Switch actuator 16gang / shutter actuator 8gang 10A RMD 75310001

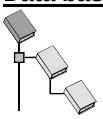
Technical Documentation

Depending on parameterization, the actuator works as switching actuator with max. 16 outputs or as blind/shutter actuator with max. 8 outputs. In the "shutter" mode, the actuator can also control shutters with lamellas. The functions can also be mixed so that the actuator can switch lamps and control shutter motors via different outputs (e.g. outputs A1 (output1) – A6 (output6) as 6-channel switching actuator, outputs A7 (output7) – A14 (output14) as 4-channel blind/shutter actuator, outputs A15 (output15) – A16 (output16) as 2-channel switching actuator). In this case, two output channels per motor must be combined for the blind/shutter function (cf. connection diagram).

The actuator is equipped for manual control permitting continuous or temporary control of the individual outputs independent of the bus. Mains supply is required.

A safety function for blind/shutter applications offers the possibility of setting all affected outputs in the event of a storm warning to a predefined safety position and to lock them in this position. Up to two sun protection functions permit controlling the shutter outputs depending on lighting conditions. An blocking function can be used to lock up parameterized switching outputs. A central function (1 bit or 2 bits) permits setting the switching outputs alternatively to a predefined position.

Data base structur:



Gebr. Berker
- ☒ Output
- ☒ Binary output mix

Application overview:
Switching/shutter TF 802601

Technical characteristics			
Degree of protection:	IP 20		
Mark of approval:	EIB		
Ambient temperature:	-5 °C ... +45 °C		
Storage temperature:	-25 °C ... +70 °C (reduced lifetime when stored above +45 °C)		
Fitting position:	any		
Minimum distances:	none		
Type of fixing:	Snap-fastening on DIN rail (no data rail required)		
instabus EIB supply			
Voltage:	21 – 32 V DC (SELV)		
Power consumption:	max. 150 mW		
Connection:	instabus connecting and branching terminal		
External supply			
Voltage:	110 V (-10 %) – 240 V (+10 %) AC; 50 / 60 Hz (no DC)		
Total power dissipation:	max. 5,5 W		
Connection:	Screw terminals:		
	0.5 – 4	mm²	single wire and stranded without ferrule
	0.5 – 2.5	mm²	stranded wire with ferrule
Input:	---		
Output:			
Number:	16 (max. 16 switching outputs / max. 8 blind/shutter outputs)		
Switching contact type:	normally open, floating (µ-contact)		
Switching voltage:	250 V AC 50-60 Hz (no DC)		
Max. switching current:	10 A at 250 V AC		
	16 A at 250 V AC (purely resistive load)		
Connection:	Screw terminals:		
	0.5 – 4	mm²	single wire and stranded without ferrule
	0.5 – 2.5	mm²	stranded wire with ferrule
Switching capability:			
	Outputs 1-8		Outputs 9-16
Resistive loads:	3600 W		3600 W
Incandescent lamps:	1400 W		2300 W

HV halogen lamps:	1225 W	2300 W
LV halogen lamps		
inductive transformers:	1200 VA	1200 VA
electronic transformers:	1200 W	1200 W
Fluorescent lamps compensated:	not approved	920 VA, 80 µF
Motors:	600 W (no three-phase motors)	600 W (no three-phase motors)

Response to voltage failure

(see also "Bus and mains voltage", page 16)

Bus voltage only:

Parameter-dependent ("response to bus voltage failure" per output)

Mains voltage only:

All outputs switch off or stop. Manual control not possible. The safety function and the master function (only with 2-bit "forced guidance ") remain active if activated before. Sun protection or blocking function are always rejected.

Bus and mains voltage:

All outputs switch OFF or stop. Manual control not possible. Safety, sun protection, master or blocking functions are rejected.

Response on reactivation

(see also "Bus and mains voltage", page 16)

Bus voltage only:

Mains voltage not available:

Outputs are OFF and/or stopped. Bus communication is possible, i.e. the safety function can be activated. Updates of the sun protection, blocking or master functions or updates on the short (Step) / long (Move) objects or the switching objects during mains failure are rejected.

Mains voltage available:
Parameter-dependent ("response on return of bus voltage" per output)

Mains voltage:

Bus voltage not available:
Parameter-dependent ("response to bus voltage failure" per output)
Manual control is possible.

Bus voltage available:
For blind/shutter operation: parameter-dependent ("response on return of bus voltage" per output).
For switching operation: switching status before mains failure will be restored.

Manual control is possible.

Exceptions:

1. In the blind/shutter mode, the actuator automatically reactivates the safety function for the outputs assigned, if the safety object has been activated before or during the mains failure. The parameterized "response at the beginning of the safety function" is then repeated.

   A safety function activated before and deactivated during the mains failure launches a new movement as parameterized for "end of the safety function" on return of the mains voltage. If a safety function was at first activated and then deactivated again during the mains failure, the actuator does not, after return of the mains, launch a new movement for the outputs assigned. In any case, the outputs assigned are re-enabled after safety deactivation.
   The sun protection functions are deactivated.

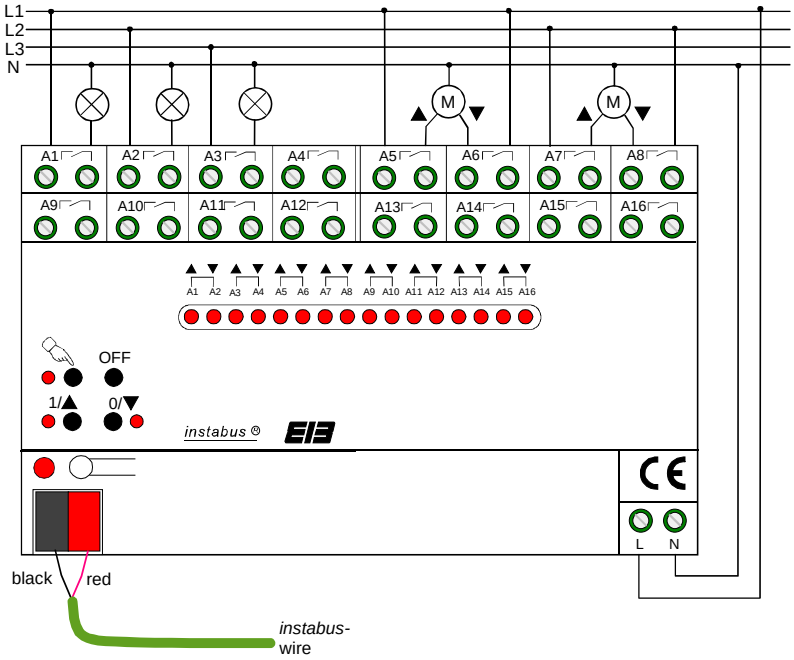
2. In the switching mode, the actuator automatically reactivates the central function (only with 2-bit "forced guidance "), if forced guidance was activated before the mains failure. Deactivation of forced guidance during mains failure is then not possible.

   The blocking function is deactivated, i.e. the switching channels are enabled.

