Product Manual

ABB i-bus® EIB / KNX
Shutter Actuator Modules for the Room Controller JA/M 2.230.1 JA/M 2.24.1

Intelligent Installation Systems

This manual describes the function of the Shutter Actuator Modules JA/M 2.230.1 and JA/M 2.24.1 for operation in the Room Controller Basis Device with the application program “Room Controller modular, 8f/1.2”.
Subject to changes and errors excepted.

Exclusion of liability:
Despite checking that the contents of this document match the hardware and software, deviations cannot be completely excluded. We therefore cannot accept any liability for this. Any necessary corrections will be inserted in new versions of the manual.
Please inform us of any suggested improvements.

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1 General

The Shutter Actuator Modules JA/M 2.230.1 and JA/M 2.24.1 are snapped into a module slot of the Room Controller Basis Device RC/A 8.1.
They are used to control motors such as shutter motors or ventilation flap drives.

The Room Controller Basis Device establishes the connection to the ABB i-bus® EIB / KNX installation bus.

The devices have two output channels, via which the two drives can be controlled independently. They are automatically linked to the incoming supply when they are snapped into the base unit. Plug-in screw terminals are available on the output side.

The comprehensive functionality is defined by programming the Room Controller Basis Device with the EIB Tool Software (ETS).
It is identical for both devices.

2 Device technology

2.1 JA/M 2.230.1 Shutter Actuator Module, 2-fold, 230 V AC

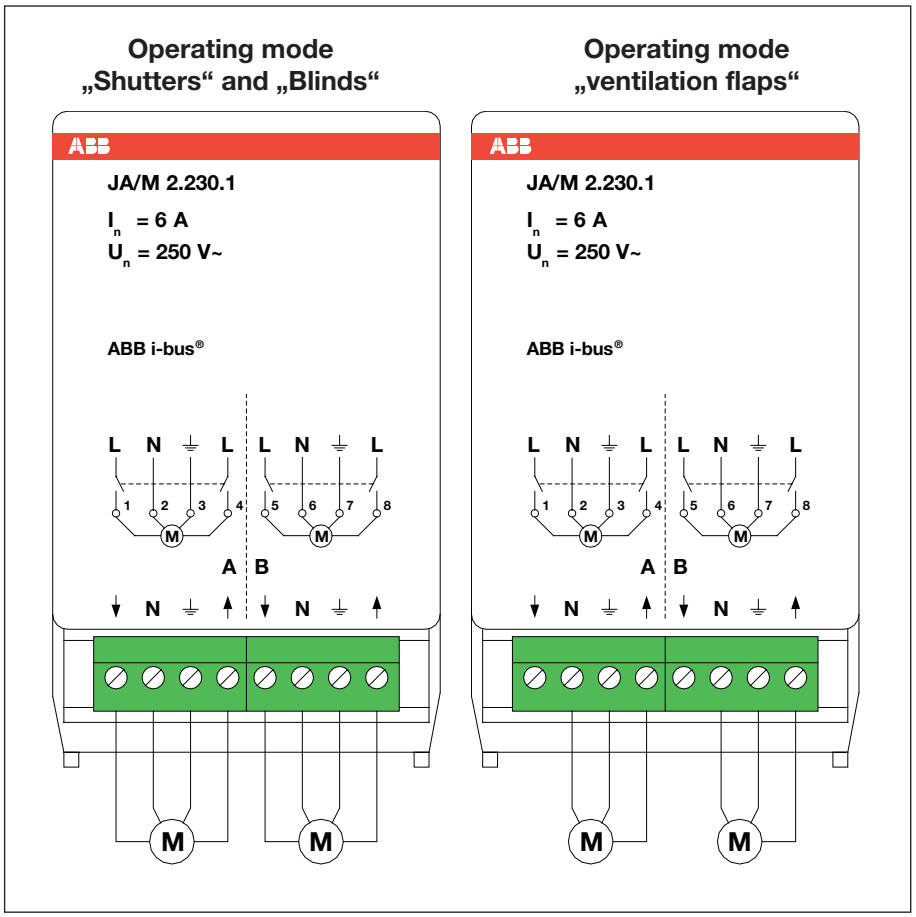
The 2-fold Shutter Actuator Module is a device for insertion in the Room Controller Basis Device. Using relay contacts, it switches two independent electric drives such as shutter motors or ventilation flap drives.

Both the incoming supply and the internal voltage are supplied via the Room Controller Basis Device. Contact is automatically established when the modules are snapped in place.

2.1.1 Technical data

Power supply/incoming supply	– Internal supply	via the Room Controller Basis Device, contact made via contact system on base of module
	– Incoming supply	0...264 V AC, contact made via contact surfaces at the front
Outputs	– 2 load circuits	Relay outputs with changeover contacts, UP/DOWN mechanically interlocked Max. switching current: 6 A (AC1/AC3) at 230 V AC
Connections	– Load circuits	2 x 4-pole screw terminals with plug-in connection
	– Wire ranges	0.2…2.5 mm^2 finely stranded 0.2…2.5 mm^2 single-core
Ambient temperature range	– Storage	– 25 °C ... 55 °C
	– Transport	– 25 °C ... 70 °C
Design	– Type of installation	For snapping into the Room Controller Basis Device
	– Housing, colour	Plastic housing, anthracite, halogen-free
	– Housing dimensions (WxHxD)	49 x 42 x 93
	– Weight	0.11 kg
CE norm	– in accordance with the EMC guideline and the low voltage guideline	

2.1.2 Circuit diagram



2.1.3 Description of the inputs

The Device has two outputs A and B for the directions UP and DOWN. Each output has two relay outputs working as a change-over contact. They are mechanically interlocked, so that the two contacts cannot be live at the same time.

2.1.4 Assembly and installation

The device is solely intended for ooperation in the Room Controller Basis Device. It can be snapped into any module slot. The mounting position can be selected as required.

2.2 JA/M 2.24.1 Shutter Actuator Module, 2-fold, 24 V AC

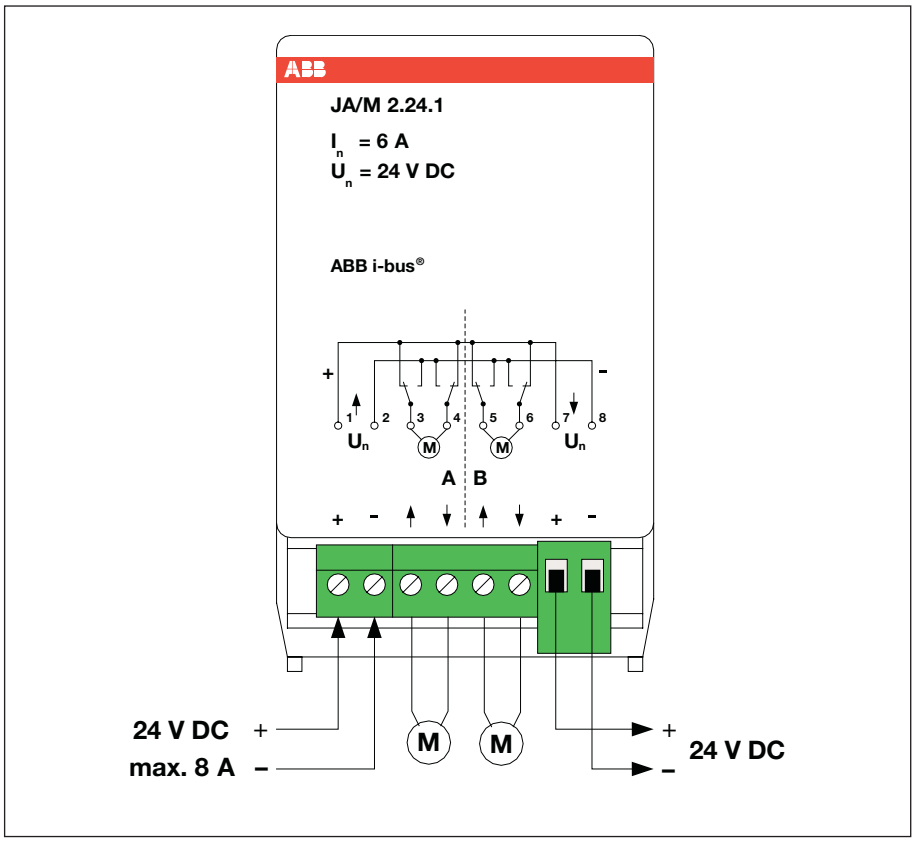
The 2-fold Shutter Actuator Module is a device for insertion in the Room Controller Basis Device. Using relay contacts, it switches two independent electric drives such as shutter motors or ventilation flap drives. The nominal switching voltage is 12 or 24 V DC.

The internal supply is carried out via the Room Controller Basis Device. Contact is established automatically when the module is snapped in place.

2.2.1 Technical data

Power supply/incoming supply	– Internal supply	via the Room Controller Basis Device, contact made via contact system on base of module
	– Incoming supply	0...48 V DC
Outputs	– 2 load circuits	Relay outputs with changeover Max. switching current: 6 A
Connections	– Load circuits	2 x 2-pole screw terminals with plug-in connection
	– Incoming supply	1 x 2-pole screw terminal with plug-in terminal each for connection and looping through
	– Wire ranges	0.2…2.5 mm^2 finely stranded 0.2…4.0 mm^2 single-core
Ambient temperature range	– Storage	– 25 °C ... 55 °C
	– Transport	– 25 °C ... 70 °C
Design	– Type of installation	For snapping into the Room Controller Basis Device
	– Housing, colour	Plastic housing, anthracite, halogen-free
	– Housing dimensions (WxHxD)	49 x 42 x 93
	– Weight	0.11 kg
CE norm	– in accordance with the EMC guideline and the low voltage guideline	

2.2.2 Circuit diagram



2.2.3 Description of the inputs

The Device has two outputs A and B for the directions UP and DOWN. Each output has two relay outputs working as an inverted change-over contact. In the position MOVE both relay outputs switch in the opposite direction “+” and “–“. In the idle position both outputs switch in the same direction.

2.2.4 Assembly and installation

The device is solely intended for operation in the Room Controller Basis Device. It can be snapped into any module slot. The mounting position can be selected as required.

3 Application and planning

This section contains practical tips and application examples for using the device.

3.1 The three operating modes

It is possible to choose between three operating modes for each output:

1. **Shutter**
   This operating mode is used to control a shutter drive. The drive is used on the one hand for moving the shutter position (upwards/downwards). On the other hand, the same drive controls the positioning of the louvres.
2. **Blinds**
   This operating mode is used to control a blind drive mechanism. The drive moves the blinds upwards and downwards. In contrast to the shutter function, no objects are available for controlling louvres.
3. **Ventilation flaps/switch mode**
   In this operating mode, the output controls a ventilation flap drive or it is used for switching a load e.g. in order to use a free output.

3.2 General functions

3.2.1 Travel times/ Total travel time

The total travel time is the period required by the shutter to carry out a movement from the upper end position to the lower end position (see Fig. 1). If the Shutter Actuator Module receives an UP or DOWN movement command, the corresponding output is switched and the shutter is moved in the required direction.

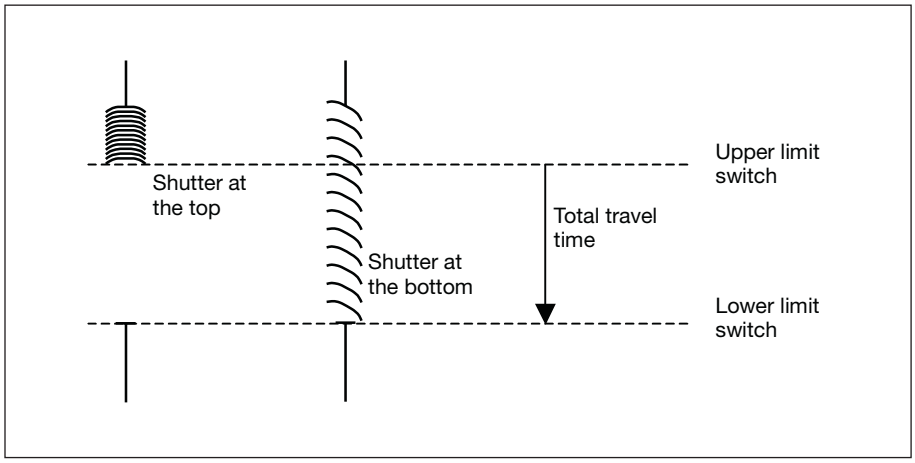


Fig. 1: Total travel time

The shutter is moved in this direction until the Shutter Actuator Module receives a stop command or until the upper or lower end position is reached and the motor is switched off via the limit switch.

