

07 01 Weather station 140B11

Use of the application program

Product family: Sensors
Product type: Weather stations
Manufacturer: Siemens

Product name: Weather station AP 257/51
Description: Weather station for temperature, brightness and wind
Order no: 5WG1 257-3AB51

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1 Functional Description

The Weather station AP 257/51 includes sensors for detecting temperature, brightness from three directions and wind speed as well as the evaluation electronics and bus connection. The measured values can be sent to the bus.

The Weather station is a KNX device, designed for assembly on or at buildings.

The KNX bus is connected to the device via the bus terminal. The device electronics are powered by the bus voltage.

The Weather station includes the following function blocks:

- 10 sensor evaluations for wind, temperature, brightness
- 3 facades with sun protection functions
- 4 threshold switches (percentage, 8- and 16-bit values, DPT 9.xxx (e.g. temperature, CO₂, brightness))
- 6 logic modules (AND, OR, XOR)

The device is configured and put into operation with the Engineering Tool Software (ETS) from Version ETS 3f. The device requires the application program "07 01 Weather station 140B11" or a newer version.

1.1 Characteristics

- Temperature and wind sensor
- 3 integrated brightness sensors, each 90° apart
- 2 objects for external brightness sensors
- Sensor evaluation with AND/OR linking of weather data
- Threshold switches with delay for exceeding and shortfall
- Logic modules with 4 input objects
- Internal linking configurable with stati of the sensor evaluations and threshold switches

1.2 Temperature sensor

Temperature measurement: temperatures are normally measured in the shade. The Weather station, conversely, is typically mounted in locations exposed to the sun and the resulting solar radiation means the measured temperature may far exceed the temperature in the shade.

1.3 Wind sensor

Since the run time of the sun/ vision protection devices (venetian blinds, roller shutters etc.) can take several minutes, they cannot be immediately protected in the event of sudden incipient gusts of wind. Accordingly, the maximum permissible wind speed, specified by the sun protection manufacturer, must be noted when configuring the wind speed threshold. It should be set below the specified threshold to be on the safe side.

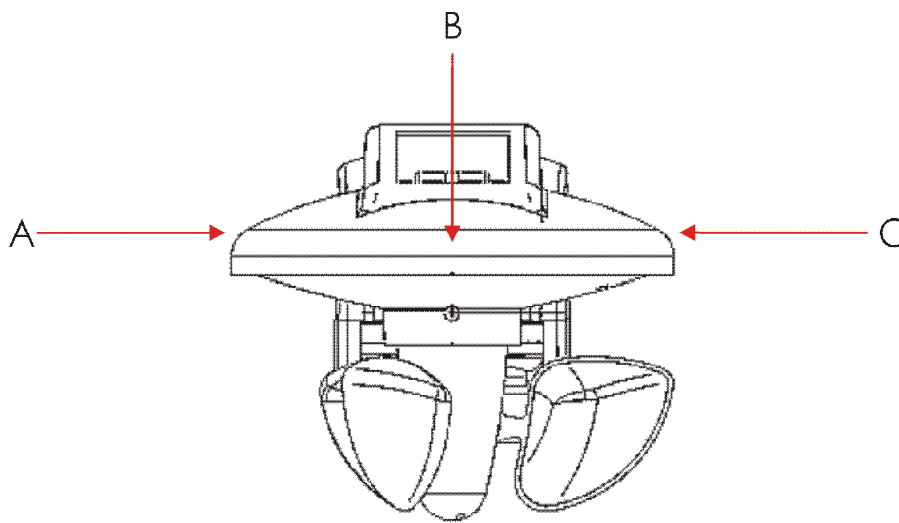
When the wind hits the facade from the front, this can result in an accumulation of air. Since the Weather station AP 257/51 can only measure the speed of wind blowing directly toward the installation site, the value measured may be far less than the actual wind speed. This should be taken into consideration when adjusting the wind threshold for frontal facades exposed to strong winds. As an alternative, the use of a pole mounting is recommended in such cases.

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1.4 Brightness sensors

The Weather station AP 257/51 includes 3 integrated brightness sensors, which are designated in the ETS application software as “Front sensor”, “Left sensor” and “Right sensor” respectively.

These designations apply assuming the device is viewed from the front, as in the following sketch:



- A: Left sensor
- B: Front sensor
- C: Right sensor

For applications in a brightness range below 100 lx, e.g. dawn/ dusk switch usage, the use of the front sensor is recommended, since this enables a finer resolution within the range in question than the other sensors.

1.5 Behavior in the event of bus voltage failure/ recovery

If the bus voltage fails, the weather control panel will not send any further communications objects. With bus voltage recovery, the configured actions are performed and the values of all sensors are sent, regardless of the configuration.

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2 Communication Objects

Maximum number of group addresses: 254

Maximum number of allocations: 255

Note

The number and designation of the communications objects incorporated in the ETS menu may vary, since it depends on the parameter settings.

The application program is loaded into the device ex factory.

The device is configured with the Engineering Tool Software (ETS) from Version ETS3f and put into operation. ETS can be used to issue the specific parameters and addresses and transfers them to the bus device.

The following list shows all the objects of the device. Which objects are visible and scope to link them to group addresses, is determined by the parameter settings and functions assigned.

The objects and related parameter settings are described in the following sections.

No.	Object Name	Function	Length	DPT	Flags
0	brightness value front sensor	current value	2 byte	9.004	CRT
1	brightness value left sensor	current value	2 byte	9.004	CRT
2	brightness value right sensor	current value	2 byte	9.004	CRT
3	maximum brightness value	send	2 byte	9.004	CRT
4	temperature value	current value	2 byte	9.001	CRT
5	wind speed (m/s)	current value	2 byte	9.005	CRT
	wind speed (km/h)	current value	2 byte	9.028	CRT
	wind speed (Bft)	current value	1 byte	20.014	CRT
15	status of temperature sensor	send (0 = OK, 1 = defect)	1 bit	1.001	CRTU
18	external brightness value 1 (lx)	current value	2 byte	9.004	CRWU
19	external brightness value 2 (lx)	current value	2 byte	9.004	CRWU
20	sensor evaluation 1.1	ON/ OFF	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
21	sensor evaluation 1.2	ON/ OFF	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
22	lock sensor evaluation 1	lock = 0	1 bit	1.003	CRW
		lock = 1	1 bit	1.003	CRW
23	sensor evaluation 1 - brightness threshold	preset/ recall	2 byte	9.004	CRWT
		recall	2 byte	9.004	CRT

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No.	Object Name	Function	Length	DPT	Flags
24	sensor evaluation 2.1	ON/ OFF	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
25	sensor evaluation 2.2	ON/ OFF	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
26	lock sensor evaluation 2	lock = 0	1 bit	1.003	CRW
		lock = 1	1 bit	1.003	CRW
27	sensor evaluation 2 - brightness threshold	preset/ recall	2 byte	9.004	CRWT
		recall	2 byte	9.004	CRT
28	sensor evaluation 3.1	ON/ OFF	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
29	sensor evaluation 3.2	ON/ OFF	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
30	lock sensor evaluation 3	lock = 0	1 bit	1.003	CRW
		lock = 1	1 bit	1.003	CRW
31	sensor evaluation 3 - brightness threshold	preset/ recall	2 byte	9.004	CRWT
		recall	2 byte	9.004	CRT
32	sensor evaluation 4.1	ON/ OFF	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
33	sensor evaluation 4.2	ON/ OFF	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
34	lock sensor evaluation 4	lock = 0	1 bit	1.003	CRW
		lock = 1	1 bit	1.003	CRW
35	sensor evaluation 4 - brightness threshold	preset/ recall	2 byte	9.004	CRWT
		recall	2 byte	9.004	CRT
36	sensor evaluation 5.1	ON/ OFF	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
37	sensor evaluation 5.2	ON/ OFF	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT

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No.	Object Name	Function	Length	DPT	Flags
38	lock sensor evaluation 5	lock = 0	1 bit	1.003	CRW
		lock = 1	1 bit	1.003	CRW
39	sensor evaluation 5 - brightness threshold	preset/ recall	2 byte	9.004	CRWT
		recall	2 byte	9.004	CRT
40	sensor evaluation 6.1	ON/ OFF	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
41	sensor evaluation 6.2	ON/ OFF	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
42	lock sensor evaluation 6	lock = 0	1 bit	1.003	CRW
		lock = 1	1 bit	1.003	CRW
43	sensor evaluation 6 - brightness threshold	preset/ recall	2 byte	9.004	CRWT
		recall	2 byte	9.004	CRT
44	sensor evaluation 7.1	ON/ OFF	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
45	sensor evaluation 7.2	ON/ OFF	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
46	lock sensor evaluation 7	lock = 0	1 bit	1.003	CRW
		lock = 1	1 bit	1.003	CRW
47	sensor evaluation 7 - brightness threshold	preset/ recall	2 byte	9.004	CRWT
		recall	2 byte	9.004	CRT
48	sensor evaluation 8.1	ON/ OFF	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
49	sensor evaluation 8.2	ON/ OFF	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
50	lock sensor evaluation 8	lock = 0	1 bit	1.003	CRW
		lock = 1	1 bit	1.003	CRW
51	sensor evaluation 8 - brightness threshold	preset/ recall	2 byte	9.004	CRWT
		recall	2 byte	9.004	CRT

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No.	Object Name	Function	Length	DPT	Flags
52	sensor evaluation 9.1	ON/ OFF	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
53	sensor evaluation 9.2	ON/ OFF	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
54	lock sensor evaluation 9	lock = 0	1 bit	1.003	CRW
		lock = 1	1 bit	1.003	CRW
55	sensor evaluation 9 - brightness threshold	preset/ recall	2 byte	9.004	CRWT
		recall	2 byte	9.004	CRT
56	sensor evaluation 10.1	ON/ OFF	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
57	sensor evaluation 10.2	ON/ OFF	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
58	lock sensor evaluation 10	lock = 0	1 bit	1.003	CRW
		lock = 1	1 bit	1.003	CRW
59	sensor evaluation 10 - brightness threshold	preset/ recall	2 byte	9.004	CRWT
		recall	2 byte	9.004	CRT
60	facade 1 - up/ down	up/ down	1 bit	1.008	CT
61	facade 1 - solar protection position in %	move to	1 byte	5.001	CRT
	facade 1 - scene	send	1 byte	17.001	CRT
62	facade 1 - slats position in %	move to	1 byte	5.001	CRT
63	facade 1 - sun control	0=sun control OFF 1=sun control ON	1 bit	1.001	CRW
65	facade 1 - safety	input	1 bit	1.001	CRW
66	facade 1 - dawn/ dusk threshold	send/ receive	2 byte	9.004	CRWTU
67	facade 1 - brightness threshold	send/ receive	2 byte	9.004	CRWTU
68	facade 2 - up/ down	up/ down	1 bit	1.008	CT
69	facade 2 - solar protection position in %	move to	1 byte	5.001	CRT
	facade 2 - scene	send	1 byte	17.001	CRT
70	facade 2 - slats position in %	move to	1 byte	5.001	CRT
71	facade 2 - sun control	0=sun control OFF 1=sun control ON	1 bit	1.001	CRW
73	facade 2 - safety	input	1 bit	1.001	CRW
74	facade 2 - dawn/ dusk threshold	send/ receive	2 byte	9.004	CRWTU

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No.	Object Name	Function	Length	DPT	Flags
75	facade 2 - brightness threshold	send/ receive	2 byte	9.004	CRWTU
76	facade 3 - up/ down	up/ down	1 bit	1.008	CT
77	facade 3 - solar protection position in %	move to	1 byte	5.001	CRT
	facade 3 - scene	send	1 byte	17.001	CRT
78	facade 3 - slats position in %	move to	1 byte	5.001	CRT
79	facade 3 - sun control	0=sun control OFF 1=sun control ON	1 bit	1.001	CRW
81	facade 3 - safety	input	1 bit	1.001	CRW
82	facade 3 - dawn/ dusk threshold	send /receive	2 byte	9.004	CRWTU
83	facade 3 - brightness threshold	send/ receive	2 byte	9.004	CRWTU
84	threshold switch 1 - input	percent	1 byte	5.001	CRW
		0..255	1 byte	5.010	CRW
		0..65535	2 byte	7.001	CRW
		DPT 9.xxx value	2 byte	9.xxx	CRW
85	lock threshold switch 1	lock = 0	1 bit	1.003	CRW
		lock = 1	1 bit	1.003	CRW
86	threshold switch 1.1	switch	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
87	threshold switch 1.2	switch	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
88	threshold switch 2 - input	percent	1 byte	5.001	CRW
		0..255	1 byte	5.010	CRW
		0..65535	2 byte	7.001	CRW
		DPT 9.xxx value	2 byte	9.xxx	CRW
89	lock threshold switch 2	lock = 0	1 bit	1.003	CRW
		lock = 1	1 bit	1.003	CRW
90	threshold switch 2.1	switch	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
91	threshold switch 2.2	switch	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT

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No.	Object Name	Function	Length	DPT	Flags
92	threshold switch 3 - input	percent	1 byte	5.001	CRW
		0..255	1 byte	5.010	CRW
		0..65535	2 byte	7.001	CRW
		DPT 9.xxx value	2 byte	9.xxx	CRW
93	lock threshold switch 3	lock = 0	1 bit	1.003	CRW
		lock = 1	1 bit	1.003	CRW
94	threshold switch 3.1	switch	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
95	threshold switch 3.2	switch	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
96	threshold switch 4 - input	percent	1 byte	5.001	CRW
		0..255	1 byte	5.010	CRW
		0..65535	2 byte	7.001	CRW
		DPT 9.xxx value	2 byte	9.xxx	CRW
97	lock threshold switch 4	lock = 0	1 bit	1.003	CRW
		lock = 1	1 bit	1.003	CRW
98	threshold switch 4.1	switch	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
99	threshold switch 4.2	switch	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
100	logic module 1 – input 1	ON/ OFF	1 bit	1.002	CRWU
101	logic module 1 – input 2	ON/ OFF	1 bit	1.002	CRWU
102	logic module 1 – input 3	ON/ OFF	1 bit	1.002	CRWU
103	logic module 1 – input 4	ON/ OFF	1 bit	1.002	CRWU
104	lock logic module 1	lock = 0	1 bit	1.003	CRW
		lock = 1	1 bit	1.003	CRW
105	logic module 1.1	switch	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT

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No.	Object Name	Function	Length	DPT	Flags
106	logic module 1.2	switch	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
107	logic module 2 – input 1	ON/ OFF	1 bit	1.002	CRWU
108	logic module 2 – input 2	ON/ OFF	1 bit	1.002	CRWU
109	logic module 2 – input 3	ON/ OFF	1 bit	1.002	CRWU
110	logic module 2 – input 4	ON/ OFF	1 bit	1.002	CRWU
111	lock logic module 2	lock = 0	1 bit	1.003	CRW
		lock = 1	1 bit	1.003	CRW
112	logic module 2.1	switch	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
113	logic module 2.2	switch	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
114	logic module 3 – input 1	ON/ OFF	1 bit	1.002	CRWU
115	logic module 3 – input 2	ON/ OFF	1 bit	1.002	CRWU
116	logic module 3 – input 3	ON/ OFF	1 bit	1.002	CRWU
117	logic module 3 – input 4	ON/ OFF	1 bit	1.002	CRWU
118	lock logic module 3	lock = 1	1 bit	1.003	CRW
		lock = 0	1 bit	1.003	CRW
119	logic module 3.1	switch	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
120	logic module 3.2	switch	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
121	logic module 4 – input 1	ON/ OFF	1 bit	1.002	CRWU
122	logic module 4 – input 2	ON/ OFF	1 bit	1.002	CRWU
123	logic module 4 – input 3	ON/ OFF	1 bit	1.002	CRWU
124	logic module 4 – input 4	ON/ OFF	1 bit	1.002	CRWU
125	lock logic module 4	lock = 0	1 bit	1.003	CRW
		lock = 1	1 bit	1.003	CRW

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No.	Object Name	Function	Length	DPT	Flags
126	logic module 4.1	switch	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
127	logic module 4.2	switch	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
128	logic module 5 – input 1	ON/ OFF	1 bit	1.002	CRWU
129	logic module 5 – input 2	ON/ OFF	1 bit	1.002	CRWU
130	logic module 5 – input 3	ON/ OFF	1 bit	1.002	CRWU
131	logic module 5 – input 4	ON/ OFF	1 bit	1.002	CRWU
132	lock logic module 5	lock = 0	1 bit	1.003	CRW
		lock = 1	1 bit	1.003	CRW
133	logic module 5.1	switch	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
134	logic module 5.2	switch	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
135	logic module 6 – input 1	ON/ OFF	1 bit	1.002	CRWU
136	logic module 6 – input 2	ON/ OFF	1 bit	1.002	CRWU
137	logic module 6 – input 3	ON/ OFF	1 bit	1.002	CRWU
138	logic module 6 – input 4	ON/ OFF	1 bit	1.002	CRWU
139	lock logic module 6	lock = 0	1 bit	1.003	CRW
		lock = 1	1 bit	1.003	CRW
140	logic module 6.1	switch	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT
141	logic module 6.2	switch	1 bit	1.001	CRT
		value	1 byte	5.010	CRT
		forced control	2 bit	2.001	CRT

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3 Functions (Objects, Parameters)

The following section describes the individual functions of the weather station, including The related objects and parameter settings.

