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ELECTRICAL INDUSTRY WAGE NEGOTIATIONS – A QUEST FOR FIVE YEARS OF LABOUR PEACE

SIGNIFICANT wage and employment negotiations, set to take place in Cape Town in June, are expected to ensure a sustainable future for the electrical industry for the next five years.

Mark Mfikoe, national director for the Electrical Contractors' Association of South Africa (ECA(SA)) says that the South African Equity Workers' Association (SAEWA) and the ECA(SA) are going to the negotiating table with "an historic five year agreement in mind to ensure labour peace and stability within the electrical contracting industry".

Mfikoe says the current agreement, which has regulated conditions of service in the industry since 2014, ends on 31 January 2017. "The parties in the electrical industry have had the foresight to start negotiations early so that contractors and employers can more easily plan and adjust prices when tendering for projects that are due to start in 2017. Frequently, projects straddle financial years and construction contracts can take two or three years to complete. Knowing that the price of labour is predictable and that one can count on industrial peace for the duration of the agreement will ensure that contractors will be in a more comfortable commercial position, Mfikoe says, adding, "with this kind of planning, there won't be a Marikana situation in the electrical contracting industry".

Industrial peace

"Long term employment conditions are not a luxury for South Africa anymore," says Mfikoe, "and the mining, motor and other industries should equally appreciate the contribution that long term industrial peace can do for their industries. If there had been a long-term agreement at Medupi, the disruptions there could have been avoided." He adds that the Medupi project has escalated from an initial cost projection of R75-billion to over R150-billion and the project, which was originally supposed to end in 2011, will now only be completed in 2021. "One of the reasons for the disruptions was labour unrest."

Social security

Mfikoe says the matters to be negotiated include wages; allowances for night work, travelling and out of town; and social security benefits. "Social security benefits include the sick benefit fund; retirement funds, death benefits, funeral cover and disability benefits. The aim is to ensure that all employees in the electrical contracting industry enjoy these benefits. This also assists small and medium enterprises to participate in a collective effort to ensure social security for their employees where the funds are controlled by elected members of their representatives. In this way the industry looks after itself," he explains. "Members and non-members of the union and the employers are being consulted to ensure compliance with legislation. Any employers in the industry are further encouraged to submit any proposals they may have to Stephen Khola, the ECA(SA)'s director of labour, for consolidation and consideration during the bargaining process," says Mfikoe.

Commitment

"We need the commitment of everyone going into these talks. We have had our own difficulties going into wage negotiations and some bridges have been burnt along the way," admits Mfikoe.

"The electrical contracting industry experienced troublesome work stoppages in 2006, which resulted in major disruptions and arrests. However, I believe we have matured as negotiators and we are looking a fair deal that appreciates the need for employees to be paid better while

respecting the imperatives of business to continue providing employment security and making prosperity possible."

Training

Mfikoe says the Council is "sensitive to the skills shortage in the industry" and is looking for ways to contribute to the funding of training in the electrical industry. "We recognise that the SETA system of training has impacted negatively on this industry and we want to intervene to ensure expert training and competent upskilling of the workforce for the ultimate good of the industry. Finding resources to fund this training is going to be a big part

"Long term employment conditions are not a luxury for South Africa anymore, and the mining, motor and other industries should equally appreciate the contribution that long term industrial peace can do for their industries."

of these wage negotiations." He adds: "We know that these negotiations are not going to be easy but we remain committed to their success because business and the country thrive when there is stability and predictability.

Enquiries: Stephen Khola, director of labour, ECA(SA) stephen@ecasa.co.za



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IT'S NOT THE YEARS IN YOUR LIFE THAT COUNT ... IT'S THE LIFE IN YOUR YEARS



Leanne Cole.

LEANNE Cole has been with the Comtest Group for 12 years, the last five as group marketing manager. Leanne took over the reins from Val Verwer, who retired two years ago.

Leanne has made multi-tasking a fine art – juggling any number of balls and keeping them all in the air at the same time. She's the epitome of the 'Duracell bunny' and keeps on going long after everyone else has fallen in a heap. Bubbly and cheerful, Leanne's happy disposition lights up a room and her contagious positivity inspires the people around her.

Sparks: Where were you educated?

LC: After matriculating at Krugersdorp High School, I studied 3D animation at Boston Media House.

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

LC: I've been directly involved in the electrical industry for five years.

Sparks: When and where did you start your career?

LC: I started my career in 2002 working for Blur Production – a post-production house – where I was a video editor and 3D animator. I was fortunate enough to travel internationally and when I returned to South Africa in 2004, I began working at Instrotech and Calog Instruments where I ran their logistics department and was also in charge of the company's desktop publishing. In 2010, the Comtest Group bought Instrotech and Calog Instruments and I was given the opportunity to pursue my passion in marketing full time.

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

LC: For me, it's the way that technology keeps evolving, from manually entering data to now where, at the click of a button, the information is made available to all concerned parties and informed decisions can be made.

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

LC: A major project was the launch of Calog Calibrators into the local and international markets; and I was part of a team that supplied over 25 Inspecta Steam Leak Detection Systems into power stations' boilers in India and South Africa.

Sparks: Have you won any awards?

LC: Yes, I recently received the 'Best Online Presence' award from Fluke Industrial Tools in Dubai.

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

LC: One of the people who has inspired me is Walt Disney because he created an empire with the stroke of a pencil!

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

LC: The uncertainty is a challenge ... People not knowing whether they will have a job in the morning; our country's political standing; the decline in the rand ... But things seem to be changing of late and there is a more positive feeling within our market.

Sparks: What do you enjoy most about your job?

LC: It's exciting knowing that each day will be different from the last. I get to work with great people and with cutting-edge products and brands. I enjoy seeing ideas come to fruition – from the research and development to marketing and getting the latest equipment out into the markets. I never have a dull moment and that is what I truly enjoy.

Sparks: How do you motivate your staff?

LC: I set a good example, concentrate on their happiness, empower them and give credit where credit is due.

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

LC: No, I wouldn't change anything.

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

LC: Yes. With electricity being part of everyone's lives, from home to work to play, working in this industry gives one a sense of fulfilment and a great sense of accomplishment.

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

LC: Start young, ask questions, never stop learning and don't be afraid of change.

Sparks: What is your favourite quote?

LC: "And in the end, it's not the years in your life that count. It's the life in your years." – Abraham Lincoln.

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

LC: I want to visit Rovaniemi in Lapland and watch the northern lights from inside a glass igloo; visit all seven wonders of the world, man-made, natural and old world; and visit the European Christmas markets.

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Michael Navarria, sales manager for ASCO Power Technologies (left) with Vert Energy's managing director, Grant Robertson. "ASCO power switching and control components now form part of Vert Energy's extensive range of electric power generation (EPG) products for generator set builders, panel builders and for numerous applications that require switching between different power sources," says Robertson. "Through ASCO, we provide advanced solutions to efficiently handle the transfer of critical loads from a primary to a secondary and or emergency source. These flexible components, designed for the protection of critical loads, significantly enhance Vert Energy's specialist solutions service to diverse sectors, including data, financial and telecommunications centres, as well as process manufacturing, transportation, fire pump applications and healthcare facilities. ASCO ATS are the only power transfer switches available that conform to



stringent IEC60947-6-1 regulations, which specify that transfers at full load for both ac and dc currents, must be done seamlessly. This was a compelling factor for Vert Energy in selecting this range.

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ENERGY CONTRACTORS: WHAT IS 'GOOD' ENERGY SAVING?

SOME time ago, a new concept known as the 'energy contractor' appeared in the electrical industry. The 'energy contractor' would offer a deal so good that a client could seldom refuse: the energy contractor (EN) would (a) measure the power consumption; (b) at no cost to the client, fit devices that saved energy and, from the resulting savings, (c) split the financial benefit with the client.

In general, the ENs were successful for a number of years after they first got the client to sign a contract. Thereafter, in many cases, the accountants would realise that there had been no or little saving

or, in fact, less saving than had been claimed and they would then ditch the whole thing. This was unfortunate because there are some energy contractors who are very good indeed. Some, however, are dodgy beyond belief.

In this column, I am going to give you some pointers as to what constitutes good energy saving and what doesn't. The first thing is to understand your electrical tariff. This is a golden rule: if your electrical tariff does not include a charge for kVA demand, then installing power factor correction will save you no money at all. You don't have to know what 'kVA

"Changing tariffs can be very effective. Most industrial plants run 24-hours a day. However, if a plant runs for only 12- or 18-hours a day then, using a time-of-use tariff, one can run refrigeration compressors and air compressors during a period of low tariff and specifically turn them off for at least one hour during high tariff periods."

demand' is – just look at your account and if it doesn't say "xxx kVA @ Rxxx/kVA" where the exes are numbers, then you don't need to know anything about



Terry Mackenzie Hoy.

power factor correction – all you need to know is that you don't need it.

Secondly, there is no chance that in one year or in any successive months you will use the same number of kilowatt-hours in the same month in the following year or in the previous year. Your consumption of kilowatt-hours is based on a whole lot of things: the weather, the number of holidays, the economy of the country and so on. So, if an energy contractor claims to have saved kWh consumption based on a comparison of monthly power accounts, don't believe it. If they insist, ask them to show you the daily kilowatt-hour consumption before the installation of the device that is meant to save electricity and the same thing again for the following week. There should be a sharp drop.

Energy-saving wise, what does work? Changing lights and light types can be very effective. LEDs use much less electricity than other lamps and they last longer. They also cost a lot more and, thus, you have to be careful that you are actually saving electricity rather than just shunting your electrical savings into the capital cost of fitting LED lights.

Changing tariffs can be very effective. Most industrial plants run 24-hours a day. However, if a plant runs for only 12- or 18-hours a day then, using a time-of-use tariff, one can run refrigeration compressors and air compressors during a period of low tariff and specifically turn them off for at least one hour during high tariff periods. Doing a bit of 'common sense maintenance' helps a lot. You have to keep illumination levels above a certain level in any industrial plant. However, if you fit a ceiling and paint it white and if you keep the walls clean and painted white, you can achieve the same illumination levels with fewer lamps.

Air conditioning: how often have you found that it is difficult to close an office door due to a sudden rush of high air pressure? This means that the air-conditioning system is not properly balanced. Many consulting firms rely on contractors to get it right and many of the contractors don't bother. Contact a reputable firm of consulting mechanical engineers. Ask them to review your HVAC system to make sure it uses no more energy than is needed.

Insulate the underside of the roof. It so happens that in the SANS 10400 XA regulations there are requirements for the insulation of commercial and domestic roofs. There is no requirement for the insulation of a factory roof. But if you insulate your factory roof, you will save money. How much? Ask the consulting mechanical engineers.

Good luck with all this ...

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enclosed with ammeter, enclosed with isolator, enclosed with isolator and ammeter. Enclosed Star Delta Starters are available in IP56 mild steel enclosures and can also be manufactured to include the same add-on features as the range of DOL Starters. Manufacturing time on any special starter is lightning fast and will be made to your specification. For more information on our products visit www.mce.co.za.

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BEWARE of these unsafe products

- » There are more than 3000 electrical fires annually in South Africa and there are many more with unknown causes that could be electrical. Cases of electrocution are not widely publicized.
- » The products illustrated below and purchased in February & March 2016 are a tiny sample of a range of sub-standard, unsafe electrical products being distributed in South Africa on a large scale.
- » The problem also extends to safety devices such as circuit breakers and earth-leakage units that do not perform their function and endanger lives and property.


- » Such products do not comply with compulsory standards and are illegal. Distributing such products is a criminal act, yet unscrupulous suppliers are able to distribute them with apparent impunity.
- » Non-compliance is difficult to assess and unsuspecting customers are using unsafe products in their homes and in commercial and industrial buildings.
- » Some sub-standard products are distributed under different brand names and in packaging that obscures their identity.
- » Documents produced as authorisations to distribute products are not always reliable proof of compliance with regulations, as may be the case here.

Except for the AP-02 adaptor which has visual non-compliances, the SAFEhouse Association has had the electrical products depicted below tested by an accredited laboratory. They have been found to be non-compliant with SA regulations and are unsafe.