If the motor is switched off via the limit switch, the corresponding output contact of the Shutter Actuator Module remains closed until the parameterised total travel time has elapsed plus a selectable “overrun period”. Only then is the voltage no longer applied at the output.

Note: The current position of the shutter during operation is also determined with the help of the total travel time. The total travel time should therefore be measured and set as precisely as possible, particularly if the functions “Move to position” or “Automatic control” are used. Only then is it possible to calculate the current position of the shutter accurately.

Duration of louvre adjustment
After an upward movement of the shutter, the louvres are open (horizontal louvre position). If the shutter is now lowered, the louvres are first closed (vertical louvre position) and the shutter moves downwards. If the shutter is now raised again, the louvres are first opened again (horizontal louvre position) and then the shutter moves upwards (see Fig. 2).

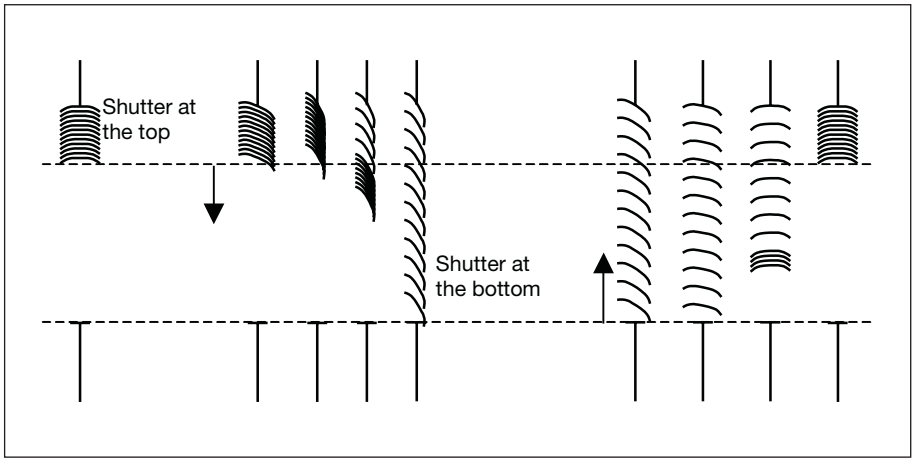


Fig. 2: Louvre position when raising and lowering the shutter

Short movements can be carried out by the Shutter Actuator Module in order to precisely adjust the louvre angle. The shutter is moved in the required direction for a brief parameterised period – the so-called duration of louvre adjustment – and a louvre adjustment is thus carried out (so-called STEP command). The shorter the period that is selected for louvre adjustment, the more precisely the louvre angle can be adjusted.

Measuring the total travel time for louvre adjustment
The total travel time of the louvres from open (horizontal louvre position) to closed (vertical louvre position) can also be determined in a simple way: Open the louvres fully. Then count how many louvre adjustments are necessary in order to close the louvres completely. The total travel time for the louvre adjustment is produced from the number of louvre adjustments multiplied by the duration. This value is entered as a parameter.

Pause on reverse, pause between two movements
So that the shutter drive is not damaged by a sudden change in direction, the output contacts are de-energised for the duration of the pause on reverse and the output contact for the required direction is only switched once the period has elapsed.

Note: When parameterising the pause on reverse, the technical data of the drive manufacturer must be taken into account!

The output contacts for the UP and DOWN directions are mechanically interlocked so that voltage cannot be applied simultaneously at both contacts and thus damage the drive.

Start-up delay, deceleration delay
Many motors do not immediately generate their full capacity when they are switched on, but only with a start-up delay of several milliseconds. Other motors also continue to run for several seconds once they are switched off (deceleration delay).

Note: These parameters must only be entered if a more precise positioning of the shutter is required. In general, the basic settings of these parameters are sufficient for normal operation. During the parameterisation, the technical data of the respective drive manufacturer must be taken into account!

3.2.2 Reaction on voltage failure

Reaction on bus voltage failure
The reaction can be parameterised. The outputs can adopt any state or remain unchanged.

Provided that the supply voltage of the Room Controller is maintained, the outputs can continue to be operated normally if the operation is carried out via push buttons which are connected to binary input modules of the same Room Controller.

Reaction on bus voltage recovery
The reaction can be parameterised. The outputs can adopt any state or remain unchanged.

Reaction after programming
The reaction is identical to the reaction after bus voltage recovery. During programming, the stored scene values and presets are reset to the parameterised values.

3.2.3 Safety functions

Weather alarm
To protect the shutter against unfavourable weather conditions, the Shutter Actuator Module can receive 1-bit weather alarm commands. Typical causes for a weather alarm are storms, frost or rain. During a weather alarm, the shutter is moved into a parameterised safety position and the operation is blocked.

The Shutter Actuator Module can monitor up to two independent weather alarms and react in different ways.

The weather detectors can be monitored cyclically by the Shutter Actuator Module i.e. the weather detectors send their status cyclically and the Shutter Actuator Module expects this signal. If the signal is omitted, the Shutter Actuator Module assumes that the weather detector is faulty or the bus communication has been interrupted and triggers the weather alarm.
The monitoring time in the Shutter Actuator Module should be at least twice as long as the cyclical transmission period of the weather detector so that the shutters are not moved immediately into the weather alarm position when a signal is omitted (e.g. due to a high bus load).

When the weather alarm is reset, the shutter is moved into a parameterisable position and the operation is enabled.

Forced operation
The shutters can be moved together to a forced position via a 2-bit command and the operation can be disabled.

When forced operation is activated, the Shutter Actuator Module is informed at the same time whether the shutter should be moved to the upper forced position or to the lower forced position. The operation of the shutter is disabled.

When forced operation is deactivated, the shutter is moved into the parameterised position and the operation is enabled.

The forced operation function is suitable for example for raising blinds and shutters when the windows are being cleaned.

Note: Please note that the cleaning staff are not sufficiently protected against the shutters being raised by the forced operation function alone. Adequate protection must be guaranteed in an appropriate manner.

Priority of the safety functions
The weather alarm and forced operation safety functions have priority over all the other functions of the Shutter Actuator Module. If one of these functions is activated for an output, the operation of the output is blocked for other movements.

A priority can also be defined among the safety functions in order to control the shutter more accurately if more than one safety function is activated at the same time.

3.3 Movement into position

3.3.1 Determining the current position

Reference movement
The Shutter Actuator Module permanently determines the current position of the shutter as well as the position of the louvre angle using the duration of the individual movements. Slight inaccuracies can arise over longer periods when determining the position due to various causes. The Shutter Actuator Module thus uses the upper and lower end position to clearly define the current position of the shutter. Each time the shutter is located in the upper and lower end position, the position is updated in the memory of the Shutter Actuator Module.

If the end positions are not reached during normal operation, a reference movement to the upper or lower end position can be triggered via a bus telegram. Depending on the parameterisation, the shutter remains in the reference position after the reference movement or reverts to the saved position.

Direct and indirect movement into position
Via the parameter *Move to position*, it can be set whether the shutter should either move directly from its current position into the target position or whether a reference movement should be carried out indirectly via the start position (upper or lower end position) for each movement into a defined target position.

3.3.2 Move to position 0...100 %

The shutter can be moved into any position via an 8-bit value. In the “Shutter” operating mode, the louvres can also be positioned at any angle via an 8-bit value.

In this way, it can be decided for each movement command which position the shutter should move into. The position can be set for example on a display or in a visualisation program (see Fig. 3).

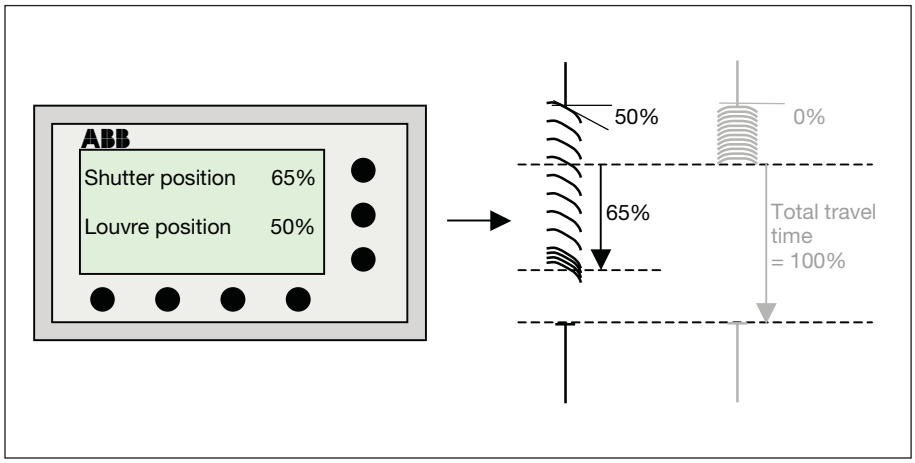


Fig. 3: Move to position 0...100 %

3.3.3 Move to preset position

In the Shutter Actuator Module, up to 2 preset positions can be parameterised for each output individually and then retrieved via a 1-bit command.

When moving into one of these preset positions, the target position must have been set beforehand either via the parameters during programming or via the function “Set preset position” (see chapter 1.3.4). This target position can then be retrieved as often as required, for example by pressing a switch sensor (see Fig. 4).

3.3.4 Set preset position

The preset position can be modified very simply via a 1-bit command. To do so, the shutters are moved into the required preset position via UP/DOWN commands as well as STOP/louvre adjustment commands. This new position is then adopted via a 1-bit command as a new preset position in the memory of the Shutter Actuator Module.

Application example: The shutters are moved into a preset position with a short push button action while the current position is adopted as a new preset position with a long push button action (see Fig. 4).

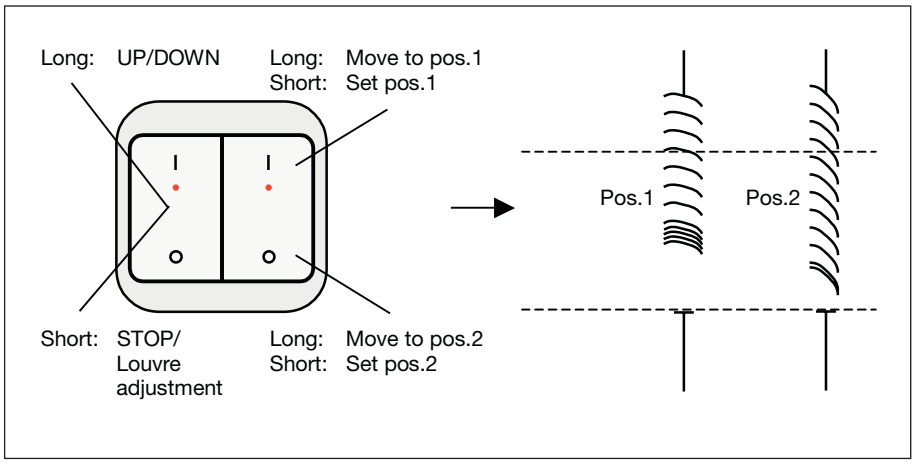


Fig. 4: Move to preset position and store preset position

The stored preset values are retained on bus voltage failure. When programming the Shutter Actuator Module, the stored values are overwritten by the parameterised values.

3.4 Automatic control

3.4.1 Automatic sun protection

Method of functioning

A very convenient automatic sun protection function can be created with the Shutter Actuator Module together with other EIB components. The automatic sun protection controls the shutter according to the irradiation of the sun. Depending on the intensity of the sun and in which direction the sun is shining, the shutter is moved into a parameterised position or moved into a situation-dependent position via an 8-bit value.

The shutter can for example be raised if the sun is only shining weakly on the window or not at all. This allows as much light as possible into the room without absorbing the disruptive direct sunlight. If the sun is however shining brightly on the window, the shutter is lowered and the louvres are closed to the extent that direct sunlight can no longer penetrate the room. There is still sufficient diffuse lighting through the residual opening of the shutters which can be supplemented if necessary by artificial light (see Fig. 5).

