



## Wireless Wire<sup>®</sup> Radio-connection system FV2 SM FV2 EL Receiver with log

Transmitter with magnetic contact

Receiver with logic functions (1 relay)

Radio-connection receiver for monitoring up to four magnetic contact transmitters (for fume hood control, theft protection, window monitoring, etc.)

## **Special features**

- Battery-operated transmitter and magnet easy to install (with double adhesive strip)
- One transmitter can control several receivers
- One receiver can learn up to 4 transmitters (switching logic OR, NOR, AND or NAND selectable, the switching states of the individual transmitters are logically linked)
- Relay contact in the receiver potential-free
- Several FV2 systems can be installed side by side
- Free field range > 30 m (no external antenna)
- Receiver fits in flush-mounted switch box (h = 18.5 mm)



## **General information**

The battery-operated FV2 SM transmitter detects mechanical position states (windows, doors, etc.) via a magnet and transmits them to one or more FV2 EL receivers. In addition, the FV2 EL receiver can detect the switching states of up to 4 different transmitters and switch the relay depending on the set logic (OR, NOR, AND or NAND). Several FV2 systems can also be operated side by side. The default address is assigned to the transmitter and receiver in factory settings Addressing only needs to be changed if several transmitters are in the range of coverage.

## **Applications**

Monitoring of windows, doors, gates, flaps, etc. (theft protection, alarm and status messages). Extractor hoods in connection with firing systems (ensure supply air in accordance with §4 Firing Ordinance (Germany)).

## Examples of switching logic:

- OR: Fume hood is released as soon as one of several windows is opened.
- NOR: Enable heating only if all windows are closed.
- AND: Only enable fume hood if 2 transmitters (for one window) report open (ensure ensure a minimum opening angle).

## Operation

The FV2 EL receiver always switches through when the switching states of the taught-in transmitters, logically linked with one another, enable the relay contact (with OR, if 1 transmitter signals "on" / with AND, if all transmitters signal "on"). If input B1 is bridged to L, the switching logic ( $\rightarrow$  NOR and NAND) is inverted. In the event of a fault (e.g. empty battery in the transmitter), the relay contact drops out if no signal has been received from a transmitter for 5 minutes. Transmitters are assigned via a teach-in process at the receiver.



#### Initial operation:

We recommend not to install the FV2 SM transmitter for range tests for the time being.

First supply the FV2 EL receiver with power. Open the transmitter housing (slightly lever back one of the two hooks with a slotted screwdriver) and insert the battery with the correct polarity (+ pole up).

#### Addressing:

In the factory setting, the transmitter and receiver are provided with a standard address, so that the devices already react to each other (play with magnet on the transmitter for testing).

The addressing must only be changed if several transmitters are within the range range or several transmitters are to be taught-in on the FV2 EL.

## One FV2 SM transmitter is able to switch one or more FV2 EL receivers.

#### Assign the first receiver:

(with creation of a new sender address)

- Set receiver FV2 EL to learning mode (briefly press the programming key → LED lights red).
- Set the FV2 SM transmitter to teach-in mode (briefly press the button in the transmitter → LED in the transmitter lights red).
- Press the button in the transmitter for 5 to 10s (the LED goes out after 1s and begins to flicker after 5s) = create a new transmitter address and transmit it to the receiver.
  → LED in the receiver goes out

### Assigning additional receivers:

(Sender address may no longer be changed)

- Set receiver FV2 EL to learning mode (briefly press the programming key → LED lights red).
- Set the FV2 SM transmitter to teach-in mode (briefly press the button in the transmitter → LED in the transmitter lights red).
- Press the button in the transmitter for 2s (LED goes out after 1s) to transfer existing address to receiver → the LED in the receiver goes out.

# One receiver FV2 EL should react to 1-4 transmitters FV2 SM (switching logic OR, NOR, AND or NAND):

If the addressing of the FV2 EL differs from the factory setting, all taught-in protocols must first be deleted.

