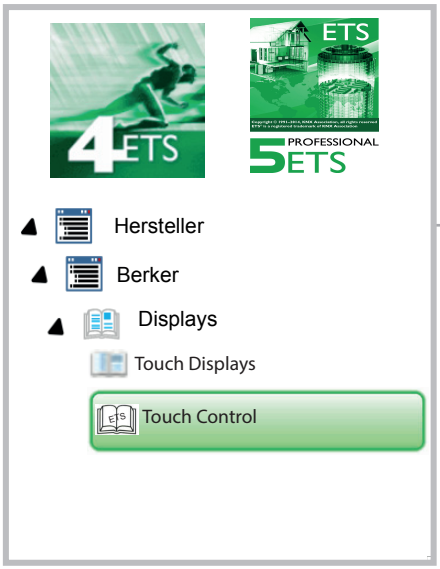
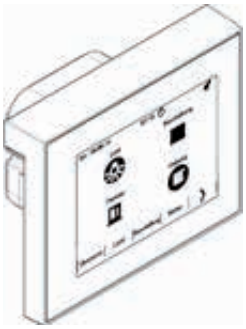


Application description

KNX Touch Control

	Order number	Product designation	Application programme	TP product
	7574 01 01	KNX Touch Control	S7574 0101	

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1. Description

1.1 Description

The "KNX Touch Control" offers various possible uses. The touch-sensitive glass surface allows it to be used as a normal switch. The high-resolution display is suitable for displaying texts, images and graphics. Besides current measured values and messages from the KNX bus system, photos can also be displayed, for example. At the same time, the device can be configured as an operating panel for automatic shading, ventilation and air-conditioning.

Functions:

- Touch-sensitive surface 3.5 inches
- 10 display pages are configured with various areas for operation or display e.g. switch, push-button, up/down rocker, rotary control, value display.
- Icons for display can be replaced (icon library in the device or self-generated graphics from micro SD card)
- Integrated proximity sensor. Enables switching when approaching and rapid activation of the display from the standby-mode
- Integrated brightness sensor for automatic adjustment of the display lighting
- Integrated scene control (16 scenes), timer, alarm clock
- 5 Automatic channels, integrated automatic control for ventilation (windows, ventilation units), for shading (blind, roller shutter, awning), for indoor climate control (heating, cooling) and for light
- 4 AND as well as 4 x OR logic gates with 4 inputs each. 16 logic inputs (in the form of communication objects) are available as inputs for the logic gates. The output of each gate can be configured optionally as 1-bit or 2 x 8-bit
- 4 inputs for binary contact or temperature sensor
- Micro SD card slot e.g. as memory for image data
- USB interface (only used for service purposes)

ⓘ The configuration takes place with the KNX software ETS from version 4 and higher.

ⓘ The current product file, datasheet, operating instructions and manual can always be found on our homepage at www.berker.de .

1.2 Scope of delivery

- Display unit
- Breakout cable for analogue/digital inputs
- Operating and assembly instructions
- 4 Sticker for documentation of the physical address data

You will also need (not included in scope of delivery):

- Design frame Art. no. 1319 xx xx

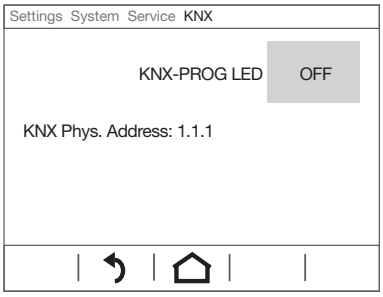
Optional accessories (not included in scope of delivery)

- Temperature sensor NTC (Art. no. EK090)
- Micro SD card for image data (commercially available)

1.3 Addressing the device

The programming mode for physical addressing can be carried out via the programming button at the back of the device or via the display. For this purpose, you need to make the following settings on the display:

Settings → System → Service → KNX



KNX programming LED **ON**:
Programming mode active.

KNX programming LED **OFF**:
Programming mode off.

The current address is displayed.
Address in default state: 15.15.250

Figure 1: Programming physical address

1.4 Maintenance and care

You can best remove fingerprints on the glass surface using a damp cloth or microfibre cloth.

Do not use any abrasive / cleaning agents or aggressive care products for cleaning.

The "cleaning mode" is available for cleaning the screen, which is activated via the display.

Settings → Cleaning mode

The operation of the touch-sensitive control surface will then be blocked for a duration preset in the ETS and the display can be cleaned.

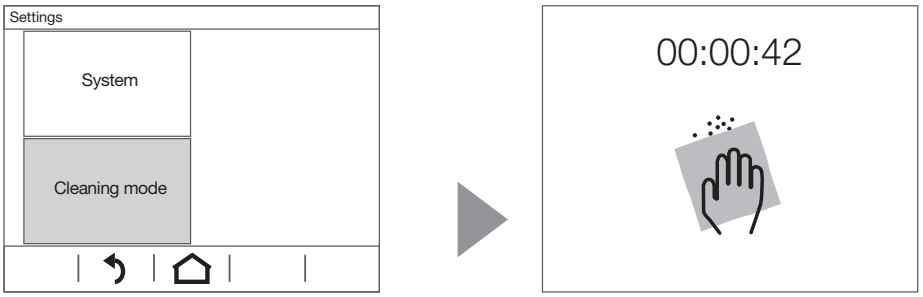


Figure 2: Cleaning mode

1.5 Loading individual images

1.5.1 Images for screen saver

The configuration of the screen saver is described in the chapters

Screen (ETS) and screen saver (Display)

Save the images in a corresponding folder in the size specified at the top level of the SD card.

Image type	Resolution	File format	Folder name
Images for slideshow	320 × 240 pixels	.jpg (RGB mode)	slideshow
Images for single-image display	320 × 240 pixels	.jpg (RGB mode)	diafix

Table 1: Image formats for SD card

Images for the single-image display ("diafix" folder) must have a 4-digit numerical sequence as a filename in order to be called up in the ETS and menu (0001...9999).

Pictures to be displayed as a screen saver must be saved on a micro SD card. After inserting the SD card, please perform a reset so that it will be detected by the system.

Settings → System → Reset

This will not be necessary if the card was inserted before starting up the system.

The card must remain in the device.

1.5.2 Pictures for picture display

Pictures can be called up as a fixed display (e.g. welcome screen). Unlike the screen saver, the touch function is blocked while a still picture is displayed.

Save the images in a corresponding folder in the size specified at the top level of the SD card.

Image type	Resolution	File format	Folder name
Still pictures	320 × 240 pixels	.jpg (RGB mode)	still pictures

Table 2: Saving fixed images to the SD card

Fixed images must have a 4-digit numerical sequence as a filename in order to be called up in the ETS and menu (0001...9999).

Pictures to be called up via the "fixed image" communication object must be saved on a micro SD card. After inserting the SD card, please perform a reset in the menu so that it will be detected by the system.

Settings → System → Reset

This is not necessary if the card was inserted before starting up the system.

The card must remain in the device.

1.5.3 Replacing symbols and graphics

A large number of symbols for the display pages of the KNX Touch Control in the areas of safety, multimedia, sensors, operation, house, lighting as well as air-conditioning and drive control are available at the factory, which are stored in the device. Your own symbolic graphics and rotary control graphics can also be used, however.

Save the images in a corresponding folder in the size specified at the top level of the SD card.

Image type	Resolution	File format	Folder name
Symbol/small icon	48 × 48 Pixel	.png	icons
Symbol for rotary control	158 × 158 Pixel	.png	icons

Table 3: File formats of symbols / icons

Symbols must have a 4-digit numerical sequence as a filename in order to be called up in the ETS and menu (0001...9999).

Pictures to be displayed as symbols must be saved on a micro SD card. After inserting the SD card, please perform a reset in the menu so that it will be detected by the system

Settings → System → Reset

This is not necessary if the card was inserted before starting up the system.

The card must remain in the device.

1.6 Connection and control options

Various environmental parameters/measured values have to be provided via the bus for the automatic control of shading, ventilation etc. In chapter 13.2 General automatic settings the necessary parameters are described for the individual automatic functions.

A temperature sensor for detecting the room temperature can also be connected directly to one of the 4 analog/digital inputs of the device. Furthermore, for example, conventional push-buttons, switches and window contacts can be connected to these inputs.

Date and time should be received periodically at least once per day via the bus (object no. 8+9). Date and time are required with the object no. 10. The internal clock of the device has a maximum Fehlgang of ± 3 seconds per day. The alarm clock of the KNX Touch Control will only function after the time has been received from the bus.

1.7 Automatic functions at a glance

The device has five automatic channels that can be assigned the functions lighting, awning, blind, roller shutter, window, ventilation unit and temperature control (heating/cooling).

Basic tips:

- For the time-dependent retraction of blinds/roller shutters/awnings the entire running time is executed (no position is approached)
- The approaching of positions is only adjustable for shading and ventilation

1.7.1 Lightings

The following environmental parameters/measured values are required for the control of lighting.

- Brightness
- time

In addition to the settings lighting can be controlled via automatic functions

- Switching or dimming. The brightness value for ON/OFF is adjustable when dimming
- Switching on at night and during certain periods. Both can also be linked (AND/OR). The twilight value is adjustable
- Automatic reset (time point/time periods adjustable)

1.7.2 Blinds, awnings, roller shutters

The following environmental parameters/measured values are required for the control of blinds, awnings or shutters.

- Brightness
- Position of the sun
- Outdoor Temperature
- Indoor Temperature
- Wind speed
- Precipitation message
- time

In addition to the settings blinds, roller shutters or awnings can be controlled via automatic functions

- Shading according to brightness and position of the sun (sun elevation/direction)
- or always (visual protection, i.e. only change the slat position and movement position)
- or never (only time-dependent retraction, rain, wind and frost protection)
- Position and slat position are adjustable in two stages. Slat tracking according to sun elevation is possible
- Movement delays for extending/retracting adjustable
- Night-time closure

- Time-dependent retraction
- Room temperature lock-up: Leave open until set room temperature is reached
- Outside temperature lock-up: Shading first above a set outside temperature
- Heat protection (approach alternative position)
- Frost protection (retract if precipitation is below a set outside temperature)
- Wind protection (retract if a set wind speed is exceeded)
- Rain protection (retract if precipitation)
- Automatic reset (time point/time periods adjustable)

1.7.3 Window

The following environmental parameters/measured values are required for the control of windows.

- Outdoor Temperature
- Indoor Temperature
- Indoor humidity
- CO_2 content of the indoor air
- Wind speed
- Precipitation message
- time

In addition to the settings windows can be controlled via automatic functions

- Opening stages with up to 10 steps
- Movement position/Opening restriction
- Ventilate according to room temperature, humidity and CO_2-content of the indoor air
- Outside temperature lock-up: Lock-up below a set outside temperature
- Frost protection: Close if precipitation is below a set outside temperature
- Close if supply air temperature is higher than room temperature
- Rain protection: If precipitation, close or close up to one gap
- Wind protection: Close if a set wind speed is exceeded
- Timed ventilation, timed closing
- Night-time re-cooling (time period, room temperature and window opening adjustable)
- Automatic reset (time point/time periods adjustable)

1.7.4 Extractor fan

The following environmental parameters/measured values are required for the control of fans.

- Outdoor Temperature
- Indoor Temperature
- Indoor humidity
- CO_2 content of the indoor air
- time

In addition to the settings ventilation can be controlled via automatic functions

- Speed range adjustable
- Ventilate according to room temperature, humidity and CO_2-content of the indoor air
- Outside temperature lock-up: Lock-up below a set outside temperature
- Do not ventilate if supply air temperature is higher than room temperature
- Timed ventilation
- Night-time re-cooling (time period, room temperature and fan speed adjustable)
- Automatic reset (time point/time periods adjustable)

1.7.5 Heating and Cooling

The following environmental parameters/measured values are required for the control of heaters and cooling devices.

– Indoor temperature

In addition to the settings heating and cooling can be controlled via automatic functions

– Heating and cooling in two stages, 1st stage PI control, 2nd stage PI control or 2-point control
– Values for the comfort, standby, night reduction and frost/heat protection mode can be adjusted separately or the comfort value is used as a basis
– Change-over between heating and cooling by means of dead zone or changeover object
– Day extension (night reduction can be deactivated briefly)
– Frost protection (setpoint and activation delay adjustable)
– Heat protection (setpoint and activation delay adjustable)

1.8 List of communication objects

DPT: Data Point Type

Abbreviations of Flags:

- C Communication
- R Read
- W Write
- T Transmit
- U Update

1.8.1 System

No.	Name	Function	DPT	Length in bytes	Flags
1	Software version	Output	217,001	2	C R T
2	Unit malfunction	Output	1,001	1	C R T
3	System language selection	Input	234,001	2	C W
4	Select language of the editable texts	Input	234,001	2	C W
5	Access code reset	Input	1,017	1	C W
6	Reset to download version	Input	1,017	1	C W
7	Reserve				
8	Date	Input	11,001	3	C W T
9	Time	Input	10,001	3	C W T
10	Request date and time	Input / Output	1,017	1	C R W T
11	Reserve				
12	Room brightness status	Output	1,001	1	C R T
13	Reserve				
14	Display page selection	Input	5,010	1	C W
15	Touch screen lock-up	Input	1,001	1	C W
16	Touch screen lock-up for cleaning	Input	1,001	1	C W
17	Screen saver	Input	1,001	1	C W
18	Image selection from SD Card	Input	5,001	1	C W
19	Reserve				
20	Reserve				
21	Display lighting brightness (%)	Input	5,001	1	C W
22-33	Reserve				
34	Button sound activation	Input / Output	1,001	1	C R W T
35	Reserve				
36	Reserve				
37	Reserve				
38	Approach proximity sensor	Output	5.*	1	C R T
39	Reserve				
40	Retreat from proximity sensor	Output			
41-55	Reserve		5.*	1	C R T
56	Alarm 1	Input			
57	Alarm 1 Acknowledge	Input / Output	1,001	1	C W
58	Alarm 2	Input	1,001	1	C W T

No.	Name	Function	DPT	Length in bytes	Flags
59	Alarm 2 Acknowledge	Input / Output	1,001	1	C W
60	Alarm 3	Input	1,001	1	C W
61	Alarm 3 Acknowledge	Input / Output	1,001	1	C W T
62	Alarm 4	Input	1,001	1	C W
63	Alarm 4 Acknowledge	Input / Output	1,001	1	C W T
64	Alarm 5	Input	1,001	1	C W
65	Alarm 5 Acknowledge	Input / Output	1,001	1	C W T
66	Alarm 6	Input	1,001	1	C W
67	Alarm 6 Acknowledge	Input / Output	1,001	1	C W T
68-79	Reserve				
80	Alarm clock activation	Input / Output	1,001	1	C R W T
81	Alarm clock alarm time	Input / Output	10,001	3	C R W T
82	Alarm clock alarm status	Output	1,001	1	C R T
83	Alarm clock acknowledgement	Input / Output	1,001	1	C W T
84	Alarm clock alarm repeat	Input / Output	1,001	1	C R W T
85-100	Reserve				

Table 4: "System" communication objects

1.8.2 Pages

No.	Name	Function	DPT	Length in bytes	Flags
101	Page 1 Surface 1A	Input / Output	16,000	14	C R W T
102	Page 1 Surface 1B	Output	1,010	1	C R T
103	Page 1 Surface 1C	Input	5,001	1	C W
104	Page 1 Surface 1D	Input	5,001	1	C W
105	Page 1 Surface 2A	Input / Output	16,000	14	C R W T
106	Page 1 Surface 2B	Output	1,010	1	C R T
107	Page 1 Surface 2C	Input	5,001	1	C W
108	Page 1 Surface 2D	Input	5,001	1	C W
109	Page 1 Surface 3A	Input / Output	16,000	14	C R W T
110	Page 1 Surface 3B	Output	1,010	1	C R T
111	Page 1 Surface 3C	Input	5,001	1	C W
112	Page 1 Surface 3D	Input	5,001	1	C W
113	Page 1 Surface 4A	Input / Output	16,000	14	C R W T
114	Page 1 Surface 4B	Output	1,010	1	C R T
115	Page 1 Surface 4C	Input	5,001	1	C W
116	Page 1 Surface 4D	Input	5,001	1	C W
117	Page 1 Surface 5A	Input / Output	16,000	14	C R W T
118	Page 1 Surface 5B	Output	1,010	1	C R T
119	Page 1 Surface 5C	Input	5,001	1	C W
120	Page 1 Surface 5D	Input	5,001	1	C W
121	Page 1 Surface 6A	Input / Output	16,000	14	C R W T
122	Page 1 Surface 6B	Output	1,010	1	C R T
123	Page 1 Surface 6C	Input	5,001	1	C W
124	Page 1 Surface 6D	Input	5,001	1	C W
125-132	Reserve			4	
133	Page 1 Rocker 1 Up/Down (long-term) Page 1 Rocker 1 ON/OFF	Output	1,008	1	C R W T
134	Page 1 Rocker 1 Step/Stopp (short press) Page 1 Rocker 1 Dimming	Output	1,010	1	C R T
135	Page 1 Rocker 1 Position	Input	5,001	1	C R W T
136	Page 1 Rocker 1 Slat position status	Input	5,001	1	C R W T
137	Page 1 Rocker 1 Status	Input	1,001	1	C W
138	Page 1 Rocker 2 Long-term	Output	1,008	1	C R W T
139	Page 1 Rocker 2 Short-term	Output	1,010	1	C R T
140	Page 1 Rocker 2 Position	Input	5,001	1	C R W T
141	Page 1 Rocker 2 Position	Input	5,001	1	C R W T
142	Page 1 Rocker 2 Status	Input	1,001	1	C W
143	Page 1 Rocker 3 Long-term	Output	1,008	1	C R W T
144	Page 1 Rocker 3 Short-term	Output	1,010	1	C R T
145	Page 1 Rocker 3 Position	Input	5,001	1	C R W T

No.	Name	Function	DPT	Length in bytes	Flags
146	Page 1 Rocker 3 Position	Input	5,001	1	C R W T
147	Page 1 Rocker 3 Status	Input	1,001	1	C W
148	Page 1 Rotary control	Output	14.*	4	C R W T
149	Page 1 Rotary control	Output	5,001	1	C R W T
150	Page 1 Rotary control	Output	5,001	1	C R W T
151-200	Page 2				
201-250	Page 3				
251-300	Page 4				
301-350	Page 5				
351-400	Page 6				
401-450	Page 7				
501-550	Page 9				
551-600	Page 10				

Table 5: "Pages" communication objects

1.8.3 Automatic

No.	Name	Function	DPT	Length in bytes	Flags
601	Automatic inside temperature	Input	9,001	2	C W
602	Automatic inside humidity value	Input	9,007	2	C W
603	Automatic CO2 measuring value in ppm	Input	9,008	2	C W
604	Automatic wind speed	Input	9,005	2	C W
605	Automatic rain	Input	1,002	1	C W
606	Automatic outside temperature	Input	9,001	2	C W
607	Automatic brightness value	Input	9,004	2	C W
608	Automatic cooling status	Input	1,001	1	C W
609	Automatic sun position azimuth				
610	Automatic sun position elevation				

Table 6: "Automatic 1" communication objects

Objects automatic channels for shading, window, fan or light

N0. Auto 1	No. Auto 1	No. Auto 3	No. Auto 4	No. Auto 5	Name	Function	DPT	Flags
611	653	695	737	779	Auto X Reset / Status Automatic	Input	1,001	C W
612	654	696	738	780	Automatic X Lock-up	Input	1,001	C W
613	655	697	739	781	Auto X safety	Output	1,001	C R T
614	656	698	740	782	Auto X rain alarm	Output	1,001	C R T
615	657	699	741	783	Auto X wind alarm	Output	1,001	C R T
616	658	700	742	784	Auto X frost alarm	Output	1,001	C R T
617	659	701	743	785	Auto X status room temperature lock-up	Output	1,001	C R T
618	660	702	744	786	Auto X status outdoor temperature lock-up	Output	1,001	C R T
619	661	703	745	787	Auto X position	Output	5,001	C R T
620	662	704	746	788	Auto X slat position	Output	5,001	C R T
621	663	705	747	789	Auto X status position	Input	5,001	C W
622	664	706	748	790	Auto X status slat position	Input	5,001	C W

Table 7: "Automatic for shading, window, fan, light" communication objects

Objects automatic channels for temperature control

N0. Auto 1	No. Auto 1	No. Auto 3	No. Auto 4	No. Auto 5	Name	Function	DPT	Flags
623	665	707	749	791	Auto X temp. HVAC mode, priority 1	Input	1,003	C W
624	666	708	750	792	Auto X temp. HVAC mode, priority 2	Input	1,003	C W
625	667	709	751	793	Auto X temp. HVAC mode frost/heat protection	Input	1,003	C R W T
626	668	710	752	794	Auto X temp. regulator lock-up	Input	1,003	C R W T
627	669	711	753	795	Auto X temp. setpoint current	Output	9,001	C R T
628	670	712	754	796	Auto X temp. changeover object (heating = 1| cooling = 0)	Input	1,002	C W
629	671	713	755	797	Auto X temp. setpoint comfort heating	Input / Output	9,001	C R W T
630	672	714	756	798	Auto X temp. setpoint comfort heating up/ down	Input	1,002	C W
631	673	715	757	799	Auto X temp. setpoint comfort cooling	Input / Output	9,001	C R W T
632	674	716	758	800	Auto X temp. setpoint comfort cooling up/ down	Input	1,002	C W
633	675	717	759	801	Auto X Temp. base setpoint adjustment	Input	5,001	C W
634	676	718	760	802	Auto X status slat position	Input	5,001	C W
635	677	719	761	803	Auto x temp. setpoint standby heating	Input / Output	9,001	C R W T
636	678	720	762	804	Auto X temp. setpoint standby heating up/ down	Input	1,002	C W
637	679	721	763	805	Auto X temp. setpoint standby cooling	Input / Output	9,001	C R W T
638	680	722	764	806	Auto X temp. setpoint standby cooling up/ down	Input	1,002	C W
638	680	722	764	806	Auto X temp. setpoint night heating	Input / Output	9,001	C R W T
639	681	723	765	807	Auto X temp. setpoint night heating up/down	Output	5,001	C R T
640	682	724	766	808	Auto X temp. setpoint night cooling	Output	5,001	C R T
641	683	725	767	809	Auto X temp. setpoint night cooling up/down	Output	5,001	C R T
642	684	726	768	810	Auto X temp. valve position background heating	Output	5,001	C R T
643	685	727	769	811	Auto X temp. valve position supplementary heating	Output	1,002	C R T
644	686	728	770	812	Auto X temp. valve position background cooling	Output	1,002	C R T
645	687	729	771	813	Auto X temp. valve position supplementary cooling	Output	1,002	C R T

N0. Auto 1	No. Auto 1	No. Auto 3	No. Auto 4	No. Auto 5	Name	Function	DPT	Flags
647	689	731	773	815	Auto X temp. status supplementary heating	Input / Output	7,005	C R W T
648	690	732	774	816	Auto X temp. status background cooling	Input / Output	1,002	C R W T
649	691	733	775	817	Auto X temp. status supplementary cooling	Output	1,002	C R W T
650	692	734	776	818	Auto X temp. comfort extension status	ON/OFF	1,002	C R W T
646	688	730	772	814	Auto X temp. status background heating	Output	1,002	C R T
647	689	731	773	815	Auto X temp. status supplementary heating	Input / Output	7,005	C R W T
648	690	732	774	816	Auto X temp. status background cooling	Input / Output	1,002	C R W T
649	691	733	775	817	Auto X temp. status supplementary cooling	Output	1,002	C R W T
650	692	734	776	818	Auto X temp. comfort extension status	ON/OFF	1,002	C R W T
651	693	735	777	819	Auto X temp. comfort extension time	Input	2 byte	
652	694	736	778	820	Auto X temp. valve position for 4/6-way valve	Output	5,001	C R T

