WHAT IS CLAIMED IS:

1. A non-contact alternating current sensing method, comprising the following steps:

constructing a sealed shielding space for preventing electromagnetic interference, arranging a detection port that can allow an electromagnetic signal in a specific direction to enter the shielding space, and arranging, in the shielding space, an induction coil that can collect the electromagnetic signal passing through the detection port to enter the shielding space;

during sensing of a single wire, enabling the detection port to be close to but not in contact with the single wire, so that an electromagnetic signal generated when an alternating current flows in the single wire can be allowed to pass through the detection port to enter the shielding space to be collected by the induction coil, and the induction coil outputs a corresponding current signal;

during sensing of a non-twisted cable formed by two or more wires arranged in parallel, enabling the detection port to be close to but not in contact with the non-twisted cable, and rotating around the non-twisted cable, so that the detection port faces the wires in the non-twisted cable one by one, and an electromagnetic signal generated when an alternating current flows in a target wire in the non-twisted cable can be allowed to pass through the detection port to enter the shielding space to be collected by the induction coil, and the induction coil outputs a corresponding current signal; and

during sensing of a twisted cable formed by two or more wires twisted together, enabling the detection port to be close to but not in contact with the twisted cable, and then rotating around the twisted cable and/or moving along a direction of a central axis of the twisted cable, so that an electromagnetic signal generated when an alternating current flows in a target wire in the twisted cable can be allowed to pass through the detection port to enter the shielding space to be collected by the induction coil, and the induction coil outputs a corresponding current signal.

2. The non-contact alternating current sensing method according to Claim 1, wherein the current signal output by the induction coil is subjected to signal amplification and noise filtering and then is subjected to analytic operation processing by a main control MCU chip, to obtain related electrical parameters.

3. The non-contact alternating current sensing method according to Claim 2, wherein the electrical parameters comprise a current, a voltage, a frequency, a duty cycle, a phase, a harmonic, and a frequency-conversion signal.

4. A non-contact alternating current sensing probe for implementing the non-contact alternating current sensing method according to Claim 1, comprising

a metal shielding shell used for constructing a sealed shielding space for preventing electromagnetic interference; wherein the metal shielding shell is provided with a detection port

that can allow an electromagnetic signal in a specific direction to enter the shielding space; and

an induction coil, wherein the induction coil is arranged in the shielding space, and is used for sensing the electromagnetic signal that enters the metal shielding shell from the detection port and outputting a corresponding current signal.

5. The non-contact alternating current sensing probe according to Claim 4, wherein the induction coil is a hollow induction coil, with an iron rod for enhancing sensitivity of the induction coil to a magnetic field change penetrating through the middle.

6. The non-contact alternating current sensing probe according to Claim 4, wherein the induction coil is connected to a signal amplification circuit.

7. The non-contact alternating current sensing probe according to Claim 6, wherein the iron rod is connected to another signal amplification circuit.

8. The non-contact alternating current sensing probe according to Claim 5, wherein the metal shielding shell is connected to a noise filter circuit.

9. The non-contact alternating current sensing probe according to Claim 4, applied to a test pen, wherein the induction coil is a hollow induction coil, and a feeler pin of the test pen penetrates through the induction coil.

10. The non-contact alternating current sensing probe according to Claim 4, applied to a measuring instrument.