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## ELECTRIC

## INDUSTRY CALLS FOR SABS TO RECONSIDER ITS 'INTERNAL DIRECTIVE'

**THE** Electrical Engineering and Allied Industries Association (EEAIA) has called on Dr Boni Mehlomakulu, CEO of South African Bureau of Standards, to reconsider the SABS' "unilateral decision regarding type testing at NEFTA" that was made "without due consultation or consideration of the resultant negative impact on local companies".

Johan Basson, Exco member at EEAIA, says the decision by SABS to cease 'partial testing' is "irresponsible and counter-productive" because it will damage the economy, lead to job losses and stifle technological progress in the South African manufacturing sector – and it is contrary to SABS' claim of "partnering with industry".

Rhett Kelly, technology development specialist at ACTOM – a member of the Electrical Manufacturers' Association of South Africa (EMASA) – says the industry only came to hear of the SABS 'directive' when requesting tests to be performed by SABS at the SABS NEFTA test facility.

"The test facility informed us that it will only carry out full testing in accordance with a particular standard and that any other testing will effectively no longer be considered. A fundamental problem is that prior to implementing its 'directive', the SABS did not communicate with industry and has not engaged with any of its stakeholders (many of which have been loyal customers for many years) regarding its internal directive and the consequences of its decision. Furthermore, the SABS is unable to conduct full testing to many of the standards due to limitations in its own testing capabilities. The decision has put an overnight end to valuable testing services that have been offered by the SABS to the industry for decades. It claims now, to be acting in accordance with its 'legal mandate' and refers to the Standards Act 8, 2008."

"It now seems that anything falling outside the SABS view of "conformity assessment services" will not be entertained. This includes all testing not associated with conformity assessment services for SABS mark schemes, whether partial, specific, special or developmental testing," says Kelly.

### SMART GRID CONFERENCE – IS SA READY FOR ADVANCED METERING INFRASTRUCTURE?



André Hoffman (SAIEE president); Prof Massoud Amin (University of Minnesota); George Debbo (conference organiser, chairman SAIEE); Prof Qing-Guo Wang (University of Singapore); Lee Stogner (president, Vincula Group, USA); and Stan Bridgens (CEO SAIEE) at the South African Institute of Electrical Engineers (SAIEE) SmartGrid Conference held at the Eskom Academy of Learning in Midrand from 23 – 25 February.

In correspondence between the (EMASA) and the SABS, the SABS states that in the recent past the SABS has experienced a number of challenges brought about by the practice of "partial testing" in particular and states, "The SABS has also realised that the practice of partial testing is prone to abuse and exposes the organisation to immeasurable risk. Therefore, the stringent implementation of conformity assessment protocols is intended to ensure that the SABS complies with its statutory mandate and that when called to account it (the SABS) can stand up to all regulatory and statutory scrutiny."

Pierre Nothard, chairman of the SAFEhouse Association – an association formed to combat the prevalence of unsafe products and to expose specific cases of sub-standard products – says the "ruling on partial testing is having a materially harmful impact on many businesses in the electrical industry".

"The SAFEhouse Association itself is affected because, in the course of us dealing with sub-standard products, culpable suppliers often demand an accredited laboratory test – usually a delaying tactic – before agreeing to take action. The time delay and the cost of full tests when they are not necessary will probably be prohibitive and contribute to unsafe products being available to users when they should be withdrawn," says Nothard.

"I know the SABS has problems with partial testing but I am convinced that practical solutions can be found if it would invite the participation of industry. We should be working together to deal with these kinds of issues without compromising our common purpose – the protection of users."



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# FIGHTING THE GOOD FIGHT FOR THE BENEFIT OF THE ELECTRICAL INDUSTRY



Evert Swanepoel, Copper Development Association Africa.

**IN HIS ROLE** as centre director and chairman at the Copper Development Association Africa (CDA), Evert Swanepoel works with the metal that is at the heart of the electrical industry – copper – which has an infinite recyclable life and is one of the most used, and reused, metals.

Because copper's recycling value is so great – premium-grade scrap has at least 95 % of the value of the primary metal from newly mined ore – one of Evert's tasks is to reduce the export of South African copper and retain it for local manufacturers.

He has a close working relationship with the major players in the electrical industry and has been a driving force behind the CDA initiative that awards numerous bursaries to deserving young electrical artisans every year.

**Sparks:** Where were you educated?

**ES:** I attended Helpmekeer High School in Johannesburg and Brandwag High School in Uitenhage in the Eastern Cape. I went on to complete the Management Development Programme (MDP) at the University of Cape Town and, over the years, I've done enough management courses to last me a lifetime.

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

**ES:** I've been indirectly involved with the electrical industry for four years.

**Sparks:** When and where did you start your career?

**ES:** I started out as a draughtsman in the 1960s at a steel and aluminium company, Crittall Hope Metal Windows, which was bought out by Wispeco in 1968. I ended up as deputy managing director of Wispeco.

**Sparks:** What is the greatest change you have seen over the years?

**ES:** Within the copper industry, it has been the lack of control over the export of scrap copper.

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

**ES:** One of the major projects I've worked on recently has been the

successful testing and deployment of antimicrobial fish nets in Cahora Bassa and Richards Bay.

Improving the CDA's relationship with the electrical industry is an ongoing project for me and numerous objectives have been achieved along the way.

**Sparks:** Have you won any awards?

**ES:** Yes, I have, but nothing noteworthy.

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

**ES:** I have had the privilege of working with some dynamic senior executives over the years and I have learnt from them all.

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

**ES:** The biggest challenge is for the CDA to reduce the export of scrap copper and retain quality scrap copper for the association's manufacturing members. This challenge is made more difficult by the wholesale theft of electrical cable, which is not only destroying South Africa's infrastructure but is fuelling the export of copper scrap.

**Sparks:** What do you enjoy most about your job?

**ES:** I enjoy finding new ways to use copper and expanding our membership base; the interaction between the different sectors in the copper industry is always gratifying.

**Sparks:** How do you motivate your staff?

**ES:** I would like to think it is by example and sharing with them the company's goals and results.

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

**ES:** It may sound strange but I would have liked to have completed an apprenticeship before qualifying in management.

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

**ES:** At the CDA, we are passionate about the development of artisans and annually sponsor the Electrical Contractors' Association's development programmes, the Eskom Young Scientist Awards; artisan development in the photovoltaic industry; and others. There are too many unqualified 'electricians' harming society and the industry. This country needs professional, qualified electricians.

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

**ES:** My advice is to never compromise on quality. And, if in doubt about a product, contact Pierre Nothard at SAFEhouse for guidance. I also encourage electrical contractors and engineers to keep up with new technology. A good place to do this is on our international electrical energy platform, 'Leonardo Energy', which offers the electrical sector a vast information sharing and knowledge base service as well as free online courses and programmes for the electrical industry. [www.leonardo-energy.org](http://www.leonardo-energy.org)

**Sparks:** What is your favourite quote?

**ES:** "The show must go on."

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

**ES:** The three things on my bucket list all relate to work! First, I'd like to put to rest the current explosive situation on scrap exports for the benefit of all; second, to finalise the introduction of antimicrobial copper with Department of Health in order to reduce the unnecessary deaths of thousands through hospital acquired infections (HAIs); and, thirdly, to expand the CDA network into the rest of Africa.

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## New socket outlet with integral USB ports launched

CBI-electric: low voltage recently announced the launch of its new USB socket outlet. This aesthetically pleasing socket outlet is a standard 240 V ac Euro socket outlet with a twist – in addition to the option of two complementary plug sockets it has two integral USB ports.

Manuel Ribeiro, CBI-electric's product manager says, "At CBI we continually develop new products to meet the needs of our customers. With the addition of this product to our highly successful standard range, customers no longer require a USB adapter and can plug directly into the wall socket outlet to charge their electronic devices."

Providing effortless installation and ease of operation, the socket outlet is rated at 16 A, 240 V with the USB ports



rated 2 A (cumulative), 5 V dc. The socket outlet is fully tested and complies with SANS 164 as well as SANS 60950.

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## THREE TARGETS – AND A CASE IN POINT

**MANY** years ago, I worked on a project for a Shell petrochemical plant. The design engineers were all from Holland and the project manager was from New Zealand. They were all very good. When the time came for the project to be awarded, they got all the prices, called in the contractors one by one and offered them a deal: each contractor had to name an amount for being on time, another amount for working safely and a further amount for good quality of work.

For example, if the price from contractor A was

R10-million, he had to state that he wanted a further, say, R500 000 for working safely, R400 000 for being on time and R300 000 for good quality of work. The deal was this: if the contractor could show safe work that was on time and of good quality, then the client would pay the original R10-million plus R500 000 plus R400 000 plus R300 000.

If, on the other hand, the targets were not met, then the contractor would be penalised R500 000 plus R400 000 plus R300 000, which would be subtracted from the total of R10-million. To be candid,

two of the contractors just backed away – they did put forward some amounts but were rather half-hearted about it.

One contractor – J C Groenewalds – leapt in to action and 'bet' 20% of their total price that they would hit all three targets. And hit them they did. And, what a thing it was to see: the site swarmed with quality assurance people, with safety officers and material supply coordinators. The whole project made a big impact on my thinking, mostly because it was widely believed in South Africa that (a) all projects are late;

(b) working safely is possible but not 100% so; and (c) all projects have something wrong with them, which means there is usually some bad quality of work in parts of the project.

Subsequently, in my petrochemical career I would implement, along with (mostly) Hilton Brukman of Chevron, a policy of making sure that the project had enough money in it to encourage the contractor to hit the three targets.

It is unfortunate that this type of system is not used more widely. The problem is that the people who adjudicate project tenders are not always engineers. They are usually land surveyors who have never installed a cable in their lives, do not know that angle grinders slice through steel, roof sheets, fingers and toes and that work programmes cannot be infinitely compressed.

I'm not sure how to change things – certainly in the current environment where political correctness is top of the list for contract evaluation, closely followed by tax compliance it is not obvious how to proceed.

There is a clue we can get from the past ... When I worked on the gold mines (in my 20s) there were a lot of accidents. Not a lot was done to prevent them – certainly production was not halted. Now, it is different; if a few accidents happen then the mine stops to find out why.

Project developers could be convinced to pay more attention to safety if, somehow, it hit their pockets – if that were too many accidents, the project would then stop for an investigation into the cause of those accidents.

Anyway ... The other day I did the design for the electrical work in a small building. I wrote the specification and our technician did the drawings and site supervision. Thus, for most of the contract, I never saw the contractor. At final inspection I was very surprised and happy to see that the work was of superb quality. The distribution board was solid (not the usual bit of tin), the wires were in conduits and held with hospital saddles, the socket outlets had tag numbers, and the cable tray was hot-dipped not just electro-galvanised ... great stuff!

I sought out the contractor and said to him, "Well done!" I added, "It's not usual to see a job well done ... your work is of a very high standard."

"Yes", he said, "this way we only do the job once so we make more money. And." he gave me a wink, "... the engineers remember the good projects and give us more work ..."

He has a point.

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## MORE THAN JUST A LIGHTING COLUMN

BEKA Schröder recently announced the launch of the Shuffle. More than just a lighting column, it can integrate up to five modules in each column to suit the specific needs of its environment. The available modules are LED light, control systems, light ring, WLAN, CCTV camera, loudspeaker and EV (electric vehicle) charger. Because of its smart design, the Shuffle is an affordable, completely energy efficient solution that requires very low maintenance. View the video of the Shuffle and its possibilities: <http://www.bekaschroeder.co.za/videos>  
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# FACTS about LED Lamps



A relatively new technology, LED lighting is fertile ground for unscrupulous and opportunistic suppliers to capitalise on the absence of a compulsory local standard for LED lamps and to make performance claims that will not be met, mostly around lifespan and power-consumption.

## Some facts:

- There are no **compulsory** local standards for LED lamps
- There are two standards that may be applied voluntarily by suppliers and specifiers:  
SANS 62560: South African National Standards  
IEC 62560: International Electrotechnical Commission  
There appear to be very few products that are certified against these standards.
- The “**CE**” mark appears on many products. This is a manufacturer’s claim to a certain quality standard. **It is not an indication of independent, 3<sup>rd</sup> party testing.**
- The nature of LED performance claims being made cannot usually be validated by buyers, whether they be resellers, electrical contractors or users - until it’s too late.