Note

The number and designation of the parameter pages inserted into the ETS menu may vary, since they depend on the parameter settings. This means that an additional parameter page may also appear, if dynamic refreshing on the parameter page means there is no space for any further parameters.

3.1 Parameters „General“

The following parameters allow the various functions of the weather station to be activated.

Parameter	Settings
Activate sensor evaluation1 (2, 3, ... 10)	no yes
This parameter configures whether the corresponding objects should be provided for the sensor evaluation (1 ... 10). (This parameter applies to each of the 10 sensor evaluations.)	
Activate facade 1 (2, 3)	no yes
This parameter configures whether the corresponding objects for the facades (1 ... 3) should be provided. (This parameter applies to each of the 3 facades.)	
Activate threshold switch 1 (2, 3, 4)	no yes
This parameter configures whether the corresponding objects for the threshold switches (1 ... 4) should be provided. (This parameter applies to each of the 4 threshold switches.)	
Activate logic module 1 (2, 3, ... 6)	no yes
This parameter configures whether the corresponding objects for the logic modules (1 ... 6) should be provided. (This parameter applies to each of the 6 logic modules.)	

3.2 Parameters and Objects „Measured values“

3.2.1 Parameters „Measured values“

The parameters described here allow settings to be configured for transmitting the weather data.

Parameter	Settings
Send on change of brightness value by	no 10 %, but at least 1 lx 20 %, but at least 1 lx 30 %, but at least 1 lx 50 %, but at least 1 lx
This parameter configures the amount of change in brightness which triggers automatic resending of the brightness level. If this parameter is set to “no”, only cyclical sending is performed, provided this is activated via the following parameters:	

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Parameter	Settings
Send brightness value cyclically	no 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 allows the desired time interval for the cyclical transmission of the brightness value to be configured. If this parameter is set to "no", only cyclical sending is performed, provided this is activated via the following parameter.	
Brightness adjustment front (left, right) sensor in %	Value range: -30 ... 30 % Increment: 1% Default setting: 0 %
This parameter allows the correction value for the brightness measurement to be input, if the value sent by the sensor deviates from the actual ambient brightness. (These parameters apply to each of the three brightness sensors (front, left, right)).	
Send on change of temperature value by	no 0.5 °C / 32.9 °F 1.0 °C / 33.8 °F 1.5 °C / 34.7 °F 2.0 °C / 35.6 °F 2.5 °C / 36.5 °F
This parameter configures the amount of change in temperature which triggers automatic resending of the temperature level. If this parameter is set to "no", only cyclical sending is performed, provided this is activated via the following parameters.	
Temperature calibration in 0.1°C	Value range: -64 ... 63 Increment: 1 Default setting: 0
This parameter allows the correction value for the temperature measurement to be input, if the value sent by the sensor deviates from the actual ambient temperature. (Minimum and maximum corrections of -6.4 and +6.3°C can be respectively input).	
Send temperature cyclically	no 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 allows the desired time interval for the cyclical transmission of temperature to be configured. If this parameter is set to "no", the temperature is not cyclically sent.	

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Parameter	Settings
Unit for wind speed	m/s km/h Beaufort
This parameter allows the unit of sent wind speed to be selected. 1 m/s corresponds to 3.6 km/h, 1 km/h corresponds to around 0.278 m/s. If the Beaufort unit is selected, the wind speed is expressed in terms of wind strength from 1...12.	
Send wind speed in the event of change	no 10 %, but at least 0.5 m/s 20 %, but at least 0.5 m/s 30 %, but at least 1 m/s 50 %, but at least 1 m/s
This parameter is only visible if the unit for wind speed has been set to "m/s". This parameter configures the amount of change in wind speed which triggers automatic resending of the wind speed figure.. If this parameter is set to "no", it is only cyclically sent, provided it is activated via the following parameter.	
Send wind speed in the event of change	no 10 %, but at least 1.8 km/h 20 %, but at least 1.8 km/h 30 %, but at least 3.6 km/h 50 %, but at least 3.6 km/h
This parameter is only visible if the unit for wind speed has been set to "km/h". This parameter configures the amount of change in wind speed which triggers automatic resending of the wind speed figure.. If this parameter is set to "no", it is only cyclically sent, provided it is activated via the following parameter.	
Send wind speed in the event of change	not due a change on change of wind speed
This parameter is only visible if the unit for wind speed has been set to "Beaufort". This parameter configures if the current wind speed should be sent automatically when the wind strength changes. If this parameter is set to "not due a change", it is only sent cyclically, provided this is activated via the following parameter.	
Send wind speed cyclically	no 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 every 10 s (for test purposes only)
This parameter allows the desired time interval for the cyclical transmission of wind speed configured. If this parameter is set to "no", the wind speed is not cyclically sent.	

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3.2.2 Objects „Measured values“

Obj	Object name	Function	Type	Flag
0	brightness value front sensor	current value	2 byte - 9.004	CRT
Sends the current brightness value of the front brightness sensor. Only the value measured on the integrated sensor is sent. Any external brightness values received are not taken into consideration.				
1	brightness value left sensor	current value	2 byte - 9.004	CRT
Sends the current brightness value of the left brightness sensor (when device viewed from front). Only the value measured on the integrated sensor is sent. Any external brightness values received are not taken into consideration.				
2	brightness value right sensor	current value	2 byte - 9.004	CRT
Sends the current brightness value of the right brightness sensor (when device viewed from front). Only the value measured on the integrated sensor is sent. Any external brightness values received are not taken into consideration.				
3	maximum brightness value	send	2 byte - 9.004	CRT
Sends the largest value among objects 0, 1 and 2. Any external brightness values received are not taken into consideration.				
4	temperature value	current value	2 byte - 9.001	CRT
Sends the current temperature value, depending on the configuration for change and/or cyclically.				
5	wind speed	current value (m/s) current value (km/h) current value (Bft)	2 byte - 9.005 2 byte - 9.028 2 byte - 20.014	CRT
Sends the current wind speed, depending on the configuration in the event of change and/or cyclically. The unit used, namely m/s, km/h or Beaufort can be selected via the corresponding parameter setting.				
15	status of temperature sensor	send (0 = OK, 1 = defect)	1 bit - 1.001	CRTU
This object sends the current status of the temperature sensor. "0" means Sensor OK, "1" means error.				
18	external brightness value 1 (lx)	current value	2 byte - 9.004	CRWU
Receives the brightness value of an additional facade from another KNX sensor.				
19	external brightness value 2 (lx)	current value	2 byte - 9.004	CRWU
Receives the brightness value of an additional facade from another KNX sensor.				

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3.3 Parameters and Objects „Sensor evaluation“

Sensor evaluations 1 to 10 can be used for sub tasks (e.g. pure brightness threshold) or for an arbitrary combination of measurement values.

A sensor evaluation comprises up to 3 logically linked weather conditions, namely:

- brightness above/ below threshold
- temperature above/ below threshold
- wind speed above/ below threshold
-

The weather conditions can be interlinked, either with a logical AND or a logical OR. An irrelevant condition (e.g. temperature) can be disregarded and is then not taken into consideration for the linking.

The behavior of the output objects with the condition met or unmet is configured via the parameters on the page “Objects”.

Each sensor evaluation includes a lock object and a brightness threshold object.

A sensor evaluation can also be configured as a safety channel as required, provided the relevant variables, e.g. temperature and wind, are linked with a logical OR. The logical operation result can then be assessed with a corresponding configuration of the “facades” as a safety message.

