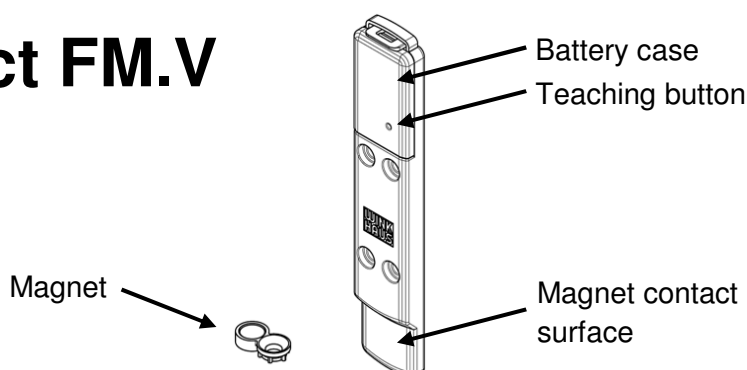


# Wireless Contact FM.V

## Operating instructions



### 1. Product description

The FM.V wireless contact is a battery-operated radio contact which is not visible when the window is closed. It is installed in the rebate area between the sash and the frame, enabling detection of opening and closing procedures of a window in combination with a magnet attached to the sash. After the teaching process the signal is wirelessly transmitted to a subsequent EnOcean-compatible component or a subsequent EnOcean-compatible smart home system, using an EnOcean radio protocol.

A possible application of the sensor is heating control. In combination with suitable heater actuators it is possible to turn the heating down and hence to save energy when the window is open. Further solutions include the connection of a relay, e. g. to activate or deactivate air conditioners or ventilation systems. It is also possible to control the window by means of appropriate alarm sensors and control centres.

### 2. Scope of delivery

- 1 x Wireless contact FM.V
- 1 x Contactor VS.KG.04
- 2 x ISO 7049-ST3,5x25-C sheet metal screw
- 1 x Spindle with adapters and plugs
- 1 x Battery CR 2032
- 1 x Operating instructions

### 3. Product information

#### Technical data



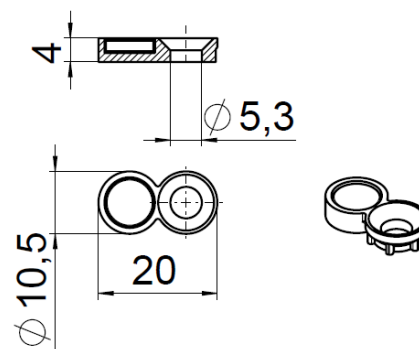
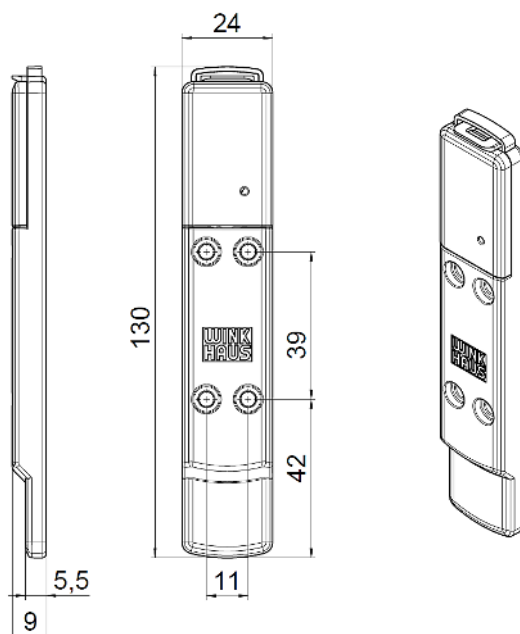
General data	
Designation	Wireless contact FM.V
Operating temperature	0 °C up to +60 °C
Suitable for	Windows and doors made of PVC-U or timber
Air moisture	0 % – 93 % relative humidity, non-condensing
Protection type	IP 67
Storage and transport conditions	+10 °C up to +30 °C, < 60 % relative humidity, non-condensing

