

PropSava®

Single Phase

1st Purpose Designed Mains Power Optimisation System for Domestic and Office Properties



The PropSava is connected between the electric meter and the property distribution/fuse board.

The PropSava is a hybrid voltage regulator. The PropSava uses a number of transformers, sensors and computer system to measure and manage the incoming main voltage. The output voltage to the property is then maintained at a consistent and stable regulated voltage. Controlling and reducing the voltage into a property has the following benefits:

- Reduces energy costs by up to 17%
- Reduces CO2 emissions by up to 16%.
- Protects electrical and electronic equipment from spikes and surges.
- Lowers maintenance costs on electric motors (such as refrigerator and freezers, air conditioners, washing machine, etc.), all types of lighting and all domestic and office electrical equipment.
- Prolongs the life of electrical components through reduced voltage and electrical stresses.



PropSava Protection:

The PropSava protects all electrical equipment in the property from the ills of over and under voltage. It reduces the electrical cost of using electrical appliances and protects all the appliances from the damage caused by both over and under voltage. Electric bill could be reduced by up to 17% and the life electrical equipment in the property could be increased by up to 25%.



PropSava® 23KVA / 230V
P/N: VR204-23KVA



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PropSava and Security of Supply:

The PropSava will optimise the power supply to the entire electrical load of a property because it is installed at source.

The PropSava has been designed with no moving parts. Voltage optimisation and power quality improvement is achieved through magnetic fields only, and the unit is as reliable as the incoming power supply itself. The unit requires no maintenance, guaranteed for 10 years and will last for 20-40 years.

The PropSava has been field tested for two years and is efficient across its entire operating range.

Why optimise your electricity supply?

Operating electrical equipment at higher and lower than optimum voltages leads to significantly higher energy consumption and possible damage to electrical lights and appliances.

“ A 230V linear appliance used on a 240V supply will take 4.3% more current and will consume almost 9% more energy.” (UK Electrician's Guide, 16th Edition BS7671)

Over-voltage supply creates four detrimental events:

1. You use and pay for more electricity than you need.
2. Your appliance works harder than it should and will therefore wear out faster.
3. You will produce more carbon emissions than necessary.
4. Poor or bad power Harmonics can cause severe damage to new electronic/ electrical devices and at least shorten the life expectancy of the device.

Under-voltage supply creates four detrimental events:

1. Some appliances will fail to operate if the voltage is too low.
2. Some appliances will become unstable and shut down, such as computers.
3. Your appliances will demonstrate various type of malfunction such as a poor quality picture on a television; clothes not being washed or dried correctly, vacuum cleaners not cleaning correctly, steam irons not getting hot enough, electric water heaters taking far too long to heat the water etc.
4. Some of your electric motors will overheat as they are not running at the correct voltage (especially washing machines, dishwashers, boiler pumps, fridges etc); will wear out much faster with have much shorter lives.

Why does over and under voltage occur?

Over and under voltage is generally a chronic problem aggravated by a number of factors beyond the end user's control. Electric utilities try to maintain voltage levels delivered to customers at $\pm 5\%$. However, factors like weather, high demand and others can cause the utility voltage to fall within a $\pm 10\%$ range. Even under ideal conditions, most customers will see a drop in utility voltage levels over the course of the day as demand begins to increase around 8 AM and peaks around 3 or 4 PM.

Distribution system characteristics can also contribute to chronically low voltage situations. For example, customers at the end of a long distribution line may be subject to a permanent voltage drop due to line losses on top of the utility voltage variations.



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What does a PropSava do for lighting?

Lighting loads tend to be switched for a large proportion of the time, so savings on lighting equipment are very valuable.

“A 230V bulb used at 240V will achieve only 55% of its rated life.” (UK, IEE Electricians Guide)

The efficiency of any type of lighting will be improved by bringing it to the correct voltage, including systems with resistive or reactive ballasts. Fluorescent lighting will run more efficiently when supplied with the correct voltage - the PropSava delivers all these improvements automatically.



