



# sparks

electrical news

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## Safe products: The only way to go

A YEAR after the SAFEhouse Association was launched, its chairman, Pierre Nothard, says that nine organisations have joined its ranks and two major companies have indicated their intention to join the association in the near future.

"SAFEhouse was initiated because of the considerable number of sub-standard products being distributed in South Africa – many of which are unsafe – and the intention behind SAFEhouse is to bring this issue to the attention of buyers and users; and to create a brand that is synonymous with quality and safety through integrity and self-regulation," explains Nothard.

The companies that are members of SAFEhouse are: Aberdare Cables, Apex Cordset Technologies, CBI African Cables, Crabtree, Major Tech, MES Products, Pretoria Motor Control Gear (PMCG), Tolmay Electrics and Voltex.

"There is a strong commitment from many in the industry to only deal in products that are safe and fit for purpose," says Nothard, revealing that the two major organisations that will be joining SAFEhouse are HellermannTyton and Electrobase.

"HellermannTyton has always prided itself on supplying customers with products that are SABS approved and when there is no SABS specification, that products comply with the highest existing international specifications. In this way, our customers can be assured that the products we supply to end-users are safe and fit for purpose," says Claude Middleton, sales and marketing director at HellermannTyton.

**Consumer Protection Act**  
He explains that by joining SAFEhouse, HellermannTyton acknowledges the obvious benefit of being part of a self-regulated industry body that ensures that members' products are safe, comply with the necessary standards and are compliant with the Consumer Protection Act.

"This, in turn, results in the association's main objective, which is to protect users of the products."

"We are happy to be part of an association that aims to expose non-compliant products in the market.

"We believe that a strong industry body, such as SAFEhouse, in co-operation with the relevant government authorities, can and will ensure that products supplied

to the local electrical market will increasingly be more compliant and safe," says Middleton.

### Wholesalers

Donné van Eeden, a director at Electrobase, confirmed that Electrobase will join the SAFEhouse initiative. "As we represent 47 individual electrical wholesalers, each outlet will be required to sign and agree to the SAFEhouse constitution. Those outlets will then be allowed to associate themselves with the SAFEhouse logo and their details will be displayed as complying outlets on the SAFEhouse website, giving members of the public assurance that items purchased from those stores are compliant with the necessary regulations," she explains. "The ElectroBase board believes that Electrobase's objective to have reputable and well-established members selling products of good quality fits in well with the ideals of SAFEhouse."

### Competitive pressure

Nothard points out that, in his opinion and based on reactions he has observed, there are a good number of organisations that have succumbed to the temptation, brought on by competitive pressure, to handle products that are 'on the wrong side of the quality line.' "This is a shame as many of these organisations would not otherwise have been inclined to stray over that line were it not for the widespread availability of non-compliant and unsafe products, which are misrepresented as being fit for purpose and are sometimes even unlawful copies of legitimate products."

### Objectives

Besides growing the membership of the association, a major objective has been to uncover and expose incidents of sub-standard products. Nothard says that a characteristic of the electrical industry is that "much complaining is done based on assumptions and personal interpretations".

"There is no shortage of sub-standard products and services and SAFEhouse investigates the allegations and collects facts to validate or disprove them," he explains.

Nothard says that the current series of SAFEhouse advertisements depict products that have not withstood scrutiny

for compliance, while several are "under investigation".

Nothard says it is "gratifying" that several cases of sub-standard products investigated by SAFEhouse have prompted the parties to either withdraw the product or correct the defect without SAFEhouse having to resort to exposing the cases of non-compliance.

"These are, in SAFEhouse's view, the best possible outcomes as they indicate a fundamental commitment on the part of the entities concerned to do the right thing," he says, "and this results in the companies paying more attention to quality and safety aspects than they did before this was brought to their attention by SAFEhouse."

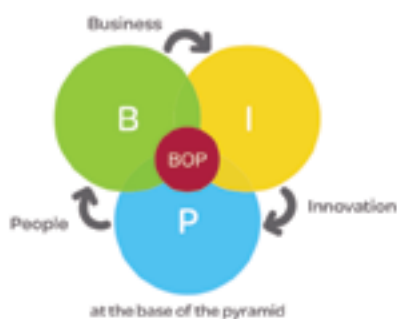
The exposure of poor products and services through an advertising campaign also helps to achieve the objective of educating customers and others who influence buying decisions. So far the communication has been limited to the electrical industry and home-owner media. As the SAFEhouse membership profile changes, this campaign will be stepped up to educate a wider

group of buyers and users. By the end of October, a website will be launched to offer information and guidance as well as illustrations of sub-standard products.

"A direct electronic mail process, which has also been established, will begin disseminating vital information to interested and influential parties, including the electrical engineering and consulting community," says Nothard, adding that this process will be followed by the use of radio advertising to publicise the SAFEhouse campaign for a safer electrical environment.

"SAFEhouse is not a 'project' – it is a strategy that will, ideally, involve an entire industry – or at least the willing part of an industry; a community that is sincere in its commitment to supplying safe products and services and demonstrates its integrity by supporting the SAFEhouse initiative, not only because it makes commercial sense but because it is the right thing to do," stresses Nothard.

To find out more about the SAFEhouse Association or how to become a member, call Pierre Nothard on 083 414 4980 or go to [www.safehouse.co.za](http://www.safehouse.co.za)



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Personality of the Month

# You have to have your heart in your business



Dean Lotter.

DEAN Lotter, general manager of Philips Lighting Solutions has made a huge impact in the seven months he's been with the company. At only 32 years of age, he manages all commercial and operational aspects of the business.

His innate business acumen emerged at the age of 25 when he was 'thrown in at the deep end' and assigned to revive a struggling German-owned South African subsidiary. With no small amount of dedication and diligence from Lotter and his team, within a year the branch had grown and was recognised as one of the top three performing companies within the global group.

Lotter's clear understanding of how to drive a business forward, coupled with his capacity for hard work, has made him stand out from the pack – and paved the way towards a bright future.

**Sparks:** Where were you educated?

**DL:** I am a very proud Pretoria boy (and Blue Bull supporter by default). I matriculated at Pretoria Boys High School in 1998 and then went on to Damelin in Boksburg to start my studies for my B Comm (Marketing) in 2004.

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

**DL:** I have only been in the electrical industry for a short time. I started in the renewable energy sub-segment of the industry in 2011 when I worked for a German photovoltaic manufacturing company, tasked with establishing a southern African subsidiary.

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

**DL:** I started my career in 2001 after a stint in the UK on a traveling holiday. I was very fortunate to be taken on as a sales representative for a German pipe tool manufacturer, Rothenberger. I was employed in the start-up team and really learnt from a young age what goes into building a business from the ground up; the challenges that are faced; and the gruelling but highly valuable lessons that come from working for a German multi-national. I was blessed to be given the opportunity to progress and ended up as the regional director for southern Africa six years later.

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

**DL:** My greatest achievement was bringing that first company back from a disastrous result and a 'near death experience'. The company was financially in trouble and the German board entrusted me with the reigns.

My team and I were given a year to turn the company around. We finished that financial year as the third best performing company globally out of 40 subsidiaries.

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

**DL:** I was employed by a remarkable German professional – Andreas Ehrler – at Rothenberger who has served as a mentor to me over all the years. Andreas has always been 10 000km away in Germany, which has given me the space to make mistakes and test my entrepreneurial ability regularly, but close enough to lean on when help and guidance was required.

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

**DL:** In the short time that I have spent in the lighting industry, I would have to say that it is the 'LED lighting revolution'. In a non-regulated market, the industry is being bombarded with a continuous flurry of poor products. Add to that the speed at which the technology is evolving and we find a weary client who distrusts this significant technology.

Although it is a challenge, it has created a very exciting market where we see an opportunity to dominate with our global market-leading product portfolio.

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

**DL:** The two things that drive and excite me every day are my brand and its people. I have joined an amazing brand that stands for so many of the things I believe in. I am building a team of exceptional people who are visionary and as passionate about customers as I am.

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

**DL:** I motivate my staff through empowerment and ownership. In the same way that I learnt about business and living the brand, I believe that my staff should have the freedom to make many of their own decisions but to be accountable and

to own those decisions. Through this process they grow, and when they win, they truly win. Every one of them is passionate about the brand and very clear on their role in the team and achieving what we've set out to do.

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

**DL:** I wouldn't change any of it for the world.

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

**DL:** Yes. The electrical industry is a fascinating space, particularly in the lighting sector.

Energy efficiency is the name of the game and this is fast tracking advances in technology across all areas.

This situation has created a very exciting industry and, most importantly, we get to provide solutions that improve peoples' lives instantly in one way or another.

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

**DL:** "To be successful, you have to have your heart in your business, and your business in your heart." – Thomas Watson, Sr.

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

**DL:** Three things on my bucket

list are to take my family to Disney World; do the 94.7 Cycle Challenge in less than three hours; and complete an MBA.

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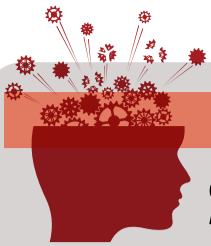
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Working knowledge by Terry McKenzie-Hoy

## Square peg, square hole

THERE comes a time in everybody's life when you stop and wonder what you are doing with your life. And now, more than ever, many electricians are wondering if they are in the right profession.

There is very little romance in electrical contracting or being an electrician in a factory.

Many electricians, particularly those who are employed in industry, start to use their job only as a means of earning money and they start living for the weekends when they can go fishing, boating, sailing, motorcar racing, cycling, running ... all

those things that people do when they are not working.

Now, there's nothing wrong at all with getting more enjoyment out of your hobbies than you do out of your work. However, a difficulty for electricians particularly, is that the way to the top is not really open so, if your life revolves around your hobbies, you're stuck.

If you start off as a junior salesman, there is a fairly good chance that you may one day become the sales manager, chief executive in charge of

sales or even the chief executive officer.

The reason for this is that you understand the process of business. The electrician, however, is very unlikely to be rewarded because he knows how to set a variable speed drive or wire a switchboard. Many electricians and electrical contractors turn away from their chosen profession and, late in their lives, start other things that may be considered as 'unsuitable'. Some start restaurants and some become salesmen ... One of the electrical contractors I know gave it all up to ferry yachts

across the ocean.

So, how do you know if you're in the right profession? The first thing to do is to decide whether or not you are happy in your work; if you really enjoy what you are doing; if you really enjoy the hours you are working; and if you are content with the money you are getting (okay, well nobody is, but you understand...).

But if you are not content, it's probably a good time to think about what you would like to do next – either you could change your job or you could start your own business. There are many books that tell you what not to do when starting a business so I am not going to tell you what not to do. But, trust me, as a person who started – and runs – my own business, it's very demanding. You have to work long hours. Surprisingly though, you don't have to take many financial risks, but you do have to be content with probably not having as much money as you would have liked. I have been in business on my own for 19 years and I can say it has definitely been rewarding in the sense that I feel free, I am my own person, and I decide what I want to do. At the same time, financially I would be far better off if I were to work at one of the corporates but then life wouldn't be as much fun.

If you decide that you are content and actually like what you are doing, then try to find out where you will be going in the future. It might be a good idea to ask your boss if you can change from being an electrician to being a salesman, or change from being an electrician to some other profession that you might prefer. If the answer is that there is "no change possible" and you like being an electrician, then look around and ask around for new opportunities. Generally, if you've been employed and you can get good references, there is a world of jobs waiting for you out there. Artisans are in high demand and in short supply – and, on contracts, they are well paid.

What I would like to do is to encourage you with a word of advice: Don't spend the rest of your life unhappily grinding away in the same position at the same factory. If you do, you are wasting your life. There is a simple calculation I can give you: every person has around about 600 000 hours of life – that's if they are lucky to live until the age of 70. If you're 40 years old, more than half of that life is already gone. Ask yourself: Do I want to waste one single hour by being unhappy?

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The UPS system uses a double conversion online topology, which provides a regulated and reliable power supply. The Galaxy 300i offers an integrated transformer and internal mechanical bypass to

provide higher levels of power availability. These features, combined with the compact design and easy installation, meet all the key requirements of customers looking for a three-phase UPS in the 10-40kVA power range.

