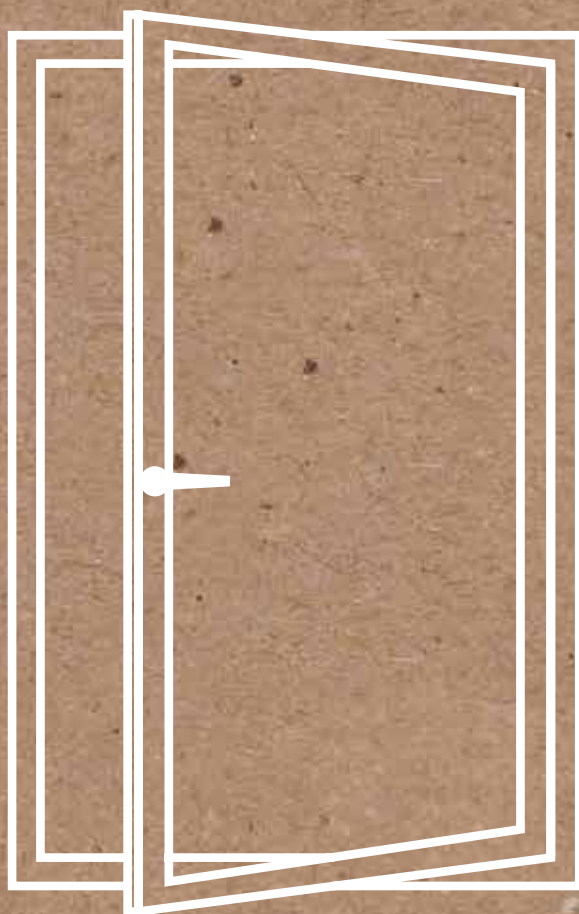


# Operating instructions and safety information. Windows.





Dear Customer

Thank you for choosing Finstral products.

These operating instructions set out the key points for the proper operation and cleaning of our products. A number of special features are not covered by this manual and are described in separate documents. If you have not received these separate instructions in paper form, you can request them from your contract partner. They are also permanently accessible at [finstral.com/manuals](https://finstral.com/manuals). Should any other uncertainties or problems ever arise, then your contract partner will, of course, always be there to help.

We are confident that your Finstral products will give you pleasure for a long time to come. And why? Because we have been developing and building windows, doors and glass walls to the highest quality criteria for over 50 years. And we leave nothing to chance: from the careful selection of materials and in-house manufacture in our own production facilities to best-practice installation by trained professionals. With Finstral, you always get everything from a single source. On that you can rely. Not for nothing are we Europe's most-certified window manufacturer.

Always with best regards





Three handwritten signatures in blue ink, corresponding to the names listed below.

**Florian, Joachim and Luis Oberrauch**


Finstral Board of Directors

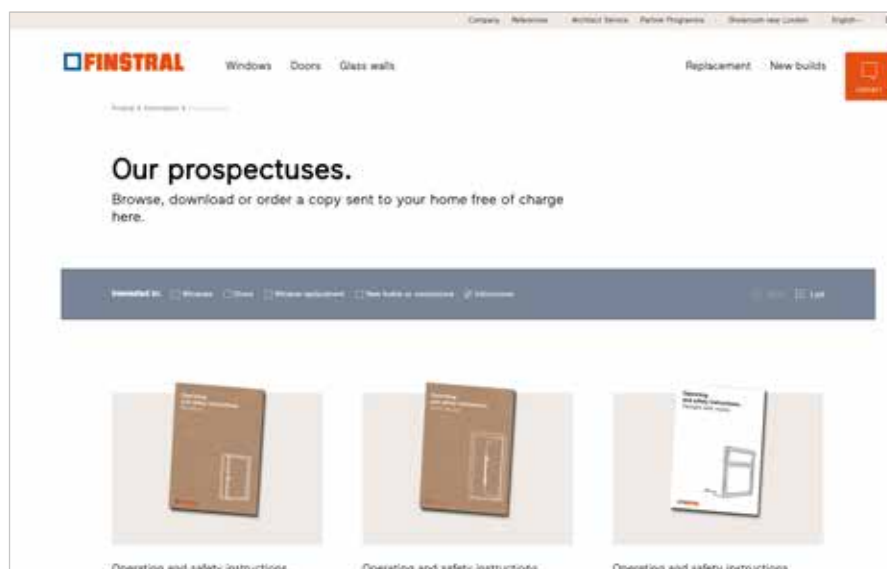


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Special features are marked with this symbol.  You can find full details on these at [finstral.com/manuals](https://finstral.com/manuals).



# Safety information

- Only use the window units for the intended and specified purpose.
- The units and their means of control must only be operated by qualified persons.
- Only operate the units if these are in flawless condition.
- Opening, closing, cleaning and maintaining the units, shading devices and insect screens entail a risk of falling from height. Do not lean out.  
Make sure that you are safe and have a secure footing.
- Always exercise extreme care in the vicinity of open units. Keep children and people incapable of assessing risks away from the units.
- For all opening actions, please ensure that the sash is guided slowly by hand over its entire range of movement up to the open or closed end position.
- Never exert pressure on the sash when it reaches the end position or if it is obstructed within its range of movement.
- Units that are open or tilted pose a risk of injury or entrapment.
- When turning the handle, do not pull at the sash frame or handle. Pulling the handle while turning may operate the window and cause injury due to its sudden or jerky opening.
- If you want to move an open or tilted window to another position, always start by pushing it into the fully closed position using the handle such that the sash frame is enclosed by the window frame. Only then turn the handle. This prevents the unit from being unhinged.
- Do not slam the units shut. Do not yank at the unit.
- The products are heavy on account of their stable construction. Their careless or jerky operation poses a risk of injury. Ensure that the area of travel is not occupied by any persons or animals. Nor must the area of travel be obstructed by any furniture, curtains or other objects.
- When closing the units, make sure that no items of clothing, objects, body parts or persons are trapped between sash and frame or in the area of the fasteners and stays. In this way, potential injury from entrapment can be prevented.
- In the case of sliding units, especially when lowering sliding sashes, make sure that no body parts or objects are located beneath them.
- With doors, pay attention to the threshold height due to the risk of tripping when entering and exiting.
- Always lock closed windows and doors.
- Unlocked units in the tilt or other ventilation position and only latched (not locked) doors fail to meet any requirements in terms of airtightness, driving rain tightness, sound insulation, thermal insulation or burglar resistance.
- Open and close the units with greater caution in windy conditions. Close and lock the units in heavier winds. Take care to prevent draughts, also during your absences. Draughts or strong winds may cause opened or unlocked units to jerk open or slam shut on their own, which may damage the product. Persons, animals or objects obstructing the area of travel may also suffer injury or damage.
- Depending on the on-site situation, door stops may be useful for outward-opening doors. They prevent the wind from yanking open the door and thereby unhinging the sash.
- Given the risk of injury and entrapment, make sure that hand levers and cranks are properly operated.
- In frosty conditions, units may freeze on the outside. Refrain from using force when operating them. Do not open them if they are frozen up. They can be operated again when they have unfrozen.
- Do not apply any additional loads to the units.
- Do not place any obstructions (wedges or the like) in the gap between the frame and open sash.
- Make sure that the sash is not subject to any point loads or obstructions, e.g. pitched roofing, in the area of travel. Any bumping at certain points during the opening operation may otherwise lead to deformation or general damage.
- Do not press the window or door sash against the edge of the opening (wall reveal) or against objects, components or their constituent parts that obstruct the sash's range of movement.
- Do not place flames near the units. Indirect heat sources must be at least 50 cm away from the units.

- People or animals are at risk of bumping into the glass surface of the units in case of glare, reflection or poor visibility.
- Float glass can break easily. The resulting sharp fractured edges and glass splinters pose a risk of injury.
- All installation, dismantling, maintenance and repair works may only be carried out by authorised or specially trained and qualified personnel.
- Always arrange for malfunctioning units to be checked and adjusted by qualified personnel.
- Do not make any technical modifications to the components.
- Any works to the electrical installation may only be carried out by an authorised and qualified electrician.
- Motorised units may trap and crush body parts, and thus pose a risk of injury and death.
- The cleaning and maintenance of electronic components may only be carried out by authorised persons.
- Electrically operated units must be designed so as not to protrude into the circulation routes of buildings in either the open or closed position.  
Where openings extend down to floor level, due provision must be made for fall protection.
- In automatic mode, the drive is halted by the limit or overload shut-off.
- Any necessary works to the 230 V AC network may only be carried out by an authorised and qualified electrician.
- Motorised systems can start fires due to overheating. They thus pose a risk of injury and death from electric shock or fire.
- Do not operate motorised units when persons are carrying out works (e.g. cleaning etc.) to the unit. Always disconnect the power supply prior to cleaning or maintenance works to the unit.
- If a fault is detected, then arrange for the unit to be checked only by a specialist.
- When cleaning the drive, always make sure that no liquid infiltrates into the unit as this may damage the electronics. Should a solid object or any liquid get inside the unit, then immediately interrupt its operation and disconnect the system from the mains. Then arrange for repair of the system by duly qualified personnel.
- Children and animals must not be allowed to play with the remote controls or wall switches. Keep remote controls out of the reach of children and animals. Children and animals could swallow components of the remote control or change settings.
- Do not throw batteries into a fire and do not use batteries of the wrong type. This poses a risk of explosion.
- As batteries are harmful to the environment, they require proper and careful disposal.
- Flammable liquids or gases may leak from batteries. Do not swallow batteries or insert them into any body orifices. Seek medical attention immediately should any of the above situations occur.
- Check for proper operation during the execution of motorised movements, keeping a safe distance until the movements have finished.
- Remember to regularly check the balancing springs and for wear on any cables.
- To assess the potential risks posed by motorised units (window, door, shading device, ventilation device) and to take the appropriate precautions, a risk assessment must be prepared as early as the design/planning stage. The risk analysis provides the necessary information for a risk assessment, which can be used to take decisions on the safety of the power-operated units. A risk and hazard analysis geared to the specific project and occupancy situation, e.g. based on our "Risk assessment and hazard analysis for power-operated windows and doors" checklist and the current version of the Machinery Directive, must be performed by the client at the design/planning stage in order to provide for the necessary safeguards and installation detailing.
- Keep the remote control or the component operated by this away from heat sources and naked flames. These can damage the product and cause malfunctions.
- Handle the remote controls with care and ensure that they are not damaged by being squashed, knocked or dropped.
- Refrain from using the remote control if its battery compartment cannot be completely closed.

# Tilt-and-turn hardware: window and casement door

## → Component description



Tilt position



Opening position/  
turn opening action



Window in closed position

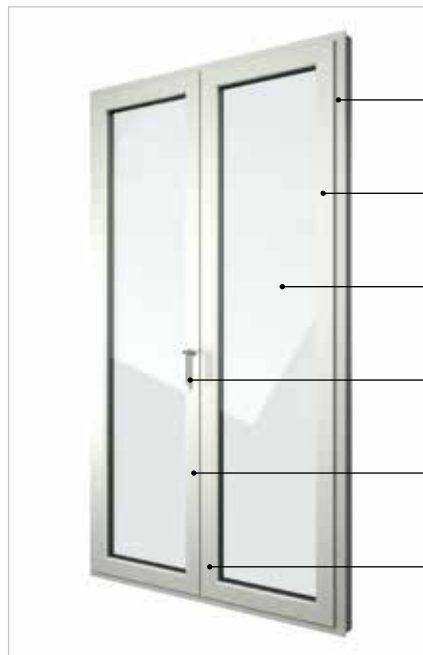
Window frame

Sash frame

Glass

Handle

Hinge



Double-sash casement door

Door frame

Sash frame

Glass

Handle

Active sash

Passive sash

## → Standard handle

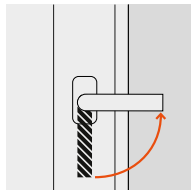
### Operation of standard handle

With a standard handle, the window/casement door can be either fully opened or tilted. If your window/casement door is fitted with either tilt-only or turn-only hardware, then please observe only the descriptions for the tilt or turn actions in the following. Carry out the steps described in the order listed here. When doing so, please ensure that the sash is guided slowly by hand over its entire range of movement up to the open or closed end position.

#### Opening

##### Opening position

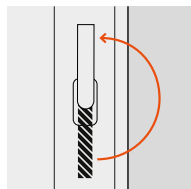
The handle points downwards. The window/casement door is closed. Turn the window handle upwards by 90°. The window/casement door can now be completely opened.



##### Tilt position

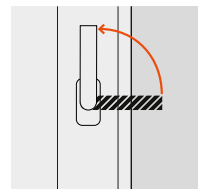
###### from the closed position

Turn the handle upwards by 180°. The window/casement door can be tilted by gently pulling the handle.



###### from the opening position

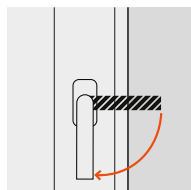
Push the window/casement door closed using the handle. Turn the handle upwards by 90°. The window/casement door can be tilted by gently pulling the handle.



#### Closing

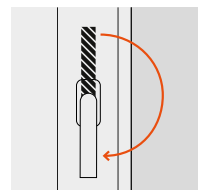
##### from the opening position

Push the fully open window/casement door closed using the handle. Turn the handle downwards by 90°. The window/casement door is closed.



##### from the tilt position

Push the tilted window/casement door closed using the handle. Turn the handle downwards by 180°. The window/casement door is closed.

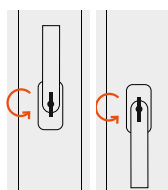


### Operation of lockable standard handle

Locking and unlocking is possible in both the tilt and closed position. The profile cylinder can be fitted to the handle or in the rose. The following pictures show the example of a profile cylinder on a handle.

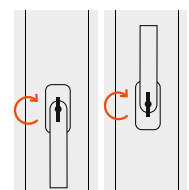
#### Locking

Turn the key by 180° in the locking direction.



#### Unlocking

Turn the key by 180° in the unlocking direction.



# Tilt-and-turn hardware: window and casement door

## → Handle with push-button

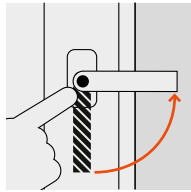
### Operation of handle with push-button

This handle allows operation of a window/casement door by pressing a push-button located at the base of the handle. It can be used to open or tilt the window/casement door. If your window/casement door is fitted with either tilt-only or turn-only hardware, then please observe only the descriptions for the tilt or turn actions in the following. Carry out the steps described in the order listed here. When doing so, please ensure that the sash is guided slowly by hand over its entire range of movement up to the open or closed end position.

### Opening

#### Opening position

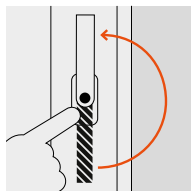
The handle points downwards. The window/casement door is closed. Press and hold down the push-button with your thumb. Turn the handle upwards by 90° and release the push-button. The window can be completely opened.



#### Tilt position

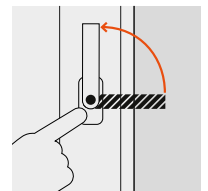
##### from the closed position

Press and hold down the push-button with your thumb. Turn the handle upwards by 180°. The window/casement door can be tilted by gently pulling the handle.



##### from the opening position

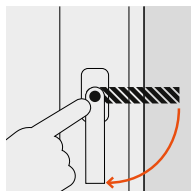
Push the window/casement door closed using the handle. Press and hold down the push-button with your thumb. Turn the handle upwards by 90°. The window/casement door can now be tilted.



### Closing

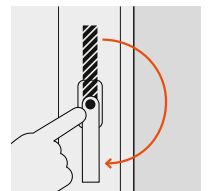
#### from the opening position

Push the window/casement door closed using the handle. Press and hold down the push-button with your thumb. Turn the handle downwards by 90° and release the push-button. The window/casement door is closed.



#### from the tilt position

Push the tilted window/casement door closed using the handle. Press and hold down the push-button with your thumb. Turn the handle downwards by 180° and release the push-button. The window/casement door is closed.



You can also release the push-button while turning the handle. The button audibly clicks out again at the next position reached. This does not work, however, when moving the handle directly from the closed to the tilt position as the push-button clicks out when the opening position is reached.

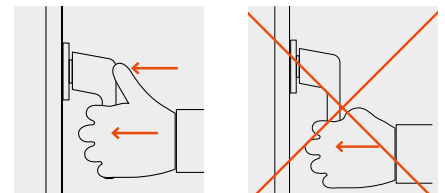
## → Push-down handle

### Operation of push-down handle

Press and turn the push-down handle to tilt or open the window or casement door. Follow only the relevant tilt or turn instructions if your unit is tilt-only or turn-only. Carry out the steps described in the order listed here. Please ensure that the sash is guided slowly by hand over its entire range of movement up to the open or closed end position.

### How do I operate the push-down handle correctly?

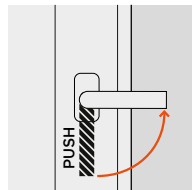
Apply pressure to the base of the handle with your thumb and to the centre of the handle with the ball of your hand. Do not apply pressure to the tip of the handle.



### Opening

#### Opening position

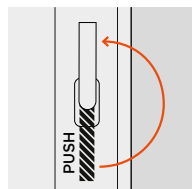
Press the push-down handle and turn it upwards by 90°. After one click you can open the window/casement door completely.



#### Tilt position

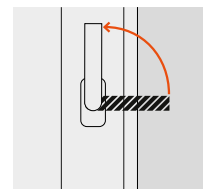
##### from the closed position

From the closed position, press the push-down handle and turn it up 180° until it clicks. Gently pull the handle to tilt the window or door



##### from the opening position

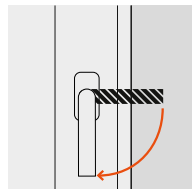
From the open position, push the window or casement door closed. Turn the handle up 90° until it clicks, then gently pull the handle to tilt the window or door.



### Closing

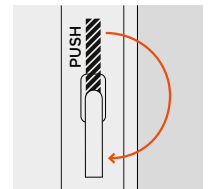
#### from the opening position

Push the open window/casement door closed. Turn the handle downwards by 90°. The handle clicks out as soon as you stop holding it down.



#### from the tilt position

Push the tilted window/casement door closed. Press the push-down handle and turn it downwards by 180°. The handle clicks out as soon as you stop holding it down.

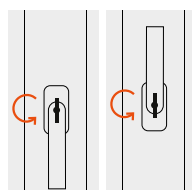


### Operation of lockable push-down handle

You can lock and unlock a lockable push-down handle using the profile cylinder and a key. Locking and unlocking is possible in both the tilt and closed position.

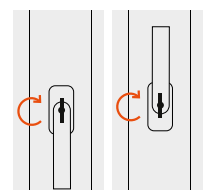
#### Locking

Turn the key by 180° in the locking direction.



#### Unlocking

Turn the key by 180° in the unlocking direction.



# Tilt-and-turn hardware: window and casement door

## → Lockable tilt-before-turn handle

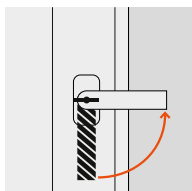
### Tilt-before-turn function

For windows/casement doors with a tilt-before-turn function, starting from the closed position, the tilt position is reached with a 90° turn and the opening position with a 180° turn. In the tilt position, you can unlock the window/casement door using the key. This means that only authorised persons can open the window/casement door. Please ensure that the sash is guided slowly by hand over its entire range of movement up to the open or closed end position.

