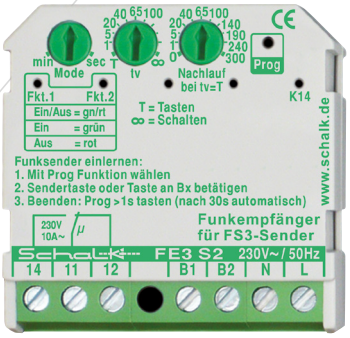
# Radio controlled switch FE3 S2

**1 Relay, with timer functions**
Radio receiver with one relay (potential-free changeover contact). Support for pushbutton or switch mode, with timer functions and group control. Two programmable inputs for wired pushbuttons.

## Special features

- 3 operating modes:
  pushbutton mode, switch mode with and without timer functions (configurable timeout 1 -240 minutes or seconds)
- 3 programmable functions (On, Off, On/Off) for local, group and central control
- 2 freely programmable inputs for local pushbuttons
- Time stretch function (can be used for retriggering by a periodic transmitter)
- Free-field range 50m
- Antenna built into housing
- Repeater available to increase range
- Very small enclosure fits in flush mounted switch boxes
- Potential-free changeover contact for 10A/250V AC




## General information

The FE3 S2 radio remote-control receiver switch is equipped with a potential-free changeover contact that can be used for wireless switching with the FS3 series of hand-held or fixed-mounted radio transmitters. The 3 functions („On/Off“, „On“, „Off“) can be assigned to any of the transmitter buttons or one of the wired pushbutton inputs B1/B2. The „On/Off“ function (toggling on and off using a single button) is used for individual control. Using the dedicated „On“ and „Off“ functions, several receivers can be switched simultaneously (for example for group or centralized control).
The relay can be operated in switch mode or pushbutton mode (with or without timer functions). Pushbutton mode can be used for example, to control a door opener or a push-button dimmer.

## Application

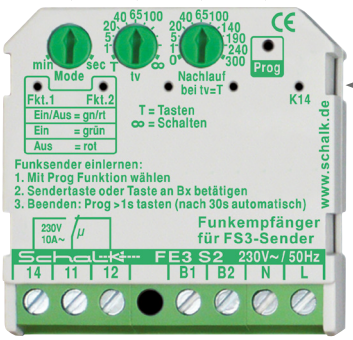
Wireless control of lamps, pushbutton dimmers, ventilators, signal emitters etc.

## Operation

The „Mode“ setting selects the switch duration in minutes or seconds. The „tv“ setting selects 3 operating modes: Pushbutton, switching with timer functions, switching only (without timer function).
The „time stretch in pushbutton mode“ provides an easy way to implement a long contact time for use with a transmitter in periodic mode. When the „tv“ setting is set to „T“ then the „time stretch in pushbutton mode“ always acts in retrigger mode. If signals are no longer received from the transmitter, then the FE3 S2 switches off after the timeout.

## 1. Default setting and installation

### 1.1 Controls and displays




**„Mode“ setting:**
Time scale setting :

| | |
|---|---|
| min | all timer settings in minutes |
| sec | all timer settings in seconds |

**„tv“ setting:**
Relay timeout setting:

| | |
|---|---|
| T | Pushbutton mode (relay only switched on during transmission) |
| 1...240 | Switch mode with timeout in seconds, the relay then automatically switches off |
| ∞ | Switch mode without timeout (all changes to the switch state are done manually) |

**„Nachlauf bei tv=T“ („Time stretch when tv=T“) setting:**
Sets the timeout of the relay when the „tv“ setting is set to „T“ (pushbutton mode):

| | |
|---|---|
| 0...300 | Timeout, after which the relay is automatically deactivated |

*In this operating mode each „On/Off signal acts a retrigger. A dedicated „Off“ signal causes the relay to switch off.*

**„Prog“ programming button:**
This button is used to enable/disable programming mode, select programming functions or restore the factory default settings (refer to the section on programming)

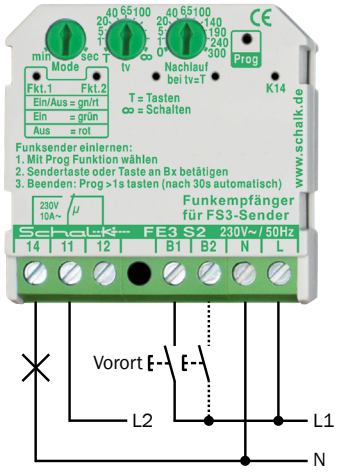
**LEDs: Fkt. 1, Fkt. 2, K14:**
In normal operation (switch mode):