"Low and medium power level customers have stated that the core issues that UPS systems must address are: power availability, reliability, manageability and convenience," explains Eben Owen, E&S sales manager at Schneider Electric South Africa.

"The new Galaxy 300i system has been designed to fulfil all these key requirements.

Also, the model is ideal for first time three-phase UPS purchasers, as it is a UPS that is easy to install and operate, and it is marketed at an affordable price."

Users are able to monitor and manage power requirements locally and remotely through a simple web/ SNMP interface and a user-friendly display available in 18 languages.

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## Three new corporate team members welcomed



(Back): Kirk S. Risch (sales manager), Johannes Oelofse (sales engineer), Edgar Botes (business development manager) and (front) Alexis Barwise (managing director).

DEHN Protection South Africa, a recently established local subsidiary of Germany-based lightning and surge protection, earthing components and safety equipment manufacturer, DEHN + SÖHNE, has announced the appointment of three new associates to the company.

Kirk S. Risch (sales manager) has joined the company to oversee the development of new sales channels. Risch is responsible for conducting market specific research, and developing as well as implementing sales and marketing strategies for the full Dehn Protection South Africa offering. He will undertake specification work with consulting engineers, key end-users and standards committees, like SABS, whilst providing technical sales and guidance through lectures and seminars. Johannes (Hano) Oelofse (sales engineer) will work closely with consulting engineers and key end-users on assessing technical specifications. Along with product management and branding, the business development manager, Edgar (Eddy) Botes, will be responsible for developing the market for the Yellow/Line product offering, and evolving relevant marketing and sales strategies for implementation in this segment.

Alexis Barwise, managing director, says: "The market slowdown in Europe led DEHN + SÖHNE to seek expansion opportunities in developing regions. Our focus in southern Africa is on the local telecommunications, oil and gas, energy supply, transportation, mining and solar sectors, and we are set to broaden our product and solution offering within the marketplace."

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**HellermannTyton**

Training and development by Nick du Plessis

## Do you know what you are getting for your 'buck'?

WHEN buying a new car, most of us follow a similar procedure: We first review our budget to establish if we are, indeed, able to afford a new car. Then we visit a few motor dealers to look at what cars are available and, most likely, we test drive a car (or two) to ensure that we 'get a feel' for the car and ascertain that it is what we would like to drive. Lastly, we take a few brochures and, of course, the sales person's estimate of the costs involved. In all likelihood, this process would be repeated at a few motor dealers and perhaps even with various

makes and models of motor vehicles.

We then consider all the options, narrow them down and, if we are undecided, we may even take the car for another test drive. Eventually, we make an informed decision on which vehicle we are going to purchase. Inevitably, it costs more than we bargained for but, deep down, we know we have made the correct choice.

During my consultations with various employers, I have found that the principles we apply when purchasing items for ourselves are not the

same as when we are sourcing training providers to train our future artisans. I have noticed that employers tend to use the same centre for many years and continue using it because it's 'easier that way' or because it's 'the closest' and not because the centre provides the best possible training.

In order to 'drive' your business to the next level, here is a suggested procedure to follow when selecting the best provider of training:

**Step 1:** Review your Workplace Skills Plan (WSP) or immediate needs. Decide what skills your

organisation requires as well how many learners would be needed (electrical, fitters, etc).

**Step 2:** Contact the relevant Sector Education Authorities (SETAs) to ascertain which training providers are accredited to deliver the skills you need. You should also be able to download this criteria from the SETA web page although, in my experience, the databases are not always up-to-date. However, a phone call to the quality assurance department of the SETA should produce results. Alternatively, you can search the web for names and verify their credentials with the relevant SETA.

**Step 3:** Visit the various training providers to establish the following:

- Is the centre's accreditation valid and how long will it remain valid? You would not like to send your learners to a training provider and, half way through their training, discover that the centre is no longer accredited.
- What is the ratio of facilitators to learners? The ideal ratio would be around 1 to 15 in the workshop. Remember, if a learner is going to learn a skill and there are too many people in the class, they may not get the attention they require from the facilitator.
- Does the centre have the required training materials and other training resources for all the learners undergoing training? Ask to look at the centre's resources and don't hesitate to ask any questions that may arise.
- Does the centre have all the practical equipment required to train learners? Does the training equipment work and is there sufficient equipment to train the number of learners they claim they can train?
- Does the centre have an adequate staff complement of facilitators or will one facilitator be required to look after more than one group of learners learning different skills at the same time? Will your learner get the attention and support you are paying for?
- Does the centre have an administrative process in place to keep you up-to-date and informed of your learners' progress? My recommendation is that employers should be informed on a weekly basis regarding a learner's progress, performance and whether or not they are attending classes.
- I would advise that employers walk around the centre and notice whether it adheres to health and safety criteria. It is essential to establish that the learners will be looked after and that all safety principles will be applied while learners are there. It is also advisable to inspect the centre's housekeeping and take a look at the ablution and locker room facilities. Hygiene is an important element that is often overlooked.
- How long would the learner need to be with the training provider? Some SETAs require 32 weeks of institutionalised training that equates to about 12 weeks training per year for each year of an apprenticeship programme. If a learner is only in attendance for four to six weeks in a year, what could he or she learn in the context of their trade during that time?
- Lastly, ask yourself whether you would be happy to send your learner to that centre. Do you have that same warm and fuzzy feeling that you get when you are behind the steering wheel of that vehicle you've finally decided to purchase?

Always remember that you get what you pay for – and skills development is no different. When choosing a training facility, you should be able to see what you will be paying for; if you can't, how can you be sure that you will get your money's worth?

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# This product *is unsafe!*

This product has been freely available on the South African market, distributed by a major retailer.

It displays an SABS test report number, implying its conformance with regulations.

Yet, it does not pass the **SINGLE POLE INSERTION TEST** (Protection against electrocution) required by the regulations. Consequently the plug can mistakenly be inserted as illustrated, quite possibly by a child, thus rendering the exposed pin live when connected to a supply of electricity. Anyone then touching the exposed pin will be electrocuted. This instance has been reported to the National Regulator for Compulsory Specifications (NRCS) and the National Consumer Protection Commission.

There are many sub-standard products distributed in South Africa, usually at lower prices than their compliant competitors.

Beware when purchasing electrical products!

A product supplied by members of the SAFEhouse Association is your assurance of responsible behaviour: **SAFEhouse members undertake to supply only products that comply with regulations and that are safe and fit for purpose.**

Look out for the SAFEhouse logo on electrical products.

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For more information about the SAFEhouse Association:  
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)

The South African SAFEhouse Association is an independent organization established by industry and is committed to communication with customers.

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Getting to grips with SANS 10142-1 by Hannes Baard

# Getting your head around electrical industry legislation

SO, here we are... some time after my 'last instalment' in July, 'Starting over at the beginning' in August and 'Constructive criticism and friendly debate' in September, we now find ourselves in October. It's hard to tell the beginning from the end, it seems...

One thing we can be sure of, however, is the indisputable fact that our daily electrical lives are dictated by legislation... There are essentially two Acts in South Africa that deal with the supply, distribution and use of electricity. And, not to be forgotten, are the respective regulations that must be read in conjunction with the two Acts...

The one is more focused on the 'supply side' (Electricity Regulation Act 4 of 2006) and the other more focused on the 'consumption/user side' (Occupational Health And Safety Act No. 85 of 1993). Let's have a look at the Acts and their 'credos' to get a bigger picture...

## Electricity Regulation Act 4 of 2006

This Act is to establish a national regulatory framework for the electricity supply industry; to make the National Energy Regulator of South Africa the custodian and enforcer of the national electricity regulatory framework; to provide for licences and registration as the manner in which generation, transmission, distribution, reticulation, trading and the import and export of electricity are regulated; to regulate the reticulation of electricity by municipalities; and to provide for matters connected therewith.

## Occupational Health and Safety Act No. 85 of 1993

This Act serves to provide for the health and safety of persons at work and for the health and safety of persons in connection with the use of plant and machinery; the protection of persons other than

persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work; to establish an advisory council for occupational health and safety; and to provide for matters connected therewith.

The Electrical Installation Regulations, General Machinery Regulations and Electrical Machinery Regulations, of course, are the sections of the OHS Act that concern us most.

What strikes me as a little odd though, is the fact that while these two Acts 'co-exist', they are also 'isolated' from each other, it seems.

Only a few years ago, in 2008 to be exact, the Electricity

Regulations for Compulsory Norms and Standards for Reticulation Services (GN R773 in GG 31250 of 18 July 2008) was published.

Clause 2 states: 2. 'In order to maintain good quality of supply, to ensure stability of the electricity network, to minimise electricity load shedding and to avoid blackouts, the following norms and standards for reticulation services must be maintained in an area of jurisdiction...'

It then goes on to deal with the individual areas and actions to be taken or measures to be implemented.

Areas include streetlights and lighting in buildings, electric water heaters, space heating, cooling, ventilation and end-users consuming 1 000kWh and more, etc.

The measures or actions to be taken include, amongst others, remote control switching of loads such as swimming pool pumps, hot water systems, 'smart systems' and what all else.

Now, in these regulations it is required by law that supply authorities institute these measures by as early as 1 January 2012, for instance.

My question is: "Why do I have to find out about these things while doing research for my article?"

Is it not the responsibility of the supply authorities or Government to enlighten the electrical construction industry?

Some of these measures can only be instituted with the assistance of the contracting industry – providing space in distribution boards for devices, slack in wiring to eliminate unnecessary joints, etc.

Another area of concern is why (with only a suburban street in between) does a municipality install some of these measures on one side of the road but Eskom does not do the same on the other side?

And when these measures are installed (in a distribution board) by subcontractors from

somewhere outside of the particular supply area, why hide behind 'exemptions' from things such as Certificates of Compliance to get away with shoddy workmanship?

Anyway... I just thought to highlight this to underscore the fact that even though there are plenty of laws, if the policing is shoddy, the laws might as well not have been made...

Now let us turn our attention to the Occupational Health and Safety Act No. 85 of 1993. After all, this is the Act we should concern ourselves with more, seeing that we are on the 'user side' of the supply of electricity.

Earlier we saw that the Occupational Health and Safety Act No. 85 of 1993 is primarily concerned with the provision of a safe working environment and it does not only cover electrical installations and machinery, but a plethora of areas concerning more or less all the working environments we encounter. We will, however, concentrate on the electrical portions of the Act.

So, let us jump right in and, as is customary, we'll start with the definitions. By now you should have come to realise that, in the end, if you are on top of the definitions, the rest comes easy – right?

There is a slight difference in the way the definitions are presented in the Act and regulations as compared to the definitions found in SANS 10142-1 and that is the definitions are not individually numbered, but presented to us 'in bulk' as part of Clause 1 in the Act like this:

### 1. Definitions

(1) In this Act, unless the context otherwise indicates: 'Approved inspection authority' means an inspection authority approved by the Chief Inspector: Provided that an inspection authority approved by the Chief Inspector with respect to any particular service shall be an approved inspection authority with respect to that service only...

The above seems a tad lopsided, but what the legislator wants us to understand, is that if a person is an approved inspection authority for pressure vessels for instance, he cannot use that same certification and declare himself an approved inspection authority for electrical installations or vice versa!

Even though there may be a wise guy who thinks he possesses the ability to inspect both without the proper certification!

Next time we'll carry on where we left off with more definitions from the Act that have a direct bearing on our industry rather than just covering everything for the sake of covering them.

Till next time

## New branch opens

MAGNET, specialists in the supply, implementation and support of electrical equipment and industrial instrumentation, has recently opened a branch in Pietermaritzburg.

"Magnet, which was established in Durban over 40 years ago, has expanded its branch network to now include a Pietermaritzburg operation that will service KwaZulu-Natal's Midlands region," says Brian Howarth, managing director

of Magnet. "This new outlet supports an extensive stockholding of electrical equipment and industrial instrumentation, with a specialist project and energy saving solutions service."

