WS1000 Color

Conservatory Control • Building Control

elsner®
elektronik

Installation and Operation

WS1000® Color

Control unit for conservatory and building technology

Installation and operation

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Contents

Explanation of the symbols used in this manual

	Instructions that must strictly be observed to ensure the safe operation of the control unit.
▢	“Control unit” – the symbol is followed by a menu path. In this menu the settings just described can be changed.
🕮	“Manual” – the symbol is followed by chapter information with a page number. In this chapter you will find additional information about the setting just described.

Description

Field of application of the WS1000 Color control unit

The WS1000 Color was developed so that the different technical equipment installed in conservatories and buildings could be centrally controlled. The control unit offers the highest measure of flexibility with regard to connections, allowing settings to be optimally and individually adjusted to the circumstances on site. Please use this operational guide to adjust the automatic functions to your requirements and enable comfortable manual operation.

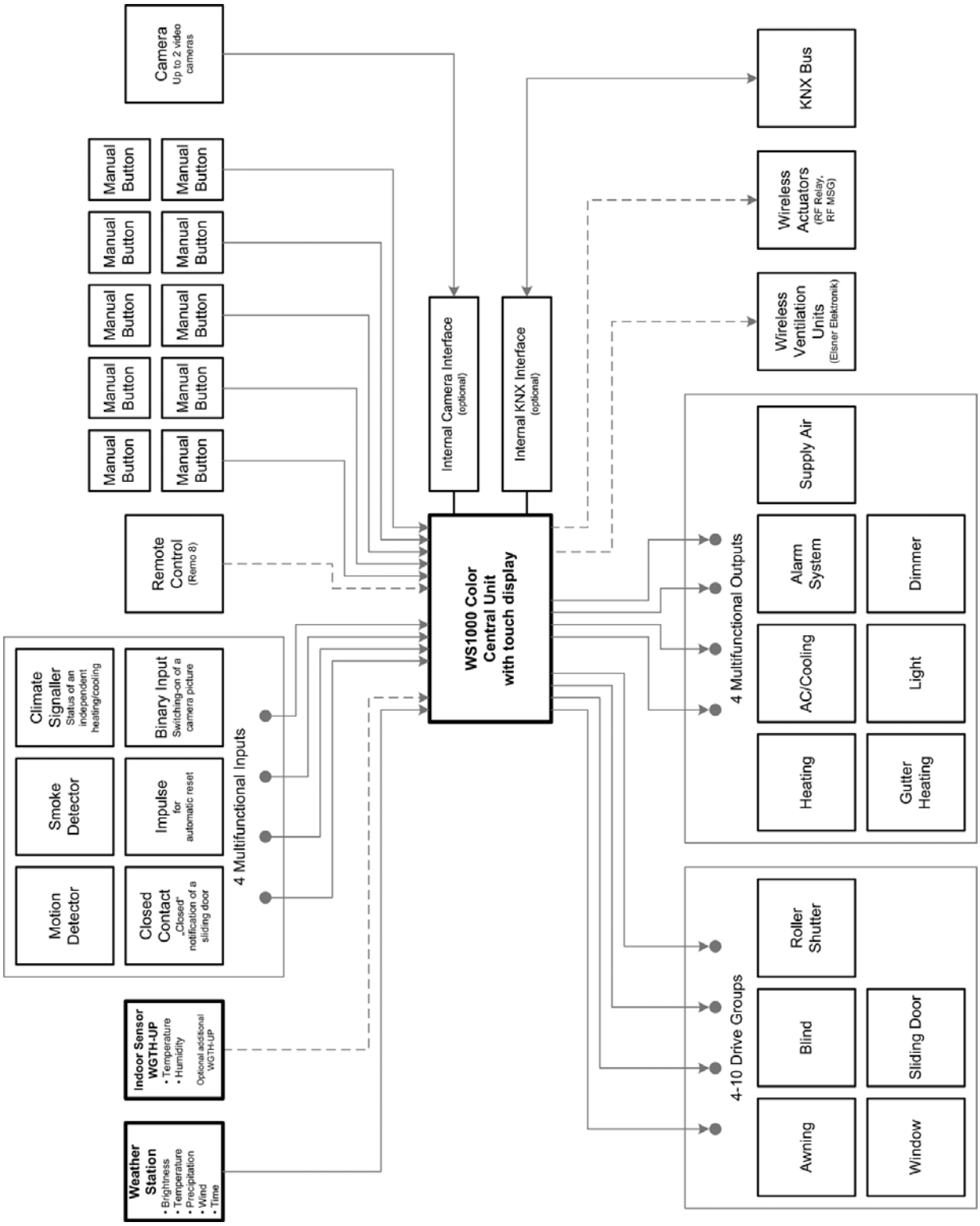
Delivery scope

- WS1000 Color central control and operations unit (with 4, 6, 8 or 10 drive groups)
- Weather station
- WGTH-UP indoor sensor with frame
- Stylus
- Manual

You need *additionally* (not included in the scope of delivery):

- Socket ∅ 60 mm, 42 mm deep for WGTH-UP

Connection and control options



The following **environmental parameters** will be measured and displayed:

- Outdoor and indoor temperature
- Air humidity inside
- Lighting (intensity and direction, twilight recognition)
- Wind speed
- Precipitation
- Time/date

The following **drives** can be connected to the drive groups:

- Electrically-operated awnings
- Electrically-operated blinds
- Electrically-operated shutters
- Electrically-operated windows and sliding roofs
- Electrically-operated sliding doors

In addition, **4 multifunctional outputs** for the following devices are available:

- Heating
- Cooling
- Alarm equipment
- Lighting
- Roof gutter heating
- Supply air devices
- Dimmer (for a light)

The following can be connected to the **4 multifunctional** inputs:

- Motion detector
- Smoke detector
- Climate sensor (a climate or heating unit which is independent of the WS1000 Color control unit, status query “active”/“not active”, for cancelling ventilation)
- Closed-contact for closing notification of a sliding door
- Impulse for automatic reset (e.g. button or impulse at alarm activation)

The following devices can be connected via a **wireless connection**:

- Elsner ventilation devices (WL610, WL305, WFL)

- Additional WGTH-UP indoor sensors (optional) for additional temperature and humidity measurement at various places in the room. This allows various climate areas to be realised (e. g. living and plant areas in the conservatory)
- Radio remote control Remo 8
- RF relay (radio relay, On/Off)
- RF MSG (radio motor control device, Up/Down)

The following **additional options** are available:

- Connection of up to 10 external Up/Down wall buttons for manual operation of drives and devices on the spot
- Connection of up to 2 video cameras via an optional camera interface
- Communication with the KNX bus system via an optional KNX interface

Automatic functions in overview

Devices connected via the **"Dimmer" output** (e.g. lighting) have no automatic functions. They can however be operated manually via the display.
Sliding doors also have no automatic functions. They can be fitted with a close-contact (to a multifunctional input) and be manually operated via the display.

Automatic functions for window/sliding roofs:

- Opening above a selectable indoor temperature (can be switched off)
- Opening above a selectable air humidity level in the room (can be switched off)
- Keep closed beneath a selectable outdoor temperature (can be switched off)
- Close when the supply air temperature is higher than the room temperature
- Close when there is precipitation or move to a gap (can be switched off)
- Closing when a selectable wind speed is exceeded (can be switched off)
- Daily forced closure (settable running times)
- Night-time re-cooling (settable running times)
- Keep closed in a period which can be set
- Closing when cooling/air-conditioning unit is active

If a motion detector is connected, windows will be closed automatically when a break-in alarm is triggered. If a smoke detector is connected, windows will be opened automatically when a fire alarm is triggered.
Step windows will be opened step-by-step. An opening position can be set for sliding windows.

Automatic functions for awnings:

- Extend according to brightness and the position of the sun
  or retract regardless of brightness (extending only manually)
  or extend regardless of brightness (visual protection, automatically retraction only when there is a rain or wind alarm)
- Keep retracted until a selectable indoor temperature is reached (can be switched off)
- Keep retracted until a selectable outdoor temperature is reached (can be switched off)
- Retract when a selectable wind speed is exceeded (can be switched off)
- Retract when there is precipitation (can be switched off)
- Adjustable movement position

If a smoke detector is connected, awnings will be automatically retracted when a fire alarm is triggered.

Automatic functions for blinds:

- Closing according to brightness or position of the sun
  or keep open regardless of brightness (only time-controlled or manual closing)
  or keep closed regardless of brightness (visual protection, automatically retract only when there is a rain or wind alarm) with light reversal
- Close at night/twilight (can be switched off)
- Close daily (settable running times)
- Leave open until a selectable indoor temperature is reached (can be switched off)
- Leave open until a selectable outdoor temperature is reached (can be switched off)
- Retract when a selectable wind speed is exceeded (can be switched off)
- Retract when there is precipitation (can be switched off)
- Adjustable movement position and slat position (slat tracking of the sun height possible)

If a smoke detector is connected, blinds will be opened automatically when a fire alarm is triggered.

Automatic functions for shutters:

- Closing according to brightness or position of the sun
  or keep open regardless of brightness (only time-controlled or manual closing)
  or keep closed regardless of brightness (visual protection, automatic retraction only when there is a rain or wind alarm)

- Close at night/twilight Leave open until
- Close daily (settable running times)
- Leave open until a selectable indoor temperature is reached (can be switched off)
- Leave open until a selectable outdoor temperature is reached (can be switched off)
- Retract when a selectable wind speed is exceeded (can be switched off)
- Retract when there is precipitation (can be switched off)
- Adjustable movement position

If a smoke detector is connected, shutters will be opened automatically when a fire alarm is triggered.

Automatic functions for heatings:

- Switch on daily below a selectable indoor temperature
- Night setback (with adjustment of time and temperature until the setback is made)

If a smoke detector is connected, the heating will be automatically switched off when a fire alarm is triggered.

Automatic functions for coolings and air-conditioning units:

- Switch on daily above a selectable indoor temperature
- Night mode (with adjustment of time and temperature until cooling takes place)
- Cancel ventilation when cooling/air-conditioning unit is active

If a smoke detector is connected, the cooling will be automatically switched off when a fire alarm is triggered.

Automatic ventilation functions:

- Ventilation above a selectable indoor temperature (can be switched off)
- Ventilation above a selectable air humidity level in the room (can be switched off)
- Daily forced ventilation (settable running times)
- Winter operation: supply air will be closed below a selectable outdoor temperature (can be switched off)
- Summer operation: supply air will be shut off if outdoor temperature is higher than room temperature
- Night-time re-cooling (settable running times)
- Adjustable minimum and maximum speeds for motorised fans

- Additionally with roof ventilators WL610 and WL305: recirculating air for heat recovery; recirculating air to avoid condensation
- Cancel ventilation when cooling/air-conditioning unit is active

If a smoke detector is connected, ventilation will be activated automatically when there is a fire alarm.

Automatic functions for light:

- Switch on at twilight
- Switch on daily (settable running times, with and without twilight recognition)
- Switch on when an alarm triggers (motion/smoke detector)

Automatic functions for roof gutter heatings:

- Switch on within an adjustable temperature range

Automatic alarm settings:

- Motion detector: The period of alarm readiness is adjustable.
  If the alarm is triggered within this period, all windows close. After 5 minutes without a new alarm signal, normal automatic operation will be resumed.
- Smoke detector: When the alarm triggers, shades retract (escape routes), windows open, ventilators open/switch on (getting rid of smoke) and heatings and air conditioners switch off. No manual operation is possible. An acoustic warning signal will sound at the control system.

Operation and use of the automatic functions

Operation

Weather data display (starting image of the control)

As a starting image, the control system shows the current weather data:

Sun data

	*Intensity:* Light intensity (brightness) in Lux (lx) or Kilolux (klx) *Direction:* Direction (azimuth) in degrees *Height:* Elevation over the horizon in degrees

Wind

The wind speed will be shown in metres per second (m/s) and the windsock changes:

	Calm: up to 1.9 m/s
	Slight wind: 2.0 to 9.9 m/s
	Strong wind: 10.0 m/s and up

A caution flag appears besides the wind symbol if wind alarm has been triggered for a drive.

Outdoor temperature

	Outdoor temperature at the weather station in degrees Celsius (°C)

Indoor information

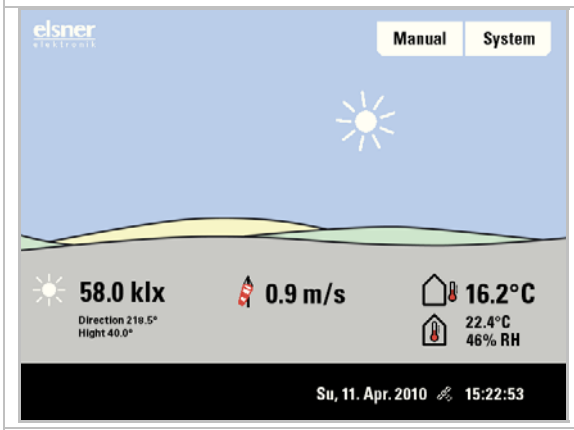
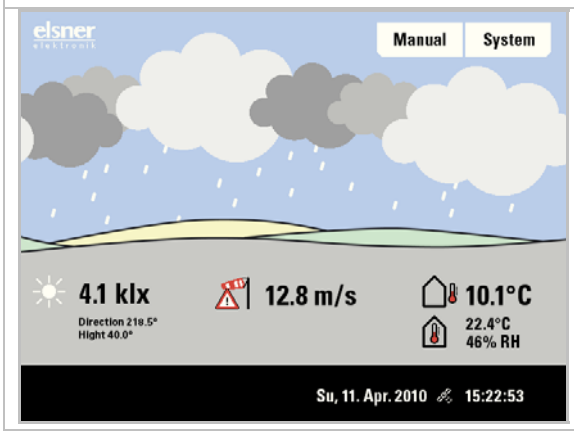
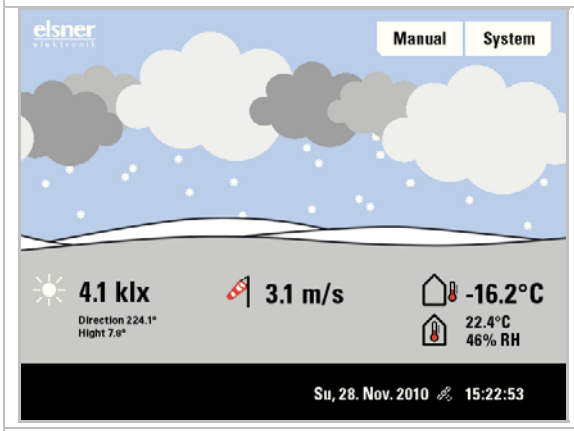
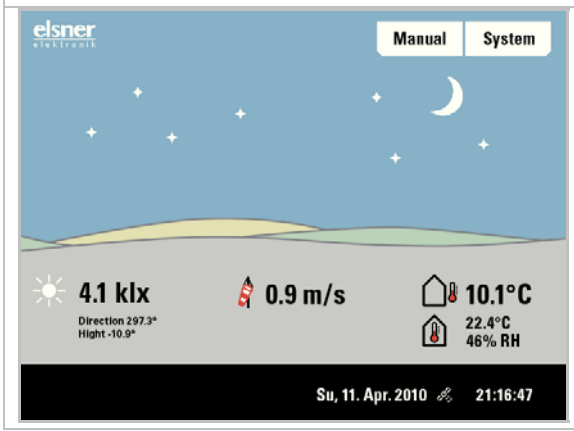
Temperature in degrees Celsius (°C)
Air humidity in %RH

You may select which indoor information is displayed (e. g. if several sensors are connected).

🖵 System > Installation > Weather Display

🕮 Indoor sensor for wheather data display, p. 91

The general weather situation is shown graphically:

	**Sunny or cloudy:** The sun moves across the sky according to its current direction and height.
	**Rain:** When there is a precipitation report and temperatures above -3 °C, it is raining.
	**Snow:** When there is a precipitation report and temperatures below -3 °C, it is snowing.
	At **night** (twilight) the display will be darker; instead of the sun, the moon and stars will appear.

The date and time will be shown on the lower right on the display. The following symbols are displayed, depending on which source the time signal is from:

DCF77 radio clock reception (from weather station):		Broadcasting tower
GPS reception (from weather station):		Satellite
Reception of time via KNX bus:		Clock

In order that shades can be controlled according to the direction and height of the sun, the building's location must be specified. Only in this way will the sun's position be calculated correctly.

🖵 System > WS1000 Settings > Settings > Location
🕮 Enter location, p. 97

The touch display

Manual control, as well as setting the defaults for the automatic functions and the connected equipment, is via the WS1000 Color's touch display. The button surfaces are operated in this area by touching the display. When a button is activated, there is visual feedback and a brief audio signal sounds.

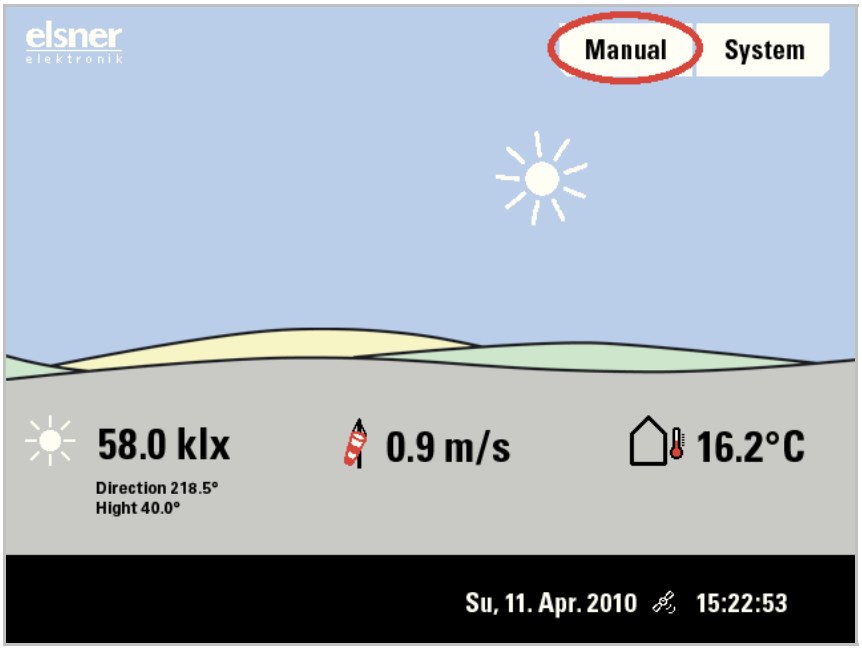
If the push buttons shown do not match up with the touch-sensitive surfaces (you have to press "next to the button"), the touch display can be calibrated as follows.

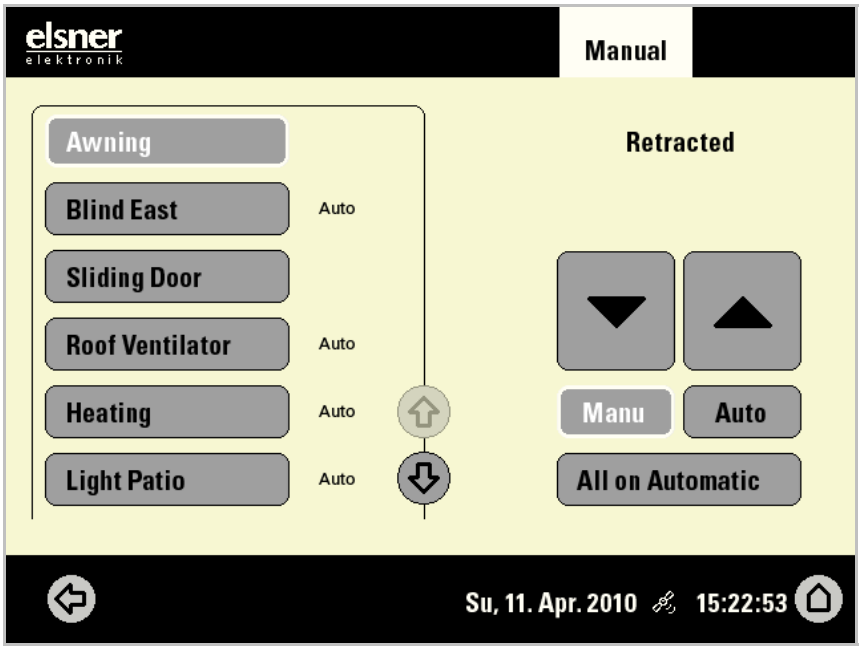
🖵 System > WS1000 Settings > Settings > Calibrate touch
🕮 Calibrate touch, p. 97

Operating the display with long fingernails will not damage the screen or the touch function. A stylus is enclosed with the control system. It can be stored in the tray beneath the covering lid. Touching the display with very hard or pointed objects (e.g. those made from glass, gems or metal) should be avoided as this can cause marks.

Manually operate drives and devices

Manual operation of the drives and devices is carried out in the manual menu, which you can reach via the **Manual** button:





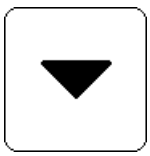
Here you can operate all connected drives and devices directly: Use the buttons to select the name of the drive or device you want to operate. You can change the order of the list in the System menu.

🖵 System > Installation > Channel Order

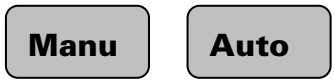
🕮 Define channel order, p. 94


Use the arrow keys to scroll through the list.

The selected device is marked in white. On the right-hand side you will receive status information (e.g. on/off, open/closed, exhaust air level) and various control options (up/down arrow keys or on/off buttons).



For shades and windows, the **Down** and **Up** buttons are fitted with automatic time functions. The drive can be precisely positioned with brief button presses (less than 1 second, short audio signal). If the button is pressed for longer than 1 second (higher audio signal: locking signal), the drive moves independently to the end position. A brief press in the opposite direction stops the drive.
If a drive group is momentarily blocked for manual operation by a rain or wind alarm, the arrow keys will be greyed out and may not be used. The message “Rain alarm” and/or “Wind alarm” is shown.



Whether a drive or device is in automatic mode or manually operated can be recognised from the white marking on the buttons and the text “Auto” next to the name button in the list on the left. By pressing the button you can switch from one to another.
After being operated manually the drive or device remains in manual mode. The automatic functions are thus switched off and only the rain and wind protection will be carried out. The equipment will only switch back into automatic mode when reset by hand (“Manu” button) or through the daily automatic reset. In the Automatic menu, the automatic reset can be activated separately for each drive group and each device.

With this button you can carry out the automatic reset manually and place all equipment into automatic mode.

Back to the weather data display (starting image)

Internal buttons (group buttons)

It is possible to operate several drives or devices at the same time via a collective group button (internal software button). This makes it possible to close all windows with a single button press, for example. These group buttons can be set up in the System menu.