## Some consequences:

- The absence of compulsory standards can result in incompatible dimensions between fittings and lamps from different suppliers - a performance and safety risk to users.
- The technology of an LED lamp and its heat-generation encourage shortcuts that compromise insulation in favour of heat dissipation - a safety risk to users.
- Plastic parts are a manufacturer’s cost-saving opportunity. Inferior material will affect heat- and flame-resistance.
- The low volume of certified testing of LED lamps in South Africa does not allow much credible reference to be made to local testing and regulatory authority that will comfort buyers and specifiers.

For more information, please consult the SAFEhouse LED lighting guide available to download free at [www.safehousesa.co.za](http://www.safehousesa.co.za)

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



## The SAFEhouse code of conduct includes:

- To offer only products that are safe
- To advise customers if any of their sold products fail this undertaking
- To recall unsafe products
- To replace unsafe products or render them safe

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

## For more information contact:

Pierre Nothard Cell: 083 414 4980  
Tel: 011 396 8140 | Email: [pierren@safehousesa.co.za](mailto:pierren@safehousesa.co.za)

[www.safehousesa.co.za](http://www.safehousesa.co.za)

## SAFEhouse guidelines: What can you do?

- Purchase brands you can trust and satisfy yourself about the manufacturing source
- Lamps should be marked with at least the following information. If it is absent, be suspicious:
  - Mark of origin or manufacturer’s name
  - Rated Voltage (V)
  - Rated Wattage (W)
  - Frequency (Hz)
- Be cautious about prices that are materially below the prices of other, similar products. Substantially lower prices are often indicators of poor quality.
- Be cautious about accepting performance claims, whether verbal or on packaging.
- Look for obvious signs of inferior quality in workmanship and materials.
- If in doubt, contact SAFEhouse for possible assistance.







## THE COMPLEXITIES OF COMPLIANCE

With the ever-increasing changes in the electrical landscape, the complexity of compliance may soon be a daunting challenge for many Registered Persons and electrical contractors.

I have, over many years, seen changes in technology create numerous obstacles for the electrical contracting industry and have indeed written quite a number of columns highlighting my concerns about the lack of sufficient training.

Often, even the simple task of correctly completing a certificate of compliance (CoC) appears to be

beyond many electrical contractors and essentially, many CoCs are invalid even before any technical investigation is undertaken.

Technical investigations by this AIA reveal that continuous electrical training, particularly for Registered Persons, is hopelessly inadequate, especially when taking into account the galloping pace of technology.

### Home automation

In the domestic sphere of electrical installations, home automation in itself has created somewhat of a problem in that it sometimes becomes diffi-

cult to establish which parts of the system, in fact, fall within the scope of the electrical installation and which parts can be deemed to be part of the 'control' or machine aspect of the system. It is essential to make this determination when CoCs must be issued in terms of the provisions of the Electrical Installation Regulations (EIR).

### Alternative supply

Some months ago, I briefly covered the alternative supply aspect but there are increasing concerns with reference to photovoltaic (PV) and similar systems.

Many of these systems have been installed over the last year, in particular by installers with very little knowledge of the scope of SANS 10142-1 and how these PV systems interface with the electrical installation, as defined.

Of even more concern to me is that CoCs for this type of connection are not being issued and, when they have been issued, it is clear that the Registered Person himself has insufficient knowledge of the requirements as specified in SANS 10142-1.

And, the complexity of many of these systems becomes evident when the element of 'embedded generation' raises its head.

Whilst the SANS 10142-1 Working Group has been hard at work on critical amendments that relate to alternative supplies – including looking at references to standards to cover the actual PV generation system itself – Registered Persons must understand that these supplies are, to a large extent, already covered in the SANS 10142-1. Anyone wanting to become involved in the installation of such systems must ensure that they receive adequate appropriate training. Many installers who deal with these systems, especially where dc voltages are present, are surprisingly unaware that SANS 10142-1 also covers these dc voltages.

In many cases, users are still not totally relying on PV supply and also have mechanical generators installed as additional alternative supplies. Registered Persons must familiarise themselves with the complexity of this additional supply and with the appropriate precautionary measures.

Although it is true that while many Registered Persons who intend installing these complex systems may indeed attend some form of training provided by the manufacturers of such equipment, the greater risk is posed by those who have no training at all. Here I refer to those Registered Persons who issue CoCs for existing electrical installations and who will, no doubt, be exposed to these installed systems in the very near future.

The extent to which certification is required is going to be a 'dark area' for those who are not familiar with these systems and I believe that safety may be compromised. Unfortunately, in this country, we are facing a scenario where Registered Persons, electrical contractors and the very users (the public) of such equipment do not have sufficient operating knowledge of the installed systems and equipment and this lack of such knowledge may have disastrous consequences.

I believe that, as an industry, we need to understand the nature of the complexities of compliance and take the time to address the current dilemma of providing comprehensive and applicable training for installers and electrical contractors so that, in the end, users will be able to use such equipment safely.






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GETTING TO GRIPS WITH SANS 10142-1 BY HANNES BAARD

# ELECTRICAL INSTALLATION – NOT JUST TWO WORDS

**ELECTRICAL Installation.** The definition in the Electrical Regulations (2009), forming part of the Occupational Health and Safety Act (Act 85 of 1993), that is possibly the most misunderstood or misinterpreted couple of words in our daily electrical lives.

In last month's column I ended by asking where it is stated that the electrical installation in my newly completed outbuilding must have a light fitting (luminaire) installed otherwise I cannot issue a Certificate of Compliance.

So let's look at that pesky definition again (which appears in SANS 10142-1 Clause 3 too, by the way) and I will try to explain my way around a picture or two...

It reads: *'Electrical installation' means any machinery, in or on any premises, used for the transmission of electricity from a point of control to a point of consumption anywhere on the premises, including any article forming part of such an electrical installation irrespective of whether or not it is part of the electrical circuit, but excluding*

- (a) Any machinery of the supplier related to the supply of electricity on the premises;
- (b) Any machinery which transmits electrical energy in communication, control circuits, television or radio circuits;
- (c) An electrical installation on a vehicle, vessel, train or aircraft; and
- (d) Control circuits of 50 V or less between different parts of machinery or system components, forming a unit that are separately installed and derived from an independent source or an isolating transformer...

By comparison, the definition in SANS 10142-1 Clause 3: For the

purposes of this part of SANS 10142 (SABS 0142), the following definitions apply:

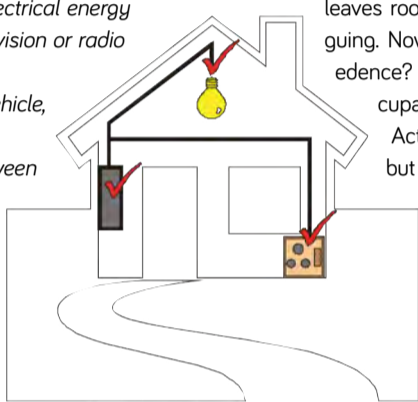
- 3.34 electrical installation means machinery, in or on any premises, that is used for the transmission of electrical energy from a point of control (see 3.56) to a point of consumption (see 3.55) anywhere on the premises, including any article that forms part of such an installation, irrespective of whether or not it is part of the electrical circuit, but excluding
  - a) Any machinery of the supplier that is related to the supply of electricity on the premise;
  - b) Any machinery that is used for the transmission of electricity of which the voltage does not exceed 50 V, where such electricity is not derived from the main supply of a supplier; and
  - c) Any machinery that transmits electrical energy in telecommunication, television or radio circuits.

NOTE 1 Deleted by amendment No. 3.

NOTE 2 For specialised electrical installations, see 3.74.

NOTE 3 Deleted by amendment No. 3.

At first glance these two definitions appear identical – right? Wrong. The problem I have is that it leaves room for people to start arguing. Now which one takes precedence? The one from the Occupational Health and Safety Act is my first thought too, but the Act makes provision for the SANS codes and standards as we learned before.



But let us start at the beginning... again...

I have to reiterate that we can also look at

definitions as a 'collective term', in a manner of speaking. So please bear in mind that the words 'machinery', 'premises', 'point of control', 'point of consumption', 'electrical circuit' and others are, in fact, definitions in their own right, with detailed descriptions and/or explanations, in either the Electrical Installation Regulations or SANS 10142-1.

It is, therefore, very difficult to not call a spade 'an agricultural instrument used to cultivate ground with' while trying to explain many of the terms in the SANS Codes, Occupational Health and Safety Act and Regulations, especially by writing alone.

But let me try. You will notice red 'tick marks' in the illustration. Note that one red tick mark is on the distribution board, one on the socket outlet, and the third tick mark sits at the end of the cables before the light bulb.

For the sake of this explanation we can take the DB to be the 'point of control' and the socket outlet and the end of the cable before the light bulb, the 'point of consumption'. So, an 'electrical installation' consists of only two defining and very clear points – a 'point of control' and a 'point of consumption' – full stop. Oh, stop grumbling and trying to make it more involved than what it is. An 'electrical installation' is nothing more and nothing less.

So, how can I be so sure? Simple. According to the definition of a 'point of control' it is the point at which the consumer or user of the electrical installation can switch off the electrical supply to that installation. That switch is known as the 'main switch'. Right? Right! The 'point of consumption' is defined as the terminals of an appliance or a socket outlet.

Also, remember when you do an insulation resistance test, all loads may be disconnected as per Clause 8 of SANS 10142-1. So,

what is the answer to the question I posed in my previous column? Yes, I can issue a Certificate of Compliance without a light fitting being installed. As I only test up to the terminals of the appliance. With no light fitting installed, I just need to ensure the ends of the cables are insulated and made safe.

Now that we know what an 'electrical installation' is, we can have a look at the rest of the definition and what's not part of the 'electrical installation' as defined. And this is where the problems start. The ill-informed, the ones who only see what they want to see, those who failed their reading skills at school and those who smoke their socks, may think that anything that is mentioned from 'a' onwards, is still part of the electrical installation. Which it clearly is not!

Note 1 from the SANS 10142-1 definition, which was deleted by Amendment 3 of SANS 10142-1, referred to the 'point of supply' and the supply conductors to the premises. The deleted Note 3 referred to electric fences. The item excluded from an 'electrical installation' as defined and completely omitted from SANS 10142-1 is paragraph 'C' in the definition in the Electrical Regulations.

Do the authors of SANS 10142-1 secretly want us to think installations on vehicles (perhaps a caravan) and vessels (your yacht on the Vaal or at Langebaan?) do form part of an 'electrical installation' as defined?

I think not. Although a little confusing, the scope of the applicability of SANS 10142-1 and the applicability of the definition of an 'electrical installation' and, therefore, also that of the CoC, can be found in Clause 1 of SANS 10142-1. Direct comparisons can sometimes be misleading. So be careful of not taking all the facts into account – it could start a small war.

Stay well defined till we meet again next time.

## Manufacturer of non-metallic enclosures announces assisted funding for prototypes

**QUINTIN** Lamprecht, managing director of Allbro, says one of the company's "success stories" has been the Allbrox range of enclosures. "The price point of SMC (Sheet Moulded Composite) enclosures internationally is significantly higher than powder-coated steel and, in most cases, even higher than stainless steel," he explains, adding that there are two reasons for this: SMC enclosures offer significant technical benefits related to durability, environmental impact, and safety. He goes on to point out that the investment cost to create the complex tooling required is significant.

"It is therefore a world first to find a company manufacturing a range of SMC enclosures at a cost that is generally lower than even cheap 'Far East' steel products."

He explains that the extended advantage to South African panel builders and OEMs is that they have an aesthetically and technically superior housing for the innovative systems they design and manufacture. "While it is clear that the housing does not sell the solution, we know that design and presentation carry more weight than it logically should in the decision-making process.

More importantly, the perceived quality and genuine reliability of systems are directly affected by how sound the IP level of the enclosure is, and for how many years it is able to retain its integrity."

He says that while South African companies have made breakthroughs in security, access control, communication, automation, distribution, monitoring, metering, and solar combiners, until now they are faced with a tough choice between a well-priced steel box and an expensive imported SMC enclosure solution.

