Sollatek™

# THE SOLLATEK GUARD RANGE

Instruction manual


FRIDGEGUARD


VOLTGUARD


COMMSGUARD


FAXGUARD


HIVOLTGUARD


SPIKEGUARD

Important: This manual contains important safety instructions.
Keep this manual handy for reference.

# INTRODUCTION

Without doubt, power interruptions cause major problems for home and business computing. An unpredictable power supply can lead to worrying problems events such as surges, spikes, brownouts and utility failures. If any of these should occur, there's a strong chance you will suffer from loss of critical data, lowered productivity and even damage to your expensive equipment.

All electrical and electronic equipment, connected to the mains supply is at risk of being damaged from spikes, surges, lightning, brown-outs, power-cuts (blackouts), power back surges, and over-voltage.

Sollatek encompasses a wide range of power protection products for use in many different industries where clean, regulated mains power is critical to their continued operation.

For more information on our range of power protection products, contact us now.

Sollatek™

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# THE SOLLATEK GUARD RANGE

The Sollatek Guard range prevents damage to equipment from over and under voltage levels of any duration. They work by disconnecting power when voltage levels exceed set parameters. Reconnection takes place when power returns inside set parameters for a pre-set period.

Fully automatic in operation. All these products provide power-back surge protection as standard by their in-built start-up delay* and voltage monitoring.

Additionally, all models include surge and spike protection.

* *Spikeguard and Commsguard do not have start-up delay.*

## Contents

# SOLLATEK PRODUCT RANGE COMPARISON CHART

The following chart gives an overview of most of the Sollatek range of products and the protection they offer.

| |  Spike /surge |  RFI |  Over Voltage |  Brownout |  Basic Lightning |  Power Cuts |  Power-back surges |  Telecom surge/ spike & lightning | Amps | Single Phase | Three Phase | Connection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HivoltGuard | ✓ | | ✓ | | ✓ | | ✓ | | 5 | ✓ | | Plug/socket |
| FridgeGuard | ✓ | | | ✓ | ✓ | | ✓ | | 5 | ✓ | | Plug/socket |
| VoltGuard | ✓ | | ✓ | ✓ | ✓ | | ✓ | | 5 | ✓ | | Plug/socket |
| Automatic Voltage Switcher AVS13 | ✓ | | ✓ | ✓ | ✓ | | ✓ | | 13 | ✓ | | Plug/socket |
| Automatic Voltage Switcher AVS13L | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | | 13 | ✓ | | Plug/socket |
| Automatic Voltage Switcher AVS15 | ✓ | | ✓ | ✓ | ✓ | | ✓ | | 15 | ✓ | | Plug/socket |
| Automatic Voltage Switcher AVS30 | ✓ | | ✓ | ✓ | ✓ | | ✓ | | 30 | ✓ | | Direct wiring |
| Energy Saving Protector ESP30 | ✓ | | ✓ | ✓ | ✓ | | ✓ | | 30 | ✓ | | Direct wiring |
| Automatic Voltage Switcher AVS100 | ✓ | | ✓ | ✓ | ✓ | | ✓ | | 100 | ✓ | | Direct wiring |
| FaxGuard | ✓ | | ✓ | | ✓ | | ✓ | ✓ | 5 | ✓ | | Plug/socket+data |
| Automatic Voltage Switcher AVS303 | ✓ | | ✓ | ✓ | ✓ | | ✓ | | 23 to 1250 | | ✓ | 3 phase |
| Automatic Voltage Switcher AVS3P-03 | ✓ | | ✓ | ✓ | ✓ | | ✓ | | unlimited | | ✓ | 3 phase |
| In line Surge protector ISP | ✓ | | | | ✓ | | | | 10 | ✓ | | IEC |
| Surge plug | ✓ | | | | ✓ | | | | 13 | ✓ | | 13 Amp plug |
| Surge strip | ✓ | | | | ✓ | | | | 13 | ✓ | | Plug/socket |
| SpikeGuard | ✓ | | | | ✓ | | | | 13 | ✓ | | Plug/socket |
| PureAC | ✓ | ✓ | | | ✓ | | | | 3 to 13 | ✓ | | Plug/socket |
| Distribution Surge protector DSP3 | ✓ | | | | ✓ | | | | unlimited | | ✓ | Direct wiring |
| LineGuard | | | | | | | | ✓ | data only | | | |
| CommsGuard | ✓ | | | | ✓ | | | ✓ | 5 | | | Plug/socket+data |
| Sollatek Voltage Switcher SVS | ✓ | | ✓ | ✓ | ✓ | | ✓ | | 1 to 75 | ✓ | | Plug/socket+Direct wiring |
| Sollatek Voltage Switcher SVS (ER) | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | | 1 to 15 | ✓ | | Plug/socket |
| Automatic Voltage Regulator AVR | ✓ | | ✓ | ✓ | ✓ | | | | 1 to 400 | ✓ | | Plug/socket+Direct wiring |
| Automatic Voltage Regulator AVR (ER) | ✓ | ✓ | ✓ | ✓ | ✓ | | | | 1 to 10 | ✓ | | Plug/socket |
| Automatic Voltage Regulator (3 phase) | ✓ | | ✓ | ✓ | ✓ | | ✓ | | 20 to 700/phase | | ✓ | 3 phase |
| Ultima UPS | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 1 to 20 | ✓ | | IEC |
| Optima UPS | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 1 to 20 | ✓ | | IEC |

