

21 S2 Brightness and Temperature 909712

Application program usage

Product family: Physical sensors
 Product type: brightness and temperature
 Manufacturer: Siemens

Name: Dual sensor AP254/02
 Order-No.: 5WG1 254-3EY02

Functional description

The Dual Sensor AP 254/02 provides ambient light level and outdoor temperature values. These values can be sent onto the bus.

The device offers four universal channels (A, B, D, E) and one solar protection channel C, which evaluate light level and temperature for their configured function.

Each universal channel alternatively provides the following threshold switches for control of switching, dimming, and solar protection actuators based on ambient light level and/or temperature:

- threshold switch for light level
- threshold switch for temperature
- threshold switch for light level and temperature combined

Dependent on whether the threshold condition is met or not met a corresponding telegram is sent onto the bus via the associated channel object. Additionally, a second object can be activated as required to send a second telegram.

Each universal channel can be deactivated by an associated blocking object. For each universal channel if a light level threshold is applied it may be set to the current light level via an associated learning object.

Additionally, the device provides a solar protection channel C for automatic control of solar protection equipment. The automatic control can be started and stopped via an object (sun control) or via a dusk/dawn ambient light level threshold. Up to three light level thresholds control the position (height and angle of slats) of the solar protection blinds.

The light level thresholds may be set by sending a bus telegram to an associated learning object. The solar protection channel can be deactivated by an associated blocking object.

Function for blinds:

When threshold 1 is exceeded the blind is moved down via the first object (height) and the slats are moved into a first position via the second object.

When threshold 2 is exceeded the slats are moved into a second position. The height remains the same.

When threshold 3 is exceeded the slats are moved into a third position. The height remains the same.

When the light level falls below any threshold the blind is moved into the previous position and/or height. When the light level falls below threshold level 1 the blind is moved up.

Function for shutters / textile solar protection:

When threshold 1 is exceeded the shutter is moved down into a first position via the object "height".

When threshold 2 is exceeded the shutter is moved down into a second position via the object "height".

When threshold 3 is exceeded the shutter is moved down into a third position via the object "height".

When the light level falls below any threshold the blind is moved to the previous height. When the light level falls below threshold level 1 the blind is moved up.

While automatically controlling solar protection equipment fast changing sunshine conditions can lead to frequent up and down movements of the solar protection equipment. To avoid frequent up and down movement of the solar protection the parameter "Reaction to sun control ON" can be set to "move up & sun control once". The behaviour of the blinds and shutters changes as follows.

Function for blinds (singular automatic sun control):

When threshold 1 is exceeded the blind is moved down via the first object (height) and the slats are moved into a first position via the second object. The blind stays at this height all day long. The blind is moved only at dusk or via the object for automatic sun control. Only the slats are adjusted dependent on the current light level.

When threshold 2 is exceeded the slats are moved into a second position. The height remains the same.

When threshold 3 is exceeded the slats are moved into a third position. The height remains the same.

When the light level falls below any threshold the slats are moved into the previous position.

Function for shutters / textile solar protection (singular automatic sun control):

When threshold 1 is exceeded the shutter is moved down via the object (height).

When threshold 2 is exceeded the shutter is moved into a second position via the object (height).

When threshold 3 is exceeded the shutter is moved into a third position via the object (height).

When the light level falls below any threshold no telegram is sent. The brighter it gets the further down the shutter is moved. It is only moved up at dusk or when the automatic sun control is turned off. All other movements of the shutters are initiated by the user.

21 S2 Brightness and Temperature 909712

Note

Always a telegram (move up, move down) is sent when the day starts or ends, as a dusk threshold may be crossed or a sun protection telegram is received. This telegram is sent in the evening even if threshold 1 was not exceeded during the day.

The device allows setting or reading the brightness threshold levels for channels A to E at run-time, i.e. without ETS. The current brightness threshold levels are announced via object 40 "Brightness thresholds". After a download of the application program all brightness thresholds are automatically sent. The brightness thresholds are sent in the same sequence as they appear in the application program in ETS.

Channel	Threshold	Comment
1	Brightness	<i>only, if the channel has been configured as brightness sensor or as universal channel</i>
2	Brightness	<i>only, if the channel has been configured as brightness sensor or as universal channel</i>
3	Dusk threshold	<i>is always sent</i>
	Brightness threshold 1	<i>is always sent</i>
	Brightness threshold 2	<i>only if two or three thresholds were configured (Parameter: „How many brightness thresholds?“)</i>
	Brightness threshold 3	
4	Brightness	<i>only, if the channel has been configured as brightness sensor or as universal channel</i>
5	Brightness	<i>only, if the channel has been configured as brightness sensor or as universal channel</i>

Thresholds that are not active are not sent (e.g. brightness threshold 3 if channel C is configured for two thresholds only).

Sending any value between 0 and 127 respectively between 132 and 255 to the set brightness threshold object triggers the device to send the current brightness threshold values.

Note

As the encoding precision of a 2-Byte value (EIS 5) is limited values are rounded up or down. Because of this a e.g. value of 10,000 lux may be displayed as 9,999.36 (\$4FA1) or as 10,004.48 (\$4FA2).

Brightness thresholds may be set during operation via the teach-in objects of the channels.

If the value 128 is received via the teach-in object of channels A, B, C, D, or E the currently measured brightness value is saved thus replacing by the previously configured value.

The threshold behaviour "above XY lux" or "below XY lux" configured with ETS remains. The lower boundary for the brightness threshold of channels A, B, C, D, and E is 2 lux. The upper boundary is 90,000 lux.

The newly saved value of the brightness threshold is sent onto the bus via object 40 thus confirming that the threshold has been successfully set.

The solar protection channel C offers a dusk / dawn threshold and up to three additional thresholds for controlling the solar protection. The teach-in codes for these thresholds are listed in the following table.

learning code		Threshold	lower limit	upper limit
Hex.	Dec.			
\$80	128	dusk / dawn threshold	2 lx	500 lx
\$81	129	threshold 1	2 klx	60 klx
\$82	130	threshold 2	6 klx	70 klx
\$83	131	threshold 3	10 klx	80 klx

The newly saved values of the thresholds are sent onto the bus via object 40 thus confirming that the thresholds have been successfully set.

The brightness thresholds of the solar protection channel C must be spaced 4,000 lux apart from each other, thus fulfilling these conditions:

- threshold 1 + 4,000 lux < threshold 2
- threshold 2 + 4,000 lux < threshold 3

If one of these conditions is not met during teach-in the device corrects the thresholds according to these rules.