🖵 System > Installation > Int. Buttons

🕮 Assign internal buttons (group buttons), p. 84

External buttons

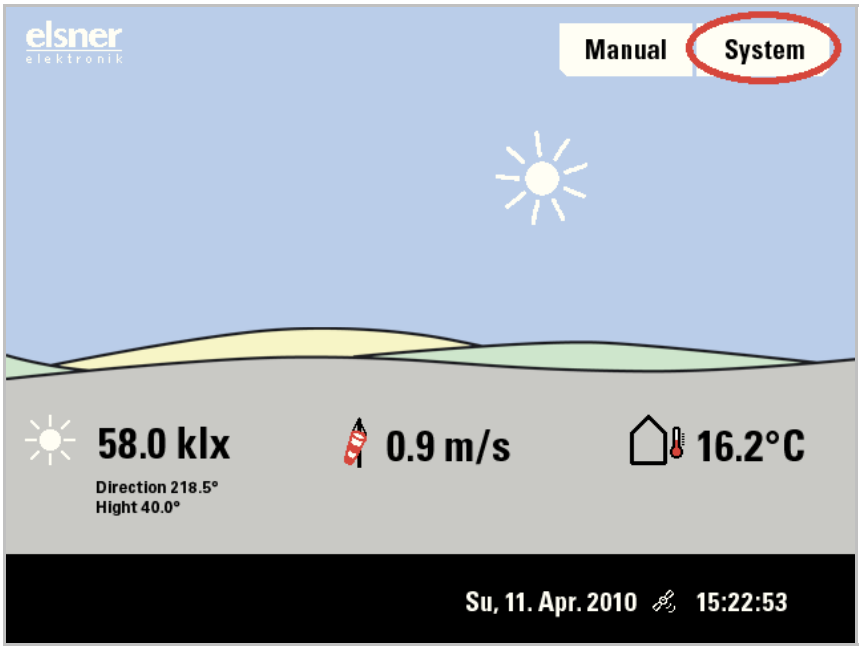
As well as operating the controls via the display, it is possible to connect external buttons (wall buttons) to the control unit. In the System menu the individual buttons can be assigned to any drives or devices.

🖵 System > Installation > Ext. Buttons

🕮 Assign external buttons, p. 82

Navigation in the System menu

All settings for drives and devices, for the automation and the control system are changed in the System menu, which you reach via the **System** button:



In three sub-menus you can carry out the following adjustments:

Installation:

- Specify fundamental characteristics of the drives at inputs/outputs
- Set up wireless connections to devices
- Define the order in which the drives and devices are shown (e.g. in the manual menu)

Automatic Settings:

- Define automatic functions for the individual drives and devices
- Adjust general automatic settings: Twilight value, movement delays, forced closure, ventilation block and automatic reset

WS1000 settings:

- Change personal data such as Time/Date and location and adjust the screen display to your personal preferences
- Place the control unit in Standby mode, restart, reset to factory defaults, adjust wireless mode and change internal settings
- Set an access code to protect the “Installation” and “Automatic Settings” menus from unauthorised changes.

The following buttons are needed constantly for navigation in the System menu:

Back to the previous menu level (only settings already saved with **OK** will be applied)

Back to the weather data display (starting image)

Confirms(saves) adjustments made

Info button: Appears in many menus next to the option settings. Press the button for an explanation of the function shown in the upper display area. Press again for the explanation to disappear.

On the top right, beneath the System field, is shown which menu you are currently in as well as the path by which you arrived there. For example, if you are in the Automation menu for the light intensity of the “South awning”, the path will be:

System
Automation
Awning
Awning South
Intensity

Input keyboard for names and codes

In some menus an input keyboard for names and codes appears. The words can be typed in completely normally.
Special keys:

Selects the input keyboard for letters and numbers.

Selects the input keyboard for symbols and umlauts.

Delete. Removes the preceding character.


Shift key. Switches between upper and lower case letters.

Automatic Settings

In the menu **System > Automatic Settings** you can make the following adjustments**:**

- Define automatic functions for the individual drives and devices
- Adjust general automatic settings: Twilight value, movement delays, forced closure, ventilation block and automatic reset

In order to set the automatic functions, the basic settings must already have been made.

🕮 Basic setting / Installation, p. 79

Please adjust the settings for drives and devices to your individual circumstances. Only in this way can alarm and blocking functions like rain or wind warnings help to protect external awnings or prevent rain from coming in through the window.

In order that shades can be controlled according to the direction and height of the sun, the building's location must be specified. Only in this way will the sun's position be calculated correctly.

🖵 System > WS1000 Settings > Settings > Location

🕮 Enter location, p. 97

Safety notice for automatic and alarm functions

When it starts to rain, depending on the amount of rain and the temperature, some time may pass before the rain is recognised by the weather station. For electrically-operated windows or sliding roofs, a closing time must also be taken into account. Moisture-sensitive objects should therefore not be placed in an area where they may be damaged by precipitation penetrating inside. Please remember also that, for example, when it starts to rain during a power outage, the windows will no longer close automatically, if no emergency power generator is fitted.

Please note that the rails of externally mounted blinds, awnings and shutters can ice up. If the drive group is then moved, the shade and drives may suffer damage.

It is imperative you take care that no-one is in the movement area of the equipment parts moved by electrical motors (danger of crushing!). The appropriate building regulations are to be observed.

Power failure, maintenance works, etc. (restart of control)

If a power outage occurs, the control unit can no longer control the connected drives! If the functional scope must be guaranteed even during a power cut, an emergency power unit with a corresponding switch from network power to emergency operation should be installed by the customer.
Settings saved in the control unit programme will be maintained even during a power outage.

If cleaning or maintenance work is to be carried out in the conservatory/building, the control unit should be de-energised and secure against restart by disconnection of the customer-installed fuse. This ensures that the connected drives cannot start.

After every re-start (e. g. return of voltage after mains failure or manual reset) all drives and devices are in automatic mode.

Automatic settings for drive groups and devices

Drives and devices without automatic functions

Devices connected via the **"Dimmer" output** (e.g. lighting) have no automatic functions. They can however be operated manually via the display.
Sliding doors also have no automatic functions. They can also be operated manually via the display. In addition, sliding doors can be fitted with a close-contact (connection to a multifunctional input). In this way the control unit knows whether the door is open or closed.

Automatic awning settings

For connected awnings or awning groups the following automatic settings can be changed:

- Light intensity
- Direction of sun
- Height of sun
- Movement position
- Indoor sensor to be used for the awning
- Indoor temperature block
- Outdoor temperature block
- Wind alarm
- Rain alarm

- Enable/Disable automatic reset

Alarm Functions

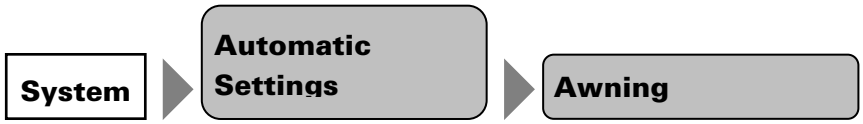
Alarm functions are used for awnings in manual and in automatic mode.
Fire alarm of a smoke detector has highest priority. All awnings are retracted and cannot be influenced either by automatic or manual.
During **wind or rain alarm** the awnings are retracted and cannot be manually extended.

Shade settings

The settings are only executed if an awning is in automatic mode and none of the alarm functions named above is active.
Highest priority is assigned to the **outdoor temperature-block** (shade is not moved), followed by the **indoor temperature-block** (retract).
Only when the direction and height of the sun agree and there is no active block is the **automatic shading by light intensity** engaged.

Setting of the automatic

The automatic awning functions can be accessed by pressing the buttons:



Now you can select individual awnings and adjust their settings. For each awning the following settings can be changed:

Press the button to set the brightness above which the awning will be deployed to offer shade.
Adjust value: Use the arrow buttons to change the value as you wish. Default setting: 40 kLux.
🕮 Units for sun and wind, p. 103
Allow retraction: If the awning should not react to the brightness, select **Never**. The awning will then remain retracted unless it is manually operated.
Confirm your setting with the **OK** button.

For the automatic system to react, the set light intensity value must be exceeded or undercut for the duration of the delay times. This prevents constant extensions and retraction of the awning during rapid-changing light conditions. The movement delays can be adjusted.
🖵 System > Automatic Settings > General Settings > Movement Delays
🕮 Adjust movement delays, p. 53

Direction of sun

Press the button to set the orientation of the sun which must exist before the awning is deployed to offer shade.
All directions: If the sun's orientation is not decisive for shading purposes, select **All sides** (default setting).
Direction: If the shade should only be deployed when the sun is in a specific orientation, select as appropriate: **West**, **South-West**, **South**, **South-East** or **East**. The thickened part of the circle in the centre shows the selected area.
Enter angle: To exactly specify the angle numerically press the "smaller **360°**" or "larger **0°**" and adjust the numeric values with the arrows keys that appear.
Confirm your setting with the **OK** button.

For as long as no DCF77 respectively GPS reception is available and the time has not been entered manually (the display on the control unit will show "Please set clock!"), the shades will only be controlled based on light intensity, temperature and alarm reports. The position of the sun will not be taken into account.

Height of sun

Press the button to set the height which the sun must have reached before the awning is deployed to offer shade.
Any angle: If the height of the sun is not decisive for shading purposes, select **Any height** (default setting).
Enter angle: To exactly specify the hight numerically, change the number values "smaller 90°" or "larger 0°" with the adjacent arrow keys. The thickened part of the graphic shows you the selected area.
Confirm your setting with the **OK** button.

For as long as no DCF77 respectively GPS reception is available and the time has not been entered manually (the display on the control unit will show "Please set clock!"), the shades will only be controlled based on light intensity, temperature and alarm reports. The position of the sun will not be taken into account.

Movem. Position

Press the button to set the movement position for the automatic mode. With the arrow keys, specify the movement position in % (0% = fully retracted, 100% = fully extended). Default setting: 75%.
Confirm your setting with the **OK** button.

Sensor Selection

Press the button to select the indoor sensor the control system will use for this awning. As long as “No Sensor” is selected, the indoor temperature will not be taken into account by the control system for this shade (default setting).
Confirm your setting with the **OK** button.

Indoor Temp.

Press the button to set the indoor temperature block. Until an indoor sensor is selected, the indoor temperature block will not be active.
Through the indoor temperature block, the sun’s energy will be used to heat the room. The block's effect is to ensure that the shade only deploys when the room temperature exceeds the pre-set value. The shade is retracted again once the temperature sinks more than 2.0°C under the pre-set value (hysteresis).

Set temperature: With the arrow keys, adjust the value for the desired room temperature. Default setting: 25.0 °C.
Disable block: If the awning should be deployed to offer shade regardless of the indoor temperature, press the **Off** button.
Confirm your setting with the **OK** button.

Outdoor Temp.

Press the button to set the outdoor temperature block. The block protects the external awning from being damaged by moving when the rails are iced up.
Set temperature: If the awning should be blocked when the outdoor temperature is low, set the value recommended by the manufacturer using the arrow keys. Default setting: 5.0 °C.
Disable block: If the awning should be deployed to offer shade regardless of the outdoor temperature (for example with internal awnings), press the **Off** button.
Confirm your setting with the **OK** button.

When the outdoor temperature drops below the blocking temperature, awnings neither extend nor retract under normal automatic regime in the sun (blocking temperature has priority over light intensity and sun position). The block is countermanded again when the temperature rises more than 2.0°C over the pre-set value (hysteresis).
In case of a rain or wind alarm, the shading is also retracted when the outdoor temperature drops below the blocking temperature (the alarm has priority over the blocking temperature).
Manual control is also possible when the awning is locked due to lower outdoor temperature. Please note that shading rails and other mechanical components can remain iced even when the outdoor temperature has already risen to very high values.

The drive and hangings may be damaged if a firmly frozen outdoor shading is moved!

Wind Alarm

Press the button to set the wind alarm. The wind alarm protects the sensitive awning cloth from damage by retracting the awning. Adjust values: Use the arrow keys to adjust the value for wind speed and the length of time by which it must have been exceeded.
Disable: If the awning should not react to the wind (e.g. internal awnings), select **Never retract** (default setting).
Confirm your setting with the **OK** button.

A wind alarm triggered for the drive will be maintained for 5 minutes. If during these 5 minutes the saved value is exceeded again, the holding time begins again.

Rain Alarm

Press the button to enable or disable the rain alarm. The rain alarm protects the sensitive awning cloth from damage by retracting the awning.
Enable: For moisture-sensitive external awnings, select **Yes** (awning should be retracted when it rains).
Disable: For internal awnings, select **No** (awning should not be retracted when it rains, default setting).
Confirm your setting with the **OK** button.

Automatic Reset

Press the button to enable or disable the switchover to automatic mode at a set point in time, or following a manual intervention.
The general Automatic Reset occurs daily at the same time.
Switching on: To set the awning to Automatic at a set point in time, select **Yes** (this is the default setting).
Switching off: To switch off the awning's Reset function, select **No**.

Alternatively, the automatic function can be reactivated at a set time following a manual intervention.
Switching on: To perform an Automatic Reset after a manual intervention, select **Yes**.
Switching off: To switch off the awning's Reset function, select **No** (this is the default setting).
Confirm your setting with the **OK** button.

Automatic Reset time and/or period can be set.

🖵 System > Automatic Settings > General Settings > Automatic Reset
🕮 Define automatic reset, p. 56

Automatic blind and roller shutter settings

For connected blinds and roller shutters (or groups of blinds/roller shutters) the following automatic settings can be changed:

- Light intensity
- Direction of sun
- Height of sun
- Movement position
- Slat position (only for blinds)
- Indoor sensor to be used for the blind/roller shutter
- Indoor temperature block
- Night closure
- Timed closure
- Outdoor temperature block
- Wind alarm
- Rain alarm
- Enable/Disable automatic reset

Alarm Functions

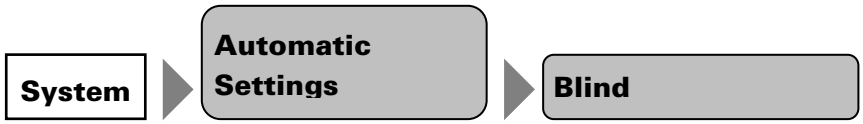
Alarm functions are used for shades in manual and in automatic mode.
Fire alarm of a smoke detector has highest priority. All shades are retracted and cannot be influenced either by automatic or manual operation.
During **wind or rain alarm** the shades are retracted and cannot be manually extended.

Shade settings

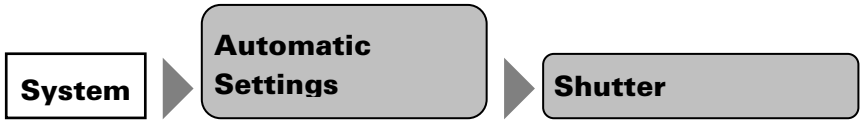
The settings are only executed if a shade is in automatic mode and none of the aforementioned alarm functions is active.
The highest priority is given to the **outdoor temperature block** (shade is not moved, followed by **timed closure** (extend), **night closure** (extend) and **indoor temperature-block** (retract).
Only when the direction and height of the sun agree and there is no active block is the **automatic shading by light intensity** engaged.

Setting of the automatic

The automatic blind functions can be accessed by pressing the buttons:



The automatic roller shutter functions can be accessed by pressing the buttons:



Now you can select individual blinds respectively roller shutters and adjust their settings. For each shade the following settings can be changed:

Intensity

Press the button to set the brightness above which the blind respectively the roller shutter will be deployed to offer shade.
Adjust value: Use the arrow buttons to change the value according to your desire. Default setting: 40 kLux.
🕮 Units for sun and wind, p. 103
Keep closed: If the blind respectively the roller shutter should remain closed when there is brightness, select **Always**. The shading will then remain closed and will only be retracted when the rain or wind alarms trigger, if these functions have been activated. The slat (for blinds) and movement position can be adjusted individually. Manual opening is possible.
Leave open: If the blind respectively the roller shutter should not react to the brightness, select **Never**. The shading will then only be closed in the night closing and time closing periods set by you. Manual closing is possible.
Confirm your setting with the **OK** button.

For the automatic system to react, the set light intensity value must be exceeded or undercut for the duration of the delay times. This prevents constant up and down movement of the shading during rapidly changing light conditions. The movement delays can be adjusted.
🖵 System > Automatic Settings > General Settings > Movement delays
🕮 Adjust movement delays, p. 53

Direction of sun

Press the button to set the orientation of the sun which must exist before the blind respectively the roller shutter is deployed to offer shade.

All directions: If the sun's orientation is not decisive for shading purposes, select **All sides** (default setting).
Direction: If the shade should only be deployed when the sun is in a specific orientation, select as appropriate: **West**, **South-West**, **South**, **South-East** or **East**. The thickened part of the circle in the centre shows the selected area.
Enter angle: To exactly specify the angle numerically press the "smaller **360°**" or "larger **0°**" and adjust the numeric values with the arrows keys that appear.
Confirm your setting with the **OK** button.

For as long as no DCF77 respectively GPS reception is available and the time has not been entered manually (the display on the control unit will show "Please set clock!"), the shades will only be controlled based on light intensity, temperature and alarm reports. The position of the sun will not be taken into account.

Height of sun

Press the button to set the height which the sun must have reached before the blind respectively the roller shutter is deployed to offer shade.
Any angle: If the height of the sun is not decisive for shading purposes, select **Any height** (default setting).
Enter angle: To exactly specify the height numerically, change the number values "smaller 90°" or "larger 0°" with the adjacent arrow keys. The thickened part of the graphic shows you the selected area.
Confirm your setting with the **OK** button.

For as long as no DCF77 respectively GPS reception is available and the time has not been entered manually (the display on the control unit will show "Please set clock!"), the shades will only be controlled based on light intensity, temperature and alarm reports. The position of the sun will not be taken into account.

Movem. Position

Press the button to set the movement position for the automatic shading. With the arrow keys, specify the movement position in % (0% = fully retracted, 100% = fully extended). Default setting: 75%.
Confirm your setting with the **OK** button.

Slat Position ***Only for blinds!***

Press the button to set the angular position of the slats.
Fixed angle: If the slats should be opened at a fixed angle after reaching the movement position, leave the button position at **No** (do not follow the sun's

height). With the arrow keys, specify the slat position in % (0% = closed, 50% = horizontal, 100% = closed). Default setting: 75% (slightly open).
Tracking the position of the sun: If the slats should be opened in accordance with the position of the sun, press the button so it changes to **Yes**. You can adjust the slat opening for the various angles of the sun. For this use the arrow keys next to the % details.
Default setting: 0° to 15°: 100% (closed), 15° to 30°: 80%, 30° to 45°: 65%, 45° to 90°: 50% (horizontal).
Confirm your setting with the **OK** button.

Sensor Selection

Press the button to select the indoor sensor the control system will use for these blinds respectively shutters. As long as "No Sensor" is selected, the indoor temperature will not be taken into account by the control system for this shade (default setting).
Confirm your setting with the **OK** button.

Indoor Temp.

Press the button to set the indoor temperature block. Until an indoor sensor is selected, the indoor temperature block will not be active.
Through the indoor temperature block, the sun's energy will be used to heat the room. The block's effect is to ensure that the shade only deploys when the room temperature exceeds the pre-set value. The shade is retracted again once the temperature sinks more than 2.0°C under the pre-set value (hysteresis).

Set temperature: With the arrow keys, adjust the value for the desired room temperature. Default setting: 25.0 °C.
Disable block: If the blinds respectively shutters should be deployed to offer shade regardless of the indoor temperature, press the **Off** button.
Confirm your setting with the **OK** button.

Night Closure

Press the button to enable or disable the closing of the blind respectively the roller shutter at night.
Enable: If the blind respectively the roller shutter should be closed at night, select **Yes**.
Disable: If the blind respectively the roller shutter should remain open at night, select **No** (default setting).
Confirm your setting with the **OK** button.

The threshold value, above which twilight/night will be recognised, can be adjusted.

🖵 System > Automatic Settings > General Settings > Twilight

🕮 Adjust twilight value, p. 53

Note to night closing function and outdoor temperature block:

If the outdoor temperature is below the blocking temperature (see “Outdoor Temperature” settings), the blinds and roller shutters will close, but will not open automatically. If the blind/shutter fails to move up in the morning, please check if the hangings are not frozen or the rails iced. When the shading is free, you can move the hangings up by hand.

The drive and hangings may be damaged if a firmly frozen outdoor shading is moved!

Timed closure

Press the button to set the closure time. Press **Select** to select the time during which the blind respectively the roller shutter will be closed. Activate one or more periods on the list. The periods can be individually customised (see below).
Confirm your setting with the **OK** button.

To change any of the time periods, press **Timer**.

🕮 Set timer, p. 53

Note to timer closing function and outdoor temperature block:

If the outdoor temperature is below the blocking temperature (see "Outdoor Temperature" settings), the blinds and roller shutters will close, but not open automatically. If the blind/shutter fails to move up after the preset period, please check if the hangings are not frozen or the rails iced. When the shading is free, you can move the hangings up by hand.

The drive and hangings may be damaged if a firmly frozen outdoor shading is moved!

Outdoor Temp.

Press the button to set the outdoor temperature block. The block protects the shading from being damaged by moving when the rails are iced up.

Set temperature: If the blind respectively the roller shutter should be blocked when the outdoor temperature is low, set the value recommended by the manufacturer using the arrow keys. Default setting: 5.0 ℃.
Disable block: If the blind respectively the roller shutter should be deployed to offer shade regardless of the outdoor temperature, press the **Off** button.
Confirm your setting with the **OK** button.

When the outdoor temperature drops below the blocking temperature, blinds and roller shutters neither extend nor retract under normal automatic regime in the sun. The block is countermanded again when the temperature rises more than 2.0°C over the pre- set value (hysteresis). This applies to the shade under corresponding light levels and to night and timed closure.

In case of a rain or wind alarm, the shading is also retracted when the outdoor temperature drops below the blocking temperature (the alarm has priority over the blocking temperature).
Manual control is also possible when the blind respectively the roller shutter is blocked due to lower outdoor temperature. Please note that shading rails and other mechanical components can remain iced even when the outdoor temperature has already risen to very high values.

The drive and hangings may be damaged if a firmly frozen outdoor shading is moved!

Wind Alarm

Press the button to set the wind alarm. The wind alarm protects the system from damage by retracting the blind respectively the roller shutter.
Adjust values: Use the arrow keys to adjust the value for wind speed and the length of time by which it must have been exceeded.
Disable: If the blind respectively the roller shutter should not react to the wind, select **Never retract** (default setting).
Confirm your setting with the **OK** button.

A wind alarm triggered for the drive will be maintained for 5 minutes. If during these 5 minutes the saved value is exceeded again, the holding time begins again.

Rain Alarm

Press the button to enable or disable the rain alarm. The rain alarm protects against moisture damage by retracting the blind respectively the roller shutter.

Enable: If the shading should be retracted when there is rain, select **Yes**.
Disable: If the shading respectively the roller shutter should remain closed when there is rain, select **No**. (default setting).
Confirm your setting with the **OK** button.

Automatic Reset

Press the button to enable or disable the switchover to automatic mode at a set point in time, or following a manual intervention.
The general Automatic Reset occurs daily at the same time.
Switching on: To set the blind respectively the roller shutter to Automatic at a set point in time, select **Yes** (this is the default setting).
Switching off: To switch off the blind's/shutter's Reset function, select **No**.

Alternatively, the automatic function can be reactivated at a set time following a manual intervention.
Switching on: To perform an Automatic Reset after a manual intervention, select **Yes**.
Switching off: To switch off the blinds's/ shutter's Reset function, select **No** (this is the default setting).
Confirm your setting with the **OK** button.

Automatic Reset time and/or period can be set.
🖵 System > Automatic Settings > General Settings > Automatic Reset
🕮 Define automatic reset, p. 56

Automatic window settings

For connected windows, sliding roofs, step windows or window groups, the following automatic settings can be changed:

- Indoor sensor to be used for the window
- Indoor temperature
- Air humidity
- Supply air temperature
- Night-time re-cooling (together with indoor temperature and movement position for night-time re-cooling)
- Movement position (only for sliding windows)
- Number of steps (only for step windows)
- Timed ventilation
- Outdoor temperature
- Timed closure

- Wind alarm
- Rain alarm
- Gap ventilation
- Gap position
- Enable/Disable automatic reset

Alarm Functions

Alarm functions are used for windows in manual and in automatic mode.
Fire alarm of a smoke detector has highest priority. All windows are opened and cannot be influenced either by automatic or manual operation.

