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; ~~and~~

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,

~~and~~ 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, ~~and~~

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 logic circuit is at least partially powered from the AC power signal.~~

~~4.~~ 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.

~~5~~4. The device according to claim ~~4~~3 wherein the relay is a solenoid-based electromagnetic relay or a reed relay.

~~6~~5. The device according to claim ~~4~~3 wherein the relay is a solid-state or semiconductor based relay.

~~7~~6. The device according to claim ~~6~~5 wherein the relay is a ~~Solid State Relay~~Solid State Relay (SSR).

~~8~~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.

~~9~~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.

~~10~~9. The device according to claim ~~9~~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.

~~11~~10. The device according to claim ~~10~~9 wherein the field-effect power transistor is an N-channel or a P-channel field-effect power transistor.

~~12~~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.

~~13~~12. The device according to claim ~~12~~11 further comprising a capacitor or a battery connected to be charged from the DC power.

~~14~~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.

~~15~~14. The device according to claim 1 further operative to shifting between the first and second states in response to a remote command.

~~16~~15. The device according to claim ~~15~~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.

~~17~~16. The device according to claim ~~16~~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.

~~18. The device according to claim~~ 17. The device according to claim 16 wherein the WPAN is according to, or based on, ~~Bluetooth™ or~~ IEEE 802.15.1-~~2005standards~~2005 standard~~s~~, or wherein the WPAN is a wireless control network that is according to, or based on, ~~Zigbee™,~~ IEEE 802.15.4-2003~~, or Z-Wave™~~ standard~~s~~.

18. ~~19.~~ The device according to claim ~~16~~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.

~~20~~19. The device according to claim ~~19~~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. ~~21.~~ The device according to claim ~~16~~15 wherein the wireless network is over ~~a licensed or~~an unlicensed radio frequency band.

~~22.~~21. The device according to claim ~~21~~20 wherein the unlicensed radio frequency band is an Industrial, Scientific and Medical (ISM) radio band.

~~23~~22. The device according to claim ~~16~~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.

~~24~~23. The device according to claim ~~23~~21, wherein the WWAN ~~is a wireless broadband network.~~

~~25. The device according to claim 24 wherein the wireless network~~ 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.

~~26~~24. The device according to claim ~~24~~21, wherein the ~~wireless network~~WWAN is a cellular telephone network, the antenna is a cellular antenna, and the wireless transceiver is a cellular modem.

~~27~~25. The device according to claim ~~26~~24 wherein the cellular telephone network is a Third Generation (3G) network that uses UMTS W-CDMA, UMTS HSPA, UMTS TDD, CDMA2000 ~~1xRTT~~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.

~~28~~26. The device according to claim 1 further configured to substitute a light switch.

~~29~~27. The device according to claim ~~28~~26 wherein the single enclosure is dimensioned and shaped to be installed in a light switch outlet cavity.

~~30~~28. The device according to claim 1 wherein the AC power is a domestic mains.

~~31.~~ 29. The device according to claim ~~30~~28 wherein the AC power is nominally ~~120VAC/60Hz~~120 VAC/60 Hz or ~~230VAC/50Hz~~230 VAC/50 Hz.

~~32~~30. The device according to claim ~~30~~28 wherein the load is a light source.

31. ~~33.~~The device according to claim ~~32~~30 wherein the light source light source is an electric light source for converting electrical energy into light.

~~34~~32. The device according to claim ~~33~~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.

~~35~~33. The device according to claim ~~34~~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.

~~36~~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.

~~37. The device according to claim 1 further comprising an electrical energy storing component for storing DC power and for powering the logic circuit, the component is coupled in parallel to the second switch to be charged from the AC power signal, wherein as part of the first state the device is configured to further be in third and fourth states, 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 component.~~

~~38. The device according to claim 37~~35. The device according to claim 1, wherein the electrical energy-storing component consists of, or comprises, a rechargeable battery or a capacitor.