Mechanical data	
Dimensions sensor W/H/D	127.5 x 9 x 24mm
Universal magnet W/H/D	20 x 4 x 10.5 mm
Material (housing)	ABS
Fixing type	With screws
Max. distance of magnet to radio contact	5 mm
Airgap tolerance	10 mm – 15 mm
Fixing place	Airgap area between frame and sash in windows and doors, retrofittable and fitting-independent, for all current timber and PVC-U profiles, from a rebate depth of 24mm

Electrial data	
Power supply	battery CR 2032
Life of battery	normally $\geq 5$ years at 25°C

Communication	
Radio	EnOcean, unidirectional
Radio protocol	Switchable by pressing teaching button:  Teaching button $< 3$ sec: EnOcean, Equipment Profile (EEP), A5-14-01 (4BS)  Teaching button $\geq 3$ sec: EnOcean, Equipment Profile (EEP), D5-00-01 (1BS)
Frequency Output (typ.)	868.3 MHz 5,7 dBm @ 50 Ohm
Typical ranges Standard values in buildings under optimum conditions	Ferroconcrete 10m through max. 1 wall  Masonry 20m through max. 3 walls  Plasterboard/timber 30m through max. 5 walls

#### 4. Dimensions



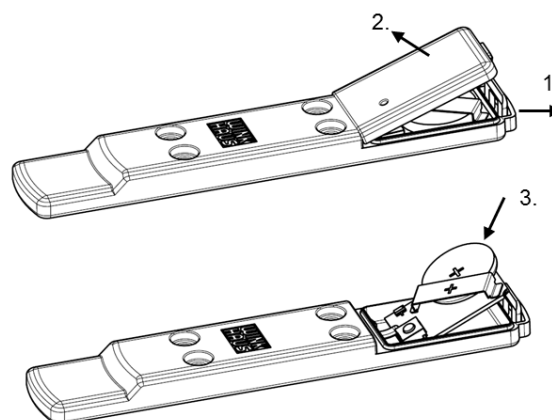
#### 5. Start-up

##### Before the start-up

These mounting instructions include the installation and the teaching procedure of Winkhaus wireless contacts on a window or patio door. Every person in charge of installation must have read and understood these mounting instructions. During installation and use it is important to protect the wireless contact from heavy shocks, as it may be damaged. An installation video can be found at [www.winkhaus.de](http://www.winkhaus.de).

##### Preparation

Before using the radio contact, please insert the battery. To do so, open the battery lid by carefully pulling back the plastic part holding the battery lid.



Put in the battery with the positive terminal directed to the top. Then put the battery

carrier back into the holder and close the lid. A soft clicking sound will be heard when the lid clicks in place.

### Teaching procedure

In order to make rational use of the wireless contact it is necessary to teach it in with a compatible smart home system or another compatible component (e. g. EnOcean-compatible relays, actuators etc).

#### *Step 1: Activate the teaching mode*

For starting the teaching procedure you first need to switch the smart home system or the subsequent component into the teaching mode. (How this is done you can learn from the operating instructions of the smart home system or of the component receiving the signal.)

#### *Step 2: Teaching*



Now put the wireless contact FM.V into the teaching mode. To this effect press the teaching button by means of a straightened paper clip.

Now the wireless contact FM.V has been taught in.

#### *Please note:*

The wireless contact FM.V supports two different EnOcean radio telegrams. Standardly the 4BS radio telegram is used. Should the teaching procedure turn out to be unsuccessful even after several tries, please press the teaching button longer than 3 seconds. In this way the device switches to the 1BS radio telegram.