Bus and mains voltage:

Parameter-dependent ("response on return of bus voltage" per output)
(cf. "Bus voltage only" / "Mains voltage only")

Connection diagram **Assignment of terminals:**



The mains voltage and the loads are connected as shown in the diagram above. The example shows connection of 3 lamps to outputs A 1 – A3 and 2 blind/shutter motors to outputs A5/A6 and A7/A8. Further loads are connected in the same way.

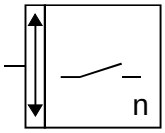
For blind/shutter operation, two neighbouring relay outputs are grouped to form an output channel. The relay output on the left (1, 3, 5, …) respectively is the one for the UP movement whereas the one on the right (2, 4, 6, …) is responsible for the DOWN movement.

Important information:
It must be ensured that the loads connected are compatible with the parameterization of the outputs. There is otherwise a risk of irreparable damage to blind/shutter motors, if they are connected to outputs parameterized as switching actuator outputs. For this reason, the loads connected must be checked before programming the device with the ETS. The movement directions in blind/shutter operation are interlocked only by the software.

Hardware information

- Connection of different phase conductors is possible.
- Connecting 230 V and SELV to different outputs of the actuator is not permitted.
- The supply voltage (mains voltage) is connected to terminals "L" and "N". The relays can only be operated when the mains voltage is on.
- If, motors are to be connected in parallel to the outputs in blind/shutter operation, it is absolutely indispensable to observe the corresponding instructions of the motor manufacturers to avoid irreparable damage to the motors. If necessary, use supplementary isolating relays.
- For blind/shutter operation, use only blinds or shutters with end position limit switches (mechanical or electronic). The limit switches of the motors connected are to be checked for correct adjustment.
- Activation of the manual operating mode stops all blind/shutter output channels. The switching channels maintain their status. In this case, bus communication has no longer any effect on the relay switching condition. Safety interlock, sun protection and inhibit function, the central function and all time functions will be aborted. A safety function will be subsequently executed on leaving the manual control mode, if still active, and a forced guidance that was active beforehand will also be reactivated (switching channels disabled). In the manual control mode with blind/shutters, only long operation (long depression of key) and the stop command (brief depression of key) are available.

Description of the software

Software description					
ETS search path: Output / Binary output mix / Switch act. 16gang / shutter act. 8gang 10A RMD				**ETS symbol:** 	
AST type	00 Hex	0 Dez	No adapter used		
Application: Switching/shutter TF 802601		1.1			
Executable from mask version:	32		**dynamic table management**	Yes ☒	No ☐
Number of addresses (max):	32		**maximum length of table**	64	
Number of assignments (max):	20				

Object	**Object name**	**Function**	**Type**	**Flags**
Function: "2 x switching" (for all 8 pairs of outputs) *				
0	Output 1	Switching	1 bit	C, W, (R**)
1	Output 2	Switching	1 bit	C, W, (R**)
2	Output 3	Switching	1 bit	C, W, (R**)
3	Output 4	Switching	1 bit	C, W, (R**)
4	Output 5	Switching	1 bit	C, W, (R**)
5	Output 6	Switching	1 bit	C, W, (R**)
6	Output 7	Switching	1 bit	C, W, (R**)
7	Output 8	Switching	1 bit	C, W, (R**)
8	Output 9	Switching	1 bit	C, W, (R**)
9	Output 10	Switching	1 bit	C, W, (R**)
10	Output 11	Switching	1 bit	C, W, (R**)
11	Output 12	Switching	1 bit	C, W, (R**)
12	Output 13	Switching	1 bit	C, W, (R**)
13	Output 14	Switching	1 bit	C, W, (R**)
14	Output 15	Switching	1 bit	C, W, (R**)
15	Output 16	Switching	1 bit	C, W, (R**)
Function: "1 x blind/shutter (for all 8 pairs of outputs) *				
0	Output 1/2	Short operation (Step)	1 bit	C, W, (R**)
1	Output 1/2	Long operation (Move)	1 bit	C, W, (R**)
2	Output 3/4	Short operation (Step)	1 bit	C, W, (R**)
3	Output 3/4	Long operation (Move)	1 bit	C, W, (R**)
4	Output 5/6	Short operation (Step)	1 bit	C, W, (R**)
5	Output 5/6	Long operation (Move)	1 bit	C, W, (R**)
6	Output 7/8	Short operation (Step)	1 bit	C, W, (R**)
7	Output 7/8	Long operation (Move)	1 bit	C, W, (R**)
8	Output 9/10	Short operation (Step)	1 bit	C, W, (R**)
9	Output 9/10	Long operation (Move)	1 bit	C, W, (R**)
10	Output 11/12	Short operation (Step)	1 bit	C, W, (R**)
11	Output 11/12	Long operation (Move)	1 bit	C, W, (R**)
12	Output 13/14	Short operation (Step)	1 bit	C, W, (R**)
13	Output 13/14	Long operation (Move)	1 bit	C, W, (R**)
14	Output 15/16	Short operation (Step)	1 bit	C, W, (R**)
15	Output 15/16	Long operation (Move)	1 bit	C, W, (R**)

Object	Object name	Function	Type	Flags
Master function "Switching (1 bit)" ***				
16	Central function (switching)	Switching	1 bit	C, W, (R**)
Master function "Forced guidance (2 bits)" ***				
16	Central function (switching)	Forced guidance	2 bits	C, W, (R**)
Function "Sun protection function 1"				
17	Sun protection function (blind/shutter)	Sun protection 1	1 bit	C, W, (R**)
Auxiliary function "Inhibit function" ***				
18	Auxiliary function (switching)	Blocking	1 bit	C, W, (R**)
Auxiliary function "Sun protection function 2" ***				
18	Auxiliary function (blind/shutter)	Sun protection 2	1 bit	C, W, (R**)
Function "Safety"				
19	Auxiliary function (blind/shutter)	Safety	1 bit	C, W, (R**)

***:** The "2 x switching" resp. "1 x blind/shutter" functions can be parameterized for the 8 pairs of outputs. The parameter and object structure will therefore vary depending on parameterization.

: For objects marked (R), the object status can be read out (set "Read" flag!). The status set by manual control or by means of an blocking function for switching channels will not be retained in the "switching" objects! Switching conditions caused by a time or master function (only 1-bit central function) will be retained. No status will be retained for the blind/shutter outputs in the Step resp. in the Move objects!

***: Depending on parameterization, the objects for the master and auxiliary function will be created dynamically.

Description of the objects

Object description (dynamic object structure):			
0 - 16	Switching (EIS 1):	1-bit object for switching of a switching output The switching status is dependent on relay operation: "Normally open contact (no)": "1" = contact closed / "0" = contact open. "Normally closed contact (nc)": "1" = contact open / "0" = contact closed. The status indicator LEDs of the LED array on the device are lit up when the switching contacts are closed.
0, 2, 4...14	Short operation (Step) (EIS 7):	1-bit object for short operation (step) of a blind/shutter
1, 3, 5...15	Long operation (Move) (EIS 7):	1-bit object for short operation (move) of a blind/shutter
16	Switching (EIS 1):	1-bit object for central switching of all switching outputs integrated in the central function (parameterizable). The switching status is dependent on relay operation: "Normally open": "1" = contact closed / "0" = contact open. "Normally closed": "1" = contact open / "0" = contact closed.
16	Forced guidance (EIS 8):	2-object for forced guidance (forced guidance) of all switching outputs integrated in the central function (parameterizable). The switching status is dependent on relay operation: "Normally open": "forced guid. on / on" = contact closed / " forced guid. off / off" = contact open "Normally closed":" forced guid. on / on" = contact open / " forced guid. off / off" = contact closed.
17	Sun protection 1 (EIS 1):	1-bit object for activation of sun protection function 1. "1": sun protection activated / "0": sun protection deactivated.

