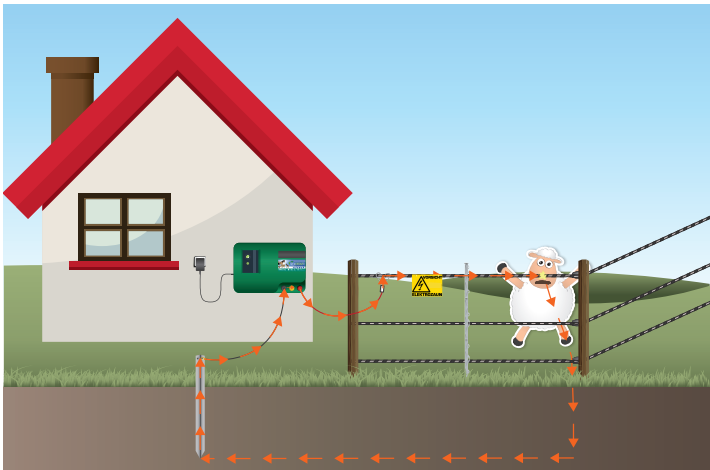
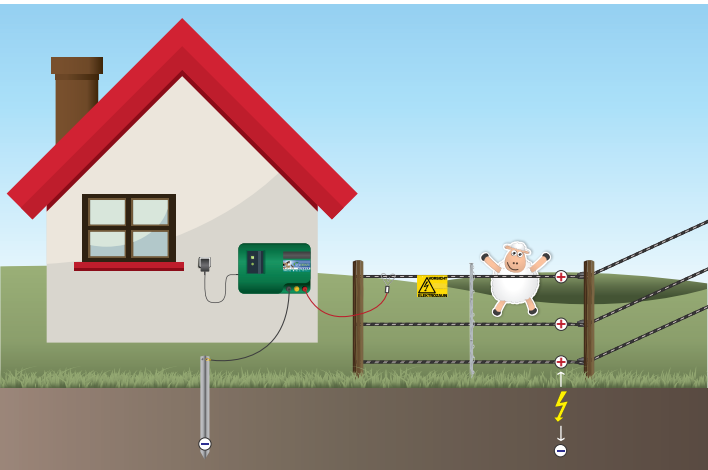




How does an electric fence work?

The heart of any electric fence system is the energiser. It is connected simultaneously to the fence conducting material and the earth. The energiser creates regular high-voltage impulses (every 1.3 sec), which last a matter of milliseconds and in turn generate a voltage between the conducting material and the ground. When an animal (or a person, vegetation or similar) touches the fence, the circuit is completed. A current then flows from the energiser, through the conducting fence material, through the animal and then finally through the ground to the grounding rod and back to the energiser. The electric shock is rather unpleasant and results in the desired deterrent effect. The fence does not have to loop back and can end at any point



Technical specifications explained.

Power source	Mains, 12 V, 9 V, 3 V.
Stored energy (J, joules)	The energy the energiser takes from the mains or battery and consumes itself. This value can be used to compare different energisers.
Output energy (J, joules)	This is the maximum energy that an energiser can provide to the fence. The higher the pulse energy, the less of an issue vegetation is and the more secure the fence is. Since 2010 it is compulsory for an energiser to have safety features ensuring that if a fence is touched by an animal or person (500 Ohms), the pulse energy will not exceed 5 joules .
Voltage in open circuit (V, volts)	This is the voltage as measured on the outputs of the energiser, when it is not connected to the fence.
Voltage at 500 Ohm (V, volts)	This is the actual voltage as measured on the outputs of the energiser under a normal load. e.g. when an animal or grass or a person are in contact with the fence. Since 2010 it is compulsory for an energiser to have safety features ensuring that if a fence is touched by an animal or person (500 Ohms), the voltage will not exceed 5000 volts .
Power consumption (W, watts / mA, milliampere)	Power consumption is measured in watts for mains energisers and milliampere for battery energisers. Our most powerful mains energiser NVi 15000 consumes around 18 watts per hour. This is much less than the power consumption of a conventional light bulb 40-100 W.
Min number of ground rods	This number works for the majority of situations. In some situations, where the soil is not moist enough, more rods may be required. We will discuss the importance of grounding in the future issues.
Number of connectable nets	For this purpose one net is 50 m (55 yards) long.
Fence length	The maximum fence length the energiser will power.
Optimal, lab (CEE 1500V)	This figure is based on the single strand of the conductor with the highest metal content and lowest resistance, like strand wire and assumes perfect fence conditions, which are not achievable in real life.
No vegetation	Real life achievable fence length using a single strand wire when no vegetation touches the fence.
Light vegetation	Real life achievable fence length with light vegetation.
Heavy vegetation	Real life achievable fence length with heavy vegetation.

