECA(SA), which will be looking after their interests and working for the common good of all."



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Personality of the Month



Burkhard Grensemann.

THIS month's personality is Burkhard Grensemann, the newly appointed country sales director for the Bosch Power Tool division at Robert Bosch in Midrand.

After 24 years with Bosch, Burkhard's success is tied to the fact that he is a champion of the brand and passionate about marketing. A strategic thinker, Burkhard identifies his vision for the company, articulates this concept to the sales team and inspires them to work together towards a common goal. He motivates his team by empowering them with appropriate strategies, guiding without controlling and leading by example. A great communicator and facilitator, Burkhard inspires respect by 'walking the talk'.

Sparks: Where were you educated?

BG: I studied at the University of Applied Sciences Pforzheim in the state of Baden Wuerttemberg, near to Stuttgart, Germany.

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

BG: I have worked for the Bosch Power Tool division in Germany and in South Africa for 24 years in various marketing and sales positions.

Sparks: When and where did you start your career?

BG: In 1992, I started my career at the Bosch Power Tool headquarters in Leinfelden-Echterdingen 10 km south of Stuttgart.

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

It always seems impossible until it's done

BG: The greatest changes have been the rapid technological progress and the development of social media platforms. The 'Internet of Things' is fast changing the world as we know it. Smart devices allow interconnected communication between machines, objects or humans, and are able to trigger automated responses – providing challenges as well as significant commercial opportunities.

This significantly impacts all major industries and a mind shift and process change is needed to deal with this phenomenon. I believe this is not an evolution but a revolution.

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

BG: In Germany, I was responsible for the global marketing activities within the Bosch Lawn and Garden product portfolio. A major project was developing the concept for the company's participation at the GAFA fair in Cologne, which is one of the biggest garden and tool fairs in the world.

I worked with the Bosch advertising agency to develop a new global marketing campaign for our electric garden tool range, which included TV, print and point-of-sale (POS) activities. I have enjoyed working with a team of top class professionals to successfully drive sales growth in southern Africa.

Sparks: Have you won any awards?

BG: The Power Tool division evaluates quarterly submissions from all marketing and sales divisions globally. The competition is tough, however, the South African team has won a number of awards for outstanding sales growth, new customer acquisitions and creative sales concepts.

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

BG: I consider Derick Dreyer as my mentor. He was the power tool sales director for many years and retired 2008. In a nutshell, people and actions inspire me: from ordinary people and great leaders to strong competitors and colleagues as well as my wife and children.

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

BG: I would say that the lack of accountability is a major challenge.

Sparks: What do you enjoy most about your job?

BG: It sounds like a cliché but it's really about people. I enjoy playing a part in improving our

internal competencies and being able to experience the personal growth of individuals in the Bosch team while achieving success by matching products, service and excellence with customer expectations and user requirements.

Sparks: How do you motivate your staff?

BG: I motivate the staff by caring about them, showing appreciation for work well done and taking the time to actively coach people.

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

BG: As a global company, Bosch is active in numerous markets and offers many opportunities and, especially in the early stages of my career, I would have consciously used those opportunities to broaden my experience by working in different divisions.

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

BG: I believe that a career in the electrical industry should be on top of the list of employment options because this industry offers a wide range of career opportunities.

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

BG: Use professional power tools.

Sparks: What is your favourite quote?

BG: "It always seems impossible until it's done." - Nelson Mandela.

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

BG: I am not a bucket list

type of guy. Nevertheless, I do have plans to spend a romantic holiday in Venice with my wife (the kids stay at home!); and to retire and relocate to one of South Africa's beautiful coastal regions. I'll keep the third space open because wish lists change as life moves you along.



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Vasili Kourellos (Legrand Concept Store director); Luk Ivens (general manager, Legrand SA); and Mark Seftel (Legrand Concept Store director) celebrate at the opening of the newest Legrand Concept Store in Maboneng – a trendy district in central Johannesburg. Kourellos says the Legrand Concept Store represents "a fusion of design and purpose to re-imagine the use of power, light and data in the built environment" and focuses on providing solutions for engineers, architects, developers and end-users across all sectors. "The site for the new showroom, located on Fox Street in the heart of the Maboneng precinct, was chosen as it is an up-and-coming area that is design-focused and represents the true nature of an African City," says Kourellos, adding that the area is "an entrepreneurial hub with a great energy and sense of optimism".

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Working knowledge by Terry McKenzie-Hoy

UPSs and UPS batteries – go to the real experts

WHEN new technology becomes popular there is an immediate increase in the number of self-appointed 'industry experts' who have a selling style that is based on firstly frightening the customer and then selling them exactly what they *don't* need.

A very good example of these 'experts' is those who sell uninterruptible power supply systems, or UPSs. The bog standard UPS is a battery charger which, yes, charges a battery and an inverter, which takes in 12 V or 24 V dc and gives out 220 V ac (single phase) or 400 V ac (three phase). It is common to rate UPSs in kVA – which

is just the current it can supply multiplied by the voltage at which the current is supplied (for single phase units) and the same value further multiplied by 1,732 for three-phase units.

For example, if a single-phase UPS supplies 20 A it is $20 \times 220 = 4,4$ kVA. If a three-phase unit supplies 20 A per phase it is $20 \times 400 \times 1,732 = 13,8$ kVA.

An important question is: "how long can the current be supplied?"

A UPS, naturally, can only supply power until the battery runs flat. Therefore, one would specify a UPS as being, for example, 13,8 kVA, three-phase, 30-minute standby, which means it will supply

power at rated load for 30-minutes and then shut down. This is obvious. What is not so obvious, however, is that often it will take at least four times the discharge time to recharge. So, if a UPS battery is flat after 30 minutes, it will not take 30 minutes to be fully charged – you cannot recharge the battery that fast. It will take two hours minimum to be fully recharged. If you ask the UPS sales person, selling the latest import, the question: "If I want my UPS to supply 15 kVA for 10 minutes, how big a battery and UPS do I need and what is the recovery time?" you will get a confusing reply: numbers, figures and "K-factors" and "volts per cell" and "time

to SOC", all of which are very hard to follow.

On the other hand if you say, "Well, just give me the answer, Jack ..." more often than not, you will be sold a whole lot of stuff, which (a) will work and (b) will be much more than you need.

Therefore, it is important that you go to a reputable local supplier. They have much more to lose if they rip you off and you spread the bad word. On the other hand, when you do go to a reputable supplier, you will be asked questions such as: (a) Do you want the UPS output to be sinusoidal? And (b) Do you have an air-conditioned room to store the batteries?

The answer to the first question is: I can't really see why you need a sine wave output from a UPS unless you have some very delicate piece of kit and, in general, nothing that has to work in Africa is that delicate, actually. (Someone will probably tell me I'm wrong.)

The air-conditioned room to store batteries is another issue altogether. UPS batteries are generally valve-regulated lead acid (VRLA) batteries, more commonly known as a sealed battery or a maintenance-free battery. These batteries do not require constant maintenance, such as topping up the cells.

However, 'thermal runaway' occurs most often in a valve-regulated lead acid battery when the rate of internal heat generation exceeds the rate at which the heat can be expelled.

If this condition continues for an extended period, the VRLA battery temperature will increase until the cells dry out; and the container softens, breaks and melts ... and it can explode. So, UPS suppliers encourage you to fit your UPS room with air conditioning which, to me, is dead stupid.

I would encourage you to use flooded lead acid batteries and top them up time to time – which is not too much of a chore. It's certainly better than having a UPS to supply the aircon so you can have a UPS.

Forget VRLA batteries. I know I'm old school but I can tell you that there is a 200 kVA UPS at a local refinery that I commissioned 20 years ago with standard Plante lead acid batteries.

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Getting to grips with SANS 10142-1 by Hannes Baard

An eye opener for Master Installation Electricians

THIS will be the penultimate column covering the Occupational Health and Safety Act (Act 85 1993) as such, and will end next month with a synopsis of the remainder of the Act.

After that, the next 'series' will look at the regulations stemming from and forming part of this Act – what I like to call 'the second level' of legislation, which deals more directly with our profession, unlike the high level document – the Act itself – that gives broad guidelines that cover what should happen in the workplace with regards to health and safety. But before we get stuck in ... and kind of relevant to this issue's topic, I have something to share.

Recently, a 'Notice to Tenderers' document, issued by one of South Africa's more significant city councils, travelled through cyberspace and landed on my desk. If you have ever questioned your professional status or defined your 'job' as a qualified artisan or Accredited Person, this will be an eye opener – it was for me.

Just to explain to those of you who may not know what this document is for or what it is meant to achieve, the 'Notice to Tenderers' document is intended to clarify any questions potential tenderers may have arising from unclear or ambiguous wording in a tender document. This notice is sent out to everyone who has collected a set of tender documents so that the process remains open and fair and no-one can turn around and say, "I didn't know".

Now, to my mind, it was obvious that one of the tenderers – who, it seems, did not understand why the council wanted a Master Electrician or, indeed, what was meant by Master Electrician – had asked for clarification on the term.

Aside from the many misspelt words and atrocious grammar, I quote verbatim from item two of this three-page document:

"2) Master electrician: more clarity to be provided? We require the master Electrician in the event that we need to install CCTV and state-of-the-art burglar alarms. Safety is becoming a huge requirement within our ECD Centres."

Well, I only know of a Master Installation Electrician – and, presuming that ECD refers to Early Childhood Development, I'm sure a Master Installation Electrician would do a sterling job of installing electronic services, too, as long as there are no explosive baby nappies nearby.

It is quite clear to me that this document was written by a non-technical person in the procurement department who knows absolutely nothing about the electrical trade.

It seems to me that tender processes have been 'hi-jacked' by procurement departments, which are staffed by legal and mostly non-technical people who deal with technical documents. No wonder the guy who 'scores the best' gets the job

– never mind whether he can do it or not – and, before long, the money disappears ... only to have the guy who should have been awarded the job in the first place appointed at a premium (over and above the wasted money) to fix up the mess.

Let's now move to Section 25 of the Occupational Health and Safety Act, which reads:

25. Report to chief inspector regarding occupational disease

Any medical practitioner who examines or treats a person for a disease described in the Second Schedule to the Workmen's Compensation Act, 1941 (Act N. 30 of 1941), or any other disease which he believes arose out of that person's employment, shall within the prescribed period and in the prescribed manner report the case to the person's employer and to the chief inspector, and inform that person accordingly.

[S. 25 substituted by s. 7 of Act No. 181 of 1993.]

Taking cognisance of what is within the square brackets, my clarification for the above is as follows:

Section 25 in Act 85 of 1993 has been substituted by Section 7 of Act 181 of 1993. Now, where the Dickens does Act 181 come from? Act 181 of 1993 is, in fact, the updated or amended version of the 'main Act', namely the Occupational Health and Safety Act (Act 85 of 1993). If you pick up a copy of the Occupational Health and Safety Act (Act 85 of 1993) and there is no mention of Act 181 on the front page, it simply means you have an outdated version of the OHS Act and you should get yourself an updated version.

Section 26 continues...

26. Victimisation forbidden

(1) No employer shall dismiss an employee, or reduce the rate of his remuneration, or alter the terms or conditions of his employment to terms or conditions less favourable to him, or alter his position relative to other employees employed by that employer to his disadvantage, by reason of the fact, or because he suspects or believes, whether or not the suspicion or belief is justified or correct, that that employee has given information to the Minister or to any other person charged with the administration of a provision of this Act which in terms of this Act he is required to give or which relates to the terms, conditions or circumstances of his employment or to those of any other employee of his employer, or has complied with a lawful prohibition, requirement, request or direction of an inspector, or has given evidence before a court of law or the industrial court, or has done anything which he may or is required to do in terms of this Act or has refused to do anything which he is prohibited from doing in terms of this Act.

(2) No employer shall unfairly dismiss an employee, or reduce the rate of his remuneration, or alter the terms or conditions of his employment to terms or conditions less favourable to him, or alter his

position relative to other employees employed by that employer to his disadvantage, by reason of the information that the employer has obtained regarding the results contemplated in section 12 (2) or by reason of a report made to the employer in terms of section 25.

[Sub-s. (2) added by s. 8 of Act No. 181 of 1993.]

Section 26 should be self-explanatory. Please take note, however, that the older version of the OHS Act has been amended with the addition of sub Section (2). So it is not only SANS 10142 that is amended from time to time. An Act can only be amended by another Act though.

Stay 'clarified' till next time.

Six simple steps to determine an optimal air motor solution



AIR motors are globally recognised as being more efficient, cost effective and environmentally friendly than standard electric motors in demanding industrial operations says Deprag product manager for air motors, Dagmar Dübbelde.

However, it can be a daunting task to select the appropriate motor. To overcome this challenge Deprag has established a simple six-step selection guide. "The selection of an air motor is not difficult. However, when focusing on pneumatic systems, there are numerous factors that can influence the power of the motor," she explains, and suggests a simple six-step guide in selecting the most effective air motor, particularly for pneumatic applications.

Selection of the drive system

Dübbelde says that air motors are available in diverse design options, and that their application and intended operating time are of great importance when selecting the basic principles. "An air vane motor is suitable for regular running cycles. In comparison, gear motors and turbines are maintenance-free and therefore better suited to continuous operation."

Turbines and gear motors rotate in upper speed ranges of 140 000 rpm, while vane motors rotate at low speeds of 1 rpm. "Oil-free operation is also an option for all three drive principles. A slight loss of power must be taken into account with oil-free operation of a vane motor," says Dübbelde.

