Weather stations

WS1-US-GPS, WS1-US-GPS-PM und SK10L-GPS-THL

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1. Device description

The KNX weather stations record different local weather and sun position data. There is also a GPS module installed to obtain precise time and location information.
Depending on the date, position of the sun, wind and solar radiation, shading, lighting and irrigation can be controlled.
The KNX weather station combination consists of a weather station and a KNX coupling module with GPS receiver. The weather stations work maintenance-free and without moving parts.

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With the KNX weather station combination **WS1-US-GPS(-PM)** the follwing values are present:

- Wind speed and wind direction (weather station using ultrasound)
- Temperature and humidity (weather station)
- Rain intensity and accumulated amount of rain (weather station using radar)
    - The measurement of the accumulated amount of rain can be restarted via an object
- Solar radiation and accumulated solar radiation (weather station)
    - The measurement of the accumulated solar radiation is restarted every day at 00:00
- The weather station **WS1-US-GPS-PM** also records particle matter pollution with particle sizes PM1, PM2.5, and PM10 (weather station)
- Local longitude and latitude (coupling module)
- Brightness (coupling module)
- Date/time (coupling module)

As derived values are available:

- Absolute humidity and dew point temperature
- Average wind speed over 10 minutes and over 2 minutes
- Wind speed in Beaufort
- Gusts wind speed
- Position of the sun: azimuth and elevation angle (coupling module)
- Day/night/twilight as switching objects
- Annual, weekly and daily timers

The following are available in the device **SK10L-GPS-THL**, which is operated without an external weather station:

- Temperature and humidity
- Local longitude and latitude
- Brightness
- Date/Time
- Position of the sun: azimuth and elevation angle
- Day/night/twilight as switching objects
- Annual, weekly and daily timers

Additionally available in all variants:

- Minimum/maximum values for up to 5 measured variables
- 10 limit value calculations for up to 10 measured variables
- 10 logic objects with logical connections
- 6 parameterizable sectors for calculating the position of the sun

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1.1 KNX coupler

(With weather station)

WS1-SK10L-GPS-L	
Protection class	IP65
Bus voltage	KNX 21 .. 32V DC
Auxiliary voltage (AUX):	15 .. 40V
KNX-current load:	10mA
AUX-current load:	120mA
Sensors:	W83X(M1/M2/M3) brightness 1..140KLux GPS-Module
Input:	ModBus RTU
Supply for sensor head	12V / 120mA max

(Stand alone)

SK10L-GPS-THL	
Protection class	IP65
Bus voltage	KNX 21 .. 32V DC
Additional voltage (AUX):	15 .. 40V
KNX current load:	10mA
Sensors:	Temperature/humidity brightness 1..140KLux GPS-Module

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1.2 Weather station without particle matter detection

W83X(M3)	Value	Accuracy	resolution
Protection class	IP65		
Supply voltage	12V DC		
Output signal	ModBUS RTU		
Wind speed	0-70m/s	±3%	0.1m/s
Wind direction	0-359°	±3°<>	1°
Air temperature	-40°C +80°C	±0.5°C	0.1°C
Humidity	0-100%	±3%	0.1%
Air pressure	300-1100hPa	±1 hPa	0.1hPa
Precipitation intensity	0-100mm/h	±8%	0.1mm
Precipitation type	Rain Hail Snow		
Global radiation	0-2000 W/m2	±5%	0.1 W/m2
Cable length	4m		

1.3 Weather station with particle matter detection

W83X(M3)-PM	Value	Accuracy	Resolution
Protection class	IP65		
Supply voltage	12V DC		
Output signal	ModBUS RTU		
Wind speed	0-70m/s	±3%	0.1m/s
Wind direction	0-359°	±3°<>	1°
Air temperature	-40°C +80°C	±0.5°C	0.1°C
Humidity	0-100%	±3%	0.1%
Air pressure	300-1100hPa	±1 hPa	0.1hPa
Precipitation intensity	0-100mm/h	±8%	0.1mm
Precipitation type	Rain Hail Snow		
Global radiation	0-2000 W/m2	±5%	0.1 W/m2
PM1.0/PM2.5/PM10	0-1000ug/m3	±8%	1 ug/m3
Cable length	4m		

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1.4 Device elements

The following operating, connection and sensor elements are available on the KNX coupler

WS1-SK10L-GPS-L	SK10L-GPS-THL

- KNX connection
  - KNX connection
  - Programming button
  - Programming LED
- Green GPS LED
- Brightness sensor
- AUX supply connection (WS1-SK10L-GPS-L only)
- Connection for weather station (only WS1-SK10L-GPS-L)
- Temperature and humidity sensor (SK10L-GPS-THL only)

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W83X(M3)(-PM) Side view	W83X(M3)(-PM) Bottom view

The only connecting element on the weather station itself is the socket for the connecting cable.

1.5 Displays on the KNX coupler

There are 2 LEDs for the status display

- KNX LED (red)
  - Signals the active programming status
  - Flashing of the KNX LED signals an internal communication failure
- GPS LED (green)
  - Flashing every 1 second indicates a lack of GPS reception
  - Fast flashing (n times plus pause) signals reception of n satellites
  - If synchronization is successful, the LED remains off
  - The function of the GPS LED can be changed via the ETS (Off/On/Pulse/IO)

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2. Application description

2.1 Operating principle and areas of application

The WS1-US-GPS measuring system records meteorological data without moving parts using ultrasonic and radar sensors. To determine the wind direction and wind speed, the phase shifts of sound waves caused by air currents are measured; a radar signal is used to measure precipitation. particle matter is optionally determined via the scattering of IR laser light on small particles.

The positions of the sun are calculated from the time and the exact position and thus the onset of day/twilight and night is determined. Sky sectors can be defined within which the position of the sun generates a signal.

The timers can send telegrams depending on the time, date and day of the week. Upper and lower limit values are recorded and can activate switching states. Minimum and maximum values are recorded. The KNX sensors are commissioned via the ETS (tool software) in conjunction with the associated one Application program. When delivered, the devices are unprogrammed.

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2.2 Features

	WS1-US-GPS	WS1-US-GPS-PM	SK10L-GPS-THL
Wind speed	X	X	
Wind direction	X	X	
Temperature	X	X	X
Humidity	X	X	X
Rain intensity	X	X	
Cumulative rainfall	X	X	
Solar radiation	X	X	
Cumulative solar radiation	X	X	
Particulate matter PM1		X	
Particulate matter PM2.5		X	
Particulate matter PM10		X	
Brightness	X	X	X
Longitude and latitude	X	X	X
Date and time	X	X	X
Absolute humidity	X	X	X
Dew point temperature	X	X	X
Average wind speed 2 min	X	X	
Maximum wind speed 2 min	X	X	
Minimum wind speed 2 min	X	X	
Average wind speed 10 min	X	X	
Maximum wind speed 10 min	X	X	
Minimum wind speed 10 min	X	X	
Wind speed in Beaufort	X	X	
Gusts wind speed	X	X	
Sun position azimuth and elevation angle	X	X	X
Day/night/twilight as switching object	X	X	X

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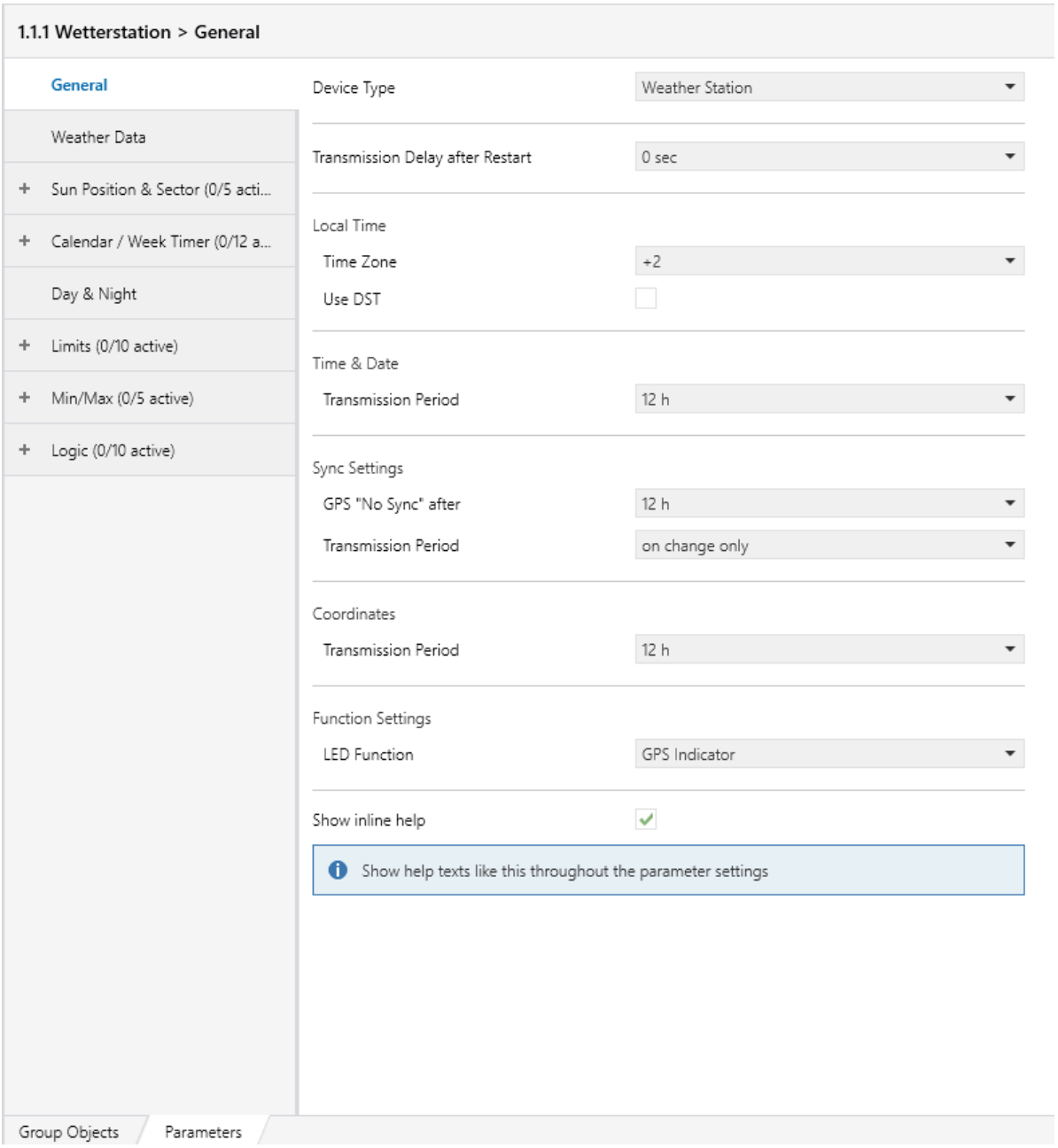
2.3 Parameter