The environmental benefits of the PropSava:

Under the Kyoto Protocol, many countries are committed to cutting their carbon emissions by up to 12.5% below 1990 levels.

Over-voltage is an under-publicised cause of power supply inefficiencies. The PropSava can reduce CO2 emissions by up to 17%. We estimate that up to 90% of European businesses suffer from over-voltage and would save energy by installing a PropSava.



The contribution towards Europe’s carbon-cutting effort over the coming decades will be substantial.

In addition, a PropSava prolongs the life of electrical equipment, reducing non-recyclable waste.

PropSava Savings:

Based on the UK national average voltage(242V), the average optimisation level of a PropSava is 8%, this typically produces power consumption in kilowatt per hour saving of 13%. However, as the supply voltage does vary slightly across the country and each site will have different power consumption, savings can be seen between 10-16% on around 90% of UK homes and offices.

Slightly lower figures can also be achieved in Europe with the average optimisation level at 6%, kilowatt per hour savings of 9%, savings can be realised between 8-11% on around 70% of European homes and offices.

Installation:

A qualified electrician must be used to make the installation of the PropSava. The PropSava can be installed inside, or if outside the property, in a waterproof box system, as near as possible to the electric meter. Normal internal installation could take up to 1 hour; subject to site survey.

Safety Certification:

The PropSava device is CE marked, and complies with EN61000-6-1, EN61000-6-3, 61000-3-2, 61000-3-3 and EN61558-2-12. It is also undergoing UL/cUL listed product status for North America (UL1012 Power units other than class II) and also undergoing Japanese (PSE/GSL) and NATA (Australian and S.E.Asian) and CCC (China) accreditation.

Packaging Details: Example for 230V-5KVA PropSava

- Footprint: 300 mm (L) x 450 mm (W) x 450 mm (H)
- Carton grade: 200K/T EB Flute, Single Wall
- Exact carton dimensions: 310 mm (L) x 460 mm (W) x 460 mm (H)
- Quantity per carton: 1 Unit
- No. of carton per pallet: 27 Carton
- Pallet dimensions: 1400 mm (L) x 1100 mm (W) x 120 mm (H)
- No. of carton per 20 ft. : 216 Cartons
- No. of carton per 40 ft. : 432 Cartons
- Weight: 42 Kg ± 3 Kg



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1st Purpose Designed Mains Power Optimisation System for Domestic and Office Properties

Specifications:

Electrical

Capacity in VA (Watts): 5KVA
 Phases: Single Phase
 Regulation: Digital control Contactless compensated Regulation.

Input

Voltage: 220V +/-15% 50Hz
 Input Current: 27A max

Output:

Normal mode: 220V +/-1% 50Hz
 Optimize mode: 210V +/-1% 50Hz
 Current: 24A max
 Efficiency: ≥98%
 Response time: ≤40ms
 Output wave: Sine wave, additional Waveform deformation less than 0.4%.

Protection

Delay output: System will delay output for 5 to 8 seconds after power on.

Over voltage: If output voltage exceeds +10% of output rated voltage for 5 seconds the system will shut down; LED alarm indicator will light and activate an alarm buzzer. Subject to no By-Pass or internal failure and the voltage has dropped to within the specified limits, the system will automatically restart and alarms cancel.

Under voltage: If output voltage exceeds -10% of output rated voltage for 5 seconds the system will shut down. LED alarm indicator will light and activate an alarm buzzer. Subject to no By-Pass or internal failure and the voltage has dropped to within the specified limits, the system will automatically restart and alarms cancel.

Over load: If output current exceeds 20% of maximum rated current for 60 minutes and/or if output is overloaded or shorted the system will automatically shut down.

By-pass: Automatic/Manual

EMC and Safety

EMC: EN61000-6-1, EN61000-6-3, EN61000-3-2, EN61000-3-3
 LVD: EN61558-2-12

230V-5KVA

High frequency Filters (Optional)

Filter: A high frequency filter may be added to the input side to absorb and filter high frequency noise and reduce Electromagnetic Interference to sensitive devices.

Delay output: System will delay output for 5 to 8 seconds after power on.