PRODUCT: UNBRANDED PLUG-IN ADAPTOR TYPE AP-02 in VALUPAK packaging			
	STANDARD REFERENCE & NON COMPLIANCE	CONSEQUENCE	RISK TO USER
1	SANS 164-2 Sockets not enclosed in 12mm deep well.	No earth-leakage protection. Live pins exposed on entry.	Risk of electric shock. This product design is dangerous and has been banned for many years.
2	SANS 164-1 – SANS 60884-1 Clause 8: Marking – no manufacturer's name	No identification	Rejection by National Regulator for Compulsory Specifications.




PRODUCT: REDISSON PLUG-IN ADAPTOR TYPE R-36 in VALUPAK packaging			
	STANDARD REFERENCE & NON COMPLIANCE	CONSEQUENCE	RISK TO USER
1	SANS 164-1 Pin diameters fail	Reduced contact and contact pressure from socket outlet.	Risk of overheating.
2	SANS 164-2 Well depth fail	Risk of live pins exposed on entry.	Risk of poor live and neutral pin contact leading to overheating.
3	SANS 164-1 Depth of entry hole fail	Shallow hole reduced entry of E pin.	Risk of poor live and neutral pin contact leading to overheating.
4	SANS 164-1 Pin length fail	Longer E pin reduced entry of L & N pins.	Risk of poor live and neutral pin contact leading to overheating.
5	SANS 164-1 No-contact gauge fail	Shallow contact allows pin contact early on entry.	Risk of electric shock if pins are touched on plug insertion.
6	SANS 164-2 Single pin insertion fail	Malfunctioning protective shutter can allow entry of single metal objects.	Risk of electric shock.




PRODUCT: REDISSON PLUG-IN ADAPTOR TYPE R-38 in VALUPAK packaging			
	STANDARD REFERENCE & NON COMPLIANCE	CONSEQUENCE	RISK TO USER
1	SANS 164-1 Pin diameter fail	Reduced contact and contact pressure from socket outlet.	Risk of overheating.
2	SANS 164-6 Pin entry hole diameter fail	Entry holes too small – possible damage to plug.	Problematic functionality.
3	SANS 164-2 Single pin insertion fail	Malfunctioning protective shutter can allow entry of single metal objects.	Risk of electric shock.



PRODUCT: REDISSON PLUG-IN ADAPTOR TYPE R-17 in VALUPAK packaging			
	STANDARD REFERENCE & NON COMPLIANCE	CONSEQUENCE	RISK TO USER
1	SANS 164-1 Pin diameter fail	Reduced contact and contact pressure from socket outlet.	Risk of overheating.
2	SANS 164-1 Distance to edge fail	Reduced space between edge and live pin.	Risk of electric shock if pins are touched on plug insertion, especially by small fingers.
3	SANS 164-2 Single pin insertion fail	Malfunctioning protective shutter can allow entry of single metal objects.	Risk of electric shock.
4	SANS 164-2 Contact gauge fail	Contact too deep reduces pin contact area.	Overheating, arcing and possibly fire.



PRODUCT: K-KBO CORD EXTENSION SET in VALUPAK packaging			
	STANDARD REFERENCE & NON COMPLIANCE	CONSEQUENCE	RISK TO USER
1	SANS 60227-5 and SANS 1574-1 Cable fail	Conductor resistance exceeds requirements.	Overheating and fire. With a high-resistance earth conductor, the earth leakage protection function may be compromised.



What to do?some guidelines:

- Purchase brands you know and can trust.
- Ask your supplier to confirm compliance with safety regulations.
- Be suspicious of prices that are substantially below those of other, similar products on offer.
- Examine products for obvious signs of inferior design, materials or workmanship
- Be suspicious of products and packaging that lack basic information such as Voltage, Amperage and, for instance, in the case of electrical cable and wire, a description of

- the applications for which the product is suitable or not.
- Look for markings such as the SABS mark – and try to authenticate this as the mark can be used fraudulently.
- The “CE” mark is widely used but is NOT an indicator of independent certification of compliance with regulations.
- Check with the SAFEhouse Association. It may have information to assist you.

SAFEhouse has identified a retailer of the abovementioned products, the “Checkout” chain of stores, in KwaZulu Natal. In 2015 the retailer was advised of these findings, but is still offering the products for sale.

SAFEhouse has attempted to make contact with the importer of the products but has had no response to the approach.

SAFEhouse has attempted to make contact with the retailer's supplier, Delta Electrical, in order to share its findings, but has been unsuccessful.

SAFEhouse reports its findings to the National Regulator for Compulsory Specifications and, where applicable, lodges complaints with the National Consumer Commission.

In our view, these products are dangerous and should be withdrawn from the market. Sold products should be recalled as users are at risk.

SAFEhouse appeals to the importer, distributor and retailer of the products to make contact at the email address or telephone number below.
SAFEhouse cautions sub-distributors, retail chains, hardware stores, electrical contractors and end-users.

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

The South African SAFEhouse Association has been established to combat the proliferation of dangerous electrical products and services by:

- Making the market aware of the risks in using such products and services
- Exposing sub-standard products and services
- Persuading specifiers, suppliers and distribution channels not to recommend or to offer such products and services for sale

For more information contact:

Pierre Nothard: Tel: 011 396 8140 | Email: pierren@safehousesa.co.za

www.safehousesa.co.za





GEARING UP FOR THE 2017 WORLDSKILLS COMPETITION

Founded in 1950, WorldSkills International (WSI) – the largest skills competition in the world – is a global organisation that promotes vocational, technological and service oriented education and training.

It promotes skilled careers in 72 member countries and regions, all working with youth, educators, governments, and industries to help prepare the workforce and talent of today for the jobs of the future.

WSI brings youth, industries, and educators together to give the youth a chance to compete, experience, and learn how to become the best in

their skill of choice. WSI is making a direct impact on raising the level of skills throughout the world – from traditional trades to multi-skilled technology careers in the industry and service sectors, supported by parents, industries, governments, volunteers and educational institutions. This global event has become the pinnacle of showcasing excellence in vocational education and training.

Every two years, tens of thousands of skilled young people from around the world – accompanied by their teachers, coaches and mentors – gather in a selected city to compete in their various

“We have a considerable talent pool of young artisans in South Africa, and the WorldSkills South Africa competition is about celebrating that talent, as well as communicating how key the artisanal sector is to South Africa’s economy.” – Dr Raymond Patel (WorldSkills South Africa chairperson).

trades and test themselves against demanding international standards.

The young professionals, who are selected by

their respective countries, may only participate in the competition once and must be between 18 and 22 years of age.

In South Africa, the WorldSkills initiative is championed by the Department of Higher Education and Training. Even though South Africa has participated in WSI events since 1990, WSSA was only formally established in April 2013 by the deputy minister of the Department of Higher Education and Training, Mduduzi Manana, who says that WorldSkills South Africa is “a win-win situation for learners, employers, government and the economy”.

Why are skill competitions so important?

- Training, qualifying and competing in the WorldSkills Competition equals four to five years of professional training.
- These competitions build character, confidence, commitment and self-esteem.
- They help to align and increase the quality of the required standards in vocational and educational training systems and help to benchmark educational training systems against industry, public demand and across borders.
- The challenge of a competition brings fun and exciting elements into teaching and training while validating that mastery of a skill requires practical learning and training over time.
- Competitions improve quality of training, promote professional development and drive improvements in vocational training.
- WorldSkills offers the infrastructure and competition experience to engage with a number of target groups, from students in grade school and secondary school to youth, governments, and educators.

The next competition will be held in Abu Dhabi in 2017 and aims to promote exchanges between young professionals from various regions of the world, which includes exchanging of skills, experience and technological innovations; raising understanding of the importance of skills training within government, education and industry; and raising the awareness of youth – and those who influence them – to the opportunities that are available within skilled professions.

In South Africa, the process to select the person who will represent South Africa in the electrical installation skills will follow these steps:

Step 1: TVET colleges will run a screening process to select a candidate who will represent them in the regional competition (theoretical process).

Step 2: TVET colleges will facilitate a regional competition (practical process).

Step 3: TVET colleges will facilitate a provincial competition (practical process).

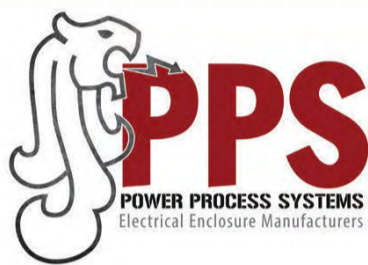
Step 4: WorldSkills South Africa will facilitate a national competition, which will be held in Durban in February 2017, to identify candidates who will represent South Africa in Abu Dhabi in 2017.

As I am the nominated South African electrical installation expert, I will mentor the competitor who will represent South Africa in the electrical installations category.

If you or your organisation would like to be part of WorldSkills South Africa by providing sponsorship or assistance during the South African competitions please email me at nick@pandttechnology.co.za

For more information on WorldSkills South Africa visit the Facebook page: <https://www.facebook.com/pages/DHET/366699083370092>

To find out more about the competition, visit: <https://www.worldskills.org>



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GETTING TO GRIPS WITH SANS 10142-1 BY HANNES BAARD

POINTS OF SUPPLY, POINTS OF CONTENTION

Is it just me, or is there a definite air of intolerance that's creeping into our daily lives? Head-on collisions can only happen if one of the drivers is on the wrong side of the road. How do bad drivers pass their driver's license tests? Well, I've been told that it is apparently 'easier' to get a C1 (previously code 10) license for vehicles above 3 500 kg than it is to get a B (previously code 8) for a light passenger car. Apparently, many people now opt for the C1 rather than the B – ask any driving school instructor. A quick look at the K53 practical 'yard' tests reveal that the C1 driver is not required to make a three-point turn or to show that he or she is able to parallel park. This implies that the emphasis placed on the use of the rear view mirrors for the B license is absent for the C1 license test and/or training too, I presume.

Oh well, here I am trying to broaden the knowledge of those in the electrical industry who are responsible citizens, while recently, 23 schools in one municipal area were torched and destroyed. There is a bright side to all this gloom: At least the cause of these fires can't be blamed on the all too familiar 'electrical short circuit'.

Which, in a roundabout way, brings us to the following definition in the Electrical Installation Regulations 2009 (and, as we all should know, these regulations form part of the Occupational Health and Safety Act (Act 85 of 1993), which reads:

'Provincial director' means the provincial director as defined in regulation 1 of the General Administrative Regulations promulgated by Government Notice No R 929 of 25 June 2003;

In the case of the Western Cape, Regulation 1 defines it as follows: "Province of the Western Cape, means the Provincial Director: Western Cape, Department of Labour, P O Box 872, Cape Town, 8000" and, in respect of the Northern Cape: "Province of the Northern Cape, means the Provincial Director: Northern Cape, Department of Labour, Private Bag X5102, Kimberley, 8300.

The next definition will mean different things to different consumers – especially as the renewable energy drive gains momentum and gas-fired generating stations come on stream.

The definition reads: **'Supplier'** in relation to a particular electrical installation, means any person who supplies or contracts or agrees to supply electricity to that electrical installation."

Now, I think I speak for the majority when I say that the first name that comes to mind when hearing the words 'supplier' or 'supply authority', is 'Eskom'. A close second is 'municipality'. This is because when we apply for an electricity connection for a home or business, we are used to

being served by Eskom and these days by municipalities as well.

There is a very big industrial entity (and I mean big) that is planning to purchase all its electricity requirements from a gas-fired power plant, which will be situated close to the entity's premises.

The reason? It's cheaper to import natural gas by the shipload, build a power plant and sell the energy than what this particular industrial entity is currently paying to Eskom to supply them with power.

So, in this definition then, the 'supplier' will be the gas energy company and not Eskom or the local municipality.

I wonder what will happen to the 'basic fee' that everyone pays Eskom – or municipality – on top of their power consumption. Will it be dropped if you go 'off-grid', even if you generate your own electricity?

