CLAIMS

1. A device having two terminals connectable in series to an AC power source and a load for switching an AC power signal from the AC power source to the load, the device comprising in a single enclosure:

a first terminal for connecting to the AC power source;

a second terminal for connecting to the load;

a first electrically controlled switching component comprising a first switch connected between third and fourth terminals that is controlled by a first signal at a fifth terminal;

a second electrically controlled switching component comprising a second switch connected between sixth and seventh terminals that is controlled by a second signal at an eighth terminal;

a logic circuit coupled to output the first and second signals respectively to the fifth and eighth terminals; and

an electrical energy storing component for storing DC power and for powering the logic circuit, the electrical energy storing component is coupled in parallel to the second switch to be charged from the AC power signal,

wherein the first and second switches are coupled in series to pass the AC power signal between the first and second terminals,

wherein the device is powered only from the AC power signal,

wherein the device is configured to be in first and second states, wherein in the first state the first and second switches are controlled by the logic circuit to pass the AC power signal between the first and second terminals to power the load,

wherein in the second state the first and second switches are controlled by the logic circuit to stop the AC power signal between the first and second terminals,

wherein as part of the first state the device is configured to further be in third and fourth states,

and wherein in the third state the component is charged from the AC power signal and in the fourth state the logic circuit is powered by the electrical energy storing component.

2. The device according to claim 1 wherein the logic circuit consists of, or includes, software and a processor for executing the software.

3. The device according to claim 1 wherein the first electrically controlled switching component, or the second electrically controlled switching component, is based on, is part of, or consists of, a relay.

4. The device according to claim 3 wherein the relay is a solenoid-based electromagnetic relay or a reed relay.

5. The device according to claim 3 wherein the relay is a solid-state or semiconductor based relay.

6. The device according to claim 5 wherein the relay is a Solid State Relay (SSR).

7. The device according to claim 1 wherein the first electrically controlled switching component or the electrically controlled switching second component is based on, comprises, or consists of, an electrical circuit that comprises an open collector transistor, an open drain transistor, a thyristor, a TRIAC, or an opto-isolator.

8. The device according to claim 1 wherein the first electrically controlled switching component, or the second electrically controlled switching component, is based on, comprises, or consists of, an electrical circuit or a transistor.

9. The device according to claim 8 wherein the transistor is a field-effect power transistor, wherein the third connection or the sixth connection is a ‘drain’ pin, the fourth connection or the seventh connection is a ‘source’ pin, and the fifth terminal or the eighth terminal is a ‘gate’ pin.

10. The device according to claim 9 wherein the field-effect power transistor is an N-channel or a P-channel field-effect power transistor.

11. The device according to claim 1 further comprising an AC/DC converter connected to be power fed from the first and second terminals, and configured to supply a DC power.

12. The device according to claim 11 further comprising a capacitor or a battery connected to be charged from the DC power.

13. The device according to claim 1 further comprising a tactile sensor coupled to the logic circuit for shifting between the first and second states in response to a human touch or a human mechanical activation.

14. The device according to claim 1 further operative to shifting between the first and second states in response to a remote command.

15. The device according to claim 14 further comprising an antenna for receiving signals over the air, and a wireless transceiver coupled to the antenna to receive the remote command from a wireless network, wherein the logic circuits coupled to the wireless transceiver to receive the remote command therefrom.

16. The device according to claim 15 wherein the wireless network is a Wireless Personal Area Network (WPAN), the wireless transceiver is a WPAN transceiver, and the antenna is a WPAN antenna.

17. The device according to claim 16 wherein the WPAN is according to, or based on, IEEE 802.15.1-2005 standard~~s~~, or wherein the WPAN is a wireless control network that is according to, or based on, IEEE 802.15.4-2003 standard~~s~~.

18. The device according to claim 15 wherein the wireless network is a Wireless Local Area Network (WLAN), the wireless transceiver is a WLAN transceiver, and the antenna is a WLAN antenna.

19. The device according to claim 18 wherein the WLAN is according to, or base on, IEEE 802.11-2012, IEEE 802.11a, IEEE 802.11b, IEEE 802.11g, IEEE 802.11n, or IEEE 802.11ac.

20. The device according to claim 15 wherein the wireless network is over an unlicensed radio frequency band.

21. The device according to claim 20 wherein the unlicensed radio frequency band is an Industrial, Scientific and Medical (ISM) radio band.

22. The device according to claim 15 wherein the wireless network is a Wireless Wide Area Network (WWAN), the wireless transceiver is a WWAN transceiver, and the antenna is a WWAN antenna.

23. The device according to claim 21, wherein the WWAN is a WiMAX network, wherein the antenna is a WiMAX antenna and the wireless transceiver is a WiMAX modem, and the WiMAX network is according to, or based on, IEEE 802.16-2009.

24. The device according to claim 21, wherein the WWAN is a cellular telephone network, the antenna is a cellular antenna, and the wireless transceiver is a cellular modem.

25. The device according to claim 24 wherein the cellular telephone network is a Third Generation (3G) network that uses UMTS W-CDMA, UMTS HSPA, UMTS TDD, CDMA2000 1×RTT, CDMA2000 EV-DO, or GSM EDGE-Evolution, or wherein the cellular telephone network is a Fourth Generation (4G) network that uses HSPA+, Mobile WiMAX, LTE, LTE-Advanced, MBWA, or is based on IEEE 802.20-2008.

26. The device according to claim 1 further configured to substitute a light switch.

27. The device according to claim 26 wherein the single enclosure is dimensioned and shaped to be installed in a light switch outlet cavity.

28. The device according to claim 1 wherein the AC power is a domestic mains.

29. The device according to claim 28 wherein the AC power is nominally 120 VAC/60 Hz or 230 VAC/50 Hz.

30. The device according to claim 28 wherein the load is a light source.

31. The device according to claim 30 wherein the light source light source is an electric light source for converting electrical energy into light.

32. The device according to claim 31 wherein the electric light source emits visible or non-visible light for illumination or indication, the non-visible light is infrared, ultraviolet, X-rays, or gamma rays.

33. The device according to claim 32 wherein the electric light source consists of, or comprises, a lamp, an incandescent lamp, a gas discharge lamp, a fluorescent lamp, a Solid-State Lighting (SSL), a Light Emitting Diode (LED), an Organic LED (OLED), a polymer LED (PLED), or a laser diode.

34. A system for switching AC power from the AC power source to the load, the system comprising:

the load; and

the device according to claim 1,

wherein the device is connected in series between the AC power source and the load for switching the AC power from the AC power source to the load.

35. The device according to claim 1, wherein the electrical energy-storing component consists of, or comprises, a rechargeable battery or a capacitor.

36. The device according to claim 1, further comprising a voltage detector responsive to the detected voltage across the first and second terminals, across the second switch, or across the electrical energy storing component, and wherein the device is configured to be in the third state when the detected voltage is positive.

37. The device according to claim 36, for use with a voltage threshold, wherein the device is configured to be in the third state when the detected voltage is below the voltage threshold.