Table 8: "Automatic temperature control" communication objects

Others

No.	Name	Function	DPT	Length in bytes	Flags
821-840	Reserve				
841	Timer function 1 output	Output	14.*	4	C R T
842	Timer function 2 output	Output	14.*	4	C R T
843	Timer function 3 output	Output	14.*	4	C R T
844	Timer function 4 output	Output	14.*	4	C R T
845	Timer function 5 output	Output	14.*	4	C R T
846	Timer function 6 output	Output	14.*	4	C R T
847	Timer function 7 output	Output	14.*	4	C R T
848	Timer function 8 output	Output	14.*	4	C R T
849	Timer function 9 output	Output	14.*	4	C R T
850	Timer function 10 output	Output	14.*	4	C R T
851	Timer function 11 output	Output	14.*	4	C R T
852	Timer function 12 output	Output	14.*	4	C R T
853	Timer function 13 output	Output	14.*	4	C R T
854	Timer function 14 output	Output	14.*	4	C R T
855	Timer function 15 output	Output	14.*	4	C R T
856	Timer function 16 output	Output	14.*	4	C R T
857-860	Reserve				
861	Scene	Input	18,001	1	C W
862	Scene object 1	Input / Output	9.*	4	C R T
863	Scene object 2	Input / Output	9.*	4	C R T
864	Scene object 3	Input / Output	9.*	4	C R T
865	Scene object 4	Input / Output	9.*	4	C R T
866	Scene object 5	Input / Output	9.*	4	C R T
867	Scene object 6	Input / Output	9.*	4	C R T
868	Scene object 7	Input / Output	9.*	4	C R T
869	Scene object 8	Input / Output	9.*	4	C R T
870	Scene object 9	Input / Output	9.*	4	C R T
871	Scene object 10	Input / Output	9.*	4	C R T
872	Scene object 11	Input / Output	9.*	4	C R T
873	Scene object 12	Input / Output	9.*	4	C R T
874	Scene object 13	Input / Output	9.*	4	C R T
875	Scene object 14	Input / Output	9.*	4	C R T

No.	Name	Function	DPT	Length in bytes	Flags
876	Scene object 15	Input / Output	9.*	4	C R T
877	Scene object 16	Input / Output	9.*	4	C R T
878-880	Reserve				
881	Push-button 1 long key-press	Output	1,008	1	C R T
882	Push-button 1 short press	Output	1,010	1	C R T
883	Button 1 ON/OFF	Input / Output	1,001	1	C R W T
884	Push-button 1 Dimming relative	Input / Output	3,007	1	C R W T
885	Button 1 Value transmitter 8-bit	Output	5*	1	C R T
886	Button 1 Value transmitter 16-bit	Output	9*	2	C R T
887	Button 1 Scene	Output	18,001	1	C R T
888	Push-button 2 long key-press	Output	1,008	1	C R T
889	Push-button 2 short press	Output	1,010	1	C R T
890	Button 2 ON/OFF	Input / Output	1,001	1	C R W T
891	Push-button 2 Dimming relative	Input / Output	3,007	1	C R W T
892	Button 2 Value transmitter 8-bit	Output	5*	1	C R T
893	Button 2 Value transmitter 16-bit	Output	9*	2	C R T
894	Button 2 Scene	Output	18,001	1	C R T
895	Push-button 3 long key-press	Output	1,008	1	C R T
896	Push-button 3 short press	Output	1,010	1	C R T
897	Button 3 ON/OFF	Input / Output	1,001	1	C R W T
898	Push-button 3 Dimming relative	Input / Output	3,007	1	C R W T
899	Button 3 Value transmitter 8-bit	Output	5*	1	C R T
900	Button 3 Value transmitter 16-bit	Output	9*	2	C R T
901	Button 3 Scene	Output	18,001	1	C R T
902	Push-button 4 long key-press	Output	1,008	1	C R T
903	Push-button 4 short press	Output	1,010	1	C R T
904	Button 4 ON/OFF	Input / Output	1,001	1	C R W T
905	Button 4 Dimming	Input / Output	3,007	1	C R W T
906	Button 4 Value transmitter 8-bit	Output	5*	1	C R T
907	Button 4 Value transmitter 16-bit	Output	9*	2	C R T
908	Button 4 Scene	Output	18,001	1	C R T
909-920	Reserve				

No.	Name	Function	DPT	Length in bytes	Flags
921	Temperature sensor 1 measuring value	Output	9,001	2	C R T
922	Temperature sensor 1 external measuring value	Input	9,001	2	C W
923	Temperature sensor 1 total value	Output	9,001	2	C R T
924	Temperature sensor 1 fault status	Output	1,001	1	C R T
925	Temperature sensor 2 measuring value	Output	9,001	2	C R T
926	Temperature sensor 2 external measuring value	Input	9,001	2	C W
927	Temperature sensor 2 total value	Output	9,001	2	C R T
928	Temperature sensor 2 fault status	Output	1,001	1	C R T
929	Temperature sensor 3 measuring value	Output	9,001	2	C R T
930	Temperature sensor 3 external measuring value	Input	9,001	2	C W
931	Temperature sensor 3 total value	Output	9,001	2	C R T
932	Temperature sensor 3 fault status	Output	1,001	1	C R T
933	Temperature sensor 4 measuring value	Output	9,001	2	C R T
934	Temperature sensor 4 external measuring value	Input	9,001	2	C W
935	Temperature sensor 4 total value	Output	9,001	2	C R T
936	Temperature sensor 4 fault status	Output	1,001	1	C R T
937-940	Reserve				
941	Temp. threshold value 1 measurement value	Input	9,001	2	C W
942	Temp. threshold value 1 temperature limit	Input / Output	9,001	2	C R W T
943	Temp. threshold value 1 temperature limit up/down	Input	1,001	1	C W
944	Temp. threshold value 1 delay from 0 to 1	Input	7,005	2	C W
945	Temp. threshold value 1 delay from 1 to 0	Input	7,005	2	C W
946	Temp. threshold value 1 switching	Output	1,001	1	C R T
947	Temp. threshold value 1 lock-up	Input	1,002	1	C W
948	Temp. threshold value 2 measurement value	Input	9,001	2	C W
949	Temp. threshold value 2 temperature limit	Input / Output	9,001	2	C R W T
950	Temp. threshold value 2 temperature limit up/down	Input	1,001	1	C W
951	Temp. threshold value 2 delay from 0 to 1	Input	7,005	2	C W
952	Temp. threshold value 2 delay from 1 to 0	Input	7,005	2	C W
953	Temp. threshold value 2 switching	Output	1,001	1	C R T
954	Temp. threshold value 2 lock-up	Input	1,002	1	C W
955	Temp. threshold value 3 measurement value	Input / Output	9,001	2	C R W T
956	Temp. threshold value 3 temperature limit	Input	9,001	2	C W

No.	Name	Function	DPT	Length in bytes	Flags
957	Temp. threshold value 3 temperature limit up/down	Input	1,001	1	C W
958	Temp. threshold value 3 delay from 0 to 1	Input	7,005	2	C W
959	Temp. threshold value 3 delay from 1 to 0	Input	7,005	2	C W
960	Temp. threshold value 3 switching	Output	1,001	1	C R T
961	Temp. threshold value 3 lock-up	Input	1,002	1	C W
962	Temp. threshold value 4 measurement value	Input	9,001	2	C W
963	Temp. threshold value 4 temperature limit	Input / Output	9,001	2	C R W T
964	Temp. threshold value 4 temperature limit up/down	Input	1,001	1	C W
965	Temp. threshold value 4 delay from 0 to 1	Input	7,005	2	C W
966	Temp. threshold value 4 delay from 1 to 0	Input	7,005	2	C W
967	Temp. threshold value 4 switching	Output	1,001	1	C R T
968	Temp. threshold value 4 lock-up	Input	1,002	1	C W
969-970	Reserve				
971	Logic input 1	Input	1,002	1	C W
972	Logic input 2	Input	1,002	1	C W
973	Logic input 3	Input	1,002	1	C W
974	Logic input 4	Input	1,002	1	C W
975	Logic input 5	Input	1,002	1	C W
976	Logic input 6	Input	1,002	1	C W
977	Logic input 7	Input	1,002	1	C W
978	Logic input 8	Input	1,002	1	C W
979	Logic input 9	Input	1,002	1	C W
980	Logic input 10	Input	1,002	1	C W
981	Logic input 11	Input	1,002	1	C W
982	Logic input 12	Input	1,002	1	C W
983	Logic input 13	Input	1,002	1	C W
984	Logic input 14	Input	1,002	1	C W
985	Logic input 15	Input	1,002	1	C W
986	Logic input 16	Input	1,002	1	C W
987-990	Reserve				

No.	Name	Function	DPT	Length in bytes	Flags
991	AND Logic 1 1-bit output	Output	1,002	1	C R T
992	AND Logic 1 8-bit output A	Output	5,010	1	C R T
993	AND Logic 1 8-bit output B	Output	5,010	1	C R T
994	AND Logic 1 lock-up	Input	1,001	1	C W
995	AND Logic 2 1-bit output	Output	1,002	1	C R T
996	AND Logic 2 8-bit output A	Output	5,010	1	C R T
997	AND Logic 2 8-bit output B	Output	5,010	1	C R T
998	AND Logic 2 lock-up	Input	1,001	1	C W
999	AND Logic 3 1-bit output	Output	1,002	1	C R T
1000	AND Logic 3 8-bit output A	Output	5,010	1	C R T
1001	AND Logic 3 8-bit output B	Output	5,010	1	C R T
1002	AND Logic 3 lock-up	Input	1,001	1	C W
1003	AND Logic 4 1-bit output	Output	1,002	1	C R T
1004	AND Logic 4 8-bit output A	Output	5,010	1	C R T
1005	AND Logic 4 8-bit output B	Output	5,010	1	C R T
1006	AND Logic 4 lock-up	Input	1,001	1	C W
1007	OR Logic 1 1-bit output	Output	1,002	1	C R T
1008	OR Logic 1 8-bit output A	Output	5,010	1	C R T
1009	OR Logic 1 8-bit output B	Output	5,010	1	C R T
1010	OR Logic 1 lock-up	Input	1,001	1	C W
1011	OR Logic 2 1-bit output	Output	1,002	1	C R T
1012	OR Logic 2 8-bit output A	Output	5,010	1	C R T
1013	OR Logic 2 8-bit output B	Output	5,010	1	C R T
1014	OR Logic 2 lock-up	Input	1,001	1	C W
1015	OR Logic 3 1-bit output	Output	1,002	1	C R T
1016	OR Logic 3 8-bit output A	Output	5,010	1	C R T
1017	OR Logic 3 8-bit output B	Output	5,010	1	C R T
1018	OR Logic 3 lock-up	Input	1,001	1	C W
1019	OR Logic 4 1-bit output	Output	1,002	1	C R T
1020	OR Logic 4 8-bit output A	Output	5,010	1	C R T
1021	OR Logic 4 8-bit output B	Output	5,010	1	C R T
1022	OR Logic 4 lock-up	Input	1,001	1	C W

1.9 Basic configuration in the ETS

ℹ Before using the device, the basic configuration must be carried out by the integrator in the KNX software ETS. Afterwards, certain device settings can also be changed directly on the display.

First set the basic properties of the data transmission.

Transmission delay after initialisation	5 s ... 2 h
Maximum message rate	1 telegram per second 2 telegrams per second 5 telegrams per second 10 telegrams per second 20 telegrams per second

Table 9: "Transmission delay" Basic configuration

The integrated brightness sensor of the KNX Touch Control distinguishes "day" and "night". This is used, for example, for adjusting the display brightness, but the corresponding object no. 12 can also be emitted to the bus and used for the configuration of AND operations (e.g. night AND object in the detection area of the proximity sensor).

Room brightness status transmission	Not active On change On change to 1 On change to 0 on change and periodically on change to 1 and periodically on change to 0 and periodically
Periodical transmission *(only active if periodical is selected)*	5 s ...1 min … 2 h

Table 10: "Room brightness" Basic configuration

Specify if the device shall receive date and time as one common or two seperate objects. Date and time of the bus are required via the object no. 10. Once the data is available on the bus, the query cycle is reset again regardless of whether or not the query was self-generated or came from another bus subscriber. Therefore, the query cycle of several devices is normally set to the same value.

Periodical emission of the object "Date and time query" (seconds)	50...420; 120

Table 11: Requesting date / time

Device name	[Free text] Maximum of 25 characters

Table 12: Device name

In this parameter the device can be given an individual name. This can be required for localising a device in a KNX system.

1.9.1 Functional overview

Can be set/changed	via ETS	on the display
Screen (brightness, screen saver)	yes	yes
Button sound	yes	yes
Proximity sensor	yes	–
Alarm	yes	yes
Timer	yes	(only change)
Alarm clock	yes	yes
Change language	yes	yes
Input texts (editable texts, names of functions)	yes	–
Layout of display pages	yes	–
Symbols of areas, rockers, rotary controls (icons)	yes	–
Automatic settings	yes	–
Interface assignment	yes	–
Temperature limits	yes	–
Scenes	yes	–
Logic	yes	–
Access codes	yes	(only change, reset)

Table 13: Functional overview

2. System language selection

The language used for the display can be changed via an object, on the display or in the ETS menu.

ETS: System language selection

2.1 Object control

In the language setting via an object, i.e. via the bus, the object values correspond to the KNX standard for the language changeover. The object no. 3 "Language selection of the system" is both an input and output, which means that it can receive a changeover command and emit the status to the bus itself. The language object can be activated in the ETS.

Object for language *Activates the language changeover via object no. 3*	Active Not active

Table 14: Creating object for language

2.2 Adjustment on the display

The language setting on the display takes place in the menu

Settings → System Language system

and can be saved with an access code (adjustable in ETS).

Set system on the display → System language selection, in chapter 11.2

2.3 Adjustment via the ETS

Select "Overwrite following parameters during download: Active" so that changes take effect. The previous settings will then be overwritten – even changes made on the display! If the parameter is set to "Not active", the setting will then not be transferred to the device, which means that any changes made on the device display are preserved.

The language menu on the display can be saved with an access code that is defined (as well as deleted) in the ETS.

Overwrite following parameter values during download	Active Not active
Access code (1 … 8 numbers from 0 to 9)	[Free text] Empty field means no code request

Table 15: Activating access code

- The access code can be readjusted on every single page created. The access code comprises a maximum of 8 numbers from 0…9.
- If no number is entered, then no lock-up of the display operation is active.. At least 1 number must be entered for the lock-up of the display operation.

Please select a language. If no available language is selected, the menus will then be displayed in German.

Language selection if language object "Active	German English French Spanish Italian Dutch ...

Table 16: Selecting a language

- Please select a language available in the display software

3. Language of the editable texts

Individually input texts can be saved in various languages. The displayed language can be changed via an object, on the display or in the ETS menu.

ETS: Language of the editable texts

3.1 Object control

If a language is set via an object, i.e. via the bus, then use the object table from the chapter "System language selection". The object no. 4 "Language selection of the editable texts" is both an input and output, which means that it can receive a changeover command and emit the status to the bus itself.

The language object can be activated in the ETS.

Object for language Activates the language changeover via object no. 4	Active Not active

Table 17: Creating object for language

The language selection on the display can be saved with an access code that is defined (or even deleted) in the ETS.

3.2 Adjustment on the display

The language setting on the display takes place in the menu

Settings System Language of editable texts

and can be saved with an access code (adjustable in ETS).

Set system on the display Language of editable texts, in chapter 11.3 Language of editable texts

3.3 Adjustment via the ETS

Select "Overwrite following parameter values during download: Active" so that changes take effect. The previous settings will then be overwritten – even changes made on the display!

The language menu on the display can also be saved with an access code that is defined (or even deleted) in the ETS.

Overwrite following parameter values during download	Active Not active
Access code (1 … 8 numbers from 0 to 9)	[Free text] *Empty field means no code request*

Table 18: Activating access code

The access code can be readjusted on every single page created. The access code comprises a maximum of 8 numbers from 0…9.

Value at initialization language selection *If language object "Active"*	Language selection 1-6
Language selection *If language object "Not active"*	Language selection 1-6

Table 19: Selecting language

Six languages can be saved. In the parameter table "Example language assignment" the chosen languages are assigned to the six places. The object values correspond to the data point types for the language changeover in the KNX bus.

Example language assignment	
Language 1	German
Language 2	English
Language 3	French
Language 4	Spanish
Language 5	Italian
Language 6	Dutch

Table 20: Object values of the languages

4. Display

Screen settings can be adjusted via objects, on the display or in the ETS menu.

ETS: Screen

Duration of the lock-up for cleaning	5 s ... 5 min ... 2 h

Table 21: Screen lock-up

The touch screen can be locked-up temporarily or permanently via the object no. 15 "Touch screen lock-up". The touch screen lock-up has priority over screen saver or standby (screen off). A screen lock-up symbol is displayed as long as the screen lock-up is active.

The "cleaning mode" can be used for cleaning the screen, which can be activated via the object no. 16 "Touch screen lock-up for cleaning" or via the display button "Settings Cleaning mode". The touch function is then not active during a set duration.

4.1 Object control

For the screen setting via objects, i.e. via the bus, objects 14-18 and 21 are available.

The screen objects can be activated in the ETS. The following parameters only appear when using the objects ("Active").

Objects for display	Active Not active
Touch screen lock-up at value	1 0
Value at initialization touch screen lock-up	1 0

Table 22: Screen objects

The display can be changed over to any preconfigured display page via the object no. 14 "Display page selection". After 5 minutes, however, the system changes back to the start page if this was set in such a way (see parameter "When not touching the touch screen for more than 5 min. display turns..." see below).

4.2 Adjustment on the display

The screen setting on the display is performed in the menu

Settings System Screen

and can be saved with an access code (adjustable in ETS).

Set system on the display → Screen, in chapter 11 Set system on the display

4.3 Adjustment via the ETS

Select "Overwrite following parameters during download: Active" so that changes take effect. The previous settings will then be overwritten – even changes made on the display!

The screen menu on the display can be saved with an access code that is defined (or even deleted) in the ETS.

Overwrite following parameter values during download	Active Not active
Access code (1 … 8 numbers from 0 to 9)	[Free text] *Empty field means no code request*

Table 23: Activating access code

The screen brightness can be set to a fixed value or can adjust itself automatically to the room brightness (the internal brightness sensor is used for this purpose) or the screen brightness can also be controlled via the object no. 21 "Display lighting brightness (%)".

The automatic shutdown darkens the display after the predefined waiting time. The shutdown can also be linked with the ambient brightness via the setting "If room dark".

Brightness	has a fixed value adapts to the ambient brightness is controlled via objec *(only adjustable when using the screen objects)*
Value in % *only with fixed value resp. start value (%)* *only with obkect control*	1...100; 100
Automatic shutdown *not with control "brightness" via object*	Active Not active If room dark
Waiting time	5 s ... 1 min .. 2 h

Table 24: Setting the screen parameters

The start page defines which page the display jumps to when the home button is pressed (and after re-start). Additionally, it is possible to set what will happen if no input is made on the display after 5 minutes.

Start page (after re-start or press of home button)	Page 1 ... Page 10
When not touching the touch screen for more than 5 minutes, display turns	not to start page

Table 25: Defining start page

An individual screen saver can be set regardless of the automatic shutdown. The screen saver is activated after a waiting time and can also be linked with the proximity sensor. The display then already switches on again when approaching.

Screen saver	Active Not active
Waiting time	5 s ... 10 s … 2 h
Proximity sensor action:	
Switch off screen saver when approaching	Active Not active
Screen saver type	Display OFF Analogue clock Digital clock Image from SD Card Slide show from SD Card
Image number *(only if "Images from SD Card" is selected)*	0 ... 100; 1

Table 26: Screen saver

The screen saver can be changed via the objects no. 17 "screen saver" and no. 18 "Image selection from SD Card" via the bus. The object no. 17 is both an input and output, which means that it can receive a command and emit the status to the bus itself.

The images for the screen saver are loaded from an external SD card. The individual images must be in a "diafix" folder and the slideshow images must be in a "slideshow" folder. Please note chapter 1.5.1 Images for screen saver.

5. Button sound

The KNX touch control display can play back a sound when a button in the display is touched. The button sound can be set via an object, on the display or in the ETS menu.

ETS: Button sound

5.1 Object control

For the setting via an object, i.e. via the bus, use object no. 34 "button sound (1 = active | 0 = inactive)". It is both an input and output, which means that it can receive a command and emit the status to the bus itself.

The button sound object can be activated in the ETS. The following parameter only appears when using the object ("active").

Object for button tone	Not active Active
Value for button sound active *only when using the object*	0 1
Value at initialization for button tone *only for object for button sound "active"*	Not active Active
Button sound *only for object for button sound "not active"*	Not active Active

Table 27: Button sound

5.2 Adjustment on the display

The setting on the display is performed in the menu

Settings → System → Button sound

and can be saved with an access code (adjustable in ETS).

Set system on the display → Button sound

5.3 Adjustment via the ETS

Select "Overwrite following parameters during download: Active" so that changes take effect. The previous settings will then be overwritten – even changes made on the display!

The button sound menu on the display can be saved with an access code that is defined (or even deleted) in the ETS.

Overwrite following parameter values during download	Not active Active
Access code (1 … 8 numbers from 0 to 9)	[Free text] *Empty field means no code request*

Table 28: Activating access code

6. Proximity sensor

The proximity sensor of the KNX Touch Control registers when a person moves into or retreats from the detection area. In this way, the object no. 38 can be transmitted to the display when approaching, and the object no. 40 can be transmitted to the display when retreating from the detection area.

The object functions for the proximity sensor can be configured only via the ETS.

Each object can be configured as a bit object and can transmit the value 1 or 0 or toggle between 0 and 1 (e.g. for switching lights). Or the object can be configured as a byte object and transmit a value between 0 and 255 or a percentage value (e.g. for dimming lighting, for approaching a shading position or for opening a scene).

Objects for proximity sensor *Activates the proximity sensor function*	Not active Active
Function when approaching *"Approach proximity sensor" object*	none Emission of value 1 Emission of value 0 Object value is toggled Transmission of value 0 … 255 Emission of value 0 … 100%
Function when leaving *"Retreat from proximity sensor" object*	none Emission of value 1 Emission of value 0 Object value is toggled Transmission of value 0 … 255 Emission of value 0 … 100%
Transmission delay (seconds) *only if something is transmitted*	0...240; 2
Value *only if emission of value 0...255 or 0...100%*	0...255; 255 or 0...100; 100

Table 29: Proximity sensor

7. Alarm

The six alarm functions of the KNX Touch Control show messages in the display. At the same time, the display can flash and an alarm sound can be emitted. The alarm message can be acknowledged using the button that appears in the display or via the bus. For this purpose you can set whether a 1 or 0 should be used to acknowledge.

The alarm functions use the object no. 56-67 (one input object and one input/output object per alarm channel for acknowledgement). They can be set on the display or in the ETS menu.

ETS: Alarm

The setting on the display is performed in the menu

Settings → System → Alarm

and can be saved with an access code (adjustable in ETS).

Set system on the display → Alarm

When changing via the ETS, select "Overwrite following parameter values during download: Active" so that changes for the access code and alarm setting take effect. The previous settings will then be overwritten – even changes made on the display!

The alarm menu on the display can be saved with an access code that is defined (or even deleted) in the ETS.

Alarm *Activates the alarm function and alarm objects*	Not active Active
Object value for\r\n alarm acknowledgement	0 1
Overwrite following parameter values during download	Not active Active
Access code *(1 … 8 numbers from 0 to 9)*	[Free text] *Empty field means no code request*
Value *only if emission of value 0...255 or 0...100%*	0...255; 255 resp. 0...100; 100

Table 30: Alarm

Alarm action for input 1...6:	
flashing backlight	Not active Active
Alarm sound	Not active Active
Alarm symbol	No symbol Symbol 1...254 *For list of symbols see "Overview symbols" and file provided separately for downloading.*Image selection
Image number *only with image selection for alarm symbol*	0...65535; 1

Table 31: Alarm parameter

In the "Alarm symbol: Image selection" an image is loaded from SD card. The image must be in a "still pictures" folder. Please note chapter "Pictures for picture display"

Alarm text *Language selection 1...6*	[Free text] *A separate text can be input for each language.*

Table 32: Alarm text

8. Weekly timer

In the weekly timer of the touch control, 16 timer functions can be defined. These timer functions are then allocated to internal automatic functions, such as the timed closing of roller shutters. The associated objects "timer function X" (no. 841 to 856) can be configured as output or input, i.e. transmit to the bus (switching time by KNX touch control, as well as for other bus subscribers) or switched from there (switching time by an external device). If several displays are used in the system, the switching times can therefore be set on a device that transmits switching time objects as output. The others apply the timer switching command (input).

The timer functions must be preset in the ETS menu "Weekly timer: Timer functions". Timer functions that are configured as output can also then be changed on the display.