In the case of a **break-in alarm** from a motion detector all windows are closed. The windows can be operated again immediately after the break-in alarm.

During **wind or rain alarm** all windows are closed and cannot be manually opened. Gap ventilation during a rain alarm is an exception; it only restricts the window's range of motion in automatic mode.

As soon as a connected **air conditioner is activated**, all windows are closed. They are then in automatic mode but can be immediately operated again.
The delay time for the ventilation block engaged by an air conditioner can be adjusted.
🖵 System > Automatic Settings > General Settings > Ventilation Block
🕮 Adjust ventilation block, p. 55

Ventilation Settings

The settings are only executed if a window is in automatic mode and none of the alarm functions named above is active.
Highest priority is assigned to **time closure**, followed by the **outdoor temperature-block** (keep closed), **timed ventilation** (open), the **incoming air temperature-block** (keep closed) and **night-time re-cooling** (open).
This means that e.g. timed ventilation or night-time re-cooling will only occur, when the outdoor temperature lies over the pre-set value for the outdoor temperature block.
The **automatic ventilation according to temperature or relative humidity** is only performed if no block is active.

Setting of the automatic

The automatic window functions can be accessed by pressing the buttons:

System ▶ Automatic Settings ▶ Window

Now you can select individual windows and adjust their settings. For each window the following settings can be changed:

Sensor Selection

Press the button to select the indoor sensor the control system will use for this window. As long as "No Sensor" is selected, the indoor temperature and air humidity will not be taken into account (default setting).
Confirm your setting with the **OK** button.

Indoor Temp.

Press the button to set the indoor temperature above which the window will be opened. Until an indoor sensor is selected, the indoor temperature will be disregarded.
Setting the temperature: Adjust the value for the desired room temperature using the arrow buttons. Pre-setting: 25.0 °C.
The window is opened as soon as the temperature lies above the pre set value. It is closed again once the temperature sinks more than 2.0°C under the pre-set value (hysteresis).
Shutting off ventilation: If ventilation shall be independent of indoor temperature, press the button labelled **OFF**.
Confirm your setting with the **OK** button.

Air Humidity

Press the button to set the air humidity above which the window will be opened. Until an indoor sensor is selected, the air humidity will be disregarded.
Setting air humidity: Adjust the value for the desired humidity using the arrow buttons. Pre-setting: 80%.
The window is opened as soon as the humidity lies above the pre- set value. However, it is only closed again when the humidity sinks by more than 3.0% under the pre-set value (hysteresis).
Shutting off ventilation: If ventilation is to be independent of the air humidity, press the button labelled **OFF**.
Confirm your setting with the **OK** button.

Supply Air Temp.

Press the button to set the supply air temperature block.

Enable: If the window should be closed when the air supply temperature is higher than the room temperature, select **Yes**.
The supply air temperature-block becomes active as soon as the incoming air temperature lies above the room temperature. The block is however only deactivated again when the incoming air temperature sinks below the room temperature by more than 3.0°C (hysteresis).
Disable: If the window should also then be/remain open when the supply air temperature is higher than the room temperature, select **No** (default setting).
Confirm your setting with the **OK** button.

Movem. Position

Only for sliding windows.

Press the button to set the movement position for a sliding window in automatic mode. The window can also be fully opened by hand.
With the arrow keys, specify the movement position in % (0% = closed, 100% = fully open). Default setting: 75%.
Confirm your setting with the **OK** button.

Number of Steps

Only for step windows.

Press the button to set the number of movement steps for a step window in automatic mode. With step windows the control unit checks every 3 minutes whether the set room temperature or air humidity has been exceeded and then moves up another step if necessary.
Specify the desired number of steps with the arrow keys.
Default setting: 5.
Confirm your setting with the **OK** button.

Night-time Cooling

Press the button to set the times for night-time re-cooling. The button is only activated once the general settings for night-time re-cooling have been configured.
🖵 System > Automatic Settings > General Settings > Night-time Cooling
🕮 Set night-time re-cooling, p. 55

Press **Select** to select the time during which the night-time re-cooling will operate. Activate one or more periods on the list.
Confirm your setting with the **OK** button.

To change any of the time periods, press **Timer**.
🕮 Set timer, p. 53

Be careful that your settings for timed closure do not prevent night-time re-cooling operations!

NTC Indoor Temp.

Press the button to set the indoor temperature to the desired cooling level (for the night-time re-cooling). The button is only activated once a night-time re-cooling period has been set.
Use the arrow keys to change the value as required. Default setting: 16.0°C.
Confirm your setting by pressing **OK**.

NTC Movem. Pos.

Press the button to set the movement position for the night-time re-cooling. The button is only activated once a night-time re-cooling period has been set.
Input the movement position in % using the arrow keys (0% = closed, 100% = fully open). Default setting: 30%.
Confirm your setting by pressing **OK**.

Timed Ventilation

Press the button to set the ventilation running time. Press **Select** to select the time periods. However the window will only open if the specified outdoor temperature is reached.
Activate one or more periods on the list. The periods can be individually customised (see below).
Confirm your setting by pressing **OK**.

To change any of the time periods, press **Timer**.
📖 Set timer, p. 53

Outdoor Temp.

Press the button to set the outdoor temperature below which the window will be closed.
Set value: Use the arrow buttons to change the value according to your wish. Default setting: 5.0°C
The outdoor temperature-block becomes active as soon as the temperature sinks under the pre- set value. The block is however only deactivated again when the temperature rises over the pre-set value by more than 2.0°C (hysteresis).
Disable block: If the window should be controlled independently of the outdoor temperature, press the button **Off**.
Confirm your setting with the **OK** button.

Timed closure

Press the button to set the closure time. Closure periods prevent the windows, for example, from opening and closing at night, and thus causing noise. Note that no night-time re-cooling is possible during the set closure periods.
Press **Select** to select the time during which the window should be closed. Activate one or more periods on the list. The periods can be individually customised (see below).
Confirm your setting by pressing **OK**.

To change any of the time periods, press **Timer**.
📖 Set timer, p. 53

Wind Alarm

Press the button to set the wind alarm. The wind alarm protects the unit and equipment from damage by closing the window. The wind alarm will also close manually opened windows.
Adjust values: Use the arrow keys to adjust the value for wind speed and the length of time by which it must have been exceeded.
Disable: If the window should not react to the wind, select **Never close** (default setting).
Confirm your setting with the **OK** button.

A wind alarm triggered for the drive will be maintained for 5 minutes. If during these 5 minutes the saved value is exceeded again, the holding time begins again.

Rain Alarm

Press the button to enable or disable the rain alarm. The rain alarm protects against moisture damage by closing the window. The rain alarm will also close manually opened windows.
Enable: If the window should be closed when there is rain, select **Yes**.
Disable: If the window should remain open when there is rain, select **No** (default setting).
Confirm your setting with the **OK** button.

When precipitation begins, depending on the amount of rain and the temperature, some time may pass before the precipitation is recognised by the weather station. The operating time taken to close the window must also be included in this calculation.

Moisture-sensitive objects should therefore not be placed within the area of the automatic window.

Gap Ventilation

Press the button to enable or disable gap opening when a rain alarm triggers. The function is only active if the rain alarm is switched on. With gap opening, the window can be opened a little despite a rain alarm.
Enable: If gap opening should be active when it rains, select **Yes**.
Disable: If the window should be completely closed when there is rain, select **No** (default setting).
Confirm your setting with the **OK** button.

Please note that gap ventilation is not possible if the MSG Control has been activated (signal duration set to permanent) in the basic settings of the window in the installation menue.
📖 Set up drives and drive groups, MSG Control p. 81

Gap Position

Press the button to set the movement position for the gap opening when a rain alarm triggers. The function is only active if the gap ventilation is switched on.
With the arrow keys, specify the movement position in % (0% = closed, 100% = fully open). Default setting: 5%.
Confirm your setting with the **OK** button.

Automatic Reset

Press the button to enable or disable the switchover to automatic mode at a set point in time, or following a manual intervention.
The general Automatic Reset occurs daily at the same time.
Switching on: To set the window to Automatic at a set point in time, select **Yes** (this is the default setting).
Switching off: To switch off the window's Reset function, select **No**.

Alternatively, the automatic function can be reactivated at a set time following a manual intervention.
Switching on: To perform an Automatic Reset after a manual intervention, select **Yes**.
Switching off: To switch off the window's Reset function, select **No** (this is the default setting).
Confirm your setting with the **OK** button.

Automatic Reset time and/or period can be set.

🖵 System > Automatic Settings > General Settings > Automatic Reset

🕮 Define automatic reset, p. 56

Automatic ventilation settings

For connected roof ventilation units and supply air units the following automatic settings can be changed:

- Indoor sensor to be used for the ventilation unit
- Indoor temperature
- Air humidity
- Air supply temperature (only for air supply devices)
- Exhaust air levels (only for roof ventilators WL610/WL305)
- Night-time re-cooling (together with indoor temperature for night-time re-cooling)
- Timed ventilation (and levels for timed ventilation)
- Outdoor temperature (only for air supply devices)
- Recirculating air for heat recovery (only roof ventilators WL610/WL305)
- Recirculating air for condensation reduction (only for roof ventilators WL610/WL305)
- Enable/Disable automatic reset

In the event of a fire alarm from a smoke detector, ventilation is activated and cannot be influenced by either the automatic or the manual.

As soon as a connected air conditioner is activated, ventilation is disabled, including manually activated fans. The fans can be manually operated again immediately. The delay time for the ventilation block can be adjusted.

🖵 System > Automatic Settings > General Settings > Ventilation Block

🕮 Adjust ventilation block, p. 55

The automatic ventilation functions can be accessed by pressing the buttons:

Now you can select individual ventilators and adjust their settings. For each ventilator the following settings can be changed:

Sensor Selection

Press the button to select the indoor sensor the control system will use for this ventilator. As long as "No Sensor" is selected, the indoor temperature and air humidity will not be taken into account by the control system for this ventilator (default setting).
Confirm your setting with the **OK** button.

Indoor Temp.

Press the button to set the indoor temperature above which the ventilation will be switched on at night. Until an indoor sensor is selected, the indoor temperature will be disregarded.
Setting the temperature: Adjust the value for the desired room temperature using the arrow buttons. Pre-setting: 21.0 °C.
Shutting off ventilation: If ventilation is to be independent of indoor temperature, press the button labelled **OFF**.
Confirm your setting with the **OK** button.

Air Humidity

Press the button to set the air humidity above which the ventilation will be switched on at night. Until an indoor sensor is selected, the air humidity will be disregarded.
Setting humidity: Adjust the value for the desired humidity using the arrow buttons. Pre-setting: 80%.
Shutting off ventilation: If ventilation is to be independent of air humidity, press the button labelled **OFF**.
Confirm your setting with the **OK** button.

Supply Air Temp. ***Only for supply air units.***

Press the button to set the supply air temperature block (summer operation). With WFL supply air units, the supply air temperature is recorded by a thermometer integrated into the WFL. With devices from other manufacturers the outdoor temperature at the weather station is used as the supply air temperature.
Enable: If the supply air unit should be closed when the supply air temperature is warmer than the room temperature, select **Yes**.
Disable: If the supply air unit should also then be/remain open when the supply air temperature is warmer than the room temperature, select **No** (default setting).
Confirm your setting with the **OK** button.

Exhaust Air Levels

Only for roof ventilators WL610 and WL305.

Press the button to set the ventilation levels of the motorised roof ventilators. The further the indoor temperature and air humidity lie above the reference values, the higher the ventilator shifts.
Use the arrow buttons to change the start and maximum values according to your wishes. Default setting: Start with level 1, maximum level 8 (full level utilisation).
Confirm your setting with the **OK** button.

Night-time Cooling

Press the button to set the times for night-time re-cooling. The button is only activated once the general settings for night-time re-cooling have been configured.

🖵 System > Automatic Settings > General Settings > Night-time Cooling

🕮 Set night-time re-cooling, p. 55

Press **Select** to select the time during which the night-time re-cooling will operate. Activate one or more periods on the list.
Confirm your setting with the **OK** button.
To change any of the time periods, press **Timer**.

🕮 Set timer, p. 53

Be careful that your settings for timed closure do not prevent night-time re-cooling operations! A set supply air temperature block can also prevent night-time re-cooling.

NTC Indoor Temp.

Press the button to set the indoor temperature to the desired cooling level (for the night-time re-cooling). The button is only activated once a night-time re-cooling period has been set.
Use the arrow keys to change the value as required. Default setting: 16.0°C.
Confirm your setting by pressing **OK**.

NTC Exhaust Level

Only for roof ventilators WL610 and WL305.

Press the button to set the ventilation levels of the motorised roof ventilators for the night-time re-cooling. The button is only activated once a night-time re-cooling period has been set.
Use the arrow buttons to change the level according to your desire. Default setting: Level 3.
Confirm your setting with the **OK** button.

Timed Ventilation

Press the button to set the timed ventilation. Press **Select** to select the time during which ventilation will occur. However supply air flaps are only opened if the set outdoor temperature is hit.
Activate one or more periods on the list. Confirm your setting by pressing **OK**.

To change any of the time periods, press **Timer**.
📖 Set timer, p. 53

Outdoor Temp.

Only for supply air units.

Press the button to set the outdoor temperature above which the supply air unit should remain closed (winter operation). Use the arrow buttons to change the value according to your wish. Default setting: 1.0 °C.
Confirm your setting with the **OK** button.

Ventilation Level

Only for roof ventilators WL610 and WL305.

Press the button to set the ventilation levels of the motorised roof ventilators for the timed ventilation. The button is only active if a ventilation time has been set.
Use the arrow buttons to change the level according to your desire. Default setting: Level 3.
Confirm your setting with the **OK** button.

Heat Recovery

Only for roof ventilators WL610 and WL305.

Press the button to set the recirculating air function for heat recovery. Recirculation allows heated air from the first area to be distributed in the entire room and so be used for warming if required. In principle, the recirculation function only starts if the temperature at the ventilator is at least 3° warmer than the indoor temperature.
Select **Yes** to activate the heat recovery function (with **No,** the function is switched off). Use the arrow keys that appear to set the indoor temperature beneath which circulation should take place, and the level at which the ventilator should run.
Default setting: Indoor temperature 10.0°C lower; with level 3.
Confirm your setting with the **OK** button.

Condensation

Only for roof ventilators WL610 and WL305.

Press the button to set the recirculating air function for condensation reduction. Recirculation of the air can reduce condensation forming on the window panes.

Select **Yes** to activate the condensation reduction function (with **No,** the function is switched off). Using the arrow keys that appear, set the U-value of the glass used (ask your window manufacturer or conservatory supplier for the value) and the level at which the ventilator should run. Default setting: U-value 1.0; with Level 3.
Confirm your setting with the **OK** button.

Automatic Reset

Press the button to enable or disable the switchover to automatic mode at a set point in time, or following a manual intervention.
The general Automatic Reset occurs daily at the same time.
Switching on: To set the ventilation unit to Automatic at a set point in time, select **Yes** (this is the default setting).
Switching off: To switch off the ventilation unit's Reset function, select **No**.

Alternatively, the automatic function can be reactivated at a set time following a manual intervention.
Switching on: To perform an Automatic Reset after a manual intervention, select **Yes**.
Switching off: To switch off the ventilation unit's Reset function, select **No** (this is the default setting).
Confirm your setting with the **OK** button.

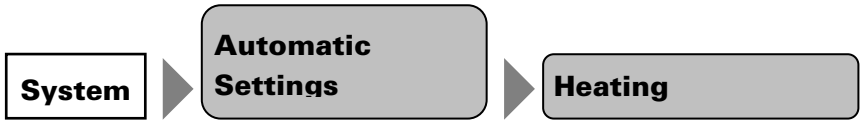
Automatic Reset time and/or period can be set.
🖵 System > Automatic Settings > General Settings > Automatic Reset
🕮 Define automatic reset, p. 56

Automatic heating settings

For connected heatings the following automatic settings can be changed:

- Indoor sensor to be used for the heating
- Indoor day temperature
- Night mode (period) and indoor night temperature
- Enable/Disable automatic reset

The automatic heating functions can be accessed by pressing the buttons:



Now you can select individual heatings and adjust their settings. For each heating the following settings can be changed:

Sensor Selection

Press the button to select the indoor sensor the control system will use for this heating. For as long as “No sensor” is selected, the indoor sensor will not be taken into account for control of the heating, i.e. no automatic control will take place (default setting).
Confirm your setting with the **OK** button.

Indoor Temp. Day

Press the button to set the indoor temperature above which the heating will be switched on during the day. Until an indoor sensor is selected, the automatic heating is deactivated. Use the arrow buttons to change the value according to your wish. Default setting: 20.0 °C.
Confirm your setting with the **OK** button.

Night Mode

Press the button to set the night-time operation. Press **Select** to select the time during which the night mode will operate. Activate one or more periods on the list. The periods can be individually customised (see below).
Confirm your setting with the **OK** button.

To change any of the time periods, press **Timer**.
🕮 Set timer, p. 53

Indoor Temp. Night

Press the button to set the indoor temperature above which the heating will be switched on at night. The button is only active if a night mode operation period has been set. Use the arrow buttons to change the value according to your wish. Default setting: 16.0°C
Confirm your setting with the **OK** button.

Automatic Reset

Press the button to enable or disable the switchover to automatic mode at a set point in time, or following a manual intervention.
The general Automatic Reset occurs daily at the same time.
Switching on: To set the heating to Automatic at a set point in time, select **Yes** (this is the default setting).
Switching off: To switch off the heating’s Reset function, select **No**.

Alternatively, the automatic function can be reactivated at a set time following a manual intervention.
Switching on: To perform an Automatic Reset after a manual intervention, select **Yes**.
Switching off: To switch off the heating's Reset function, select **No** (this is the default setting).
Confirm your setting with the **OK** button.

Automatic Reset time and/or period can be set.
🖵 System > Automatic Settings > General Settings > Automatic Reset
🕮 Define automatic reset, p. 56

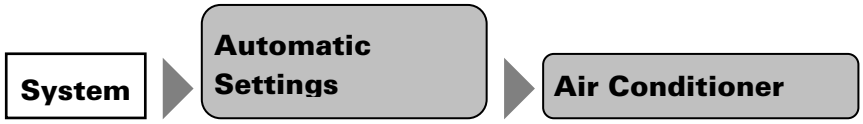
Automatic air-conditioner settings

For connected coolings/air conditioners the following automatic settings can be changed:

- Indoor sensor to be used for the air-conditioner
- Indoor day temperature
- Night mode (period) and indoor night temperature
- Enable/Disable automatic reset

As soon as a cooling/air-conditioning unit is activated, windows will be closed and ventilators switched off. The delay time applicable to this can be set.
🖵 System > Automatic Settings > General Settings > Ventilation Block
🕮 Adjust ventilation block, p. 55

The automatic climate control functions can be accessed by pressing the buttons:



Now you can select individual air conditioners and adjust their settings. For each air conditioner the following settings can be changed:

Sensor Selection

Press the button to select the indoor sensor the control system will use for this cooling unit. For as long as "No sensor" is selected, the indoor sensor will not be taken into account for control of the cooling unit, i.e. no automatic control will take place (default setting).
Confirm your setting with the **OK** button.

Indoor Temp. Day

Press the button to set the indoor temperature above which the cooling unit will be switched on during the day. Until an indoor sensor is selected, the automatic cooling is deactivated. Use the arrow buttons to change the value according to your wish. Default setting: 30.0°C
Confirm your setting with the **OK** button.

Night Mode

Press the button to set the night-time operation. Press **Select** to select the time during which the night mode will operate. Activate one or more periods on the list. The periods can be individually customised (see below).
Confirm your setting with the **OK** button.

To change any of the time periods, press **Timer**.
📖 Set timer, p. 53

Indoor Temp. Night

Press the button to set the indoor temperature above which the cooling will be switched on at night. The button is only active if a night mode operation period has been set. Use the arrow buttons to change the value according to your wish. Default setting: 34.0°C.
Confirm your setting with the **OK** button.

Automatic Reset

Press the button to enable or disable the switchover to automatic mode at a set point in time, or following a manual intervention.
The general Automatic Reset occurs daily at the same time.
Switching on: To set the air conditioner to Automatic at a set point in time, select **Yes** (this is the default setting).
Switching off: To switch off the air conditioner's Reset function, select **No**.

Alternatively, the automatic function can be reactivated at a set time following a manual intervention.
Switching on: To perform an Automatic Reset after a manual intervention, select **Yes**.
Switching off: To switch off the air conditioner's Reset function, select **No** (this is the default setting).
Confirm your setting with the **OK** button.

Automatic Reset time and/or period can be set.

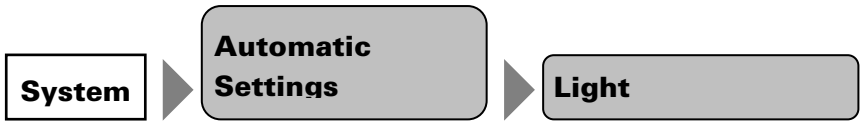
🖵 System > Automatic Settings > General Settings > Automatic Reset
🕮 Define automatic reset, p. 56

Automatic light settings

For connected lights the following automatic settings can be changed:

- Twilight operation
- Time switches
- Alarm reaction
- Enable/Disable automatic reset

The automatic lighting functions can be accessed by pressing the buttons:



Now you can select individual lights and adjust their settings. For each light the following settings can be changed:

Time Switch

Press the button to set the time switch. Press **Select** to select the time during which the lights will be turned on. As soon as you activate the twilight setting (see below), the light will only be turned on at twilight in the selected time periods. Activate one or more periods on the list.
Confirm your setting with the **OK** button.

To change any of the time periods, press **Timer**.
🕮 Set timer, p. 53

Twilight

Press the button to enable or disable the twilight/night switch. If the twilight setting is active, the light is only turned on at twilight in the time periods selected above. Pre-setting: No (twilight switching off).
Confirm your setting with the **OK** button.

The threshold value, above which twilight/night will be recognised, can be adjusted.
🖵 System > Automatic Settings > Twilight
🕮 Adjust twilight value, p. 53

Alarm

Press the button to set the alarm response. When an alarm is triggered in a connected motion or smoke detector, the lighting can be switched on automatically.
Enable: If the lighting should be switched on automatically when an alarm is triggered, select **Yes**.
Disable: If the lighting should not be switched on automatically when an alarm is triggered, select **No** (default setting).
Confirm your setting with the **OK** button.

Automatic Reset

Press the button to enable or disable the switchover to automatic mode at a set point in time, or following a manual intervention.
The general Automatic Reset occurs daily at the same time.
Switching on: To set the light to Automatic at a set point in time, select **Yes** (this is the default setting).
Switching off: To switch off the light's Reset function, select **No**.

Alternatively, the automatic function can be reactivated at a set time following a manual intervention.
Switching on: To perform an Automatic Reset after a manual intervention, select **Yes**.
Switching off: To switch off the light's Reset function, select **No** (this is the default setting).
Confirm your setting with the **OK** button.