Supply terminals

The following definition serves to further enhance and clarify the definition of 'installation work' which we addressed last time. It reads: 'Supply terminals' in relation to machinery installed as a complete unit, means the terminals or connection clamps on such machinery where the external conductors supplying the machinery with electricity are terminated or connected.

Remember the installation work definition we spoke about: "The connection of machinery at the supply terminals of such machinery?"

I jokingly refer to the following definitions as 'the points of contention'. I have re-arranged them slightly so that we can address them as we come across them in an installation. What's more, these 'points of contention' actually define the limits of an 'electrical installation' as defined.

Let's have a look in less than a thousand words... and at the illustration too.

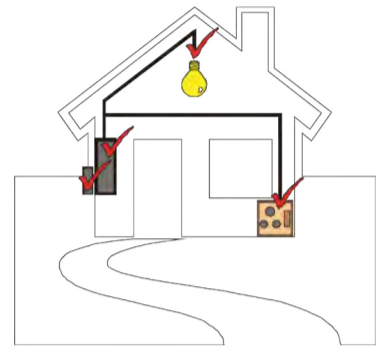
'Point of supply' means the point at which electricity is supplied to any premises by a supplier. This is either the meter outside or the line side of the main circuit breaker. It all depends on the installation.

'Point of control' means the point at which an electrical installation on or in any premises can be switched off by a user or lessor from the electricity supplied from the point of supply, or the point at which a particular part of an electrical installation on or in any

premises can be switched off where different users occupy different portions of such premises ... The main switch, or sub main switch as the case may be.

'Point of outlet' means any termination of an electrical installation which has been provided for connecting any electrical machinery without the use of tools... The socket outlet.

'Point of consumption' means any point of outlet or the supply terminals of machinery, which is not connected to a point of outlet and which converts electrical energy to another form of energy. Provided that, in the case of machinery which has been installed for any specific purpose as a complete unit, the point of consumption shall be the supply terminals, which have been provided on the unit of machinery for that purpose... The terminals of a light fitting or the pins of a plug top you insert into the socket outlet.



The words 'machinery... which converts electrical energy to another form of energy' is the bureaucratic way of describing an appliance.

Till the next time we have a bone to... I mean, have a point of contention to contemplate ...

Minimising production downtime

ABB has supported Sasol to minimise process downtime for routine maintenance with a range of medium-voltage solutions. Sasol has implemented an innovative and flexible ABB solution utilising the power of UniGear Digital switchgear, Relion protection relays and sensor technology installed in a lightweight E-House, mounted on a mobile truck trailer.

At Sasol's Secunda petrochemical plant in South Africa, locally mined coal is converted into synthetic fuels. On this site, aging substations needed to be refurbished and Sasol was looking for a solution to minimise capital losses due to the production downtime required for the switchgear replacement.

Bruno Melles, managing director of ABB's Medium Voltage Products business, says, "ABB has a strong focus on supporting customers to improve their productivity through maximized uptime. The effective cooperation between Sasol and ABB led to the successful completion of this project and we look forward to building on this in the future."

"The unique flexibility of our Relion protection and control relays installed in our innovative Unigear digital switchgear formed the core of this modular E-House, which provides stable power supply in a range of challenging conditions. We were able to deliver a robust, yet

flexible, solution for Sasol that safely re-routes power while the maintenance activities are performed."

To meet the requirements set, ABB offered a mobile E-House based on the UniGear Digital solution. The backbone of this solution is the UniGear ZS1 switchgear equipped with IEC 61850-embedded Relion 615 series protection relays and ABB's advanced sensor technology.

The switchgear was placed in a prefabricated metal enclosure, an E-House, which was then installed on a truck trailer. Installing the solution on the truck trailer means that it can be relocated to wherever it is needed, swiftly and efficiently. This mobile E-House provided the flexible power supply solution required by Sasol.

In this project, the cooperative efforts of ABB and Sasol led to this unique solution, where several innovative products were combined to meet customer needs and expectations. ABB delivered the solution within a short time frame – from concept to design and implementation – within a year. The success of this project strengthened the relationship between the two business partners, building an even stronger foundation for the joint projects to come.

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SAFETY REQUIREMENTS: SANS 10142-1 – ACCESS TO LIVE PARTS

CONTINUING with last month's column, I will now address SANS Clause 5.1, which deals with the general requirements for safety applicable to all electrical installations.

The first aspect from an electrical safety perspective is access to live parts.

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) Amendment 5

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.

This fundamental requirement has a number of aspects which need careful consideration.

The first issue that raises its head is the reference to the *standard test finger*. In this matter, the presumption is that all registered persons/electrical contractors, in fact, have such a measuring instrument in order to determine whether a detected live part is, indeed, within touching distance of 'a person's finger' and who may be exposed to such a live part. Unfortunately, this is one of the areas where, as an industry, there is much oversight.

The problem is that the vast majority of registered persons/electrical contractors do not have such an instrument and even when looking at the general availability of such an instrument, one finds that many wholesalers do not stock it. It could well be said that the 'supply and demand' aspect is applicable here in that, if as an industry we are not

asking for such an instrument, the suppliers will not stock it.

The second aspect relates to where such a live part may be expected to be found. Obviously, such live parts will exist throughout an electrical installation and it is therefore prescribed that such live parts should not be in a position to be touched by the 'standard test finger' during;

1. Normal operation; or

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

The first aspect requires no clarification and the intent is clear, for example:

It is indeed the second aspect where, as an Approved Inspection Authority (AIA), we come across a number of problems with interpretation and, therefore, some clarification is required.

The largest area of concern is certainly in the domestic or residential environment. There are those in the industry who perceive general roof spaces to be 'enclosures' and, therefore, any live parts that may be exposed in these areas are, in fact, out of reach of the standard test finger during normal operation and, because a person would require (in many instances) to use a ladder (for example) to gain access to this area, this constitutes using a 'tool'.

It is this very thinking that has resulted in a number of electrocutions over the last few years. It is often forgotten by persons who follow this line of thought that it is not only electricians who access

these areas, but many other people also need to access equipment contained in these areas, for example, security alarm installers, builders and plumbers.

When dealing with this aspect, however, it is also important to take note of the words "in arm's reach" as detailed in the Clause 5.1.1. This aspect must also be taken into consideration and here it is important to consult Annexure B in the Standard, which details the "limits of arm's reach".

In consulting this annexure then, it becomes clear that the "arm's reach" aspect does not only apply to an "area from the floor", but in fact applies to "any surface expected to be occupied by persons".

The notion of regarding a roof space to be an 'enclosure' in itself is, therefore, undoubtedly flawed when we consult with the Standard as a whole. This notion is generally backed by a perception that the "cover" referred to in Clause 5.1.1 (b) is the trapdoor provided for access to the roof space.

It is certainly the opinion of this AIA that this is not the intention of the Standard and, therefore, in applying the safety principle of protecting persons against access to live parts within arm's reach, where there is a surface, which is expected to be occupied by persons, a roof space is not an 'enclosure'.

As a primary fundamental safety requirement, it is plain that, although the standard is clear in the requirements for safety regarding access to live parts, the application thereof is clouded when common sense does not prevail.



Cover plates for cutting-edge solutions

"The control and regulator mechanisms are available in three colours: white, slate, and titanium, while a recent addition features a partial range of ivory modules."

THE Chorus domotic system from Gewiss offers cutting-edge solutions for the management of homes and buildings by integrating advanced technology and sleek Italian design.

With Chorus, homes and buildings no longer have any limits as this range offers a great number of combinations that can be used to suit every residential or commercial building. The modular concept ensures that the system can be adapted and expanded with state-of-the-art functionalities for any requirement. To optimise space and practicality the modules may be combined in keys of half, one, two, or three modules in a variation of wall and surface mounts and floor boxes. The control and regulator mechanisms are available in three colours: white, slate, and titanium, while a recent addition features a partial range of ivory modules.

Chorus offers seven shapes of cover plates in six types of materials, with over 100 colours and finishes for unique style choices.

The range's form and functionality enable a selection for simple, young and elegant or elaborate smart installations in apartments, homes, hotels and offices.

Enquiries: +27 10 202 3300



OEMs RELY ON ROTOR BALANCING CAPACITY

Leading local repairer of rotating electrical equipment, Marthinusen & Coutts says its in-house ability to precision balance rotors to a high accuracy improves vibration levels, thereby increasing reliability while reducing customer maintenance costs.

Marthinusen Coutts, a division of Actom, operates the third largest high speed dynamic balancing machine in sub-Saharan Africa. Mike Chamberlain, marketing executive at Marthinusen & Coutts, says the advanced machine is in constant use with local OEMs benefitting tremendously by having such access to an independent balancing service of this quality and capacity.

The 32 ton Schenck HM7 U/S balancing machine is located at Marthinusen & Coutts' 9 500 m² high tech workshop in Cleveland, near Johannesburg. The HM7 U/S balancing machine is 9 000 mm long and has a measuring range between 100 and 5 000 rpm. It has a journal size of 400 mm and a swing of 2 400 mm. It is fitted with a CAB 920 H measuring instrument with a vector display. Its state-of-the-art technology makes changeovers to new rotor types quick and straightforward.

"The machine facilitates the balancing of all larger high speed rotors dynamically at full operating speed and sometimes, depending on the design of the rotor and customer requirements, at 10% overspeed," Chamberlain says.

All rotors are balanced in-house which speeds up the process and reduces costs with the service being available to external customers on a first come, first served basis. The machine is operated by one of the country's top balancing machine experts in line with international best practice with industry standard balancing certificates being issued for each completed rotor.

The largest rotor balanced at full speed to date was a 15 ton four-pole rotor for a 28 MW compressor motor used by a leading local steel producer.

Marthinusen & Coutts provides this crucial service to the power generation industry balancing high pressure and low pressure turbines. The division has also partially (low speed) balanced generator rotors up to 60 MW where the rotors are subsequently trim balanced at full speed on site, once the rotor has been installed.

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TEST AND MEASUREMENT
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Schneider Electric launches an innovative app for electricians: EasyQuote

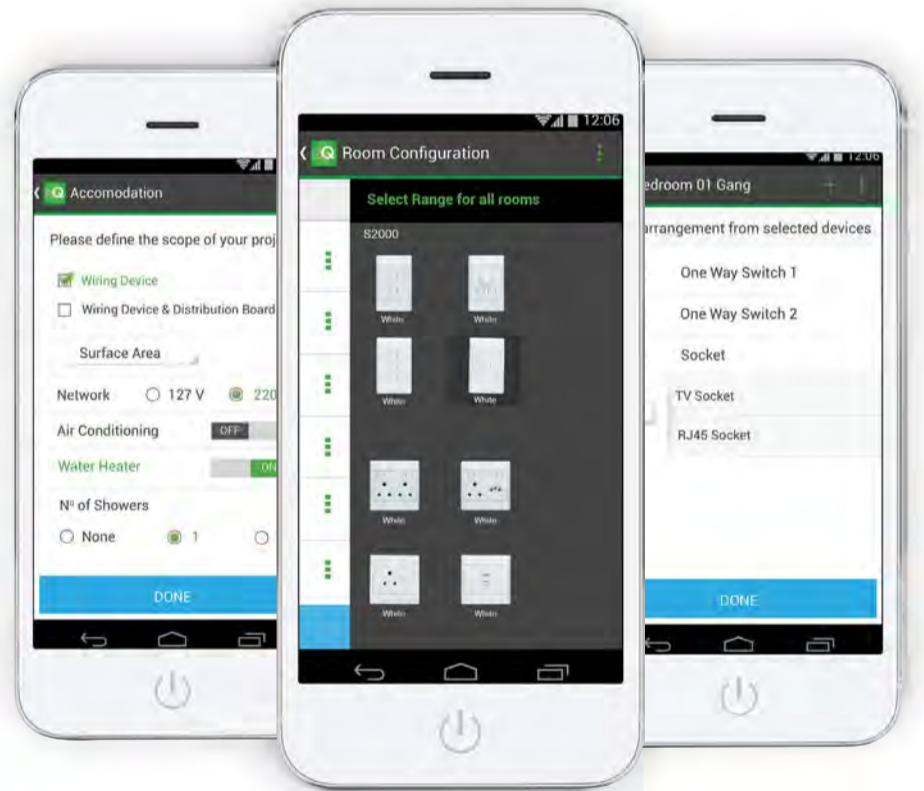


Schneider Electric, the global specialist in energy management, has identified that quotations and bill of materials are time consuming tasks for electricians, based on the knowledge of its partners. In parallel, the capability to quickly answer the end-consumer and send quick quotes are important components of satisfaction, loyalty and word-of-mouth.