Construction material

If operating in a dry surrounding atmosphere and in standard stationary production, Dübbelde explains that an inexpensive cast iron air motor is suitable. "For installation in robots and machines, there are a variety of grinding motors, drilling motors and milling motors available which are distinguished by their low weight and compact size." The Deprag Advanced Line motors with external parts made from stainless steel are additionally sealed and lubricated with food industry standard USDA-H1 grease.

Pneumatic drives can be operated under water, however, it is essential to determine the water depth required. If the motors have to be started underwater, they can be used up to a depth of 5 m. If the motors are started on the surface and then submerged, they can be used to a depth of up to 20 m without damaging the motor. If the motor must be sterilisable as required in some medical technology applications, it can be equipped with special vanes.

Motor power

The next step is the calculation of the theoretical motor power. Motors designed for use in only one rotational direction are more efficient than reversible motors. When determining the rotational direction, the pneumatic expert looks towards the

motor shaft from the air inlet.

"This is the other way around for electric motors, where the rotational direction is specified by looking at the motor spindle. First the required working point of the motor is determined – the desired nominal torque and speed under load. The most economic use of the motor, which involves the least wear and air consumption, is attained by running close to the nominal speed," she explains.

The characteristic curve of an air motor shows that it reaches its maximum torque just before standstill – around twice the specified nominal torque. At nominal speed, the air motor reaches maximum power. Using the formula: nominal torque times working speed, divided by 9550, the theoretically required power in kW can be calculated.

Integration of the motor

Deprag has comprehensive spindle designs and individual fixing methods, which work out more cost-effective than separate gear solutions, and there are numerous air motors with integrated planetary gears, spur gears and worm gears. If additional safety in the design is required, a holding brake can be recommended. Integration is concluded with the technical verification of the maximum permissible axial and radial load on the drive spindle of the air motor.

Durability

Air motors are powerful, durable and robust. Adherence to the framework conditions determined during the design phase and compliance with the instruction manual will ensure the longest possible life of the drive. These conditions include adhering to the recommended air quality, lubrication, maintenance intervals, maximum feed hose length and opening widths of the feed hose and connection parts.

Purchase price and running costs

The purchase price is commonly the main focal point among designers when acquiring a new drive system. Dübbelde stresses that the designer should also take into account running expenses and consider the operating costs for maintenance and servicing. "When planning and selecting a new system, the designer must bear in mind the availability of replacement parts and their prices." She says that the patented vane exchange system enables the vanes to be replaced quickly and easily, "using only an Allen key and tweezers directly on the machine".

Dübbelde highlights that fact that the operating costs are determined by the air consumption. "The right choice of motor sets the course for low running costs. The closer the motor runs to nominal speed (50% of the idle speed), the more efficiently the air is used," she concludes.

Battery charger and portable backup



Comtest Technologies has signed-up leading Italian manufacturer, BC Battery Controller, that has on offer a powerful, lightweight and pocket-sized jump starter for cars, motorcycles, quad bikes, ski-jets, surf-skis and tractors. As a portable backup battery, it can be used for emergency charging of tablets, smart phones, navigators, cameras, videos, MP3 players and other electronic devices, when

on the move and nowhere near a power source. The BC Booster K1200 features 100% safe LiFePO4 technology; recharges electronic devices via USB port (5 V, 2 A); includes a complete set of adapters for emergency charging of smartphones and tablets; emergency flashlight; power 400 A; dimensions of 160 x 75 x 28 mm; and weighs 380 g.

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New policy document outlines workplace or worksite approval

BY now, many companies would have had a visit from their relevant Sector Education Training Authority (SETA) that is conducting workplace approvals, which will allow the companies to provide recognised practical training to learners.

NAMB

The National Artisan Moderation Body (NAMB) within the Department of Higher Education and Training has issued a policy document that outlines workplace or worksite approval. The purpose of the policy is to establish a set of national standardised criteria and guidelines across all sectors and for all listed trades to allow for the approval of workplaces and sites to deliver a structured work experience component of the relevant artisan trades.

It's quite a comprehensive document so in this month's column, I will provide some insights into what is required for this worksite approval according to the policy. Any readers who would like a copy of the policy can contact their SETA or drop me a mail and I will forward a copy of NAMB's 'National Standardised Artisan Learner Workplace and/or Site Approval Criteria and Guidelines'.

General criteria

The general criteria requires that the workplace or site has

- The ability and the resources to report to the relevant SETA and NAMB as required on the learner artisans' progress, administration and attendance.
- A juristic person who is registered and established in terms of South African law and has a letter of good standing or a tax clearance certificate; or be a national, provincial or local government department; or be a state-owned company.
- Has proof of financial sustainability to deliver on the contractual arrangement with the learner in terms of the required workplace component.
- Be compliant with the relevant legislation applicable to the specific trade including but not limited to the Occupational Health and Safety Act and/or Mine Health and Safety Act.

Occupational specific criteria

The occupational specific criteria require that the workplace or site must

- Indicate that the programme for the structured work experience component of the artisan trade curriculum will be facilitated and mentored. The evidence required would include a structured programme with clearly identified timeframes aligned to the relevant work experience components of the trade curriculum; and proof of formally appointed workplace mentors.
- Have access to all physical resources to deliver on the tasks and activities as required by the relevant work experience components of the curriculum, taking into account varying contexts within different workplace environments.
- Have suitably qualified mentors for the trade/s in which workplace/site approval is sought.
- Be able to sustain the mentoring for the duration and scope of the trade qualification for which workplace approval is sought.
- The number of learner artisans mentored by a single mentor shall, unless otherwise permitted by NAMB or defined in the curriculum document, not exceed the number stated in the table below.

Trade category	Mentor/learner ratio
Civil	1:4
Mechanical	1:3
Manufacturing	1:3
Electrical	1:2
Services and support	1:4

- There must also be a letter of commitment from each mentor endorsed by the employer indicating the number of learners allocated to the mentor and the duration of the mentoring process.

The procedure for approval of workplaces and or sites is that the applicant workplace/site will be visited and evaluated by the SETA supported, where relevant, by subject matter experts to determine whether they comply with the requirements of the structured work experience component of the occupational curriculum for which they are seeking workplace/site approval.

The workplace/site must ensure they have the facilities, equipment, tools, structures and resources in accordance with minimum standards determined by the occupational qualification

structured work experience component.

The transitional arrangements state that all current approved workplaces or sites will remain approved under this policy and will be monitored in accordance with this policy.

Competent artisans

I have found that when candidates apply for a trade test, many applicants have only had exposure to limited areas of the curriculum in the workplace and this obviously places them at a disadvantage and they struggle at work.

This is why I believe that this policy will ensure

that all learners are exposed to the entire curriculum and that when they do qualify, that they will be competent artisans.

I encourage companies to apply for workplace or site approval because this will give a good indication of whether or not their learners have been exposed to the full workplace curriculum – and it will ensure that training is structured for the benefit of all.

Anyone needing guidance regarding this policy can email me on nick@pandttechnology.co.za

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Looks can be deceiving. And often DEADLY.



This case was the subject of legal action. The following distributors placed statements of apology and product recall in various South African publications:

- Ridgeway Builders Centre trading as Morgan's Hardware of Lenasia, Gauteng.
- Wirelec Industries of Devland and Micromatica of Lenasia, Gauteng.

Counterfeiting and selling non-compliant products and services are criminal acts.

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The South African Safehouse Association is an independent, registered, non-profit organization established by the electrical industry and committed to communicating with customers.

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- Exposing sub-standard products and services
- Persuading specifiers, suppliers and distribution channels not to recommend or to offer such products and services for sale

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Born and bred in Africa – an intelligent battery management system

THE Silicon-BMS™ is not just a multi-alarm module but also a battery management system (BMS) designed for all new battery technologies that have become available since 1978. Designed and produced in Africa by people who understand the harsh environments of deep gold mining and the tough conditions found in the iron and steel, petrochemical, and power generation and distribution industries.

The Silicon-BMS has been around for 26 years – before the advent of cell phones – and, as electrical noise and radiation became an issue, those challenges were overcome by implementing special algorithms, similar to those used in cruise missiles.

Alarms

Different settings and charging requirements are built into the Silicon-BMS. A changed battery type can be reconfigured in under two minutes so there is no chance of a wrong setting and Silicon-BMS complies with virtually every charger specification.

User-friendly

The menu structure has remained basically the same since 1989. All the operator has to do is press the 'menu' button and follow on-screen instructions. Silicon-BMS upgrades are released from time to time. The latest BMS-Elite is virtually pin-for-pin compatible with the 1989 chargers, which makes upgrading fast and affordable. Upgrade kits are readily available or updates can be installed by Silicon-BMS technicians. The dc earth fault alarm system can be calibrated to minimum impedance to earth; and report on the polarity of the fault and the actual impedance to earth of that fault.

Communication

Silicon-BMS comes standard with Modbus RTU protocol that can be connected to your SCADA system. Alternatively, an app – BMS-Studio – has been developed, which sorts out all communications issues between your laptop or VPN and the charger. The user can have full graphic details of the status of the dc and, for immediate notification of a problem, SMSs can be sent to up to five mobile numbers when an alarm arises, describing the charger location, cause of the fault and time of fault.

Memory

Silicon-BMS has a 2 000-event recorder, including results of periodic load tests, which can be downloaded and saved on a computer using the BMS-Studio app and, in the event of an insurance claim, results can be submitted to an insurance company as proof of health of the dc system.

Silicon-BMS has two independent memories for charger settings: the factory default and the 'customer memory'. Any user changes are saved to the 'customer memory'. Changes are discarded by restoring the factory default.

Economical

Silicon-BMS can be configured for a single charger, two chargers with one battery, load control dropping diodes, single- or three-

phase supply and/or load disconnect. When disconnected from the mains supply, it draws minimal power from the main battery.

Periodic load testing and substations

Many specifications have changed over the years. An example is the periodic battery test where the charger is turned off and a load is connected for a short time to detect potential faults. This is done three times per day. The Silicon-BMS periodic load test has a built-in 'testing of test circuit' feature so if a test is not actually carried out, an alarm is raised and the faulty component identified.

Substations have changing load profiles with new electronic protection relays and commu-

nications. Silicon-BMS has built-in intelligence whereby, if the station standing load increases, the Silicon-BMS does not apply an extra load but uses the station load to test the battery.

The Silicon-BMS has a built-in redundancy and keeps the substation battery fully charged even in the event of BMS component failure. An analogue control card keeps the charger operational and the Silicon-BMS controls the analogue card for optimum settings and long battery life.

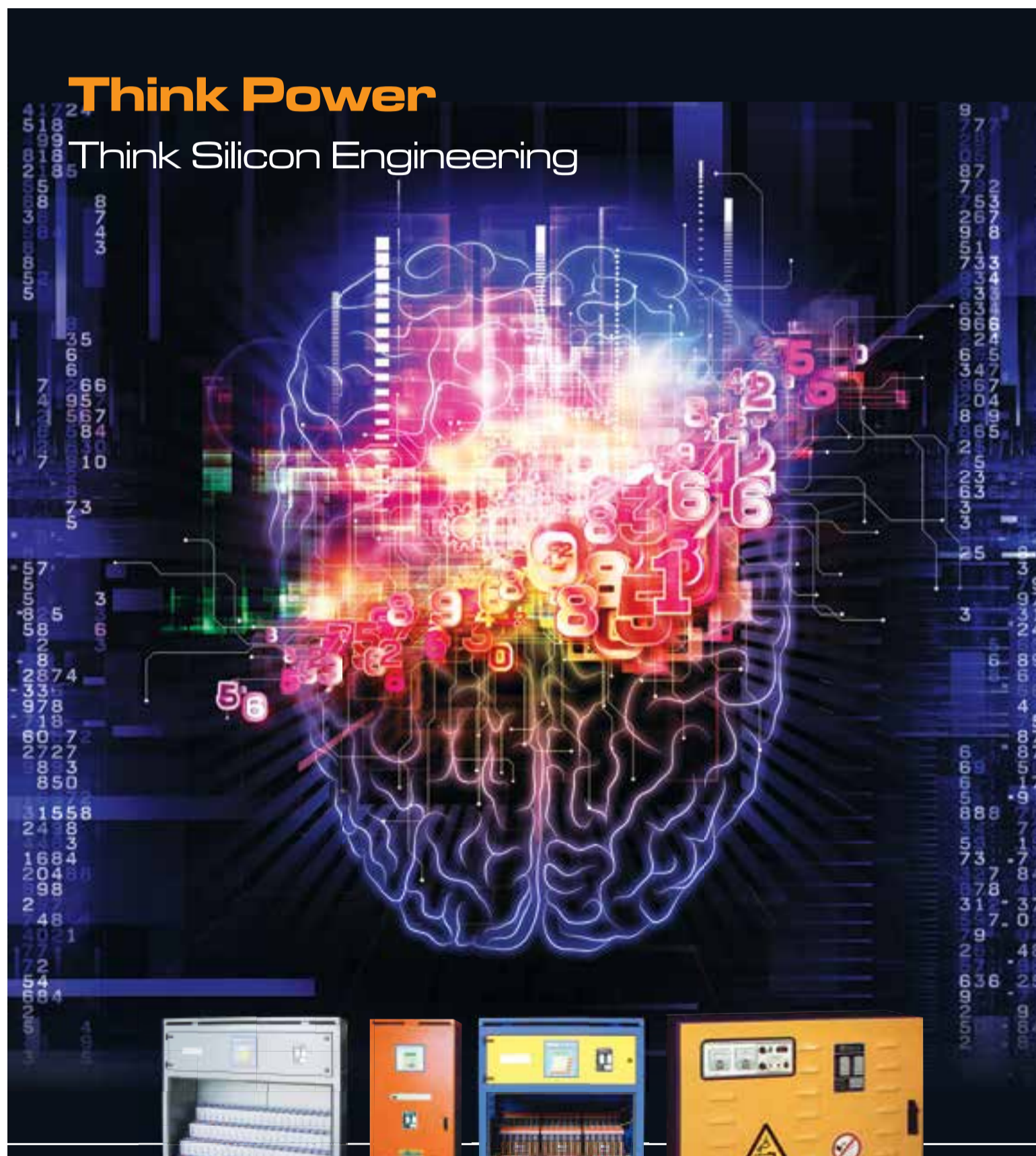
The Silicon-BMS 'Micro-Sense' sends a coded pulse to the analogue card every second. If this pulse fails, the analogue card switches to default and an alarm is raised. The substation can safely

operate with full output for weeks under this condition.