The last threshold set by teach-in determines the value of the other thresholds if the difference is too low.

If the teach-in value of threshold 3 is lower than the value of threshold 2 then thresholds 1 and 2 are decreased.

If the teach-in values for thresholds 1 to 3 would be below the lower limits then those lower limit values are used.

If the teach-in value for the dusk / dawn threshold would be above the upper limit then the upper limit value is used.

The device also corrects thresholds that were improperly set with ETS. If the gap between thresholds is too small threshold 1 is taken as the reference. The other thresholds are corrected with a gap of 4,000 lux between them.

21 S2 Brightness and Temperature 909712

Communication objects

Number	Name	Object Function	Length	C	R	W	T	U
0	Brightness value	Lux value (EIS 5)	2 Byte	C	R	-	T	-
1	Temperature value	°C value (EIS 5)	2 Byte	C	R	-	T	-
4	Channel A.1 brightness threshold	On / Off	1 bit	C	R	-	T	-
5	Channel A.2 brightness threshold	On / Off	1 bit	C	R	-	T	-
6	Channel A lock	0=unlocked / 1=locked	1 bit	C	R	W	-	-
7	Channel A brightness threshold set	set	1 Byte	C	R	W	-	-
8	Channel B.1 temperature threshold	On / Off	1 bit	C	R	-	T	-
9	Channel B.2 temperature threshold	On / Off	1 bit	C	R	-	T	-
10	Channel B lock	0=unlocked / 1=locked	1 bit	C	R	W	-	-
12	Channel C solar protection	up / down	1 bit	C	-	-	T	-
13	Channel C Blinds	Height	1 Byte	C	R	-	T	-
14	Channel C Slats	Position	1 Byte	C	R	-	T	-
15	Channel C Sun control	Morning=1 / Evening=0	1 bit	C	R	W	-	-
16	Channel C safety	0=off / 1=on	1 bit	C	R	W	-	-
17	Channel C brightness thresholds	set	1 Byte	C	-	W	-	-
18	Channel D.1 universal channel	On / Off	1 bit	C	R	-	T	-
19	Channel D.2 universal channel	On / Off	1 bit	C	R	-	T	-
20	Channel D lock	0=unlocked / 1=locked	1 bit	C	R	W	-	-
21	Channel D brightness threshold set	set	1 Byte	C	R	W	-	-
22	Channel E.1 universal channel	On / Off	1 bit	C	R	-	T	-
23	Channel E.2 universal channel	On / Off	1 bit	C	R	-	T	-
24	Channel E lock	0=unlocked / 1=locked	1 bit	C	R	W	-	-
25	Channel E brightness threshold set	set	1 Byte	C	R	W	-	-
40	Brightness thresholds	report	2 Byte	C	-	-	T	-

Note

Your screen presentation may vary from these typical snap shots.

Obj	Object name	Function	Type	Flag
0	Brightness value	Lux value (EIS 5)	2 Byte	CRT
Transmits the current brightness value either on change of value and/or cyclically, depending on the configuration.				
1	Temperature value	°C value (EIS 5)	2 Byte	CRT
Transmits the current temperature value either on change of value and/or cyclically, depending on the configuration.				

Obj	Object name	Function	Type	Flag
4	Channel A.1 brightness threshold	On/Off	1 Bit	CRT
		forced control	2 Bit	CRT
		8-bit value (EIS 6)	1 Byte	CRT
	Channel A.1 temperature threshold	On/Off	1 Bit	CRT
		forced control	2 Bit	CRT
		8-bit value (EIS 6)	1 Byte	CRT
	Channel A.1 universal channel	On/Off	1 Bit	CRT
		forced control	2 Bit	CRT
		8-bit value (EIS 6)	1 Byte	CRT
Channel A.1: The configured telegram (On/Off, forced control, 8-bit value) is transmitted when the transmit condition is fulfilled for the channel, i.e. the value rises above or falls below the configured threshold. When configured as a universal channel the logic AND result of the threshold conditions configured for brightness and temperature is evaluated as the transmission condition.				
5	Channel A.2 identical with Channel A.1	On/Off	1 Bit	CRT
		forced control	2 Bit	CRT
		8-bit value (EIS 6)	1 Byte	CRT
Channel A.2: This object is only visible if the parameter for an additional object has been set to „yes“. The configured telegram (On/Off, forced control, 8-bit value) is transmitted when the transmit condition is fulfilled for the channel.				
6	Channel A lock	0=unlocked / 1=locked	1 Bit	CRW
If the parameter „Behavior when setting the lock“ is set to „do not send“ then this channel does not send when the value 1 (=locked) is received on this object until the value 0 (=unlocked) is received. If the parameter „Behavior when setting the lock“ is set to „like unmet condition“ then this channel sends the value for the unmet condition depending on the configuration cyclically, once or not at all. Depending on the configuration the current or no value is sent when the channel is unlocked. This object is invisible when the parameter „Behavior when setting the lock“ is set to „ignore lock“.				

21 S2 Brightness and Temperature 909712

Obj	Object name	Function	Type	Flag
7	Channel A brightness threshold	set	1 Byte	CRW
<p>When the value 128 is received via the group address assigned to this object the previously configured value for the brightness threshold is replaced by the current brightness value, which is saved in memory as the new brightness threshold.</p> <p>As a confirmation for successfully setting the parameter the newly saved threshold is sent onto the bus via object 40.</p> <p>This object is invisible when channel A is configured as temperature threshold.</p>				
8	Channel B.1 brightness threshold	On/Off	1 Bit	CRT
		forced control	2 Bit	CRT
		8-bit value (EIS 6)	1 Byte	CRT
	Channel B.1 temperature threshold	On/Off	1 Bit	CRT
		forced control	2 Bit	CRT
		8-bit value (EIS 6)	1 Byte	CRT
	Channel B.1 universal channel	On/Off	1 Bit	CRT
		forced control	2 Bit	CRT
		8-bit value (EIS 6)	1 Byte	CRT
<p>Channel B.1: The configured telegram (On/Off, forced control, 8-bit value) is transmitted when the transmit condition is fulfilled for the channel, i.e. the value rises above or falls below the configured threshold. When configured as a universal channel the logic AND result of the threshold conditions configured for brightness and temperature is evaluated as the transmission condition.</p>				
9	Channel B.2 identical with Channel B.1	On/Off	1 Bit	CRT
		forced control	2 Bit	CRT
		8-bit value (EIS 6)	1 Byte	CRT
<p>Channel B.2: This object is only visible if the parameter for an additional object has been set to „yes“. The configured telegram (On/Off, forced control, 8-bit value) is transmitted when the transmit condition is fulfilled for the channel.</p>				