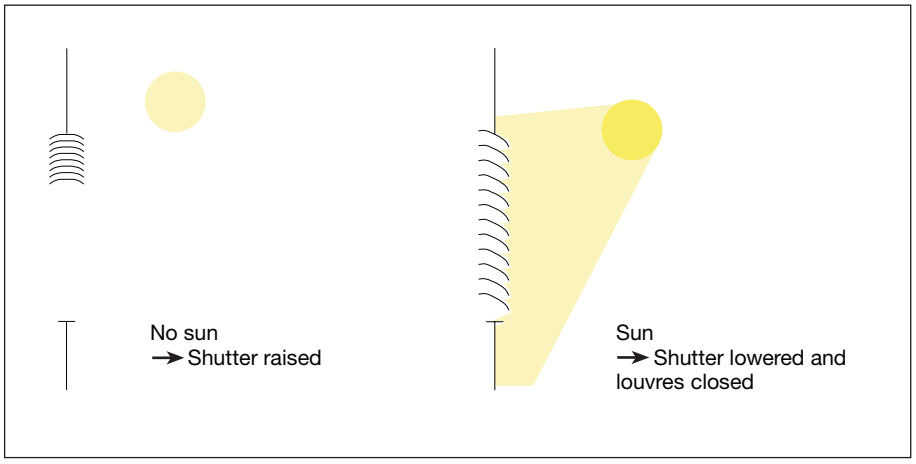


Fig. 5: Method of functioning of automatic sun protection

When using special directional louvres, the light can be directed into the room so that there is no disruptive direct sunlight but at the same time optimum use can be made of the natural daylight available (see Fig. 6).

Fig. 6: Daylight redirection

Structure of a simple automatic sun protection system
Two further components are required in addition to the Shutter Actuator Module and switch sensor in order to implement a simple automatic sun protection system: an activation option for the user (e.g. a further switch sensor or the second rocker of the UP/DOWN switch sensor) and a brightness sensor.

With the help of the second switch sensor, the user of the room can determine whether he wishes to use the automatic sun protection or whether he would rather manually control the shutters himself. If the automatic sun protection is activated via a switch sensor, the shutter moves automatically until either the automatic sun protection is deactivated via the same switch sensor or the user issues a direct movement command (e.g. UP/DOWN or move to position) and thus likewise deactivates the automatic function.

Via the brightness sensor, the Shutter Actuator Module receives the information whether direct sunlight is falling on the window or the façade. The Shutter Actuator Module positions the shutter once the parameterisable delay has elapsed according to the set *Position if sun = “1” (sun is shining)* or *Position if sun = “0” (no sun)* (see Fig. 7).

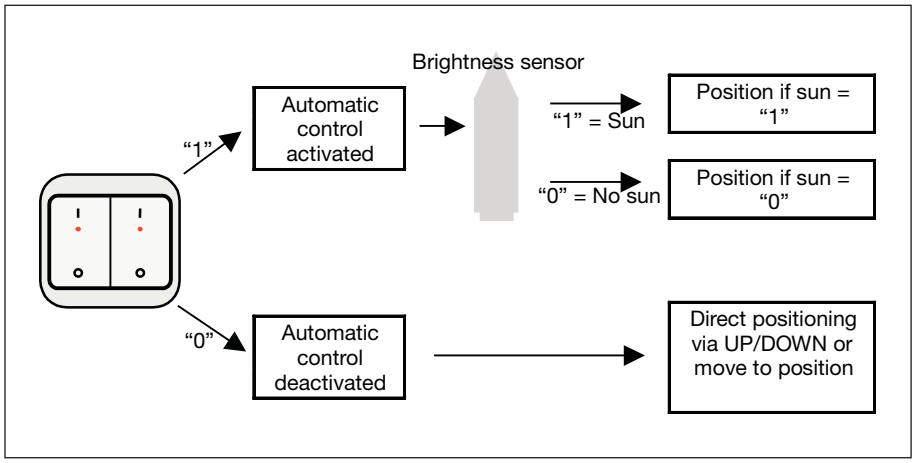


Fig. 7: Structure of a simple automatic sun protection system

Planning notes for a simple automatic sun protection system
The following EIB components are required to implement a simple automatic sun protection system (see also Fig. 8):

– Room Controller with shutter actuator module

– EIB switch sensors or universal interface + push button

– Brightness sensor

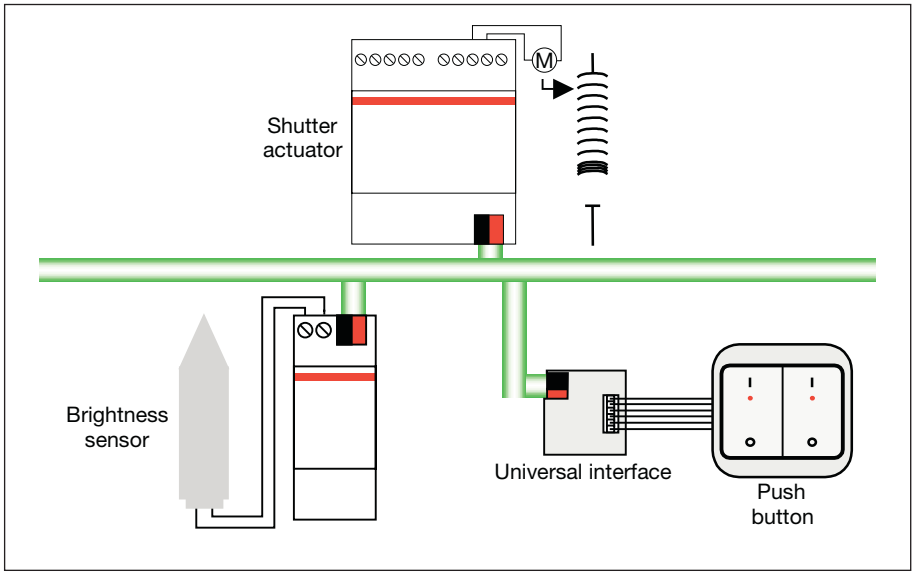


Fig. 8: Planning a simple automatic sun protection system

Structure of an automatic sun protection system which tracks the position of the sun
To implement an automatic sun protection system which tracks the position of the sun, an additional control module is required (e.g. the shutter control module JSB/S 1.1).

The current position of the sun is continually calculated in the shutter control module. The shutter is moved into the optimum position via an 8-bit value so that it diverts direct sunlight but lets in as much diffuse light as possible. The influence of shadow objects e.g. buildings that face each other can also be taken into account in the shutter control module (see Fig. 9).

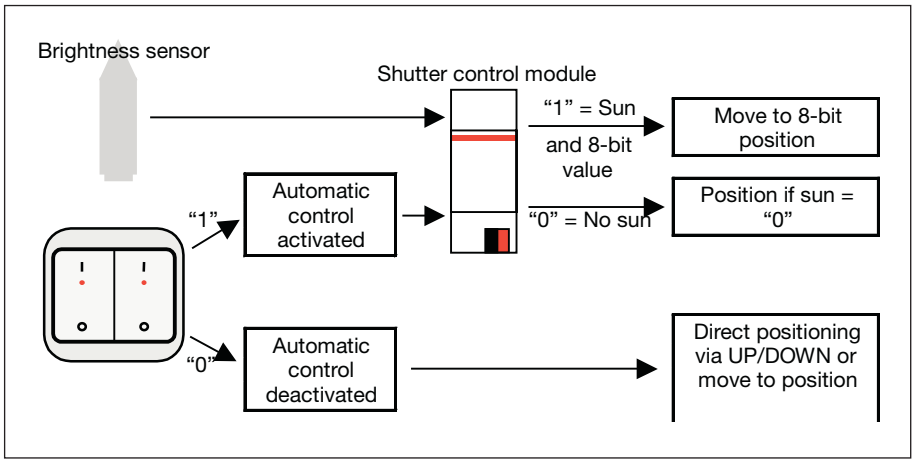


Fig. 9: Structure of an automatic sun protection system which tracks the position of the sun

Planning notes for an automatic sun protection system which tracks the position of the sun

The following EIB components are required to implement an automatic sun protection system which tracks the position of the sun (see also Fig. 10):

– Shutter actuator module

– EIB switch sensors or universal interface + push button

– Brightness sensor

– Shutter control module

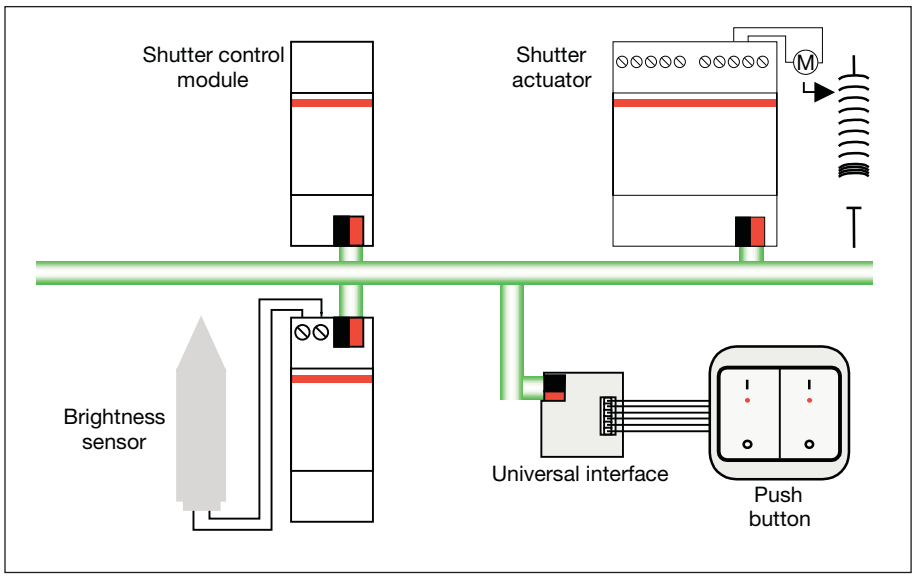


Fig. 10: Planning an automatic sun protection system which tracks the position of the sun

The current position of the sun is calculated using the current time. The shutter control module can be operated as an independent clock, as a master clock or as a slave clock on the EIB. Several shutter control modules can be synchronised with each other. If the shutter control module is operated as an independent clock or a master clock, no further time switch is required.

The shutter control module can likewise be operated as a slave clock if for example a master clock is present in the installation. A time switch which can send the time and date on the EIB must be used as a master clock.

3.4.2 Status feedback

Position 0...100 %

The Shutter Actuator Module can report the position of the shutter on the bus as an 8-bit value via the same object which is used to retrieve the position. The corresponding group address must be defined in ETS as a “sending group address”.

3.5 Operating mode “Ventilation flaps/ switch mode”

3.5.1 General

Open/close ventilation flaps
Only two positions are used in the operating mode “Ventilation flaps/switch mode”: OPEN and CLOSED. In the “OPEN” position, the output contact is closed i.e. the output conducts voltage. In the “CLOSED” position, the output is moved to the neutral position i.e. the output is de-energised.

Note: In the “OPEN” position, the output contact remains closed until a “CLOSE” command is executed. The output contact is not automatically de-energised in the “OPEN” position!

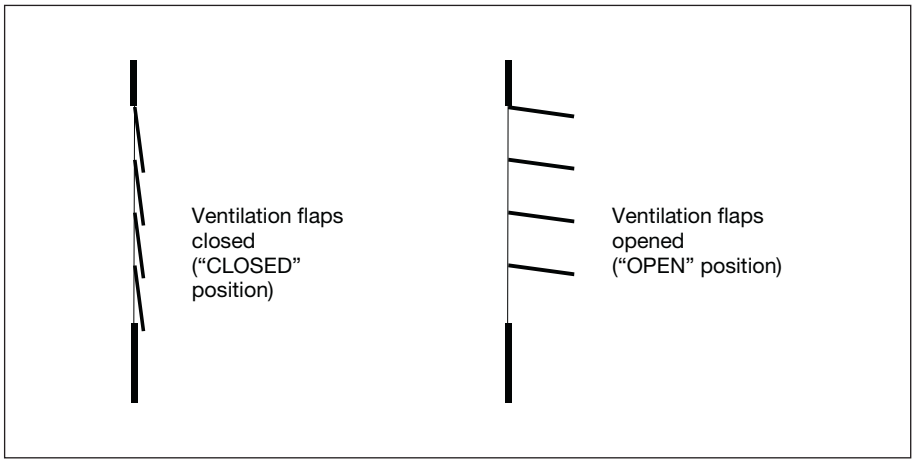


Fig. 11: Open/close ventilation flaps

Switch mode
The operating mode “Ventilation flaps/switch mode” can also be used to switch loads on and off.

Note: When connecting the loads, the technical data of the output contacts of the Shutter Actuator Module must be taken into account!

3.6 Reaction on voltage failure and recovery

Reaction on failure of the bus voltage
The reaction of the outputs on bus voltage failure can be parameterised. The function of the Room Controller is retained provided that the supply voltage (115/230 V AC or 12 V DC auxiliary voltage) is present.

If it has been set in the parameters, the Room Controller can also continue to function after failure of the bus voltage and the functions in the room are retained.