"The introduction of a new product usually requires a prototype to be provided for approval and Allbro is now assisting the funding of this process by offering a 50% reduction in the nett price of any of the new Allbrox range of enclosures used for prototype purposes.

"The company believes that there are significant advantages to be gained when South African manufacturers combine innovation in multiple areas of a complex offering on a world stage where every feature and benefit is weighed and measured against world class competition," concludes

**It is therefore a world first to find a company manufacturing a range of SMC enclosures at a cost that is generally lower than even cheap 'Far East' steel products.**



Lamprecht. To qualify for this subsidy, email [marketing@allbro.com](mailto:marketing@allbro.com) with the subject 'Prototype'.

The catalogue for Allbro's range of

enclosures can be found on the company website: [www.allbro.co.za](http://www.allbro.co.za)

Enquiries: +27 11 894 8341

**NEWS FLASH**

**GENERATORS WITH INCREASED PERFORMANCE, LONGER RUN TIMES**

Subaru Industrial Power Products has made several upgrades to its SGX generator line, which includes the SGX3500, SGX5000 and the SGX7500E. The generators feature quality components, durable construction and Subaru EX overhead cam engines. Stators have a full varnish dip for better protection from movement, moisture and debris. The hour meter displays operating hours even when the units are off. The engine on/off switch is now mounted on the control panel for easier access. No-flat tyres on the wheel kits save time and money by eliminating the need to check, inflate or repair tyres. All models are backed by Subaru's five-year warranty on the engine and three-year warranty on the generator. Subaru Industrial Power Products has a worldwide dealer network and, in South Africa, Goscor Power Products stocks Subaru pumps, generators and engines. Enquiries: +27 11 230 2600

## Extended Guarantees on WEG Products



Please contact your nearest sales office for further details.

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[www.zestweg.com](http://www.zestweg.com)







# 30 MECH HDMI ADAPTOR

Adaptable, efficient, reliable - Available Now!



## Schneider Electric launches 30 Mech HDMI Adaptor

South Africans are investing in high definition TV with many of them choosing to wall mount their big screens, preferring the clean and uncluttered look this offers. Although the wall-mounted look is hard to beat, no one likes to see exposed cables “dangling” between the TV and the video source. Schneider Electric has responded to this by introducing a 30 Mech HDMI angled adaptor, providing a neat and streamlined means of concealing the cable. Schneider Electric’s new 30 Series angled HDMI adaptor is designed to be installed behind the TV as well as the video source. The HDMI adaptor fits into standard wall boxes and can be adapted to the S2000 and S3000 ranges. The angled adaptor is designed for installations that have ample space behind the wall plate and where rear termination space is restricted and the cable needs to be routed to the top or the bottom.

Ref: 30HDMIA-WE  
Available at Schneider Electric Distributors

[www.schneider-electric.co.za](http://www.schneider-electric.co.za)

Life Is On

**Schneider**  
Electric





## CUSTOMISED MOBILE SUBSTATION WITH UNIGEAR DIGITAL SWITCHGEAR DELIVERED

ABB has delivered a complete modular packaged substation to Sasol Secunda plant in Mpumalanga, almost eliminating unplanned power outages during annual shutdown periods. The mobile substation is made up of 14 panels of UniGear ZS1 medium voltage (MV) switchgear, future-proof protection and control technology. This innovation, aptly named E-House, is specifically tailored to Sasol's needs such as slope plant flooring and constant movement around the plant.

The E-House was designed by ABB and Sasol engineers with a scope that required a universal switchboard in a mobile substation, suitable to be operated at 3.3, 6.6 and 11 KV without significant changes to the switchgear configurations. This optimised solution was created to energise and protect motor feeders, transformer feeders and line feeders without changing of protection equipment.

Secondary Switchgear & Modular Systems

product group manager, Hermanus Jooste says, "This project was exciting because of the many delicate considerations that had to be built and that are outside our scope – such as an air suspended trailer to enable effortless plant mobility for the substation. The outcome is a brilliant solution for Sasol."

Enquiries: +27 10 202 5090



## DIARY

### Power & Electricity World Africa conference and exhibition

The 19<sup>th</sup> annual Power & Electricity World Africa conference and exhibition will be held at the Sandton Convention Centre on 15 and 16 March 2016. For more information, visit [www.terrapinn.com/powerafrica](http://www.terrapinn.com/powerafrica)

### Nuclear Africa

Nuclear Africa will be held from 16 to 18 March at the Nt'Shonalanga Valley Resort, Centurion, Pretoria. For more information, contact Carol van Niekerk on +27 12 807 3920.

### Wonderware X-Change User Conference 2016

The X-Change User conference will be held at Sun City from 17-20 April 2016. For more information, visit [www.x-change.co.za](http://www.x-change.co.za) or contact Clarise on 082 859 9318.

### IESSA 12th AGM and Conference

IESSA's 12th AGM and conference will be held at the Cape St Francis Resort from 15 to 18 May. Enquiries: Sue Swash at [sue@iessa.org.za](mailto:sue@iessa.org.za).

### Grand Designs Live Home and Garden Show

The Grand Designs Live Home and Garden Show – with headline sponsor Black+Decker – will take place at The Ticketpro Dome, Northgate, from 20 – 22 May. For more information, visit [www.granddesignslive.co.za](http://www.granddesignslive.co.za)

### POWER-GEN Africa and DistribuTECH Africa

POWER-GEN Africa and DistribuTECH Africa 2016 will be held in partnership with host utility Eskom at the Sandton Convention Centre from 19 – 21 July 2016. Enquiries: +27 11 869 9153. For more details, visit [www.powergenafrika.com](http://www.powergenafrika.com)

### Save the date for KITE industrial exhibition

The KZN Industrial Technology Exhibition (KITE) will be held at the Durban Exhibition Centre from 25 to 28 July and will focus on sourcing new technology and services. Enquiries: Loftie Eaton or Mark Anderson on +27 41 585 8274 or +27 10 003 3063. For more information, visit [www.kznindustrial.co.za](http://www.kznindustrial.co.za).

### Southern African Association of Energy Efficiency

The 11th Southern African Energy Efficiency Convention will take place on 8 and 9 November 2016 at Emperors Palace, Gauteng. Enquiries: Lydia Marais on +27 18 293 1499, at email [admin@saaee.org.za](mailto:admin@saaee.org.za) or visit [www.saaee.org.za](http://www.saaee.org.za)

### Electra Mining Africa

Electra Mining Africa will be held at the Expo Centre in Johannesburg, from 12 to 16 September 2016. For more information, contact Leatitia van Straten at email [leatitiavs@specialised.com](mailto:leatitiavs@specialised.com) or visit [www.electramining.co.za](http://www.electramining.co.za).

# Reliable Energy Worldwide

Quality  
Made in  
Germany

The advertisement features a large globe of the Earth as a background. In the foreground, several BAE batteries are displayed in various sizes and configurations. The BAE logo, consisting of a stylized 'B' and 'A' with a circle, is prominently shown. Below the globe, several African cities are marked with red dots: Cape Town, Port Elizabeth, Durban, Johannesburg, and Potchefstroom. At the bottom left, the logo for 'silicon ENGINEERING' is visible, along with the website 'www.silicon-online.co.za'. At the bottom right, the BAE logo is repeated with the tagline 'Energy from Batteries'.





## MANUFACTURERS

Brady South Africa/Grafo  
HellermannTyton  
Legrand  
Stone Stamcor

## DISTRIBUTORS

ACTOM Electrical Products  
ARB Electrical Wholesalers  
Atlas  
Bellco  
Citilec  
Comtest  
Denver Technical Products  
Electro Test Instrumentation  
Garry Lumpe Imports  
HellermannTyton  
JDL Electric  
Knipex and Wiha  
Magnet Electrical Supplies  
Major Tech  
Makita Industrial Power Tools  
MCE Global Suppliers  
Phambili Interface  
R&C Instrumentation  
Stone Stamcor  
Voltex  
Waco

## CONTACTS

ACTOM Electrical Products  
Mike Ulyett  
ARB Electrical Wholesalers  
Arvi Ramdass  
Atlas  
Sales  
Bellco  
Sales  
Brady South Africa/Grafo  
Morne Louw  
Citilec  
Jeff Forman  
Comtest  
Leanne Cole  
Denver Technical Products  
Mervyn Stocks  
Electro Test Instrumentation  
Winston Browning  
Garry Lumpe Imports  
Garry Lumpe  
HellermannTyton  
Sales  
JDL Electric  
Shaun Singh  
Legrand  
Johan Bosch  
Magnet Electrical Supplies  
Kevin Govender  
Major Tech  
Werner Grobbelaar  
Makita Industrial Power Tools  
Errol Martin  
MCE Global Suppliers  
Sales  
Phambili Interface  
Alex Lockyer  
R&C Instrumentation  
Johan de Villiers  
Stone Stamcor  
Sales  
Voltex  
Hugh Ward  
Waco  
Sales

## LADDERS AND SCAFFOLDING

Atlas  
A-frame and extension ladders for industrial and domestic use; scaffolding on request  
Bellco  
A-frame and extension ladders for industrial and domestic use; scaffolding on request  
Brady South Africa/Grafo  
Equipment status management tools – Scafftag, Laddertag  
Citilec  
Full range of ladders and scaffolding  
JDL Electric  
Full range of ladders and scaffolding  
Magnet Electrical Supplies  
Rigwell; Lovemore Bros  
Voltex  
A-frame and extension ladders for industrial and domestic use; scaffolding on request  
Waco Industries  
A-frame and extension ladders for industrial and domestic use; scaffolding on request

## POWER TOOLS AND ACCESSORIES

ACTOM Electrical Products  
Full range of power tools and accessories  
Atlas  
Various brands of drills, grinders and accessories for industrial and DIY  
Bellco  
Various brands of drills, grinders and accessories for industrial and DIY  
Bosch  
Power tools for drilling, driving, grinding, cutting, metalworking and woodworking

## POWER TOOLS AND ACCESSORIES

Citilec  
Full range of power tools and accessories  
JDL Electric  
Full range of power tools and accessories  
Magnet Electrical Supplies  
Bosch, Black & Decker  
Makita Industrial Power Tools  
Comprehensive range of corded and cordless power tools and accessories  
Phambili Interface  
Full range of power tools and accessories  
Voltex  
Various brands of drills, grinders and accessories for industrial and DIY  
Waco  
Various brands of drills, grinders and accessories for industrial and DIY

## DRAW WIRES AND AIR-DRIVEN SYSTEMS

Atlas  
Wiremate pull cord systems  
Bellco  
Wiremate pull cord systems  
Citilec  
Full range of draw wires and air-driven systems  
Magnet Electrical Supplies  
HellermannTyton; Three-D  
JDL Electric  
Full range of wires and air-driven systems  
Voltex  
Wiremate pull cord systems  
Waco  
Wiremate pull cord systems

## HAND TOOLS AND ACCESSORIES

ACTOM Electrical Products  
Full range of hand tools and accessories  
Atlas  
Various brands for electrical and DIY  
ARB Electrical Wholesalers  
Full range of hand tools and accessories  
Bellco  
Various brands for electrical and DIY  
Brady South Africa/Grafo  
Handheld printers for cable and wire identification, labels, sleeves  
Citilec  
Full range of hand tools and accessories  
Electro Test Instrumentation  
Full range of hand tools and accessories  
Garry Lumpe Imports  
Full range of Knipex and Wiha German-made hand tools: pliers, wire strippers, side cutters, cable cutters, crimpers, VDE spanners and sockets, screwdrivers, Allen keys and toolkits  
HellermannTyton  
Full range of hand tools and accessories  
JDL Electric  
Full range of hand tools and accessories  
Legrand  
Starfix crimper, Colson cable tie tensioner  
Magnet Electrical Supplies  
HellermannTyton; Major Tech; Gedore  
Major Tech  
Full range of high voltage and high temperature resistant VDE insulated pliers and cutters; complete range of VDE spanners, sockets, ratchets, cable shears and hacksaws  
MCE Global Suppliers  
MCE handheld crimpers, wire strippers and cable cutters; MCE hydraulic punch and die set  
Phambili Interface  
Various brands for electrical and DIY  
Stone Stamcor  
Crimping tools – hydraulic and hand type; portable bus bar punch units and chassis punch units; hydraulic and manual cable cutters  
Voltex  
Various brands for electrical and DIY  
Waco  
Various brands for electrical and DIY