General settings



- Device type
  - Weather station
    - without particles
  - Weather station with particles
    - PM1.0, PM2.5 and PM10 *GPS-THL
    - GPS and temperature / humidity / brightness only

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- Sending delay after restart
  - After restarting the device, the first data will not be sent until after the configured time at the earliest
- Local time
  - Time zone
    - Since the GPS satellites provide GMT (or UTC), the time zone must be set for the local time
  - European Daylight Saving Time
    - If European Daylight Saving Time is used, the time zone automatically shifts by +1 hour in summer
- Time & Date
  - Transmission period
    - If the coupling module is to be used as a time server, the time is sent regularly
    - Synchronisation
      - If no satellite signal could be received for x hours, synchronization is considered lost and the current time may differ from the actual time by a few seconds
      - Transmission interval
        - The synchronization information can be sent regularly; if the status changes, it is sent immediately
- Coordinates transmission interval
  - The local coordinates (longitude and latitude) are written to the bus every x seconds
- GPS LED function
  - GPS display
    - The LED shows the synchronization status of the coupling module
  - Off
    - The LED is permanently OFF
  - On
    - The LED is permanently ON
  - Flashing 1Hz
    - The LED flashes once per second
  - LED object
    - The LED can be controlled via an object
- Show inline help
  - Help text can be displayed on the parameter page for some settings

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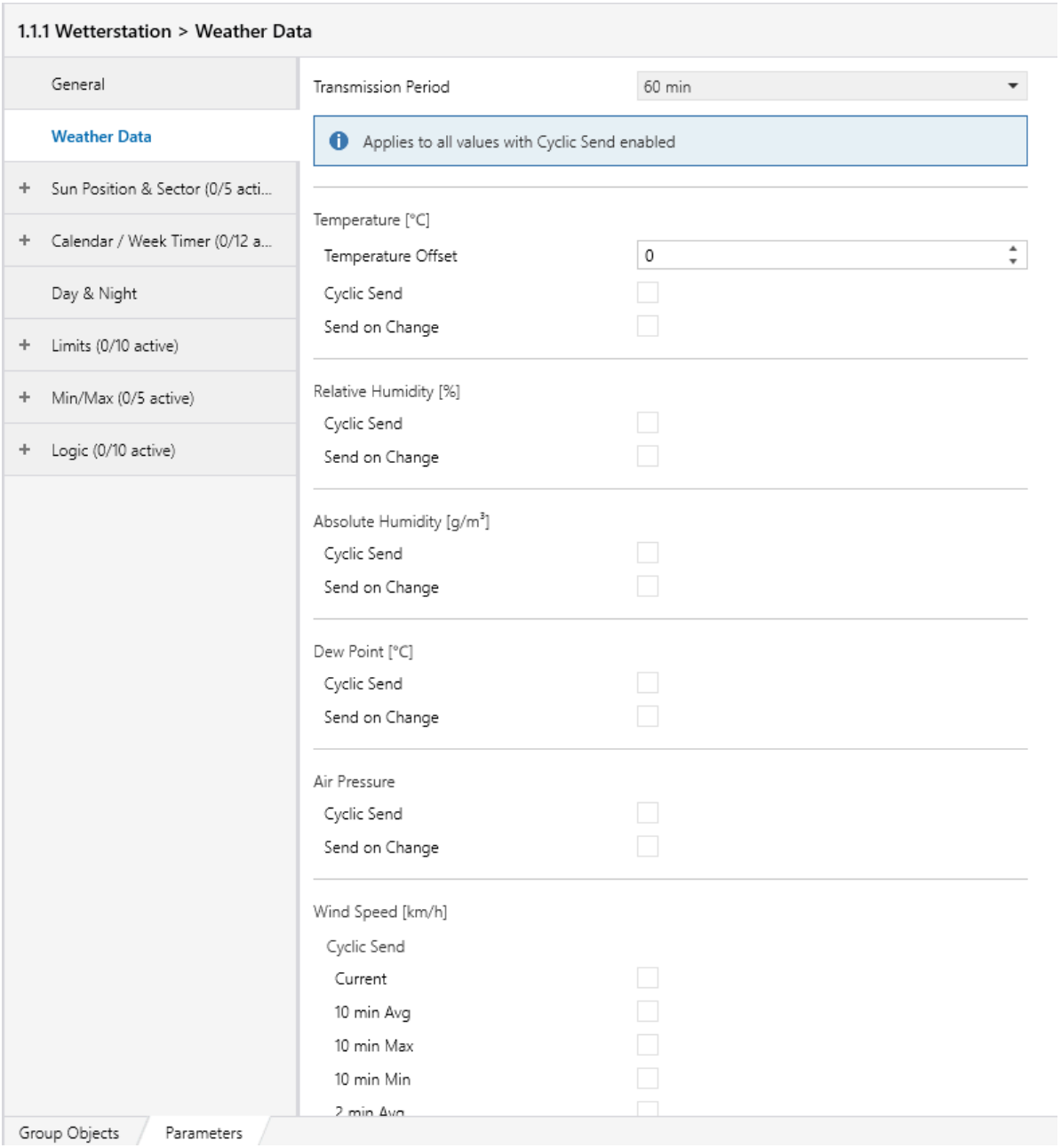
Weather data



- Transmission period
  - All weather data for which 'Cyclic Send' is activated will be sent with this interval
- Temperature
  - Temperature offset °C (-5°C ..+5°C)
    - An offset can be programmed; this value is added to the measured value
  - Send cyclically
    - The measured outside temperature + offset is sent periodically
  - Send on change
    - Threshold value (0.1°C .. 5°C)
    - If there is a change by the specified difference, the value is sent and the cyclic interval is restarted
- Humidity

    - Send cyclically
        - The measured relative outside humidity is sent periodically

- Send on change

    - Threshold
    - If there is a change by the specified difference, the value is sent and the cyclic interval is restarted

- Absolute humidity and dew point

    - Send cyclically (see above)
    - Send on change

> If one of the variables temperature or humidity meets the sending condition, the newly calculated value is also sent

> Similar parameters apply to the variables wind speed, wind direction, rain intensity, amount of rain, solar radiation, particle matter and brightness

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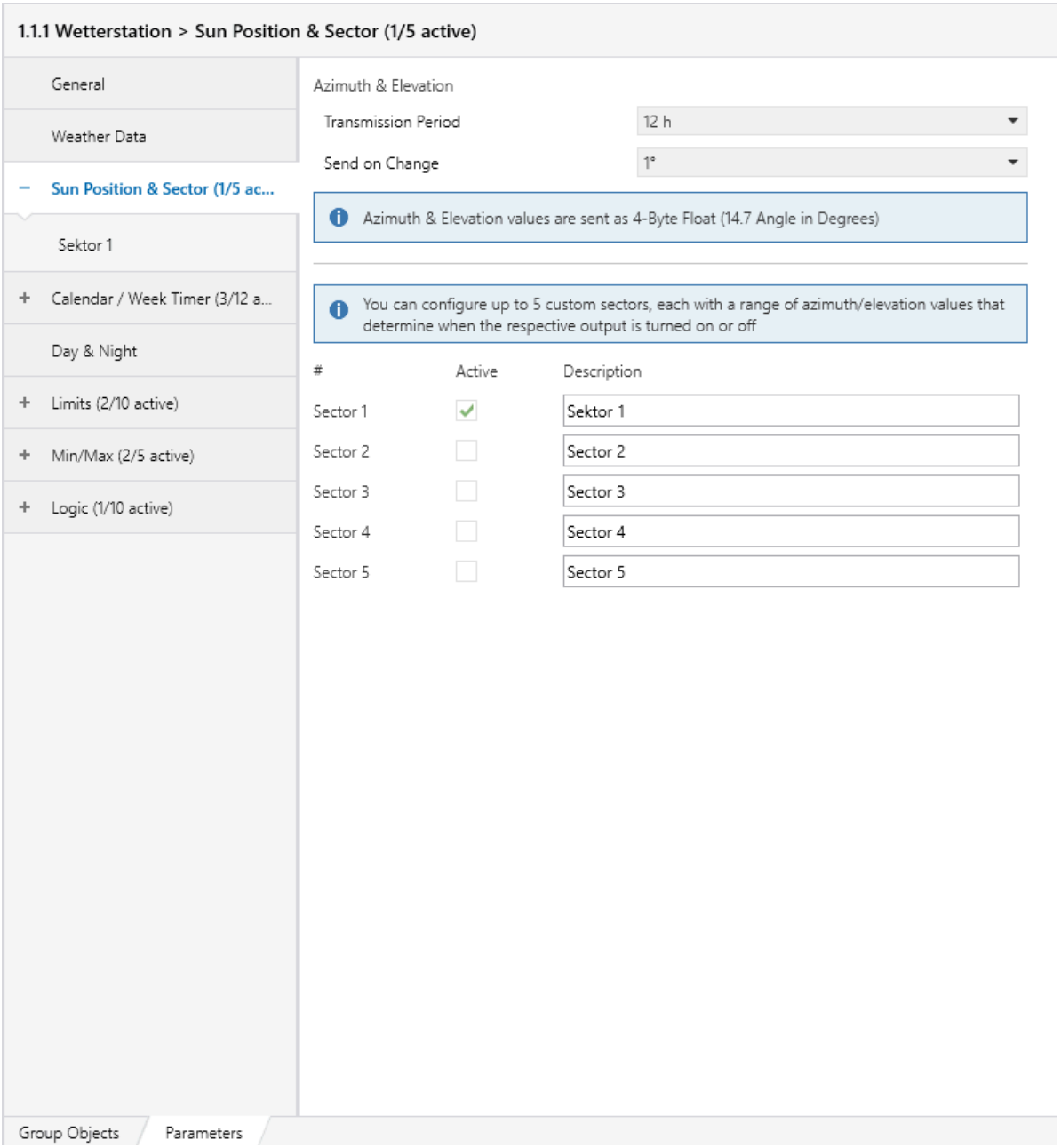
Sun position



