



Practical tips for the Schalk radio remote control system

To ensure optimal functioning and reliability, the following points should be taken into account when planning and installing a radio remote control system.

Selecting the correct radio remote control system

As a basic rule, two very different types of application must be distinguished when choosing a radio remote control system:

- Pushbutton-operated remote control

In this type of application, the buttons of a wireless transmitter are only **briefly operated** (i.e. pressed or touched) in order to switch the associated receiver on and off again in the same way as an impulse switch.

In this way, lamps, louver blinds, roller shutters and many other devices can be comfortably remote-controlled using a battery-powered handheld transmitter or an installable flush-mounting transmitter.

All the transmitters and receivers of the FS3 and FE3 equipment families are suitable for this type of application.

- Wireless transmission of switch states

If, for example, the switch states of motion sensors, heater thermostats, time switches etc. are to be forwarded by wireless signal, a specially designed radio remote control system must be used.

A normal pushbutton-operated remote control system would permanently occupy the transmission path as a result of a switched actuation and would therefore interfere with the operation of other wireless applications.

The Schalk **Wireless Wire®** radio remote control system, consisting of the **FV1 SQ radio remote control connector transmitter** and **FV1 ES radio remote control connector receiver** is specially designed for this type of application, which is often required in practice.

In this system, the **FV1 SQ transmitter** can be directly actuated by a switch. The current switch state is transmitted reliably and without problem to the **FV1 ES receiver**. The optimised transmission method of this system operates without permanently occupying the wireless communication path and is therefore ideally suited to act as a wireless alternative to a wired solution.

Switching several loads simultaneously

With normal in-situ (local) actuation, a receiver of the FE3 series mainly acts as a remote control switch (first press of button=ON, next press=OFF). If several receivers are actuated by this method, one of the receivers may fail to recognise one of the wireless signals. This receiver will then no longer be synchronised with the others and will switch over in exact opposition to the others.

This type of error can be reliably prevented by the Group or Central switching functions of the FE3 receivers. If an FE3 receiver is addressed in Group or Central mode, one button on the transmitter is used only for defined **ON** switching and another button is used exclusively to switch the designated receivers **OFF**. This method reliably ensures a clear switch state for all the receivers.

Group or Central mode can be taught into the receivers by a simple programming process.

In the Schalk **Wireless Wire®** radio remote control system, as a basic principle, the transmitter always transmits a clearly defined switch state. Consequently, with this system, there is generally no problem addressing any number of **FV1 ES** receivers at the same time with a single **FV1 SQ** transmitter, provided that the receivers are within range of the transmitter.

Therefore, using this system, for example, the output of a motion sensor can be distributed by wireless signal to several lamps.

Optimising the transmission range

The propagation of the wireless signal depends to a great extent on the environmental conditions. To minimise the attenuation of the signal, the following points should be remembered:

- The transmitter and receiver should be installed as high as possible above ground level (minimum 50cm).
- Optimal alignment of the devices in relation to one another can significantly improve the range.
- Walls, concrete ceilings, metal surfaces, damp soil, wet roof surfaces and other obstacles reduce the transmission range.
- Other electrical devices, such as switched power supply units or DC motors can also impair the transmission range due to radiated interference.

Increasing the transmission range with the FR3 U2 radio remote control repeater

If the standard transmission range of the radio remote control system is insufficient, the range can be doubled by using the radio signal repeater.

All the repeater needs is an installation space with mains power supply between the transmitter and the receiver.

The FR3 U2 repeater can be combined with all transmitters and repeaters of the FE3, FS3 and FV1 product families.

Further information

The latest product innovations, technical data, connection examples and operating instructions can be found on the Internet at www.schalk.de