ETS: Weekly timer

In the ETS first activate the timer function(s) that are to be set. Then, submenus will appear for the activated timer functions.

Timer function 1 ... 16	Active Not active

Table 33: Activating timer function

The setting on the display can then be performed in the menu

Settings → System → Timer

erfolgen. The menu can be protected by an access code (adjustable in ETS).

Set system on the display → Timer

8.1 Timer function 1 ... 16

For the activated timer function(s) of the weekly timer you now set whether the timer function should be parameterised as an input or output (see above). In the case of outputs, define the transmission behaviour.

ETS: Timer function → Timer function 1 ... 16

Timer function	as output *(Timer functions can also be adjusted in the display)* as input *(external time control)*
Timer function transmits *only if timer function as output*	Not active On change On change to 1 On change to 0 on change and periodically on change to 1 and periodically on change to 0 and periodically
Periodical transmission *only if timer function as output*	5 s ... 1 min ... 2 h

Table 34: Setting timer function parameters

Select "Overwrite following parameter values during download: Active" so that changes take effect. The previous settings will then be overwritten – even changes made on the display!

The timer menu on the display can be saved with an access code that is defined (or even deleted) in the ETS.

Overwrite following parameter values during download	Active Not active
Access code *(1 … 8 numbers from 0 to 9)*	[Free text] *Empty field means no code request*
Name Language selection 1...6	[Free text] *A separate text can be input for each language.*

Table 35: Activating access code

If the timer function "as input" is set, i.e. it is controlled by an external timer via the bus, no further parameters are available.

In the case of adjustable timer functions (timer function object is output), the time is now set:

Start	
Hour	0 ... 23
Minute	0 ... 59
End	
Hour	0 ... 23
Minute	0 ... 59
Use day of week	
Monday ... Sunday	Active Not active

Table 36: Setting switching times

9. Alarm clock

The KNX touch control display can trigger an alarm with sound and flashing display at a set time. Simultaneously, the time and a button for switching off the alarm appears in the display.

The alarm function of the KNX Touch Control can be set via an object, on the display or in the ETS menu.

ETS: Alarm clock

9.1 Object control

For the screen setting via objects, i.e. via the bus, objects 80-84 are available. They are both an input and output, which means that they can receive a status change as well as emit the status to the bus themselves. Thus, for example, the alarm clock can also be activated, switched off or set to snooze mode from another place in the building.

The object no. 81 emits or receives the "Alarm clock alarm time". Thus, the alarm clock can also be set from another display.

The object no. 82 "Alarm clock alarm status" can be configured as a bit object and can transmit the value 1 or 0 (e.g. for switching lights). Or the object can be configured as a byte object and transmit a value between 0 and 255 or a percentage value (e.g. for dimming lighting, for approaching a shading position or for opening a scene).

The "objects for alarm clock" can be activated in the ETS. The following parameters only appear when using the objects ("Active").

Object for alarm clock	Active Not active
Object value for alarm activation	0 1
Object value for\r\n alarm acknowledgement	0 1
Object value for alarm repeat	0 1
Alarm clock action	none Emission of value 1 Emission of value 0 Transmission of value 0 … 255 Transmission of value 0 … 100%
Value *only with alarm clock action value 0…255 or value 0…100%*	0 ... 255; 255 resp. 0 ... 100; 100
Use day of week	
Monday ... Sunday	Active Not active

Table 37: Alarm clock

9.2 Adjustment on the display

The setting on the display is performed in the menu

Settings → System → Alarm clock

and can be saved with an access code (adjustable in ETS).

Set system on the display → Alarm

9.3 Adjustment via the ETS

Select "Overwrite following parameters during download: Active" so that changes take effect. The previous settings will then be overwritten – even changes made on the display!

The alarm clock menu on the display can be saved with an access code that is defined (or even deleted) in the ETS.

Overwrite following parameter values during download	Active Not active
Access code *(1 … 8 numbers from 0 to 9)*	[Free text] *Empty field means no code request*

Table 38: Activating access code

Alarm time hour	0 ... 23
Alarm time minute	0 ... 59
Alarm duration	5 s ... 30 min ... 2 h *until acknowledgement*
Alarm repetition in snooze mode (minutes)	0 ... 30; 5
Alarm sound	Active Not active
Display lighting flashes on alarm	Active Not active

Table 39: Setting the wake-up/ alarm times

10. Service

If settings changed on the display are to be reset, this can be done on the display in the menu "Settings → System → Service" using the "Reset to last ETS download" button.

ETS: Set system on the display → Service

The reset to ETS download can be protected by a code. In the ETS, select "Overwrite following parameters during download: Active" to change the code.

Overwrite following parameter values during download	Active Not active
Load the latest download version	
Access code *(1 … 8 numbers from 0 to 9)*	[Free text] *Empty field means no code request*

Table 40: Activating access code

This function should be set to "inactive" after the final setting to prevent a previously loaded download version from being accidentally reset.

11. Set system on the display

Before using the device, the basic configuration must be carried out by the integrator in the KNX software ETS. Afterwards, specific device settings can also be changed directly on the display:

- System language selection
- Language of the editable texts
- Display
- Button sound
- Alarm
- Timer
- Alarm clock
- Service

You can access the system settings via the symbol on the display pages.

During the configuration of the display pages, the symbol can be set as "visible" or "invisible". If system settings are to be possible on the display, the symbol must be displayed on one page at least.

ETS: Configuration of pages

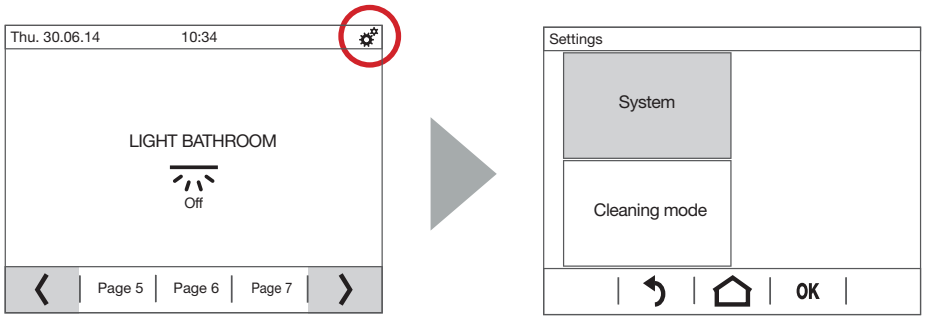


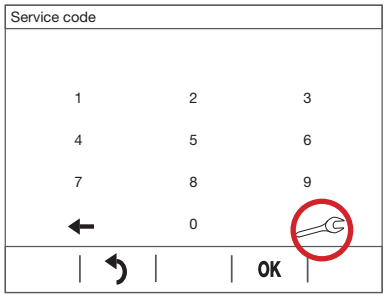
Figure 3: System settings on the display

With the return arrow you return to the previous menu page without saving.

With the home button you return to the standard page without saving.

11.1 Access codes for display menus

Access codes for the individual menus can be defined via the ETS. Before the menu is displayed, the code must then be entered via a number field.



On the number field screen page, the code can be changed or deleted via the button with the tool . To do this, the code currently valid must be entered.

Save an empty field means: No code request anymore.

Figure 4: Access code entry

Input the 1 to 8 numbers of the access code via the numeric keypad and confirm this with the OK button. If you happen to enter a wrong number, you can delete this and enter it again with the ← button.

All codes can be reset to the status of the last ETS download via the menu.

Settings → System → Service → Reset access code

Reset the access code

Via the bus you can reset all codes via the object no. 5 "Reset access code".

11.2 System language selection

The language used for the setting menus can be changed in the menu

Settings → System Language system

The menu can be protected by an access code.

Access codes for display menus

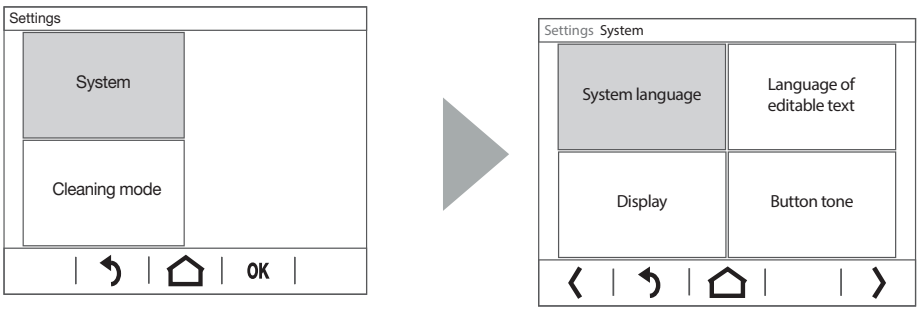


Figure 5: Setting system language

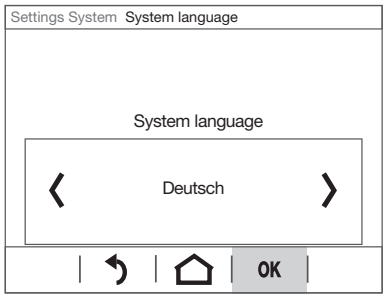


Figure 6: Selecting system language

Scroll with the arrow keys in the rocker to the required language setting.
Confirm with **OK** to save and return to the previous menu selection.
With the return arrow you return to the previous menu page without saving.
With the home button you return to the standard page without saving.

11.3 Language of the editable texts

The language used for the editable texts (e.g. push-button name) can be changed in the menu

Settings System Language of editable texts

The menu can be protected by an access code.

Access codes for display menus

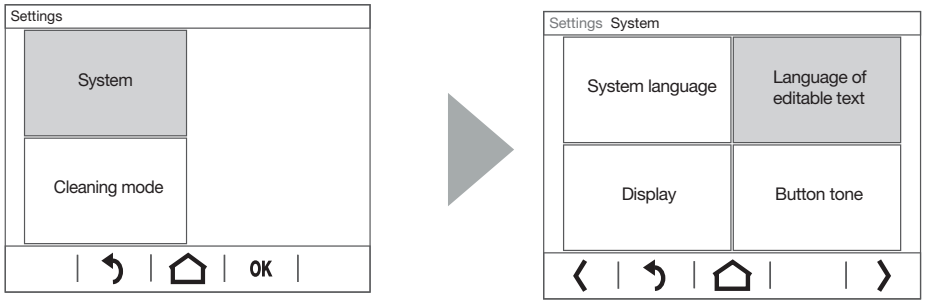
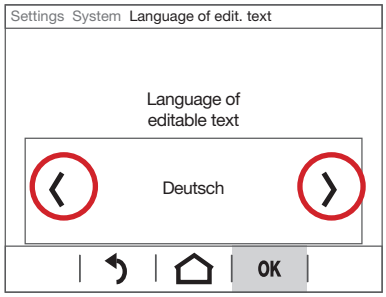


Figure 7: Setting language of the editable texts



You can choose from up to 6 languages that were preset in the ETS. The texts can only be changed in the ETS. Only the language changeover takes place on the display.

Figure 8: Selecting language of the editable text

Scroll with the arrow keys in the rocker to the required language setting.
Confirm with **OK** to save and return to the previous menu selection.
With the return arrow you return to the previous menu page without saving.
With the home button you return to the standard page without saving.

11.4 Display

11.4.1 Cleaning mode

Before the cleaning mode can be started, the time in the ETS must be defined in the parameter "Duration of the lock-up for cleaning". Afterwards, the cleaning mode can be started as follows.

5 Settings → Cleaning mode → Start cleaning mode

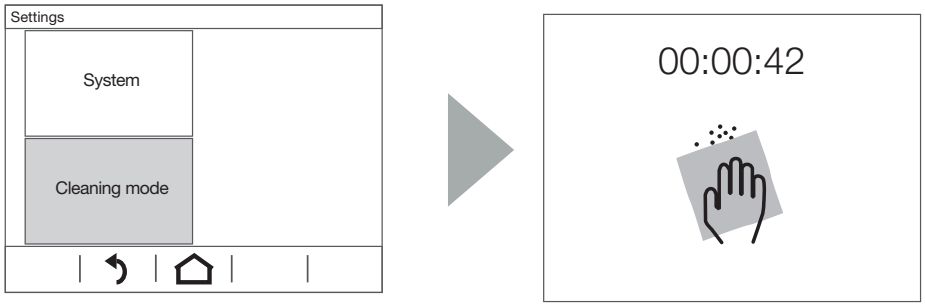


Figure 9: Starting cleaning mode

11.4.2 Display options

Screen settings can be adjusted in the menu

Settings → System → Screen

The menu can be protected by an access code.

Access codes for display menus

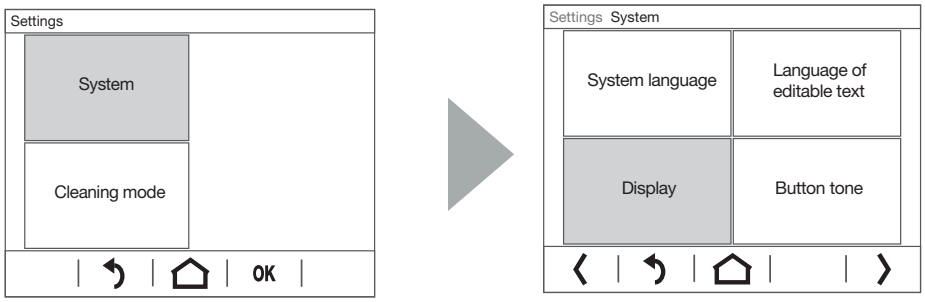


Figure 10: Setting screen options

11.4.3 Brightness

Settings System Screen

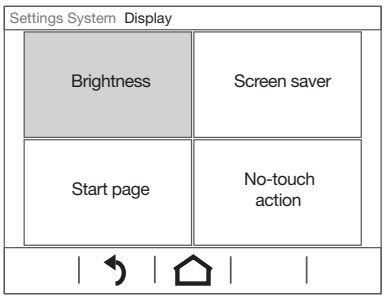
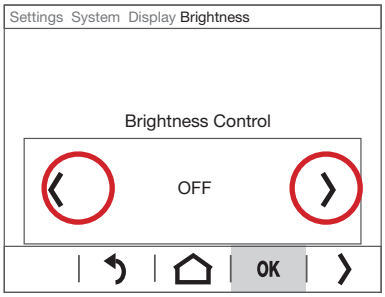


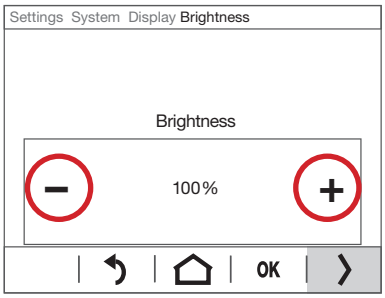
Figure 11: Screen option "Brightness"



The screen brightness can be adjusted
- to a fixed value (control OFF).
- Through adjustment by the internal brightness sensor (control according to room brightness).
- Control via the KNX bus (this selection is only possible if preset in the ETS).

Figure 12: Setting brightness control

Then, with the Next button (bottom right) proceed to the next setting.

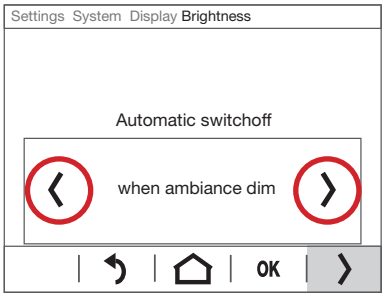


In the case of a fixed brightness value and control via the KNX bus, the brightness (or starting brightness) can be adjusted in percent.

Figure 13: Setting brightness value

Scroll with the +/- keys in the rocker to the required setting.

Then, with the Next button (bottom right) proceed to the next setting.



In the case of a fixed brightness value and control according to room brightness, an automatic shutdown can be set.

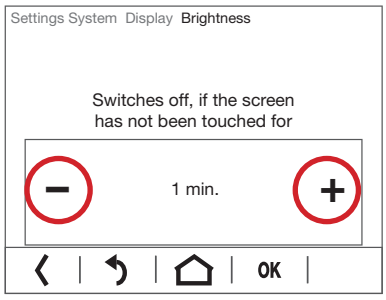
The automatic shutdown darkens the display after the predefined waiting time.

The automatic shutdown can be
- switched **OFF**.
- switched **ON**.
- shut down **ahen ambiance dim**.

Figure 14: Selecting automatic shutdown parameter

Scroll with the arrow keys in the rocker to the required setting.

Then, with the Next button (bottom right) proceed to the next setting.



If the automatic shutdown is activated, the waiting time until shutdown is set.

Figure 15: Setting waiting time for automatic shutdown

Scroll with the +/- keys in the rocker to the required setting.

Confirm with **OK** to save and return to the previous menu selection. With the return arrow you return to the previous menu page without saving.

With the home button you return to the standard page without saving.

11.4.4 Screen saver

The screen saver is displayed if the display is not touched for a defined period of time.

Settings System Screen

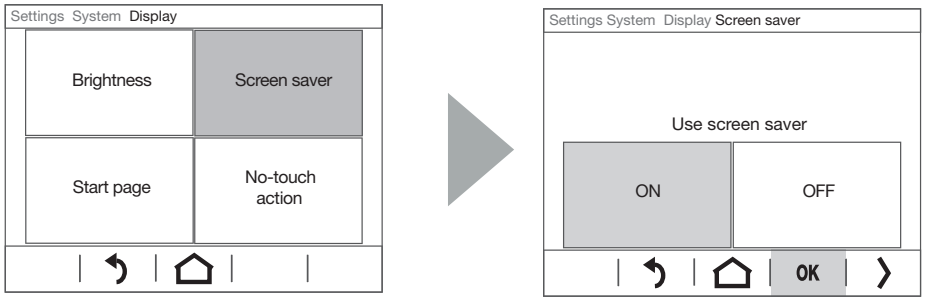
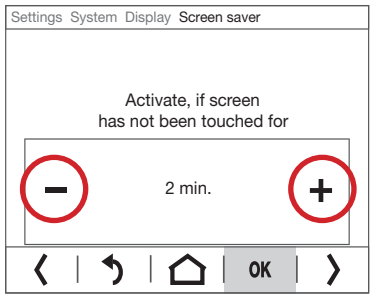


Figure 16: Screen saver

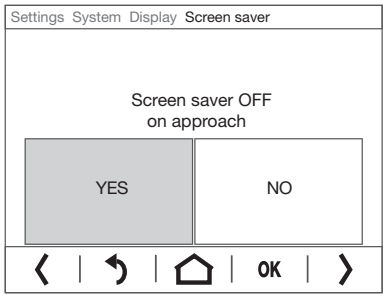


If the screen saver is activated, the waiting time until change-over is set.

Figure 17: Switching screen saver On/Off

Scroll with the +/- keys in the rocker to the required setting.

Then, with the Next button (bottom right) proceed to the next setting.

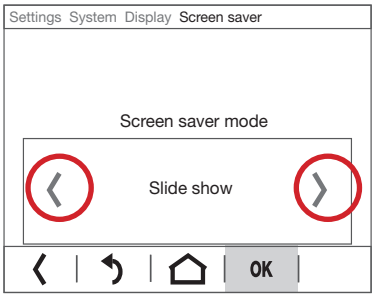


The screen saver can be linked with the proximity sensor.

Figure 18: Switching screen saver On/Off

Select YES if the display should already switch again to the start page when approaching.

Then, with the Next button (bottom right) proceed to the next setting.



Select the screen saver type:

- Display OFF
- Analogue clock
- Digital clock
- Image from SD card
- Slideshow

Figure 19: Selecting screen saver type

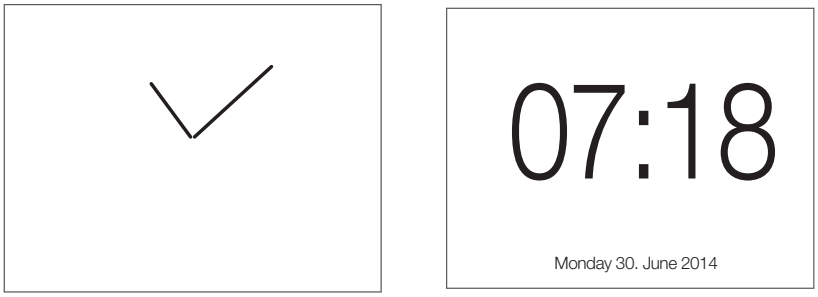
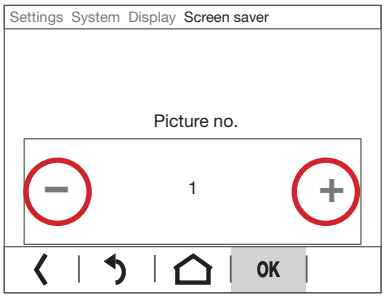


Figure 20: Screen saver "analogue clock" (left), "digital clock" (right)

Pictures to be displayed as a screen saver must be saved on an SD card that remains in the device.

Images for screen saver



In the case of an image from an SD card as a screen saver, you can select the image number.

Figure 21: Selecting image from SD card

Scroll with the +/- keys in the rocker to the required setting.

Confirm with **OK** to save and return to the previous menu selection. With the return arrow you return to the previous menu page without saving.

With the home button you return to the standard page without saving.

11.4.5 Start page

The start page defines which page the display jumps to when the home button is pressed (and after re-start).

Settings System Screen

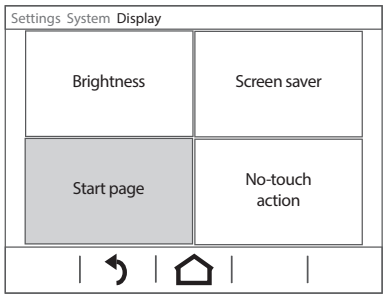
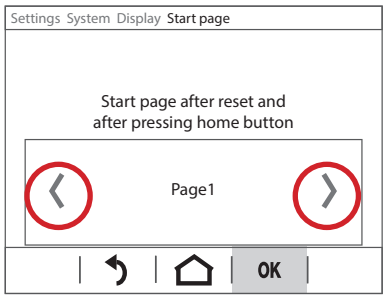


Figure 22: Setting start page



All display pages defined in the ETS can be defined as a start page.

Figure 23: Selecting start page

Scroll with the +/- arrowkeys in the rocker to the required start page.

Confirm with **OK** to save and return to the previous menu selection. With the return arrow you return to the previous menu page without saving.

With the home button you return to the standard page without saving.

11.4.6 Do not touch action

The action defines what happens if no input is made on the display after 5 minutes.

Settings System Screen

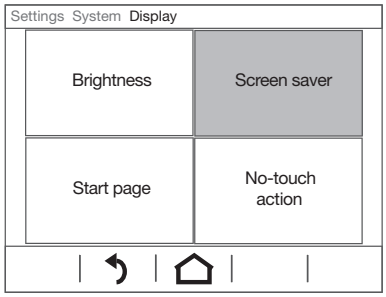
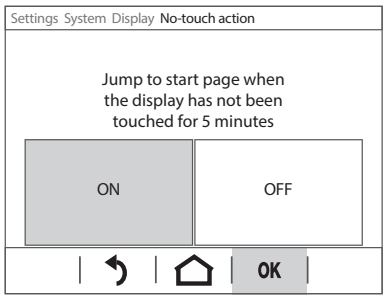


Figure 24: Selecting do not touch action



Switch the automatic change-over to the start page **ON**, then the display will change if the display has not been touched for 5 minutes.

If you switch OFF, the display stays on the page initially selected until a button is pressed.

Figure 25: Setting do not touch action

Confirm with **OK** to save and return to the previous menu selection. With the return arrow you return to the previous menu page without saving.

With the home button you return to the standard page without saving.

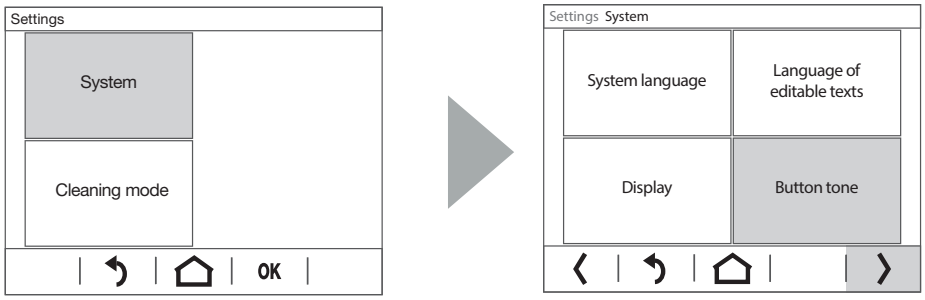
11.5 Button sound

The device can play back a sound when a button in the display is touched. The button sound can be switched on and off in the menu

Settings → System → Button sound

The menu can be protected by an access code.