### Opening

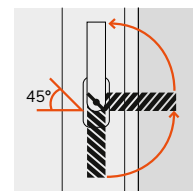
#### Tilt position

The window/casement door is closed. Turn the handle upwards by 90°. The window/casement door can be tilted by gently pulling the handle. Without a key, the window/casement door can only be tilted and closed.



#### Opening position

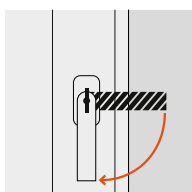
The window/casement door is closed. Turn the handle upwards by 90° to reach the tilt position. Do not tilt the window/casement door, but turn the key by 45° and keep it turned. Turn the handle upwards by another 90°. The window/casement door can now be opened completely.



### Closing

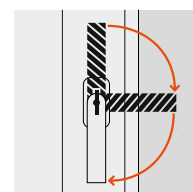
#### from the tilt position

Push the tilted window/casement door closed. Turn the handle downwards by 90°. The window/casement door is closed.



#### from the opening position

Push the open window/casement door closed. Turn the handle downwards by 90°. The key clicks by 45° in the closing direction and the handle is now in the tilt position. Turn the handle by another 90°. The window/casement door is completely closed.



## → Double-sash, flying mullion

### Active and passive sash

The passive sash is fitted with a release lever. This can only be operated after the active sash has been opened.

### Safety information

- Do not yank at the release lever.
- Do not pull the release lever in a horizontal direction as it may otherwise break off or be prised out.

### Operation

#### Active sash

##### Opening position

The handle points downwards. The active sash is closed.

To open it, turn the handle upwards by 90°. For further details, see the descriptions of the opening position for the relevant handles (see pages 9–12).



##### Tilt position

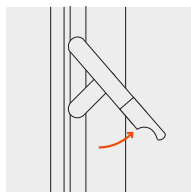
To tilt the active sash, turn the handle upwards by 180°. For further details, see the descriptions of the tilt position for the relevant handles (see pages 9–12).



#### Passive sash

##### Opening position

Lift the release lever upwards by approx. 45°. The passive sash can now be opened.



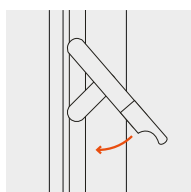
##### No tilt position

The tilt position is not possible for a passive sash.



##### Closed position

Press the release lever downwards until it is again vertical. Only when the passive sash is locked can the active sash be locked.



# Tilt-and-turn hardware: window and casement door

## → Turn lock

### Operation of turn lock

The turn lock is located on the lower side of the sash frame. The window/casement door can only be tilted, but not opened. Unlocking of the turn lock and full opening of the window/casement door are only possible with a key. This means that only authorised persons can open the window.

### Activated turn lock

The lock is activated and the window/casement door can be tilted, but not opened.



### Deactivated turn lock

Turn the key by 90° in the opening direction. The window/casement door can now be opened.



## → Motorised tilt-and-turn hardware



Information on the operation of motorised tilt-and-turn hardware by wall switch or remote control

Full details on the operation of motorised tilt-and-turn hardware by wall switch or remote control can be found at [finstral.com/manuals](https://finstral.com/manuals).

## → Identifying and remedying problems

Problem	Solution
The sash lifter is stuck.	Have the sash lifter replaced.



### Note on common mishandling errors

At Finstral, handle mechanisms are fitted as standard with anti-mishandling devices. These prevent the handle from being turned when the window/casement door is tilted and open – which would cause the window to become unhinged.

The sash frame may nevertheless become unhinged if you would like to tilt the fully open window/casement door or to fully open the tilted window/casement door and operate the handle before the window sash has been fully pressed against the window frame. For this reason, always perform the operations in the following order: first push the window/casement door closed and then operate the handle.

### Remedy for mishandling error

If the aforementioned mishandling error occurs, read here to find out how you can remedy it yourself. If in doubt, contact the technical support service of the installation company.

### Safety information

- Make sure that you do not trap any body parts, persons or objects during the reattachment process. There is a risk of injury.
- There is also a risk of falling from height during the reattachment process. Always pay attention to your safety.
- Children or persons with physical or mental impairments must not be allowed to reattach the window.
- Only reattach small or easily accessible windows.

### Unhinged sash: switch from tilt position to closed position

1. The sash appears to be tilted, but the handle shows the closed position. The window cannot be closed.



2. Do not use force to close the window. This may damage the sash or hardware. Leave the window tilted and turn the handle 90° in the opening direction.

This will unhinge the sash. Then follow the procedure, starting from point 1, described under “Unhinged sash: switch from tilt position to opening position” (see page 16). Follow all the steps described here in the indicated order.



# Tilt-and-turn hardware: window and casement door

## → Identifying and remedying problems

### Unhinged sash: switch from tilt position to opening position

1. The sash is unhinged at the top corner. The handle shows the opening position.



2. Carefully press the top, unhinged part of the sash into the corner. The pin continues to hit against the stay.



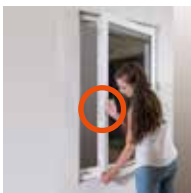
3a. For a window: move the sash lifter into the vertical position (it must not be at an angle) and hold it in this position.



3b. For a casement door: move the sash lifter with your foot into the vertical position (it must not be at an angle) and hold it in this position.



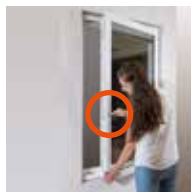
4. While holding the sash lifter in the vertical position, turn the handle by 90° in the opening direction such that it shows the tilt position.



5. Press the sash fully into the upper corner of the frame while continuing to hold the sash lifter in the vertical position.



6. While holding the sash lifter in the vertical position, turn the handle by 90° in the closing direction such that it shows the opening position. The window is back in working order.



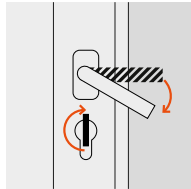
### Unhinged sash: switch from opening position to tilt position

In this case, follow steps 5, 3 and 6, in this order, of the procedure described under "Unhinged sash: switch from tilt position to opening position".

# Lockable turn-only hardware: casement door

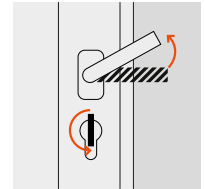
## Opening position

The handle is horizontal. If the door is locked, first turn the key to unlock. After unlocking, push down the handle to open the door.



## Locking

Pull the handle upwards as far as it will go, then move it back down. You can now use the key to lock the door.



## Tilt position

The tilt position is not possible for a turn-only door.

## Troubleshooting for turn-only door

Problem	Cause	Remedy
The turn-only door cannot be locked.	The handle was not completely pulled upwards prior to locking.	Pull the handle upwards as far as it will go until the key can be properly turned.

# Locking cylinder

## **Standard cylinder**

A standard cylinder is lockable on both sides. This allows you to lock and unlock the door from both the outside and inside, even if a key is inserted on the other side of the door (emergency and danger function).

## **Security level 1 cylinder**

A security level 1 cylinder is operated with a reversible key. It allows intuitive operation, offers maximum drill protection and is lockable on both sides. This allows you to lock and unlock the door from both the outside and inside, even if a key is inserted on the other side of the door (emergency and danger function). This security cylinder comes with a security card for ordering replacement keys.

## **Security level 2 cylinder**

A security level 2 cylinder is operated with a reversible key. It allows intuitive operation, offers a highly effective guard against tampering thanks to outstanding drill/pull protection and is lockable on both sides. This allows you to lock and unlock the door from both the outside and inside, even if a key is inserted on the other side of the door (emergency and danger function). This security cylinder comes with a security card for ordering replacement keys.

### Replacement orders for security cylinders

Standard cylinders are pre-installed in the window/door units. Security cylinders, on the other hand, are delivered loose in their original sealed packaging for reasons of confidentiality. A security card is always included in the packaging. Please keep this in a safe place as it is needed to order replacement keys. No replacement keys can be cut without the security card. If you need to order a replacement key and are unable to find the security card, then the cylinder must be replaced.

### Cylinder replacement

You can carry out the cylinder replacement on almost all lockable units that feature in these operating instructions. As the only exception, you cannot yourself perform the replacement on lockable windows with a fixed profile cylinder incorporated in the handle. Where such a cylinder is defective, then please contact the technical support service of the installation company.

1. When replacing the cylinder, ensure that this sits straight and perpendicular to the sash. To remove the cylinder, unscrew the cylinder screw with a hand screwdriver.



2. Then insert the key into the profile cylinder and turn the key by 15°–20°. The cylinder can now be gently extracted.



3. Insert the new cylinder. The cylinder must be smoothly fitted and seated with minimum tension in the hardware. With a security level 2 cylinder, make sure that the relevant parts of the profile cylinder are on the intended side (outside or inside). The outside is marked.



4. Use a hand screwdriver to tighten the cylinder screw with medium force. When inserting the cylinder, make sure that no pressure is exerted on the outer rose.

# Fanlight

## → Component description



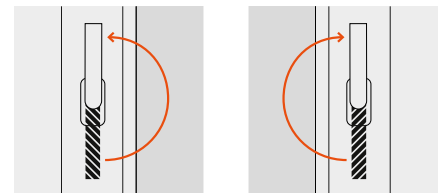
## → Handle, hand lever, crank

### Operation by handle

The handle can be fitted either on the top, left-hand or right-hand side of the fanlight. There is also a two-handle version with handles on the left- and right-hand side of the fanlight. The example below shows how to operate a fanlight with a handle on both the left- and right-hand side. The same basic system can be applied for the other configurations.

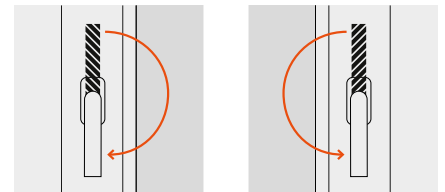
#### Opening

Turn the handles on the left and right by 180° in the opening direction. The fanlight can now be tilted.



#### Closing

Push the tilted fanlight closed. Turn the handles on the left and right by 180° in the closing direction. The fanlight is now closed.



### Operation by hand lever

This section shows you how to operate a fanlight using a hand lever.

#### Opening

Fold over the hand lever from the top to bottom position. Operation of the hand lever will tilt the fanlight.



#### Closing

Fold over the hand lever from the bottom to top position. Operation of the hand lever will close the fanlight.



# Fanlight

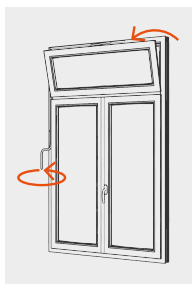
## → Handle, hand lever, crank

### Operation by crank

This section shows you how to operate a fanlight using a crank. The crank is either permanently mounted or can be fitted and removed as required.

#### Opening

Move the crank to the illustrated position and wind in the opening direction. The fanlight will now be tilted.



#### Closing

Move the crank to the illustrated position and wind in the closing direction. The fanlight will now be closed.



## → Cleaning of bottom-hung fanlights

To clean the fanlight, use a cloth dampened with mild soapy water or detergent.

Maintenance and inspection of the bottom-hung fanlight and hardware components must be carried out at least once a year. To do this, the cleaning stay must be released and the fanlight folded down.

Caution: the weight of the heavy unit poses a risk of injury. These works must therefore be carried out only by qualified personnel. Please contact the technical support service of the installation company and also take note of the safety information.

## → Motorised fanlight



### **Information on motorised fanlight**

Full details and important instructions on the operation of motorised fanlights can be found at [finstral.com/manuals](https://finstral.com/manuals).

# Sliding units

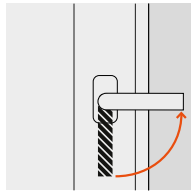
## → Parallel sliding door and window

### Operation

This section shows you how to operate a parallel sliding unit. Please ensure that the sash is guided slowly by hand over its entire range of movement up to the open or closed end position.

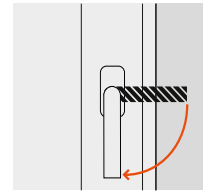
#### Opening

The handle points downwards. The door is closed. Turn the handle upwards by 90°. Pull the door slightly towards you. The sash moves out slightly in your direction. The mechanism audibly clicks out at the bottom. Slide the sash in the opening direction.



#### Closing

The door is open. The handle has been turned by 90°. Slide the door shut. The mechanism engages in the end stop. Push the door shut. When the door is fully closed, turn the handle downwards by 90°. The door is closed.



### Identifying and remedying problems

If the unit cannot be closed, then read here for the possible cause and solution to the problem.

Problem	Cause	Remedy
The unit cannot be closed.	The handle was turned to the closed position before the unit was fully pushed shut.	Turn the handle by 90° in the opening direction so as to reach the open position. Press the unit shut and turn the handle by 90° in the closing direction.

# → Parallel sliding-tilting door and window

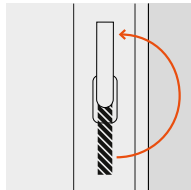
## Operation

This section shows you how to operate a parallel sliding door with tilt function. Please ensure that the sash is guided slowly by hand over its entire range of movement up to the open or closed end position.

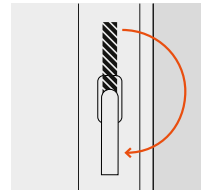
### Tilting

#### from the closed position

The handle points downwards. The unit is closed. Turn the handle upwards by 180°. The unit can now be tilted.

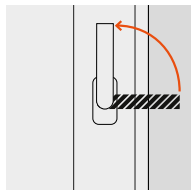


To close the tilted unit, push it closed and turn the handle downwards by 180°. The unit is closed.

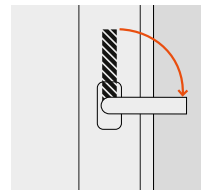


#### from the opening position

The unit is open. The handle has been turned by 90°. Slide and push the unit shut. When the unit is fully closed, turn the handle upwards by 90°. The unit can now be tilted.



To move the unit from the tilt position back to the opening position, push it shut and turn the handle downwards by 90°. The unit can now be opened.

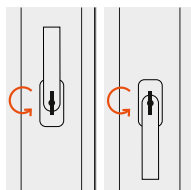


## Lockable parallel sliding or parallel sliding-tilting unit

Locking and unlocking is possible in both the tilt and closed position.

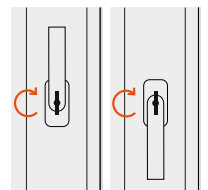
### Locking

Turn the key by 180° in the locking direction.



### Unlocking

Turn the key by 180° in the unlocking direction.



## Identifying and remedying problems

If the unit cannot be closed, then read here for the possible cause and solution to the problem.

Problem	Cause	Remedy
The unit cannot be closed.	The handle was turned to the closed position before the unit was fully pushed shut.	Turn the handle by 90° in the opening direction so as to reach the open position. Press the unit shut and turn the handle by 90° in the closing direction.

# Sliding units

## → FIN-Slide lift-and-slide door and window

### Component description

Pictured below is a FIN-Slide lift-and-slide door with its individual components.



### Soft-stop

The soft-stop function ensures that, when sliding shut, the lift-and-slide unit comes to a gentle halt just before the end position and must be lightly pushed shut by hand. This prevents damage to the unit from being pulled shut too quickly.

### Four-part FIN-Slide with flying mullion

Operation of a four-part lift-and-slide door with a flying mullion is identical to that for a lift-and-slide door without a flying mullion. Please note, however, that with this version the active sash must be operated first when opening and the passive sash first when closing.

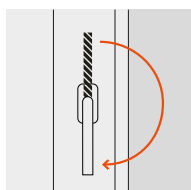


### Operation by handle

Set out below are all the key details on the operation of a FIN-Slide lift-and-slide unit. Please ensure that the sash is guided slowly by hand over its entire range of movement up to the open or closed end position. In particular, when lowering the lift-and-slide door sash, make sure that no body parts or objects are located beneath it.

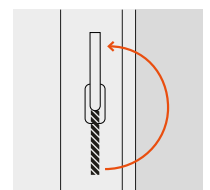
#### Opening

Turn the handle downwards by 180°. This will raise the lift-and-slide unit, which can then be opened.



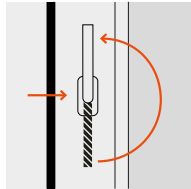
#### Closing

Slide the unit completely shut. Then turn the handle upwards by 180°. The lift-and-slide sash will then be lowered. The unit is now completely closed.

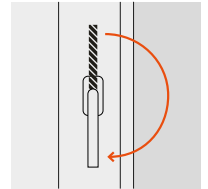


### Locked trickle ventilation position

Open the sliding sash slightly (with an approx. 1 cm gap) and turn the handle upwards by 180°. The unit will then remain locked in this trickle ventilation position.



If you want to close the unit or open it wider, then turn the handle downwards by 180°. The unit can now be operated again.

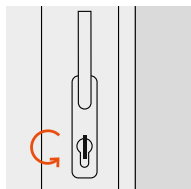


### Lockable lift-and-slide door

You can lock and unlock a lockable lift-and-slide door using a profile cylinder and a key.

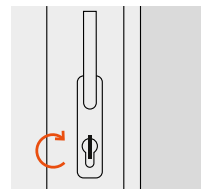
#### Locking

Turn the key by 180° in the locking direction.



#### Unlocking

Turn the key by 180° in the unlocking direction.



### Operation by flush pull or handle strip

The lift-and-slide door has either a flush pull or a handle strip on the exterior, both of which are easy to operate by hand. Please ensure that the sash is guided slowly by hand over its entire range of movement up to the open or closed end position.



Flush pull



Handle strip

## → Motorised lift-and-slide door



#### Motorised operation

Further details and important instructions on the motorised FIN-Slide lift-and-slide door can be found at [finstral.com/manuals](https://finstral.com/manuals).

# Sliding units

## → FIN-Scroll sliding door and window

### Component description

Pictured below is a FIN-Scroll sliding window with its key components.

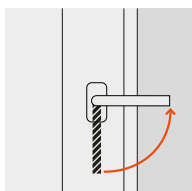


### Operation by handle

This section shows you how to operate a FIN-Scroll sliding unit with a handle. Please ensure that the sash is guided slowly by hand over its entire range of movement up to the open or closed end position.

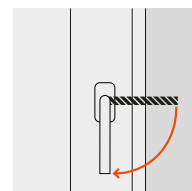
#### Opening

The handle points downwards. The unit is closed. Turn the handle upwards by 90°. The unit can now be opened.



#### Closing

Slide the open unit completely closed. Turn the handle downwards by 90°. The unit is closed.



## Operation by handle for opposite-sliding sash

If there is a handle for the opposite-sliding, i.e. passive sash, then this can be operated as described below:

### Safety information

- Take care not to trap your fingers when operating the handle.
- Do not pull at the handle with force and do not pull it out further than necessary for operation (maximum 15°).
- Never leave the handle pulled out, as this can cause damage to the handle itself or to the active sash.
- Only operate the handle in the closed position. Do not turn it downwards when the unit is already open. Otherwise, the handle can no longer be completely turned upwards by 180° and the unit can no longer be closed. In such cases, the anti-mishandling device must be pressed and, simultaneously, the handle turned completely upwards to allow the handle to be operated again and the unit to be closed.

### Opening position

Pull out the handle piece with your thumb and turn it upwards by 180° until it audibly clicks into the opening position. The opening position is indicated by the open lock symbol and the opposite-sliding/passive sash can now be used to open the sliding door.