The branch, at 5 Quarry Road, offers a wide range of quality brands that include Schneider, 3M, Klingspor, Philips, Energywise, Eaton and other general contracting supplies.

Enquiries: (033) 355-5700

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## Spare a thought for the fireman's switch

WITH the growing popularity of LED signage the stalwart of the signage industry – neon, along with the specific requirements for this technology, is not always top-of-mind.

One product that is often

associated with neon is the fireman's switch. Often seen on the outside wall of commercial buildings, these non-flammable, high visibility switch-disconnector/isolators are used by firemen to cut the electrical current to neon-lighting

or other hazardous electrical equipment in case of fire.

The non-flammable, bright red aluminium-alloy box manufactured by ABB with IP65 protection is easy to install and operate, the operating handle is locked in the 'O' position and requires a two-handed grip to reset. In the interests of safety the interlocking mechanism prevents accidental switching and it is possible to add an auxiliary contact.

The ABB fireman's switch range comprises two-, three- and four-pole options with a maximum operational current rating of 32A.

A feature of this product is its ability to operate the under-voltage release or shunt trip in the main

incoming circuit breaker. Should a fire break out the utility supply to the building can be isolated simply by the opening of the switch by the emergency services.

The under-voltage release is fed through one of the main contacts of the fireman's switch, when the voltage is removed the breaker trips. Flexible wiring allows for the shunt trip to be fed through the N/C auxiliary contact, when the switch closes the auxiliary contact opens, powering the shunt trip and trips the breaker. Versatile design allows the 'O' position to be configured either vertically up or down, to meet local regulations.

Enquiries: (010) 202-5000



## Safety a priority



impedance measurements (up to 0.01 ohm), without tripping RCDs rated at 30mA and above,"

he explains.

Other features include convenient lock down test button for hands-free testing with auto start operation. Display and front panel keyboard come with backlight for visibility at night or in dark places.

"The K4140 features dual display that allows simultaneous measurements such as loop and PFC/PSC, testing of phase rotation, voltage and frequency.

Testing is possible for two-wire connections for loop, line-line, line-neutral and PSC," says Grobbelaar, adding that the instrument's new 'overmould' design allows for maximum grip.

A set of fused safety test leads is included and the instrument also comes with additional crocodile clips, a soft carry case with shoulder strap and a quick reference guide.

Enquiries: (011) 872-5500

THE Major Tech K4140 has everything needed for Earth Loop impedance tests and prospective short circuit (PSC) testing. "This instrument incorporates Anti-Trip Technology (ATT), which electronically bypasses residual-current devices (RCDs) when performing loop impedance tests," says Werner Grobbelaar.

"This saves time and money by not having to take the RCD out of the circuit when testing and is a safer procedure to follow. With the ATT function enabled, a test current of 15mA or less is applied between line and earth.

It enables resolution loop

## Shaping the future of the African power and electricity industry

SOME of the world's leading and globally recognised power companies will take centre stage in Johannesburg next month in an effort to address the African energy crisis and also shape the future of the African power and electricity industry.

Taking place from 9 to 11 October at the Sandton Convention Centre, Africa Electricity Exhibition and Conference will serve as a comprehensive showcase for the power generation, transmission and distribution, lighting, new and renewable energy, nuclear energy and water sectors.

The event coincides with a recent report titled, Prospects for the African Power Sector, and published by the International Renewable Energy Agency (IRENA), indicating that nearly 600 million people in Africa lack access to electricity with governments in urgent need to add around 250GW of electricity capacity by 2030 to meet growing electricity demand.

The research further states that Africa faces a unique opportunity today as nearly two-thirds of the additional capacity needed by 2030 has yet to be built.

The three-day exhibition

returns with the Africa Electricity Conference, hosting an esteemed panel of industry experts from South Africa who will discuss and debate key energy issues that the Republic faces today.

Nelisiwe Magubane, director general of Energy from the South African Department of Energy will deliver the keynote address about facilitating investment and supporting innovation in South Africa's power generation sector.

She will be joined by experts from Standard Bank, the National Energy Regulator of South Africa (NERSA), Cape Peninsula University of Technology in Cape Town, who will address 'the right energy mix' to achieve a sustainable power strategy for South Africa and establish a regulatory framework to support innovation and new developments in energy provision.

The three-day conference will culminate with a presentation about balancing community development and rural economic growth objectives alongside a financially viable infrastructure venture, explaining how project developers meet social development objectives and still demonstrate sound financial benefits.

Enquiries: [www.africaelectricity.com](http://www.africaelectricity.com)

## Manufacturers & contacts

**ABB**  
Alida / Herbert

**ABN-Africa Enclosure Systems**  
Neville Clarke

**Aberdare Cables**  
Annelene Sivalingum

**AC/DC Dynamics**  
Sales

**ACTOM Electrical Products**  
Russel Ramsden

**Actom Low Voltage Equipment**  
Rob Hare

**Alstom Protection & Control**  
Faisal Hoosen

**Alvern Cables**  
Stephen Liasides

**CBI-electric: low voltage**  
Charl Osborne

**CBI-electric: low voltage (Industrial Controls Division)**  
Langa Nxumalo

**CCG**  
Nicholas Lackinger

**Cipsal by Schneider Electric**  
Nico van der Merwe

**Crabtree Electrical Accessories**  
Annelene Sivalingum

**Danfoss**  
Donald Fowkes

**Denver Technical Products**  
Mervyn Stocks

**Eaton Electric SA**  
Marlene Coetzee

**Electroparts**  
Brian Nieuwstad/Keith Hickman

**Elen Enclosures**  
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**Elquip Solutions**  
Mike Cronin

**Gamma Panel and Switchboard Manufacturers**  
M Pienaar / Alex Di Paulo

**General Electric**  
Derrick Searle

**Grafoplast Wiremarkers**  
Darryl Crampton

**HellermannTyton**  
Sales

**Lapp Group**  
Candice Stewart

**Legrand**  
Luk Ivens

**Major Tech**  
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**MCE Global Suppliers**  
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**NDA Mining Supplies**  
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**NewElec**  
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**Nextube**  
Peter Baker

**Omron**  
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**Pelco by Schneider Electric**  
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**Power Process Systems**  
Sales

**PREI Instrumentation**  
Norman Woolf

**Pretoria Motor Control Gear Products (PMCG)**  
Hannes Schwartz or Colin Laubscher

**Radiant Group**  
Gerard Pillay

**R&C Instrumentation**  
Steve Edwards

**Rittal**  
Dale Allison

**RS Components**  
Adelaide Taylor

**Rockwell Automation**  
Jeff Sandison

**Sabelco Industries**  
Marc Moreau (CT) / Dion Fourie (JHB)

**SEW Eurodrive**  
U Roos

**Sicame SA**  
Nawaaz

**South Ocean Electrical Wire Co**  
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**Stone Stamcor**  
Theo Momphe

**Strike Technologies**  
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**Voltex**  
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**Waco Industries**  
Sales

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David Broom

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**ARB Electrical Wholesalers**  
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**CEMA Electric Motors**  
Andre Bussey

**Emble Marketing**  
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**Iso-Tech Systems**  
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**Denver Technical Products**  
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Distributor for CCG cable terminations

**Waco Industries**  
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Full range of cabinets for motor applications

**ABN-Africa Enclosure Systems**  
Full range of cabinets for motor applications

**AC/DC Dynamics**  
Perano; Gewiss; Ilmox; LAPP

**Actom Low Voltage Equipment**  
Full range of cabinets for motor applications

**Alstom Protection & Control**  
MCS; special and standard starters

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**Controlgear Products**  
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ARIA polyester cabinet type enclosures; APO polyester box-type enclosures

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**Low Voltage Switchboards**  
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**Motor Control & Automation**  
Manufacture of motor control centres and distribution boards

**Power Process Systems**  
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**R&C Instrumentation**  
Infrared inspection windows

**Rittal**  
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**Sabelco Industries**  
SABS 1473-1 and IEC 60439-1, electro-galvanised steel, 3CR12 and stainless steel main distribution boards, sub distribution boards, control desks; fully- and semi-withdrawable units; automation panels, VSD panels, PLC cabinets and wall boxes; cubic type tested switchboards up to 8799A/120kA, 1sec

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GEC Alstom

**Power Process Systems**  
Fans for motor applications

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**Actom Low Voltage Equipment**  
Full range of drives and soft starters

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**Bearing Man**  
Full range of drives/soft starters

**CBI-electric: low voltage (Industrial Controls Division)**  
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**FKI Rotating Machines**  
Full range of drives and soft starters

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Distributor for Carlo Gavazzi Automation components

**Voltex**  
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**Waco Industries**  
ABB

## Displays

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Full range of displays

**ABN-Africa Enclosure Systems**  
Full range of displays

**AC/DC Dynamics**  
Full range of displays

**ARB Electrical Wholesalers**  
Full range of displays

**CBI-electric: low voltage**  
Full range of displays

**CEMA Electric Motors**  
Full range of analogue and digital panel meters and displays

**Controlgear Products**  
Full range of LV motors

**Eaton Electric SA**  
Full range of displays

**Electroparts**  
Displays

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DuPi digital bar-graph panel meter; on/off controller

**Gamma Panel & Switchboard Manufacturers**  
Full range of displays

**Instralec**  
Instralec, DPM, and M System displays

**Legrand**  
Lexic meters

**Lido Electrical East Rand**  
Merlin Gerin, Heineman, CBI

**MCE Global Suppliers**  
Full range of panel meters

**Mimic Crafts**  
Digital panel meters specialising in large digit and Modbus; alarm displays and annunciators

**Pelco by Schneider Electric**  
Magelis human machine interface terminals and operator dialogue displays; Powerlogic energy management systems and power meters

**Power Process Systems**  
Full range of displays

**Pretoria Motor Control Gear Products (PMCG)**  
Full range of displays

**Radiant**  
Full range of displays (meter reading, etc)

**RS Components**  
Full range of displays

**SEW Eurodrive**  
Three phase and single phase AC squirrel cage motors; AC servo motors; change pole motors; torque motors

**Thorn Electrical Distributors**  
Distributor for Carlo Gavazzi Automation components

**Waco Industries**  
ABB

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Full range of cable glands, lugs, and ferrules

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

**CCG**  
Full range of cable glands, lugs and ferrules

**Controlgear Products**  
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**Eaton Electric SA**  
Full range of cable glands/lugs/ferrules

**Electroparts**  
Cable glands/lugs/ferrules

**Elen Enclosures**  
AGRO Eurotech cable compression glands; polyamide; standard; Exe, and EXI

**Enclosure Solutions**  
Full range of cable glands, lugs and ferrules

**Gamma Panel and Switchboard Manufacturers**  
Full range of cable glands, lugs and ferrules

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Torque shear lugs and ferrules up to 36kV

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Comprehensive range of pre-insulated crimp terminals, up to 6mm<sup>2</sup>

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Manufacture of compression lugs and ferrules tested to IEC61238-1 and regulator approved; special connectors to customers' specifications

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**Voltex**  
Full range of cable glands, lugs and ferrules

**Waco Industries**  
Waco lugs and ferrules; CCG cable glands

**Wilec**  
Full range of cable glands, lugs and ferrules

## Controls for motor applications

**A&A Dynamic Distributors**  
Full range of controls for motor applications

**ABB**  
Emergency stop and pilot devices

**ABN-Africa Enclosure Systems**  
Full range of controls for motor applications

**AC/DC Dynamics**  
Full range of controls for motor applications

**Actom Low Voltage Equipment**  
Full range of controls for motor applications

**Alstom Protection & Control**  
Control desks; control panels; selector switches

**ARB Electrical Wholesalers**  
Full range of controls for motor applications

**CBI-electric: low voltage**  
Full range of controls for motor applications

**Controlgear Products**  
Full range of controls for motor applications

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PCE range of industrial switches and sockets: industrial plug tops, connectors and phase inverters, wall mounting sockets (new version); straight flanged plugs; sloping flanged sockets; switched interlock sockets; 32A plugs and sockets; industrial Taurus and adaptors

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Esbee

**Gamma Panel & Switchboard Manufacturers**  
Full range of controls for motor applications

**General Electric**  
P9 22mm push buttons, pilot lights, joysticks, e-stops; 077 30mm push buttons, pilot lights, joysticks

