System XS

XS MSG2-AP Motor Control Unit

XS 1B-D Control Unit

XS 2B Double Control Unit

elsner® elektronik

Installation and Operation

XS system: XS MSG2-AP motor control unit, XS 2B double control unit, XS 1B-D control unit.
From software versions XS MSG2-AP 1.0, XS 2B 1.0, XS 1B-D 1.0 onward, • Issued: 01.03.2010.
Errors subject to correction. Technical data subject to change.

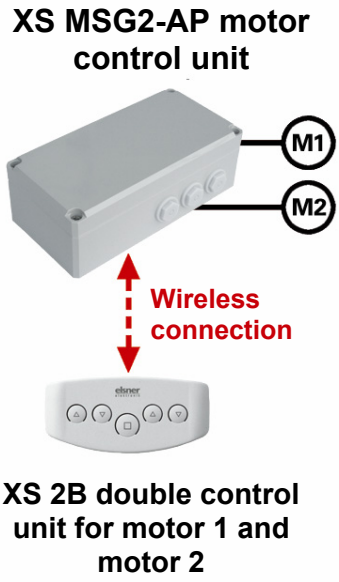
The XS system: Connectivity, installation, commissioning and basic settings

Connection and combination possibilities for the XS system

The XS wireless control system allows the automatic and manual control of shades (awnings and blinds) and windows.
The possibilities for the flexible combination of the XS system products allow the most diverse of requirements to be met: From the simple manual operation of drives using wireless control units, to control systems with a range of automatic parameters for all individual drives.

The wireless-based XS system is easy to install, without any dirt or waste of time, as there is no need to lay cables in the building. The control units work on batteries, while shades and windows are moved using conventional, wired motors which are directly connected to the XS motor control units.

A: Manual operation of drives using the XS MSG2-AP wireless motor control unit



The XS system allows drives to be manually actuated using a wireless control unit.

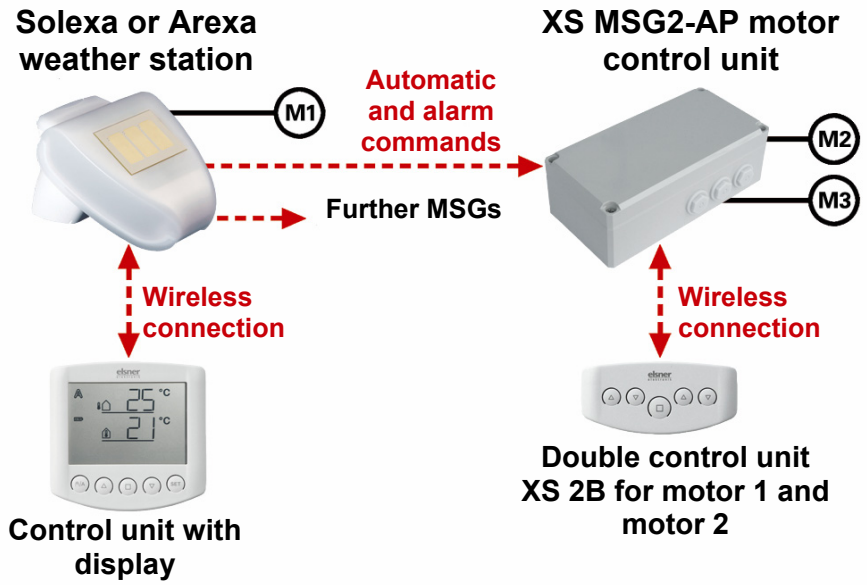
Required equipment:

- XS MSG2-AP motor control unit (with 2 drive connections)
- XS 2B double control unit
- Further XS 2B double control unit may be used for operation from elsewhere in the room

Procedure:

- Installation of the motor control unit and connection to the drives
- Installation of the XS 2B control unit
- Configuring the control unit on the motor control unit

B: Central control systems with Solexa/Arexa



The central control system is suitable for use with drives of the same type, e.g. for awnings only, blinds only or for windows only. The motors receive your automatic commands centrally from the weather station and can be individually and manually actuated using the XS 2B double control unit.

Required equipment:

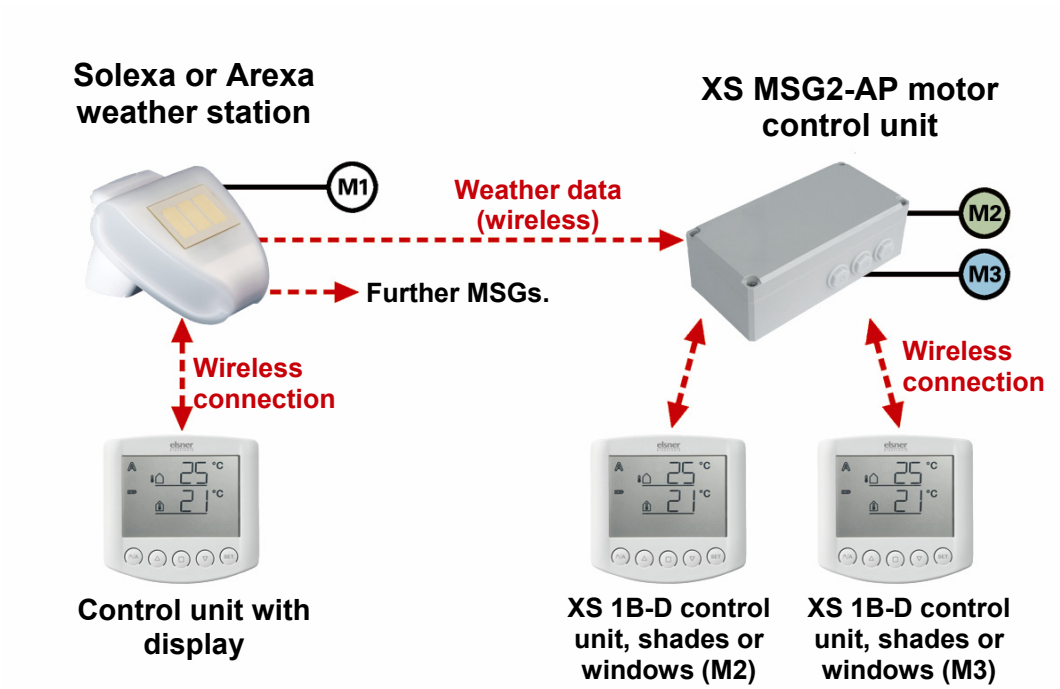
- Solexa control set (for the control of shades) or Arexa (for the control of windows), from software version 3.2
- XS MSG2-AP motor control unit (with 2 drive connections)
- XS 2B double control unit
- Further XS 2B double control unit may be used for operation from elsewhere in the room

Procedure:

- Installation of Solexa or Arexa (control unit and weather station), see Solexa/Arexa manual
- Installation of the motor control unit and connection to the drives
- Installation of the XS 2B control unit
- Commissioning of Solexa/Arexa including configuration of wireless connections between controls and weather station and basic setting of the drives connected to the Solexa/Arexa systems using the Solexa/Arexa control unit (see Solexa/Arexa manual)
- Configuring the weather station to the motor control unit
- Configuring the XS 2B control unit on the motor control unit
- Setting the automatic functions for all drives using the Solexa/Arexa controls (see Solexa/Arexa manual)

The described situation only allows the setting of a shade and/or window opening position for the drives on the Solexa/ Arexa weather station (M1). It is not possible to save an operating position for the drives on the motor control unit (M2, M3) using the XS 2B control unit; an XS 1B-D control unit with display is required.
For the procedure for saving an operating position, please see the "Basic Settings" chapter for drives using the XS 1B-D control unit. In the event that the XS 1B-D is subsequently not used for manual operation, this can be disconnected from the system in accordance with the basic set-up, and removed.

C: Individual automatic control using Solexa/Arexa



Individual automatic control allows the connection of different drives, such as an awning to weather station, or a blind or a window to a motor control unit. Each drive has its own automatic control, which can be set using the XS 1B-D wireless control unit with display.
Both drives on the motor control unit (M2, M3) can also be treated as a group when these are of the same type. The motors are both set up over a common XS 1B-D control unit, have the same automatic behaviour and actuate in parallel.

Up to two XS 2B double control units with simple Up/Down buttons can be configured to the motor control unit in order to be able to actuate the drives (M2, M3) from elsewhere in the room.

Required equipment:

- Solexa or Arexa control set, from software version 3.2
- XS MSG2-AP motor control unit (with 2 drive connections)
- For each drive which shall be independently controlled, 1 XS 1B-D control unit with display (maximum of two for XS MSG2-AP). Parallel operation for both drives with XS MSG2-AP as a group is also possible (with one XS 1B-D control unit only).
- Up to two further XS 2B double control units may be used (for operation from elsewhere in the room)

Procedure:

- Installation of Solexa or Arexa (control unit and weather station), see Solexa/Arexa manual
- Installation of the motor control unit and connection to the drives
- Installation of the control unit
- Commissioning of Solexa/Arexa including configuration of wireless connections between controls and weather station and basic setting of the drives connected to the Solexa/Arexa systems using the Solexa/Arexa control unit (see Solexa/Arexa manual)
- Configuring the weather station to the motor control unit
- Configuring the control units to the motor control unit
- Basic set-up of the drives to the motor control unit using the respective XS 1B-D (control unit with display)
- Setting the automatic functions for all drives connected to the Solexa/Arexa systems using the Solexa/Arexa control unit (see Solexa/Arexa manual)
- Setting the automatic functions for the drives to the motor control unit using the respective XS 1B-D

D: Combinations of central automation and individual automation

Multiple wireless motor control units can be configured to the weather station using Solexa or Arexa. The drives connected to them can be controlled on a central or separate basis.

Installation

Procedure

Carefully read the installation recommendations and instructions for the individual devices through. First, assemble all devices in the system and install all drive and power supply cabling. Insert batteries in the control units.
Then check all connections and proceed with commissioning.

Installation notes

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

Installation, testing, commissioning and fault repair may only be carried out by a qualified electrician. Shut off the voltage to all cables to be fitted and take safety precautions against unintended activation.

The devices are intended exclusively for appropriate use. Any improper alteration or non-observance of the operating instructions will void any warranty or guarantee claim.
After unpacking, the devices shall be checked immediately for any possible mechanical damage. The supplier shall be immediately notified in the event of any transport damage.

The devices must not be used if damaged.

If it is assumed that danger-free operation of the XS system, individual devices or the connected drives can no longer be guaranteed, the equipment shall be taken out of service and secured against unintended operation.

The XS system devices may only be operated as a fixed installation, meaning in built-in condition and following the completion of all installation and commissioning work, and only in the intended environment.
Elsner Elektronik shall not be liable for any changes to norms or standards after the publication of these operating instructions.

Notes on radio devices

When performing the layout, ensure that there is sufficient radio range. The range of wireless control systems is limited by the statutory regulations governing wireless devices, and by site conditions (if the radio signal must penetrate walls and ceilings).

A minimum distance of 30 cm must be maintained between wireless transmitters in order not to compromise the quality of reception. Control units as well as motor control units and the weather station should therefore be positioned at a sufficient distance from other wireless transmitters. Powerful local transmission sources (such as wireless headphones) which transmit on the same frequency (868.2 MHz) may interfere with reception. The control units should also not be installed in direct proximity to metallic surfaces.

Safety information for automatic and alarm functions

Any power failure to the motor control units or weather station will mean that the connected drives can no longer be operated! Should full functionality also be ensured in the event of failed power supply, an emergency generator with appropriate switching from the mains network shall also be installed on-site for emergency use.
Settings saved in the software (motor control unit and control units) will remain unaffected by any power failure. Once the power supply is restored, the control system will be set to automatic mode.

If the wireless connection between te control unit and the motor control unit fails (for example from a wireless malfunction or drained batteries in the control unit), manual access is no more possible. The XS 1B-D control units with displays retain control in their current mode (manual or automatic). Automatic mode will continue operating as set up until wireless connection is re-established, although without taking the indoor temperature into account. Wind and rain protection functionality remains active also even when manual mode is set.
Normal automatic mode will continue to operate on XS 2B double control units.

In the event of any interruption to the wireless connection between the weather station and the motor control unit, the drives will actuate to their safety position (shades will be retracted, windows will be closed). The XS 1B-D unit screen will display the message ER (error, malfunction) instead of weather data.