Obj	Object name	Function	Type	Flag
10	Channel B lock	0=unlocked /1=locked	1 Bit	CRW
<p>If the parameter „Behavior when setting the lock“ is set to „do not send“ then this channel does not send when the value 1 (=locked) is received on this object until the value 0 (=unlocked) is received.</p> <p>If the parameter „Behavior when setting the lock“ is set to „like unmet condition“ then this channel sends the value for the unmet condition depending on the configuration cyclically, once or not at all.</p> <p>Depending on the configuration the current or no value is sent when the channel is unlocked.</p> <p>This object is invisible when the parameter „Behavior when setting the lock“ is set to „ignore lock“.</p>				
11	Channel B brightness threshold	set	1 Byte	CRW
<p>When the value 128 is received via the group address assigned to this object the previously configured value for the brightness threshold is replaced by the current brightness value, which is saved in memory as the new brightness threshold.</p> <p>As a confirmation for successfully setting the parameter the newly saved threshold is sent onto the bus via object 40.</p> <p>This object is invisible when channel B is configured as temperature threshold.</p>				
12	Channel C solar protection	Up/down	1 Bit	CT
<p>Channel C: Via the group address assigned to this object a telegram is sent to move the solar protection up or down.</p>				
13	Channel C Blinds	Height	1 Byte	CRT
	Channel C send value	8-bit value (EIS 6)	1 Byte	CRT
	Channel C Scene 1+2	send	1 Bit	CRT
<p>Channel C: The configured telegram (Height blinds/shutters, 8-bit value or scene 1/2) is sent with the value that has been assigned with the triggering threshold.</p>				
14	Channel C Slats	Position	1 Byte	CRT
	Channel C Scene 3+4	send	1 Bit	CRT
<p>Channel C: The configured telegram (Position slats, or scene 3/4) is sent with the value that has been assigned with the triggering threshold.</p>				
15	Channel C sun control	Morning=1/ Evening=0	1 Bit	CRW
<p>Via the group address assigned to this object a telegram is received the automatic solar protection control can be started (Morning=1) or stopped (Evening=0).</p>				

21 S2 Brightness and Temperature 909712

Obj	Object name	Function	Type	Flag
16	Channel C safety	0=off / 1=off	1 Bit	CRW
<p>While the value of this safety object is set to „on“ no telegrams are sent via objects 13 (Channel C blinds/shutters height, Channel C 8-bit value send, Scene 1/2), and 14 (Channel C slats position, Scene 3/4).</p> <p>When the value of this safety object is set to "off" via a telegram then during the day (i.e. when the automatic solar protection is active) the current channel status (e.g. height and position) is sent after a delay period. When automatic solar protection is inactive the settings of the parameters "Reaction to dusk" or "Reaction to sun control OFF" prevail.</p>				
17	Channel C brightness thresholds	set	1 Byte	CW
<p>Via the group address assigned to this object the dusk/dawn threshold and the brightness thresholds 1 to 3 can be set and the transmission of the current threshold values via object 40 is triggered.</p>				
18	Channel D.1 brightness threshold	On/Off	1 Bit	CRT
		forced control	2 Bit	CRT
		8-bit value (EIS 6)	1 Byte	CRT
	Channel D.1 temperature threshold	On/Off	1 Bit	CRT
		forced control	2 Bit	CRT
		8-bit value (EIS 6)	1 Byte	CRT
	Channel D.1 universal channel	On/Off	1 Bit	CRT
		forced control	2 Bit	CRT
		8-bit value (EIS 6)	1 Byte	CRT
<p>Channel D.1: The configured telegram (On/Off, forced control, 8-bit value) is transmitted when the transmit condition is fulfilled for the channel, i.e. the value rises above or falls below the configured threshold. When configured as a universal channel the logic AND result of the threshold conditions configured for brightness and temperature is evaluated as the transmission condition.</p>				
19	Channel D.2 identical with Channel B.1	On/Off	1 Bit	CRT
		forced control	2 Bit	CRT
		8-bit value (EIS 6)	1 Byte	CRT
<p>Channel D.2: This object is only visible if the parameter for an additional object has been set to „yes“. The configured telegram (On/Off, forced control, 8-bit value) is transmitted when the transmit condition is fulfilled for the channel.</p>				

Obj	Object name	Function	Type	Flag
20	Channel D lock	0=unlocked /1=locked	1 Bit	CRW
<p>If the parameter „Behavior when setting the lock“ is set to „do not send“ then this channel does not send when the value 1 (=locked) is received on this object until the value 0 (=unlocked) is received.</p> <p>If the parameter „Behavior when setting the lock“ is set to „like unmet condition“ then this channel sends the value for the unmet condition depending on the configuration cyclically, once or not at all.</p> <p>Depending on the configuration the current or no value is sent when the channel is unlocked.</p> <p>This object is invisible when the parameter „Behavior when setting the lock“ is set to "ignore lock".</p>				
21	Channel D brightness threshold	set	1 Byte	CRW
<p>When the value 128 is received via the group address assigned to this object the previously configured value for the brightness threshold is replaced by the current brightness value, which is saved in memory as the new brightness threshold.</p> <p>As a confirmation for successfully setting the parameter the newly saved threshold is sent onto the bus via object 40.</p> <p>This object is invisible when channel D is configured as temperature threshold.</p>				
22	Channel E.1 brightness threshold	On/Off	1 Bit	CRT
		forced control	2 Bit	CRT
		8-bit value (EIS 6)	1 Byte	CRT
	Channel E.1 temperature threshold	On/Off	1 Bit	CRT
		forced control	2 Bit	CRT
		8-bit value (EIS 6)	1 Byte	CRT
	Channel E.1 universal channel	On/Off	1 Bit	CRT
		forced control	2 Bit	CRT
		8-bit value (EIS 6)	1 Byte	CRT
<p>Channel E.1: The configured telegram (On/Off, forced control, 8-bit value) is transmitted when the transmit condition is fulfilled for the channel, i.e. the value rises above or falls below the configured threshold. When configured as a universal channel the logic AND result of the threshold conditions configured for brightness and temperature is evaluated as the transmission condition.</p>				
23	Channel E.2 identical with Channel E.1	On/Off	1 Bit	CRT
		forced control	2 Bit	CRT
		8-bit value (EIS 6)	1 Byte	CRT