Schneider Electric has developed an easy-to-use mobile application for iOS and Android smartphones to help electricians better manage this pain point, generating bill of materials and quickly share quotations with their clients.

The bill of materials and quotations include distribution board and wiring devices for all the residential projects of the electrician.

EasyQuote is a free application available on the Apple App Store and Google Play, that will help electricians to create and send quotations faster.



www.schneider-electric.co.za

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Schneider
Electric



MANUFACTURERS

ABB South Africa
Aberdare Cables
Allbro
Alstom Protection & Control
Alvern Cables
CBI-electric: low voltage
Crabtree Electrical Accessories
HellermannTyton
JB Switchgear Solutions
Legrand
Radiant Group
Sabelco
Schneider Electric

DISTRIBUTORS

ACDC Dynamics
Actom Electrical Products
Alvern Cables
Atlas Group
ARB Electrical Wholesalers
Bellco
Brady SA
Comtest Distribution
Crabtree Electrical Accessories
HellermannTyton
JDL Electric
Major Tech
MCE Global Suppliers
Phambili Interface
Radiant Group
Schneider Electric
Stone-Stamcor
Surgetek
Vert Energy
Voltex
Voltex Lighting
Voltex LSis
Voltex MV/LV Solutions
Waco
Zest WEG Group Africa

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Ryan Allan
Alstom Protection & Control
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Alvern Cables
Stephen Liasides
ARB Electrical Wholesalers
Arvinash Ramdass
Atlas Group
Annie Storrar
Bellco
Fred Wilson
Brady SA
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Jaco Viljoen
Comtest Distribution
Leanne Cole
Crabtree Electrical Accessories
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HellermannTyton
Sales
JB Switchgear Solutions
Ally Sulayman
JDL Electric
Shaun Singh
Legrand
Johan Bosch
Magnet Electrical Supplies
Kevin Goverder
Major Tech
Werner Grobbelaar
MCE Global Suppliers
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Radiant Group
Gerard Pillay
Sabelco
Ludi Erasmus
Schneider Electric
Sales
Stone-Stamcor
Mark Talbot
Surgetek
Sikhumbuzo Ngwenya
Vert Energy
Grant Robertson
Voltex
Hugh Ward
Voltex Lighting
Marc Rudman
Voltex LSis
Gary Paterson
Voltex MV/LV Solutions
Sales
Waco Industries
Jaco Coetzee

CONTACTS

Zest WEG Group Africa
Sales

METERS

ABB South Africa
Full range of meters
Actom Electrical Products
Single phase direct kWh meters, single- and three-phase Ct operated kWh meter, single phase kWh meter with cyclometer, single phase meter with LCD display and polycarbonate cover
Allbro
Meter boxes
Alstom Protection & Control
Three-phase and single-phase electromechanical and electronic meters;
Three-phase and single-phase electromechanical and electronic meters; measurement centres; three-phase programmable electronic meters
ARB Electrical Wholesalers
Full range of meters
Atlas Group
Full range of meters
Bellco
Full range of meters
CBI-electric: low voltage
Rail mount meters and rotating disc meters
Comtest Distribution
Multimeters; clamp meters; RMS meters; wireless meters; RMS ac voltage meters; RMS dc voltage meters; high performance industrial logging meters; remote display meters; IP 67 meters; IS meters; automotive meter; digital precision meter; 5.5 digit multimeter; wireless ac clamp meter; wireless flexi ac current clamp meter; wireless ac/dc current clamp meter; true RMS clamp meter; ac/dc clamp meter; leakage clamp meter; voltage/continuity tester; electrical tester; voltage alert pens; phase rotation meter; fluorescent light tester
HellermannTyton
Full range of meters
JDL Electric
Full range of meters
Legrand
Analogue and digital DIN rail-mounted meters
Magnet Electrical Supplies
Full range of meters
Major Tech
Compact power analysers, power quality analysers, current loggers, current and voltage loggers, leakage loggers; full range of professional ac and ac/dc clamp meters, compact ac and ac/dc clamp meters
MCE Global Suppliers
Onesto kWh meters; MCE ammeters; MCE voltmeters; MCD max demand meters; MCE running hour meters
Radiant Group
Range of meters
Surgetek
Full range of meters
Voltex
Full range of meters
Voltex LSis
Full range of meters
Waco
Full range of meters

CABLING

Aberdare Cables
Complete range of electric cable
Allbro
Junction boxes
ARB Electrical Wholesalers
Full range of cabling
Atlas Group
Full range of cables
Bellco
Full range of cables
Brady SA
Cable labelling
Comtest Distribution
Cable locator
HellermannTyton
PV cable
JDL Electric
Full range of cabling
Legrand
Full range of cabling
Magnet Electrical Supplies
Full range of cabling
Radiant Group
SOEW - South Ocean Electrical Wiring
Surgetek
Full range of cables
Voltex
Full range of cables

SWITCHGEAR

ABB South Africa
Full range of switchgear
Actom Electrical Products
SBV indoor equipment, SBV3+3E, SBV4+4E, SBV5+5E, SBV-24, vacuum intern pres, ring main units and extensible switchgear, compact MV switchgear
Allbro
Insulators and busbar supports
Alstom Protection & Control
LV municipal electricity distribution; metering and distribution enclosures
ARB Electrical Wholesalers
Full range of switchgear
Atlas Group
Full range of switchgear
Bellco
Full range of switchgear
CBI-electric: low voltage
Full range of lv moulded case circuit breakers

SWITCHGEAR

JB Switchgear Solutions
Full range of switchgear solutions
JDL Electric
Full range of switchgear
Legrand
Miniature circuit breakers from 1 - 125 A; b-, c- and d-curve moulded case circuit breakers from 16 - 1 600 A; air circuit breakers from 800 - 6 300 A
Magnet Electrical Supplies
Full range of switchgear
MCE Global Suppliers
MCE ac contactors; isolators; overloads
Sabelco
Advanced LV electrical assemblies
Voltex
Full range of switchgear
Voltex LSis
Full range of switchgear
Voltex MV/LV Solutions
Full range of switchgear
Zest WEG Group Africa
Full range of switchgear

LOAD MANAGEMENT

ABB South Africa
Full range of load management solutions
ACDC Dynamics
Full range of load management solutions
Alstom Protection & Control
Load shedding relays
CBI-electric: low voltage
Energy control units (electronic) and standard touch screen electronic time switch
Comtest Distribution
Visual thermometers; thermal imagers; battery testers; vibration meters; power quality clamp meters; single-phase power quality analysers; single-phase voltage quality recorders; three-phase power quality analysers; electrical energy loggers; power loggers; power quality loggers; power recorders; power quality recorders
JDL Electric
Full range of load management solutions
Magnet Electrical Supplies
Full range of load management solutions
MCE Global Suppliers
Onesto load shed relays

LABELLING

ABB South Africa
Full range of labelling
Atlas Group
Full range of labelling
Bellco
Full range of labelling
Brady SA
Full range of labelling
HellermannTyton
Full range of labelling
JDL Electric
Full range of labelling
Phambili Interface
Full range of labelling
Voltex
Full range of labelling

ENERGY BILLING

ABB South Africa
Full range of energy billing solutions
ACDC Dynamics
Full range of energy billing solutions
Atlas Group
Full range of energy billing solutions
Bellco
Full range of energy billing solutions
Comtest Distribution
Visual thermometers; thermal imagers; battery testers; vibration meters; power quality clamp meters; single-phase power quality analysers; single-phase voltage quality recorders; three-phase power quality analysers; electrical energy loggers; power loggers; power quality loggers; power recorders; power quality recorders
Eaton Electric SA
Full range of energy billing solutions
JDL Electric
Full range of energy billing solutions
Magnet Electrical Supplies
Full range of energy billing solutions
Radiant Group
Range of energy billing solutions
Voltex
Full range of energy billing solutions

BUILDING MANAGEMENT SYSTEMS

ABB South Africa
Full range of building management systems
ACDC Dynamics
Full range of building management systems
Comtest Distribution
Thermal imagers; battery testers; vibration meters; power quality clamp meters; single-phase power quality analysers; single-phase voltage quality recorders; three-phase power quality analysers; electrical energy loggers; power loggers; power quality loggers; power recorders; power quality recorders
JDL Electric
Full range of building management systems
Schneider Electric
Full range of building management systems

DBS, MAIN BREAKERS, CIRCUIT BREAKERS, OVERLOAD

ABB
Full range of DBs, contactors, circuit breakers and relays
ACDC Dynamics
Full range of DBs, main breakers and circuit breakers
Allbro
Distribution boards and ready boards
Alstom Protection & Control
LV air circuit breakers
ARB Electrical Wholesalers
Full range of DBs, mains breakers, etc
Atlas Group
Full range of DBs, breakers
Bellco
Full range of DBs, breakers
CBI-electric: low voltage
12-way and 20-way distribution boards; full range of commercial and industrial miniature circuit breakers, moulded case circuit breakers and earth leakage protection devices
Comtest Distribution
Thermal imagers
Crabtree Electrical Accessories
A range of 6 kA MCBs (includes isolators, earth leakages and miniature circuit breakers); a range of 12 and 18 DIN flush mount distribution boards
HellermannTyton
Full range of DBs
JDL Electric
Full range of DBs, main breakers, circuit breakers
Legrand
Surface- and flush-mount DBs; full range of breakers and protection devices
Magnet Electrical Supplies
Full range of DBs, mains breakers, circuit breakers
Major Tech
Full range of distribution boards including flush-mount Econo boards, surface-mount IP65 boards, IP65 clear/grey enclosures and IP55 junction boxes; specialists in populated ready boards, 3 kA and 6 kA mini circuit breakers, isolator and earth leakage switches
MCE Global Suppliers
Onesto distribution boards - flush and surface mount; indoor and outdoor Onesto MCCBs three- and four-pole Onesto circuit breakers one- to four-pole, new Schenker 13 mm circuit breakers
Megger
Megger test instruments for circuit breakers
Schneider Electric
Series 4 DBs and circuit breakers
Surgetek
Full range of DBs, main breakers, overload protection
Voltex
Full range of circuit breakers
Voltex LSis
Full range of circuit breakers
Waco
Wide range of circuit breakers
Zest WEG Group Africa
Full range of DBs, main breakers, circuit breakers etc

MV TO LV TRANSFORMERS

ABB South Africa
Full range of MV to LV transformers
Actom Electrical Products
Distribution transformers from 16 kVA to 5 mVA, power transformers from 6 mVA to 315 mVA
Allbro
Transformer bushings and tap change switches, protection equipment
ARB Electrical Wholesalers
Full range of MV to LV transformers
Atlas Group
Full range of MV to LV transformers
Bellco
Full range of MV to LV transformers
JDL Electric
Full range of MV to LV transformers
Legrand
Compact DIN rail-mounted transformers; LV transformers; power supplies up to 50 A; MV transformers 100 kVA - 3 150 kVA standard and up to 20 000 kVA Special
Magnet Electrical Supplies
Full range of MV to LV transformers
Schneider Electric
Electronic LV lighting transformers
Voltex
Full range of MV to LV transformers
Voltex MV/LV Solutions
Full range of MV/LV transformers
Zest WEG Group Africa
Full range of MV to LV transformers

PAVEMENT CUBICLES AND BOXES

Allbro
Pole mounted distribution boxes
Atlas Group
Full range of pavement cubicles, boxes
Alstom Protection & Control
LV municipal, utility distribution and metering
ARB Electrical Wholesalers
Full range of pavement cubicles, boxes
Bellco
Full range of pavement cubicles, boxes
JDL Electric
Full range of pavement cubicles, boxes
Legrand
Full range of enclosures in mild steel, polycarbonate and stainless steel
MCE Global Suppliers
MCE steel enclosures
Voltex
Full range of pavement cubicles, boxes