~~39~~36. The device according to claim ~~37~~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.

~~40~~37. The device according to claim ~~39~~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.

41. The device according to claim 37 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 negative.

42. The device according to claim 41 for use with a voltage threshold, wherein the device is configured to be in the third state when the detected voltage is above the voltage threshold.

43. The device according to claim 37 for use with first and second voltage thresholds, the device 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 between the first and second voltage thresholds.

44. The device according to claim 43 wherein the first threshold is zero.

45. The device according to claim 1 further comprising an occupancy sensor for detecting occupancy of a space by a human body, the sensor coupled to the logic circuit for shifting between the states in response to detecting a presence of a human by using electric effect, inductive coupling, capacitive coupling, triboelectric effect, piezoelectric effect, fiber optic transmission, or radar intrusion sensing.

46. The device according to claim 45 wherein the occupancy sensor consists of, comprises, or is based on, an acoustic sensor, opacity, geomagnetism, magnetic sensors, magnetometer, reflection of transmitted energy, infrared laser radar, microwave radar, electromagnetic induction, or vibration.

47. The device according to claim 45 wherein the occupancy sensor consists of, comprises of, or is based on, a motion sensor.

48. The device according to claim 47 wherein the motion sensor is a mechanically actuated sensor, passive or active electronic sensor, ultrasonic sensor, microwave sensor, tomographic detector, passive infrared (PIR) sensor, laser optical detector, or acoustical detector.

~~49. The device according to claim 45, wherein the sensor is a photoelectric sensor that responds to a visible or an invisible light, the invisible light is infrared, ultraviolet, X-rays, or gamma rays, and wherein the photoelectric sensor is based on the photoelectric or photovoltaic effect, and consists of, or comprises, a semiconductor component that consists of, or comprises, a photodiode, or a phototransistor.~~

~~50. The device according to claim 49, wherein the photoelectric sensor is based on Charge-Coupled Device (CCD) or a Complementary Metal-Oxide Semiconductor (CMOS) component.~~

~~51. A system for switching AC power from the AC power source to the load, the system comprising:~~

~~the load that is a domestic appliance including an actuator that converts electrical energy to affects a phenomenon; 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.~~

~~52. The system according to claim 51, wherein the actuator is an electric thermoelectric actuator that is a heater or a cooler, operative for affecting the temperature of a solid, a liquid, or a gas object, and is coupled to the object by conduction, convection, forced convention, thermal radiation, or by the transfer of energy by phase changes.~~

~~53. The system according to claim 51, wherein the actuator is a sounder for converting an electrical energy to omnidirectional, unidirectional, or bidirectional pattern emitted, audible or inaudible, sound waves.~~

~~54. The system according to claim 53, wherein the sound is audible, and wherein the sounder is an electromagnetic loudspeaker, a piezoelectric speaker, an electrostatic loudspeaker (ESL), a ribbon or a planar magnetic loudspeaker, or a bending wave loudspeaker.~~

~~55. The system according to claim 51, wherein the actuator is an electric thermoelectric actuator that is a heater or a cooler, operative for affecting the temperature of a solid, a~~

~~liquid, or a gas object, and is coupled to the object by conduction, convection, force convention, thermal radiation, or by the transfer of energy by phase changes.~~

~~56. The system according to claim 55, wherein the thermoelectric actuator is a cooler based on a heat pump driving a refrigeration cycle using a compressor based electric motor.~~

~~57. The system according to claim 55, wherein the thermoelectric actuator is an electric heater that is a resistance heater or a dielectric heater.~~

~~58. The system according to claim 51, wherein the actuator is a display for visually presenting information.~~

~~59. The system according to claim 58, wherein the display is a monochrome, grayscale or color display and consists of an array of light emitters or light reflectors.~~

~~60. The system according to claim 59, wherein the display is a video display supporting Standard Definition (SD) or High Definition (HD) standards, and is capable of scrolling, static, bold or flashing the presented information.~~