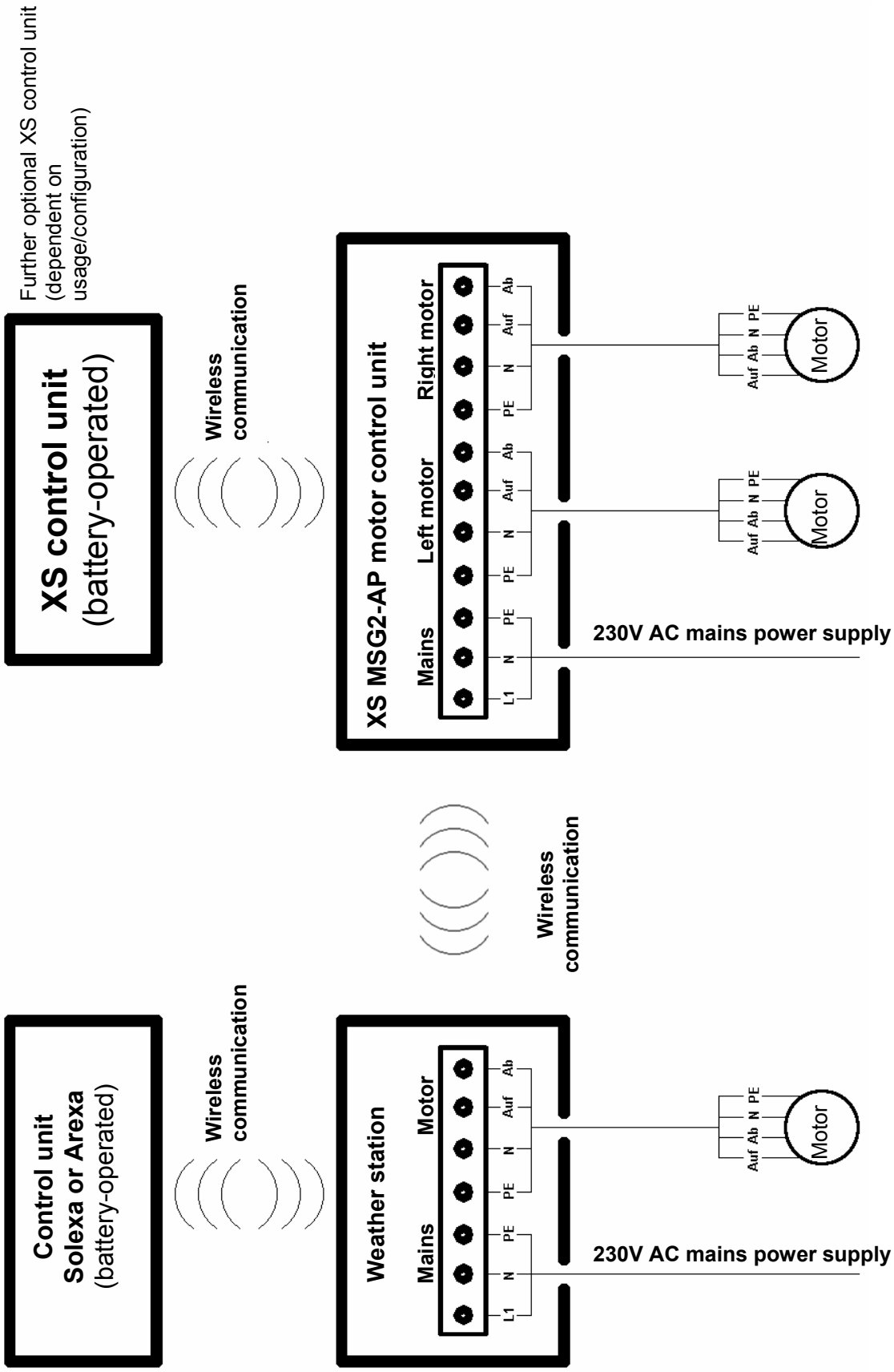
Should cleaning or maintenance work be performed in proximity to the shades or windows, the control system (weather stations and motor control units) must be without voltage by tripping the fuse fitted on site, and secured against re-activation. This is to ensure that the switched-off drives cannot operate.

A certain amount of time may pass before falling rain is recognised by the weather station, depending on the rain amount and outdoor temperature.
Please also bear in mind that in the event of a power failure and rainfall, external awnings will not be automatically retracted if no emergency generator is installed.

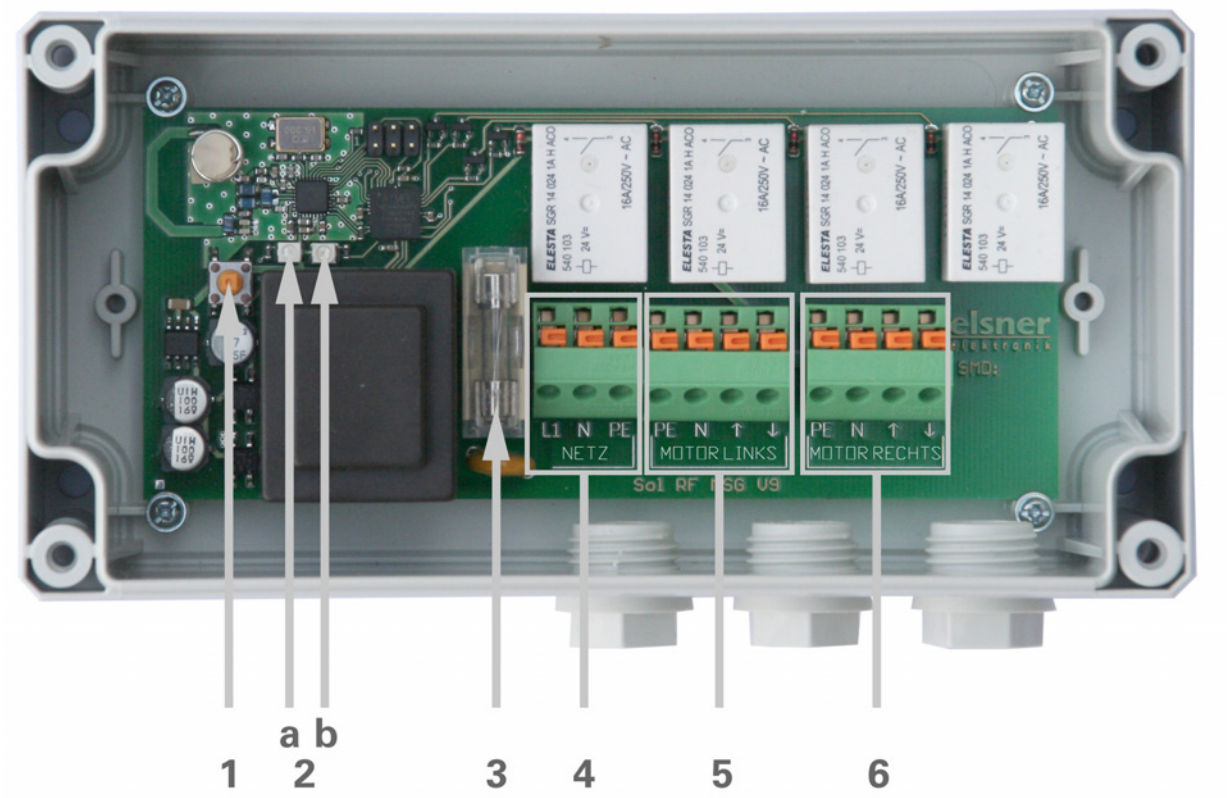
Note that sun protection equipment rails which are externally mounted can ice up. Operating awnings or blinds under such conditions can damage the shades and drive.

Please ensure that no one is able to enter the operating areas of electrically operated equipment components (danger of crushing!). The relevant construction rules must be observed.

XS system Solexa/Arexa connection overview



Fitting of the XS MSG2-AP motor control unit and connection to the drives



1 Configure/Delete button
2a/b LEDs
3 T6,3 A microfuse
4 "Mains" L1/N/PE mains power connection
5 "Motor Left" PE/N/↑/↓ drive connection
6 "Motor Right" PE/N/↑/↓ drive connection

The XS MSG2-AP motor control unit is fitted with two connection points for drives ("Left" and "Right" connections). Parallel switching of further drives from a single connection point is possible. Check whether a group control relay is required by the motor manufacturer. Group control relays can be obtained from Elsner Elektronik or from the motor manufacturer.

Setting motors in parallel which are not suitable for this purpose will damage these and the motor control unit.

Motors with a power input exceeding 1000 watt must be operated through a relay or contactor with its own power supply.

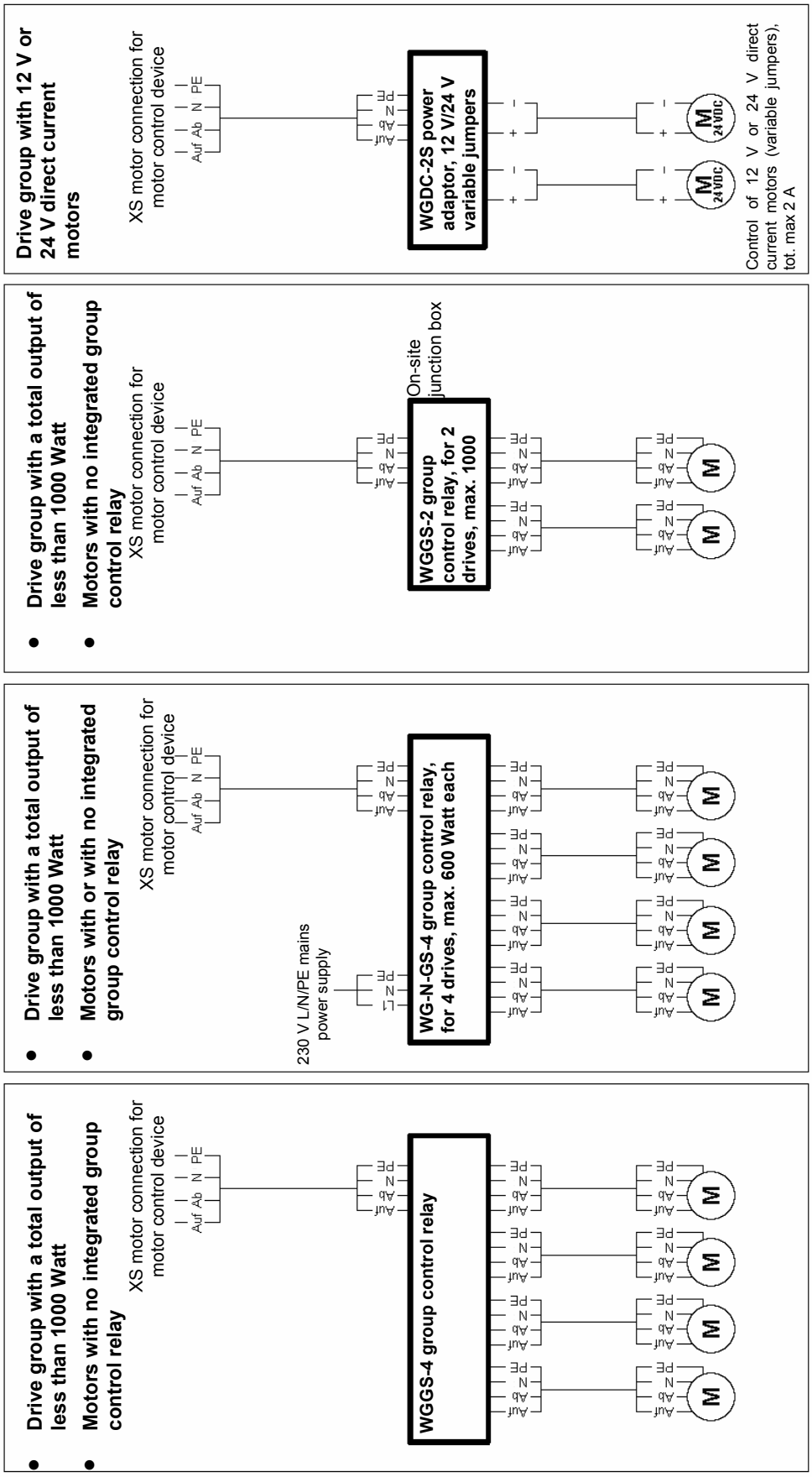
We offer appropriate power adaptors for direct current drives. Where required, we will need you to indicate the motor types, the manufacturer and – if available – the technical specifications.

Run the power supply and drive connection cable through the grommets and connect the voltage (L1/N/PE) and "Left" and "Right" drives (PE/N/Up/Down) to the terminals designated for this purpose. Ensure that the connections are correct:

Up 🡅: Retract shade / close window ("safety position"),
Down 🡇: Extend the shade, open window.

