



NETWORKS

Serving all electricity customers

PROTECTING YOUR ELECTRICAL EQUIPMENT

Customer Advice
esbnetworks.ie



VOLTAGE VARIATIONS

In common with electricity systems worldwide, ESB Networks' system is subject to unavoidable variations in voltage. These may interfere with the effective functioning of sensitive appliances or equipment.

Some of the causes

- Lightning
- Accidental damage
- Storm damage to overhead lines
- Vehicles striking poles or equipment
- Animals and birds coming in contact with lines
- Interference from construction and excavation activities
- Equipment failure on the ESB Networks' system
- Very large or frequent variations of load in your own or nearby installations
- Disturbances generated by your own or another customer's equipment
- Trees in contact with overhead powerlines

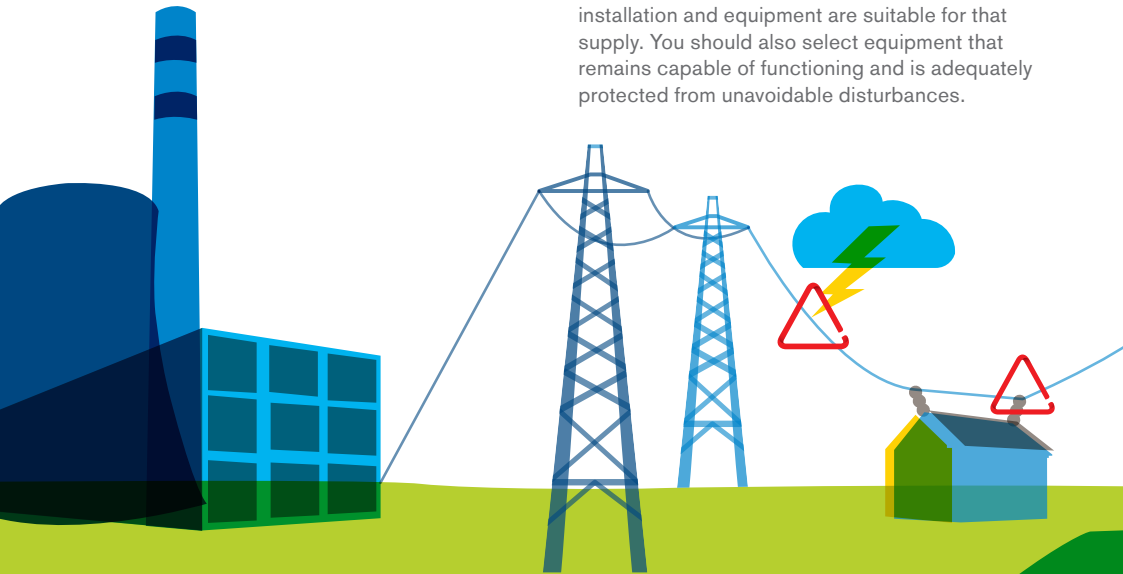
SENSITIVE EQUIPMENT

Today's electrical equipment can be highly sensitive to even split-second interruptions or to voltage disturbances and variations. Appliances that can be affected include:

Computers/Tablets	Answering Machines
Copiers	Telephones
Fax Machines	Digital Clocks
Stereo Components	Microwave Ovens
Televisions	Security Systems
DVD's/Digital Box	Satellite Systems

VARIATION CONTROL

Voltage variation is controlled as far as possible by the careful design and operation of the ESB Networks' system. However, it is not technically feasible to maintain an absolutely steady supply voltage at all times. Therefore it is important that you adhere to the guidelines given in Section 4(b) and 4(i) of ESB Networks' General Conditions of Supply in relation to selection and maintenance of your electrical equipment and installations. The effective and safe utilization of electricity depends on the quality of your electrical installation as well as upon the nature of the supply delivered by ESB Networks. With the help of your registered electrical contractor, you should ensure that your supply is correctly connected and that your installation and equipment are suitable for that supply. You should also select equipment that remains capable of functioning and is adequately protected from unavoidable disturbances.