Life cycle

Life cycle: Designed for 10 years minimum, up to 25 years subject to 10 year service intervals.

Other

Display: Digital meter shows output voltage and power.

Mute switch: When buzzer is activated the mute button may be used to silence the noise.

Cooling: Temperature controlled, low noise, long life Fan

Working temperature: ≤65C

Noise: ≤45db

Ambient temperature: -15 - 40C

Humidity: 0~95% (Not freezing point)

Physical

Modularization: The transformer and cable contact with terminal, suitable for Disassemble and Assemble.

Dimensions: 300mm (H) x450mm (W) x450mm (D)

Weight: 42Kg

Enclosure: IP22

Feet: 4 wheels

Part NO: VR201-5KVA



Specifications:

Electrical

Capacity in VA (Watts): 12KVA
 Phases: Single Phase
 Regulation: Digital control Contactless compensated Regulation

Input

Voltage: 220V +/-15% 50Hz
 Input Current: 65A max

Output:

Normal mode: 220V +/-1% 50Hz
 Optimize mode: 210V +/-1% 50Hz
 Current: 58A max
 Efficiency: ≥98%
 Response time: ≤40ms
 Output wave: Sine wave, additional Waveform deformation less than 0.4%.

Protection

Delay output: System will delay output for 5 to 8 seconds after power on.

Over voltage: If output voltage exceeds +10% of output rated voltage for 5 seconds the system will shut down; LED alarm indicator will light and activate an alarm buzzer. Subject to no By-Pass or internal failure and the voltage has dropped to within the specified limits, the system will automatically restart and alarms cancel.

Under voltage: If output voltage exceeds -10% of output rated voltage for 5 seconds the system will shut down. LED alarm indicator will light and activate an alarm buzzer. Subject to no By-Pass or internal failure and the voltage has dropped to within the specified limits, the system will automatically restart and alarms cancel.

Over load: If output current exceeds 20% of maximum rated current for 60 minutes and/or if output is overloaded or shorted the system will automatically shut down.

By-pass: Automatic/Manual

EMC and Safety

EMC: EN61000-6-1, EN61000-6-3, EN61000-3-2, EN61000-3-3
 LVD: EN61558-2-12

230V-12KVA

High frequency Filters (Optional)

Filter: A high frequency filter may be added to the input side to absorb and filter high frequency noise and reduce Electromagnetic Interference to sensitive devices.

Delay output: System will delay output for 5 to 8 seconds after power on.

Life cycle

Life cycle: Designed for 10 years minimum, up to 25 years subject to 10 year service intervals.

Other

Display: Digital meter shows output voltage and power.

Mute switch: When buzzer is activated the mute button may be used to silence the noise.

Cooling: Temperature controlled, low noise, long life Fan

Working temperature: ≤65C

Noise: ≤45db

Ambient temperature: -15 - 40C

Humidity: 0~95% (Not freezing point)

Physical

Modularization: The transformer and cable contact with terminal, suitable for Disassemble and Assemble.

Dimensions: 350mm (H) x500mm (W) x520mm (D)

Weight: 55Kg

Enclosure: IP22

Feet: 4 wheels

Part NO: VR202-12KVA



1st Purpose Designed Mains Power Optimisation System for Domestic and Office Properties

Specifications:

Electrical	
Capacity in VA (Watts):	18KVA
Phases:	Single Phase
Regulation:	Digital control Contactless (SCR) compensated Regulation
Input	
Voltage:	220V +/-15% 50Hz
Input Current:	96A max
Output:	
Normal mode:	220V +/-1% 50Hz
Optimize mode:	210V +/-1% 50Hz
Current:	86A max
Efficiency:	≥98%
Response time:	≤40ms
Output wave:	Sine wave, additional Waveform deformation less than 0.4%.
Protection	
Delay output:	System will delay output for 5 to 8 seconds after power on.
Over voltage:	If output voltage exceeds +10% of output rated voltage for 5 seconds the system will shut down; LED alarm indicator will light and activate an alarm buzzer. Subject to no By-Pass or internal failure and the voltage has dropped to within the specified limits, the system will automatically restart and alarms cancel.
Under voltage:	If output voltage exceeds -10% of output rated voltage for 5 seconds the system will shut down. LED alarm indicator will light and activate an alarm buzzer. Subject to no By-Pass or internal failure and the voltage has dropped to within the specified limits, the system will automatically restart and alarms cancel.
Over load:	If output current exceeds 20% of maximum rated current for 60 minutes and/or if output is overloaded or shorted the system will automatically shut down.
By-pass:	Automatic/Manual
EMC and Safety	
EMC:	EN61000-6-1, EN61000-6-3, EN61000-3-2, EN61000-3-3
LVD:	EN61558-2-12