~~61. The system according to claim 51, wherein the actuator is a motion actuator that causes linear or rotary motion, and the system further comprising a conversion mechanism for respectfully converting to rotary or linear motion based on a screw, a wheel and axle, or a cam.~~

~~62. The system according to claim 61, wherein the motion actuator is a pneumatic, hydraulic, or electrical actuator.~~

~~63. The system according to claim 61, wherein the motion actuator is an electrical motor.~~

~~64. The system according to claim 63, wherein the electrical motor is a brushed, a brushless, or an uncommutated DC motor.~~

~~65. The system according to claim 64, wherein the DC motor is a stepper motor that is a Permanent Magnet (PM) motor, a Variable reluctance (VR) motor, or a hybrid synchronous stepper.~~

~~66. The system according to claim 63, wherein the electrical motor is an AC motor that is an induction motor, a synchronous motor, or an eddy current motor.~~

~~67. The system according to claim 66, wherein the AC motor is a single-phase AC induction motor, a two-phase AC servo motor, or a three-phase AC synchronous motor, and the AC motor is a split-phase motor, a capacitor-start motor, or a Permanent Split Capacitor (PSC) motor.~~

~~68. The system according to claim 51, wherein the load is a water heater, HVAC system, air conditioner, heater, washing machine, clothes dryer, vacuum cleaner, microwave oven, electric mixer, stove, oven, refrigerator, freezer, food processor, dishwasher, food blender, beverage maker, coffeemaker, answering machine, telephone set, home cinema system, HiFi system, CD or DVD player, induction cooker, electric furnace, trash compactor, electric shutter, or dehumidifier.~~

~~69. The device according to claim 1 further comprising in the single enclosure a sensor coupled to sense the voltage across the first switch, wherein the sensor is coupled to the fifth terminal for producing the first in response to sensed voltage.~~

~~70. The device according to claim 69 further operative to be powered from the AC power signal, the device further comprising an electrical energy-storing component coupled in parallel to the first switch to be charged from the AC power signal.~~

~~71. The device according to claim 70 wherein the sensor is coupled to be powered from the electrical energy-storing component.~~

~~72. The device according to claim 70 further operative to be in third and fourth states, wherein in the third state the electrical energy-storing component is charged from the AC power signal, and in the fourth state the electrical energy-storing component powers the sensor.~~

~~73. The device according to claim 70 further comprising a sensor for detecting positive and negative half-cycles of the AC power signal, wherein the device is in the third state during an entire of, or a part of, one of the half-cycles, and the device is in the fourth state during an entire of, or a part of, the other half-cycle.~~

~~74. The device according to claim 70 wherein the electrical energy-storing component is a capacitor or a rechargeable battery.~~

75. The device according to claim 74 wherein the capacitor is an electrolytic or a tantalum capacitor.

76. The device according to claim 69 for use with a defined voltage threshold, wherein the sensor is a comparator coupled to compare the voltage across the first switch to the voltage threshold.

77. The device according to claim 76 wherein if the voltage across the first switch or the energy storage component is below the voltage threshold, the voltage is supplied to the fifth terminal for stopping the AC power signal flow via the first switch.

78. The device according to claim 69 wherein if the voltage across the first switch or the energy storage component is above the voltage threshold the voltage is supplied to the fifth terminal for passing the power signal via the first switch.

79. The device according to claim 1 further for detecting polarity or magnitude of the AC power signal, the device further comprising in the single enclosure a voltage detector coupled to sense the polarity or the magnitude of the voltage across the first switch; and

a logic circuit coupled to output the control voltage at a fifth terminal and to the voltage detector;

wherein when the first switch is closed so that the AC power signal is passed from the AC power source to the load, the logic circuit outputs the first signal to the fifth terminal so as to open the switch for a time interval, and the voltage detector senses the polarity or the magnitude of the power signal when the first switch is configured to stop the AC power signal.