PAVEMENT CUBICLES AND BOXES

- ABB South Africa**
Full range of mini substations
- Actom Electrical Products**
Compact mini substations; maximum rating: 22 kV up to 1 000 kVA available in mild steel, fibreglass or 3CR12; enclosures in Type A or B configuration
- ARB Electrical Wholesalers**
Full range of mini substations
- Atlas Group**
Full range of mini substations
- Bellco**
Full range of mini substations
- Comtest Distribution**
Visual thermometers; thermal imagers; battery testers; vibration meters; power quality clamp meters; single-phase power quality analysers; single-phase voltage quality recorders; three-phase power quality analysers; electrical energy loggers; power loggers; power quality loggers; power recorders; power quality recorders
- Eaton Electric SA**
Full range of mini substations
- JDL Electric**
Full range of mini substations
- Legrand**
Extendable mild steel enclosures
- Voltex**
Full range of mini substations
- Voltex MV/LV**
Full range of mini substations
- Zest WEG Group Africa**
Full range of mini substations

METERING (MEASURING INSTRUMENTS)

- ACDC Dynamics**
Full range of measuring instruments
- Actom Electrical Products**
Full range of metering instruments
- Alstom Protection & Control**
Meter test blocks
- ARB Electrical Wholesalers**
Full range of metering instruments
- Atlas Group**
Full range of metering instruments
- Bellco**
Full range of metering instruments
- Comtest Distribution**
Multimeters; clamp meters; RMS meters; wireless meters; RMS ac voltage meters; RMS dc voltage meters; high performance industrial logging meters; remote display meters; IP 67 meters; IS meters; automotive meters; digital precision meters; 5.5-digit multimeters; wireless ac clamp meters; wireless flexi ac current clamp meters; Wireless ac/dc current clamp meters; True-RMS clamp meters; remote display True-RMS clamp meters; detachable jaw True-RMS ac/dc clamp meters; ac/dc clamp meters; leakage clamp meters; voltage/continuity testers; electrical testers; voltage alert pens; phase rotation meters; fluorescent light tester
- HellermannTyton**
Full range of metering instruments
- JDL Electric**
Full range of metering instruments
- Magnet Electrical Supplies**
Catu MV and HV voltage detector complete with audible and visual alarm, contact type; Chauvin Arnoux current, power and harmonic clamp-on meters; Chauvin Arnoux Qualistar power quality analyser, digital with scope and 4 Mb of storage; Metrahit multimeters with optional data logging features
- Major Tech**
Compact power analysers; power quality analysers; current loggers; current and voltage loggers; leakage and loggers; full range of professional ac and ac/dc clamp meters; compact ac and ac/dc clamp meters
- Surgetek**
Full range of metering instruments
- Voltex**
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CUSTOMISED CONTAINER E-HOUSE FOR ZIBULO COLLIERY

CUSTOM-BUILT e-houses offer a rapid and more cost-effective alternative to the building of brick and mortar substations, and this is especially true in an underground application. This is one of the reasons why Zibulo Colliery contracted Shaw Controls, a division of Zest WEG Manufacturing, to design and manufacture an e-house for its operation in the Mpumalanga coalfields.

Bevan Richards, COO of Shaw Controls, says the evolution and development of pre-manufactured electrical substations or e-houses has opened up numerous possibilities including the ability to completely customise the unit according to process and plant requirements.

Specifically designed for this underground application in a coal mine, the e-house was designed with several specific parameters taking precedence. Underground height restrictions

meant that the structure itself had to be lower than usual but would still need to accommodate all necessary electrical infrastructure and allow for sufficient headroom for cooling.

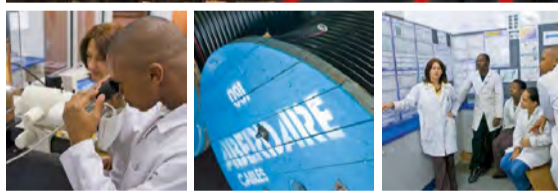
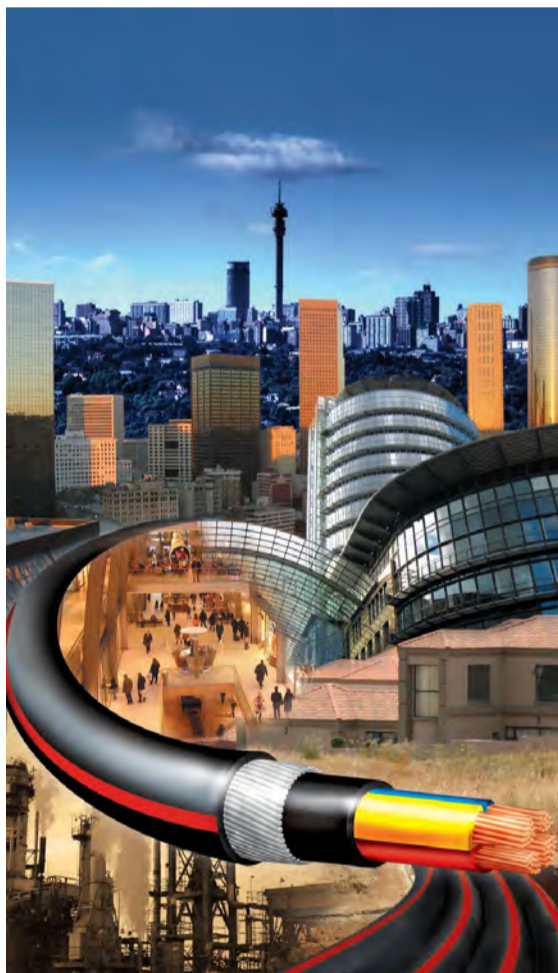
Richards says it is testimony to Shaw Controls' mechanical design capability that its engineers were able to design such a low profile steel structure that could house all the equipment and still maintain the requisite internal clearances. Another important criterion that had to be met was the voltage being used on the mine. A majority of mines use 525 V, but at Zibulo Colliery the voltage being used is 1 000 V. This required special design work on the motor control centre (MCC) and the variable speed drive (VSD) to ensure safe operation at 1 000 V.

The e-house is the prime power centre for an underground trunk belt conveyor which is driven by three 400 kW WEG 1 000 V motors. The conveyor belt with a width of 1.8 m belt speed of 4.9 m per second has been designed to transport 4 800 tph.

The complete e-house including the base, cladding and all internal electrical equipment was designed and manufactured by Shaw Controls at its facility in Johannesburg. The system was integrated internally at the factory and the complete solution, load tested in the factory environment to prove its functionality prior to installation underground.

Richards says that to facilitate the load testing requirement of such a large kW power load a third party test facility was used and Shaw Controls was responsible for the co-ordination of the connection of an 11 kV power centre, the e-house and the water cooling skid and VSDs at the test centre.

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ENTICING CUSTOMERS WITH CONVENIENCE AND COMFORT



One of the new ARB Connects' lighting showrooms, featuring a number of lamps and fittings, tailored for all customers' needs.

ARB Electrical Wholesalers, one of southern Africa's largest electrical wholesalers is doing everything possible to make its customer's purchasing experience quick, easy and comfortable, says the company's CEO, Blayne Burke.

The company recently opened three new stores in Silver Lakes (Pretoria), Meadowdale (Edenvale) and Diep River in Cape Town, which brings the total of ARB Electrical Wholesalers branches to 20, expanding on the company's national footprint.

'Quick pull' system

"Bringing the product to our customers isn't just about opening new branches; we are also making our stores more user-friendly for busy contractors," explains Burke. "We've introduced a 'quick pull' system to complement our trade counters that makes it quicker and easier to find the most commonly requested products that we stock – and the added convenience of being able to

pay for purchases via a dedicated cashier. So, if a contractor who bought his daily materials at the trade counter in the morning has to return to the store to buy that one item he didn't think he would need, he can do so quickly and get back to site without wasting valuable time waiting in queues and for stock to be packed for despatch."

Burke says the 'quick pull' system allows customers to browse and directly select what they need, rather than placing an order at a counter and waiting for it to be processed. Commonly requested items such as switches and sockets, cables and wire, light fittings and lamps and other day-to-day consumables are now quickly and effortlessly accessed in this area. Items on promotion are also available from the 'quick pull' area, which makes it easy for customers to take advantage of specials," says Burke.

"We have also created 'chill-out' areas to give customers a place to relax with a cup of coffee, sports highlights and free Wi-Fi while they wait for their orders.



The new ARB 'chill out area' where customers can enjoy a cup of coffee, watch sports highlights and use free WIFI while catching up on paperwork.

Lighting showrooms

The new stores stock a large variety of lamps and light fittings, which are displayed in the lighting showrooms, and this allows customers to see for themselves what is available before making any purchasing decisions. "As the stores are all conveniently located, contractors' clients can personally decide on the lighting that best suits their homes or offices with the assistance of ARB's experienced sales staff," says Burke.

Online shopping "ARB's new website is designed to make it easy to source electrical products for the customers who prefer to shop online as well as customers who live

in remote areas," he explains, adding that a user-friendly drop-down menu makes the task of finding the right product category simple. "Standard shipping is free for qualifying orders and an express overnight shipping option is available." Clients can also download the convenient ARB app that features tools for electrical engineers, electricians and technicians such as conversion tools, cable sizing guides and more.

"All of these initiatives are meant to improve the overall experience when dealing with ARB. We strive to deliver exceptional service and support to our customers and hopefully these innovative new changes will help us to achieve our goals of supporting our customers, solving their problems and simplifying their lives," concludes Burke.

Enquiries: 0861 272 835

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Sebenza substation project "well on track"



Construction of the new Sebenza substation under way: the three-storey GIS building in the background, in foreground, the oil spill catch pit and to the right, the transformer plinths with fire walls in-between them.

Conco has completed about half of the Sebenza substation project since work began at the end of 2014 after being awarded the contract by City Power.

The project entails the construction of a new 1 000 MVA, 400/275/88 kV bulk in-feed substation, which will relieve the overloaded and aged Kelvin Power Station of a large portion of its existing load. Upgrades and additions to Prospect substation and at Kelvin substation, the latter to include four sets of reactors and new switchgear on some of the main feeders, all form part of this project.

"In just over a year, we have conquered a vast portion of this key multi-phase project," says CONCO senior project manager Thamie Nyembe, who adds that this is due to "meticulous project planning, management and control".

CONCO construction manager, Jan Ehlers, explains, "The majority of the earthworks and civil work is complete as well as the construction of a three-storey GIS building that will house the 132 kV GIS switchgear, as well as the protection, control and SCADA systems manufactured and supplied by CONCO Energy Solutions.

City Power's project manager, Godfrey Mulaudzi, says, "As we enter the installation and commissioning of apparatus into the grid, we still want to assure our customers of continuity of supply and minimum outages when necessary. All outages will be communicated to our customers in time."

"The project is on target," says Mario Prasti, CONCO director of special projects, "and we have achieved results as planned."

Enquiries: +27 11 805 4281

'TIPPING POINT' FOR SOLAR POWER IN AFRICA



RENEWABLE energy, particularly solar, is approaching a tipping point across Africa, according to experts participating in the upcoming POWER-GEN & DistribuTECH Africa 2016 in Johannesburg, South Africa.

Speaking ahead of the annual exhibition and conference, advisory board members said it had become clear across Africa that renewable energy sources hold the key to meeting future power needs across the continent.

According to Sindiswa Mzamo, COO of the Edison Power Group, "We've reached a tipping point for the adoption of solar power. In the vast majority of African countries, solar is the solution for powering rural communities, because it is cost effective and does not need to be connected to a grid to power an isolated geographic area. In some debates, it has been said that people might be overestimating the potential for solar power, but we believe the wave of solar adoptions might be one of the most important initiatives in African power right now."