	18	Sun protection 2 (EIS 1):	1-bit object for activation of sun protection function 2. "1" = sun protection activated / "0" = sun protection deactivated.
	18	Blocking (EIS 1):	1-bit object for inhibition of all switching channels integrated in the blocking function (parameterizable). "1" = blocking function activated / "0" = blocking function deactivated.
	19	Safety (EIS 1):	1-bit object for reception of an alarm resp. safety message (polarity parameterizable)

Scope of functions

- Max. 16 switching outputs or max. 8 blind/shutter outputs. The 8 pairs of outputs can be freely assigned to the "Switching" or "blind/shutter" functions.
- Switching status indication for each relay output (LED lit up = contact closed),
- Manual control of all output channels possible even without bus voltage. Manual control can be inhibited.

Switching function:

- Blocking function possible (response at the beginning and at the end of inhibit is parameterizable),
- Central function possible, alternatively for common switching (EIS 1) or as forced guidance (EIS 2),
- Relay operation presettable (normally open contact / normally closed contact),
- Time function possible for outputs A1 thru A8 (OFF-delay or timer function / for timer function, the response to an OFF-telegram can be parameterized),
- Response to failure and return of bus voltage adjustable

Blind/shutter function:

- Blind/shutter presettable: Venetian blind (with slat position control) or rolling shutter,
- Moving times for short and long operation presettable (1 x for all blind/shutter outputs),
- Break during change of moving direction (change-over time) parameterizable (1 x for all blind/shutter outputs),
- Response to failure and return of bus voltage adjustable,
- Safety function, e.g. for wind alarm, with or without cyclical monitoring, with movement to one of the limit positions or no reaction parameterizable (polarity of safety object adjustable),
- Up to 2 sun protection functions for assignable blind / shutter outputs (separate moving times for sun protection activation parameterizable; sun protection positioning including slat position control possible; response at the end of the sun protection cycle selectable).

Description of functions

Safety function

The actuator is equipped with a safety function that can be separately assigned to the blind or shutter channels. The safety function can be activated or deactivated by means of an object. The polarity of the object can be parameterized.

Safety reaction
Only the output channels to which the safety function has been assigned show a reaction! The response of the channels at the beginning and at the end of a safety function can be generally preselected.

"**Response at the start a safety function":**

The actuator moves the blinds/shutters optionally into one of the limit-stop positions, if the response to safety is parameterized for "moving UP" or "moving DOWN". With these settings, the blinds/shutters will be locked up in the limit position after the end of the safety movement. If the response to safety is parameterized for "no reaction", no movement will be started and the output channels locked up in the current position.
With respect to other bus-controllable functions of the blind/shutter channels, the safety function has the highest priority. This means that all active functions of the outputs concerned as, for instance, an active sun protection function or short (Step) or long (Move) commands will be aborted and the safety function executed. The safety function can only be interrupted by manual control of the device.

"Response at the end a safety function":

If parameterized for "UP movement" or "DOWN movement", the output channels concerned are immediately re-enabled by the actuator at the end of the safety function and the blind/shutter is moved into the corresponding limit positions. If the response at the end of a safety function is parameterized for "no reaction", the corresponding outputs are re-enabled without, however, launching a new movement. If the outputs are re-enabled for "no reaction" while a safety movement is still in progress, the outputs will be re-enabled without stopping the movement.
A sun protection function interrupted by a safety function will not be continued after safety deactivation.

Cyclical monitoring

The safety object can be cyclically monitored for the reception of telegrams.
When monitoring is enabled (monitoring time parameterized), the actuator expects a telegram update to the safety object! If no telegrams are received during the monitoring time, the safety function will be activated.
The safety function can be deactivated again when a safety unlock command is received.
The cycle time of the transmitters should be shorter than the monitoring time parameterized in the blind/shutter actuator in order to ensure that at least one telegram can be received during the monitoring time.

Manual control and safety function

With respect to all other bus-controllable blind/shutter functions, the safety function has the highest priority. The safety function can be interrupted only by manual control of the device.
After the end of manual control, the actuator automatically reactivates the safety function for the blind/shutter outputs assigned, if the safety object has been activated before or during manual control and re-executes the parameterized "response at the beginning of a safety function".

A safety function activated before and deactivated during manual control causes the actuator to start a new movement after deactivation as parameterized for "end of safety function". If a safety function has been activated and then deactivated during manal control, the actuator does not start a new movement for the outputs assigned after deactivation of the manual control mode. The blind/shutter outputs concerned are in any case re-enabled after safety deactivation.

Sun protection function

The actuator has up to two sun protection functions for separate assignment to the blind or shutter channels. The sun protection functions can be activated resp. deactivated via separate objects.
The second sun protection function can be enabled by the auxiliary function as an alternative to the blocking function for switching channels. Only one sun protection function can be assigned to a blind or shutter output. It is not possible to combine the two automatic sun protection functions.

Sun protection behaviour / sun protection positioning

The response of the blind/shutter outputs assigned at the beginning and at the end of a sun protection function can be predetermined.

Response at the beginning of a sun protection function:

The sun protection function is executed in three steps:

1. Reference movement into the upper end position only if the blind or shutter is not already in its upper end position (long upward movement ended.)
   A reference movement is executed in the form of the parameterized long movement (long operation).
2. Positioning of the blind / shutter: During the sun protection movement time separately preset for both sun protection functions ("Move operation" in acc. with "Sun protection" card), the blind or shutter is moved downwards. When the sun protection movement time elapses, the blind or the shutter will stop in sun protection position.
3. Positioning of the slats: positioning of the slats in acc. with the parameterized "Number of steps after long-step operation" will be effected after the sun protection movement only for such outputs for which the "Blind/shutter type" = "Blind" selection is valid, with the actuator moving the blind upwards for the preset duration (number of steps x parameterized short operation).
   It must be remembered that the actuator has been designed to control the most common types of blinds. The actuator assumes that the slats are completely closed during the downward movement and that they will open during an upward movement.
   When the "Blind/shutter type" is a "Shutter", there is no positioning of the slats during the sun protection.

During an activated sun protection function, no operation by means of short (Step) or long (Move) objects is possible.