The objects and parameters for the 10 sensor evaluations are configured in the same way. Accordingly, here, only those of Sensor evaluation 1 are described.

3.3.1 Parameters „Sensor evaluation - function“

The sensor evaluations are activated on the “General” parameter page. Depending on the configured function, various parameters may be available.

The following parameter allows the user to select which sensors should be taken into consideration for the sensor evaluation.

Parameter	Settings
Channel function	brightness sensor temperature sensor wind sensor logic operation
This parameter configures which of the 3 measurement values should be considered by the channel. If this parameter is set to “logic operation”, various measurement values can be logically linked together.	

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3.3.1.1 Parameters „Sensor evaluation - brightness sensor“

The following parameters are available if the above parameter “Channel function” has been set to “brightness sensor”.

Parameter	Settings
Brightness threshold	below 3 lx up to below 90 000 lx (in 72 steps) above 3 lx up to above 90 000 lx (in 75 steps) Default setting: above 10 000 lx
This parameter allows the channel condition to be selected.	
Source	front sensor left sensor right sensor maximum value of the 3 sensors
This parameter allows the user to select which brightness value should be taken into consideration for further proceeding.	
Light hysteresis	20 %, but at least 1 lx 30 %, but at least 1 lx 50 %, but at least 1 lx
The hysteresis prevents frequent switching during minor brightness changes and may be positive or negative, depending on the configured condition.	
Delay when brightness increases	none 5 sec 10 sec 20 sec 30 sec 1 min 2 min 3 min 5 min 10 min 15 min 20 min
This parameter allows a delayed response time to be configured with increasing brightness and when the configured threshold is exceeded. This means the transmission of contradictory telegrams in the event of a sudden sequence of brightness changes can be prevented.	
Delay when brightness decreases	none 5 sec 10 sec 20 sec 30 sec 1 min 2 min 3 min 5 min 10 min 15 min 20 min
This parameter allows a delayed response time to be configured with decreasing brightness and when the brightness falls below the configured threshold. This means that the transmission of contradictory telegrams in the event of a sudden sequence of brightness changes can be prevented.	

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Parameter	Settings
Value overwritable via object	yes no
This parameter defines whether the configured brightness threshold value can be modified via bus telegrams.	
Overwrite value on download	yes no
If this parameter is set to "yes", during an ETS download, the brightness threshold currently stored in the device is deleted and overwritten by the value configured in the ETS. If this parameter is set to "no", an ETS download has no impact on the brightness threshold currently stored in the device. Note: During the first commissioning, regardless of the parameter configuration, the value configured via the ETS is downloaded.	

3.3.1.2 Parameters „Sensor evaluation – temperature sensor“

The following parameters are available if the "Channel function" parameter described in section 3.3.1 has been set to "temperature sensor".

Parameter	Settings
Temperature threshold	below -10°C / 14 °F up to below 40°C / 104 °F (in 1K steps) above -10°C / 14 °F up to above 40°C / 104 °F (in 1K steps) Default setting: above 18°C / 64.4 °F
This parameter allows the channel condition to be selected.	
Temperature hysteresis	1.0 K 1.5 K 2.0 K 2.5 K
The hysteresis prevents frequent switching in the event of minor changes in temperature and may be negative or positive, depending on the configured condition.	

3.3.1.3 Parameters „Sensor evaluation – wind sensor“

The following parameters are available if the "Channel function" parameter described in section 3.3.1 has been set to "wind sensor".

Parameter	Settings
Wind speed threshold	below 4 m/s (14 km/h) up to below 30 m/s (108 km/h) (in 1m/s steps) above 4 m/s (14km/h) up to above 30 m/s (108 km/h) (in 1m/s steps) Default setting: above 4 m/s (14 km/h)
This parameter allows the channel condition to be selected.	

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Parameter	Settings
Send delay in case of decreasing wind speed	none 5 sec 10 sec 20 sec 30 sec 1 min 2 min 3 min 5 min 10 min 15 min 20 min
This parameter allows to configure a delayed response time for decreasing wind speed falling below the configured threshold.	

3.3.1.4 Parameters „Sensor evaluation – logic operation“

The following parameters are available if the “Channel function” parameter described in section 3.3.1 has been set to “logic operation”.

Parameter	Settings
Brightness	yes no
This parameter allows the user to select whether the measured brightness value should be taken into consideration for the logical operation.	
Temperature	yes no
This parameter allows the user to select whether the measured temperature value should be taken into consideration for the logical operation.	
Wind	yes no
This parameter allows the user to select whether the measured wind speed should be taken into consideration for the logical operation.	
Type of logic operation	AND OR
This parameter allows the user to select whether the above-selected measurement values should be linked with a logical “AND” or a logical “OR”.	

In addition, the parameters listed in 3.3.1.1 for the brightness sensors, the parameters listed in 3.3.1.2 for the temperature sensor and the parameters listed in 3.3.1.3 for the wind sensor are configurable for the linking channel via the ETS, provided the corresponding parameters of “brightness”, “temperature” or “wind” have been set to “yes”.

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3.3.2 Parameters „Objects – Sensor evaluation“

All sensor evaluations (1 to 10) include a parameter page of this type. Here, the user can configure which response should occur in the event of compliance or non-compliance with pre-configured conditions.

The parameters for the individual sensor evaluations are configured in the same manner, so only those for sensor evaluation 1 are described here.

Parameter	Settings
Type of telegram sensor evaluation 1.1	switching command (1 bit) value (1 byte) forced control (2 bit)
This parameter defines which function (datapoint type) should be assigned to the corresponding object. The following selection options are available: - switching command (1 bit, ON/OFF) - value (1 byte, 0 ... 255) - forced control (2 bit)	
Behavior if the condition is met	send no telegram send telegram once send telegram cyclically
This parameter defines the transmission behavior, when the conditions defined under "Sensor evaluation 1 – function" are met (operation result = 1).	
Telegram value	ON/ OFF 0 ... 255 forced control inactive, forced controlled ON, forced controlled OFF
This parameter defines the value of the telegram when conditions are met. The values can be defined depending on the selected telegram type.	
Behavior if the condition is not met	send no telegram send telegram once send telegram cyclically
This parameter defines the transmission behavior, when the conditions defined under "Sensor evaluation 1 – function" are not met (operation result = 0).	
Telegram value	ON/ OFF 0 ... 255 forced control inactive, forced controlled ON, forced controlled OFF
This parameter defines the telegram value when conditions are not met. The values can be defined depending on the selected telegram type.	
Activate second telegram	yes no
Via this parameter, a second output object can be activated for sensor evaluation 1. If the second output object is activated, additional parameters emerge to configure this output object. The configured cycle time and locking behavior apply for both output objects of sensor evaluation 1.	

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Parameter	Settings
Type of telegram for sensor evaluation 1.2	switching command (1 bit) value (1 byte) forced control (2 bit)
This parameter defines which function (datapoint type) should be assigned to the corresponding object. The following selection options are available: - switching command (1 bit, ON/OFF) - value (1 byte, 0 ... 255) - forced control (2 bit)	
Behavior if the condition is met	send no telegram send telegram once send telegram cyclically
This parameter defines the transmission behavior, when the conditions defined under "Sensor evaluation 1 – function" are met (operation result = 1).	
Telegram value	ON/ OFF 0 ... 255 forced control inactive, forced controlled ON, forced controlled OFF
This parameter defines the telegram value when conditions are met. The values can be defined depending on the selected telegram type.	
Behavior if the condition is not met	send no telegram send telegram once send telegram cyclically
This parameter defines the transmission behavior, when the conditions defined under "Sensor evaluation 1 – function" are not met (operation result = 0).	
Telegram value	ON/ OFF 0 ... 255 forced control inactive, forced controlled ON, forced controlled OFF
This parameter defines the telegram value when conditions are not met. The values can be defined depending on the selected telegram type.	
Activate lock function	yes no
If this parameter is set to "yes", lock parameters and lock object are shown for sensor evaluation 1. The locking behavior is collectively valid for both objects of sensor evaluation 1 and is thus only configured once.	
Lock telegram	lock with ON telegram lock with OFF telegram
This parameter defines whether an "ON" or "OFF" telegram activates the lock.	
Behavior when setting the lock	do not send as if the condition is not met as if the condition is met
Via this parameter, the behavior of the sensor evaluation 1 with the lock function activated is defined.	
Behavior when cancelling the lock	do not send update channel
Via this parameter, the behavior when the lock function is released is defined. If "update channel" is selected, the current values of obj. 20 (sensor evaluation 1.1) and obj. 21 (sensor evaluation 1.2) are sent immediately after releasing the lock.	