80. The device according to claim 79 wherein the logic circuit outputs a control voltage to the fifth terminal periodically.

81. The device according to claim 79 wherein the time interval is less than 1 millisecond.

82. The device according to claim 79 wherein the AC power signal is in sinewave form including a positive half-cycle and a negative half-cycle in a cycle time period, and wherein the time interval is substantially less than the AC power signal time period.

~~83. The device according to claim 82 wherein the time interval is less than one tenth of the AC power signal time period.~~

~~84. The device according to claim 82 wherein the device is operative to sense and indicate one of the half-cycles of the AC power signal time period.~~

~~85. The device according to claim 84 wherein the device is periodically operative to outputs a control voltage to the fifth terminal until the detecting the non-indicated half-cycle of the AC power signal time period.~~

~~86. The device according to claim 84 wherein the device is operative to outputs the first signal to the fifth terminal in a delay after the non-indicated half-cycle of the AC power signal time period.~~

~~87. The device according to claim 86 wherein the delay is higher than half of the cycle time period and is lower than the cycle time period.~~

~~88. The device according to claim 79 further operative to be powered from the AC power signal, the device further comprising an electrical energy-storing component coupled in parallel to the first switch to be charged from the AC power signal when the first switch is configured for stopping the AC power signal flow via the first switch.~~

~~89. The device according to claim 88 wherein the electrical energy storing component in a capacitor or a rechargeable battery.~~

~~90. The device according to claim 88 for use with first and second voltage thresholds, wherein the electrical energy storing component is charged from the AC power signal when the voltage detected across the first switch or across the electrical energy storing component is between the first and second voltage thresholds.~~

~~91. The device according to claim 90 wherein the first voltage threshold is zero.~~

~~92. A multiway AC power switching system in a building comprising:~~

~~an AC power source for supplying an AC power signal;~~

~~an AC load connectable to be powered from the AC power source;~~

~~a first device according to claim 1 in a first single enclosure that is dimensioned and shaped to be installed in a light switch outlet cavity; and~~

~~a second device according to claim 1 in a second single enclosure that is dimensioned and shaped to be installed in a light switch outlet cavity;~~

~~wherein each of the devices is stopping the AC power signal in an open state for and is passing the AC power signal in a closed state, wherein each of the devices is connected in series for switching the AC power signal from the AC power source to the AC load, and wherein the first and second devices are connected in parallel whereby each of switches is configured to pass the AC power signal from the AC power source to the AC load.~~

~~93. The system according to claim 92 wherein the first device is located in a first location and the second device is located in a second location distinct from the first location, and wherein the two devices are connected via two wires in a wall of the building.~~

~~94. The system according to claim 92 wherein the first device further comprising a sensor for sensing the state of the second switch.~~

~~95. The system according to claim 94 wherein the sensor is a voltage detector for detecting the voltage across the first device terminals.~~

~~96. The system according to claim 94 further periodically sensing the state of the second device.~~

~~97. The system according to claim 94 wherein the state of the first device is determined based on the state of the second device.~~

~~98. The system according to claim 97 wherein the first device is operative during the closed state to stop the AC power signal for a time interval, whereby a voltage is developed over the first device that is sensed by the voltage detector.~~

~~99. The system according to claim 98 wherein the first device is powered by the voltage developed across the second device.~~

~~100. The system according to claim 97 wherein the second device further comprising a transmitter for sending the state of the second device.~~

~~101. The system according to claim 100 wherein the first device further comprising a receiver for receiving the state of the second device from the transmitter.~~

~~102. The system according to claim 101 wherein the first device shifts to the received state of the second device.~~

~~103. The system according to claim 101, wherein the transmitter is a wireless transmitter and the receiver is a wireless receiver.~~

~~104. The system according to claim 92 wherein each of the devices further comprising a visual indicator indicating the switch state.~~