Mzamo notes that growing numbers of middle class urban consumers and rural households are moving to install their own solar panels, with manufacturers bringing to market better and cheaper solutions for street lighting, security and home lighting. "Solar is the big story of the moment, and investors are seeing good returns on solar plants," she says.


Under the theme, 'Creating Power for Sustainable Growth', POWER-GEN & DistribuTECH Africa 2016 will be staged from 19 - 21 July at the Sandton Convention Centre, with a strong focus on renewable energy, sustainable power generation and distribution, pan-Africa power provision and smarter management and grids.

For more information, go to www.powergenafrika.com. Follow on twitter @PGAFRICA and <https://www.facebook.com/POWERGENAFRICA>



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LIGHT UP THE FUTURE



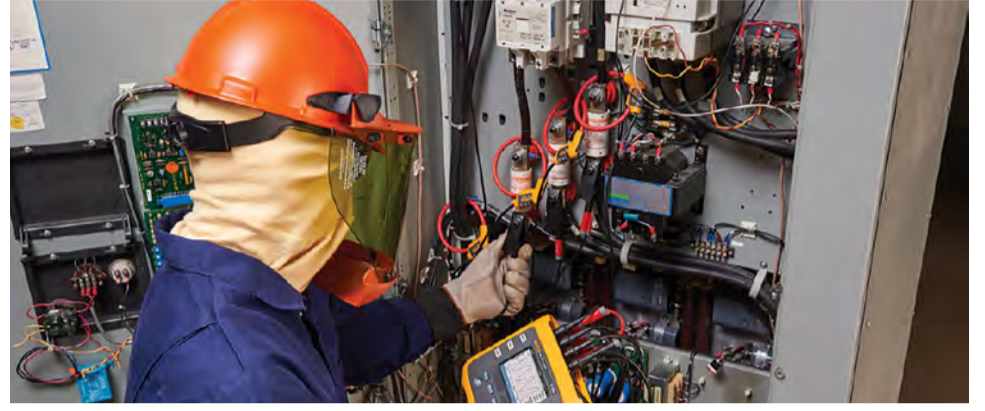
POWER LOGGERS WITH MOBILE APP AND SOFTWARE

Fluke has launched two new three-phase power loggers – the 1736 and 1738 – giving users the data needed to make critical power quality and energy decisions in real-time. They are specifically engineered to conduct energy studies and basic power quality logging, automatically capturing and logging over 500 power quality parameters for more visibility into the data needed to optimise system reliability and savings.

The Fluke 1736 and 1738 are the first three-phase power loggers built with the Fluke Connect mobile app and software, enabling users to measure, capture and log all relevant characteristics of electric power and enable access to management and analysis of large data sets.

The 1736 and 1738 provide:

- More visibility – automatically captures and logs over 500 power quality parameters.
- Reduced uncertainty – visibility through Fluke Connect enables us-



ers to view collected data to ensure the data being collected is correct, either at the panel or remotely. By powering the logger directly from the measured line and the intelligent verification function that digitally corrects common connection issues, measurement system errors are significantly reduced.

- Better decision-making capabilities – data can be accessed and shared remotely via the Fluke Connect app to maintain safer working distances and make critical decisions in real-time, reducing the need for protective equipment, site visits and check-ins.
- Chart and graph measurements to create detailed reports with Fluke Energy Analyse Plus software.

The Fluke 1736 and 1738 have more power quality measurement capability than their predecessor, the Fluke 1730, a pure energy logger; this functionality is a subset of the Fluke 1736/1738. For users

performing both basic power quality studies and energy studies, the 1736/1738 enables users to measure, capture and log all relevant characteristics of electric power and gives access to management and analysis of large data sets. The 1738 includes advanced limit based analysis (uses EN510160 limits), the capability to connect two Fluke Connect devices for logging of supplementary parameters and a WiFi / Bluetooth (BLE) dongle.

Accessories for the 1736, ie, the hanger kit and magnetic voltage probes, are must-haves; making installing much easier. Additionally, the upgrade kit for the 1736 allows users to fully upgrade their 1736 to a 1738 with all the functionality and accessories included with 1738. The auxiliary input cable is very useful if users wish to log other parameters such as temperature along with energy and, especially if there are a wide variety of circuit types and sizes, additional current probes would be most useful. If users are planning to fully integrate their measurements they can also buy FC3000 modules, which can connect to the 1738 and log those measured values.

Enquiries: +27 10 595 1821

When the electric tension rises... The new surge protection series from OBO.

A new look and even more performance capacity – OBO is presenting the new modular screwless series of the V50 combination arrester and the V20 surge arrester. They contain an impressive range of technical features such as a dynamic cut-off function, a visual status display and many more practical attributes.

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From left to right: Dudley Miller (general manager); Kim Terblanche (marketing co-ordinator); Don Archery (manufacturing manager); Nancy Naidu (HR assistant); Eric Leger (Schneider Electric) and Vivien Perumal (marketing manager).

PREPAID electricity meter specialist, in business. During the past five decades, the

Durban-based business, which today is part of Schneider Electric, has founded ground-breaking technology, and made notable advancements in the leadership position it holds within prepaid solutions and the systems it deploys to service the needs of utilities around the globe.

“Since the inception of the South African prepayment industry in the late 1980s, Conlog has been at the forefront of innovative solutions that meet the needs of utilities across the world. In fact, the majority of our revenue comes from outside South Africa’s borders,” says

Conlog’s general manager, Dudley Miller.

Conlog specialises in providing prepayment solutions for the delivery of electricity services. Its broad product offering encompasses prepayment meters, vending, revenue management, maintenance, support and consultation, as well as a dedicated and accredited training facility for all aspects of prepayment.

“This comprehensive and holistic approach enables customers to reap the full benefit of their investment and ensures sustained success, into the future,” emphasises Miller.

“Over 70 utilities worldwide utilise our solutions and consider the company their preferred prepayment provider. With systems that are available in English, Arabic, French, Spanish and Portuguese, our products have been able to reach millions,” says Miller.

Enquiries: +27 11 254 6400

FLUKE

The Fluke 1736 Three-Phase Power Logger

Make critical power quality and energy decisions in real-time with the Fluke 1736

More visibility, reduced uncertainty and better power quality and energy consumption decisions.



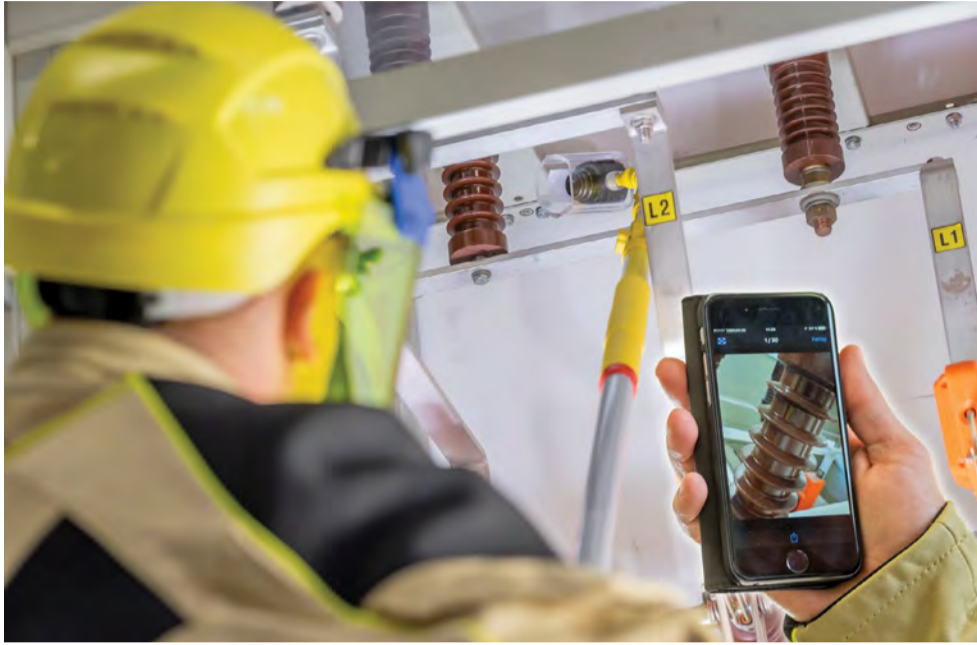
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CAMERA ENABLES TECHNICIANS TO SEE HIDDEN PROBLEMS



Tracing electrical wiring in walls or anywhere else can be a tricky task, one that involves more than just looking for the visible and non-visible wires.

To figure out exactly where the wires are, one would also have to look for the outlets and appliances to which each wire connects. Furthermore, one would need to figure out which circuit breaker applies to which section of the building wiring. Fortunately, with the right tools and techniques, one can effectively and safely trace wiring without causing any damage.

The DEHNcheck camera brings the invisible to light and thus allows for safe inspections and easy handling via a radio link to smartphones or tablets. The portable inspection camera can be used for regular visual inspections and for documenting the state of electrical installations up to 36 kV / 15 to 60 Hz. The device can easily and safely be operated by electrically skilled workers through the use of WiFi, and practically controlled via an application on smartphones or tablets.

Photos are wirelessly transmitted via a WiFi connection and, when used in combination with the extendable insulating sticks from DEHN, the camera maintains the required safety distance. The flexible operating head is able to reach and document

areas of the installation that are difficult to access.

The DEHNcheck camera can be used for quickly and reliably reading the rating plates of electric switches or transformers, detecting broken electrical equipment such as insulators at an early stage, and determining the degree of pollution of parts of electrical installations - even in places not visible to the eye. If a greater safety distance is required to ensure safe operation, an extension can be easily and quickly attached using the plug-in coupling system.

The installation does not have to be disconnected during testing, which means no downtime is necessary and less time will be used for the installer. Photos and films can be filed for documentation purposes and important information can easily and quickly be transferred through a smartphone or tablet.

The DEHNcheck camera comes as a complete set supplied in a case. It consists of a camera with battery, USB cable and smartphone attachment, housing, adapter with gear coupling and transport case and can be used for visual inspections of electrical installations with nominal voltages up to 36 kV / 15 to 60 Hz.

Enquiries: +27 11 704 1487

Compact, infrared camera with online thermal imaging system

INSTROTECH, local distributor of process control instrumentation and specialised systems, has announced the availability of the Optris PI camera featuring online thermal imaging systems, claiming impressive cost-to-performance ratios. Developed to thermally determine objects and automatically detect hot or cold spots, typical applications are research and development; test stations (T&M); process automation and portable measurement tasks.

The Optris PI covers a range of temperature measurements between -20 °C and 1500 °C. The camera, once connected to a PC with USB 2.0, can be used immediately after connection. The Optris PI Connect software displays the captured temperature data as a thermal image, while remotely controlling the camera. Based on a small, uncooled bolometer (UFPA) with 160 x 120 pixels or 382 x 288 pixels, the Optris PI delivers thermal images in real time with a frequency of up to 128 Hz. Fast processes can be captured and stored as snapshots or video sequences and it's possible to detect the smallest temperature differences of an object due to the unit's high thermal sensitivity range.