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Full range of MCE and Onesto control buttons, pilot lights, switches, etc

**Motor Control & Automation**  
Full range of controls for motor applications

**NewElec**  
Full range of controls for motor applications

**Omron**  
Push buttons, pilot lights, on/off switches

**Pelco by Schneider Electric**  
Harmony 22mm push buttons, pilot lamps, selector switches, control stations; Zelio logic programmable controllers; crane controllers; contactors; relays; overload relays

**Power Process Systems**  
Full range of controls for motor applications

**PREI Instrumentation**  
AC to 4 - 20mA current transducers

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

**RS Components**  
Full range of controls for motor applications

**Thorn Electrical Distributors**  
Distributor for Giovenzana Control components

**Voltex**  
Full range of controls for motor applications

**Waco Industries**  
ABB, Salzer and ContactPlasma

## Motor protection and surge protection

**A&A Dynamic Distributors**  
Full range of motor and surge protection

**ABN-Africa Enclosure Systems**  
Full range of motor protection and surge protection

**AC/DC Dynamics**  
Full range of motor protection and surge protection

**Actom Low Voltage Equipment**  
Full range of motor and surge protection

**Alstom Protection & Control**  
Microm motor protection relays

**ARB Electrical Wholesales**  
Full range of motor protection/surge protection

**CBI-electric: low voltage**  
Full range of motor protection relays

**CEMA Electric Motors**  
Full range of motor protection relays

**Controlgear Products**  
Thermal overloads; full range of electronic motor protection relays

**Eaton Electric SA**  
Full range of motor protection and surge protection

**Electroparts**  
Avanti

**FKI Rotating Machines**  
Full range of motor and surge protection devices

**Gamma Panel & Switchboard Manufacturers**  
Full range of motor and surge protection

**General Electric**  
SFK manual motor breakers; GPS manual motor breakers

**HellermannTyton**  
Full range of motor and surge protection devices

**Inher SA**  
P&B motor and feeder vision protection relays

**Instralec**  
M System motor protection

**Iso-Tech Systems**  
Pluggable surge arresters for Type 'A' and 'C'; connectors and bushings

**Legrand**  
Lexic MCCB; Lexic DPX MCCBs

**Lido Electrical East Rand**  
Telemecanique, Merlin Gerin, Omron, Carlo Gavazzi, Phoenix Contact, Heineman, CBI

**MCE Global Suppliers**  
Onesto surge protection

**Motor Control & Automation**  
Full range of motor protection

**NewElec**  
Full range of motor protection and control relays for stand alone as well as field bus communications supporting a wide range of protocols

**Omron**  
Motor protection relays 1-phase and 3-phase

**Pelco by Schneider Electric**  
LR9 thermal overload relays up to 630A; GV motor circuit breakers

**Power Process Systems**  
Full range of motor protection and surge protection

**PREI Instrumentation**  
Vibration monitors; non-contact temperature monitors

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

**RS Components**  
Comprehensive range of motor and surge protection

**Rockwell Automation**  
Thermal overloads; electronic overloads; overloads with communications

**Strike Technologies**  
Motor protection relays and Zorc high frequency transient over voltage surge suppressors for motors

**Surge Technology**  
Lightning and overvoltage protection; surge arresters

**Thorn Electrical Distributors**  
Distributor for Carlo Gavazzi Automation components

**Vamp Power System Technologies**  
Vamp Relays

**Voltex**  
Full range

**Waco Industries**  
ABB

## Wiring and wiring accessories for motor applications

**Aberdare Cables**  
Multicore (three and four core) and single core armoured cables – GW (general wiring) green/yellow for earthing

**Alstom Protection & Control**  
Customised enclosures and starters

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

**Controlgear Products**  
Design and manufacture of wiring and wiring accessories for MCCs, DBs, starters, etc, to customer requirements

**Eaton Electric SA**  
Full range of wiring and wiring accessories for motor applications

**Electroparts**  
Wiring and wiring accessories for motor applications

**FKI Rotating Machines**  
Full range of wiring and wiring accessories for motor applications

**HellermannTyton**  
Full range of wiring and wiring accessories for motor applications

**Legrand**  
Full range of wiring accessories for motor applications

**Lido Electrical East Rand**  
All types

**Pelco by Schneider Electric**  
Comprehensive range of terminal blocks, disconnectors, cable ducting and enclosures

**Power Process Systems**  
Full range of wiring and wiring accessories

**R&C Instrumentation**  
Infrared inspection windows

**RS Components**  
Full range of wiring and wiring accessories for motor applications

**Rockwell Automation**  
Full range of terminal blocks

**Voltex**  
Full range of wiring and wiring accessories

**Waco Industries**  
ABB

**Wilec**  
Full range of wiring and wiring accessories for motor applications

## Cable support systems

**A&A Dynamic Distributors**  
Full range of cable support systems

**AC/DC Dynamics**  
Full range of cable support systems

**ACTOM Electrical Products**  
Cable support systems to suit all installations

**ARB Electrical Wholesalers**  
Full range of cable support systems

**Controlgear Products**  
Full range of cable support systems; on-site installation to and from MCCs, starters, DBs

**Eaton Electric SA**  
Full range of cable support systems

**Electroparts**  
Cable support systems

**Equip Solutions**  
Flexible conduit, metallic and non-metallic

**Grafoplast Wiremarkers**  
Stainless steel wire mesh cable trays

**Instralec**  
3M cable support systems

**Lapp Group**  
Silvyn protective cable conduit and cable carrier systems

**Lido Electrical East Rand**  
Oline, Cabstrut, Technostrut, Stutfast

**Major Tech**  
Plasti-Loc cable ties ranging from miniature cable ties to extra heavy duty; manufactured from nylon 6/6 in black and natural

**Power Process Systems**  
Full range of cable support systems

**Pretoria Motor Control Gear Products (PMCG)**  
Full range of cable support systems

**RS Components**  
Full range of cable support systems

**Strut-Ahead**  
Full range of cable support systems

**Verotest**  
Seba KMT products; repairs of fault location equipment, cable fault location; AC/DC pressure testing; repairs to faulty cables; fault location equipment; training seminars

**Voltex**  
Cabstrut range of cable support systems

## Contactors, breakers, relays

**A&A Dynamic Distributors**  
Full range of contactors, breakers, relays

**ABB**  
Full range of contactors, breakers, relays

**ABN-Africa Enclosure Systems**  
Full range of contactors, breakers, relays

**AC/DC Dynamics**  
Full range of contactors, breakers, relays

**Actom Low Voltage Equipment**  
Full range of contactors, breakers, relays

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

**Alstom Protection & Control**  
TAIAN contactors/relays

**ARB Electrical Wholesalers**  
Full range of low voltage circuit breakers, isolators, earth leakage devices and wiring accessories

**Clipsal by Schneider Electric**  
Circuit breakers

**CBI-electric: low voltage**  
Full range of contactors, breakers and relays

**Controlgear Products**  
Full range from all leading manufacturers

**Denver Technical Products**  
Hermetically sealed ac/dc contactors up to 600A+; high voltage relays

**Eaton Electric SA**  
Full range of contactors, breakers, relays

**Electroparts**  
Iskra

**General Electric**  
MC/CL/CK contactors; 3/4P 2.2kW to 45kW; MCR/H6 relays; record breakers; Redline miniature circuit breakers

**Iso-Tech Systems**  
CSP circuit breaker for HV Transformers; HV selector switch up to 36kV

**Legrand**  
Lexic contactors; Lexic MCCB, Lexic MCCB breakers

**Lido Electrical East Rand**  
Telemecanique, Merlin Gerin, Siemens, Moeller, Cutler Hammer, Mitsubishi, Omron, Carlo Gavazzi, Heineman, CBI

**Major Tech**  
Veti 3kA and 6kA one-, two-, three- and four-pole MCCBs; Veti IS one-, two-, three- and four-pole isolator switches; Veti EL RCCBs (residual current circuit breaker without integral overcurrent protection) 6kA one-, two-, three- and four-pole isolator switches; Veti Ready Boards – VRB1 ready board with 50A overload protection; VRB1L ready board with 50A overload protection and light; VBE12ASMT populated 12-way distribution board; VBW8ASP populated weatherproof swimming pool distribution board

**MCE Global Suppliers**  
Full range of MCE contactors and relays, Onesto DIN circuit breakers, earth leakages and Schenker mini rail circuit breakers and earth leakages

**Omron**  
Plug in relays, power relays, PC board relays, contactors 4 – 110kW, solid state relays

**Pelco by Schneider Electric**  
Contactors from, 6 to 2 750A (ac/dc/vacuum/low consumption); Zelio interface relays up to 16A; Zelio miniature relays up to 12A; Zelio universal relays up to 10A; GV motor circuit breakers up to 110kW; multi 9 miniature circuit breakers from 1 to 125A, 2.5 to 25kA; NS moulded case circuit breakers up to 3200A; Masterpact NT/NW power circuit breakers from 800 to 6 300A

**Power Process Systems**  
Full range of contactors, breakers and relays

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

**R&C Instrumentation**  
Full system power management local and via Internet

**RS Components**  
Full range of contactors, breakers and relays

**Rockwell Automation**  
Full range of contactors with various coil and line voltages, full range of accessories; major breakers; circuit breakers; various plug and control relays with a full range of coil voltages, different configurations

**Strike Technology**  
Schrack moulded case circuit breakers

**Strut-Ahead**  
Full range of contactors, breakers and relays

**Thorn Electrical Distributors**  
Distributor of Carlo Gavazzi Automation components

**Vamp Power System Technologies**  
Vamp relays; Reyrolle Pacific switchgear

**Waco Industries**  
ABB, ELKO

## Cable management accessories

**A&A Dynamic Distributors**  
Full range of cable management accessories

**ABB**  
Full range of DIN rail mounted terminal blocks

**AC/DC Dynamics**  
Full range of cable management accessories

**ACTOM Electrical Products**  
Full range of accessories for all types of installations

**ARB Electrical Wholesalers**  
Full range of cable management accessories

**Clipsal by Schneider Electric**  
Grey conduit, 20mm, 25mm, 32mm, 40mm and 50mm

**Controlgear Products**  
Full range of cable management accessories

**Crabtree Electrical Accessories**  
Compact mini trunking and accessories; stop ends for compact mini trunking; cable line trunking and stop ends for cable trunking; Ceen fittings – one to four-way round box side entry; eight hole round box side and back entry; four-hole round box back entry; U-conduit box side entry; Y-conduit box side entry; one to four spout loop-in box; wall boxes; SAU extension box; extension box; dome lid; self-locating dome lid; oversized lid; cable entry pipe; couplings; male and female adaptors; solid bends; flexible strap saddles; spacebar saddles; inspection elbows, bends and tees; extension rings; surface box and lid; weather-proof box; SABS conduit; flexible conduit

**Denver Technical Products**  
Cable reels and hand winches

**Eaton Electric SA**  
Full range of cable management accessories

**Electroparts**  
Cable management accessories

**Elen Enclosures**  
Grey PVC trunking

**Emble Marketing**  
Schermer cable spiking device

**Gamma Panel & Switchboard Manufacturers**  
Full range of cable management accessories

**Grafoplast Wiremarkers**  
Full range of Grafoplast marking systems, elematic cable ties and stainless steel cable ties

**HellermannTyton**  
Full range of cable management accessories

**Instralec**  
3M cable management accessories

**Lapp Group**  
Cable accessories including UV resistant cable ties, steel cable ties and twist tail cable ties; Fleximark cable marking products