~~105. The system according to claim 92 wherein each of the devices comprising a tactile sensor for shifting between the states in response to a human touch or a human mechanical activation.~~

~~106. A device having two terminals connectable in series to a power source and a load for switching a power signal from the power source to the load, the device comprising in a single enclosure:~~

~~a first terminal for connecting to the power source;~~

~~a second terminal for connecting to the load;~~

~~an electrically controlled switching component comprising a switch between third and fourth terminals that is controlled by a voltage at a fifth terminal, the third terminal coupled to the first terminal and the fourth terminal coupled to the second terminal so that the power signal is passed between the third and fourth terminals; and~~

~~a sensor coupled to sense the voltage across the third and fourth terminals;~~

~~wherein the sensor is coupled to the electrically controlled switching component for producing a voltage to the fifth terminal in response to sensed voltage.~~

~~107. The device according to claim 106 further operative to be powered from the power signal, the device further comprising an electrical energy-storing component coupled to the third and fourth terminals to be charged from the power signal.~~

~~108. The device according to claim 107 wherein the sensor is coupled to be powered from the electrical energy storing component.~~

~~109. The device according to claim 107 further operative to be first and second states, wherein in the first state the electrical energy storing component is charged from the power signal, and in the second state the electrical energy storing component powers the sensor.~~

~~110. The device according to claim 107 wherein the electrical energy storing component is a capacitor or a rechargeable battery.~~

~~111. The device according to claim 110 wherein the capacitor is an electrolytic or a tantalum capacitor.~~

~~112. The device according to claim 106 for use with a defined voltage threshold, wherein the sensor is a comparator coupled to compare the voltage across the third and fourth terminals to the voltage threshold.~~

~~113. The device according to claim 112 wherein if the voltage across the third and fourth terminals or the energy storage component is below the voltage threshold, the voltage is supplied to the fifth terminal for stopping the power signal flow via the switch.~~

~~114. The device according to claim 112 wherein if the voltage across the third and fourth terminals or the energy storage component is above the voltage threshold, the voltage is supplied to the fifth terminal for passing the power signal via the switch.~~

~~115. The device according to claim 106 wherein the electrically controlled switching is based on, or consists of, an electrical circuit or a transistor.~~

~~116. The device according to claim 115 wherein the transistor is a field-effect power transistor, where the third terminal is the 'drain' pin, the fourth terminal is the 'source' pin, and the fifth terminal is the 'gate' pin.~~

~~117. The device according to claim 116 wherein the field-effect power transistor is an N-channel or a P-channel field-effect power transistor.~~

~~118. The device according to claim 106 wherein the power source is an AC power source, and the power signal is an AC power signal.~~

~~119. The system according to claim 118 wherein the AC power is a domestic mains.~~

~~120. The system according to claim 119 wherein the AC power is nominally 120VAC / 60Hz or 230VAC / 50Hz.~~

~~121. The system according to claim 118 wherein the load is a light source.~~

~~122. The system according to claim 121 wherein the light source is an electric light source for converting electrical energy into light.~~

~~123. The device according to claim 118 further comprising a capacitor and operative to be in first and second states, wherein in the first state the capacitor is charged from the AC power signal, and in the second state the capacitor powers the sensor.~~

~~124. The device according to claim 106 further comprising a sensor for detecting positive and negative half-cycles of the AC power signal, wherein the device is in the first state during an entire of, or a part of, one of the half-cycles, and the device is in the second state during an entire of, or a part of, the other half-cycle.~~

~~125. The device according to claim 106 further comprising a DC converter coupled to the first and second terminal for passing of, and for being powered by, the power signal.~~

~~126. The device according to claim 125 wherein the power signal is an AC power signal, and the DC converter is an AC/DC converter.~~

~~127. The device according to claim 125 wherein the power signal is a DC power signal, and the DC converter is a DC/DC converter.~~