## INSULATION INSTRUMENTS AND ACCESSORIES

ACTOM Electrical Products  
Full range of insulation instruments and accessories  
Atlas  
Various brands of insulations testers and accessories  
Bellco  
Various brands of insulations testers and accessories  
Comtest  
A full range of Fluke, Midtronic, AFL, Teledyne LeCroy, Meriam, Radian, Microsemi and Siglent meters and testers  
Electro Test Instrumentation  
Full range of insulation instruments and accessories  
HellermannTyton  
Full range of insulation instruments and accessories  
JDL Electric  
Full range of insulation instruments and accessories  
Magnet Electrical Supplies  
HellermannTyton; Major Tech; Fluke  
Major Tech  
Analogue and digital insulation testers, insulation testers with true RMS, industrial multimeters, HV analogue and digital insulation testers  
R&C Instrumentation  
Full system power management local and via Internet  
Voltex  
Various brands of insulations testers and accessories  
Waco  
Various brands of insulations testers and accessories

## SEALANTS AND LUBRICANTS

ACTOM Electrical Products  
Full range of sealants and lubricants

## INSULATION INSTRUMENTS AND ACCESSORIES

Atlas  
CRC and other well-known brands  
Bellco  
CRC and other well-known brands  
HellermannTyton  
Full range of sealants and lubricants  
JDL Electric  
Full range of sealants and lubricants  
Voltex  
CRC and other well-known brands  
Waco  
CRC and other well-known brands

## STRIPPERS

ACTOM Electrical Products  
Full range of strippers  
Atlas  
Various well-known brands available  
Bellco  
Various well-known brands available  
Garry Lumpe Imports  
Knipex cable wire strippers  
Legrand  
Starfix multi-tool stripper/crimper  
Magnet Electrical Supplies  
Full range of strippers  
HellermannTyton  
Full range of strippers  
JDL Electric  
Full range of strippers  
Major Tech  
Wire strippers; wire stripping pliers in various sizes, stripping knives, coaxial cable strippers, automatic wire strippers, dual action cable strippers  
MCE Global Suppliers  
MCE wire strippers  
Phambili Interface  
Various well-known brands available  
Stone Stamcor  
Cable strippers and wire strippers  
Voltex  
Various well-known brands available  
Waco  
Various well-known brands available

## WELDING INSTRUMENTS AND ACCESSORIES

JDL Electric  
Full range of welding instruments and accessories  
Magnet Electrical Supplies  
Afrox

## CABLE TESTING/CABLE FAULT LOCATION

ACTOM Electrical Products  
Full range of cable testing and cable fault location instruments  
Atlas  
Various well-known brands available  
Bellco  
Various well-known brands available  
ARB Electrical Wholesalers  
Full range of cable testing and cable fault location instruments  
Comtest  
Fluke, Lantek 7CAT7 tester, Ideal Lantek range and Beha  
HellermannTyton  
Full range of instruments for cable testing/cable fault location  
JDL Electric  
Full range of cable testing/cable fault location instruments  
Magnet Electrical Supplies  
HellermannTyton; Major Tech; Fluke; Eberle  
Major Tech  
Cable meter and identifier, LAN cable meters, networking tools, cable meters and identifiers  
Voltex  
Various well-known brands available  
Waco  
Various well-known brands available

## EARTH ELECTRODE RESISTANCE

Comtest  
A full range of Fluke instruments  
Electro Test Instrumentation  
Full range of electrode resistance instruments  
JDL Electric  
Full range of earth electrode resistance testers  
Magnet Electrical Supplies  
Surgetek  
Major Tech  
Full range of tools including clamp-on earth resistance testers with Bluetooth, analogue and digital earth resistance testers, earth resistivity and resistance testers

## ENVIRONMENTAL TESTERS

ACTOM Electrical Products  
Full range of humidity temperature, wind and sound environmental testers  
Atlas  
Various well-known brands available  
Comtest  
Full range of Comtest and Fluke environmental testing instruments  
Electro Test Instrumentation  
Full range of environmental testers  
JDL Electric  
Full range of environmental testers  
Major Tech  
Thermo anemometers, lux meters, professional weather stations, humidity meters, combustible gas leak detectors, gas detectors, sound level meters, particle counters

## ENVIRONMENTAL TESTERS

Voltex  
Various well-known brands available

## HV PROBES

ACTOM Electrical Products  
Full range of HV probes  
Atlas  
Various well-known brands available  
ARB Electrical Wholesalers  
Full range of HV probes  
Comtest  
Fluke  
Denver Technical Products  
High voltage probes, transducers and measurement for ac and dc applications  
Electro Test Instrumentation  
Full range of HV probes  
HellermannTyton  
Full range of HV probes  
JDL Electric  
Full range of HV probes  
Magnet Electrical Supplies  
HellermannTyton; Major Tech; Catu; Fluke  
Voltex  
Various well-known brands available

## INFRARED THERMAL IMAGING

ARB Electrical Wholesalers  
Full range of infrared thermal imagers  
Atlas  
Various well-known brands available  
Bellco  
Various well-known brands available  
Comtest  
Full range of thermal imagers  
Electro Test Instrumentation  
Full range of thermal imagers  
HellermannTyton  
Full range of infrared thermal imaging devices  
JDL Electric  
Full range of infrared thermal imagers  
Magnet Electrical Supplies  
HellermannTyton; Major Tech; Fluke  
Major Tech  
Full range of IR thermal imagers  
R&C Instrumentation  
Infrared inspection windows; infrared thermal imagers fixed and portable  
Voltex  
Various well-known brands available

## COMPLIANCE TESTERS

ACTOM Electrical Products  
Full range of compliance testers and contractor's kits  
ARB Electrical Wholesalers  
Full range of compliance testers  
Atlas  
Various well-known brands available  
Bellco  
Various well-known brands available  
Comtest  
Fluke  
HellermannTyton  
Full range of compliance testers  
JDL Electric  
Full range of compliance testers  
Magnet Electrical Supplies  
HellermannTyton; Fluke  
Major Tech  
Multifunction tester with memory and USB interface; multifunction testers  
Voltex  
Various well-known brands

## CLAMP-ON METERS

ACTOM Electrical Products  
Full range of clamp-on meters  
ARB Electrical Wholesalers  
Full range of clamp-on meters  
Atlas  
Various well-known brands available  
Bellco  
Various well-known brands available  
Comtest  
Full range of clamp-on meters  
Denver Technical Products  
Clamp on metering units for all ranges of current, for measurement of ac and dc currents  
Electro Test Instrumentation  
Full range of clamp-on meters  
HellermannTyton  
Full range of clamp-on meters  
JDL Electric  
Full range of clamp-on meters  
Magnet Electrical Supplies  
HellermannTyton; Major Tech; Chavin Arno; Fluke; Three-D  
Major Tech  
Full range of clamp meters  
Voltex  
Various well-known brands available  
Waco  
Various well-known brands available

ACTOM Electrical Products  
Full range of earth-loop impedance testers  
ARB Electrical Wholesalers  
Full range of earth-loop impedance testers  
Atlas  
Various well-known brands available





# BUYERS' GUIDE

## EARTH-LOOP IMPEDANCE TESTERS

**Bellco**  
Various well-known brands available

**Comtest**  
Full range of earth-loop impedance testers

**Electro Test Instrumentation**  
Full range of earth-loop impedance testers

**HellermannTyton**  
Full range of earth-loop impedance testers

**JDL Electric**  
Full range of earth-loop impedance testers

**Magnet Electrical Supplies**  
Fluke; Major Tech; HellermannTyton; Three-D

**Major Tech**  
Full range of earth-loop impedance and PSC/PFC testers

**Voltex**  
Various well-known brands available

## POWER ANALYSERS

**ARB Electrical Wholesalers**  
Full range of power analysers

**Atlas**  
Various well-known brands available

**Bellco**  
Various well-known brands available

**Comtest**  
Power analysers from Fluke, RPM

**Denver Technical Products**  
Power analyser range of products, for handheld and permanent installation applications

**Electro Test Instrumentation**  
Full range of power analysers

**HellermannTyton**  
Full range of power analysers

**JDL Electric**  
Full range of power analysers

**Magnet Electrical Supplies**  
Major Tech; HellermannTyton; Impact Energy

**Major Tech**  
Compact power analysers, power quality analysers, current loggers, current and voltage loggers, leakage loggers

**Voltex**  
Various well-known brands available

## MULTIMETERS

**ACTOM Electrical Products**  
Full range of multimeters

**ARB Electrical Wholesalers**  
Full range of multimeters

**Atlas**  
Various well-known brands available

**Bellco**  
Various well-known brands available

**Comtest**  
Full range, from low-cost analogue to high-resolution digital multimeters from Amprobe, Beha and Fluke

**Denver Technical Products**  
Fluke range of multimeters

**Electro Test Instrumentation**  
Full range of multimeters

**HellermannTyton**  
Full range of multimeters

**JDL Electric**  
Full range of multimeters

**Magnet Electrical Supplies**  
Major Tech; HellermannTyton; Fluke; Three-D

**Major Tech**  
Full range of true RMS industrial multimeters and oscilloscopes; industrial multimeters; industrial general purpose multimeters; compact, pocket, analogue and environmental multimeters; MT1009 True RMS multimeter and oscilloscope meter; MT1007 True RMS industrial digital multimeter

**Voltex**  
Various well-known brands available

**Waco**  
Various well-known brands available

## VOLTAGE TESTERS

**ACTOM Electrical Products**  
Full range of voltage testers

**ARB Electrical Wholesalers**  
Full range of voltage testers

**Atlas**  
Various well-known brands available

**Bellco**  
Various well-known brands available

**Comtest**  
Voltage testers from Amprobe, Beha

**Denver Technical Products**  
Full range of voltage transducers for permanent installations

**Electro Test Instrumentation**  
Full range of voltage testers

**HellermannTyton**  
Full range of voltage testers

**JDL Electric**  
Full range of voltage testers

**Magnet Electrical Supplies**  
Major Tech; HellermannTyton; Fluke; Three-D

**Major Tech**  
Full range of voltage testers and two-pole voltage testers

**Voltex**  
Various well-known brands available

## MEASURING INSTRUMENTS FOR SITE SURVEYING

**Comtest**  
Fluke industrial and Amprobe

**JDL Electric**  
Full range of instruments for site surveying

## MEASURING INSTRUMENTS FOR SITE SURVEYING

**Magnet Electrical Supplies**  
HellermannTyton; Three-D; Fluke

**Major Tech**  
Video borescopes

## OSCILLOSCOPES

**Atlas**  
Various well-known brands available

**Bellco**  
Various well-known brands available

**Comtest**  
Nicolet, LeCroy, Gould, Fluke industrial: ScopeMeter, BK precision series

**Electro Test Instrumentation**  
Full range of oscilloscopes

**JDL Electric**  
Full range of oscilloscopes

**Magnet Electrical Supplies**  
Fluke; Major Tech

**Major Tech**  
Full range of handheld digital storage oscilloscopes; portable digital storage oscilloscopes; True RMS multimeter and oscilloscope

**Phambili**  
Various well-known brands available

**Voltex**  
Various well-known brands available

## PHASE TESTING

**ACTOM Electrical Products**  
Full range of phase testing equipment

**ARB Electrical Wholesalers**  
Full range of phase testing equipment

**Atlas**  
Various well-known brands available

**Bellco**  
Various well-known brands available

**Comtest**  
Beha Fluke phase testers

**Electro Test Instrumentation**  
Full range of phase testers

**HellermannTyton**  
Full range of phase testers

**JDL Electric**  
Full range of HV phase testers

**Magnet Electrical Supplies**  
Major Tech; Catu; Surgetek; Fluke; HellermannTyton

**Major Tech**  
Full range of phase rotation meters and non-contact safety phase indicators

**Voltex**  
Various well-known brands available

## TEMPERATURE TESTERS

**ARB Electrical Wholesalers**  
Full range of temperature testers

**Atlas**  
Various well-known brands available

**Bellco**  
Various well-known brands available

**Comtest**  
HART, Amprobe, Fluke and Beha

**Electro Test Instrumentation**  
Full range of temperature testers

**HellermannTyton**  
Full range of temperature testers

**JDL Electric**  
Full range of temperature testers

**Magnet Electrical Supplies**  
Fluke; HellermannTyton; Three-D; Major Tech

**Major Tech**  
Full range of infrared thermometers: K-type thermometers; pocket thermometers; wireless indoor and outdoor thermometers; data loggers; easy-to-carry pocket thermometers; and a versatile range of temperature kits