# POWER PROBLEMS AND THEIR ASSOCIATED CAUSES

All electrical and electronic equipment, connected to the mains supply is at risk of being damaged from spikes, surges, lightning, brown-outs, power-cuts (blackouts), power back surges, and over-voltage. The following is a summary of the main types of power problems, causes and how these affect electrical and electronic equipment.

**Spikes/Surge:** Very short, (one millisecond) event of very high surge in voltage to thousands of volts and amps. Spikes are common in all parts of the world and repeated exposure to spikes will damage electronic equipment and corrupt data.
**What causes it?** Switching on/off of nearby equipment, lightning, motors starting etc.

**RFI (Radio Frequency Interference)/Noise:** High frequency disturbances that occur within a short period of time (milliseconds). RFI & noise are very common in all parts of the world and are the main cause of data corruption.
**What causes it?** Generated by high frequency noise from nearby equipment like TV, radio equipment, transmitters, mobile phones, switching on/off of certain loads, fluorescent lights, motor speed controls, light dimmers.

**Over-Voltage:** Long duration (milliseconds, seconds, minutes, hours or days) rise in the voltage above acceptable limits. Depending on the level of the over-voltage, the damage can be instantaneous, severe and irreparable.
**What causes it?** On return of mains supply after power cuts, under-sized utility oscillating between periods of brown-outs and over-voltage or accidental (e.g. accidental connection between two phases).

**Brown-Out:** Long duration of low voltage (milliseconds to seconds, minutes, hours or days). Very common in parts of the world especially where the power utilities are over-stretched. Prolonged and frequent brownouts cause the equipment to malfunction or not work at all. Repeated episodes are certain to cause damage. Motors and compressors (and therefore fridges, freezers, coolers, air-conditioners and pumps) are especially at risk. In time, damage is certain.
**What causes it?** Most commonly an over-stretched utility, especially in areas of poor power distribution infra-structure and remote areas. Common in dry seasons where water is used for electricity generation.

**Basic Lightning:** Direct or nearby strikes can cause minor problems or severe disturbances and damage. Lightning produces spikes/surges, over-voltage or power cuts.
**What causes it?** The surge is generated by either a direct hit, or indirectly striking underground or overhead lines and transmitting high surges to connected equipment in nearby buildings.

**Power-cuts:** Common in many countries in the world, especially in areas of frequent voltage problems. Sudden loss of power can cause damage ranging from corruption of data to mechanical faults as equipment is stopped while in operation.
**What causes it?** Power or sub station failure, breakdown in the distribution network, or simply a plug being pulled out accidentally.

**Power-Back Surges:** These typically occur when power returns after a power-cut and connected equipment receives a surge of electricity at an over-voltage level, which can be very damaging (see above).
**What causes it?** Power back surges are created by the utility, when it restores supply at an above normal voltage in order to compensate for the demand as connected equipment re-starts simultaneously.

**Telecom surges, spikes and lightning:** Short term, high voltage and current phenomena occurring on the telephone lines. Can cause irreparable damage to any piece of equipment connected to the incoming line. The telephone line itself may even be damaged or destroyed in severe cases.
**What causes it?** Telecom spikes are caused by lightning striking either the telephone line directly or an object near it.


# FRIDGEGUARD

The Fridgeguard is an under-voltage protection device rated at 5 Amps. The Fridgeguard will disconnect if the mains go below the lower limit and re-connect automatically after the supply returning and remaining above the lower limit for the duration of the wait time.

PLEASE READ CAREFULLY.

1. Make sure that your load does not exceed the rating of the Fridgeguard which is 5 AMPS. If this is exceeded, the Fridgeguard may be damaged, and the warranty will be void.