Automatic Reset time and/or period can be set.
🖵 System > Automatic Settings > General Settings > Automatic Reset
🕮 Define automatic reset, p. 56

Automatic roof gutter heating settings

For connected roof gutter heatings the following automatic settings can be changed:

- Temperature range within which the heating will be switched on
- Enable/Disable automatic reset

The automatic gutter heating functions can be accessed by pressing the buttons:

System ▶ **Automatic Settings** ▶ **Gutter Heating**

Now you can select individual roof gutter heatings and adjust their settings. For each heating the following settings can be changed:

Temperature Range

Use the arrow keys to set the temperature range within which the roof gutter heating will be switched on. If the temperatures are very cold, no condensate forms and the heating can remain switched off. Default setting: 5.0°C to -5.0°C.
Confirm your setting with the **OK** button.

Automatic Reset

Press the button to enable or disable the switchover to automatic mode at a set point in time, or following a manual intervention.
The general Automatic Reset occurs daily at the same time.
Switching on: To set the gutter heating to Automatic at a set point in time, select **Yes** (this is the default setting).
Switching off: To switch off the gutter heating's Reset function, select **No**.

Alternatively, the automatic function can be reactivated at a set time following a manual intervention.
Switching on: To perform an Automatic Reset after a manual intervention, select **Yes**.
Switching off: To switch off the gutter heating's Reset function, select **No** (this is the default setting).
Confirm your setting with the **OK** button.

Automatic Reset time and/or period can be set.
🖵 System > Automatic Settings > General Settings > Automatic Reset
🕮 Define automatic reset, p. 56

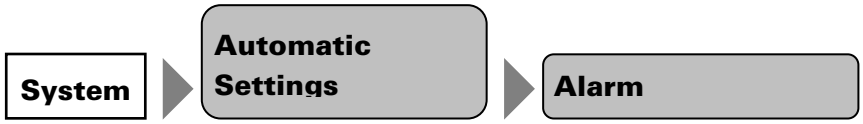
Set up alarm

You can set the alarm output and motion detector here.
If a motion-detector is connected, a period of time during which the control system will react to the movements detected can be set (severe alarm). If an alarm is triggered within this time, all windows will close for around 5 minutes. The display (starting position with weather data display) reads "Motion-detector alarm." After 5 minutes without a new alarm signal, normal automatic operation will be resumed.

Even manually opened windows will be closed when there is a motion-detector alarm!

If a multifunctional output is configured as an alarm output, it closes for the duration of the alarm signal. Lights can also be switched on when the alarm is active.
📖 Automatic light settings, p. 49

The alarm settings can be accessed by pressing the buttons:



Setting motion detectors

First select the motion detector that you want to set.
Press **Select** to select the time during which the motion detector alarm should be active. Activate one or more periods on the list. The operating times can be individually customised (see below).
Confirm your setting with the **OK** button.

To change any of the time periods, press **Timer**.
📖 Set timer, p. 53

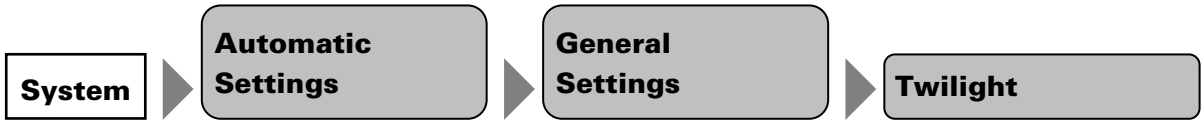
Setting the alarm output

First select the alarm output that you want to set.
Select the alarm source which should activate the alarm output relay. More than one source can also be selected.
Confirm your setting with the **OK** button.

Adjust general automatic settings

Adjust twilight value

You can adjust the threshold value above which twilight/night will be recognised. The twilight settings can be accessed by pressing the buttons:

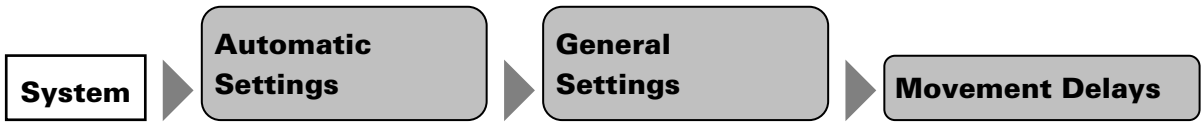


Use the arrow keys to set the value above which twilight or night will be recognised by the control unit.
Default setting: 10 Lux.
Confirm your setting with the **OK** button.

Adjust movement delays

You can adjust the delay time for shades. The movement delay prevents sun shades from being constantly extended and retracted when there are rapidly changing light conditions.
For the shade to extend, the brightness must lie above the set light intensity value uninterruptedly for the set extension delay time (e.g. 1 minute). For the shade to retract again, the light intensity for the set retraction delay time must lie below the value without interruption for the set retraction delay time (e.g. 12 minutes). Clever selection of the delay time "masks out" passing clouds and nonetheless permits the shade to react quickly to the sun.

The movement delay settings can be accessed by pressing the buttons:



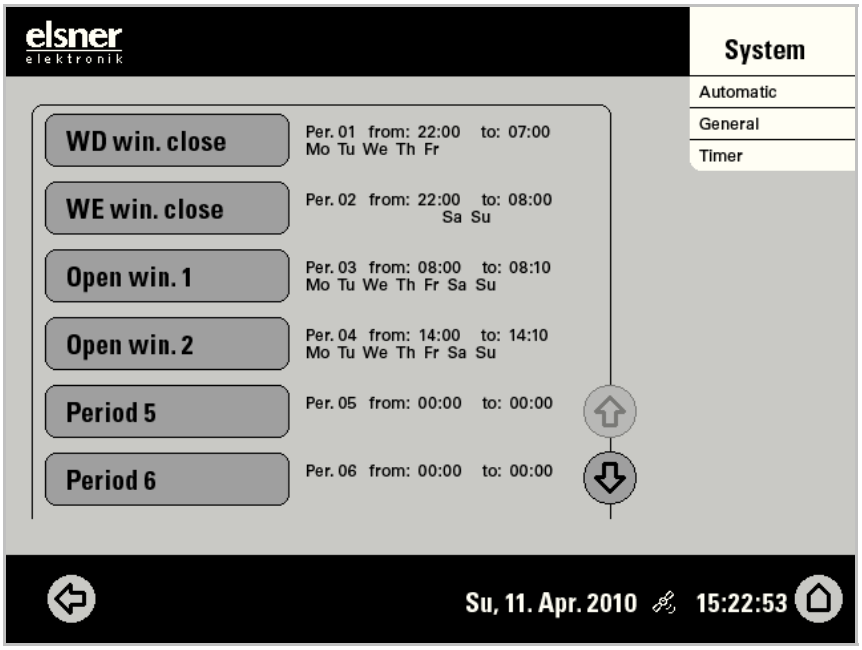
Use the arrow keys to set the values for the extension and retraction delays.
Default setting: Extension 1 minute, retraction 12 minutes.
Confirm your setting with the **OK** button.

Set timer

Sixteen periods can be set in the week-long timer, which can be used for different automation functions. A start and end point, as well as a day of the week must be set for each time period.

The timer settings can be accessed by pressing the buttons:

System ▶ Automatic Settings ▶ General Settings ▶ Timer



In the illustration, the times for mandatory closing and opening the windows on weekdays and weekends have already been set.
Select the time period that you want to change. The following settings of each time period can be changed:

Name of the time period:

Period 1 Press the button to change this name. Input the desired name on the on-screen keyboard which appears.

📖 Input keyboard for names and codes, p. 21

Start / end:

Set the start and end of the time period by selecting each hour and minute field consecutively and setting the time using the arrow keys.

Weekdays:

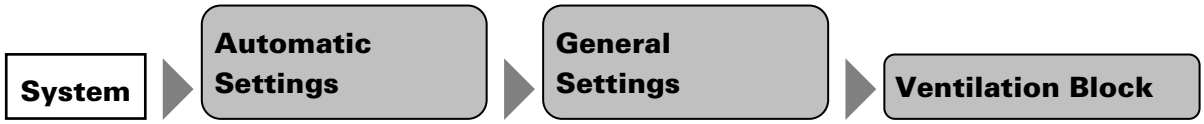
Select the day of the week on which the time period should be activated. More than one day can also be selected.

Confirm your setting with the **OK** button.

Adjust ventilation block

As soon as a cooling/air-conditioning unit is activated, windows will be closed and ventilators switched off. If the cooling is switched off again, the ventilation will stay off for a while, to prevent the cooled air to be discharged immidiately through windows or ventilaition units. You can adjust the delay time for this.
The ventilation block is also iniciated by devices that are connected to the multifunction input as climate signallers.

The ventilation block settings can be accessed by pressing the buttons:

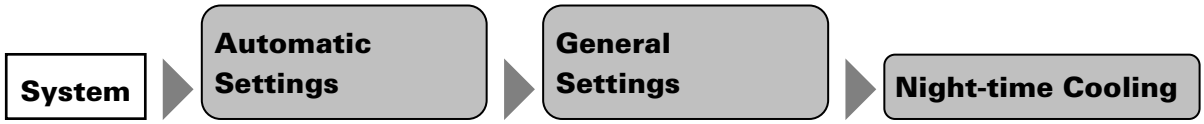


Use the arrow keys to set how many minutes ventilation via windows or ventilators should remain blocked after an air-conditioning device is switched off.
Default setting: 120 minutes.
Confirm your setting with the **OK** button.

Set night-time re-cooling

The night-time re-cooling function using the windows and ventilation equipment is activated once a set outdoor temperature is exceeded for an extended period of time.
The window(s) and ventilator(s) which are used for night-time re-cooling as well as the time period over which these are activated can be set in the automatic operation functions for the individual windows and ventilators.

The night-time re-cooling settings can be accessed by pressing the buttons:

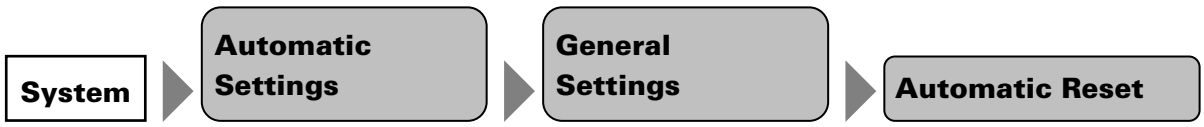


Using the arrow keys, set the outdoor temperature at which the night-time re-cooling shall be active (e. g. higher than 20°C). Remember that the night-time re-cooling only starts when the outdoor temperature is more than 2.0°C above the pre-set value. The night-time re-cooling is de-activated again as soon as the outdoor temperature drops below the pre-set value.
Also set the period for which the outdoor temperature must have been above the minimum temperature (e. g. longer than 48 hours).
Confirm your setting with the **OK** button.

Define automatic reset

Following a manual intervention, the affected drive or unit remains in manual mode, and automatic operations are switched off. Once the general Automatic Function time point is reached, drives and units are once again set to Automatic. Alternatively, the automatic function can be set to reactivate following a manual intervention. The period for this can be set.
The Automatic Reset prevents drives from being manually operated and then stay in an unfavourable position (leaving windows accidentally open, or blinds retracted despite the sunlight).
The general Automatic Reset and reset following a manual intervention can be separately activated and de-activated in the Automatic functions menu for each drive group and each unit.

The Automatic Reset function settings can be accessed by pressing the buttons:



General Automatic Reset:

Set the time point by selecting the hour and accordingly the minute fields and setting the time using the arrow buttons.
Default setting: 3:00 AM.

Automatic reset following a manual intervention:

Use the arrow keys to set the time interval after which Automatic functions should be once again activated.
Default setting: 60 minutes.

Confirm your setting with the **OK** button.

Installation, commissioning and basic set-up

Installation

Procedure

Installation, testing, commissioning and fault repair should only be carried out by a qualified electrician.

To install the control unit, proceed as follows:

1. Installation
2. Commissioning
3. Basic settings in the menu **System > Installation**. Input the location in the **System > WS1000 Settings** menu.
4. Automatic settings in the menu **System > Automatic Settings.**

This chapter describes the installation. Read through the notes and instructions for the individual components carefully. First of all fit all components and connect the cables to the control unit, drives and devices. Then check all components and continue with the commissioning.

Installation notes

Warning, mains voltage! National legal regulations are to be observed.

Installation, testing, commissioning and fault repair should only be carried out by a qualified electrician. De-energise all fitted cables and take safety precautions against unintended restart.

The control unit is intended exclusively for appropriate use. Any inappropriate change or disregard of the operating instructions causes any warranty or guarantee claim to be invalid.
After unpacking the devices they should be checked carefully for any possible mechanical damage. If transport damage exists, the supplier is to be made aware of it straight away.

The control unit may not be taken into service if there is damage.

If it is accepted that danger-free operation of the control unit or the connected drives/devices is no longer guaranteed, the equipment should be taken out of service and secured against unintended operation.

The control unit should only be operated in a fixed installation, meaning a built-in condition and after the conclusion of all installation and commissioning work and only in the intended environment.

Elsner Elektronik is not liable for changes in the norms and standards after the operating manual has appeared.

Notes on wireless equipment

During planning, take care to ensure adequate wireless reception. This applies both for WGTH-UP indoor sensors and for other wireless devices that should be operated from the control unit (ventilators, wireless relays, wall buttons). The range of wireless control will be limited by legal regulation and structural circumstances (if the wireless signal must penetrate walls and ceilings).

To prevent reception quality from being affected, a minimum distance of 30 cm should be maintained between wireless transmitters. For that reason, all wireless units should be mounted at a sufficient distance from other wireless transmitters. Powerful local transmitters (e.g. wireless headphones), which transmit on the same frequency, can cause reception problems. In addition, operating/control units, the WGTH-UP Indoor Sensor and other wireless devices should not be installed in direct proximity to metallic surfaces.

Safety notice for automatic and alarm functions

When it starts to rain, depending on the amount of rain and the temperature, some time may pass before the rain is recognised by the weather station. For electrically-operated windows or sliding roofs, a closing time must also be taken into account. Moisture-sensitive objects should therefore not be placed within an area where they may be damaged by precipitation penetrating inside. Please remember also that, for example, when it starts to rain during a power outage, the windows will no longer close automatically, if no emergency power generator is fitted.

Take note that the rails of externally mounted blinds, awnings and shutters can ice up. If the drive group is then moved, the shade and drives may suffer damage.

It is imperative to take care that no-one is in the movement area of the equipment parts moved by electrical motors (danger of crushing!). The appropriate building regulations are to be observed.

Power failure, maintenance works, etc. (restart of control)

If a power outage occurs, the control unit can no longer control the connected drives! If the functional scope must be guaranteed even during a power cut, an emergency power unit with a corresponding switch from network power to emergency operation should be installed by the customer.
Settings saved in the control unit programme will be maintained even during a power outage.

If cleaning or maintenance work is to be carried out in the conservatory/building, the control unit should be de-energised and secure against restart by disconnection of the customer-installed fuse. This ensures that the connected drives cannot start.

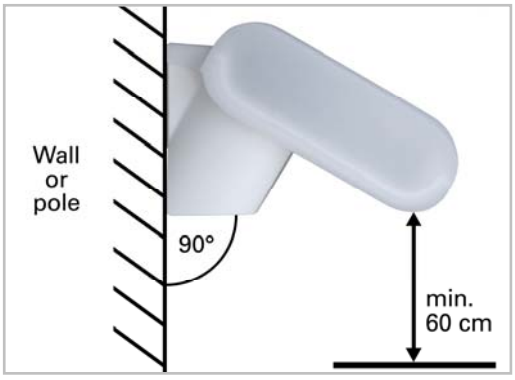
After every re-start (e. g. return of voltage after mains failure or manual reset) all drives and devices are in automatic mode.

Installation of the weather station

Installation location

Select an installation position on the building where the sensors can measure wind, rain and sunshine without hindrance. No structural elements should be mounted above the weather station from which water could still drop on to the precipitation sensor after rain or snow has already stopped. The weather station should not be shaded by structures or, for example, trees. At least 60 cm of free space must be left beneath the weather station to enable correct wind measurement and prevent snowing in when there is snow.

Iron structures or large metal plates directly behind or in the vicinity of the weather station reduce the reception quality of the built-in wireless receiver. Please take this into account when selecting an installation location. Magnetic fields, transmitters and interference fields from electrical consumers (e.g. fluorescent lamps, neon signs, switch mode power supplies etc.) can block or interfere with the reception of the DCF77 signal.

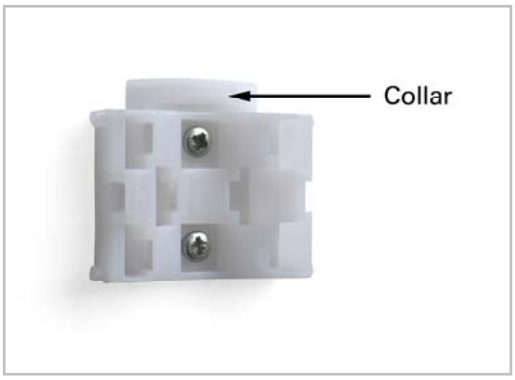


The weather station must be mounted on a vertical wall (or a pole).

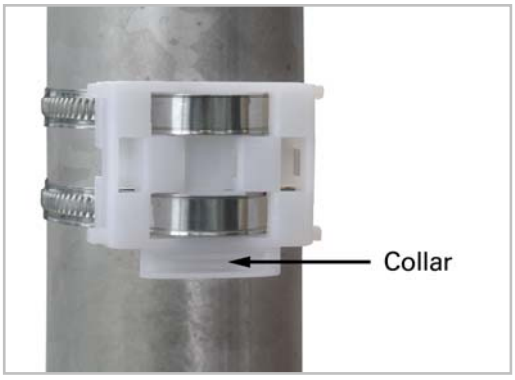
The weather station must be mounted in the horizontal transverse direction (horizontally).

Fitting the holder

The weather station contains a combined wall/pole holder. On delivery, the holder is fastened to the rear side of the housing with adhesive tape.
Fasten the holder vertically to the wall or pole.



For wall mounting: Flat side to the wall, crescent moon-shaped crosspiece facing up.



For pole mounting: curved side to the pole, crosspiece facing down.

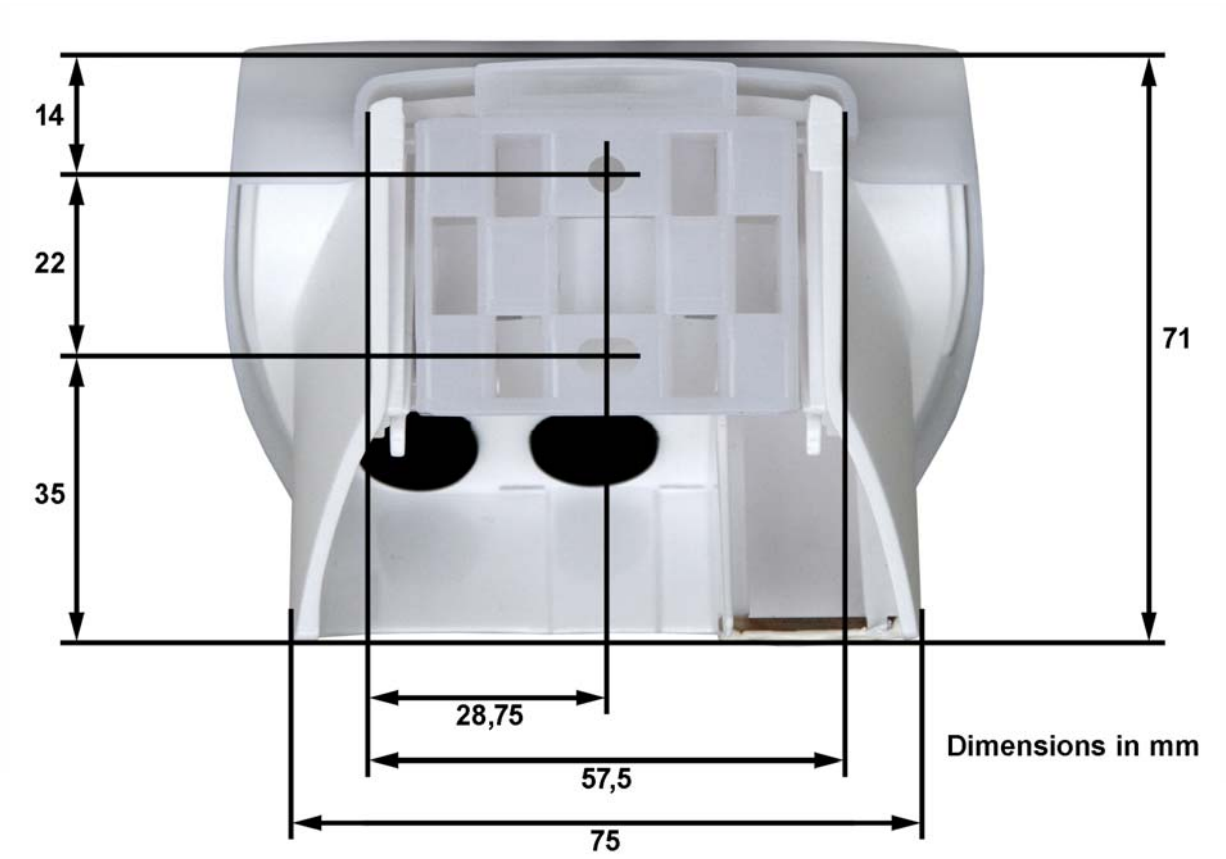
A hinge arm mounting is available from Elsner Elektronik as an additional, **optional accessory** for flexible installation of the weather station on wall, pole or beam.

Example uses of the hinge arm mounting:

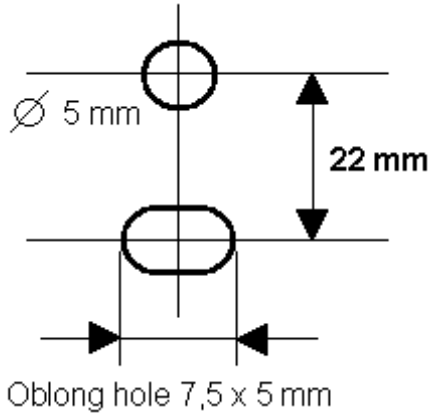
Example 1: With the hinge arm mounting, the weather station projects from beneath the roof overhang. Sun, wind and precipitation can act upon the sensors without hindrance.

Example 2: Fitting to a pole with worm drive hose clips

Rear view and drill sketch

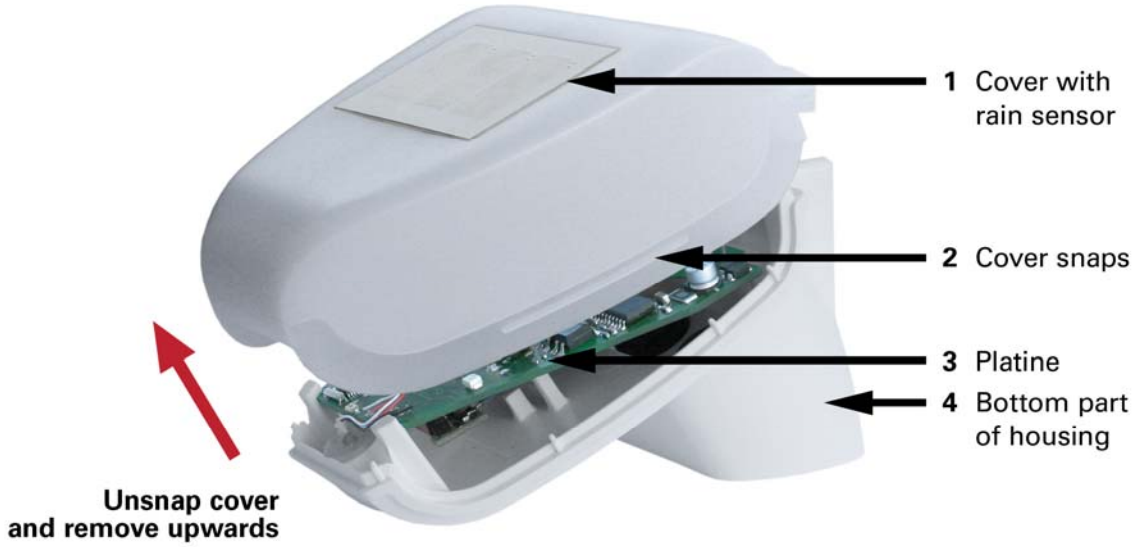


Dimensions of the rear side of the housing with holder. Divergences are possible for technical reasons.



