



Powerhouse Distribution

Reliable Power Solutions

Tel: 011 346 1812
Fax: 011 346 1818
Address: 115 10th road kew
web page: www.phdpowerhouse.co.za
Email: anthony@phdpowerhouse.co.za



Powerhouse will soon be seen in the pages of engineering IT.

Powerhouse has launched their 2010 marketing campaign off with a bang, you will soon be seeing us within the pages of the Engineering IT magazine among others.

Volume 2 - 2010
Title : Reliable power solutions



PHD for Reliable Power Solutions.

Become part of the excitement Powerhouse offers all three major UPS topologies as well as Surge Protection Equipment, Voltage Stabilisers and Switch Gear.

Powerhouse Distributions your partner in reliable power solutions!



AEC Uninterruptable Power Supplies.

Powerhouse has the privilege of representing AEC in Africa, AEC is one of the top 5 selling UPS brands in the world, with selling centers in all major countries and on all 4 major continents.

For more information on the AEC UPS systems please click on the following links

- [Line interactive UPS systems](#)
- [Online double conversion UPS systems](#)
- [Rack mount UPS systems](#)

Powerhouse includes a detailed UPS AC installation manual on their web page, to assist you and the electrician with your installation.

South Africa: The year of the increase

South Africa's monumental year has finally arrived, albeit with a bitter sweet taste in our mouths. It's one thing to have the soccer world cup less than 100 days away, but what about extra expenses incurred by the South African tax payers, who by the way make up just 9 or 10 percent of our total population.

This year we not only have fuel levy increases, but we also have sin taxes, toll roads (which are popping up everywhere) and even our national TV broadcaster, has announced that it might add a little extra pressure to our already empty wallets, but the worst increase we have is the electricity price.

We are in no way saying that by hosting the soccer world cup, it has pushed all this financial pressure onto the tax payers. What we are trying to point out is the fact that it's difficult to get excited about the soccer world cup when we have real problems at home and at the office.

Powerhouse's philosophy has always been that by helping you, we help others and ourselves. We keep our costing on our UPS systems as low as possible and offer you the best quality product we can. I was sitting in class on Saturday (I am studying a Business management diploma) and in my marketing lecture we were going through the term "Value", and what the term means. To put it plainly it's the relationship between the cost of your goods or service and the quality of it, a bargain is when the cost of the goods or service is low and the quality of the goods is very high, so by using that definition we can say, "Powerhouse offers an extremely good value for money product at bargain prices"



For more information on the products offered by Powerhouse distributions please go to our webpage www.phdpowerhouse.co.za

A well rounded company

One of the things that I have always admired about Powerhouse Distributions is that we are a one stop power shop, we offer uninterruptible power supplies as well as surge protection and AVR units, this is a huge benefit to customers as we understand both facets of the power industry BACK-UP and PROTECTION, this is a huge advantage because we can offer you the correct solution for what you need, not what is best suited and more expensive than what you need.

Powerhouse also builds 80% of their surge protection inhouse, so we have direct control over its quality, we are also fully compliant with all SABS rules and regulations including the new laws with regards to the thermal disconnect on MOV's between line and neutral.

Powerhouse uses thermal disconnect MOV's between line and neutral.

We have just recently upgraded all our surge protection equipment with thermal disconnect MOV's between line and neutral, this is in accordance with SABS standards and is designed to remove the MOV from the line-neutral circuit in the event the MOV should go into thermal runaway

200 subscribers for the live wire news publication

The powerhouse news publication “The live Wire” has exceeded all expectations by breaking the 200 subscriber mark.

We would like to thank all of our readers for their input and dedicated support.

If you have any topics you would like us to discuss, please feel free to send them to us so we can include them in our future publications.

Surge protection for home and business.

In this issue we wanted to take you back to our more popular articles

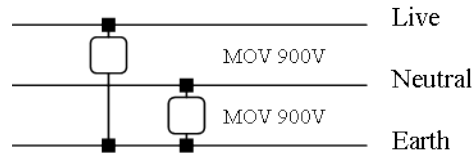
While the fitting of surge protectors on a main supply board is no longer obligatory, Powerhouse Distributions (PHD) recommends that for peace of mind and protection of sophisticated electronic equipment used in both home and office, proper surge protection is fitted on both the live and neutral connection entering the mains board.

International specification (IEC 60664-1) to which most of today’s equipment will comply specifies the maximum differential mode surge that the equipment should be able to withstand without damage is 1500 Volt. (A surge or a spike is a transient voltage that last for only a split second).

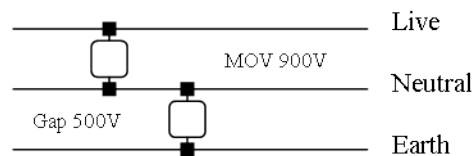
There are two types of protectors fitted. On the live a metal oxide varistor (MOV) unit is recommended and for the neutral a spark gap or as it is also referred to an N-PE type. The value in fitting both is in the way they are configured to ensure that surges over 1500V are bled off to earth and don’t travel around the indoor wiring.