### Closing

Close the opposite-sliding/passive sash of the sliding door. Pull out the handle piece with your index finger and turn it downwards by 180° until it audibly clicks into the original position. The closed lock symbol is displayed and the sliding door is closed.



### Operation by flush pull

The flush pull on the exterior is easy to operate by hand. Please ensure that the sash is guided slowly by hand over its entire range of movement up to the open or closed end position.



# Sliding units

## → FIN-Fold folding door

### Component description

Pictured below is a three-part FIN-Fold folding door with all its key components.



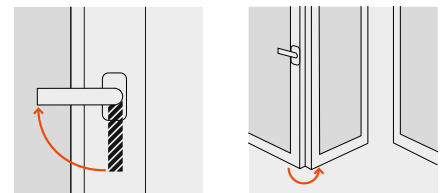
## Operation

This section shows you how to operate a FIN-Fold folding door. As a general rule when operating folding doors, always make sure that you perform slow movements. Always exercise particular caution to avoid entrapment injuries.

### 2+2-part folding door

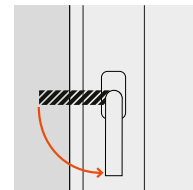
#### Opening position

The handle points downwards. The folding door is closed. Turn the handle upwards by 90° and pull the handle to slide open the folding door stack. When the folding door stack is slightly open, you can use your second hand to facilitate the sliding operation. Repeat this procedure with the second folding door stack.



#### Closed position

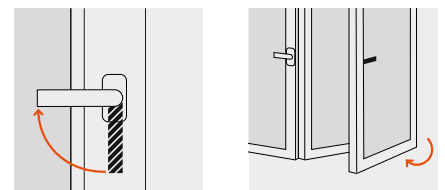
When closing, start by pulling one folding stack towards the centre with both hands. Then press on the handle to completely close the folding stack. Turn the handle downwards by 90°. Repeat this procedure with the second folding door stack.



### 3-part folding door

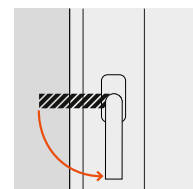
#### Opening position

The folding door is closed. Turn the handle of the first-opening sash upwards by 90°. Open the first-opening sash, turning it completely by 180° until it engages with the second sash. Now turn the second handle to the opening position and pull the handle to push the folding stack to the side. You can use your second hand to facilitate the sliding operation.



#### Closed position

To close the folding door, repeat the procedure for opening in reverse order.



# Ventilation

## → General information

### **Why should I ventilate?**

A three-to-four-person household produces several litres of water every day simply by breathing, cooking and bathing or by keeping indoor plants. If the moisture cannot escape from the interior, then it will condense on walls and windows. This condensation forms the perfect breeding ground for mould. Regular ventilation is thus needed to improve living comfort and avoid condensation. It will prevent overly high humidity and the associated risk of mould growth. Health problems may be caused not only by too high, but also by too low humidity. So even where interior humidity is low, it is still advisable to ventilate properly to combat dry indoor air.

### **How do I ventilate properly?**

Thanks to their premium-quality design, Finstral windows seal off living spaces very well and offer accordingly high thermal and sound insulation. We recommend fully opening the windows at least once a day for 15 minutes in the morning (so-called “shock” ventilation). This allows moisture and vapour to escape with little loss of indoor heat. Walls or furniture do not cool down significantly during this short period of time. In a building with several connected floors, the warm air will rise to the upper floors. More frequent ventilation is thus required on the upper floors.

### **Ideal temperature and indoor humidity**

The ideal temperature in living spaces is 20°C. The optimum indoor humidity lies between 40% and 60%. A simple hygrometer can be used to measure humidity.

### **New-builds**

Fresh construction materials release moisture – so-called residual building moisture. This is why, for new-builds, regular shock ventilation – three or four times a day for 10 to 15 minutes – is important from the start.

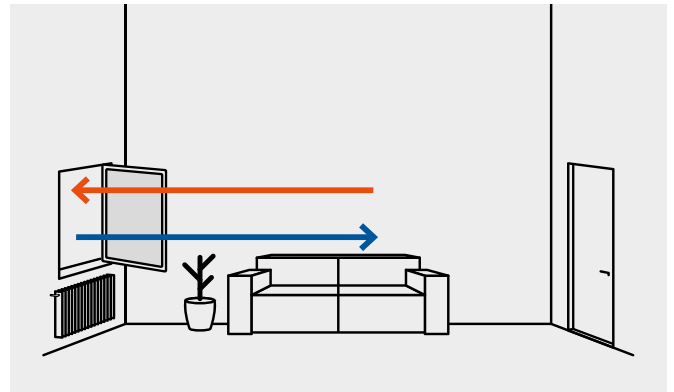
### **Refurbishment and window replacement**

When replacing windows, make sure that your new windows and doors are more weathertight and offer better insulation. This, in turn, will necessitate more regular ventilation. While more frequent ventilation naturally entails energy loss, this is nonetheless far lower than the additional energy consumption caused by your old and leaky windows and doors.

## Ventilation methods

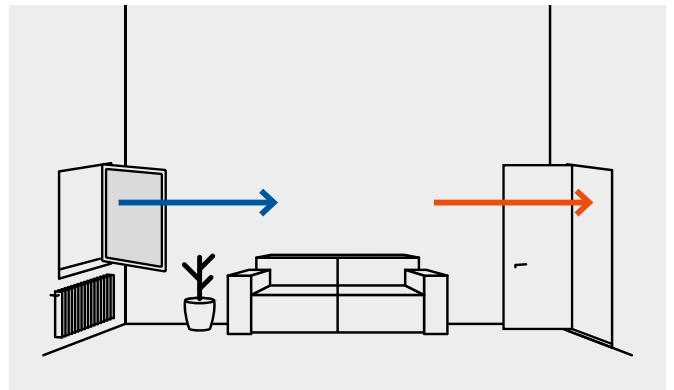
### Shock ventilation

To shock ventilate, you fully open the window.



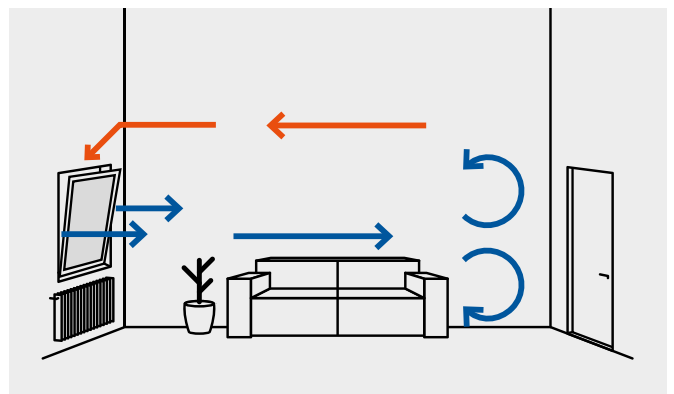
### Cross ventilation

Cross ventilation involves simultaneously opening windows and doors so as to create a draught. Please note that cross ventilation may bring about strong draughts that can cause windows and doors to slam shut on their own.



### Continuous ventilation

Continuous ventilation occurs even when windows are only tilted. However, this ventilation method is not as effective as the other two, where high volumes of fresh air flow into the interior within a short period. You can also use the tilt position to partially ventilate the interior. But you should refrain from tilting windows in spaces with high humidity (kitchens, bathrooms, bedrooms) where sub-zero temperatures prevail outside. This will prevent the cold outdoor air from cooling down the walls near the windows, with the attendant risk of condensation and mould growth. Please note that tilted windows and doors are not burglar-proof.



# Ventilation

## → Summer/winter tilt position

### Description

To set the summer/winter tilt positions, you can manually adjust the tilt opening width: up to 17 cm in summer, 4 cm in winter (depending on window size). This adjustment is performed using a lever located at the top corner of the window on the handle side.

### Setting the winter tilt position

To set the winter tilt position, proceed as follows.

1. Fully open the window. The winter tilt lever is located in the top part of the window frame.



2. Pull out the top part of the lever horizontally and keep it extended.



3. While the top part of the lever is pulled out, turn the lever upwards by 180°. It will audibly click into place.



4. Close and tilt the window. The winter tilt position has now been set.



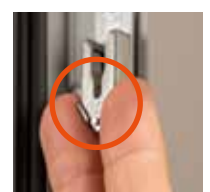
### Setting the summer tilt position

To set the summer tilt position, proceed as follows.

1. Fully open the window.



2. Pull out the top part of the lever horizontally and keep it extended.



3. While the top part of the lever is pulled out, turn the lever downwards by 180°. It will audibly click into place.



4. Close and tilt the window. The summer tilt position has now been set.



## → Two-step turn opening

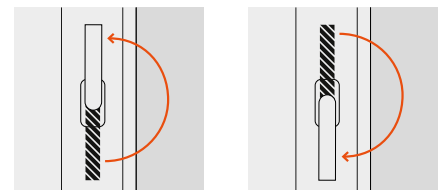
### Two-step turn opening function

It may not be possible to tilt very tall or unusually shaped windows. The two-step turn opening function offers an alternative: here, provision is made for ventilation via a restricted horizontal turn opening instead of the standard vertical tilt opening.



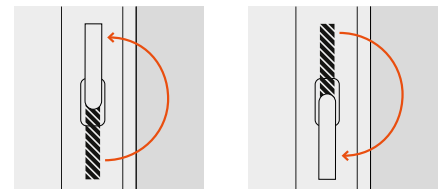
### Turn opening position

Turn the handle by 180° in the opening direction. Then gently pull at the handle. A small gap will open. Turn the handle by 180° in the closing direction to secure the unit in the turn opening position.



### Closed position

With the unit secured in the turn opening position, turn the handle by 180° in the opening direction. Push the unit fully shut such that the sash frame is enclosed by the window frame. Then turn the handle by 180° in the closing direction. The unit is now locked.



## → Trickle ventilation opening

### Trickle ventilation opening function

The trickle ventilation opening function provides for a tilt position with an up to approx. 5 mm gap for a handle position of up to 135°.

### Trickle ventilation in tilt position

The further the handle is turned upwards, starting from the opening position (90° angle), the wider the gap for trickle ventilation.

### Tilt opening

If the handle is turned further to the tilt position (180° angle), then the window can be tilted as normal.



Trickle ventilation  
in tilt position



Tilt opening

# Ventilation

## → PassiveVent Mini window rebate ventilator

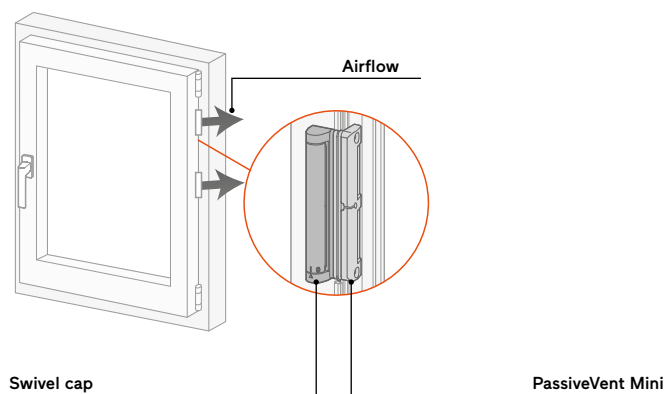
### Safety information

If you own a PassiveVent Mini or PassiveVent Midi window rebate ventilator, then please take note of the following safety information.

- A reduction in the airflow rate is possible depending on the profile system, profile geometry or blockage of the rebate space by hardware components.
- Make sure the ventilation paths are clear. Make sure that air can flow in and out of the air inlets and outlets without obstruction. No fabrics, paper or the like should be left hanging over the openings. Do not place any objects in front of or next to the device and do not insert any objects into the openings of the device.
- The following impairments may occur under extreme climatic conditions: condensation (this is a physical process, not a defect), restricted functionality or increased noise.
- Depending on the outdoor conditions, window ventilators may help to dehumidify the living environment, though are unsuitable for targeted dehumidification (e.g. drying of new-builds or rectifying construction defects).
- In the event of a local catastrophe, the ventilators must be taped over or closed using the available closing provision.

### Component description

The PassiveVent Mini is fitted to the frame on the hinge side. A swivel cap is optionally provided for manual opening or closing of the air supply. This does not, however, offer a fully airtight seal.

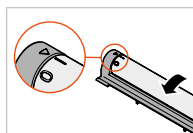


### Operation

This section shows you how to operate a PassiveVent Mini window rebate ventilator.

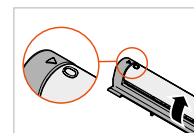
#### Opening

Turn the mechanism so that the arrow points to "I". The air can now flow through.



#### Closing

Turn the mechanism so that the arrow points to "0". The device is now closed.



## → PassiveVent Midi window rebate ventilator

### Safety information

If you own a PassiveVent Midi window rebate ventilator, then please take note of the safety information on the previous page (under “PassiveVent Mini window rebate ventilator”).

### Component description

The PassiveVent Midi is fitted top centre to either the sash frame or window frame. When fitted to the window frame, the PassiveVent Midi is always without humidity control and sound insulation module. When fitted to the sash frame, it can be optionally fitted with humidity control or with humidity control and sound insulation module.



PassiveVent Midi: window frame model



PassiveVent Midi: sash frame model



PassiveVent Midi: sash frame model with humidity control



PassiveVent Midi: sash frame model with humidity control and sound insulation module

### Operation

Operate the lever to open and close the shutter device.

## → PassiveVent cleaning and maintenance

- To prevent any damage to the housing surfaces, do not use any aggressive or solvent-based cleaning agents or sharp objects.
- Never use high-pressure or steam-jet equipment to clean the ventilator.
- Clean the ventilator at regular intervals several times a year.
- To clean the surface, use a cloth dampened with mild soapy water or detergent.
- Where necessary, also clean the window rebate and ventilation paths.

# Ventilation

## → Vent ventilation sash

### Component description

Pictured below is a Vent ventilation sash viewed from the exterior. From the outside, it cannot be ascertained whether or not the sash on the interior is open.

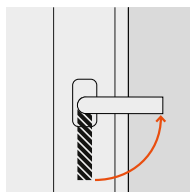


### Operation

This section shows you how to operate the Vent ventilation sash.

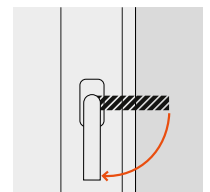
#### Opening

Turn the handle by 90° in the opening direction. The ventilation sash door can now be opened.



#### Closing

Push the open ventilation sash door properly closed. Turn the handle by 90° in the closing direction. The door is now closed.



#### Tilt position

It is not possible to tilt the ventilation sash.

## → ActiveVent motorised ventilator



#### ActiveVent motorised ventilator

Full details and important instructions on the ActiveVent motorised ventilator can be found at [finstral.com/manuals](http://finstral.com/manuals).

# Insect protection

## → Insect screen roller/pleated blind

### Safety information

The following safety information applies to both insect screen roller/pleated blinds and insect screen frames.

- Only use the insect screens for their intended purpose.
- Insect screens serve to prevent the ingress of insects through open windows or doors. The insect screen is not suitable as a support or fall protection device. A closed insect screen will not prevent persons from falling out of a window or door.
- Opening, closing, removing, inserting, cleaning and maintaining the insect screens entail a risk of falling from height. Do not lean out of the window.
- The insect screen may freeze in frosty conditions. Refrain from using force when operating the insect screen. Do not try to operate it if it is frozen up. It can be operated again when it has unfrozen.
- Do not apply any additional loads to the insect screen.
- Provision must be made for the unobstructed movement of the insect screen. Make sure that the area of travel is not blocked by any obstructions and that the guide rails guarantee free travel.
- Adults, children and animals may accidentally bump into the insect screen and damage it.
- Do not kick the screen.
- The insect screen provides protection only against insects and small animals. The insect screen must be retracted if the wind speed exceeds 20km/h. When operating movable insect screens, always make sure that you perform slow movements.

### Operation

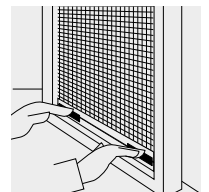
This section shows you how to operate insect screen roller and pleated blinds properly.

#### Insect screen roller blind for windows (vertical)

The insect screen roller blind is rolled up and down vertically.

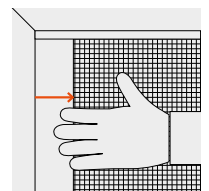
To lower the blind, pull the central cord. Grip the side pulls with both hands and, at the end position, gently press down the end rail until you hear a click.

To unlock the blinds, gently press the end rail from the top downwards. Holding the blind by the cord, use this to allow the controlled upward movement of the blind.



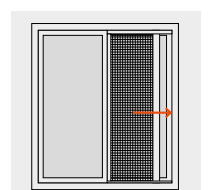
#### Insect screen roller blind for doors (horizontal)

The side-sliding insect screen roller blind is fitted with a bottom guide rail and a net that can be freely positioned as required in the horizontal direction. To open the blind, gently pull the end rail to the side (horizontal direction).



#### Insect screen pleated blind for doors

To open the blind, gently push the end rail to the side (horizontal direction).



# Insect protection

## → Insect screen frame

### Safety information

Please take note of the safety information on the previous page (under “Insect screen roller/pleated blind”).

### Distinction between types 1, 2 and 3

Finstral offers three different types of insect screen as outlined below:

#### Type 1

Two mounts are located at the top and two at the bottom of the insect screen frame. A grip handle is located at the side.

#### Type 2

Two fixed mounts are located at the bottom of the insect screen frame. One movable swivel mount and one grip handle are located at equal heights on each side edge.

#### Type 3

Casement door: three fixings are located on the right-hand side of the insect screen frame. On the left-hand side, a grip handle is located on the interior and a pull handle on the exterior.

### Type 1 screen operation

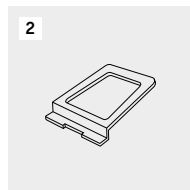
This section shows you how to insert and remove a fixed, type 1 insect screen for uPVC-uPVC windows.

#### Insert insect screen frame (type 1)

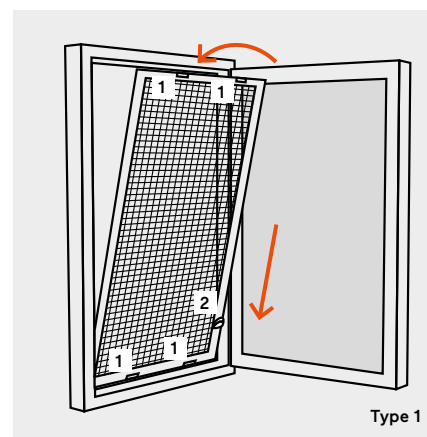
Position the fixed insect screen at the bottom and press it against the window frame at the top until it snaps into place. Use the mounts (at top and bottom) to secure the insect screen frame in place.



Mount

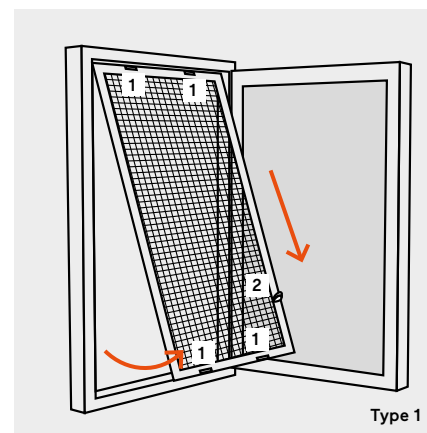


Grip handle



#### Remove insect screen frame (type 1)

Use the bottom side grip handle to pull the insect screen frame inwards and release the two bottom mounts. Hold the insect screen firmly and release the two top mounts by pulling the frame downwards towards you.