2. Plug the Fridgeguard into the mains and plug your appliance into the Fridgeguard.

3. Do not connect more than one appliance to the Fridgeguard.

4. On first switching on, the yellow LED will indicate and there will be no output while the Fridgeguard monitors the mains. If the mains level is acceptable, the Yellow LED is lit indicating that the Fridgeguard is in wait mode. At the end of the wait time and if the supply is above the lower limit the green LED goes on and the load is connected.

5. It is recommended that the Fridgeguard is kept switched on, and the appliance switched on and off as required, to prevent activating the time delay every time the appliance is switched on.

6. If the red LED shows, the voltage is too low. When the voltage is acceptable, the Fridgeguard will go to yellow.

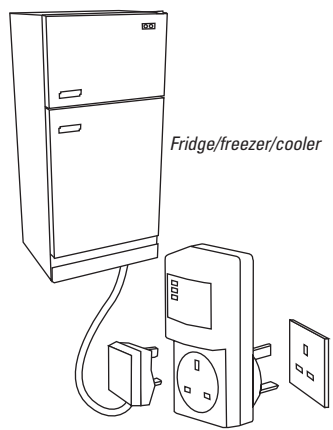


SPECIFICATIONS

| | |
|---|---|
| Nominal Voltage | 230V (or 110V) |
| Current Rating | 5Amps |
| Frequency | 50/60Hz |
| Mains Spike Response Time | <10ns |
| Mains Spike Discharge Amps | 6.5kA |
| Spike Protection | 160J |
| Wait Time | 90 seconds |
| Ideal For | Fridges, freezers and coolers |
| Socket availability | UK13, Schuko, 5A Indian |
| Weight | 250gm |
| Dims | 180x90x95mm |

*Please note: Some of these values (i.e. HVD, LVD and wait time) may be different to adapt to local market conditions.*

CONNECTION DIAGRAM




# VOLTGUARD

The Sollatek Voltguard is a voltage protection device that will protect your equipment against;

- Over-voltage
- Under-voltage
  (also called brown-out)
- Power-back surges
- Surges/spikes

The Sollatek Voltguard is a protection device rated at 5 Amps. It will disconnect the mains if it goes below an acceptable limit (LVD - Low Voltage Disconnect) or above an acceptable limit (HVD - High Voltage Disconnect). These limits for a 230V system are normally 180V and 265V respectively. In addition, the Voltguard has a 30 second start-up delay which ensures that the power to your appliance does not return immediately after resumption from power cuts thus protecting against power-back surges. The Voltguard will also protect against surges and spikes by clamping them to normal safe level (disconnection is not required).

PLEASE READ CAREFULLY.

1. Make sure that your load does not exceed the rating of the Voltguard which is 5 AMPS. If this is exceeded, the Voltguard may be damaged, and the warranty will be void.

2. Plug the Voltguard into the mains and plug your appliance into the Voltguard .

3. Do not connect more than one appliance to the Voltguard.

4. On first switching on, the red LED will indicate and there will be no output while the Voltguard monitors the mains. If the mains level is acceptable, the Yellow LED is lit indicating that the Voltguard is in wait mode. At the end of the wait time and if the supply is within normal limits the green LED goes on and the load is connected.



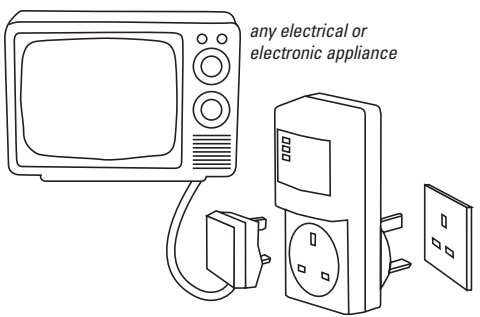
5. It is recommended that the Voltguard is kept switched on, and the appliance switched on and off as required, to prevent activating the time delay every time the appliance is switched on.

SPECIFICATIONS

| | |
|---|---|
| Maximum power | 5 amps |
| Nominal voltage | 230V |
| Over-voltage disconnect | 265V |
| Under-voltage disconnect | 180V |
| Spike protection | 160J |
| Mains spike response time | <10ns |
| Mains spike discharge current | 6.5kA |
| Wait Time | 30 seconds |
| Ideal For | TV, Video, Hi-Fi, PABX, Fax machines, Fridges and domestic freezers and all electronic equipment up to 5Amps |
| Socket availability | UK13, Schuko, 5A Indian |
| Weight | 250gm |
| Dims | 180x90x95mm |

*Please note: Some of these values (i.e. HVD, LVD and wait time) may be different to adapt to local market conditions.*

CONNECTION DIAGRAM




## COMMSGUARD

The Sollatek CommsGuard is designed to give protection against signal line (i.e. Data or Telephone or Modem or Fax) borne spikes and surges. These spikes are generally caused by nearby lightning strikes or by switching of motorised equipment. The CommsGuard also offers spike/surge suppression on the mains.