~~128. The device according to claim 125 further comprising an electrical energy storing component coupled to be charged from the DC converter, and for powering the sensor from the electrical energy storing component.~~

~~129. The device according to claim 106 further for detecting polarity or magnitude of the power signal, the device further comprising in the single enclosure:~~

~~a voltage detector coupled to sense the polarity or the magnitude of the voltage across the third and fourth terminals; and~~

~~a logic circuit coupled to output the control voltage at a fifth terminal and to the voltage detector;~~

~~wherein when the switch is closed so that the power signal is passed from the power source to the load, the logic circuit outputs a control voltage to the fifth terminal so as to open the switch for a time interval, and the voltage detector senses the polarity or the magnitude of the power signal when the switch is configured to stop the power signal.~~

~~130. The device according to claim 129 wherein the logic circuit outputs a control voltage to the fifth terminal periodically.~~

~~131. The device according to claim 129 wherein the time interval is less than 1 millisecond.~~

~~132. The device according to claim 129 wherein the power source is an AC power source and the power signal is an AC power signal in sinewave form including a positive half-cycle and a negative half-cycle in a cycle time period.~~

~~133. The device according to claim 132 wherein the time interval is substantially less than the AC power signal time period.~~

~~134. The device according to claim 132 wherein the time interval is less than one tenth of the AC power signal time period.~~

~~135. The device according to claim 132 wherein the device is operative to sense and indicate one of the half-cycles of the AC power signal time period.~~

~~136. The device according to claim 135 wherein the device is periodically operative to outputs a control voltage to the fifth terminal until the detecting the non-indicated half-cycle of the AC power signal time period.~~

~~137. The device according to claim 135 wherein the device is operative to outputs a control voltage to the fifth terminal in a delay after the non-indicated half-cycle of the AC power signal time period.~~

~~138. The device according to claim 137 wherein the delay is higher than half of the cycle time period and is lower than the cycle time period.~~

~~139. The device according to claim 129 further operative to be powered from the power signal, the device further comprising an electrical energy-storing component coupled in parallel to the switch to be charged from the power signal when the switch is configured for stopping the power signal flow between the third and fourth terminals.~~

~~140. The device according to claim 139 wherein the electrical energy storing component in a capacitor or a rechargeable battery.~~

~~141. The device according to claim 139 for use with first and second voltage thresholds, wherein the electrical energy storing component is charged from the power signal when the voltage detected across the first and second terminals, across the third and fourth terminals, or across the electrical energy storing component is between the first and second voltage thresholds.~~

~~142. The device according to claim 141 wherein the first voltage threshold is zero.~~

~~143. The device according to claim 142 operative to be in first, second, and third states, wherein in the first state the logic circuit outputs a control voltage to the fifth terminal periodically, in the second state the electrical energy storing component is charged from the power signal, and in the third state the switch is configured to continuously pass the power signal.~~

~~144. The device according to claim 143 wherein the device shifts from the first state to the second state upon detecting a change of the detected voltage polarity.~~

~~145. The device according to claim 143 wherein the device is in the second state when the voltage detected across the first and second terminals, across the third and fourth terminals, or across the electrical energy storing component, is between the first and second voltage thresholds.~~

~~146. The device according to claim 143 wherein the device is in the third state for a time interval.~~

~~147. The device according to claim 146 wherein the power source is an AC power source and the power signal is an AC power signal in sinewave form including a positive half-cycle and a negative half-cycle in a cycle time period, and wherein the time interval is between an half-cycle period to a full-cycle period.~~

~~148. A multiway AC power switching system in a building comprising:~~

~~an AC power source for supplying an AC power signal;~~

~~an AC load connectable to be powered from the AC power source;~~

~~a first device according to claim 106 in a first single enclosure that is dimensioned and shaped to be installed in a light switch outlet cavity; and~~