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Parameter	Settings
Cycle time	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 allows the desired time interval for the cyclical transmission of objects 20 (sensor evaluation 1.1) and 21 (sensor evaluation 1.2) to be configured.	
Behavior if sensor error is detected (only for temperature)	as if condition is not met as if the condition is met do not send anymore
This parameter applies when the temperature sensor (if used by the channel) signals an error.	

3.3.3 Objects „Sensor evaluation“

Obj	Object name	Function	Type	Flag
20	sensor evaluation 1.1	ON/ OFF value forced control	1 bit - 1.001 1byte – 5.010 2 bit – 2.001	CRT
This is the first output object of a sensor evaluation. The object function depends on the telegram type selected via the parameter. If the function "value" is selected, a value between 0 and 255 can be assigned. If the "forced control" function is selected, the following assignments apply: 0 = no forced control 2 = forced controlled OFF 3 = forced controlled ON				
21	sensor evaluation 1.2	ON/ OFF value forced control	1 bit - 1.001 1byte – 5.010 2 bit – 2.001	CRT
This is the second output object of a sensor evaluation. The object function depends on the telegram type selected via the parameter and is independent of the setting for object 20. The same assignments apply as for object 20. The cycle time and locking behavior are collectively valid for both objects (20 and 21).				
22	lock sensor evaluation 1	lock = 0 lock = 1	1 bit - 1.003	CRW
This object only exists if the lock function is activated. The behavior in the event of activating/releasing the lock as well as the effective direction are configurable via parameters.				
23	sensor evaluation 1 – brightness threshold	preset/ recall recall	2 byte – 9.004	CRWT CRT
This object only exists if the channel is configured as a brightness sensor or as a means of linking multiple sensors. This object allows the configured brightness threshold of the channel to be modified at any time via bus telegram.				

Objects 24 to 59 for sensor evaluations 2 to 10 are functionally identical to the above-described objects of sensor evaluation 1.

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3.4 Parameters and Objects „Facade“

The facades can control venetian blinds, awnings, roller shutters etc.

A facade includes:

- a dawn/ dusk threshold
- a brightness threshold for solar protection
- three objects for controlling solar protection or activating a scene
- a sun control object
- an object to set the dawn/ dusk threshold
- a safety object

The sun control can either be triggered via the sun control object (e.g. via a time switch) or via dusk/ dawn.

The facades are activated on the “General” parameter page.

The objects and parameters for facades 1 to 3 are configured in the same way, so only those for facade 1 are described.

3.4.1 Parameters „Facade“

The following parameters allow the basic settings for the solar protection function, such as brightness thresholds and delays to be configured. The sun position tracking can also be activated.

Parameter	Settings
Facade controls	8-bit scene blinds shutters / textile sun protection
This parameter allows the user to select whether the facade controls a scene, a venetian blind or a roller shutter/textile solar protection.	
Source for brightness measurement	front sensor left sensor right sensor maximum value of the 3 sensors external sensor 1 external sensor 2
This parameter allows the user to select which brightness value should be considered.	
Dawn/ dusk threshold	2 lx up to 500 lx Default setting: 10 lx
This parameter allows the brightness value to be defined to detect sunrise or sunset.	
Brightness threshold for solar protection	2 000 lx up to 90 000 lx Default setting: 20 000 lx
This parameter allows the user to define above which brightness value the solar protection should be activated.	

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Parameter	Settings
Delay when brightness increases	none 5 sec 10 sec 20 sec 30 sec 1 min 2 min 3 min 5 min 10 min 15 min 20 min
This parameter allows a delayed response time to be configured with increasing brightness and when the configured threshold is exceeded. This means the transmission of contradictory telegrams in the event of a sudden sequence of brightness changes can be prevented. Note: A value below 20 s should only be selected during the commissioning and for test purposes.	
Delay when brightness decreases	none 5 sec 10 sec 20 sec 30 sec 1 min 2 min 3 min 5 min 10 min 15 min 20 min
This parameter allows a delayed response time to be configured with decreasing brightness and when the brightness falls below the configured threshold. This means that the transmission of contradictory telegrams in the event of a sudden sequence of brightness changes can be prevented. Note: A value below 20 s should only be selected during the commissioning and for test purposes.	
Solar protection position when exceeding brightness threshold	0 ... 100 % Increment: 2.5 % Default setting: 10 %
This parameter only appears if the "Facade controls" parameter has been set to "blinds" or "shutters/ textile sun protection". It defines at which solar protection position the solar protection should be initiated whenever the configured brightness threshold is exceeded.	
Slats position when exceeding brightness threshold	0 ... 100 % Increment: 2.5 % Default setting: 50 %
This parameter only appears if the "Facade controls" parameter has been set to "blinds". It defines the slats position at which the blinds should be initiated whenever the configured brightness threshold is exceeded.	
Scene number when exceeding brightness threshold	scene 1 ... scene 64 Default setting: scene 1
This parameter only appears if the "Facade controls" parameter has been set to "8-bit scene". It defines the scene number to be sent when the configured brightness threshold is exceeded.	

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Parameter	Settings
Threshold via object overwritable	yes no
This parameter defines whether the configured brightness threshold value can be modified via bus telegram.	
Overwrite threshold in case of download	yes no
If this parameter is set to "yes", during an ETS download, the brightness threshold currently stored in the device is deleted and overwritten by the value configured in the ETS. If this parameter is set to "no", an ETS download has no effect on the brightness threshold currently stored in the device. Note: During the first commissioning, regardless of the parameter configuration, the value configured via the ETS is downloaded.	

3.4.2 Parameters „Sun control“

Using the sun control, blinds and other hangings as well as scenes can be either controlled by an object (e.g. a time switch) or by exceeding the dawn/ dusk threshold. The type of activation and the response of the sun control is defined via the following parameters.

Parameter	Settings
Activation of sun control	via dawn/ dusk threshold via object
This parameter allows the user to select whether the automatic solar protection is activated via the respective sun control object (e.g. a time switch) or by exceeding the dawn/ dusk threshold.	
Reaction to dawn	sun control ON and move up sun control ON but without movement
This parameter is only visible if the "Activation of sun control" parameter has been set to "via dawn/ dusk threshold". It defines the behavior of facade 1 when exceeding the dawn/ dusk threshold. It is e.g. possible to define lifting of the roller shutters and activation of the automatic solar protection.	
Reaction to dusk	sun control OFF and move up sun control OFF and move down sun control OFF but without movement
This parameter is only visible if the "Activation of sun control" parameter has been set to "via dawn/ dusk threshold". It defines the behavior of facade 1 when falling below the dawn/ dusk threshold.	
Reaction to sun control ON via object	sun control ON and move up automatic ON and move up at dawn sun control ON but without movement
This parameter is only visible if the above-described "Activation of sun control" parameter has been set to "via object". It defines the behavior of facade 1 when receiving the value "1" (sun control ON) via object 63 (facade 1 – sun control).	
Reaction to sun control OFF via object	sun control OFF and move up sun control OFF and move down sun control OFF and move down at dusk sun control OFF but without movement
This parameter is only visible if the above-described parameter "Activation of sun control" is set to "via object". It defines the behavior of facade 1 when receiving the value "0" (sun control OFF) via object 63 (facade 1 – sun control).	

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3.4.2.1 Parameters „Sun control“ if „blinds“ are selected

The following parameters appear, if the “Facade controls” parameter (see section 3.4.1) has been set to “blinds”.

Parameter	Settings
Behavior when brightness falling below threshold during active sun control	no reaction move up adjust slats
This parameter defines the behavior of facade 1 if sun control is activated and brightness falls below the configured brightness threshold.	
Slats position	0 % ... 100 % Increment: 2.5% Default setting: 20 %
This parameter is only visible if the above “Behavior when brightness falling below threshold during active sun control” parameter has been set to “adjust slats”. It defines the slats position to which the blinds should be moved when falling below the configured brightness threshold, during active sun control.	