Examples of multiple drives connected as a group to a single connection

Connection examples for more drives



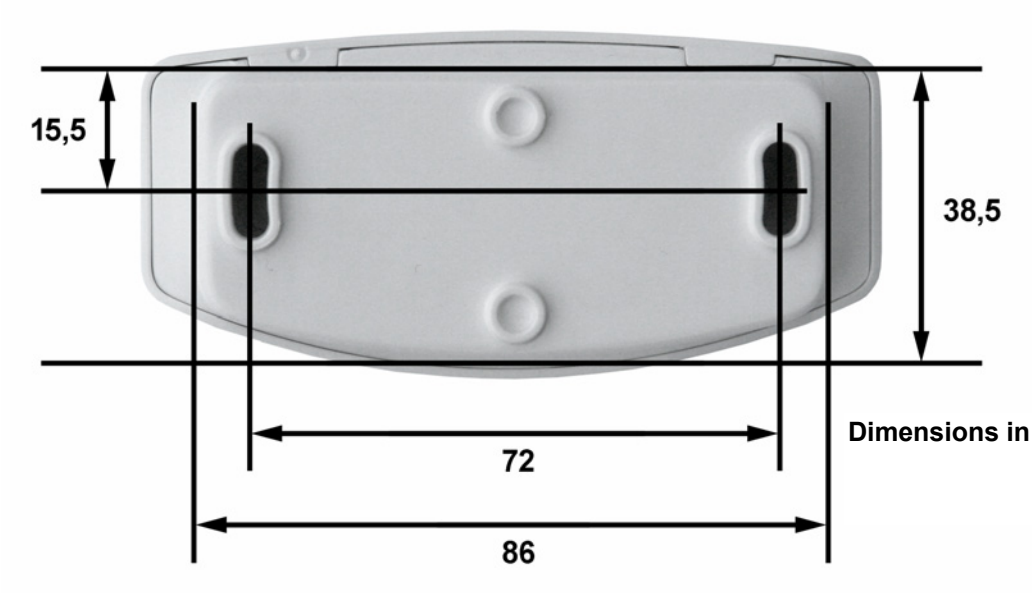
Installing the XS 2B double control unit

The control unit is battery-powered and communicates wirelessly with the motor control unit. No connection cables are therefore required.

The control unit must only be installed and used in dry, interior spaces. Relative air humidity must not exceed 80%. Avoid condensation.

Rear view and drill sketch

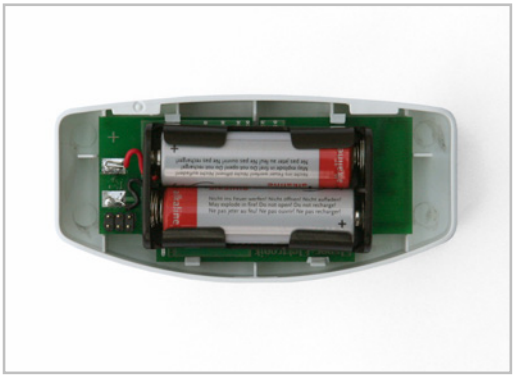
All values in mm, may vary due to technical requirements.



Inserting the batteries

The battery compartment is located inside the housing.

Open the control unit by releasing the catch on the bottom of the housing. To do this, press a screwdriver directly into the slot.



Check that the polarity of the batteries is correct. Two commercially available AA type (Mignon/ LR6) batteries (1.5 V) or rechargeable batteries (1.2 V) are required.

Close the housing by lowering the forward part of the housing (with the PCB) from above over the rear panel. The latch mechanism on the underside must engage with a clear "click".

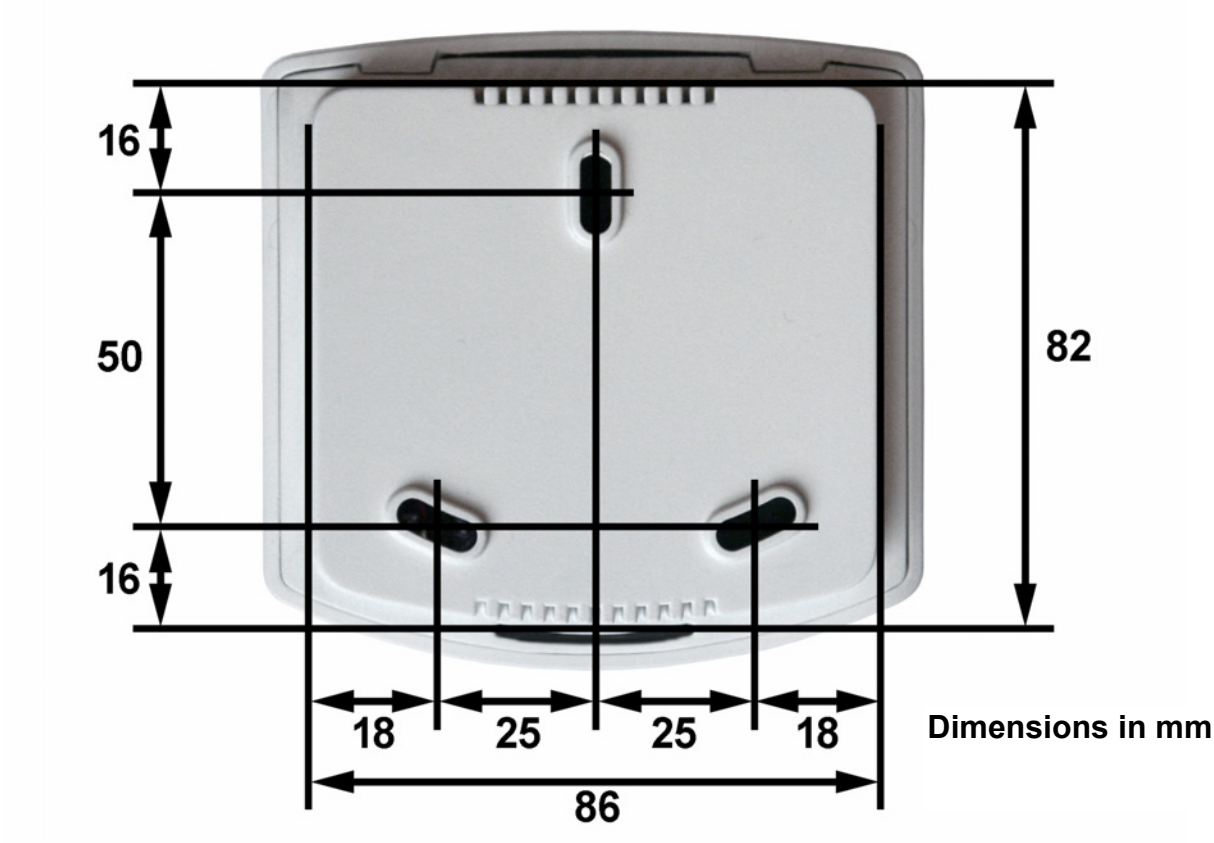
Installation of the XS 1B-D control unit

The control unit is battery-powered and communicates wirelessly with the motor control unit.
Avoid selecting an installation position in direct sunlight, as this will result in incorrect indoor temperature measurements. The measuring sensor is built into the underside of the control unit. For the same reason, the control unit should not be installed above a radiator. Please also ensure that no direct draft from windows or doors distorts the measurement values.

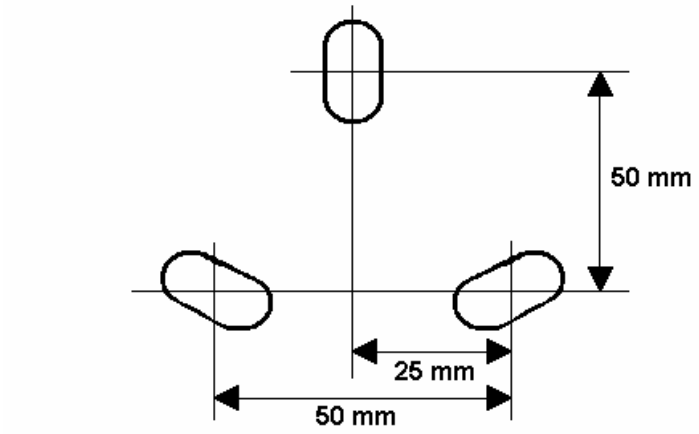
The control unit must only be installed and used in dry, interior spaces. Relative air humidity must not exceed 80%. Avoid condensation.

Rear view and drill sketch

All values in mm, may vary due to technical requirements.



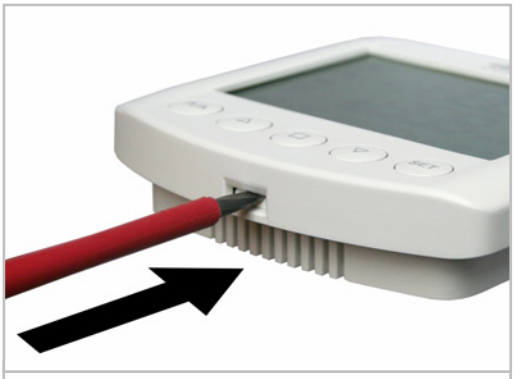
Dimensions in mm



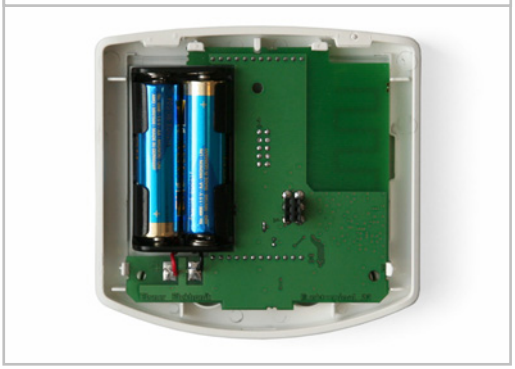
3 x Langloch 13 x 5 mm

Inserting the batteries

The battery compartment is located inside the housing.



Open the control unit by releasing the catch on the bottom of the housing. To do this, press a screwdriver directly into the slot.



Check that the polarity of the batteries is correct. Two commercially available AA type (Mignon/ LR6) batteries (1.5 V) or rechargeable batteries (1.2 V) are required.

Close the housing by lowering the forward part of the housing (with the PCB) from above over the rear panel. The latch mechanism on the underside must engage with a clear "click".

Initial start-up

Procedure

Carefully read through the recommendations for commissioning and for configuring the wireless connections for the individual devices.

Bringing a device from a cold room into a warm room can cause a build-up of condensation. Before commissioning, ensure that there is no humidity in the device (leave to dry if necessary).

After checking all connections, switch on the mains voltage to the motor control units (and to the weather stations if necessary). If a Solexa or Arexa control system is used in the XS system, commission this first (including basic settings). Then configure the wireless connections between the installed devices of the XS systems (and the weather station if necessary) and apply the basic settings for the drives on the XS 1B-D control unit.

Configuring and deleting wireless connections

Wireless connections may only be configured by a professional electrician, as the button for configuring and deleting these is located inside the housing.

The wireless connections between the individual components of the XS system are configured using the programming and/or configure/delete buttons (motor control unit, weather station) and the operation buttons (control unit).

In order to configure a wireless connection, the XS MSG2-AP motor control unit (and if necessary the Solexa/Arexa weather station) must be installed, supplied with voltage, and the housing opened. The control units must be fitted with charged batteries.
Close and tighten the screws of the cover of the motor control unit after configuring the wireless connections.
Pressing the configure/delete buttons on the XS MSG2-AP motor control unit housing allows you to access the configure/delete mode for the different devices:
Press briefly once (both LEDs are on): Solexa or Arexa weather station
Press briefly twice (both LEDs flash): XS 2B double control unit

Press briefly three times (left LED is on): XS 1B-D control unit on left channel
Press briefly four times (right LED is on): XS 1B-D control unit on right channel
Press briefly five times: Normal operation/initial position

Wireless connection between motor control unit and weather station

XS MSG2-AP

Solexa or Arexa weather station

When the Solexa or Arexa control system is used together with weather station in the XS system, the "Transmission of weather and automation data" function must be activated in the basic settings of the control system (see Solexa/Arexa manual).
The Solexa or Arexa weather station will then transmit weather data, automation data and central manual operating commands every 5 seconds. This transmission is indicated by a brief flash of the LED within the weather station.

Activate the motor control unit configure/delete mode for the weather station:

XS MSG2-AP motor control unit configure/delete button **Press briefly once.** Both LEDs on the motor control unit are now on, and the weather station configure/delete mode is activated.

