

# SUNTRACER® KNX basic Weather Station for KNX





**Installation and Adjustment** 

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Suntracer KNX basic • from software version 1.06, ETS programme version 1.1 Status: 01.02.2010. Errors excepted. Subject to technical changes



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### **Product description**

The Weather Station **sun**tracer<sup>®</sup>KNX basic perceives temperature, wind speed, brightness and precipitation.

All data may be used for the control of switching outputs which depend on threshold values. The states may be linked by means of AND and OR logic gates.

The compact housing of suntracer<sup>®</sup>KNX basic stores the sensor system, the evaluation electronics and the electronics of the bus connection.

#### **Functions and Operation:**

- **Brightness measurement**: The current light intensity is measured by means of a sensor
- Wind measurement: The measurement of wind speed is accomplished electronically and thus noiseless and reliable even in case of hail, snow and minus temperature. Air swirls and up-draught in the radius of the weather station are collected, too
- **Precipitation perception**: The surface of the sensor is heated so that only drops and flakes are recognised as precipitation but not fog or dew. If it stops raining or snowing, the sensor dries quickly and the precipitation message ends
- Temperature measurement
- **Switching outputs** for all measured and calculated values (Threshold values can be set by parameter or via communication objects)
- **8 AND and 8 OR logic gates** with each 4 inputs. Every switching incident as well as 8 logic inputs (in the form of communication objects) may be used as inputs for the logic gates. The output of each gate may optionally be configured as 1 bit or 2 x 8 bits

Configuration is accomplished by means of the KNX software ETS. The **programme file** for KNX software ETS (format VD2) is ready for download on the Elsner Elektronik website under **www.elsner-elektronik.de** in the "Service" menu.

Housing:	Plastic material
Colour:	White / translucent
Mounting:	On-wall
Protection category:	IP 44
Dimensions:	approx. 96 × 77 × 118 (W × H × D, mm)
Weight:	230 V AC version: approx. 240 g 24 V DC version: approx. 170 g
Ambient temperature:	Operation -30+50°C, Storage -30+70°C
Operating voltage:	Available for 230 V AC or for 24 V DC (20 V AC)

### **Technical data**

Current:	230 V AC version: max. 20 mA 24 V DC version: max. 100 mA Residual ripple 10%
Data output:	KNX +/- bus terminal plug
BCU type:	Own micro controller
PEI type:	0
Group addresses:	max. 254
Allocations:	max. 255
Communication objects:	222
Heating rain sensor:	approx. 1.2 W (230 V and 24 V)
Measurement range temperature:	-40+80°C
	Resolution: 0.1°C
	Accuracy: ±0.5°C at +10+50°C ±1°C at -10+85°C ±1.5°C at -25+150°C
Measurement range wind:	070 m/s
	Resolution: <10% of the measured value
	Accuracy: ±25% at 015 m/s at an angle of attack of 45°, pole mounting
Measurement range brightness:	0150 000 lux
	Resolution: 1 lux at 0120 lux 2 lux at 1211 046 lux 63 lux at 1 04752 363 lux 423 lux at 52 364150 000 lux Accuracy: ±35%

The following standards have been considered for the evaluation of the product in terms of electro magnetic compatibility:

Transient emissions:

- EN 60730-1:2000 Section EMV (23, 26, H23, H26) (threshold category: B)
- EN 50090-2-2:1996-11 + A1:2002-01 (threshold category: B)
- EN 61000-6-3:2001 (threshold category: B)

Interference resistance:

- EN 60730-1:2000 Section EMV (23, 26, H23, H26)
- EN 50090-2-2:1996-11 + A1:2002-01
- EN 61000-6-1:2004

The product has been tested for the above mentioned standards by an accredited EMV laboratory.