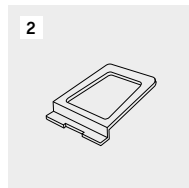


## Type 2 screen operation

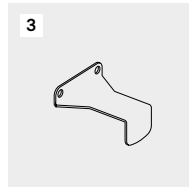
This section shows you how to insert and remove a fixed, type 2 insect screen for uPVC-uPVC windows.

### Insert insect screen frame (type 2)

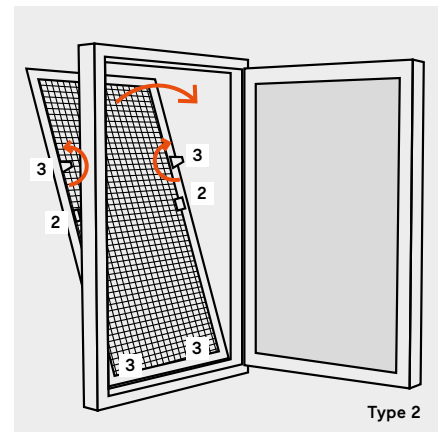
Holding the frame by the two grip handles, guide it diagonally through the window opening to the outside. Then lower it such that the two mounts at the bottom sit securely on the window frame and pull the insect screen frame towards the window frame. To secure it in place, swivel round the two movable side mounts.



Grip handle

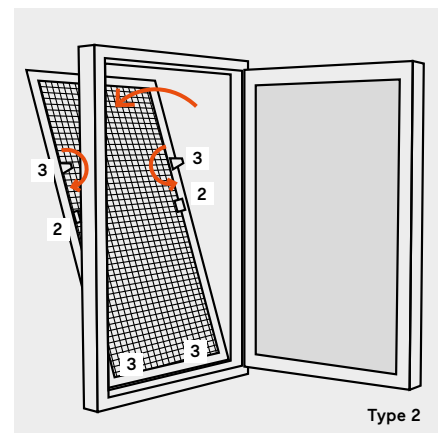


Mount (hook)



### Remove insect screen frame (type 2)

Release the two flexible mounts. Holding the insect screen frame firmly by the two side grip handles, carefully push it outwards. Guide the insect screen frame diagonally through the window opening to the inside.



# Insect protection

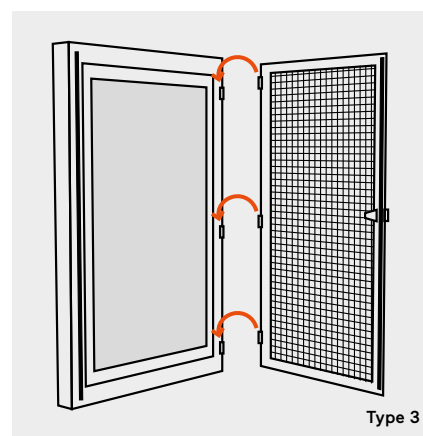
## → Insect screen frame

### Type 3 screen operation

This section shows you how to insert and remove a fixed, type 3 insect screen for uPVC-uPVC casement doors.

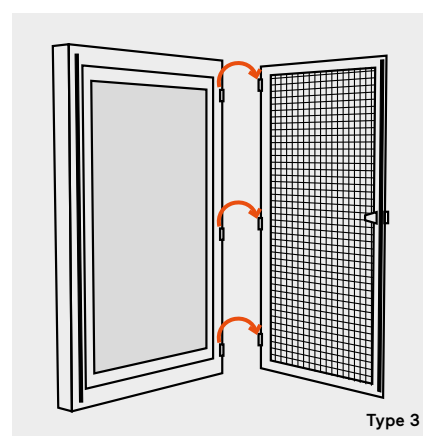
#### Insert insect screen frame (type 3)

Three hinges are mounted on the door frame. Holding the insect screen frame at the sides with both hands, insert the three side fixings from the top downwards into the three hinges. Be careful not to hold the insect screen at an angle, but to move it vertically downwards. You can open and close the insect screen from the outside using the pull handle and from the inside using the grip handle.



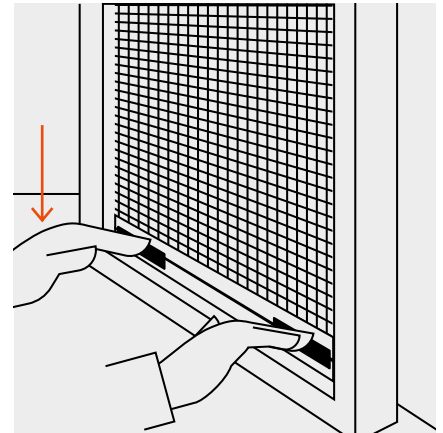
#### Remove insect screen frame (type 3)

Open the insect screen and hold it at the sides with both hands. Carefully lift it upwards so as to release the three fixings from the hinges. Be careful not to lift the insect screen at an angle, but vertically upwards.

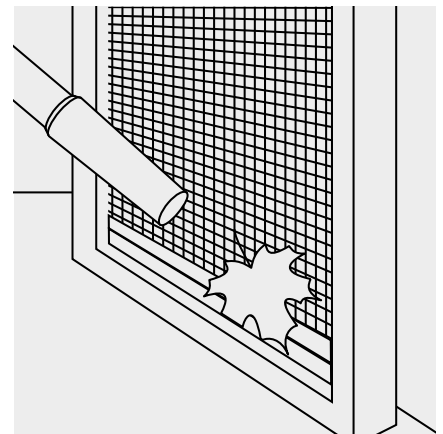


## → Cleaning

Inspect the net at least twice a year, once in spring and once in autumn. To clean the net, you can vacuum off the dust or clean it with lukewarm water and a soft cloth. Do not use solvents, ammonia or hydrocarbons. Allow the net to dry completely before rolling it up. Should the screen become disengaged from the mounts, then hold it at the sides with both hands and fit it back into place.



The bottom guide rail should be kept free from heavy soiling. If twigs or leaves are left on the guide rail, there is a risk, when the insect screen is opened, that these may be dragged into and jam the mechanism. For this reason, both screen and guide rail require regular cleaning with a vacuum cleaner on a low setting.



# Roller shutter

## → Safety information

- Only use the roller shutter for its intended purpose.
- The roller shutter serves as a closure in front of windows or doors to provide visual privacy and solar protection. The roller shutter is not suitable as a support or fall protection device. A closed roller shutter will not prevent persons from falling out of a window or door.
- Opening, closing, cleaning and maintaining the roller shutter entail a risk of falling from height. Do not lean out of the window.
- On account of its stable construction, the roller shutter is a heavy unit. Its careless operation poses a risk of injury.
- Close your windows in strong winds. Take care to prevent draughts, also during your absences. Closed roller shutters are not able to withstand all wind loads when the window is open. Please note that the specified wind load is only guaranteed when the window is closed.
- When roller shutters are used for sunshading, we recommend that they are not fully closed so as to ensure adequate ventilation.
- The roller shutter may freeze in frosty conditions. Refrain from using force when operating the roller shutter. Do not try to open or close it if it is frozen up. It can be operated again when it has unfrozen.
- Nothing must be allowed to obstruct the lowering action of the roller shutter. Ensure that the area of travel is not obstructed by any persons, animals or objects and that the roller shutter rails guarantee free travel.
- The opening and closing of roller shutters pose a risk of injury. Do not reach into the area of travel of the roller shutter or the roller shutter rails. Make sure that the area of travel of the roller shutter is not occupied by any persons or animals when it is operated. Do not push up the roller shutter without operating the drive as this may cause a malfunction.
- Do not operate the roller shutter when adjustments or repairs are being carried out on it.
- For troubleshooting and repair works, please contact only qualified technical personnel.
- Take care to prevent any items of clothing, objects or body parts from being caught up or trapped in the device.
- Do not apply any additional loads to the roller shutter.
- Do not push up or pull down the roller shutter by hand.
- Additional information for motorised roller shutters with automatic control:
  - If a roller shutter that is connected to an automatic sensor system is installed at the only access point to your balcony or patio, then you are at risk of locking yourself out. To prevent this from happening, switch off the automatic function whenever you are on the balcony or patio.
  - Switch off the automatic function of motorised roller shutters with automatic control whenever there is a risk of freezing. Exception: roller shutter drives equipped with overload protection or obstruction detection.
  - Provision of an emergency power supply is recommended, especially in areas with frequent mains failures. This will serve to prevent roller shutter malfunctions caused by power failures.
  - Children and animals must not be allowed to play with the controls, e.g. remote controls or switches for the roller shutter. Keep remote controls out of the reach of children and animals.
  - Persons with physical, mental or sensory impairments as well as persons lacking the necessary knowledge or experience must not be allowed to operate the roller shutter or remote control. The product must be operated under the guidance and supervision of a person responsible for their safety.

## → Belt

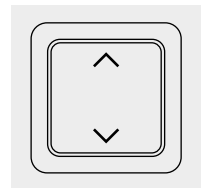
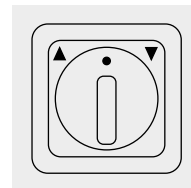
- When closing the roller shutter, operate the roller shutter belt slowly in the final third of the lowering action. When raising the shutter, likewise operate the belt slowly in the last third. At the top, the roller shutter must reach its end position gently and without force. The roller shutter belt is automatically wound up in the winder housing. Never let go of the belt and do not operate it jerkily.
- Always pull the roller shutter belt evenly and vertically out of the winder housing. Failure to pull the belt vertically from the housing may cause deformation, wear and malfunctions.

## → Wall switch

The motor switches off automatically at the top and bottom end positions.  
Various switch models are available.

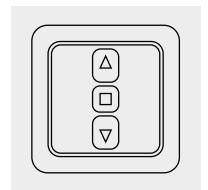
### Rotary or push-button switch

Pressing and holding down the (up/down) push-button or turning (left/right) and holding the knob of a rotary switch will cause the roller shutter to move in the selected direction. Releasing the switch or turning back the knob will stop the roller shutter. When the unit has reached the end position after raising and lowering, the push-button switch or knob must be returned to the starting position to keep the motor voltage-free.



### Latching switch

Pressing the (up/down) push-button or turning (left/right) the knob of a rotary switch will cause the roller shutter to move in the selected direction. Pressing the stop button or the button for the opposite direction (depending on the switch version) or turning back the knob will stop the roller shutter.



# Roller shutter

## → Radio remote control “A”

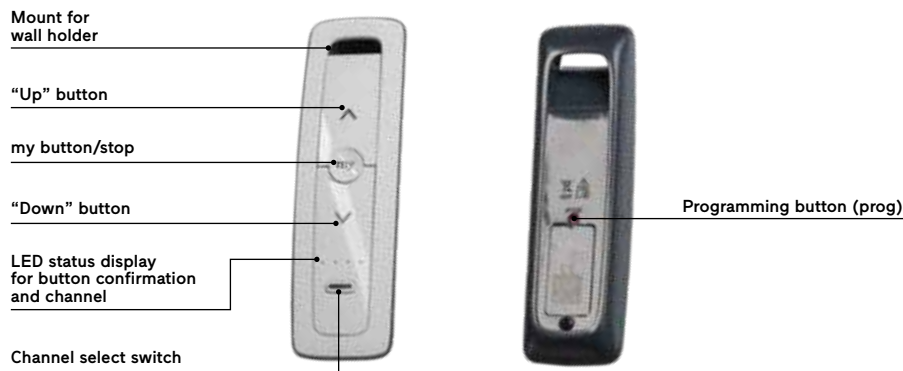
### Operation of remote control “A”

This section shows you how to operate your roller shutter using the remote control “A”. Up to nine remote controls can be programmed for one unit.

#### 1-channel remote control



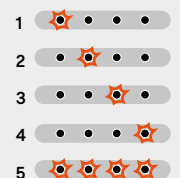
#### 5-channel remote control



#### Channels of 5-channel remote control

There are five different channels. By pressing the channel select switch, you can see which channel you are on. The first four channels are indicated by the individual LEDs. The fifth is active where all four LEDs light up. You can change the channel by re-pressing the channel select switch.

Scheme for LED  
status display



#### Same channel – multiple units

You can use the same channel to programme several motorised units.

For example, you can store and operate two roller shutters on channel 1 – and three other roller shutters on channel 2.

**Range**

The range of the remote controls is up to 40 metres and depends on whether the communication path between unit and remote control is free and whether there are any intervening obstructions (walls etc.). The fewer the obstructions between remote control and unit, the farther the signal will reach.

**Operation**

If you have a 5-channel remote control, press the channel select switch prior to operation to ensure that the correct channel – i.e. the channel where the unit(s) to be operated is/are stored – is selected.

**“Up” and “Down” buttons**

Briefly press the “Up” button to fully raise the roller shutter.



Briefly press the “Down” button to fully lower the roller shutter.

**Stop function**

When the roller shutter is moving, it can be stopped by briefly pressing the “my” button. Re-pressing the “my” button will cause the roller shutter to continue moving in the same direction as prior to stopping.

**Favourite position**

You can also use the radio remote control to set an intermediate position, a so-called favourite position.

**Activating favourite position**

Briefly press the “my” button. The roller shutter will move to the preset favourite position.

**Default favourite position**

The factory setting of the favourite position may be at half height or the bottom end position. However, a default favourite position is not necessarily preset.

**Setting/changing favourite position**

Operate the roller shutter and stop it at the required position. Press the “my” button (for approx. 5 seconds) until the unit briefly moves up and down one time. The favourite position is now programmed.

# Roller shutter

## → Radio remote control “A”

**Note:** With the 5-channel remote control, it is not possible to programme two different favourite positions on two different channels for the same roller shutter. If several channels are set for a roller shutter and a favourite position is programmed on one of these, then this favourite position will be transferred to all other channels set for the roller shutter.

### Deleting favourite position

Press the “my” button. The roller shutter will move to the preset favourite position and stop there. Press the “my” button again and hold it down (for approx. 5 seconds) until the roller shutter briefly moves up and down one time. The favourite position has now been deleted.

### Adding a remote control using a programmed remote control

If you have a motorised roller shutter that can be operated via a remote control, then you can programme another of the same type using a previously programmed remote control.

1. On a remote control that has been previously programmed, use a thin, pointed object (paper clip, pen, toothpick) to press the programming button (prog) for approx. 2 seconds until the roller shutter makes a brief up-and-down movement.
2. If you want to add a 5-channel remote control, then start by selecting the required channel using the channel select switch. On the remote control that is to be added, use a thin, pointed object (paper clip, pen, toothpick) to press the programming button (prog) for approx. 2 seconds until the roller shutter makes a brief up-and-down movement. The remote control has now been added.

### Deleting a remote control using a programmed remote control

If you have a motorised roller shutter that can be operated via a remote control, then you can use a previously programmed remote control to delete another.

1. On a remote control that has been previously programmed, use a thin, pointed object (paper clip, pen, toothpick) to press the programming button (prog) for approx. 2 seconds until the roller shutter makes a brief up-and-down movement.
2. If you want to delete a 5-channel remote control, then start by selecting the required channel using the channel select switch. On the remote control that is to be deleted, use a thin, pointed object (paper clip, toothpick) to press the programming button (prog) for approx. 2 seconds until the roller shutter makes a brief up-and-down movement. The remote control has now been deleted.

### Adding a channel with the 5-channel remote control

1. Make sure the remote control is on the correct channel. To do this, press the channel select switch, which shows you which channel the remote control is on, and switch to the correct channel as required.
2. Then adopt the same procedure as for adding a remote control.

## Replacing battery

If you need to replace the battery, then proceed as follows.

1. Unscrew the cover of the remote control as pictured.



3. Insert a new battery (type CR 2032 3V) into the holder such that the side with the plus sign is visible. Observe the polarity. The connections must not be short-circuited. Press the battery into the compartment.



2. Extract the empty battery from the compartment using a plastic object or a screwdriver.



4. Refit the cover and screw back down.



# Roller shutter

## → Radio remote control “A”

### Wall holder for remote control

The wall holder serves to attach the remote control to the wall. This section shows you how to fix it to the wall.

1. Remove the protective film from the adhesive surface on the rear face of the wall holder.



2. Mount the wall holder on a dry, clean, smooth surface. Press it down firmly so that it adheres well.



3. Place the remote control on the wall holder.



### Technical data

All technical data apply for an ambient temperature of 20°C ( $\pm 5^\circ\text{C}$ ). The situation on site and temperature have an impact on the effective range of the remote control.

Description	Technical data
Type of battery	Battery 3 V, type CR 2032
Frequency	868.700 MHz - 869.200 MHz
Effective radiated power (ERP)	<25 mW
Range	20 m
Operating temperature	0°C to +48°C
Ingress protection	IP 40 (use indoors or in protected environment)

## → Radio remote control “B”

### Operation of remote control “B”

Alongside the remote control “A”, the remote control “B” is additionally available for operating the Maxi roller shutters.

### Range

The range of the remote controls is up to 20 metres and depends on whether the communication path between unit and remote control is free and whether there are any intervening obstructions (walls etc.). The fewer the obstructions between remote control and unit, the farther the signal will reach. The range and reception performance of the receivers are also heavily influenced by other nearby devices (alarm systems, headphones etc.) operating at the same frequency.

### 1-channel remote control



### LED

The LED indicates the current status.

### Command buttons

With this remote control, you can use the command buttons to operate one or more roller shutters.

Press the ▲ button to raise the roller shutter.

Press the ▼ button to lower the roller shutter.

Press the ■ button to stop the moving roller shutter. The LED lights up green while the commands are being executed.

### Status button

The status button informs you about the current status of the active channel buttons on the remote control and about the position of the roller shutters (e.g. lowered or not).

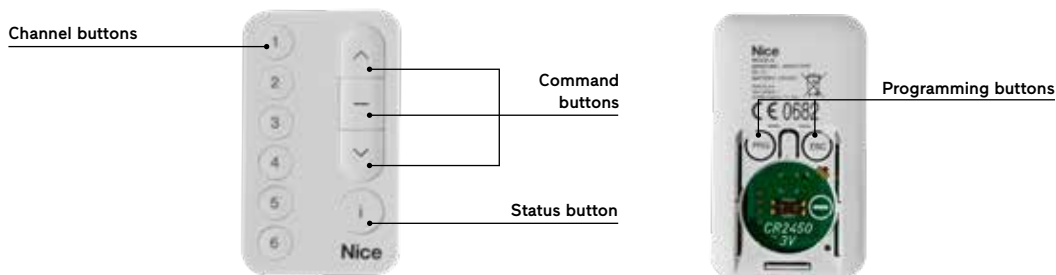
### Programming buttons

See description of 6-channel remote control.

# Roller shutter

## → Radio remote control “B”

### 6-channel remote control



#### Command buttons

Press the ▲ button to raise the roller shutter. The LED of the relevant channel will light up.

Press the ▼ button to lower the roller shutter. The LED of the relevant channel will light up.

Press the ■ button to stop the moving roller shutter. The LED of the relevant channel will light up.