- Sun position
  - Transmission period
    - The current position of the sun (azimuth and elevation angle) is sent to the bus every x minutes/hours
  - Send on change
    - The current position of the sun (azimuth and elevation angle) is transmitted as soon as the angle changes by x°
- Sector active
  - The five sectors can be activated/deactivated individually

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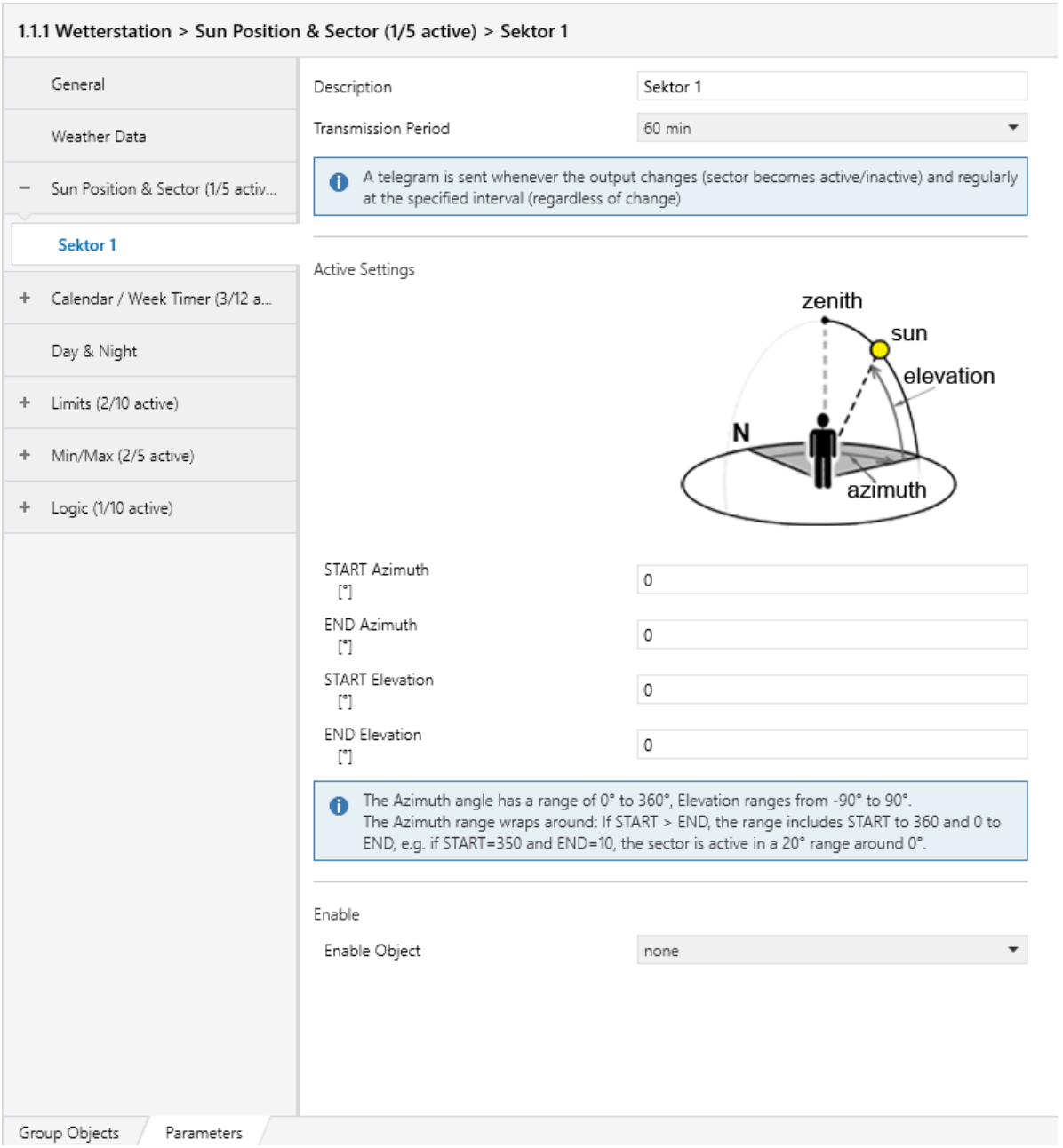
Solar sector



- Transmission period
  - The information as to whether the sun is in the sector is sent to the bus every x minutes/hours
- START/END azimuth, START/END elevation angle
  - If the sun is within both the azimuth limits and the elevation angle limits, the sector is active

> For azimuth, the start angle can be larger than the end angle to allow sector boundaries around 0 (e.g. start 300° end 30°)