Mains power voltage is sensed by a small potential transformer (PT). Silicon-BMS has built-in algorithms and when a faulty PT is detected, an alarm defining the fault is raised and the charger continues to charge the battery, avoiding charger shutdown.

The Silicon-BMS 'Battery Intelligence Centre' allows the user to make decisions on the replacement of the battery or extending service life by monitoring temperature, standing load current, discharges and boost cycles.

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ECA News by Mark Mfikoe, national director of the Electrical Contractors' Association of South Africa

A good story emerges as Medupi Power Station produces its first power

ON behalf of the Electrical Contractors Association of South Africa, I would like to express delight at the news of the successful synchronisation of Medupi Power Station's Unit 6 on 2 March 2015 – the first of six units to be synchronised. This is good news for the Republic and its citizens, no matter who they are.

I believe it doesn't help to say that Eskom did not meet the original programme for Medupi. That's in the past and all indications are that

we're on the way to actualising a solution that will reduce pressure on the grid and provide the power capacity to meet demand and development imperatives.

Yes, the burden on South Africa's infrastructure should have been anticipated and I would say that the full impact is yet to be felt. However, if we are to bring dignity and freedom to rural South Africans, we could not do this without some sacrifices from those who are currently benefiting

from the existing infrastructure. For this reason, I agree with the observations made by the Minister of Finance, Nhlamhla Nene, that South Africa's trend of rapid urbanisation has intensified in recent years, creating a significant challenge for government to meet the needs of all South Africans. Nene's observations were supported by a budget that has provided R200-billion for local development and social infrastructure for the 2015/2016 fiscal year, which is to be utilised

by government to deliver 1.5 million new dwellings for South Africans by 2019.

These developments are part of this country's continuing journey towards a time when everyone will have something to lose. The greatest threat to business and communal stability is when people have nothing to lose in the chaos and, as a country, we cannot afford that situation.

The availability of electricity is critical to all these efforts and, in this context, Medupi must be celebrated by business and the broader community.

This explains my elation at learning that Medupi Power Station Unit 6 was synchronised. Synchronisation, or first power, is the process whereby the generator in the unit is electrically connected to the national power grid in such a way that its power is perfectly aligned with all the other generators to generate and deliver electricity into the national power grid.

We at the ECA(SA) encourage the Medupi team to stay on programme so, come June 2015, the community and the business sector can be spared from the excessive power interruptions that have compromised commercial endeavours and social life.

Without a reliable and adequate electricity supply, all the plans outlined in Nene's budget speech and the drama-filled State of the Nation address will only be achieved with great difficulty. Private and public developments cannot go ahead without adequate electricity to support such plans.

Milestone

The ECA(SA) congratulates Eskom and Team Medupi on this achievement, which is important for South Africa's future.

Obviously, forward planning in anticipation of this unit operating at its full potential of 794 MW in three months is essential. It is, therefore, encouraging that a power station manager has already been appointed and that the training and development of a core set of 350 people to operate the power station's new technology commenced six years ago. This is a positive development, indeed.

The ECA(SA) looks forward to the successful operation of Medupi and we also support the generation of sustainable alternative power that utilises this country's favourable climate, which also contributes towards our country's development so that we all can have a licence to dream.

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The **GSB 162-2 RE Professional** is a new powerful impact drill for demanding work with diamond core cutters. This powerful tool is ideal for impact drilling in concrete and masonry, screwdriving and drilling with large diameters in wood, and stirring viscous materials. Equipped with a 1500-watt high-performance motor, this impact drill effortlessly completes even tough jobs on the construction site due to its high overload capability. The optimized speed ensures fast work progress when non-impact dry drilling with diamond core cutters up to 162 millimeters in diameter.

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Manufactured in Germany, the Knipex range of VDE 1000V rated quality cable knives feature ergonomically designed handles for easy handling and a comfortable slip guard. A thumb recess and a finger hook at the end of the handle ensure good transmission of force when the blade is pulled. This range of knives, available from Garry Lumpe Imports, includes: straight blade; straight blade rear blade plastic-coated; fixed hook blade; sickle-shaped blade; and a fixed hook blade with guide shoe.

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Significant uptake in demand for key products



Lebo Ntete in the dedicated electrical workshop for the production of main and sub distribution boards at Shaw Controls.

SHAW Controls, a company of the Zest WEG Group, has seen a significant increase in the demand for key products such as electrical houses (E-Houses), fully withdrawable motor control centres (MCCs) and modular variable speed drives (VSDs). This has resulted in the Zest WEG Group committing to a major expansion drive at Shaw Controls as the Group expands its manufacturing capability in order to boost its presence in the local market and also in Africa, which is perceived as a major growth area.

"While the Zest WEG Group is well known for distributing one of the largest electric motor ranges in the world from WEG of Brazil, our comprehensive product line-up includes switchgear, VSDs, MCCs, gensets and renewable energy solutions. We also have three fully fledged

manufacturing facilities in South Africa that we are in the process of expanding as we increase our footprint in Africa," explains Louis Meiring, CEO of the Zest WEG Group.

Bevan Richards, managing director of Shaw Controls, reveals that next year it will embark on the design and establishment of a 4 000 m² standalone E-House and container conversion facility.

"The Zest WEG Group as a whole has the management team and overall company structure in place to be able to handle projects of a

much larger nature and to provide the customer care needed on multiple projects for different customers, and to do so efficiently and cost effectively." In addition, Shaw Controls is in the process of establishing a centralised bulk store for the receipt and issue of all goods in line with its new inventory control system. "We are fully committed to the ISO 9001 process."

Richards says that the growth and expansion at Shaw Controls dovetails with the overall strategy of the Zest WEG Group. "We are integrating our product range with those of the other Group companies involved in large scale turnkey projects. This represents a huge opportunity for us to add value to our own product range by capitalising on the knowledge and experience of the entire Group."

The E-Houses from Shaw Controls represent a particular innovation for the South African market in that they are a cost effective alternative to traditional containerised solutions manufactured in either 6 m or 12 m standard marine containers. "The main benefit of the E-Houses is that they can be manufactured to customised dimensions, which is a testament to the flexibility of Shaw Controls." Shaw Controls also supplies WEG modular VSDs for loads of up to 2.5 MW at 690 V.

"Whereas modular VSDs were previously built and assembled by WEG of Brazil, we as the South African arm of WEG will in future develop the enclosures and populate them with modular VSD components from WEG," Richards reveals. "The advantage of these modular VSD products now being assembled in South Africa is that it represents a substantial reduction in the lead time of any project."

Santos Ferreira, product development specialist at Shaw Controls, reveals that all the company's products have now been tested to the latest IEC 61439-1 standard. "We have developed various ranges of our switchboard products, namely SC 100, SC 200 and SC 300, for various

applications at different fault levels and current ratings."

The maximum rating that all products have been tested at is 690 V + 5% @ 65 kA. "In addition we are in the process of locally developing the WEG range of fully withdrawable MCCs. This product range is suitable for all types of process type industries and will add great value to Shaw Controls' product range," Ferreira adds.

Enquiries: +27 11 723 6000

Improved protection benefits



NEW ELEC'S KE range of microprocessor-based motor protection relays are ideally suited for motors used in air-conditioning, compressor, machine, conveyor, pumps and crusher applications.

With a small footprint, the KE relays feature integrated CTs up to 50 A with extendable current ranges using interposing CTs. A door-mounted MMI, fitted with an infrared sensor, permits accessing the relay settings. Fault and event records can be accessed without opening the cubicle

door provided a window cut out is made available through which the infrared communication can take place, improving operational safety while reducing downtime.

Improved protection benefits include earth insulation lockout (prior to starting the motor) and earth leakage protection may be selected as instantaneous or IDMT with sensitivities in the range from 30 to 1 000 mA.

The relays offer an array of features related to dry-run protection, such as user-selectable priming time, dry run detection by power factor measurement or current only, as well as optional user-selectable automatic motor re-start with delay timer on dry load trips.

The relays offer drive power measurement to assist in pump efficiency and plant energy management programs. To assist maintenance personnel with fault finding, the relays have a time and date stamped event (2 000) and fault (60) recording facility.

NewElec's free issue, easy-to-use intuitive configuration software provides extensive monitoring, logging and simulation capabilities to assist with integration, pre-testing, commissioning of the drive and training.

Enquiries: +27 12 327 1729

New range of switchgear supports local electricians



SCHNEIDER Electric has launched its Easy9 switchgear, a new range to help electricians with the provision of reliable switchboards. According to Christo Janse van Rensburg, product manager: final distribution, at Schneider Electric South Africa, Easy9 answers the need for electricians to have access to robust products that are widely available, and will also help them to complete their installations swiftly and professionally.

The range covers miniature circuit breakers, residual current circuit breakers, surge protection devices, comb busbars, and switchboard enclosures. All Easy9 products are manufactured in

ISO9000-certified plants belonging to Schneider Electric and are approved by independent authorities as compliant with local electrical safety standards.

"We work closely with electricians worldwide to help bring safe electricity to homes and buildings around the globe. With Easy9 electricians can take pride in delivering the enhanced safety and peace of mind their customers deserve. An advantage too is that it is a high-end device available at a mid-range price," adds Janse van Rensburg.

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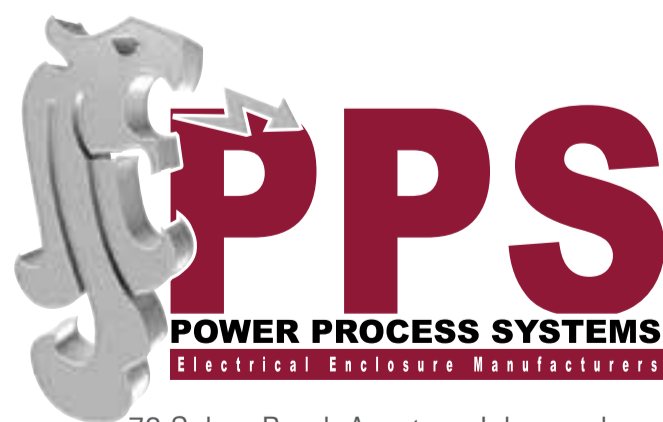
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Assemblies manufactured to SABS 1765 for the safety of distribution boards

New monitoring relays offer comprehensive machine protection

OMRON has now completed the popular K8 series product range by adding six new models for three-phase monitoring and reliable machine protection.

These additions to the range mean that now, virtually all machine monitoring functions can be conveniently implemented with the same range of products, with the added benefit that all the products comply with global safety standards.

The new monitoring relays feature advanced switching power supply technology and generate almost no heat. This ensures that they have long reliable product lifecycles and also allow the K8 relays to be mounted closely to one another and to other components, saving valuable control panel space.

K8 monitoring relays are available in versions for both single- and three-phase applications and provide a wide range of solutions for detecting common issues such as under- and over-voltage, phase loss, under- and over-current, over temperature, phase sequence errors, and voltage asymmetry conditions. Omron also offers thermistor motor protection relays that directly monitor the temperature of motor windings.

Added to this are the contact-type outputs – all the new monitoring relays incorporate LED indicators to indicate equipment status, which greatly simplify machine troubleshooting and allow corrective action to be taken before any lasting damage can

occur, avoiding costly machine downtime.

Typical applications for these versatile monitoring relays include the protection of pumps and other driven equipment against reverse rotation, guarding against motor damage under overload conditions, and the detection of broken drive belts and similar faults that leave motors running unloaded.

The K8 range includes monitoring relays to suit all commonly used global power supply systems

with three-phase types covering the 200 V to 480 V voltage range. This feature, together with global standards compliance and worldwide availability through the Omron distribution network, makes them an ideal choice for use in export projects.

Omron's K8 monitoring relays feature compact 17.5 mm or 22.5 mm wide housing, depending on the model, and are suitable for mounting directly on to standard DIN profile rail

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Letter to the Editor

Wise advice from a concerned reader

Rob Fiander, technical services manager at the Belmond Mount Nelson Hotel in Cape Town, writes:

I HAVE great respect for Terry Mackenzie Hoy and have used his consulting services in the past at this facility, however, I was deeply concerned with his last paragraph in the March 2015 edition of Sparks Electrical News: "And, finally, remember to keep the starting battery charged."

Great advice, except for just one small snippet: we cannot use sealed batteries for large standby generators.

