Switching gadget for a self-regulated disconnection of electronic devices in "idle", as well as the self-regulated reconnection

Completely galvanically isolating device-network-circuit gadget and circuit method therefor.

The invention relates to a circuit gadget and a method for a complete electrotechnical galvanic isolation and / or connection of a technical device from or to an energy supply network, without a consumer having to be physically involved to separate or connect the technical device to the energy supply network.

Problem

Almost all technical devices have a meaningless "idle mode" in which the device is having no function but still needs energy since components, such as a built-in voltage converter are constantly working.

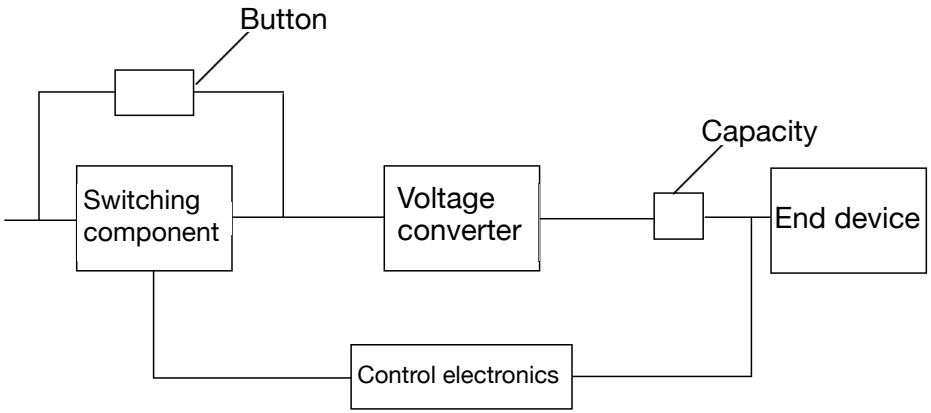
At the same time, heat is generated in the device and thus the service life of components may be reduced. The overall sustainability and environmental balance of the device deteriorates.

Current solutions

The prior inventions produce gadgets which can cut off the devices independently, but require the intervention of the consumer for turning it back on. The energy-saving convenience does not exist.

Our solution

The flow of electricity between the power grid and the technical device is measured via control electronics.
If the measurement falls below a certain threshold value, a switching component is opened and the device is galvanically isolated from the energy supply.
However, as soon as the consumer should switch to „active mode“ it draws the energy from a built-in capacitor and electricity flows. If the control electronics detect this current flow, the switching component gets closed and the galvanic separation is canceled.



Minimum required components

- Control electronics (e.g. microcontroller ≈ 2 g)
- Switching component (e.g. relay ≈ 3.7g)
- Capacity (e.g. capacitor ≈ 2g)

≈ 8 g

Further functional options

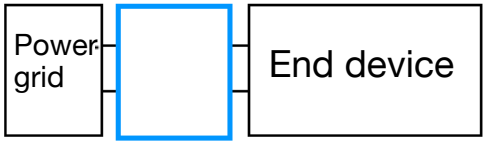
- Self-regulated setting of the threshold is possible

- Self-regulated energy supply of the control electronics (or similar) through built-in capacity

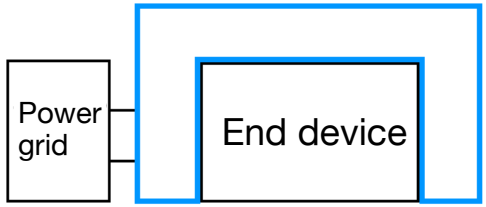
A variation of the electronics is given by different areas, further functions but also by device types:

Application examples

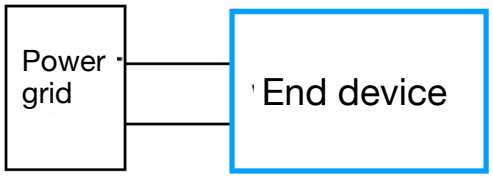
- Use as a **separate component**



- Equipment/device supplement through **attachment**



- **Integration** in electronics of the device



- Use in **„Smart-Home“-Systems**

Results

The "idling" of consumers can be completely prevented by the invention. Consumers do not have to involve themselves at any point.
The invention can be used for devices of any shape.
With the appropriate application, the gadget can be used for several devices.
It leads to a lot of positive effects, for example saving money, energy, resources and carbon dioxide.
So it overall helps protecting the environment.

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