**Legrand**  
Full range of cable management systems

**Lido Electrical East Rand**  
HellermannTyton, 3D, Cabec, Gravoplast

**Major Tech**  
Full range of nylon 6/6 weather-resistant cable ties

**Nextube**  
Stakbox access boxes; Kabelflex cable conduit; Optex cable conduit

**Pelco by Schneider Electric**  
Full range of cable markers

**Power Process Systems**  
Full range of cable management accessories

**Pretoria Motor Control Gear Products (PMCG)**  
Full range of cable management accessories

**Radiant Group**  
Full range of cable management accessories

**RS Components**  
Full range of cable management accessories

**Stone Stamcor**  
Brady cable identification marking systems

**Strut-Ahead**  
Full range of cable management accessories

**Thorn Electrical Distributors**  
CCG cable terminations

**Voltex**  
Full range of cable management accessories

**Waco Industries**  
Waco cable ties, Waco jointing kits

## Armoured/shielded cables

**A&A Dynamic Distributors**  
Full range of armoured/shielded cables

**Aberdare Cables**  
Multicore (three and four core) and single core armoured cables

**ARB Electrical Wholesalers**  
Full range of armoured and shielded cables

**Controlgear Products**  
Full range of armoured and shielded cables

**Electroparts**  
Armoured cables

**Lapp Group**  
Unitronic data communication cables; Olflex power and control cables

**Lido Electrical East Rand**  
All types and sizes of armoured/shielded cables

**Power Process Systems**  
Full range of armoured and shielded cables

**RS Components**  
Full range of armoured and shielded cables

**South Ocean Electrical Wire Co**  
Flame retardant (FR) armoured cable 600/1 000V; low halogen (LHFR); flame retardant (ECC FR) armoured cable; armoured cable (FR) 1.9/3.3kV; single core PVC AWA cable; aluminium flame retardant armoured cable; Surfex wires

**Voltex**  
Full range of armoured and shielded cables



(011) 683 0641



(031) 910 0200

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



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Electrical Accessories

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(011) 879 2000



(011) 879 6600

Mark Palmer, Gauteng Electrical Inspection Authority

## Understanding the implications of the finger test

I HAVE found that the 'finger test' is one of the least understood aspects in electrical installations so it is not surprising that the 'jointed test finger' is an instrument that is conspicuous by its absence... which is rather surprising when one considers that one of the primary safety requirements applicable to all electrical installations is 'access to live parts'.

Over the last few months, a colleague and I have made some attempts to ascertain the availability of this 'instrument' and alas, it is not generally available.

This creates – and it has been the case over many years – the problem of identifying live parts that may be accessible with the 'standard test finger' when this instrument is not being used for the test.

This 'assumed' accessibility to live parts has, therefore, become dependent on the average size of the 'Registered Persons' finger and the obvious disadvantage for those Registered Persons who have smaller than average fingers!

What concerns me particularly, is the use of the 'standard test finger' by Registered Persons testing electrical installations when issuing Certificates of Compliance so let's look at the legislation pertaining to access to live parts as specifically detailed in SANS 10142-1, Clause 5.1.1 Live parts

*It shall not be possible to touch any live part within arm's reach with the standard test finger (see SANS 60529)*

a) during normal operation, or b) when a cover

is removed, unless the cover is removed with the use of a tool or a key.

It is important to note that SANS 10142-1 refers to the standard SANS 60529 and that the specifications of SANS 60529 make provision for 'the degrees of protection' provided by enclosures (IP Code). Annex J in SANS 10142-1 (informative) is an extract from SANS 60529/IEC 60529.

When dealing with this particular requirement, note also that 'the IP rating of the standard test finger' is more fully detailed in SANS 60529.

In relation to Annex J and SANS 60529, the IP code element is given as IP2X.

### How do we interpret the IP Code and what does this mean?

The IP code – defined in the second edition of 'IEC60529 Degrees of Protection provided by enclosures (IP code)' – consists of two numerals and two optional extra letters. The first numeral '0', '1'...6, or 'X' defines the protection against ingress of solid foreign objects and against access to hazardous parts.

The second numeral '0', '1'...8; or 'X' defines the protection against the ingress of water.

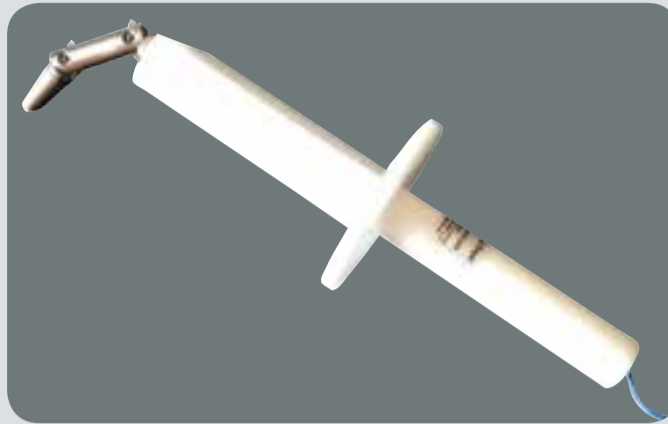
Put simply, therefore, to comply with the

provisions of SANS 10142-1 means that the full penetration of a 12,5mm diameter of sphere is not allowed. *The jointed test finger shall have adequate clearance from hazardous parts.*

To pass the test for the first characteristic numerals '1', '2', '3' and '4' against solid foreign objects (in this case IP2), it is satisfactory if the full diameter of probe does not pass through any opening.

In essence then, as we are dealing with an instrument in terms of determining compliance with a standard, it becomes necessary to have such an instrument.

Reference should be made to SANS 60529 for full specifications.



The Standard test finger - SANS IEC 60529.



Clear access for test finger – now to test for live parts.



Ensuring no access with the jointed test finger on distribution board.

## Turning the tables on copper cable theft



IN the month of June alone, copper theft cost South Africa R11.1 million, according to the South African Chamber of Commerce and Industry's (SACCI) copper theft barometer.

There are a variety of anti-theft products on the market and even the South African Police Service is stepping up the training of its officers combatting copper theft, yet none of these offer a compre-

hensive long term solution. The re-sale value of copper as scrap metal remains the biggest issue and while financial incentives remain, copper cabling will always be a theft-risk.

ARB Holdings aims to change this scenario with the local launch of Fushi Copperweld's Coloured Anti-Theft Metallic Oxide (CAMO) ground wire. A product that has the appearance of galvanised steel,

yet it features a steel core clad in highly conductive copper. While the copper layer ensures reliable conductivity it is also impossible to separate the copper from the steel core, making the wire virtually worthless to cable thieves without sacrificing performance.

"For the first time there is a truly viable product available, able to turn the tide on cable theft in South Africa," says Clinton Cockerell, cable director for ARB.

The ARB Group is the exclusive stockist and distributor of Fushi Copperweld bimetallic products including CAMO throughout the SADC region.

The reason for Cockerell's confidence is four-fold:

- CAMO does not look like copper. Fushi Copperweld has developed a process of permanently changing the colour of the shiny outer copper layer to a dull, dark grey, without affecting conductivity or connectivity. This means that CAMO looks like low-cost galvanised steel.
- CAMO is magnetic. Most thieves test whether a wire is copper by running a magnet over it, as steel is magnetic while copper is not. This adds to the illusion that they are encountering low-cost steel.
- CAMO is hard to cut, unlike soft, pliable copper.
- CAMO has virtually no scrap value. Should thieves steal the cable anyway, they will soon find out that the re-sale value of CAMO is hardly worth the effort. The scientifically verified metallurgical bond found in CAMO means the copper can't be separated from the

steel and because the valuable copper is tainted by the cheap steel, it has virtually no scrap value.

Cockerell points out that copper cable theft has become such a problem locally that utilities are going to extreme and costly lengths to protect their copper wire stock. "Scrap dealers also rarely question the source of the material and recovered copper is usually untraceable because material is seldom marked. We truly believe that CAMO offers a long term solution to the issue of copper cable theft, and in many ways CAMO is even the technically superior product."

When comparing copper cabling and CAMO, the differences are clear. Copper has poor tensile strength and often requires upsizing to meet tensile requirements; it is also typically toughened for flexibility. CAMO on the other hand offers high break load ratings, excellent tensile strength and ample capacity for fault current safety margins at comparable sizes, as well as containing superb fatigue properties.

The product also provides outstanding corrosion properties and is 7 – 9% lighter than copper, while offering the same connections, coatings and insulations as copper.

"Here is a product that has been treated to look like galvanised steel, is magnetised and difficult to cut, creating the illusion of low-cost steel. In terms of conductivity it is on par with copper," comments Cockerell.

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

Enquiries: (031) 910-0200

## KEEP YOUR TRANSFORMER WORKING.

An electrical engineer's **worst nightmare** – a transformer on fire.

The good news is that regular sampling of transformer oil can help avoid this. And by using a reputable, independent company like WearCheck – a small investment can give you precious peace of mind.

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

- Transformers have a degradable paper core that needs to be monitored via furanic analysis.
- The oil should be monitored for dissolved gases and corrosive sulphur, long before this becomes a serious, expensive problem.
- Contamination of transformer oil by water or dirt needs to be closely monitored as contaminants may cause grave transformer problems.
- Environmentally, transformers should be tested and retested every time oil is cleaned or changed to monitor cross-contamination and ensure it is PCB-free.

WearCheck also offers a sampling/thermography service.

**Transformer oil analysis** - limiting unexpected failures - boosting productivity and profitability - providing peace of mind.

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WEARCHECK IS A REGISTERED ISO 9001 AND ISO 14001 COMPANY.

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A member of the Set Point group  
**THE LEADER**  
IN OIL ANALYSIS

## Complete fixed speed motor solution

THE Integra motor controller has been re-launched nationally under the Suresense Technology banner, which is available locally from OEN Enterprises. Integra can make significant savings on the running costs of applications that use ac induction motors.

Motors are the world's largest consumer of electrical energy, accounting for 70% of all industrial electricity used.

Incredibly, however, motors are unable to intelligently match the power they consume to do their job. The Integra motor controller is unique as it dynamically adjusts power to a motor as its load changes. It constantly monitors the motor's load and calculates the exact amount of power required at any

time, reducing the amount of electricity used, increasing the life-span of motors, reducing maintenance requirements and reducing the amount of carbon dioxide produced at the point of generation.

Once the motor is running, Integra constantly monitors the load on the shaft of the motor and adjusts the electricity consumption in accordance with the job that it is doing at any point in its duty cycle. Integra is able to shut motors down when they are not required.

The timed shut off feature automatically turns off motors that have not been used for a specified period of time.

Integra's stored energy feature takes full advantage of the kinetic energy present

in fly wheel applications and can decrease run time of the motor by as much as 30% in certain cases.

A variety of stopping methods are also featured on the unit – soft stop, plug braking and dc injection braking. Integra is suitable for a wide variety of applications and results will vary depending on several factors, but even a small saving will still provide a 100% guaranteed return on investment.

Enquiries: (011) 675-4447



## Advanced motor protection



THE ProLoc LV motor protection and management relay is the brainchild of EMIS in Heidelberg. Developed by NewElec, the relay enhances the protection and safety aspects desired by clients in the coal mining environment. It comprises two separate but inter-related components: the panel mounted protection relay incorporates four inputs and two outputs; and the door mounted MMI provides a further three output contacts. In order of importance, the design

emphasis is on improving the safety of users exposed to dangerous electrical shock. The relay incorporates features such as earth insulation lock out, frozen contactor pole detection and lock out, running earth leakage protection, earth fault detection and back-tripping. It also provides short circuit detection with enhanced trip time and fault level.

The relay provides ease of parametrisation as the MMI stores up to five different settings with its associated logic functions.

The user is able to switch from one motor setting to the next with a few button presses.

Motor management functions including event and fault records can be downloaded by the user.

Enquiries: (012) 327-1729

## Compact, cost-effective phase angle meters



MEGGER'S PAM400 phase angle meters are compact, light-weight, fast and easy to use. They offer a convenient and cost-effective solution for a wide range of applications, including checking poly-phase metering installations, testing protective relays, making comparative tests in electrical substations, and verifying phase angle deviation on power transformers.

The PAM400 range includes two models. The PAM410 provides facilities for accurately and quickly measuring the phase angle between two

voltages, two currents or between one current and one voltage. Voltages up to 500V and currents up to 25A can be connected directly to the instrument, and the current range can be readily extended by using external current transformers. The instrument displays phase angle directly, with a resolution of 0.1° with no need for calculation or interpolation.