~~a second device according to claim 106 in a second single enclosure that is dimensioned and shaped to be installed in a light switch outlet cavity;~~

~~wherein each of the devices is stopping the AC power signal in an open state for and is passing the AC power signal in a closed state, wherein each of the devices is connected in series for switching the AC power signal from the AC power source to the AC load, and wherein the first and second devices are connected in parallel whereby each of switches is configured to pass the AC power signal from the AC power source to the AC load.~~

~~149. The system according to claim 148 wherein the first device is located in a first location and the second device is located in a second location that is distinct from the first location, and wherein the two devices are connected via two wires in a wall of the building.~~

~~150. The system according to claim 148 wherein the first device further comprising a sensor for sensing the state of the second switch.~~

~~151. The system according to claim 150 wherein the sensor is a voltage detector for detecting the voltage across the first device terminals.~~

~~152. The system according to claim 150 further periodically sensing the state of the second device.~~

~~153. The system according to claim 150 wherein the state of the first device is determined based on the state of the second device.~~

~~154. The system according to claim 153 wherein the first device is operative during the closed state to stop the AC power signal for a time interval, whereby a voltage is developed over the first device that is sensed by the voltage detector.~~

155. The system according to claim 154 wherein the first device is powered by the voltage developed across the second device.

156. The system according to claim 153 wherein the second device further comprising a transmitter for sending the state of the second device.

157. The system according to claim 156 wherein the first device further comprising a receiver for receiving the state of the second device from the transmitter.

158. The system according to claim 157 wherein the first device shifts to the received state of the second device.

159. The system according to claim 157, wherein the transmitter is a wireless transmitter and the receiver is a wireless receiver.

160. The system according to claim 148 wherein each of the switches further comprising a visual indicator indicating the switch state.

161. The system according to claim 148 wherein each of the devices comprising a tactile sensor for shifting between the states in response to a human touch or a human mechanical activation.

162. A device having two terminals for detecting polarity or magnitude of a power signal, connectable in series between a power source and a load for switching the power signal from the power source to the load, the device comprising in a single enclosure:

a first terminal for connecting to the power source;

a second terminal for connecting to the load;

an electrically controlled switching component comprising a switch between third and fourth terminals that is controlled by a control voltage at a fifth terminal, the third terminal coupled to the first terminal and the fourth terminal coupled to the second terminal so that the power signal is passed between the third and fourth terminals;

a voltage detector coupled to sense the polarity or the magnitude of the voltage across the third and fourth terminals; and

~~a logic circuit coupled to output the control voltage at a fifth terminal and to the voltage detector;~~

~~wherein when the switch is closed so that the power signal is passed from the power source to the load, the logic circuit outputs a control voltage to the fifth terminal so as to open the switch for a time interval, and the voltage detector senses the polarity or the magnitude of the power signal when the switch is configured to stop the power signal.~~

~~163. The device according to claim 162 wherein the logic circuit outputs a control voltage to the fifth terminal periodically.~~

~~164. The device according to claim 162 wherein the time interval is less than 1 millisecond.~~

~~165. The device according to claim 162 wherein the power source is an AC power source and the power signal is an AC power signal in sinewave form including a positive half-cycle and a negative half-cycle in a cycle time period.~~

~~166. The device according to claim 165 wherein the time interval is substantially less than the AC power signal time period.~~

~~167. The device according to claim 165 wherein the time interval is less than one tenth of the AC power signal time period.~~

~~168. The device according to claim 165 wherein the device is operative to sense and indicate one of the half-cycles of the AC power signal time period.~~

~~169. The device according to claim 168 wherein the device is periodically operative to outputs a control voltage to the fifth terminal until the detecting the non-indicated half-cycle of the AC power signal time period.~~

~~170. The device according to claim 168 wherein the device is operative to outputs a control voltage to the fifth terminal in a delay after the non-indicated half-cycle of the AC power signal time period.~~

~~171. The device according to claim 170 wherein the delay is higher than half of the cycle time period and is lower than the cycle time period.~~

172. The device according to claim 162 further operative to be powered from the power signal, the device further comprising an electrical energy storing component coupled in parallel to the switch to be charged from the power signal when the switch is configured for stopping the power signal flow between the third and fourth terminals.