Drill sketch

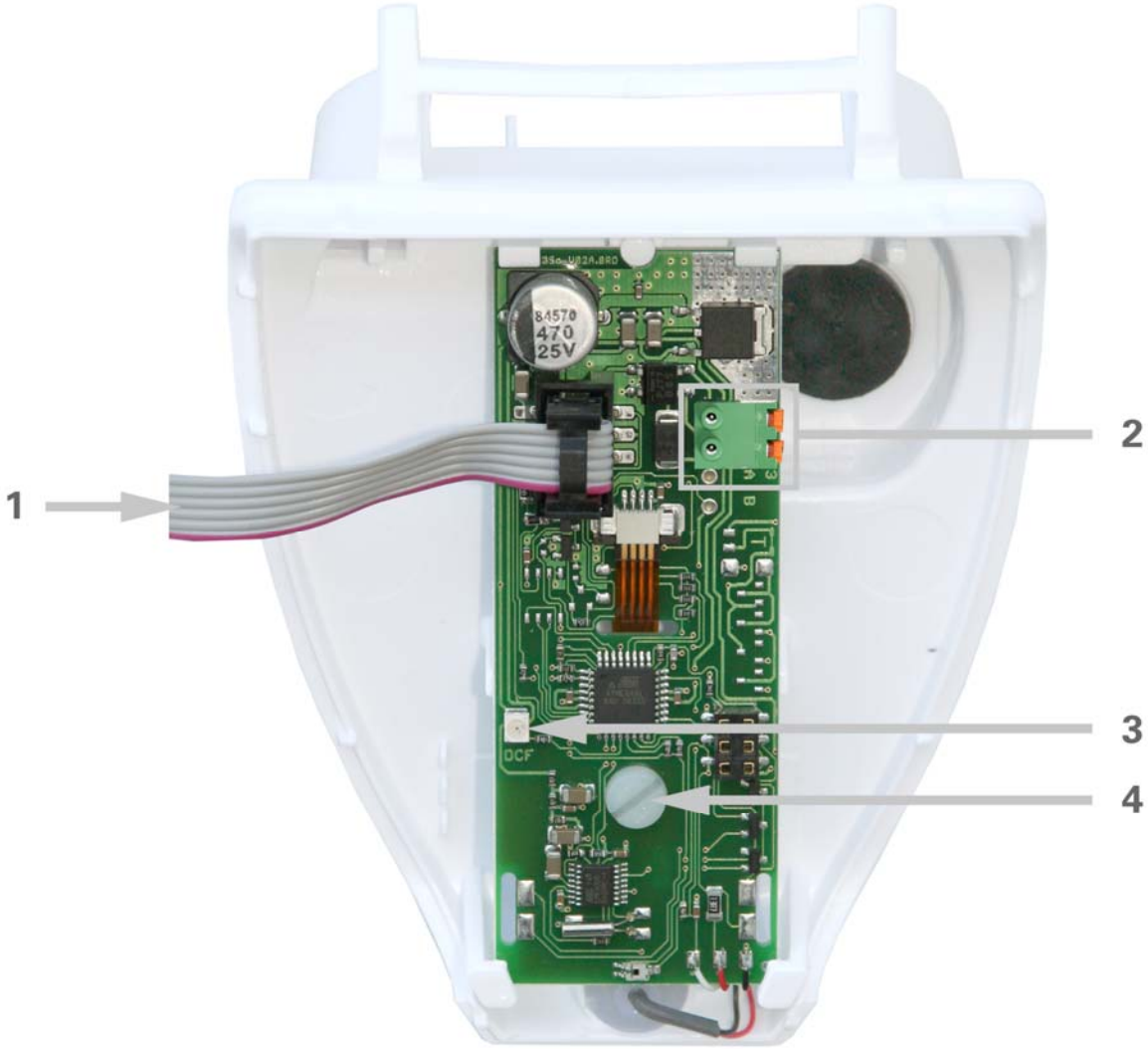
Preparation



The weather station lid with the rain sensor latches into place on the lower edge to the right and left (see diagram). Remove the lid from the weather station. Proceed carefully to avoid tearing off the cable connection between the circuit board in the lower section and the rain sensor in the lid (cable with plug).

Lead the connection cable through the rubber seal on the underside of the weather station and connect it to the terminals provided.
The power supply cable to the weather station should be a maximum of 300 m long. The connection is made with a standard, UV-resistant telephone cable (A-2Y(L)2Y 2x2x0.6 or A-2Y(L)2Y 2x2x0.8).

Layout of the circuit board



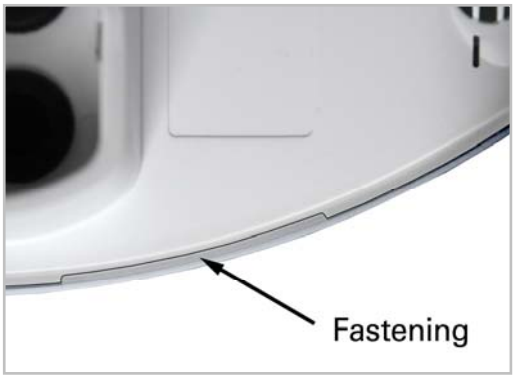
1 Slot for cable connection to the precipitation sensor in the housing lid
2 Slot for control unit/voltage connection
1: +24 V DC
2: GND
3 DCF77 reception LED monitor
4 DCF77 antenna adjusting screw

Adjusting up the DCF77 antenna

The antenna for the DCF77 time and date reception is located in the housing underneath the circuit board. Using the adjusting screw (see “Layout of the circuit board”, No. 4) the antenna can be turned in an angle of 180° and thus be set up in an optimal way. Reception is available if the monitor LED (No. 3) blinks regularly once per second (in the 59th second the blinking stops once). 30 minutes after being switched on the LED stops blinking and goes out.

Mounting the weather station

Close the housing by placing the lid on the lower section. The lid must lock into place on the right and left with a distinct click.



Check that the lid and lower section have properly latched into place! The diagram shows the closed weather station from below.

Push the housing from above into the fitted holder. In doing this, the studs in the holder must click in to the tracks on the housing.

For removal purposes, the weather station can be pulled upwards against the resistance of the notches.

Installation notes

Do not open the weather station when water (rain) can enter into it: Even a few drops may damage the electronics.

During installation care must be taken that the temperature sensor (small plate on the underside of the housing) is not damaged. The cable connection between the plate and the rain sensor should also not be torn off or bent when being connected.

After installation, remove all transport protection stickers present.

The wind measurement can first be output 60 seconds after applying the supply voltage.

Installation of WGTH-UP Indoor Sensors

The control system can evaluate the signals from several separate indoor sensors for temperature and humidity measurement. The radio sensors are taught to the control system as described in the chapter “Learn wireless connections”.

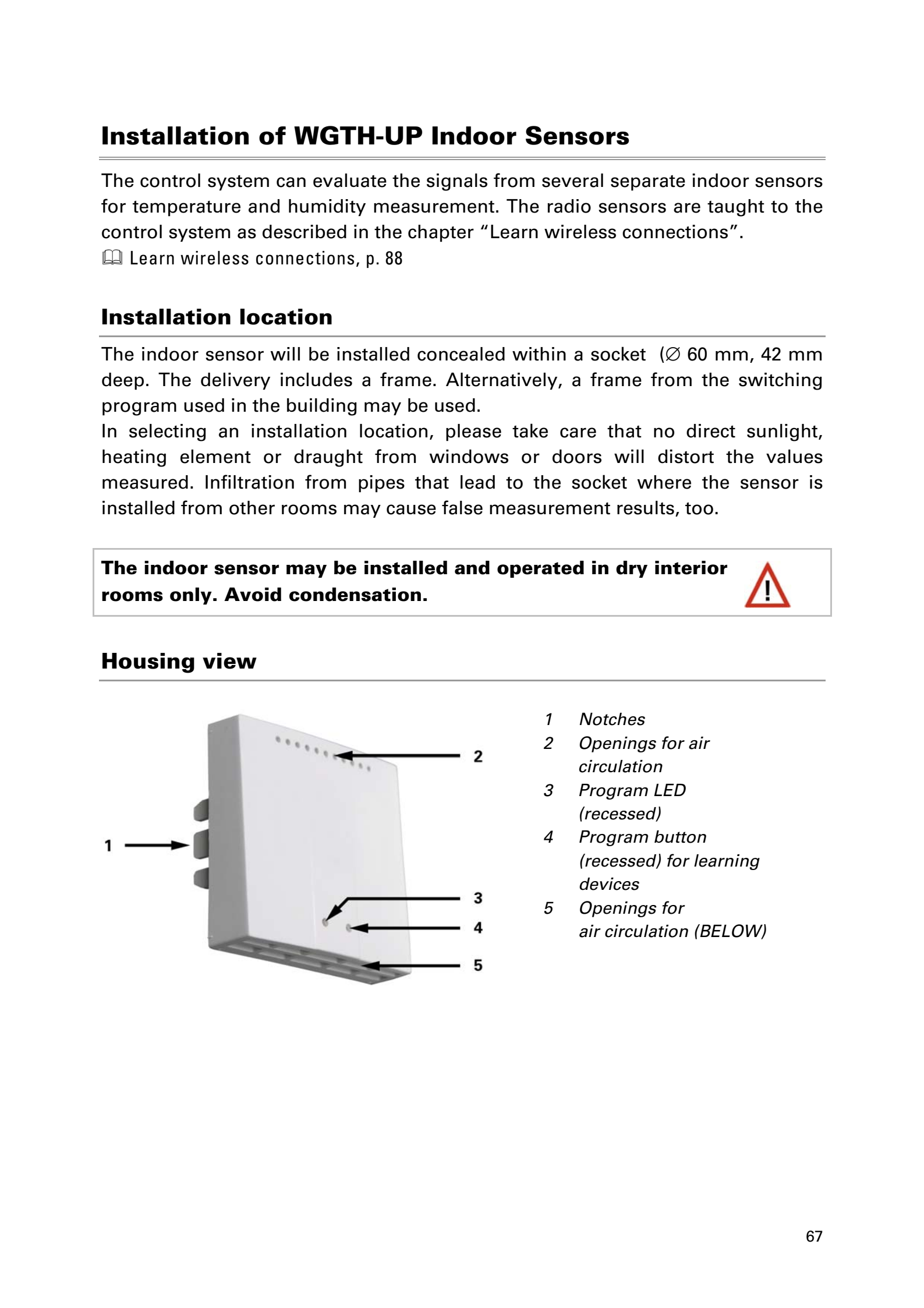
📖 Learn wireless connections, p. 88

Installation location

The indoor sensor will be installed concealed within a socket (∅ 60 mm, 42 mm deep. The delivery includes a frame. Alternatively, a frame from the switching program used in the building may be used.

In selecting an installation location, please take care that no direct sunlight, heating element or draught from windows or doors will distort the values measured. Infiltration from pipes that lead to the socket where the sensor is installed from other rooms may cause false measurement results, too.

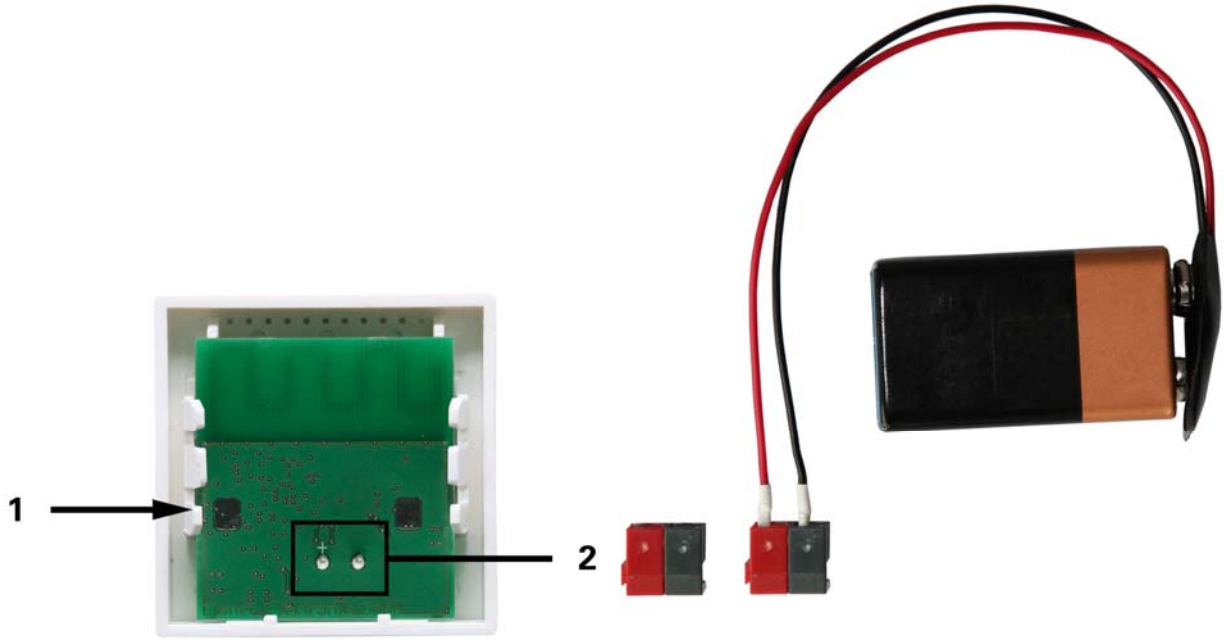
The indoor sensor may be installed and operated in dry interior rooms only. Avoid condensation.



Housing view

1 Notches
2 Openings for air circulation
3 Program LED (recessed)
4 Program button (recessed) for learning devices
5 Openings for air circulation (BELOW)

Rear view of housing with sensor circuit board



1 Notches
2 Slot for voltage supply connectors 7...30 V DC (red +, black -)

Installation

First of all fit the socket. Seal inlet pipes to avoid infiltration. Then screw the mounting plate onto the socket and put on the switch range frame.

Connect the voltage supply +/- (black-red plug) to the terminals provided on the sensor board. The WGTH can be supplied by cable or battry. For voltage supply with cable, the 12 V DC from the WS1000 Color connected board can be tapped, for example (multifunctional input, see board overview p. 82, plug no. 24 terminal 3 / 4). For voltage supply with battery, a connection cable is supplied.

Pin the sensor with the notches on to the metal frame, so that sensor and frame are fixed.

Installation notes

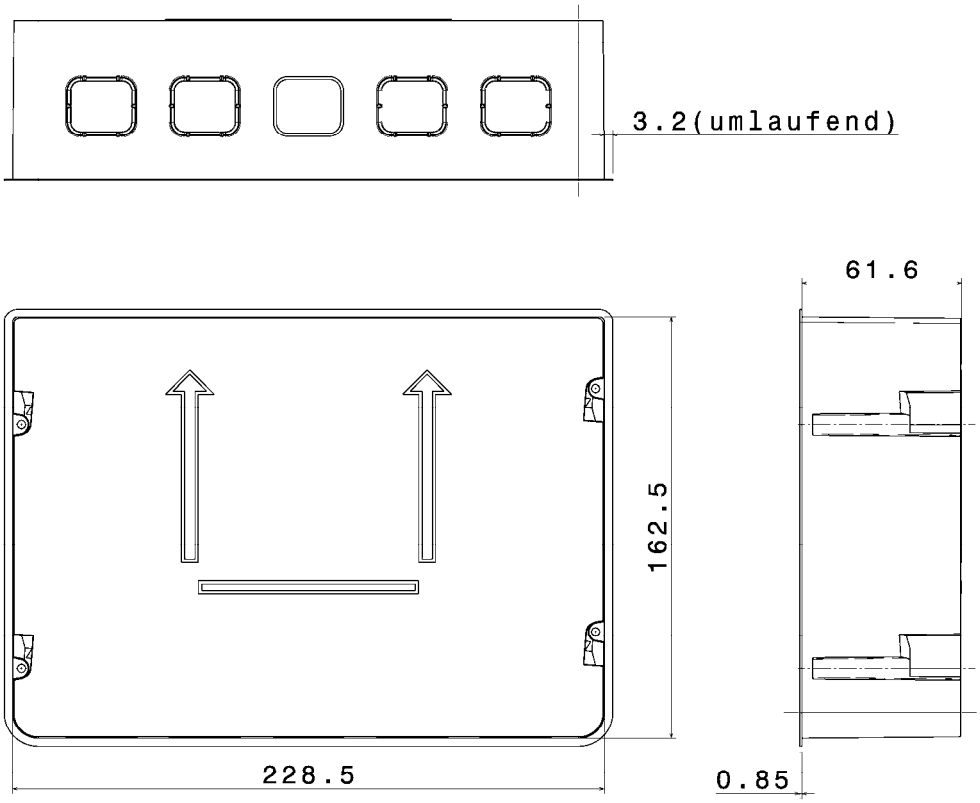
Never expose the sensor to water (rain) or dust. This may damage the electronics.

Installation of the control unit

Installation location

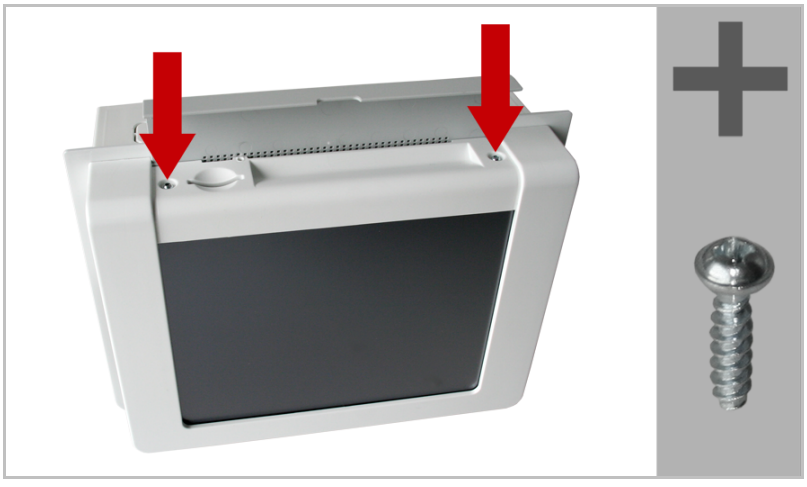
The control unit must be mounted in a frost-free, heatable room if possible, as the display may not be covered in dew.

External dimensions of concealed box

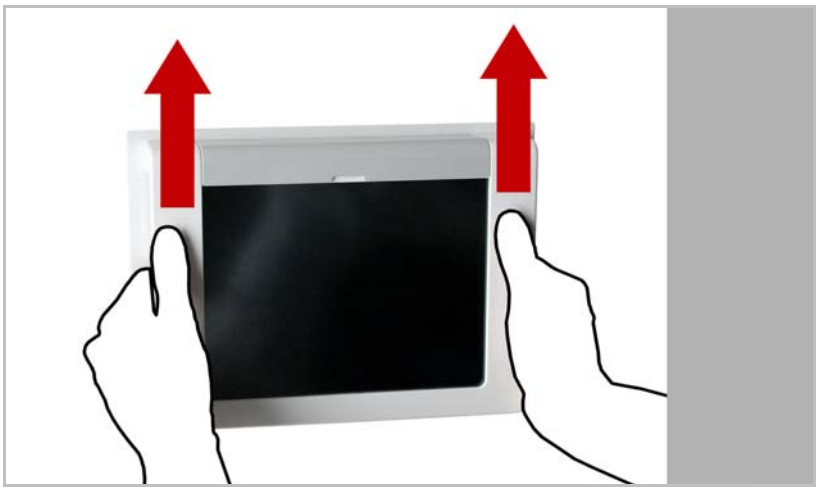


Cut-out dimensions for flush-mounted casing:
approx. W = 229 mm | H = 163 mm | D = 62 mm

Preparing for installation

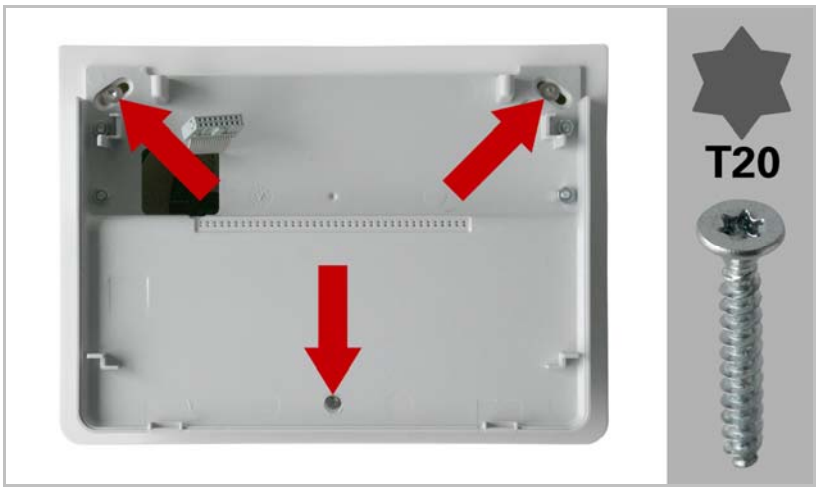


To take off the front plate, remove the screws beneath the lid.



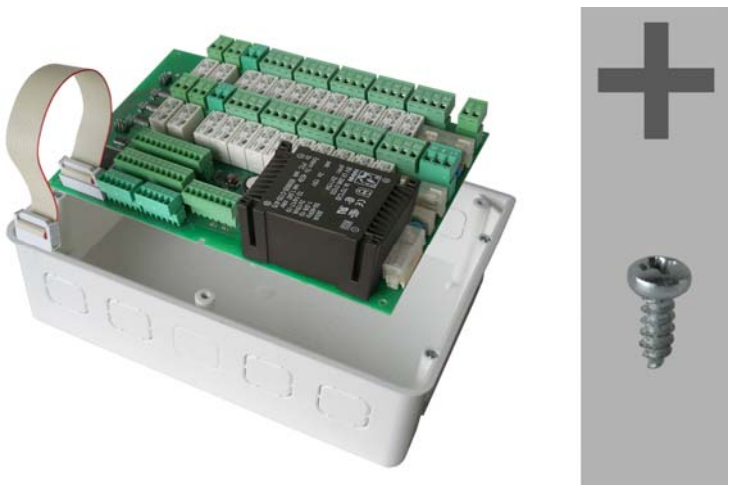
Push the upper section of the housing (frame with display) up a little and lift it off.
Caution: The display is connected with a flat-ribbon cable to the circuit board in the concealed box. Loosen the plug so that the upper section can be removed.