### **PCB** layout

#### 230 V AC version



#### Fig. 1

- 1 Cable connection to the rain sensor in the housing cover
- 2 Opening for the cable for the voltage supply
- 3 Tension clamp for voltage supply (230 V AC),
- suitable for massive conductors of up to 1.5 mm<sup>2</sup> or conductors with fine wires
- 4 Opening for bus cable
- 5 Slot for KNX clamp +/-
- 6 Programming pushbutton for the teach-in of the device
- 7 Programming LED

#### 24 V DC version



#### Fig. 2

- 1 Slot for cable connection to the rain sensor in the housing cover
- 2 Tension clamp for voltage supply (24 V DC/20 V AC), suitable for massive conductors of up to 1.5 mm<sup>2</sup> or conductors with fine wires
- *3 Opening for the cable for the voltage supply*
- 4 Opening for bus cable
- 5 Slot for KNX clamp +/-
- 6 Programming pushbutton for the teach-in of the device
- 7 Programming LED

### Installation and commissioning

## Attention! Mains voltage! The legal national regulations must be complied with.

Installation, inspection, commissioning and troubleshooting of the weather station must only be carried out by a competent electrician. Disconnect all lines to be assembled, and take safety precautions against accidental switch-on.

The weather station is exclusively intended for appropriate use. With each inappropriate change or non-observance of the instructions for use, any warranty or guarantee claim will be void.

After unpacking the device, check immediately for any mechanical damages. In case of transport damage, this must immediately notified to the supplier.

lf	damaged,	the weather	station	must	not	be	put	into
o	peration.							

If an operation without risk may supposedly not be guaranteed, the device must be put out of operation and be secured against accidental operation.

The weather station must only be operated as stationary system, i.e. only in a fitted state and after completion of all installation and start-up works, and only in the environment intended for this purpose.

Elsner Elektronik does not assume any liability for changes in standards after publication of this instruction manual.

### Location

Select an assembly location at the building where wind, rain and sun may be collected by the sensors unobstructedly. Do not assemble any construction components above the weather station from where water may drop on to the rain sensor after it has stopped raining or snowing. The weather station may not be shaded by the building or for example by trees. Leave at least 60 cm of free space beneath the weather station in order to enable a correct wind measurement and in order to avoid that the weather station is snowed in if there is heavy snowfall.



*Fig. 3: The weather station must be mounted onto a vertical wall (or pole).* 



*Fig.4: The weather station must be mounted horizontally in the lateral direction.* 

### Attaching the mount

The weather station comes with a combination wall/pole mount. The mount comes adhered by adhesive strips to the rear side of the housing. Fasten the mount vertically onto the wall or pole.



*Fig. 5: When wall mounting: flat side on wall, crescent-shaped collar upward.* 



*Fig. 6: When pole mounting: curved side on pole, collar downward.* 



Fig. 7: An additional, **optional accessory** available from Elsner Elektronik is an articulated arm for flexible wall, pole or beam mounting of the weather station.

Examples for the application of the hinge arm mounting:



Ex.1: With the hinge arm mounting, the weather station projects from beneath the roof. Sun, wind and precipitation can be measured unhindered by the sensors.



Ex. 2: Pole-mounting with mounting brackets.



### View of rear side and drill hole plan



Fig. 8a: Drill hole plan



*Fig.8b: Dimensions of rear side of housing with bracket. Subject to change for technical enhancement* 

### Preparing the weather station



#### Fig. 9

The weather station cover with the rain sensor snaps in on the left and right along the bottom edge (see Fig.). Remove the weather station cover. Proceed carefully, so as not to pull off the wire connecting the PCB in the bottom part with the rain sensor in the cover

(soldered cable connection in case of 230 V AC version, cable with plug in case of 24 V DC version).

Push the power supply and bus connection cable through the rubber seal on the bottom of the weather station and connect voltage LN and bus +/- to the provided clamps.

#### Mounting the weather station

Close the housing by putting the cover back over the bottom part. The cover must snap in on the left and right with a definite "click".



Fig. 10: Make sure the cover and bottom part are properly snapped together! This picture is looking at the closed weather station from underneath.

Push the housing from above into mount. The bumps on the mount into the rails in the housing.



Fig. 11: the fastened must snap

To remove it, the weather station can be simply pulled upwards out of the mount, against the resistance of the fastening.

### **Details for the installation**

Do not open suntracer<sup>®</sup>KNX basic weather station if water (rain) might ingress: even some drops might damage the electronic system.

Observe the correct connections. Incorrect connections may destroy the weather station or connected electronic devices.

Please take care not to damage the temperature sensor (small blank at the bottom part of the housing.) when mounting the weather station. Please also take care not to break away or bend the cable connection between the blank and the rain sensor when connecting the weather station.