"Response at the end of the sun protection function":

At the end of the sun protection function, the actuator immediately re-enables the outputs channels concerned and moves the blind/shutter into the respective limit positions for the "UP" and "DOWN" settings. If the response at the end of the sun protection function is parameterized for "No reaction" or "Stop", there will be no new movement. If the sun protection is dectivated by "No reaction" while the sun protection positioning movement is still in progress, the movement will be completed (movement as for sun protection long operation). If the sun protection is dectivated by "Stop" while the sun protection positioning movement is still in progress, the movement is interrupted instantaneously.

Remarks on the sun protection function:

- Sun protection movements including the reference movement before sun protection are not retriggerable.
- On return of bus voltage, the sun protection functions are always deactivated.
- An object update of the sun protection objects from "Deactivated" to "Deactivated" shows no reaction. An update from "Activated" to "Activated" restarts the corresponding sun protection function only if this function was interrupted beforehand by manual control or by a safety function.
- The safety function interrupts the sun protection function. A safety-locked output cannot be influenced by a sun protection function.
  A sun protection function becomes active only after deactivation of the safety lock and a new telegram update of the sun protection object and, if necessary, of the enabled output.
- Long (Move) or short (Step) commands issued during an active sun protection function are disregared.

Master function

The master function is only available in the switching channels and can be preset as a 1-bit switching function or optionally as 2-bit forced guidance . The master function is activated resp. deactivated by object 16.

Master function "Switching (1 bit)":

Object 16 is structured as a 1-bit object. The switching channels assigned to the master function are controlled in accordance with the master function object value received ("1": switching on / "0": switching off). The behaviour of the channels is identical to the 'normal' switching function when controlled via the "Switching" objects, i.e. time functions will be taken into consideration if they are parameterized. The response with the 1-bit master function is comparable to a master group address assigned to all "Switching" objects. The parameterized relay operation is evaluated, too. The switching status set by the master function is retained in the "Switching" objects.

Master function "Forced guidance (2-bit / priority)":

Object 16 is structured as a 2-bit object in acc. with EIS 8. With the central object, the switching channels assigned to the central function can be forced separately into a switching position and this independent of the values of the "Switching" objects. The "Relay operation" parameter is active here, too. The value of the 2-bit telegram must be selected in acc. with the following syntax:

The first bit (bit 0) of the forced guidance object indicates the switching status with priority.
The second bit (bit 1) of the forced guidance object activates resp. deactivates the prioritiy control

bit 1	bit 0	Function
0	x	priority not active, ⇨ ´switching´ object
0	x	priority not active, ⇨ ´switching´ object
1	0	priority active: switching off
1	1	priority active: switching on

At the beginning of forced guidance, all time functions are stopped.
When priority is active, the internal evaluation of switching telegrams received continues. During the deactivation of forced guidance , the switching status is set in compliance with the value of the switching object retained. Time functions are not taken into account. If no switching telegrams have been received or retained during active forced guidance , the relay status activated before forced guidance is reactivated.

Remarks on the master function:

- After return of bus voltage, the master function is always deactivated.
- An object update of the master object ("Switching on" after "Switching on" resp. "Switching off" after "Switching off") is always re-executed for the 1-bit master function. An object update of the master object ("Priority active" after "Priority active" resp, "Priority inactive" after "Priority inactive") shows no reaction with the 2-bit central function.
- A forced guidance active before manual control remains activated after deactivation of the manual control mode (switching channels locked). The switching status in acc. with the forced guidance is re-executed only after an update of the forced guidance function.
- Switching statuses preset by a 1-bit master function will be retained in the "Switching" objects.
- A switching output assigned to the 2-bit master function can no longer be assigned to the blocking function. Assignment of a switching output to the 1-bit master function and to the blocking function is, however, possible.
- The 1-bit central function has the same priority as the "Switching" objects.

Blocking function

The blocking function is available only for the switching channels and is activated and deactivated by object 18. It permits disabling of the switching outputs assigned. The blocking function is enabled by the master function as an alternative to the second sun protection function of the blind/shutter outputs.
During an active blocking function, the channels cannot be controlled by means of the "Switching" objects.
The polarity of the blocking object is fixed as follows: "1" = blocking active / "0" = blocking inactive.

Only the output channels assigned to the blocking function show a reaction. The response of the cannels at the beginning and at the end of an blocking function can be generally fixed.

"Response at the beginning of an inhibit function":
Depending on the relay operation parameterized, the actuator can switch the outputs optionally "on" or "off". The outputs are interlocked. In the "No reaction" setting, the switching outputs remain in the state set before the blocking function.

"Response at the end of an inhibit function":
Depending on the relay operation parameterized, the actuator can switch the outputs optionally "on" or "off ". Time functions are disregarded. The outputs are re-enabled. In the "No reaction" setting, the switching outputs remain in the state prevailing at the beginning of the inhibit function.

Remarks on the blocking function:

- After return of bus voltage, the blocking function is always deactivated.
- An object update of the blocking object "Deactivated" after "Deactivated" shows no reaction. An update from "Activated" to "Activated" restarts the blocking function only in case the function has been interrupted beforehand by manual control.
- Switching states set by an blocking function are not retained in the "Switching" objects.
- A switching output assigned to the 2-bit master function can no longer be assigned to the blocking function. Assignment of a switching output to the 1-bit master function and to the blocking function is, however, possible!

Time functions for switching outputs

A time function can be parameterized for switching outputs 1 thru 8 with the possibility to activate an OFF-delay or alternatively a timer function (staircase lighting).

Switch OFF delay:
After reception of a "0" telegram via the "Switching" object or a 1-bit central function "OFF", the output does not switch off immediately and the parameterized time delay begins to run. The output is switched off only after this delay has elapsed. The OFF-delay cannot be retriggered by an "OFF" telegram. An "ON" telegram during the OFF-delay interrupts this delay. The OFF-delay does not influence the value of the "Switching" object.

Timer function:
After reception of a "1" telegram via the "Switching" object or a 1-bit central function "ON", the output channel is switched on and the parameterized time delay is started.
After this delay, tha output switches off automatically. The timer function can be retriggered by a switch-on command. The timer function influences the value of the "Switching" object so that a "0" is retained in the "Switching" object after the delay has elapsed.

An "OFF" telegram received during the time delay (ON-time) can be disregarded with timer functions. Depending on the "Response to OFF telegram" parameter, the output either switches off prematurely ("Switch off" setting) or the switch-off telegram is disregarded and the output switches off only after the end of the time delay ("Ignore OFF telegram" setting).

No timer functions available for switching outputs 9 thru 16!

Priorities of the blind/shutter resp. switching functions

All functions of the actuator are governed by fixed priority rules.

Priorities for the blind/shutter functions:

- Manual control (highest priority)
- Safety function
- Sun protection function
- Operation by short or long command (lowest priority)

The safety function interrupts the sun protection function and all other bus-controlled movements of the blind or the shutter. A safety-locked output cannot be influenced by a sun protection function. The safety function can only be interrupted by a manual control.
A sun protection function becomes active again only after the safety lock has been deactivated and after a new telegram update of the sun protection object and, if necessary, of the enabled output.
Long or short commands during active manual control or a safety or sun protection function are disregarded.