Press teaching button < 3 sec:  
EEP: A5-14-01 (4BS telegram)

*This radio telegram transmits the states: open / closed plus battery voltage.*

Press teaching button ≥ 3 sec:  
EEP: D5-00-01 (1BS telegram)

*This radio telegram only transmits the states: open / closed.*

### Installation

The wireless contact is suited for installation into windows and doors made of PVC-U and timber. We cannot recommend to use it in metal windows and doors due to their signal-shielding properties. The following section describes the installation of a radio contact into a window. Installation into a door is performed in the same way.

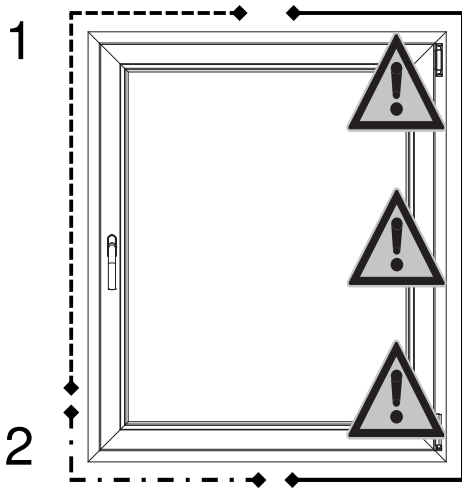
#### *Step 1: Choose mounting place*

Open the window in which to install the wireless contact FM.V.

In order to mount the radio contact, a screwing point on the window sash is needed for fixing the magnet and, in addition, a free space on the frame is required in order to screw on the contact.

The perfect place for attaching the radio contact is at the upper area of the window's drive side. In this position the tilt as well as the turn position of the sash is indicated as "open" (see positioning area 1 in the illustration below).

Should the tilt position of the window not be indicated as "open" but "closed", the radio contact should be installed in a horizontal position at the bottom (see positioning area 2 in the illustration below).



Look for a screw that fixes the fitting. Then verify whether there is enough space for the radio contact on the opposite frame side and make sure it will not collide with other functional fitting components. To this effect, it is recommended to close the sash slowly, verifying if there is enough distance between the wireless contact and the locking bolt and other fitting parts. The installation direction can be chosen at will (with contact surface pointing either to the top or bottom or to left or right).

Please note: Functional components of the existing fitting system must not be removed or repositioned!

*Important danger warning:*



Please bear in mind that magnets must not be fixed to screw positions of load-bearing components. Load-bearing components are generally found in areas marked with warning symbols.

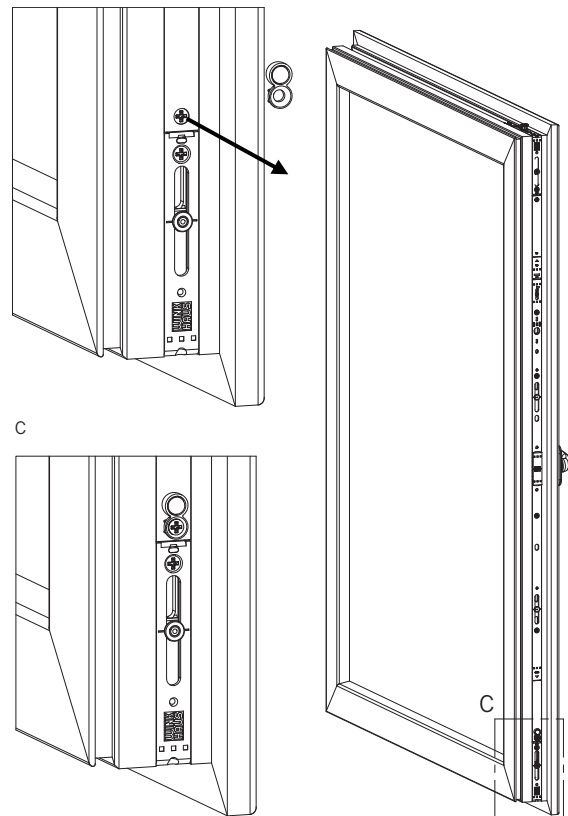
These screw positions must not be modified, as there is serious risk of injury and risk of damage to the window itself.