Access codes for display menus



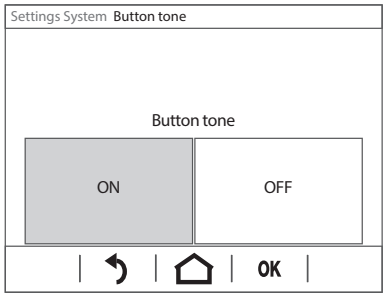


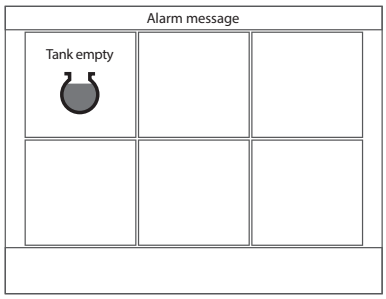
Figure 26: Setting button sound

Confirm with **OK** to save and return to the previous menu selection. With the return arrow you return to the previous menu page without saving.

With the home button you return to the standard page without saving.

11.6 Alarm

The six alarm functions of the KNX Touch Control show messages in the display. At the same time, the display can flash and an alarm sound can be emitted. The alarm can be acknowledged directly via the bus.



Page with alarm messages, Alarm 1 "Tank empty", is active.

Acknowledge the active alarm by pressing the button. Several alarms can be active simultaneously.

Texts and symbols can only be set in the ETS.

Figure 27: Alarm message display

The response during an alarm can be adjusted in the menu

Settings → System → Alarm

The menu can be protected by an access code.

Access codes for display menus

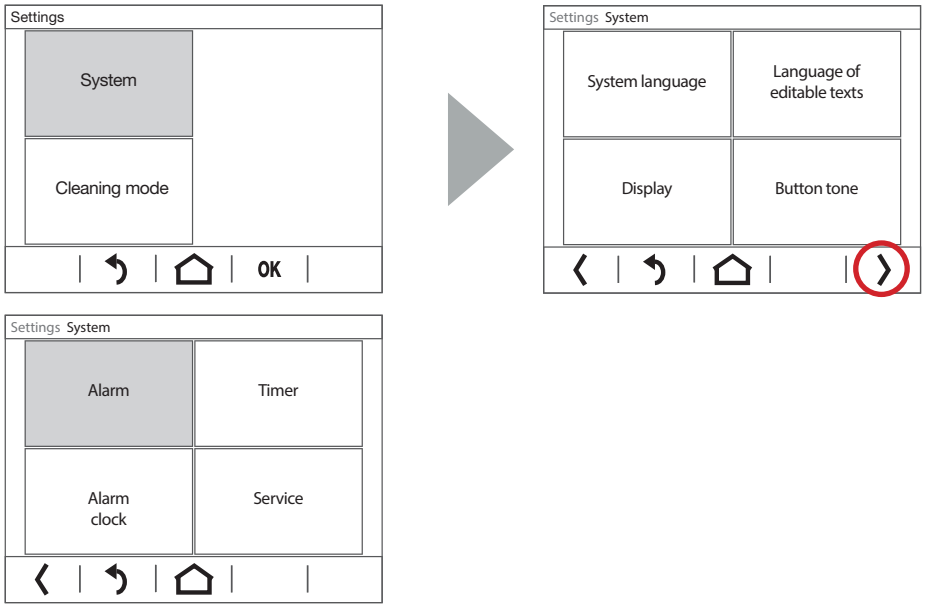
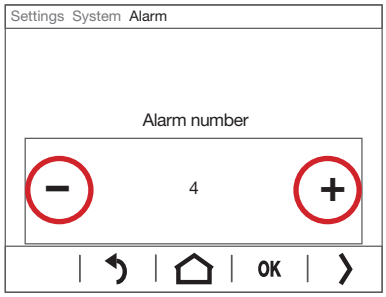


Figure 28: Setting the alarm

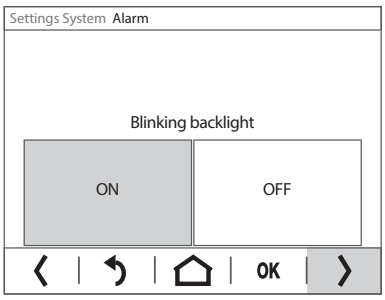


Select the alarm function that you want to set (1-6).

Figure 29: Selecting alarm number

Scroll with the +/- keys in the rocker to the required number.

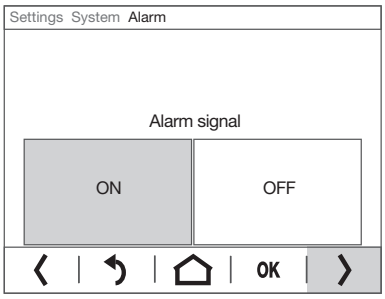
Then, with the Next button (bottom right) proceed to the first setting.



Switch the flashing of the display backlighting in the event of an alarm **ON** or **OFF**.

Figure 30: Setting blinking backlighting

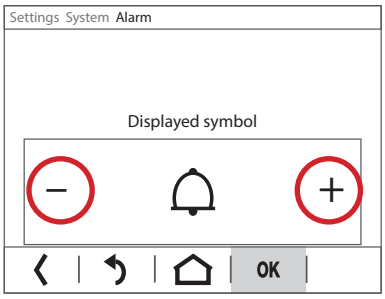
Then, with the Next button (bottom right) proceed to the next setting.



Switch the alarm sound **ON** or **OFF**

Figure 31: Setting the alarm sound

Then, with the Next button (bottom right) proceed to the next setting.



Select the symbol that should be displayed during an alarm. All icons of the system are available.

- Overview symbols

Additionally, your own symbols can be saved on an SD card and then recalled. Please note the chapter

- Replacing symbols and graphics

Figure 32: Selecting an alarm symbol

Scroll with the +/- keys in the rocker to the required setting.

Confirm with **OK** to save and return to the previous menu selection.

With symbol 1 an image can also be selected from the SD card by pressing the minus button (forwards / backwards)

Or cancel with the return arrow or home key.

11.7 Timer

In the timer of the KNX Touch Control, 16 timer functions can be defined. These timer functions are then allocated to internal automatic functions, such as the time-dependent closure of roller shutters.

The timer functions must be preset in the ETS menu "Weekly timer: Timer functions". Timer functions that are configured as output can also then be changed on the display. Timer functions that are configured as input only receive the timing from another timer in the bus system. Only the name is shown in the display here, nothing can be changed.

The timer functions can be viewed or changed in the menu

Settings → System → Timer

The menu can be protected by an access code.

Access codes for display menus

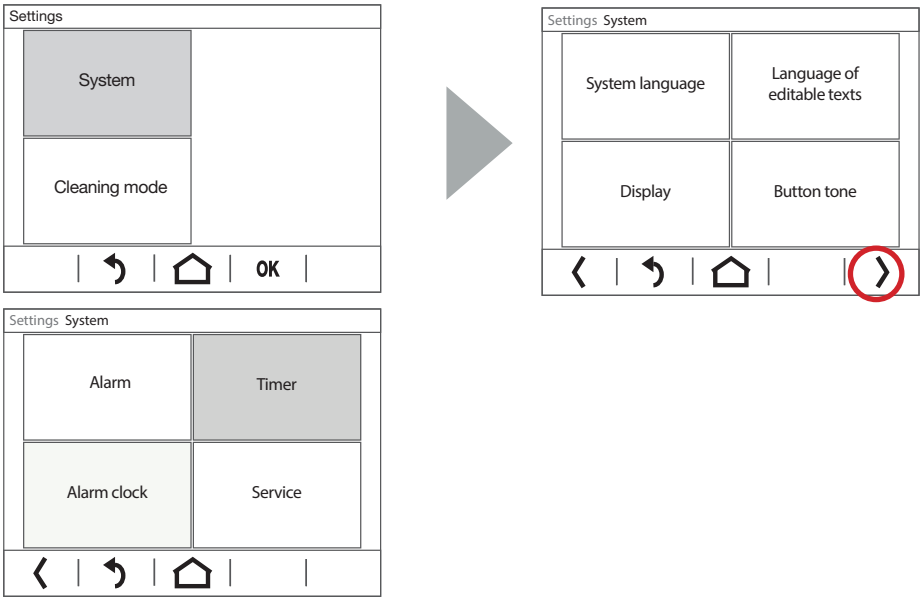
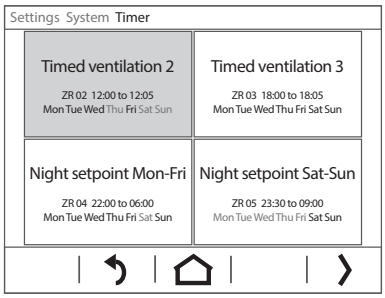


Figure 33: Setting timer



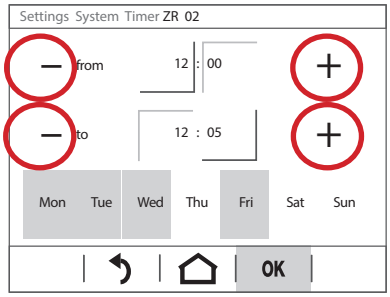
Select the timer function that you want to change.

Only the timer functions preconfigured in the ETS are displayed.

In the example, night setpoints Mo-Fr and Sa-Su are configured in the ETS as input. The timer information comes via the bus, it cannot be changed.

Figure 34: Selecting timer function

Then, with the Next 〉 button (bottom right) proceed to the next setting.



Then, set the start and end of the timer function successively. To do this, activate the hours field and then the minutes field and press the +/- buttons in the rocker to the set the required time.

Then, activate the buttons of the weekdays on which the timer function should be active.

In the example, the time period is from 12:00 to

12:05 and Monday, Tuesday, Wednesday and Friday is active.

Figure 35: Changing switching times for the selected timer function

Confirm with **OK** to save and return to the previous menu selection.

Or cancel with the return arrow ↰ or home key ⌂.

11.8 Alarm clock

The KNX touch control can trigger an alarm with sound and flashing display at a set time. Simultaneously, the time and a button for switching off the alarm appears in the display.

If the alarm is not switched off manually, it switches off automatically after the set alarm time has elapsed. Alternatively, the alarm clock can be switched off via the bus. After switching off the alarm, the alarm clock remains on and triggers an alarm again the next day.

If the alarm clock is switched on, a small clock is displayed on the display pages next to the current time.

Figure 36: Alarm clock display

The symbol is also a button that can switch directly to the alarm clock menu. If the alarm clock is switched off, use the setting menu

Settings → System → Alarm clock

The menu can be protected by an access code.

Access codes for display menus

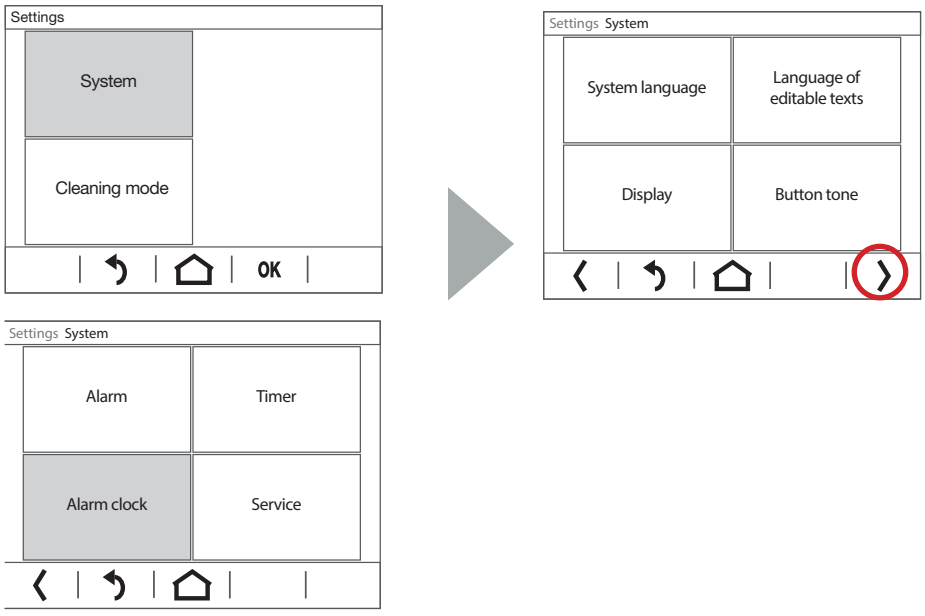
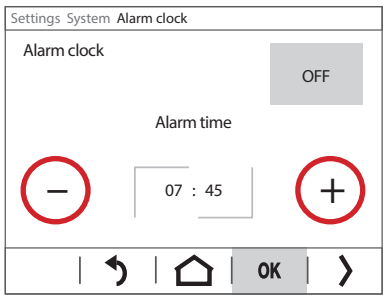


Figure 37: Selecting alarm clock function

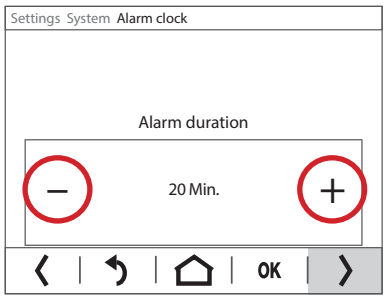


Press the button at the top right to switch the alarm sound **ON** or **OFF**.

Switch the alarm time on by activating the hours field and then the minutes field successively and then press the +/- buttons in the rocker to the set the required time.

Figure 38: Setting the alarm time

Then, with the Next button (bottom right) proceed to the next setting.

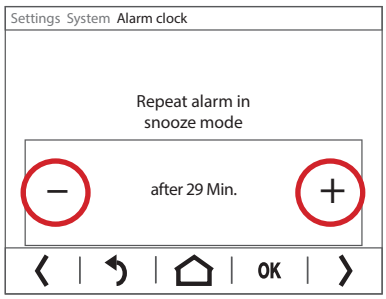


Set the alarm duration.

Set the required alarm duration with the +/- buttons in the rocker.

Figure 39: Setting the alarm duration

Then, with the Next button (bottom right) proceed to the next setting.

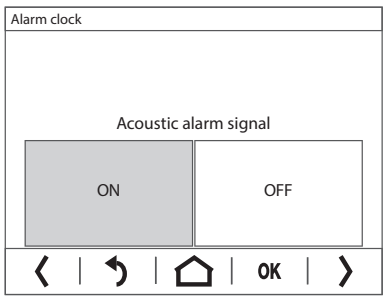


Set the number of minutes until the alarm should be repeated in snooze mode. Select "none" if the alarm should not be repeated.

Scroll with the +/- keys in the rocker to the required setting.

Figure 40: Setting alarm repetition in snooze mode

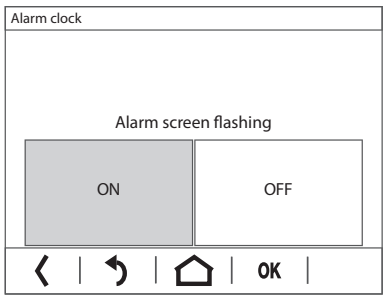
Then, with the Next button (bottom right) proceed to the next setting.



Switch the acoustic signal for the alarm sound **ON** or **OFF**.

Figure 41: Selecting acoustic signal during alarm

Then, with the Next button (bottom right) proceed to the next setting.



Switch the flashing of the display backlighting in the event of an alarm **ON** or **OFF**.

Figure 42: Flashing display during alarm

Confirm with **OK** to save and return to the previous menu selection.

Or cancel with the return arrow ↰ or home key ⌂.

11.9 Service

In the service menu you can

- Resetting access code
- reset the device to the state of the last ETS download
- perform a reset of the device software
- assign the device address (switch on PRG-LED)
- Retrieve information about the device (software versions)
- read licence texts
- access the internal area (only manufacturer service)

11.9.1 Resetting access code

All codes can be reset to the status of the last ETS download via the menu.

Settings → System → Service → Reset access code

11.9.2 Resetting device to last ETS download

All settings changed manually on the display will be irretrievably overwritten by resetting the device!

Settings → System → Service → Reset to last ETS-download

11.9.3 Resetting the device

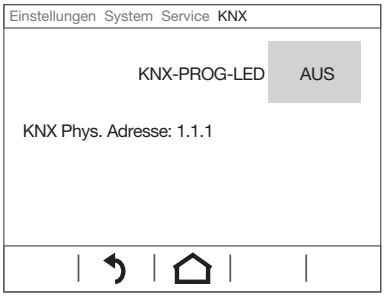
This will restart the device software.

Settings → System → Service → Reset

11.9.4 Addressing the device

The programming mode for the addressing on the bus is activated via the programming button at the back of the device housing or via the display.

Settings → System → Service → KNX



KNX programming LED ON:
Programming mode active.

KNX programming LED OFF:
Programming mode not active.

The current address is displayed.
Address in default state: 15.15.250

Figure 43: Addressing device via display

11.9.5 Info

Here, you will find the KNX software version, the display software version and the software version of the operating system.

Settings → System → Service → Info

11.9.6 Licence

Here, you will find information on the licences of the software and hardware components used in the device, the licence texts and licence owners.

12. Configuration of display pages

The device provides 10 display pages that can be configured individually with

- surfaces (switches, display areas for sensor values)
- Rockers
- Control knob

Thirty seven predefined page displays are provided for this purpose. The pages are configured in the ETS and then represented on the display.

12.1 Selecting pages on the display

Only pages configured with the ETS are displayed 1 to 10 pages can be displayed. The individual pages are selected from the lower menu bar. The page selection is displayed in page blocks of 3-4 pages each. The page blocks are selected with the buttons ❮/❯. The underlying function is executed by pressing the touch control surface.

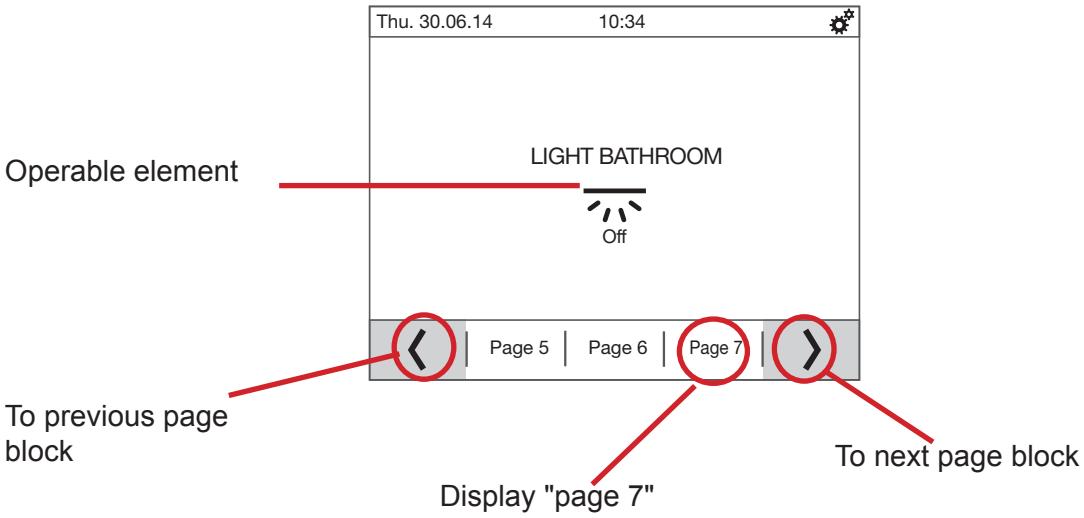


Figure 44: Selecting page on the display

A start page is defined in the ETS. The display jumps to this page when the **home button** ⌂ in the settings is pressed (and after restart). Additionally, you can set that the start page will be displayed if no input is made on the display after 5 minutes.

12.2 Configuration of pages in the ETS

ETS menu: Page 1...10

At the top right corner of each page the button for accessing the system settings can be displayed. If it is not desirable for the system to be set by the user, the button can be hidden. If, however, the system settings should be carried out on the display, then the button should be activated on one display page at least.

Menu navigation out of this page	Active Not active

Table 41: Page navigation

You can assign an access code for the display pages on the screen. The code is requested when you switch between the pages. Thus, the standard page is always accessible.

Specify whether the settings for the access code should be transferred from the ETS during downloading. The previous settings will then be overwritten – even changes made to the code on the display.

Transfer during download:	
Overwrite following parameter values during download	Active Not active
Access code *(1 … 8 numbers from 0 to 9)*	[Free text] *Empty field means no code request*

Table 42: General setting of page navigation

Assign a name for this page. A name can be input (max. 15 characters) for each of the six possible languages. This name will appear in the lower menu bar of the screen.

Language of the editable texts

Page name	
Language selection 1...6	[Free text]

Table 43: Selecting a language for page name

Define the functions of the page. A page can contain functional elements consisting of surfaces (buttons), rockers, rotary controls or combinations of these elements. For this purpose, predefined layouts are provided for the page settings. These can be selected individually for each display page.

Select the layout of the page using the table.

Overview of predefined pages

Page type	see overview of predefined pages

Table 44: Selecting page type

Symbols and labelling of the individual page elements can be customised.

12.2.1 Surface

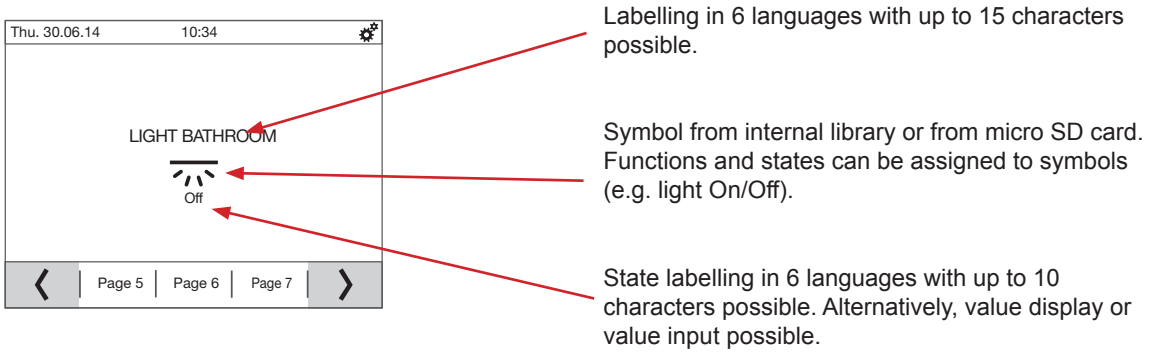


Figure 45: Creating display surface individually

Surface functions:

- no function
- Display ON / OFF
- Display date
- Display of the time
- Display 8-bit value (0 ... 255)
- Display 8-bit value (0 ... 100%)
- Display 8-bit value (0 ... 360°)
- Display 16-bit counter without sign
- Display 16-bit counter with sign
- Display 16-bit floating point
- Display 32-bit counter without sign
- Display 32-bit counter with sign
- Display 32-bit floating point
- Display text
- Display energy [DPT 29.01X]
- Key-press ON
- Key-press OFF
- Key-press OFF, release key ON
- Key-press ON, release key OFF
- Key-press toggle
- Input date
- Input time
- Input 8-bit value scene
- Input 8-bit value (0 ... 255)
- Input 8-bit value (0 ... 100%)
- Input 8-bit value (0 ... 360°)
- Input 16-bit counter without math. symbol
- Input 16-bit counter with math. symbol
- Input 16-bit floating point
- Input 32-bit counter without math. symbol
- Input 32-bit counter with math. symbol
- Input 32-bit floating point
- Input text
- Input energy [DPT 29.01X]
- Lightning, increase (ON)
- Lightning, decrease (OFF)
- Lightning, increase (ON) / decrease (OFF)
- Roller shutter / blind Up
- Roller shutter / blind down

- Page navigation
- System navigation

Assign a name for this function. A name can be input (max. 15 characters) for each of the six possible languages.

Language of the editable texts

Then define the function of the surface, input additional texts that should be displayed if necessary and select a symbol. If no symbol should be displayed, select the setting "no symbol". Depending on the surface function, 1 or 2 symbols must be selected.

