CLAIMS

WHAT IS CLAIMED IS:

1. A power supply control circuit for controlling operation of a power supply for an electricity meter during an alternating current (AC) power outage, the power supply control circuit comprising:

an input section configured to receive a representation of an output voltage of the power supply and a power loss signal, wherein the input section comprises:

a first switching device configured to receive the representation of the output voltage of the power supply; and

a second switching device configured to receive the power loss signal,

wherein the second switching device is configured to activate the first switching device when the power loss signal is received, and

wherein the first switching device is configured to supply the representation of the output voltage to the comparator section when activated by the second switching device;

a comparator section configured to generate an output signal based on the power loss signal and the representation of the output voltage; and

a feedback control section configured to control a feedback signal to the power supply based on the output signal from the comparator section,

wherein when activated by the output signal from the comparator section, the feedback control section is configured to change the feedback signal with respect to the feedback signal generated by a feedback circuit based on the output voltage, and

wherein the change in the feedback signal causes the power supply to stop supplying the output voltage.

2. The power supply control circuit of claim 1, wherein the comparator section comprises:

a comparator configured to receive the representation of the output voltage at a first input and generate the output signal; and

feedback components configured to set an upper threshold value for the output voltage and a lower threshold value for the output voltage,

wherein the comparator is further configured to generate the output signal at a first value when the output voltage reaches the upper threshold value until the output voltage

reaches the lower threshold value, and to generate the output signal at a second value when the output voltage reaches the lower threshold value.

3. The power supply control circuit of claim 2, wherein the comparator is further configured to receive a representation of a reference voltage at a second input, wherein the representation of the reference voltage is representative of a minimum voltage for operation of a component of the electricity meter.

4. The power supply control circuit of claim 2, wherein the feedback components are configured to set the lower threshold value to a value higher than a value representative of a minimum voltage for operation of a component of the electricity meter.

5. The power supply control circuit of claim 2, wherein the feedback components are configured to set the upper threshold value to a value lower than a representation of a regulation point of the power supply.

6. The power supply control circuit of claim 1, wherein the feedback control section comprises:

a third switching device configured to change the feedback signal by changing a current provided by the feedback circuit when activated by the output signal from the comparator section.

7. The power supply control circuit of claim 1, wherein when AC power is available, the feedback signal to the power supply is based only on a signal generated by the feedback circuit according to the output voltage.

8. An electricity meter comprising:

a power supply; and

a power supply control circuit for controlling operation of the power supply for an electricity meter during an alternating current (AC) power outage, the power supply control circuit comprising:

an input section configured to receive a representation of an output voltage of the power supply and a power loss signal, wherein the input section comprises:

a first switching device configured to receive the representation of the output voltage of the power supply; and

a second switching device configured to receive the power loss signal,

wherein the second switching device is configured to activate the first switching device when the power loss signal is received, and

wherein the first switching device is configured to supply the representation of the output voltage to the comparator section when activated by the second switching device;

a comparator section configured to generate an output signal based on the power loss signal and the representation of the output voltage; and

a feedback control section configured to control a feedback signal to the power supply based on the output signal from the comparator section,

wherein when activated by the output signal from the comparator section, the feedback control section is configured to change the feedback signal with respect to the feedback signal generated by a feedback circuit based on the output voltage, and

wherein the change in the feedback signal causes the power supply to stop supplying the output voltage.

9. The electricity meter of claim 8, wherein the input section of the power supply control circuit comprises:

one or more components configured to receive the output voltage of the power supply and the power loss signal, and to supply the output voltage to the comparator section when the power loss signal is received.

10. The electricity meter of claim 8, wherein the comparator section of the power supply control circuit comprises:

a comparator configured to receive a voltage based on the output voltage at a first input and generate the output signal; and

feedback components configured to set an upper threshold value for the output voltage and a lower threshold value for the output voltage,

wherein the comparator is further configured to generate the output signal at a first value when the output voltage reaches the upper threshold value until the output voltage reaches the lower threshold value, and to generate the output signal at a second value when the output voltage reaches the lower threshold value.

11. The electricity meter of claim 10, wherein the comparator is further configured to receive a reference voltage at a second input, wherein the reference voltage is representative of a minimum voltage for operation of a component of the electricity meter.

12. The electricity meter of claim 10, wherein the feedback components are configured to set the lower threshold value to a value higher than a minimum voltage for operation of a component of the electricity meter.

13. The electricity meter of claim 10, wherein the feedback components are configured to set the upper threshold value to a value lower than a representation of a regulation point of the power supply.

14. The electricity meter of claim 8, wherein the feedback control section of the power supply control circuit comprises:

a third switching device configured to change the feedback signal by changing a current provided by the feedback circuit when activated by the output signal from the comparator section.

15. The electricity meter of claim 8, wherein the power supply is an offline switching power supply.

16. The electricity meter of claim 8, wherein when AC power is available, the feedback signal to the power supply is based only on a signal generated by the feedback circuit according to the output voltage.

17. A method for controlling operation of a power supply for an electricity meter during an alternating current (AC) power outage, the method comprising:

receiving, by a power supply control circuit, an AC power loss signal;

generating, by the power supply control circuit, a false feedback signal to the power supply, wherein the false feedback signal is different than a feedback signal generated by an output voltage of the power supply, wherein the false feedback signal causes the power supply to stop supplying the output voltage;

determining that the output voltage of the power supply reached a lower voltage threshold; and

in response to determining that the output voltage of the power supply reached the lower voltage threshold, ceasing generation of the false feedback signal.

18. The method of claim 17, further comprising setting the lower voltage threshold to a value higher than a minimum voltage for operation of a component of the electricity meter.

19. The method of claim 17, further comprising:

determining that the output voltage of the power supply reached an upper voltage threshold; and

in response to determining that the output voltage of the power supply reached the upper voltage threshold, generating, by the power supply control circuit, the false feedback signal.

20. The method of claim 19, further comprising setting the upper voltage threshold to a value lower than a representation of a regulation point of the power supply.

21. The method of claim 17, wherein generating the false feedback signal comprises changing a current for a feedback signal provided by a feedback circuit of the electricity meter.

22. The method of claim 17, wherein when AC power is available, the feedback signal to the power supply is based only on a signal generated by a feedback circuit of the electricity meter according to the output voltage.