Please also understand that the hinge side of the window is not suited to install the radio contact.

*Step 2: Mounting the magnet*

As soon as you have found an appropriate installation place, you can proceed with it.

Loosen the selected screw position. Attach the radio contact to the screw hole and fix the screw position through the screw hole of the magnet.



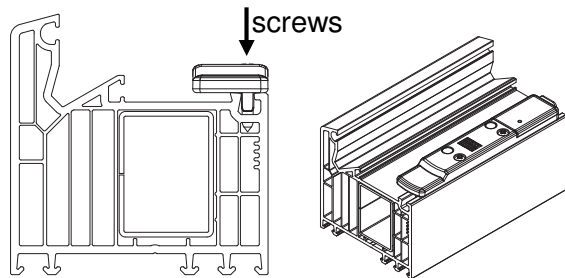
*Step 3: Determine radio contact position*

In order to enable precise positioning of the wireless contact, it may be best to close the window slowly and to apply a mark at the height of the mounted magnet. (Please take care that the temporary marking can be completely removed afterwards.)

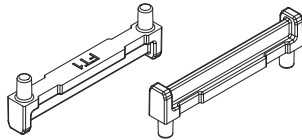
#### *Step 4: Choose plastic adapter*

Select the suitable profile adaption for the radio contact. The following pictures show current profile and installation examples:

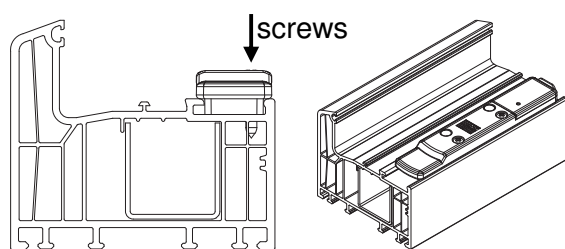
##### Installation example 1: PVC-U window with a small groove in the frame



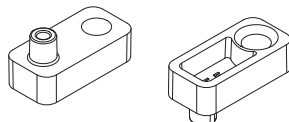
In this installation example the FT 1 adapter must be used. Put the component into the small position holes on the back of the radio contact. It is screwed into the two screw positions located towards the inner side.



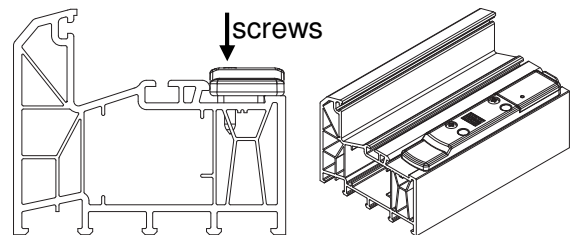
##### Installation example 2: PVC-U window with a wide groove in the frame



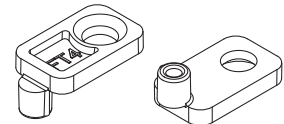
In this installation example the FT 5 adapters must be used. Put the positioning plugs into the screw holes that are not used. The parts are screwed into the two screw positions located towards the inner side.



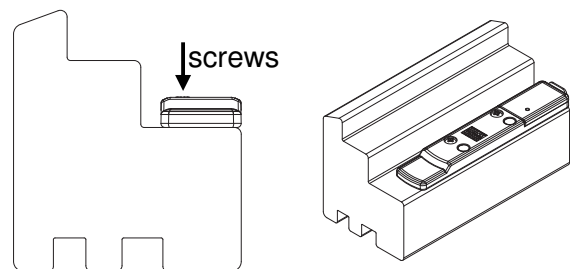
##### Installation example 3: PVC-U windows with wide ridge at the front of the frame



In this installation example the FT 4 adapters must be used. Put the positioning plugs into the screw holes that are not used. The parts are screwed into the two screw positions directed towards the external side.