Remove all existing protection labels after installation.

The measured wind value and thus all other wind switching outputs may only be supplied 60 seconds after the supply voltage has been connected.

### Maintenance

The weather station must regularly be checked for dirt twice a year and cleaned if necessary. In case of severe dirt, the wind sensor may not work properly anymore, there might be a permanent rain message or the station may not identify the sun anymore.

As a precaution, the weather station should always be separated from power supply for maintenance works (e.g. deactivate or remove fuse).



### **Transmission protocol**

Units: Temperatures in degree Celsius Light in Lux Wind in meters per second

### Abbreviations

EIS types:	
EIS 1	Switching 1/0
EIS 5	Floating decimal value
EIS 6	8 bit value
Flags:	
С	Communication
R	Read
W	Write
Т	Transmit

### Listing of all communication objects

No.	Name	Function	EIS type	Flags
0	Switching output dawn		1	CRT
1	Switching output rain		1	CRT
2	Logic input 1		1	CRW
3	Logic input 2		1	CRW
4	Logic input 3		1	CRW
5	Logic input 4		1	CRW
6	Logic input 5		1	CRW
7	Logic input 6		1	CRW
8	Logic input 7		1	CRW
9	Logic input 8		1	CRW
10	Temperature sensor failure	Output	1	CRT
11	Wind sensor failure	Output	1	CRT
12	Measured temperature value		5	CRT
13	Requirement min/max temperature	Requirement	1	CRW

No.	Name	Function	EIS type	Flags
14	Lowest measured temperature	Sends min.	5	CRT
	value	temperature		
15	Highest measured temperature	Sends max.	5	CRT
	value	temperature		
16	Min/max temperature reset	Reset of	1	CRW
		temperature		
17	Temperature threshold value 1	Target value	5	CRW
18	Temperature threshold value 1	Actual value	5	CRT
19	Temperature threshold value 2	Target value	5	CRW
20	Temperature threshold value 2	Actual value	5	CRT
21	Temperature threshold value 3	Target value	5	C R W
22	Temperature threshold value 3	Actual value	5	CRT
23	Temperature threshold value 4	Target value	5	C R W
24	Temperature threshold value 4	Actual value	5	CRT
25	Switching output temperature threshold value 1		1	CRT
26	Switching output temperature threshold value 2		1	CRT
27	Switching output temperature threshold value 3		1	CRT
28	Switching output temperature threshold value 4		1	CRT
29	Measured value of wind force		5	CRT
30	Requirement max. wind force	Requirement	1	CRW
31	Highest measured value of wind force	Sends max. wind force	5	CRT
32	Max. wind force reset	Reset of wind	1	CRW
33	Wind force threshold value 1	Target value	5	CBW
34	Wind force threshold value 1	Actual value	5	CRT
35	Wind force threshold value 2	Target value	5	
36	Wind force threshold value 2	Actual value	5	
27	Wind force threshold value 2	Target value	5	
37 20	Wind force threshold value 3		5	
30	Switching output wind force	Actual value	J 1	
39	threshold value 1		1	CRI
40	Switching output wind force threshold value 2		1	CRT
41	Switching output wind force threshold value 3		1	CRT

No.	Name	Function	EIS type	Flags
42	Measured light value		5	CRT
43	Brightness threshold value 1	Target value	5	CRW
44	Brightness threshold value 1	Actual value	5	CRT
45	Brightness threshold value 2	Target value	5	CRW
46	Brightness threshold value 2	Actual value	5	CRT
47	Brightness threshold value 3	Target value	5	CRW
48	Brightness threshold value 3	Actual value	5	CRT
49	Switching output light threshold value 1		1	CRT
50	Switching output light threshold value 2		1	CRT
51	Switching output light threshold value 3		1	CRT
52	Dawn threshold value 1	Target value	5	CRW
53	Dawn threshold value 1	Actual value	5	CRT
54	Dawn threshold value 2	Target value	5	CRW
55	Dawn threshold value 2	Actual value	5	CRT
56	Dawn threshold value 3	Target value	5	CRW
57	Dawn threshold value 3	Actual value	5	CRT
58	Switching output dawn threshold value 1		1	CRT
59	Switching output dawn threshold value 2		1	CRT
60	Switching output dawn threshold value 3		1	CRT
61	AND logic 1	Switching output	1	CRT
62	AND logic 1	8 Bit output A	6	CRT
63	AND logic 1	8 Bit output B	6	CRT
64	AND logic 2	Switching output	1	CRT
65	AND logic 2	8 Bit output A	6	CRT
66	AND logic 2	8 Bit output B	6	CRT
67	AND logic 3	Switching output	1	CRT
68	AND logic 3	8 Bit output A	6	CRT
69	AND logic 3	8 Bit output B	6	CRT
70	AND logic 4	Switching output	1	CRT
71	AND logic 4	8 Bit output A	6	CRT
72	AND logic 4	8 Bit output B	6	CRT
73	AND logic 5	Switching output	1	CRT
74	AND logic 5	8 Bit output A	6	CRT