**R&C Instrumentation**  
Portable and fixed infrared thermometers; Ex- and IS-rated infrared thermometers

**Voltex**  
Various well-known brands available

## INSULATION TESTERS

**ACTOM Electrical Products**  
Full range of insulation testers

**ARB Electrical Wholesalers**  
Full range of insulation testers

**Atlas**  
Various well-known brands available

**Bellco**  
Various well-known brands available

**Comtest**  
Fluke, Amprobe

**Electro Test Instrumentation**  
Full range of insulation testers

**HellermannTyton**  
Full range of insulation testers

**JDL Electric**  
Full range of insulation testers

**Magnet Electrical Supplies**  
Fluke; HellermannTyton; Three-D; Major Tech

**Major Tech**  
Full range of analogue and digital insulation testers; insulation testers with true RMS industrial multimeters; HV digital insulation testers; and HV analogue insulation testers

**Voltex**  
Various well-known brands available

**ACTOM Electrical Products**  
Full range of polarity/ELCB testers

**ARB Electrical Wholesalers**  
Full range of polarity/ELCB testers

## POLARITY/ELCB TESTERS

**Atlas**  
Various well-known brands available

**Bellco**  
Various well-known brands available

**Comtest**  
Beha, Fluke

**HellermannTyton**  
Full range of polarity/ELCB testers

**JDL Electric**  
Full range of polarity/ELCB testers

**Magnet Electrical Supplies**  
Major Tech; Fluke; Three-D; HellermannTyton

**Major Tech**  
Full range of ELCB, industrial RCD/ELCB and digital RCD/ELCB testers

**Voltex**  
Various well-known brands available

## STANDARD METERS

**ARB Electrical Wholesalers**  
Full range of standard meters

**Atlas**  
Various well-known brands available

**Bellco**  
Various well-known brands available

**Comtest**  
Fluke, Amprobe

**HellermannTyton**  
Full range of standard meters

**JDL Electric**  
Full range of standard meters

**Magnet Electrical Supplies**  
Fluke; Three-D; Major Tech; HellermannTyton

**Major Tech**  
Full range of standard meters

**MCE Global Suppliers**  
MCE ammeters, voltmeters

**Phambili Interface**  
Full range of standard meters

**Voltex**  
Various well-known brands available

**Waco**  
Various well-known brands available

## TEST LEADS

**ARB Electrical Wholesalers**  
Full range of test leads

**Atlas**  
Various well-known brands available

**Bellco**  
Various well-known brands available

**Comtest**  
Full range of Fluke and Amprobe test leads

**Electro Test Instrumentation**  
Full range of test leads

**HellermannTyton**  
Full range of test leads

**JDL Electric**  
Full range of test leads

**Magnet Electrical Supplies**  
Fluke; Three-D; Major Tech; HellermannTyton

**Major Tech**  
Modular test lead sets and croc clips with plated test lead tips that stay sharp and accurate with silicone insulation for protection

**Voltex**  
Various well-known brands available

**Waco**  
Various well-known brands available



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## INSPECTING AND TESTING ELECTRICAL INSTALLATIONS

**MANY** electricians tell me that once they have completed a task, they don't inspect and test their work because "it's the job of the registered person or the person with the wireman's licence".

According to the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), Electrical Installation Regulations, the definition of electrical installation work is:

**'Installation work' means:**

1. The installation, extension, modification or repair of an electrical installation;
2. The connection of machinery at the supply terminals of such machinery; or
3. The inspection, testing and verification of electrical installations for the purpose of issuing a certificate of compliance.

It is of utmost importance to note that it is the electrician – not the registered person or the person with the wireman's licence – who must always test and

inspect an installation prior to working on it in order to ensure that the installation is dead so that neither he nor his assistant are injured. This is the first safety step and it is a legal responsibility.

When the installation work includes the extension, modification or repair of an electrical installation or the connection of machinery at the supply terminals of such machinery, the electrician should conduct at least the following tests, and record the results:

- Voltages.
- Earth loop impedance.
- Prospective short circuit current.
- Elevated voltage on neutral.
- Insulation resistance.
- Earth leakage unit.
- Polarity of points of consumption.
- Switching devices make and break circuits.
- Continuity of bonding conductors.

- Resistance of earth continuity conductors.
- Continuity of ring circuits.

Records should also be kept of the inspection elements, components or installation methods of the installation work that was conducted such as:

- Is the distribution board correctly located?
- Does the main switch isolate the entire electrical installation?
- Is the DB accessible for maintenance?
- Is the DB installed and secured correctly?
- Is the DB clearly identified?
- Is the DB suitable for the environmental conditions?
- Is the main switch rated/selected correctly?
- Has the main switch been correctly installed?
- Is the main switch accessible, clearly identified and has a warning label been fitted?
- Is the enclosure in sound condition and does it have the correct ingress protection?

- Are the bus bars correctly rated? Are all conductors correctly rated?
- Are the neutral bar connections correct?
- Is the switchgear rated to withstand prospective short circuit current (PSCC)?
- Are conductive parts properly earthed and all connections secure?
- Are earth connections and components correct and secured?
- Are all openings properly blanked off?
- Are all circuits protected and is the colour coding correct?
- Are all circuits identified and labelled?

It is important that the electrician, who works under the general control of a registered person, records the evidence of the electrical installation on which he has worked before the registered person conducts the final inspection and test in order to issue a certificate of compliance.

## Tackling the terminology: what is a building energy management system anyway?

By Mary Jane McCraven, director strategic communications: Schneider Electric

**D**uring the past 25 years, building automation has seen rapid progress and new approaches have evolved swiftly and in countless ways. Originally defined by Wikipedia as "the automatic centralised control of a building's heating, ventilation and air conditioning, lighting, and other systems through a building management system", legacy building automation systems (BASs) were designed to improve occupant comfort and building efficiency while reducing energy consumption and operating costs.

In the earliest days, the goal of the smart building market was to automate buildings, regardless of the practical or logistical aspects. As a result, a battle of building communications protocols erupted, BACnet vs LonTalk, much like the PC vs Mac battle of computer operating systems. And just like computer operating systems, language compatibility mattered because the protocol dictated the interoperability of automated devices. In other words, a LonTalk lighting system could not easily communicate with a BACnet HVAC system, despite the claim that both protocols were 'open'. As a result of this conflict, many facility managers patiently watched and waited on the side-lines while the smart building market matured.

Fortunately, it was not a long wait for facility managers. With the introduction of building management systems (BMSs), this market reached its next level of sophistication. Automated BAS devices were now manageable

**In the earliest days, the goal of the smart building market was to automate buildings, regardless of the practical or logistical aspects...Nowadays, the smart building market has not only matured, it has exploded in terms of sophisticated energy management options for facility managers, perhaps at a time when facility managers need it most. A recently released research report predicts that energy demand will increase by 40 % between 2010 and 2040. This is likely to enhance the growth of the smart building market, since it plays a vital role in contributing to energy savings.**

BMSs, thanks to open protocols on IP networks. As Brandy Moore, offer management director for Schneider Electric's Global Field Services for Buildings, explains, BMSs got away from the device communication issue of the past "to integrate all of the disparate systems and provide a holistic view of a facility." With BMS technology, all of the devices could speak the same language at last.

Nowadays, the smart building market has not only matured, it has exploded in terms of sophisticated energy management options for facility managers, perhaps at a time when facility managers need it most. A recently released research report predicts that energy demand will increase by 40% between 2010 and 2040. This is likely to enhance the growth of the smart building market, since it plays a vital role in contributing to energy savings.

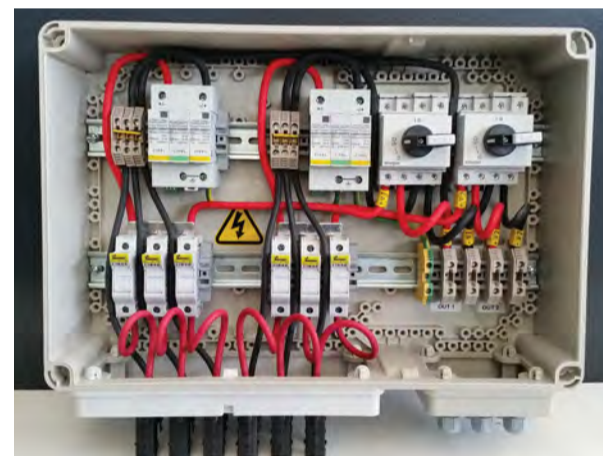
Likewise, according to a report from Navigant

Research, today's building energy management systems (BEMs) tap into the importance of "data from both the BMS and additional data on the utility, enterprise, or facility operations sides. Consequently, BEMs can provide visualisation and analysis of that data to enable better energy-related decision making". So, while building management systems can gather that data, BEMs take that gathered data and analyse it at a much more complex level.

With its shifting emphasis from automation to management to energy, smart building systems have become an integral tool for facility managers who are responsible for the essential operational assets. While the language has changed, the technology continues to evolve and improve in ways that can help keep strategic professionals one step ahead of the game.

Enquiries: +27 11 254 6400

## STATE-OF-THE-ART STRING COMBINER BOXES FOR PV INSTALLATIONS



**OVER** the past three years, HellermannTyton, a leading South African cable care manufacturing and distribution company, has expanded its business into the renewable market.

With branches in Cape Town, Port Elizabeth and Durban and a manufacturing facility in Johannesburg, HellermannTyton supplies a comprehensive range of components for cable care and management in PV installations.

"A string combiner box manufacturing facility was established at HellermannTyton's ISO/TS 16949 manufacturing facility," says Claude Middleton, the company's sales director. He explains: "Based on the ISO 90001 standard, the ISO/TS 16949 is an ISO technical specification aimed at the development of a quality management system that provides for continual improvement, emphasising defect prevention and the reduction of variation and waste in the supply chain."

He says the string combiner boxes are manufactured using Hensel double-insulated IEC type-tested enclosures, which "epitomise German technology at its best".

HellermannTyton is the sole distributor of the Hensel product range in South Africa and, explains Middleton, this range includes products that are designed according to customers' specific needs and this includes string monitoring, if required.

"The Hensel range of polycarbonate enclosures is rugged and durable being double-insulated, UV resistant, impact resistant, dust proof, water resistant (IP 65) and resistant to corrosion resulting from rain, ice and snow."

All Hensel products comply with the IEC 60 364-7-712 standard.

### A recent successful project

"HellermannTyton designed, built and supplied 588 12-string combiner boxes with integrated string monitoring to a 90 MW solar farm in the De Aar area," says Middleton, adding, "We're also in the process of designing a range of off-the-shelf string combiner boxes and ac/dc disconnection boxes to the rooftop solar industry."

For more information about PV cable care and string combiner box requirements, email [jhb.sales@hellermann.co.za](mailto:jhb.sales@hellermann.co.za)

Enquiries: +27 11 879 6674

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# SAFETY COMPLIANCE TESTER REDUCES THE RISK OF SHOCK AND ARC FLASH

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

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

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

The pocket-sized PRV240 sources 240 V of both ac and dc steady-state voltage for testing of both high- and low-impedance multimeters, clamp meters, and two-pole testers, eliminating both the need for multiple verification tools

and the use of a known high-energy voltage source for test instrument verification. To avoid accidental contact, the voltage is supplied through recessed contacts that are activated only when test probes are inserted into the modules insulated access points. A single LED indicates the sourcing of the voltage to verify the test tool, simplifying test tool verification without the need for PPE.

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

Enquiries: +27 10 595 1821



## POCKET-SIZED INFRARED TROUBLE-SHOOTER



**THERMAL** imaging has become essential technology for diagnosing mechanical and electrical faults and also for spotting energy loss and other building problems. Not every application, however, needs to be pursued with a fully featured infrared camera and this is why FLIR Systems has introduced its new TG130.