* Voucher can only be redeemed online. Not redeemable for cash or credit. Cannot be combined with other vouchers. Can only be redeemed once per customer per purchase. Cannot be applied to previously placed orders. Expires 31 March2017.

What do these specifications mean to you?

The actual values of interest to you are





- **Output energy**
- **Voltage at 500 Ohm**
- **Number of connectable nets**
- **Fence length with heavy, light and without vegetation**

These are practical values: **Output energy** - the maximum energy provided to the fence, **Voltage at 500 Ohm** - actual voltage when an animal touches the fence, **Fence lengths** - real life, achievable length, which are based on a single wire strand, which is important because it means if you have 2 strands in your fence the advertised fence length is halved. **Nets** have a low metal content in the polywires and are closer to the ground than other conductors, hence more leakage will occur through vegetation and shorter distances will be effectively powered.

TIP: Other values are for comparison of energisers only and offer no practical use. Some sellers out there only use **Stored energy, Voltage in open circuit** and **Optimal, lab fence length** when promoting their items. While these numbers are correct, they are quite misleading from a practical point of view, especially to those who are unfamiliar with electric fencing. We use these values as well to stay competitive, but we emphasize the real fence length achievable, as you will notice it is significantly lower.

Choosing the right energiser.

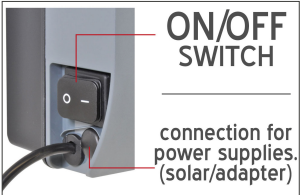
Firstly, your choice should be influenced by the Power source available. Here are some Pros and Cons.

		Pros	Cons
230 V		<ul style="list-style-type: none">• lower start-up costs• cheaper to run• suitable for very long fences with heavy vegetation• suitable for hard-to-keep animals	<ul style="list-style-type: none">• affected by power cuts• require mains power• require lightning protection
12 V		<ul style="list-style-type: none">• mobile, do not require mains power• suitable for long fences with heavy vegetation• can run on solar power• suitable for hard-to-keep animals	<ul style="list-style-type: none">• higher start-up costs• batteries must be checked and recharged frequently
9 V		<ul style="list-style-type: none">• lightweight• highly mobile• can run on solar power• can run from a few weeks to a few months on 1 battery	<ul style="list-style-type: none">• short fences only• only suitable for easy-to-keep animals• batteries cannot be recharged• costly compared to other energisers in the long run
3 V		<ul style="list-style-type: none">• extremely mobile• suitable for gardens, mobile paddocks or trail riding• lower power consumption (approx. 6 weeks)	<ul style="list-style-type: none">• very short fences• not suitable for nets

Some energisers can be powered by **more than one power source**. For example, one of our best-selling dual-power energisers **HELOS 4** can be powered by a 12 V battery, solar or mains via an adapter. This adds to the energiser's versatility. Our 9 V energisers can be powered by 9 or 12 V batteries, as well as mains. Another great feature is **2 fence terminals**. All of our **PROFiLINE** mains energisers and some others, like **VOSS.farming TESLA 7** and the 12 V energiser **AV6700**, allow to power up 2 fences simultaneously. However, the power distribution is not equal, making them ideal for one long and one short fence. Finally, all of our energisers with a 12 V operation mode have a battery protection built in as standard, meaning you will never need to worry about your battery being completely depleted.

Secondly, you should consider the **type of animal** the fence for. Easy-to-keep animals - horses, cattle, pigs, dogs, cats and other pest are generally used to electric fences, have short hair and therefore feel the shock pulse more clearly. The minimum effective voltage for the fence should not, however, go below 2,500 volts - these animals tend to escape otherwise. Free-roaming wild animals, but also sheep, goats and poultry are „more difficult to keep“. These animals are not generally familiar with electric fences and also have thick hair or fur which significantly reduces their sensitivity to electric shocks. In this case, a high-voltage electric fence is required to provide the necessary safety. This voltage should not be less than around 4,000 volts. Some energisers, like **SIRUS 8**, allow you to switch between **2 different power levels**, thus allowing you to use it for both easy- and hard-to-keep animals.

Thirdly, you should consider the **Output energy**. Energisers with low pulse energy (under 1 joule) are suitable for use with easy to keep animals. These energisers are also suitable for fencing with little or no vegetation. Energisers with medium pulse energy (up to around 5 joules) are suitable for use with difficult to keep animals. The electric fence should be of medium length with a normal to medium amount of grass vegetation. Very powerful energisers with high pulse energy (over 5 joules) are suitable for use with difficult to keep animals. These are good for very large fence systems with lots of vegetation. We hope this article answered some of the questions you may have had, for others give us a call or drop us an email. We have also added a check list which will help you identify the problem on the fence, as well as a convenient guide to our energisers.



All of the 12 V and 9 V energisers can be powered by solar panels. In the next issue we discuss in which situations they are a better choice.