No.	Name	Function	EIS type	Flags
75	AND logic 5	8 Bit output B	6	CRT
76	AND logic 6	Switching output	1	CRT
77	AND logic 6	8 Bit output A	6	CRT
78	AND logic 6	8 Bit output B	6	CRT
79	AND logic 7	Switching output	1	CRT
80	AND logic 7	8 Bit output A	6	CRT
81	AND logic 7	8 Bit output B	6	CRT
82	AND logic 8	Switching output	1	CRT
83	AND logic 8	8 Bit output A	6	CRT
84	AND logic 8	8 Bit output B	6	CRT
85	OR logic 1	Switching output	1	CRT
86	OR logic 1	8 Bit output A	6	CRT
87	OR logic 1	8 Bit output B	6	CRT
88	OR logic 2	Switching output	1	CRT
89	OR logic 2	8 Bit output A	6	CRT
90	OR logic 2	8 Bit output B	6	CRT
91	OR logic 3	Switching output	1	CRT
92	OR logic 3	8 Bit output A	6	CRT
93	OR logic 3	8 Bit output B	6	CRT
94	OR logic 4	Switching output	1	CRT
95	OR logic 4	8 Bit output A	6	CRT
96	OR logic 4	8 Bit output B	6	CRT
97	OR logic 5	Switching output	1	CRT
98	OR logic 5	8 Bit output A	6	CRT
99	OR logic 5	8 Bit output B	6	CRT
100	OR logic 6	Switching output	1	CRT
101	OR logic 6	8 Bit output A	6	CRT
102	OR logic 6	8 Bit output B	6	CRT
103	OR logic 7	Switching output	1	CRT
104	OR logic 7	8 Bit output A	6	CRT
105	OR logic 7	8 Bit output B	6	CRT
106	OR logic 8	Switching output	1	CRT
107	OR logic 8	8 Bit output A	6	CRT
108	OR logic 8	8 Bit output B	6	CRT

### **Setting of parameters**

### **General settings**

1.1.1 KNX Suntracer basic				
General settings	General settings			
Temperature				
Wind force Brightness	Send measured values cyclically every	5 sec	~	
AND logic	Send switching outputs cyclically every	5 sec	~	
UK logic	Send logic outputs cyclically every	5 sec	~	
	Communication objects logic inputs	do not release	~	
	Communication object switching output night	send in case of change	~	
	Communication object switching output rain	send in case of change	~	
	Transmission delay of the switching outputs after power up and programming	10 sec	~	
	Maximum telegram quota	5 Telegrams per second	~	
	OK Cano	cel Default Info	Help	

Send measured values cyclically every	5 sec • 10 sec • 30 sec • • 2 h
Send switching outputs cyclically every	5 sec • 10 sec • 30 sec • • 2 h
Send logic outputs cyclically every	5 sec • 10 sec • 30 sec • • 2 h
Communication objects logic inputs	do not release • release
Communication object switching output night (The output reacts with a delay of approx. 1 minute; "night" is recognised when light is below 10 lux)	<ul> <li>do not send</li> <li>send in case of change</li> <li>send inverted in case of change</li> <li>send in case of change and cyclically</li> <li>send inverted in case of change and cyclically</li> <li>(as in case of all switching outputs)</li> </ul>
Communication object Switching output rain (After approx. 8 minutes without rain, the output is reset)	(as in case of switching output night)
Maximum telegram quota	$1 \bullet 2 \bullet 3 \bullet 5 \bullet 10 \bullet 20$ telegrams per second