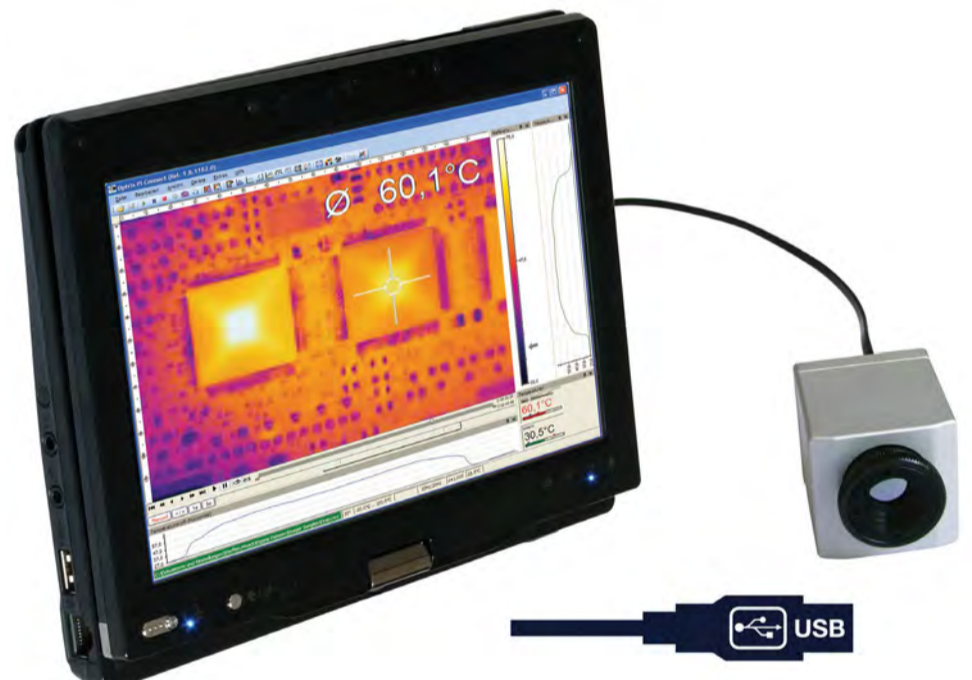
Optris PI200 using BI-SPECTRAL technology, can combine a visual image (VIS) with a

thermal image (IR) which can be captured time-synchronously. In a ready-to-use mode, the camera's weight is not more than 320 g, including lens and cable, making it the smallest (dimensions: 46 mm x 56 mm x 90 mm) thermal imager in the world! And in combination with a tablet PC, the cameras are used as a mobile solution for preventive maintenance or construction thermography, covering the existing gap between portable infrared snapshot cameras and pure fixed devices.

Industrial protection and cooling

The Optris PI thermal imager's housing is rated IP 67 (NeMA-4) protection class and can be installed in surroundings with temperatures up to 50 °C. For applications of up to 100 °C, the Optris PI, together with an air cooling system like the VORTEX cooler's air purge collar, protects the lens from dirt. The optional cooling housing allows for the installation of the camera in rough, industrial surroundings and can be used for ambient temperatures of up to 240 °C in combination with water-cooling systems.

Enquiries: +27 11 462 1920



REMOTE, SIMULTANEOUS, RECORDABLE WIRELESS TEST TOOL SYSTEM

THE Comtest Group, Fluke's authorised test and measurement distributor for South and southern Africa, has introduced Fluke CNX, a customisable, troubleshooting tool set of wireless test tools that work together to record live measurements remotely and simultaneously on a single screen. CNX modules measure ac voltage, temperature and ac current with a standard clamp or flex clamp.

Possible applications include:

- Detection of power interruptions.
- Single phase measurement.
- Determining current imbalance.
- Measurement of incoming current.

A wireless multimeter displays readings from up to three wireless modules, plus the meter measurement at the same time, on the same screen, from as far as 20 m away. To get a holistic overview of the situation, readings from 10 tools' measurements can be reviewed simultaneously on PC view. Users are able to mix and match the wireless-enabled modules to suit their unique measurement needs.

The CNX system can record up to 65 000 sets of min/max/avg readings in either single or multiple logging sessions. CNX isolates intermittent events or records signal fluctuations automatically, using the module's log function. Measurements can be viewed in a location separate from the point of measurement, for safety purposes, as well as be viewed repeatedly from either remote locations or on-site.

Fluke CNX meets Category 1000 V CAT III and Category IV 600 V safety standards.

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PLEA BARGAINING IN THE MANAGEMENT OF DISCIPLINE

SOME offences committed by employees are done in a group. An employer may need to break the pact the group of employees has with each other by offering a deal to an employee to take the side of management or the company in order to punish deviant behaviour by co-offenders.

Such a decision is in the hands of management and there is nothing wrong with management punishing the offenders differently for the same offence. Any finding that the differentiated punishment occasioned by the plea bargain is unfair for lack of consistency in the application of the penalty would be overturned by the Labour Court.

Plea bargaining in the labour context can be defined as an arrangement where the employer and an offending employee who, as part of a group of two or more employees committed an offence,

enters into an agreement with the employer to help the employer with information that would lead to the desired finding against his co-offender/s in exchange for a bargained punishment.

The punishment may be that the employee receives a suspension without pay, comprehensive final written warning, demotion, even a combination of any of these stated examples, anything short of dismissal. Such a bargained punishment closes the matter as long as the offending employee delivers his/her side of the deal. Ordinarily the deal would be that the employee provides a full, credible and honest disclosure that would result in a guilty finding against the employee's fellow offenders. It is not a plea bargain if the employee is merely a witness and not a co-offender.

In MEC: *Depart of Health, ECP v PHSDSBC and others* (PR63/14)

[2016] ZALCPE 9 (16 March 2016) the Labour Court had to consider the question, amongst others, of whether the differentiated punishment meted out to co-offenders constituted unfair dismissal where one of the employees was not dismissed as a result of the plea bargain he entered into with his employer. It appears from the case that the employees took a plane hired by the Department of Health to go and watch a game of football in Bloemfontein without permission. This action came to the attention of an opposition party MP who then submitted a written question to the MEC, which required a written response. The employees conspired to lie in the written response claiming that they were going to help with health services at the said football game.

In order to break the pact amongst these offenders, the employer offered a plea bargain to a co-offender. The co-offender was to testify truthfully and honestly as well as plead guilty to the charges and give evidence against his fellow offenders. The relevant offenders were found guilty and dismissed and he received two months' unpaid suspension plus a final written warning. In arbitration proceedings, the Bargaining Council ruled this to be unfair on the basis that the employer did not effect the same penalty emanating from the same offence. The employees and indeed the arbitrator had no issue with the guilty finding. It was the sentencing that was questioned and which the arbitrator overturned.

The employer took the matter to the Labour Court and the Court agreed that the variation of sentences in line with the plea bargain was fair. The Court also accepted that the decision as to who the employer chooses to enter into a plea bargain with and the content of the bargain is the prerogative of the employer to be done at the employer's discretion. This is subject to certain considerations effectively where *mala fide* (in bad faith) on the part of the employer would be frowned upon. The example that the Court uses is where the 'king pin' escapes punishment by informing on the 'foot soldiers' who effectively followed his plan. Other instances where this would be found to be undesirable is where there is an obvious element of discrimination on constitutionally prohibited grounds.

We should all be familiar with section 204 of the Criminal Procedure Act (Act 51 of 1977), made famous by Vusi Pikoli in the Brett Kebble murder investigation, where he entered into plea bargains to obtain cooperation towards solving the case. The Labour Court has ruled that there is no reason why plea bargaining should not be adapted and applied in the labour law context for the same principle that it is used in the criminal context. The employer has a licence, within the bounds of fairness and reasonability, to enter into a plea bargain to crack an otherwise difficult disciplinary matter in the workplace.



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STATE-OF-THE-ART TOOLS WITH A HISTORY OF EXCELLENCE

Wayne Ternent, managing director at Major Tech, says the company's long-standing partnership with Kyoritsu – a Japanese electrical instrument company that celebrates its 75th anniversary this year – is based on "trust and respect".

"State-of-the-art electrical measurement products are the backbone of Kyoritsu's business and its wide line of testers has contributed to technological developments and industrial infrastructures worldwide since its founding in 1940.

"Major Tech and Kyoritsu share the same business values and principles and this has contributed significantly to our long-lasting partnership," says Ternent.

Clamp meters

Kyoritsu's K-Series instruments include quality clamp meters; earth clamp meters; ac/dc mini clamp meters; multifunction testers; insulation testers; phase rotation testers; loop, PFC and PSC testers; power meters; and voltage, current and leakage loggers – all available locally from Major Tech.

The Kyoritsu K-Series range clamp meters offers most of the functions of a digital multimeter as well as the added feature of a built-in current transformer and wide opening jaws for safe, fast and non-contact current measurement from 200 A to 2 000 A. "Kyoritsu was the first to manufacture CAT IV 600 V rated clamps for hazardous and arduous work conditions with true RMS to average reading," says Ternent, adding that the K2500 dc milliamp process clamp meter measures dc 4 to 20 mA signals without breaking the loop and features a 0.6 mm diameter jaw opening.

Insulation testers

He explains that the SANS 10142-1 compliant K-Series insulation testers are compact, rugged, reliable and easy to use.

These instruments are suited for mining, industry and electricians' applications, and range from 250 to 1 000 V with 1 mA output and 200 mA short circuit current.

Cut-out tool to make life easier



MAKITA has launched another 18 V cordless tool to its range: the Cut-Out tool, which will simplify the work of contractors who need to cut through dry walling. The Makita DCO180Z has a high rotational speed for faster cutting and it cuts through plaster-board quickly and effectively, allowing the user to cut holes for plugs and switches; cut out doorways and the trim around them; cut around any template; and even cut holes in ceiling board for down-lights.

It has an ergonomic soft grip handle with a lock-on-switch for ease of use, which is simply flicked to stop the tool. The anti-restart function prevents accidental start-up of the tool if the user forgets to switch it off before removing the battery.

The DCO180Z is supplied with a depth gauge that doubles up as a spanner when changing the bit. This model has a no-load speed of 30 000 r/min and takes 3 mm bits.

The batteries and the charger are sold separately. The rechargeable and eco-friendly 18 V Li-Ion batteries provide longer run time.

Enquiries: +27 11 878 2600

The K3131IS and K3007IS offer intrinsically safe versions. The K-Series range of high voltage insulation testers comes in analogue and digital measuring 2 500 V; 5 000 V; 10 000 V with the K3125 up to 12 000 V, 5 mA.

Power quality analysers

The K6315 power quality analyser comes with easy-to-use settings that simultaneously record power and power quality measurements in one survey, while the K6305 compact power meter is the perfect tool for measuring energy and power control – and come with a 2 GB SD card, free Android software and Bluetooth interface to enable the user to transfer data to a PC.

Werner Grobbelaar, sales manager for Major Tech, says, "We stock

an extensive range of Kyoritsu power quality test tools for troubleshooting, predictive maintenance and long-term recording in industrial and utility applications. For the development and testing of electrical equipment, the K-Series' high-precision power analysers are easy and reliable for use in the field, as a bench unit or in test laboratories."

He says Major Tech offers the K2210R CAT IV 600 V and CAT III 1 000 V flexible and lightweight ac digital clamp meter with a jaw opening of 150 mm, which measure a wide range up to 3 000 A and are suitable for hard to clamp areas or in crowded wiring places.

See the Major Tech advertisement on page 20 for details of the K-Series instruments

Enquiries: +27 11 872 5500




26mm
SDS+
800W



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HR2631F
Rotary Hammer - 3 Mode

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HR2631F Rotary Hammer

- 3 Operation modes – hammering, hammering with rotation, rotation
- 40 Different bit-angle settings. The bit angle is adjustable without a chisel adapter
- One-touch sliding chuck for easy bit changes
- Built-in Led job light
- Rotation reversing system using a brush holder unit that protects the carbon brush for dust and extends its life by as much as 2.7 times longer than existing models

Capacity:	
- Concrete:	26mm
- Steel:	13mm
- Wood:	32mm
Blows per minute:	0 - 4,600
No load speed (r/min):	0 - 1,200
Net weight:	2,9kg
With carry case:	
Bit sold separately	



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www.makita.co.za



LED RETROFIT: MAKE A TRANSITION IN LESS THAN THREE MINUTES

THE newly developed Mars LED lighting system, available exclusively from the Magnet Group, has been designed for energy efficiency and optimum quality of light in commercial buildings, warehouses and distribution centres, as well as for parkades and perimeter installations.