Reasonably priced, this new spot thermal camera features the FLIR Lepton core that is the size of a smart phone SIM card. This makes the new TG130 lightweight, ergonomic and pocket portable so it is always available for instant troubleshooting. Simply aim the instrument at a target object or surface to measure the temperature, click the trigger to freeze and view the image.

The FLIR TG130 is ideal for spotting thermal anomalies which can then be flagged for more detailed thermal inspection. The same unit can be used for looking at heat loss, bad electrical connections, HVAC performance and source water leaks. It's a good toolbox instrument for anyone involved in plant or facilities maintenance.

Enquiries: +27 78 706 9532



**HellermannTyton**  
www.HellermannTyton.co.za

## ELECBP - 32 Piece Electrician's Backpack Tool Kit

NEW



LGJ250 - 250mm Groove Joint Pliers



LGJ300 - 300mm Groove Joint Pliers



HAMB300 - 300g Ball Pein Hammer



SW8 - 8mm Socket Wrench Screwdriver



HUK1 - Universal Panel Key



CC38 - 38mm Cable Cutter



SVN160 - Wire Stripper



SW10 - 10mm Socket Wrench Screwdriver



H5M - 5 Metre Tape Measure



01604LM - 7 Piece Allen Key Set



VG250 - 250mm Vice Grip



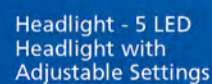
H015 - Junior Hacksaw



ECOSSET - 1000V Insulated Screwdrivers



AW200 - 200mm Adjustable Spanner



Headlight - 5 LED Headlight with Adjustable Settings



SLN160 - 160mm Long Nose Pliers (Super Range)



SEP200 - 200mm Pliers (Super Range)



SDC200 - 200mm Diagonal Cutter (Super Range)



HD16L - Heavy Duty Uninsulated Crimper (1,5-16mm<sup>2</sup>)



WAK2 - Utility Knife

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Website: www.hellermanntyton.co.za



288005/harika





# THE RIGHT TOOLS MAKE INSTALLATIONS EASIER



ACDC Dynamics supplies a complete range of hand-held manual and power tools and accessories that make installers' tasks easier.

ACDC Dynamics is a primary South African distributor of the BM brand of tools, which are manufactured in Italy and are renowned for quality and durability, says Jason Snyman, product manager for the BM brand.

"The added value provided by the BM brand goes beyond the functionality and the expected results," he says, adding that it is the company's continuing innovation, technical skills and technological know-how

that assure the brand is constantly improving.

"The development of innovative products and processes is undertaken through a continuous dialogue with electricians around the world and this is why the BM brand continues to provide solutions that optimise electricians' daily tasks," he says.

BM offers a complete range of crimping tools, cutting tools, punches and din rail cutters with a range of fasteners that includes numerous products, from wall plugs to cable connectors.

Snyman says that while crimping a connector to a cable is a task that may seem simple, crimping is

actually a fundamental procedure in wiring designs, the importance of which must not be underrated. "It must not be forgotten that the correct functioning of the whole wiring installation will depend on the quality of the crimping work."

He says the BM crimping systems guarantee simplicity of operation with maximum safety, longevity and high productivity on industrial product lines. "Dies are made in alloyed carbon steel and their stamps are developed to ensure a crimping operation that has a high retention force of the connector to the cable, aligned to the highest international standards," explains Snyman.

"The new BM professional crimping tool range, which has an ergonomically designed handle and a new leverage system that includes an elevated gear ratio, reduces the effort required and delivers the finest results."

The main characteristics are:

- Ergonomic handle with easy grip allowing for one handed operations.
- Round plastic handles with adherence to international standards CEI 20-28 and UL486A.
- Maximum crimping pressure with minimal effort.
- A pin release regulation device, for a perfect joining of dies.
- Emergency device so that incorrect terminal settings can be modified during the crimping action.
- A wide selection of high precision crimping dies for insulated, uninsulated, brass barrel and for end-sleeve terminals from 0.25 to 50mm.

## Professional scissors

The X-pro EVO range of professional wireman's scissors has won many international design awards for the range's innovative design that includes bi-component handles and an automatic spring opening system for effective cable stripping and cutting functions.

"The handle guarantees ease of use and the blades have variable edges to shear and strip Cu/Al cables up to 50 mm with the non-slip micro-serrated blades," says Snyman.

ACDC offers a complete range of hand tools from screw drivers and pliers to ratchet spanner sets and all the other consumable items such as drills, saws and cutting blades.

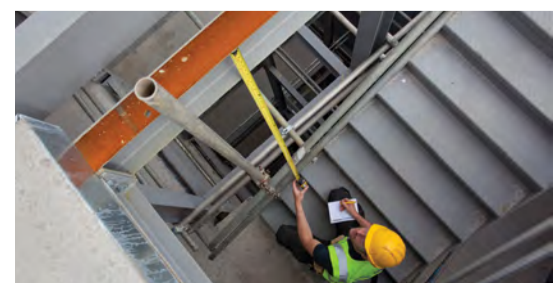
Visit [www.acdc.co.za](http://www.acdc.co.za) view the complete range of tools and accessories or contact brand manager, Jason Snyman

Enquiries: +27 10 202 3400

## AUTOLOCKING TAPE

STANLEY has added two new 5 m and 8 m tape rules to the FatMax Auto-Locking Tape line-up. Mayan Desai, trade marketing manager at Stanley Black & Decker Southern Africa says the new Stanley FatMax tapes have blades that automatically lock at the length to which they are extended. When the release button is depressed, the blade retracts. The auto-locking feature allows users to control tape retraction, which helps to provide long blade life. The tape also features a manual mode used to override the auto-locking mechanism, enabling it to become a traditional retractable tape, by depressing the button and pulling back away from the hook. Featuring a customisable hook system, users can configure their tape for the right application.

Enquiries: +27 11 472 0454

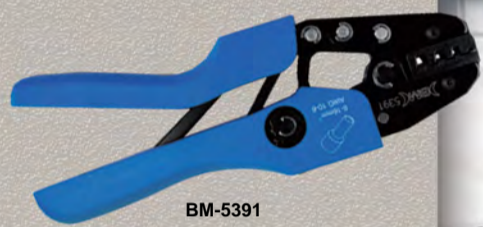


## TOOLS OF THE TRADE

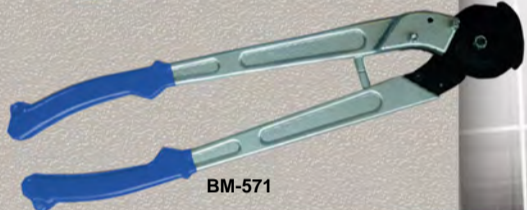
ACDC Dynamics is a primary distributor of the **BM brand of tools** in South Africa and now offers a complete range of hand-held manual and power tools as well as accessories to make your installations as easy as possible.

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BM-571



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BM-568

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# A rewarding CCMA experience – don't go there without us!

ECA(SA) news by Mark Mfikoe, national director

In January I represented an ECA(SA) member who was a respondent at an arbitration proceeding at the CCMA. At the centre of the dispute, according to this member, was an allegation of unfair dismissal that was brought about by the non-renewal of a fixed term contract.

The applicant alleged that he had never signed a fixed term contract and assumed that his employment with the member was permanent. My member had already tried to solve this dispute by offering a month's pay to the applicant during conciliation at the National Bargaining Council for the Electrical Industries (NBCEI). This offer of settlement was rejected by the applicant and the matter remained unresolved.

On assessment of the member's case, I realised that he had made two mistakes – or errors of judgement. He had failed to fulfil the requirements of Section 198B(6). These requirements are that an offer to employ an employee on a fixed term contract or to renew or extend a fixed term contract, must (a) be in writing; and (b) state the reasons why such employment would only be for a limited duration. This is the situation that defined my 'burden' going into that arbitration forum.

The ECA(SA) member had employed six employ-

ees on a fixed term contract to do a hotel installation in Sandton. The job was to be finished in August 2015 but was extended by a month. He distributed six contracts to be signed by the employees on site and for these contracts to be placed in the safety file on site. At the end of the job, he terminated all contracts and as a good member of the association, he gave the employees each an extra week's pay plus R500 as a thank you and send off.

Within a month, one of the employees served him with an unfair dismissal claim. He then discovered that only five of the fixed term contracts had been signed; and one had only been signed by the employer but had not been signed by the employee, who was now making the claim of unfair dismissal.

How could I show there was an agreement to the terms of the fixed term contract? Strictly speaking, a signature showing there had been 'a meeting of the minds' was absent. There was nothing within the other five contracts that had been signed that showed that the contracts had indeed been extended.

The only contracts in place were the original ones showing employment up to and including August 2015. There were no written extensions. This is a direct violation of section 198B(6).

**My advice to all ECA(SA) member is this: Please ensure that contracts of employment are signed and that they follow 'the letter of the law'.**

The CCMA Commissioner used his powers to reopen conciliation. I agreed to engage the applicant towards a resolution.

I offered as settlement a third of what was offered by my member at the initial conciliation. I was quite prepared to defend my member as I strongly believed that, at best, my member was negligent but there were no real grounds upon which a claim of permanent employment could be sustained. The circumstances under which the employee had been employed satisfied all the requirements of section 198B – except for the two mentioned – and I believed I could explain these away and informed the applicant accordingly.

After consultation with the applicant, I was presented with a counter offer of one month's pay. I rejected this counter offer on the basis that the employer had already taken enough 'punishment' by voluntarily paying one week's wages; and that I was at the CCMA because the applicant had failed to sign a contract that

was presented to him and he had never expressed any reservations about signing the contract.

I had also learned that the applicant's former colleagues (who had signed contracts) were hovering around the CCMA offices so I had to make it difficult for him to call them in as witnesses. I stuck to my offer of seven day's pay and expressed my confidence of taking the matter through to arbitration. After a further caucus, the applicant accepted my offer and, to my member's delight, the matter was resolved.

My advice to all ECA(SA) member is this: Please ensure that contracts of employment are signed and that they follow 'the letter of the law'. All sorts of employment contracts and the relevant extensions of such contracts are on the ECA(SA) website for members' use. Any ECA(SA) member who needs help in a labour dispute should contact the ECA(SA)'s director of labour, Stephen Khola at national office on +27 11 392 0000.

## TOUGH OUTDOOR IDENTIFICATION LABEL LASTS FOR MORE THAN A DECADE



**BRADY** has developed a top quality identification label that resists UV-light, weathering, fluids and abrasion for more than 10 years. This tough outdoor identification label keeps equipment, vehicles, components and facilities clearly identified for more than a decade.

### Ultra durable

Many outdoor identification solutions fade, shrink, crack or fall-off after a few years making them unreadable and therefore irrelevant. Brady's new, halogen free and ultra durable outdoor identification label remains attached and clearly legible for more than 10 years in tough outdoors conditions. The label is uniquely weather resistant and doesn't even need an over-

lamine to protect its print.

Clear and durable identification increases the efficient use of equipment, components, vehicles, tools and facilities, and it doesn't need frequent replacement.

### Outside applications

Available in black print on a white surface, the toughest outdoor identification label is ideal to barcode and to identify solar panels, vehicles, equipment and facilities or exposed cables. Potential applications also include identification on signposts, on vending machines, rooftop air conditioning units, doors or outside stairwells.

In sectors with outdoor activities or products, such as data/telecom, construc-

tion or electrical, this tough outdoor label will increase efficiency through clear identification and communication on the spot.

### Easy to create and apply

The toughest outdoor identification label can be printed on location using a quality thermal transfer benchtop or mobile printer from Brady. When coupled with labelling software, several barcode and serialisation options become available for on-site printing. Because the label is self-adhesive and does not require an overlamine, it is easy to print and apply. Also called B-8591, the toughest outdoor weather resistant label is part of Brady's Workhorse Label Series.