#### Deletion of all aught-in protocols for FV2 EL:

- Set receiver FV2 EL to learning mode (briefly press the "Prog." button → LED lights red).
- Then press the programming button for 10s until the LED flashes red 5 times (after 5s the LED flashes 1 or 2 times and then remains off for 5s).

#### Teaching-in one or more transmitters on the FV2 EL:

 Set receiver FV2 EL to learning mode (briefly press the "Prog:" button → LED lights red).

- Set the FV2 SM transmitter to teach-in mode (briefly press the button in the transmitter → LED in the transmitter lights red).
- Press the key in the transmitter either for 2s (= send existing address to the receiver) or for 5 to 10s (= generate new address and send to the receiver). After receiving the transmitter address, the LED in the receiver goes out. If the station table in the FV2 EL is full (4 stations/transmitters have already been taught in), the LED flashes red/green three times.

#### Switching the logic of the receiver FV2 EL:

- Set receiver FV2 EL to learning mode (briefly press the "Prog." button → LED lights red).
- Then press the programming button for 5s → LED flashes 1 time red (OR logic) or 2 times red (AND logic). If input B1 is bridged to L, the relay state is inverted → OR becomes NOR, AND becomes NAND.

## Behaviour of the receiver FV2 EL in the event of an error: (e.g. empty battery of transmitter)

If no signal is received from one of the taught-in transmitters for 300s, the relay switches off. Exception for OR logic: relay switches off if no "ON" signal has been received from any of the taught-in transmitters for 300s.

#### Behaviour of the FV2 EL after a power failure:

After a power failure, the relay on the receiver only switches on when an "ON" signal has been received from all taught-in transmitters.

This can take up to 60s (= max. transmission interval). Only with OR logic does the receiver react to the first "ON" signal received from a transmitter.

#### Range notes:

The range of the radio signal in free field is at least 30 m. However, the signal is sometimes strongly dampened by obstacles (walls, concrete ceilings, metal surfaces, damp bushes, etc.). Sometimes interference from electrical devices can reduce the range (switching power supplies, DC motors). Since the alignment of the devices to each other also plays a role, it is advisable to test the radio reception before mechanical fixing.



## Mounting the FV2 SM transmitter:

The transmitter LED flashes briefly each time the magnetic contact changes



### Connecting the FV2 EL receiver:





## **Technical data**

Radio signal	433,92 MHz OOK PWM
Range	> 30 m in free field
Ambient temp.	-10°C to +45°C
Mounting orientation	If necessary, align the receiver with the transmitter (for better range)
Transmitter FV2 SM:	
Battery type	Lithium CR2032
Battery life	typically 2 to 3 years (depending on switching frequency)
External dimensions	59,5 x 23,3 x 15,3 mm³
Outside dimensions (magnet)	22,2 x 11,2 x 5,5 mm <sup>3</sup>
Weight (magnet)	15 g (3 g)
RAL colour	white / green 6029
Receiver FV2 EL:	
Operating voltage:	230 V AC 50/60 Hz
Power consumption:	0.6 W
Relay contact	1 change-over contact 10 A / 250 V AC potential-free (8 mm KLS)
Switch rating	see "Relay contacts" data sheet
Connection terminals	Socket terminals with captive screws M3
Clamping range	0.5 mm <sup>2</sup> - 2.5 mm <sup>2</sup>
Strip length	6.5 mm - 7.0 mm
Screwing torque	0.50 Nm
External dimensions	43 x 43 x 18,5 mm <sup>3</sup>
Weight	33 g
RAL colour	grey 7035 / green 6029

## Order data

Item no.	EAN	Туре	Designation
FV2SMB	4 <sup>046929</sup> 101172	FV2 SM	Radio transmitter with magnetic contact 3V DC, incl. batt.
FV2EL9	4 <sup>0</sup> 046929 <sup>10</sup> 1240	FV2 EL	Radio receiver with logic functions 230V AC (UP), 1 CO 10A

## Accessories

Item no.	EAN	Туре	Designation	177
HC3500	4 <sup>046929</sup> 901048	HC 35	DIN rail clip for flush-mounted housings	01/06/20