The lid cover is only attached by a hinge. Take care not to lose it.



The lower section of the housing together with the wall-mounting plate is attached to the concealed box with 3 screws:
Loosen the screws and take off the lower part.

Wall-fitting



Remove the circuit board from the concealed box to be installed a keep it in a place where it is protected from dirt. **It may never be exposed to dust or moisture!**

For fitting, screw the cover (board) on to the concealed box with the enclosed screws.

During electrical installation, please introduce all connection cables into the concealed box through the lower or upper side wall. In the process, keep the individual connection wires short to prevent long reserve loops.

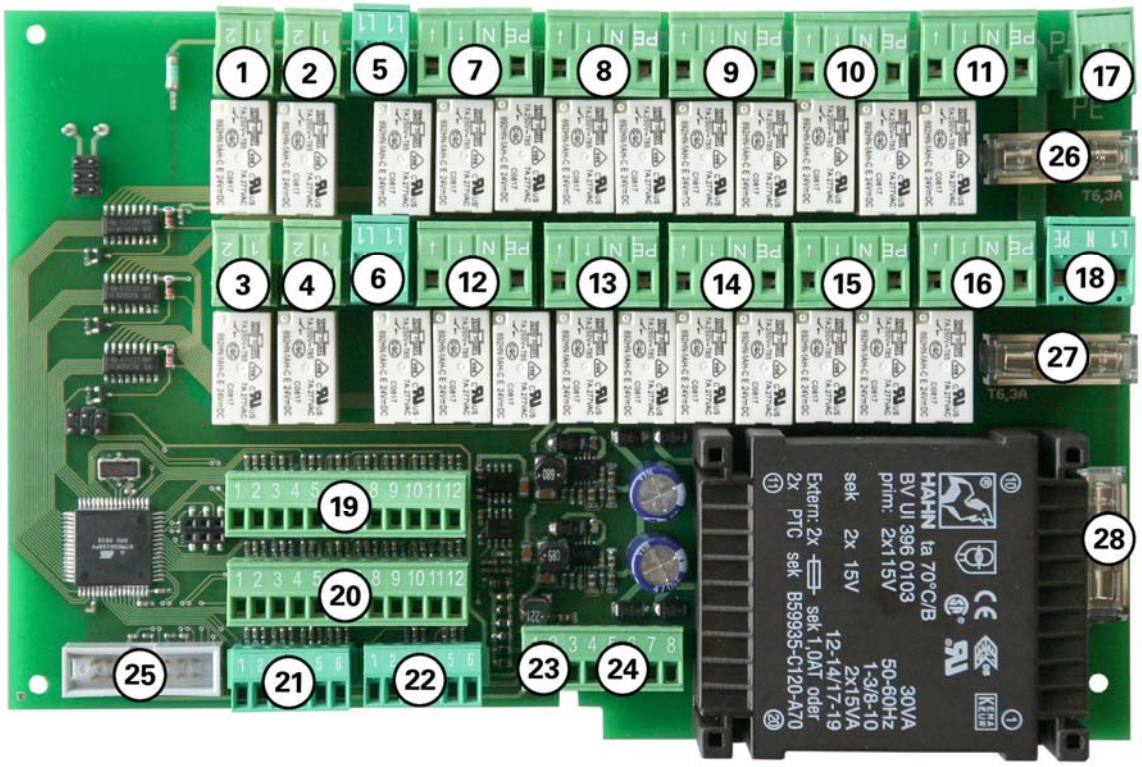
Cavity wall fitting

Clamp the concealed box to the wall with the four enclosed screws.

Upon delivery, the pouch containing the assembly screws can be found in the control unit's flush-mounted casing.

During electrical installation, please introduce all connection cables into the concealed box through the lower or upper side wall. In the process, keep the individual connection wires short to prevent long reserve loops.

Structure of the connector board



1 Multifunctional output 1 (potential-free)
2 Multifunctional output 2 (pot. fr.)
3 Multifunctional output 3 (potential-free)
4 Multifunctional output 4 (pot. fr.)
5 Outer conductor L1
6 Outer conductor L1

7 Drive group 1
8 Drive group 2
9 Drive group 3
10 Drive group 4
11 Drive group 5
12 Drive group 6
13 Drive group 7
14 Drive group 8
15 Drive group 9
16 Drive group 10
17 Earth wall-mounting plate
18 Mains connection L/N/PE 230 V/50 Hz

19 Wall button 1 (terminals 1-3), wall button 2 (terminals 4-6), Wall button 3 (terminals 7-9), wall button 4 (terminals 10-12),
20 Wall button 5 (terminals 1-3), wall button 6 (terminals 4-6), Wall button 7 (terminals 7-9), wall button 8 (terminals 10-12),
21 Wall button 9 (terminals 1-3), wall button 10 (terminals 4-6),

22 Multifunctional input 1 (terminals 1-3), multifunctional input 2 (terminals 4-6)
23 Weather station (terminals 1-2)
24 Multifunctional input 3 (terminals 3-5), multifunctional input 4 (terminals 6-8), indoor sensor supply voltage via terminals 3-4

25 Connector for flat-ribbon cable to front board
26 Microfuse T6.3A (Drive 1-5)
27 Microfuse T6.3A (Drive 6-10)
28 Microfuse T6.3A (for power supply)

📖 **Connection diagrams, p. 108**

Connect drive groups

Each drive that must be controlled individually requires a group of its own. It is not possible to individually control drives that are connected in a group. Only drives with the same function (only windows, only awnings, only blinds, only shutters) can be brought together in groups.
Shades with different orientations (east, south, west) should be placed in different groups. Only in this way can the shades be controlled appropriately according to the position of the sun.

Special attention should be paid to blinds in front of doors and awnings above windows. Combination rules for two drive groups like “only open window if awning is up” are not possible.

The device works with 230 V alternating voltage 50 Hz. The input power is dependent on the number and power of the connected motors. Each drive group may be loaded with a maximum of 400 Watts. The total connected load may not exceed approx. 1.5 kW however. The output voltage is 230 V AC.

When motors are connected in parallel, take note of whether a group control relay is prescribed by the manufacturer. Group control relays can be obtained from Elsner Elektronik or the motor manufacturer.
Various drives for blinds and awnings, in particular, can for the most part only be operated via a group control relay on an output channel.

If motors are connected in parallel which are unsuitable for this purpose, both they and the control unit will be damaged.

Motors with a higher power input than 400 Watt are to be operated via a relay or control gate with its own power cable.

For D.C. drives we offer appropriate power supply units. In case of need we ask for details of the motor type, the manufacturer and – if available – the technical data.

Connect Elsner wireless ventilation devices

Connecting ventilation devices from Elsner Elektronik to the WS1000 control unit takes place via a wireless connection. Please observe the installation notes enclosed with the ventilation devices.
📖 Learn wireless connections, p. 88

Connect devices to the multifunctional outputs

Heatings, air-conditioners, lights, air supply devices, roof gutter heatings, dimmers or alarm devices (e.g. alarm equipment in combination with a motion detector in a multifunctional input) can be connected to the multifunctional outputs.
The multifunctional outputs have a potential-free make contact which can be loaded with 230 V AC/2 A.

Connect devices to the multifunctional inputs

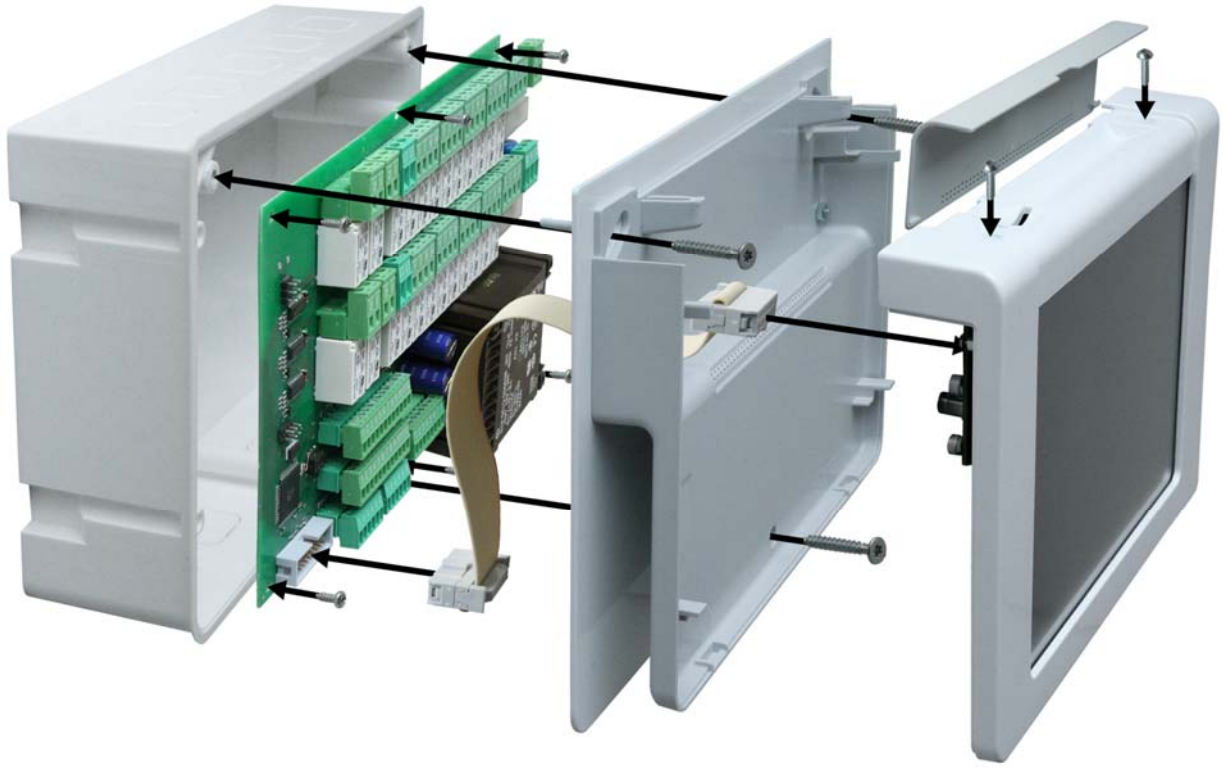
Devices with potential-free contacts can be connected to the multifunctional inputs (connection terminals +/-/S). These can be alarm-reporting devices, such as motion-detectors (e.g. system sensors from the company Jung) or smoke detectors (with relay output) or another device with a potential-free contact, which is then crucial for the alarm function.

A heating or cooling plant operated independently of the control system can be connected to a multifunction input using its potential-free contact. Through the closed relay, the device signals the control that it is currently heating or cooling and the control activates the ventilation block.

A closed contact on the multifunction input can be used to test if a sliding door is closed.

An impulse transmitter for the automatic reset can also be connected here, e.g. a sensor device or an alarm unit (impulse when activating).

Assembling the control unit with concealed box



After connecting the cables connect the earth of the wall-mounting plate. Screw the lower section of the housing (with the mounting plate) onto the concealed box. Connect the flat ribbon cable to the display.
Put the lid cover on the upper section of the housing (frame with display). Put the upper section of the housing onto the lower section of the housing from above and move it downwards until the bottom edges are aligned. Screw on the upper section.

Commissioning

Procedure

Installation, testing, commissioning and fault repair should only be carried out by a qualified electrician.

To install the control unit, proceed as follows:

1. Installation
2. Commissioning
3. Basic setting in the menu **System > Installation**. Input the location in the **System > WS1000 Settings** menu.
4. Automatic settings in the menu **System > Automatic Settings.**

This chapter describes the **commissioning** of the device. Prior to commissioning all components must be installed (fitted and with their cables connected). Read through the notes and instructions carefully.

Start control unit

Condensation water can occur if a device is taken from a cold into a warm room. Before the commissioning of the control take care that there is no humidity inside the device (let dry if necessary).

After installation, connecting cables to the unit and checking all connections, switch the power supply on.
The control unit starts and in the display the model and serial number appear initially. Then the following will be shown

- “Read drive parameter OK“
  (or if there is an error: “Error initialising drive parameter with factory settings.”)
- “Wireless interface”
  (or if there is an error: “Wireless interface error”)
- “Wireless channel initialised OK“
  (or if there is an error: “Wireless channel initialisation error”)

After successfully running through the initial test sequence, the control unit will be in the starting position with a display of weather data. The clock sets itself within approximately 10 minutes if there is DCF77 respectively GPS reception. If the signal is insufficient the clock can be set manually.

🖵 System > WS1000 Settings > Settings > Time and Date
🕮 Enter time and date manually, p. 95

Check sensor functions

On the display the current values for sun, wind and outdoor temperature are shown. First check the sensor functions.

Light intensity (sun sensor)

The sunlight sensor is beneath the weather station lid. If there is not enough brightness at the moment, light up the weather station with a powerful table lamp until a value is shown.

Direction and height (sun)

The direction and height of the sun is calculated by the control unit based on the date/time and location. The clock sets itself if there is DCF77/GPS reception (can take up to 10 minutes). If the signal is insufficient the clock can be set manually. If a weather station with DCF77 receiver is connected to the control system, the geographical position of the building must be specified through the menu.

🖵 System > WS1000 Settings > Settings > Time and Date
🕮 Enter time and date manually, p. 95
🖵 System > WS1000 Settings > Settings > Location
🕮 Enter location, p. 97

Precipitation (Precipitation sensor)

Precipitation is shown with the “Rain” or “Snow” animation in the display. Moisten the golden sensor surface on the weather station lid (often the moisture from the surface of the skin when touching is enough). The “Precipitation” animation should then begin.
Please take note that after the sensors dry out, the precipitation warning remains for a further 5 minutes.

Wind speed (wind sensor)

If the sensor tube on the underside of the weather station is blown into, the corresponding wind speed in metres per second appears in the display alongside the animated windsock.

Temperature

The outdoor temperature is shown next to the symbol “thermometer next to house”. If reasonable values are shown, correct functioning can be assumed.

Basic settings / Installation

In the menu area **System > Installation** you can adjust the following settings:

- Specify fundamental characteristics of the drives and devices at the inputs/outputs
- Set up wireless connections to devices
- Define the order in which the drives and devices will be shown (e.g. in the manual menu)

For this the following sub-menus are used:

- Drive (with the option settings type, name, movement time, direction of rotation, manual direction, signal duration, canvas tightening, slat turning, close-contact)
- External button (with the option settings type, direction, name and drive group assignment)
- Internal button (with the option settings type, name and drive group assignment)
- Multifunctional output (with the option settings type and name)
- Multifunctional input (with the option settings type and name)
- Wireless connection
- Weather display (selection of indoor sensor for weather data display)
- KNX settings (only if a KNX interface is installed)
- Camera (only if a camera interface is installed)
- Channel order

In order to be able to carry out the basic setting, the control unit must have been professionally installed and commissioned.

📖 Installation, p. 58 and Commissioning, p. 76

Set up drives and drive groups

Windows, awnings and blinds are controlled in various ways. For example, windows are opened or closed according to the temperature or air humidity, but blinds are opened or closed according to the light or time. For this reason it is imperative that, when started up, the control unit be adjusted accordingly.

The basic settings for the drives can be accessed by pressing the buttons:

Now you can select individual drives (or drive groups) from the list and adjust their settings. So long as no settings were completed yet, the buttons show **(Drive 1), (Drive 2)** etc. If an output was already configured, the name of the drive will be displayed instead.
Press the button of the drive to be set. For each drive the following settings can be changed:

Drive type:

Press the **Reserve** button.
The possible drive types appear (awning, window, step window, sliding roof, blinds, shutters, sliding door). Select as appropriate. If the connection is not being used for the moment, leave “Reserve”.
Confirm your selection with the **OK** button.

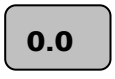
With the buttons **A** and **B** you can test the motor function. Please also determine the **movement times** to complete opening/extension or closing/retraction (stop watch). You need these values for the setting "movement times" (see below).

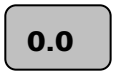
Note that rain and wind alarms are deactivated while the menu item “drive type” is shown!

Name:

Press the button to change the name (by default its name is the selected drive type). Enter the desired name via the keypad that appears.
📖 Input keyboard for names and codes, p. 21
Confirm your input with the **OK** button.

Movement times:

Extend Secs 

Retract Secs 

Press the buttons with the number values and enter the timed values (see top “Drive type”) via the keypad that appears.
Confirm with the **OK** button.

Settings:

Different option settings appear here depending on the drive type:

Dir. of Rotation Press the button to check the motor's direction of rotation. A selection menu appears. Test the response of the drive when pressing the **A/B** buttons. Then select the applicable button **Retract with A** (or **Close with A**) or **Retract with B** (or **Close with B**).
Confirm your selection with the **OK** button.

Note that rain and wind alarms are deactivated while the menu item "direction of rotation" is shown!

Manual Direction Press the button to adjust the assignment of arrow keys (Up/Down, Open/Closed). A selection menu appears. Choose whether the drive should **retract** (or **open**) or **extend** (or **close**) when the ⇧ button is pressed.
Confirm your selection with the **OK** button.

MSG Control Press the button if the output shall be used as the central command for motor control devices.
Select **Yes** to drive motor control devices (e.g. IMSG 230) using the drive output. The relay stays closed permanently during a rain or wind alarm.
If a single drive or a group of drives is connected on the drive output, leave the default settings **No**.
Confirm your selection with the **OK** button.

Please note that for windows where MSG control is selected, the "Gap ventilation during rain" function is not possible.
🕮 Automatic window settings, Gap Ventilation, p. 40

Canvas Tightening Press the button to select the canvas tightening for awnings. Only select **Yes** (tighten canvas after reaching the movement position), if the installed awning is suitable. The drive time for canvas tightening is 1 second.
Confirm your selection with the **OK** button.

Slat Turning Press the button to adjust the slat turning for blinds. In the selection menu that appears, choose whether the slats should be turned

Never, **After position movement** or **After each movement**. The turn will bring the slats into the neutral position, before a slat angle is started, for example. Use the setting that is appropriate for the blinds you have installed.
Confirm your selection with the **OK** button.

Closed Detector Press the button in the basic settings to assign an installed door contact to a sliding door. Select the button of the appropriate contact.
Confirm your selection with the **OK** button.

Manual Menue Press the button to set wheather the drive should be displayed in the manuel menue or not.
Confirm your selection with the **OK** button.

Tips on connecting windows

With windows the supply of fresh air can be very well regulated using the **Step window** configuration. In this, the control unit checks the room temperature every 3 minutes. If the temperature is close to the reference value, the window will be opened or closed step by step. You can adjust the number of steps in the Automation menu (“Number of steps” button).
For sliding roofs, during normal operation of ventilators, it is not necessary to use the full stroke. For that reason you can adjust the size of the opening in the Automatic menu ("Movement position" button). If the sliding roof should be opened fully, this can take place manually.

Not all window motors are suitable for step or sunroof operation. Ask your motor supplier.

Assign external buttons

If external buttons for operating drives and devices on the spot are installed, their settings and assignments can be made here.

Only drives/devices with the same functions should be operated together with a single button (e.g. only blinds or only windows).

For switching units at a multifunctional output (heating, cooling, ventilation, lighting, gutter heating) a single push button is used. An up/down push buttton (double push button) is used for shadings and windows.

The external button settings can be accessed by pressing the buttons:

You can now select individual buttons from the list and adjust their settings. So long as no settings have been completed yet, the buttons will show **(Ext. Button 1), (Ext. Button 2)** etc. If a button was already configured, the name or function will appear instead.
Press the key of the button to be set. For each external button the following settings can be changed:

Input type:

Press the **Reserve** button.
A selection menu appears. Select **▲▼ Button** (if a double push button is connected) or **Button** (if a single push button is connected) or leave **"Reserve"**, if the button input is not being used for the moment.
Confirm your selection with the **OK** button.

Button direction:

Press **Settings** to adjust the direction of an up/down button. No button direction is needed for single buttons.
The directional test menu appears. Press the button's up and down keys. This activates the arrows in the display. If the direction of the button matches the display, leave the setting at **Normal**. Otherwise press the button **Invert**. Now button and display should match.
Confirm your setting with the **OK** button.

Name:

Press the button to change the name. Enter the desired name via the keypad that appears.
📖 Input keyboard for names and codes, p. 23
Confirm your input with the **OK** button.

Drive groups:

Press the button to assign the external buttons to drive groups or devices. All connected drives and devices appear. You can select several buttons. Confirm your selection with the **OK** button.

Assign internal buttons (group buttons)

Several drives or devices can be operated at the same time in the Manual menu via a collective group button (internal software button). Ten internal buttons are available.
The internal group button settings can be accessed by pressing the buttons:

You can now select individual buttons from the list and adjust their settings. So long as no settings have been completed yet, the buttons will show **(Int. Button 1)**, **(Int. Button 2)** etc. If a button was already configured, the name or function will appear instead.
Press the key of the button to be set. For each internal button the following settings can be changed:

Button type:

Reserve Press the **Reserve** button. A selection menu appears. Select Int. Button or leave "Reserve" if the button is not being used for the moment.
Confirm your selection with the **OK** button.

Name:

Group Button 1 Press the button to change the name. Enter the desired name via the keypad that appears.
📖 Input keyboard for names and codes, p. 21
Confirm your input with the **OK** button.

Drive groups:

Assign Press the button to assign the internal buttons to drive groups or devices. All connected drives and devices appear. You can select several buttons. Confirm your selection with the **OK** button.

Only drives/devices with the same functions should be operated together with a single button (e.g. only blinds or only windows).

Set up multifunctional outputs

To the four multifunctional outputs you can connect:

- heatings
- air conditioners
- air supply devices
- lights
- roof gutter heatings
- alarm equipment
- dimmers

Specify here which devices are connected to the individual outputs. The settings for the multifunctional outputs can be accessed by pressing the buttons:

You can now select individual outputs from the list and adjust their settings. So long as no settings were completed yet, the buttons show **(MF Output 1)**, **(MF-Output 2)** etc. If an output was already configured, the function and/or name will be displayed instead.
Press the button of the output to be set. For each multifunctional output the following settings can be changed:

Output type:

Press the **Reserve** button. The possible output types appear (heating, air-conditioner, ventilator, light, roof gutter heating, alarm, dimmer). Select as appropriate. You can test the relay function with the **Close** button. If a multifunctional output is not being used for the moment, leave “Reserve."
Confirm your selection with the **OK** button.

Name:

Press the button to change the name. Enter the desired name via the keypad that appears.
📖 Input keyboard for names and codes, p. 21
Confirm your input with the **OK** button.

Set up multifunctionals inputs

To the four multifunctional inputs you can connect:

- alarm signal (motion or smoke detectors)
- climate indicators (e.g. a climate/heating unit that is independent of the WS1000 Color)
- close-contacts (for sliding doors)
- impulse for automatic reset
- signal for activation of the camera picture (binary input)

Specify here which devices are connected to the individual inputs.

When a motion-detector alarm is triggered and a sensor signal recognised, all windows connected to the control unit will be closed. After 5 minutes without a new sensor signal the control unit switches back to normal operation.

📖 Alarm messages, p. 106

The **fire alarm** activates various safety measures: awnings, blinds and shutters retract in order to clear an escape route, the light comes on, heatings and air-conditioning units switch off, windows and ventilators are opened or switched on. While the fire alarm is triggered an acoustic warning signal sounds at the control unit. The fire alarm can only be switched off by a Reset/Restart of the control system through the **System > WS1000 Settings > Service > Reset** menu or by cutting off the power supply.