230V-18KVA

High frequency Filters (Optional)	
Filter:	A high frequency filter may be added to the input side to absorb and filter high frequency noise and reduce Electromagnetic Interference to sensitive devices.
Delay output:	System will delay output for 5 to 8 seconds after power on.
Life cycle	
Life cycle:	Designed for 10 years minimum, up to 25 years subject to 10 year service intervals.
Other	
Display:	Digital meter shows output voltage and power.
Mute switch:	When buzzer is activated the mute button may be used to silence the noise.
Cooling:	Temperature controlled, low noise, long life Fan
Working temperature:	≤65C
Noise:	≤45db
Ambient temperature:	-15 - 40C
Humidity:	0~95% (Not freezing point)
Physical	
Modularization:	The transformer and cable contact with terminal, suitable for Disassemble and Assemble.
Dimensions:	380mm (H) x600mm (W) x570mm (D)
Weight:	78Kg
Enclosure:	IP22
Feet:	4 wheels

Part NO: VR203-18KVA



Specifications:

Electrical	
Capacity in VA (Watts):	23KVA
Phases:	Single Phase
Regulation:	Digital control Contactless (SCR) compensated Regulation
Input	
Voltage:	220V +/-15% 50Hz
Input Current:	123A max
Output:	
Normal mode:	220V +/-1% 50Hz
Optimize mode:	210V +/-1% 50Hz
Current:	110A max
Efficiency:	≥98%
Response time:	≤40ms
Output wave:	Sine wave, additional Waveform deformation less than 0.4%.
Protection	
Delay output:	System will delay output for 5 to 8 seconds after power on.
Over voltage:	If output voltage exceeds +10% of output rated voltage for 5 seconds the system will shut down; LED alarm indicator will light and activate an alarm buzzer. Subject to no By-Pass or internal failure and the voltage has dropped to within the specified limits, the system will automatically restart and alarms cancel.
Under voltage:	If output voltage exceeds -10% of output rated voltage for 5 seconds the system will shut down. LED alarm indicator will light and activate an alarm buzzer. Subject to no By-Pass or internal failure and the voltage has dropped to within the specified limits, the system will automatically restart and alarms cancel.
Over load:	If output current exceeds 20% of maximum rated current for 60 minutes and/or if output is overloaded or shorted the system will automatically shut down.
By-pass:	Automatic/Manual
EMC and Safety	
EMC:	EN61000-6-1, EN61000-6-3, EN61000-3-2, EN61000-3-3
LVD:	EN61558-2-12

230V-23KVA

High frequency Filters (Optional)	
Filter:	A high frequency filter may be added to the input side to absorb and filter high frequency noise and reduce Electromagnetic Interference to sensitive devices.
Delay output:	System will delay output for 5 to 8 seconds after power on.
Life cycle	
Life cycle:	Designed for 10 years minimum, up to 25 years subject to 10 year service intervals.
Other	
Display:	Digital meter shows output voltage and power.
Mute switch:	When buzzer is activated the mute button may be used to silence the noise.
Cooling:	Temperature controlled, low noise, long life Fan
Working temperature:	≤65C
Noise:	≤45db
Ambient temperature:	-15 - 40C
Humidity:	0~95% (Not freezing point)
Physical	
Modularization:	The transformer and cable contact with terminal, suitable for Disassemble and Assemble.
Dimensions:	350mm (H) x500mm (W) x520mm (D)
Weight:	103Kg
Enclosure:	IP22
Feet:	4 wheels