Example: Conventional push buttons are connected to a Room Controller via binary input modules. The Room Controller also controls shutters. On bus voltage failure, the shutters can still be operated because the Room Controller is not supplied by the bus.

Reaction on recovery of the bus voltage
The reaction of the outputs can be parameterised.

Reaction on failure of the supply voltage
The supply voltage has failed if both the 115/230 V AC supply and the 12 V DC auxiliary supply have failed. The Room Controller has no function in this case.

On failure of the supply voltage, the status of the relay outputs is “STOP”.

Note: On failure of the supply voltage, the stored preset values are lost. They are overwritten by the parameterised preset values. Stored scene values are retained.

Reaction on recovery of the supply voltage
The reaction of the outputs is identical to the reaction on recovery of the bus voltage. It can be parameterised for each output.

On recovery of the supply voltage the automatic sun protection function is inactive. The function can be activated by setting the object “Activation of automatic control” = 1.

3.7 Behaviour after programming

After programming, the device behaves as after bus voltage recovery (can be parameterised).

4 Project design and programming

4.1 Overview of the functions

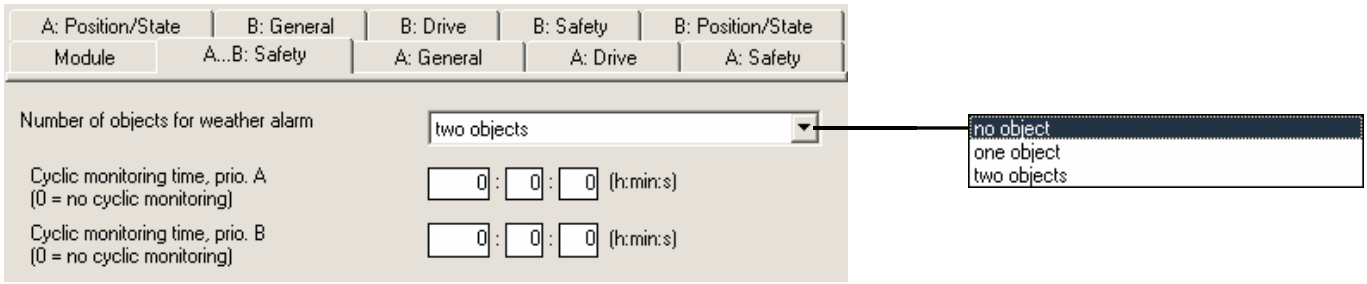
The Room Controller has a single application program “Room Controller modular, 8f/1” which is used to set the device function. The programming requires the EIB Tool Software ETS2 **V1.3a** or higher.

Application program	Number of communication objects	Max. number of group addresses	Max. number of associations
Room Controller modular, 8f/1	246	254	255

4.2 General functions

4.2.1 Parameter window: “A...B: Safety”

The safety function “Weather alarm” can be enabled in this parameter window. Wind, rain or frost detectors can for example be evaluated via this function. In the event of an alarm, the shutter moves into a safety position.



Parameter: “Number of objects for weather alarm”
It can be set here whether one or two weather alarm objects are enabled (see objects “Weather alarm, prio. A” or “...prio. B”). The object “...prio. A” has the higher priority.

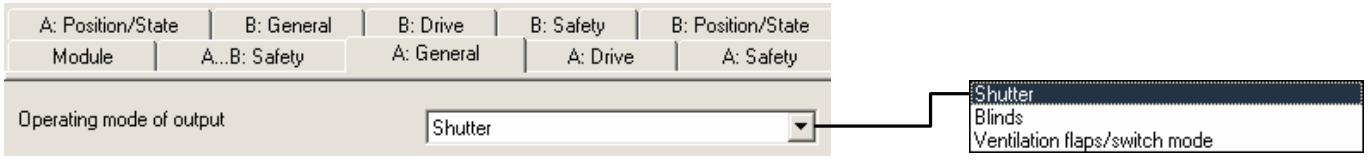
Parameter: “Cyclic monitoring time, prio. A/B (0 = no cyclic monitoring)”
This parameter can be set individually for both alarm objects. The period for monitoring the alarm object is defined here.

The objects “Weather alarm, prio. A” and “Weather alarm, prio. B” can be monitored cyclically. If a cyclically monitored object does not receive any telegrams during the period set here, the device assumes that there is a communication problem with the sensor. The alarm is triggered in this case.

In the setting “0 s”, there is no cyclical monitoring of the object.

4.2.2 Parameter window: “General”

The operating mode of the output is set in the first parameter.



Parameter: “Operating mode of output”
The function of the output can be selected here. It is possible to choose between “Shutter”, “Blinds” and “Ventilation flaps/switch mode”.

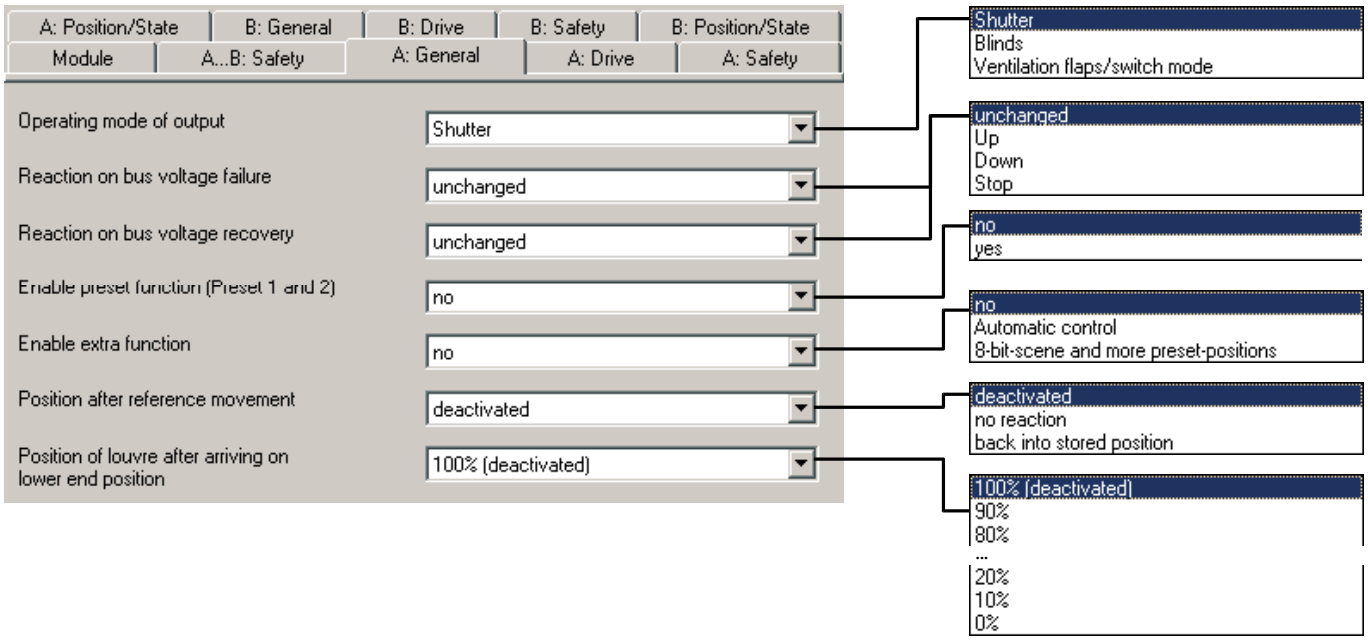
Further parameters and objects are dependent on the selected operating mode.

Explanations about the operating modes can be found in section 3.1.

4.3 Operating mode: “Shutter” or “Blinds”

This operating mode is used to control blind or shutter motors.

4.3.1 Parameter window: ”A: General”



Parameter: “Reaction on bus voltage failure”
The output can adopt a defined state on bus voltage failure via this parameter. The output can still be operated, e.g. by a push button connected to a Binary Input Module of the same Room Controller.

In the default setting “unchanged” the state of the relay outputs remains unchanged. If the shutter/blind is currently in the moving state, it will move to the end position. Alternatively, a fixed contact position (“Up”, “Down” or “Stop”) can be set.

Parameter: “Reaction on bus voltage recovery”
This parameter defines how the output behaves on recovery of the bus voltage.

In the setting “unchanged”, the current state is retained.

Parameter: “Enable preset function (Preset 1 and 2)”
This parameter enables the preset function and the parameter window “Presets 1/2”.

Parameter: “Enable extra function”
This parameter enables an additional function.

“Automatic control” enables the very convenient, automatic sun protection function which together with other EIB components (e.g. shutter control module) enables automatic anti-glare protection with tracking of the sun’s position and/or a daylight redirection function.

“8-bit scene and additional preset positions” enables a powerful positioning function. On the one hand, it enables the integration of the output in an 8-bit scene. On the other hand, two further preset positions are enabled. Both the 8-bit scene and the preset positions enable the current position to be saved as a new scene or preset value.

Further information about the object function can be found in section 4.3.9.

Parameter: “Position after reference movement”
This parameter enables the object “Reference movement” and sets how the Shutter Actuator Module behaves after a reference movement. Further information about the object function can be obtained in section 4.3.9.

If the option “no reaction” is set, the shutter remains in the upper or lower reference position after a reference movement.

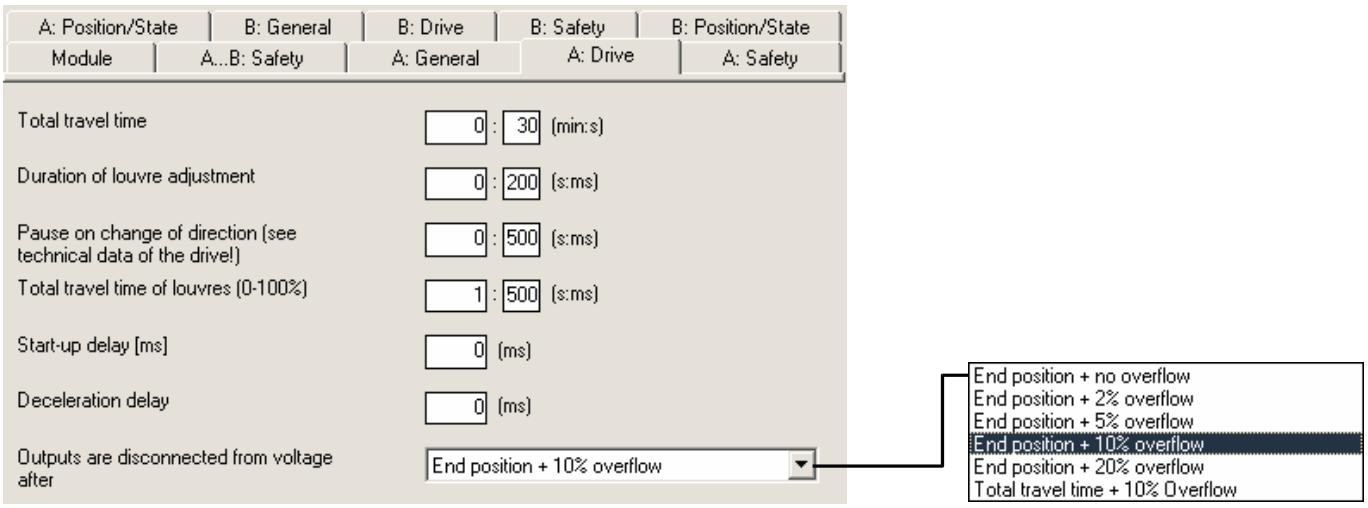
If the option “back into stored position” is set, the shutter is moved back to the position it occupied prior to the reference movement. If automatic control was activated for the shutter before the reference movement, the automatic control function is reactivated once the stored position has been reached.

Parameter: “Position of louvre after arriving on lower end position”
After the shutter has moved into the lower end position, the louvres are normally closed. The louvre position which the actuator sets after reaching the lower end position can be selected via this parameter.

The Parameter refers to the behaviour of the shutter/blind after a movement that was triggered by the object “Move shutter/blind Up/Down” or by an automatic function.

4.3.2 Parameter window: "A: Drive"

The properties of the blind or shutter drive are defined in this parameter window.



Parameter: "Total travel time"
For setting the total travel time from the upper end position to the lower end position.

Parameter: "Duration of louvre adjustment"
For setting the duration of the louvre adjustment.
(only in the "Shutter" operating mode)

Parameter: "Pause on change of direction"
For setting the minimum pause on reverse between two directions of movement.

Note: The technical data of the drive manufacturer must be noted!