### Temperature

1.1.1 KNX Suntracer basic				
General settings	Temperature			
Temperature Temperature threshold value 1 Wind force Brightness Dawn	Measured value	send cyclically		
AND logic OR logic	Temperature offset in 0.1°C Send and reset of the min. and max. temperature value on request	0 🔊		
	Use malfunction object	No		
	Threshold value 1	active		
	Threshold value 2	not active		
	Threshold value 3	not active		
	Threshold value 4	not active		
	ОК Са	ncel Default Info Help		

Measured value	<ul> <li>do not send</li> <li>send cyclically</li> <li>send in case of change</li> <li>send in case of change and cyclically</li> </ul>
From a temperature change of	$0.5^{\circ}$ C • $1^{\circ}$ C • $2^{\circ}$ C • $3^{\circ}$ C • $4^{\circ}$ C • $5^{\circ}$ C
Temperature offset in 0.1°C	-50 50
Threshold value 1 / 2 / 3 / 4	not active • active
Sending and resetting min. and max. temperature value on request	do not release • release

### Temperature threshold 1 / 2 / 3 / 4

#### If the threshold is set by parameters:

🗆 1.1.1 KNX Suntracer basic 🛛 🔀			
General settings	Temperature threshold value 1		
General settings Temperature Temperature threshold value 1 Wind force Brightness Dawn AND logic OR logic	Threshold value: Threshold value is set by Threshold value in 0,1°C Hysteresis of the threshold value in 0.1 °C Switching output: Start-up delay	Parameter 200 30	
	Switch-off delay Output switches at Communication object switching output temperature threshold value 1	none TV above = ON   TV - Hyst. below = OFF not send	
OK Cancel Default Info Help			

Threshold value is set by	Parameters
Threshold value in 0.1°C	-300 800

If the threshold is set by communication objects, a threshold which is valid until the first communication of a new threshold must be determined for the initial operation:

Threshold value is set by	Communication object
Start threshold value in 0.1°C	-300 800
Valid until the first communication	

#### In case of an already commissioned weather station, the threshold which has been communicated at last may be used:

As soon as a threshold has been set by means of a parameter or by means of a communication object, the threshold set at last remains until a new threshold has been transmitted by a communication object.

The thresholds set at last by communication objects are saved in EEPROM in order to maintain them in case of voltage breakdown and to provide them as soon as there is voltage supply again.

Hysteresis of the threshold value in 0.1°C.	0100
Strat-up delay	none • 1 sec 2 h
Switch-off delay	none • 1 sec 2 h
Output switches at	TV above = ON   TV - Hyst. below = OFF $\bullet$ TV below = ON   TV - Hyst. above = OFF $\bullet$
Communication object switching output temperature threshold value 1/2/3/4	(as in case of switching output night)

### Wind force

🗆 1.1.1 KNX Suntracer basic 🛛 🔀			
General settings	Wind force		
Temperature threshold value 1 Wind force Wind force threshold value 1 Brightness Dawn	Measured value	send cyclically	
AND logic OR logic	Send and reset of the maximum wind load value on request	do not release	
	Use malfunction object	No	
	Threshold value 1	active	
	Threshold value 2	not active	
	Threshold value 3	not active	
OK Cancel Default Info Help			

Measured value	<ul> <li>do not send</li> <li>send cyclically</li> <li>send in case of change</li> <li>send in case of change and cyclically</li> </ul>
From a wind force change of	1 m/sec 4 m/sec
Threshold value 1 / 2 / 3	not active • active
Sending and resetting max. wind force value on request	do not release • release

### Wind force threshold 1 / 2 / 3

1.1.1 KNX Suntracer basic		$\overline{\mathbf{X}}$	
General settings	Wind force threshold value 1		
Temperature Temperature threshold value 1 Wind force	Threshold value:		
Wind force threshold value 1 Brightness	Threshold value is set by	Parameter	
AND logic	Threshold value in 0,1° m/sec	40	
UR logic	Hysteresis of the threshold value in 0.1 m/s	20	
	Switching output: Start-up delay Switch-off delay Output switches at Communication object switching output wind load threshold value 1	none  none  TV above = ON ITV - Hyst. below = OFF  not send	
	ОК Са	ncel Default Info Help	

Threshold value in 0.1 m/s	0 350
Hysteresis of the threshold value in 0.1 m/s	0 250

All other parameters correspond to the parameters of the temperature thresholds (see there).