Before pressing the command buttons, press the required channel buttons. Otherwise, the commands will be executed on the last channels used (selected using the channel buttons).

#### Status button

The status button informs you about the current status of the active channel buttons on the remote control and about the position of the roller shutters (e.g. lowered or not).

#### Channel buttons

Channel buttons are only available on the 6-channel remote control. They serve the selection of one or more channels that are to be used to operate one roller shutter (in the case of one programmed roller shutter on a channel) or several roller shutters.

The 6-channel remote control is provided with 6 channels that can be operated using the channel buttons. Each numbered button represents one channel. One channel can be used to operate one or more roller shutters after these have been programmed. To select a particular channel, press the relevant button. The associated LED will light up for several seconds. Before this goes out, you can select further channels by pressing additional buttons. After selecting your required channels, you can use the command buttons to operate the relevant roller shutters.

After selection of the required channels, these will remain in the memory, once the LEDs has automatically gone off, until a new channel or several new channels is/are selected. As long as the selected buttons remain in the memory, these can accept commands without first having to be reselected.

If you have selected an additional channel by mistake, you can remove it from the selection by re-pressing the relevant button.

### **Programming buttons**

You will find the programming buttons on the back of the remote control after you have removed the battery cover. They are mainly required for processes that are not intended or recommended for the end user due to their complexity and are thus not covered by these operating instructions. These buttons are only relevant to specific sections of these instructions.

### **Bidirectional mode**

The remote control is supplied with preset bidirectional mode. As Finstral does not intend or anticipate any switch to unidirectional mode, this is not described in these guidelines.

#### **Functions of bidirectional radio signal**

- Transmission of confirmation from the receiver to the transmitter that the transmitted command has been received.
  - If all the drives stored on a channel receive the control command correctly after transmission, then the LED of the 1-channel remote control or the LED of the selected channel buttons will light up green. A beep will be emitted.
  - If the control command has not been received by at least one of the automated drives stored on the channel, then the LED will light up dark red.
- To find out the current status of the roller shutter (e.g. whether it is fully raised), you can query the status. You can read more on this in the “Status query” section.

#### **Mode display**

When the battery is inserted, the remote control will emit a beep (if activated) and the LED on the 1-channel remote control or all channel buttons on the 6-channel remote control will switch on and light up green. This indicates the configuration in bidirectional mode.

# Roller shutter

## → Radio remote control “B”

### Programming a new remote control with a previously programmed one

You can use a previously programmed remote control to programme another one. Here, the distance from the roller shutter must not exceed 20 metres. The motors of other nearby roller shutters should be switched off during this process.

#### Programming procedure

1. Remove the batteries from the **previously programmed** remote control and reinsert them.

- With a previously programmed 1-channel remote control, the LED will flash light red.
- With a previously programmed 6-channel remote control, the channel buttons assigned to the drive will flash green. Press and release the channel button of the channel that is to contain the enabling code to be transmitted. The corresponding LED for the selected group will flash bright red.

2. Press the following button on the **new** remote control within 5 seconds:

- With a new 1-channel remote control, press the ▲ button.
- With a new 6-channel remote control, press the channel button for the channel that is to receive the signal from the previously programmed remote control (channel 1 in the illustration). Then press and hold down the ▲ button.



New 1-channel  
remote control



New 6-channel  
remote control

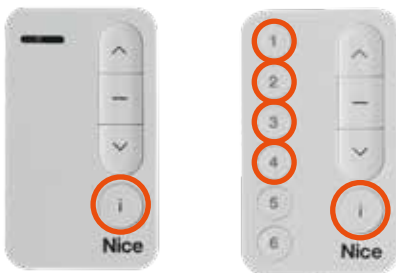
3. Correct receipt of the code is indicated by the LED or the channel buttons lighting up green. If the acoustic signal is activated, a beep will be emitted.

If the LED on the 1-channel remote control flashes or the chosen channel select buttons on the 6-channel remote control light up dark red, then the procedure must be repeated.

## Status query

You can use the status button on the remote control to check the position of the roller shutter(s).

1. Press the status button. With a 6-channel remote control, start by selecting the required channel(s) (channels 1–4 in the illustration).



2. Check the colour of the LED on the 1-channel remote control or the colour of the selected channel buttons. The colours indicate the following:

- Green: The roller shutter is at the top end position.
- Red: The roller shutter is at the bottom end position.
- Light red: The roller shutter is only partially lowered/raised.
- Light red flashing: There is no power supply.

## Selecting a channel

1. Select one or more channels on the 6-channel remote control.
2. Press the required command button. When the command is sent, the corresponding LED on the channel button will flash light red.
3. After execution of the command via the command button, the channel button will display the result as follows:
  - Green (plus acoustic signal, if activated): The command was received and executed correctly.
  - Dark red: The command was not received by at least one of the drives stored on the channel.

If the command was not received, then check whether the assigned automated drive is supplied with power and is functioning correctly. In case of problems, please contact the technical support service of the installation company.

# Roller shutter

## → Radio remote control “B”

### Deleting a channel

With the 6-channel remote control, you can delete a channel that has been set.

#### Note

Make absolutely sure that another channel on the remote control is still programmed for the roller shutter. Should all channels on the remote control be deleted, then the remote control must be reprogrammed. For this, you will need to contact the technical support service of the installation company.

1. Open the protective housing of the battery by moving back the cover while leaving the battery firmly in place, with the remote control still fully operational.



2. Press the channel select button for the channel you wish to delete (channel 1 in the illustration) and then release it.



3. Simultaneously press the “PRG” and “ESC” buttons until the channel select button of the channel to be deleted lights up dark red. Then release the buttons. The dark red LED will light up to indicate that the channel has been successfully deleted.



### Activation/deactivation of acoustic signal

The 1-channel and 6-channel remote controls are provided with a factory-activated acoustic signal (beep). It can be deactivated and reactivated at any time. To do this, proceed as follows:

Open the protective housing of the battery by moving back the cover while leaving the battery firmly in place, with the remote control still fully operational.



#### Deactivation of acoustic signal

To deactivate the acoustic signal, press the “ESC” programming button and simultaneously press the ▼ command button twice.



#### Activation of acoustic signal

To activate the acoustic signal, press the “ESC” programming button and simultaneously press the ▲ command button twice.



## Replacing battery

This section shows you how to replace the batteries in the remote control “B”.

### Low battery status message

When the battery charge level is low, the LED or the channel buttons will start to slowly flash light red.

### (Almost) empty battery

If the battery is almost empty, then the LED will flash dark red during transmission. If the battery is empty, then the LED will become dimmer and the remote control will stop transmitting signals.

### Replacing battery

For the remote control to work properly again, the empty battery must be replaced with one of the same type. Proceed as follows:

1. Pull out the protective cover. Use a paper clip, a SIM card eject tool or a similar object for this purpose.



2. Remove the battery and replace it with one of the same type. Observe the polarity when inserting the new battery.



# Roller shutter

## → Radio remote control “B”

### Cleaning

As an externally fitted sunshading device, roller shutters can become soiled over time.

Clean only the safely accessible surfaces of roller shutters using a clean, damp cloth and soapy water. Then rewipe with another clean, damp cloth and clean water. To achieve even better results, finish by drying the surfaces with a soft cloth.

Do not press too firmly on the slats as these may otherwise become bent. Do not use a high-pressure cleaner. There is a risk of the slat surfaces being damaged by pressure and heat. Cleaning should be performed at least twice a year.

### Technical data

All technical data apply for an ambient temperature of 20°C (±5°C). The situation on site and temperature have an impact on the effective range of the remote control.

Description	Technical data
Type of battery	AAA, type CR2450
Battery life	Approx. 3 years for 10 signal transmissions per day
Frequency	433.92 MHz
Effective radiated power (ERP)	< 10 mW
Radio coding	BD - O-Code
Range	20 m
Operating temperature	-5°C to +55°C
Ingress protection	IP 40 (use indoors or in protected environment)

## → Identifying and remedying problems

### Roller shutters: identifying and remedying specific problems

This section describes problems relating to roller shutters, their causes and solutions.

Problem	Possible causes	Solutions
<b>The roller shutter does not respond.</b>	The wiring is faulty.	Contact the technical support service of the installation company.
	The freeze protection function of the drive has been triggered.	Wait until the temperature allows operation of the roller shutter.
	The overheating protection function of the drive has been triggered. The overheating protection function factors in several parameters and may be triggered to protect the drive even when the shaft temperature is not elevated.	Wait a few minutes.
	The remote control battery is low.	Replace the battery (see page 57).
	The remote control is not compatible.	Contact the technical support service of the installation company.
	The operated remote control has not been programmed for the drive.	Use a programmed remote control or programme the remote control in question.

# Roller shutter

## → Identifying and remedying problems

### Roller shutters: identifying and remedying specific problems

This section describes problems relating to roller shutters, their causes and solutions.

Problem	Possible causes	Solutions
<b>The drive's direction of rotation is not automatically set.</b>	The device in question is a small roller shutter of approx. 0.6m x 0.7m (approx. 0.5 m <sup>2</sup> ).	Move the roller shutter to the lowered position, then raise it again for 5 seconds while using your hand to slow it down (without stopping it). Then move it back down to the lowered position. When moved again, the roller shutter will now adopt the correct direction of rotation.
<b>The roller shutter (Mini roller shutter box with wall switch) is not working.</b>	The overheating protection function of the drive has been triggered.	Wait until the drive has cooled down.
<b>The roller shutter (Maxi roller shutter box with wall switch) is not working.</b>	The thermal protection function has been activated.	Wait until the drive has cooled down.
	This is the result of a technical problem.	Please contact the technical support service of the installation company.
<b>The roller shutter (Maxi roller shutter box with wall switch) does not respond to the "Up" button, the roller shutter being completely or partially closed.</b>		Briefly lower the roller shutter, then raise it again.
<b>The roller shutter stops for no apparent reason or without any visible obstruction.</b>	The sensitivity level of the obstruction detection function is too high.	Please contact the technical support service of the installation company.

## Radio remote control “B”: identifying and remedying specific problems

This section describes problems relating to the radio remote control “B”, their causes and solutions.

Problem	Cause	Solution
<b>The LED on the remote control flashes 10 times.</b>	When programming another remote control, a communication error occurs between the devices.	Retry programming the remote control. Should the problem persist despite repeated programming attempts, then please contact the technical support service of the installation company.
	The maximum time limit was exceeded. The remote control was not programmed.	Retry programming the remote control without exceeding the maximum time limit.
<b>It was not possible to programme a new remote control using the previously programmed remote control. The roller shutter has performed 6 movements.</b>	The 5 second time limit between the individual steps of the programming process was exceeded.	Repeat the procedure, observing the time limit between the individual steps of the programming process.
<b>It was not possible to programme a new remote control using the previously programmed remote control.</b>	The old remote control is defective.	It is not possible to programme a new remote control using a previously programmed remote control that is defective. Contact the technical support service of the installation company.

# Roller shutter

## → Further information

### **Obstruction detection**

The automatic obstruction detection function protects the roller shutter curtain from damage and allows obstructions to be removed.

If the roller shutter curtain encounters an obstruction during downward movement, it will automatically stop. To release the roller shutter, press the “Up” button.

If the roller shutter curtain encounters an obstruction during upward movement, it will automatically stop. To release the roller shutter, press the “Down” button.

After removal of the obstruction, the roller shutter may quickly drop downwards and trap body parts or injure you or other persons. Make sure that the area of travel is not occupied by any objects, body parts, children or adults.

### **Freeze protection**

The freeze protection function works in the same way as obstruction detection. If the drive detects any resistance, it will not start moving in order to prevent any damage to the roller shutter curtain. The roller shutter will remain in its original position.

# External Venetian blind

## → Safety information

- Only use the external Venetian blind for its intended purpose.
- External Venetian blinds are installed in front of windows or doors to provide visual privacy and solar protection. They are not designed to protect against the wind and weather.
- External Venetian blinds are not suitable as a support or fall protection device. A closed Venetian blind will not prevent persons from falling out of a window or door.
- Opening, closing, cleaning and maintaining the Venetian blind entail a risk of falling from height. Do not lean out of the window.
- Do not apply any additional loads to the external Venetian blind.
- On account of its stable construction, the external Venetian blind is a heavy unit. Its careless operation poses a risk of injury.
- Close your windows in strong winds. Take care to prevent draughts, also during your absences. Closed Venetian blinds are not able to withstand all wind loads. Please note that the specified wind load is only guaranteed when the window is closed. The slats of external Venetian blinds may rattle in strong winds, but this does not constitute a defect. If wind speeds of approx. 50 km/h are imminent, then retract the external Venetian blind to prevent potential damage.
- The external Venetian blind may freeze in frosty conditions. Refrain from using force when operating the external Venetian blind. Do not try to open or close it if it is frozen up. It can be operated again when it has unfrozen. Do not operate the external Venetian blind if there is snow or ice in the guide rails. Switch off the automatic function of motorised external Venetian blinds with automatic control whenever there is a risk of freezing.
- Do not push up or pull down the external Venetian blind by hand. Never push up the external Venetian blind without operating the drive as this may cause a malfunction.
- The opening and closing of external Venetian blinds pose a risk of injury. Do not reach into the area of travel of the external Venetian blind or the external Venetian blind rails.
- Take suitable precautions to eliminate crushing hazards, especially when the blind is operated by automatic equipment.
- Nothing must be allowed to obstruct the lowering action of the external Venetian blind. When operating the unit, ensure that the area of travel is not obstructed by any persons, animals or objects and that the blind rails guarantee free travel. Do not reach into or hold onto moving parts during operation as this poses a risk of injury.
- Locate the operating switch within sight of the unit, though not within the area of the unit's moving parts.
- Children and animals must not be allowed to play with the controls, e.g. remote controls or switches for the external Venetian blind. Keep remote controls out of the reach of children and animals.
- Provision of an emergency power supply is recommended, especially in areas with frequent mains failures. This will serve to prevent external Venetian blind malfunctions caused by power failures.
- In case of automatic control: if an external Venetian blind that is connected to an automated system is installed at the only access point to your balcony or patio, then you are at risk of locking yourself out. To prevent this from happening, switch off the automatic function whenever you are on the balcony or patio.
- Persons with physical, mental or sensory impairments as well as persons lacking the necessary knowledge or experience must not be allowed to operate the external Venetian blind or remote control. The product must be operated under the guidance and supervision of a person responsible for their safety.

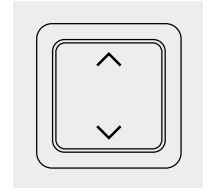
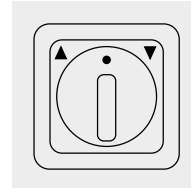
# External Venetian blind

## → Wall switch

The motor switches off automatically at the top and bottom end positions. Various switch models are available.

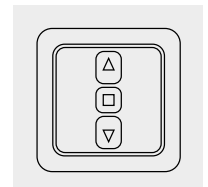
### Rotary or push-button switch

Pressing and holding down the (up/down) push-button or turning (left/right) and holding the knob of a rotary switch will cause the external Venetian blind to move in the selected direction. Releasing the switch or turning back the knob will stop the external Venetian blind. When the unit has reached the end position after raising and lowering, the push-button switch or knob must be returned to the starting position to keep the motor voltage-free.



### Latching switch

Pressing the (up/down) push-button or turning (left/right) the knob of a rotary switch will cause the external Venetian blind to move in the selected direction. Pressing the stop button or the button for the opposite direction (depending on the switch version) or turning back the knob will stop the external Venetian blind.

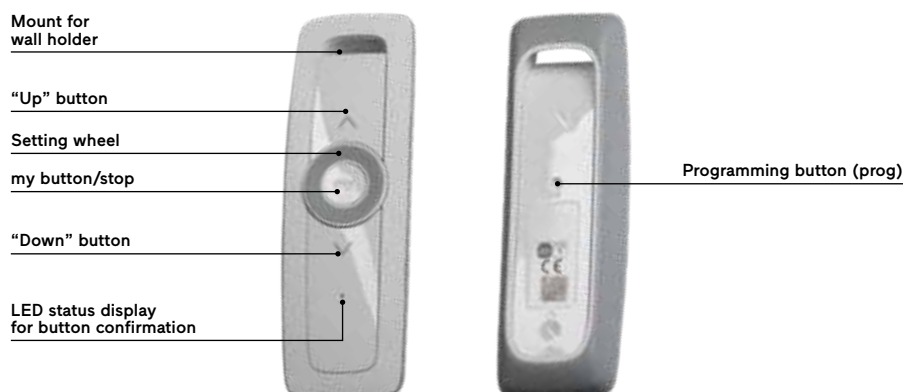


## → Radio remote control

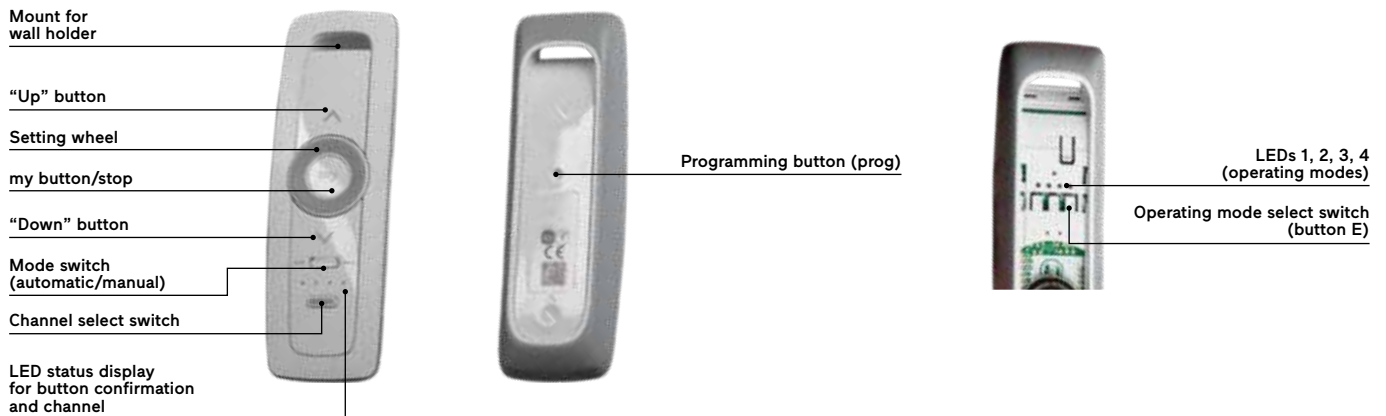
### Remote control

You are provided with either a 1-channel or a 5-channel remote control.

#### 1-channel remote control

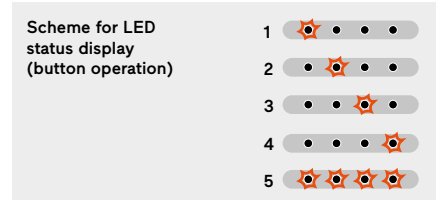


## 5-channel remote control



## Channels of 5-channel remote control

There are five different channels. By pressing the channel select switch, you can see which channel you are on. The first four channels are indicated by the individual LEDs. The fifth is active where all four LEDs light up. You can change the channel by re-pressing the channel select switch.



## Same channel – multiple units

You can use the same channel to programme several motorised units. For example, you can store and operate two external Venetian blinds on channel 1 – and three other external Venetian blinds on channel 2.