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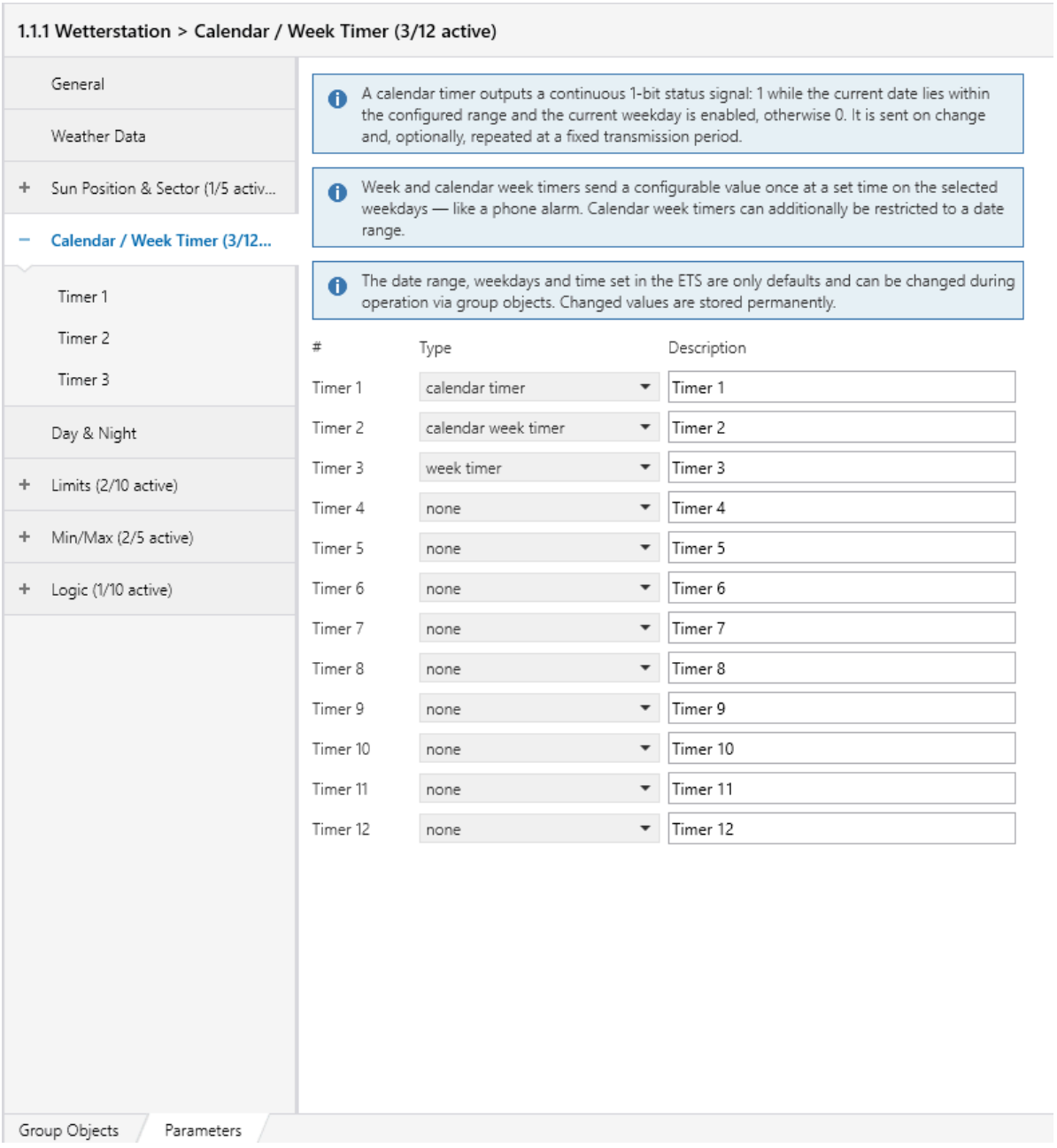
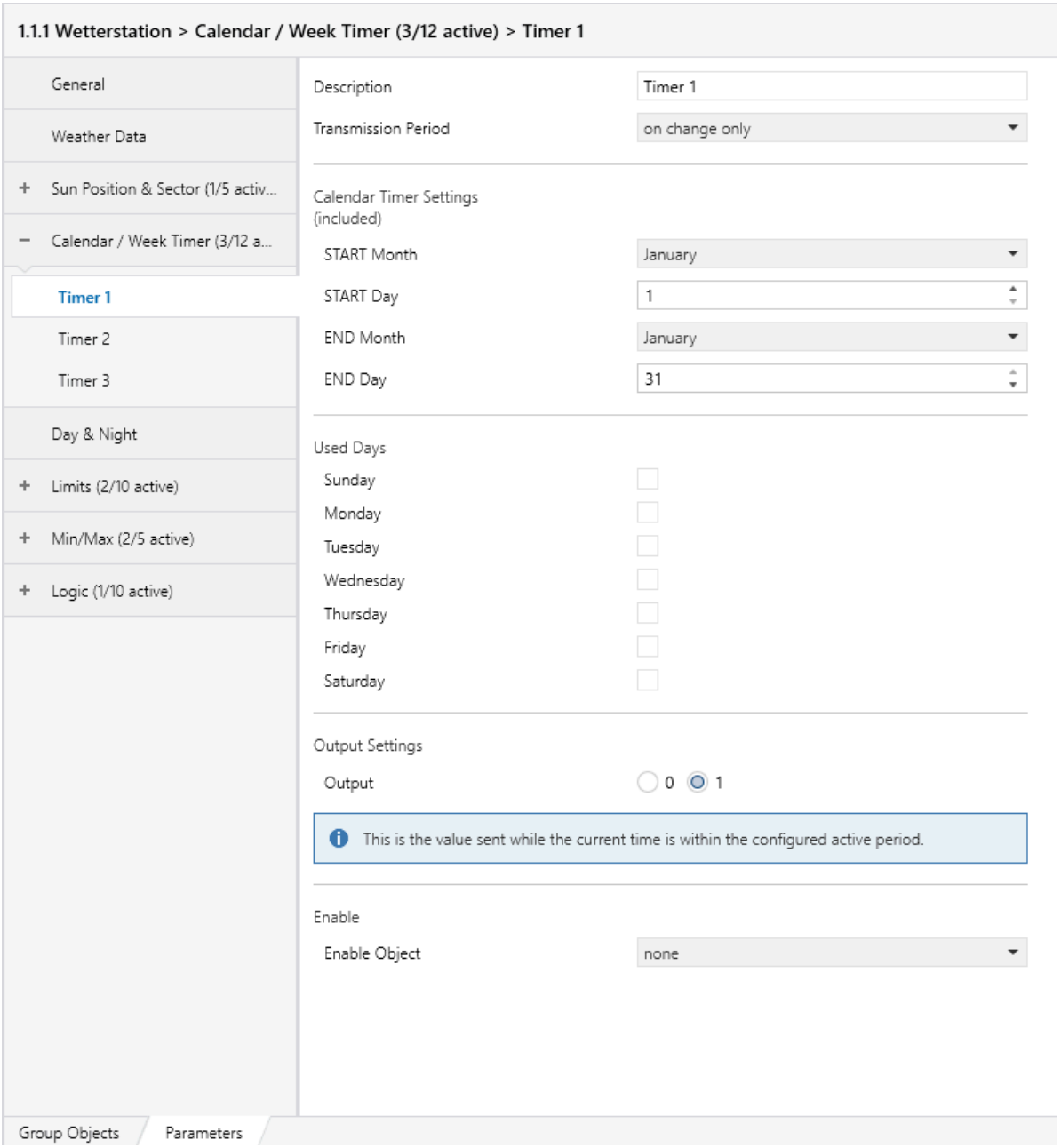
- Activation/deactivation
  - Input
    - A logic object can be selected to enable/disable the sector
  - Release at
    - The sector is considered active if the share object has a value of 0 or 1
  - Send when inactive
    - When the sector is inactive, the sector is set to Active (1) or Inactive (0).

Calendar and weekly timer



- Timer 1 .. Timer 12
  - Each of the 12 available timers can be configured as a calendar timer, calendar week timer or weekly timer
- Description for documentation purposes

Calendar hours



The calendar timer output has the states 0 or 1 depending on whether the current day meets all conditions

- Start month and day / end month and day / day of the week
  - In the parameterized period, the output has the value 1
- Transmission period
  - The value is sent cyclically
- Output when active
  - The output value is 0/Off or 1/On in the active period.
- Activation/deactivation
  - Input
    - A logic object can be selected to enable/disable the sector
  - Active at
    - The timer is considered active when the release object has the value 0 or 1

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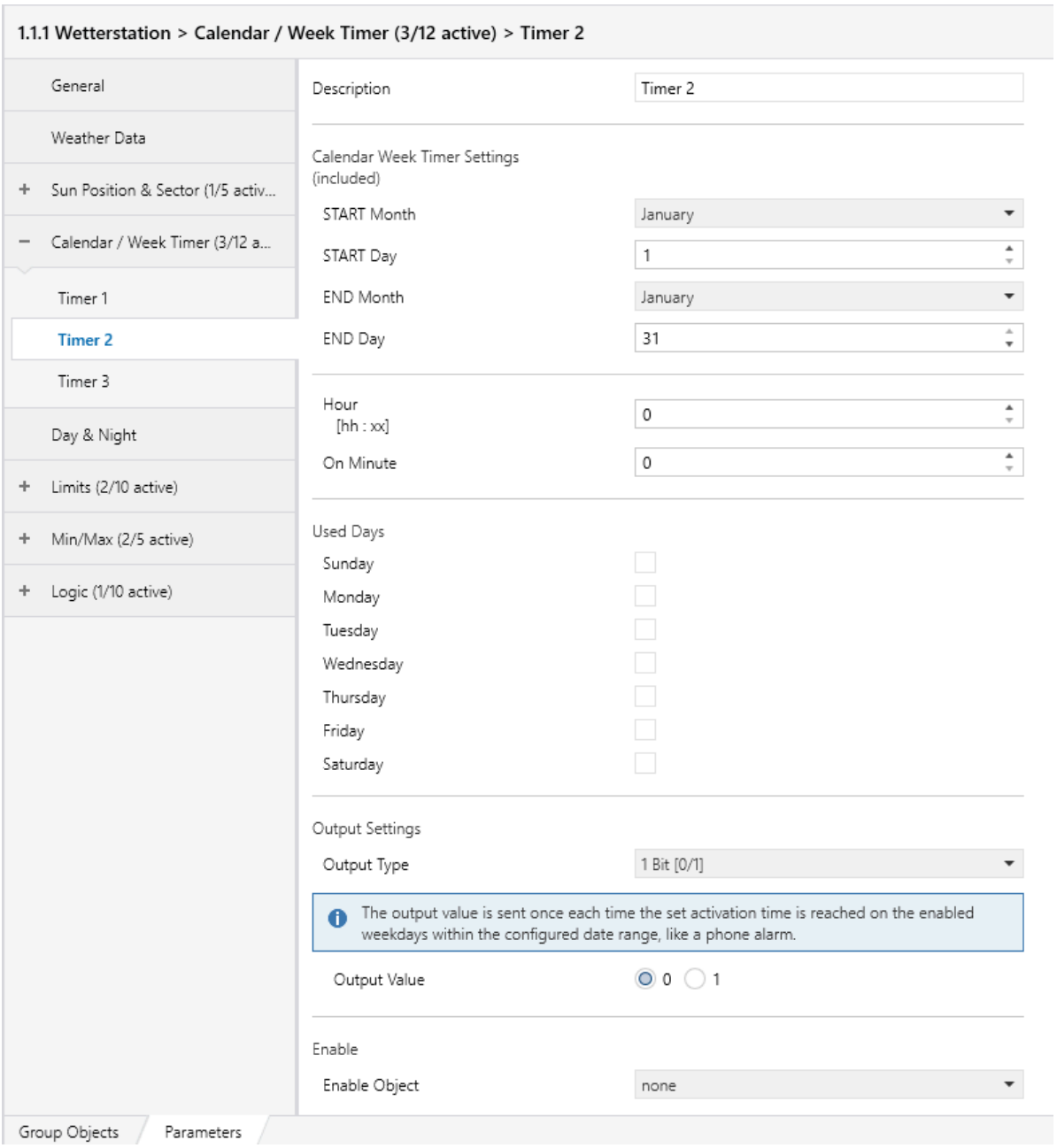
Calendar week timer



The calendar week timer sends a defined value when a point in time is reached and all conditions are met. Start date, end date and day of the week can be parameterized as conditions

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- Start month and day / end month and day / day of the week
  - In the parameterized period, a value is sent when the time is reached
- Send after restart
  - The value is sent once during the parameterized period at start
- Output type
  - The output object can be parameterized:
    - 1Bit [ON /OFF]
    - 1 Byte [0 .. 100%]
    - 1 Byte [0 .. 255]
    - 2Byte float [-671088,64 .. 670760,96]
- Output value
  - This value is sent when the time is reached and all conditions are met
- Activation/deactivation
  - Input
    - A logic object can be selected to enable/disable the sector
  - Active at
    - The timer is considered active when the release object has the value 0 or 1