### Brightness

🗆 1.1.1 KNX Suntracer basic 🛛 🔀				
General settings	Brightness			
Temperature Temperature threshold value 1 Wind force Wind force threshold value 1 Brightness Brightness threshold value 1 Dawn AND logic OR logic	Measured value from change in %		send in case of change and cyclically	•
	Threshold value 1 Threshold value 2 Threshold value 3		active not active not active	>
		OK Cancel	Default Info H	lelp

Measured value	<ul> <li>do not send</li> <li>send cyclically</li> <li>send in case of change</li> <li>send in case of change and cyclically</li> </ul>
From change in %	1 50
Threshold value 1 / 2 / 3	not active • active

### Brightness threshold value 1 / 2 / 3

1.1.1 KNX Suntracer basic			X
General settings	Brightness th	reshold value 1	
Temperature Temperature threshold value 1 Wind force	Threshold value:		
Wind force threshold value 1 Brightness Brightness threshold value 1	Threshold value is set by	Parameter	~
Dawn AND logic	Threshold value in klux	5	•
OR logic	Hysteresis of the threshold value in klux	2	•
	Switching output: Start-up delay Switch-off delay	none	~
	Output switches at	TV above = ON   TV - Hyst. below = OFF	~
	Communication object switching output brightness threshold value 1	not send	~
	OK Cance	l Default Info Help	

Threshold value in klux	1 99
Hysteresis of the threshold value in klux	0 99

All other parameters correspond to the parameters of the temperature thresholds (see there).

### Dawn

1.1.1 KNX Suntracer basic					
General settings	Dawn				
Temperature Temperature threshold value 1 Wind force Wind force threshold value 1 Brightness Brightness threshold value 1 Dawn Dawn threshold value 1 AND logic OR logic	Threshold value 1 Threshold value 2 Threshold value 3		active not active not active		× ×
	(	OK Cancel	Default	Info	alp

Threshold value 1 / 2 / 3	Not active • active
---------------------------	---------------------

### Dawn threshold value 1 / 2 / 3

1.1.1 KNX Suntracer basic		$\overline{\mathbf{X}}$	
General settings	Dawn of the threshold value 1		
Temperature Temperature threshold value 1 Wind force Wind force threshold value 1 Brightness Brightness threshold value 1 Dawn Dawn threshold value 1 AND logic OB logic	Threshold value: Threshold value is set by Threshold value in lux Hysteresis of the threshold value in klux	Parameter V 200 🗳	
	Switching output: Start-up delay Switch-off delay Output switches at Communication object switching output dawn threshold value 1	none  Inone  TV above = ON   TV - Hyst. below = OFF  not send	
	OK Ca	ncel Default Info Help	

Threshold value in lux	1 1000
Hysteresis of the threshold value in lux	0 1000

All other parameters correspond to the parameters of the temperature thresholds (see there).

### **AND** logic

```
Logic 1/2/3/4/5/6/7/8 not active • active
```

### AND logic 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8

1st / 2nd / 3rd / 4th input	do not use • all switching events which the weather station provides (see "Linkage inputs of the AND logic")
Logic output sends	a 1 bit-object • two 8 bit-objects

#### If the logic output sends a 1 bit-object:

1.1.1 KNX Suntracer basic			
General settings	AND logic 1		
Temperature Temperature threshold value 1 Wind force Wind force threshold value 1 Brightness Brightness threshold value 1 Dawn Dawn threshold value 1 AND logic AND logic OR logic	1. Input         2. Input         3. Input         4. Input         Logic output sends         if logic = 1 ==> object value         if logic = 0 ==> object value         Communication object         AND logic 1 sends	do not use l l l l l l l l l l l l l l l l l l l	
	OK Cano	cel Default Info Help	

Logic output sends	a 1 bit-object
If logic = 1 → object value	1•0
If logic = 0 $\rightarrow$ object value	1•0
Communication object AND logic 1 sends	<ul> <li>in case of the change of logic</li> <li>in case of the change of logic to 1/0</li> <li>in case of the change of logic and cyclically</li> <li>in case of the change of logic to 1/0 and cyclically</li> </ul>