Overview symbols

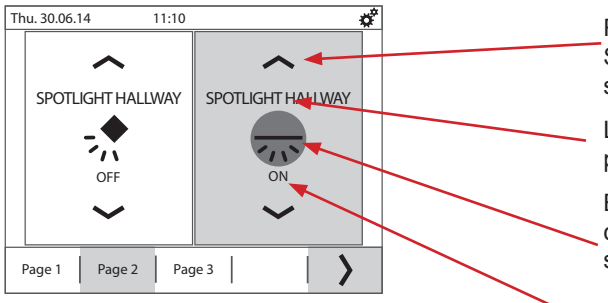
Name	
Language selection 1...6	[Free text]
Function	see Surface functions
Texts	
Language selection 1...6	[Free text]
Button symbol(s)	No symbol Symbol 1 ... 254 *internal library, see Table)* Image selection *(from SD card, see Replacing symbols and graphics*
Image number *only with image selection for surface symbol*	0 ... 65535; 1

Table 45: Selecting surface symbol

Depending on the function of the surface, the input of additional parameters is required, e.g.

- Texts for ON and OFF
- Status display
- Input of units for value display/value entry
- Conversion factors for floating point values
- Scene numbers
- for the entry of values (start value and min/max value)
- Times for the detection between short and long press of button for dimming or blind functions
- the page number for the page navigation
- and the system page for the system navigation function

12.2.2 Rocker



Rocker symbol (from internal library or from micro SD card). Symbols can be assigned to functions and states.

Labelling in 6 languages with up to 15 characters possible.

Button symbol (from internal library or micro SD card). Symbols can be assigned to functions and states.

State labelling (value)

Figure 46: Configuring rocker

Rocker functions:

- Key-press ON/OFF
- Key-press OFF/ON
- Lightning, increase (ON) / decrease (OFF)
- Lightning, decrease (OFF) / increase (ON)
- Roller shutter / blind (Up / Down)
- Roller shutter / blind (Down / Up)

Assign a name for this function. A name can be input (max. 15 characters) for each of the six possible languages.

Language of the editable texts

Define the function of the rocker. Make time specifications depending on the function and specify whether values should be displayed (e.g. movement position). Then, select symbols for the button (centric) and for the rocker. If no symbol should be displayed, select the setting "no symbol".

Overview symbols

Name	
Language selection 1...6	[Free text]
Function	see rocker function
Time between switching and dimming (* 10 ms) *only with "lighting increase, decrease and lighting, decrease / increase"*	0 ... 200; 40
Display brightness *only with "lighting increase, decrease and lighting, decrease / increase"*	Active Not active
Time between short press and long press *only with roller shutter/blind*	0 ... 200; 40
Time to permanent move (* 10ms) *only with roller shutter/blind*	0 ... 24000; 200
Display position *only with roller shutter/blind*	Active Not active
Display slat position *only with roller shutter/blind*	Active Not active

Button symbol for 1 or Button symbol for 0	No symbol Symbol 1 ...254 *internal library, see Table Overview symbols)* Image selection *(from SD card, see Replacing symbols and graphics*
Image number *only with image selection for button symbol*	0 ... 65535; 1
rocker symbol for feedback object value or rocker symbol for feedback object value 0	No symbol Symbol 1 ... 254 *internal library, see Table Overview symbols)* Image selection *(from SD card, see Replacing symbols and graphics*
Image number *only with image selection for button symbol*	0 ... 65535; 1

Table 46: Configuration of rocker symbol

12.2.3 Rotary control

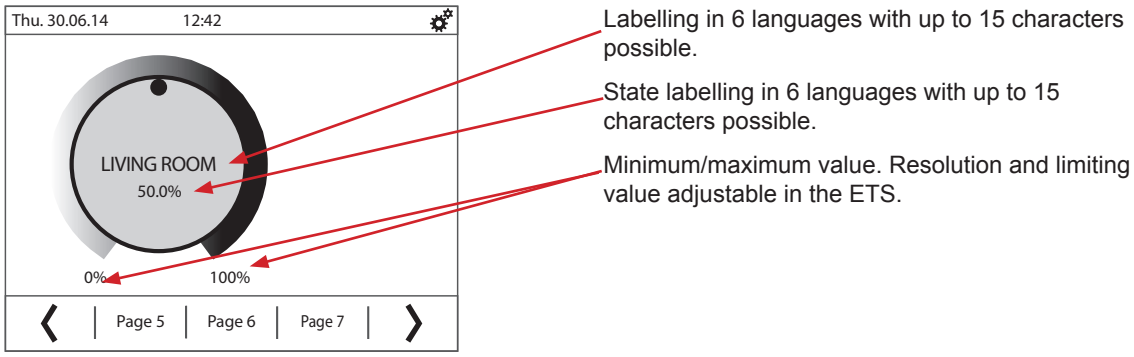


Figure 47: Configuration of rotary control

Rotary control functions:

- Temperature
- RGB control
- 8 bit value (0 ... 255)
- 8 bit value (0 ... 100%)
- 8 bit value (0 ... 360°)
- 16 bit counter without sign
- 16 bit counter with sign
- 16 bit floating point
- 32 bit counter without sign
- 32 bit counter with sign
- 32 bit floating point

Assign a name for this function. A name can be input (max. 15 characters) for each of the six possible languages.

Language of the editable texts

Define the function of the rotary control. Then, select a symbol from the area rotary control or select a suitable symbol from the SD memory card.

If a symbol other than the rotary control is selected, only the control is displayed but without a coloured ring.

Overview symbols

The other setting options depend on the function.

Name	
Language selection 1...6	[Free text]
Function	see rotary control function
Rotary control symbol	No symbol Symbol 1 ...254 *internal library, see Table Overview symbols)* Image selection *(from SD card, see Replacing symbols and graphics*
Image number *only with image selection for button symbol*	0 ... 65535; 1

Table 47: Configuration of rotary control symbol

Function temperature

Text for unit	°C
Minimum value (* 0.1°C)	-32768 ... 32767
Maximum value (* 0.1°C)	-32768 ... 32767
Resolution (*0.1°C) *(pay attention to setting range)*	1 ... 10000; 10
*Start value (*0.1°C)*	-32768 ... 32767; 0

Table 48: Configuration of temperature values

Function of RGB controller

RGB ratios are set via	one object [1 x 3 bytes] three objects [3 x 1 byte]

Table 49: Configuration of RGB controller

Function 8 bit value (0...255°)255)

Text for unit *Maximum of 10 characters*	[Free text]
Minimum value	0 ... 255
Maximum value	0 ... 255
Resolution *(pay attention to setting range)*	1 … 200; 10
Start value	0 ... 255

Table 50: Configuration of function 8-bit value (0 … 255%)

Function 8 bit value (0 ... 100°)

Text for unit *Maximum of 10 characters*	%
Minimum value	0 ... 100
Maximum value	0 ... 100
Resolution (*0.1) *(pay attention to setting range)*	5 ... 1000; 10
Start value	0 ... 100

Table 51: Configuration of function 8-bit value (0…100%)

Function 8 bit value (0...360°)

Text for unit *Maximum of 10 characters*	°
Minimum value	0 ... 360
Maximum value	0 ... 360
Resolution *(pay attention to setting range)*	1 ... 300; 10
Start value	0 ... 360

Table 52: Configuration of function 8-bit value (0…360%)

Function 16 bit counter without/ with sign

Text for unit *Maximum of 10 characters*	[Free text]
Minimum value	0 ... 65535 -32768 ... 32767
Maximum value	0 ... 65535 -32768 ... 32767
Resolution *(pay attention to setting range)*	1 ... 60000; 10 1 ... 30000; 10
Start value	0 ... 65535 -32768 ... 32767; 0

Table 53: Configuration of function 16-bit value

Function 16-bit floating point

Text for unit *Maximum of 10 characters*	[Free text]
Minimum value (* 0.1)	-2147483648
Maximum value (* 0.1)	2147483647
Resolution (*0.1) *(pay attention to setting range)*	1 ... 2000000000; 10
Conversion factor a	-0.0001 ... 1 ... 10000
Conversion factor b	1 ... 65535
*Display value = value from Bus * a * b*	
Start value	-2147483648 ... 2147483647; 0

Table 54: Configuration of function 16-bit floating point

Function 32 bit counter without/ with sign

Text for unit *Maximum of 10 characters*	[Free text]
Minimum value	0 ... 4294697295 -2147483648 ... 2147483647
Maximum value	0 ... 4294697295 -2147483648 ... 2147483647
Resolution *(pay attention to setting range)*	1 ... 4000000000; 10 1 ... 2000000000; 10
Start value	0 ... 4294697295 -2147483648 ... 2147483647; 0

Table 55: Configuration of function 32-bit counter

Function 32-bit floating point

Text for unit *Maximum of 10 characters*	[Free text]
Minimum value (* 0.1)	-2147483648 ... 2147483647
Maximum value (* 0.1)	-2147483648 ... 2147483647
Resolution (*0.1) *(pay attention to setting range)*	1 ... 2000000000; 10
Conversion factor a	-0.0001 ... 1 ... 10000
Conversion factor b	1 ... 65535
*Display value = value from Bus * a * b*	
Start value	-2147483648 ... 2147483647; 0

Table 56: Configuration of function 32-bit floating point

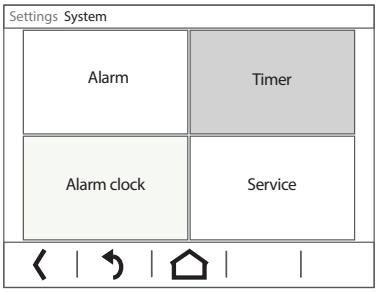
12.3 Overview of predefined pages

The device provides 38 predefined page assignments. Up to 10 individually configured pages can be displayed with these predefined page assignments.

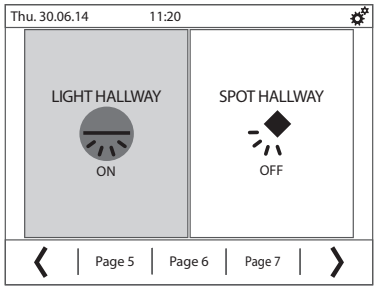
The displayed labelling and symbols, such as surfaces, rockers and rotary controls, can be individually labelled.

0 Not available

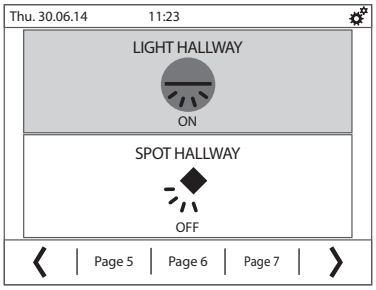
2 One surface



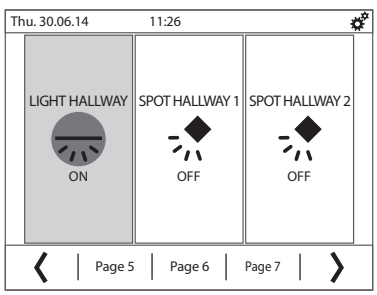
3 Two surfaces vertical



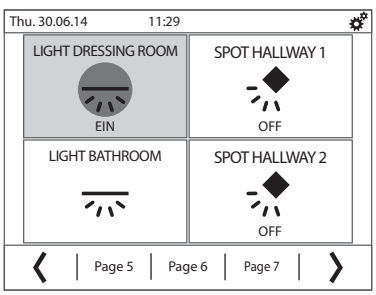
4 Two surfaces horizontal



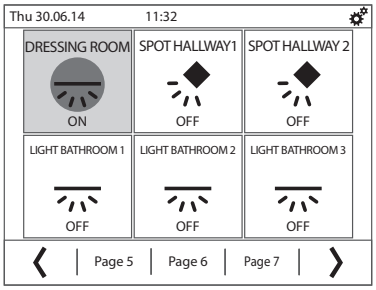
5 Three surfaces vertical



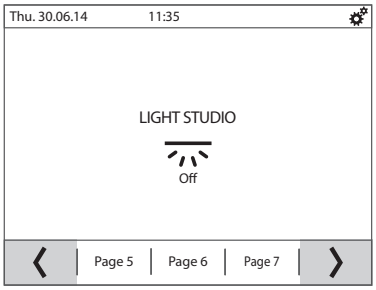
6 Four surfaces



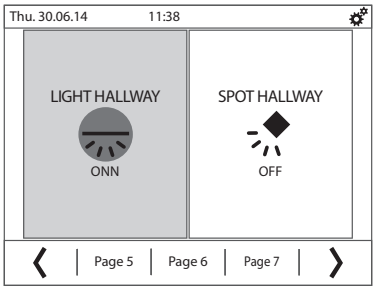
7 Six surfaces



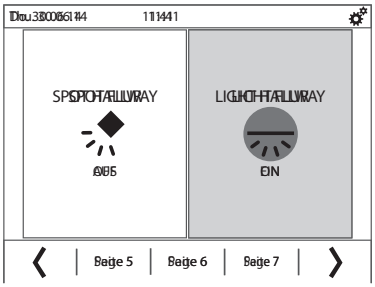
8 Single rocker vertical left



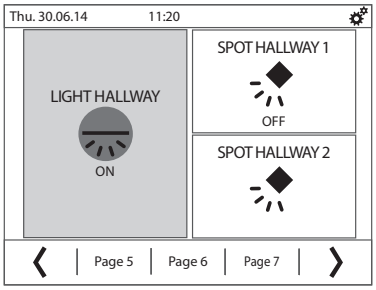
9 Single rocker vertical left + one surface



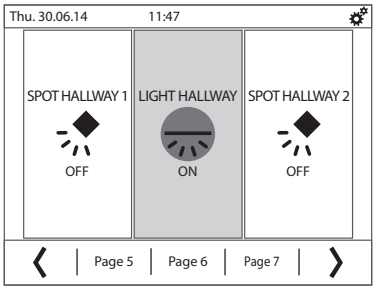
10 Single rocker vertical right + one surface



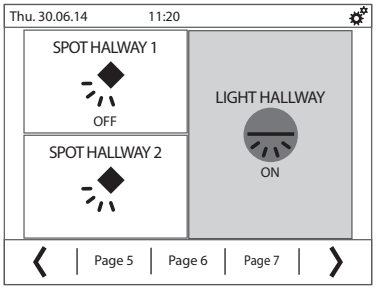
11 Single rocker vertical left + two surfaces



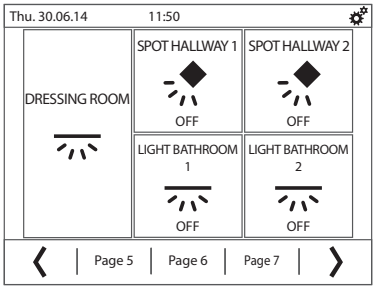
12 Single rocker vertical centric + two surfaces



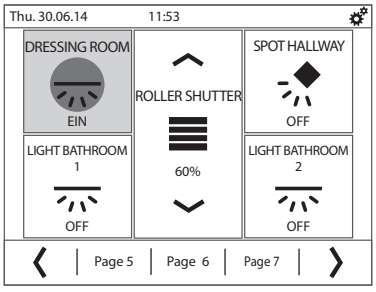
13 Single rocker vertical right + two surfaces



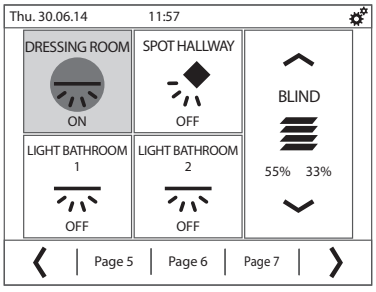
14 Single rocker vertical left + four surfaces



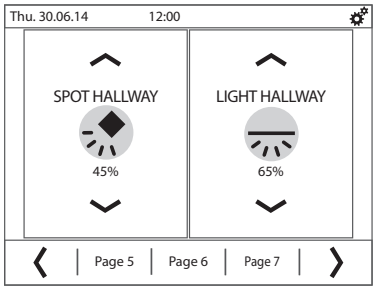
15 Single rocker vertical centric + four surfaces



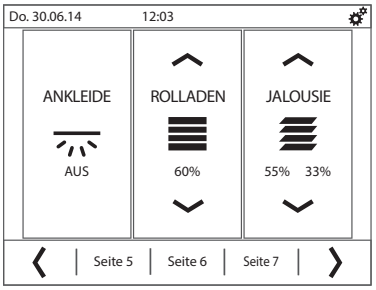
16 Single rocker vertical right + four surfaces



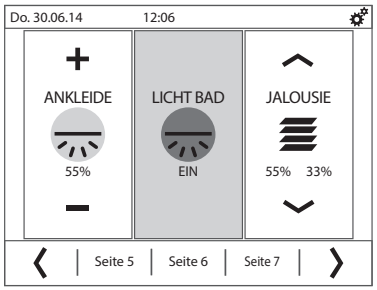
17 Dual rocker vertical



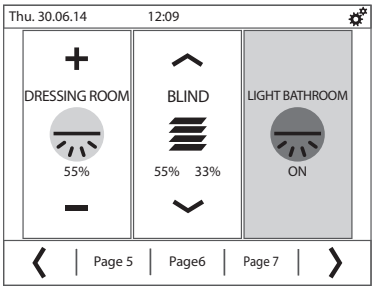
18 Dual rocker vertical + one surface left



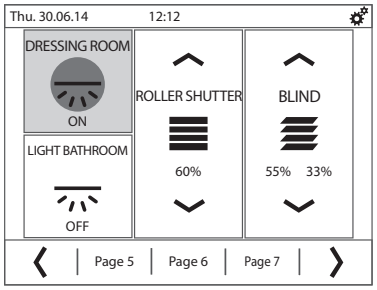
19 Dual rocker vertical + one surface centric



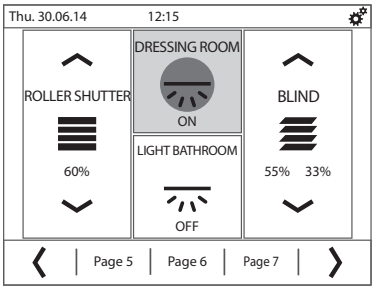
20 dual rocker vertical + one surface right



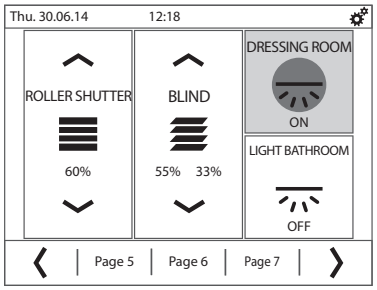
21 Dual rocker vertical + two surfaces left



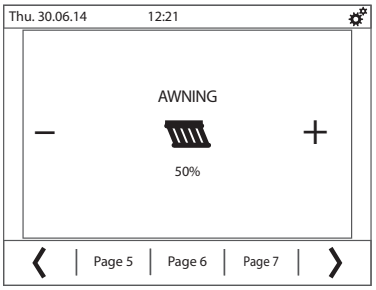
22 Dual rocker vertical + two surfaces centric



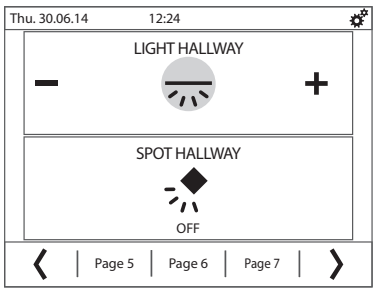
23 Dual rocker vertical + two surfaces right



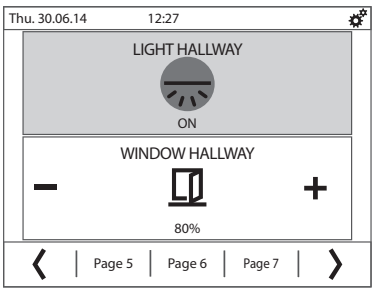
24 Single rocker horizontal



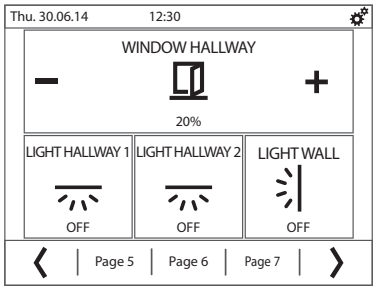
25 Single rocker horizontal top + one surface



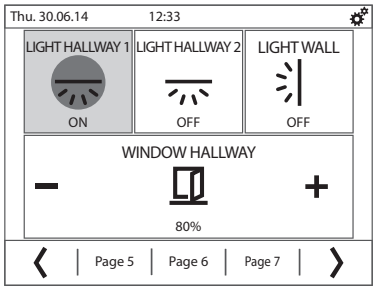
26 Single rocker horizontal bottom + one surface



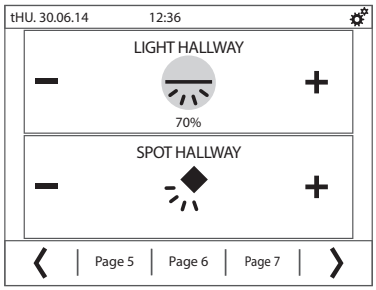
27 Single rocker horizontal top + three surfaces



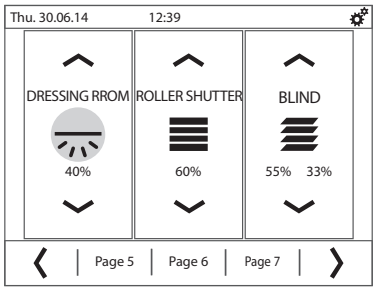
28 Single rocker horizontal bottom + three surfaces



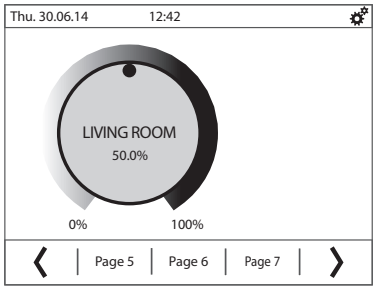
29 Dual rocker horizontal



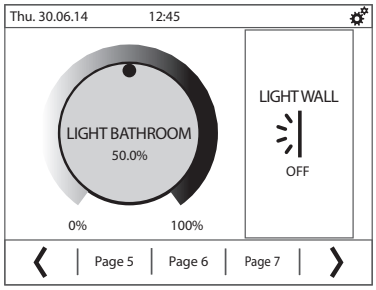
30 Triple rocker vertical



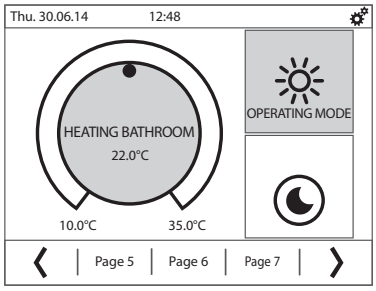
31 rotary control



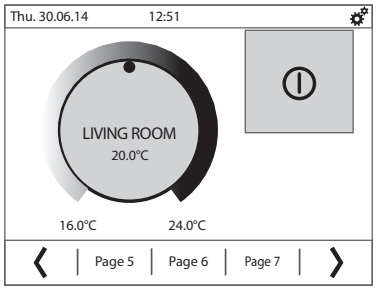
32 Rotary control + one surface vertical



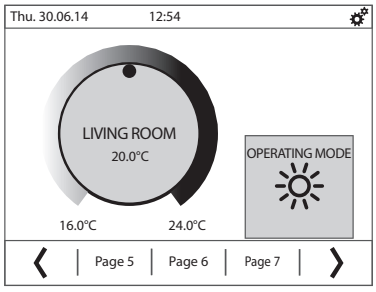
33 Rotary control + rocker



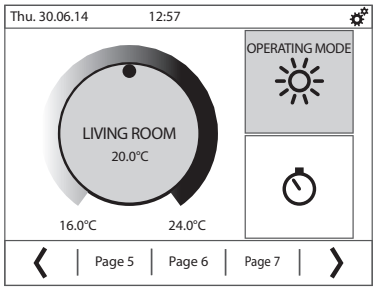
34 Rotary control + one surface top



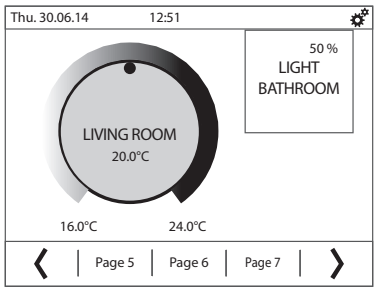
35 Rotary control + one surface bottom



36 Rotary control + two surfaces right



37 rotary control with display at top



38 Rotary control with display at top + one surface at bottom

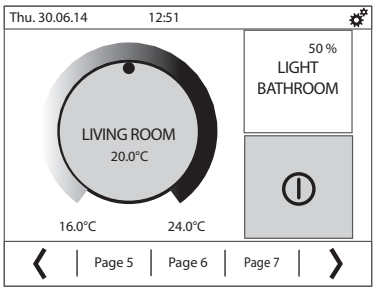


Figure 48: Overview of predefined pages

12.4 Overview symbols

The following symbols are stored in the internal library of the KNX Touch Control:

You can also find the description and assignment of the symbols as a separate file on our homepage at www.berker.de

1 – 24 Lighting					
1	Ceiling lamp On - coloured		13	Floor spotlight On - coloured	
2	Ceiling lamp On		14	Floor spotlight On	
3	Ceiling lamp Off		15	Floor spotlight Off	
4	Wall lamp On - coloured		16	Standard lamp On - coloured	
5	Wall lamp On		17	Standard lamp On	
6	Wall lamp Off		18	Standard lamp Off	
7	Spot On - coloured		19	Table lamp On -coloured	
8	Spot On		20	Table lamp On	
9	Spot Off		21	Table lamp Off	
10	Suspended ceiling lamp On - coloured		22	Light ON - coloured	
11	Suspended ceiling lamp On		23	Light ON	
12	Suspended ceiling lamp Off		24	Light Off	

25 – 28 Rotary control					
25	Coloured ring heating		27	Coloured ring ventilation	
26	Coloured ring light		28	Coloured ring	

29 – 48 Drive					
29	Blind down		39	Garage door open	
30	Blind up		40	Garage door closed	
31	Roller shutter down		41	Door open	
32	Roller shutter up		42	Door closed	
33	Awning extended		43	Lock unlocked	
34	Awning retracted		44	Lock locked	
35	Window open		45	Roof window open	
36	Window closed		46	Roof window closed	
37	Sliding gate open		47	Light dome open	
38	Sliding gate closed		48	Light dome closed	

49 – 85 Symbols (Operation)					
49	Zero		67	Settings	
50	One		68	On	
51	Two		69	Off	
52	Three		70	Standby	
53	Four		71	Switching time	
54	Five		72	Manual	
55	Six		73	Automatic	a
56	Seven		74	OK	OK
57	Eight		75	Dimming up	
58	Nine		76	Dimming down	
59	Navigate left		77	Bell	
60	Navigate right		78	Dustbin	
61	Navigate upward		79	Scene	
62	Navigate downward		80	Forced mode active	
63	Navigate back		81	Forced mode inactive	
64	Navigate forward		82	Forced mode OFF active	
65	Plus		83	Forced mode OFF inactive	
66	Minus		84	Forced mode ON active	
			85	Forced mode ON inactive	

86 – 125 Climate					
86	Heating element ON - coloured		106	Present / Comfort	
87	Heating element ON		107	Frost/heat protection - coloured	
88	Heating element OFF		108	Frost/heat protection	
89	Floor heating - coloured		109	Party mode	
90	floor heating		110	Fan On	
91	Wall heating - coloured		111	Fan Off	
92	Wall heating		112	Fan level 1	
93	Ceiling heating - coloured		113	Fan level 2	
94	Ceiling heating		114	Fan level 3	
95	Floor cooling - coloured		115	Fan level 4	
96	Floor cooling		116	Fan level 5	
97	Wall cooling - coloured		117	Fan level 6	
98	Wall cooling		118	Heating - coloured	
99	Ceiling cooling - coloured		119	Heating	
100	Ceiling cooling		120	Heating plus	
101	Night lowering - active		121	Heating minus	
102	Night lowering		122	Cooling - coloured	
103	Absent - active		123	Cooling	
104	Absent		124	Cooling plus	
105	Present / Comfort - active		125	Cooling minus	

126 – 142 Sensors					
126	Sun		134	Humidity	
127	Rain		135	Outdoor Temperature	
128	Snowfall		136	Indoor Temperature	
129	Frost		137	Fountain	
130	Tank		138	Pond	
131	Pyronanometer		139	Wind direction	
132	Humidity		140	Strong wind	
133	Earth moisture		141	Light wind	
			142	CO_2	

143 – 168 Multimedia					
143	TVs		156	Socket outlet GB On	
144	Video projector		157	Socket outlet GB Off	
145	Screen		158	Music	
146	Socket outlet On		159	Play	
147	Socket outlet Off		160	Pause	
148	Socket outlet France 2pole On		161	Backwards	
149	Socket outlet France 2pole Off		162	Forwards	
150	Socket outlet France 3pole On		163	Stop	
151	Socket outlet France 3pole Off		164	Back	
152	Socket outlet Germany On		165	Forward	
153	Socket outlet Germany Off		166	Loudspeaker	
154	Socket outlet Switzerland On		167	Softer	
155	Socket outlet Switzerland Off		168	Louder	

169 – 177 Safety					
169	Motion detector		174	Siren outside armed	
170	Siren		175	Siren armed	
171	Attention		176	Siren outside	
172	Open		177	Siren inside	
173	Siren inside armed				

178 – 193 House					
178	House		186	Housekeeping	
179	Dining room		187	Storage room	
180	Lounge		188	Laundry	
181	Kitchen		189	Toilet	
182	Child's room		190	Office	
183	Bathroom		191	Hallway	
184	Bedroom		192	Carport	
185	Dressing room		193	Garden	

Table 57: Overview of predefined symbols

13. Automatic functions

13.1 Safety instructions regarding automatic functions

WARNING!

Risk of injury from automatically moved components!

The automatic control can cause components to start and endanger persons.

No persons are allowed to stand in the range of movement of electromotively moved parts.

Always disconnect the system for maintenance and cleaning from the power supply (e.g. switch off/remove fuse).

Appropriate building regulations must be complied with!

The guideline for power-operated windows, doors and gates BGR 232, among other things, must be complied with.

Rain alarm for automatically controlled windows:

If rain starts, depending on the amount of rain and outside temperature, some time may pass until rain is detected by the sensors in the system. In addition, closure time must be taken into account for electrically powered windows or sliding roofs. Moisture-sensitive items should therefore not be placed in an area where they could be damaged by penetrating precipitation. Please also bear in mind that should a power failure occur when rain starts, for example, the windows will no longer be closed automatically if no emergency generator is installed.

Freezing over of guide rails of shadings:

Please note that the guide rails of blinds, awnings and shutters that are mounted outside can freeze over. If a drive then moves, the shading and may be damaged.

13.2 General automatic settings

ETS: Automatic

In the automatic menu, you assign the light, blind, awning, roller shutter, window, fan or thermostat functions to the five automatic channels.

Furthermore, general parameters are set here:

- Calculating the position of the sun
- Monitoring wind and rain objects
- Lock-up duration in the event of a wind alarm
- Twilight threshold
- Retraction and extension delays for shadings
- Window opening restriction
- Ventilation lock-up when cooling
- Night-time re-cooling
- Frost alarm
- Heat protection temperature– Times for automatic restart

First determine whether or not the automatic control is used. If this setting is set to "not active", the automatic channels will be inactive even if assignments and settings have already been made.

Automatic	Active Not active

Table 58: Activating/deactivating automatic function

Then, assign the required function to the five automatic channels.

Automatic 1 ... 5	do not use Light Blind Awning roller shutters Window Extractor fan Thermostats

Table 59: Assigning function of the automatic(s)

13.2.1 Settings for position of the sun

The position of the sun is needed for controlling shadings. The information can be received via the corresponding communication objects or calculated in the device.

Position of the sun will	calculated received via communication objects
Type of solar position objects *only if position of the sun is received via communication objects*	2 byte 4 byte

Table 60: Position of the sun function

The type of sun position objects (2 or 4 byte, only if position of the sun is calculated) is dependent on the device that transmits the corresponding values.

If the position of the sun is not received via objects but is calculated, then the details of the location and time zone must be input. The location can be input by selecting a town or by specifying coordinates.

Select town:

Location input using *only if position of the sun is calculated*	Town Coordinates	
Country *only if location is input using town*	Belgium Denmark Germany France Great Britain Italy	Lichtenstein Luxembourg Netherlands Austria Switzerland USA
Town *only if location is input using town, the selection depends on the country selected*	6 towns in Belgium 1 town in Denmark 46 towns in Germany; Stuttgart 23 towns in France 4 towns in Great Britain 10 towns in Italy 1 town in Lichtenstein 1 town in Luxembourg 2 towns in the Netherlands 4 towns in Austria 4 towns in Switzerland 2 towns in the USA	

Table 61: Location input by "calculate" function

Input coordinates:

East longitude (degrees -180 ... +180) *only if the location of the sun is input using coordinates*	-180 ... +180; 9
East longitude (degrees, -59 ... +59) *only if the location of the sun is input using coordinates*	-59 ... +59; 10
Northern latitude (degrees -90 ... +90) _ *only if the location of the sun is input using coordinates*	-90 ... +90; 48
Northern latitude (minutes -59 ... +59)+59) _ *only if the location of the sun is input using coordinates*	-59 ... +59; 46

Table 62: Location input by "via comm. objects" function

Information regarding the time shift is also needed for the calculation:

This data does not normally have to be changed in Central Europe. An individual setting is only necessary in exceptional cases.

Time zone (relative to GMT): ***only if position of the sun is calculated***	
Hours	-12 ... 13; 1
minutes	0 ... 59
European Summer Time	Europe USA none user defined

Start of Summer Time ***Various data for Europe and USA, the data can only be changed for user-defined European Summer Time***	
on the	Monday ... Sunday *Date (fixed day, do not select any weekday)*
From day	1...31; 25
Month	1...12; 3
Hour	0...23; 2
Minute	0...59

End of Summer Time ***Various data for Europe and USA, the data can only be changed for user-defined European Summer Time***	
on the	Monday ... Sunday *Date (fixed day, do not select any weekday)*
From day	1...31; 25
Month	1...12; 10
Hour	0...23; 2
Minute	0...59
Time shift ***can only be changed for user-defined European Summer Time***	
Hours	-12...12; 1
minutes	0...59

Table 63: Configuration of additional time parameters

13.2.2 Wind and Rain Alarm

Wind and rain objects can be monitored regularly to ensure a fast response to wind and rain alarm as well as faults. If the monitoring function is activated, weather data must be received within the selected monitoring interval (e.g. every 10 minutes), otherwise the automatic channels affected move into the safe position.

Wind and rain object monitoring	Active Not active
Monitoring period *only if active was selected*	5 s … 2 h

Table 64: Choosing the selection of wind and rain alarms

If the wind threshold for an automatic channel is exceeded, wind alarm is then triggered for 5 minutes. If the value is exceeded again within this period, the hold time of 5 minutes will begin all over again.

An additional extended automatic lock-up applies to shadings (awning, blind, roller shutter) after a wind alarm, which is set here. If the shading is in automatic mode prior to the wind alarm, then the automatic will still remain switched off after the 5 minute wind alarm hold time has elapsed. However, manual operation is already possible again.

Lock-up duration of the automatic after wind alarm (*1 min)	0 ... 360 ; 5

Table 65: Configuration of wind alarm

13.2.3 Twilight

The twilight threshold indicates the brightness level below which "night" is detected. Please note that brightness values of just under 10 Lux can be reached during moonlit nights. If the twilight value is set below 10 Lux, shadings that are set to "night-time closure" may therefore remain open or move up in the night due to the moonlight.

Night detection below (Lux) *(ON/OFF delay = 1 minute)*	1 ... 200; 10

Table 66: Configuration of twilight value

13.2.4 Movement delays

Movement delays ensure that the sun protection does not extend and retract continuously during rapidly changing lighting conditions.

The brightness must continuously be above the light intensity value set for the sun protection for the set "extension delay" (e.g. 1 minute) so that the shading extends.

If the light intensity is continuously below the threshold for the duration of the "retraction delay short", the set response for "short" will be executed, e.g. slats are opened. The shading will first be retracted if the light intensity continuously remains below the threshold for the duration of the "retraction delay long".

Extension delay for shading (*1 min)	1 ... 240; 1
Retraction delay short for shading (*1 min)	1 ... 240; 1
Retraction delay short for shading (*1 min)	1 ... 240; 30

Table 67: Setting extension delay for shading

13.2.5 Window opening restriction

The opening restriction defines that a window will only open slightly at low outside temperatures. This prevents the room from cooling down quickly.

Here, set the temperature below the level at which the window should only be opened to a limited extent. Furthermore, specify how long this temperature must be exceeded in order to deactivate the opening restriction again.

At outside temperatures below (*0.1°C)	-50 ... 150; 20
End when outside temperature limit exceeded	
For more than (hours)	1 … 72; 8

Table 68: Setting window opening restriction

You can set how wide the opening is restricted to in the automatic functions for the individual windows.

13.2.6 Ventilation lock-up

As soon as a cooling system is switched on, the windows are closed and the fans are switched off. If the cooling system is switched off again, the ventilation still remains stopped for a while so that the cooled air is not discharged immediately through the window or fan. You can adjust the delay time for this here.

The ventilation lock-up responds to the object no. 608 "Automatic cooling status". This input object can also be assigned with the status of the internal cooling control level (objects 648, 690, 732, 774, 816 Auto1...5 Temp. Status background cooling and objects 649, 691, 733, 775, 817 Auto1...5 Temp. status supplementary cooling).

Ventilation lock-up after switching off the cooling (minutes) *for fans and windows*	1 ... 480; 60

Table 69: Ventilation lock-up when cooling

13.2.7 Night-time re-cooling

The night-time re-cooling via windows and ventilation units is activated if a defined outside temperature is exceeded over a long period of time.

Start when exceeding the outside temperature of (* 0.1°C)	100 ... 350; 160
for longer than (hours)	1 ... 72; 48

Table 70: Night-time re-cooling

With the automatic functions of the individual windows and fans you set which windows and fans are used for the night-time re-cooling and in which time period cooling takes place.

13.2.8 Frost alarm

The frost alarm for shadings and windows becomes active if a defined outside temperature is not reached during or after precipitation.

The following situations trigger the frost alarm:

- The outside temperature is below the set frost alarm temperature and it starts raining/ snowing.
- The outside temperature falls below the set frost alarm temperature while it is raining/ snowing.
- It has rained/snowed. Within the set readiness period after the end of the precipitation, the outside temperature falls below the set frost alarm temperature.

The following situation ends the frost alarm:

– The outside temperature remains above the set dew-point for the set time period.

First define when the frost alarm is triggered. Set the outside temperature which must be fallen below in order to trigger the frost alarm (e.g. 2.0°C). Then, set how many hours after precipitation the readiness for frost alarm should be active (e.g. 5 h). Select the readiness period so that all humidity of the previous precipitation is dried after that.

Now specify the conditions for the end of the frost alarm. Set which outside temperature must be exceeded (e.g. 5.0°C), and how long (e.g. 5 h). Select the time period so that the ice has completely thawed afterwards.

Start frost alarm when	
outside temperature drops below (*0.1°C)	-50 ... 40; 20
and during or after a precipitation (hours)	1 ... 10; 5
End frost alarm when	
outside temperature above (*0.1°C)	30 ... 100; 50
for more than hours	1 ... 10; 5

Table 71: Frost alarm

Set which shadings are retracted and which windows are closed during frost alarm with the automatic functions of the individual shadings and windows.

13.2.9 Heat protection

The heat protection for shadings and windows is active if the defined outside temperature here is exceeded The hysteresis indicates how many degrees the outside temperature must fall below the set temperature again in order to remove the heat protection.

At outside temperature above (*0.1°C)	100 ... 500; 350
Hysteresis (*0.1°C)	10 ... 200; 50

Table 72: Heat protection

13.2.10 Automatic reset

After a manual operation, the automatic system channel affected always remains in manual mode and the automatic is switched off. At the time of the daily automatic reset e.g. at 3 o'clock in the morning, the channels can be reset to automatic. Additionally, you can specify that the system will also be reset to automatic after a set time period has elapsed.

The automatic reset ensures that drives are prevented from being used manually and then remain in an unfavourable position (a window remains accidentally open, blind remains closed despite sun).

Reset at specified time	
Hour	0 ... 23; 3
Minute	0 ... 59
and/or	
Time reset after manual operation (minutes)	5 ... 480; 60

Table 73: Automatic reset

The automatic reset can be activated and deactivated separately for each automatic channel.

13.3 Automatic light control

ETS: → Automatic X (light)

Automatic X: Automatic 1…Automatic 5

Light can be configured for simple switching or for dimming.

Light	Switching Brightness value

Table 74: Automatic light control

First configure the lock-up by the lock-up object.

Automatic lock-up via object *lock-up object "Auto X… automatic lock-up*	1 = lock-up | 0 = release 0 = lock-up | 1 = release
Value at initialization lock-up object	0 1
Action after lock-up	Execute the last automatic command Wait for next automatic command

Table 75: Lock-up object for automatic light control

The function "Switch to manual if feedback of automatic setpoint differs" ensures that changes are also registered by external light switches in the system . If you set the parameter to "active", then all actuators of this channel will be set to "manual" if the object "Switch AutoX light status" or "AutoX Light status brightness" does not correspond to the setpoint. This means that the automatic is not active until an automatic reset takes place.

Therefore, you should set the parameter to "not active" if all actuators are controlled by this channel. In this case, the information manual/automatic should be processed separately by each actuator.

Switch to manual when feedback value of automatic setpoint differs *Object "Switch AutoX light status" or "AutoX light status brightness"*	Not active Active

Table 76: Differing feedback value of automatic setpoint

Then, assign a name for this automatic light function A name can be input (max. 15 characters) for each of the six possible languages.

Language of the editable texts

Automatic name	
Language selection 1...6	[Free text]

Table 77: Designation of automatic name

The light can be switched on at night in predefined time periods and linked with AND or OR in both situations Activate and deactivate the timer functions in advance that you want to use here in the menu "Weekly timer"!

Twilight

Switch light	at night by timer function at night AND timer function at night OR timer function
Timer function 1 ... 16 *only with timer function*	Not active Active

Table 78: Switching light at twilight

If the dimming function was selected as a function for the automatic light, the percentage value for ON and OFF can be input.

Brightness value ON (%) *only if light = brightness value*	0 ... 100
Brightness value OFF (%) *only if light = brightness value*	0 ... 100

Table 79: Setting brightness value

Finally, activate or deactivate the automatic reset function for this light channel.

Perform Automatic Reset	
at the specified time	Not active Active
aiting time after manual operation	Not active Active

Table 80: Automatic reset

13.4 Automatic shading (blind, awning, roller shutter)

The automatic control for blinds, shutters and awnings provides the same setting options. In the case of blinds, these options also include settings for slats.

ETS: Automatic X (blind/awning/roller shutter)

13.4.1 Automatic lock-up and safety

First configure the lock-up by the lock-up object.

Automatic lock-up via object	1 = lock-up | 0 = release 0 = lock-up | 1 = release
Value at initialization lock-up object	0 1
Action after lock-up	Execute the last automatic command Wait for next automatic command

Table 81: Lock-up object for automatic shading

The function "Switch to manual if feedback of automatic setpoint differs" ensures that changes are also registered by external switches in the system If you set the parameter to "active", then all actuators of this channel will be set to "manual" if the object "AutoX blind/awning/shutter status position" does not correspond to the setpoint. This means that the automatic is not active until an automatic reset takes place.

Therefore, you should set the parameter to "not active" if many actuators are controlled by this channel. In this case, the information manual/automatic should be processed separately by each actuator.

Switch to manual when feedback value of automatic setpoint differs *Objects "AutoX blind/awning/shutter status position"*	Not active Active

Table 82: Differing feedback value of automatic setpoint

Various objects provide the option to evaluate and use the status of the shading externally, too. Here, the safety object links the frost, wind and rain alarm to OR. With "Use alarm objects: active" separate objects are activated for frost, wind and rain alarm.

Lock-up status objects for room/outside temperature *Object no. AutoX blind/awning/shutter status room temperature lock-up* *Object no. AutoX blind/awning/shutter status outside temperature lock-up*	Not active Active
Safety object *Object no. AutoX blind/awning/shutter safety*	Not active Active
Alarm objects *AutoX blind/awning/shutter rain alarm* *AutoX blind/awning/shutter wind alarm* *AutoX blind/awning/shutter frost alarm*	Not active Active
Safety/alarm objects emission	On change On change to 1 On change to 0 on change and periodically on change to 1 and periodically on change to 0 and periodically
Periodical emission *only if periodical emission*	5 s ... 2 h; 10 s

Table 83: Release / lock-up of alarm objects

13.4.2 Priorities of the automatic shading

1. Alarm functions

   The alarm functions are applied to shadings in manual mode and in automatic mode. During frost, wind or rain alarm, shadings are retracted and cannot be extended manually.

2. Shading settings

   The settings are only performed if a shading is in automatic mode and none of the alarm functions is active.

   1.Outside temperature lock-up (do not move extended shadings anymore)

   2.Blind/awning/shutter down time-dependent

   3.Blind/awning/shutter up time-dependent

   4.Night-time closure (down)

   5.Room temperature lock-up (keep closed)

   6.Heat protection (special movement position)

3. Automatic sun protection

   The automatic sun protection is first executed according to light intensity when the direction and height of the sun are right and no lock-up or time/night function is active.

13.4.3 Setting shading

The automatic sun protection can shade:

1.Never: Then, there is no response to the position of the sun. The shading can be moved time-controlled or closed at night and moved manually.

2.Always: Then, the automatic shading approaches a set position independent of the sun. Nevertheless, the slats of blinds can follow the position of the sun. The shading can be opened and closed time-controlled, close at night and be moved manually. A separate heat protection position can be predefined.

3.Brightness dependent: Then, the shading is controlled automatically according to light intensity, position of the sun and room and outside temperature. The shading can be opened and closed time-controlled, close at night and be moved manually. A separate heat protection position can be predefined.

Frost and rain and wind alarm are adjustable for all types of shading to protect the hanging. These alarm functions lock-up the manual operation.

Then assign a name for this shading. A name can be input (max. 15 characters) for each of the six possible languages.

Language of the editable texts

Automatic name	
Language selection 1...6	[Free text]

Table 84: Assigning name for automatic control

Shading	Not active Active Brightness-dependent

Table 85: Selecting shading

Settings that only appear with brightness-dependent shading:

You can select from a list of 6 angular ranges for the direction of the sun (see table 101, Angle of the direction of the sun) or the angular range can be specified individually.

Set the light intensity, direction (azimuth) and height (elevation) of the sun for the shading.

Brightness-dependent control:

from brightness value (kLux)	1...99; 40
Direction of the sun *Angle of the direction of the sun*	all directions West South-West South South-East East Angular range
Direction of the sun greater than (°) *only for angular range*	0...360; 90
Direction of the sun less than (°) *only for angular range*	0...360; 270
Sun elevation	all directions Angular range
Sun elevation greater than (°) *only for angular range*	0...90
Sun elevation less than (°) *only for angular range*	0...90

Table 86: Brightness-dependent configuration of shading

Set the movement position for the automatic. For blinds you can also select the slat position and specify whether the slats should follow the position of the sun. During the sun position tracking, there are four elevation ranges to which one slat position each is assigned in percent.

Position (%)	0...100
Slat position *only for blinds*	specific position tracks the sun
Slat position (in %) *without sun position tracking*	0...100; 75
Slat position (in %) *without sun position tracking*	Slat position (%):
Range 0° - 15°	0...100
Range 15° - 30°	0...100; 80
Range 30° - 45°	0...100; 65
Range 45° - 90°	0...100; 50

Table 87: Adjusting sun position tracking

If the shading conditions are no longer met (brightness etc.), the movement position can first be changed after the retraction delay "short" has elapsed. The shading is first retracted fully after the retraction delay "long" has elapsed.

The movement delay times are set in the "Automatic" menu.

→ Movement delays

Change position after retraction delay "short"	Not active Active
Position (%) *only when changed by retraction delay "short"*	0 ... 100
Change slat position after retraction delay "short" *only for blinds*	Not active Active
Slat position (%) *only when changed by retraction delay "short"*	0 ... 100

Table 88: Shading position

Through the room temperature lock-up the solar energy is used for heating the room. If the room temperature is below the set value in the morning, for example, then the shading remains closed despite sun. As soon as the room temperature is exceeded, the lock-up is removed and the shading is released.

If the room temperature drops again, then the lock-up is reactivated as soon as the temperature is more than 3°C below the set value (hysteresis).

Please note that the retraction delays also apply to the room temperature lock-up and the shading is first retracted when the delay time has elapsed.

Room temperature lock-up	Not active Active
Shading from (*0.1°C) *only if lock-up active*	50...400; 220

Table 89: Room temperature lock-up

The outside temperature lock-up prevents the movement of extended shadings at low outside temperatures. The lock-up will first be removed again when the temperature increases more than 2.0° above the set value (hysteresis).