Configuring the weather station:	**Deleting an already configured weather station:**
Weather station PROG button: **Press briefly once** The LEDs on the motor control unit switch off, and the wireless connection is then configured. When operating, the LEDs on the motor control unit and on the weather station will flash regularly every 5 seconds.	XS MSG2-AP configure/delete button: **Press for longer than 6 secs.** The LEDs on the motor control unit switch off, and the wireless connection is then deleted.

Wireless connection between motor control unit and double control unit

XS MSG2-AP

XS 2B

Activate the motor control unit configure/delete mode for the double control units:

XS MSG2-AP motor control unit configure/delete button **Press briefly twice.** Both LEDs now flash, and the configure/delete mode for the double control unit is activated.

Configuring a double control unit:	**Delete all existing configured double control units:**
Double control unit stop button: **Press for 3 secs.** The LEDs on the motor control unit stop flashing, and the control unit is then configured.	XS MSG2-AP configure/delete button: **Press for longer than 6 secs.** The LEDs on the motor control unit stop flashing. All wireless connections with the double control units to the motor control unit are deleted.

After configuring the XS 2B double control unit, check its function by actuating the drive using the △ and ▽ buttons. The left-hand pair of buttons controls the "Left" channel, the right-hand pair the "Right" channel.

When the △ button is pressed, the connected drive must actuate to the safety position (the shade is retracted, the window is closed)! Should this not happen, please change the "Up" and "Down" cables in the motor control unit.

Wireless connection between left-hand channel motor control unit and control unit with display

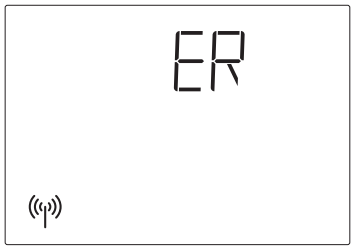
XS MSG2-AP

XS 1B-D

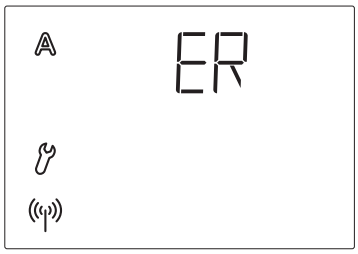
It is possible to configure an XS 1B-D control unit for the left channel and another for the right channel (for motors fitted to the "Left" or "Right" connections).

Activate the motor control unit configure/delete mode for a control unit on the left channel:

XS MSG2-AP motor control unit configure/delete button **Press briefly three times.** The left-hand LED is now on, and the mode for configuring/ deleting an XS 1B-D control unit on the left channel is activated.

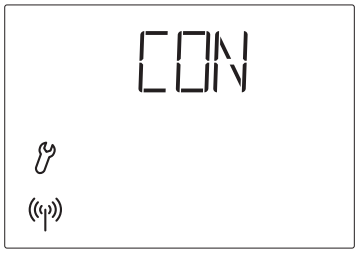
Configuring a control unit with display (Control unit basic settings menu):	**Deleting an already configured control unit:**
During initial commissioning, the screen indicates that no wireless connection has been configured:  SET Control unit set-up button: **Press for min. 3 secs.**	XS MSG2-AP configure/delete button: **Press for longer than 6 secs.** The LED on the motor control unit goes out, and the channel's wireless connection with the control unit is deleted.

You are in Automatic settings when the screen indicates:



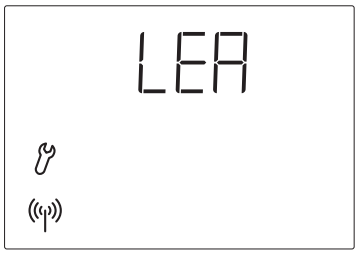
SET Control unit set-up button:
Press for min. 3 secs.

You are in Basic settings when the screen indicates:



/A Control unit manual/automatic button: **Press briefly once**

The screen indicates:



SET Control unit set-up button:
Press briefly once

The control unit is now configured for the left channel, and the LED on the motor control unit is off.

After configuring the wireless connection, you can proceed with setting the basic settings for the drive. The screen display of the control unit jumps automatically to Step 2 of basic settings (Select drive type). Please refer to the following chapter, "Basic settings", from "2. Drive types" onwards.

Should you want to apply the basic settings at a later time, press the stop button briefly once ☐ to exit the Basic settings.

After completing the configuration and basic settings, check the function of the △ and ▽ buttons by actuating the drive:

When the △ button is pressed, the connected drive must actuate to the safety position (the shade is retracted, the window is closed)! Should this not happen, please change the "Up" and "Down" cables in the motor control unit.

Wireless connection between right-hand channel of motor control unit and control unit with display

XS MSG2-AP

XS 1B-D

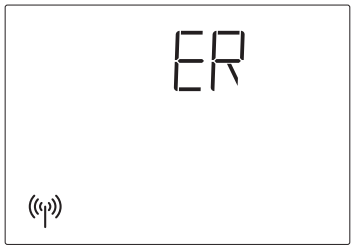
It is possible to configure an XS 1B-D control unit for the left channel and another for the right channel (for motors fitted to the "Left" or "Right" connections).

Activate the motor control unit configure/delete mode for a control unit on the right channel:

XS MSG2-AP motor control unit configure/delete button **Briefly press four times.** The right-hand LED is now on, and the mode for configuring/deleting an XS 1B-D control unit on the right channel is activated.

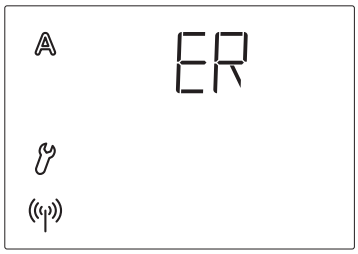
Configuring a control unit with display (Control unit basic settings menu):

During initial commissioning, the screen indicates that no wireless connection has been configured:



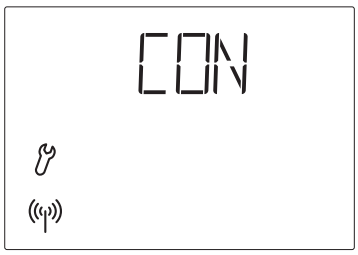
SET Control unit set-up button: **Press for min. 3 secs.**

You are in Automatic settings when the screen indicates:



SET Control unit set-up button: **Press for min. 3 secs.**

You are in Basic settings when the screen indicates:



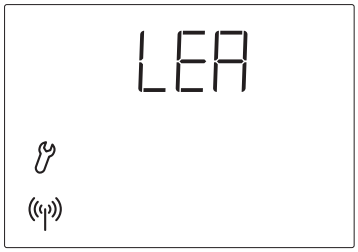
Deleting an already configured control unit:

XS MSG2-AP configure/delete button: **Press for longer than 6 secs.**

The LED on the motor control unit goes out, and the channel's wireless connection with the control unit is deleted.

Control unit manual/automatic button: **Press briefly once**

The screen indicates:



Control unit set-up button **Press briefly once**

The control unit is now configured for the right channel, and the LED on the motor control unit is off.

After configuring the wireless connection, you can proceed with setting the basic settings for the drives. The display screen of the control unit jumps automatically to Step 2 of the basic settings (Select drive type). Please refer to the following chapter, "Basic settings", from "2. Drive types" onwards.
Should you want to complete the basic settings at a later time, press the stop button briefly once ☐ to exit the Basic settings.

After completing the configuration and basic settings, check the function of the △ and ▽ buttons by actuating the drive:

When the △ button is pressed, the connected drive must actuate to the safety position (the shade is retracted, the window is closed)! Should this not happen, please change the "Up" and "Down" cables in the motor control unit.

Basic settings
(drive with XS 1B-D control unit)

Drives of motor control units whose automatic settings are obtained from an XS 1B-D control unit are normally configured after setting up the wireless connection between the motor control unit and control unit.
Changes can be subsequently made to the basic settings, such as to the operating position.

The following set-up steps will need to be addressed in succession:

1. Wireless connection to the motor control unit (as also described in the chapter "Wireless connection between motor control unit and control unit with display")
2. Type of drive to be controlled (shades or window)
3. Single or parallel operation of the drives
4. Operating position
5. Save

Accessing basic settings from normal operation (weather data screen)

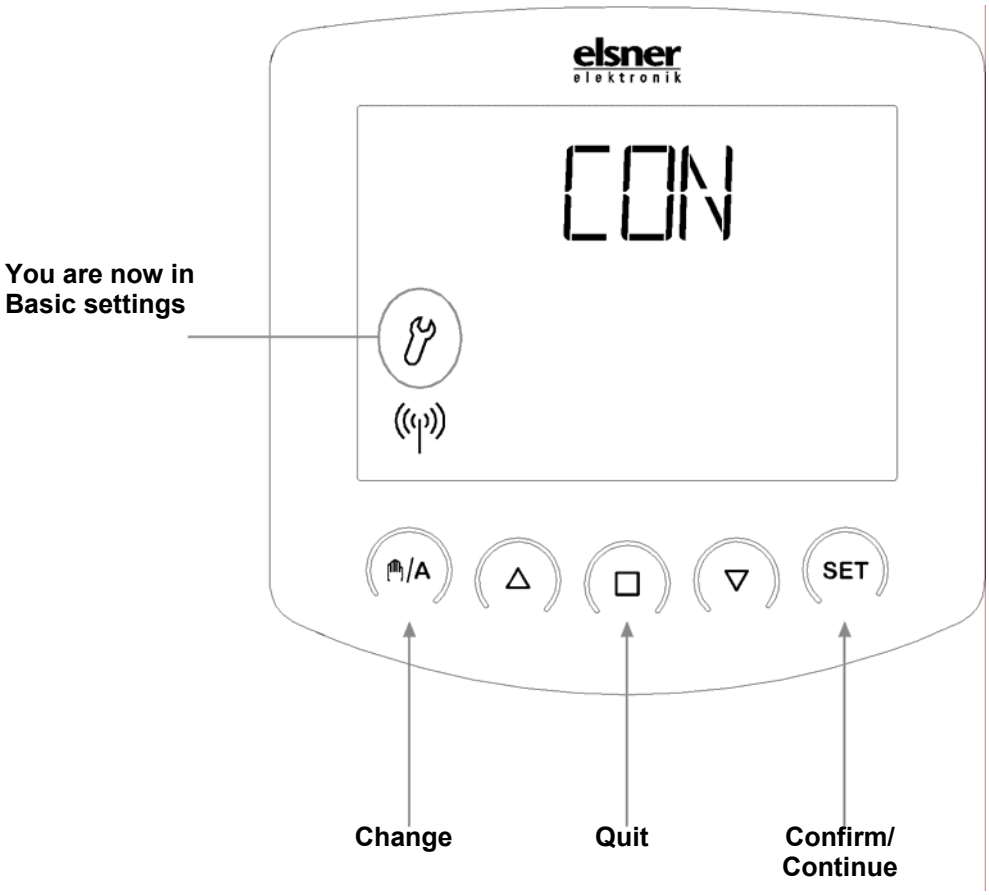
Press the SET button on the weather data screen for a minimum of 3 seconds to access the automatic settings.

You have reach the automatic settings when the two symbols A and  on the left of the screen are shown.

Once again press SET for a minimum of 3 seconds to access the basic settings.

You have reached the basic settings when the  symbol is shown on the left of the screen and the first step of the setting-up process (Wireless connection) is visible.

Assigning buttons and general notes on basic settings

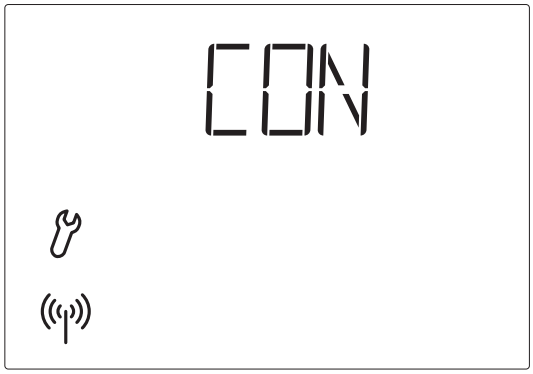


You can exit Basic settings at any time by pressing the ☐ button. The changes which have been made will not then be saved.

If no button is pressed in Basic settings for 5 minutes, the screen will automatically switch to display the temperature. Any changes made will equally not be saved.