3.4.2.2 Parameter „Sun control“ if „8-bit scene“ is selected

The following parameter appears if the “Facade controls” parameter (see section 3.4.1) has been set to “8-bit scene”.

Parameter	Settings
Behavior when brightness falling below threshold during active sun control	no reaction move up call scene
This parameter defines the behavior of facade 1 if sun control is activated and brightness falls below the configured brightness threshold.	

3.4.2.3 Parameter „Sun control“ if “shutters / textile sun protection” is selected

The following parameter appears if the “Facade controls” parameter (see section 3.4.1) has been set to “shutters / textile sun protection”.

Parameter	Settings
Behavior when brightness falling below threshold during active sun control	no reaction move up
This parameter defines the behavior of facade 1 if sun control is activated and brightness falls below the configured brightness threshold.	

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3.4.3 Parameters „Safety“

The results of the sensor evaluations, threshold switches and logic modules can trigger a safety state. The appropriate reaction can also be configured.

For example, excessive wind may lead to a blinds, which is controlled via the “facade”, having to be moved up. For this purpose, a corresponding wind threshold must be configured in the sensor evaluation and this sensor evaluation is then selected with the following “Safety condition is triggered by” parameter.

Parameter	Settings
Safety condition is triggered by	input object sensor evaluation 1 sensor evaluation 2 sensor evaluation 3 sensor evaluation 4 sensor evaluation 5 sensor evaluation 6 sensor evaluation 7 sensor evaluation 8 sensor evaluation 9 sensor evaluation 10 status threshold switch 1 status threshold switch 2 status threshold switch 3 status threshold switch 4 operation result logic module 1 operation result logic module 2 operation result logic module 3 operation result logic module 4 operation result logic module 5 operation result logic module 6
This parameter defines the input value by which the safety state is triggered. The following settings can be selected: - Input object: Value of object 65 (facade 1 – safety) - Sensor evaluation (1-10): When the condition of a sensor evaluation is met (value = 1) the safety state is triggered. To record all sensors, the corresponding sensor evaluation should link the individual sensors with OR (compare section 3.3.1.4). - Status threshold switches (1-4): If the state has the value “1”, the safety state is triggered. - Logic operation result of a logic module (1 – 6): If the operation result has the value “1”, the safety state is triggered.	
Reaction to safety beginning	no reaction move up solar protection move down solar protection
This parameter defines the reaction when the safety state is triggered. If selecting “no reaction”, no further telegrams are sent. The setting “move up solar protection” is recommended for venetian blinds, awnings and textile solar protection, and the “move down solar protection” setting for roller shutters.	

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Parameter Safety if „blinds“ or “shutters / textile sun protection” are selected

Parameter	Settings
Reaction to safety end	no reaction update position after 5 seconds update position after 1 minute update position after 30 minutes
This parameter defines the reaction when the safety state ends. If selecting „update position” the current solar protection position and, where applicable, the current slats position, are sent.	

Parameter Safety if „8 –bit scene” is selected

Parameter	Settings
Reaction to safety end	no reaction update scene
This parameter defines the reaction when the safety state ends. If selecting „update scene” the current scene number is sent.	

3.4.4 Objects „Facade”

Obj	Object name	Function	Type	Flag
60	facade 1 - up/down	up/ down	1 bit - 1.008	CT
This object is intended to open or close the solar protection. 0 = raise 1 = lower				
61	facade 1 – solar protection in %	move to	1 byte - 5.001	CRT
	facade 1 - scene	send	1 byte-17.001	CRT
The function of this object depends on the setting of the parameter “Facade controls”. If “blinds” or “shutters/ textile sun protection” is selected, the solar protection position in % is sent via this object. If “scene” is selected, a scene number between 1 and 64 is sent.				
62	facade 1 – slats position in %	move to	1 byte - 5.001	CRT
This object sends the required slats position in %.				
63	facade 1 – sun control	0=sun control OFF 1=sun control ON	1 bit - 1.001	CRW
This object only exists if the parameter “Activation of sun control” has been set to “via object”. If the object is assigned the value “1”, the sun control is activated and the weather station automatically sends the required objects for the solar protection position and the slats position. If the object is assigned the value “0”, the sun control is deactivated.				
65	facade 1 – safety	input	1 bit - 1.001	CRW
If this object has the value “1” (safety in place), both objects 60 and 61 no longer transmit. When releasing the safety (value = “0”), the following scenarios can be distinguished: · Day: Once the delay timer has elapsed, the current channel state is resent. · Night: The settings of the parameter “Reaction to sun control OFF via object” or “Reaction to dusk” apply, depending on whether the “Activation of sun control” parameter was set to “via object” or “via dawn/ dusk threshold”.				

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Obj	Object name	Function	Type	Flag
66	facade 1 – dawn/ dusk threshold	send/ receive	2 byte - 9.004	CRWTU
Via this object, the configured dawn/ dusk threshold of the facade can be changed at any time via bus telegram.				
67	facade 1 – brightness threshold	send/ receive	2 byte - 9.004	CRWTU
Via this object, the configured brightness threshold of the channel can be changed at any time via bus telegram.				

Objects 68 to 71, 73 to 79 and 81 to 83 for facades 2 and 3 are functionally identical to the above-described objects of facade 1.

Values of external brightness sensors are received via objects 18 and 19, described in chapter 3.2.2.

3.5 Parameters and Objects „Threshold switch“

The threshold switch block constitutes an arbitrary unit, which is independent of the weather data. The individual threshold switches (1 to 4) can be activated on the “General” parameter page (see section 3.1).

Principle:

A value is received from the bus and compared with the configured threshold. If the value exceeds the configured threshold, the condition is considered met, otherwise it is considered unmet.

The behavior of the output objects with the condition met or unmet is configured via the parameters on the page “Objects”. The channel state (condition met/unmet) of each threshold switch can also be configured as an input value for the logic modules (see section 3.6).

The objects and parameters for the 4 threshold switches are configured in the same way, so only those for threshold switch 1 are described.

Parameter	Settings
Type of threshold value object	percent (DPT5.001) count value 0 ... 255 (DPT 5.010) count value 0 ... 65535 (DPT 7.001) DPT 9.xxx (e.g. temperature, CO2, brightness)
This parameter allows the user to define which datapoint type the corresponding threshold object has.	

Depending on the selected datapoint types for the threshold value object the following parameters “Threshold value” and “Hysteresis” can be configured.

Parameters for threshold object “percent“

Parameter	Settings
Threshold value	1 ... 99 Increment: 1 Default setting: 50
If “percentage” is selected as the “Type of threshold value object”, this parameter is used to define the threshold for the threshold switch.	

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Parameter	Settings
Hysteresis	1 ... 99 Increment: 1 Default setting: 5
The hysteresis prevents frequent switching triggered by small changes in values.	

Parameters for threshold object „count value 0 ... 255“

Parameter	Settings
Threshold value	1 ... 254 Increment: 1 Default setting: 127
If “count value 0 ... 255” is selected as the “Type of threshold value object”, this parameter is used to define the threshold for the threshold switch.	
Hysteresis	1 ... 254 Increment: 1 Default setting: 5
The hysteresis prevents frequent switching triggered by small changes in values.	

Parameters for threshold object „count value 0 ... 65535“

Parameter	Settings
Threshold value	1 ... 65534 Increment: 1 Default setting: 1 000
If “count value 0 ... 65535” is selected as the “Type of threshold value object”, this parameter is used to define the threshold for the threshold switch.	
Hysteresis	1 ... 65534 Increment: 1 Default setting: 5
The hysteresis prevents frequent switching triggered by small changes in values.	

Parameters for threshold object „DPT 9.xxx (e.g. temperature, CO2, brightness)“

Parameter	Settings
Threshold value	-9999 ... 99999 Default setting: 20,0
If “DPT 9.xxx” is selected as the “Type of threshold value object”, this parameter is used to define the threshold for the threshold switch. Positive and negative figures to a maximum of 2 decimal places can be input. There are a maximum of five figures available for the algebraic sign, comma and numbers (e.g.: -1000; -2.25; 113.41; 99999).	
Hysteresis	0,00 ... 9999 Default setting: 1,0
The hysteresis prevents frequent switching triggered by small changes in values. Positive figures to a maximum of 2 decimal places can be input. A maximum of four figures are available for algebraic sign and figures (e.g.: 0.01; 2.25; 9999).	