21 S2 Brightness and Temperature 909712

Obj	Object name	Function	Type	Flag
<p>Channel E.2: This object is only visible if the parameter for an additional object has been set to „yes“. The configured telegram (On/Off, forced control, 8-bit value) is transmitted when the transmit condition is fulfilled for the channel.</p>				
24	Channel E lock	0=unlocked /1=locked	1 Bit	CRW
<p>If the parameter „Behavior when setting the lock“ is set to „do not send“ then this channel does not send when the value 1 (=locked) is received on this object until the value 0 (=unlocked) is received. If the parameter „Behavior when setting the lock“ is set to „like unmet condition“ then this channel sends the value for the unmet condition depending on the configuration cyclically, once or not at all. Depending on the configuration the current or no value is sent when the channel is unlocked. This object is invisible when the parameter „Behavior when setting the lock“ is set to „ignore lock“.</p>				
25	Channel E brightness threshold	set	1 Byte	CRW
<p>When the value 128 is received via the group address assigned to this object the previously configured value for the brightness threshold is replaced by the current brightness value, which is saved in memory as the new brightness threshold. As a confirmation for successfully setting the parameter the newly saved threshold is sent onto the bus via object 40. This object is invisible when channel E is configured as temperature threshold.</p>				
40	Brightness thresholds	Report	2 Byte (EIS 5)	CT
<p>Via the group address assigned to this object the current settings of the brightness thresholds are sent either automatically or as a response to a request. For further details see functional description.</p>				

Maximum number of group addresses: 108
Maximum number of assignments: 108

Parameter

Measured values

Measured values	
Send brightness value on change of	30 %, but at least 1 Lux
Send brightness value cyclically	don't send cyclically
Send temperature on change of	1.0 °C
Send temperature cyclically	don't send cyclically
Temperature offset in 1/10°C (-64 .. 64)	0

Parameter	Einstellungen
Send brightness value on change of	Not due to a change 10 %, but at least 1 Lux 20 %, but at least 1 Lux 30 %, but at least 1 Lux 50 %, but at least 1 Lux
<p>The brightness value is sent if the value has changed by 10%, 20% etc. since the last transmission. If the change of value of e.g. 10% of a brightness change < 1lux then the new value is sent only if the change of value is > 1lux. When the parameter value "not due to a change" is selected then the value is only transmitted in response to a read telegram or cyclically if cyclical sending has been enabled.</p>	
Send brightness value cyclically	Don't send cyclically every minute every 2 min. every 3 min. every 5 min. every 10 min. every 15 min. every 20 min. every 30 min. every 45 min. every 60 min.
<p>This parameter determines if and how often the brightness value is sent cyclically.</p>	
Send temperature on change of	Not due to a change 0,5 °C 1,0 °C ... 2,5 °C
<p>The temperature value is sent if the value has changed by 0.5°C, 1.0°C etc. since the last transmission. When the parameter value "not due to a change" is selected then the value is only transmitted in response to a read telegram or cyclically if cyclical sending has been enabled.</p>	

21 S2 Brightness and Temperature 909712

Parameter	Einstellungen
Send temperature cyclically	Don't send cyclically every minute every 2 min. every 3 min. every 5 min. every 10 min. every 15 min. every 20 min. every 30 min. every 45 min. every 60 min.
This parameter determines if and how often the temperature value is sent cyclically.	
Temperature offset in 1/10°C (-64 ... 64)	-64 ... 0 ... 64
This parameter allows for correcting the temperature value measured by the device in 0.1°C steps in the range [-6.4°C ... 6.4°C].	

Channel use

Channel use	
Function of channel A	brightness sensor 2...100 000 Lux
Function of channel B	temperature sensor
Function of channel C	sun protection
Use more channels?	no

Parameter	Einstellungen
Function of channel A	Brightness sensor 2...100 000 Lux Temperature sensor Universal channel
This parameter determines for channel A if only the brightness sensor threshold, only the temperature sensor threshold, or the AND logic of brightness and temperature sensor thresholds (universal channel) shall be evaluated.	
Function of channel B	Brightness sensor 2...100 000 Lux Temperature sensor Universal channel
This parameter determines for channel B if only the brightness sensor threshold, only the temperature sensor threshold, or the AND logic of brightness and temperature sensor thresholds (universal channel) shall be evaluated.	
Function of channel C	Sun protection
Channel C is fixed to the solar protection function.	
Use more channels?	no yes
When this parameter is set to „yes“ the parameters for channels D and E are visible.	
Function of channel D	Brightness sensor 2...100 000 Lux Temperature sensor Universal channel
This parameter determines for channel D if only the brightness sensor threshold, only the temperature sensor threshold, or the AND logic of brightness and temperature sensor thresholds (universal channel) shall be evaluated.	
Function of channel E	Brightness sensor 2...100 000 Lux Temperature sensor Universal channel
This parameter determines for channel E if only the brightness sensor threshold, only the temperature sensor threshold, or the AND logic of brightness and temperature sensor thresholds (universal channel) shall be evaluated.	

21 S2 Brightness and Temperature 909712

Channel A (B, C, D, E) brightness

Channel A brightness	
Brightness condition	above 10000 Lux
Hysteresis light	20 %, but at least 1 Lux
Delay on increasing brightness	3 minutes
Delay on decreasing brightness	10 minutes

Function and parameters for channels A, B, D, and E are identical when configured as brightness channel and described once only.

Parameter	Einstellungen
Brightness condition	below 2 Lux below 2,5 Lux ... below 80000 Lux below 90000 Lux above 1 Lux above 1,5 Lux ... above 10000 Lux ... above 90000 Lux
The brightness condition is met when the current brightness value is below or above the selected value.	
Hysteresis light	20 %, but at least 1 Lux 30 %, but at least 1 Lux 50 %, but at least 1 Lux
The hysteresis eliminates frequent toggling on slight brightness changes. Depending on the configured condition the value can be negative or positive. <u>Example</u> with 20% hysteresis: Condition: „ABOVE 4500Lux“ is met from 4500 lx and above and is not met anymore at 4500 lx-20% Condition: „BELOW 4500 Lux“ is met below 4500 lx and is not met anymore at 4500 lx + 20%	
Delay on increasing brightness	none 5 seconds 10 seconds 20 seconds 30 seconds 1 minute 2 minutes 3 minutes 5 minutes 10 minutes 15 minutes
Response time on increasing brightness when the selected threshold is passed. This parameter prevents sending contradicting telegrams on instant brightness changes.	