##### Installation example 4: wooden profile with smooth rebate



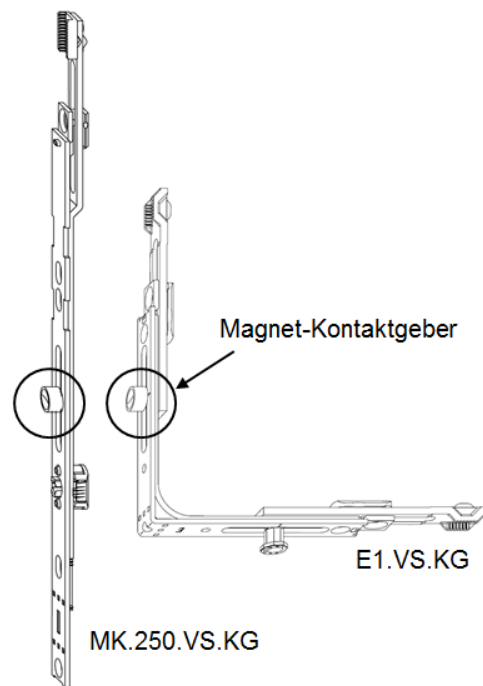
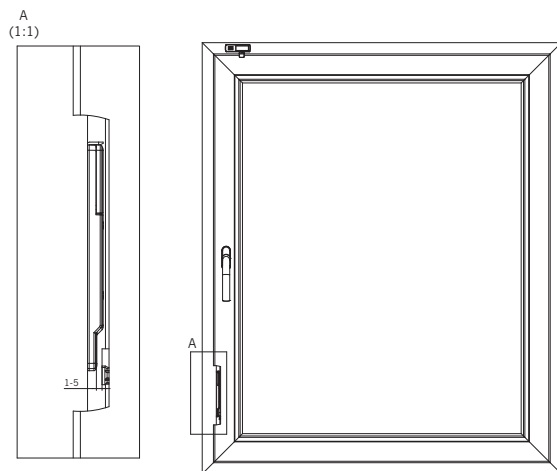
If the wireless contacts are used in wooden profiles, no adapters are needed. All you need to do is place the contact flushly at the front side. Screwing is made through the two screw positions directed towards the outside.

#### *Step 5: Mounting the wireless contact*

Place the contact surface of the wireless contact at the marking level and fix the contact. Do not fix the screws too tightly in order to avoid damage to the plastic housing.

Close the window sash carefully to verify whether the magnet or other components collide with the wireless contact. Should the components collide, the window must be adjusted or the mounting position

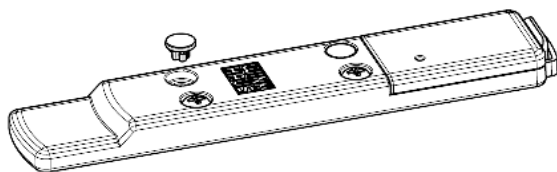
changed. (Refer to the maintenance and adjustment instructions of your fittings manufacturer.)



#### *Step 6: Functional test*

After the installation we recommend you to perform a functions test. Open the window and verify whether the smart home system or the subsequent component responds to the opening of the window. If there is no response, use the section 7 (possible sources of error) of these instructions to solve the problem.

After the successful functions test, place the screw hole covers onto the screw holes not used.



To this effect you can apply the corner drive E1.VS.KG. If your window or patio door is equipped with a Winkhaus fitting system with large dimensions, you can also use the interlocking rods MK.VS.150.KG or MK.VS.250.KG.