📖 Alarm messages, p. 106

A **heating or climate unit** (climate detector) that works independent of the WS1000 Color control unit can be connected to a multifunctional input with its potential-free relaiy contact. The device signals the WS1000 Color via the closed relay contact that it is heating or cooling. The WS1000 Color then closes all windows and switches off the ventilators. If the device opens the relay contact again, the WS1000 Color will hold the windows closed for a variable time and leave the ventilators switched off.

📖 Adjust ventilation block, p. 55

The multifunctional inputs may be used as the trigger for **automatic reset**. The input impulse may come e.g. following the pressing of a button or alarm activation.

If cameras are connected to the control system, the setting **Binary Input** can be used to activate the image display. For example, the signal can be connected to a bell on a multifunctional input and this can be configured as a binary input. Then the image of a camera can be shown in the screen as soon as the bell is rung.

The settings for the multifunctional inputs can be accessed by pressing the buttons:

You can now select individual inputs from the List and adjust their settings. So long as no settings were completed yet, the buttons show **(MF Input 1)**, **(MF Input 2)** etc. If an output was already configured, the function and/or name will be displayed instead.
Press the button of the input to be set. For each multifunctional input the following settings can be changed:

Input type:

Press the **Reserve** button. The possible input types appear (motion detector, smoke detector, climate detector, closed detector, automatic reset, binary input). Select as appropriate. If a multifunctional input is not being used for the moment, leave "Reserve".
Confirm your selection with the **OK** button.

Name:

Press the button to change the name. Enter the desired name via the keypad that appears.
📖 Input keyboard for names and codes, p. 21
Confirm your input with the **OK** button.

Status of input:

It displays whether the relay is currently open or closed.

Learn wireless connections

Devices that communicate wirelessly with the control unit must first be learned by the control unit. These wireless actors include WGTH-UP Indoor Sensors, Remo 8 Remote Controls, the Elsner ventilation units (WL610, WL305, WFL) or RF Relay Wireless Switches (e. g. for use with roof gutter heating or light) or RF MSG Motor Control Units.

Some devices have programming keys for learning the radio connection inside their housings. In this case, learning should only be performed by a trained electrician.

This menu allows you to learn, control and delete radio connections. Press the buttons:

System ▶ **Installation** ▶ **Radio Connection**

Learn wireless connection

Learn

Press **Learn** to bring the control unit into learning readiness mode. Then follow the instructions for the respective wireless participant (press PROG key or switch power supply on).
As soon as the wireless connection has been established, the control unit reports "Device successfully learnt" and beeps. Press ⬅ to go back to the menu.

If you want to learn several wireless components, repeat the learning procedure with all of them accordingly. If a device has already been learned, the message "The wireless connection to member XX (device type) has already been learned" appears.

Status

Status

Press **Status** to see which connections already exist.

WGTH **Remote Con.** **RF Relay**

WL610 **WFL** **RF MSG**

You can now select, monitor and adjust the settings for the individual wireless participants. If no adjustments have been made, the names of the wireless components are the same as the names of the devices. Later the names given are shown on the buttons.
Different operational data will be shown for the devices:

WGTH-UP indoor sensor:

Radio module type:	"WGTH" display

Radio module name:	To change the name, press the button showing device identification. Enter the required name in the box which appears. Confirm your entry using the **OK** key. 📖 Input keyboard for names and codes, see p. 21.
Radio status:	Radio status display
WGTH status:	Display of serial number and version
Measured values:	Display of current values. To adjust the sensor, press the **Adjust** button. Adjust the value for "Displayed temperature/humidity". A correction of measured values may be needed when the temperature/air humidity on the sensor does not correspond to the room average (e.g. when the sensor has been installed in a place with above-average temperatures) Confirm your entry using the **OK** key.
Settings:	Press the **Manual Menu** button to set if the indoor sensor shall be displayed in the manual menu. Confirm your choice using the **OK** key.

Remote control Remo 8:

Radio module type:	"Remote control" display
Radio module name:	To change the name, press the button showing device identification. Enter the required name in the box which has appeared. Confirm your entry using the **OK** key. 📖 Input keyboard for names and codes, see p. 21.
Serial number:	Display of serial number
Drive groups:	Press the **Allocate** button to allocate drives and devices to the manual sender channels. Select channel for the manual sender (channels 1 to 8). Select the drives and/or devices to be controlled by the channel. Confirm your entry using the **OK** key.
Only drives/units with the same function should be controlled together using a single hand-held transmitter channel (for example, blinds or windows alone). 	

WL610/WL305 roof vent:

Radio module type:	Display "WL305/610"
Radio module name:	To change the name, press the button showing device identification. Enter the required name in the box which appears. Confirm your entry using the **OK** key. 📖 Input keyboard for names and codes, see p. 21.

Radio status:	Radio status display
WL305/610 status:	Display of serial number, period, flap movements, version
Measured values:	Display of current temperature change on vent. To adjust the sensor, press the **Adjust** button. Adjust the value for "Displayed temperature". Confirm your entry using the **OK** key.
Settings:	Press the **Manual Menu** button to set if the vent shall be displayed in the manual menu. Confirm your choice using the **OK** key.

WFL air supply device:

Radio module type:	"WFL" display
Radio module name:	To change the name, press the button showing device identification. Enter the required name in the box which appears. Confirm your entry using the **OK** key. 📖 Input keyboard for names and codes, see p. 21.
Radio status:	Radio status display
WFL status:	Display of serial number, flap movements, version
Measured values:	Display of current temperature change on vent. To adjust the sensor, press the **Adjust** button. Adjust the value for "Displayed temperature". Confirm your entry using the **OK** key.
Settings:	Press the **Manual Menu** button to set if the vent shall be displayed in the manual menu. Confirm your choice using the **OK** key.

RF relay:

Radio module type:	"RF relay" display
Type of automatic regime:	To set what shall be connected to the RF relay, press the button. Select the type of automatic regime (light, roof gutter heating or none). If "none" is selected, the device can be switched on and off only by hand, there are no automatic regime menus. Confirm your entry using the **OK** key.
Radio module name:	To change the name, press the button showing device identification. Enter the required name in the box which appears. Confirm your entry using the **OK** key. 📖 Input keyboard for names and codes, see p. 21.
Radio status:	Radio status display

RF relay status:	Display of serial number and version
Settings:	Press the **Manual Menu** button to set if the relay shall be displayed in the manual menu. Confirm your choice using the **OK** key.

RF-MSG motor control devices:

Radio module type:	"RF MSG" display
Type of automatic regime:	To set what shall be connected to the RF-MSG relay, press the button. Select type of automatic regime (awning, window, sky roof, blinds). Confirm your entry using the **OK** key.
Radio module name:	To change the name, press the button showing device identification. Enter the required name in the box which appears. Confirm your entry using the **OK** key. 📖 Input keyboard for names and codes, see p. 21.
Radio status:	Radio status display
RF-MSG status:	Display of serial number and version
Other settings:	Factory settings of drive 📖 Set up drives and drive groups: movement times, settings, p. 79f

Delete wireless connection

Delete

Press **Delete** if you want to delete the connection to a wireless participant. All wireless participants available are shown.

WGTH **Remote Con.** **RF Relay**

WL610 **WFL** **RF MSG**

Select the wireless participant to be deleted. Confirm the question “Really delete wireless connection to member XX?” with **Yes**.
The wireless connection is deleted.

Indoor Sensor for Weather Display

In the weather data display, the values from a sensor (e.g. WGTH-UP) can be displays as soon as a sensor is taught. Select the desired sensor here.

Press the buttons:

Sensor Selection

Press the button to reach the selection menu with the sensors. Then press the button of the desired sensor and confirm using the **OK** button.

Settings for Communication with KNX

This menu point only appears if the WS1000 Color is equipped with a KNX interface! This interface can link the control system with the KNX bus system.

To set up the data exchange with the KNX system, please use the ETS software and follow the KNX Interface Guide. The KNX actuators and sensors provided for communication with the WS1000 Color are displayed in the **KNX Settings** menu and can be adjusted. Pres the buttons:

A list of all KNX actuators and sensors set up for communication with the control system (ETS) will be displayed. Press the button of the actuator or sensor that you wish to set.
Different operational data and setting options will be displayed for the devices:

Function:	Display of the block with number and type of input or output
Name:	Press the button with the device's designation in order to change the name. Enter the desired name via the keypad that appears. Confirm your selection using **OK**. 📖 *Input keyboard for names and codes, p. 21.*
Status of KNX block: *(only for inputs)*	Display of communication status
Correction factor: *(for 2/4 byte floating point inputs only)*	Press the button in order to enter the correction factor for the value received by the bus. Enter the factor via the keypad that appears. Confirm your selection using **OK**.
Measuring unit: *(for 2/4 byte floating point inputs only)*	Press the button in order to input the measuring unit. Enter the desired name via the keypad that appears. Confirm your selection using **OK**.

	🕮 Input keypad for names and codes, p. 21.
Settings: *(varies depending on type of input/output)*	Press **Manual Direction** in order to adjust the assignment of the arrow keys (up/down, on/off). A selection menu appears. Select whether the drive shall **retract** (or **open**) or **extend** (or **close**) when the button ⇧ is pushed. Confirm your selection using **OK**. Press **Manual Menu** in order to set whether the drive/sensor shall be displayed in the manual menu or not. Confirm your selection using **OK**.

The KNX drives and devices appear in the menu for **Automatic Setting**. The setting options for automatic functions are the same as for directly connected drives and devices.

Setting Camera Inputs

This menu point only appears if the control is equipped with a camera interface!

In order to set up camera interface and inputs, press the buttons:

Camera 1/2

If you want to set both camera inputs, press the button with the name of the camera. In the pre-settings, the cameras are called "Camera 1" and "Camera 2". You can change the names in this menu.
You can perform the following settings on each camera:

Test pattern:	Press **Show Picture**, in order to show the current camera picture. If no camera is connected, nothing will be displayed. Confirm your entry by pressing **OK**.
Using the camera:	Press the button in order to activate or deactivate this camera. Select **Yes** or **No**. Confirm your entry by pressing **OK**.
Name:	Press the button with the device's designation (pre setting: camera 1/2), in order to change the name. Enter the desired name using the key pad that appears. Confirm your selection using **OK**. 🕮 Input keypad for names and codes, p. 21.

Camera off after.... (sec.):	Press the button with the numeric value in order to set how long the camera's picture shall be displayed on the weather data screen. After the pre-set time has expired, the picture fades out. Enter the desired time (seconds) using the keypad that appears. Confirm your entry by pressing **OK**.
Multif. Input:	Press the button **Assign**, in order to assign the camera to a multifunction-input. The camera then comes on automatically as soon as signal is picked up at this input (e. g. motion detector). Several inputs can also be selected. Confirm your entry by pressing **OK**.

Interface

Press the button if you want to de-activate the camera interface. This is only necessary if the interface fails or is removed when the control system is running and an error message is displayed ("Camera interface defect"). By de-activating the interface the error message is suppressed and the weather animation will be displayed normally again.
De-activating: If the camera interface is to be turned off, select **Yes**.
Confirm your setting by pressing **OK**.

Define channel order

This is where you define the order in which the drives and devices are shown in the menues. Press the buttons:

System ▶ **Installation** ▶ **Channel Order**

Here *all* configured drives and devices (“channels”) are displayed. Note that the list also includes those channels that do not appear in the manual menu. The display in the manual menu can be activated or de-activated in the base settings for every single channel.
📖 Set up drives and drive groups, Manual Menu, p. 81

Press the button of the channels to be changed and shift them with the arrow keys that appear on the right.
Confirm the new sequence with the **OK** button.

WS1000 Settings

In the menu area **System > WS1000 Settings > Settings** you can adjust the following settings:

- Change personal data such as time/date and location and adjust the screen display to your personal preferences (settings)
- Place the control unit in Standby mode, restart, reset to factory defaults, adjust wireless mode and change internal settings (service)
- Set an access code to protect the “Installation” and “Automatic Settings” menus from unauthorised changes

Settings

In the menu area **System > WS1000 Settings > Settings** you can adjust the following settings:

- Time and date
- Language
- Display
- Calibrate touch
- Location
- Time zone

Enter time and date manually

Time and date are normally received by the weather station via the DCF77 respectively GPS signal. Reception is normally available within around 10 minutes of starting up the system. The date and time is then shown on the weather data display on the lower right.
If no time signal is available, “Please set clock!” will show permanently in the display. While this is being displayed, no weather animations can be shown. In this case, you should set the clock by hand.

The time settings can be accessed by pressing the buttons:

Set the time and date by pressing the hour, minute, second, day, month and year fields after one another and setting the current values. Confirm your setting with the **OK** button.

Change language

The menus can be shown in German, English, French or Italian. Press the buttons:

Select the desired language for the menues by pressing the button **Deutsch** or **English**. Confirm your setting with the **OK** button.

Adjust screen

The brightness and automatic shutdown of the display can be adjusted individually. Press the buttons:

In the menu that appears you can switch the **automatic brightness adjustment** on and off. For this press the **On** or **Off** button.
The **automatic brightness adjustment** adjusts the display screen to the light conditions in the room (the darker the room, the darker the display screen lighting). Touching the display screen increases the brightness by 30% in order to ensure excellent legibility. If no further operation is performed within one minute, the screen brightness is reduced once again. This automatic darkening saves energy.
If the automatic function is off, the screen brightness can be set in percent. For this press the % **value**. Using the arrow keys that appear you can adjust the value. Default setting: On.

The **automatic power-down** can also be switched on and off. For this press the **On** or **Off** button. The display is switched off automatically if no button has been pressed for one minute. This also saves energy.
If the **automatic power-down** function is activated, the display screen turns off when the room is in darkness. If the room is then lit, the display screen automatically switches on again. Similarly, touching the screen switches it on. If no further operation is performed within one minute, the automatic power-down function then switches the display screen off again. Default setting: Off.
Confirm your setting with the **OK** button.

Calibrate touch

If, when operating the touch display, you are forced to press “next to the button,” please perform a calibration here. Press the buttons:

Follow the instructions on the display and press with a pointed object (preferably the enclosed control stylus) on the centre of the cross. This will adjust the touch surface.

Enter location (only DCF weather stations)

The location must only be specified if the control unit is connected to a weather station with a DCF77 receiver!

The information about the building’s location is required for correct details of the sun’s position. If the location data is not correct, the shades will not be properly controlled.
The location settings can be accessed by pressing the buttons:

In the menu that appears, you can enter the location as a **city** or as **coordinates** (longitude and latitude).

Select **City** to make a selection under **Country** and **City** from a list using the buttons.

Select **Coordinates** to specify the location numerically. Press the minute and second fields after one another for eastern longitude and northern latitude and set the values with the arrow keys that appear. Confirm your setting with the **OK** button.

Select time zone

In order to display date and time correctly, the time zone (relating to GMT) must be specified here. In addition the automatic switch-over to summer time can be set. You can reach the time zone settings by pressing the buttons:

The **time zone** can be set by pressing the arrow keys in the menu that appears. Examples for UTC difference:

Country	UTC difference
Belgium	+01:00
Germany	+01:00
France	+01:00
United Kingdom	+00:00
Ireland	+00:00
Italy	+01:00
Croatia	+01:00
Luxembourg	+01:00
Netherlands	+01:00
Norway	+01:00
Austria	+01:00
Poland	+01:00
Portugal	+00:00
Sweden	+01:00
Switzerland	+01:00
Spain	+01:00

Press the button next to Summertime Rule to set the automatic switch-over. Depending on location, select **Europe**, **USA**, **None** (if no summertime switch-over shall take place) or **User-defined** (if the switching shall be set individually). Confirm your setting with the **OK** button.

Service settings

In the menu area **System > WS1000 Settings > Service** you can adjust the following settings:

- Standby
- Reset (new start)
- Factory settings
- Internal area

In normal operation of the control unit, the service settings are not used. Damage may arise through inappropriate use!

Activate Standby mode

In Standby mode the control unit is deactivated and all connectors are de-energised. Rain and wind alarms are switched off.
The standby function can be accessed by pressing the buttons:

Press **Standby** and the control system becomes inactive. **Standby** deactivates the control system. Pressing the **Activate Control System** button on the darkened display reactivates the control system.

For safety reasons, during cleaning and maintenance the control unit should be separated from the mains current (e.g. disconnect/ remove fuse)

Reset (new start)

Reset restarts the control system's software. In the process, the automatic settings will be maintained. After starting up, all drives and devices will be in automatic mode.
The Reset function can be accessed by pressing the buttons:

Press **Reset** and the control system restarts.

Factory settings

By resetting to the factory defaults all basic and automatic settings will be deleted. The control unit will once again be in the condition it was when delivered.
The Factory settings can be accessed by pressing the buttons:

Factory Defaults

Select **Factory Defaults**. Enter the code “81” via the keypad which appears and confirm with the **OK** button. The factory settings will be loaded and the control system restarted.

Internal area

In the internal area, basic data of the device can be modified. You are not authorised to change this.

Access code

In the **System > WS1000 Settings > Access code** menu area you can set an access code which locks the “Installation” and “Automatic Settings” menus against unauthorised changes. Manual operation of the control system remains possible at any time.
The access code settings can be accessed by pressing the buttons:

Here you can enter, change and delete a code.

Enter Code

Press the button to set a new code. Enter the desired access code via the keyboard that appears. The code will be shown in plain form.
📖 Input keyboard for names and codes, p. 21
Confirm your setting with the **OK** button.
The control system will now ask for this code before the menus are shown.

Change Code

Press the button to change an existing code. First of all enter the existing access code via the keyboard that appears. The code will be shown in plain form.
📖 Input keyboard for names and codes, p. 21
Confirm your input with the **OK** button.
Now enter the new access code via the keyboard.
Confirm your setting with the **OK** button.
The control system will now ask for this code before the menus are shown.

Delete Code

Press the button to delete an existing code, e.g. if you have forgotten the combination or do not want it to be locked any more. Enter the active code or the unlocking code “123” via the keyboard that appears.

Confirm with the **OK** button. The control system shows “Access code deleted”. Press ⬅ to go back to the menu. The control system no longer has an access code.

Tables, diagrams, maintenance

Care and maintenance

Weather station

The weather station should be regularly checked twice per year for soiling and cleaned if required. If heavily soiled, the wind sensor may be incapable of performing its functions, regularly showing a rain warning or no longer recognizing sunshine.

Control unit

Remove finger marks from the touch screen, preferably with a damp cloth. While doing this you can pass over the buttons without activating them.
If there is a power outage, the data you have entered will be saved for around 10 years. No battery is required for this. Once power is restored, the clock must be set again. If there is broadcast time reception this takes place automatically after around 10 minutes.

Units for sun and wind

The display of sun intensity is in lux or kilolux and is shortened in the display to lx or klx. The value 1 is reached even with overcast skies, 20 klx if the sun has just come out again and 100 klx is reached when there are cloudless skies at noon. Experience indicates that extending shades above 40 klx is to be recommended.

The display of wind speed is in meters per second and is shortened in the display to m/s. Depending on the position of the building and the installation position of the weather station, different values may be optimal in order to protect the shade or window. Observe the response of the awning or blinds or the window to wind and then correct the wind value accordingly. The following table should make it easier to find the optimal values for your situation:

Description	m/s	km/h	Beaufort	Knots
Calm	< 0.3	< 1	0	< 1
Light air	0.3-1.5	1-5	1	1-3
Light breeze	1.6-3.3	6-11	2	4-6
Gentle breeze	3.4-5.4	12-19	3	7-10
Moderate breeze	5.5-7.9	20-28	4	11-16
Fresh breeze	8.0-10.7	29-38	5	17-21
Strong breeze	10.8-13.8	39-49	6	22-27
Moderate gale	13.9-17.1	50-61	7	28-33
Fresh gale	17.2-20.7	62-74	8	34-40
Strong gale	20.8-24.4	75-88	9	41-47

Description	m/s	km/h	Beaufort	Knots
Whole gale	24.5-28.4	89-102	10	48-55
Storm	28.5-32.6	103-117	11	56-63
Hurricane	> 32.6	> 117	12	> 63

Technical data

Control unit

Housing	Plastic material (partially lacquered), wall panel aluminium (lacquered)
Colours	• White glossy (similar to RAL 9003 Signal White) / light grey (similar to RAL 7035 Ligh Grey) • Aluminium (similar to RAL 9006 White Aluminium) / graphite (similar to RAL 7024 Graphite Grey)
Mounting	Flush / cavity wall
Dimensions	Central Unit approx. 250 × 182 × 43 (W × H × D, mm), concealed box approx. 235 × 169 × 62 (W × H × D, mm)
Ambient temperature	Operation 0…+50°C, Storage -30…+70°C, avoid bedewing
Operating voltage	230 V AC, 50 Hz
Power consumption	Stand-by max. 16 W

Wireless frequency for the wireless channels: 868.2 MHz

For assessing the product with regard to electromagnetic compatibility the following standards were used:

- EN 60730-1:2000-11 + A1:2004-09 + A11:2002 + A12:2003-09 + A13:2004-09
- ETS 300683 ed. 1:1997-06
- ETS 300220-1:09-2000
- ETS 300220-3:09-2000

The product was tested by an accredited EMC laboratory in accordance with the standards named.

Weather station

Housing	Plastic material
Colour	White / translucent
Mounting	On-wall
Protection category	IP 44
Dimensions	approx. 96 × 77 × 118 (W × H × D, mm)
Weight	approx. 160 g
Ambient temperature	Operation -30…+50°C, Storage -30…+70°C
Operating voltage	24 V DC
Heating rain sensor	approx. 1.2 W

Measurement range temperature	-40…+80°C
	Resolution: 0.1°C
	Accuracy: ±0.5°C at +10…+50°C ±1.5°C at -25…+80°C
Measurement range wind	0…70 m/s
	Resolution: <10% of the measured value
	Accuracy: ±25% at 0…15 m/s, at an angle of attack of 45°, pole mounting
Measurement range brightness	0…99 000 lux
	Resolution: 1 lux at 0…120 lux 2 lux at 121…1 046 lux 63 lux at 1 047…52 363 lux 423 lux at 52 364…99 000 lux
	Accuracy: ±35%

Indoor Sensor WGTH-UP

Housing	Plastic material (partly lacquered)
Colours	Matched on the colour of the control (White glossy or Aluminium matt)
Mounting	In-wall (in socket ∅ 60 mm, 42 mm deep)
Protection category	IP 20
Dimensions	Housing approx. 55 × 55 (W × H, mm), mounting depth approx. 15 mm, base plate approx. 71 × 71 (W × H, mm)
Total weight	approx. 50 g
Ambient temperature	Operation -20…+70°C, Storage -55…+90°C
Ambient air humidity	max. 80% RH, avoid bedewing
Operating voltage	7…30 V DC
Current	max. 35 mA
Data output	Via radio
Radio frequency	868.2 MHz
Protocol	Own protocol (Elsner RF)
Measurement range temperature	-40…+100°C
	Resolution: 0.1°C
	Accuracy: ± 0.4°C at 25°C
Measurement range humidity	0…100% RH
	Resolution: 0.3%
	Accuracy: 0…20 % = ± 5% RH 20…80 % = ± 3% RH 80…100 % = ± 5% RH
	Drift: ± 0.5% RH per year in normal air

Alarm and error messages

Various alarm and error messages can appear in the weather data display. In this case no weather animation will be shown.