The second instrument in the range, the PAM420, provides phase angle measuring functionality identical to that of the PAM410, but adds facilities for two-channel voltage, current and frequency measurement. It also has a high-accuracy timing function that can be triggered by voltage signals or volt-free contacts, and can measure times up to 999.999s with a resolution of 1ms.

The PAM420 has a built-in rechargeable battery, allowing it to be used in almost any location.

Supplied complete with a carrying case, test lead set and, in the case of the PAM420, a mains-operated battery charger, Megger's new compact phase angle meters feature robust construction to ensure long life even in tough operating conditions.

They have a CAT III 500 V/CAT IV 300V safety rating, except for the timer inputs on the PAM420, which are rated CAT II 250V. Both models can be calibrated locally – full instructions are given in the user manual – which eliminates the inconvenience and cost of having to send them to a specialist calibration facility.

Megger is represented locally by Surgetek.

Enquiries: (011) 792-1303

**GRP enclosures for tough environments**

Designed and made in South Africa

Since 1978

- GRP = Glass Reinforced Polyester (not plastic)
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# Precision current loop calibrator with HART communication



THE Comtest Group, Fluke's authorised test and measurement distributor for South and southern Africa, has introduced the new Fluke 709 and 709H mA loop calibrators, specifically designed to save time and produce high quality results.

These calibrators are built around a user-friendly interface with a Quick-Set rotary encoder knob. This tool reduces the time it takes to measure, or source, current and power up a loop.

The protective holster easily fits into a technician's hand and the large backlit display is easy to read, even in dark, cramped worked areas.

### HART communications

The 709H adds HART communications and supports a select set of the HART universal and common practice commands. This makes the 709H unique as both an affordable, compact loop calibrator and powerful HART communication troubleshooting tool.

In the communicator mode the user will be able to read basic device information, perform

diagnostic tests, and trim the mA output on most HART enabled transmitters. In the past, this could only be done with a dedicated communicator, a high-end multifunction calibrator, or a laptop computer with HART modem. Fluke 709H will allow virtually any technician to service and support HART devices.

In addition, the 709H offers:

- Logging of HART data in the field. Once recorded by the 709H in the field, the 709H/ TRACK software can upload the HART configuration of up to (20) HART devices in your plant and output data in either (.csv) or (.txt) format.
- Data logged mA loop measurements and HART data can be recorded from a particular transmitter for troubleshooting and loop tuning. The data log feature offers selectable capture with recording intervals of 1 to 60 seconds and a logging capacity of 9 800 records or 99 individual sessions. Each data sample contains the 709H mA measurement, all four process variables, and the standard status conditions.

- Simple two-wire connection for all measurements.
- Variable step and ramp time in seconds.
- Valve test (source and simulate defined mA values with % keys).

### HART communication

The Fluke 709H offers a built-in HART modem for communication capability to perform the following commands:

- Read message.
- Read tag, descriptor, calibration date.
- Read sensor PV information.
- Read PV output information.
- Read long tag.
- Write PV ranges (upper and lower).
- Enter/exit fixed current mode.
- Set zero offset.
- Trim DAC zero (mA output 4mA).
- Trim DAC gain (mA output 20mA).
- The Fluke 709H also offers ability to store up to twenty HART device configuration files for uploading via 709H/TRACK software via the 709H/TRACK software. Configurations can be stored as .csv or .txt files. This allows the end user to document plant HART.

Configurations can be stored as .csv or .txt files. This feature gives the technician direct access to key device parameters, allowing better troubleshooting, calibrating and maintaining of plant assets.

Fluke Calibration produces the broadest range of electrical, RF, temperature, pressure and flow calibration instruments and software available and are found in standards and calibration laboratories as well as industrial, plant and commercial facilities around the world.

Enquiries: (011) 608-8520

### Product highlights

- Best-in-class accuracy at 0.01% reading.
- Compact rugged design.
- Intuitive user interface with quick-set knob for fast setup.
- 24V dc loop power with mA measure mode (-25% to 125%).
- Resolution of 1µA on mA ranges and 1mV on voltages ranges.
- Built in selectable 250 Ω resistor for HART communications.

# All round motor protection

A GOOD electronic motor protection relay, when associated with pumps, should always protect against the pump running dry and ensure that, on starting, the motor and consequently the pump do not turn in the wrong direction.

Even if the medium being pumped is present, the flow may be blocked causing severe overheating with dangerous consequences for the pump and operator.

NewElec offers a comprehensive pump motor protection solution, which protects both the motor and the pump in electric motor / mechanical pump combination applications.

The KA, KB and KC motor protection relays provide a single unit solution in pumping applications. The units provide thermal overload, underload, unbalanced current, over voltage, under voltage, over temperature, locked rotor, jam and phase rotation protection.

The relays monitor the current that is being used by the motor and thus the extent of the pump loading, so that an overload fault will result in the system tripping. When the protection relay reads a drop-off in load and reaches a user-selected pre-set threshold, it means that the medium is dry and results in the relay disconnecting the motor supply.

If the incoming supply voltage to the pump motor is connected incorrectly, the relay will prevent the motor from being started in the wrong rotation, and if the voltages present on the motor are too high or too low, the relay will trip the motor.

In the case of load loss protection, the electric motor is not at risk, except in the case of a borehole pump motor, but the relay will react to the load loss for protecting a mechanical pump.

The relay is also useful for monitoring wear on pump impellers where pump



efficiency deteriorates with use.

NewElec includes overvoltage protection in its products to protect the electric pump motor. If the voltage is not monitored, the effects of overvoltage could lead to motor loss due to overheating.

NewElec's software can be used to record all motor and pump activities, such as phase loading, voltages present, thermal capacity used, and load trending over any time period.

The software permits parameterisation of the input/output map by providing the user with an easy-to-use truth table. It is also used to display the hours of pump-motor use, and is often used for preventive maintenance on components such as bearings.

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- Insulation lockout / earth leakage with VSD harmonic filtering
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## Preventative maintenance strategy for surge arrestors

TEST Instruments Africa (TIA) has announced the launch of the SA 30i, a leakage current meter from Scope. It's a state-of-the-art on-line test system for residual life assessment of surge arrestors.

The instrument measures and directly displays the values of resistive and total leakage current.

The SA 30i can be pre-loaded with the identity (asset number, make, year, serial number, etc) and tests conducted on the same ID of the arrestors are saved under its own folder.

Trend analysis software, Sadata, picks up this data and files it in a similar fashion on a PC. This analysis software enables the user to take a decision to repair or replace the arrestors, while considering safety limits.

The SA 30i is designed to work under the hostile electrostatic noise found in live EHV switch yards.

### Special features

- Measures 3rd harmonic resistive current with system harmonic compensation, and the total leakage current.
- In-built temperature measurement facility enables calculation of temperature compensated leakage currents.
- Date and time stamp on test data.
- Results are displayed on LCD, printed on optionally supplied thermal printer and can be stored in the in-built memory of the instrument. 1 000 test records can be stored.

- The SA 30i is powered by easily available re-chargeable SLA batteries. It works for a day's testing needs on a single charge.
- The SA 30i is a switchyard compatible instrument. This makes the instrument convenient to use.
- Built-in standard calibration source and self-calibration check facility.
- Serial communication port (USB) to transfer data to PC and Windows based data management software.
- Data management, analysis and trending through Sadata software.

### Measurement

A special low-noise clamp-on CT is used to read

leakage current in the earthing conductor of the arrester.

The field probe is a non-contact, remote sensing device employed to take the reference signal from the HV line to the arrester, for measurement of phase and system harmonics.

The SA 30i measures 3rd harmonic resistive and total leakage current by compensating the harmonics present in the system as per IEC 60099-5 B2 or without system harmonic compensation as per IEC 60099-5 B1.



Enquiries: (011) 608-8541

## Perfect solution for sealed switching applications



GIGAVAC's P105 MiniFactor™ is a small, lightweight and cost-effective device. Designed and manufactured in the USA, the hermetically sealed GIGAVAC P105 joins GIGAVAC's line-up of other sealed switching products including high voltage relays and EPIC sealed contactors.

At less than 100g, the GIGAVAC P105 can easily be installed in any orientation on a panel in a matter of seconds. A sealed chamber for both contacts and coil assures clean switching in any environment. Safe make and break power switching can be achieved at any voltage up to 1 500Vdc. With bi-directional switching capability and current carry to 50A, the MiniFactor is the perfect choice for pre-charge, charge and solar applications.

The solar and electric vehicle markets have increasing requirements for a cost-effective, sealed high voltage contactor. The P105 provides the perfect solution for sealed switching applications at a competitive price. The P105 has performance specifications that would be expected from far more expensive contactors.

Enquiries: (011) 626-2023

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With its very low profile, the unit sits almost flush with the work-surface when closed, but revolves to a slightly raised position when ready for use, reducing the risk of spill-liquid ingress. The **One-Touch** also features an obstruction detection function: in the event of an obstruction, the unit will immediately stop and reverse back to the opposite position. This unit is also available as a manual, or non-motorized unit, called the **Rotadock**. The **Rotadock** is rotated open by hand, and can house both Power and Data\* connections within the unit. Comms modules are also available.

Enjoy the clean lines and unparalleled functionality of the **One-Touch** range without compromising on cost. The non-motorized **Rotadock** makes this high quality product range accessible to all.

\*Limited combination of Data connection options available within the unit itself.

**Rotadock**  
Manual Unit



**FEATURES:**

- Precision German motor for ultra-quiet operation (One-Touch)
- Mounts almost flush with work-surface when closed
- Raised above work-surface to reduce spill-fluid ingress when open
- Easy installation - simple and effective ratchet mounting system
- Touch controlled electronic operation with visual status LED indicator (One-Touch)
- Additional modules for data/media/USB etc. are available
- Obstruction detection safety features

**SPECIFICATIONS:**

Operating voltage: 220V - 250V AC @ 50 Hz

Current: 15A

Max power: 3000W

Local electrical regulations determine the final electrical rating of the system.

Length: Variable (Depending on configuration)

Width: 115 mm (Approx. 4 5/9 in.)

**This month's feature...**

- Sep**: PDO Mk1 & PDO Mk2
- Nov**: SOHO Mk1 & SOHO Mk2
- Dec**: Punto
- Jan**: S2000e
- Feb**: Slimline Range
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## Auxiliary transformers supplied to Kusile Power Station

THE Zest WEG Group, a significant player in the African transformer market, has delivered 18 auxiliary transformers to Eskom's new Kusile coal-fired power station about 15km north of its Kendal Power Station near Witbank, Mpumalanga.

This is part of an order placed in 2011 for a total of 42 auxiliary transformers, from 3MVA to 20MVA, which will be supplied in consignments until 2016. It is also one of the biggest orders Zest WEG Group has received for a single power station at one time.

Kusile is the second most advanced coal-fired power plant project in Eskom and will be the first power station in South Africa to have state-of-the-art Flue Gas Desulphurisation technology installed to remove oxides of sulphur from the exhaust flue gases. The first unit is planned for commercial operation in 2014, with the last unit expected to be in commercial operation by 2018. The construction of Kusile Power Station will have a major impact on the lives and the economy of the community of the Nkangala District, as homes and social

infrastructure are being developed to serve the thousands of contractors working on site.

This transformer supply contract will run until 2016 and Russell Finch, power division manager at the Zest WEG Group, believes that the Kusile contract was awarded partially as a result of the group's ability to prove itself as a reliable vendor to Eskom.

"It's possible that we secured the contract to supply the auxiliary transformers to Kusile based on the successful deliveries accomplished to date within the older Eskom contract," he says. "Factors such as service, quality, delivery times and price may have positioned us with Eskom as the best vendor for this category of transformers."

Through a different contract awarded by Eskom in 2007, Zest WEG Group is supplying distribution, generation and transmission transformers ranging from 2.5MVA to 160MVA to the power utility as part of its infrastructure upgrade programme to boost capacity and meet growing local demand for power. The units are being manufactured and

tested at WEG in Brazil, the largest transformer manufacturer in Latin America, with Eskom representatives present to witness and approve the test results for each subsequent consignment. After testing, the auxiliary transformers are partially disassembled and packaged for sea freight to



Four 7.5 MVA and one 20 MVA WEG transformers, part of the eighteen transformers delivered to Eskom's new Kusile coal-fired power station by Zest WEG Group.

the Port of Durban, South Africa, whereby they undergo an initial quality inspection conducted by Zest WEG Group technical personnel, before being transported by road to the company's Mid-delburg branch.