## Range

The range of the remote controls is up to 40 metres and depends on whether the communication path between unit and remote control is free and whether there are any intervening obstructions (walls etc.). The fewer the obstructions between remote control and unit, the farther the signal will reach.

## Operation

If you have a 5-channel remote control, press the channel select switch prior to operation to ensure that the correct channel – i.e. the channel where the unit(s) to be operated is/are stored – is selected.

# External Venetian blind

## → Radio remote control

### “Up” and “Down” buttons

Briefly press the “Up” button to fully raise the external Venetian blind.



Briefly press the “Down” button to fully lower the external Venetian blind.



### Stop function

When the external Venetian blind is moving, it can be stopped by briefly pressing the “my” button. Re-pressing the “my” button will cause the external Venetian blind to continue moving in the same direction as prior to stopping.



### Favourite position

You can also use the radio remote control to set an intermediate position, a so-called favourite position.

### Activating favourite position

Briefly press the “my” button. The external Venetian blind will move to the preset favourite position.

### Default favourite position

The factory setting of the favourite position may be at half height or the bottom end position. However, a default favourite position is not necessarily preset.

### Changing/setting favourite position

Operate the external Venetian blind and stop it at the required position. Press the “my” button (for approx. 5 seconds) until the unit briefly moves up and down one time. The favourite position is now programmed.

**Note:** With the 5-channel remote control, it is not possible to programme two different favourite positions on two different channels for the same unit. If several channels are set for a unit and a favourite position is programmed on one of these, then this favourite position will be transferred to all other channels set for the unit.

### Deleting favourite position

Press the “my” button. The external Venetian blind will move to the preset favourite position and stop there. Press the “my” button again and hold it down (for approx. 5 seconds) until the external Venetian blind briefly moves up and down one time. The favourite position has now been deleted.

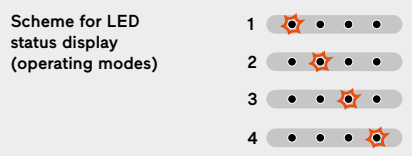
## Operating modes

The 5-channel remote control has 4 pre-programmed operating modes. This allows selection of the correct operating mode depending on the application type of the groups to be controlled. Only operating mode 3 is relevant for the operation of external Venetian blinds and all channels are preset to this by default.

Here is an overview of the operating modes:

Operating mode 1	Control of all io-homecontrol applications, e.g. roller shutters. The setting wheel is not activated.
Operating mode 2	The setting wheel is activated and allows you to control lighting and heating.
Operating mode 3	The setting wheel is activated and allows you to change the setting of an adjustable sunshading device or a roller shutter with tiltable slats.
Operating mode 4	The setting wheel is activated and allows you to change the setting of an adjustable interior Venetian blind.

The operating modes are indicated by individual LEDs.



## Changing operating mode

1. First select the correct channel using the channel select switch.
2. Remove the back of the remote control.
3. Press the operating mode select switch (button E). The operating mode assigned to the channel will be displayed. Press repeatedly to change the operating mode.
4. Refit the back of the remote control.

# External Venetian blind

## → Radio remote control

### Mode switch (automatic/manual)

To change the mode, move the mode switch (automatic/manual).

**Automatic mode:** The channel applications respond to all control units and transmitters to which they are connected (specific and general remote controls, time switches).

**Manual mode:** Blocks all commands from automation devices (TaHoma type central home automation systems, time switches, solar automation systems or sensors) to which the applications of the groups are connected.

### Setting wheel

The setting wheel allows you to adjust the slat tilt angle of the external Venetian blinds.

Adjustment by one notch: adjustment of slats by one increment.

Adjustment by several notches: Adjustment of the slats by corresponding number of increments.

Quick adjustment: full tilting of the slats.

### Copying settings to another channel

The settings for operating modes 3 and 4 can be copied to all channels that use operating modes 3 and 4.

The following settings will be copied:

- Direction of rotation of slats
- Change to speed of slat adjustment

1. First select the correct channel on the 5-channel remote control.
2. Remove the back of the remote control.
3. Press the operating mode select switch (button E) until the LED flashes (> 5 seconds). When the operating mode select switch (button E) is released, the LED will light up continuously.
4. Press the operating mode select switch (button E) again until the LED stops flashing (> 5 seconds).
5. Refit the back of the remote control.

### **Adding a remote control using a programmed remote control**

If you have a motorised external Venetian blind that can be operated via a remote control, then you can programme another of the same type using a previously programmed remote control.

1. On a remote control that has been previously programmed, press the programming button (prog) for approx. 2 seconds until the external Venetian blind makes a brief up-and-down movement.
2. If you want to add a 5-channel remote control, then start by selecting the required channel using the channel select switch. On the remote control that is to be added, press the programming button (prog) for approx. 2 seconds until the external Venetian blind makes a brief up-and-down movement. The remote control has now been added.

### **Deleting a remote control using a programmed remote control**

If you have a motorised external Venetian blind that can be operated via a remote control, then you can use a previously programmed remote control to delete another.

1. On a remote control that has been previously programmed, press the programming button (prog) for approx. 2 seconds until the external Venetian blind makes a brief up-and-down movement.
2. If you want to delete a 5-channel remote control, then start by selecting the required channel using the channel select switch. On the remote control that is to be deleted, press the programming button (prog) for approx. 2 seconds until the external Venetian blind makes a brief up-and-down movement. The remote control has now been deleted.

### **Adding a channel with the 5-channel remote control**

1. Make sure the remote control is on the correct channel. To do this, press the channel select switch, which shows you which channel the remote control is on, and switch to the correct channel as required.
2. Then adopt the same procedure as for adding a remote control.

#### **Information**

With a 5-channel remote control, it is not possible to delete just one channel. Only all channels on the remote control can be deleted.

# External Venetian blind

## → Radio remote control

### Replacing battery

If you need to replace the battery, then proceed as follows.

1. Remove the cover of the remote control as pictured. Place both thumbs at the marked positions and push the surface upwards. When doing this, apply gentle pressure with the thumb placed at the top marking. This allows the remote control to be opened.



2. Extract the empty battery from the compartment using a plastic object or a screwdriver.



3. Insert a new battery (type CR 2430 3V) into the holder such that the side with the plus sign is visible. The connections must not be short-circuited. Press the battery into the compartment.



4. Refit the cover. When doing this, make sure you start by inserting the top part of the remote control and then press the bottom part closed.



## Wall holder for remote control

This section shows you how to fix the wall holder to the wall.

**1.** Remove the protective film from the adhesive surface on the rear face of the wall holder.

**2.** Mount the wall holder on a dry, clean, smooth surface. Press it down firmly so that it adheres well.

**3.** Place the remote control on the wall holder .



## Technical data

All technical data apply for an ambient temperature of 20°C ( $\pm 5^\circ\text{C}$ ). The situation on site and temperature have an impact on the effective range of the remote control.

Description	Technical data
Type of battery	Battery 3 V, type CR 2430
Frequency	868.700 MHz - 869.200 MHz
Effective radiated power (ERP)	<25 mW
Range	20 m
Operating temperature	0°C to +48°C
Ingress protection	IP 40 (use indoors or in protected environment)

# External Venetian blind

## → Cleaning

As an externally fitted sunshading device, external Venetian blinds can become soiled over time.

Clean the slats of the external Venetian blind using a clean, damp cloth and soapy water. Then rewipe with another clean, damp cloth and clean water. To achieve even better results, finish by drying the surfaces with a soft cloth.

Do not press too firmly on the slats as these and the textile cord may otherwise become bent/creased. Do not use a high-pressure cleaner. There is a risk of the slat surfaces being damaged by pressure and heat.

## → Identifying and remedying problems

Problem	Possible causes	Solutions
<b>The external Venetian blind does not respond.</b>	The wiring is faulty.	Contact the technical support service of the installation company.
	The freeze protection function of the drive has been triggered.	Wait until the temperature allows operation of the external Venetian blind.
	The overheating protection function of the drive has been triggered.	Wait a few minutes until the drive has cooled down.
	The remote control battery is low.	Replace the battery (see page 70).
	The remote control is not compatible.	Contact the technical support service of the installation company.
	The operated remote control has not been programmed for the drive.	Use a programmed remote control or programme the remote control in question.
<b>The "my" position function does not work.</b>	The "my" position has been deleted.	Set the "my" position.

Problem	Possible causes	Solutions
The external Venetian blind stops too early or too late.	The end positions are incorrectly set.	Please contact the technical support service of the installation company.
The slats are hard to tilt.	The remote control is not compatible.	
The slats cannot be properly positioned.	The slat tilt function or maximum tilt range is incorrectly set.	
The “my” position cannot be repeated.	The slat tilt function has not been correctly set.	
The external Venetian blind runs lopsidedly.	The lift cord is crooked.	
The external Venetian blind stops too early.	The end positions are incorrectly set.	
The position cannot be repeated.	The maximum tilt range is incorrectly set.	

## → Further information

### Obstruction detection during upward movement

If the external Venetian blind encounters an obstruction during upward movement, then the drive will immediately stop and perform a downward movement to prevent any pressure being exerted on the unit's components. The obstruction detection function is activated by default. The obstruction detection function is not active during downward movement of the external Venetian blind.

### Frost detection during upward movement

If the external Venetian blind is blocked due to frost when commencing an upward movement, then the drive will immediately stop and switch to downward movement to relieve the unit. The frost detection function is activated by default.

### Independent readjustment of top end position

To reduce maintenance, the drive automatically readjusts its top end position at regular intervals. This function is activated by default.

### Overheating protection

The overheating protection function protects the drive against overheating. Should the drive overheat during prolonged operation, it will switch off for several minutes.

# Venetian and pleated blind

## → Component description



## → Safety information

- Only use the Venetian/pleated blind for its intended purpose.
- Make sure that the area of travel of the Venetian/pleated blind is not blocked by any obstructions.
- Do not reach into the area between the moving parts when the unit is in motion. Even when the unit has stopped, there is still a risk of injury if you reach into the area between the moving parts.
- Do not push up or pull down the slats by hand. Use only the operating devices provided for this purpose.
- Do not apply any additional loads to the Venetian/pleated blind.
- Important note for chain-operated Venetian/pleated blinds: Children, especially toddlers, can get caught in the loops of the chain drive and strangle themselves. There is a risk of them wrapping the chain round their neck. Keep the chain out of the reach of children. Nor should beds or other items of furniture be located near the chains.
- Provision of an emergency power supply is recommended, especially in areas with frequent mains failures. This will serve to prevent Venetian/pleated blind malfunctions caused by power failures.
- Important note for motorised Venetian/pleated blinds: Children and animals must not be allowed to play with the controls, e.g. remote controls or switches for the Venetian/pleated blind. Keep remote controls out of the reach of children and animals.

## → Chain drive

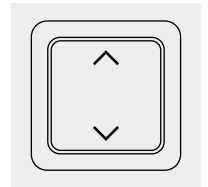
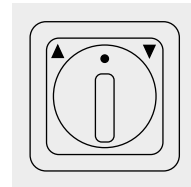
- The Venetian/pleated blind is raised or lowered by pulling the chain. The Venetian/pleated blind can be stopped at any position. Always pull the chain slowly.
- Regularly check the top and bottom mounts to ensure that the chain is properly guided. Replace the operating device if it is defective.
- When the Venetian/pleated blind is completely raised and you feel resistance on the chain pull, then switch to the other side of the chain for downward operation. To prevent damage to the drive unit, do not continue to pull the chain in the upward direction.
- The chain tensioning device must be fixed at least 1.5 m above floor level (to ensure child safety/eliminate the risk of strangulation).

## → Wall switch

The motor switches off automatically at the top and bottom end positions. Various switch models are available.

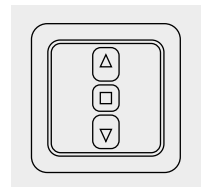
### Rotary or push-button switch

Pressing and holding down the (up/down) push-button or turning (left/right) and holding the knob of a rotary switch will cause the Venetian/pleated blind to move in the selected direction. Releasing the switch or turning back the knob will stop the unit. When the unit has reached the end position after raising and lowering, the push-button switch or knob must be returned to the starting position to keep the motor voltage-free.



### Latching switch

Pressing the (up/down) push-button or turning (left/right) the knob of a rotary switch will cause the Venetian/pleated blind to move in the selected direction. Pressing the stop button or the button for the opposite direction (depending on the switch version) or turning back the knob will stop the unit.

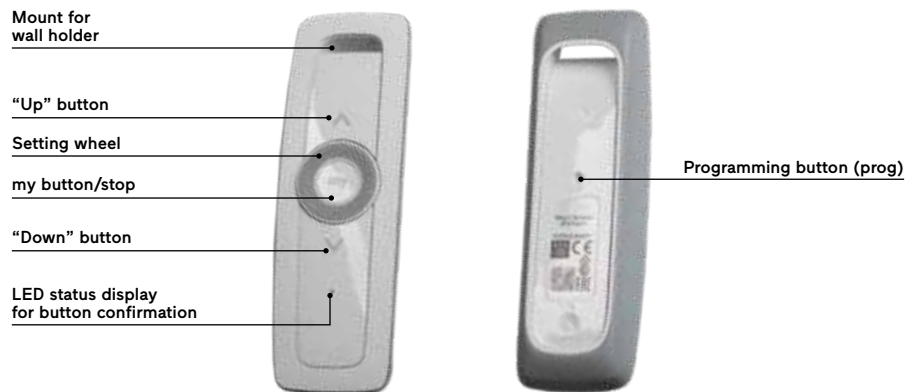


# Venetian and pleated blind → Radio remote control

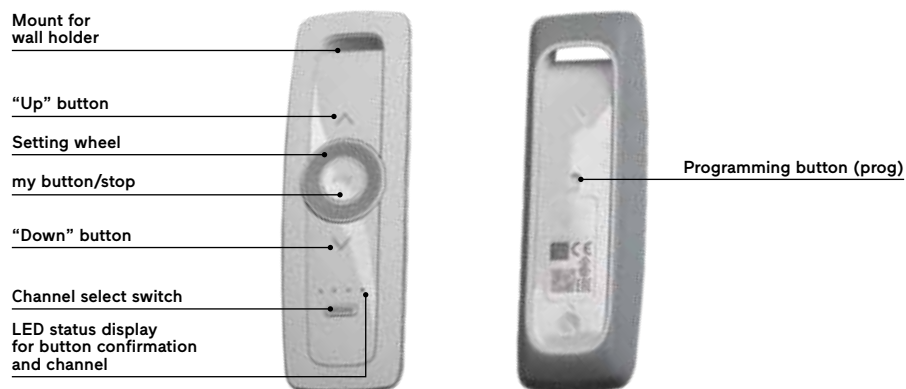
## Remote control

You are provided with either a 1-channel or a 5-channel remote control.

### 1-channel remote control

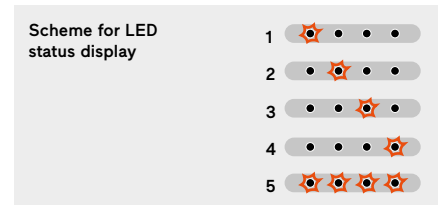


### 5-channel remote control



### Channels of 5-channel remote control

There are five different channels. By pressing the channel select switch, you can see which channel you are on. The first four channels are indicated by the individual LEDs. The fifth is active where all four LEDs light up. You can change the channel by re-pressing the channel select switch.



### Same channel – multiple units

You can use the same channel to programme several motorised units. For example, you can store and operate two Venetian/pleated blinds on channel 1 and three other Venetian/pleated blinds on channel 2.

### Range

The range of the remote controls is up to 40 metres and depends on whether the communication path between unit and remote control is free and whether there are any intervening obstructions (walls etc.). The fewer the obstructions between remote control and unit, the farther the signal will reach.

### Operation

If you have a 5-channel remote control, press the channel select switch prior to operation to ensure that the correct channel – i.e. the channel where the unit(s) to be operated is/are stored – is selected.

### “Up” and “Down” buttons

Briefly press the “Up” button to fully raise the Venetian/pleated blind.



Briefly press the “Down” button to fully lower the Venetian/pleated blind.



### Stop function

When the Venetian/pleated blind is moving, it can be stopped by briefly pressing the “my” button. Re-pressing the “my” button will cause the unit to continue moving in the same direction as prior to stopping.



# Venetian and pleated blind

## → Radio remote control

### Setting wheel

The setting wheel allows you to adjust the slat tilt angle of the Venetian blinds.

Adjustment by one notch: adjustment of slats by one increment.

Adjustment by several notches: Adjustment of the slats by corresponding number of increments.

Quick adjustment: full tilting of the slats.

### Favourite position

You can also use the radio remote control to set an intermediate position, a so-called favourite position.

#### Activating favourite position

Briefly press the “my” button. The Venetian/pleated blind will move to the preset favourite position.

#### Default favourite position

Alongside the factory settings for raising and lowering times, the factory setting of the favourite position is at the bottom end position, for Venetian blinds with a slat angle of 45°.

#### Changing favourite position

1. To change the favourite position, the Venetian/pleated blind must be at the top end position.
2. Press the “my” button for approx. 5 seconds until the unit starts to move. The Venetian/pleated blind will move to the previously stored favourite position. If the favourite position has been deleted, it will move to the original default favourite position.
3. Readjust the favourite position using the “Up” and “Down” buttons (and the scroll wheel in case of Venetian blinds).
4. Press the “my” button for approx. 5 seconds until the unit makes a brief up-and-down movement to confirm. The new favourite position has now been stored. With Venetian blinds, the slats are always closed.

**Note:** If the favourite position has been newly set, the unit will first move to the bottom end position when the “my” button is pressed, will stop for a few seconds and will then move to the set favourite position.

### **Deleting favourite position**

Press the “my” button. The Venetian/pleated blind will move to the preset favourite position and stop there. Press the “my” button again and hold it down (for approx. 5 seconds) until the unit briefly moves up and down one time. The favourite position has now been deleted. To reprogramme a favourite position, see “Changing favourite position” (page 70).

### **Adding a remote control using a programmed remote control**

If you have a motorised Venetian/pleated blind that can be operated via a remote control, then you can programme another of the same type using a previously programmed remote control.

1. On a remote control that has been previously programmed, press the programming button (prog) for approx. 2 seconds until the unit makes a brief up-and-down movement.
2. If you want to add a 5-channel remote control, then start by selecting the required channel using the channel select switch. On the remote control that is to be added, press the programming button (prog) for approx. 2 seconds until the unit makes a brief up-and-down movement. The remote control has now been added.

### **Deleting a remote control using a programmed remote control**

If you have a motorised Venetian/pleated blind that can be operated via a remote control, then you can use a previously programmed remote control to delete another.

1. On a remote control that has been previously programmed, press the programming button (prog) for approx. 2 seconds until the unit makes a brief up-and-down movement.
2. If you want to delete a 5-channel remote control, then start by selecting the required channel using the channel select switch. On the remote control that is to be deleted, press the programming button (prog) for approx. 2 seconds until the unit makes a brief up-and-down movement. The remote control has now been deleted.

### **Adding a channel with the 5-channel remote control**

1. Make sure the remote control is on the correct channel. To do this, press the channel select switch, which shows you which channel the remote control is on, and switch to the correct channel as required.
2. Then adopt the same procedure as for adding a remote control.

# Venetian and pleated blind

## → Radio remote control

### Replacing battery

If you need to replace the battery, then proceed as follows.