Enquiries: +27 11 704 3295

## Portable inspection lights with heavy-weight features

Like dynamite and diamonds, the Unilite premium quality LED pocket inspection light available from Garry Lumpe Imports, comes in a small package but has heavy-weight features. With dimensions of 162 x 30 x 16 mm and weighing only 95 g

(including the batteries) this small but strong die cast aluminium torch features 220 lumen white Samsung LEDs with a 10 m beam range, two-stage dimming and three to six hours run time – all powered by three AAA batteries. Garry Lumpe Imports stocks a full range of quality Unilite portable LED lights that are perfect for electrical contractors who often have to work in dark places. The range, imported from the UK, is waterproof and impact resistant. Although Unilite lamps are compact and easy to handle, they have incredibly high lumen



outputs. The range includes LED inspection lamps from 220 to 750 lumen; convenient headlamps from 80 to 350 lumen for workers who need hands-free lighting; durable – almost indestructible – flashlights with 500 lumen; and extremely powerful flashlights from 120 to 900 lumen. In addition, Unilite offers a range of intrinsically safe IP67 LED lamps that are ideal for the mining and petrochemical industries.

Enquiries: +27 11 396 4065

## THERMAL IMAGERS WITH WIRELESS TECHNOLOGY

**COMTEST**, Fluke's local representative, has announced the addition of two new models to the Ti100 family of thermal imagers: the Ti90 and Ti95. For the latest in wireless technology, the Ti90 and Ti95 are loaded with the Fluke Connect app and an 8 Gb wireless SD card, allowing users to share data in field, to get authorisations and complete orders without having to return to the office.

The Ti90 and Ti95 feature:

- 5,6 mRad – Best-in-class spatial resolution gives superior quality images and allows users to conduct infrared inspections from a safe distance.
- IR-Fusion picture-in-picture, which gives users context for the infrared image allowing for easier identification and reporting.
- 80 x 80 (Ti95) or 80 x 60 (Ti90) thermal resolution.
- Large 3.5 inch LCD and removable storage (8GB SD memory card).
- IP54-rated.

Fluke's Ti90 and Ti95 have been specifically designed for maintenance professionals, troubleshooting technicians, industrial and commercial electricians, HVAC/R technicians and facilities managers and find application in industrial (manufacturing, process, petrochemical) plants, commercial buildings, government buildings, schools, hospitals and electrical and water utilities.

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# BRUSHLESS MOTORS MODELS FOR POWER TOOL RANGE

MAKITA is continually adding updated technology and the latest updates to the versatile range of cordless 18 V Lithium-Ion power tools, the DHP459Z cordless impact drill driver and the DTD129ZK cordless impact driver, have all the latest innovative technology, including a brushless motor. The brushless motors are smaller, stronger, lighter, smarter and maintenance free.

The DHP459Z, with its compact body style measures just 192 mm from the front of the chuck to the back of the body and weighs 1.7 kg when loaded with a 3.0 Ah battery – an extremely useful advantages

when working in confined spaces. The LED light on the front of the tool provides good illumination in dark places.

This variable speed model has 16 torque settings to choose from and is capable of drilling 13 mm in masonry, 38 mm in wood and 13 mm in steel. The tool offers up to 22 500 impacts per minute and features an all-metal gear construction that ensures high transmission durability.

The DTD129ZK impact driver is a variable speed model with a no load speed of 0 – 2 500 r/min and a maximum fastening torque of 160 Nm. It produces

up to 3 200 impacts per minutes and has a net weight of 1.5 kg when loaded with a 3.0 Ah battery.

The DTD129ZK has the capacity to drive machine screws from M4 through to M8; standard bolts M5 through M13; high tensile bolts M5 through M12 and coarse threads that are between 22 and 125 mm in length.

As has become expected from Makita both models have an ergonomically designed handle with rubberised soft grip, providing comfort and control.

Both these models are compatible with the Makita 5.0 Ah (45 minutes charge time), 4.0 Ah (36 min-



utes charge time), 3.0 Ah (22 minutes charge time) and 1.5 Ah (15 minutes charge time) batteries.

The batteries and the charger are sold separately. The 3.0 Ah batteries are interchangeable with other 18 V Makita Lithium-Ion cordless tools in the range, while the 4.0 Ah and 5.0 Ah batteries are compatible with all models that start with a 'D' in the model name and have a star on the battery terminal. The rechargeable and eco-friendly 18 V Li-Ion batteries provide longer run time. The LXT Li-Ion battery generates an impressive 430% more lifetime work with two-and-a-half times more cycles.

For further information visit [www.makita.co.za](http://www.makita.co.za) or [www.facebook.com/MakitaPowerToolsSA](https://www.facebook.com/MakitaPowerToolsSA)

Enquiries: +27 11 878 2600

# Makita

LXT  
LITHIUM-ION

18V  
LITHIUM-ION



The Tool Set includes:  
DHP456Z Cordless 18V Impact Driver Drill, DHR263Z Cordless 18V + 18V Rotary Hammer - 36V, 3 x BL1840 4.0Ah Rechargeable Batteries, DC18RC Charger and a Duffel Bag. Limited availability.

DLX2069M Tool Set

## A Winning Combination

### 1 DHP456ZK 18V Cordless Impact Drill/Driver

Protects battery from over discharge and high temperatures.

Capacity:  
- Masonry: 13mm  
- Steel: 13mm  
- Wood: 38mm  
Impacts per minute:  
Hi: 0 - 22,500  
Lo: 0 - 6,000  
No load speed (r/min):  
Hi: 0 - 1,500  
Lo: 0 - 400  
Max. fastening torque:  
Hard: 50Nm  
Soft: 36Nm  
Net weight: 1,6kg



### 2 DHR263ZK - 36V (18V + 18V) Cordless Combination Hammer

Outstanding Performance and Compact Design.

Capacity:  
- Concrete: 26mm  
- Steel: 13mm  
- Wood: 32mm  
Blows per min (b/min): 0 - 4,800  
No load speed (r/min): 0 - 1,200

- Powered by two 18V Li-ion batteries in series.
- LED job light.
- 3 mode operation - rotation only, hammering with rotation and hammering only.
- Compatible with 1.5Ah, 3.0Ah and 4.0Ah batteries.



18V + 18V → 36V XPT  
EXTREME PROTECTION TECHNOLOGY

## TOOL BACKPACK CUSTOM-BUILT FOR ELECTRICAL CONTRACTORS



THE Major Tech TBP5-9 is the first genuine backpack tool bag on the South African market for the professional tradesman. Designed and manufactured according to mining specifications, the backpack has reflective tape for visibility, heavy duty construction for durability and a stabilising injection-moulded waterproof base that keeps tools dry, even in the most extreme of conditions.

The overall design incorporates a removable sleeve with pockets of various sizes and configurations to hold a multitude of tools and small parts.

Major Tech custom built the this tool backpack to hold 22 high quality durable chrome vanadium steel tools: 230 mm and 165 mm combination pliers; 215 mm diagonal cutting pliers; 200 mm and 165 mm long-nose pliers; a fully insulated seven-piece 1000 V screwdriver set with corrosion-resistant tips for heavy duty professional use up to 1 000 V ac; and soft-grip handles for maximum torque.

Other tools include a terminal driver; utility knife; 160 mm wire stripper; 200 mm adjustable spanner; 100 g hammer; neon screwdriver tester; 150 mm junior hacksaw; a tape measure; and 38 mm cable shears – all neatly packed in a well-organised, space-saving and easy-to-carry backpack.

Enquiries: +27 11 822 1551

Rutherford  
A MEMBER OF THE Hudaco GROUP



MakitaPowerToolsSA



MakitaToolsSA

Tools are not supplied with drill bits, discs, etc.

For more info. or your nearest Makita dealer contact Rutherford:

• JHB: 011 878-2600 • CT: 021 932-0568 • DBN: 031 717-6400

[www.makita.co.za](http://www.makita.co.za)





# TOOLS AND TIES FOR TOTAL FASTENING SOLUTIONS

**BANDING & Identification Solution's** range of Ball-Lokt tools and ties provide total fastening solutions for a variety of applications.

Business manager, Rosa Remendos, explains that the range of Ball-Lokt tools is able to tension the entire line of Band-It stainless steel cable ties. "The Ball-Lokt tools are ideally suited for cable to hose bundling and attachment, maintenance, sign erection, device attachment and mounting and cable and wire management."

The Band-It Ball-Lokt ties are manufactured from type 316 and 304 stainless steel. They are available in 4.6 mm and 7.9 mm widths and lengths of 201 mm to 1 067 mm. The ties are corrosion-resistant, ensuring a longer lifespan than nylon ties, especially in extreme climates. The ties are ideal for small tasks ranging from tagging to bundling large cables, and feature a self-locking design that allows for fast installation.

Installing the ties is quick and easy with the range of lightweight and portable Ball-Lokt tools to ensure uniform tension, or this can be done by hand. Their unique buckle design is fast becoming

ing the globally accepted industry standard.

The XE9229 tensions and cuts off Ball-Lokt ties, regardless of material or coating. A cut-off lever allows for manual tensioning. The XE9229 can be used with 4.6 mm, 7.8 mm and 12 mm wide ties.

The K50289 is used to install ties quickly and easily. This is a lightweight, portable Ball-Lokt tool with adjustable tension, side loading and automatic tail cut-off. It can be used with 4.6 and 7.8 mm wide ties.

The Bantam C075 and C085 hand tools are ideal for band widths from 6 mm to 20 mm. The Bantam C075 is a compact, lightweight ratchet-action tool

with a built in cutter. It is corrosion resistant and ideal for areas with restricted access. The three-way handle adjusts for one- or two-handed tensioning. It can be used with 12 and 15 mm ties.

The Bantam C085 is designed for quick take-up and tensioning. It is useful for packaging applications and requires two-handed operation.

Enquiries: +27 11 974 0424



## Easy-to-control drill for the toughest applications

Professional contractors can achieve consistent levels of drilling precision in the most demanding applications with the new Bosch GBM 13-2 RE Professional drill which, in addition to its quick action and keyed chucks, boasts a precision chuck with additional clamping ring to hold the drill firmly in place for pinpoint accuracy.

Bosch Power Tools SA senior brand manager, Juergen Lauer, explains: "The drill is great for professionals whose daily work involves pre-drilling and drilling. Powered by a 750 W motor, the two-speed gearbox and spindle speed pre-selector allow for optimal performance in a wide range of applications."

The GBM 13-2 RE Professional features a mechanical overload coupling for maximum control in any application. If the drill jams in metal or in a hard object, the motor cuts out, to protect the user and to minimise unwanted rotation. The first speed setting enables the user to drill diameters of up to 13 mm in steel and 32 mm in wood. The second speed setting, which features a no-load speed of 3 000 rpm, allows the user to drill diameters of up to 8 mm in steel and 20 mm in wood.

Enquiries: +27 11 651 9600



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## A VERSATILE BEST-SELLER CONVERTED TO LED TECHNOLOGY

Designed for the decorative lighting of Group A and B roads where performance, aesthetic and light pollution considerations are important factors, BEKA Schröder's classic Albany LED streetlight is notable for its versatility and its timeless form. Available in two sizes, with a range of LED photometric engines, it is suitable for large urban centres, as

well as smaller towns or urban areas. With its state-of-the-art LED technology, this classic luminaire is set to improve the quality, comfort and safety of lighting installations while offering significant energy savings and reduced CO<sub>2</sub> emissions. This product is also available in a post top version.

Enquiries: +27 11 238 0069



## A solution for flickering LED lamps

RHODAM Evans, product manager at Major Tech, says that cosmetic switches with pilot lights can cause LED lights to flicker – but Major Tech has come up with a solution.

"Because Major Tech's range of Vetri switches and sockets offer 'cosmetic' switches, which feature a small indicator light, there is, unfortunately, interference between the light in the switch and the LED globe," Evans explains.

"This is the case with any switch on the market that has a locator or pilot lamp as the locator/pilot lamp works on back feed from the neutral bar in the distribution board and, because LED globes use such low power, this causes interference with the LED globe.

"There is insufficient power supplied for powering the locator/pilot lamp to keep the LED on permanently but the minimal back feed does cause the LED globe to flicker intermittently.

"We became aware of this problem after receiving feedback from customers, and set about finding a solution to the problem. And this has resulted in the introduction of the 'bulb flicker adaptor'.

"This bulb flicker adaptor is connected across the live and neutral of the first light point in the circuit, which prevents interference and stops the flickering while still allowing the light to be included in the switch," Evans explains, adding that Major Tech is only able to guarantee the products in its Vetri range of cosmetic switches as the bulb flicker adaptor was designed specifically for the Vetri system.