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Additional parameters for „Threshold switch“

Parameter	Settings
Delay when exceeding threshold	none 5 sec 0 sec 20 sec 30 sec 1 min 2 min 3 min 5 min 10 min 15 min 20 min
This parameter allows a delayed response time to be configured when exceeding the configured threshold.	
Delay when falling below threshold	none 5 sec 10 sec 20 sec 30 sec 1 min 2 min 3 min 5 min 10 min 15 min 20 min
This parameter allows a delayed response time when falling below the configured threshold to be configured.	

3.5.1 Parameters „Objects – Threshold switch“

All threshold switches (1 to 4) include a parameter page of this type. Here, it is possible to configure the response in the event of compliance or non-compliance with pre-configured conditions.

The parameters for the individual threshold switches are configured in the same way, so only those for threshold switch 1 are described.

Parameter	Settings
Type of telegram for threshold switch 1.1	switching command (1 bit) value (1 byte) forced control (2 bit)
This parameter defines which function (datapoint type) should be assigned to the corresponding object. The following selection options are available: • switching command (1 bit, ON/OFF) • value (1 byte, 0 ... 255) • forced control (2 bit)	

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Parameter	Settings
Behavior when exceeding threshold	send no telegram send telegram once send telegram cyclically
This parameter defines the transmission behavior, if the threshold is exceeded.	
Telegram value	OFF/ ON 0 ... 255 forced control inactive, forced controlled OFF forced controlled ON
This parameter defines the telegram value when the threshold is exceeded. The values can be defined depending on the selected telegram type.	
Behavior when falling below threshold	send no telegram send telegram once send telegram cyclically
This parameter defines the transmission behavior, if falling below the threshold.	
Telegram value	OFF/ ON 0 ... 255 forced control inactive, forced controlled OFF, forced controlled ON
This parameter defines the telegram value when falling below the threshold. The values can be defined depending on the selected telegram type.	
Activate second telegram	yes no
Via this parameter, a second output object can be activated for the threshold switch 1. If the second output object is activated, additional parameters emerge to configure this output object. The configured cycle time and the locking behavior apply for both output objects of threshold switch 1.	
Type of telegram for threshold switch 2.1	switching command (1 bit) value (1 byte) forced control (2 bit)
This parameter defines which function (datapoint type) should be assigned to the corresponding object. The following selection options are available:	
- switching command (1 bit, ON/OFF) - value (1 byte, 0 ... 255) - forced control (2 bit)	
Behavior when exceeding threshold	send no telegram send telegram once send telegram cyclically
This parameter defines the transmission behavior, if the threshold is exceeded.	
Telegram value	OFF/ ON 0 ... 255 forced control inactive, forced controlled OFF forced controlled ON
This parameter defines the telegram value when the threshold is exceeded. The values can be defined depending on the selected telegram type.	
Behavior when falling below threshold	send no telegram send telegram once send telegram cyclically
This parameter defines the transmission behavior, if falling below the threshold.	

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Parameter	Settings
Telegram value	OFF/ ON 0 ... 255 forced control inactive, forced controlled OFF, forced controlled ON
This parameter defines the telegram value when falling below the threshold. The values can be defined depending on the selected telegram type.	
Activate lock function	yes no
If this parameter is set to "yes", lock parameters and lock object for threshold switch 1 are displayed. The locking behavior is collectively valid for both objects of threshold switch 1 and is thus only configured once.	
Lock telegram	lock with ON telegram lock with OFF telegram
This parameter defines whether an "ON" or "OFF" telegram activates the lock.	
Behavior when setting the lock	do not send as if below threshold as if above threshold
Via this parameter, the behavior of the threshold switch with the lock function activated is defined.	
Behavior when cancelling the lock	do not send update channel
Via this parameter, the behavior when the lock function is released is defined. If "update channel" is selected, the current values of obj. 86 (threshold switch 1.1) and obj. 87 (threshold switch 1.2) are sent immediately after releasing the lock.	
Cycle time	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 allows the desired time interval for the cyclical transmission of objects 86 (threshold switch 1.1) and 87 (threshold switch 1.2) to be configured.	
Behavior after reset or download	do not send as defined for value falling below threshold as defined for value exceeding threshold
Via this parameter, the behavior of the threshold switch after a reset or download is defined.	

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3.5.2 Objects „Threshold switch“

Obj	Object name	Function	Type	Flag
84	threshold switch 1 - input	percent 0 ... 255 0 ... 65535 16-bit value	1 byte – 5.001 1 byte - 5.010 2 byte - 7.001 2 byte - 9.xxx	CRW
This object functions as an input object of the threshold switch. Via this, the configured function of the threshold switch is triggered. The object type depends on the parameter setting for "Type of threshold value object" (see description section 3.5). It may be a percentage value, count value or a floating point number (e.g. for temperature, CO₂, brightness).				
85	lock threshold switch 1	lock = 0 lock = 1	1 bit – 1.001	CRW
This object only exists if the lock function is activated. The behavior in the event of activating/releasing the lock as well as the effective direction are configurable via parameters.				
86	threshold switch 1.1	switch value forced control	1 bit – 1.001 1 byte – 5.010 2 bit – 2.001	CRT
This is the first output object of a threshold switch. The object function depends on the telegram type selected via the parameter. If the "value" function is selected, the object can be assigned a value between 0 and 255. If the "forced control" function is selected, the following assignments apply: • 0 = no forced control • 2 = forced controlled OFF • 3 = forced controlled ON				
87	threshold switch 1.2	switch value forced control	1 bit – 1.001 1 byte – 5.010 2 bit – 2.001	CRT
This is the second output object of a threshold switch. The object function depends on the telegram type selected via the parameter and is independent of the setting for object 86. The same assignments apply as with object 86. The cycle time and locking behavior are collectively valid for both objects (86 and 87).				

Objects 88 to 99 for the threshold switches 2 to 4 are functionally identical to the above-described objects of threshold switch 1.

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3.6 Parameters and Objects „Logic module“

The logic module block constitutes an arbitrary unit, which is independent of the weather data. The logic modules can thus be deployed for a range of tasks within a KNX system.

Principle:

Up to four 1-bit input values can be logically interconnected.

These input values may be:

- Input objects of logic modules
- Status of sensor evaluations (condition met/ condition unmet)
- Status of the threshold switches (exceeded/ fallen below)
- Operation result of the other logic modules (a logic module cannot be linked to itself)

The behavior of the output objects with the logic operation result “1” or “0” is configured on the parameter page “Objects”. The logic modules are activated on the “General” parameter page.

The objects and parameter for the 6 logic modules are configured in the same way, so only those for logic module 1 are described.

Parameter	Settings
Type of logic operation	AND OR XOR
This parameter defines the type of logic operation between the 4 input values (see following parameters). If “XOR” is selected, only inputs 1 and 2 can be interlinked.	
Use input 1	yes yes, inverted
This parameter defines whether the value of input 1 should be inverted before the logical operation.	
Use input 2	yes yes, inverted
This parameter defines whether the value of input 2 should be inverted before the logical operation.	
Use input 3	no yes yes, inverted
This parameter is only visible if the above parameter “Type of logic operation” has not been set to “XOR”. It defines whether input 3 should be used for the logical operation and if so, whether the value of input 3 should be inverted before the logical operation.	
Use input 4	no yes yes, inverted
This parameter is only visible if the above parameter “Type of logic operation” has not been set to “XOR”. It defines whether input 4 should be used for the logical operation and if so, whether the value of input 4 should be inverted before the logical operation.	

