

The Wireless and Battery-free RF Switch from ZF –



Integrating windows and doors into Smart Home Systems

Thanks to the wireless and battery-free radio switch technology from ZF, there are various options for connecting windows with a smart home control system. The aim is to record every locking and unlocking operation of the window in order to trigger specific functions such as climate control or blind control. This not only increases comfort, but also makes a significant contribution to energy efficiency and safety.

The technological principle:

The mechanical activation of the ZF RF Switch is enough to generate a small voltage based on induction which leads to the transmission of several telegrams. It can be utilized with different RF protocols like BLE5.0, EnOcean3.0 or ZigBee. The radio switch is completely battery-free and wireless.

The advantages:

- Flexibility in application – no wires necessary
- Long lifetime (1,000,000 switching cycles) and no batteries – no maintenance necessary
- Compact design (20.1 x 7.3 x 14.3 mm) – ideal for applications with limited space
- Compatible with available standard protocols (EnOcean3.0, BLE5.0, ZigBee)

Application example: Connected window in Smart Home Systems

One possibility is to integrate the Energy Harvesting Switch directly into a window handle. When turning to open or close the window, the handle activates the switch which generates enough energy to transmit a radio signal. This application profits from the compact design of the ZF RF Switch.

Another option is to integrate the ZF RF Switch into a locking latch, which is again attached to the window frame. When opening or closing the window, the fitting will be moved. This leads to the extension and retraction of the locking roller which actuates the ZF radio switch within the locking latch.

Smart Home Systems



ZF Energy Harvesting Generator



Smart Window Handle System