1. Wireless connection between control unit and motor control unit

The first step of the basic settings allows you to configure a wireless connection to a motor control unit. The screen indicates:



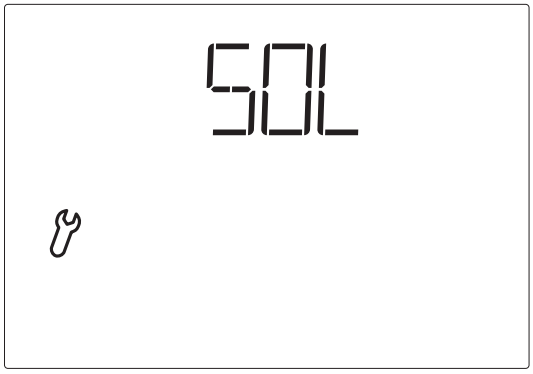
CON = Continue

To configure a wireless connection, please follow the implementations in the chapter "Wireless connection, left/right-hand channel of motor control unit – control unit with display".
To implement the basic settings or make changes, skip the configuration step by pressing SET to confirm the CON displayed.

The display screen jumps automatically to the next step.

2. Drive type (shades or window)

After the "Wireless connection" settings step, you will be asked whether the drive connected to the motor control unit operates a shade or window.
Note: This step is only displayed when a weather station has been configured in the system. When no weather station is configured, this step is skipped.



Press the ✋/A button until the desired screen appears:

SOL (Solexa, shades) when connected to an awning or blind.

AR (Arexa, window) when connected to a window.

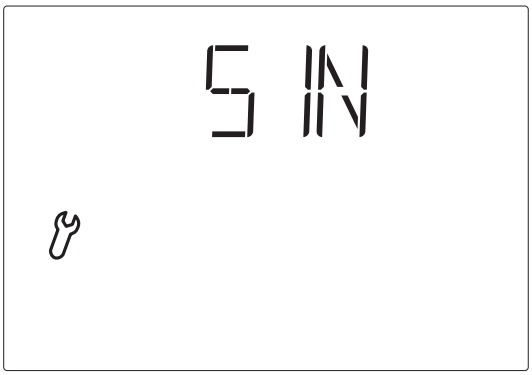
UN (Unknown) when you do not know what type of drive is connected. In this case, no automatic settings can be made.

Confirm your selection using the SET button, and you will be taken to the next settings step.

3. Single or parallel operation of the drives (for left-hand channel only)

After setting the type of drive, you will then be asked whether the drives on the motor control unit shall be operated individually or in parallel.

Both drives on the motor control unit can be operated as a group (when these are drives of the same type). The motors then actuate in parallel, and only one XS 1B-D control unit is required.
The question regarding the parallel actuation of the drives only appears when setting up the left channel. Selecting the PAR = Parallel setting enables the right channel behaves in exactly the same way as the left channel.



Press the ✋/A button until the desired screen appears:

S IN (Single) when each drive on the motor control unit shall have separate automation settings and is set and operated using a separate XS 1B-D control unit.

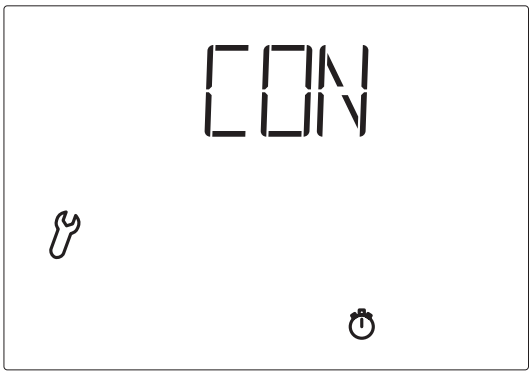
PAR (Parallel) when both drives on the motor control unit shall have the same automation settings and are operated using a single XS 1B-D control unit.

Confirm your selection using the SET button, and you will be taken to the next settings step.

If you make any changes here (switching from individual automation to parallel control, or vice-versa), please skip the following step, "4. Operating position" using CON and then save your settings as shown in „5. Saving your basic settings". To set an operating position, you should once again enter the basic settings area and configure the operating position.

4. Operating position

After setting the drive type (individual or parallel operation) comes the next step, "Configuring operating positions".



For awnings and blinds (Solexa), individual positions can be set up to which the shades are extended in Automatic mode. For venetian blinds, the opening angle of the slats can also be set (reversing).
For windows (Arexa), individual positions can be set up to which the automation opens them.

Press the /A button until the desired screen appears:

CON (Continue) to skip setting operating positions. The shade will then fully extend (close) using the automatic process, and the window will open fully. In this event, proceed as described in chapter "5. Saving your basic settings".

LEA (Learn) to configure an operating position.

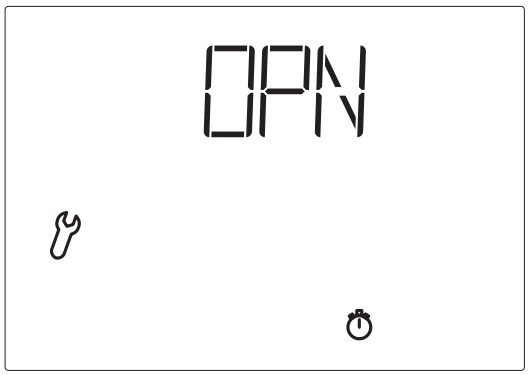
CLR (Clear, Delete) to delete an existing configured operating position. The shade will then once again fully extend (close) using the automatic process, and the window will open fully. In this event, proceed as described in the chapter "5. Saving your basic settings".

Confirm your selection using the SET button.

4.1. Retracted/closed position

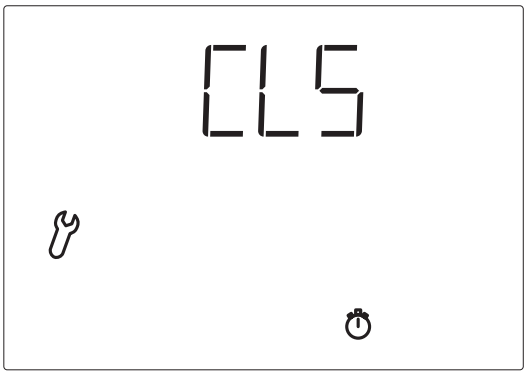
After confirmation your LEA (Configure) command, the prompt OPN (Open) will appear in the case of a shade, and CLS (Close) in the event of a window.

Shading:



First, fully retract the awning or blind using the △ button, so that no shade is provided.

Window:



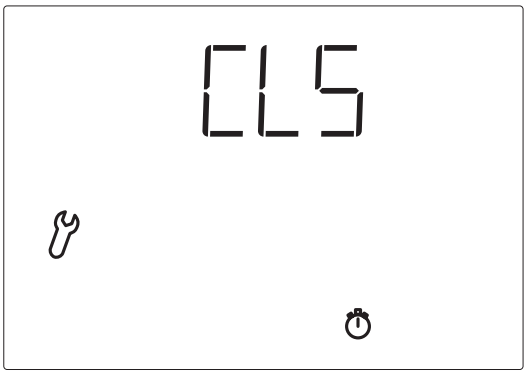
First, fully close the window using the ▽ button.

Then press the SET button to go to the next step.

4.2. Setting a desired position

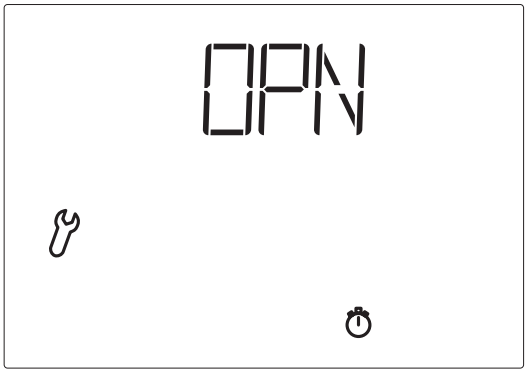
The prompt CLS (Close) will appear for a shade, and OPN (Open) for a window.

Shading:



Now extend the shade as far out as the automatic process shall later do (using the ▽ button).

Window:



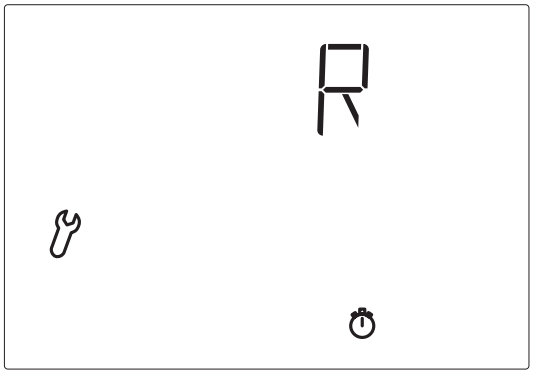
Now open the window as far as the automatic process shall later do (using the △ button).

Then press the SET button to go to the next step.

4.3. Slat angle

The prompt R (Reversing) will only appear in the event of a shade.

Shading:



With venetian blinds, use △ to open the slats to the desired angle. With awnings or if the slats should not be opened, the shade should not be operated.

Then press the SET button to complete the setting of the operating position.

5. Saving the basic settings

At the end of the basic settings, SAV (Save) will prompt you whether you want to save the settings you have made.

Press the SET button to save your entries and reach the weather data display. Press □ to exit without saving any of your basic settings.

After setting the basic settings, you can continue to set the values for the automatic functions.

If no weather station is configured in the system, no outdoor temperature, wind or brightness values are displayed. The control unit cannot be switched to Automatic mode (Ⓐ). Manual operation is still however possible.

Setting the automatic (XS 1B-D control unit) and manual operation of the drives

Automatic

Introduction

Automatic settings can only be applied when Solexa or Arexa control systems are used with the weather station.
Under **central control**, the automatic control proceeds through the Solexa or Arexa control system (see also the "Connection and combination options for the XS system" chapter). Please refer to the Solexa and/or Arexa manuals!
Under **individual control**, the automatic functions for the drives on the motor control unit are input through the respective XS 1B-D control units.

Safety notes for automatic and alarm functions

Any power failure to the motor control units or weather station will mean that the connected drives can no longer be operated! Should full functionality also be ensured during failed power supply, an emergency generator with appropriate switching from the mains network should must be installed on-site for emergency use.
Settings which have been saved in the program (motor control unit and control units) will remain unaffected by any power failure. Once the power supply is restored, the control system will be set to automatic mode.

The control unit and the motor control unit may no longer be manually accessed in the event of any disconnection of their wireless connection (for example from a wireless malfunction or drained batteries in the control unit). The XS 1B-D control units with displays retain control in their current mode (manual or automatic). Automatic mode will continue operating as set up until wireless connection is re-established, although without taking the indoor temperature into account. Wind and rain protection functionality remains active even when manual mode is set.
Normal automatic mode will continue to operate on XS 2B double control units.

In the event of any interruption to the wireless connection between the weather station and the motor control unit, the drives will return to their safety position (shades will be retracted, windows will be closed). The XS 1B-D unit screen will display the message ER (error, malfunction) instead of weather data.

Should cleaning or maintenance work be performed in proximity to the shades or windows, the control system (weather stations and motor control units) must

be without voltage by tripping the fuse fitted on site, and secured against re-activation. This is to ensure that the switched-off drives cannot operate.

A certain amount of time may pass before falling rain is recognised by the weather station, depending on the rain amount and outdoor temperature.
Please also bear in mind that in the event of a power failure and rainfall, external awnings will not be automatically retracted if no emergency generator is installed.

Note that sun protection equipment rails which are externally mounted can ice up. Operating awnings or blinds under such conditions can damage the shades and drive.

Please ensure that no one is able to enter the operating areas of electrically operated equipment components (danger of crushing!). The relevant construction rules must be observed.