I had two 200 Ampere-hour sealed batteries explode simultaneously, that could, apparently, be heard over 300 metres away. Luckily no-one was in the vicinity but it caused extensive superficial damage and acid clean-up procedures.

Please advise readers to go back to the old fashioned top-up type and loosen the filler caps.

Terry Mackenzie Hoy replies:

Rob Fiander has given a very good piece of advice. A sealed battery or maintenance free battery is a VRLA (valve-regulated lead-acid) battery. These are prone to thermal runaway and can (and do, as Rob has noted) fail catastrophically.

If used in any application they should be in a controlled temperature environment, which means air-conditioning.

The argument for their use is that they don't have to be topped up with distilled water and they give off less hydrogen than conventional lead acid batteries.

I think that it's good to have a conventional battery and do regular topping up since one gets to visit the battery location on a regular basis, which allows you to find out, if nothing else, that the battery is still there and has not vanished overnight.

They shouldn't be used to start diesel generators since VRLAs have lower peak power ratings than conventional designs.

Rob has raised a very important point – VRLAs can explode.

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Gearboxes for motor applications

Stone Stamcor
Gearboxes for motor applications

Fans for motor applications

ACDC Dynamics
Various fans and ventilations solutions
Bellco
Full range of fans for motor applications
MCE Global Suppliers
MCE panel fans
Schneider Electric
Full range of fans for motor applications
Voltex
Full range of fans for motor applications

Drives/soft-starters

ABB South Africa
Full range of low and medium voltage drives and soft-starters
ACDC Dynamics
Vacon range of variable speed drives and accessories; Aucom range of soft starters and MV soft-starters; Itegra Intelligent energy efficient range of soft starters
Alstom Protection & Control
VSD panels; soft-starters
Bellco
Full range of drives, soft starters
CBI
Mitsubishi variable speed drives – 220V AC, 380V AC, 0.1 – 375kW; Mitsubishi Servo amplifiers and motors – 220V AC, 50W - 7kW
Eaton Electric
Full range of drives/soft starters
MCE Global Suppliers
Hyundai series variable speed drives; MCE direct online starters; MCE star delta starters; MCE reversing starters; MCE manual motor starters
Omron Electronics
Full range of drives and soft starters
Power Process Systems
Full range of drives and soft-starters
Schneider Electric
Full range of drives/soft starters
Voltex
Full range of drives, soft-starters
Voltex LSis
Full range of drives, soft starters
Zest Electrical Motors
Full range of drives/soft starters

Cable glands/lugs/ferrules

ACDC Dynamics
Cable glands, lugs and ferrules in various materials for all applications
ACTOM Electrical Products
Cable glands, lugs and ferrules for all termination and jointing requirements
ARB Electrical Wholesalers
Full range of cable glands, lugs and ferrules
Atlas Group
Full range of glands, lugs, ferrules
Bellco
Full range of glands, lugs, ferrules
Eaton Electric
Full range of cable glands, lugs and ferrules
Elen Enclosures
AGRO Eurotech cable compression glands; polyamide; standard, Exe and EXI
HellermannTyton
Fixed, rotary, loose, and compression cable glands; lugs and ferrules
Lapp Group SA
Skintop MS-SC-M screened compression glands, Epic circular connectors
Legrand
IP68 cable glands, Cabstop cable glands
O-line
Full range of cable glands, lugs, ferrules
Phambile Interface
Full range of cable glands, lugs, ferrules
Schneider Electric
Cable ends; cable markers; crimping tools; wiring accessories; trunking
Stone Stamcor
Manufacture of compression lugs and ferrules tested to IEC 6 1238-1 and regulator approved; special connectors to customers' specifications
Three-D Agencies
Compression glands; BW glands; shrouds; lugs and ferrules; XLPE lugs and ferrules; aluminium lugs and ferrules; BI-metal lugs and ferrules
Voltex
Full range of cable glands, lugs and ferrules
Waco
Full range of cable glands, lugs and ferrules

Flameproof

Aberdare Cables
Flamosafe flame retardant range of cable
ACDC Dynamics
Flameproof lighting and beacons supplier: audible and visual alarms; beacons; industrial lighting; gas sensors; safety sensors, conveyor pull-wire trip switches, lgands, isolators, motor starters, pushbuttons; pilot lights, sirens; LED and energy efficient light solutions for industrial applications
Allbro
Flameproof products
Bellco
Full range of flameproof products
Eaton Electric
Flameproof products
MCE Global Suppliers
MCE fireman switches
Phambile Interface
Full range of flameproof products
South Ocean Electrical Wire Co
SWA flame retardant cables
Voltex
Full range of flameproof products

Armoured/shielded cables

Aberdare Cables
Bells and mains cable
ACDC Dynamics
Armoured cable 600 – 1 000 V with temperatures up to 70 °C
Alvern Cables
Full range of armoured and shielded cables
ARB Electrical Wholesalers
Full range of armoured and shielded cables
Atlas Group
Full range of armoured and shielded cables
Bellco
Full range of armoured and shielded cables
Citilec
Full range of armoured/shielded cables
Lapp Group SA
Olflex Servo VSD/VFD cables, Olflex Classic 100CY, Olflex Classic 110CY
South Ocean Electrical Wire Co
SWA armoured cables
Versalec
Full range of armoured, shielded cables
Voltex
Full range of armoured, shielded cables

Cable management accessories

ACDC Dynamics
Brady labelling solutions; cable tie and cable management systems
ACTOM Electrical Products
Complete range of accessories for all types of installations
Allbro
Full range of cable management accessories
ARB Electrical Wholesalers
Full range of cable management accessories
Bellco
Full range of cable management accessories
Brady
Full range of cable management systems
Cable Croc
Anti cable theft
Cabstrut
Full range of cable management accessories
Elen Enclosures
Grey PVC trunking
Grafo
Various cable and wire identification high performance labels with eight year external guarantee
HellermannTyton
Full range of cable management accessories
Lapp Group SA
Full range of cable ties and labeling solutions
Legrand
Full range of cable ties – various lengths
Major Tech
A full range of Plasti-Loc nylon cable ties, 100mm, 150mm, 100mm, 300mm, 400mm, 500mm and 540mm in black and neutral, standard and heavy duty.
O-line
Full range of cable management accessories
Pretoria Motor Control Gear Products (PMCG)
Full range of cable management accessories
Radiant Group
Radiant cable ties – various lengths available
Schneider Electric
Full range of cable management accessories
Three-D Agencies
Cable ties UV stabilised; cable ties UV full protection; label ties; identification ties; stainless steel ties; releasable ties; insulation tape; grommets; dome plugs
Voltex
Full range of cable management accessories

Displays

ABB South Africa
Displays
ACDC Dynamics
Rhombert, Entes, Sele, Contrel, Iskra, EziView and Orbis meters and displays; ammeters, volt meters; running hour meters, watt meters, frequency meters, digital and programmable ammeters and voltmeters, and multi-function meters
Bellco
Full range of displays
Eaton Electric
Full range of displays
Invirotel
Full range of displays
Legrand
Lexic meters
MCE
MCE panel meters
Power Process Systems
Full range of displays
Pretoria Motor Control Gear Products (PMCG)
Full range of displays
Radiant Group
OWL electricity monitor
Schneider Electric
Full range of displays for meter readings
Voltex
Full range of displays

Motor protection/surge protection

ABB South Africa
Full range of motor protection, surge protection

ACDC Dynamics
Rhombert and NewElec electronic motor/pump and overload protection; surge protection devices – 15 A voltage protection plugs; one- and three-phase voltage guards and surge limiters; Innovolt Power Manager full power protection management

Alstom Protection & Control
Microm motor protection relays

ARB Electrical Wholesalers
Full range of motor and surge protection

Atlas Group
Full range of motor and surge protection

Bellco
Full range of motor and surge protection

CBI
Full range of motor and surge protection

Eaton Electric
Full range of motor protection relays

Legrand
Lexic MCBB; Lexic DPX MCCBs

Major Tech
Surge protector for appliances

MCE
Onesto surge arresters, Schenker surge arresters

NewElec
Full range of motor, surge protection

Phambile Interface
Full range of motor, surge protection

Power Process Systems
Full range of motor protection

Pretoria Motor Control Gear Products (PMCG)
Full range of motor protection

Schneider Electric
Full range of motor protection

Surge Technology
Lightning and overvoltage protection; surge arresters

Voltex
Full range of motor and surge protection

Voltex LSis
Full range of motor and surge protection

Zest Electric Motors
Full range of motor and surge protection

Contactors/breakers/relays

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

Atlas Group
Full range of contactors, breakers, relays

ACDC Dynamics
Gewis, TC C&S and Terasaki contactors, breakers and relays; contactors in DIN, mini and vacuum; single pole, two-, three and four-pole; seitchgear from 13 mm MCBs to MCCBs and ACBs; MCCBs rated from 20 A to 1 600 A; relays and accessories MCB and MCCBs; TC; The Control Group India; Rele Italiana

ACTOM Electrical Products
Complete range of low voltage circuit breakers, isolators, earth leakage devices and wiring accessories

Alstom Protection & Relay
TAIAN contactors/relays

ARB Electrical Wholesalers
Full range of contactors, breakers, relays

Bellco
Full range of contactors, breakers, relays

CBI
Full range of contactors, breakers, relays

Citilec
Full range of contactors, breakers, relays

Crabtree Electrical Accessories
Schrack Technik range

Denver Technical Products
Hermetically sealed contactors for high current load up to 350A carry

Eaton Electric
Full range of contactors, breakers, relays

Legrand
Lexic contactors; Lexic MCB; Lexic MCCB breakers

MCE
MCE ac magnetic contactors three-pole and four-pole; MCE relays and bases; Onesto MCCBs; Onesto circuit breakers, Schenker circuit breakers

Omron Electronics
Full range of contactors, breakers, relays

Power Process Systems
Full range of contactors, breakers, relays

Pretoria Motor Control Gear Products (PMCG)
Full range of contactors, breakers, relays

R&C Instrumentation
Infrared inspection windows, busbar temperature monitoring

Schneider Electric
Full range of contactors, breakers, relays

Voltex
Full range of contactors, breakers, relays

Voltex LSis
Full range of contactors, breakers, relays

Zest Electric Motors
Full range of contactors, breakers, relays

Controls for motor applications

ABB South Africa
Controls for motor applications

Aberdare Cables
Multicore LV cable

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

Allbro
Full range of controls for motor applications

Alstom Protection and 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
Full range of controls for motor applications

Eaton Electric
Full range of controls for motor applications

MCE
MCE pushbuttons, control devices; control stations, toggle switches

Omron Electronics
Full range of controls for motor applications

Phambile Interface
Full range of controls for motor applications

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

Schneider Electric
Full range of controls for motor applications

Voltex
Full range of controls for motor applications

Voltex LSis
Full range of controls for motor applications

Waco
Full range of controls for motor applications

Zest Electric Motors
Full range of controls for motor applications

Cable support systems

Aberdare Cables
Cable guard

ACDC Dynamics
Gewis and Ardic cable support systems: galvanised trays, ladders, wire mesh; tray carriers; hot dip galvanised wire mesh trays and accessories; wall brackets; hanging support tray carriers; heavy load Mavistrut systems; support brackets and accessories; perforated steel racking; vertical couplings and horizontal couplings

ACTOM Electrical Products
Cable support systems to suit all installations

ARB Electrical Wholesalers
Full range of cable support systems

Bellco
Full range of cable support systems

Cable Croc
Anti cable theft

Cabstrut
Full range of cable support systems

Citilec
Full range of cable support systems

Grafo
Brady high performance labels, industrial label printers, software, safety and facility identification, spill control, lockout tagout solutions, etc

O-line
Full range of cable support systems

Three-D Agencies
Woven sleeving, PVC slotted trunking, Spirobond grommet strip, floor trunking, solid trunking, Betaflex corrugated tubing, Basal end caps, Flexicon tubing and accessories

Voltex
Full range of cable support systems

Cabinets for motor applications

ABB South Africa
Full range of cabinets for motor applications

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

Allbro
Full range of cabinets for motor applications

Alstom Protection & Control
MCCs; special and standard starters

Atlas Group
Full range of cabinets for motor applications

Bellco
Full range of cabinets for motor applications

Eaton Electric
Full range of cabinets for motor applications

MCE
MCE enclosures

Phambile Interface
Full range of cabinets for motor applications

Power Process Systems
Full range of cabinets for motor applications

R&C Instrumentation
Infrared inspection windows, busbar temperature monitoring

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

Schneider Electric
Full range of cabinets for motor applications

Voltex
Full range of cabinets for motor applications

Voltex LSis
Full range of cabinets for motor applications

Voltex MV/LV
Full range of cabinets for motor applications

Waco
Full range of cabinets for motor applications

Zest Electric Motors
Full range of cabinets for motor applications



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+27 10 202 3300



+27 11 444 7971



+27 11 579 2600



+27 31 910 0200



+27 11 494 3550



+27 11 386 0000



+27 11 254 6400



+27 11 879 6600



+27 11 723 6000



+27 11 879 2000



08 61 62 5678



+27 11 792 1300



+27 11 704 3295



+27 11 452 1415



+27 11 683 0641



+27 12 327 1729



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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.

IEC 61439-1/2 distribution and motor control switchboard up to 6 300A, now in SA

BLOKSET, Schneider Electric's modular low voltage switchboard for electrical distribution up to 6 300 A and for motor control, fully withdrawable up to 250 kW, is now available in the southern African region.