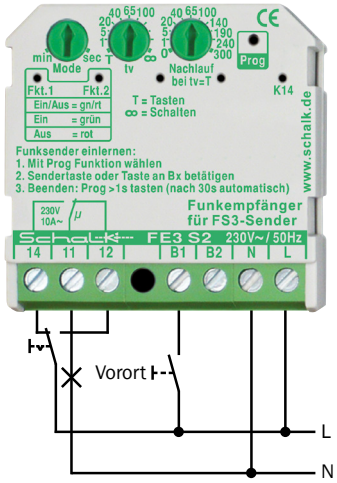
| | |
|---|---|
| „K14“ | Indicates if the relay is switched on. This LED blinks when the timer is running |
| „Fkt 1“/“Fkt 2“ | When a valid address code is received (programmed transmitter) the „Fkt 1“ lights green, the LED lights red if it receives an unknown address code. In programming mode, these LEDs indicate the function to be programmed (see „Programmable Functions“ table) |

Legend:
○ LED off
● LED lights red
◐ LED blinks red
● LED lights green
◐ LED blinks green
◐ LED alternately blinks red/green

## 1.2 Installation

| Ex.: Lighting control (different phases possible) | Ex.: Changeover contact |
|---|---|



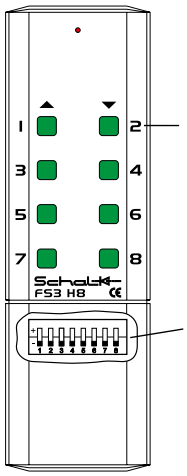




*Due the potential-free changeover contact, consumers supplied by phases different from the operating voltage can also be switched*

## 2. Programming

### 2.1 Factory settings

Transmitters and receivers are factory-configured with a standard address (transmitter: all DIP switches in low position"-"/ Receiver: responds to transmitter in factory setting), so that the K14 relay can be switched on and off with pushbutton 1 of the remote control (if it is also configured in the factory setting).




**Pushbutton number**
In the factory setting, pushbutton 1 switches relay K14 on.

**Address switches**
In the factory setting, all DIP switches are in „-" position"

*When several transmitter/receiver combinations are used together, they must be separated by configuring the addresses in order to prevent any interference.*

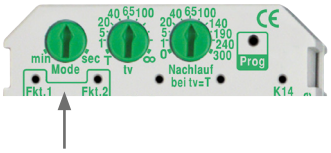
**Resetting the radio receiver to the factory settings:**
To restore the factory settings, hold down the Prog button for 10s until the „Fkt1" LED blinks red five times (●○○○○).

**Functions in factory setting (= delivery state):**

| | |
|---|---|
| **Radio function** | „Switch On/Off" function via pushbutton 1 of a transmitter in factory setting |
| **Input B1** | "Switch On/Off" function via pushbutton wired to B1 |
| **Input B2** | "Switch Off" function via pushbutton wired to B2 |

To also **delete all the programmed radio transmitters and functions** (also including the standard addresses and B1/B2 functions) hold down the Prog pushbutton for 20s until all LEDs blink (●●●●●). As a result, the receiver will no longer react to any radio transmitter/local pushbuttons until they have been explicitly programmed again.
To **delete an individual programmed function**, select this function and hold down the Prog button for 5s until the „Function" LED blinks red three times (●○○○○).

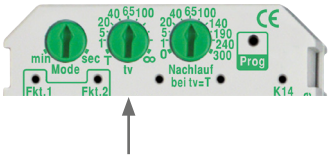
## 2.2 Selecting the operating mode




Select the desired timescale using the leftmost rotary switch. Select either:

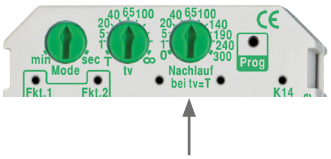
| | |
|---|---|
| min | All time settings in minutes |
| sec | All time settings in seconds |

## 2.3 Configuring the timeouts




Select the desired function with the middle rotary switch „tv“:

| | |
|---|---|
| **T** | Pushbutton mode Relay only switched on during transmission<br>Optionally with timeout (see rightmost rotary switch) |
| **1...240** | Switch mode with timeout in seconds or minutes, after which the relay is automatically deactivated |
| ∞ | Switch mode without timeout (all changes to the switch state are done manually) |



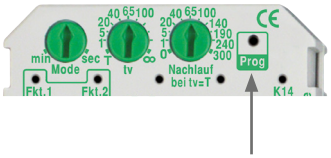

If the „T“ pushbutton mode is selected with the middle rotary switch, now select the desired timeout delay:

| | |
|---|---|
| **0...300** | Timeout in seconds or minutes, after which the relay is automatically deactivated. Setting „0“ has the effect that the relay is only switched on during transmission. |

*In this operating mode every „On” or „On/Off“ signal transmitted acts as a retrigger (only a dedicated „Off“ signal causes the relay to switch off). For example, this can be used to easily send long switch states from a periodic transmitter and prevent the relay from becoming deactivated between refresh signals.*

## 2.4 Programming radio transmitters/functions

To enable specific remote control buttons (or the push buttons wired to inputs B1 or B2) to execute the desired function on the FE3 S2, these have first to be programmed.