1. Remove the cover of the remote control as pictured. Place both thumbs at the marked positions and push the surface upwards. When doing this, apply gentle pressure with the thumb placed at the top marking. This allows the remote control to be opened.



2. Extract the empty battery from the compartment using a plastic object or a screwdriver.



3. Insert a new battery (type CR 2430 3V) into the holder such that the side with the plus sign is visible. The connections must not be short-circuited. Press the battery into the compartment.



4. Refit the cover. When doing this, make sure you start by inserting the top part of the remote control and then press the bottom part closed.



### Wall holder for remote control

The wall holder serves to attach the remote control to the wall. This section shows you how to fix it to the wall.

1. Remove the protective film from the adhesive surface on the rear face of the wall holder.
2. Mount the wall holder on a dry, clean, smooth surface. Press it down firmly so that it adheres well.
3. Place the remote control on the wall holder.



### Technical data

All technical data apply for an ambient temperature of 20°C (±5°C). The situation on site and temperature have an impact on the effective range of the remote control.

Description	Technical data
Type of battery	Battery 3 V, type CR 2430
Frequency	433,050 MHz - 434,790 MHz
Effective radiated power (ERP)	<10 mW
Range	20 m
Operating temperature	0°C to +50°C
Ingress protection	IP 40 (use indoors or in protected environment)

# Venetian and pleated blind

## → Cleaning

### Twin coupled sash

The following section provides details on how to clean the Venetian/pleated blind and the glass surfaces in the gap between the panes.

1. To clean, start by opening the locking mechanisms between the sashes and carefully push them apart. To do this, pull out the locking bars.

#### Locking bar for

active sash for Slim-line Twin/Slim-line Cristal Twin or Nova-line Twin/Nova-line Cristal Twin coupled sash



passive sash for double-sash window with Nova-line Twin/Nova-line Cristal Twin coupled sash



2. Clean the inner glass surfaces in accordance with the cleaning instructions (see "Cleaning and maintenance" section, page 90-94). If you want to clean the Venetian/pleated blind, then move it downwards, though not to the end stop.



3. Properly press all components together again and fully close the locking mechanisms. Take care not to trap the Venetian/pleated blind.

#### Note

Venetian and pleated blinds are sensitive components. Clean them carefully and gently. When cleaning, likewise take care not to damage or scratch the glass of the window.

#### Cleaning pleated blinds

Use a dry, antistatic cloth to carefully wipe the surface, moving from one side to the other.

#### Cleaning Venetian blinds

Use a dry, antistatic cloth to carefully wipe the individual slats, moving from one side to the other. When cleaning Venetian blinds, pay particular attention to the slat edges, which can cause injuries to the skin.

#### Cleaning inner glass surfaces

If you want to clean the inner glass surfaces, then first fully raise the Venetian/pleated blind so as not to damage the unit during cleaning.

## → Identifying and remedying problems

Problem	Possible causes	Solutions
<b>The Venetian/pleated blind does not respond to the command from the remote control.</b>	The wiring is faulty.	Contact the technical support service of the installation company.
	The remote control battery is low.	Replace the battery (see page 80).
	The remote control is not compatible.	Contact the technical support service of the installation company.
	The operated remote control has not been programmed for the drive.	Use a programmed remote control or programme the remote control in question.
	After cleaning, the components were not properly pressed together and closed.	Make sure that all components are correctly closed.
<b>The Venetian/pleated blind moves in the wrong direction: when the “Up” button is pressed, the unit moves down and when the “Down” button is pressed, the unit moves up.</b>	An error was made during reprogramming (e.g. when changing the favourite position).	<ol style="list-style-type: none"> <li>1. Position the unit in the middle.</li> <li>2. Simultaneously press the “Up” and “Down” buttons until the unit makes a brief up-and-down movement.</li> <li>3. Press the “my” button until the unit again makes a brief up-and-down movement.</li> <li>4. Test the direction by pressing the “Up” and “Down” buttons. If the problem persists, repeat steps 3 and 4 until the direction is correct.</li> <li>5. Press the “my” button until the unit again makes a brief up-and-down movement.</li> <li>6. Press the “my” button a second time until the unit again makes a brief up-and-down movement (i.e. repeat step 5).</li> </ol>
<b>There is a loud humming sound when the Venetian blind is raised.</b>	The end cap is displaced.	Fully lower the Venetian blind one time and then raise it again. If the humming continues, then please contact the technical support service of the installation company.

# Fabric shades

## → Safety information

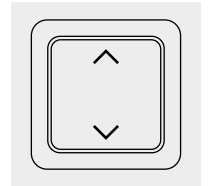
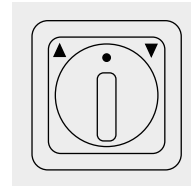
- Only use the fabric shade for its intended purpose.
- Fabric shades are installed in front of windows or doors to provide visual privacy and solar protection. They are not designed to protect against the wind and weather.
- Fabric shades are not suitable as a support or fall protection device. A closed fabric shade will not prevent persons from falling out of a window or door.
- Opening, closing, cleaning and maintaining the fabric shade entail a risk of falling from height. Do not lean out of the window.
- Do not apply any additional loads to the fabric shade.
- On account of its stable construction, the fabric shade is a heavy unit. Its careless operation poses a risk of injury.
- Close your windows in strong winds. Take care to prevent draughts, also during your absences. Closed fabric shades are not able to withstand all wind loads. Please note that the specified wind load is only guaranteed when the window is closed. If wind speeds of approx. 50 km/h are imminent, then retract the fabric shade to prevent potential damage.
- The fabric shade may freeze in frosty conditions. Refrain from using force when operating the fabric shade. Do not try to open or close it if it is frozen up. It can be operated again when it has unfrozen. Do not operate the fabric shade if there is snow or ice in the guide rails. Switch off the automatic function of motorised fabric shades with automatic control whenever there is a risk of freezing.
- Do not push up or pull down the fabric shade by hand. Never push up the fabric shade without operating the drive as this may cause a malfunction.
- The opening and closing of fabric shades pose a risk of injury. Do not reach into the area of travel of the fabric shade or the rails.
- Take suitable precautions to eliminate crushing hazards, especially when the blind is operated by automatic equipment.
- Nothing must be allowed to obstruct the lowering action of the fabric shade. When operating the unit, ensure that the area of travel is not obstructed by any persons, animals or objects and that the fabric shade rails guarantee free travel. Do not reach into or hold onto moving parts during operation as this poses a risk of injury.
- Locate the operating switch within sight of the unit, though not within the area of the unit's moving parts.
- Children and animals must not be allowed to play with the controls, e.g. remote controls or switches for the fabric shade. Keep remote controls out of the reach of children and animals.
- Provision of an emergency power supply is recommended, especially in areas with frequent mains failures. This will serve to prevent fabric shade malfunctions caused by power failures.
- In case of automatic control: if a fabric shade that is connected to an automated system is installed at the only access point to your balcony or patio, then you are at risk of locking yourself out. To prevent this from happening, switch off the automatic function whenever you are on the balcony or patio.

## → Wall switch

The motor switches off automatically at the top and bottom end positions. Various switch models are available.

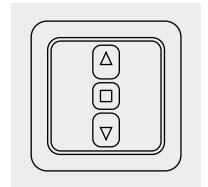
### Rotary or push-button switch

Pressing and holding down the (up/down) push-button or turning (left/right) and holding the knob of a rotary switch will cause the fabric shade to move in the selected direction. Releasing the switch or turning back the knob will stop the unit. When the unit has reached the end position after raising and lowering, the push-button switch or knob must be returned to the starting position to keep the motor voltage-free.



### Latching switch

Pressing the (up/down) push-button or turning (left/right) the knob of a rotary switch will cause the fabric shade to move in the selected direction. Pressing the stop button or the button for the opposite direction (depending on the switch version) or turning back the knob will stop the unit.



## → Radio remote control

The procedure for using a radio remote control to operate a fabric shade corresponds to that for a roller shutter with radio remote control "A". Please refer to the instructions on pages 44-50.

## → Cleaning

We recommend that the surface of the fabric and the aluminium rails are cleaned at least once a year.

### Cleaning instructions

- For cleaning, do not use strong alkaline detergents, harsh cleaners, solvents, alcohol, acids (e.g. rust solvents), in particular hydrofluoric acid or cleaning agents/paper wipes containing fluoride. These can etch the surface and cause irreparable damage.
- Do not use any scouring agents, scouring polishes or other cleaners containing ketones or esters. Nor must abrasive cleaning agents or aids, e.g. steel wool, or scratching tools, e.g. scratch brushes, steel scrapers, scouring cloths, floor knives or razor blades, be used.
- Do not apply silicone spray, oil or grease to the housing, shade, motor or rails.
- If your fabric shade is accessible from the outside (patio, balcony), then you can also clean it from there. Otherwise, to rule out the risk of falling from height, the fabric shade must only be cleaned from the inside.

# Fabric shades

## → Cleaning

### 1. Preparation

Clean the fabric shade only when no rain, snow or wind is forecast. Lower the fabric shade. Put on cleaning gloves and have two buckets of warm water at hand. Add a few squirts of a pH-neutral detergent to one of them. Have a soft, non-metallic brush, a soft sponge and two cloths at hand.



### 2. Wiping clean

Using the brush, carefully clean off light soiling from the dry shade. Then moisten the sponge with water from the bucket to which the (pH-neutral) detergent was added. Wipe the surface of the shade with the sponge. Wipe in circular motions, moving from the edge of the fabric shade to the centre.



### 3. Rewiping

Rinse one of the cloths in the bucket with warm water, then wring it out so that it does not drip. Wipe down the surface. Then also wipe the aluminium rail of the fabric shade.



### 4. Wiping dry

Use the second, dry cloth to wipe the edges and damp spots.



### 5. Drying out

Allow the fabric shade to fully dry out before raising it again.

## → Further information

### **Obstruction detection**

The automatic obstruction detection function protects the fabric shade from damage and allows obstructions to be removed.

If the fabric shade encounters an obstruction during downward movement, it will automatically stop. To release the fabric shade, press the “Up” button.

If the fabric shade encounters an obstruction during upward movement, it will automatically stop. To release the fabric shade, press the “Down” button.

After removal of the obstruction, the fabric shade may quickly drop downwards and trap body parts or injure you or other persons. Make sure that the area of travel is not occupied by any objects, body parts, children or adults.

### **Freeze protection**

The freeze protection function works in the same way as obstruction detection. If the drive detects any resistance, it will not start moving in order to prevent any damage to the fabric shade. The fabric shade will remain in its original position.

### **Shade fabrics**

The material used for the fabric shade may exhibit the following characteristics. These do not, however, impair the proper use or durability of the product.

### **Creases**

The cutting-to-size, sewing and folding of the fabrics may produce creases in the material.

### **Chalk effect**

The factory-applied impregnating agent may produce light-coloured lines in the material. Especially with dark fabrics, these are unavoidable, despite careful processing.

### **Wavy patterns**

When rolled onto and unrolled from the shaft, the fabric in the hem, seam and panel area is more heavily tensioned than between the seams. This may create wavy patterns that become visible when the shade is lowered. Especially with zip-guided systems, the waves at the edges are a product of the design and cannot be prevented as the fabric and zip lie on top of each other and travel different distances during the winding action.

### **Honeycombing**

Honeycombing is an unavoidable result of the fabric manufacturing process. This effect may be intensified by rain or elevated humidity. Retracting the shade while wet will cause the honeycombing to become more strongly imprinted in the fabric.

### **Weave defect**

It is possible, during fabric manufacture, for threads to break or for the thread thickness to vary slightly. This will create light dots or burls in the fabric.

# Hinged/sliding shutter

## → Component description



## → Safety information

- Only use the hinged or sliding shutter for its intended purpose.
- The hinged or sliding shutter serves as a closure in front of windows or doors to provide visual privacy and solar protection. The hinged or sliding shutter is not suitable as a support or fall protection device. A closed hinged or sliding shutter will not prevent persons from falling out of a window or door.
- Opening, closing, cleaning and maintaining the hinged or sliding shutter entail a risk of falling from height. Do not lean out of the window.
- Draughts or strong winds may cause opened or unlocked hinged or sliding shutters to jerk open or slam shut on their own, which may damage them. Persons, animals or objects obstructing the area of travel may also suffer injury or damage.
- On account of its stable construction, the hinged or sliding shutter is a heavy unit. Its careless operation poses a risk of injury.
- Do not apply any additional loads to the hinged or sliding shutter.
- Close hinged shutters in gale-force winds as the open position retained by the shutter holder is not suitable for this. Wind speeds exceeding 60km/h (storm) and an unfavourable location of the unit may lead to deformation of the hardware and consequential damage.
- If a hinge arrester is fitted, then, in the open position, the unit must rest against the wall with the buffer. Adjustment is possible through a corresponding device for the hinge arrester or modifications to the hinges. For this, please contact the technical support service of the installation company.

## → Operation

- When opening and closing the hinged shutter, pay attention to the operating sequence of the leaves. Ensure proper locking when closing and proper unlocking at all locking points before opening. Avoid jerky movements and the use of excessive force when opening and closing.
- The opening and closing of hinged or sliding shutters pose a risk of injury. Do not reach into the area between the hanging points (e.g. between hanging frame and hinged shutter).

- When in the open position, the hinged or sliding shutter must be held in place by a shutter holder. The hinged shutter must not sit loosely in the shutter holder. There is otherwise a risk of the fixing screws becoming loose due to possible vibrations of the hinged shutter. Do not insert any objects into the gap between the hinged or sliding shutter and the frame.
- Nothing must be allowed to obstruct the opening and closing of the hinged or sliding shutter. Make sure that the area of travel of the hinged or sliding shutter is not blocked by any objects.
- At wind speeds of 40 km/h or more, hinged or sliding shutters must be closed and locked with extreme caution. Close your windows and doors in strong winds. Take care to prevent draughts, also during your absences. Please note that the specified wind class is only guaranteed when the window or door is closed.
- Should you use hinged or sliding shutters without ventilation slits for sunshading purposes, then we recommend that you provide for an adequate exchange of air in the space between the window/door and hinged shutter.
- Closed shutters do not provide a complete blackout effect.
- Hinged or sliding shutters and hinged shutter hardware may freeze in frosty conditions. Refrain from using force when operating the hinged shutter. Do not try to open or close it if it is frozen up. It can be operated again when it has unfrozen.

## → Cleaning

### **Cleaning hinged shutters with plastics surface**

For cleaning hinged shutters with a plastics surface, please observe the instructions on page 92.

### **Cleaning hinged shutters with painted plastics surface**

Shutters that are painted in intensive colours may suffer slight colour loss when cleaned. This does not constitute a reduction in quality and in no way impairs the durability of the painted finish. The painted plastics surfaces of hinged shutters require special additional care at least once a year. For this, we recommend our special Finstral care product for painted surfaces.

### **Cleaning aluminium sliding shutters**

As a basic rule, no acidic or alkaline agents must be used on our aluminium surfaces, which are always powder-coated. The pH value must be neither  $< 5$  (acidic) nor  $> 8.5$  (alkaline). Do not use any scouring agents, scouring polishes or other cleaners containing ketones or esters on matt finishes as these will otherwise take on a glossy appearance. Nor must abrasive cleaning agents or aids, e.g. steel wool, be used as these may scratch the surface. Cleaners such as Schleifix are likewise unsuitable for powder-coated finishes and leave scour marks. Special cleaning tips are presented on page 92.

# Cleaning and maintenance

## → Proper care

### Questions and answers on care

This section presents some useful answers to questions on the proper care of our products.

#### How often should I clean and maintain my windows?

On new-build or refurbishment projects, you should commence cleaning immediately after installation of the products in order to remove any building material residue, e.g. concrete, plaster or paint, before they can dry on them. Clean and maintain your windows, doors and associated accessories at least twice a year. This will lengthen their service life and ensure they permanently retain their attractive appearance. Sheltered locations may pose a greater risk to the coating on window frames with an aluminium finish than unsheltered locations. This is because salt and other airborne pollutants will settle on the surface and will not be washed away by rain. Check sheltered areas and, if necessary, clean them more frequently.

#### What is the best way of cleaning?

Thorough cleaning should be performed at least four times a year or even more often. This will prevent deposits and in-crustations from dust, smoke or exhaust gases, which can damage materials and components, and detract from the visual impact of the surface finishes. Regular cleaning is particularly important at locations near the sea and near sources of dust. Soiling in the form of stubborn substances (bird droppings etc.) should be removed immediately.

#### What should I best use for cleaning?

Warm water with a few squirts of a pH-neutral detergent can be used to soften light soiling. This can then be removed with a microfibre cloth.

#### What must I not use for cleaning?

For cleaning, never use strong alkaline detergents, harsh cleaners, solvents, alcohol, acids (e.g. rust solvents), in particular hydrofluoric acid or cleaning agents/paper wipes containing fluoride. These can etch the surface and cause irreparable damage. Do not use any aggressive cleaning agents (e.g. containing vinegar or acid) as these can attack the corrosion protection finish of the hardware. Do not use any scouring agents, scouring polishes or other cleaners containing ketones, acetone or esters, especially on matt finishes, as these will otherwise take on a glossy appearance. Nor must abrasive cleaning agents or aids, sharp or scratching tools, e.g. brushes, steel wool, steel scrapers, scouring cloths, floor knives, razor blades or the like, be used as these may scratch or leave scratch marks on the surface. Generally avoid products containing chlorates (e.g. bleach) as these may impair the gloss finish of (especially metal) surfaces.

#### How do I avoid streaking?

Streaks are often caused by cleaning with organic solvents in combination with cold water and wiping cloths that have been used several times. To prevent streaks and patchiness when cleaning, we recommend rewiping with warm water and then drying the surface with standard commercially available microfibre cloths.

#### What should be observed during initial cleaning after installation?

First remove the protective film. Then remove the label and keep it in a safe place. Soiling of the surface by segregated constituents from construction materials, mortar, gypsum plaster, cement slurries and the like can etch the surfaces and cause irreparable damage. Remove such soiling immediately.

#### How do I clean bottom-hung windows?

Windows with tilt-only hardware must be cleaned from the outside. The sash can only be opened by specialist tradespersons.

## → Cleaning procedure

### Step-by-step guide for a perfectly cleaned window

This section presents step-by-step guidance on how best to clean a window.

#### 1. Preparation

Put on cleaning gloves and have two buckets of warm water at hand. Add a few squirts of a pH-neutral detergent to one of them. Have two clean microfibre cloths at hand.



#### 2. Wiping clean

Wipe the surface of the unit with a non-dripping microfibre cloth wetted with water from the bucket to which the (pH-neutral) detergent was added. This will remove sand and dust and soften tough soiling. Then rub harder with the cloth to remove this dirt. With glass, though only if absolutely necessary, carefully use a glass scraper (e.g. to remove stickers). Wait until everything has properly softened. Make sure that the scraper is held at the correct angle. Work only with intact, sharp blades.



#### 3. All-round cleaning

Now open the unit. Rinse the microfibre cloth in the bucket to which the (pH-neutral) detergent was added, then wring it out so that it does not drip. Wipe the inside of the frames and sashes, including all hardware, with the damp cloth. Use the cleaning sponge with abrasive nonwoven to remove stubborn dirt on the frame. Always apply ample water in advance.