Blokset follows a global design and is type tested and certified according to IEC61439-1 and IEC61439-2, guaranteeing the safety of both the installation and the operator.

"Blokset has become the ref-

erence switchboard for a large number of panel-builders, industrial site managers and maintenance managers. One of the main reasons for this is that the distribution and motor control switchboard comes with the certainty of rapid return on investment, and the switchboards have long guaranteed the durability and availability of several tens of thousands of installations worldwide," says Ernie Smith,

vice-president: Low Voltage Division at Schneider Electric, a global specialist in energy management.

He adds that Blokset technology "has never ceased to satisfy end-users in their search for optimised solutions for better, faster and more economic production, and panel-builders in their search for equipment that is more reliable and easier to install and maintain".

"In a constantly changing

industrial and economic world, you need to be able to upgrade your installations at all times to remain competitive. The Blokset modular switchboard is able to overcome these challenges," he says. Green and safe, all the components of a Blokset switchboard are designed and produced by Schneider Electric. Blokset incorporates state-of-the-art Schneider Electric components, such as conventional and intelligent motor control

centres (MCC/iMCC), variable speed drives and soft-starters. As such, it offers a unique global design with local implementation, allowing flexibility in project management, adaptability to local project habits and end-user needs.

"A great advantage is that Blokset is manufactured close to the end-user exclusively by Schneider Electric or Schneider Electric licenced partners. This guarantees the best delivered quality," says Smith.

Referencing the earthquake that occurred near Orkney last year, Smith highlights that Blokset offers "an extremely high level of reliability even in the most difficult conditions".

"Blokset offers internal arc withstand in accordance to IEC 61641, earthquake and seismic zones withstand, as well as corrosive ambient protection – making Blokset ideal for mining applications," he adds.

Blokset applications are best suited for medium and large industrial sites, including mining, oil and gas, pulp and paper, manufacturing industry, and metal processing. It is also suited for medium to large commercial and building areas such as shopping malls and hotels, as well as



infrastructures, including water treatment, airport and harbours and local electrical distribution where reliability, energy efficiency and safety is of the highest importance

Enquiries: +27 11 254 6400

Low voltage panel range tested to the latest IEC standard

SHAW Controls, a member of the Zest WEG Group, has successfully concluded a programme of product tests on its low voltage range of panels at the SABS-NETFA laboratory. Tests were performed in accordance with the latest IEC protocols, namely IEC 61439-2 Ed 1 / SABS 61439.

"Shaw Controls has recognised a trend in the market whereby clients are requesting 690 V as their primary voltage, and in that regard we have taken the initiative of testing our product range at 690 V. The successful tests demonstrate Shaw Controls' engineering capability and build quality, which reaffirms our commitment to the industry," says Bevan Richards, managing director at Shaw Controls.

Louis Meiring, CEO of the Zest WEG Group, says, "The Zest WEG Group as a whole has the management team and overall company structure in place to be able to handle projects of a much larger nature and to provide the customer care needed on multiple projects for different customers, and to do so efficiently and cost effectively." It is believed that Shaw Controls is one of the first manufacturers in South Africa to test its products to the latest IE standard at the increased voltage



rating of 690 V at 65 kA, which represents "a very high fault level," Richards points out. "We are certainly at the forefront of testing and compliance in South Africa, which also helps position the Zest WEG Group at the top end of the local market."

The latest certification not only gives the company a significant advantage in the local market, but boosts the capability of the Zest WEG Group to offer a total solutions approach to its customers.

In 2015 Shaw Controls will embark on the design and establishment of a standalone E-House and container conversion facility. "We are anticipating a 2 000 m² facility to

be able to handle these products, which represents a major extension of the Zest WEG Group's local manufacturing capability for these products," Richards says.

Meiring adds: "While we are widely known for distributing one of the largest electric motor ranges in the world from WEG, our comprehensive product line up encompasses switchgear, variable speed drives, motor control centres, gensets and renewable energy solutions. We also have three fully fledged manufacturing facilities in South Africa that we are in the process of expanding as we increase our footprint in Africa."

Enquiries: +27 011 723 6000

High-performance, portable oscilloscopes designed for harsh industrial environments

THE first high-performance portable oscilloscopes with two or four independently insulated input channels, an IP51 dust and drip waterproof rating and a CAT III 1000 V/CAT IV 600 V safety rating is available from the Comtest Group, which represents Fluke locally.

Users can choose from 500 MHz, 200 MHz, 100 MHz or 60 MHz bandwidth models.

Especially designed for plant maintenance engineers, there is a choice of either a two- or four-channel scope for the harsh conditions of industrial electronics.

A 5 000 count digital multimeter (DMM) is included in the two-channel models.

The 190 Series II has up to four independent floating isolated inputs, up to 1000 V and a real time sampling of up to 5 GS/s (depending on model and channels used). Frequency spectrum using FFT-analysis and automatic capture and

'replay' of 100 screens, as well as a deep memory of 10 000 points per trace waveform capture (scope mode), are all features of this new generation oscilloscope.

The 190 Series II has an impressive seven hours of battery operation using BP291, as well as an easy-access battery door for quick battery swaps in the field.

The isolated USB host port allows for direct data storage to a USB memory device.

The 190 Series II is compact, weighing only 2.2 kg, and features a security slot, locking the oscilloscope down with a Kensington lock while unattended.



Enquiries: +27 10 595 1821

PMPT enclosure solution



NEWELEC'S PMPT enclosure manufacturing facility, based at its head office in Pretoria, provides the ideal solution for producing fast, bespoke, plastic housings for electronic components. The process, with no need for tools or moulds, is cost effective. Prototyping and small to medium runs are all possible.

NewElec's technical consultant is in regular contact with clients to ensure immediate reaction to any alterations during the process. This results in a perfectly designed product which meets production deadline and estimated cost factors.

The basis of the production is the specially developed Planar Modular Production Technology (PMPT). Using computer-controlled manufacturing equipment, the plastic sheets (ABS, PS, acrylic etc) are machined and chemically welded. For these exclusively milled enclosures, all housing elements are completed with holes, slits, push-outs, depressions (e.g. keypads) or fasteners, as required.

All enclosures are delivered ready to install the relevant components with no need for adjustments.

Enquiries: Toll assist 0860-103041

Protection system for huge LED display atop Jo'burg city building

IN May of 2013, Absa, a member of Barclays, switched on Project Lumen, the world's largest Light Emitting Diode (LED) display – four giant LED screens (38 m by 17 m) atop the 29-storey Absa Towers building – which utilise energy-saving technology and consume the least power in their class.

At the time, the huge LED displays were a world first and have since become an instantly recognisable landmark in the city of Johannesburg.

However, there was a problem: the tall building is situated in an area that experiences very high lightning density – about 12 strikes per square kilometre per year – and since being switched on, the Project Lumen LED screens have been damaged by numerous lightning strikes. This called for a specially designed protection system.

Lightning protection systems (LPS) provider, Pontins' engineers together with German partners, DEHN, designed and developed an insulated, high-voltage resistant HVI conductor to solve the problem.

Trevor Manas, MD at Pontin, says that the previous 'cross bonded' system had failed on Project Lumen because the conventional technology "did not maintain a separation distance between the lightning protection conductors and the LED panels or the electrical/data supply cables of the panels".

Before installing the HVI conductor to SANS/IEC 62305 standards, Pontins undertook risk assessments and calculated the required separation distance. The risk assessments determined that the highest lightning protection level (LPL) – level one – was required for Project Lumen.

Separation distance – determined utilising DEHN Toolbox software – is the minimum distance between the protection device and electrically conductive materials to prevent flashover and sparking, and to ensure that the lightning currents are reliably conducted to the earth-termination system.

The ABSA Towers building was constructed using steel-reinforced concrete. Electric continuity tests performed on the concrete steel reinforcing at strategically exposed points established that the interconnected reinforcing should be used as natural down conductors, and natural earth electrodes, to enhance the division (splitting) of the lightning's current in the event of a direct strike.

"Basically, a conductor must have sufficient current-carrying capacity, be insulated to the sufficient electrical strength and prevent creeping discharge or flashover and the particular HVI conductor that we installed fits the bill perfectly," says Manas.

"The HVI conductor is unique. This coaxial conductor has an inner copper core wrapped in thick-walled high-voltage-resistant

insulation that is encased within a special semi-conductive weather-resistant sheath," Manas explains.

For this installation, two three-metre masts were installed, with two HVI power conductors (LPL 1) carrying the current down from each mast to the rebar.

"Once we'd established the requirements, we designed the isolated air terminal system to intercept and prevent penetration of strikes, calculated the height and positioning of these terminals and the angle of protection to cover the LED's steelwork frames," Manas explains.

"We also designed the earthing, equipotential bonding, current-division, layout and specialised

most brackets, which we specifically manufactured, in order to attach the masts to the I-beams," he says. Additional surge-protection devices completed the LPS.

Since this showcase project was completed in December 2014, no damage of the LED system has been reported. Pontins is able to monitor the LPS through ABSA's CCTV system and Manas says that Pontins will share footage of lightning striking the HVI LPS when it becomes available.

In the meantime, a video of the installation can be viewed at:

<https://www.youtube.com/watch?v=0I2-YDv95BE>

Enquiries: +27 11 792 1300






Earthing and Lightning Protection Specialists

LIGHTNING PROTECTION INNOVATION

ABSA Lumen is the world's largest LED display and is easily recognisable on the Johannesburg skyline. These screens, due to their height and susceptibility, have been continually damaged by direct lightning strikes since 2013.

Pontins, with our in-depth knowledge and access to world class technology, have designed a unique Lightning Protection system, using HVI conductors, manufactured by DEHN. These conductors are isolated from the LED screens and are the best solution to this problem.

PONTINS CONTACT DETAILS:

TEL : (011) 792-1300
 FAX : (011) 792-9585
 E-MAIL : info@pontins.co.za
 WEBSITE : www.pontins.co.za



High accuracy current probes



The Universal Technic current probe model SC 2000 has a capability of measuring ac/dc current up to 2 000 A and the frequency range is from dc to 10 kHz with an accuracy on dc of ± 1% and ac accuracy at 50Hz of ±0.5%. The model in the above photograph has a 52 mm jaw and a co-axial cable terminated with a BNC connector. Other jaw sizes and current ratings up to 7 500 A are available from Denver Technical Products.

Enquiries: +27 11 626 2023

Mark Palmer, Western Cape Electrical Inspection Authority (WCAEIA)

The earthing terminal for other services – a piece in the jigsaw!

OVER the last few years, I've seen the requirements for the earthing terminal for other services being relegated to the 'bottom of the heap' with scant regard for this important area – and, of particular concern here would be residential or domestic installations.

I believe that the reason that this requirement is ignored or overlooked by many Registered Persons is that there is an apparent misconception as to why the requirement even exists in the first place.

The requirement in itself is not new and evidence of this requirement can be found in the first issue of SABS 0142-1978.

With the publication of SANS 10142-1 Amendment 6 in 2008, the relevant clause was expanded to include a note pertaining to the reasoning behind the requirement:

NOTE: Providers of services other than the electrical power services should not access the distribution board or other parts of the electrical installation.

I believe that, over the years, the reasoning for this note has become more apparent when looking at the prescribed legislation, which is the Electrical Installation Regulations 2009.

Regulation 5.4

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 firmly believe that understanding the logic behind this requirement will motivate Regis-

tered Persons to look for this earthing terminal during inspection and testing and ensure that it has, in fact, been installed.

Having already acknowledged that the requirement has existed for many years in the current standard, it is obvious that existing installations are also going to be subject to it. It must be remembered that, in many cases, no due regard for this terminal was taken by electrical contractors during construction and therefore, where applicable, no such terminal will exist. In these cases, it will have to be installed.

Therefore, when this terminal is installed, it will be regarded as 'new installation work' and will have to comply with new requirements:

6.11.5 *A readily accessible earthing terminal shall be provided for the bonding of other services such as a telephone, an audio or a video system, and the like, to a building. Such an earthing terminal shall be bonded to the consumer's earth terminal by a conductor of at least 6 mm² copper or equivalent, and shall be identified by the earth symbol.*

Amendment 6; amendment 8

In complying with this clause however reference should also be made to Clause **6.13.2.6** (Bonding requirements)

6.13.2.6 *Other services Amendment 6 Other services such as water, gas, etc. in conductive material, which enter the premises, shall be bonded to the readily accessible earthing terminal (see 6.11.5) by means of a conductor of cross-sectional area at least 2,5 mm² copper or equivalent.*

NOTE 1: Providers of services other than the electrical power services should not access the distribution board or other parts of the electrical installation.

Amendment 6

NOTE 2: Extraneous conductive parts of other services should not be used as an earth conductor. Amendment 6

To be read in conjunction with Clause 6.11.5 is Clause 6.11.6:

6.11.6 *Labels shall be fitted to all distribution boards where the readily accessible earthing terminal for the bonding of other services is provided (see 6.6.1.21).*

Again we can see a reference to Clause 6.6.1.21, which is the general labelling clause applicable to all distribution boards.