In the past it was common to fit the MOV type protectors between line and earth and neutral and earth. This however does not provide the protection required as referred to in the IEC 60664-1 specification as can be seen in figure 1

Fig 1. The differential mode protection level is 1800V (sum of let through voltages which are in series between live and neutral) which is over the specified limit of 1500V



In figure 2, the MOV protector is fitted between live and neutral and a gap arrestor between neutral and earth



The differential mode protection level is now 900V (single device between live a neutral conductors), while the common mode protection level is 1400V (900+500=1400V) which is within the specifications of equipment conforming to the IEC specification. The spark-gap protector reduces the potential difference between N-PE to around 40V which ensures that the N-PE conductors are referenced as closely to each other as possible during a surge event, this in turn eliminates the possibility of “spark over” between neutral and the earthed chassis of the equipment.



The truth about lightning

I must admit this is my favourite piece, it's a wonderful article about the wrath of the elements

In the mid 1700's Benjamin Franklin experimented with a kite in a thunderstorm and was the first to postulate the theory that lightning was in fact an electrical discharge. Since those early days research has revealed a great deal about this awe inspiring phenomenon, however in spite of over 250 years of research there is still a great deal we do not know.

One fact however is absolutely certain – lightning is created by an electrical charge of millions of volts between cloud and ground. We have all experienced the mild shocks caused by walking on carpets with rubber soles. These shocks which can be quite startling although seldom very painful are caused by a build up of charge in our bodies when the rubber of our shoes rubs against the fibres of a carpet. When you make contact with an object which is connected to the ground a small spark jumps between your finger and the “grounded” object. The spark has in excess of 1000V of charge which is enough to cause the electrical current to leap through a millimeter or two of air. When lightning occurs the “spark” travels through several thousands of meters (up to 16 000m) of air which means that the voltage has to be proportionally larger – several million volts larger!

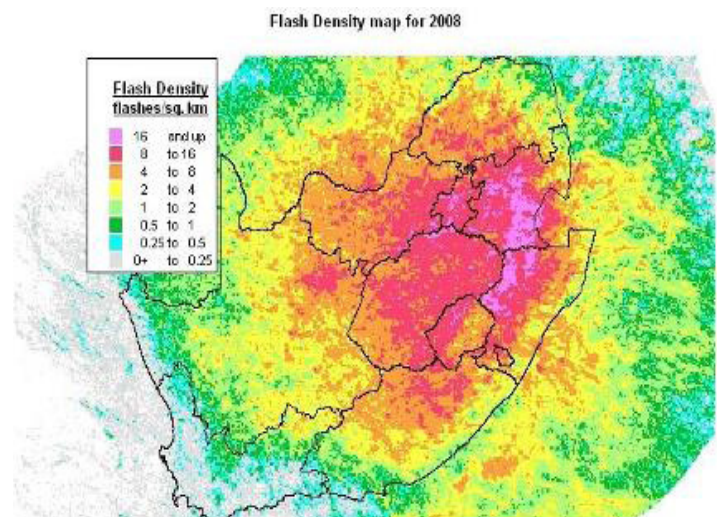
In South Africa we are no strangers to the wonder and power of a thunderstorm. These natural light shows entertain us regularly throughout the summer months and many a Highveld resident has lain awake of a night listening to the comforting rumble of thunder. However there is a more dangerous and costly side to these magnificent natural events. Most of us will attest to having experienced the damaging effects of a nearby lightning strike. TV's, decoders, computers, modems and faxes to name but a few of the expensive electronic items found in homes are all susceptible to the effects of a lightning induced surge.

In the USA it is estimated that the total damage caused by lightning every year is in the order of \$20m. While no official statistics on damage are available on South Africa, we do live in one of the most severely affected areas in the world. With an average of up to 30 strikes taking place within 1km of where we live every season, damage to expensive equipment is inevitable.

On more than one occasion I have heard people tell how they run around like crazy at the approach of a thunderstorm unplugging appliances and disconnecting telephone lines. In some cases I have heard about people who won't even watch TV during a storm for fear of damage (what if the spring-boks are playing!!).

The fortunate truth is that in spite of what we still have to learn about lightning and what causes it, there are devices available which with years of research and development based on extensive field trials are capable of keeping out even very severe surges caused by lightning. PHD is one such company, who with more than 20 years of experience in the design and manufacture of surge protection devices still strive constantly to develop new clever ways to make it possible to watch TV, surf the net or just lie peacefully listening to the gentle rumble of a thunderstorm, secure in the knowledge that you won't have to be phoning your insurance company in the morning.

2008 Lightning density map from the CSIR



The Live wire team would like to thank all our dedicated live wire readers, as well as our new commers to the publication, for all the support, we would also like to invite you to contact us should you need any advice on surge protection or UPS systems to view our web page www.phdpowerhouse.co.za or alternatively contact us on 011 346 1812.

Thought for the month

Do the job correctly the first time, because a half hearted job will cost you more than just money in the end.

Featured Products Click on picture for more.



Line interactive UPS systems.



Online double conversion UPS systems.



DB board Surge Protection



POWERHOUSE
RELIABLE POWER SOLUTIONS