#### 4. Rewiping

Rinse another clean microfibre cloth in the bucket with clean water. Thoroughly wipe down all parts of the unit. All cleaning agent should be completely removed from the glass surfaces. This could otherwise be "burnt in" by the sun and cause discoloration or streaks.



#### 5. Wiping dry

Start by removing water from the glass edges with the squeegee. Then, moving the squeegee backwards and forwards, remove water from the remaining wet part of the window. Interrupt as little as possible, but as often as necessary, to shake off water from the rubber blade. Finish by wiping down the edges and any other damp spots with a dry microfibre cloth.



# Cleaning and maintenance

## → Surface care

### Instructions for specific materials

Finstral uses only high-grade materials that are extremely robust and weather-resistant. However, naturally enough, a long service life also depends on proper care. The following section provides instructions on the proper cleaning and care of the surfaces of your units, and the points requiring particular attention.

### Instructions for uPVC

Special, commercially available antistatic cleaning agents are not suitable for cleaning uPVC. There is a risk of the surface fading or becoming matt or brittle. Do not stick adhesive tape to the surfaces. Over time, dust and sand can get trapped underneath and soil the surface.

### Instructions for glass

To avoid scratches when using glass scrapers, please observe the following: Start by properly soaking the dirt or adhesive to be removed with water. Make sure that the scraper is held at the correct angle and work only with intact, sharp blades. Under no circumstances should strong alkaline detergents, acids, in particular hydrofluoric acid, or cleaning agents containing fluoride be used to clean glazing. These solutions can etch the glass surface and cause irreparable damage. The removal of labels and any spacer plate residue as well as cleaning with a mild detergent to remove any adhesive residue is recommended within a few days after installation. Mild household detergents can be used for glass soiling that cannot otherwise be removed by washing with ample clean water, a sponge, wiper, leather or standard commercially available spray cleaners and cloths. Do not carry out any work with cutting grinders or welding equipment near glazing. Sparks and weld spatter will irreparably damage the glass surface. We advise against the use of special glass cleaners. This will minimise the risk of streaking.

### Instructions for aluminium

As a basic rule, no acidic or alkaline agents must be used on our aluminium surfaces, which are always powder-coated. The pH value must be neither  $< 5$  (acidic) nor  $> 8.5$  (alkaline). Do not use any scouring agents, scouring polishes or other cleaners containing ketones or esters on matt finishes as these will otherwise take on a glossy appearance. Nor must abrasive cleaning agents or aids, e.g. steel wool, be used as these may scratch the surface. Cleaners such as Schleifix are likewise unsuitable for powder-coated finishes and leave scour marks. Clean all surfaces with a soft cloth or sponge, or at most using a brush with soft natural bristles. If air pollution has left visible stains on the coating, then these should be removed with stronger cleaners. You should always dilute these cleaners and try them out in advance at a non-visible location. After cleaning with aggressive detergents, immediately and thoroughly wipe down the cleaned areas with a microfibre cloth and plenty of water.

### Instructions for wood

Make sure that the indoor humidity does not exceed 60%. If the humidity lies above this, then ventilate the rooms regularly and at least several times a day. Clean the wood surfaces in the direction of the grain with a soft, dry microfibre cloth. The precious wood fitted on support profiles for inlay versions must only be cleaned with a damp cloth.

### Instructions for ceramics

Metallic or scratchy objects (scrapers, steel wool etc.) can leave stubborn metal particles and must not be used.

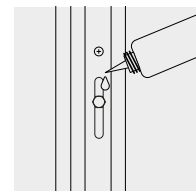
## → Annual maintenance

### Regular checks

Finstral windows and doors are high-grade, durable products that require only little care and maintenance. You should nonetheless perform these minor checks at least once a year.

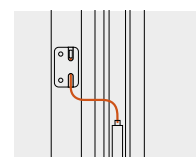
### Hardware

To maintain the proper performance and smooth operation of the window and casement door hardware, clean the moving hardware components at least once a year with a small brush and lubricate them with oil. Then open and close the window several times to allow the oil to spread. Do not use dissolving or acidic lubricants or oils (e.g. rust-solvent sprays). Apply lubricants only to the moving hardware components and take care to prevent them from coming into contact with the profile surface. If necessary, please contact the technical support service of the installation company. Make sure that no water seeps into the hardware. Moreover, excessively humid ambient conditions in which condensation cannot dry off may trigger corrosion, with damage to the surface of the hardware as the result. Take the necessary precautions to prevent humid indoor air from condensing in the hinge and rebate spaces. Aggressive vapours (from formic or acetic acid, ammonia (compounds) etc.) acting in conjunction with even small amounts of condensation can lead to the rapid corrosion of hardware components.



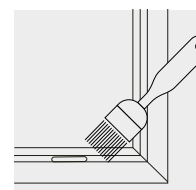
### Sash retention device

Regularly check the wire cable during service for any noticeable defects. Immediately arrange for replacement of an obviously defective wire cable by a specialist.



### Drainage slots

Regularly open the window to check the drainage slots in the frame. Remove any blockages with a small brush.



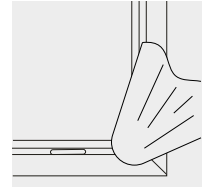
# Cleaning and maintenance

## → Annual maintenance

### Gaskets

Clean the gaskets once a year. They will stay elastic for longer if they are regularly wiped with a damp cloth.

With Nova-line sashes, the outer glass edge gasket has a larger area on the weather-exposed side and should therefore be cleaned several times a year.



### Glass breakage

The full-perimeter bonding of the window sash with the insulation glass offers enhanced stability and thus guarantees perfect long-term functional performance. In the event of a glass breakage, the replacement must be carried out by duly qualified personnel in accordance with our guidelines in written or video form. For some sash shapes, the most cost-effective solution will involve replacing both glazing and frame. Ask your Finstral sales consultant for further details.

### Additional instructions

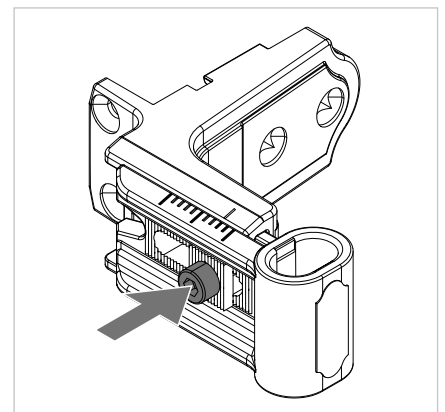
Regularly inspect windows, doors, roller shutters, Venetian blinds and hinged shutters together with their controls for stability and for signs of wear or damage. We recommend that you have all hardware components regularly checked and serviced by a specialist. In case of damage, only original spare parts must be used.

Maintenance beyond the checks described above or any necessary repairs or dismantling must only be carried out by specially trained and qualified personnel. Only original spare parts must be used to repair damage to hardware components. Do not carry out any repairs yourself. Do not use the windows, doors, roller shutters, Venetian blinds or hinged/sliding shutters should any repairs be required. The inspection and maintenance of electrical installations must only be carried out by specialist tradespersons.

### Instructions for hinged shutters

At least once a year, check the safety-relevant hardware components (hinges etc.), brackets and fixing screws of hinged shutters for wear, damage, tight fit or breakage in both the open and closed position. Clean the moving hardware components once a year with a small brush.

Hand-tighten the screw, as pictured (4-6 Nm). Do not use a cordless screwdriver.



### Cleaning the track

Regularly clean the track of sliding units with a vacuum cleaner.

# Troubleshooting

## → Frequently asked questions

### **Why did external condensation never previously occur with insulation glass?**

Because of the inferior thermal insulation offered by these old insulating glass panes or by single glazing. Much more heat was lost from the warm interior, which automatically meant that the outer panes were also heated – at the expense of overall energy consumption, of course. And because the poorly insulated outer panes were warmer, they never or only rarely fogged up.

### **Why does the inner surface of the outer pane of coupled sashes fog up?**

On cold nights, the inner surface of the outer pane cools down not only due to ventilation of the gap between the panes, but also due to the radiation of heat to the outside. If the humidity of the outdoor air is high in autumn and spring, condensation will then form on the inner surface of the outer pane. With coupled sashes, this is an inevitable product of the laws of physics and does not constitute a defect. The panes will dry out as soon as the outdoor temperature rises.

### **Why do windows fog up on the outside?**

Insulating glass units with high thermal insulation values ensure that a minimum of thermal energy is transported from the inside to the outside (the lower the  $U_g$  value, the lower the energy loss). As a result, the temperature of the outer pane is roughly equal to that of the outside air. If you open the window, warm and humid indoor air will come into contact with the cold outer glass pane and condense. If the humidity of the outdoor air is high, condensation will form on the outer pane even when the windows are closed. Fogged-up outer panes thus do not constitute a defect, but simply reflect the outstanding thermal insulation performance of modern-day thermally insulating glass units. The panes will dry out as soon as the outdoor temperature rises.

### **Why does condensation occur on inner panes?**

With modern-day thermally insulating glass units, condensation on inner panes is much rarer than with older insulation glass. Due to the improved thermal insulation, the surface temperature differs only slightly from the indoor temperature. If the indoor air is very humid, e.g. in the kitchen when cooking or in the bathroom, then the inner panes can nonetheless fog up. Regular ventilation prevents excess humidity from condensing on the walls and condensation from forming on the glass surface. Due to the glass spacers, the surface temperature at the glass edges is lower than in the centre – which is why the glass always fogs up at the edges first. In buildings served by ventilation systems, please ensure that the controlled humidity is set to a maximum of 50%.

# Troubleshooting

## → Frequently asked questions

### **Why do suction cup or label marks become visible on the pane surface?**

Dew, rain or cleaning water may cause suction cup or label marks to become visible on glass surfaces. As soon as the pane dries, the marks will disappear. These marks reflect a physical phenomenon caused by the varying wettability of surfaces. This is how it comes about: during the manufacture of insulating glass units, the individual panes are cleaned in a special washing plant. This produces extremely clean and chemically/physically activated glass surfaces. If these cleaned glass surfaces come into contact with foreign matter (vacuum cups, grease, label adhesive etc.), parts of these are absorbed. This is unavoidable and does not constitute a defect because the panes are absolutely clean under normal humidity conditions. Over time, with the regular cleaning of the panes, this varying wettability will largely dissipate.

### **Why can insulation glass exhibit colour variations?**

Glasses have an inherent colour. Depending on the perspective – when looking at and/or through the glass – this colour may be differently perceived. Such variations in colour perception are unavoidable and depend on several factors. The iron oxide content of the glass mix or the coating process may, for example, play a role.

### **How does glass breakage occur?**

Glass, as the product of a cooled molten mass, is a brittle material which, unlike metals for example, does not allow plastic deformation. If the elasticity limit is exceeded by thermal or mechanical action, then the pane will immediately fracture. Glass breakage is caused by external influences and is thus essentially not a material defect. After cutting to size, Finstral glass is seamed at the edges to eliminate any material stresses at the cut edges that may cause the pane to fracture.

### **How does glass thermal breakage occur?**

Large temperature differences across a glass pane may lead to thermal breakage. Potential causes for temperature differences across the glass pane include: partial shading by covering up part of the pane with sunshading devices, shadows cast by trees and roof overhangs, small distance to blackout devices hung on the interior, affixation of films and colours to the glass, heat sources near the glass, dark objects, e.g. interior decoration, furniture or dark curtains, located directly behind the glazing.

## → Identifying and remedying problems

Problem	Possible causes	Solution
<b>The window cannot be closed. It appears to be unhinged at the top.</b>	The window was wrongly operated.	See page 15-16.
<b>The window cannot be closed properly.</b>	Single-sash window: Check the full perimeter for any obstructions between frame and sash.	Single-sash window: Remove the cause of the obstruction, gently lift the sash and press it closed.
	Double- or multi-sash window: The lever for blocking the passive sash has not been pressed down.	Double-sash window: Make sure that the lever for opening/closing the passive sash is in a vertical position. Check that the passive sash is properly closed and, if necessary, gently press it closed by hand.
	Hardware components have not been cleaned and lubricated.	See page 93.
<b>Water ingress on the room side: There is water on the windowsill or floor.</b>	The drainage slots are soiled.	Clean the drainage slots on the interior and exterior with a small brush or vacuum cleaner.

# Troubleshooting

## → Identifying and remedying problems

Problem	Possible causes	Solution
<b>Condensation forms on the window or glass pane.</b>	The humidity is too high.	Ventilate the space as often as possible (see page 32-33).
	There are too many plants near the window.	Move the plants away from the window.
	The space has not been adequately ventilated.	Frequently check the humidity.  Check for external causes: fresh plaster, condition of walls, location of space etc.
	The space is too cold.	Increase the indoor temperature to at least 19°C.
<b>There is mould growth around the window or in the corners of the wall.</b>	The new windows are more weathertight than the old ones.	Ventilate the space as often as possible and eliminate the causes of damp/humidity.
	There is high humidity and insufficient air exchange in the space.	Dry the mould growth with warm air and clean it with a cloth dipped in a disinfecting detergent.
	The house is new and the building fabric is still damp.	If the building fabric is still damp, then ventilate repeatedly and increase the heating temperature by a several degrees. While doing so, leave open the internal doors so that the air can circulate between spaces.

## → Further information

### Visual assessment of multi-pane insulating glass units

For assessing the visual quality of multi-pane insulating glass units in terms of the permissible characteristics, European standard EN 1279-1:2018 “Glass in building” distinguishes between the main zone and edge zone. Finstral applies the more demanding requirements for the main zone to the entire visible glass area.

#### Observation conditions to EN 1279-1:2018

- Viewing distance at least 3 m from the inside or outside
- Examination of the panes in transmission and not in reflection
- Discrepancies not to be marked on the pane
- Viewing angle as perpendicular to the glass surface as possible
- Viewing time of maximum one minute per square metre glass surface
- Viewing in diffuse daylight conditions without direct sunlight or artificial lighting

Scratches	Double-glazed unit	Double-glazed unit with 1× Multiprotect or triple-glazed unit	Double-glazed unit with 2× Multiprotect or triple-glazed unit with 1× Multiprotect	Triple-glazed unit with 2× Multiprotect
	Allowable scratch length $\leq 15$ mm	Allowable scratch length $\leq 15$ mm	Allowable scratch length $\leq 15$ mm	Allowable scratch length $\leq 15$ mm
	Allowable scratch length total $\leq 45$ mm	Allowable scratch length total $\leq 57$ mm	Allowable scratch length total $\leq 68$ mm	Allowable scratch length total $\leq 79$ mm
<b>Spot faults diameter <math>\leq 1</math> mm</b>	2 spots allowable in each area of 20 cm diameter	3 spots allowable in each area of 20 cm diameter	3 spots allowable in each area of 20 cm diameter	4 spots allowable in each area of 20 cm diameter

# Troubleshooting

## → Further information

Spot faults diameter >1 mm and ≤2 mm	Double-glazed unit	Double-glazed unit with 1× Multiprotect or triple-glazed unit	Double-glazed unit with 2× Multiprotect or triple-glazed unit with 1× Multiprotect	Triple-glazed unit with 2× Multiprotect
Glass area ≤1 m <sup>2</sup>	2 spots allowable	3 spots allowable	3 spots allowable	4 spots allowable
Glass area >1 m <sup>2</sup> and ≤2 m <sup>2</sup>	3 spots allowable	4 spots allowable	5 spots allowable	6 spots allowable
Glass area >2 m <sup>2</sup> and ≤3 m <sup>2</sup>	5 spots allowable	7 spots allowable	8 spots allowable	9 spots allowable
Glass area >3 m <sup>2</sup> and ≤4 m <sup>2</sup>	7 spots allowable	10 spots allowable	11 spots allowable	13 spots allowable
Glass area >4 m <sup>2</sup> and ≤5 m <sup>2</sup>	9 spots allowable	13 spots allowable	14 spots allowable	17 spots allowable
Glass area >5 m <sup>2</sup> and ≤6 m <sup>2</sup>	11 spots allowable	16 spots allowable	17 spots allowable	21 spots allowable
Glass area >6 m <sup>2</sup> and ≤7 m <sup>2</sup>	13 spots allowable	19 spots allowable	20 spots allowable	25 spots allowable
<b>Residue spots ≤1 mm</b>	3 spots allowable in each area of 20 cm diameter	4 spots allowable in each area of 20 cm diameter	5 spots allowable in each area of 20 cm diameter	6 spots allowable in each area of 20 cm diameter
<b>Residue spots &gt;1 mm and ≤3 mm</b>	2 spots allowable in each area of 20 cm diameter	3 spots allowable in each area of 20 cm diameter	3 spots allowable in each area of 20 cm diameter	4 spots allowable in each area of 20 cm diameter

### Other features

The requirements specified in EN 1279-1:2018 shall apply for all other assessment criteria for the visual quality of multi-pane insulating glass units.

### Technical support service

With Finstral, you always get everything from a single source. We work in accordance with the most demanding quality guidelines and also carefully check every window and every door during the production process in line with our in-house quality control regime. This always guarantees supreme standards and the assurance of receiving a perfect product.

### Expert support

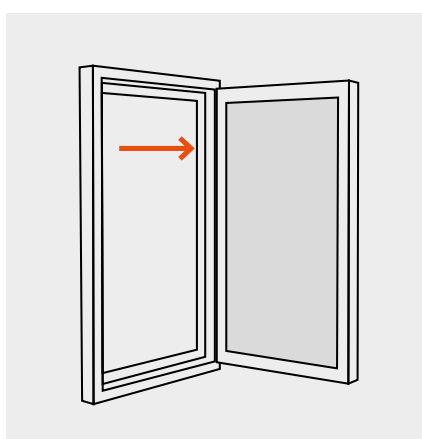
Should you nonetheless require the help of our technical support service, then please contact your nearest Finstral Studio (see back cover). Please formulate your request as precisely as possible, specifying the identification number on the unit. Technical support will be provided by our specialist Finstral staff. All the materials and spare parts used will be original Finstral products.

### Identification number

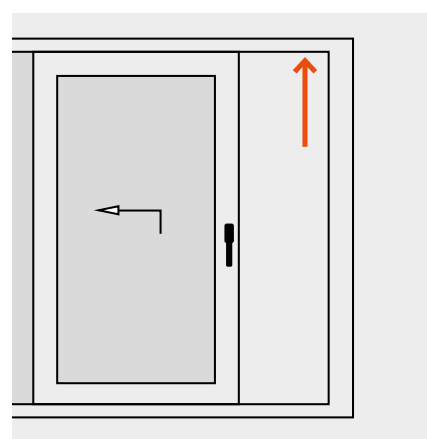
A label with the identification number is affixed to each window and door unit.

#### Label

For windows, casement doors and balcony doors, the label is always affixed at the top on the hinge side of the active sash. For sliding doors, the identification number is located at the top on the handle side. Please do not remove this label even after installation. It will help us to quickly find and view the technical data for the faulty unit.



Identification number for window/casement door



Identification number for sliding door

### Packaging materials

Most of the packaging materials used for Finstral products and fittings are recyclable. Please collect and dispose of them separately.

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**Always at your side.**  
Call us up or  
call in.

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**Talk directly to a specialist consultant:**

Via chat at [finstral.com](http://finstral.com) or by phone on +44 20 8050 0584 (free of charge).

**Your nearest Finstral partner:**