Weekly timer

> The weekly timer sends a defined value when a point in time is reached and all conditions are met. The day of the week can be parameterized as a condition

> The parameterization is the same as for the calendar week timer, only the start and end dates are not used

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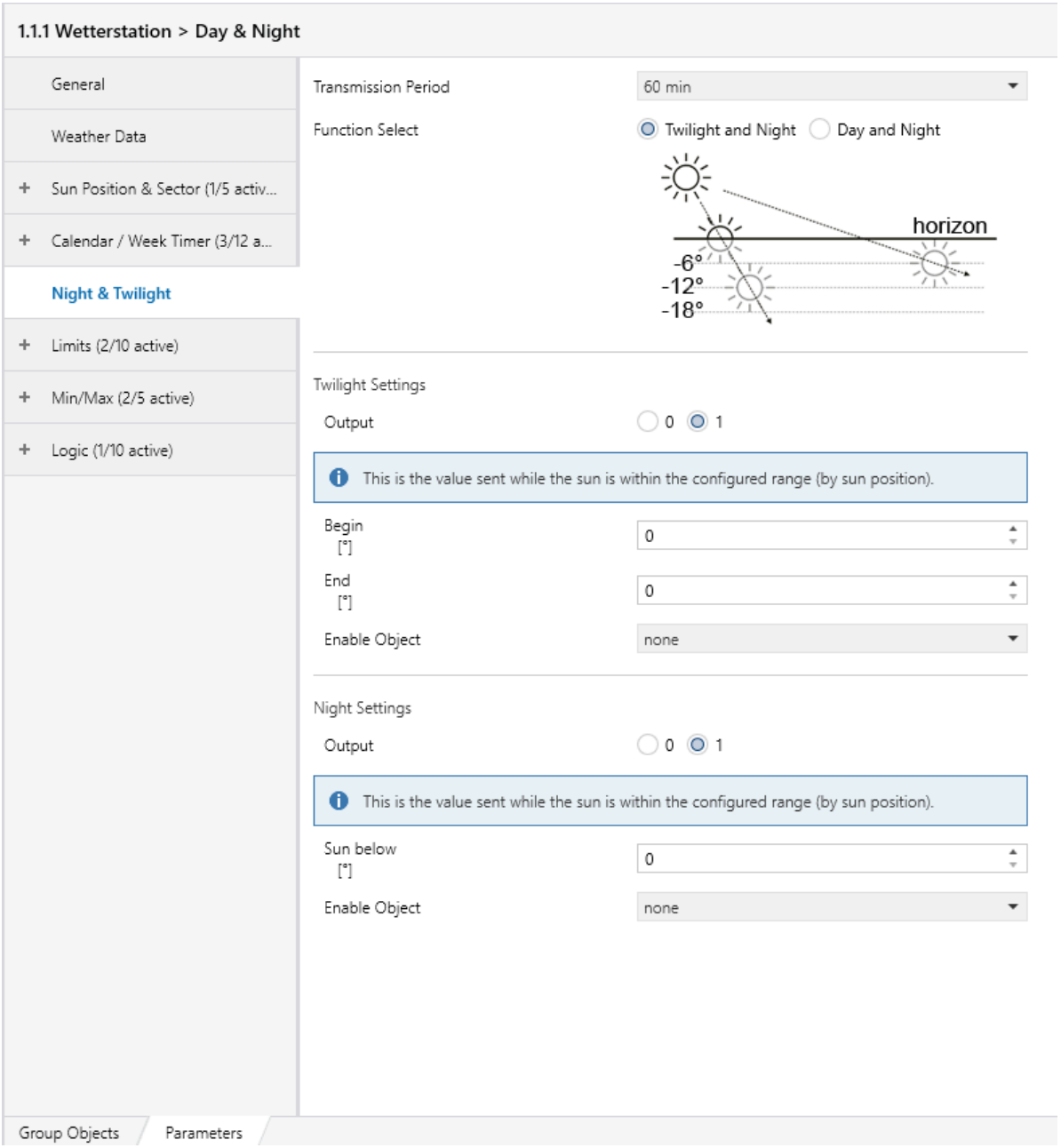
Day/night and twilight/night



The block can be parameterized as day/night and twilight/night All values are calculated based on the current position of the sun and the elevation angle.

- Transmission period
  - The information, day/twilight/night, is sent to the bus every x minutes/hours
- Function selection day/night and twilight/night

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- START
  - when set to night:
    - below this elevation angle it is night
  - when setting day:
    - above this elevation angle it is day
- START and END
  - at dusk
    - between these elevation angles is twilight
- Output when active
  - The output value is 0/Off or 1/On in the active period.
- Activation/deactivation
  - Input
    - A logic object can be selected to enable/disable the calculation
  - Active at
    - The calculation is considered active if the release object has the value 0 or 1

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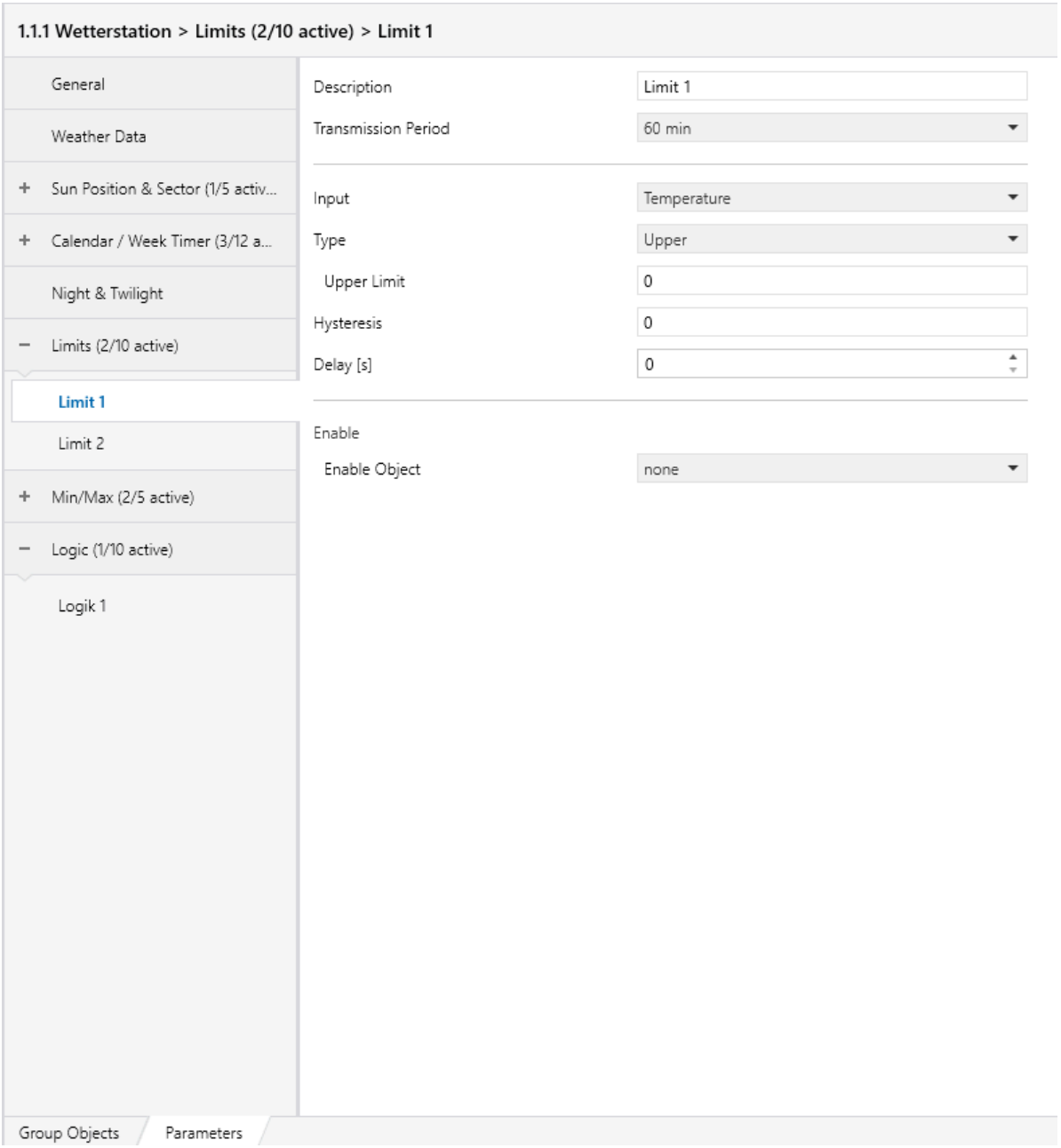
Limits

> The individual limit values can be activated on the Limits page. The individual limit values have their own tabs in the ETS



- Description for documentation purposes
- Transmission period
    - The information about exceeding/falling below the limit is sent to the bus every x minutes/hours

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- Input
  - You can choose between 32 different floating point values
- Type
  - You can choose between Lower limit/Upper limit/Inside a window/Outside a window
- Depending on the type, upper and/or lower values can be parameterized
- Hysteresis for limit values (% of maximum)

  > To prevent unstable switching states, a hysteresis is specified here. If the switching state changes frequently, the hysteresis should be increased.