Part NO: VR204-23KVA



PropSava®

Single Phase

1st Purpose Designed Mains Power Optimisation System for Domestic and Office Properties

Specifications:

Electrical

Capacity in VA (Watts): 2KVA
Phases: Single Phase
Regulation: Digital control Contactless compensated Regulation

Input

Rating Voltage: 120Vac+/-15% 60Hz
Input Current: 20A max

Output:

Normal mode: 120V +/-1% 60Hz
Optimize mode: 115V +/-1% 60Hz
Current: 18A max
Efficiency: ≥98%
Response time: 20ms
Output wave: Sine wave, Waveform distortion less than 0.4%.

Protection

Over voltage: If output voltage is above 132V for 5 seconds the system will activate automatic by-pass. In by-pass state, if output voltage exceeds 132V for 5 seconds, then system will automatically shut down.

Under voltage: If output voltage is under 108V for 5 seconds the system will automatically enter by-pass state. In by-pass state, if output voltage falls under 108V, after 5 seconds, then system will automatically shut down.

Over load: If output current exceeds 100% of maximum rated current for 20 seconds, then system will automatically enter by-pass state. In by-pass state, if output current exceeds 100% of maximum rated current for 2 minutes, then system will automatically shut down.

By-pass: Automatic/Manual

EMC and Safety

FCC: FCC PART15 Class B
LVD: UI1012

120V-2KVA

Harmonic Filters (Optional)

Filter: Passive Harmonic Filters can be installed to reduce 3rd Harmonics.

Life cycle

Life cycle: Designed for 10 years minimum, up to 25 years subject to 10 year service intervals

Other

Display: Digital meter shows output voltage and power
Cooling: Temperature controlled, low noise, long life Fan
Working temperature: ≤65C
Humidity: 0~95% (Not freezing point)
Ambient temperature: -15 - 40C

Physical

Modularization: All the transformer and cable contact with terminal, suitable for Disassemble and Assemble.
Dimensions: 350mm (H) x450mm (W) x450mm (D)
Weight: 31Kg
Enclosure: IP22
Feet: 4 wheels

Part NO: VR205-2KVA



Specifications:

Electrical

Capacity in VA (Watts): 5KVA
Phases: Single Phase
Regulation: Digital control Contactless compensated Regulation

Input

Rating Voltage: 120Vac+/-15% 60Hz
Input Current: 50A max

Output:

Normal mode: 120V +/-1% 60Hz
Optimize mode: 115V +/-1% 60Hz
Current: 45A max
Efficiency: ≥98%
Response time: 20ms
Output wave: Sine wave, Waveform distortion less than 0.4%.

Protection

Over voltage: If output voltage is above 132V for 5 seconds the system will activate automatic by-pass. In by-pass state, if output voltage exceeds 132V for 5 seconds, then system will automatically shut down.

Under voltage: If output voltage is under 108V for 5 seconds the system will automatically enter by-pass state. In by-pass state, if output voltage falls under 108V, after 5 seconds, then system will automatically shut down.

Over load: If output current exceeds 100% of maximum rated current for 20 seconds, then system will automatically enter by-pass state. In by-pass state, if output current exceeds 100% of maximum rated current for 2 minutes, then system will automatically shut down.

By-pass: Automatic/Manual

EMC and Safety

FCC: FCC PART15 Class B
LVD: UI1012

120V-5KVA

Harmonic Filters (Optional)

Filter: Passive Harmonic Filters can be installed to reduce 3rd Harmonics.