**Programming procedure:**

1. With the help of a pointed object, press 1 to 6 times on the „Prog“ button of the FE3 S2 to select the desired function (the „Programmable functions“ table shows the different functions using the LED display.
2. Briefly press the desired pushbutton on the remote control or the wired push-button: the K14 LED blinks if the reception is valid, indicating that the Function/Address code has been programmed.
3. Now either exit programming mode by pressing the Prog button for approx. 2s until all LEDs are off (programming mode also switches off automatically after approx. 20s of inactivity), or else select another function by pressing briefly on the Prog button, and assign another pushbutton to it.

If any particular function (for example Function 1 „On/Off“ is addressed by two transmitters with different addresses, then the first transmitter must be programmed on Function 1, the second transmitter programmed on Function 4. Function 4-6 thus enable the functions to be assigned a second time by other transmitters.

**Table: Programmable functions**

| No. | LED display<br>Fkt. 1 / Fkt. 2 / not used / not used / K14 | Pushbutton function depending on the configured operating mode |
|---|---|---|
| 1 | 🟢🔴 ○ ○ ○ 🔴 | K14 On/Off |
| 2 | 🟢 ○ ○ ○ 🔴 | K14 On |
| 3 | 🔴 ○ ○ ○ 🔴 | K14 Off |
| 4 | ○ 🟢🔴 ○ ○ 🔴 | K14 On/Off |
| 5 | ○ 🟢 ○ ○ 🔴 | K14 On |
| 6 | ○ 🔴 ○ ○ 🔴 | K14 Off |

## 2.5 Programming example

**Programming example: Assign the „On/Off“ function (1-pushbutton-control) to button 5 of a remote control transmitter and assign the „Off“ function to the local input B2**

1. Press once briefly on the Prog button to select Function No. 1
   LED Fkt. 1 blinks red/green; and LED K14 lights red (🟢🔴 ○ ○ ○ 🔴)
2. Press button 5 on the transmitter to assign the function to it
   LED K14 blinks => Function 1 has been programmed (🟢🔴 ○ ○ ○ 🟢🔴)
3. Press briefly twice on the Prog button, to select Function 3
   LED Fkt. 1 and LED K14 light red (🔴 ○ ○ ○ 🔴)
4. Press briefly on the wired pushbutton on B2 to assign the function to it
   LED K14 blinks => Function 3 has been programmed (🔴 ○ ○ ○ 🟢🔴)
5. Then hold down the Prog button for 2s (or wait 20s) to quit programming mode

For group/central switching, the FE3 S2 must be programmed with dedicated „On“ or „Off» switching functions, assigning different pushbuttons (on the radio transmitter or the wired pushbuttons on B1/B2) to each function.

Note

***Recommendation on transmission range***
*The free-field range is a minimum of 50 meters. However it may in some cases be strongly reduced by walls, concrete ceilings, metal surfaces, bushes, or damp soil. Radio or electrical interference from other electrical devices reduces the receiver sensitivity.*
*Measures for improving the range:*
*- Optimize the alignment of the transmitter and receiver in relation to each other*
*- Do not install the transmitter/receiver at ground level (recommendation: at least 1m above ground level)*
*- Do not install the receiver on a metal surface and keep the top of the housing free of wiring (antenna on the upper surface of the floor)*

## Technical data

| | |
|---|---|
| **Reception frequency** | 433.92 MHz |
| **Modulation type** | OOK PWM |
| **Operating voltage** | 230V AC 50/60Hz |
| **Power consumption** | 0.6W |
| **Line capacity (L-B1/B2)** | 15nF (approx. 50m NYM) |
| **Glow lamps (L-B1/B2)** | Max. 2x 1 mA glow lamps |
| **Relay contacts** | 1 changeover 10A 250V AC, potential-free (KLS 8mm) |
| **Switching capacity** | See relay contact datasheet |
| **Ambient temp.** | -10°C to +45°C |
| **Connections** | Socket terminals with captive screws M3 |
| **Clamping range** | 0.5 $mm^2$ - 2.5 $mm^2$ |
| **Strip length** | 6.5 mm - 7.0 mm |
| **Screwing torque** | 0.50 Nm |
| **Installation position** | If necessary directed at transmitter |
| **External dimensions** | 43 x 43 x 18.5 $mm^3$ |
| **Weight** | 37g |
| **Color (RAL)** | Gray 7035 / green 6029 |

**Compatible devices:** FE3- / FD3- / FS3 Series radio receivers/-transmitters, FV2 Radio repeater

## Ordering information

| Part No. | EAN | Type | Description |
|---|---|---|---|
| FE3S29 | 4 046929 101356 | FE3 S2 | Radio receiver switch, 1 changeover potential free, 230 VAC (flush mounting) |

## Accessories

| Part No. | EAN | Type | Description |
|---|---|---|---|
| HC3500 | 4 046929 901048 | HC 35 | Top hat rail clip |