For Registered Persons, the implication of the above clauses extends to the Electrical Installation Regulations 2009 and the issue of valid Certificates of Compliance. It is prescribed that the test report, as contained in SANS 10142-1, must accompany the issued Annexure 1 Certificate of Compliance document in order for it to be valid; and reference should be made to Section 4 (Inspections) and, in particular, Section 15; 15) *The position of the readily accessible earthing terminal for the earth connection of other services made by installers of such services (see 6.11.5) is indicated on all distribution boards (see 6.6.1.21(e). Amendment 8.*

To note again that this question must be marked in the affirmative and cannot be marked as 'N/A' or 'No'. Clause 8.6.2 has reference hereto:

8.6.2 *Complete the inspection table in the test report by confirming the statements with 'Yes' in the appropriate block. 'No' answers to any of the statements will prevent the issuing of the report.*

I urge designers to be more circumspect when designing installations and to ensure that this requirement is detailed; and Registered Persons must ensure that these terminals are installed in new and existing installations.



Medium Voltage Power cables you can trust

Aberdare Cables, a leading cable manufacturer since 1946, brings you medium voltage electric cable of the highest standard in quality, safety and reliability.

Paper insulated lead covered (PILC) cables and cross-linked polyethylene (XLPE) cables are used in many electrical distribution and reticulation applications including: • Municipal distribution • Mining (special construction with water blocking as well as flame retardancy for shaft installations available) • Petrochemical industry • Wind farms

181A Barbara Road, Elandsfontein, Gauteng P.O. Box 1679, Edenburg, Gauteng 1610, South Africa
Tel +27 (0)11 396 8000 Fax +27 (0)11 396 8010 www.aberdare.co.za



ABERDARE
CABLES

Driven by Powertech

Multi-channel device circuit breaker boards

THE new multi-channel device circuit breaker boards from Phoenix Contact are available with four, eight, and 12 channels.

The boards are versatile as they can be fitted individually with thermos-magnetic or electronic circuit breakers.

They are particularly suitable for machine building and control and process technology.

Due to the central potential distribution, up to four loads can be protected per channel.

This reduces installation time to a minimum, while simultaneously saving space compared to conventional installations. In addition to individual load protection, the boards give you the option to loop in safety-related relay contacts.

As such, the affected circuits are integrated into the safety concept with minimal wiring. In doing so, the switch contacts of the enabling current paths are protected according to regulations. A supply of up to 60 A can be achieved thanks to the high current carrying capacity.

Enquiries: +27 11 801 8200



Test leads with world-class safety feature



Fluke's new ultra-rugged TL 175 TwistGuard test leads are a world-first – featuring a manually adjustable guard. The patented TwistGuard extendable tip shroud meets the highest electrical safety requirements to reduce tip exposure while providing the versatility needed for most measurements. Simply twisting the test lead cuts the exposed probe tip length from 19 to 4 mm. Extra-heavy duty strain relief on both probe-end and plug-end has, remarkably, tested beyond 30 000 bends without failure. WearGuard double insulated silicone leads ensure added safety as each lead has two silicone insulation layers: red or black on the outside and white inside. Any white showing through warns of nicks or scuffs in the insulation. The double insulation also means they can withstand high temperatures and remain flexible in cold temperatures. The leads are CAT II 1 000 V (extended) or CAT III 1 000 V and CAT IV 600 V safety rated (retracted).

Enquiries: +27 10 595 1821

IP66 enclosures for corrosive environments



LEGRAND'S range of fibreglass reinforced polyester Marina cabinets, has been designed for use in any environment, but these units are particularly well suited for severe corrosive environments, including petrochemical, mining, general engineering and marine industries.

Marina enclosures are designed for maximum safety and the ordered arrangement and optimum protection of electrical components such as terminal blocks, switches and sockets, fuse carriers, safety transformers and circuit breakers.

Marina glass fibre reinforced polyester cabinets are self-extinguishing at 960 °C and can withstand temperature ratings of between -40 °C and 80 °C. These cabinets have an IP66 index protection rating for protection against dust and water and have been adapted to withstand corrosive environments, with excellent resistance to UV, saline mist, bases, oils and greases.

Class II classification meets the requirements to create suitable assemblies for photovoltaic installations.

Marina cabinets are available in sizes between 300 x 220 x 160 mm and 1 220 x 810 x 300 mm, all fitted with a reversible door opening of 180° and stainless steel hinge pins.

The cabinets are supplied with a set of internal mounting accessories for easy and secure attachment of equipment to the back of the cabinet. Accessories include double bar locks and metal keys.

These fibreglass reinforced polyester cabinets enhance Legrand's range of stainless steel and metal cabinets, which are manufactured according to stringent quality specifications and are available from Legrand and its carefully selected national distributor network.

Enquiries: +27 11 444 7971

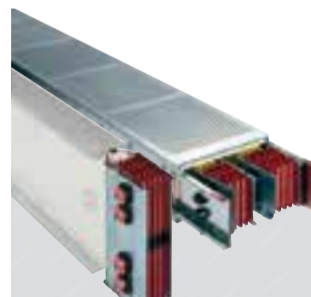


RELIABILITY & CONTINUITY OF SERVICE



1 Safety and reduced maintenance

Legrand dry-type HV/LV transformers combine optimized electrical energy consumption with low environmental impact to offer a reliable, energy-efficient solution. They can reduce electricity consumption by up to 20% during off-peak activity.



2 Solution for the distribution of high currents

Legrand's prefabricated busbar trunkings offer complete distribution systems for high currents of up to 6300 A. Busbar trunking is quick to install and offers great flexibility by enabling reconfigurations without any service interruption. Different available ranges for : power distribution, lighting or technical floor.



3 Efficient protection up to 6300 A

To guarantee efficient protection and effective service continuity, Legrand proposes DMX³ air circuit-breakers, DPX³ MCCBs, supply inverters, isolating switches and XL³ distribution enclosures as a set of fast-deployable solutions integrating cutting-edge technologies. XL³ power enclosures are type tested according to IEC 61439-2 and allow multiple configurations and all level of forms up to 4b.

FOR MORE INFORMATION:

TEL: +27 11 444 7971

URL: www.legrand.co.za

E-MAIL: legrand.south-africa@legrand.co.za

legrand[®]

ARB



COPPERWELD

Anti Theft Copperweld[®]
CCS Coated Earthing Wire

Standard
Copperweld[®] CCS

ARB
ANTI-THEFT COPPERWELD[®] CCS
COATED EARTHING WIRE

COPPERWELD CONDUCTORS CONFORM TO NRS102:2014

MAGNETIC:

Thieves test wire for copper purity by placing a magnet on it. Copper isn't magnetic, steel is.

HARD TO CUT:

Thieves know when the wire resists their cutters that they're not dealing with soft, pliable copper.

LOW SCRAP VALUE:

The scrap value of Copperweld is that of cheap ferrous mixed-metal.

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Telephone: +27 (31) 910 0200

JOHANNESBURG:

8 Bosworth Street, Alberton
Telephone: +27 (11) 439 0000

CAPE TOWN:

14 Track Crescent, Montague Gardens
Telephone: +27 (21) 527 8820



National E-Mail Enquiries: cable@arbhold.co.za • Web: www.arb.co.za

Low smoke zero halogen cable sleeve increases safety during evacuations

BRADY has launched a durable and compliant Low Smoke Zero Halogen Sleeve to identify wires and cables and to protect people in closed environments during a fire. "Our Low Smoke Zero Halogen Sleeve passes EU and UK norms for smoke and toxic gas emission and is therefore useful to identify cables and wires in mass transit passenger vehicles or in public places", says Mario van Bever, global product manager materials wire ID, at Brady Corporation.

Lethal smoke

In enclosed spaces, where it is difficult for people to evacuate, smoke and toxicity are often more lethal than

the fire itself. "It is difficult for people to evacuate quickly in closed environments. To reduce the risk of toxic smoke poisoning during a fire in these spaces, it is necessary to limit the release of smoke with toxic substances. Materials used to build public places or mass transit vehicles must limit smoke generation and the release of toxic substances."

Mass transit norms

Well aware of this risk, national regulators have established maximum smoke emissions for materials used in railway passenger vehicles. "Our newest generation B-7641 Low Smoke Zero Halogen Sleeve passes the

London Underground requirements through the BS-6853 Vehicle Category 1a norm, which means that the sleeve can be used to safely identify wires and cables in underground rolling stock."

Brady's newest generation B-7641 Low Smoke Zero Halogen Sleeve also passes the European Norm EN-45545-2, requirement 22/23/24, Vehicle Category HL3. This European Norm creates a clear and transparent requirement to construct new materials for railway applications across Europe.

"EN 45545 is expected to replace the various national norms in the following

years and we have made sure our new identification sleeve is already aligned with this European Norm", says Van Bever.

"We have created a very durable wire and cable identification sleeve that will offer new options to railway manufacturers, and suppliers working with similar conditions, to increase passenger safety."

For more information, contact Brady at emea_request@bradycorp.com.

Enquiries: +27 11 704 3295



Copperweld: conductors for the future



COPPER theft is costing South Africa tens, if not hundreds of millions of rand each year. This includes replacement and labour costs as well as revenue loss due to electrical outages. Add to that the danger posed to humans by ungrounded power systems, security costs such as surveillance cameras and the problem gains perspective.

But ARB Electrical Wholesalers' range of Copperweld® bi-metallic earth-wire and strands products are helping to turn the tide on copper theft across Africa says Dave Muller, divisional manager at ARB Electrical Wholesalers.

He explains that the Copperweld range of products has the appearance of galvanised steel, yet it features a steel core clad in highly conductive copper. While the copper layer ensures reliable conductivity it is also impossible to separate from the steel core, making the wire virtually worthless to scrap dealers and, therefore, to cable thieves. The NRS 102: Anti-Theft Earthing Materials (2014) also recommends the use of copper-clad steel to deter theft.

"Here is a product that has been treated to look like galvanised steel, is magnetised and difficult to cut, creating the illusion of low-cost steel. In terms of conductivity, it is on par with copper and even produces better tensile strength and sufficient current capacity," explains Muller.

"It really is an excellent alternative to copper and bound to curb the copper cable theft that is plaguing our country."

It is for that reason that several South African municipalities are using the product, including the eThekweni municipality in KwaZulu-Natal; the City of Johannesburg metropolitan municipality in Gauteng; and the Cape Town metropolitan municipality in the Western Cape. These products are also being used in several African countries

ARB Electrical Wholesalers is the sole distributor of the Copperweld range in southern Africa. Muller explains that after operating in the local market for 35 years, ARB understands its unique challenges. "As southern Africa's largest independent black-empowered electrical wholesaler, ARB plays a pivotal role in providing the essential materials required for the electrification of large scale industrial and parastatal projects."

The Copperweld range is available through any of ARB's 18 branches countrywide. For more information contact ARB by emailing them at cable@arbhold.co.za.

To take a look at their entire range of products or to learn more about the various technologies, log onto www.arb.co.za

Enquiries: +27 31 910 0200



Handheld, battery operated TDR cable meter

MAJOR Tech's MT900 TDR cable meter is capable of measuring cable lengths and finding the distance to an open or short using the Time Domain Reflectometry (TDR) principle says Werner Grobbelaar. "This meter offers exceptional features and a range capability usually associated with far more expensive instruments."

"The MT900 can be used for any cable consisting of at least two insulated metallic elements, one of which may be the sheath or shield of the cable," he explains. "The MT900 has automatic internal matching networks to allow testing of 25Ω, 50Ω, 75Ω, 100Ω, 125Ω or 150Ω cables. This corresponds to power, telephony, CATV and LAN cables. It can be closely matched to the cable under test using the menu selection keys. The propagation velocity value can be similarly adjusted to match the cable under test thus ensuring

an accurate distance measurement." He adds that the MT900 can store up to 20 test results for custom cable types in internal non-volatile memory and the stored cable library provides easy access to 39 standard cable types, which enables accurate measurement without the necessity of entering VOP (Velocity of Propagation).

The MT900 TDR cable length meter can test accurately throughout the entire range when measuring cables to 3.7 km and is principally designed for cable wholesalers and retailers, contractors, electricians and cable and alarm installers who need to measure the cable lengths and test for opens and shorts in all types of cable. He says the MT900 is easy-to-use with an extra-large backlit LCD and user-friendly menu onscreen

Enquiries: +27 11 872 5500

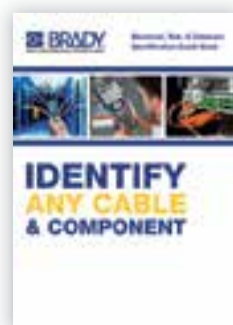


Identify any cable or component

With Brady's Cable & Component Identification Labels, you can install faster, lower the risk of mistakes, spend less time on maintenance diagnostics, reduce the cost of downtime and create a safer workplace. Brady has a label material for every application in the most versatile offer on the market.

We developed a free identification guide book 'Identify any Cable & Component': a great tool to select the best professional identification label for your needs!

Download the free guide book now! www.bradyeurope.com/cableid



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BRADY 100

UK cable company opens division in SA



CMP Products recently opened its African office in Midrand. Seen at the opening on March 6 are: Vince Patterson (CEO); Attie Booysen (regional sales manager, Africa); and Phil Wood (regional manager UK, Middle East and Africa).

CMP Products, a division of British Engines Limited, a company registered in England, is expanding its international footprint. The company has established a branch in Johannesburg to serve the African market. This branch provides additional support to the company's global

network of established agents and distributors who represent CMP in all of the major countries around the world.

CEO of CMP Products, Vince Patterson, says the company, now based in Midrand, is "a leading designer, manufacturer, and supplier of cable

glands, cable connectors, cable cleats and cable accessories for customers around the globe".

"The company has, for over 50 years, cemented an international reputation for quality and reliability in various sectors of industry including oil and gas, petrochemical, pharmaceutical, power generation and distribution, mining and transportation infrastructure," says Patterson.