The lock-up only applies to automatic mode. Even if an outside temperature lock-up is active, the drive responds to frost, wind and rain alarm and to manual move commands.

- The drive and hanging may be damaged if a frozen outside shading is moved!
- Guide rails or other mechanical parts could still be frozen over even if the outside temperature has already increased to quite high values.
- To achieve reliable protection against damage caused by freezing over, use the frost alarm function.

Using outside temperature lock-up	Not active Active
Shading from (*0.1°C) *only if lock-up active*	-200...300; 50

Table 90: Outside temperature lock-up

Settings that only appear with "active" shading:

Set the movement position for the automatic. For blinds you can also select the slat position and specify whether the slats should follow the position of the sun. During the sun position tracking, there are four elevation ranges to which one slat position each is assigned in percent (Table 101: Angle of the direction of the sun).

Parameter description if shading is active:

Position (%)	0...<u>100</u>
Slat position *only for blinds*	<u>specific position</u> tracks the sun
Slat position (in %) *without sun position tracking*	0...100; <u>75</u>

Table 91: Parameter only "visible" for shading

Slat position (only for blinds):

Slat position	specific position <u>tracks the sun</u>
from brightness (kLux) *with sun position tracking*	1...99; <u>40</u>
Direction of the sun *Angle of the direction of the sun*	<u>all directions</u> West South-West South South-East East Angular range
Direction of the sun greater than (°) *only for angular range*	0...360; <u>90</u>
Direction of the sun less than (°) *only for angular range*	0...360; <u>270</u>
Sun elevation	<u>all directions</u> Angular range
Sun elevation greater than (°) *only for angular range*	<u>0</u>...90
Direction of the sun less than (°) *only for angular range*	<u>0</u>...90
Sun elevation:	Slat position (%):
Range 0° - 15°	<u>0</u>...100
Range 15° - 30°	0...100; <u>80</u>
Range 30° - 45°	0...100; <u>65</u>
Range 45° - 90°	0...100; <u>50</u>
Slat position (%) when the sun no longer in the range given above after completion of\r\nshort retraction delay	0...100; <u>75</u>

Table 92: Parameter "tracks the sun"

Settings if shading "active" or is shaded "brightness-dependent":

If the shading is always kept closed or is controlled depending on brightness, you can choose that the hanging is used as heat protection and opened via timer functions.

The heat protection temperature is set in the "Automatic" menu.

Heat protection

Heat protection *not if "not active" is shaded*	Not active Active
Heat protection position (%) *only if heat protection is used*	0...100
Heat protection slat position (%) *with blind, only if heat protection is used*	0...100

Table 93: Heat protection

Blind down time dependent ***not if shading "not active"***	
Timer function 1 - 16	Not active Active

Blind down time-dependent

Settings for ALL types of shading:

Time-dependent retraction and night-time closure can be set for all types of shading. Activate and deactivate the timer functions in advance that you want to use here in the menu "Weekly timer"!

Weekly timer

Blind up time dependent	
Timer function 1 - 16	Not active Active
Night-time closure	Not active Active
Position for time-dependent retraction or night-time closure	
Position (%)	0...100
Slat position (%) *only for blinds*	0...100

Table 94: Blind movement time-dependent

The frost, rain and wind alarm allow the shading to be moved to the safe position and lock-up the manual operation.

Wind and rain alarms are kept for 5 minutes. An additional extended automatic lock-up applies to shadings. During this time, the automatic control is disabled but the manual operation is already possible again.

The conditions for the frost alarm and lock-up duration for shadings after a wind alarm are set in the "Automatic" menu.

Frost alarm

Frost protection	Not active Active
Rain alarm	Not active Active
wind alarm	Not active Active
Wind alarm limit (*0.1m/s) *only if wind alarm is used*	5...195; 80
Wind alarm delay (seconds) *only if wind alarm is used*	1...20; 2

Table 95: Activating alarms

Finally, activate or deactivate the automatic reset function for this shading channel.

Automatic reset

Perform Automatic Reset	
at the set time	Not active Active
Waiting time after manual operation	Not active Active

Table 96: Automatic reset

13.4.4 Angle of the direction of the sun

These angle specifications are used for the direction of the sun when using the fixed cardinal directions as an indication of the shading side.

all sides	greater than 0°	less than 360°
West	greater than 180°	less than 360°
South-West	greater than 135°	less than 315°
South	greater than 90°	less than 270°
South-East	greater than 45°	less than 225°
East	greater than 0°	less than 180°

Table 97: Angle of the direction of the sun

13.5 Automatic window

ETS: Automatik X (windows)

Windows can be configured with or without opening stages (stepwise opening).

Window with opening stages, mode	Not active Active
Number of steps *only with opening stages*	2...10; 5

Table 98: Automatic window

13.5.1 Automatic lock-up and safety

First configure the lock-up by the lock-up object.

Automatic lock-up via object *Lock-up objects "AutoX window automatic lock-up"*	1 = lock-up | 0 = release 0 = lock-up | 1 = release
Value at initialization lock-up object	0 1
Action after lock-up	Execute the last automatic command Wait for next automatic command

Table 99: Lock-up object for automatic window

The function "Switch to manual if feedback of automatic setpoint differs" ensures that changes are also registered by external switches in the system If you set the parameter to "active", then all actuators of this channel will be set to "manual" if the object "AutoX window opening status" does not correspond to the setpoint. This means that the automatic is not active until an automatic reset takes place.

Therefore, you should set the parameter to "not active" if many actuators are controlled by this channel. In this case, the information manual/automatic should be processed separately by each actuator.

Switch to manual when feedback value of automatic setpoint differs *Object no. "AutoX window opening status"*	Not active Active

Table 100: Feedback value in case of deviation from automatic setpoint

Various objects provide the option to also evaluate and use the status of the window externally.

Here, the safety object links the frost, wind and rain alarm to OR.

With "Use alarm objects: active" separate objects are activated for frost, wind and rain alarm.

Status object for Outside temperature lock-up *Objects AutoX window status outside temperature lock-up*	Not active Active
Safety object *Objects AutoX window safety*	Not active Active
Alarm objects *Window rain alarm* *AutoX window wind alarm* *AutoX window frost alarm*	Not active Active
Safety/alarm object emission	On change On change to 1 On change to 0 on change and periodically on change to 1 and periodically on change to 0 and periodically

Periodical emission *only if periodical emission*	5 s ... 2 h; 10 s

Table 101: Einstellungen für die Alarm-ObjekteSettings for alarm objects

13.5.2 Priorities of the automatic window

1. Alarm functions

   The alarm functions are applied to windows in manual mode and in automatic mode. During frost, wind or rain alarm, windows are closed and cannot be opened manually.

   The ventilation lock-up also closes windows (object no. 608 "Automatic cooling status" =1). They are then in automatic mode and can then be immediately reopened manually. The delay time for the ventilation lock-up can be adjusted.

2. Ventilation settings

   The settings are only performed if a window is in automatic mode and none of the alarm functions are active.

   The priorities must be observed in the following order:

   1. Time-dependent closure
   2. Outside temperature lock-up (keep closed)
   3. Time-dependent ventilation (open)
   4. Supply air temperature lock-up (keep closed)
   5. Lowest priority: Night-time re-cooling (open)

   This means that timed ventilation or night-time re-cooling, for example, only take place if the outside temperature is above the set value of the outside temperature lock-up.

3. Automatic ventilation

   The automatic ventilation according to temperature, humidity or CO2 content is only executed if no lock-up is active.

13.5.3 Setting window ventilation

Room temperature, relative humidity and CO2-content of the indoor air can be evaluated for the ventilation.

Then, assign a name for this window. A name can be input (max. 15 characters) for each of the six possible languages.

Language of the editable texts

Automatic name	
Language selection 1...6	[Free text]

Table 102: Language selection of automatic name

Evaluation room temperature	Not active Active
Window open from temp. (*0.1 °C) (Hysteresis = 2°C) *only for ventilation according to room temperature*	50...400; 220
Evaluation humidity	Not active Active
Window open from humidity (% r.h) *(Hysteresis = 3%)* *only for ventilation according to room temperature*	10...95; 60
Evaluation of CO_2	Not active Active
Window open from CO_2 value (*10 ppm) *only for ventilation according to CO_2 value*	50...200; 80
Window closed from CO_2 value (*10 ppm) *only for ventilation according to CO_2 value*	50...200; 55

Table 103: Setting ventilation parameters

The supply air temperature lock-up closes the window if it is warmer outside than inside.

Close window when outside temperature is higher than room temperature (Hysteresis = 3%)	Not active Active

Table 104: Close window in case of temperature difference

Select the timer functions for night-time re-cooling. Activate and deactivate the timer functions in advance that you want to use here in the menu "Weekly timer"!

The night-time re-cooling is set in the "Automatic" menu.

Night-time re-cooling

Use night-time cooling for	
Timer function 1 - 16	Not active Active
Open window until room temp drops below (*0.1°C)	50...500; 160
Window opening (%)	0...100; 30

Table 105: Night-time re-cooling

The outside temperature lock-up causes the window to remain in the current position. The lock-up can be used, for example, if the window should not be used for ventilation in the winter (cold protection for plants).

The lock-up only applies to automatic mode, no ventilation then occurs. During rain or wind alarm, the window is closed despite the outside temperature lock-up (alarm has priority over lock-up temperature).

Manual operation still remains possible even if the window is disabled due to low outside temperature.

Outside temperature lock-up	Not active Active
Close window when outside temperature below (* 0.1 °C) (Hysteresis = 2%) *if temperature lock-up is used*	-200 ... 300; 50

Table 106: Outside temperature lock-up

Select the timer functions, in which the window should be opened and those in which it should be closed. Activate and deactivate the timer functions in advance that you want to use here in the menu "Weekly timer"!

Weekly timer

Window time dependent opening	
Timer function 1 - 16	Not active Active
Window time dependent closure	
Timer function 1 - 16	Not active Active

Table 107: Window time dependent opening/closure

The opening restriction restricts the opening range of the window at low outside temperatures. The opening restriction is set in the "Automatic" menu.

Window opening restriction

Opening restriction at low outside temperatures	Not active Active
Window opening (%) *only for restricted openings*	0 ... 100; 20

Table 108: Setting opening restriction

The ventilation lock-up is activated when switching on a cooling unit (object no. 608 "Automatic cooling status" =1) and closes the window. It can, however, be immediately reopened manually.

Frost, rain and wind alarm, on the other hand, close the window and lock-up the manual operation. During rain alarm, the window can remain slightly open. Wind and rain alarms are kept for 5 minutes.

The conditions for the frost alarm and delay time for the ventilation lock-up are set in the "Automatic" menu.

Ventilation lock-up and frost alarm

Ventilation lock-up	Not active Active
Frost protection	Not active Active
Rain alarm	Not active Active
Gap opening during rain *only if rain alarm is used*	Not active Active
Window opening (%) *only if gap opening is used*	0 ... 100; 5
wind alarm	Not active Active
Wind alarm limit (*0.1m/s) *only if wind alarm is used*	5...195; 80
Wind alarm delay (seconds) *only if wind alarm is used*	1...20; 2

Table 109: Configuration of parameter "alarms"

Finally, activate or deactivate the automatic reset function for this window channel.

Automatic reset

Perform automatic reset	
at the specified time	Not active Active
aiting time after manual operation	Not active Active

Table 110: Perform Automatic Reset

13.6 Automatic fan

The automatic control and manual control of fans is only possible if the Display KNX Touch Control receives a feedback about the current fan speed from the fan actuator.

ETS: Automatic X (fan)

13.6.1 Automatic lock-up and safety

First configure the lock-up by the lock-up object.

Automatic lock-up via object *Lock-up objects "AutoX ventilator automatic lock-up"*	1 = lock-up | 0 = release 0 = lock-up | 1 = release
Value at initialization lock-up object	0 1
Action after lock-up	Execute the last automatic command Wait for next automatic command

Table 111: Setting lock-up object automatic

"Switch to manual mode if the feedback does not correspond to the setpoint" ensures that changes are also registered by external switches in the system. If you set the parameter to "Active", then all actuators of this channel will be set to "Manual" if the object "AutoX fan status of fan speed" does not correspond to the setpoint. This means that the automatic is not active until an automatic reset takes place.

Therefore, you should set the parameter to "not active" if many actuators are controlled by this channel. In this case, the information manual/automatic should be processed separately by each actuator.

Switch to manual when feedback value of automatic setpoint differs *Object no. "AutoX fan status of fan speed"*	Not active Active

Table 112: Feedback value in case of deviation from automatic setpoint

The object "status outside temperature lock-up" provides the option to also evaluate and use the status of the fan externally.

Status objects for Outside temperature lock-up *Object no. AutoX "Fan status outside temperature lock-up"*	Not active Active

Status object "outside temperature lock-up

13.6.2 Priorities of the automatic fan

1. Ventilation settings

The ventilation settings are only performed if a fan is in automatic mode and the ventilation lock-up (by cooling being switched on, object no. 608) is not active.

The priorities must be observed in the following order:

1. Outside temperature lock-up (switched off),
2. Timed ventilation (switched on)
3. Supply air temperature lock-up (switched off)
4. Night-time re-cooling (switched on)

This means that timed ventilation or night-time re-cooling, for example, only take place if the outside temperature is above the set value of the outside temperature lock-up.

2. Automatic ventilation

The automatic ventilation according to temperature, humidity or CO2 content is only executed if no lock-up is active.

Adjusting ventilation

Room temperature, relative humidity and CO2-content of the indoor air can be evaluated for the ventilation.

Then, assign a name for this window ventilator. A name can be input (max. 15 characters) for each of the six possible languages.

Language of the editable texts

Automatic name	
Language selection 1...6	[Free text]

Table 113: Naming automatic function

Evaluation room temperature	Not active Active
Start ventilation from temperature (* 0.1 °C) (Hysteresis = 2°C) *only for ventilation according to room temperature*	50...400; 220
Evaluation humidity	Not active Active
Ventilation from humidity (in % rH) (Hysteresis = 3%) *only for ventilation according to room temperature*	10...95; 60
Evaluation of CO2	Not active Active
Ventilation start from CO2 value (*10 ppm) *only for ventilation according to CO2 value*	50...200; 80
Ventilation stop from CO2 value (*10 ppm) *only for ventilation according to CO2 value*	50...200; 55

Table 114: Setting ventilation parameters

The supply air temperature lock-up stops the ventilation if it is warmer outside than inside.

Stop ventilation when outside temp. higher than room temperature (Hysteresis = 3%)	Not active Active

Table 115: Supply air lock-up parameter

Adjust the speed range that should be ventilated with.

Fan speed start (%)	1...100; 10
Fan speed operation (%)	1...100; 80

Table 116: Fan speed parameters

Select the timer functions for night-time re-cooling. Activate and deactivate the timer functions in advance that you want to use here in the menu "Weekly timer"!

Weekly timer

Use night-time cooling for	
Timer function 1 - 16	Not active Active
Ventilate until room temperature drops below (*0.1°C)	50...500; 160
Fan speed (%)	0...100; 30

Table 117: Setting timer functions for night-time re-cooling

The outside temperature lock-up prevents the ventilation when it is cold outside (e.g. cold protection for plants). The lock-up only applies to automatic mode, but manual operation still remains possible.

Outside temperature lock-up	Not active Active
Stop ventilation if outside temperature below (* 0.1°C) (Hysteresis = 2°C) *if temperature lock-up is used*	-200...300; 50

Table 118: Setting outside temperature lock-up

Weekly timer

Use timed ventilation for	
Timer function 1 - 16	Not active Active
Fan speed (%) *only for timed ventilation*	0 ... 100; 50

Table 119: Setting timed ventilation parameters

The ventilation lock-up is activated when switching on a cooling unit (object no. 608 "Automatic cooling status" =1) and stops the ventilation. The fan, however, can be immediately restarted manually.

Ventilation lock-up	Not active Active

Table 120: Using ventilation lock-up

Finally, activate or deactivate the automatic reset function for this ventilation channel.

Automatic reset

Perform automatic reset	
at the specified time	Not active Active
aiting time after manual operation	Not active Active

Table 121: Setting automatic reset

14. Automatic temperature control

The temperature control allows heating and cooling to be controlled in one stage and in two stages.

ETS: Automatic X (fan)

14.1 Regulation general

To control the room temperature according to need, the comfort, standby, night reduction and building protection modes should be used.

- Comfort (presence)
- Standby (brief absence)
- Night reduction (night mode)
- Frost/heat protection (building protection during longer absence)

In the thermostat settings the set temperatures are defined for the individual modes. The mode to be executed is determined via objects. A change of the mode can be triggered manually or automatically (e.g. by a timer, window contact).

- Operating mode objects, priority 2 for change-over in daily operation
- Operating mode objects, priority 1 for central change-over with higher priority

The objects are encoded as follows

ID	Name	Encoding	Range	Use
20,102	DPT_HVACMode	field1 = HVACMode 0 = Auto 1 = Comfort 2 = Standby 3 = Economy (night operation) 4 = Building Protection (frost/ heat protection)	[0 … 4]	HVAC

Table 122: Encoding HVAC objects

Alternatively, three objects can be used, whereby one object then changes over between night reduction mode and standby mode and the two other objects activate the comfort mode or frost/heat protection mode. In the course of this, the comfort object blocks the night reduction/ standby object, the frost/heat protection object has the highest protection.

- Operating mode objects (1: night reduction, 0: standby)
- Comfort operating mode objects
- Operating mode frost/heat protection activation objects

Switch operating mode via	two 8-bit objects three 1-bit objects

Table 123: Operating mode changeover

Define which mode should be executed after a reset (e.g. power failure, reset of the line via the bus) (default).

Select which modes can be selected via the user interface of the display.

Then, configure the lock-up of the temperature control by the lock-up object.

Operating mode after restart	Comfort Standby Night lowering Frost/heat protection
The following operating modes can be selected via the user interface:	
Comfort	Active Not active
Standby	Active Not active
Night lowering	Active Not active
Frost/heat protection	Active Not active
Lock-up of the room thermostat via object	1 = lock-up | 0 = release 0 = lock-up | 1 = release
Value at initialization lock-up object	0 1

Table 124: Parameterization of operating mode

Set when the current valve positions of the control are emitted to the bus.

The periodical emission provides more safety in case a telegram does not arrive at the receiver. This means that periodical monitoring by the actuator can also be configured.

Valve position emission	On change on change and periodically
from change greater than (% absolute)	1...10; 2
Periodical transmission *only if periodical emission*	5 s ... 5 min … 2 h

Table 125: Setting valve position parameters

The status object displays the current status of the valve position (0% = OFF, >0% = ON) and can, for example, be used for visualization or for switching off the heating pump as soon as no heating is running anymore.

Status objects emission	On change On change to 1 On change to 0 on change and periodically on change to 1 and periodically on change to 0 and periodically
Periodical transmission *only if periodical emission*	5 s ... 5 min … 2 h

Table 126: Setting status objects for operating mode

Then, define the type of control. Heating and/or cooling can be controlled in two stages.

Type of regulation	Heating Background and supplementary heating Cooling Heating / cooling Background and supplementary heating / cooling Backgr. & suppl. heating / backg. & suppl. cooling

Table 127: Settimg type of regulation

14.2 Setpoints

Setpoints can either be predefined separately for each mode or the comfort setpoint is used as the base value.

If the base value is used, only the deviation from the comfort setpoint is specified for the other modes (e. g. 2°C less for standby mode).

If the control for heating and cooling is used, the setting "separate with changeover object" can also be selected. Systems that are used in the summer as cooling and in the winter as heating can thus be changed over.

Keep changed setpoint values after operation mode changeover	Active Not active
Adjusting the setpoints *only for heating or cooling control types*	setpoint separately with setpoint comfort as a basis
Adjusting the setpoints *only for heating and cooling control types*	setpoint separately, with changeover object setpoint separately, without changeover object setpoint comfort as a basis, with changeover obj. setpoint comfort as a basis, without changeo. obj.

Table 128: Parameterisation of general setpoint settings

Heating/cooling, change-over via object *only for setpoints with changeover object*	0 = Heating | 1 = Cooling 0 = Cooling | 1 = Heating
Value at initialization of the\r\nchangeover object *only for setpoints with changeover object*	0 1

Table 129: Heating/cooling, change-over via object

The increment for the setpoint change is predefined. The changes can remain active temporarily (do not save) or remain saved even after voltage recovery (and programming). This also applies to a comfort extension.

Setpoint changes +/- (*0.1°C)	1… 50; 10
Saving setpoint(s) and comfort extension time	Not active for restart for restart and download (Do not use during initial setup!)

Table 130: Setting setpoint changes

From the night reduction mode, i.e. night operation, the control can be switched again to comfort mode manually. Thus, the day setpoint can be maintained longer if, for example, guests are there. The duration of this comfort extension time is predefined. After the comfort extension time has elapsed, the control switches back again to the night reduction mode.

Comfort extension time (seconds) activated only at night setpoint	60…36000; 3600

Table 131: Setting comfort extension

14.2.1 Setpoint comfort

The comfort mode is normally used for daytime operation in the case of presence. A start value is defined for the comfort setpoint and a temperature range, in which the setpoint can be changed.

Initial setpoint for heating/cooling (*0.1°C)	-300…800; 210
Minimum setpoint for heating/cooling (*0.1 °C)	-300…800; 160
Maximum setpoint for heating/cooling (*0.1 °C)	-300…800; 280

Table 132: Setting setpoint "comfort"

If the comfort setpoint is used as a basis, a dead zone is predefined for the control type "heating and cooling" so that no direct change-over of heating and cooling takes place.

Dead zone between heating and cooling(*0.1°C) *only for heating and cooling simultaneously, no changeover object*	1…100; 50

Table 133: Setting dead zone

14.2.2 Setpoint standby

The standby mode is normally used for daytime operation in absence.

– If setpoints are set separately:

  A start value is defined and a temperature range, in which the setpoint can be changed.

Initial setpoint for heating (*0.1°C)	-300…800; 180
Initial setpoint for cooling (*0.1°C)	-300…800; 240
Minimum setpoint for heating/cooling (*0.1 °C)	-300…800; 160
Maximum setpoint for heating/cooling (*0.1 °C)	-300…800; 280

Table 134: Setting setpoint "standby"

– If setpoints are set separately:

  A start value is defined and a temperature range, in which the setpoint can be changed.

Reduce setpoint heating (*0.1°C) *for heating*	0…200; 30
Increase setpoint cooling (*0.1°C) *for cooling*	0…200; 30

Table 135: Setting setpoint reduction for heating/cooling

14.2.3 Setpoint night reduction

The "night reduction" mode is normally used for nighttime operation.

– If setpoints are set separately:

  A start value is defined and a temperature range, in which the setpoint can be changed.

Initial setpoint for heating (*0.1°C)	-300…800; 160
Initial setpoint for cooling (*0.1°C)	-300…800; 280
Minimum setpoint for heating/cooling (*0.1 °C)	-300…800; 160
Maximum setpoint for heating/cooling (*0.1 °C)	-300…800; 280

Table 136: Setting setpoint "night reduction"

– If the comfort setpoint is used as a basis:

  If the comfort setpoint is used as a basis, the deviation from this value is specified.

Reduce setpoint heating (*0.1°C) *for heating*	0…200; 50
Increase setpoint cooling (*0.1°C) *for cooling*	0…200; 60

Table 137: Setting setpoint reduction for heating/cooling

14.2.4 Setpoints frost/heat protection (building protection)

The frost/heat protection mode (building protection) is used during longer absence. Setpoints are predefined for the frost protection (heating) and heat protection (cooling), which cannot be changed from outside (no access to operating units etc.). The frost/heat protection mode can be delayed, thus making it possible to still leave the building before the control switches to the frost/heat protection mode.

Setpoint frost protection (*0.1°C)	-300…800; 70
Setpoint heat protection (*0.1°C)	-300…800; 350
Activation delay	None 5 s ... 5 min … 2 h

Table 138: Setting setpoint "frost/heat protection"

The activation delay time for the setpoint frost protection and heat protection must be set separately.

14.3 Heating control and valve position

14.3.1 Valve positions general

This setting only appears for the control types "heating" and "cooling". Here, you can define whether a common valve position should be used for the heating and for the cooling. If the 2nd level has a common valve position, then the control type of the 2nd position will also be defined commonly for supplementary heating and supplementary cooling here. In the case of a separate valve position for the supplementary level, the control type is defined during the corresponding definitions for the heating and cooling supplementary level.