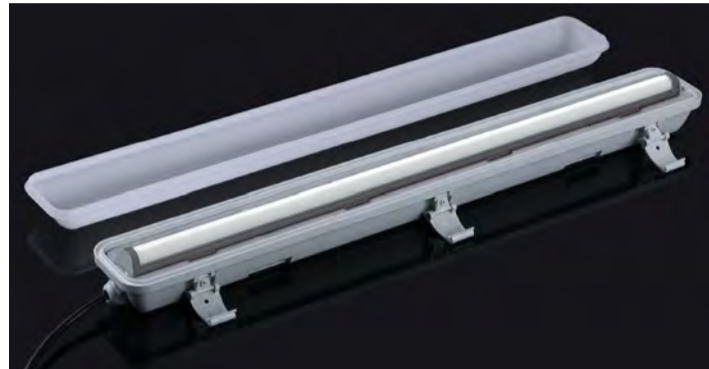
"This new LED lighting range is based on advanced European technology and focuses on the principles of 'modular, adaptable, retrofit and serviceable' to spell out Mars," says Kaylen Reddy, Magnet's lighting solutions engineer and Mars product specialist. "These high performance fittings have undergone extensive testing in the Energywise lighting laboratory at Magnet's KwaZulu-Natal head offices and boast key features that include enhanced aesthetics, an extended lamp life of over 50 000 hours and

heat tolerance up to 50 °C to ensure safe use in harsh environments. "Precise analysis and defined performance parameters during laboratory testing ensure the highest levels of accuracy in every aspect of lighting, including design and manufacture."

Locally manufactured Mars LED lighting systems, which have been designed for easy installation and simple retrofit projects, offer high quality, low glare light, available in different distributions, from approximately 60 °C to more than 120 °C. This customisable range is also available with dimmable functions and is supported by a five year guarantee.

LED linear strips are designed to slide easily into the P200 channel, held securely together with magnetic gear. All the installer needs to then do is connect the power supply. The modular design of these fittings facilitates the customisation of lengths, lumen output and wattages to suit every application. An extruded rail enables easy mounting and replacement of LED boards and an electronic driver, with adjustable output settings, ensures flicker-free operation.

Enquiries: +27 31 274 1053



For enhanced efficiency, the fluorescent lamps within this dustproof fitting have been replaced with the Mars LED strip. This transition can be done in less than three minutes, due to ease of installation.

MAKE THE WHITE CHOICE WITH ONE FITTING

Warwick Webber, Aurora South Africa's technical director, reveals why variable colour temperature should be a consideration for different environments.

In stark contrast to previous generations, we spend 90% of our time indoors. It's been proven that daylight has the ability to invigorate us and promote a sense of well-being, so interior lighting with adjustable output and colour temperatures should be a serious consideration, particularly in residential and commercial environments.

Throughout the day, natural light constantly changes in quantity, directional characteristics, colour temperature and colour rendering. The therapeutic quality of natural lighting has never been in doubt, however we have not really understood how or why, until recently.

One of the most important findings is that light controls our biological or body clock through regular light-dark rhythms, known as the circadian rhythm. Creating appropriate indoor colour temperature levels to

suit different environments and times of day is therefore essential.

In the new Enlite Edition 4 catalogue, there is luminaire that changes colour and dims at the push or rotation of a button. The PolaCX™ colour switching and dimmable downlight is ideal for creating the perfect mood. It works with a standard rotary dimmer switch so the colour temperature can be adjusted as needed. A colour temperature of 2 700 K offers warm relaxed lighting, 3 800 K attains light levels needed for attentive task lighting and 5 700 K delivers an alert task lighting mode.

The PolaCX colour changing LED downlight is ideal for residential, office, educational and communal lighting applications where light colour and output can be adjusted to suit the task and/or mood. It's also IP54 rated so it's also suitable for bathroom installations. PolaCX has 1.5 kV surge protection to help mitigate the problems experienced from power surges or fluctuation in quality of supply and it comes with a three-year warranty.

COLOUR SWITCHING LED DOWNLIGHTS

one light. three whites. your choice!



PolaCX™

for biodynamic light, we've got
your circadian rhythm covered.

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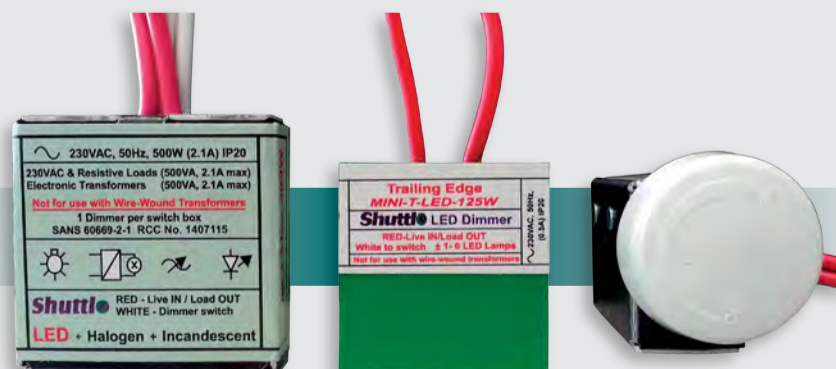
An **AURORA**®
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Shuttle

Dimmers for LED + Halogen + Incandescent

**TRAILING OR LEADING EDGE
125W, 500W AND 800W**

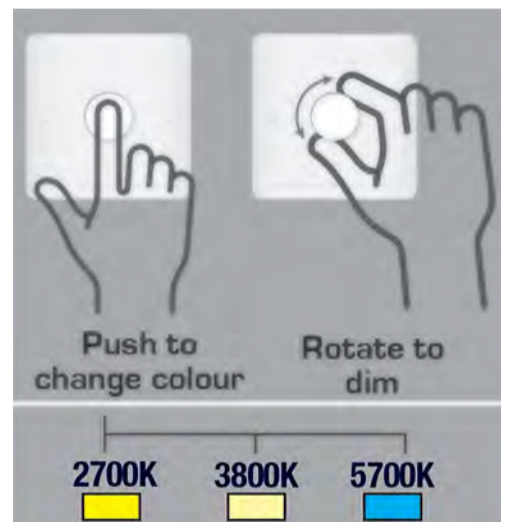
Deep dimming. No flickering. NRCS RCC certificate for CoC. Silent. **Recommended by all leading LED manufacturers.** Maximum load varies by lamp. Minimum load 1 lamp. Details available on website under Resources tab – www.shuttlelighting.com



DC LED DIMMER

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Head Office: 021 448 8229 • Laboratory: 012 991 2521



1. First switch on to colour 2 700 K.
 2. Switch on/off to change to 3 800 K.
 3. Quickly switch on/off to 5 700 K.
 4. Once switched on for 10 seconds, switch on/off will return to last selected colour.
 5. Rotate dimmer switch to dim.
- For dimming compatibility visit www.enlitemlighting.com

The fourth edition of the Enlite catalogue is a one-stop-shop of easy-to-install products engineered by the Aurora Group, which was awarded the Lux 'Manufacturer of the Year 2015'. Enlite lighting essentials are easily available nationwide through our network of Enlite stockists. To download the latest catalogue, visit: www.enlitemlighting.com

Enquiries: +27 11 234 4878



JO'BURG SHOPPING CENTRE REDUCES ENERGY CONSUMPTION WITH LED TECHNOLOGY

BEKA Schröder supplied a comprehensive LED outdoor lighting solution for the Cresta Shopping Centre's recent expansion and refurbishment project. Situated in the north-west of Johannesburg, Cresta Shopping Centre is one of the largest shopping centres in South Africa.

Figures from the South African Council of Shopping Centres show that at least 25 malls exceeding 30 000 m² were built in the past four years. This will bring South Africa's tally of large, regional and super-regional malls to around 180 — which is more than double the number five years ago.

"These malls are constantly challenged to optimise their power usage in order not to exceed the average maximum demand. The average maximum demand is the highest measured kVA or kW during any 30 minutes, within a designated billing period. If this average is higher than the notified maximum demand, the mall is charged a premium on usage," explains BEKA Schröder's Goodman Mthethwa.

He says that one of the ways to reduce the maximum energy consumption is by changing existing CFL, HID and other lighting technologies to LED technology — "which has been proven to provide up to 70% in energy savings when compared to conventional lighting technologies without compromising the performance of the luminaires".

"Another priority that has to be considered by facility management companies is security lighting as shoppers need to feel safe at night," says Mthethwa, adding that specific lighting levels — as prescribed by the relevant SANS lighting specification for different lighting areas — are required.

He explains that Cresta Shopping Centre recently expanded to create a three-level food and entertainment court. As part of this development, a general refurbishment was undertaken, including the improvement of the exterior lighting of the mall.

"BEKA Schröder was awarded the tender to supply the lighting solution. The perimeter and some parking areas are illuminated with BEKA Schröder's high-performance LEDlume-midi LED luminaires, providing effective security lighting. The decorative yet efficient ISLA LED post top luminaires light up the parking area at Entrance 4 and the LEDflood-maxi LED floodlights are installed on the roof of the shopping centre, providing area lighting around the venue. The LEDnova LED floodlight illuminates the signage installed on the centre's exterior walls while various mall entrances are enhanced by the LED-duo up- and downlighter. Finally, the exterior walkways are illuminated by the Series 42 LED bulkheads," explains Mthethwa.

"BEKA Schröder is Africa's leading manufacturer of luminaires and glass-fibre reinforced polyester (GRP) poles. We provide a full scope of solutions to enhance people's lives in terms of safety and well-being in the most sustainable way. We offer high quality lighting solutions in various categories that are designed to withstand Africa's harsh conditions. Our aim is to satisfy the needs of our customers with high performance products made to high quality standards, delivered on time and supported with technical advice and our objective is to provide the right lighting solutions by optimising the optical and mechanical design of luminaires. Using contemporary technologies, our goal is to always offer intelligent and sustainable lighting solutions in order to reduce energy consumption, as well as the overall cost of ownership," he says.

BEKA Schröder's in-house specialists and field application engineers assist with commissioning of projects, providing technical on-site support, as well as offering possible solutions for upgrading and servicing of luminaires.

BEKA Schröder is proud to be associated with Thusanang Projects consulting engineers and Cresta Shopping Centre in providing a successful LED lighting solution for this project.

"These malls are constantly challenged to optimise their power usage in order not to exceed the average maximum demand. The average maximum demand is the highest measured kVA or kW during any 30 minutes, within a designated billing period. If this average is higher than the notified maximum demand, the mall is charged a premium on usage."



A comprehensive LED outdoor lighting solution for Cresta Shopping Centre was supplied by BEKA Schröder.

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Light is Flexibility

OSRAM PrevaLED AC Light Engines

PrevaLED Flat AC combined with DALI to enable slim luminaire designs

The PrevaLED AC portfolio has been designed as a user-friendly Plug & Play solution. Thanks to its small form factor, thin and efficient luminaires can be created — and even contribute to significant cost savings.

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PrevaLED Flat AC DALI

LED module with integrated driver and DALI, dimmable from 1 % to 100 %

Extremely flat luminaire designs

Several module diameters for optimal light distribution: 170 mm for 1,500 lm, 240 mm for 2,500 lm
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Submit your photos of new appointments and promotions to People on the Move at sparks@crowm.co.za. All photos must be in jpeg format and high resolution (at least 1 MB when attached).



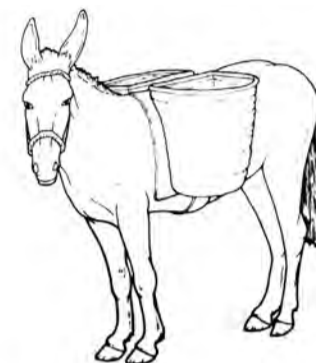
Scan this QR code to read the latest issue of Sparks Electrical News online.



BRIGHT SPARK

A QUESTION OF BALANCE

Farmer Giles has a problem. He has sacks weighing 35, 24, 17, 16, 13, 11 and 7 kg, and only one donkey to carry them in two panniers, one on either side.



How should he arrange the sacks so that the donkey is as evenly loaded as possible?

MAY SOLUTION

TV TEASE

He has two hours in which to watch the programmes, which have a total running time of 2 hours and 40 minutes. So, whether he likes it or not, he will have to miss a total of at least 40 minutes.

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- Cables and cable accessories
- Standby and emergency power
- Lighting

Buyers' guide

- Cables and cable accessories

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Phase Rotation Testers



75 Years of success

On behalf of everyone at Major Tech we would like to congratulate the Kyoritsu team for completing 75 years of success. We appreciate and value our partnership over the years, and offer our best wishes for your continued success as you celebrate this important milestone.

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