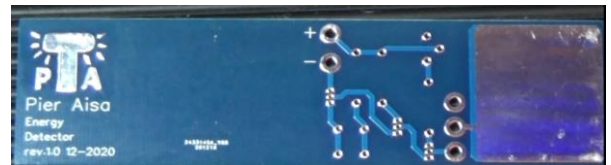


- Able to detect electric and magnetic field without direct contact
- Detects mains power supply voltages (50Hz-60Hz)
- Detects RF energy
- Power Supply 9V battery
- Low power consumption
- High sensitivity and configurable gain
- LED indication or buzzer



PCB Top View



PCB Bottom View

DESCRIPTION

The Contactless Energy Detector is a tool designed for detect the presence of mains voltage or RF energy without the need to direct contact. It is useful to determine cable under a wall and to detect presence of voltage. The measure principle is based on capacitive and inductive antenna pick-up with a high gain transistor amplifier to magnify the signals. Different sensibility. Three type of antennas have been implemented: pure capacitive, RF antenna and connection for an external antenna

TECHNICAL DATA

PARAMETER	VALUE	UNIT
Main voltage distance detection (adjustable)	0.1 .. 10	Cm
Frequency detection	10 .. 10e+6	Hz
Power Supply	+9	V
Antennas	Mains (capacitive), RF (inductive), Externa	

PCB TECHNICAL DATA

PARAMETER	VALUE	UNIT
Dimensions Lenght x Width	11.5 x 30	mm
Colors	BLUE	
PCB thickness (RED, YELLOW)	1.6	mm
Layers	2	
Surface finish	HASL	
Copper Weight	1	oz
Material Details	FR4-Standard Tg 130-140C	

BILL OF MATERIALS (HIGH SENSIVITY)

- R1: 3.3 Mohm
- R2: 47 Kohm
- R3: 270 ohm
- R5: Trimmer 1 Mohm (optional)
- Q1,Q2,Q3: BC547C
- LED1: Led 1.8V or buzzer 20mA
- +/- Battery terminals connection

BILL OF MATERIALS (MEDIUM SENSIVITY)

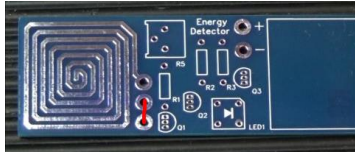
- R1: 560 Kohm
- R2: 100 Kohm
- R3: 270 ohm
- R5: bypass with short circuit
- Q1,Q2,Q3: BC547C
- LED1: Led 1.8V or buzzer 20mA



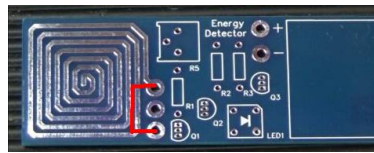
- +/- Battery terminals connection

ASSEMBLY INSTRUCTIONS

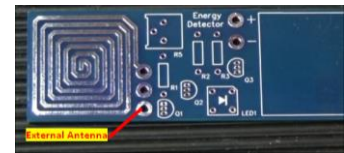
1. Select the antenna to be used and connect with a short wire the input transistor with the antenna as indicated in the following figure:



Mains Antenna connection



RF Antenna connection



External Antenna connection

2. Assembly all the components following the selected Bill of Materials
3. In place of the trimmer R5 a short circuit can be placed between the lower pins of the R5 PCB shape
4. Place the 9V battery on the TOP of the PCB and tie it with a rubber band
5. Connect the battery

USER INFORMATION

With the battery connected, place the Energy detector near a source of voltage and check that the LED will turn on or the buzzer sounds

ADDITIONAL INFORMATION

To further extend the sensitivity of the Energy detector a copper band can be soldered in the capacitive antenna as indicated in the following figure



Running mode with antenna extension of copper soldered in the capacitive area on the PCB Bottom side

ORDERING INFORMATION

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