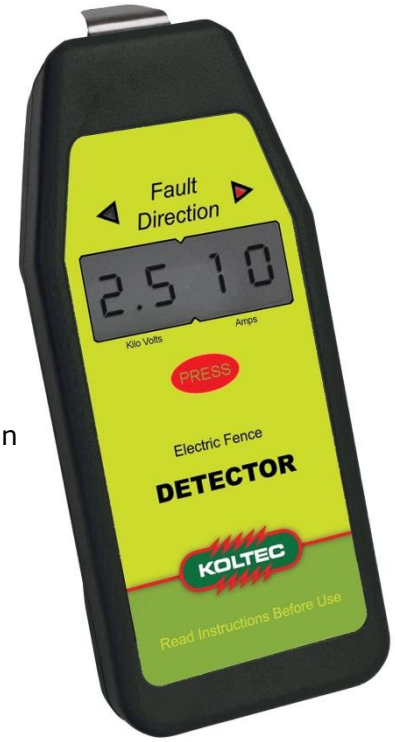
Specifications
Suitable for the measurement of tension and current in an electric fence.

Voltage
Display : Left 2 figures, reflects in kV (kilo Volts = x 1.000)
Values : from 0.0 till 9.9 kV
Precision : +/- 10%

Current
Display : Right 2 figures, reflects in A(mperes)
Values : from 0 – 27 A (if higher it will show also 27 A)
Precision : +/- 10%

Various
Weight : 153 Gram
Power supply : 9 Volt alkaline battery, type XXXX
Consumption : Consumption 7 mA (milli Ampere = 1/1000 A), in the "sleep" status 2 uA (2/1000 mA)



Advantages:
- Easy usable
- No shocks
- No external wires
- At a single glance presents Voltage, Amperes and current direction
- Small handy size
- Power supply by a standard, everywhere available battery
- Easy to read out
- Waterproof (IP67)
- Mechanical very strong (Mach 2)
- Built-in carry clip

USE

Battery
The KOLTEC detector functions on a 9 Volt Alkaline battery. De lifetime depends on the use, it can varies from months till several years. If the KOLTEC detector is not used for a longer period, it is smart to remove the battery. If the battery becomes empty, the measurements will be less accurate. If it gets to low, the KOLTEC detector will show a battery after pushing the "press" button in the display.

Read out
The KOLTEC detector measures the voltage and the current with one push on the button by pressing the metal brace on the wire (wire under the brace). The big advantage of the KOLTEC detector is that also the current direction is been read out. In a fence the current always runs from the source (electric fencer) tot the short-circuit in the fence, taking the shortest possible way.

Voltage
The voltage can be read out by the KOLTEC detector, even so there is only one metal strip with which the fence is touched. The KOLTEC detector has a high impedance amplifier that makes it possible to take the hand of the user as reference capacity without feeling anything.

At fences with a lot of sparking, the KOLTEC detector, in contrast to regular digital voltmeters, will reflect the effective tension in the fence, and not the peak tension of some milliseconds that will build up before the sparkling.

This is an important fact, it is not a scientific measurement, but it is important to know if the fence is all right and that the tension is enough or that there is a problem in the fence, that makes the tension too low.

Current
The KOLTEC detector measures the current by a current sensor in the head of the apparatus. By putting the metal lip on the wire the sensor is placed in the magnetic field of the fence causes by the current in the concerning wire.
The average electric fencers can send 10 Ampere or more through a fence when there is a short circuit. By more powerful fencers this can go up to 40 Ampere.
By long fences there will always be visible an amount of current just to put the fence under tension, next to small losses by leaking insulators or growths by weeds or grass. It is therefore hard to indicate the normal value for the current.

The top value reflected by the KOLTEC detector is 27 Ampere.
Normally it is very hard to exceed this value, or the measurement would be close to the exit of a very powerful fencer. The reflected value is mostly enough to determine the difference between normal current or a false current in the fence.

The false current is determined by the fencer, type fence (single or more wires) and the failure that has occurred in the system (growth or direct circuit to the ground).
As standard is a current smaller than 5 Ampere OK and larger than 5 Ampère an indication that there is a failure in the fence.

Note: It has no use to do a failure measurement less than 50 cm of the fencer.

During the measurement it is possible that the left or right direction light will flash. These lights are developed to indicate the direction of the current and with that de direction of the failure.
The KOLTEC detector calculates the resistance out the measured data and based on that a LED will be activated. If the tension is high, for example 7.0 kV and the current is 4 Ampere, than the tension is 1750 Ohm and the detector will not notice this as a failure and a direction light will not flash. If the tension is low, for example 2.5 kV and the current is 4 Ampère, than the resistance is 625 Ohm and the KOLTEC detector will activate a red direction light.

At a multi conductor system the conductor with the highest current has to be found. If the failure exist of growths by weeds or grass, the current will be lower by measuring along the fence. The same result will occur if “bad” insulators are mounted.