Enquiries: +27 11 872 5500



## INCREASED SAVINGS WITH HIGH POWER INTEGRATED LED DOWNLIGHTS FOR COMMERCIAL ENVIRONMENTS

WARWICK Webber, Aurora's technical director, explains how the Enlite Uni-Fit range of high power integrated downlights is extremely viable as a long-term low cost solution in commercial environments.

"Now you can buy and install LED commercial downlights for the same price, or less, as compact fluorescent (CFL) luminaires. What's more, they offer savings of more than 50% in energy costs," says Webber.

"The Enlite Uni-Fit range of commercial downlights delivers all round performance – and that includes 15 kV surge protection to help mitigate the problems experienced from power surges or fluctuation in quality of supply from the supply authority. These high power integrated downlights feature ThermoTec technology, an integrated driver and high quality LED chips to deliver an outstanding lumen performance of up to 2 250 lumens," he explains, adding, "and superior light distribution is achieved by the honeycomb design of the polycarbonate diffuser."

Webber says the Uni-Fit range is manufactured by the Aurora Group and is the ideal cost-effective solution for general and feature lighting in new-build projects or in existing installations where CFL downlights need upgrading to more efficient LED technology. "And a non-dimmable version has been added to the range as part of the newly launched v4 Enlite catalogue, creating further savings."

"The Uni-Fit range is IP44-rated and available in multiple sizes and wattages and, as its name suggests, Uni-Fit suits just about every commercial requirement including offices, education institutions, council buildings and public toilets."

Webber explains that ThermoTec technology utilises a combination of a highly efficient LED light source, aluminium heat sinking and thermoplastic material to insure a longer life and consistent performance.

"The compact integrated driver makes for easy installation, even in low ceiling voids. Life is not affected by frequent switching, for example, when used with occupancy controls. With a minimum lifetime of three years (L70 to 25 000 hours) in most commercial contexts, these downlights need little or no maintenance," he says, adding that Enlite's Uni-Fit downlights are pre-wired with 500 mm two-core cable, 15 kV surge protection and offer a three year warranty.

He says that 'Version 4' of the Enlite catalogue is coming

soon and offers more than 200 new products.

Manufactured by the Aurora Group – voted 'Manufacturer of the Year' at the 2015 Lux Awards, Enlite is a brand of value-driven LED lamps and luminaires offering the perfect solution for any project, large or small.

Enquiries: +27 11 234 4878



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HIGH POWER LED COMMERCIAL DOWNLIGHTS

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LIFETIME  
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- Compact integrated driver for easy installation and low ceiling voids
- Life not affected by frequent switching e.g. when used with occupancy controls
- Non-dimmable IP44 rated - ideal for use in commercial offices, educational, council buildings, public toilets etc
- Pre-wired with 500mm 2-core cable

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surge protection

3year  
warranty



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## MODERN ITALIAN PENDANTS – UNDERSTATED ELEGANCE FOR CONTEMPORARY SPACES



**INJECT** vibrant style and character into any space with a well-placed pendant light – or a cluster of pendants – from Eurolux. The latest range of Austrian EGLO pendants, available exclusively through Eurolux in South Africa, offers anything from sultry mood lighting to bright task lighting and is available in a wide

variety of styles, colours and materials.

Shaun Bouchier, director at Eurolux says that pendants are versatile light fixtures that will add character to a room whether they are placed above a dining room table, a bar or a counter – even in an entrance or a bathroom.

### Tarugo

The EGLO Tarugo range offers a unique modern design with a polished chrome finish. The slim-line Tarugo is available in two styles, a three and five light pendant, featuring a circular chrome fitting with hanging orb-shaped discs. These two products have adjustable cords and are best suited to contemporary areas where space is at a premium.

Bouchier says the Tarugo is also available as a linear island fixture and offers the option of either four or six lights. “The linear frame of the design ensures for an elegant, uncluttered look, with a LED light source, which brightly illuminates a room.”

The four-light option is 725 mm long, while the six-light pendant is 975 mm long – perfect for hanging over a breakfast bar or dining room table.

### Campilo

The Campilo range features a modern, woven cocon pendant with a wicker finish and is available in

white, beige or brown. This fabric twist woven shade is best used to create dramatic appeal in a lounge area or bedroom.

Bouchier explains that the pendant has become a popular choice among homeowners since pendants provide great task lighting in workspaces but it's not as bulky or as expensive as chandeliers.

“It makes for an impressive focal point and is a space-saving alternative to a floor or table lamp because it can provide ambient lighting over a greater surface area.”

### Fornes

Those who want a statement piece should consider the textured Fornes collection, with its unique bowed shape in a gold finish. The rectangular shaped body gives a linear appearance providing a beautiful focal point and its super bright, warm light is made up of four 6 W LED panels, boasting an impressive 1 800 lumens. The inside of this light has a white finish, allowing the light to radiate around the room, adding to its functionality when placed above kitchen bench tops or dining tables. The Fornes pendant is also available in oak, chrome, white and silver finishes.

### Tombolo

The EGLO Tombolo triple pendant light is a modern design complete with a satin nickel ceiling fitting and three chic fabric shades in cream, taupe and brown. The Tombolo would look stylish over a kitchen counter or office desk or, because it can be dimmed it could add ambiance to a contemporary living room where the family relaxes.

### Sessa

The fun Sessa pendant has a steel ceiling fitting and white fabric patterned shade. The shade of this pendant has a unique cut-out design, creating the impression of floating bubbles. This unique pendant is also double insulated. The Sessa has a height of 110 cm and diameter of 38.5 cm and can be used over dining room tables, pool tables, kitchen counters or other work areas.

For more information on the entire EGLO range visit [www.eurolux.com](http://www.eurolux.com).

Enquiries: +27 21 528 8400

## MOTION SENSORS – THE ENERGY EFFICIENT OPTION

New to Legrand's range of lighting and motion management systems are energy saving motion sensors designed for use in areas with little or no natural light, in industrial, commercial and domestic buildings.

“Legrand's new motion sensors, which automatically reduce the amount of time lighting is left on unnecessarily, are particularly suitable for passage areas, such as corridors, hallways, staircases and restrooms,” says Johan Bosch, general manager, Legrand SA.

“These motion sensors have an automatic switch on/off facility, according to whether or not anyone is present. Passive infrared (PIR) technology automatically detects occupancy up to 8 m by reacting to movement.

“For optimum detection of movement, sensors must have an unhindered view of the area, with no obstacles in the devices' detection fields. It is also important that access points, like doors, are fully covered by the detection areas. To ensure correct measurement of the light level, sensors must not have any luminous flux in direct view.”

Legrand motion sensors have three wires and neutral. These sensors are suitable for quick and easy indoor false ceiling mounting, for interior wall mounting and for installation on outdoor walls and ceilings.

PIR ceiling-mounted motion sensors, with an IP 41 rating, have a recommended fixing height of 2,5 m, with a 360° detection range. Wall-mounted motion sensors, with an IP42 rating, have a 140° detection range and outdoor wall and ceiling mounting motion sensors have an IP55 rating for protection against dust and water in outdoor installations. These units have a 360° detection range.

### Adjustable time delay

Legrand motion devices have a manual adjustment facility for a light level threshold between 10 and 1 275 lux and an adjustable time



delay from ten seconds to ten minutes. Maximum ratings are : 1 000 W for incandescence, 500 VA/W halogen lamps, 250 VA/W fluorescent bulbs and compact fluorescent lamps (CFL)/LED of 250 VA/W.

These new motion sensors are available in presentation packaging from Legrand and its national distributor network.

Enquiries: +27 11 444 7971

## Creating lighting in a home office to boost productivity

IT is well-known that lighting has a direct effect on mood and that the right kind of light can ensure greater productivity and energy.

Nowadays, with people spending more time in front of their computers, the home office – or study – has become a popular home space. Whether the study is used by someone who is self-employed and works from home or by the family who uses the area to do homework, catch up on emails or for social networking, the right kind of home office lighting is imperative and must be carefully considered.

“When setting up a home office, people tend to think about the furniture and décor while lighting comes as an afterthought,” says Chantal Finn, marketing communications manager for Philips Lighting South Africa. “Poor lighting can reduce productivity and affect one's mood and, in the long run, poor lighting could also harm your vision.”

She says the general strategy for lighting a

home office is all about mixing different lighting solutions. A lot goes on in a home office – reading, studying, filing and working on a computer – and these tasks cannot be lit by one light source so multiple lighting sources are recommended.”

### Overhead lighting

Ensure that the working area is well lit by versatile overhead lighting such as recessed or surface-mounted downlights. It is also a good idea to use lamps controlled by motion sensors that only provide light when it is actually needed, which will ensure savings in terms of power consumption.

Remember that adequate overhead light improves the luminance in a room and significantly reduces shadows and glare,” says Finn.

### Task lighting

Next, add specific task lighting that will provide a focused light source on areas used for reading,

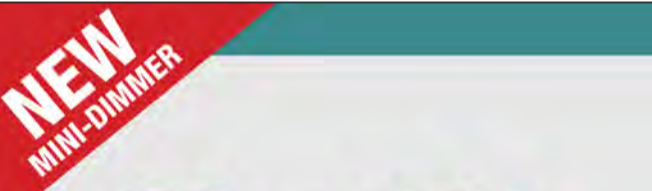
writing and working on a computer. The correct placement of a task light ensures that there is no glare and that the shadows that cause eye strain are removed.

“Not all activities require the same intensity of light so choose a desk lamp that can be adjusted to suit the task. Lamps with a dimmer are a great option and can save energy while also creating the right ambience,” says Finn.

### Natural lighting

Make the most out of the available natural light – but if the natural light is limited, there are lighting products that imitate daylight such as the Philips Scene Switch that provides cool light during the day and at night, switches to warm white light. The lighting in a study shouldn't be an afterthought or a grudge purchase – it is as important as the décor.


Enquiries: +27 11 471 5000



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MAGNET



**Keegan Moodley**  
junior lighting design engineer, KwaZulu-Natal.



**Jenine Pillay**  
junior marketing assistant, KwaZulu-Natal.

SUBMIT

Submit your photos of people on the move to sparks@crowm.co.za. All photos must be in jpeg format and high resolution.

DIARY

**Power & Electricity World Africa conference and exhibition**

The 19<sup>th</sup> annual Power & Electricity World Africa conference and exhibition will be held at the Sandton Convention Centre on 15 and 16 March 2016. For more information, visit [www.terrapinn.com/powerafrica](http://www.terrapinn.com/powerafrica)

**Nuclear Africa**

Nuclear Africa will be held from 16 to 18 March at the Nt'Shonalanga Valley Resort, Centurion, Pretoria. For more information, contact Carol van Niekerk on +27 12 807 3920.



BRIGHT SPARK

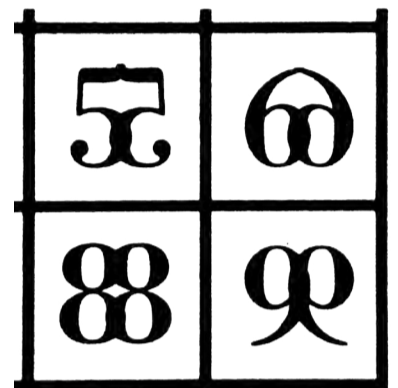
GOING UP

Mary lived on the 16<sup>th</sup> floor of a tower block. Every weekday she took the lift to the ground floor and caught the bus. However, on her return she almost always got the lift to the 5<sup>th</sup> floor only, and then walked up to the 16<sup>th</sup> floor.

Mary doesn't know anyone on the 5<sup>th</sup> floor and there is nothing there that she needs use of. Explain, please!

FEBRUARY SOLUTION

A MYSTIC SQUARE



Jane's description was indeed fanciful. Each symbol is simply one of the numbers from 1 to 9 together with its reflection in a vertical mirror. The numbers read from 1 to 8 across the rows from top to bottom, so the missing 'symbol' is a pair of 9s, face to face.

APRIL FEATURES

- Motor control centres and motor protection
- Cables and cable accessories
- Lighting

Buyers' guide

- Motors and drives

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