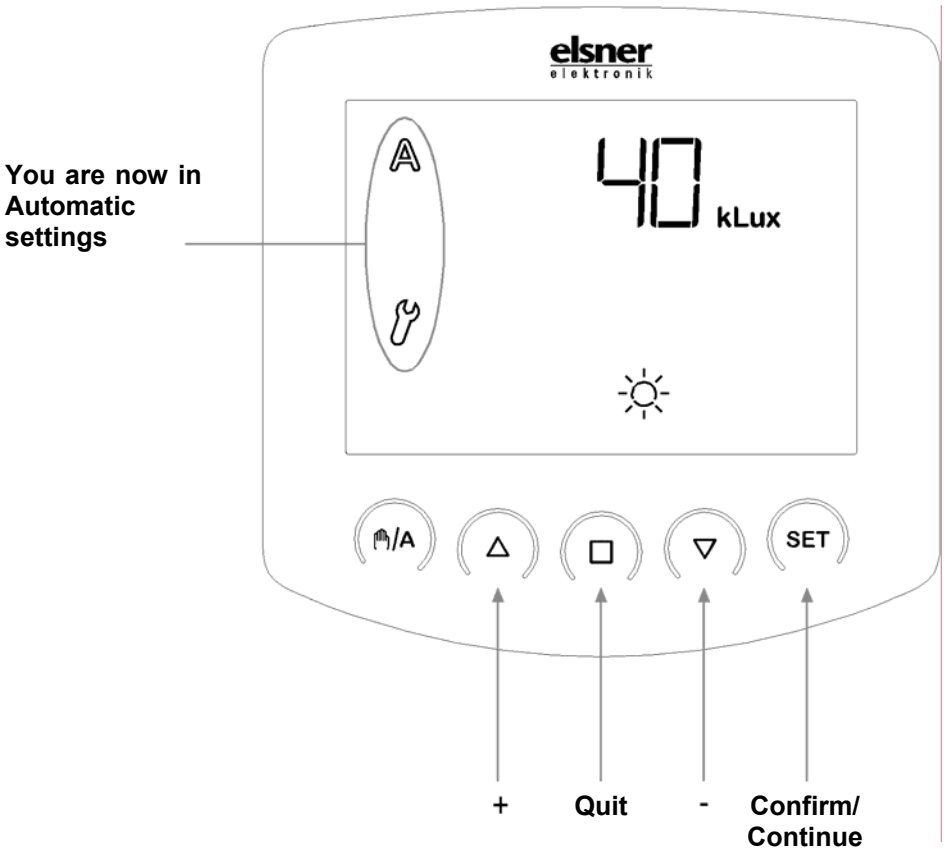
Accessing the automatic settings for shades (XS 1B-D control unit)

You can access the automatic settings in the following way:

SET **Press the SET button on the weather data screen for a minimum of 3 seconds to access the automatic settings.**

You have reached the automatic settings as soon as the two A and symbols are shown on the left of the screen. The first parameter to be set (brightness) can then be seen.

When no weather station is configured on the system, ER (Error) is displayed instead of the first parameters and no automatic settings can be applied.



You can exit Automatic settings at any time by pressing the □ button. The value changes which have been made will not then be saved.

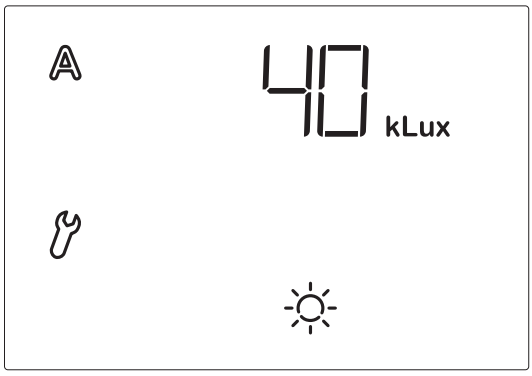
If no button is pressed in Automatic settings for 5 minutes, the display will automatically switch to display the temperature. Any changes made will equally not be saved.

Automatic functions for shades

To ensure that the awning or blind provides optimal shade, values for automatic operation must be adjusted to local conditions.
The following settings will need to be completed in succession:
A. Brightness for shade
B. Extension delay
C. Retraction delay
D. Indoor temperature guard
E. Outdoor temperature guard
F. Wind alarm
G. Rain alarm
H. Saving

A. Brightness for shade

You are first asked in the automatic settings for the brightness at which shade should be provided.

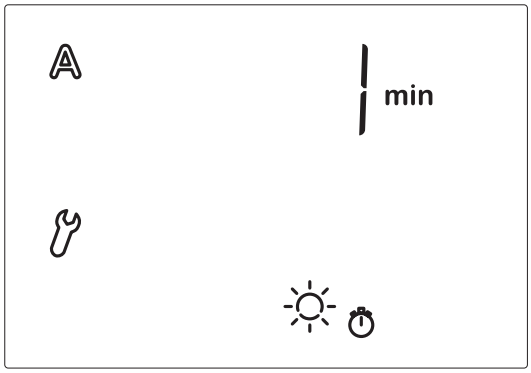


Solar intensity is displayed in Kilolux (kLux). The value 1 kLux is reached already with an overcast sky, at 20 kLux the sun starts being visible, and 100 kLux is reached during a cloudless sky at midday.

The default setting for brightness is 40 kLux.
Adjust the value by pressing △ (higher) and ▽ (lower), or select OFF (Off) to switch off this function. You can reach the OFF settings by pressing ▽ once again when "1 kLux" is displayed. Selecting OFF means that there is no control based on brightness. The automatic parameters (Chapters B to E) are therefore skipped. The shades can in this case be manually actuated, and are protected from wind and rain (if the protection functions are activated - see chapters "F. Wind alarm" and "G. Rain alarm").
Press SET to proceed to set the next parameter.

B. Extension delay

After completing the setting for brightness, you now need to provide a delay time after which the shades are extended.

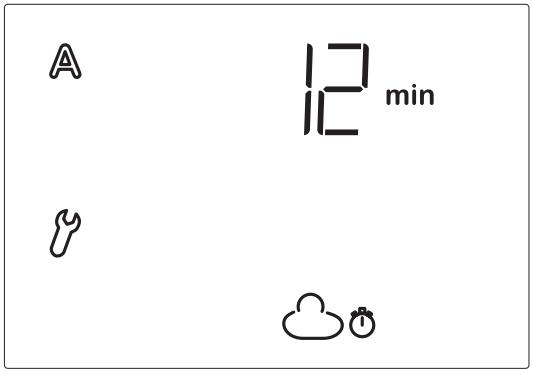


This delay ensures that the shades do not continuously retract and extend in rapidly changing light conditions.

The default setting for extension is 1 minute. Brightness must remain above its set value (item A of Automatic settings) for the following 1 minute in order to extend the shades. The shades can thus react rapidly to the sun.
Adjust the value by pressing △ (higher) and ▽ (lower). Then, press SET to proceed to set the next parameter.

C. Retraction delay

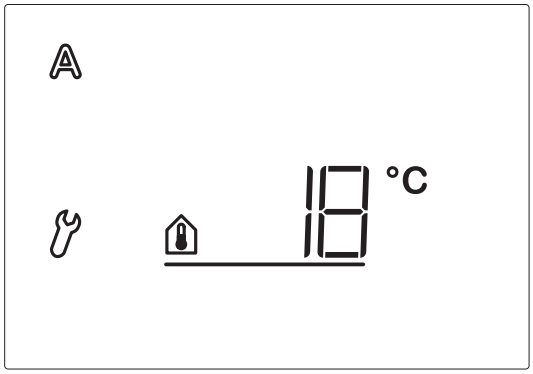
After completing the setting for extension delay, you now need to provide a delay time after which the shades are retracted.



The default setting for retraction is 12 minutes. Brightness must remain below its set value (item A of Automatic settings) for the following 12 minutes in order to retract the extended shades. The dazzle from clouds passing in front of the sun can thus be "blended out".
Adjust the value by pressing △ (higher) and ▽ (lower). Then, press SET to proceed to set the next parameter.

D. Indoor temperature guard

After setting the retraction delay, you now need to select an indoor temperature, below which the shade operation is stopped.



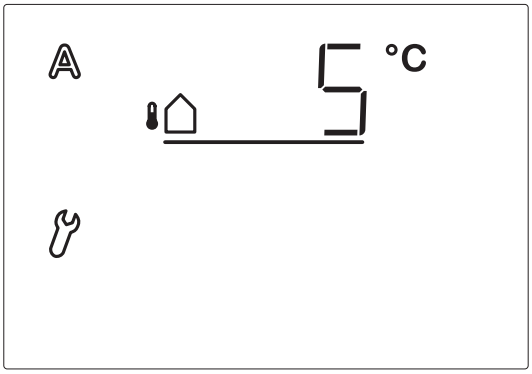
You can use the warmth of the sun with the help of the indoor temperature guard to obtain the desired room temperature (such as in winter). Only once this value is exceeded will the sun trigger the shades.

The indoor temperature guard is only applicable when the control system is in automatic mode. Manual operation of the shades is still possible.

The default setting for the indoor temperature guard is 18°C.
Adjust the value by pressing △ (higher) and ▽ (lower), or select OFF (Off) to switch off the indoor temperature guard. You can reach the OFF settings by pressing ▽ once again when "5°C" is displayed.
Then, press SET to proceed to set the next parameter.

E. Outdoor temperature guard

After setting the indoor temperature guard, you now need to select the outdoor temperature, below which the shades shall remain retracted.



The outdoor temperature guard is important when solar protection equipment is mounted outdoors. Frost can freeze awnings or blinds in their rails. Moving these shades can then damage them.

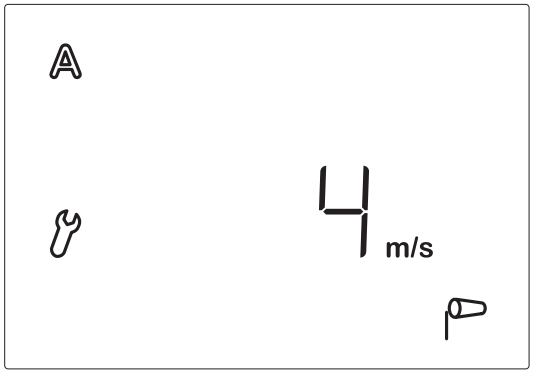
Please note that rails and other mechanical components can remain iced even when the outdoor temperature has already risen to a relatively high value. Ask a conservatory gardener about the guard temperature for your shades.
If your shades can operate at low temperatures or if these are mounted indoors, switch off the outdoor temperature guard (display OFF).

The outdoor and indoor temperature guards only operate in automatic mode. Manual operation is still possible. When manually closing or opening the shades, you must pay attention to potential icing.

The default setting for the outdoor temperature guard is 5°C.
Adjust the value by pressing △ (higher) and ▽ (lower), or select OFF (Off) to switch off the outdoor temperature guard. You can reach the OFF settings by pressing ▽ once again when "-20°C" is displayed.
Then, press SET to proceed to set the next parameter.

F. Wind alarm

After setting the outdoor temperature guard, you will now need to provide a value for the wind protection function.



The wind alarm protects shades which are mounted outdoors from damage. If the set wind value is exceeded, the awnings or blinds are retracted and manual operation is disabled.

Wind speed is entered in m/s (metres per second). The "Wind speed" table at the end of this manual can be used as a reference point for determining the optimal value.
Depending on the location of the building and the installation position of the weather station, the optimal wind value for protecting the shades can vary. You should observe the behaviour of the awnings or blinds in wind, and adjust the wind value accordingly.

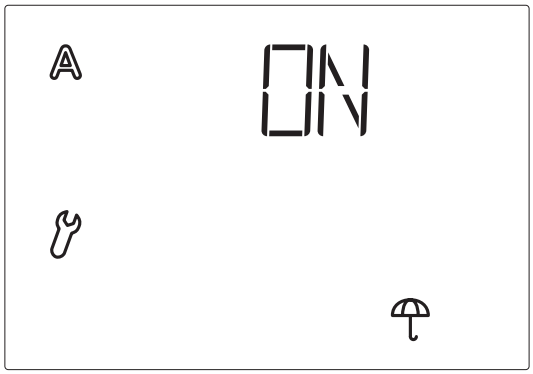
The wind alarm remains active for 5 minutes. If the set wind value is once again exceeded in these 5 minutes, the alarm time will be restarted.

The default setting for retraction due to wind is 4 m/s.

You can set the value by pressing △ (higher) and ▽ (lower), or select OFF (Off) to switch off this function. You can reach the OFF settings by pressing ▽ once again when "1 m/s" is displayed.
Then, press SET to proceed to set the next parameter.

G. Rain alarm

After setting the wind alarm, you now need to select whether to switch the rain alarm on or off.



The rain alarm protects shades which are mounted outdoors, especially awning cloth, from damage. When the rain alarm is triggered, the shades are automatically retracted, and manual operation is disabled.

The rain alarm remains active for 5 minutes. If further rainfall is detected within these 5 minutes, the alarm time will be restarted.
The rain alarm is switched on (display ON) by default. Use the arrow buttons to choose between switched on (ON display) and switched off (OFF display). Then, press SET to proceed to save your settings.

H. Saving the automatic settings

After inputting the automatic settings, SAV (Save) will prompt you whether you want to save the settings you have made.

Press the SET button to save your entries and return to the weather data screen.
Press ☐ to exit without saving any of your automatic settings.