Parameter	Einstellungen
Delay on decreasing brightness	none 5 seconds 10 seconds 20 seconds 30 seconds 1 minute 2 minutes 3 minutes 5 minutes 10 minutes 15 minutes
Response time on decreasing brightness when the selected threshold is passed. This parameter prevents sending contradicting telegrams on instant brightness changes.	

21 S2 Brightness and Temperature 909712

Channel A (B, C, D, E) temperature

Channel A temperature	
Temperature condition	above 18°C
Hysteresis temperature	1.0°C

Function and parameters for channels A, B, D, and E are identical when configured as temperature channel and described once only.

Parameter	Einstellungen
Temperature condition	Don't care below -10°C ... below 40°C above -10°C ... above 18°C ... above 40°C
The temperature condition is met when the current temperature value is below or above the selected value. If the parameter is set to "don't care" the temperature is ignored.	
Hysteresis temperature	1,0°C 1,5°C 2,0°C 2,5°C
The hysteresis eliminates frequent toggling on slight temperature changes. Depending on the configured condition the value can be negative or positive.	
<u>Example</u> with 1.0°C hysteresis: Condition: „ABOVE 18°C“ is met from 18 °C and above and is not met anymore at 17°C Condition: „BELOW 18°C“ is met below 18°C and is not met anymore at 19°C	

Channel A (B, C, D, E) universal

Channel A universal	
Brightness condition	above 10000 Lux
Hysteresis light	20 %, but at least 1 Lux
Delay on increasing brightness	3 minutes
Delay on decreasing brightness	10 minutes
AND temperature	above 18°C
Hysteresis temperature	1.0 °C

Function and parameters for channels A, B, D, and E are identical when configured as universal channel and described once only.

Parameter	Einstellungen
Brightness condition	Don't care below 2 lx below 2,5 lx ... below 80000 lx below 90000 lx above 1 lx above 1,5 lx ... above 10000 lx ... above 90000 lx
The brightness condition is met when the current brightness value is below or above the selected value. If the parameter is set to "don't care" the brightness is ignored.	
Hysteresis light	20 %, but at least 1 Lux 30 %, but at least 1 Lux 50 %, but at least 1 Lux
The hysteresis eliminates frequent toggling on slight brightness changes. Depending on the configured condition the value can be negative or positive.	
<u>Example</u> with 20% hysteresis: Condition: „ABOVE 4500Lux“ is met from 4500 lx and above and is not met anymore at 4500 lx-20% Condition: „BELOW 4500 Lux“ is met below 4500 lx and is not met anymore at 4500 lx + 20%	

21 S2 Brightness and Temperature 909712

Parameter	Einstellungen
Delay on increasing brightness	none 5 seconds 10 seconds 20 seconds 30 seconds 1 minute 2 minutes 3 minutes 5 minutes 10 minutes 15 minutes
Response time on increasing brightness when the selected threshold is passed. This parameter prevents sending contradicting telegrams on instant brightness changes.	
Delay on decreasing brightness	none 5 seconds 10 seconds 20 seconds 30 seconds 1 minute 2 minutes 3 minutes 5 minutes 10 minutes 15 minutes
Response time on increasing brightness when the selected threshold is passed. This parameter prevents sending contradicting telegrams on instant brightness changes.	
AND temperature	Don't care below -10°C ... below 40°C above -10°C ... above 18°C ... above 40°C
The temperature condition is met when the current temperature value is below or above the selected value. If the parameter is set to "don't care" the temperature is ignored.	
Hysteresis temperature	1,0°C 1,5°C 2,0°C 2,5°C
The hysteresis eliminates frequent toggling on slight temperature changes. Depending on the configured condition (above or below xx °C) the value can be negative or positive. <u>Example with 1.0°C hysteresis:</u> Condition: „ABOVE 18°C“ is met from 18 °C and above and is not met anymore at 17°C Condition: „BELOW 18°C“ is met below 18°C and is not met anymore at 19°C	

21 S2 Brightness and Temperature 909712

**Channel A.1 (B.1, D.1, E.1)
Channel A.2 (B.2, D.2, E.2)**

Channel A.1	
Telegram type channel A.1	switching
If all conditions are met	send following telegram once
Telegram	switch on
If not all conditions are met	send following telegram once
Telegram	switch off
Cycle time for channel A (if used)	every 60 min.
Behaviour when setting the lock	do not send
Behaviour when releasing the lock	update channel
Should a second telegram be sent	yes

Funktion und Parameter der Kanäle C1, C2, C4 und C5 sind identisch und nur einmal beschrieben.

Parameter	Einstellungen
Telegram type channel A.1	switching forced control value
This parameter determines the function assigned to channel A.1. Depending on the function selected with this parameter the parameter window „Channel A.1“ changes and the parameters associated with the selected function are displayed with their default settings.	
If all conditions are met	No telegram Send following telegram once Send cyclically
This parameter determines the transmission behavior when the transmission conditions are met.	
Telegram	Switch off Switch on Forced control inactive Forced ON (down) Forced OFF (up) 0 (0 .. 255)
When the conditions are met a telegram is sent. Depending on the selected telegram type (switching, forced control, 8-bit value) the value to be sent is selected with this parameter.	
If not all conditions are met	No telegram Send following telegram once Send cyclically
This parameter determines the transmission behavior if not all conditions are met.	

Telegramm	Switch off Switch on No telegram Forced ON (down) Forced OFF (up) 255 (0 .. 255)
When the conditions are no longer or not met a telegram is sent. Depending on the selected telegram type (switching, forced control, 8-bit value) the value to be sent is selected with this parameter.	
Cycle time for channel A (if used)	every minute every 2 minutes every 3 minutes every 5 minutes every 10 minutes every 15 minutes every 20 minutes every 30 minutes every 45 minutes every 60 minutes
This parameter determines how often telegrams shall be sent if cyclical sending has been selected.	
Behaviour when setting the lock	Ignore lock Do not send Like unmet condition
If this parameter is set to "ignore lock" the channel A.1 lock object and the parameter "behavior when releasing the lock" are invisible. When "do not send" is selected transmission is blocked when the value of the lock object is set to 1. When "like unmet condition" is selected the channel behavior follows the settings for when the condition is not met.	
Behaviour when releasing the lock	Do not send Update channel
When the transmission lock is released and this parameter is set to „do not send“ the current channel status is not sent automatically. Otherwise, the current channel status is sent onto the bus when the lock is released.	
Should a second telegram be sent	yes no
If „yes“ is selected a second parameter tab (e.g. channel A.2) and a second sending object appear for this channel. The second parameter tab contains the first five parameters described above. The second object for a channel allows sending two different telegrams at the same time. Cyclical sending period and locking behaviour apply to both objects (e.g. Channel A.1 and Channel A.2) in the same manner.	

