Replaceable surge & overvoltage cartridge

Designed in South Africa, Manufactured in Germany, Built to take the hit.

# Allow me to introduce ourselves **energywise**

We have been in the lighting and Energy saving industry for almost a decade.

#### Multiple Award winner.

- Best energy company of the year
- Best ESCO project
- Microsoft case study... and other

We still maintain the record in South Africa – the largest ESCO (public-private) Energy Saving Project

Saved ESKOM in excess of 520 GWh of electricity over 3 years.

Enough to power over 10 000 middle-class south African homes a year.



## As for who I am?

Andrea Barausse - founder and director of Energywise

& a fellow member of IEESA.

We design and manufacture a variety of LED products and carry the following certification:









We also own one of about 12 fully fledged Photometric Lighting laboratories in South Africa at our head office in Durban

Our 2 Mantras:

**Quality over Quantity &** 

What is on the box is IN the BOX





## Definitions

Overvoltage: the slow cook (generally not more than 400V)

Spike/Transient

Permanent

Surge: The flash fry (generally greater than 500V but up to tens of thousands of Volts)

**Spike/Transient** 



## Which causes what?

### Overvoltage >270V

#### Temporary (survivable)

- Switching of a big load
- Faulty connection
- Lightning
- Power Utility Network trouble
- Falling branches/line interruptions

#### Permanent (the true silent Killer)

- Wrong/faulty connections
- Transformer Tapping
- Removal (stealing of Neutral)

### Surge 500 ~ 20kV

#### Temporary

- Switching of big load
- Lightning
- Power Utility Network trouble



## A little more about Overvoltage

Typically, in South Africa 240+10% = +- 264V is the MAX safe voltage permitted in the great majority of Electronic devices.



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## A little more about Surge

A surge is a temporary unwanted voltage in an electrical circuit that can range from a few volts to tens of thousands of volts.



https://cauk.tv/articles/power-quality-issuestransients-and-interference/

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## How does it affect you?

• Billions of Rands of losses in electrical equipment annually in RSA

 Insurance companies looking to exclude <u>any form of cover</u> for the above except if it is specified (adding additional cost for cover) or <u>only if</u> it has additional protection.

 Silent Killer – not as obvious as SURGE but just as destructive and prevalent



## How does it affect your municipality?

#### • Infrastructure:

- Traffic Lights
- Streetlights
- municipal buildings etc
- Increasing Maintenance cost
- Increase risks:
  - Dark streets increase criminal activity
  - Downed traffic lights increase accidents
  - Downtime
  - Disgruntled ratepayer
  - etc

## Protector vs Arrestor

### What is the difference?

**Surge protector:** Cheaper option, will typically protect the device until the unit "pops".

Surge protectors are normally connected in parallel to the load.

Surge Arrestor: Generally, more expensive.

Are connected in series to the load acting like a fuse.



## **Our solution**

- Combining Surge and Overvoltage protection
- 3 years in the making
- Designed in South Africa by Energywise
- Manufactured in Germany by a leading electronics company part of the VS group
- Compact: fits into the space of the existing Surge protector

# Introducing the VOLTPRO



# Introducing the VOLTPRO



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An Energywise and VS-Group Europe joint collaboration, Designed by Energywise, manufacuterd in Europe.

# Introducing the VOLTPRO

#### SPECIFICATIONS

Nominale voltage	220 240 Vac (not suitable for DC-voltage supplies)
Power dissipation at nominal voltage	125mW
Max. continuous overvoltage	400 Vac +/- 10%
Nominal frequency	50/60Hz
Maximum load current (Im)	AOI
In rush current withstand	 100A (Lin- Lout)
Disconnecting voltage	270 Vac +/- 3%
Response time	< 100ms
Up@SkA	< 2kV < 100ms
Reset	Disconnect from the mains voltage.
	After reconnecting the device will re-connect the
	load to the supply voltage in case supply voltage is
	within the limits within 7 seconds
Protection rate	IP2C
Storage temperature	-40°C 80°C
Operating temperature	-40°C 60°C
Tc max.	70°c
Lead wires Lin, Lout, 2x N	Lin (BN), Lout (WT), 2x N (BU), 1,Smm2 stranded-200mm
Indicator	Green LED ON: AC power supply OK
	Ret LED ON : Overvoltage > 270V ac +/-3%
Dimensions (axbxh)	62 x 34 x 27 mm



## Easy to use

- Activates in less than 100ms absorbing Surges up to 10kV for a minimum of 15 events.
- If the unit cannot protect the asset, it will permanently switch off to preserve the asset
- In event of Overvoltage automatically shuts down, and will reset the connection after powering down
- The unit's biggest concern is protecting the asset, it is expendable and easier to replace than the asset





## How much could you save?

• Unnecessary Replacement of

Streetlights,

Park lights,

**Traffic Lights** 

### AND MUCH MORE

- Labor costs implication
- Interruption of services
- Long interruption due to high cost of maintenance
- Public Liability

## Over Budget due to Over Voltage? VOLTPRO Replaceable surge & overvoltage cartridge

energywise