"Many of the company's innovative developments incorporate unique features and benefits that have evolved directly from its clients' needs and requirements," he says, adding that "this is just one of the reasons why CMP Products is regarded as a specialist in the field of hazardous area cable gland design and manufacture".

He explains that CMP Products also offers a comprehensive range of cable cleats that support cables and conductors, retaining the mechanical load of the cable itself and reducing the mechanical stress placed on any cable termination. CMP cable cleats are designed for use within heavy industrial applications and hazardous locations, as well as the arduous conditions and harsh environments encountered by operators in the railways, tunnels and underground, oil and gas and petrochemical industry sectors.

"We can offer a cable cleat so suit a variety of

support structures including, cable ladder, cable tray, basket, channel, masonry or concrete, and can manufacture in a variety of materials to suit the environmental conditions they may be subjected to," he says.

CMP Products is a quality assured company responsible for its own design and that operates a quality management system complying with the requirements of BS EN ISO 9001:2000.

Patterson explains that CMP's manufacturing base is ideally situated in the northeast of England, with excellent logistical access worldwide via major rail, road, sea and airports. "This enables CMP to provide an excellent delivery service to customers around the world." CMP Products has regional offices to support key global markets in Houston, Singapore, Dubai, Pusan, Shanghai, Perth, Brisbane and now Johannesburg.

Discussing CMP's products in the offshore and onshore oil and gas sector, Patterson says the company has enjoyed "considerable success" in recent years, during a period of changing standards, in respect of improved safety and higher quality expectations.

"CMP undoubtedly has a commitment to product quality and reliability combined with a wealth of experience. We strongly believe that the company can offer a package embracing not only competitive pricing and delivery but also a commitment to product support and training, which will serve the market well in the years ahead," concludes Patterson.

Enquiries: +27 11 266 8880

Durable cable ties for demanding applications



THREE-D Agencies, a member of the Hudaco Group of Companies, supplies the SapiSelco range of cable ties, which includes standard nylon ties; special UVV2 - UV resistant ties, metal tongue nylon ties, metal

detectable ties, heat resistant ties and Nylon 12 ties.

"There is a huge difference between 'UV resistant' and 'UV stabilised' cable ties," says Ian Downard, managing director at Three-D Agencies, "adding that SapiSelco UV resistant ties last for 10 years outdoors in the sun, which is why they are being used extensively on solar farms.

He says that Three-D Agencies also stocks SapiSelco's range of special ties, which includes reusable, releasable and marker ties. "SapiSelco has been designing and creating cable ties since 1950 - and we are proud to be the exclusive distributor of its range of products in southern Africa."

Cable ties are used in the electrical, pharmaceutical, automotive, military, marine, food, chemical and many other industries. "It is always recommended that only the best quality cable ties are used to avoid expensive mistakes," says Downard.

"We are already gaining a presence in the South African market, and SapiSelco cable ties are known as the 'yellow packet ties' or the 'Italian ties,'" he adds.

SapiSelco cable ties are one of the most certified cable ties in the world having IMQ, Germanischer Lloyd, Bureau Veritas, RINA, Lloyds Register, Det Norske Veritas, Military Standard (USA), Underwriters Laboratories UL USA, CE SapiSelco SRS, Rohs-European Directive and REACH approvals.

Enquiries: +27 11 392 3804

Measure cable accurately without unrolling cable reels



THE MT933 from Major Tech is a hand-held, battery-operated metric cable length meter that quickly measures any reeled wire up to 30 000 m with gauges ranging from 0,15 mm² to 240 mm².

Within seconds, cables can be measured and digitally displayed without the cumbersome task of unrolling cable reels. All that is needed, is accessibility to both cable ends.

"The MT933 can also be used as a precision milliohm meter," says Major Tech's Werner Grobbelaar. "The 'user select' mode allows the user to save the resistance of a user wire for additional measurements of unknown lengths of the same wire gauge.

In addition, it enables the user to accurately measure the length of standard gauge wire. In this mode, the user can measure the length of any metal wire and its resistance, and also measure in feet or metres in copper (Cu) or aluminium (Al) wire."

Grobbelaar says this instrument is useful for electrical contractors, utilities and distributors for the control of inventories of wire and it is ideal for measuring cable on drums.

The MT933 carries the IEC61010-1 CAT III 300V and CAT II 600V standard of approval.

Enquiries: +27 11 872 5500

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Lighting creates a 'magical' space in the heart of an industrial area

THE importance of lighting cannot be underestimated and Derek McMahon, MD of Mac Brothers Catering Equipment, says that a bespoke lighting solution from Eurolux has enhanced the company's image and improved its brand value at its manufacturing plant in Epping, Cape Town.

Mac Brothers designs and manufactures catering and refrigeration equipment but is probably best known for supplying the catering equipment used on popular TV shows Masterchef SA and Kokkedoor.

McMahon says clients enjoyed seeing the production process at the company's 10 000m² manufacturing plant but, as the image of cooking evolved, the company's approach to marketing changed "so we took the decision to give our plant a face lift to include a dedicated showroom space".

"We soon realised that more than the carpets, paint or furniture, the lighting is what would make the space 'pop'. That is why we got in touch with Eurolux, who in turn partnered with Blair Hammond and Associates, to deliver a truly professional end result," says McMahon.

The design

Blair Hammond and Eurolux presented three designs to Mac Brothers, each featuring different technologies. The selected lighting design created the desired look and feel within the space, without exceeding budget. The showroom is divided into an area that showcases the actual kitchen equipment, a working kitchen fitted with the Mac Brothers product line, sales desks as well as a coffee shop, lounge and reception area – each requiring different lighting solutions.

The sales area

Eurolux P3AL pendants with a brushed aluminium finish were selected for the sales area and positioned above each of the sales desks. The entire Mac Brother range feature a stainless steel or highly polished metal finish and the P3AL pendant extends this decorative theme throughout the sales area. "We selected this pendant for the sales area as it provides sufficient targeted task lighting at desk level and it minimises glare," explains Daniel Hammond from Blair Hammond and Associates.

Coffee shop and reception area

Eurolux P150AL pendants with adjustable cord suspension were selected for the coffee shop and reception area. These fittings feature the same brushed aluminium finish but have a slightly different shape. "The fitting has a modern, minimalist appearance, complementing the showroom and creating a welcoming ambiance in the reception and

coffee shop areas," says Hammond.

The showroom

The Eurolux PR111 three light double parabolic Louvre fitting was used in the main showroom area and, fitted with 3 x 28W T5 fluorescent lamps, provide the high light levels required in that area.

A ceiling grid was used and the fittings recessed into the suspended ceiling, as Mac Brothers did not want to have any light fittings surface mounted onto the 2.85 m high ceiling. "The benefit of using this product at that specific mounting height is that it distributes light evenly over the reference

plane that needs to be illuminated," explains Shaun Bouchier, director at Eurolux.

Eurolux downlights were installed in the rest of the showroom and working kitchen to provide light for the general areas where low light levels are required.

McMahon says, "When you walk through our doors you feel like you are being transported to a movie set, and that is mostly due to the lighting. It turns it into a magical space. Eurolux and Blair Hammond have created an upmarket space that enhances Mac Brothers' image and improves our brand value."

Enquiries: +27 21 528 8400



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50 000 hours

Hadar Hazardous Area Fluorescent Luminaire
100 000 hours

Hadar Hazardous Area Floodlight
Cool and Warm White
100 000 hours

Lighting for Interiors – IESSA course in April

The IESSA development committee will present a course 'Lighting for Interiors' at the Cabanga Conference Centre, Johannesburg on 14 and 15 April.

The course will cover:

- Lighting for interior spacing (application concept).
- Lighting economics.
- Glare.
- Selection of luminaire type.
- IP rating.
- Lighting levels for Interior Code SANS 10114-1/2.
- Lighting direction.
- Lumen method calculation and photometric data sheet.
- Interior lighting software calculations.
- Lamps pros and cons (brief).
- Touch on lighting terms (refresh).

The course is designed for building designers; interior and exterior decorators; lighting equipment suppliers and buyers; telesales; architects, building services; engineers and electrical engineers; professionals and students; electrical wholesalers and counter sales; electrical contractors; and energy service providers.

The course is limited to 25 delegates and registration will take place on 14 April at 8 am.

Enquiries: +27 11 476 4171

EUROLUX PROJECT SOLUTIONS

Enhance your commercial and industrial environments

Eurolux Project Solutions offers a variety of energy efficient lighting solutions. Recent projects include Caxton Publishing House; Windhoek Breweries; the renowned Hotel Verde: The greenest hotel in Africa; as well as the Agulhas Marine research vessel.

Eurolux offers a comprehensive lighting design and specification solution to its customers – all completed by a qualified lighting engineer.

- A project begins with the initial site inspection and customer briefings.
- A detailed lighting design, with full 3D simulation and energy efficiency report, to comply with SANS and OHS, is then presented to the client.
- Detailed cost-of-ownership and lifecycle cost analysis is presented to the client, thus allowing for informed easy decision making.

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Intelligent light – simple, individual and colourful



The Lightify LED lamp can produce around 16 million different colours.



The Lightify App can be downloaded for free from various app stores.

OSRAM'S Lightify lighting system makes it possible for lamps and luminaires in homes and offices to be controlled by smartphones – revolutionising lighting control. Lightify, for indoor and outdoor applications, is now available for end-users and professionals. It can be connected to other manufacturers' products thanks to open interfaces. "Lightify lets consumers exploit the wide-ranging possibilities of light – and that brings safety, well-being and, of course, lots of fun," says Timon Rupp, who is responsible for Lightify at Osram.

The starter package enables customers to

get started with the new system consisting of one lamp and a gateway. The gateway serves as the control unit for all connected Lightify devices and, in contrast to other products available on the market, merely requires a WLAN connection but no cabling to the Internet. The light itself is controlled via an app for smartphones, downloaded for free from various app stores. Users can teach the system their favourites from a selection of millions of possible colours, and several light sources can be combined and commonly controlled. This means that with just a single click, light across the living room is

switched from a cosy evening ambience to a home cinema atmosphere.

As well as classic incandescent-shaped lamps and spotlights, more products are available, for example, garden spots, which are the first outdoor products for home lighting that can be controlled via an app. Surface light luminaires feature a cover that can be personalised and to which, for example, a holiday photo can be attached. Flex lighting strips also give picture frames, beds and televisions a luminous shimmer. Many of the products are available in two versions: All colours between warm white and cool white can be selected with one version. For example, the lighting in a living room that is used as a home office during the day can be changed by the user – switching between 'daylight-similar light' and relaxing evening light.

Around 16 million different colour variations can be specified from the complete light spectrum with the second version.

In addition to the Lightify version for private users, a Pro version is available for professionals, with the gateway enabling 100 light sources to be integrated into the system. A push-button coupler also allows light switches in the building to be used – simply remove the switch, install the push-button coupler and attach the switch again. Connection to the DALI standard is especially interesting for professional users. This standard is common in Europe but is complicated to set up for electrical installers, and until now was not controllable by end-users via smartphones. Lightify Pro changes this. An app is available for the installer and another for the user, enabling DALI networks to be intuitively set up and operated.

Lightify supports the ZigBee standard and all products in the portfolio are ZigBee Light Link certified, meaning that products can be combined with products from other manufacturers, to make it future proof and comprehensively connectable.

Enquiries: +27 11 207 5600

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Farewell to the incandescent lamp.

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Same Look, Same Feel, up to 30% energy saving.

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Register now for eleventh IESSA conference and AGM



THIS year the 11th IESSA conference and annual general meeting will be held at the Protea Hotel in Midrand, Gauteng from 17 to 19 May.

The hotel is situated 6 km from the Gautrain Midrand station and Gaurain buses will transport delegates from the station to the hotel on week days. This shuttle service is available at R150 per person.

Registration fees are R3 990 per delegate (IESSA members) and R4 332 for non-members, VAT inclusive. Registration fees paid after 31 March 2015 will be R4332 per IESSA member and R4560 for delegates who are non-members, VAT inclusive.

Delegates who require accommodation should book directly with the Protea Hotel by calling (011) 318 1868. The hotel offers single accommodation at R1 395 per room per night and R1 565 per night sharing. These rates exclude a 1% tourism levy. A full English breakfast is available at R175 per person.

These prices are subject to change so please confirm when booking.

Enquiries: +27 11 476 4171

Stylish easy-to-install aluminium step lights

STEP lights are not just a 'finishing touch', they are a safety essential – and besides being practical they can also be beautiful, adding a touch of class to a building, says Major Tech's Werner Grobbelaar.

Major Tech has a comprehensive selection of high performance, durable LED step lights that are suitable for indoor and outdoor step requirements – with various IP protection ratings available for outdoor applications to add style to gardens, patios, pools and spa areas. These step lights radiate soft light to transform dark areas into elegant spaces while enhancing the safety and security of any property.

"The low profile design, with no visible fasteners, provides seamless integration with all architectural styles along with LED energy efficiency. The logical, modular design elements facilitate fast, fool-proof installation in all types of wall surfaces – including drywall, concrete pour or bricks," explains Grobbelaar.