Final assembly and oil filling is conducted followed by cold commissioning of each unit prior to final delivery to its temporary plinth at the Kusile site.

"This project is not just about delivering a qual-

ity product," Finch says. "Having a presence in the area of the power station has allowed us to receive each consignment of transformers a little earlier than required, ensuring that delivery times are met consistently."

In fact, for the 18 units supplied to date, we've actually ahead of our delivery commitments. The next batch of four units will be completed ex-works by the end of August 2013 in Brazil."

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## New catalogue available for industrial voltage and current transducers

LEM, of Geneva Switzerland, has released a new 100-page catalogue describing its industrial voltage and current transducers. The catalogue provides an outline on applications, technologies and specific industry sectors.

The first section outlines transducers optimised for drives, welding, renewable energy and power supplies.

The next section is for railway traction and trackside applications, such as onboard current transducers for

locomotive propulsion systems, as well as for substation and signalling equipment.

There is also a section dedicated to the high precision industry with very high accuracy transducers, ranging in current of from 12.5A up to 24kA.

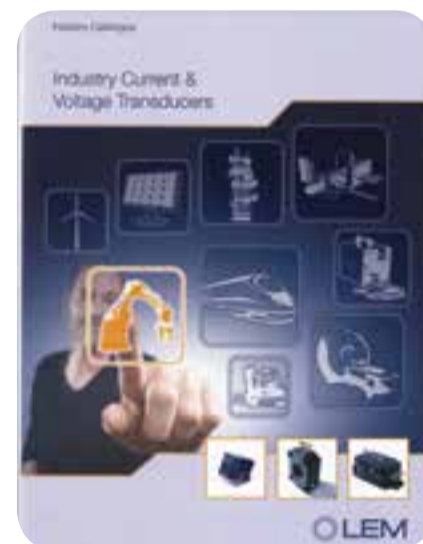
Finally, there is a section describing transducers manufactured specifically for the automotive industry, such as battery monitoring, charger control, electric motor, transaxle, dc to dc converters,

electric power steering and more.

The catalogue provides detailed information on LEM's quality and standards to which they work. Exact mechanical dimensions of all the transducers described is included, product coding is also explained together with details of the LEM five year warranty.

Catalogues are available at no charge from Denver Technical Products.

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## Unique solar-powered lighting solution for Kaalfontein Park

BEKA has provided a unique solar-powered lighting solution to the newly upgraded Kaalfontein Park in Midrand.

To make this park accessible and safe for the community at night, solar-powered lighting was needed for this off-grid area.

The client, Johannesburg City Parks, required a lighting solution that suited the new image of the park, incorporating an aesthetically pleasing design while concealing the solar elements to reduce the risk of theft.

Blueprint Landscape Architecture approached BEKA with the idea of 'The Leaf Tree', whereby the solar panels are hidden in the leaves.

"BEKA assisted Blueprint Landscape Architecture to bring their idea to reality," explains Benita Delpont. "A 10m high pole was transformed to look like a tree.

The large leaves, made of powder-coated steel, were designed to take the weight of the solar panels," she says, adding that the wind factor was also taken into consideration when designing the 'tree'.

"Two BEKA LEDlume-midi 62W luminaires at 24V, installed at a height of 8m, provide the security lighting in the park. The BEKA LEDlume range is designed and manufactured in South Africa, thus taking Africa's harsh environment and conditions into account. This is evident in the luminaire's design.

"A unique thermal sensor technique monitors the temperature of the LEDs on the printed circuit boards (PCBs). Once a critical temperature is reached, which could harm the lifetime of the LEDs, the current is reduced to ensure safe operating temperatures of the LEDs. This safeguards the LEDs and ensures that the long lifetime of 15 to

25 years, as envisaged by the LED manufacturer Osram, is achieved." She says the BEKA SOLAR module has been engineered for all geographical locations in Africa.

"It is designed to operate reliably at a high light output over a 12- to 14-hour period. It has sufficient autonomy to cater for up to two continuous overcast or rainy days, in order to continue its reliable night operation." Delpont says Kaalfontein Park has been transformed from a run-down

park into a meeting point for the community. It now has a play area for the younger children, as well as a picnic area where adults can get together and have community meetings. A gym area has also been built for all ages to enjoy," she says, adding that BEKA is proud of its association with this project and its partnership with Blueprint Landscape Architecture and Johannesburg City Parks.

Enquiries: (011) 238-0035



'The Leaf Tree' in Kaalfontein Park.

## News from IESSA Durban branch

THE Illuminating Engineers Society of South Africa (IESSA) is an organisation that members of the lighting industry would definitely benefit by joining.

Members come from all sectors of the lighting industry – manufacturers, retailers and wholesalers, sales personnel, lighting engineers, street lighting specialists, hospital lighting installers, and energy efficient lighting experts.

From February to November, the society meets once a month to listen to presentations covering a wide range of lighting topics: LEDs, waste management, gas and electricity. Some presentations highlight interesting facts about lighting – from the first lamp to the implications of light in the medical field and even light in nature.

Meetings sometimes involve a 'behind the scenes' visit to view contemporary lighting installations such as the Moses Mabida Stadium and Durban's aquarium.

The presentations carry 0.2 CPD points for professionals. Members who attend all 10 meetings obtain two points over the year – as well as a lot of useful information and being able to network with members of the lighting fraternity.

The IESSA training course is being upgraded to include modern technology to keep members current with new advances in lighting. Members will be notified of the course dates, venue and costs as these details become available.

To join the Durban branch of IESSA contact Leon Pillay, who holds the membership portfolio, by email: [leonpillay@eject.co.za](mailto:leonpillay@eject.co.za). Chairman of the Durban branch is Dereck Currie, who also holds the public relations and functions portfolio. Anyone who would like to be added to the IESSA Durban branch mailing list should contact Dereck at [dereck.iessa@gmail.com](mailto:dereck.iessa@gmail.com).

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## LEDS – the next generation in home lighting

ELECTRIC lighting contributes up to 25% of the average home energy budget and considering that the electricity used over the lifetime of a single incandescent bulb costs anywhere between five to 10 times the original purchase price of the lamp itself, it makes sense to use LEDs.

"Light Emitting Diode (LED) lamps have revolutionised energy-efficient lighting," says Sara Ross, corporate marketing manager at AC/DC Dynamics. "LEDs are small, efficient, solid state lamps and with the rapid advancements in LED technology, many new lamp styles are now available. All of these LEDs are available with standard bases,

which fit common household light fixtures," she explains, adding that "LEDs are the next generation in home lighting".

"LEDs provide more value for money as the life span is considerably longer than CFLs. One of the problems associated with early LED lamps was glare, however, this has been overcome by an intelligent lens design.

"The KL range of lamps, available from AC/DC Dynamics and all their distribution points, uses a specially designed lens that eliminates glare and provides even light distribution.

"The innovative design of the lenses also makes

it possible to project light all around the lamp, providing the same effect as incandescent lamps.

"For example, a chandelier can now be retrofitted with LED candle lamps that will provide the required lighting effect without spoiling the aesthetic appeal of the installation. As mentioned, there are many different models and styles of LED lamps emerging in today's marketplace," explains Ross.

Jacques Coetzee, lighting product specialist at AC/DC Dynamics, gives some handy tips to consider when choosing LEDs:

- Estimate the desired brightness (lumen) – lamp

brightness will be stated on the packaging in lumen. Choose a lamp that is equivalent to the traditional lamp being replaced, for example, when replacing a 50W Halogen downlight, choose a LED downlight with a lumen output of +/- 500lm.

- Choose between warm and cool light – new LED bulbs are available in 'cool' white light, which is ideal for task lighting, and 'warm' light commonly used for accent or small area lighting.
- Choose the required lamp type – select the type of lamp required (downlight, candle, etc) and the base type (screw-in, bayonet, two-pin, etc).
- Choose between standard and dimmable bulbs – some LED bulbs, are now available as dimmable bulbs.

AC/DC Dynamics has an extensive range of LED lighting solutions and its new extended range can be viewed in a new lighting catalogue, which is now available.

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## Affordable building management solution



SCHNEIDER Electric, a global specialist in energy management, has launched the 'lite' version of its SmartStruxure solution, providing a fast way to future-fit and retrofit small to medium-sized buildings for HVAC control, lighting and metering.

With SmartStruxure Lite, users can save energy, gain efficiency, maintain a healthy and productive environment and access their building systems anytime, anywhere.

According to Artur Socha, buildings division product manager at Schneider Electric South Africa, with the introduction of SmartStruxure Lite solution, small- to medium-sized commercial buildings now have an affordable building management solution to meet their needs.

"By providing anytime, anywhere access to building information on a simple user interface, SmartStruxure Lite solution lowers energy costs without compromising on comfort," he says.

As a simple web-based solution delivering one-click access to building system information, the product provides a single interface to connect HVAC, lighting and metering. It is customisable to fit the specific needs of the user's facility and is a scalable, high-performance system based on open protocols.

"Up to 60% of energy costs in a building are related to lighting and HVAC," Socha explains.

"This solution helps reduce energy costs and increase building performance while simplifying daily operations. It also provides users with remote access to their systems via a mobile device or the cloud."

Aside from reducing installation time, labour and cost, it is a suitable retrofit solution for HVAC, lighting and metering applications. Optimal environmental comfort also increases employee productivity.

The product's ecosystem delivers open system functionality from basic control up to the cloud. It consists of a wireless site manager/gateway, a universal controller, input/output controller, VAV and room controller.

Enquiries: (011) 254-6400

## Lighting industry appointments



Murray Cronje.



Jason Smith.



Daniel Kasper.



Amelda Dorman.



Carl Watson.



Peteer Schleritzko.



Paulo Mamede.



Wimpie Ludwick.

THE management team at BEKA has announced that, due to the expanding requirements of the demanding LED markets, the following managerial appointments have been made:

- Carl Watson has taken over the helm from Johann Schleritzko, who has retired as managing director of BEKA.
- Daniel Kasper has been appointed as product development manager.
- Wimpie Ludwick joins BEKA as national sales manager.
- Murray Cronje joins BEKA as manager applications and training.
- Peter Schleritzko has been appointed as BPM and systems manager.
- Jason Smith has been appointed as project solutions manager.
- Amelda Dorman joins BEKA as SHEQ manager.
- Paulo Mamede has been appointed as export manager.

"We are currently upgrading and expanding our research and development department to international standards for the testing and certification of products," says Carl Watson, adding that the company continues to invest capital into the design and development of new products.

"Furthermore, we have invested in newly appointed engineers and production managers to oversee the LED and other factory expansions."

Enquiries: (011) 238-0035

## LED launch



Ayhan Siriner (marketing director, head of strategy and marketing, OSRAM) and Lawrence Chan (senior manager strategy and marketing, OSRAM) recently travelled from Hong Kong to present OSRAM's new LED luminaire product range to clients at two launches that took place in Johannesburg and Cape Town.

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SEE THE WORLD IN A NEW LIGHT

# Saving energy – lighting giant sets an example

GE Lighting, the pioneer of the first affordable incandescent lamp and LED technology, is setting an example in energy use efficiency by adopting its lighting solutions for the office environment says Georges Bou Mitri, GE Lighting's general manager of Middle East, Africa and Turkey.

"One of the central narratives of modern work environments is the focus on promoting energy efficiency," says Mitri. "With demand for power increasing in leaps and bounds in line with population growth and infrastructure development, adopting energy-efficient lighting is one of the key considerations in promoting environmental sustainability."

He says that GE is "setting an example and serving as a model for today's office space with the introduction of its own energy-efficient LED lighting solutions at its offices in South Africa, in Durban and Midrand".

"GE has the enviable track-record of inventing the first affordable incandescent lamp by Thomas Alva Edison to pioneering the industry revolutionising technology of LEDs in the 1960s.