173. The device according to claim 172 wherein the electrical energy storing component in a capacitor or a rechargeable battery.

174. The device according to claim 172 for use with first and second voltage thresholds, wherein the electrical energy storing component is charged from the power signal when the voltage detected across the first and second terminals, across the third and fourth terminals, or across the electrical energy storing component is between the first and second voltage thresholds.

175. The device according to claim 174 wherein the first voltage threshold is zero.

176. The device according to claim 174 operative to be in first, second, and third states, wherein in the first state the logic circuit outputs a control voltage to the fifth terminal periodically, in the second state the electrical energy storing component is charged from the power signal, and in the third state the switch is configured to continuously pass the power signal.

177. The device according to claim 176 wherein the device shifts from the first state to the second state upon detecting a change of the detected voltage polarity.

178. The device according to claim 176 wherein the device is in the second state when the voltage detected across the first and second terminals, across the third and fourth terminals, or across the electrical energy storing component, is between the first and second voltage thresholds.

179. The device according to claim 176 wherein the device is in the third state for a time interval.

180. The device according to claim 179 wherein the power source is an AC power source and the power signal is an AC power signal in sinewave form including a positive half-cycle and a negative half-cycle in a cycle time period, and wherein the time interval is between an half-cycle period to a full-cycle period.

~~181. A multiway AC power switching system in a building comprising:~~

~~an AC power source for supplying an AC power signal;~~

~~an AC load connectable to be powered from the AC power source;~~

~~a first switch in a first single enclosure that is dimensioned and shaped to be installed in a light switch outlet cavity; and~~

~~a second switch in a second single enclosure that is dimensioned and shaped to be installed in a light switch outlet cavity;~~

~~wherein each of the switches is stopping the AC power signal in an open state for and is passing the AC power signal in a closed state, wherein each of the switches is connected in series for switching the AC power signal from the AC power source to the AC load, and wherein the first and second switches are connected in parallel whereby each of switches is configured to pass the AC power signal from the AC power source to the AC load.~~

~~182. The system according to claim 181 wherein the first switch is located in a first location and the second switch is located in a second location distinct from the first location, and wherein the two switches are connected via two wires in a wall of the building.~~

~~183. The system according to claim 181 wherein the first switch further comprising a sensor for sensing the state of the second switch.~~

~~184. The system according to claim 183 wherein the sensor is a voltage detector for detecting the voltage across the first switch terminals.~~

~~185. The system according to claim 183 further periodically sensing the state of the second switch.~~

~~186. The system according to claim 183 wherein the state of the first switch is determined based on the state of the second switch.~~

~~187. The system according to claim 186 wherein the first switch is operative during the closed state to stop the power signal for a time interval, whereby voltage is developed over the first switch that is sensed by the voltage detector.~~

~~188. The system according to claim 187 wherein the first switch is powered by the voltage developed across the second switch.~~

~~189. The system according to claim 186 wherein the second switch further comprising a transmitter for sending the state of the second switch.~~

~~190. The system according to claim 189 wherein the first switch further comprising a receiver for receiving the state of the second switch from the transmitter.~~

~~191. The system according to claim 190 wherein the first switch shifts to the received state of the second switch.~~

~~192. The system according to claim 190 wherein the transmitter is a wireless transmitter and the receiver is a wireless receiver.~~

~~193. The system according to claim 181 wherein each of the switches further comprising a visual indicator indicating the switch state.~~

~~194. The system according to claim 181 wherein each of the switches comprising a tactile sensor for shifting between the states in response to a human touch or a human mechanical activation.~~