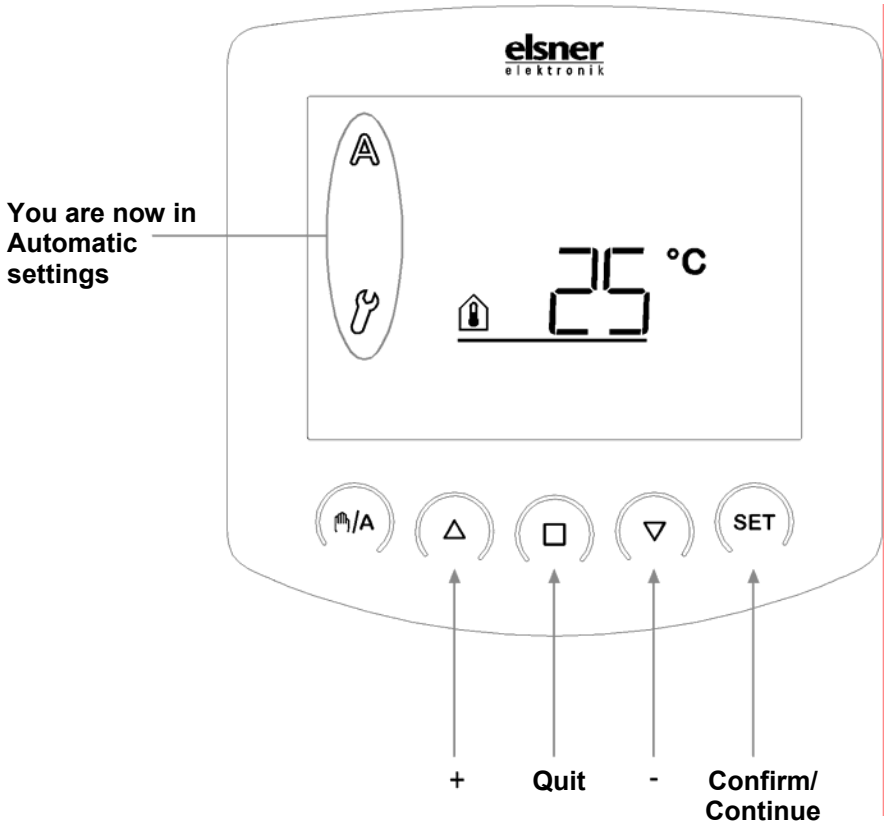
Accessing the automatic settings for windows (XS 1B-D control unit)

You can access the automatic settings in the following way:

SET **Press the SET button on the weather data screen for a minimum of 3 seconds to access the automatic settings.**

You have reached the automatic setting when the two A and symbols are shown on the left of the screen. The first parameter to be set (indoor temperature) can then be seen.

When no weather station is configured on the system, ER (Error) is displayed instead of the first parameter, and no automatic settings can be applied.



You can exit Automatic settings at any time by pressing the □ button. The value changes which have been made will not then be saved.

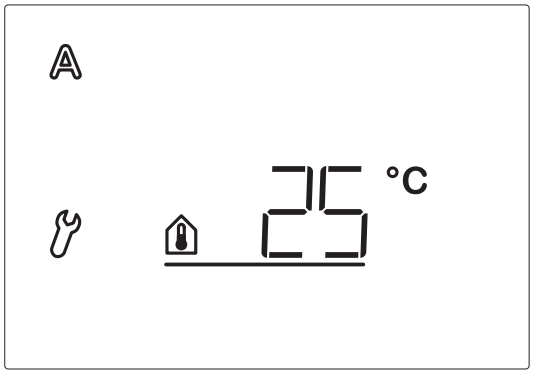
If no button is pressed in Automatic settings for 5 minutes, the display will automatically switch to display the temperature. Any changes made will equally not be saved.

Automatic functions for windows

To ensure optimal ventilation, values for automatic operation must be adjusted to local conditions.
The following settings will need to be completed in succession:
A. Indoor temperature for opening
B. Outdoor temperature guard
C. Wind alarm
D. Rain alarm
E. Saving

A. Indoor temperature for opening

In automatic settings, you are first asked for the indoor temperature at which the window shall be opened.

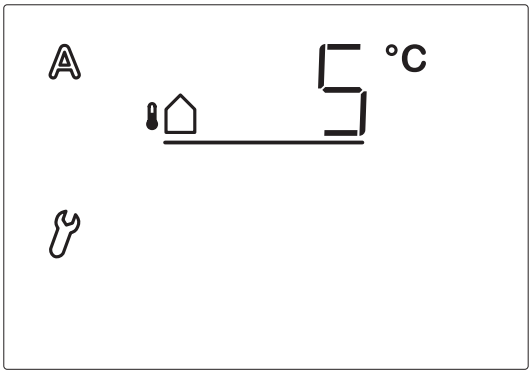


As soon as this value is exceeded, the Automatic function opens the window (unless the outdoor temperature guard value drops below limit, see the next parameter).

The default setting is 25°C.
Adjust the value by pressing △ (higher) and ▽ (lower), or select OFF (Off) to switch off this function. You can reach the OFF settings by pressing ▽ once again when "5°C" is displayed. Selecting OFF means that there is no control based on temperature. The following automatic function parameter (chapter B) is therefore skipped. The window can be actuated manually and wind and rain protection is active (if set, see chapters "C. Wind alarm" and "D. Rain alarm").
Press SET to proceed to set the next parameter.

B. Outdoor temperature guard

After setting the indoor temperature, you now need to select an outdoor temperature, below which the window shall remain closed.



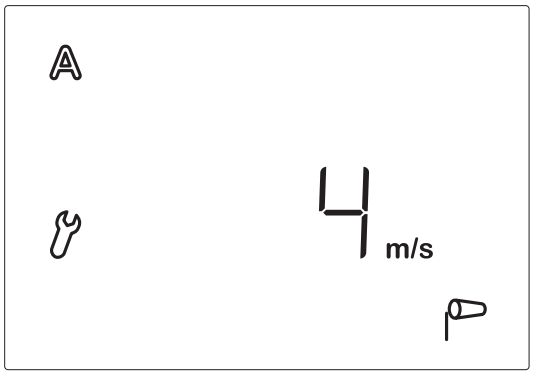
The outdoor temperature guard keeps the window closed when below the selected temperature. This means that in automatic mode, an opened window is closed and is not then re-opened when the indoor temperature value (chapter A) is exceeded.

This thus prevents energy loss from ventilation and protects plants from cold outdoor air.

The default setting for the outdoor temperature guard is 5°C.
Adjust the value by pressing △ (higher) and ▽ (lower), or select OFF (Off) to switch off the outdoor temperature guard. You can reach the OFF settings by pressing ▽ once again when "-20°C" is displayed.
Then, press SET to proceed to set the next parameter.

C. Wind alarm

After setting the outdoor temperature guard, you will now need to provide a value for the wind protection function.



The wind alarm protects the window and fixtures from damage. If the set wind value is exceeded, the window is closed, and manual operation is disabled.

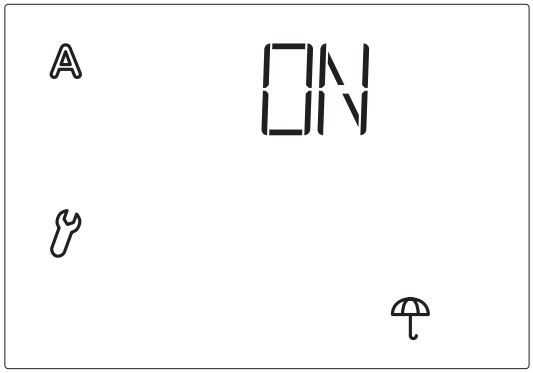
Wind speed is entered in m/s (metres per second). The "Wind speed" table at the end of this manual can be used as a reference point for determining the optimal value. Depending on the location of the building and the installation position of the weather station, optimal wind values can vary. You should observe the behaviour of the window in wind, and adjust the wind value accordingly.

The wind alarm remains active for 5 minutes. If the set wind value is once again exceeded in these 5 minutes, the alarm time will be restarted.

The default setting for closure due to wind is 4 m/s.
You can set the value by pressing △ (higher) and ▽ (lower), or select OFF (Off) to switch off this function. You can reach the OFF settings by pressing ▽ once again when "1 m/s" is displayed.
Then, press SET to proceed to set the next parameter.

D. Rain alarm

After setting the wind alarm, you now need to select whether to switch the rain alarm on or off.



The rain alarm protects the fixtures from damage. When it rains, the window is automatically retracted, and manual operation is disabled.

The rain alarm remains active for 5 minutes. If further rainfall is detected within these 5 minutes, the alarm time will be restarted.
The rain alarm is switched on (display ON) by default. Use the arrow buttons to choose between switched on (ON display) and switched off (OFF display). Then, press SET to proceed to save your settings.

E. Saving the automatic settings

After setting the automatic settings, SAV (Save) will prompt you whether you want to save the settings you have made.

Press the SET button to save your entries and return to the weather data screen.
Press ☐ to exit without saving any of your automatic settings.

Personal setting data for automatic functions

Shade A:

Shading when brightness exceeds		kLux
Extension time delay		Min.
Retraction time delay		Min.
Shade when indoor temperature exceeds		°C
Outdoor temperature guard below		°C
Wind alarm from		m/s
Rain alarm		(Yes/No)

Shade B:

Shading when brightness exceeds		kLux
Extension time delay		Min.
Retraction time delay		Min.
Shade when indoor temperature exceeds		°C
Outdoor temperature guard below		°C
Wind alarm from		m/s
Rain alarm		(Yes/No)

Window A:

Open when indoor temperature exceeds		°C
Outdoor temperature guard below		°C
Wind alarm from		m/s
Rain alarm		(Yes/No)

Window B:

Open when indoor temperature exceeds		°C
Outdoor temperature guard below		°C
Wind alarm from		m/s
Rain alarm		(Yes/No)

Manual operation

The XS 2B double control unit

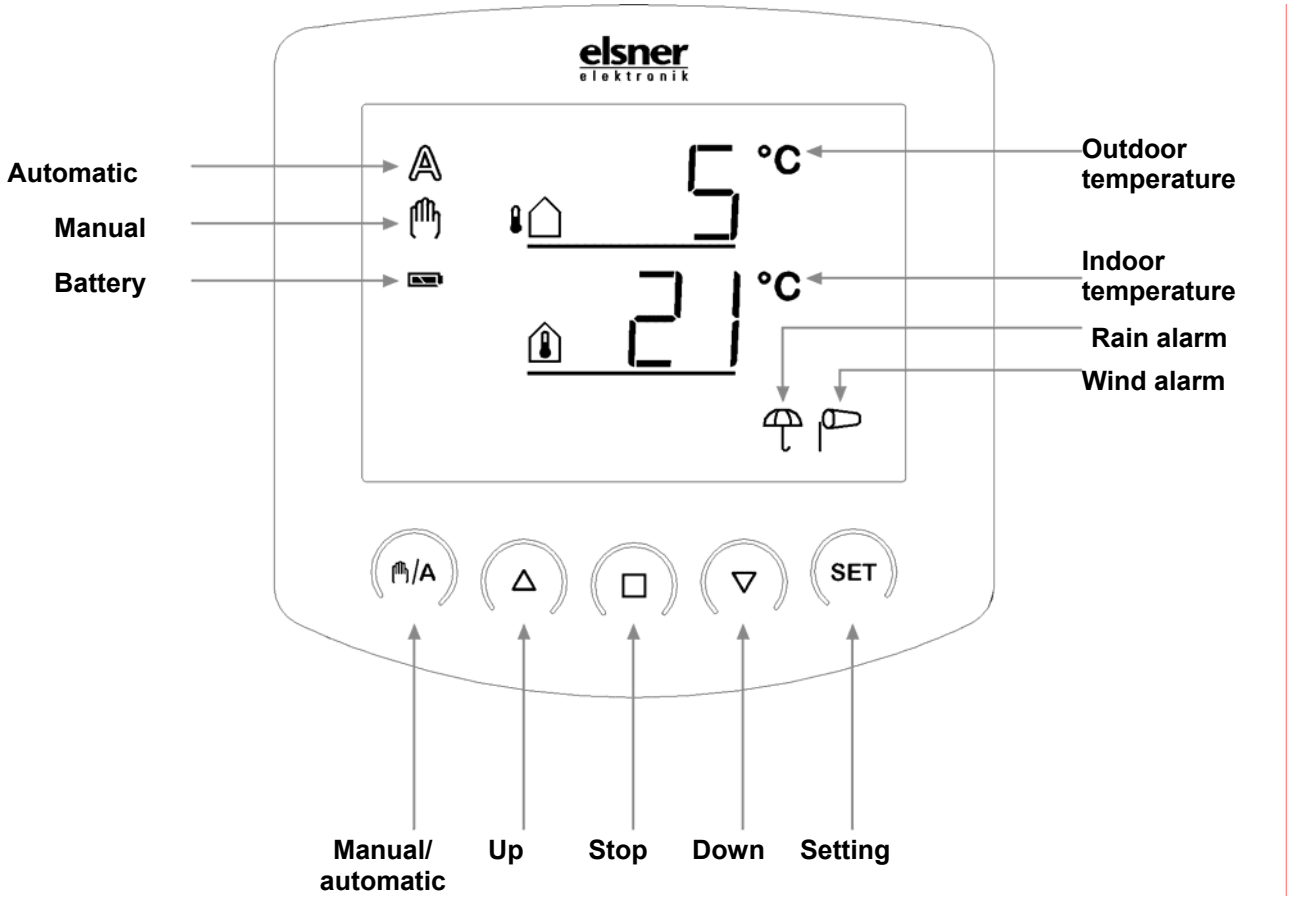
Up Stop Down

The drives connected to the motor control unit can be manually operated using the left-hand pair of buttons △, ▽ (for a drive connected to the "Left" terminal) and right-hand pair △, ▽ (for a drive connected to the "Right" terminal). The arrow buttons are equipped with an automatic timer. A brief press (less than 1 second) allows the drive to be precisely positioned. When the button is pressed for longer than 1 second, the drive will independently move to its end-position. Further pressing of either of the arrow buttons during normal operating stops the relevant drive, while pressing □ stops both drives.