- Delay
  - The status is only sent if a state change lasts longer than the set delay time
- Activation/deactivation
  - Input
    - A logic object can be selected to activate/deactivate the limit value calculation
  - Active at
    - The limit value calculation is considered active if the release object has the value 0 or 1

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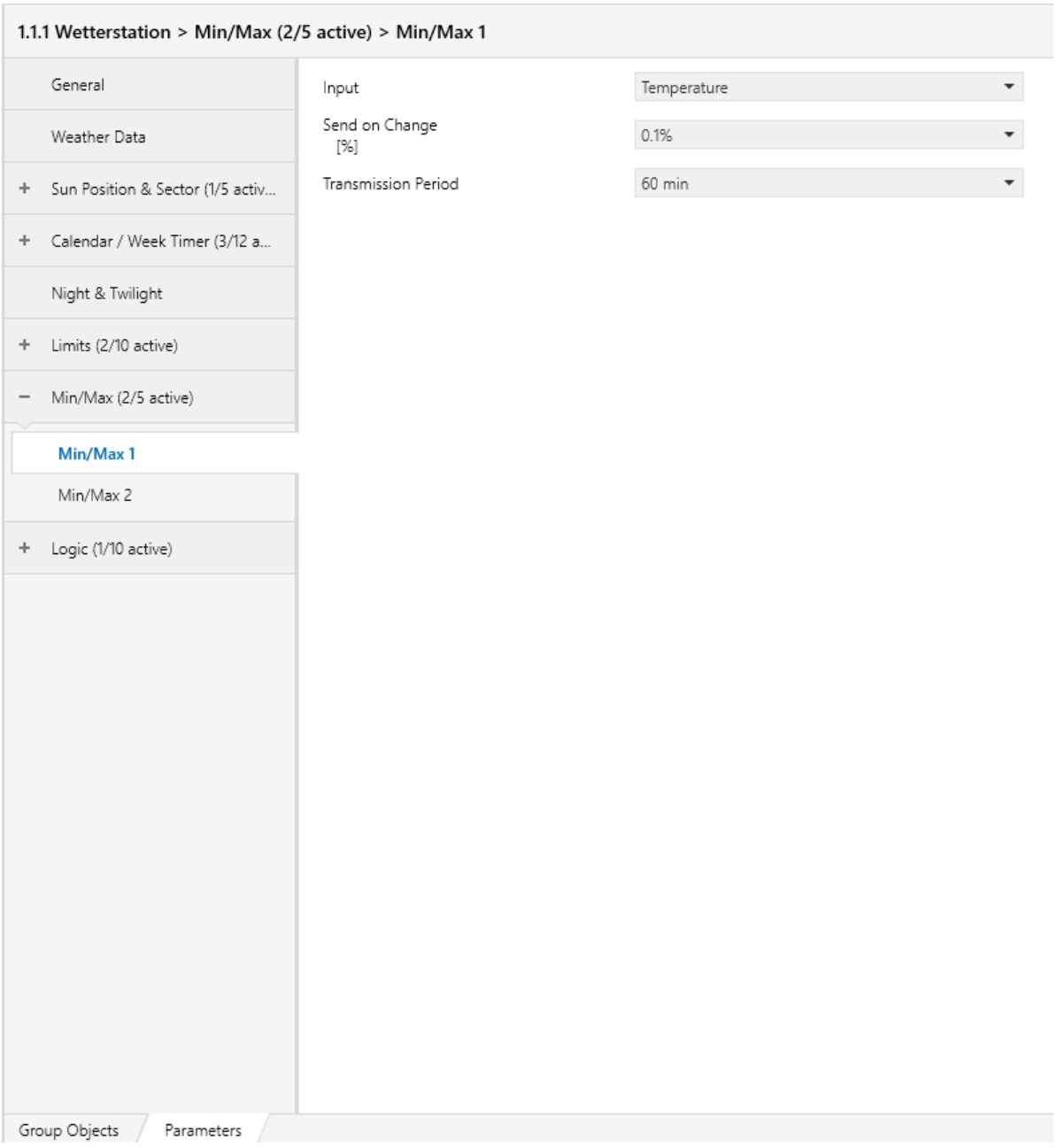
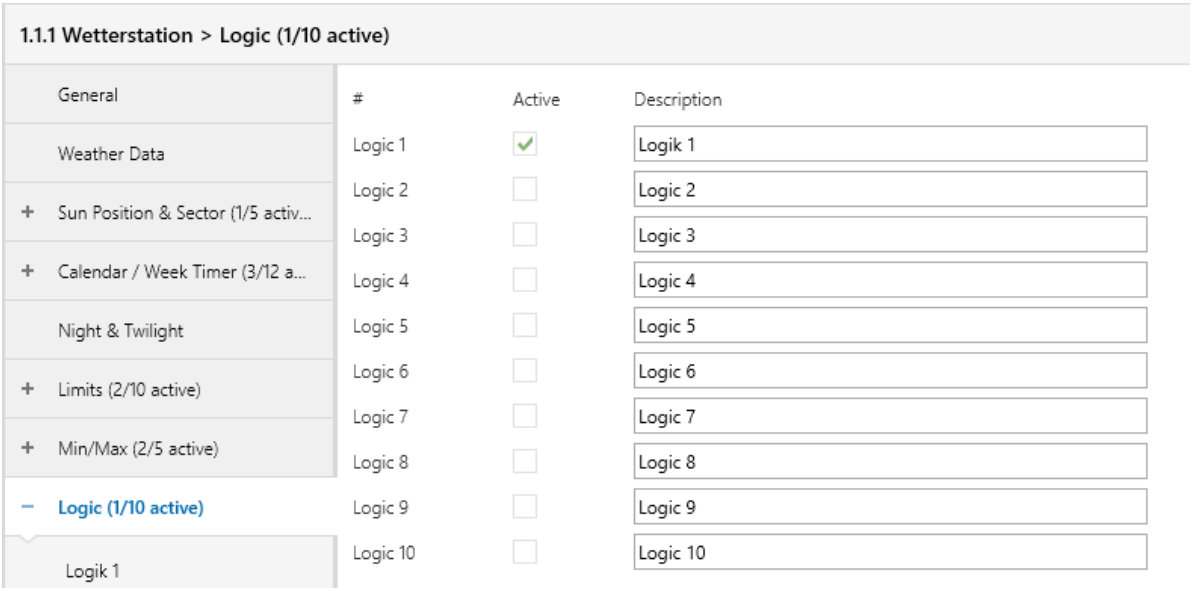
Minimum and Maximum

> Up to 5 blocks can be activated on the Minima/Maxima page A measured value can be selected in each block and each block can be reset separately.



- Input
  - You can choose between 32 different floating point values
- Send on change
  - The minimum/maximum value is sent if the value deviates from the last one sent by the parameterized value.
- Transmission period
  - The value is sent cyclically at the configured interval

Logic



> Up to 10 logic blocks can be activated on the higher-level Logic page. 6 values can be linked together in each block.
> The following are available as calculations:
>
> - Binary : And / Or / Exclusive Or / Not
> - Arithmetic: + / - / * / Value 0..255
> - Flow control '=' , if A == B then the value is sent.
>
> Available as input selections:
>
> - 10 logic objects
> - 6 solar sectors
> - 12 timers
> - Day/Twilight/Night
> - 10 limit calculations
> - GPS sync and GPS LED

Overview of parameters:

- Activation of the individual logic blocks
- Description for documentation purposes

Logic Block parameter:

- Transmission period
  - The calculated value is sent to the bus every x minutes/hours
- 6 * Logic inputs
  - Selection between logic inputs/outputs, sector, timer, limit states as well as night/day/twilight
- Calculations
  - Line for linking the inputs
- Update
  - Defines whether the calculation is carried out again when an input value is updated (not changed)

> If the output is fed back to one of the inputs, an undesirable logical loop can be created here

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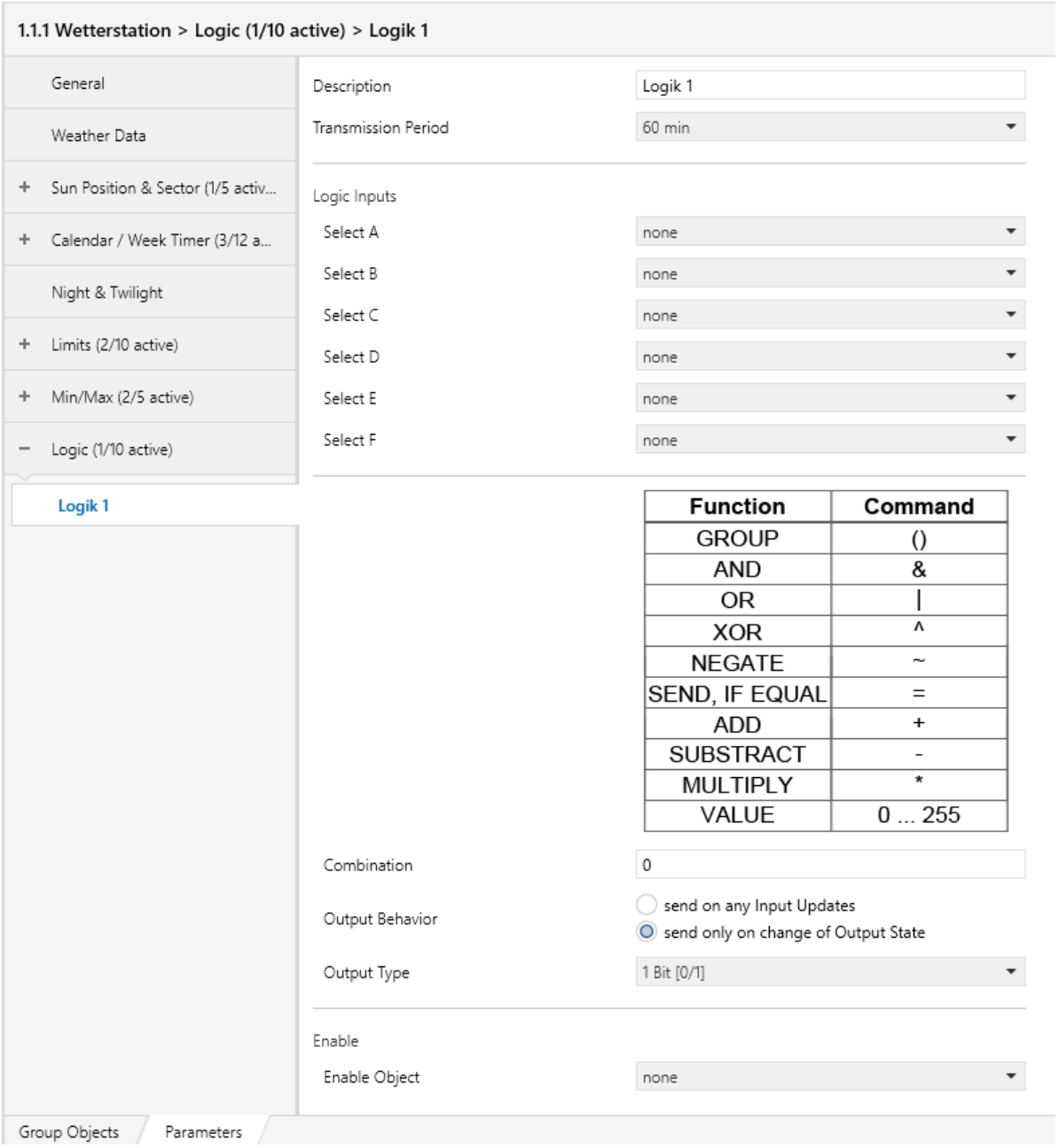