Alarm messages

Alarm from motion detector!

is shown when a connected motion sensor has been activated. When there is a motion-detector alarm, windows close automatically; if applicable, the light is switched on. After 5 minutes without another signal from the motion detector, the warning disappears and the control system returns the windows to normal automatic mode.

Fire alarm! By "XX" (sensor name)

is shown if the control system receives a signal from a smoke detector. At the same time awnings and blinds retract, the light comes on, heatings and air conditioners switch off, windows and ventilators open/switch on. Manual operation is blocked. A warning system sounds at the control system. The fire alarm can only be switched off by a Reset/Restart of the control system through the **System > WS1000 Settings > Service > Reset** menu or by cutting off the power supply.

Error messages

Please set clock!

is shown when the control system is first started or after a restart. As soon as a DCF77 or GPS signal is received, this message disappears. If no reception is available, please set the clock by hand.

🖵 System > WS1000 settings > Settings > Time and Date
🕮 Enter time and date manually, p. 95

Connection to weather station failed!

means that the control system is receiving no data from the weather station. Check the connection lead to the weather station and examine it if necessary. Manual operation of drives and devices without rain or wind alarm is still possible. Drives with selected rain or wind alarm move to the safe position.

No wireless contact to "XX" (name of the wireless member)

means that the control unit is receiving no more data from a learned wireless member. This can, for example, be a WGTH-UP indoor sensor or a wireless

ventilator unit. Check the status of the wireless connection in the menu **System > Installation > Wireless Connection > Status**. This will say “Wireless status: Reception timeout,” if there is a wireless problem. Check the device concerned.

WGTH “XX” (name) faulty!

means that the indoor sensor named is not working properly. Check the device concerned.

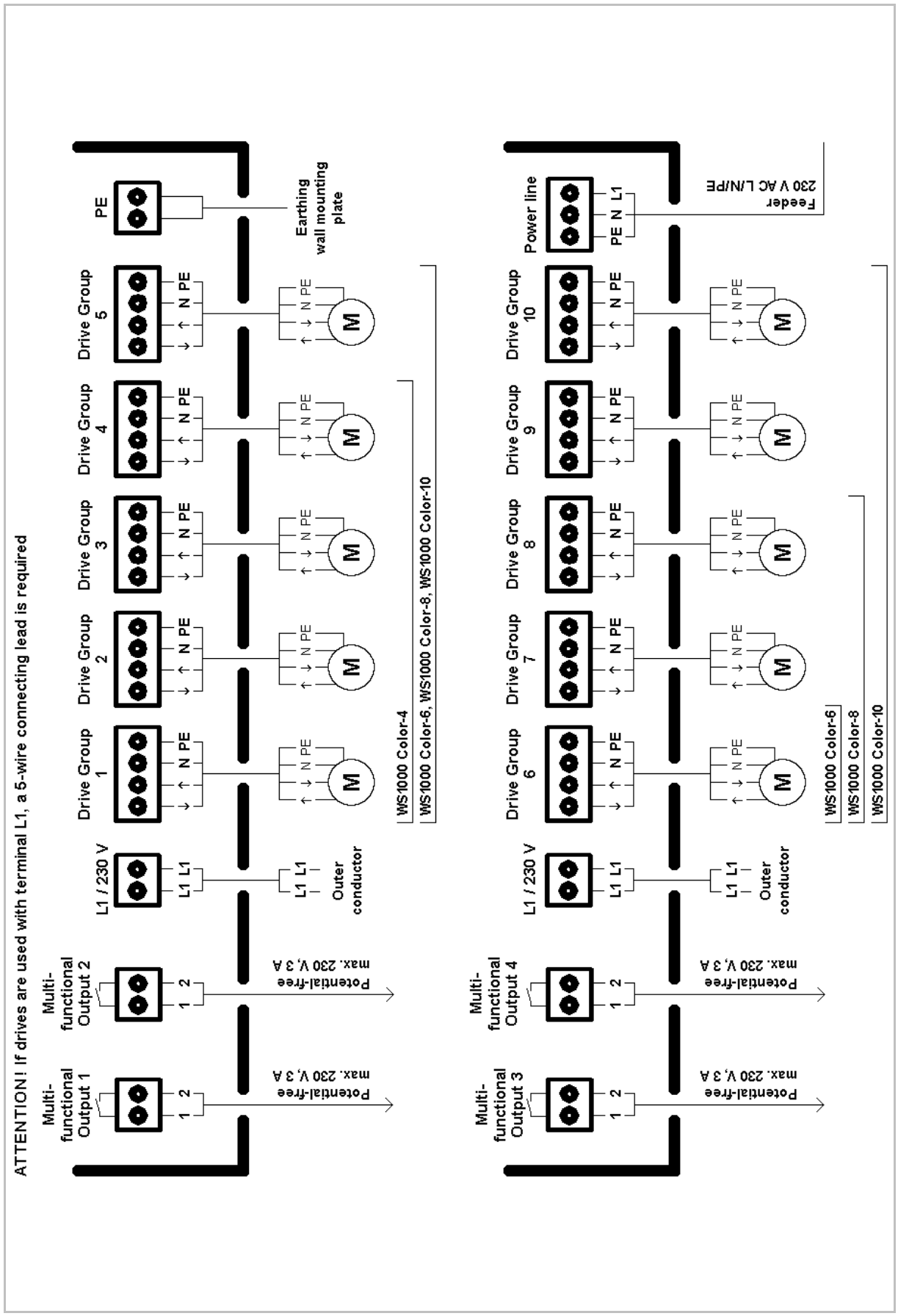
RF868 wireless module faulty!

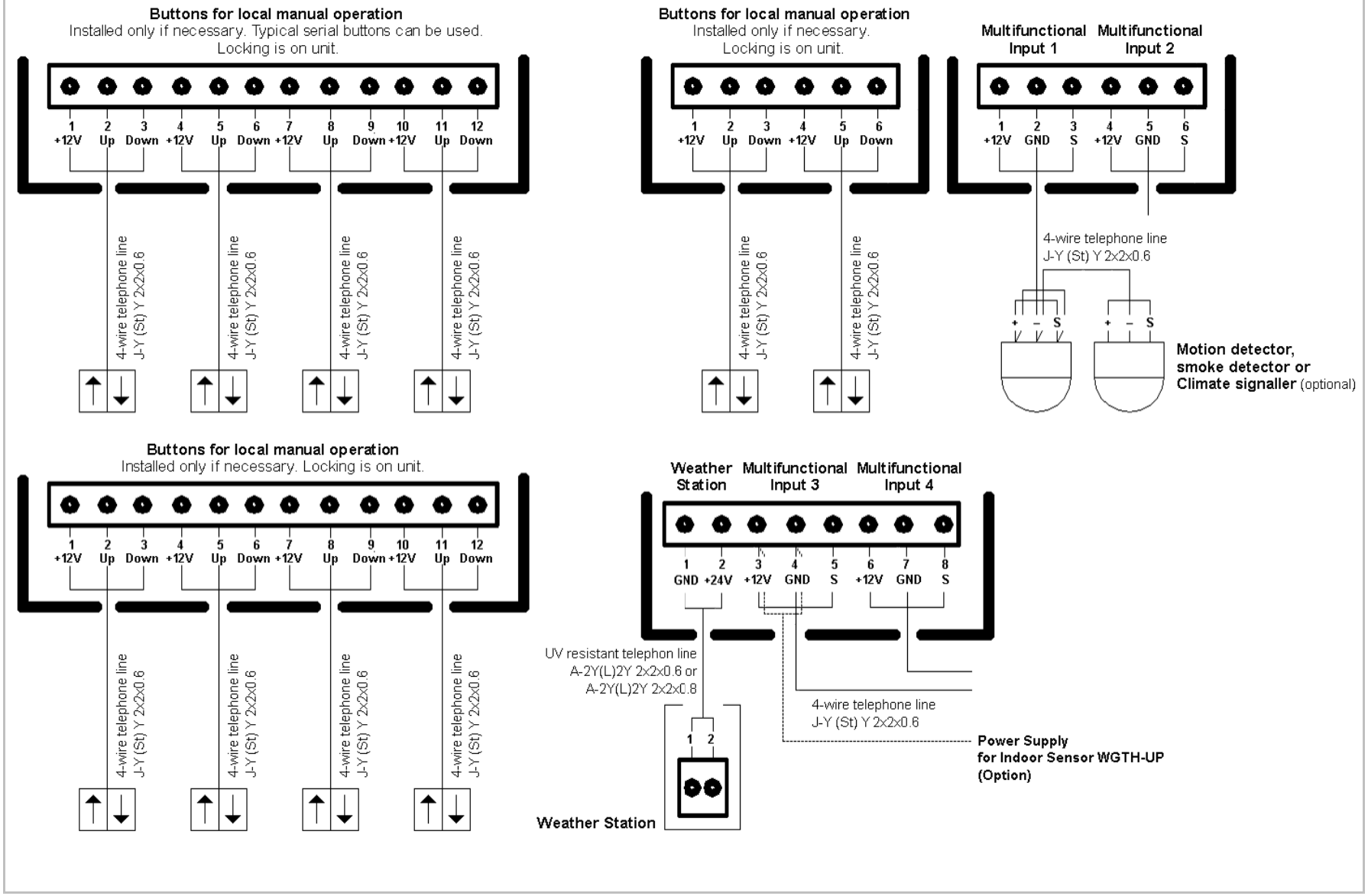
means that the internal wireless module is not working properly. Contact customer service to have the control unit checked.

Configuration memory faulty!

means that the memory for the automatic settings is not working properly. Contact customer service to have the control unit checked.

Connection diagrams

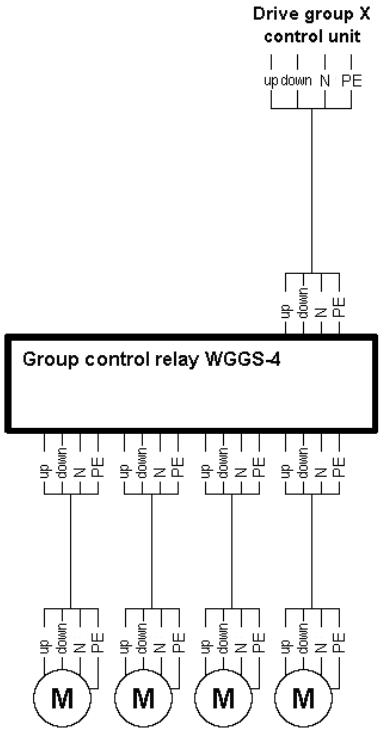



Buttons for local manual operation
Installed only if necessary. Typical serial buttons can be used.
Locking is on unit.
1 +12V
2 Up
3 Down
4 +12V
5 Up
6 Down
7 +12V
8 Up
9 Down
10 +12V
11 Up
12 Down
4-wire telephone line J-Y (St) Y 2x2x0.6
Buttons for local manual operation
Installed only if necessary.
Locking is on unit.
1 +12V
2 Up
3 Down
4 +12V
5 Up
6 Down
Multifunctional Input 1
Multifunctional Input 2
1 +12V
2 GND
3 S
4 +12V
5 GND
6 S
4-wire telephone line
J-Y (St) Y 2x2x0.6
+ – S
+ – S
Motion detector, smoke detector or Climate signaller (optional)
Buttons for local manual operation
Installed only if necessary. Locking is on unit.
Weather Station
Multifunctional Input 3
Multifunctional Input 4
1 GND
2 +24V
3 +12V
4 GND
5 S
6 +12V
7 GND
8 S
UV resistant telephon line
A-2Y(L)2Y 2x2x0.6 or
A-2Y(L)2Y 2x2x0.8
4-wire telephone line
J-Y (St) Y 2x2x0.6
Power Supply for Indoor Sensor WGTH-UP (Option)
1 2
Weather Station

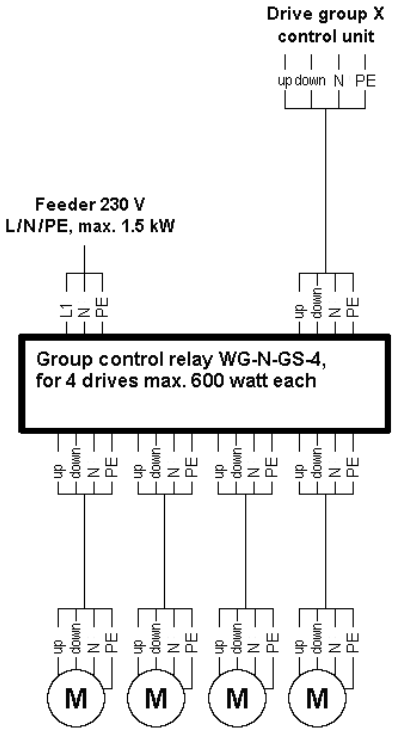
Connection examples for several drives to one drive group

ATTENTION! If motors are used that require a constant phase L1 for operation the entire wiring must be 5-wire.
Correspoding terminals are fitted in the group control relays. All group control relays are designed for a maximum of 4 motors.

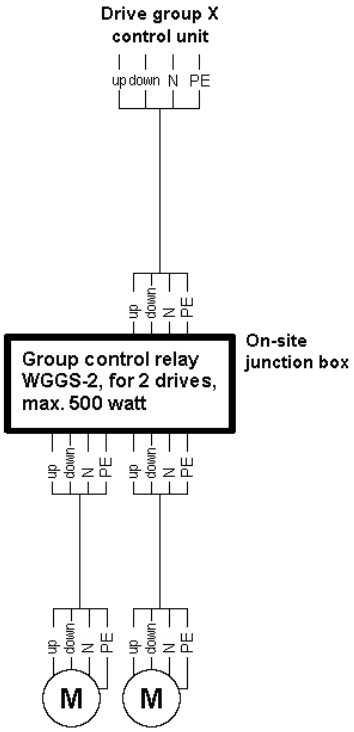
- **Drive group with a total power output of less than 500 watt**
- **Motors without integrated group control relay**



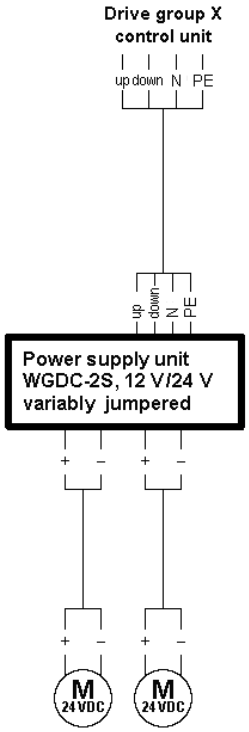
- **Drive group with a total power output of more than 500 watt**
- **Motors with or without integrated group control relay**



- **Drive group with a total power output of less than 500 watt**
- **Motors without integrated group control relay**



Drive group with 12 V or 24 V DC motors



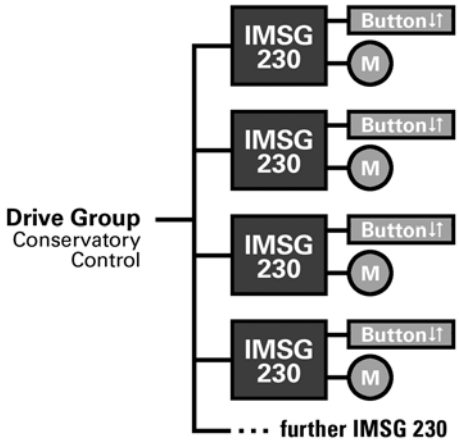
Control of DC motors 12 V or 24 V
(variably jumpered),
max. 2 A altogether

Use drive groups for centralised control

Centralised control with IMSG 230 Motor Control Units

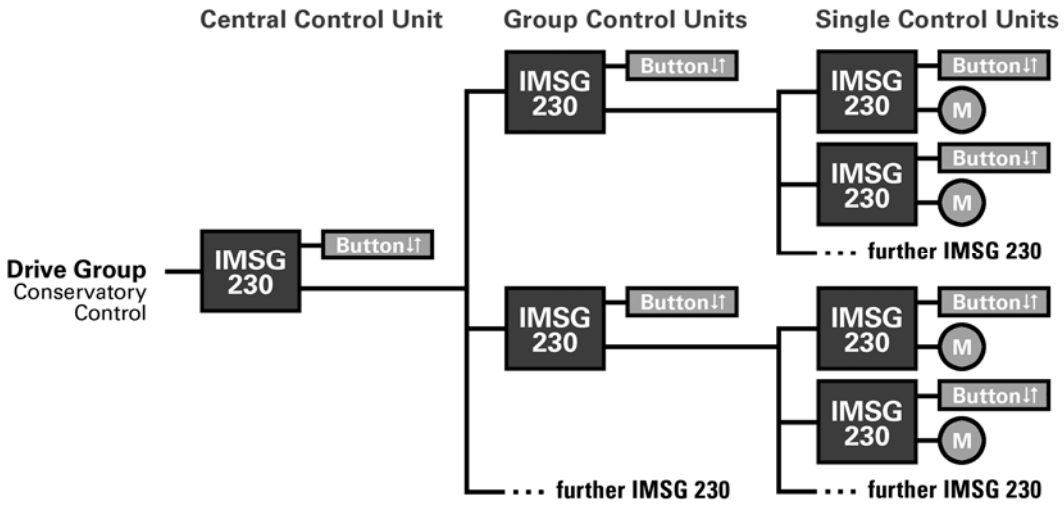
Simple centralised control

Example for simple central control with motor-control devices in a WS1000 Color drive group: IMSG230 motor-control devices with Up/Down buttons for manual operation on the spot.

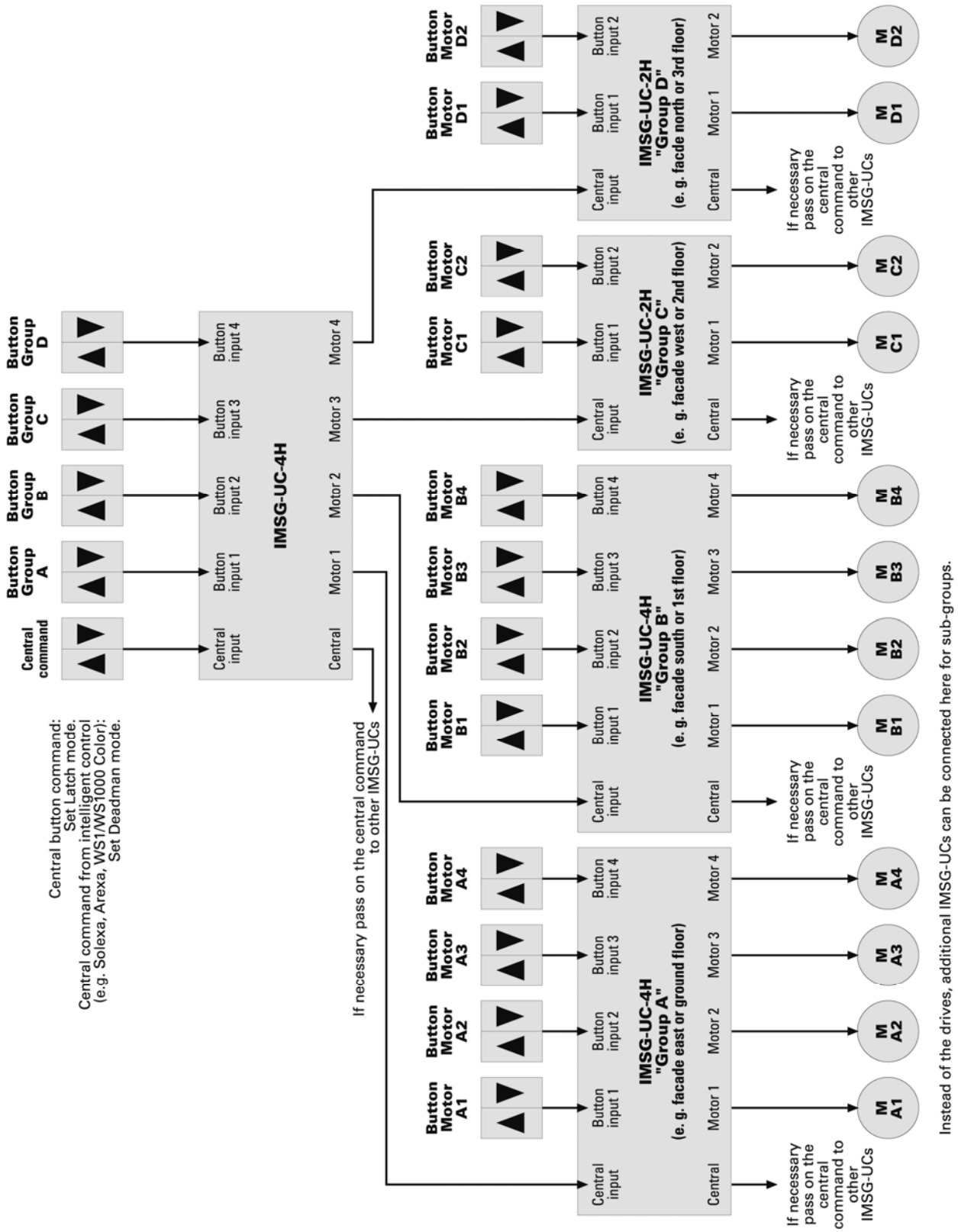


Central with group formation

Example of central control with group formation with motor-control devices in a WS1000 Color drive group: IMSG230 motor-control devices with Up/Down buttons for manual operation on the spot



Centralised control with IMSG-UC Motor Control Units



Personal automatic settings data

Awnings, blinds, shutters

Drive no. (output)							
Name							
Function							
Light intensity (kLux)							
Direction of sun							
Height of sun							
Movement position							
Slat position							
Slat position for height of the sun of	0°-15°						
	15°-30°						
	30°-45°						
	45°-90°						
Indoor sensor							
Indoor temperature (°C)							
Night closure?							
Timed closure (period)							
Outdoor temperat. (°C)							
Wind alarm at (m/s), Time exceeded							
Rain alarm?							
Automatic reset?							
Reset following manual intervention?							

Extension delay (min)	
Retraction delay (min)	
Twilight value (lux)	

Window

Drive no. (output)						
Name						
Normal, sliding window or step window?						
Indoor sensor						
Indoor temperature (°C)						
Air humidity (%)						
Supply air temperature block?						
Night-time re-cooling (period, temp., position)						
Movement position/ number of steps						
Timed ventilation (period)						
Outdoor temperat. (°C)						
Timed closure (period)						
Wind alarm at (m/s), Time exceeded						
Rain alarm?						
Gap opening during rain? Position						
Automatic reset?						
Reset following manual intervention?						

Ventilation, heating and cooling units

No. (output)						
Name						
Indoor sensor						
Luftfeuchtigkeit (%)						
Indoor temperature (°C)						
Outdoor temperat. (°C)						
Supply air temperature block						
Exhaust air levels						
Night-time re-cooling ventil. (period, temp.)						
Timed ventil. / Night mode (period, temp.)						
Heat recovery recircu-lation (temp., level)						
Condensation air recirculation (level)						
Automatic reset?						
Reset following manual intervention?						

Ventilation block via air-conditioning (min)	

Roof gutter heating

No. (output)							
Name							
Temperature range (°C)	from						
	to						
Automatic reset?							
Reset following manual intervention?							

Light

No. (output)						
Name						
Twilight operation						
Time switch (period)						
On at alarm?						
Automatic reset						
Reset following manual intervention?						

General Settings

Time point for general automatic reset	
Reset following manual intervention (min)	

Timer time periods

	Name	from	to
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

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