

Voltage / Magnetic Indicator
TEK 200
INSTRUCTIONS



Voltage / Magnetic Indicator

Non contact electric and magnetic field indicator with audible warning and self-test feature. For conductors energised at voltages in the range of 100V to 600V AC and for inductors, relays, solenoids and transformers operating from low voltage AC/DC and above. The user is part of the response circuit. Also suitable for permanent magnets and for indication of the polarity of machine windings.

TECHNICAL SPECIFICATION

Supply: 9V alkaline battery, MN1604 or equivalent (included).

Voltage Range: 100 to 600V AC.

Voltage Sensitivity: See table below.

Magnetic Sensitivity: ±10mT.

Frequency Range: 0 to 50kHz.

Indicators:

LED (green) and audible tone (3kHz) - South Pole Magnetic

LED (red) and audible tone (3kHz) - North Pole Magnetic

Operating Temperature: -5 to 40°C.

Case: Yellow ABS.

Dimensions: 202 x 32 x 22mm.

Weight: 150g.

Cable Type	110V AC 50Hz	240V AC 50Hz
Flat 1mm ² Twin & Earth	3mm	23mm
Flat 2.5mm ² Twin & Earth	5mm	23mm
Round 1.5mm ²	2mm	18mm

Typical Sensing Distance of Energised Cable

WARNING

The sensing device must be tested before and after use to ensure full functionality. **DO NOT USE THE TESTING DEVICE IF THE RED, GREEN AND AUDIBLE TONE INDICATORS ARE NOT SIMULTANEOUSLY ACTIVATED IN THE TEST POSITION.** From some directions the neutral and earth conductors in cables will shield the live, so it's important that a cable is explored from all directions. This unit is a non contact device and is not to be put in contact with hazardous conductive surfaces. When testing for the presence of voltage in multi-core cables always run the sensing device along a short length of cable so as to overcome the natural twist in conductors.

Replace battery if the green light fails to illuminate.

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OPERATING INSTRUCTIONS

Electric Field Sensing

Hold the sensing device in the palm of the hand.

Slide the switch across the middle 'E' position with the thumb and check that the green and red audible tone indicators are activated when the push to test switch is pressed.

The sensing device is now ready for use.

The green and red indicators and audible tone will indicate and sound simultaneously when the nose of the sensing device is placed in the proximity of a live conductor.

Magnetic Field Sensing

Hold the sensing device in the palm of the hand.

Slide the switch across to the far right 'M' position with the thumb and check that the green, red and audible tone indicators are activated when the push to test switch is pressed.

The sensing device is now ready for use.

When the nose of the sensing device is placed in the proximity of a magnetic field its polarity is indicated.

RED - for north pole

GREEN - for south pole

In the presence of an alternating electro-magnetic field both north and south pole indicators are on. The audible tone will sound for unipolar and bipolar magnetic or electro-magnetic fields.

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Note: Lines of magnetic flux flow from the north pole of a magnet to the south pole of a magnet. These lines try to adopt the shortest possible path. However, the directions that these lines exit initially from the north pole and enter finally into the south pole are strongly influenced to lie along the axis of the magnet. The lines of flux must bend to form circular loops as they reach from north to south pole. Figure 1 shows the shape of magnetic flux lines for a typical bar magnet and for a typical horseshoe magnet.

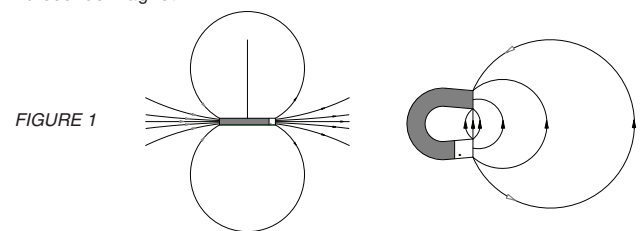
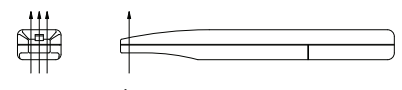


FIGURE 1

The magnetic field sensing element of the TEK200 is within the tip. The sensing element reacts to lines of flux entering the back (underside) of the tip and exiting from the front (topside) of the tip, as shown in figure 2.

FIGURE 2



When assessing a magnet, it is important to make use of the figure 1 above to estimate the shape of the magnetic field. The magnet should be placed in relation to the tip of the TEK200 to best achieve the arrangement of flux lines as in figure 2. The polarity indicated on the front of the TEK200 will be according to the example situations shown in figure 3.

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Note: also that a compass needle is a North Pole. It is attracted to point towards the south pole of any other magnet and NOT the north pole of any other magnet.

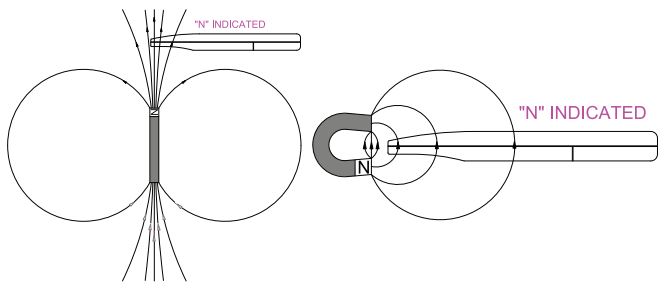


FIGURE 3 **PREFERRED ORIENTATION**

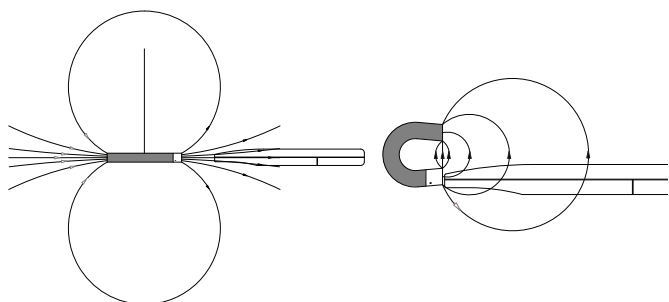


FIGURE 3 **UNCERTAIN INDICATION**

Take particular note of the examples where the polarity indicated may be mis-leading.

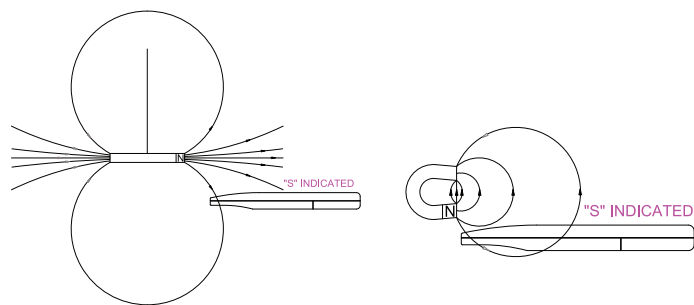


FIGURE 3 cont **'S' INDICATED - MISLEADING**

WARNING

The sensing device must be tested before and after use to ensure full functionality.

DO NOT USE THE TESTING DEVICE IF THE RED, GREEN AND AUDIBLE TONE INDICATORS ARE NOT SIMULTANEOUSLY ACTIVATED WHEN THE DEVICE IS SWITCHED ON AND THE PUSH TO TEST BUTTON IS PRESSED.

When testing for the presence of voltage in multi-core cables always run the sensing device along a short length of cable so as to overcome the natural twist in conductors.

Replace battery if the sensing device appears to malfunction during test.

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