If the logic output sends two 8 bit-objects:

1.1.1 KNX Suntracer basic			
General settings Temperature	AND logic 1		
Temperature threshold value 1 Wind force	1. Input	do not use	
Wind force threshold value 1 Brightness	2. Input	do not use 💌	
Dawn	3. Input	do not use 💌	
AND logic	4. Input	do not use 💌	
OR logic	Logic output sends	two 8 bit objects	
	if logic = 1 ==> object A value	127	
	if logic = 0 ==> object A value	0	
	if logic = 1 ==> object B value	127	
	if logic = 0 ==> object B value	0	
	Communication objects AND logic 1 A and B send	in case of the change of the logic	
	ОК Са	ancel Default Info Help	

Logic output sends	two 8 bit-objects
If logic = 1 → object A value	0 255
If logic = 0 → object A value	0 255
If logic = 1 → object B value	0 255
If logic = 0 → object B value	0 255
Communication objects AND logic 1 A and B send	<ul> <li>in case of the change of logic</li> <li>in case of the change of logic to 1/0</li> <li>in case of the change of logic and cyclically</li> <li>in case of the change of logic to 1/0 and cyclically</li> </ul>

### Linkage inputs of AND logic

do not use Night = 1 Night = 0 Dawn threshold value 1 Dawn threshold value 1 inverted Dawn threshold value 2 Dawn threshold value 2 Dawn threshold value 3 Dawn threshold value 3 Dawn threshold value 3 Brightness threshold value 1 Brightness threshold value 2 Brightness threshold value 2 inverted Brightness threshold value 3 Brightness threshold value 3 inverted Communication object logic input 1 Communication object logic input 1 inverted Communication object logic input 2 Communication object logic input 2 inverted Communication object logic input 3 Communication object logic input 3 inverted Communication object logic input 4 Communication object logic input 4 inverted Communication object logic input 5 Communication object logic input 5 inverted Communication object logic input 6 Communication object logic input 6 inverted Communication object logic input 7 Communication object logic input 7 inverted Communication object logic input 8 Communication object logic input 8 inverted Rain yes Rain no Failure temperature Failure temperature inverted Failure wind Failure wind inverted Temperature threshold value 1 Temperature threshold value 1 inverted Temperature threshold value 2 Temperature threshold value 2 inverted Temperature threshold value 3 Temperature threshold value 3 inverted Temperature threshold value 4 Temperature threshold value 4 inverted Wind threshold value 1 Wind threshold value 1 inverted Wind threshold value 2 Wind threshold value 2 inverted Wind threshold value 3 Wind threshold value 3 inverted

### **OR** logic

Logic 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8

not active • active

#### OR logic 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8

		X
OR logic 1		
1. Input	do not use	•
2. Input	do not use	~
3. Input	do not use	~
4. Input	do not use	~
Logic output sends	one 1 bit object	~
if logic = 1 ==> object value	1	~
if logic = 0 ==> object value	0	~
Communication object OR logic 1 sends	in case of the change of the logic	~
ОК	Cancel Default Info Help	
	1. Input         2. Input         3. Input         4. Input         Logic output sends         if logic = 1 ==> object value         if logic = 0 ==> object value         Communication object         OR logic 1 sends	OR logic 1         1. Input       do not use         2. Input       do not use         3. Input       do not use         4. Input       do not use         Logic output sends       one 1 bit object         if logic = 1 ==> object value       1         if logic = 0 ==> object value       0         Communication object       in case of the change of the logic         OK       Cancel       Default       Info

Logic output sends

a 1 bit-object • two 8 bit-objects

All parameters of the OR logic correspond with the parameters of the AND logic.

#### Linkage inputs of OR logic

The linkage inputs of the OR logic correspond with the parameters of the AND logic. The OR logic is *additionally* provided with the following inputs:

AND logic output 1 AND logic output 1 inverted AND logic output 2 AND logic output 2 inverted AND logic output 3 AND logic output 3 inverted AND logic output 4 AND logic output 4 inverted AND logic output 5 AND logic output 5 inverted AND logic output 6 AND logic output 6 inverted AND logic output 7 AND logic output 7 inverted AND logic output 8 AND logic output 8 inverted

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