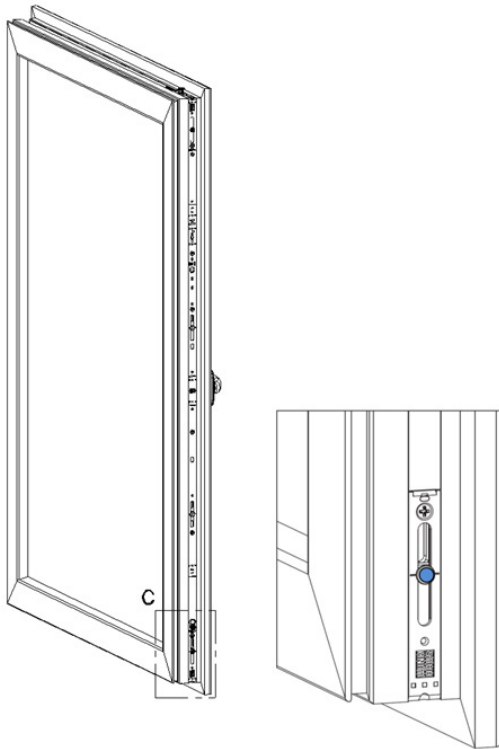
The interlocking rod can be mounted on various places of the window or the patio door in case the dimensions are large enough:

- Between the top rod and the corner drive
- On the drive rod
- e. g. on the corner drive

The corner drive is preferably positioned at the bottom of the drive side.

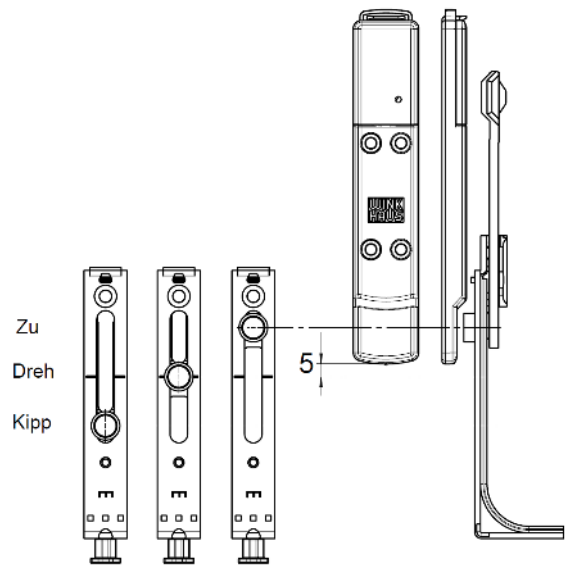
## **6. Opening and locking surveillance**

In combination with the Winkhaus activPilot fitting system it is also possible to use the wireless contact for combined opening and locking surveillance. To learn more, please turn to a window specialist.



Regarding installation and positioning of the radio contact for opening and locking surveillance it must be made sure that the window is already locked when the sensor gives the locking signal. This means the locking bolts must have entered 50 % into the locking keeps.

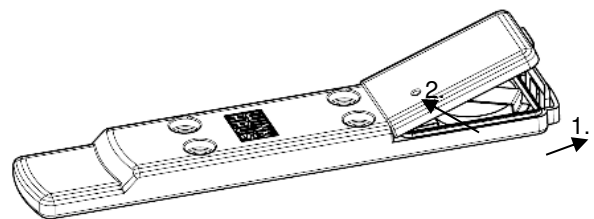
The installation position of the radio contact on the frame depends on the travel path of the fitting system. Positioning of the wireless contact in relation to the movable contactor is described below, using the example of the corner drive E1.VS.KG.



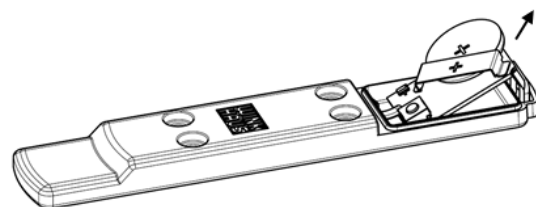
## 7. Maintenance and cleaning

### *Battery replacement*

At the end of the battery's service life, the radio performance is impaired. In case you notice such an impairment of performance, you need to replace the battery. To do so, open the battery lid carefully, pulling back the strap with your fingers and lifting the battery lid towards the top.