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Parameter	Settings
Input value for input 1	input object sensor evaluation 1 sensor evaluation 2 sensor evaluation 3 sensor evaluation 4 sensor evaluation 5 sensor evaluation 6 sensor evaluation 7 sensor evaluation 8 sensor evaluation 9 sensor evaluation 10 status threshold switch 1 status threshold switch 2 status threshold switch 3 status threshold switch 4 operation result logic module 2 operation result logic module 3 operation result logic module 4 operation result logic module 5 operation result logic module 6
This parameter defines which input value should be used for input 1 of logic module 1. The following values can be selected: - Value of the first input object of this logic module (logic module 1 – input 1, Obj. 100) - Status of a sensor evaluation (1 to 10): met corresponds to “1”, unmet corresponds to “0” - Status of a threshold switch (1 to 4): exceeded corresponds to “1”, fallen below corresponds to “0” - Operation result of another logic module (2 to 6)	
Input value for input 2	input object sensor evaluation 1 sensor evaluation 2 sensor evaluation 3 sensor evaluation 4 sensor evaluation 5 sensor evaluation 6 sensor evaluation 7 sensor evaluation 8 sensor evaluation 9 sensor evaluation 10 status threshold switch 1 status threshold switch 2 status threshold switch 3 status threshold switch 4 operation result logic module 2 operation result logic module 3 operation result logic module 4 operation result logic module 5 operation result logic module 6
This parameter defines which input value should be used for input 2 of logic module 1. The following values can be selected: - Value of the second input object of this logic module (logic module 1 – input 2, Obj. 101) - Status of a sensor evaluation (1 to 10): met corresponds to “1”, unmet corresponds to “0” - Status of a threshold switch (1 to 4): exceeded corresponds to “1”, fallen below corresponds to “0” - Operation result of another logic module (2 to 6)	

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Parameter	Settings
Input value for input 3	input object sensor evaluation 1 sensor evaluation 2 sensor evaluation 3 sensor evaluation 4 sensor evaluation 5 sensor evaluation 6 sensor evaluation 7 sensor evaluation 8 sensor evaluation 9 sensor evaluation 10 status threshold switch 1 status threshold switch 2 status threshold switch 3 status threshold switch 4 operation result logic module 2 operation result logic module 3 operation result logic module 4 operation result logic module 5 operation result logic module 6
This parameter is only shown if the above parameter "Use input 3" has not been set to "no". This parameter defines which input value should be used for input 3 of logic module 1. The following values can be selected: • Value of the third input object of this logic module (logic module 1 – input 3, Obj. 102) • Status of a sensor evaluation (1 to 10): met corresponds to "1", unmet corresponds to "0" • Status of a threshold switch (1 to 4): exceeded corresponds to "1", fallen below corresponds to "0" • Operation result of another logic module (2 to 6)	

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Parameter	Settings
Input value for input 4	input object sensor evaluation 1 sensor evaluation 2 sensor evaluation 3 sensor evaluation 4 sensor evaluation 5 sensor evaluation 6 sensor evaluation 7 sensor evaluation 8 sensor evaluation 9 sensor evaluation 10 status threshold switch 1 status threshold switch 2 status threshold switch 3 status threshold switch 4 operation result logic module 2 operation result logic module 3 operation result logic module 4 operation result logic module 5 operation result logic module 6
This parameter is only shown if the above parameter "Use input 4" has not been set to "no". This parameter defines which input value should be used for input 4 of logic module 1. The following values can be selected: - Value of the fourth input object of this logic module (logic module 1 – input 4, Obj. 103) - Status of a sensor evaluation (1 to 10): met corresponds to "1", unmet corresponds to "0" - Status of a threshold switch (1 to 4): exceeded corresponds to "1", fallen below corresponds to "0" - Operation result of another logic module (2 to 6)	

3.6.1 Parameters „Objects – Logic module“

All logic modules (1 to 6) include a parameter page of this type. Here, the user can configure which response to initiate for operation result "1" or "0" of the pre-configured logical operations.

The parameter for the individual logic modules are configured in the same way, so only those for logic module 1 are described.

Parameter	Settings
Type of telegram logic module 1.1	switching command (1 bit) value (1 byte) forced control (2 bit)
This parameter defines which function (datapoint type) should be assigned to the corresponding object. The following selection options are available: - switching command (1 bit, ON/OFF) - value (1 byte, 0 ... 255) - forced control (2 bit)	
Behavior if the condition is met	send no telegram send telegram once send telegram cyclically
This parameter defines the transmission behavior, if the result of the logical operation is "1".	

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Parameter	Settings
Telegram value	OFF/ ON 0 ... 255 forced control inactive, forced controlled OFF forced controlled ON
This parameter defines the telegram value, if the result of the logical operation is "1". The values can be defined depending on the selected telegram type.	
Behavior if the condition is not met	send no telegram send telegram once send telegram cyclically
This parameter defines the transmission behavior, if the result of the logical operation is "0".	
Telegram value	OFF/ ON 0 ... 255 forced control inactive, forced controlled OFF, forced controlled ON
This parameter defines the telegram value, if the result of the logical operation is "0". The values can be defined depending on the selected telegram type.	
Activate second telegram	yes no
Via this parameter, a second output object can be activated for logic module 1. If the second output object is activated, additional parameters emerge to configure this output object. The configured cycle time and locking behavior apply for both output objects of logic module 1.	
Type of telegram logic module 1.2	switching command (1 bit) value (1 byte) forced control (2 bit)
This parameter defines which function (datapoint type) should be assigned to the corresponding object. The following selection options are available:	
• switching command (1 bit, ON/OFF) • value (1 byte, 0 ... 255) • forced control (2 bit)	
Behavior if the condition is met	send no telegram send telegram once send telegram cyclically
This parameter defines the transmission behavior, if the result of the logical operation is "1".	
Telegram value	OFF/ ON 0 ... 255 forced control inactive, forced controlled OFF forced controlled ON
This parameter defines the telegram value, if the result of the logical operation is "1". The values can be defined depending on the selected telegram type.	
Behavior if the condition is not met	send no telegram send telegram once send telegram cyclically
This parameter defines the telegram value, if the result of the logical operation is "0". The values can be defined depending on the selected telegram type.	

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Parameter	Settings
Telegram value	OFF/ ON 0 ... 255 forced control inactive, forced controlled OFF, forced controlled ON
This parameter defines the telegram value, if the result of the logical operation is "0". The values can be defined depending on the selected telegram type.	
Activate lock function	yes no
If this parameter is set to "yes", lock parameters and lock object for logic module 1 are displayed. The locking behavior is collectively valid for both objects of logic module 1 and is thus only configured once.	
Lock telegram	lock with ON telegram lock with OFF telegram
This parameter defines whether an "ON" or "OFF" telegram activates the lock.	
Behavior when setting the lock	do not send as if the condition is not met as if the condition is met
Via this parameter, the behavior of the logic module 1 with the lock function activated is defined.	
Behavior when cancelling the lock	do not send update channel
Via this parameter, the behavior when the lock function is released is defined. If "update channel" is selected, the current values of obj. 105 (logic module 1.1) and obj. 106 (logic module 1.2) are sent immediately after releasing the lock.	
Cycle time	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 allows the desired time interval for the cyclical transmission of objects 105 (logic module 1.1) and 106 (logic module 1.2) to be configured.	
Behavior after reset or download	do not send as if the condition is not met as if the condition is met
Via this parameter, the behavior of the the logic module 1 after a reset or download is defined.	

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3.6.2 Objects „Logic module“

Obj	Objektname	Funktion	Typ	Flag
100	logic module 1 - input 1	ON/ OFF	1 bit - 1.002	CRWU
This object functions as first input object of logic module 1.				
101	logic module 1 - input 2	ON/ OFF	1 bit - 1.002	CRWU
This object functions as second input object of logic module 1.				
102	logic module -1 input 3	ON/ OFF	1 bit - 1.002	CRWU
This object functions as third input object of logic module 1. It cannot be used for XOR operations.				
103	logic module 1 - input 4	ON/ OFF	1 bit - 1.002	CRWU
This object functions as fourth input object of logic module 1. It cannot be used for XOR operations.				
104	lock logic module 1	lock = 0 lock = 1	1 bit - 1.003	CRW
This object only exists if the lock function is activated. The behavior in the event of activating/releasing the lock as well as the effective direction are configurable via parameters.				
105	logic module 1.1	switch value forced control	1 bit – 1.001 1 byte – 5.010 2 bit – 2.001	CRT
This is the first output object of logic module 1. The object function depends on the telegram type selected via parameter. If the function "value" is selected, the object can be assigned a value between 0 and 255. If the "forced control" function is selected, the following assignments apply: · 0 = no forced control · 2 = forced controlled OFF · 3 = forced controlled ON				
106	logic module 1.2	switch value forced control	1 bit – 1.001 1 byte – 5.010 2 bit – 2.001	CRT
This is the second output object of logic module 1. The object function depends on the telegram type selected via parameter and is independent of the setting for object 105. The same assignments apply as with object 105. The cycle time and locking behavior are collectively valid for both objects (105 and 106).				

Objects 107 to 141 for logic modules 2 to 6 are functionally identical to the above-described objects of logic module 1.