By connecting to a CommsGuard you will ensure clean, safe power for your valuable telecommunications equipment.

PLEASE READ CAREFULLY.

1. Ensure that you received an RJ11-RJ11 black telephone cable with your CommsGuard.

2. Make sure that your load does not exceed the rating of the CommsGuard (13A).

3. Plug the CommsGuard into the mains outlet. ❶ The outlet must be earthed. If not or you are unsure, then contact your electrician or a Sollatek retailer.

4. Plug your fax machine's mains plug into it. ❷

5. From the fax machine end, unplug the telephone cable and plug it into the LINE IN ❸ socket on the CommsGuard.

6. Plug one end of the supplied cable into LINE OUT on the CommsGuard, ❹ the other end into your fax machine. ❺

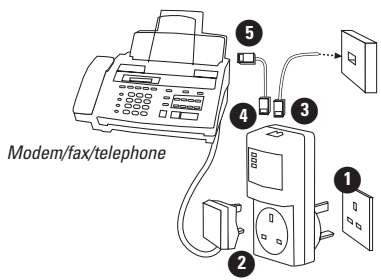
7. Your fax or phone is now protected and ready for use.



SPECIFICATIONS

| | |
|---|---|
| Nominal Voltage | 230V (or 110V) |
| Current Rating | 13Amps |
| Frequency | 50/60Hz |
| Mains Spike Response Time | <10ns |
| Mains Spike Discharge Amps | 6.5kA |
| Spike Protection | 160J |
| Line Spike Response Time | 10ms (<10ns with transient suppression) |
| Line Spike Discharge Amps | >10kA |
| Line Resistance | Negligible (27ohms with transient suppression) |
| Maximum power | > 10kA (8/20 s) |
| Ideal For | Modem, fax, telephone |
| Socket availability | UK13, Schuko, 5A Indian +telephone (RJ11) |
| Weight | 300gm |
| Dims | 180x90x95mm |

CONNECTION DIAGRAM




# FAXGUARD

The Sollatek Faxguard is designed to give protection against all types of mains and signal line borne spikes and surges. These spikes are generally caused by nearby lightning strikes or by switching of motorised equipment. The Faxguard also offers high mains voltage and spike protection.

PLEASE READ CAREFULLY.

1.Ensure that you received an RJ11-RJ11 black telephone cable with your Faxguard.

2. Make sure that your load does not exceed the rating of the Faxguard (5A).

3. Plug the Faxguard into the mains outlet. ❶ The outlet must be earthed. If not or you are unsure, then contact your electrician or a Sollatek retailer.

4. Plug your fax machine's mains plug into it. ❷

5. From the fax machine end, unplug the telephone cable and plug it into the LINE IN socket on the Faxguard. ❸

6. Plug one end of the supplied cable into LINE OUT on the Faxguard, ❹ the other end into your fax machine. ❺

7. Your fax or phone is now protected and ready for use.

The LEDs on the front of the Faxguard indicate the state of the mains output from the Faxguard. If the incoming supply voltage is too high the disconnect function will operate and the OFF LED will be lit. When the supply becomes good again the unit waits 30s before re-connecting. During this time the WAIT LED will be lit. When the supply is good and the output connected the ON LED will be illuminated.

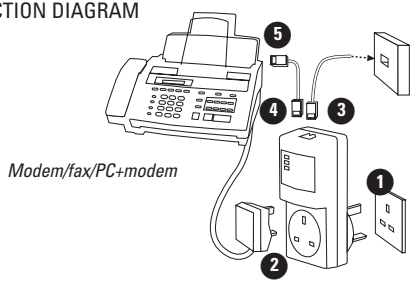


SPECIFICATIONS

| | |
|---|---|
| Nominal Voltage | 230V or 110V |
| Current Rating | 5Amps |
| Frequency | 50/60Hz |
| Mains Spike Response Time | <10ns |
| Mains Spike Discharge Amps | 6.5kA |
| Spike Protection | 160J |
| Disconnect Response Time | <20ms |
| High Voltage Disconnect | 265V for 230V (135V for 115V system) |
| Wait time | 30 seconds |
| Reconnect Voltage | 260V for 230V (130V for 115V system) |
| Line Spike Response Time | 10ms (<10ns with transient suppression) |
| Line Spike Discharge Amps | >10kA |
| Line Resistance | Negligible (27ohms with transient suppression) |
| Ideal for | Modem, fax, telephone |
| Socket availability | UK13, Schuko, 5A Indian +telephone (RJ11) |
| Weight | 300gm |
| Dims | 180x90x95mm |