Parameter: "Total travel time of louvres 0...100 %"
For setting the maximum number of louvre adjustments in one direction.
(only in the "Shutter" operating mode)

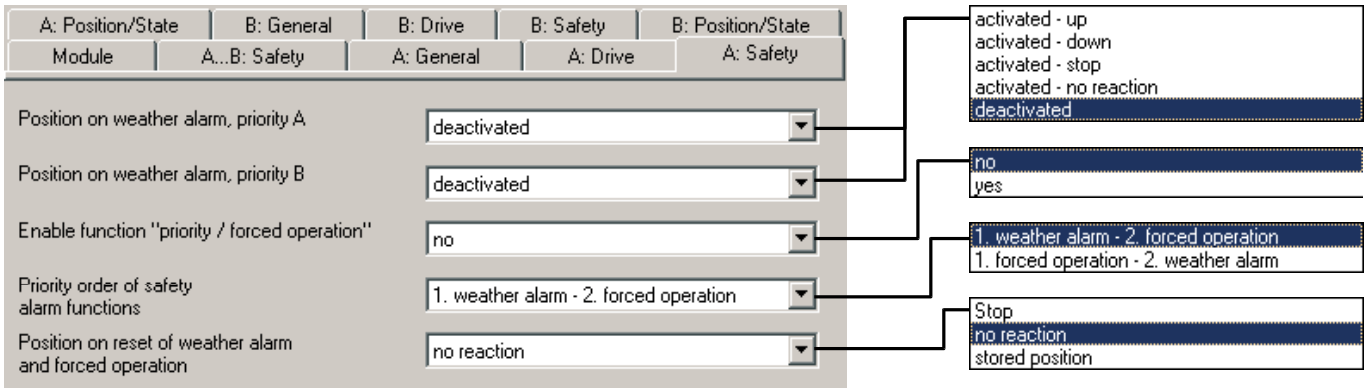
Parameter: "Start-up delay"
For setting the start-up delay of the motor.

Parameter: "Deceleration delay"
For setting the deceleration delay of the motor.

Parameter: "Outputs are disconnected from voltage after"
Once the end position has been reached (upper or lower), the shutter drive is switched off automatically. So that the shutter actuator reaches this position, a so-called "overrun" can be set. The voltage thus remains switched on for a short period at the disconnected drive in order to move the drive into the end position.

4.3.3 Parameter window: "A: Safety"

The "Safety" parameter window defines the function of the output when the safety functions are active. Further information about the safety objects can be found in section 4.3.9.



Parameter: "Position on weather alarm, priority A" and "…, priority B"
The parameter is used to set a safety position when a weather alarm is triggered via the object with the same name. There are two objects, of which "…, prio. A" has the higher priority.

The safety position can only be modified by manual operation or forced operation if the latter has been set in the parameters.

"activated – up" or *"activated – down"* moves the shutter up or down.

"activated – stop" stops the output immediately.

"activated – no reaction" leaves the output unchanged. If the shutter is moving, the action is completed.

"deactivated" means that the output does not react to the weather alarm object.

Parameter: "Enable function 'priority/forced operation'"
The object "Priority/forced operation" (2 bit) is enabled via this parameter. It enables the forced positioning of the shutter drive.

Parameter: "Priority order of safety alarm functions"
For definition of the priority between the objects "Weather alarm, prio. A/B" and the object "Priority/forced operation".

Parameter: "Position on reset of weather alarm and forced operation"
This parameter specifies how the output behaves after a safety position.

"no reaction" means that the position remains unchanged or that the current action is completed.

"Stop" means that the output is de-energised i.e. a moving shutter is stopped.

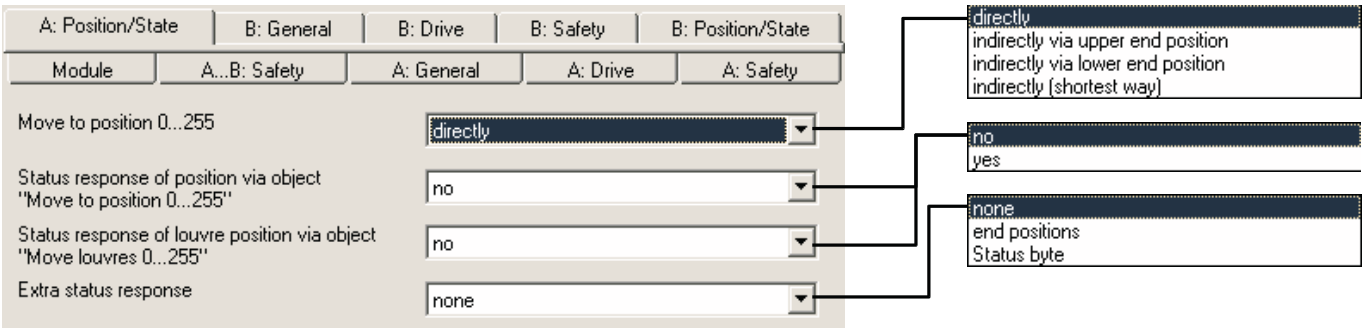
"stored position" recreates the status before the safety position.

4.3.4 Parameter window “A: Position/State”

The parameter window “Position/State” defines how the shutter moves into positions or reports the current position on the bus.

The output can be positioned via the bus. The objects “Move to position 0...255” and “Move louvres 0...255” are used for this purpose (the latter only in the “Shutter” operating mode). If required, the same objects send the new position on the bus after a movement.

The status feedback of the position is carried out approx. 5 seconds after reaching the target position.



Parameter: “Move to position 0...255”
If “directly” is selected, the shutter moves from the current position directly into the new target position after a positioning command.

If “indirectly via upper end position” or “indirectly via lower end position” is selected, after a positioning command the shutter travels first right to the top or right to the bottom and then into the target position.

With the setting “indirectly (shortest way)”, the shutter travels either right to the top or right to the bottom after a positioning command, depending on which is the shortest route. It then moves into the target position.

Parameter: “Status response of position via object ‘Move to position 0...255’”
The status feedback of the new position via the object “Move to position 0…255” can be enabled here. The status response is carried out via the sending group address of the object once the shutter has reached its new position.

Parameter: “Status response of louvre position via object ‘Move louvres 0...255’”
The status feedback of the new louvre position via the object “Move louvres 0...255” can be enabled here. The status response is carried out via the sending group address of the object once the shutter has reached its new position.

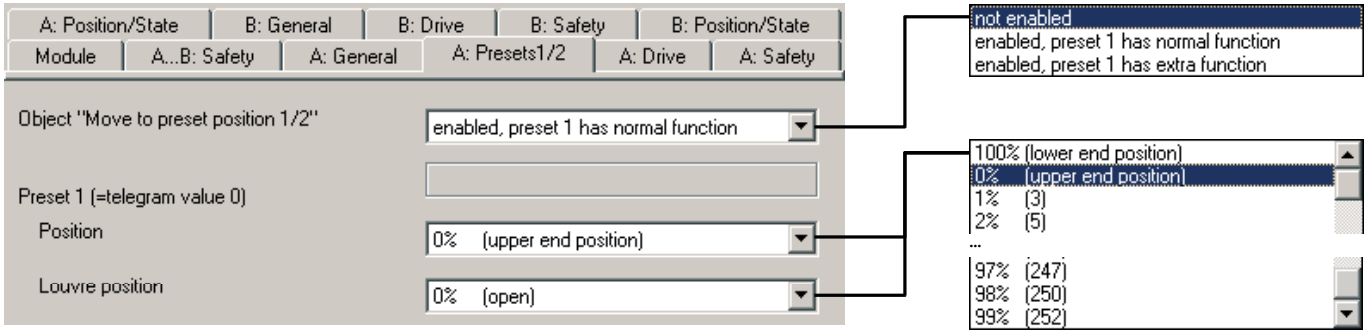
Parameter: “Extra status response”
An additional status response can be enabled via this parameter.
If “end positions” is selected, the objects “Status lower end position” and “Status upper end position” are enabled which indicate that the shutter is in the upper or lower end position (measured using the total travel time).

In the setting “Status byte”, the object “Telegr. status byte” is enabled which contains further information in coded form.

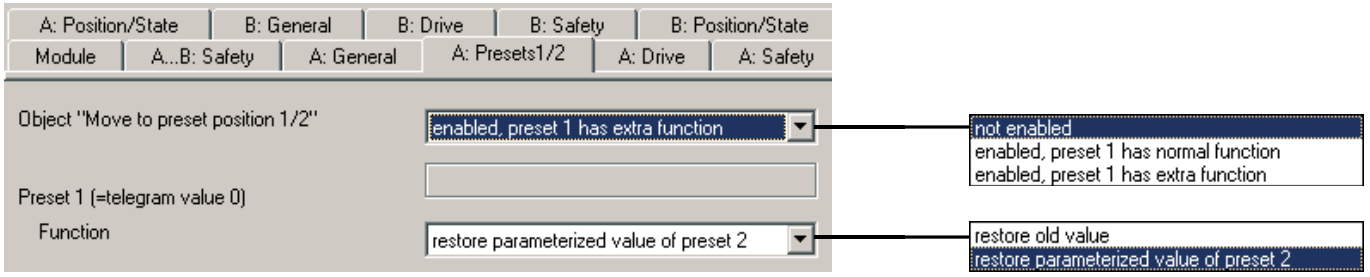
4.3.5 Parameter window “A: Presets 1/2”

The parameter window defines the function of the objects “Move to preset position 1/2” and “Set preset position 1/2”. Further information about the function of the preset objects can be found in section 4.3.9.

Setting „preset 1 has normal function“



Setting „preset 1 has extra function“



Parameter: “Object ‘Move to preset position 1/2’”
Preset positions 1 and 2 can be enabled via this parameter.
“enabled, preset 1 has normal function” enables the preset positions 1 and 2. Both preset positions can be used for positioning.
“enabled, preset 1 has extra function” enables the preset positions 1 and 2. Preset position 1 receives a special function while preset position 2 is used for positioning as normal.

Parameter: “Preset 1 (telegram value 0), Position”
This parameter is visible if preset 1 has been assigned a normal function.

It is set here how the output behaves when preset position 1 is retrieved (i.e. object “Call preset position 1/2” receives telegram value 0).
A parameterised position can be retrieved.

Parameter: “Preset 1, Louvre position”
This parameter is visible if preset 1 has been assigned a normal function.

It is set here which louvre position is adopted on retrieval of preset position 1.

Parameter: “Preset 1 (telegram value 0), Function”
This parameter is visible if preset 1 has been assigned a special function. One of the following functions can be selected in connection with preset position 2:

“restore old value” recreates the position before the last retrieval of preset position 2. If the automatic function was active, it is also activated again.

“restore parameterised value of preset 2” resets preset position 2 to the parameterised value. This can be advisable if the preset can be stored via the bus (see below).

Parameter: “Preset 2 (telegram value 1), Position”
It is set here how the output behaves when preset position 2 is retrieved (i.e. object “Call preset position 1/2” receives telegram value 1).
A parameterised position can be retrieved.

Parameter: “Preset 2, Louvre position”
It is set here which louvre position is adopted on retrieval of preset position 2.

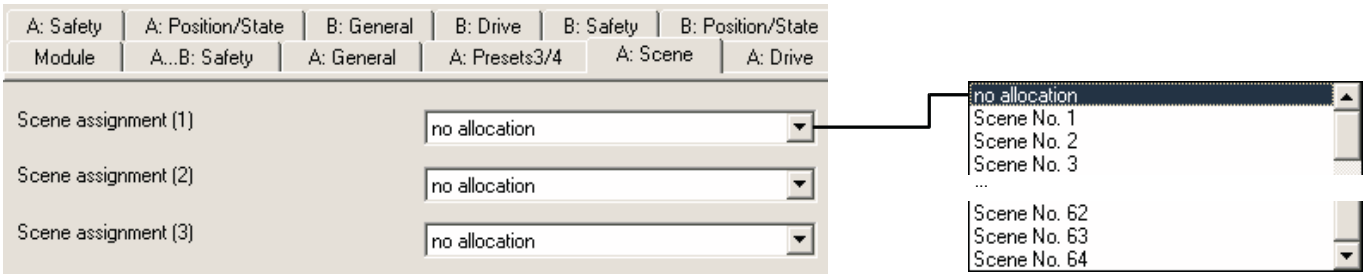
Parameter: “Preset can be set via the bus”
The object “Set preset position 1/2” is enabled via this parameter. It is used to store the currently set shutter position as the new preset value.