- Output type
  - The output object can be parameterized:
    - 1Bit [ON /OFF]
    - 1 Byte [-128 .. +127]
    - 1 Byte [0 .. 255]
- Activation/deactivation
  - Input
    - A logic object can be selected to activate/deactivate the logic blocks
  - Active at
    - The logic is considered active if the enable object has the value 0 or 1

2.4 KNX-Objekts

number	IO	Name	Length	data type
1	Output	Temperature	2 byte	Temperature (°C)
2	Output	Relative humidity	2 byte	Humidity (%)
3	Output	Absolute humidity	2 byte	Absolute humidity (g/m³)
4	Output	Dew point	2 byte	Temperature (°C)
5	Output	Air pressure	2 byte	Pressure (Pa)
6	Output	Wind speed	2 byte	Speed (m/s)
7	Output	Wind speed 10min average	2 byte	Speed (m/s)
8	Output	Wind speed 10min-Max	2 byte	Speed (m/s)
9	Output	Wind speed 10min-min	2 byte	Speed (m/s)
10	Output	Wind speed 2min average	2 byte	Speed (m/s)
11	Output	Wind speed 2min-Max	2 byte	Speed (m/s)
12	Output	Wind speed 2min-min	2 byte	Speed (m/s)
13	Output	gust of wind	2 byte	Speed (m/s)
14	Output	Wind speed (Beaufort)	1 byte	Wind force (0..12)
15	Output	Wind direction	4 byte	Angle (degrees)
16	Output	Wind direction 10min average	4 byte	Angle (degrees)
17	Output	Wind direction 10min-Max	4 byte	Angle (degrees)
18	Output	Wind direction 10min-min	4 byte	Angle (degrees)
19	Output	Wind direction 2min average	4 byte	Angle (degrees)
20	Output	Wind direction 2min-Max	4 byte	Angle (degrees)
21	Output	Wind direction 2min-min	4 byte	Angle (degrees)
22	Output	Rain intensity	2 byte	Flow rate (l/h)
23	Output	Amount of rain	2 byte	Amount of rain (l/m²)
24	Input	Rain amount reset	1 bit	Reset
25	Output	Snow depth	2 byte	Length (mm)
26	Input	Amount of snow reset	1 bit	Reset
27	Output	Rain active	1 bit	Boolean
28	Output	Snow active	1 bit	Boolean
29	Output	Hail active	1 bit	Boolean
30	Output	Precipitation active	1 bit	Boolean

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number	IO	Name	Length	data type
31	Output	Particulate matter PM1.0	2 byte	Density (µg/m³)
32	Output	Particulate matter PM2.5	2 byte	Density (µg/m³)
33	Output	Particulate matter PM10	2 byte	Density (µg/m³)
34	Output	Sunlight	2 byte	Power density (W/m²)
35	Output	Solar radiation accumulated	4 byte	Energy (J)
36	Output	UV radiation	2 byte	Power density (W/m²)
37	Output	Brightness	2 byte	Lux (Lux)
38	I/O	GPS LED	1 bit	Switch
39	Output	GMT time	3 byte	Time of day
40	Output	GMT date	3 byte	Date
41	Output	Local time	3 byte	Time of day
42	Output	Local date	3 byte	Date
43	Output	Local Date & Time	8 byte	Date/Time
44	Output	GPS synchronization	1 bit	Boolean
45	Output	Longitude	4 byte	Angle (degrees)
46	Output	Latitude	4 byte	Angle (degrees)
47	Output	Azimuth	4 byte	Angle (degrees)
48	Output	Elevation	4 byte	Angle (degrees)
49	Output	Sector 1	1 bit	Boolean
..53	Output	Sectors 2..5	1 bit	Boolean
54	Output	Timer 1	1 bit	Switch
55	Input	Activation time 1	3 byte	Time of day
56	Input	Active days 1	1 byte	8-bit
..89	---	Timer 2 .. Timer 12	---	---
90	Output	night	1 bit	Boolean
91	Output	day	1 bit	Boolean
92	Output	Maximum value 1	2 byte	Temperature (°C)
93	Output	Minimum value 1	2 byte	Temperature (°C)
94	Input	Min/Max 1 reset	1 bit	Boolean
..106	---	MinMax 2..5	---	---
107	Output	Limit 1	1 bit	Boolean

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number	IO	Name	Length	data type
..116	Output	Limit value 2 .. 10	1 bit	Boolean
117	I/O	Logic 1	1 bit	Boolean
..126	I/O	Logic 2 .. 10	1 bit	Boolean

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3. Technical data

SK10L-GPS-THL	
Ambient temperature	Operation -20 .. +55°C Storage -20 .. +85°C
Ambient humidity	0 .. 95% RH non-condensing
Bus voltage	KNX 21 .. 32V DC
KNX current load:	10mA
Sensors:	Brightness Temperature Humidity
Measuring ranges: Brightness Temperature Humidity	 0..140kLux -40..+85°C 0% .. 99%
Accuracy: Brightness Temperature Humidity	 n.A. depending on use 0.5°C 3%
Auxiliary voltage	WITHOUT
Bus coupler	Integrated
Commissioning	ARC-WS1.knxprod
Connections	2-pin KNX terminal (red-black)
Protection class	IP65
Installation SK10L	Mounting with 2 screws surface-mounted
Housing	Plastic gray with viewing window
Dimensions SK10L	80x80x50mm

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WS1-SK10L-GPS-L	
Ambient temperature	Operation -20 .. +55°C Storage -20 .. +85°C
Ambient humidity	0 .. 95% RH non-condensing
Bus voltage	KNX 21 .. 32V DC
KNX current load:	10mA
Sensors:	Brightness
Measuring range:	0..140kLux
Accuracy:	n/a. depending on use
Auxiliary voltage (AUX):	15 .. 40V
AUX current load (max):	120mA
Supply for sensor head (max)	12V / 120mA
Input IO:	ModBus RTU
Bus coupler	Integrated
Commissioning	ARC-WS1.knxprod
Connections	2-pin KNX terminal (red-black) 2-pin AUX terminal (yellow-white)
Protection class	IP65
Installation SK10L	Mounting with 2 screws surface-mounted
Housing	Plastic gray with viewing window
Dimensions SK10L	80x80x50mm

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W83X(M3)	Value	Accuracy	Resolution
Protection class	IP65		
Supply voltage	12VDC		
Output signal	ModBUS RTU		
Wind speed	0-70m/s	±3%	0.1m/s
Wind direction	0-359°	±3°<>	1°
Air temperature	-40°C +80°C	±0.5°C	0.1°C
Humidity	0-100%	±3%	0.1%
Air pressure	300-1100hPa	±1 hPa	0.1hPa
Precipitation intensity	0-100mm/h	±8%	0.1mm
Type of precipitation	Rain Hail Snow		
Global radiation	0-2000W/m2	±5%	0.1W/m2
Cable length	4m		

W83X(M3)-PM	Value	Accuracy	Resolution
Protection class	IP65		
Supply voltage	12VDC		
Output signal	ModBUS RTU		
Wind speed	0-70m/s	±3%	0.1m/s
Wind direction	0-359°	±3°<>	1°
Air temperature	-40°C +80°C	±0.5°C	0.1°C
Humidity	0-100%	±3%	0.1%
Air pressure	300-1100hPa	±1 hPa	0.1hPa
Precipitation intensity	0-100mm/h	±8%	0.1mm
Type of precipitation	Rain Hail Snow		
Global radiation	0-2000W/m2	±5%	0.1W/m2
PM1.0/PM2.5/PM10	0-1000ug/m3	±8%	1ug/m3
Cable length	4m		