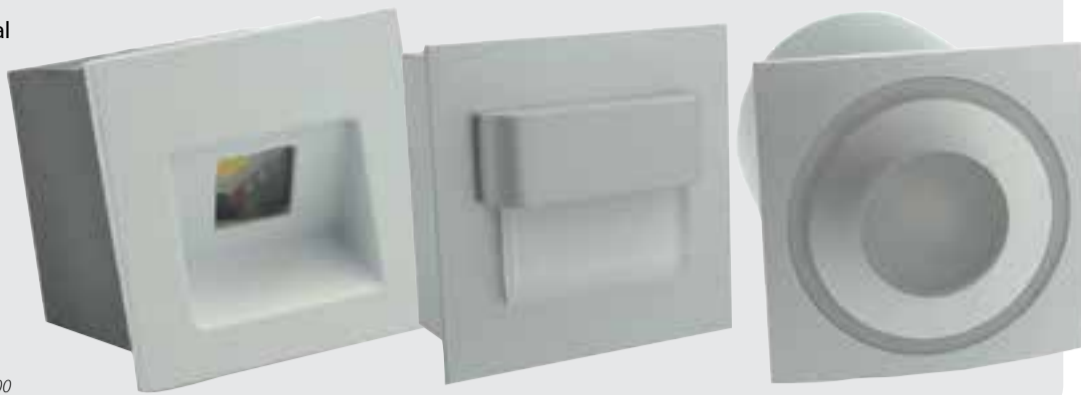
"There are a number of IP protection ratings available for indoor wall-mounted and outdoor applications," says Grobbelaar,

adding that the step lights are supplied complete with wall boxes and are "perfect for path, step and aisle lighting in homes, offices or commercial locations".

Features include:

- Integral electronic driver.
- Available in die cast or machined aluminium.
- Supplied with wall box.
- Models S2A-20C and S2A-21C are supplied with a decorative blue LED ring.
- High output white LEDs.
- Long life and low maintenance.
- Easy to install.
- Complements any surface finish.

Enquiries: +27 11 872 5500



Mini emergency light with great features



A MINIATURE emergency lighting unit that automatically lights up in the event of a power failure is included in Legrand's extensive range of electrical products, which are designed to help South Africans during power outages.

"This Arteor emergency lighting device, which enhances security and comfort in homes, hospitals, hotels and offices, illuminates immediately when there is a power outage," says Luk Ivens, general manager, Legrand Southern Africa. "A special feature of this unit is that the light fitting can be easily unclipped from the mechanism and used like a conventional torch - a handy facility when a room is suddenly plunged into darkness during load shedding.

"Although this removable lighting unit is small, its illumination is powerful, effective and comforting in any environment. Light-emitting diodes (LEDs) indicate the mains and charging status."

These mechanisms are available in white, with a selection of 17 cover plate design options, including woven metal, red mirror and marine leather. Other finishes, like plastic, metal, tattoo, wood and brushed steel are also available.

The Arteor range of wiring devices enables users to 'mix and match' the design option and type of finish for any control function. An added advantage is these combinations can be changed at any time to suit exact requirements.

Legrand offers the local market a choice of modern stand-alone Arteor devices, like simple switches, as well as the combination of many system functions, including the most advanced home automation solutions.

Arteor devices have been designed for aesthetic appeal, flexibility, energy efficiency, quality power supply and optimum safety in renovations and new installations.

Other Legrand products, which minimise the negative effects of power outages, include home automation devices, a reliable uninterruptible power supply (UPS) system, inverters and DLP LED trunking

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LP015
1 x 0.06W Twin Pack Solar light - Plastic Spike + ON/OFF Switch

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Radiant provides lighting, electrical and solar solutions that are beautifully designed and created to compliment your living space. We are focused on driving innovation and technology and are constantly expanding our range of products to effectively bring you lighting and electrical solutions you can trust.



We light up your life

RADIANT

Prestigious solar street lighting project for Kinshasa

THE well-travelled main road from Kinshasa's N'Djili International Airport to the city has undergone a lighting transformation with more than 1 000 solar lamps now lighting the way.

The solar street lighting system in Kinshasa, Democratic Republic of the Congo (DRC), was supplied by BEKA Schröder with local agent, Martin Müller, performing the professional installation of the system.

BEKA Schröder's Don van Niekerk says the company continually develops tailor-made solar solutions for the DRC with Müller.

"The DRC is faced with power generation challenges – as are many African countries – and these challenges – coupled with ageing electrical infrastructure – mean that the country's electricity supply is not reliable," says Van Niekerk. "This situation poses a significant challenge when it comes to reliable street lighting on its roads so it made absolute sense to choose a solar lighting solution."

He says the major eight-lane link road has been lit to an international standard of Class A3 as requested by the client and according to predicted traffic volume using the BEKA LEDlume-midi

36 LED 85 W luminaire, which was chosen for this project.

"Mounted 8 m above road level, BEKA's solar solution features built-in intelligence," explains Van Niekerk. "This 'intelligence' provides additional energy savings because the luminaire automatically dims to a pre-selected dimming profile. In addition, the luminaire was designed with dual charging capabilities, which allows

for the grid connection to charge the batteries should the solar charging ability be impeded for more than the two day redundancy period. The maximum power point tracking (MPPT) charge controller allows for maximum charging ability even when weather conditions are not optimal. The luminaires are also equipped with a data logging function, which can store up to two years' worth of data – and this is ideal for troubleshooting," Van Niekerk says.

"Staggered spacing of 25 m was applied and, owing to the highly efficient BEKA LEDlume luminaire's excellent light distribution, uniformity and efficacy, as well as compliance with all road parameters were achieved."



More than 1 000 BEKA Solar units are installed in Kinshasa, lighting up the prestigious main road from the airport to the city.

Van Niekerk adds that the BEKA Solar module has been engineered to suit all geographical locations in Africa and has been designed to operate reliably at a high light output over a 12 to 14 hour period. It has sufficient autonomy to cater for up to two continuous overcast or rainy days, in order to continue its reliable night operation.

"The BEKA LEDlume-midi is the LED luminaire of choice since it is designed and manufactured in South Africa and it takes Africa's various environments and conditions into account. This is evident in the luminaire's design: a unique thermal sensor technique monitors the temperature of the LEDs on the printed circuit boards (PCBs). Once a critical

temperature is reached, the current is reduced to ensure safe operating temperatures of the LEDs, which safeguards the LEDs and ensures that the long lifetime of up to 100 000 hours (at L70), is achieved," explains Van Niekerk.

He adds that one of the key focus points of this project was to "impart knowledge and technical training to local agents", which enables technically qualified personnel to maintain the systems, ultimately extending the lifespan of the product. BEKA Schröder is also providing ongoing remote assistance and technical support to ensure that the skills transfer and local upliftment continues.

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Expanding SSL capabilities and focus

VENTURE Lighting will be extending its metal halide lighting solutions offer to include the fast developing solid state lighting product area.

"Solid state lighting (SSL) technology has grown faster than any other," says Sabu Krishnan, Venture Lighting's president, "and this makes 2015 the ideal time for the company to enhance its industry-leading product set.

"Our customers demand the best solutions for their lighting needs, and it's crucial that we apply our considerable abilities to SSL, now that the technology has proved its adaptability to the range of lighting situations we see in the marketplace," says Krishnan.

"We look forward to bringing the same pioneering spirit to SSL, even as we continue to improve and enhance our metal halide product and serve and support our customers," he adds.

To demonstrate its commitment to SSL, Venture also announced that Keith Price, previously managing director of Venture Lighting Europe since 1990, will lead the SSL business development effort around the world.

Price began his Venture Lighting career while being an independent distributor in 1985, rising to lead the company's UK and European business as managing director as it built its brand. Prior to joining Venture, he spent 12 years with City Electrical Factors, including positions as branch manager, regional manager in the UK and general manager for Germany, and then worked as an independent distributor.

"SSL technology is the future of our industry," Price says, "and to continue bringing Venture's history of lighting innovation to that future is personally and professionally exciting for me."

In his new role, Price will build a support team of SSL product managers and design engineers, based at Venture Lighting offices and manufacturing centres around the world.

"We are committed to bringing the finest SSL products to market around the world, and will shortly release an expanded product line that will enable our customers to pick the right technology,

or blend of technologies, most appropriate for their needs," says Price.

Richard Morris has been appointed to succeed Keith Price as managing director of Venture Lighting Europe.

Enquiries: +27 21 709 0180

Energy saving alternatives to incandescent lamps



lamps will be glad to know that the OSRAM Halogen Classic range looks, feels and performs the same as incandescent lamps – the only difference being that the Halogen Classic uses 30% less energy and lasts twice as long.

The Halogen Classic range includes 100% dimmable lamps in the classic 'Edison'

THE ban on incandescent lamps – due to their high energy consumption – is beginning to take effect in South Africa and the average consumer and professionals are going to have to find an energy efficient alternative to the incandescent lamps they've always used.

OSRAM South Africa supplies the perfect energy-savings alternative: the OSRAM Halogen Classic lamp has been introduced to replace incandescent lamps, which are being phased out.

The Halogen Classic offers up to 30% energy savings and a price that is easy on the pocket.

Consumers who dislike CFLs (compact fluorescent lamps) as an energy saving alternative to incandescent

shape, golf balls, candles and R50 and R60 reflector lamps.

The advantages of OSRAM's Halogen Eco technology include:

- A long service life of 2 000 to 5 000 hours;
- Excellent colour rendition.
- Constant light strength and colour throughout the lamp's entire service life.
- Natural colour reproduction (Ra = 100).
- 100% dimming capacity.
- Simple replacement of conventional halogen lamps.
- Environmentally friendly.
- Reduced heat.

Enquiries: +27 11 207 5600



Quality lighting at the right price at the right time

ENLITE is a new, fast-moving range of Aurora-manufactured quality products available through wholesalers and lighting specialists for quick installation.

"The cost of LED and other quality lighting products can sometimes be a deal breaker as they can appear to be too expensive for some sectors of the market," says Paul Johnson, Aurora's international development director.

"Our research reveals that what the homeowner or commercial building property manager wants is quality at an affordable price. Cheap and cheerful simply won't do these days; they're looking for fantastic value, exceptional product quality and longevity."

In response, Aurora has launched Enlite, its own range of essential lighting products, including LED, manufactured to the highest standards of quality and durability. The Enlite range is available through wholesalers and lighting specialists to suit both residential and commercial projects.

"Enlite products offer state-of-the-art performance at a competitive price where quality, reliability and trouble-free installation are paramount. They are all designed and engineered by Aurora in-house, and before any item is dispatched, rigorous safety and quality checks ensure you always receive a safe, reliable product," says Johnson.

He adds that the range comprises a selection of commercial downlights, LED panels, bulkheads, floodlights and lamps – affordable, energy-saving lighting in a multitude of applications across commercial and residential sectors.

Featured technologies:

- ThermoTec™ technology utilises a combination of highly efficient LED light source, aluminium heatsinking and thermoplastics material for longer life and consistent performance.
- EnFiniti™ edge-to-edge multifaceted polycarbonate lens creates low glare and halogen-like appearance.

Johnson says there are seven Enlite lines:

- **ICE lamps** 5W GU10 and MR16 LED deliver significant energy savings. Available in up to 520 lumens in dimmable and non-dimmable for the GU10; they allow for direct halogen replacement at a fraction of the energy consumption. The ICE range offers 25 000 hours lifetime to L70 and a three-year warranty – at a lower price than alternative lamps delivering half the performance and reliability.
- **Uni-Fit™** Integrated LED downlights feature an integrated driver and high-quality LED chips to deliver a serious lumen punch and the ideal cost-effective solution for new or existing retrofit installations. Available in 10 W to 25 W Uni-Fit offers 700 to 1 900 lumens at 25 000 hours to L70 and comes with a three-year warranty.
- **E6060 and E1260** ultra-slim edge-lit LED flat panels are suitable for a wide range of applications including office, education and commercial spaces. The advanced aluminium heatsink dissipates unwanted heat allowing for a flat form factor. The range is engineered to deliver 36 W at 2 800 lumens and UGR19 for even light distribution. It offers 40 000 hours lifetime to L70 with a three-year warranty.
- **Helius™** 10 W to 200 W LED floodlights are perfect for residential and commercial applications. The slim profile and clean black finish make them unobtrusive. At 200 W and up to 14 000 lumens, they deliver 25 000 hours lifetime to L70 and come with a two-year warranty.
- **Prysim™** 45 W LED wallwashers deliver

high output and energy efficiency for retail and display lighting, offering up to 3 450 lumens and 40 000 hours to L70 with a three-year warranty.

Orbital™ 12 W LED bulkheads offer 900 lumens and are engineered out of a tough polycarbonate body; all products in the range are vandal-resistant and designed to last. The range comprises round and eyelid styles, and the 25 000-hour lifetime to L70 is unaffected by frequent switching when used with occupancy controls. They come with a two-year warranty.

Enquiries: +27 11 234 4878

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Voltex



Jacques van Wyngaard, sales manager, Free State Admin branch.

Bright Sparks

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?

March solution

A tower of coins

The simplest way to solve this puzzle is to solve the same puzzle with fewer coins, and then work up to four coins.

To move one coin takes of course, just one move



To move two coins takes three moves like this



To move three coins takes seven moves like this



In this diagram, the moves have been abbreviated to show that all you have to do is move the top two coins (which you know takes three moves); then move the third coin (one move); and finally, move the top two coins again (another three moves).

Now the pattern is easier to see. To move four coins, you first move the top three coins (seven moves). Then move the fourth coin (one move) and then move the top three again (seven more moves) – a total of 15 moves. The number of move required for four coins is one more than double the number required for three coins. By the same pattern, the number of moves required to move five coins would be $15 + 1 + 15 = 31$

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