4.3.6 Parameter window “A: Presets 3/4”

This parameter window is visible if the additional function “8-bit scene and additional preset positions” is selected in the parameter window “A: General”. The parameters are identical to the parameter window “Preset 1/2” and explained there (see section 4.3.6).

4.3.7 Parameter window “A: Scene”

This parameter window is visible if the additional function “8-bit scene and additional preset positions” is selected in the parameter window “A: General”.

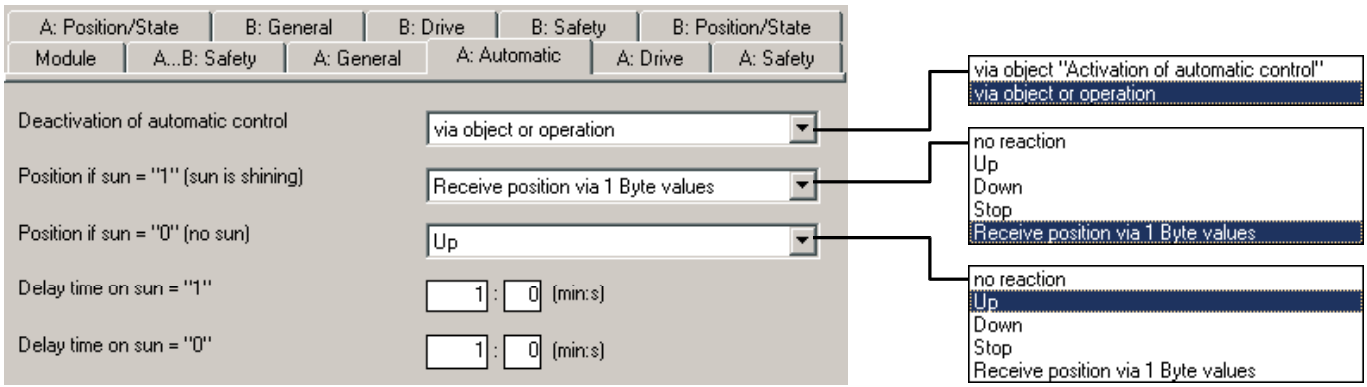


Parameter: “Scene assignment (1)...(10)”
This parameter sets in which scene the shutter should be integrated. Each shutter can be integrated in up to 10 scenes from a total of 64.

By default, the scene values are undefined. They must therefore be taught in via the bus (see object “8-bit scene”).

4.3.8 Parameter window “A: Automatic”

The automatic function enables automatic anti-glare protection for the user in connection with the shutter control module. A detailed explanation of the function can be found in section 3.4. Further information about the function of the objects can be found in section 4.3.9.



Parameter: “Deactivation of automatic control”
This parameter defines how the automatic control can be deactivated. In addition to the object “Activation of automatic control”, it can also be deactivated via operation i.e. any object value is received with the exception of an automatic object.

Note: After a supply voltage failure of the Basis Device the object value will be reset to “0”. The automatic sun protection function is thus inactive by default.

Parameter: “Position if sun = ‘1’ (sun is shining)”
For setting the behaviour if the sun = “1” (sun is shining) in the automatic sun protection function.

If the option “no reaction” is set, the current movement is completed. If “Stop” is selected, the shutter is stopped immediately. The outputs are de-energised.

Parameter: “Position if sun = ‘0’ (no sun)”
For setting the behaviour if the sun = “0” (no sun) in the automatic sun protection function. If the option “no reaction” is set, the current movement is completed. If “Stop” is selected, the shutter is stopped immediately. The outputs are de-energised.

Parameter: “Delay time on sun = ‘1’”
Parameter: “Delay time on sun = ‘0’”
For setting the delay when activating the *Position if sun = “1”* or *Position if sun = “0”*.

Via this parameter, it is possible to prevent the shutter moving upwards and downwards when the sun is temporarily hidden.

4.3.9 Communication objects

The following section describes the communication objects of the operating modes “shutter” and “blinds”.

4.3.9.1 Overview of the objects

The communication objects of the “Shutter” or “Blind” operating modes are clearly listed here and their function is described briefly. A detailed description of the objects can be found in section 4.3.9.2.

Note: All communication objects that are not linked always have the value “0”.

No.	Function	Object name	Data type	Flags
0/14	**Move shutter Up-Down** ***or*** **Move blinds Up-Down**	**Output x**	**1 Bit (EIS7)**	**CW**
This object moves the shutter or the blinds upwards (“0”) or downwards (“1”).				
1/15	**Louvre adj./Stop Up-Down** ***or*** **Stop Up-Down**	**Output x**	**1 Bit (EIS7)**	**CW**
This object stops the shutter or the blinds during movement. When the shutter is stopped, the object is used for stepwise louvre adjustment either open (“0”) or closed (“1”).				
2/16	**Move to position 0...255**	**Output x**	**1 Byte (EIS6)**	**CW**
Used to move to and report a specific position (“0” = top, “255” = bottom).				
3/17	**Move louvres 0...255**	**Output x**	**1 Byte (EIS6)**	**CW**
Used to carry out and report a specific louvre adjustment (only “Shutter” operating mode).				
4/18	**Reference movement**	**Output x**	**1 Bit (EIS1)**	**CW**
Used to compensate for variations in the position e.g. after frequent upward/downward movement into intermediate positions. The shutter or the blinds are moved into an end position (“0” = upper, “1” = lower) and back again.				
5/19	**Call preset position 1/2**	**Output x**	**1 Bit (EIS1)**	**CW**
Retrieves a stored position/louvre position. The object values “0” or “1” retrieve the two positions/louvre positions “Position 1” or “Position 2”. For “Position 1”, a further possibility can be set that the status before retrieving “Position 2” can be restored or the position/louvre position can be reset to the parameterised value (advisable if position 2 can be stored).				
6/20	**Set preset position 1/2**	**Output x**	**1 Bit (EIS1)**	**CW**
Stores the current position/louvre position as a new preset value. The object values “0” and “1” store the positions “1” and “2” respectively.				

Additional function: “Automatic control”

No.	Function	Object name	Data type	Flags
7/21	**Activation of automatic control**	**Output x**	**1 Bit (EIS1)**	**CW**
Used to activate and deactivate the automatic function.				
8/22	**Sun**	**Output x**	**1 Bit (EIS1)**	**CW**
Used to activate the sun protection function: the shutter moves into the sun protection position.				
9/23	**Adjust position for sun 0...255**	**Output x**	**1 Byte (EIS6)**	**CW**
Used for setting the position during active sun protection.				
10/24	**Adjust louvres for sun 0...255**	**Output x**	**1 Byte (EIS6)**	**CW**
Used for setting the louvre position during active sun protection.				

Additional function: “Preset/Scene”

No.	Function	Object name	Data type	Flags
7/21	**Call preset position 3/4**	**Output x**	**1 Bit (EIS1)**	**CW**
Retrieves a stored position/louvre position. The object values “0” or “1” retrieve the two independent positions/louvre positions “Position 3” or “Position 4”. For “Position 3”, a further possibility can be set that the status before retrieving “Position 4” can be restored or the position/louvre position can be reset to the parameterised value (advisable if position 4 can be stored).				
8/22	**Set preset position 3/4**	**Output x**	**1 Bit (EIS1)**	**CW**
Stores the current position/louvre position as a new preset value. The object values “0” and “1” store the positions “3” and “4” respectively.				
9/23	**8-bit scene**	**Output x**	**1 Byte (DPT 18.001)**	**CW**
Used to retrieve or store a scene (shutter/blind position and lamella position). The object value contains a scene number (1...64) as well as the instruction as to whether the scene should be retrieved or stored. The storing of the scene values takes place in the actuator.				

“Status response” objects

No.	Function	Object name	Data type	Flags
11/25	**Status upper end position**	**Output x**	**1 Bit (EIS1)**	**CT**
Reports that the shutter is located in the upper end position.				
12/26	**Status lower end position**	**Output x**	**1 Bit (EIS1)**	**CT**
Reports that the shutter is located in the lower end position.				
11/25	**Telegr. status byte**	**Output x**	**1 Byte (non EIS)**	**CT**
Provides information about the status of the output and the operation, coded in a byte value (see appendix).				

“Safety” communication objects

No.	Function	Object name	Data type	Flags
13/27	**Priority/forced operation**	**Output x**	**2 Bit (EIS8)**	**CW**
It is possible to move the shutter into a fixed position via this object and disable normal operation. Object values “0” and “1” cancel the forced operation and the output is set to the parameterised state. Object value “2” forces the shutter to move upwards and disables the operation. Object value “3” forces the shutter to move downwards and disables the operation.				
28 **29**	**Weather alarm, prio. A** **Weather alarm, prio. B**	**Output A...B**	**1 Bit (EIS1)**	**CW**
Wind detectors, rain detectors or frost detectors for example can move the shutters into a parameterised safety position via these objects. The object “Weather alarm, prio. A“ has the highest priority.				

4.3.9.2 Detailed description of the objects

Object: “Move shutter Up-Down”: 1 Bit (EIS 7) (“Shutter” operating mode)
Object: “Move blinds Up-Down”: 1 Bit (EIS 7) (“Blinds” operating mode)
If a telegram with the value “0” is received at this communication object, the shutter is moved upwards. If a telegram with the value “1” is received, the shutter is moved downwards. The output contact reverts to the neutral middle position when the *Total travel time* has elapsed.

Telegram value:	“0”:	Up
	“1”:	Down

Object: “Louvre adj./Stop Up-Down”: 1 Bit (EIS 7) (“Shutter”)
Object: “Stop Up-Down”: 1 Bit (EIS 7)“ (“Blinds”)
If the shutter is moving, the movement is stopped on receipt on a telegram at this communication object, regardless of whether a “0” or a “1” is received.

“Shutter” operating mode: If the shutter is idle, the shutter is raised (“0”) or lowered (“1”) on receipt of a telegram at this communication object for the duration of the louvre adjustment and then stopped.

“Blinds” operating mode: If the blind is idle, no action is carried out on receipt of a telegram at this communication object.

Telegram value:	“0”:	Stop/Louvre adjustment Up
	„1“:	Stop/Louvre adjustment Down

Object: “Move to position 0...255”: 8 Bit (EIS 6)
If a telegram is received at this communication object, the shutter moves to the position that corresponds to the received value.

After reaching the target position, the louvres adopt the same position before the shutter movement. If a telegram “Move louvres 0…255” is received during the movement, the shutter moves to this received target position.

Telegram value:	“0”:	Top
	“...”:	Intermediate position
	“255”:	Bottom

Object: “Move louvres 0...255”: 8 Bit (EIS 6)
(only in the “Shutter” operating mode)
If a telegram is received at this communication object, the louvres are positioned according to the received value. If the shutter is moving, the movement into the target position is executed first and then the positioning of the louvres is carried out.

Telegram value:	“0”:	Louvres opened to maximum
	“...”:	Intermediate position
	“255”:	Louvres closed

Object: “Reference movement”: 1 Bit (EIS1)
If a telegram is received at this communication object, all the shutters which do not have an active safety function are raised to the upper end position or lowered to the lower end position.

The current position is stored and the shutter is then moved into the parameterised *Position after reference movement*. If the option “back into stored position” is set and the automatic control was activated for the shutter before the reference movement, the automatic control is activated again once the stored position is reached.

Telegram value:	“0”:	Reference movement to upper end position
	“1”:	Reference movement to lower end position

Object: “Call preset position 1/2”: 1 Bit (EIS 1)
If a telegram is received at this communication object, the shutter is moved into the stored preset position. In the “Shutter” operating mode, the louvres are also set when the position has been reached.

If a telegram with the value “0” is received, the shutter moves to position 1 while the shutter moves to position 2 on receipt of a telegram with the value “1”.

Special functions can also be executed for position 1 instead of retrieving a position.

Telegram value:	“0”:	Retrieve position 1
	“1”:	Retrieve position 2

Object: “Set preset position 1/2”: 1 Bit (EIS 1)
If a telegram is received at this communication object, the current position of the shutter is adopted as the new preset value.

If a telegram with the value “0” is received, the current position is stored as a new preset value for position 1. If a telegram with the value “1” is received, the current position is stored as a new preset value for position 2. If position 1 or 2 is now retrieved, the shutter moves to the new preset values.

On bus voltage failure, the modified preset values are retained. After programming the device, the preset values are reset to the values that were parameterised during the project design.

If a special function is defined for position 1, the telegram value “0” is ignored.

Telegram value:	“0”:	Set position 1
	“1”:	Set position 2

Object: “Activation of automatic control”: 1 Bit (EIS 1)
If a telegram with the value “1” is received, the automatic control function is activated for the corresponding output and the output moves to the automatic position. The position can be defined via the “Automatic” communication objects “Adjust position for sun 0…255” and “Adjust louvres for sun 0…255”.