Now carefully pull the battery carrier from its holder and remove the old battery by pushing it out to the side.



After that you can insert the new battery into the empty battery carrier, making sure the positive and negative terminals are positioned correctly. Then put the battery

carrier back into the holder and latch the lid of the battery case. Also ensure that the gasket in the battery lid is in the right position. Finally please perform a functional test.

#### *Check window adjustment*

In the life of a window influences like wear, heat and cold may induce a misalignment of the window fitting. For this reason window fittings should be controlled and maintained on an annual basis. On this occasion, additionally check whether the distance between the magnet and the wireless contact is large enough (min. 1 mm, max. 5 mm). If the distance is too small or the two components collide, the window fitting must be adjusted in order to avoid damage to the wireless contact or the magnet (see illustration *Step 5: Mounting the wireless contact*).

#### *Cleaning*

Normally cleaning of the radio contact is not necessary. However, if you wish to clean its surface, you can use a dry and soft cloth. Heavy soiling can be removed by means of a cloth dampened with lukewarm water.

Please do not use any aggressive or solvent-containing detergents damaging the plastic surface of the housing.

### **8. Possible sources of error**

The following section enumerates the most frequent sources of error of non-functioning of the radio contact.

#### *Check the battery*

In case teaching of the sensor is not possible or it does not send signals any longer, please check if

- the battery is empty.
- the plastic strip has been removed during initial installation.
- the battery has been inserted faultily.

#### *Check the radio protocol*

If several attempts to teach the sensor fail, please verify whether the subsequent device or the smart home system is compatible with the EnOcean radio protocol. If the devices are compatible, try whether teaching is possible in case you press the teaching button longer than 3 seconds. In this way the system switches to a simpler EnOcean Equipment Profile (EEP).

#### *Repeat the teaching procedure*

Repeat the teaching procedure, referring to *Step 2* of the Maintenance section.

#### *Check the radio range*

If there is no connection between the radio contact and the subsequent component or smart home system, you should check whether the distance is too big, whether there are too many obstacles between the radio contact and the receiver or whether there are any interference fields. The best way to do so is to unmount the wireless contact and check its function in close proximity to the receiver. If it works in proximity to the receiver, but not in the place where it is installed, it is recommended to use a repeater in order to increase the radio range.



## Installation

In case the sensor permanently detects an open window (which however is closed) although the teaching procedure was performed correctly, this may have the following reasons:

- There is no magnet.
- The magnet is not in the correct position above the sensor surface.

If there is no magnet, it must be attached in order to restore the function.

If there is a magnet, please verify whether the magnet is in its correct position above the sensor surface and whether the distance between the radio contact and the magnet is o.k. (must not exceed 5 mm). Should the distance be too big, you can improve the position of the magnet by means of the adjustment screws of the fitting system. (When adjusting the window fitting, please observe the maintenance and adjustment instructions of the window fittings manufacturer in question.)

## 9. Declaration of conformity



This product complies with the basic requirements and instructions of the R&TTE guideline 1999/5/EG.

You can download the declaration of conformity in the download section on the internet at [www.winkhaus.de](http://www.winkhaus.de).

## 10. Disposal information



FM wireless contacts include elements treated as electronic waste and thus must not be disposed of with the normal household waste. The housing is made of recyclable plastic material.

When disposing of waste, please observe the locally-valid rules and laws.

The battery contained in the wireless contact FM.V must not be disposed of with the household garbage. Please dispose of it adhering to the locally-valid rules and laws.

## 11. All rights reserved

The following information and illustrations reflect the current state of our development and manufacturing of this product. In order to achieve customer satisfaction and reliability of the wireless contacts we reserve the right to change the product. Any information given in this document has been compiled and verified with the greatest care. Due to the constant technical progress, changes in legislation and other inevitable changes, we cannot accept any responsibility for the accuracy and completeness of the contents. We are always thankful for suggestions and comments.

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