21 S2 Brightness and Temperature 909712

Channel C Thresholds

Channel C Thresholds	
Light measurement through	internal sensor
Twilight threshold	10 Lux
How many brightness thresholds	3 thresholds
Brightness threshold 1	20000 Lux
Brightness threshold 2	30000 Lux
Brightness threshold 3	45000 Lux
Delay when brightness increases	3 minutes
Delay when brightness decreases	15 minutes

Parameter	Einstellungen
Light measurement through	Internal sensor
Brightness and temperature are always measured using the internal sensors.	
Twilight threshold	2 Lux ... 10 Lux ... 500 Lux
The twilight threshold is used to determine the start and end of the day.	
How many brightness thresholds?	1 threshold 2 thresholds 3 thresholds
Three thresholds allow for fine positioning of blinds slats or three roller shutter positions.	
Brightness threshold 1	2000 Lux ... 20000 Lux ... 60000 Lux
Brightness threshold 2	6000 Lux ... 30000 Lux ... 70000 Lux
Brightness threshold 3	10000 Lux ... 45000 Lux ... 80000 Lux
The brightness thresholds have to be entered in ascending order. The values must be apart by at least 4,000 lux. Prohibited values are automatically corrected by the device itself (see functional description).	

Parameter	Einstellungen
Delay when brightness increases	10s 1 min ... 3 min ... 20 min
This parameter determines the response time on increasing brightness when the selected threshold is passed. This delay prevents sending contradicting motion of the solar protection drives on instant brightness changes.	
Delay when brightness decreases	10s 1 min ... 3 min ... 20 min
This parameter determines the response time on decreasing brightness when the selected threshold is passed. This delay prevents sending contradicting motion of the solar protection drives on instant brightness changes.	

21 S2 Brightness and Temperature 909712

Solar protection channel C : Blinds

Channel C Blinds	
Telegram type	blinds
Activation of sun control	through object
Reaction to sun control ON	move up & sun control ON
Solar protection height from threshold 1	80%
Turn slats between threshold 1 and 2	40%
Turn slats between threshold 2 and 3	60%
Turn slats above threshold 3	75%
Reaction to sun control OFF	sun control OFF & move up

Parameter	Einstellungen
Telegram type	Scenes via 1-bit telegrams Send value blinds shutters/textile sun protection
Four different telegram types can be selected for the solar protection channel: 1-bit scenes, send value, blinds, or shutters / textile sun protection. When blinds is selected the following parameters appear.	
Activation of sun control	by dawn threshold through object
This parameter determines if the automatic solar protection control is activated via the dusk/dawn threshold or via a sun control object. If the automatic solar protection control is activated via the dusk/dawn threshold it is immediately active when the dusk/dawn threshold is passed. If the automatic solar protection control is activated via the sun control object it is only active when the sun control object has been set to 1 e.g. by a time clock.	

Parameter	Einstellungen
Reaction to sun control ON	Move up & sun control ON Move up & sun control once Not until dawn move up & sun control ON
[This parameter appears only when the automatic solar protection is activated via the sun control object.] When the sun control object is set to 1, ... Move up & sun control ON: ... move blinds up and move to position every time a threshold is passed. Move up & sun control once: ... move blinds up and move down / position slats when a threshold is passed. The blinds are only moved up after the solar protection control object has been set to 0. The single motion function is intended to "silence" the façade by avoiding frequently moving the blinds up and down. not until dawn move up & sun control ON: ... only move blinds up when the the dawn threshold has been passed. When another threshold is passed position the blinds accordingly.	
Reaction to dawn	Move up & sun control ON Move up & sun control once
[This parameter appears only when the automatic solar protection is activated via the dusk/dawn threshold.] Move up & sun control ON: When the dawn threshold is passed the blind is moved up and when threshold 1 is exceeded then the blind is moved down and the slats positioned accordingly. If the brightness level falls below threshold 1 then the blind is moved up again. Move up & sun control once: When the dawn threshold is passed the blind is moved up and when threshold 1 is exceeded then the blind is moved down and the slats positioned accordingly. The blind is moved up again at dusk. The single motion function is intended to "silence" the façade by avoiding frequently moving the blinds up and down.	
Solar protection height above threshold 1	80% (0% ... 100%)
When threshold 1 is exceeded the blinds are moved to the height determined by this parameter.	
Solar protection height between threshold 1 and 2	40% (0% ... 100%)
This parameter determines the position of the slats when threshold 1 is exceeded.	
Solar protection height between threshold 2 and 3	60% (0% ... 100%)
This parameter determines the position of the slats when threshold 2 is exceeded.	
Solar protection height above threshold 3	75% (0% ... 100%)
This parameter determines the position of the slats when threshold 3 is exceeded.	

21 S2 Brightness and Temperature 909712

Parameter	Einstellungen
Reaction to dusk	Sun control OFF & move up Sun control OFF & move down
<p>[This parameter appears only when the automatic solar protection is activated via the dusk/dawn threshold.]</p> <p>Sun control OFF & move up: When the brightness level falls below the dusk threshold the automatic sun control is turned off and the blinds are moved up.</p> <p>Sun control OFF & move down: When the brightness level falls below the dusk threshold the automatic sun control is turned off and the blinds are moved down.</p>	
Reaction to sun control OFF	Sun control OFF & move up Sun control OFF & move down Sun control OFF & move down at dusk
<p>[This parameter appears only when the automatic solar protection is activated via the sun control object.]</p> <p>When the sun control object is set to 0, ...</p> <p>Sun control OFF & move up: ... the automatic sun control is turned off and the blinds are moved up.</p> <p>Sun control OFF & move down: ... the automatic sun control is turned off and the blinds are moved down.</p> <p>Sun control OFF & move down at dusk: ... the automatic sun control is turned off and the blinds are moved down when the dusk threshold is passed.</p>	