"Today, the company's lighting business has a diverse portfolio of LED lighting solutions for indoors and outdoors applications," explains Mitri.

To further highlight the differentials its lighting solutions bring to the bottom-line – in terms of energy use, cost and carbon dioxide emission – GE Lighting has installed its latest LED solutions to refurbish the Durban and Midrand offices.

At Midrand, GE Lighting used an integrated mix of traditional fluorescent fixtures with LED solutions, while in Durban, the company demonstrated greater cost-effectiveness by purely using LED lighting solutions.

Ben Preston, property project leader of GE Lighting, who led both projects, says: "For the two office refurbishments, we reviewed several scenarios and selected the option with the most attractive payback and the lowest operating cost. With GE Lighting's LED and energy-efficient solutions that meet every need and their ability for creatively integrating with the overall design, we refurbished the buildings, further enhancing their energy efficiency."

"Among the newest lighting solutions installed by GE at Midrand is the T5HO 47W Watt-Miser lamp, which utilises GE's best fluorescent technology, producing similar light output as the 54W system, without replacing the ballast.

The energy savings, alone, makes this lamp a retrofit solution that offers an immediate 13% savings at minimal investment," explains Preston.

In Durban, even greater efficiencies were achieved



through implementation of a 100% LED based solution consisting of its state-of-the-art Lumination LED range, ideally suited for office spaces.

"In addition to the considerable reduction in the actual number of luminaires used, the lighting refurbishment today enables the Midrand office to save an average 232.8Kwh per day and 83,817Kwh per year, in addition to saving carbon dioxide emissions of 116.4kg per day (41 980kg per annum).

"The savings at the Durban office include 26.32Kwh per day and carbon dioxide of 13.16kg daily.

Clearly, GE's initiative of using LED and eco-friendly solutions will mark a reference point for businesses aspiring to reduce costs and move towards ecologically friendly lighting architecture," concludes Preston.

Enquiries: (011) 238-3000

## Added value from a local brand



Greg Walton.

SINCE its inception four years ago, World Gaia has been at the forefront of many of southern Africa's solar products and has been supplying many of the country's major retailers, says Greg Walton, managing director of World Gaia.

"In the past, these products and components were sourced from other global manufacturers and then modified to suit the local market," he explains. "World Gaia is proud to announce that the company has now started to manufacture and assemble its own 'South African made' products at its premises in the Cape.

Walton says he sees this as a "massive advantage" for the company as well as for local consumers.

"For a start, the company now has better control over quality, currency fluctuations, delivery times and, most importantly, the products are better suited to harsh African conditions. Basically, the component configurations are different and we now offer products that are superior to those currently being imported from the East and Europe.

The consumer benefits because product guarantees can be improved upon, prices reduced and customers have the added value of a local accountable brand," says Walton.

"The local World Gaia range of solar light products – MiSolar – has already found much success in the local security and mining industries. Through the experience gained in servicing the local market, the MiSolar range benefits from lessons learnt over the years. Neighbouring African countries are also showing increased interest – specifically in the security and street light options offered by MiSolar."

The new MiSolar range is currently being distributed through partnering retailers.

Enquiries: (021) 791-0821

**SPLIT UNIT AIRCONDITIONERS**

# Comfort In Your Home



## WINTER AND SUMMER



**Outdoor unit dimensions**

**AC25:** 685mm(w) x 260mm(d) x 430mm(h)  
**AC35:** 700mm(w) x 235mm(d) x 535mm(h)  
**ACS1:** 780mm(w) x 250mm(d) x 540mm(h)



**Indoor unit dimensions**

**AC25:** 710mm(w) x 189mm(d) x 250mm(h)  
**AC35:** 790mm(w) x 190mm(d) x 275mm(h)  
**ACS1:** 940mm(w) x 198mm(d) x 275mm(h)

### FEATURES

- Independent dehumidifying function
- LED motion display
- Automatic restart function
- Self-diagnosis and auto-protection function
- Silent operation
- Energy-saving, high efficiency
- Intelligent control and display technology
- Dual air guide plate technology (Up and down air outlet)
- Remote control LED
- 24-hours timer, Sleep mode
- 3 years warranty on compressor and 1 year on complete unit
- Spares available

Code	Description	For a room of approximately
AC25	9000 BTU Split Unit Air Conditioner Heating and Cooling	10 to 18 m <sup>2</sup>
AC35	12000 BTU Split Unit Air Conditioner Heating and Cooling	20 to 25 m <sup>2</sup>
ACS1	18000 BTU Split Unit Air Conditioner Heating and Cooling	30 to 38 m <sup>2</sup>



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## LOW VOLTAGE AERIAL BUNDLE CONDUCTOR (ABC)

### SOEW ACHIEVES SABS MARK ON LOW VOLTAGE AERIAL BUNDLE CONDUCTOR



#### DESCRIPTION:

Two systems are available, namely:

#### SELF-SUPPORTING SYSTEM:

Consists of four cores of hard drawn stranded compacted aluminium conductors of the same cross-sectional area insulated with Carbon loaded XLPE for UV protection.

#### SUPPORTING CORE SYSTEM:

Consists of three phase cores of hard drawn stranded compacted aluminium conductors of the same cross-sectional area insulated with Carbon loaded XLPE and laid up around a bare aluminium alloy supporting core.

#### APPLICATIONS:

ABC Cable is used in place of bare conductor overhead distribution systems. It provides a higher level of safety and reliability and economy with reduced maintenance and operative costs and reduced risks of vandalism and theft. It is ideal for difficult terrains and urban areas and is a flexible system that is easier to reroute than the conventional overhead line methods.



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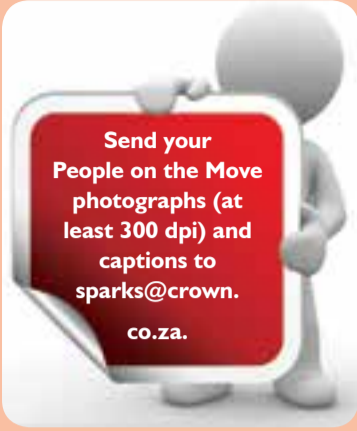
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Bright Sparks

An impossible win

Little Johnny was delighted when his two older cousins came to visit because they were both strong chess players, much stronger than Johnny, and he was keen to improve his game. He also had a trick up his sleeve.

After they had played a couple of games and Johnny had lost badly, he suggested that he play them both at once.

In other words, he would play two games at once, one against each of them. They thought this was a strange idea because Johnny would obviously lose even more badly than usual, but Johnny insisted that he would win one of the games, or at least get a couple of draws, and so they agreed.

Sure enough, after a few moves, it was clear that Johnny had a winning position on one of the boards although he was losing on the other, and his cousins admitted – amidst much laughter – that he had been right all along.

How did Johnny do it? How could he be so sure of doing well?

September solution

The wolf, the goat and cabbages

The man took the goat across, leaving the wolf and cabbages behind. Then he returned and took the wolf across and brought the goat back. He then rowed across with cabbages. Finally, he returned to pick up the goat and take it across, making a total of seven crossings.

NOVEMBER FEATURES

CABLES AND CABLE ACCESSORIES

Regular topics such as cables, cable accessories, cable management systems, cable sizing, skirting, trunking, conduit, cable trays, cable marking and labelling, cable jointing techniques, wire sizing, fault finding, hazardous areas, flameproof, cable terminations, glands, cable installations and trenching will be included.

STANDBY AND EMERGENCY POWER

Stand-alone generator sets, batteries, uninterruptible power supplies, maintenance powerline filtering and testing, emergency wiring and lighting, supplies for computer rooms, hospital supplies, process equipment

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<p><b>K4140 Loop / PFC / PSC Tester</b></p> <p><b>Price R2899<sup>00</sup> excl. VAT</b></p> <ul style="list-style-type: none"> <li>• Anti-Trip Technology for complete trip free Loop testing on all RCD's rated 30mA and above. Tests loop impedance, PFC and PSC.</li> <li>• Dual display allows simultaneous measurements like Loop &amp; PFC/PSC.</li> <li>• Two wire connection for Loop L-L, L-N and PSC testing is possible.</li> <li>• Phase rotation, Voltage and frequency measurements.</li> <li>• Lock-down test button for "hands free" testing with auto-start operation.</li> <li>• Display and front panel keyboards with backlight to be visible in dark places.</li> <li>• Water and dustproof (IP54).</li> </ul>	<p><b>K3005 Digital Insulation Tester</b></p> <p><b>Price R6399<sup>00</sup> excl. VAT</b></p> <ul style="list-style-type: none"> <li>• 205/500/1000V</li> <li>• Auto null function</li> <li>• Automatic discharge after test</li> <li>• Lock down test button for continuous use</li> <li>• 1mA output current on insulation test</li> <li>• 200mA short circuit on continuity range</li> <li>• EL Backlight for dimly lit areas</li> </ul>	<p><b>K2009R 2000A AC/DC CATIV Clamp Meter</b></p> <p><b>Price R3215<sup>00</sup> excl. VAT</b></p> <ul style="list-style-type: none"> <li>• Current measurement from 0.1 to 2000 A AC/DC</li> <li>• Ø55mm Cable allow for easy access</li> <li>• 4000 Count LCD display</li> <li>• Measures ACV to 750V and DCV to 1000V</li> <li>• Resistance to 4000Ω</li> <li>• Frequency</li> </ul>
<p><b>MT660 Temperature &amp; Humidity Data Logger</b></p> <p><b>Price R1299<sup>00</sup> excl. VAT</b></p> <ul style="list-style-type: none"> <li>• 15 350 Readings for both temperature and humidity</li> <li>• Temperature range -40°C to +70°C</li> <li>• Humidity range 0% to 100% RH</li> <li>• Selectable measuring cycle- 2s to 24hrs</li> <li>• Analysis software</li> </ul>	<p><b>MT915 Cable Tester</b></p> <p><b>Price R1099<sup>00</sup> excl. VAT</b></p> <ul style="list-style-type: none"> <li>• Identifies up to 15 cables</li> <li>• Cuts out "Bell-Out" time</li> <li>• Digital multimeter</li> <li>• Transmitter and receiver included</li> <li>• Displays the cable number on the large LED display</li> </ul>	<p><b>K2017 600A AC Clamp Meter</b></p> <p><b>Price R999<sup>00</sup> excl. VAT</b></p> <ul style="list-style-type: none"> <li>• Measures Current up to 600A AC</li> <li>• Maximum conductor size Ø33mm cable</li> <li>• Tear drop shaped jaws</li> <li>• Measures resistance up to 200Ω</li> <li>• Frequency response from 40Hz to 1kHz on AC current and voltage</li> </ul>
<p><b>MT604 Infrared Thermometer</b></p> <p><b>Price R969<sup>00</sup> excl. VAT</b></p> <ul style="list-style-type: none"> <li>• -50°C to 550°C</li> <li>• 12 to 1 distance to target ratio</li> <li>• Built-in dual laser pointer</li> <li>• 0.1°C Resolution</li> <li>• Automatic data hold</li> <li>• Max display</li> </ul>	<p><b>MT635 Professional Thermometer</b></p> <p><b>Price R999<sup>00</sup> excl. VAT</b></p> <ul style="list-style-type: none"> <li>• K-Type temp -200°C to 1372°C</li> <li>• J-Type temp -210°C to 1100°C</li> <li>• Readout in °C, °F or K</li> <li>• Dual channel inputs</li> <li>• Scan function T1, T2, T1-T2, plus MAX, MIN, AVG(K)</li> <li>• USB interface, USB to UART Bridge Controller</li> <li>• 18,000 records data logger per channel</li> </ul>	<p><b>MT632 Professional Thermometer</b></p> <p><b>Price R679<sup>00</sup> excl. VAT</b></p> <ul style="list-style-type: none"> <li>• K-Type temp -200°C to 1372°C</li> <li>• J-Type temp -210°C to 1100°C</li> <li>• Readout in °C, °F or K</li> <li>• Dual channel inputs</li> <li>• Scan function T1, T2, T1-T2, plus MAX, MIN, AVG(K)</li> </ul>

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