SURGES

Some voltage variations are referred to as surges. The vast majority of these surges are generated within an electrical installation and can be triggered internally or externally. For example switching on and off fluorescent light can generate a substantial surge. Another type of surge can be caused by lightning. This is a much more powerful surge and requires specific equipment to control the high energy involved. The equipment used for controlling surges is called a Surge Protection Device or SPD for short. It is important to note that a switching surge SPD is unlikely to provide protection against a surge caused by lightning.

SEEK PROFESSIONAL ADVICE

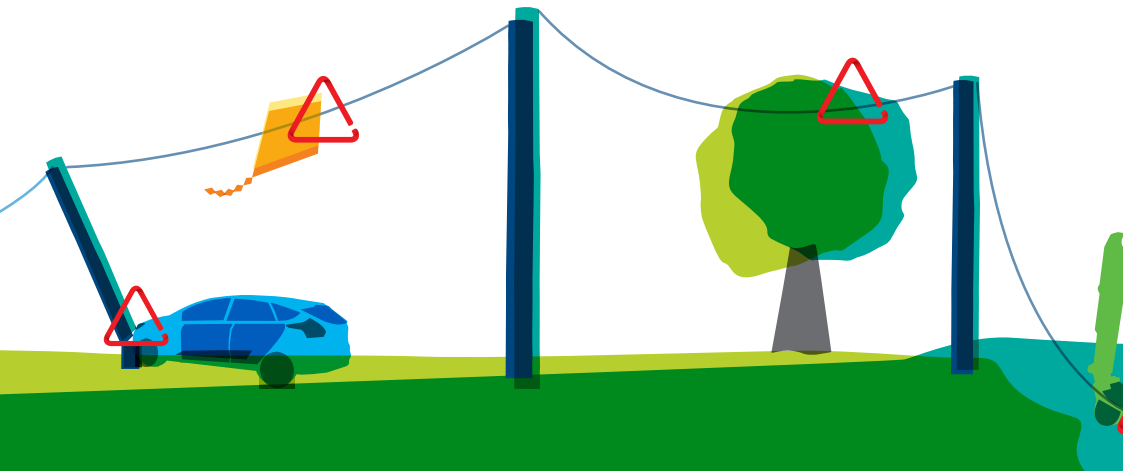
Installations, equipment, fuseboards and wiring must comply with the National Standards Authority of Ireland (NSAI) National rules for electrical installations and should be checked at least every 10 years or whenever an alteration is made. This can be done by an electrical contractor who is registered as a member of a recognised regulatory body.

FURTHER SAFEGUARDS

The installation of an Uninterruptable Power Supply (UPS) or a similar device can protect sensitive equipment like computers, fax machines and telecommunications tools. You should ask your equipment supplier about such devices. Protection against damage by over-voltage and under-voltage can be provided by devices meeting the National standards set by the NSAI.

Three-phase equipment can be fitted with protection which disconnects all phases of supply in the event of low voltage or loss of power. As far as possible, electrical equipment should be unplugged during supply interruption. If prior notice of interruption is provided by ESB Networks, equipment should be unplugged in advance.

The effective and safe utilisation of electricity depends on the quality of your electrical installation as well as upon the nature of the supply delivered by ESB Networks.



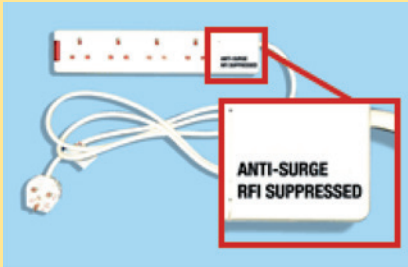
WHAT YOU CAN DO

Considering that the majority of voltage disturbances come from within your own electrical installation, it makes good sense to protect your electrical installation and equipment from such disturbances. There is no substitute for the level of protection afforded by an electrical installation designed by an expert in this field and correctly installed by a registered electrical contractor. However some simple steps can be taken to reduce or even eliminate the effects of voltage surges.

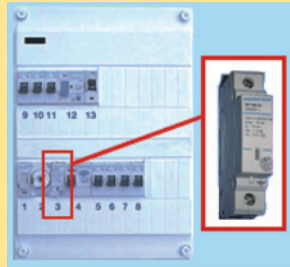
The first and easiest place to start is by installing individual surge protected circuits/leads, as illustrated in Example 1. These should be installed on expensive/sensitive electrical equipment (see earlier list).