It is always the current active operating command that is followed, meaning that both manual and automatic operating commands have the same priority, and interrupt each other. Manual operation is only disabled when running alarm commands (rain or wind) from the weather station.

The XS 1B-D control unit with display

Assigning buttons and weather data screen display icons



In its initial position, the control system's control unit displays the current outdoor temperature (upper row) and indoor temperature (lower row), as well as the function mode (automatic or manual), battery status and current alarm messages for rain or wind. Weather data is updated once per minute (as well as upon any button press).

Outdoor temperature

Indoor temperature

Battery icon (indicates the battery charge) – full

- half-full

- empty

Automatic mode active

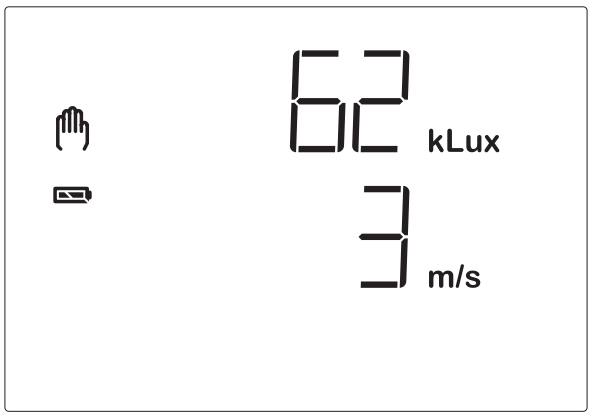
Manual mode active. The connected drive was manually actuated (using the arrow buttons) or the ✋/A button was pressed. The automatic functions are therefore switched off, meaning that there is no control based on brightness or temperature. The rain alarm and wind alarm safety functions remain active. The control system remains in manual mode until the ✋/A button is used to switch to automatic mode.

Rain alarm. Outdoor awnings are retracted, and manual operation is disabled. The rain protection function can be switched on and off in the automatic function settings (for example for indoor awnings or blinds).

Wind alarm. Outdoor awnings or blinds are retracted, and manual operation is disabled. The wind protection function can be configured and switched off in the automatic function settings (for example for indoor awnings).

Brightness and wind speed displays

When the temperature is displayed, press the SET button once briefly to display the current brightness (in kilolux, kLux) and wind speed (in metres per second, m/s). Values are updated every 4 seconds.



Note: In the first approx. 90 seconds or so following the resumption of voltage to the weather station, the wind value will not be displayed correctly (such as following a power failure, or during commissioning). When the wind alarm is switched on, manual operation is thus disabled in this interval.

Once again briefly pressing SET will return you to the temperature display (or to the central command display, see next chapter). After approx. 60 seconds, the display automatically switches back to display the temperature.

Using the buttons

Manual control as well as the default settings for automatic functions and basic settings for the connected shades is achieved using the buttons on the control unit.


Up


Stop


Down

The connected awnings or blinds can be manually operated using the △, □ and ▽ buttons. The arrow buttons are equipped with an automatic timer. A brief press (less than 1 second) allows the awning or blind to be precisely positioned. When the button is pressed for longer than 1 second, the drive will independently move to its end-position. Pressing □ stops the drive.
Manual operation is disabled during any rain or wind alarm.

Manual/automatic

The /A button switches back and forth between automatic mode (A display) and manual mode (display). Following manual operation using the △, □ or ▽ buttons, the control system is in manual mode. The automatic functions are then switched off, although the rain and wind alarms are still active.
Press the /A button to once again set the control system back to Automatic.

Pressing the **SET** button briefly displays brightness and wind speed.
Pressing for a longer period opens the settings area for automatic functions and basic settings (see respective chapters).

Querying service data

The software version of the control unit and the motor control unit can be shown on the screen. The service area can be accessed from Basic settings by pressing SET for a longer period (3 seconds). The software version of the control unit (PAN, panel) is initially displayed, and again briefly pressing SET shows the software version of the motor control unit (SOF, software). The displayed number 10 refers to Version 1.0, 12 to 1.2, etc. You can exit the service data display by once again briefly pressing SET.

Simultaneous use of multiple control units

When a drive can be manually actuated using multiple control units, it is the last received command that is always being performed. This means that the operating command of a control unit is interrupted when a button is pressed on another control unit.

Service

Maintenance and care

The housing and screens of the control units shall be cleaned as required using a dry cloth.

Abbreviations

kLux: Kilolux (= 1000 Lux), unit of brightness
m/s: Metre per second, unit of wind strength

ER Error
OFF Off, switched off
ON On, switched on
SAV Save, Save the applied settings

Table: Wind speed

Description	m/s	km/h	Beaufort	Knots
No wind	< 0,3	< 1,1	0	< 1
Almost no wind	0,3-1,5	1,1-5,4	1	1-3
Very light wind	1,6-3,3	5,5-11,9	2	4-6
Light wind	3,4-5,4	12,0-19,4	3	7-10
Moderate wind	5,5-7,9	19,5-28,4	4	11-16
Fresh wind	8,0-10,7	28,5-38,5	5	17-21
Very fresh wind	10,8-13,8	38,6-49,7	6	22-27
Strong wind	13,9-17,1	49,8-61,5	7	28-33
Very strong wind	17,2-20,7	61,6-74,5	8	34-40
Storm	20,8-24,4	74,6-87,8	9	41-47
Strong storm	24,5-28,4	87,9-102,2	10	48-55
Violent storm	28,5-32,6	102,3-117,3	11	56-63
Hurricane	> 32,6	> 117,3	12	> 63

XS 1B-D control unit factory settings

The following default settings for automatic function values are saved prior to delivery:

Shading:

- Shading at solar brightness > 40 kLux
- Time delay until extension of shades to provide protection from sun: 1 min, retraction: 12 min
- Guard for indoor temperature > 18°C
- Guard for outdoor temperature > 5°C

- Wind alarm from 4 m/s
- Rain alarm switched on

Window:
- Open from indoor temperature > 25°C
- Guard for outdoor temperature > 5°C
- Wind alarm from 4 m/s
- Rain alarm switched on

Error messages XS 1B-D control unit

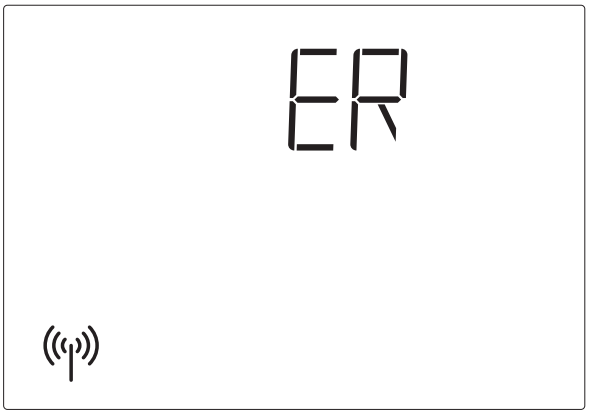
Instead of temperature, brightness and wind speed values, error messages can be displayed onscreen in the weather data display.

BATTERY fault

Only the battery is displayed, no other icons or values. Manual operation is possible.

Cause: The batteries in the control unit are empty and must be replaced. Caution: The function of the control units can no longer be guaranteed.
Procedure: Replace the batteries, as described in chapter "Inserting the batteries" (XS 1B-D installation).

WIRELESS fault

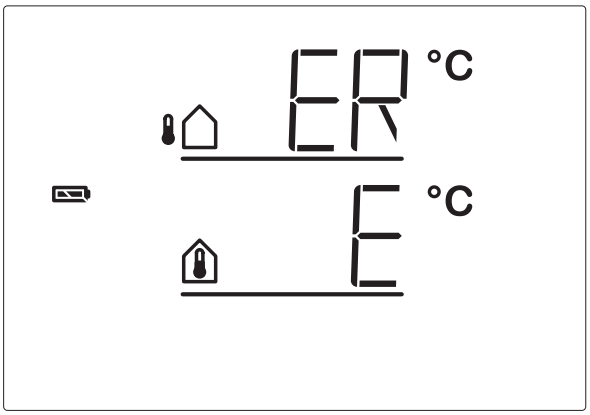


ER and the wireless icon are displayed on the screen.

Cause: No wireless connection between control unit and motor control unit. The motor control unit is out of order (such as, it has no voltage) or the wireless connection has been interrupted or has not been configured.
Procedure: The configuration of the wireless connection between the weather station and the control unit is described in chapter "Basic settings: 1. Wireless connection, motor control unit – control unit".

Troubleshooting should only be performed by trained specialist personnel. You shall therefore please contact y installer.

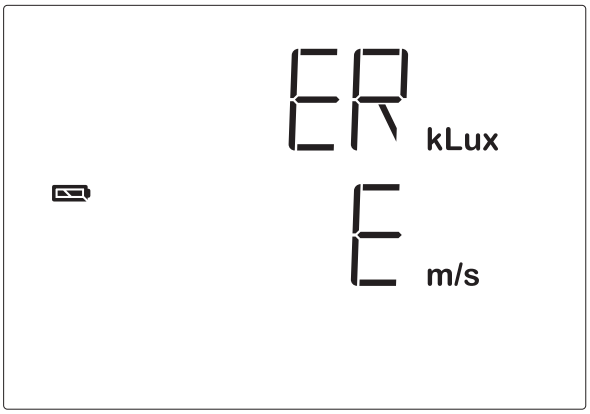
WEATHER DATA fault



ER instead of the outdoor temperature
or
E instead of the indoor temperature

Cause: The weather station's outdoor temperature sensor and/or the indoor temperature sensor in the control unit is/are faulty.
Procedure: The relevant sensor must be checked.

Troubleshooting should only be performed by trained specialist personnel. You shall therefore please contact y installer.



ER instead of brightness or
E instead of wind speed

Cause: The brightness sensor and/or wind sensor of the weather station is/are faulty.
Procedure: The relevant sensor must be checked.

Troubleshooting should only be performed by trained specialist personnel. You shall therefore please contact y installer.

Technical specifications

The wireless frequency used is 868.2 MHz.

The following standards were used for assessing the products with regard to electromagnetic compatibility:

- EN 61000-6-1 (2004)
- EN 61000-6-3 (2001)
- ETSI EN 301 489-1 V1.6.1 (2005-09)
- ETSI EN 300 220-1 V1.3.1 (2000-09)
- ETSI EN 300 200-3 (2000-09)

The products were tested by an accredited EMC laboratory in accordance with the abovementioned standards.

XS MSG2-AP technical specifications

Operating voltage	230 V AC / 50 Hz
Dimensions	approx. W=160 mm, H=80 mm, D=57 mm
Ambient temperature	-20…+50°C
Protection class	IP 44

XS 2B technical specifications

Operating voltage	2 x 1.5 V (2 AA/Mignon/LR6 batteries) or 2 x 1.2 V (2 AA/Mignon/LR6 rechargeable batteries)
Dimensions	approx. W=103 mm, H=48 mm, D=33 mm
Ambient temperature	-10…+50 °C
Air humidity	max. 80% rH, avoid condensation

XS 1B-D technical specifications

Operating voltage	2 x 1.5 V (2 AA/Mignon/LR6 batteries) or 2 x 1.2 V (2 AA/Mignon/LR6 rechargeable batteries)
Dimensions	approx. W=103 mm, H=98 mm, D=28 mm
Ambient temperature, storage	-10…+50 °C
Ambient temperature, operation	0…+50 °C
Air humidity	max. 80% rH, avoid condensation

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