Solar protection channel C: shutter

Channel C Shutter

Telegram type	shutters / textile sun protection
Activation of sun control	through object
Reaction to sun control ON	not until dawn move up & sun control ON
Solar protection height between threshold 1 and 2	30%
Solar protection height between threshold 2 and 3	60%
Solar protection height above threshold 3	80%
Reaction to sun control OFF	sun control OFF & move down at dusk

Parameter	Einstellungen
Telegram type	Scenes via 1-bit telegrams Send value blinds shutters/textile sun protection
<p>Four different telegram types can be selected for the solar protection channel: 1-bit scenes, send value, blinds, or shutters / textile sun protection.</p> <p>When shutters/textile sun protection is selected the following parameters appear.</p>	
Activation of sun control	by dawn threshold through object
<p>This parameter determines if the automatic solar protection control is activated via the dusk/dawn threshold or via a sun control object.</p> <p>If the automatic solar protection control is activated via the dusk/dawn threshold it is immediately active when the dusk/dawn threshold is passed.</p> <p>If the automatic solar protection control is activated via the sun control object it is only active when the sun control object has been set to 1 e.g. by a time clock.</p>	
Solar protection height between threshold 1 and 2	30% (0% ... 100%)
<p>This parameter determines the height of the shutter when threshold 1 is exceeded.</p>	
Solar protection height between threshold 2 and 3	60% (0% ... 100%)
<p>This parameter determines the height of the shutter when threshold 2 is exceeded.</p>	
Solar protection height above threshold 3	80% (0% ... 100%)
<p>This parameter determines the height of the shutter when threshold 3 is exceeded.</p>	

21 S2 Brightness and Temperature 909712

Parameter	Einstellungen
Reaction to dawn	Move up & sun control ON Move up & sun control once
<p>[This parameter appears only when the automatic solar protection is activated via the dusk/dawn threshold.]</p> <p>Move up & sun control ON: When the dawn threshold is passed the shutters are moved up and when threshold 1 is exceeded then the shutters are moved down accordingly. If the brightness level falls below threshold 1 then the shutters are moved up again.</p> <p>Move up & sun control once: When the dawn threshold is passed the shutters are moved up and when threshold 1 is exceeded then the shutters are moved down accordingly. When thresholds 2 and 3 are exceeded the shutters are moved further down accordingly. The shutters are moved up again at dusk.</p> <p>The single motion function is intended to "silence" the façade by avoiding frequently moving the shutters up and down.</p>	
Reaction to sun control ON	Move up & sun control ON Move up & sun control once Not until dawn move up & sun control ON
<p>[This parameter appears only when the automatic solar protection is activated via the sun control object.]</p> <p>When the sun control object is set to 1, ...</p> <p>Move up & sun control ON: ... move shutters up and move to the according height every time a threshold is passed.</p> <p>Move up & sun control once: ... move shutters up and move a lower height when a higher threshold is passed. The shutters are only moved up after the solar protection control object has been set to 0.</p> <p>The single motion function is intended to "silence" the façade by avoiding frequently moving the shutters up and down.</p> <p>not until dawn move up & sun control ON: ... only move shutters up when the dawn threshold has been passed. When another threshold is passed position the shutters accordingly.</p>	
Reaction to dusk	Sun control OFF & move up Sun control OFF & move down
<p>[This parameter appears only when the automatic solar protection is activated via the dusk/dawn threshold.]</p> <p>Sun control OFF & move up: When the brightness level falls below the dusk threshold the automatic sun control is turned off and the shutters are moved up.</p> <p>Sun control OFF & move down: When the brightness level falls below the dusk threshold the automatic sun control is turned off and the shutters are moved down.</p>	

Parameter	Einstellungen
Reaction to sun control OFF	Sun control OFF & move up Sun control OFF & move down Sun control OFF & move down at dusk
<p>[This parameter appears only when the automatic solar protection is activated via the sun control object.]</p> <p>When the sun control object is set to 0, ...</p> <p>Sun control OFF & move up: ... the automatic sun control is turned off and the shutters are moved up.</p> <p>Sun control OFF & move down: ... the automatic sun control is turned off and the shutters are moved down.</p> <p>Sun control OFF & move down at dusk: ... the automatic sun control is turned off and the shutters are moved down when the dusk threshold is passed.</p>	

21 S2 Brightness and Temperature 909712

Solar protection channel C: Scenes (1-Bit)

Channel C Scenes	
Telegram type	Scenes via 1-bit telegrams
Activation of sun control	through object
Reaction to sun control ON	not until dawn move up & sun control ON
Telegram between threshold 1 and 2	Scene 2
Telegram between threshold 2 and 3	Scene 3
Telegram above threshold 3	Scene 4
Reaction to sun control OFF	sun control OFF & move down at dusk

Parameter	Einstellungen
Telegram type	Scenes via 1-bit telegrams Send value blinds shutters/textile sun protection
Four different telegram types can be selected for the solar protection channel: 1-bit scenes, send value, blinds, or shutters / textile sun protection. When scenes via 1-bit telegrams is selected the following parameters appear.	
Activation of sun control	by dawn threshold through object
This parameter determines if the automatic solar protection control is activated via the dusk/dawn threshold or via a sun control object. If the automatic solar protection control is activated via the dusk/dawn threshold it is immediately active when the dusk/dawn threshold is passed. If the automatic solar protection control is activated via the sun control object it is only active when the sun control object has been set to 1 e.g. by a time clock.	
Telegram between threshold 1 and 2	Scene 1 Scene 2 Scene 3 Scene 4
This parameter determines the scene that is recalled when threshold 1 is exceeded.	
Telegram between threshold 2 and 3	Scene 1 Scene 2 Scene 3 Scene 4
This parameter determines the scene that is recalled when threshold 2 is exceeded.	
Telegram above threshold 3	Scene 1 Scene 2 Scene 3 Scene 4
This parameter determines the scene that is recalled when threshold 3 is exceeded.	