If a telegram with the value “0” is received, the shutter remains in the current position and no longer reacts to incoming telegrams at the “Automatic” communication objects. If the shutter is currently carrying out an automatic movement command, the action will not be interrupted.

Telegram value:	“0”:	Automatic control deactivated
	“1”:	Automatic control activated

Object: “Sun”: 1 Bit (EIS 1)
Telegrams received at this communication object are only taken into account if the value “1” is present in the communication object “Activation of automatic control”.

If a telegram with the value “1” is received at the communication object “Sun”, the shutter moves into the parameterised *Position if sun = “1”*.
If a telegram with the value “0” is received, the shutter moves into the parameterised *Position if sun = “0”*.

The reaction to an incoming telegram can be executed with a time delay via the parameters *Delay time on sun = “1”* and *Delay time on sun = “0”*, so that the shutters are not continually raised and lowered when the weather conditions change frequently. If a telegram with the opposite value is received during the time delay, the shutter does not move to the *Position if sun = “1”* and remains in the *Position if sun = “0”* or vice versa.

If the option “Receive position via 1 byte values” is set as the *Position if sun = “1”*, the output adopts the position which was last received at the objects “Adjust position for sun 0...255” (“Shutter” and “Blinds” operating modes) as well as “Adjust louvres for sun 0...255” (only “Shutter” operating mode), once the delay has elapsed.

Telegram value:	“0”:	No sun
	“1”:	Sun

Object: “Adjust position for sun 0...255”: 8 Bit (EIS6)
Incoming telegrams at this communication object are only executed immediately if the automatic control function is active (“Activation of automatic control” = “1”) and the sun is shining (“Sun” = “1”). The shutter is then positioned according to the received value.

Telegram value:	“0”:	Top
	“...”:	Intermediate position
	“255”:	Bottom

Object: “Adjust louvres for sun 0...255”: 8 Bit (EIS6)
(only in the “Shutter” operating mode)

Incoming telegrams at this communication object are only executed immediately if the automatic control function is active (“Activation of automatic control” = “1”) and the sun is shining (“Sun” = “1”). The louvres are then positioned according to the received value.

The movement command “Adjust position for sun 0...255” into the target position is always executed first before the positioning of the louvres is carried out.

Telegram value:	“0”:	Louvres opened to maximum
	“...”:	Intermediate position
	“255”:	Louvres closed

Object: “Call preset position 3/4”: 1 Bit (EIS 1)
Object: “Set preset position 3/4”: 1 Bit (EIS 1)
These objects are identical in their function to the objects “Call preset position 1/2” or “Set preset position 1/2”.

Object: “8-bit scene”: 8 Bit (DPT 18.001)
Via this object a scene can be recalled or stored. A scene defines a shutter/blind position and a lamella position. When a scene is stored, the current positions are saved as the new scene value.

In the parameters each output can be assigned to up to 10 scene numbers. Via the object, the output receives the number of the addressed scene as well as the information as to whether the shutter is moved to the last stored value or the current position should be stored as a new scene value.

As long as a scene has not been stored, the scene values are undefined. On bus voltage failure, the stored scene values are retained. After programming, the scene values are also retained, if the scene assignment in the parameters has not been changed.

Bitwise telegram code: MxNNNNNN

M:	0 – Scene is retrieved 1 – Scene is stored
x:	Not used
N:	Number of the scene (1...64)

Object value		**Meaning**
decimal	**hexadecimal**	
00 *or* 64 01 *or* 65 02 *or* 66 ... 63 *or* 127	00h *or* 40h 01h *or* 41h 02h *or* 42h ... 3Fh *or* 7Fh	Retrieve scene 1 Retrieve scene 2 Retrieve scene 3 ... Retrieve scene 64
128 *or* 192 129 *or* 193 130 *or* 194 ... 191 *or* 255	80h *or* B0h 81h *or* B1h 82h *or* B2h ... AFh *or* FFh	Set scene 1 Set scene 2 Set scene 3 ... Set scene 64

Object: “Status upper end position”: 1 Bit (EIS1)
The output sends the information to this communication object about whether or not the shutter is located in the upper end position. The object value is sent after a stoppage of approx. 5 seconds once a movement has been completed.

Telegram value: “0”: Shutter not in upper end position
“1”: Shutter in upper end position

Object: “Status lower end position”: 1 Bit (EIS1)
The output sends the information to this communication object about whether or not the shutter is located in the lower end position. The object value is sent after a stoppage of approx. 5 seconds once a movement has been completed.

Telegram value: “0”: Shutter not in lower end position
“1”: Shutter in lower end position

Object: “Telegr. status byte”: 8 Bit (non EIS)
The shutter actuator sends information about the current operating mode of the output to this communication object. Only one operating mode can be activated at the same time. The status byte is sent after a change.

Bitwise telegram code: 76543210

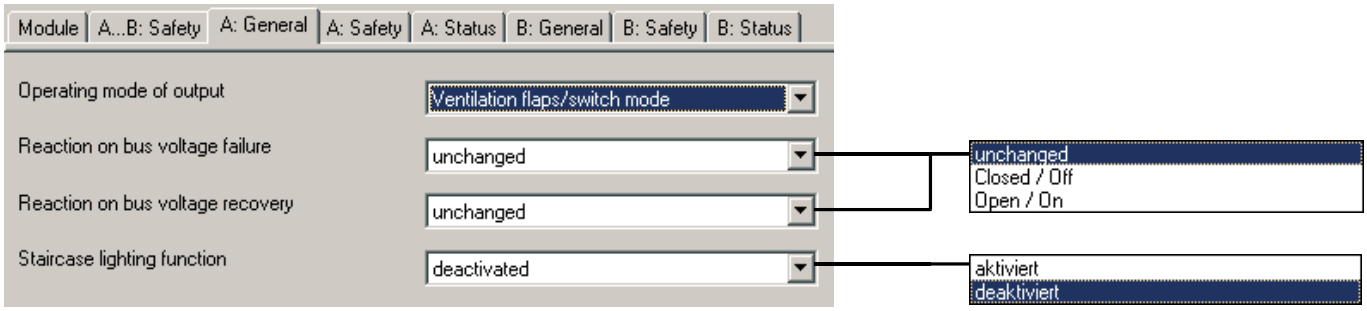
7: Automatic control active
6: not used (zero)
5: Weather alarm active
4: Shutter in upper end position
3: Shutter in lower end position
2: Forced operation active
1: not used (zero)
0: not used (zero)

A status byte table with all the possible combinations is printed in the appendix.

4.4 Operating mode “Ventilation flaps/switch mode”

This operating mode is used to control a drive which only opens or closes in the end positions such as a ventilation flap drive. The output thus behaves in a similar way to a switch actuator with a changeover contact.

4.4.1 Parameter window “A: General”



Parameter: “Reaction on bus voltage failure”
The output can adopt a defined state via this parameter on bus voltage failure.

A fixed contact position (“Closed/Off” or “Open/On”) can be set with this parameter. The contact position can also remain unchanged in the setting “unchanged”. In this case, the output can still be operated e.g. via push buttons which are connected to binary input modules of the same device.

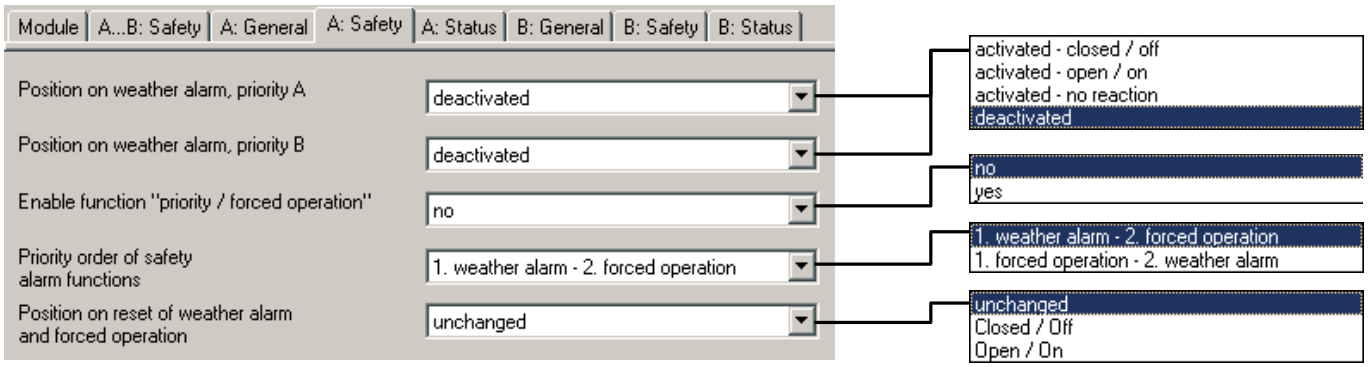
Parameter: “Reaction on bus voltage recovery”
The output can be set to a defined state with this parameter on bus voltage recovery.

The output is set on bus voltage failure once the initialisation period has elapsed.

Parameter: “Staircase lighting function”
The staircase lighting function is activated via this parameter. If the option “activated” is selected, the parameter *Switch-on time/duration of opening for staircase lighting* appears. The staircase lighting function switches an output off automatically after an adjustable period.

Parameter: “Switch-on time/duration of opening for staircase lighting”
For setting the operating time/opening time for staircase lighting.

4.4.2 Parameter window “A: Safety”



Parameter: “Position on weather alarm, prioriy A” and “…, priority B”
The parameter is used to set a safety position when a weather alarm is triggered (setting “activated - ...”). The safety position can only be modified by forced operation if this function has been parameterised.

“activated – closed/off” switches off the output (ventilation flap closes).

“activated – open/on” switches the output on (ventilation flap opens).

“activated – no reaction” leaves the output unchanged. A movement is thus completed.

“deactivated” means that the output does not react to a weather alarm.

Parameter: “Enable function ‘priority/forced operation’”
This parameter enables the object “Priority/forced operation”. The output can be positively switched via this object and the operation disabled.

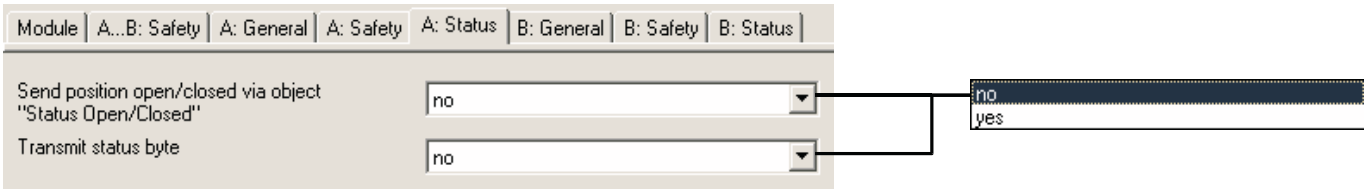
Parameter: “Priority order of safety alarm functions”
For defining the priority between the safety functions of weather alarm and forced operation.

Parameter: “Position on reset of weather alarm and forced operation”
This parameter sets how the output behaves after a safety position.

“no reaction” means that the output remains in the current position.

“Closed/Off” or *“Open/On”* sets a specific state for the output.

4.4.3 Parameter window “A: Status”



Parameter: “Send position open/closed via object ‘Status Open/Closed’”
The object “Status Open-Closed/On-Off” can be enabled here to report the switching state of the object.

Transmit status byte
If the option “yes” is selected, the communication object “Telegr. status byte” appears.

4.4.4 Communication objects

The following section describes the communication objects of the operating mode “ventilation flaps / switch mode”.

4.4.4.1 Overview of the objects

The communication objects of the operating mode “Ventilation flaps/switch mode” are listed clearly here and their function is briefly described.
A detailed description of the objects can be found in section 4.4.4.2.

No.	Function	Object name	Data type	Flags
0/14	**Ventilation flaps Open-Closed/On-Off**	**Output x**	**1 Bit (EIS1)**	**CW**
Opens (“1”) or closes (“0”) the ventilation flap				
1/15	**Lock operation**	**Output x**	**1 Bit (EIS1)**	**CW**
Disables the operation of the output. Only forced operation remains active.				
3/17	**Status Open-Closed/On-Off**	**Output x**	**1 Bit (EIS1)**	**CT**
Reports the contact position of the output				
11/25	**Telegr. status byte**	**Output x**	**1 Byte (non EIS)**	**CT**
Provides information about the status of the output and the operation, coded in a byte value.				