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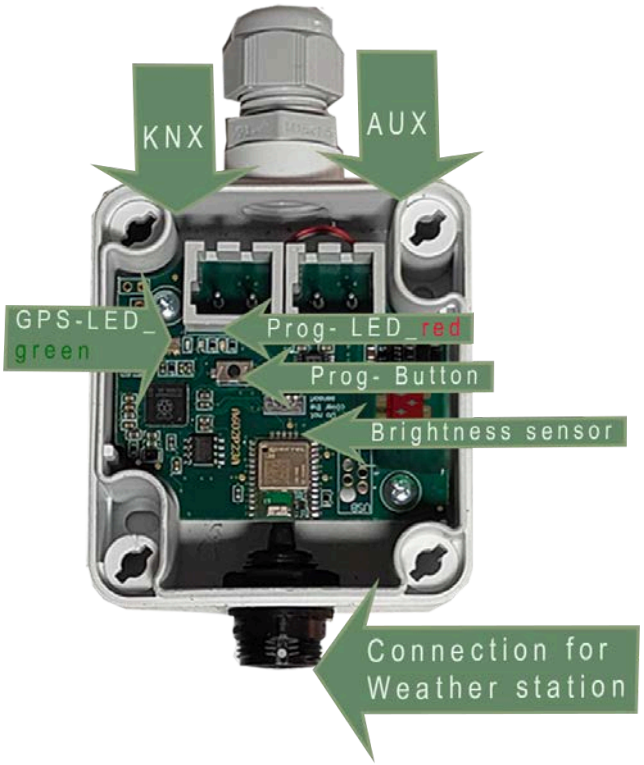
4. Commissioning

WS1-SK10L-GPS-L Controls and connections	W83X(M3)-PM
	

The KNX sensor is commissioned via the ETS (Tool Software) in conjunction with the associated application program. The delivery takes place in an unprogrammed state. All functions can be parameterized and programmed via the ETS. Please note the documentation associated with the ETS.

Mounting WS1-SK10L-GPS and SK10L-GPS-THL

The stand-alone device SK10L-GPS-THL and the KNX coupling module unit WS1-SK10L-GPS-L are intended for outdoor installation. They meet protection class IP65. The integrated GPS receiver requires an at least partially clear view of the open sky.

It is mounted on the wall with two screws. The cover of the modules is loosened by turning the fastening screws. In order to meet protection class IP65, the sealing ring supplied must be carefully inserted into the lid. Make sure that the electronics are not damaged by tools and cable ends during installation.

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Mounting the weather station

The weather station used is connected to the cable to the evaluation unit via a screwable plug connection. The assembly takes place on a pipe with an outer diameter of 44mm or one with a 38mm with a suitable reducer. The 38mm pipe with reducer and double pipe clamps are available as accessories. Alternatively, installation can be done with a stainless steel bracket (also available as an accessory). The correct orientation of the N marking to the north is a prerequisite for the correct output of the wind direction (0°->north).

Behavior when bus voltage returns

All values changed via the KNX bus are retained in the event of a bus voltage failure. The internal time is saved in the event of a power failure and continues to be incremented upon restart. After a restart, the system needs a few seconds to minutes to synchronize with suitable GNSS satellites.

Delete program and reset sensor

In order to delete the programming (configuration) on the KNX coupling module or to reset the module back to its delivery state, it must be switched off from the power supply (disconnect the KNX bus terminal). Now hold down the programming button while you reconnect the KNX bus terminal and wait until the programming LED lights up (approx. 1-2 seconds). You can now release the programming button and the module is ready for a new configuration. If you release the programming button too early, repeat the procedure.

5. Variants and accessories

Name	Description	Order number
SK10L-GPS-THL	Stand-alone temperature/humidity sensor with GPS and brightness sensor	40303030
WS1-US-GPS	Complete system, coupling module and weather station (without particle matter measurement)	40304101
WS1-US-GPS-PM	Complete system, coupling module and weather station (WITH particle matter measurement)	40304102

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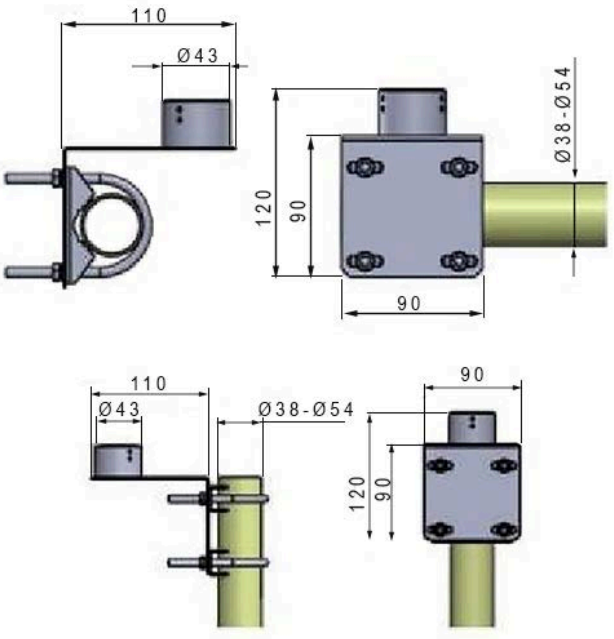
Individual components as spare parts

Name	Description	Order number
WS1-SK10L-GPS-L	Weather station coupling module with brightness sensor and GPS receiver	40304100
W83X(M3)	Weather station (without particle matter measurement)	90304101
W83X(M3)-PM	Weather station (with particle matter measurement)	90304102

Accesories

Mounting tube WS1-BEF1	Mounting bracket WS1-BEF2
	

Name	Description	Order number
WS1-BEF1	500mm mounting pipe 38mm aluminum with reducer and 2*double pipe clamps	90304121
WS1-BEF2	Mounting flange stainless steel	90304122

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5.1 Scope of delivery

Depending on the equipment, the scope of delivery includes

	WS1-US-GPS	WS1-US-GPS-PM	SK10L-GPS-THL
W83X(M3)	1x		
W83X(M3)-PM		1x	
WS1-SK10L-GPS-L	1x	1x	
SK10L-GPS-THL			1x
Connection cable	4m	4m	
KNX-Clamp	1x	1x	1x
AUX-Clamp	1x	1x	

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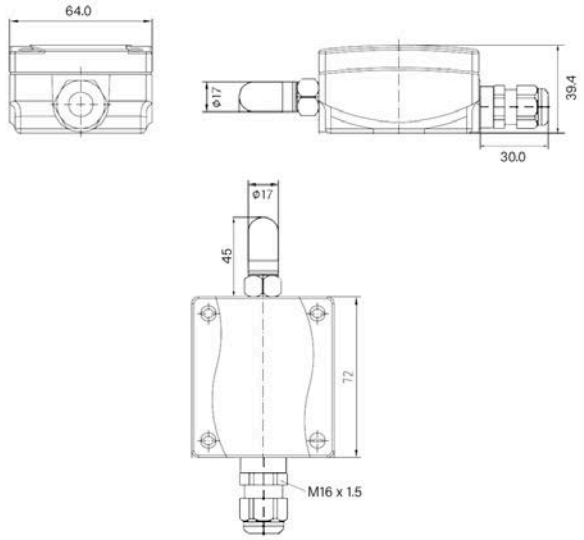
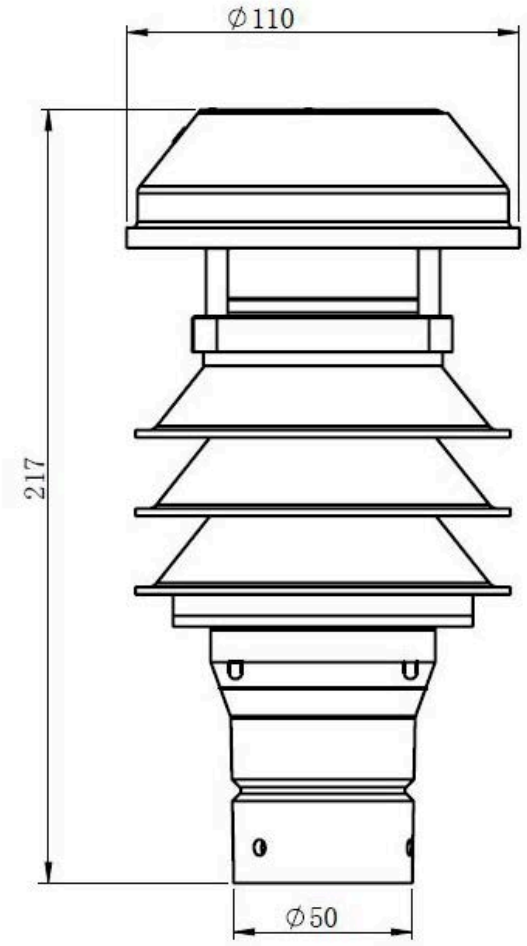
5.2 Dimensions

SK10L	W83X(M3)(-PM)
	

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6. Imprint

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Danger! Installation and assembly of electrical devices may only be carried out by a qualified electrician. Compliance with the relevant safety regulations of the VDE, TÜV and the relevant authorities Energy supply companies must be ensured by the buyer/operator of the system. For defects and damage caused by improper use of the devices or by non-observance of the instructions Operating instructions are not provided, no warranty is given.

Warranty

We provide guarantees within the framework of the legal provisions. In the event of a malfunction, please contact us and send the device with a description of the error our company address listed below.

Manufacturer

arcus-eds electronic design services KNX

Arcus-EDS Gmbh
Rigaer Str. 88
10247 Berlin

Disposal

The crossed-out wheelie bin symbol on the device or packaging means that the product must not be disposed of with other general waste at the end of its useful life.

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