Parameter	Einstellungen
Reaction to dawn	Move up & sun control ON Move up & sun control once
[This parameter appears only when the automatic solar protection is activated via the dusk/dawn threshold.] Move up & sun control ON: When the dawn threshold is passed the blinds / shutters are moved up. When threshold 1 is exceeded then the configured scene is recalled. If the brightness level falls below threshold 1 then the blinds / shutters are moved up again. Move up & sun control once: When the dawn threshold is passed the blinds / shutters are moved up. When threshold 1 is exceeded then the configured scene is recalled. When thresholds 2 and 3 are exceeded the corresponding scenes are recalled. The blinds / shutters are moved up again at dusk. The single motion function is intended to "silence" the façade by avoiding frequently moving the blinds / shutters up and down.	
Reaction to sun control ON	Move up & sun control ON Move up & sun control once Not until dawn move up & sun control ON
[This parameter appears only when the automatic solar protection is activated via the sun control object.] When the sun control object is set to 1, ... Move up & sun control ON: ... move blinds / shutters up. When the configured thresholds are passed the correspondingly configured scenes are recalled. Move up & sun control once: ... move blinds / shutters up. When a threshold is exceeded the corresponding scene is recalled once. The blinds/ shutters are only moved up after the solar protection control object has been set to 0. The single motion function is intended to "silence" the façade by avoiding frequently moving the blinds / shutters up and down. not until dawn move up & sun control ON: ... only move blinds / shutters up when the dawn threshold has been passed. When another threshold is passed the corresponding scene is recalled.	
Reaction to dusk	Sun control OFF & move up Sun control OFF & move down
[This parameter appears only when the automatic solar protection is activated via the dusk/dawn threshold.] Sun control OFF & move up: When the brightness level falls below the dusk threshold the automatic sun control is turned off and the blinds / shutters are moved up. Sun control OFF & move down: When the brightness level falls below the dusk threshold the automatic sun control is turned off and the blinds / shutters are moved down.	

21 S2 Brightness and Temperature 909712

Parameter	Einstellungen
Reaction to sun control OFF	Sun control OFF & move up Sun control OFF & move down Sun control OFF & move down at dusk
<p>[This parameter appears only when the automatic solar protection is activated via the sun control object.]</p> <p>When the sun control object is set to 0, ...</p> <p>Sun control OFF & move up: ... the automatic sun control is turned off and the blinds / shutters are moved up.</p> <p>Sun control OFF & move down: ... the automatic sun control is turned off and the blinds / shutters are moved down.</p> <p>Sun control OFF & move down at dusk: ... the automatic sun control is turned off and the blinds / shutters are moved down when the dusk threshold is passed.</p>	

Solar protection channel C: send value

Channel C Send value	
Telegram type	send value
Activation of sun control	through object
Reaction to sun control ON	not until dawn move up & sun control ON
Telegram between threshold 1 and 2	10
Telegram between threshold 2 and 3	20
Telegram above threshold 3	30
Reaction to sun control OFF	sun control OFF & move down at dusk

Parameter	Einstellungen
Telegram type	Scenes via 1-bit telegrams Send value blinds shutters/textile sun protection
<p>Four different telegram types can be selected for the solar protection channel: 1-bit scenes, send value, blinds, or shutters / textile sun protection.</p> <p>When send value is selected the following parameters appear.</p>	
Activation of sun control	by dawn threshold through object
<p>This parameter determines if the automatic solar protection control is activated via the dusk/dawn threshold or via a sun control object.</p> <p>If the automatic solar protection control is activated via the dusk/dawn threshold it is immediately active when the dusk/dawn threshold is passed.</p> <p>If the automatic solar protection control is activated via the sun control object it is only active when the sun control object has been set to 1 e.g. by a time clock.</p>	
Telegram between threshold 1 and 2	10 (0...255)
This parameter determines the value that is sent when threshold 1 is exceeded.	
Telegram between threshold 2 and 3	20 (0...255)
This parameter determines the value that is sent when threshold 2 is exceeded.	
Telegram above threshold 3	30 (0...255)
This parameter determines the value that is sent when threshold 3 is exceeded.	

21 S2 Brightness and Temperature 909712

Parameter	Einstellungen
Reaction to dawn	Move up & sun control ON Move up & sun control once
<p>[This parameter appears only when the automatic solar protection is activated via the dusk/dawn threshold.]</p> <p>Move up & sun control ON: When the dawn threshold is passed the blinds / shutters are moved up. When threshold 1 is exceeded then the configured value is sent. If the brightness level falls below threshold 1 then the blinds / shutters are moved up again.</p> <p>Move up & sun control once: When the dawn threshold is passed the blinds / shutters are moved up. When threshold 1 is exceeded then the configured value is sent. When thresholds 2 and 3 are exceeded the corresponding values are sent. The blinds / shutters are moved up again at dusk.</p> <p>The single motion function is intended to "silence" the façade by avoiding frequently moving the blinds / shutters up and down.</p>	
Reaction to sun control ON	Move up & sun control ON Move up & sun control once Not until dawn move up & sun control ON
<p>[This parameter appears only when the automatic solar protection is activated via the sun control object.]</p> <p>When the sun control object is set to 1, ...</p> <p>Move up & sun control ON: ... move blinds / shutters up. When the configured thresholds are passed the correspondingly configured values are sent.</p> <p>Move up & sun control once: ... move blinds / shutters up. When a threshold is exceeded the corresponding value is sent once. The blinds / shutters are only moved up after the solar protection control object has been set to 0.</p> <p>The single motion function is intended to "silence" the façade by avoiding frequently moving the blinds / shutters up and down.</p> <p>not until dawn move up & sun control ON: ... only move blinds / shutters up when the dawn threshold has been passed. When another threshold is passed the corresponding value is sent.</p>	
Reaction to dusk	Sun control OFF & move up Sun control OFF & move down
<p>[This parameter appears only when the automatic solar protection is activated via the dusk/dawn threshold.]</p> <p>Sun control OFF & move up: When the brightness level falls below the dusk threshold the automatic sun control is turned off and the blinds / shutters are moved up.</p> <p>Sun control OFF & move down: When the brightness level falls below the dusk threshold the automatic sun control is turned off and the blinds / shutters are moved down.</p>	

Parameter	Einstellungen
Reaction to sun control OFF	Sun control OFF & move up Sun control OFF & move down Sun control OFF & move down at dusk
<p>[This parameter appears only when the automatic solar protection is activated via the sun control object.]</p> <p>When the sun control object is set to 0, ...</p> <p>Sun control OFF & move up: ... the automatic sun control is turned off and the blinds / shutters are moved up.</p> <p>Sun control OFF & move down: ... the automatic sun control is turned off and the blinds / shutters are moved down.</p> <p>Sun control OFF & move down at dusk: ... the automatic sun control is turned off and the blinds / shutters are moved down when the dusk threshold is passed.</p>	