Priorities for the switching functions:

- Manual control
- Blocking function
- Master function 1 bit / operation by switching commands

or

- Manual control (highest priority)
- Blocking function 2 bits
- Operation by switching commands (lowest priority)

A distinction must be made between a 1-bit master function or a forced guidance (2 bits) being assigned to an output.
With forced guidance, no blocking function is possible. In this case, a master function can only be interrupted by manual control. During an active forced guidance, the switching commands received via the bus are retained internally and abandoned only at the end of a forced guidance .
With a 1-bit master function, an blocking function is available. The blocking function has a higher priority than the master function or an operation by "Switching" objects and can only be interrupted by a manual control. A control of the relay outputs by the "Switching" object ranks on the same level as a 1-bit master function.

Bus and mains voltage / Programming procedure

Response to bus voltage failure:
The response in case of bus voltage failure only is fixed by the "Response to bus voltage failure" parameter separately for each blind/shutter or switching output. The following actions can be parameterized: blind or shutter moving to upper limit position ("UP"), blind or shutter moving to lower limit position ("DOWN"), movements in

progress being stopped ("Stop") or no reaction taking place ("No reaction" / any movements still in progress will be completed). The switching channels can close ("Close contact"), open ("Open contact") or show no reaction in the event of bus voltage failure ("No reaction" / switching state maintained).
Depending on the "Manual control in case of bus voltage failure" parameter on the "General" card, manual control is possible.

Response to mains voltage failure:
The actuator needs a mains voltage supply for operation. In the event of mains voltage failure, all outputs switch off or are stopped. Manual control is then no longer possible. Any safety or master functions ("Forced guidance " 2 bits) remain active. Sun protection or blocking functions are rejected.

Response to bus and mains voltage failure:
Like with a normal mains failure, all outputs switch off or are stopped. Manual control is then no longer possible. Any bus-activated safety functions and also central, sun protection or inhibit functions are rejected.

Response on return of bus voltage:
The response depends on whether mains voltage is present or not when the bus voltage returns.
If the mains is present on return of bus voltage, the reaction is fixed by the "Response on return of bus voltage" parameter separately for each blind or shutter output. The following actions can be parameterized: blind or shutter moving to upper limit position ("UP"), blind or shutter moving to lower limit position ("DOWN"), movements in progress being stopped ("Stop"). The switching channels can close ("Close contact"), open ("Open contact") or go back on return of bus voltage to the switching state held before bus voltage failure ("Value before bus voltage failure").
In the "Value before bus voltage failure" setting, the switching state that was active before bus voltage failure is restored. The parameterized relay operation (break or make) is taken into account. After programming with the ETS, the "Value before bus voltage failure" resp. the object value is always "0" so that a breaking contact (contact closed) closes and a making contact (contact openened) opens. The status LED in the LED array on the device is lit up when the switching contact is closed.

An activated manual control is terminated. An unprogrammed actuator is factory-adjusted for "Stop" resp. "Open contact" reaction in the event of bus voltage return.

If there is no mains voltage on return of the bus voltage, all output channels remain off or stopped. Bus communication is, however, possible, i.e. the safety function can be activated. Activations of the sun protection, blocking or master function, of short (Step) or long (Move) commands or switching telegrams are rejected. Any safety function activated during the mains failure will be repeated when the mains voltage is restored later on.
If no safety function has been activated during the mains failure (bus voltage being present), the actuator executes the parameterized "Response to bus voltage return" when the mains is restored later on. Manual control is not possible.

Response to mains voltage return:

The response depends on whether bus voltage is present or not when the mains voltage returns.
If bus voltage is present, the reaction of the blind/shutter function is fixed by the "Response on return of bus voltage" parameter separately for each blind or shutter output. The following actions can be parameterized: blind or shutter moving to upper limit position ("UP"), blind or shutter moving to lower limit position ("DOWN"), movements in progress being stopped ("Stop").
For all switching channels, the switching state that was active before mains voltage failure is restored on return of the mains (bus voltage being present).
Manual control is possible.

Exceptions:

1. In the blind/shutter function, the actuator automatically reactivates the safety function in the outputs assigned, if the safety object was activated before or during the mains failure. The parameterized "Response at the beginning of the safety function" is re-executed.

   A safety function activated before the mains failure and deactivated during the failure causes a new movement on return of mains voltage as parameterized for "End of the safety function". If, during mains failure, a safety function was activated and then deactivated again, the actuator does not launch a new movement for the outputs assigned after return of the mains voltage. The outputs concerned are in any case re-enabled after safety deactivation.
   The sun protection functions are deactivated.

2. In the switching function, the actuator automatically reactivates the master function (only with 2- bit "Forced guidance "), if the forced guidance was activated before the mains failure. Deactivation of the forced guidance during mains failure is then not possible.

   The blocking function is deactivated, i.e. the switching channels are enabled.

If the bus voltage is not present on return of mains voltage, the parameterized "Response to bus voltage failure" is launched separately for each blind/shutter or switching output (in unprogrammed actuators, "Stop" or "Open contact" are factory-adjusted). Manual control is possible.

Response to bus and mains voltage return:

The parameterized "Response to bus voltage return" is launched separately for each blind/shutter or switching output. In this case, manual control is possible. (Cf. also "Response to bus voltage return" / "Response to mains voltage return")

Programming procedure:

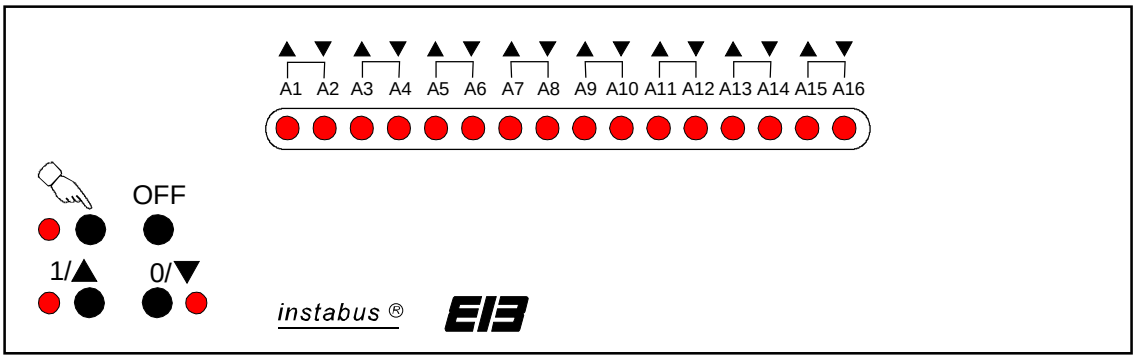
After the end of ETS programming or after a bus reset (bus voltage return), the parameterized "Response to bus voltage return" is executed separately for each blind/shutter or switching output.
In the "Value before bus voltage return" setting for the switching outputs, the switching state that was active before bus voltage failure is restored. The parameterized relay operation (break or make) is taken into account. After programming with the ETS, the "Value before bus voltage failure" resp. the object value is always "0" so that a breaking contact (contact closed) closes and a making contact (contact openened) opens. The status LED in the LED array on the device is lit up when the switching contact is closed.
After a programming cycle, the manual control mode is terminated.