*Please note: Some of these values (i.e. HVD, LVD and wait time) may be different to adapt to local market conditions.*

CONNECTION DIAGRAM




## HIVOLTGUARD

The HiVoltguard is an over-voltage protection device rated at 5 Amps. The HiVoltguard will disconnect if the mains go above the upper limit and re-connect automatically after the supply returning and remaining below the upper limit for the duration of the wait time.

PLEASE READ CAREFULLY.

1. Make sure that your load does not exceed the rating of the HiVoltguard which is 5 AMPS. If this is exceeded, the HiVoltguard may be damaged, and the warranty will be void.

2. Plug the HiVoltguard into the mains and plug your appliance into the HiVoltguard.

3. Do not connect more than one appliance to the HiVoltguard.

4. On first switching on, the yellow LED will indicate and there will be no output while the HiVoltguard monitors the mains. If the mains level is acceptable, the Yellow LED is lit indicating that the Fridgeguard is in wait mode. At the end of the wait time, and if the supply is below the upper limit, the green LED goes on and the load is connected.

5. It is recommended that the HiVoltguard is kept switched on, and the appliance switched on and off as required, to prevent activating the time delay every time the appliance is switched on.

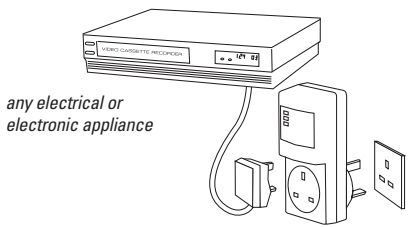


SPECIFICATIONS

| | |
|---|---|
| Maximum power | 5 amps |
| Nominal voltage | 230V |
| Over-voltage disconnect | 265V |
| Spike protection | 160J |
| Mains spike response time | <10ns |
| Mains spike discharge current | 6.5kA |
| Wait Time | 30 seconds |
| Ideal For | TV, Video, Hi-Fi, PABX, Fax machines, and all electronic equipment up to 5Amps |
| Socket availability | UK13, Schuko, 5A Indian |
| Weight | 250gm |
| Dims | 180x90x95mm |

*Please note: Some of these values (i.e. HVD and wait time) may be different to adapt to local market conditions.*

CONNECTION DIAGRAM




## SPIKEGUARD

The SpikeGuard prevents everyday spikes and surges from reaching sensitive equipment. By simply plugging your equipment into the SpikeGuard or even in an adjacent socket, it will be protected. When a spike occurs, the SpikeGuard reacts very quickly to 'clamp' the high voltage level, sending it safely away to earth. Afterwards the SpikeGuard automatically resets itself and continues protecting.

PLEASE READ CAREFULLY.

1. Make sure that your load does not exceed the rating of the Spikeguard which is 13 AMPS. If this is exceeded, the Spikeguard may be damaged, and the warranty will be void.

2. Plug the Spikeguard into the mains and plug your appliance into the Spikeguard.

3. More than one appliance can be connected to the Spikeguard.

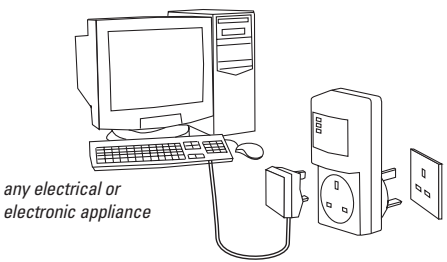
4. If one of the two LEDs goes out when the mains is still applied, then the unit needs servicing.



SPECIFICATIONS

| | |
|---|---|
| Maximum power | 13 amps |
| Nominal voltage | 230V |
| Spike protection | 480J |
| Mains spike response time | <10ns |
| Mains spike discharge current | <3kA (6.5kA max) |
| Ideal For | Office and home appliances e.g. computers, printers and all electronic equipment up to 13Amps |
| Socket availability | UK13, Schuko, 5A Indian |
| Weight | 300gm |
| Dims | 180x90x95mm |

CONNECTION DIAGRAM



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