



Electric Fence Lightning Arrestor and RFI filter PTE 0054

This Lightning Arrestor is designed to perform two roles:

- 1 **Lightning diverter (arrestor):** it diverts lightning surges coming from the fence line to earth. This will reduce the damage to the energiser suffered in the event of a lightning strike to the fence or nearby trees etc. It cannot help, of course, when the lightning induced surge is coming from the mains electricity side of the energiser. For a more detailed explanation of lightning damage see below. To protect the energiser the Lightning Arrestor must be positioned between the energiser and the fence. The earth for the Lightning Arrestor may be the same as that for the energiser, but a separate earth is preferable. The Lightning Arrestor is designed to take care of lightning pulses with currents up to 3000 Amps. *If the surge is greater than the Lightning Arrestor can handle it will be damaged and require replacement.* Ticking noises from the Lightning Arrestor are normal and NOT an indication that the unit is faulty or damaged. Energiser power will not reach the fence if the Lightning Arrestor has been damaged.
- 2 **RFI Filter:** The Lightning Arrestor contains filter elements which reduce the highest frequency components from the electric fence pulses. These components are most responsible for clicking noises in telephones, radios and hi-fi's. To reduce clicking noises the Lightning Arrestor should be mounted at the energiser (as per lightning diverter) as well as at various points around the fence line. Most particularly at either end of long parallel runs of electric fence and telephone lines.

How does lightning damage electric fence energisers?

- There are 3 possible paths for high voltage surges to get to the energiser.
1. Via the electric fence line, usually from a strike to your fence, a nearby tree or ground.
 2. Via the mains electricity line due to a strike to power poles or lines.
 3. From differing voltages on the electric fence and mains earths, due to a more direct strike to ground near either earth.

The Lightning Arrestor can only protect your energiser from the first type. A mains surge arrestor will protect it from the second. Nothing will protect it from the third.

Why do electric fences make the telephone click?

An electric fence energiser places a short sharp pulse of very high voltage on the live wires. This pulse contains radio frequency energy. If there is an arcing (spark) short circuit on the fence then there may be more radio frequency noise on the live wires and the spark itself will emit radio frequency noise. If the electric fence and telephone lines run parallel to each other then the fence acts as an aerial and some of the radio frequency energy is transferred. The amount of energy transferred depends on a lot of factors:

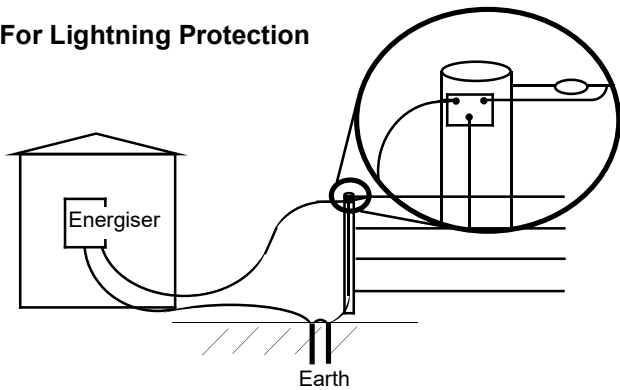
- How sharp the 'front' of the pulse is from the energiser. All manufactures are starting to lessen the emissions of Radio Frequency noise in line with new EMC standards.
- How much current is flowing in the wire. This is why fences with faults cause more noise.

Other things to do to avoid radio and telephone interference:

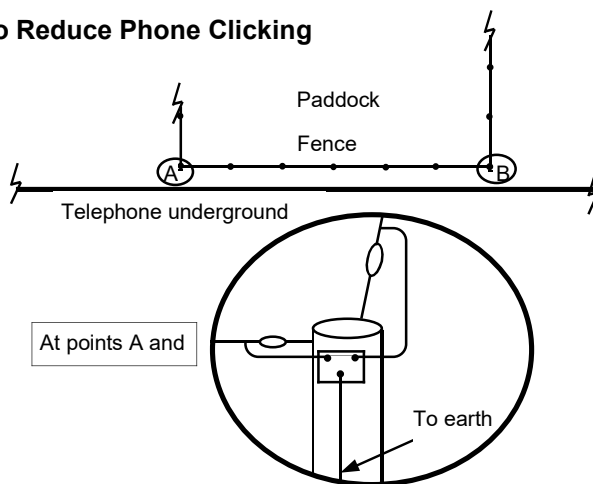
- The electric fence earth should be well sized for the energiser and ground conditions, it must not be close to the mains system earth. Do not connect it to buildings (such as steel sheds), or metal water pipes that may run back towards the mains earth or building.
- Remove all leakages (short circuits or faults) from your fence line using a JVA Fault Finder.
- Ensure all live line connections are well made and not causing sparks.

Installation Instructions

For Lightning Protection



To Reduce Phone Clicking



Please Note: We do not recommend use with any energiser whose output energy exceeds 25 Joules.

For more information:

See the Website at: <http://www.jva-fence.com.au>