Life cycle

Life cycle: Designed for 10 years minimum, up to 25 years subject to 10 year service intervals

Other

Display: Digital meter shows output voltage and power
Cooling: Temperature controlled, low noise, long life Fan
Working temperature: ≤65C
Humidity: 0~95% (Not freezing point)
Ambient temperature: -15 - 40C

Physical

Modularization: All the transformer and cable contact with terminal, suitable for Disassemble and Assemble.
Dimensions: 400mm (H) x350mm (W) x500mm (D)
Weight: 48Kg
Enclosure: IP22
Feet: 4 wheels

Part NO: VR206-5KVA



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Specifications:

Electrical

Capacity in VA (Watts): 9KVA
Phases: Single Phase
Regulation: Digital control Contactless compensated Regulation

Input

Rating Voltage: 120Vac+/-15% 60Hz
Input Current: 90A max

Output:

Normal mode: 120V +/-1% 60Hz
Optimize mode: 115V +/-1% 60Hz
Current: 80A max
Efficiency: ≥98%
Response time: 20ms
Output wave: Sine wave, Waveform distortion less than 0.4%.

Protection

Over voltage: If output voltage is above 132V for 5 seconds the system will activate automatic by-pass. In by-pass state, if output voltage exceeds 132V for 5 seconds, then system will automatically shut down.

Under voltage: If output voltage is under 108V for 5 seconds the system will automatically enter by-pass state. In by-pass state, if output voltage falls under 108V, after 5 seconds, then system will automatically shut down.

Over load: If output current exceeds 100% of maximum rated current for 20 seconds, then system will automatically enter by-pass state. In by-pass state, if output current exceeds 100% of maximum rated current for 2 minutes, then system will automatically shut down.

By-pass: Automatic/Manual

EMC and Safety

FCC: FCC PART15 Class B
LVD: UI1012

120V-9KVA

Harmonic Filters (Optional)

Filter: Passive Harmonic Filters can be installed to reduce 3rd Harmonics.

Life cycle

Life cycle: Designed for 10 years minimum, up to 25 years subject to 10 year service intervals

Other

Display: Digital meter shows output voltage and power
Cooling: Temperature controlled, low noise, long life Fan
Working temperature: ≤65C
Humidity: 0~95% (Not freezing point)
Ambient temperature: -15 - 40C

Physical

Modularization: All the transformer and cable contact with terminal, suitable for Disassemble and Assemble.
Dimensions: 350mm (H) x450mm (W) x450mm (D)
Weight: 50Kg
Enclosure: IP22
Feet: 4 wheels

Part NO: VR207-9KVA



Specifications:

Electrical

Capacity in VA (Watts): 12KVA
Phases: Single Phase
Regulation: Digital control Contactless compensated Regulation

Input

Rating Voltage: 120Vac+/-15% 60Hz
Input Current: 120A max

Output:

Normal mode: 120V +/-1% 60Hz
Optimize mode: 115V +/-1% 60Hz
Current: 105A max
Efficiency: ≥98%
Response time: 20ms
Output wave: Sine wave, Waveform distortion less than 0.4%.

Protection

Over voltage: If output voltage is above 132V for 5 seconds the system will activate automatic by-pass. In by-pass state, if output voltage exceeds 132V for 5 seconds, then system will automatically shut down.

Under voltage: If output voltage is under 108V for 5 seconds the system will automatically enter by-pass state. In by-pass state, if output voltage falls under 108V, after 5 seconds, then system will automatically shut down.

Over load: If output current exceeds 100% of maximum rated current for 20 seconds, then system will automatically enter by-pass state. In by-pass state, if output current exceeds 100% of maximum rated current for 2 minutes, then system will automatically shut down.

By-pass: Automatic/Manual

EMC and Safety

FCC: FCC PART15 Class B
LVD: UI1012

120V-12KVA

Harmonic Filters (Optional)

Filter: Passive Harmonic Filters can be installed to reduce 3rd Harmonics.

Life cycle

Life cycle: Designed for 10 years minimum, up to 25 years subject to 10 year service intervals

Other

Display: Digital meter shows output voltage and power
Cooling: Temperature controlled, low noise, long life Fan
Working temperature: ≤65C
Humidity: 0~95% (Not freezing point)
Ambient temperature: -15 - 40C

Physical

Modularization: All the transformer and cable contact with terminal, suitable for Disassemble and Assemble.
Dimensions: 350mm (H) x500mm (W) x520mm (D)
Weight: 65Kg
Enclosure: IP22
Feet: 4 wheels

Part NO: VR208-12KVA