“Safety” communication objects

No.	Function	Object name	Data type	Flags
13/27	**Priority/forced operation**	**Output x**	**2 Bit (EIS8)**	**CW**
The ventilation flap can be moved into a fixed position via this object and normal operation is disabled. Object values “0” and “1” cancel the forced operation and the output is set to the parameterised state. Object value “2” forces the ventilation flap closed and disables the operation. Object value “3” forces open the ventilation flap and disables the operation.				
28 **29**	**Weather alarm, prio. A** **Weather alarm, prio. B**	**Output A...B**	**1 Bit (EIS1)**	**CW**
Wind detectors, rain detectors or frost detectors for example can move the shutters into a parameterised safety position via these objects. The object “Weather alarm, prio. A“ has the highest priority.				

4.4.4.2 Detailed description of the objects

Object: “Ventilation flaps Open-Closed/On-Off”: 1 Bit (EIS1)
If a telegram with the value “1” is received at this communication object, the output contact closes. The connected ventilation flaps are opened or connected loads are switched on.

If a telegram with the value “0” is received, the ventilation flaps are closed or the loads are switched off. The output contact reverts to the neutral middle position.

Telegram value: “1”: Open/On
“0”: Closed/Off

Object: “Status Open-Closed/On-Off”: 1 Bit (EIS1)
The output sends the information to this communication object about whether the ventilation flaps are opened or closed or the connected loads are switched on or off. The object value is sent after a change.

Telegram value: “0”: Ventilation flap CLOSED/switch contact OFF
“1”: Ventilation flap OPEN/switch contact ON

Object: “Lock operation”: 1 Bit (EIS1)
If the object has the value “0”, the output can be operated normally.
If a telegram with the value “1” is received, the operation of the output is fully disabled. The output remains unchanged. The safety functions are however retained.

After cancelling the disable function (receipt of the object value “0”), the shutter is moved into the *Position on reset of weather alarm and forced operation* and the operation is enabled again.

Telegram value: “0”: Operation enabled
“1”: Operation disabled

Object: “Telegr. status byte”: 8 Bit (non EIS)
The output sends information about the current operating mode of the output to this communication object. Only one operating mode can be activated at the same time. The status byte is sent after a change.

Bitwise telegram code: 76543210
7: not used (zero)
6: not used (zero)
5: Weather alarm active
4: Ventilation flap opened
3: Ventilation flap closed
2: Forced operation active
1: Disable function active
0: not used (zero)

A status byte table with all the possible combinations is printed in the appendix.

Object: “Priority / forced operation”: 2 Bit (EIS8)
It is possible to move the output into a fixed position and disable normal operation via this object. Only a weather alarm can have a higher priority if it has been parameterised.

If this object receives the telegram value “2” or “3”, the forced operation is activated and the output is moved into a parameterised intermediate position. Normal operation is disabled until the object receives the value “0” or “1”. In this case, the forced operation is deactivated and the output can be moved into a parameterised output position. It can then be operated normally again.

Telegram value:	“0”, “1”	Operation enabled
	“2”	Forced operation active, raise
	“3”	Forced operation active, lower

Objects “Weather alarm, prio. A” and “..., prio. B”: 1 Bit
Wind detectors, rain detectors or frost detectors can for example move the shutters or ventilation flaps into a parameterised safety position. Only the forced operation function can have a higher priority if it has been parameterised.

On receipt of the telegram value “1” at one of the two objects, the weather alarm is activated and both outputs can trigger a parameterisable safety position. Normal operation remains disabled until both object values again receive the value “0”. In this case, the weather alarm is reset and the outputs can move into a parameterisable output position. They can then be operated normally again.

Both objects can be monitored cyclically. If no telegrams are received at one of these objects for the duration of the monitoring period, the object value is set to “1” and the weather alarm is activated. After programming or bus voltage recovery, the monitoring period restarts.

The object “Weather alarm, prio. A” has a higher priority than the object “Weather alarm, prio. B”. If both objects have the value “1”, the parameterised safety position of the object “Weather alarm, prio. A” is relevant, provided that it has not been deactivated.

If the transmit flag is set at one of the objects, the object sends its status on the bus after each change.

Telegram value:	“0”: No weather alarm (operation enabled)
	“1”: Weather alarm (operation disabled)

5 Appendix

5.1 Value table for object "Telegr. status byte"

Object value		Automatic control active	Not used	Weather alarm active	Shutter/blind in upper end position *	Shutter/blind in lower end position **	Forced operation active	Disable function active	Not used
0	00								
1	01								■
2	02							■	
3	03							■	■
4	04						■		
5	05						■		■
6	06						■	■	
7	07						■	■	■
8	08					■			
9	09					■			■
10	0A					■		■	
11	0B					■		■	■
12	0C					■	■		
13	0D					■	■		■
14	0E					■	■	■	
15	0F					■	■	■	■
16	10				■				
17	11				■				■
18	12				■			■	
19	13				■			■	■
20	14				■		■		
21	15				■		■		■
22	16				■		■	■	
23	17				■		■	■	■
24	18				■	■			
25	19				■	■			■
26	1A				■	■		■	
27	1B				■	■		■	■
28	1C				■	■	■		
29	1D				■	■	■		■
30	1E				■	■	■	■	
31	1F				■	■	■	■	■
32	20			■					
33	21			■					■
34	22			■				■	
35	23			■				■	■
36	24			■			■		
37	25			■			■		■
38	26			■			■	■	
39	27			■			■	■	■
40	28			■		■			
41	29			■		■			■
42	2A			■		■		■	
43	2B			■		■		■	■
44	2C			■		■	■		
45	2D			■		■	■		■
46	2E			■		■	■	■	
47	2F			■		■	■	■	■
48	30			■	■				
49	31			■	■				■
50	32			■	■			■	
51	33			■	■			■	■
52	34			■	■		■		
53	35			■	■		■		■
54	36			■	■		■	■	
55	37			■	■		■	■	■
56	38			■	■	■			
57	39			■	■	■			■
58	3A			■	■	■		■	
59	3B			■	■	■		■	■
60	3C			■	■	■	■		
61	3D			■	■	■	■		■
62	3E			■	■	■	■	■	
63	3F			■	■	■	■	■	■
64	40		■						
65	41		■						■
66	42		■					■	
67	43		■					■	■
68	44		■				■		
69	45		■				■		■
70	46		■				■	■	
71	47		■				■	■	■
72	48		■			■			
73	49		■			■			■
74	4A		■			■		■	
75	4B		■			■		■	■
76	4C		■			■	■		
77	4D		■			■	■		■
78	4E		■			■	■	■	
79	4F		■			■	■	■	■
80	50		■		■				
81	51		■		■				■
82	52		■		■			■	
83	53		■		■			■	■
84	54		■		■		■		
85	55		■		■		■		■
86	56			■		■		■	
87	57			■		■		■	■
88	58			■		■	■		
89	59			■		■	■		■
90	5A			■		■	■	■	
91	5B			■		■	■	■	■
92	5C			■		■	■	■	
93	5D			■		■	■	■	■
94	5E			■		■	■	■	
95	5F			■		■	■	■	■
96	60			■	■				
97	61			■	■				■
98	62			■	■			■	
99	63			■	■			■	■
100	64			■	■				
101	65			■	■				■
102	66			■	■			■	
103	67			■	■			■	■
104	68			■	■		■		
105	69			■	■		■		■
106	6A			■	■		■		
107	6B			■	■		■		■
108	6C			■	■		■	■	
109	6D			■	■		■	■	■
110	6E			■	■		■	■	
111	6F			■	■		■	■	■
112	70			■	■	■			
113	71			■	■	■			■
114	72			■	■	■			
115	73			■	■	■			■
116	74			■	■	■		■	
117	75			■	■	■		■	■
118	76			■	■	■		■	
119	77			■	■	■		■	■
120	78			■	■	■	■		
121	79			■	■	■	■		■
122	7A			■	■	■	■		
123	7B			■	■	■	■		■
124	7C			■	■	■	■	■	
125	7D			■	■	■	■	■	■
126	7E			■	■	■	■	■	
127	7F			■	■	■	■	■	■
128	80	■							
129	81	■							■
130	82	■						■	
131	83	■						■	■
132	84	■					■		
133	85	■					■		■
134	86	■					■	■	
135	87	■					■	■	■
136	88	■				■			
137	89	■				■			■
138	8A	■				■		■	
139	8B	■				■		■	■
140	8C	■				■	■		
141	8D	■				■	■		■
142	8E	■				■	■	■	
143	8F	■				■	■	■	■
144	90	■			■				
145	91	■			■				■
146	92	■			■			■	
147	93	■			■			■	■
148	94	■			■		■		
149	95	■			■		■		■
150	96	■			■		■	■	
151	97	■			■		■	■	■
152	98	■			■	■			
153	99	■			■	■			■
154	9A	■			■	■		■	
155	9B	■			■	■		■	■
156	9C	■			■	■	■		
157	9D	■			■	■	■		■
158	9E	■			■	■	■	■	
159	9F	■			■	■	■	■	■
160	A0	■		■					
161	A1	■		■					■
162	A2	■		■				■	
163	A3	■		■				■	■
164	A4	■		■			■		
165	A5	■		■			■		■
166	A6	■		■			■	■	
167	A7	■		■			■	■	■
168	A8	■		■		■			
169	A9	■		■		■			■
170	AA	■		■		■		■	
171	AB	■		■		■		■	■
172	AC	■		■				■	
173	AD	■		■				■	■
174	AE	■		■				■	
175	AF	■		■				■	■
176	B0	■		■	■				
177	B1	■		■	■				■
178	B2	■		■	■				
179	B3	■		■	■				■
180	B4	■		■	■				
181	B5	■		■	■				■
182	B6	■		■	■				
183	B7	■		■	■				■
184	B8	■		■	■	■			
185	B9	■		■	■	■			■
186	BA	■		■	■	■			
187	BB	■		■	■	■			■
188	BC	■		■	■	■			
189	BD	■		■	■	■			■
190	BE	■		■	■	■			
191	BF	■		■	■	■			■
192	C0	■	■						
193	C1	■	■						■
194	C2	■	■						
195	C3	■	■						■
196	C4	■	■						
197	C5	■	■						■
198	C6	■	■						
199	C7	■	■						■
200	C8	■	■						
201	C9	■	■						■
202	CA	■	■						
203	CB	■	■						■
204	CC	■	■						
205	CD	■	■						■
206	CE	■	■						
207	CF	■	■						■
208	D0	■	■						
209	D1	■	■						■
210	D2	■	■						
211	D3	■	■						■
212	D4	■	■						
213	D5	■	■						■
214	D6	■	■						
215	D7	■	■						■
216	D8	■	■						
217	D9	■	■						■
218	DA	■	■						
219	DB	■	■						■
220	DC	■	■						
221	DD	■	■						■
222	DE	■	■						
223	DF	■	■						■
224	E0	■	■	■					
225	E1	■	■	■					■
226	E2	■	■	■					
227	E3	■	■	■					■
228	E4	■	■	■					
229	E5	■	■	■					■
230	E6	■	■	■					
231	E7	■	■	■					■
232	E8	■	■	■					
233	E9	■	■	■					■
234	EA	■	■	■					
235	EB	■	■	■					■
236	EC	■	■	■					
237	ED	■	■	■					■
238	EE	■	■	■					
239	EF	■	■	■					■
240	F0	■	■	■	■				
241	F1	■	■	■	■				■
242	F2	■	■	■	■				
243	F3	■	■	■	■				■
244	F4	■	■	■	■				
245	F5	■	■	■	■				■
246	F6	■	■	■	■				
247	F7	■	■	■	■				■
248	F8	■	■	■	■	■			
249	F9	■	■	■	■	■			■
250	FA	■	■	■	■	■			
251	FB	■	■	■	■	■			■
252	FC	■	■	■	■	■			
253	FD	■	■	■	■	■			■
254	FE	■	■	■	■	■			
255	FF	■	■	■	■	■			■

* In the operating mode "ventilation flaps" this bit indicates "ventilation flap open"
** In the operating mode "ventilation flaps" this bit indicates "ventilation flap closed"

5.2 Ordering information

Description	**Ordering information**		**bbn 40 16779**	Unit price	Unit weight	Pack unit
	Short code	Order no.	**EAN**	[EURO]	[kg]	[pc.]
Shutter Actuator Module, 2fach, 230 V AC	**JA/M 2.230.1**	2CDG 110 003 R0011	**58315 2**	26		1
Shutter Actuator Module, 2fach, 24 V DC	**JA/M 2.24.1**	2CDG 110 004 R0011	**58316 9**	26		1

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