Manual control depending on bus and mains voltage:

Manual control is only possible when mains voltage is present. Depending on the "Manual control on bus voltage failure" parameter on the "General" card, manual control with no bus voltage applied is possible. An activated manual control mode ends on return of bus voltage.

Manual control

The actuator as delivered has the manual control mode already enabled. The four keys on the device front panel permit comfortable local operation of the up to 16 output channels also without bus voltage being present. The different operating states are indicated by up to 19 red LEDs. For manual control, the mains supply must be on.



Activation of manual control and operation:

The manual control mode can be activated temporarily or permanently.

<u>Permanent manual control:</u>

Activation:

1. Press the " " key for at least 5 seconds,
2. the red LED beside the " " key lights up statically. The actuator is now peramanently in the manual control mode, control from the EIB is disabled and all blind/shutter output channels are stopped. The switching outputs remain in the state that was active before the acticvation of manual control.

Operation: A short press (< 1 second) on the " " key selects the output channel which is to be operated by manual control. The actuator distinguishes between blind/shutter or switching function also in the manual control mode.
The two status LEDs (▲ ▼) of the output selected in the LED array start flashing, if the channel

is one parameterized for blind/shutter operation. If only one status LED flashes (▲ or ▼), the selected channel is a switching channel. Pressing the select key repeatedly permits switching between all outputs.
The "1/ ▲ " and "0/ ▼ " keys can be used to control the selected output channel and to modify the switching status and the sense of movement. The LEDs beside the keys indicate the switching state of the selected channel. The switching states of non selected outputs are indicated as for 'normal' bus operation by means of the LEDs of outputs A1thru A16 in the LED array.

Deactivation:
- by pressing the " ☜ " key for at least 5 secs. until the corresponding LED goes out or
- by bus reset or reapplication of bus voltage (return of bus voltage), or
- by switching off the mains voltage.

Master OFF / Stop function:

When the actuator is in the permanent manual control mode, all output channels can be shut off at the same time with the central OFF / Stop function (switching outputs) or stopped (blind/shutter outputs). A press on the "OFF" key executes the OFF / Stop function. All relays are switched off immediately. The central OFF / Stop function is available in the permanent manual control mode only!

Temporary manual control mode:

Activation:
1. Press the " ☜ " select key briefly (< 1 sec.),
2. The red LED(s) of output channel 1 in the LED array start flashing. Both LEDs will flash, if the first output channel is parameterized as blind/shutter channel. Only one LED will flash, if the first channel is a switching channel. The actuator is now temporarily in the manual control mode, control from the EIB is disabled and all blind/shutter channels are stopped. The switching outputs remain in the state that was active before activation of the manual control mode. The red LED beside the select key is off!

Operation:
A brief press (< 1 sec.) of the " ☜ " key selects the output channel which is to be controlled manually. The actuator distinguishes between blind/shutter or switching functions also in the manual control mode.
The two status LEDs (▲ ▼) of the output selected in the LED array start flashing, if the channel is one parameterized for blind/shutter operation. If only one status LED flashes (▲ or ▼), the selected channel is a switching channel. Pressing the select key repeatedly permits switching between all outputs. The temporary manual control mode is terminated automatically if the select key is pressed once again after the last output channel has been selected. After termination of the manual control mode, the actuator goes back to 'normal' bus operation.

The "1/ ▲ " and "0/ ▼ " keys can be used to control the selected output channel and to modify the switching status and the sense of movement. The LEDs beside the keys indicate the switching state of the selected channel. The switching states of non selected outputs are indicated as for 'normal' bus operation by means of the LEDs of outputs A1 thru A16 in the LED array.

Deactivation:
- if no further key is pressed after more than 5 seconds, or
- when the select key is pressed once again after all outputs channels have been selected once with the key, or
- by bus reset or reapplication of bus voltage (bus voltage return) or
- by switching off the mains voltage.

If the " ☜ " key is pressed in the temporary manual control mode for at leat 5 seconds, the actuator changes over to permanent manual control. Pressing the "OFF" key in the temporary manual control mode yields no reaction!

On activation of the temporary or permanent manual control mode, all blind/shutter output channels are generally stopped and an active safety and sun protection function are aborted. The output channel control via the bus is disabled. The switching outputs remain in the state that was active before activation of the manual control mode. Time functions are not taken into account. The central or the blocking function are aborted, too.

The safety function for blind/shutter outputs is reactivated after deactivation of the manual control mode, if it has not been cancelled. The sun protection functions are rejected or discontinued after deactivation of the manual control mode. If the blind/shutter outputs are in motion when deactivated, the movement is continued until the preset long operation elapses (counted from the moment of actuation).
The switching states remain unchanged after deactivation of the manual control mode. Time functions are not taken into account. A forced guidance (master function: 2 bits) active before the manual control mode remains activated

(switching channels disabled) The switching state corresponding to the forced guidance is re-executed, however, only after an update of the forced guidance function.

Manual control mode enable:

The manual control mode is available only when mains voltage is present. The manual control mode can be generally inhibited by selecting the parameter "Manual control = disabled" on the "General" card. Depending on the "Manual control on bus voltage failure" parameter, it is possible to specify in addition (with manual control generally disabled) whether a manual control is to be permitted even in the event of bus voltage failure. An activated manual control mode is terminated on return of bus voltage.

Manual control mode information:

- The parameterized "Break during change of movement direction" is taken into account also for the manual control mode (factory-adjusted to 1 second).
- The state of the switching channels adjusted during manual control is not retained in the "Switching" objects!
- In the manual control mode, the blind/shutter outputs permit only long operation (long depression of key) and stop commands (brief depression of key). When delivered ex factory (actuator not yet programmed), the long operation is factory-adjusted to 'infinite'. After programming of the device with the ETS, the movement time parameterized on the "Movement time" card under "Long operation" is applicable.

Settings of the actuator when delivered ex factory

When delivered ex factory, the actuator is adjusted to the the following parameters:

- All outputs are preset as blind/shutter channels
- Move operation time: infinite
- Step operation: only stop
- Break during change of movement direction: 1 s
- Reaction after bus voltage failure: Stop / Open contact
- Reaction on return of bus voltage: Stop / Open contact
- Manual control: completely enabled

Parameters of the parameter card “General”

Parameter		
Description:	**Values:**	**Comment:**
General		
Manual operation		In the manual operating mode, the output channels can be switched manually. Manual operation is available only if mains voltage is present.
	enabled	Manual operation is generally available.
	disabled	Manual operation is not available when bus voltage present.
Manual operation in case of bus voltage failure		Manual operation additionally permitted in the event of bus voltage failure.
	enabled	Manual operation can only be activated in the event of bus voltage failure.
	disabled	Activation of manual operation generally not possible. Only if "Manual operation" = "disabled"!
Auxiliary function (HA)		Defines the auxiliary function (object 18).
	Blocking function (for switching operation)	Enables the blocking functions which are valid for switching functions only.
	Sun protection function 2 (for blind/shutter operation)	Enables the second sun protection function which is valid for blind/shutter functions only.
Function of object 'Master function' in case of switch operation (HA)		Defines the type of master function which is valid for switching channels only.
	Switching (1 bit)	The master function is designed as switching function (EIS 1).
	Forced guidance (2 bits)	The master function is designed as forced guidance (priority control) function (priority / EIS 8).