Normally (but not always!) the more you pay the better the protection. Avoid purchasing 'bargain' SPD's....remember that if they fail to work, your equipment may be damaged. Some manufacturers offer warranties (with conditions) in the event that connected equipment is damaged due to a failure of their product.

It is important in the case of computers and fax machines which also have a connection to a telephone line that an appropriate SPD is fitted to the telephone line. SPD's can be fitted on main fuse boards and take up minimal room (as illustrated in the photos in Example 2.) You can get professional advice from registered electrical contractors and equipment suppliers.



EXAMPLE 1
Surge protected leads

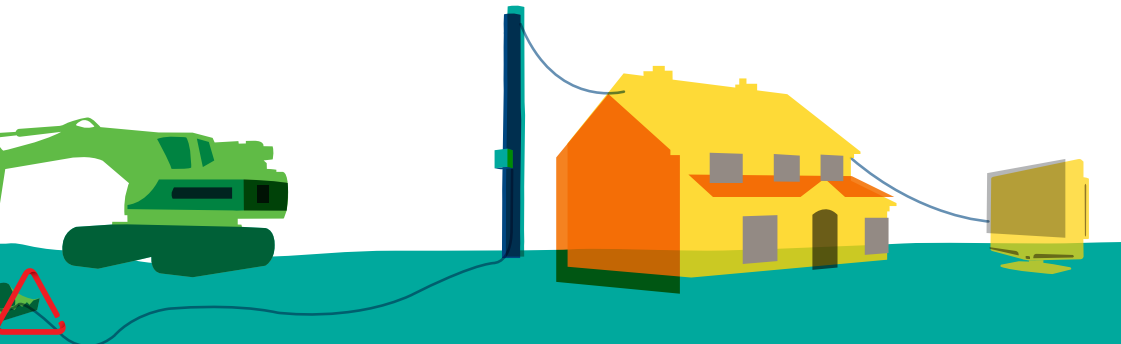


EXAMPLE 2
Plug-in type surge protection
for customer's main fuse board

IMPORTANT POINTS TO REMEMBER

Do not overload extension leads

There are various qualities of surge protection



WHAT WE ARE DOING

ESB Networks' staff are constantly working to minimise interruptions and quickly restore power when problems occur.

From 2011 to 2020, ESB Networks has invested €5.3 bn to refurbish and upgrade the national electricity network. Some disturbances such as those caused by severe weather are uncontrollable.

However, for those situations within our control, a number of measures are taken to maintain power quality and improve reliability.

These measures include

Regular maintenance to ensure that our system functions as intended.

Installation of lightning and fault protection systems throughout the ESB network.

Replacement of obsolete and defective equipment.

Provision of clear information on the approximate location of our underground cables to those excavating roadways, footpaths, streets, etc. (Note: all contractors involved in such excavations should use cable detection equipment.)

Tree trimming to keep branches away from power lines.

Installation of guards to prevent animals from making contact with ESB Networks' equipment.

Finally, international standards are under constant development to ensure that the equipment available to you and other customers neither generates excessive disturbance nor is unduly sensitive to disturbance or damage. ESB Networks helps in the development of these standards.

WE ARE HERE TO HELP YOU

If you have any questions or concerns please contact us:

CALL US

Emergencies / Loss of Supply

Phone 1800 372 999 or 021 2382410

New Connections / Voltage Queries/ Meter Relocation

Phone 1800 372 757 or 021 2386555

ESB NETWORKS POWERCHECK

You can access PowerCheck on your home computer, laptop or smartphone.

View PowerCheck online at esbpowercheck.ie

EMAIL US

esbnetworks@esb.ie

ONLINE

esbnetworks.ie

 [@ESBNetworks](https://twitter.com/ESBNetworks)  [@ESBNetworks](https://facebook.com/ESBNetworks)

Please have your 11 digit ESB Networks MPRN number to hand when you call - shown on your electricity bill as M10...