Parameters of the parameter card "Function of outputs"

Parameter		
Description:	**Values:**	**Comment:**
Function of outputs		
Function output 1 / output 2		Defines the function of output pair out1/out2.
	2 x switching	Output 1 and output 2 are two separate switching channels.
	1 x blind/shutter	output 1 and output 2 are combined into a blind/shutter channel.
Function output 3 / output 4		Defines the function of output pair outp3/out4.
	2 x switching	Output 3 and output 4 are two separate switching channels.
	1 x blind/shutter	Output 3 and output 4 are combined into a blind/shutter channel.
Function output 5 / output 6		Defines the function of output pair out5/out6.
	2 x switching	Output 5 and output 6 are two separate switching channels.
	1 x blind/shutter	Output 5 and output 6 are combined into a blind/shutter channel.
Function output 7 / output 8		Defines the function of output pair out7/out8.
	2 x switching	Output 7 and output 8 are two separate switching channels.
	1 x blind/shutter	Output 7 and output 8 are combined into a blind/shutter channel.
Function output 9 / output 10		Defines the function of output pair out9/out10.
	2 x switching	Output 9 and output 10 are two separate switching channels.
	1 x blind/shutter	Output 9 and output 10 are combined into a blind/shutter channel.
Function output 11 / output 12		Defines the function of output pair output11/output12.
	2 x switching	Output 11 and output 12 are two separate switching channels.
	1 x blind/shutter	Output 11 and output 12 are combined into a blind/shutter channel.
Function output 13 / output 14		Defines the function of output pair output 13 / output 14.
	2 x switching	Output 13 and output 14 are two separate switching channels.
	1 x blind/shutter	Output 13 and output 14 are combined into a blind/shutter channel.
Function output 15 / output 16		Defines the function of output pair output 15 / output 16.
	2 x switching	Output 15 and output 16 are two separate switching channels.
	1 x blind/shutter	Output 15 and output 16 are combined into a blind/shutter channel.

Parameters of the parameter card "Blocking function"

Only if "Auxiliary function" = "Blocking function"!

Parameter		
Description:	**Values:**	**Comment:**
Blocking function (switching) (HA)		
Response at the beginning of blocking function (all switching outputs assigned) (HA)		During an active blocking function, telegram updates of the "switching" objects are rejected.
	No reaction	The state of the assigned switching outputs does not change at the beginning of an inhibition.
	Switch ON	The switching outputs assigned are switched on at the beginning of the inhibition.
	Switch OFF	The switching outputs assigned are switched off at the beginning of the inhibition.
		The "relay operation" parameterized is taken into account!
Response at the end of blocking function (all switching outputs assigned) (HA)		At the end of an blocking function, the "switching" objects are re-enabled.
	No reaction	The state of the assigned switching outputs does not change at the end of an inhibition.
	Switch ON	The switching outputs assigned are switched on at the end of the inhibition. Parameterized time functions, if any, are not taken into account.
	Switch OFF	The switching outputs assigned are switched off at the end of the inhibition.
		The "relay operation" parameterized is taken into account!

Parameters of the parameter card "Movement time"

Parameter		
Description:	**Values:**	**Comment:**
Movement time (blind/shutter)		
Step operation (Short), base	**10 ms**; 50 ms; 100 ms; 150 ms; 500 ms; 1 s	Defines the time base for step operation. Step duration = factor x base
Step operation (Short), factor (0..255) (0= only stop)	0 ... 255, **50**	Defines the time factor for step operation. Step duration = factor x base Preset value: 10 ms x 50 = 500 ms
Move operation (Long), base	50 ms; 100 ms; **500 ms**; 1 s; 1,5 s; 5 s; 10 s; 1 min; 10 min	Defines the time base for move operation. Step duration = factor x base
Move operation (Long), factor (3..255)	3 ... 255, **120**	Defines the time factor for move operation. Step duration = factor x base Preset value: 500 ms x 120 = 60 s
Break before change of running direction	**0,5 s**; 1 s; 1,5 s; 2 s	Fixes the length of the break during change of running direction (change-over time).

Parameters of the parameter card “Safety” (HA)

Parameter		
Description:	**Values:**	**Comment:**
Safety (shutter) (HA)		
Cyclic monitoring time for safety object (HA)	**None** 1 min; 2 min; 3 min; 4 min; 5 min; 6 min; 7 min; 8 min; 10 min; 11 min; 12 min; 20 min; 40 min; 1 h; 2 h	The safety object can be cyclically monitored. The safety function is activated when the safety object receives a corresponding "alarm telegram" or when the preset monitoring time elapses without the safety object having received an "Alarm OFF telegram". Cyclic monitoring is deactivated when the set value is "None".
Safety lock function in case of safety object value (HA)		Fixes the polarity of the safety object.
	0 (safety unlock = 1)	The safety function is activated, when the safety object receives a "0". To prevent the safety function from being activated during cyclical monitoring, a "1" must be cyclically written to the object.
	1 (safety unlock = 0)	The safety function is activated, when the safety object receives a "1". To prevent the safety function from being activated during cyclical monitoring, a "0" must be cyclically written to the object.
Response at beginning of safety function (all shutter outputs assigned) (HA)		Fixes the reaction at the beginning of a safety function. When the safety function is activated, the actuation via the short (Step) / long (Move) objects is locked up.
	No reaction	The blind/shutter outputs assigned remain in their position or continue to run.
	Move up	The blind/shutter outputs assigned move upwards.
	Move down	The blind/shutter outputs assigned move downwards.
Response at the end of the safety function (all shutter outputs assigned) (HA)		Fixes the reaction at the end of a safety function. After deactivation of a safety function, the actuation via the step / move objects is re-enabled.
	No reaction	The blind/shutter outputs assigned remain in their position or continue to run, when the safety function is deactivated while a movement is still in progress.
	Move up	The blind/shutter outputs assigned move upwards.
	Move down	The blind/shutter outputs assigned move downwards.

Parameters of the parameter card “Sun protection, sun protection 1” (HA)

Sun protection (blind/shutter) (HA): only if "Auxiliary function" = "Blocking function" resp.
Sun protection 1 (blind/shutter) (HA): only if "Auxiliary function" = "Sun protection function 2"!

Parameter		
Description:	**Values:**	**Comment:**
Sun protection (blind/shutter) (HA) Sun protection 1 (blind/shutter) (HA)		
Move operation (Long), base (HA)	Same as move operation (long) base on "Movement time" card!	Dummy parameter without further functions. Info: For sun protection, the respective blinds or shutters can be moved to a defined position. The sun protection position is approached from the upper limit position and is determined by the time to be set separately for move operation. The base for move operation is the same as the one parameterized on the "Movement time" card.
Move operation (Long), factor (3..255) (HA)	3...255; **60**	For sun protection, the respective blinds or shutters can be moved to a defined position. The sun protection position is approached from the upper limit position and is determined by the time to be set separately for move operation. Long moving time = factor x base
Response at end of a sun protection function (all shutter outputs assigned) (HA)		Defines the reaction of the blind/shutter at the end of a sun protection function. After deactivation of a sun protection function, the actuation via the step / move objects is re-enabled.
	No reaction	The blind/shutter outputs assigned remain in their position or continue to run, when the safety function is deactivated while a movement is still in progress.
	Move up	The blind/shutter outputs assigned move upwards.
	Move down	The blind/shutter outputs assigned move downwards.
	Stop	The blind/shutter outputs assigned are stopped (relay contacts opened).
Number of steps after move operation (Long), (0...15) (HA)	0...15; **0**	After reaching the sun protection position, an output for which "Type of blind/shutter" = "Blind" can be used to tilt or to reposition the slats. The slats can be adjusted with one or more short commands (steps). This parameter defines the number of steps to be executed after sun protection positioning (upward movement). When number = “0”, there is no slat adjustment (slats completely closed as for downward movement).

Parameters of the parameter card “Sun protection 2” (HA)

Sun protection 2 (blind/shutter) (HA): only if "Auxiliary function" = "Sun protection function 2"!

Parameter		
Description:	**Values:**	**Comment:**
Sun protection 2 (blind/shutter) (HA)		
See sun protection 1!		

Parameters of the parameter card “Output x” (HA)

Output 1: only if "function output 1 / output 2" = "2 x switching"!

Parameter		
Description:	**Values:**	**Comment:**
Output 1		
Function	Switching	Info parameter without further functions.
Relay operation		The type of relay control for a switching output can be fixed.
	Normally open contact	"1" telegram resp. "switch-on" command: relay contact is closed. "0" telegram resp. "switch-off" command: relay contact is opened.
	Normally closed contact	"1" telegram resp. "switch-on" command: relay contact is opened. "0" telegram resp. "switch-off" command": relay contact is closed. The red status LEDs in the LED array on the device are on when a relay contact is closed!
Time function (HA)		For switching outputs, a time function can be activated.
	None	No time function activated.
	Switch OFF delay	The OFF-delay is active. Active channels are shut off with a delay after reception of an OFF telegram.
	Timer function	The timer function (staircase lighting) is active. The preset time begins to run when a channel is switched on via the "Switching" object. When the preset time has elapsed, the channel is switched off automatically and the "Switching" object retains the "0" value. The time functions are available only for outputs 1 thru 8!
Factor (3...127) (HA)	3...127; **10**	Definition of the time factor for the selected delay. Delay time = factor x base Only if "Time function" = "Switch OFF delay" or "Timer function"!

Parameter		
Description:	**Values:**	**Comment:**
Base (HA)	130 ms; 260 ms; 520 ms; **1 s**; 2,1 s; 4,2 s; 8,4 s; 17 s; 34 s; 1,1 min; 2,2 min; 4,5 min; 9,0 min; 18 min; 35 min; 1,2 h	Definition of the time base for the selected delay time. Delay time = facor x base Preset value: 1 s x 10 = 10 s Only if " Time function" = "Switch OFF delay" or "Timer function"!
Response to OFF telegram (HA)		In a timer function, an OFF telegram received during the delay (ON time) can be ignored.
	Switch OFF	The OFF telegram is executed. The switching channel is switched off prematurely.
	Ignore OFF telegram	The OFF telegram is ignored. The time delay is not interrupted. Only if "Time function" = "Timer function"!
Assignment to master function ? (HA)	**NO**	The switching output is not integrated in the central function.
	YES	The switching output is integrated in the central function.
Assignment to blocking function? (HA)	**NO**	The switching output is not integrated in the blocking function.
	YES	The switching output is integrated in the blocking function. Only if "Auxiliary function" = "Block. function"!
Response to bus voltage failure		Fixes the reaction in the event of bus voltage failure.
	No reaction	The switching state remains unchanged.
	Close contact	The relay contact closes.
	Open contact	The relay contact opens.
Response on bus voltage return		Fixes the reaction in the event of bus voltage return.
	Value before bus voltage failure	The switching state that was active before bus voltage failure is restored. Parameterized relay operation (breaking contact or making contact) is taken into account. After programming with the ETS, the "Value before bus voltage failure" or the object value is always "0" so that the breaking contact closes (contact closed) and a making contact opens (contact open).
	Close contact	The relay contact closes.
	Open contact	The relay contact opens.

Parameter		
Description:	**Values:**	**Comment:**
Output 2 - 16	See Output 1	Only if "Function Output x / Output y" = "2 x Switching"!

Parameters of the parameter card "Output x/y" (HA)

Output 1/2: only if "function output 1 / output 2" = "1 x Blind/shutter"!

Parameter		
Description:	**Values:**	**Comment:**
Output 1/2 (HA)		
Function	Shutter control	Info parameter without further functions!
Blind/shutter type		Fixes the blind/shutter type used.
	Shutter	Control of a shutter with lamellas (slats).
	Blind	Control of a blind (without slats).
Assignment to safety function ? (HA)	**NO**	The blind or shutter output is not integrated in the safety function.
	YES	The blind or shutter output is integrated in the safety function.
Only if "Auxiliary function" = "Blocking function"!		
Assignment to sun protection function ? (HA)	**NO**	The blind or shutter output is not integrated in the sun protection function.
	YES	The blind or shutter output is integrated in the sun protection function.
Only if "Auxiliary function" = "Sun protection function 2"!		
Assignment to sun protection function ? (HA)	**None**	The blind or shutter output is not integrated in any of the two sun protection functions.
	Sun protection 1	The blind or shutter output is integrated only in sun protection function 1.
	Sun protection 2	The blind or shutter output is integrated only in sun protection function 2.
Response to bus voltage failure		Fixes the reaction in the event of bus voltage failure.
	UP	The assigned blind or shutter outputs are set for upward movement.
	DOWN	The assigned blind or shutter outputs are set for downward movement.
	Stop	The assigned blind or shutter outputs are stopped (relay contacts open).
	No reaction	The assigned blind or shutter outputs remain in their actual position or continue the movement when the bus voltage failure occurs during a movement.
Response on bus voltage return		Fixes the reaction in the event of bus voltage return.
	UP	The assigned blind or shutter outputs are set for upward movement.
	DOWN	The assigned blind or shutter outputs are set for downward movement.
	Stop	The assigned blind or shutter outputs are stopped (relay contacts open).

Parameter		
Description:	**Values:**	**Comment:**
Output x/y	See Output 1/2	Only if "Function Output x / Output y" = "1 x Blind/shutter"!

Software information

In order to be able to edit all parameters, the parameter editing function in the ETS must be set to "high access" (HA).

The "Bus voltage readout" function (ETS function) is not available for this device!

It must be ensured that the loads connected are compatible with the parameterization of the outputs. There is otherwise a risk of irreparable damage to blind/shutter motors, if they are connected to outputs parameterized as switching actuator outputs. For this reason, the loads connected must be checked before programming the device with the ETS. The movement directions in blind/shutter operation are interlocked only by the software.