If the valve position for a 4/6-way valve is used, then the following applies:

0%...100% Heating = 66...100% valve position
OFF = 50% valve position
0...100% Cooling = 33...0% valve position

Valve positions for heating and cooling *variants can only be selected if under "Type of control" the parameter "Heating / Cooling" or "Background and supplementary heating / cooling" is selected*	separate common
Valve positions at heating and cooling *variants can only be selected if under "Type of control" the parameter "Backgr. & suppl. heating / backg. & suppl. cooling" is selected*	separate common for background level common for supplementary level common for background and supplementary level
Use valve position for 4/6-way valve *only adjustable if valve positions for heating and cooling are common in the background level*	Active Not active
Regulation general\r\n *only for supplementary level*	2-point control PI control
Valve position *only for supplementary level*	1 bit object 8 bit object

Table 139: Valve position "General"

14.3.2 Heating control level

If the heating control level is configured, an adjustment section appears for the heating levels.

In the background level, the heating is controlled by a PI control, in which the controller parameter can be optionally input or predefined applications can be selected.

For individual control parameters you define at which deviation from the setpoint the maximum valve position is reached i.e. from when the maximum heat output is used.

The reset time specifies how fast the control responds to setpoint deviations. In the case of a small reset time, the control responds with a fast increase of the valve position. In the case of a large reset time, the control responds more gently and needs longer until the required valve position is reached for the setpoint deviation.

A time that is adjusted to the heating system must be set here (observe the manufacturer's data).

Type of heating	predefined application Custom controller parameter
Application *proportional band and reset time are set specifically only with predefined application (table 152)*	Hot water heating floor heating Forced air convector Electric heating
Proportional band heating (°C) *(only adjustable if parameter "custom controller parameter" is selected)*	1...5
Reset time (minutes) *(only adjustable if parameter "custom controller parameter" is selected)*	1...255; 30

Table 140: Setting "heating control level" parameter

Now specify what is emitted in the case of control lock-up. Set here a value greater than 0 (= OFF) to maintain a background heat, e.g. for floor heating systems.

On release, the valve position follows the control again.

Valve position when regulator lock-up	no emission emission of a specific value
Value (%) *(only if controller parameter "emission of a specific value" is selected)*	0...100; 0

Table 141: Setting "heating control level" valve position

In the case of a common valve position of heating and cooling in the background level, 0 is always emitted as a fixed value during the lock-up of the regulator

14.3.3 Heating control background and supplementary level

If a heating control background and supplementary level is configured, two setting sections for the heating levels appear.

In the background level, the heating is controlled by a PI control, as already described in the chapter "Heating control level".

In the supplementary level (i.e. only for two-stage heating), the heating is controlled by a PI or 2-point control. The 2-point control is used by default.

The parameters for the background level are to be set as described in the previous paragraph.

In the supplementary level, the setpoint difference between both levels must be predefined i.e. from which setpoint shortfall the supplementary level is switched on.

Difference between background to supplementary heating (*0.1°C) *only for supplementary level*	0...100; <u>40</u>
Regulation general\r\n *(only for supplementary level and if no common valve positions are used)*	<u>2-point control</u> PI control

Table 142: Setting "supplementary heating" parameters

14.3.3.12-point control

ℹ The 2-point control can only be configured in the supplementary level.

The 2-point control is used for systems that are only switched ON and OFF.

Specify the hysteresis preventing the frequent switching on and off at temperatures within the threshold range. Then, set whether a 1-bit object (On/Off) or an 8-bit object (On with percentage value/Off) is used.

Hysteresis (*0.1°C)	0...100; <u>20</u>
Output value	<u>1 bit object</u> 8 bit object
Value (%) *(only visible if parameter "8-bit object" is selected)*	0...<u>100</u>

Table 143: Setting hysteresis value

Now specify what is emitted in the case of control lock-up. Set here a value greater than 0 (= OFF) to maintain a background heat, e.g. for floor heating systems.

On release, the valve position follows the control again.

Valve position with regulator lock-up →	<u>no emission</u> emission of a specific value
Value *(only visible if valve position is 1-bit object and parameter "emission of a specific value" is selected)*	<u>0</u> 1
Value (%) *(only visible if valve position is 8-bit object and parameter "emission of a specific value" is selected)*	<u>0</u>...100

Table 144: Valve position for lock-up

In the case of a common valve position of heating and cooling in the supplementary level, 0 is always emitted as a fixed value during the lock-up of the control.

■ PI control with user-defined controller parameters in the supplementary level:
This setting allows the parameters to be input individually for the PI control.

Type of heating *only if PI control for supplementary level*	Custom controller parameter predefined applications
Application *proportional band and reset time are set specifically only with predefined application (table 152)*	Hot water heating floor heating Forced air convector Electric heating
Proportional band heating (°C) *only adjustable if parameter "custom controller parameter" is selected*	1...5
Reset time (minutes) *only adjustable if parameter "custom controller parameter" is selected*	1...255; 30

Table 145: PI control parameters

Now specify what is emitted in the case of control lock-up. On release, the valve position follows the control again.

Valve position when regulator lock-up	no emission emission of a specific value
Value (%) *(only visible if parameter "emission of a specific value" is selected)*	0...100

Table 146: Regulator lock-up for PI control

In the case of a common valve position of heating and cooling in the supplementary level, 0 is always emitted as a fixed value during the lock-up of the control.

– PI control with predefined application:
This setting provides fixed parameters for frequent applications.

Application	**Proportional range Heating (°C)**	**Reset time (minutes)**
Hot water heating	5	150
floor heating	5	240
Forced air convector	4	90
Electric heating	4	100

Table 147: PI control with predefined application:

14.3.4 Cooling control level

If the cooling control level is configured, an adjustment section appears for the cooling levels.

In the background level, the cooling is controlled by a PI control, in which the controller parameter can be optionally input or predefined applications can be selected.

For individual control parameters you define at which deviation from the setpoint the maximum valve position is reached i.e. from when the maximum cooling output is used.

The reset time specifies how fast the control responds to setpoint deviations. In the case of a small reset time, the control responds with a fast increase of the valve position. In the case of a large reset time, the control responds more gently and needs longer until the required valve position is reached for the setpoint deviation.

A time that is adjusted to the cooling system must be set here (observe the manufacturer's data).

Type of cooling	predefined application Custom controller parameter
Application *proportional band and reset time are set specifically only with predefined application (table 155)*	Cooling ceiling
Proportional band cooling (°C) *(only adjustable if parameter "custom controller parameter" is selected)*	1...5
Reset time (minutes) *(only adjustable if parameter "custom controller parameter" is selected)*	1...255; 30

Table 148: Setting "cooling control level" parameter

Now specify what is emitted in the case of control lock-up.

On release, the valve position follows the control again.

Valve position when regulator lock-up	no emission emission of a specific value
Value (%) *(only if controller parameter "emission of a specific value" is selected)*	0...100; 0

Table 149: Setting "cooling control level" valve position

In the case of a common valve position of heating and cooling in the background level, 0 is always emitted as a fixed value during the lock-up of the control.

14.3.5 Cooling control background and supplementary level

If a cooling control background and supplementary level is configured, two setting sections for the cooling levels appear.

In the background level, the cooling is controlled by a PI control, as already described above under Cooling control level.

In the supplementary level (i.e. only for two-stage cooling), the cooling is controlled by a PI or 2-point control. The 2-point control is used by default.

The parameters for the background level are to be set as described in the previous paragraph.

In the supplementary level, the setpoint difference between both levels must be predefined i.e. from which setpoint shortfall the 2nd level is switched on.

Difference between background to supplementary heating (*0.1°C) *only for supplementary level*	0...100; 40
Regulation general\r\n *(only for supplementary level and if no common valve positions are used)*	2-point control PI control

Table 150: Setting "supplementary cooling" parameter

14.3.5.1 2-point control

The 2-point control can only be configured in the supplementary level.

The 2-point control is used for systems that are only switched ON and OFF.

Specify the hysteresis preventing the frequent switching on and off at temperatures within the threshold range. Then, set whether a 1-bit object (On/Off) or an 8-bit object (On with percentage value/Off) is used.

Hysteresis (*0.1°C)	0...100; 20
Output value	1 bit object 8 bit object
Value (%) *(only visible if parameter "8-bit object" is selected)*	0...100

Table 151: Setting hysteresis value

Now specify what is emitted in the case of control lock-up.

On release, the valve position follows the control again.

Valve position when regulator lock-up	no emission emission of a specific value
Value *(only visible if valve position is 1-bit object and parameter "emission of a specific value" is selected)*	0 1
Value (%) *(only visible if valve position is 8-bit object and parameter "emission of a specific value" is selected)*	0...100

Table 152: Lock-up valve position

In the case of a common valve position of heating and cooling in the supplementary level, 0 is always emitted as a fixed value during the lock-up of the control.

– PI control in the supplementary level:

This setting allows the parameters to be input individually for the PI control.

Type of cooling *only if PI control for supplementary level*	Custom controller parameter predefined applications
Application *proportional band and reset time are set specifically only with predefined application (table 155)*	Cooling ceiling
Proportional band cooling (°C) *only adjustable if parameter "custom controller parameter" is selected*	1...5
Reset time (minutes) *only adjustable if parameter "custom controller parameter" is selected*	1...255; 30

Table 153: PI control "cooling"

Now specify what is emitted in the case of control lock-up.

On release, the valve position follows the control again.

Valve position when regulator lock-up	no emission emission of a specific value
Value (%) *only if controller parameter "emission of a specific value" is selected*	0...100; 0

Table 154: Valve position for lock-up

In the case of a common valve position of heating and cooling in the supplementary level, 0 is always emitted as a fixed value during the lock-up of the control.

– PI control with predefined application:

This setting provides fixed parameters for a cooling ceiling.

Application	**Proportional range Heating (°C)**	**Reset time (minutes)**
Cooling ceiling	5	30

Table 155: Control type for predefined application

15. Additional settings (ETS)

15.1 Interfaces

On the four analogue/digital inputs of the KNX Touch Control, mechanical push-buttons or temperature sensor can be connected. The configuration is performed in the menu

ETS: Interfaces

Activate the interfaces that you want to use.

Interface 1	Not active • Active
Interface 2	Not active • Active
Interface 3	Not active • Active
Interface 4	Not active • Active

Table 156: Activating interfaces

Select the appropriate function of the device connected to the analogue / digital inputs for the corresponding interface 1…4:

Function	Switch Slide switch Shutter roller shutters Awning Window Dimmers 8 bit encoder 16 bit encoder Scene call-up Temperature sensor (NTC)

Table 157: Assignment of functions

15.1.1 Function as switch

If a push-button with a switching function is assigned to the input, select the "switch" function and define which value is emitted when pressing and releasing the button and the condition when to emit it.

Control when button is pressed	0 emission 1 transmission1 emission no emission
Control when button is released	0 emission 1 transmission1 emission no emission
ON/OFF output emission	On change On change to 1 On change to 0 on change and periodically on change to 1 and periodically on change to 0 and periodically
Periodical emission *(only if periodical emission)*	5 s … 2 h; 1 min

Table 158: Interface "Function as switch"

15.1.2 Function as toggle switch

If a push-button with a toggle function is assigned to the input, select the "toggle switch" function and define whether toggling will occur when pressing or releasing the push-button.

Control when button is pressed	Toggle switch no emission
Control when button is released	Toggle switch no emission

Table 159: Interface "Function as toggle switch"

15.1.3 Settings for blind, roller shutter, awning, or window control

15.1.3.1 Function as blind control

If the input for the control of a drive is used, select the "blind", "awning", "roller shutter" or "window" function and define the button function and control mode. Depending on the control mode selected, additional specifications as to the duration of the button detection can be made.

Control	Down Up
Control mode **	Standard Standard inverted Advanced Safety movement (during press)
Control on keypress short = Stop/Step long = Up/Down *only adjustable if under operating mode the "Standard" parameter is selected* Control on keypress long = Stop/Step short = Up/Down *only adjustable if under operating mode the "Standard inverted" parameter is selected*	
Time between short press and long press (*0.1 s)	0…50 s; 10 s
Repetition of the step control on long keypress *only adjustable if under operating mode the "Standard inverted" parameter is selected*	None every 0.1 s…every 2 s; every 0.5s
Time to permanent move (* 0.1s) *only adjustable if under operating mode the "Extended" parameter is selected*	0…50 s; 20 s

Table 160: Interface "Function as blind switch"

** For more settings see chapter 15.1.4

15.1.3.2Function as roller shutter control

Control	Up Down Up/down
Control mode **	Standard Standard inverted Advanced Safety movement (during press)
Control on keypress short = Stop long = Up/Down *only adjustable if under operating mode the "Standard" parameter is selected* Control on keypress long = Stop short = Up/Down *only adjustable if under operating mode the "Standard inverted" parameter is selected*	
Time between short press and long press (*0.1 s)	0…50 s; 10 s
Repetition of the step control on long keypress *only adjustable if under operating mode the "Standard inverted" parameter is selected*	None every 0.1 s…every 2 s; every 0.5s
Time to permanent move (* 0.1s) *only adjustable if under operating mode the "Extended" parameter is selected*	0…50 s; 20 s

Table 161: Interface "Function as roller shutter switch"

** For more settings see chapter 15.1.4

15.1.3.3Function as awning control

Control	Up Down Up/down
Control mode **	Standard Standard inverted Advanced Safety movement (during press)
Control on keypress short = Stop long = Up/Down *only adjustable if under operating mode the "Standard" parameter is selected* Control on keypress long = Stop short = Up/Down *only adjustable if under operating mode the "Standard inverted" parameter is selected*	
Time between short press and long press (*0.1 s)	0…50 s; 10 s
Repetition of the step control on long keypress *only adjustable if under operating mode the "Standard inverted" parameter is selected*	None every 0.1 s…every 2 s; every 0.5s
Time to permanent move (* 0.1s) *only adjustable if under operating mode the "Extended" parameter is selected*	0…50 s; 20 s

Table 162: Interface "Function as awning control"

** For more settings see chapter 15.1.4

15.1.3.4Function as window control

Control	Close Open Close/Open
Control mode **	Standard Standard inverted Advanced Safety movement (during press)
Control on keypress short = Stop long = Open/Close *only adjustable if under operating mode the "Standard" parameter is selected* Control on keypress long = Stop short = Open/Close, *only adjustable if under operating mode the "Standard inverted" parameter is selected*	
Time between short press and long press (*0.1 s)	0…50 s; 10 s
Repetition of the step control on long keypress *only adjustable if under operating mode the "Standard inverted" parameter is selected*	None every 0.1 s…every 2 s; every 0.5s
Time to permanent move (* 0.1s) *only adjustable if under operating mode the "Extended" parameter is selected*	0…50 s; 20 s

Table 163: Interface "Function as window control"

** For more settings see chapter 15.1.4

15.1.3.5Control mode for drive control

	short	long
Shutter	Stop/Step	Up, Down
roller shutters	Stop	Up, Down, Up/Down
Awning	Stop	Up, Down, Up/Down
Window	Stop	Open, Close, Open/Close

Table 164: Table : Operating mode for standard controls

- Standard:

  In the "Standard" operating mode, the drive moves stepwise or stops if pressed for a short time. If pressed for a longer time, the drive moves to the final position. The time difference between "short" and "long" is set individually.

- Standard inverted:

  In the "Standard inverted" operating mode, the drive moves to the final position if pressed for a short time. If pressed for a long time, the drive moves stepwise or stops. The time difference between "short" and "long" and the repeat interval is set individually.

- Advanced:

  In the "Advanced" operating mode, short, slightly longer and long pressing of the push-button trigger different responses of the drive. The time intervals are set individually.

  By briefly pressing the push-button shorter than the adjustable time 1 (time between short time and long time), the drive is positioned stepwise (or stopped).

  For the advanced function, the time 2 (time until permanent move) is also set.

  If the drive is to be moved a little, then press slightly longer (longer than time 1, but shorter than time 1+2). The drive stops immediately upon releasing the push-button.

  If the drive is to move to its final position autonomously, then the push-button is first released after time 1 and 2 have elapsed. The move can then be stopped by briefly pressing.

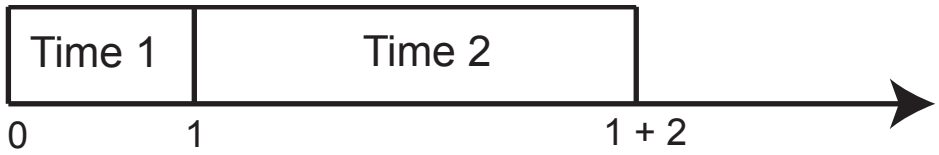


Table 165: Behaviour when button pressed briefly and long

Time 0:	Press the push-button, start from time 1
Release before time 1 has elapsed:	Step (or stop while drive is moving)
Time 1:	End of time 1, start of time 2, move command
Release after time 1 has elapsed but before time 2 has elapsed:	Stop
Release after time 1 + 2 has elapsed:	Move to final position

Table 166: Control mode "Extended"

- Safety movement (during press):

  The drive moves while the push-button is pressed and stops when the push-button is released.

15.1.4 Function as dimmer

If the input is used as a dimmer, select the "Dimmer" function and define the button function, time interval (switching/dimming), and if required, the repetition interval on long keypress.

Control	Increase (ON) Decrease (OFF) Increase (ON)/decrease (OFF)
Time between switching and dimming (*0.1 s)	1...50; 5
Repetition of the dimming control	Not active Active
Periodical emission on long keypress *(only if "Repetition of the dimming control" is set to active)*	every 0.1 s... • every 2 s; every 0.5 s
Periodical emission on long keypress *(only if "Repetition of the dimming control" is set to active)*	1.50%; 3%; 6 %; 12.50%; 25%; 50%

Table 167: Control mode "Function as dimmer"

15.1.5 Function as 8-bit value transmitter

If the input should be used as an 8-bit value transmitter, select the "8-bit value transmitter" function and define which value is emitted.

Object type	8 bit → 0...255 8 bit → 0...100% 8 bit → 0°...360°
Value	0...255; 0 (for value range 0...255) 0...100; 0 (for value range 0%...100%) 0...360; 0 (for value range 0°...360°)

Table 168: Control mode "Function as 8-bit value transmitter"

15.1.6 Function as 16-bit value transmitter

If the input should be used as an 16-bit value transmitter, select the "16-bit value transmitter" function and define which value is emitted.

Function	16 bit encoder
Value (*0.1)	-6707600...6707600; 0

Table 169: Control mode "Function as 16-bit value transmitter"

15.1.7 Function as scene control

If a scene is to be called up and saved, then select the "Scene call-up" function and define whether the push-button should also be used for storing the scene (press longer).

Function	Scene call-up
Scene number	0...63
Store scene by long key-press	Not active Active
Duration to long press (*0.1s) *(only visible if "Store scene by long key-press" is set to active)*	0...50

Table 170: Control mode "Function for scene control"

15.1.8 Temperature sensor (NTC)

If a temperature sensor NTC is to be connected to the input, set the behaviour (malfunction object, transmission behaviour) and mixed value calculation. If the measured values of the sensor deviate from the actual temperature values (e.g. at an unfavourable mounting location), this can be corrected by an offset.

Function	Temperature sensor (NTC)
Malfunction object	Active Not active
Offset (*0.1°C)	-50 ... 50; 0
External measured value	Active Not active
Measured value proportion,\r\ninternal to external *only if external value is used*	95% to 5% 90% to 10% . 50% to 50% . 10% to 90% 5% to 95% 0% to 100%
All of the following settings then pertain to the total measured value.	
Measured value emission	Periodically On change on change and periodically
on change greater than/equal to *if emission on change*	0.1°C ... 0.5°C ... 5.0°C
Periodical emission *(if parameter "Measured value emission" is set to periodical)*	5 s...2 h

Table 171: Control mode "Temperature sensor NTC"

15.2 Temperature limit

The KNX Touch Control can evaluate temperature values (e.g. of an NTC on an input) and switch output objects accordingly via the temperature limits.

ETS: Temperature limits

Activate the required temperature limits.

Temperature limit1 - 4	Not active Active

Table 172: Activating temperature limits

If you select "Active" on one of the temperature limits 1…4, an additional menu item "Threshold value 1 … 4" will open below the parameter temperature limit.

15.2.1 Setting temperature limit 1 - 4

The temperature limit can be predefined via parameters, i.e. directly in the menu

ETS: Temperature limits → Threshold value 1 ... 2

or via communication objects (object no. 942-943/949-950/956-957/963-964).

Preset temperature limit	Parameters communication object

Table 173: Preset temperature limit

– Preset temperature limit: Parameter

Temperature limit (*0.1°C)	-300 ... 800; 200
Hysteresis (%)	0 ... 50; 20

Table 174: Preset temperature limit via parameter

– Preset temperature limit: Communication object:

Here, you limit the object value and set the type of threshold value change (receive an absolute value or increase / decrease the current value).

Temperature limit memorisation	Not active for reset for reset and download (*Attention: Do not use during initial setup)*
Value at initialization of temperature limit (*0.1°C) *(not visible if parameter "for reset and download" is selected)*	-300 ... 800; 200
Minimum temperature limit (*0.1°C)	-300 ... 800
Maximum temperature limit (*0.1°C)	-300 ... 800
Change of temperature limit	Absolute value Increase/Decrease
Temperature limit change +/- *(only if parameter "Increase/Decrease" is selected)*	0.1°C ... 5°C
Hysteresis (%)	0 ... 50; 20

Table 175: Preset threshold value via communication object

15.2.2 ON/OFF output

Set the response, delay and transmission behaviour of the output

Output state (TV = threshold value)	TV exceeded = 1 | TV - Hyst. undershot = 0 TV exceeded = 0 | TV - Hyst. undershot = 1 TV exceeded = 1 | TV + Hyst. undershot = 0 TV exceeded = 0 | TV + Hyst. undershot = 1
Delay via objects	Not active Active
Delay from 0 to 1 *if delay via object "not active"*	None 1 s ... 2 h
Value at initialization\r\ndelay from 0 to 1 *if delay via object "active"*	None 1 s ... 2 h
Delay from 1 to 0 *if delay via object "not active"*	None 1 s ... 2 h
Value at initialization\r\ndelay from 1 to 0 *if delay via object "active"*	None 1 s ... 2 h
ON/OFF output emission	On change On change to 1 On change to 0 on change and periodically on change to 1 and periodically on change to 0 and periodically
Periodical transmission *only if output emits periodically*	5 s ... 2 h

Table 176: Setting "ON/OFF output" response

15.2.3 Lock-up

ON/OFF output lock-up	Not active Active

Table 177: Lock-up of "ON/OFF output"

– If the lock-up of the ON/OFF output is used:

Specify the behaviour, initial object value of the lock-up object and the lock-up action.

The setting options of the release action are dependent on the value of the parameter "ON/OFF output emission ..." (see "ON/OFF output emission").

Lock-up of temperature limit via object	1 = lock-up | 0 = release 0 = lock-up | 1 = release
Value at initialization lock-up object	0 1
Output at lock-up temperature limit	no emission 0 emission 1 transmission1 emission
Output at releasing temperature limit *(with 2 seconds release delay)*	no emission [Dependent on the setting for "ON/OFF output emission"] (see table 181)

Table 178: Parameter for lock-up of the ON/OFF output

The setting options of the release behaviour "Output at releasing temperature limit" are dependent on the value of the parameter "ON/OFF output emission" and activation of the parameter "ON/OFF output lock-up".

ON/OFF output emission…	
On change	no emission ON/OFF output status emission
On change to 1	no emission 1 emission
On change to 0	no emission 0 emission
on change and periodically	not adjustable, the ON/OFF output status is transmitted
on change to 1 and periodically	not adjustable, 1 is always transmitted
on change to 0 and periodically	not adjustable, 0 is always emitted

Table 179: Parameter "Lock-up of output at temperature limit" when changing "ON/OFF output emission"

15.3 Scene control

Configure scenes that are then called up via objects and can also be changed.

ETS: Scene control

If you select "Active" on one of the scene objects 1…16, an additional menu item will open below the parameter scene object X.

First activate the required number of scene objects (up to 16 objects, no. 862-877).

Scene object 1 -16	Not active Active

Table 180: Selection of scene objects

15.3.1 Scene object 1-16

If you select "Active" on one of the scene objects 1…16, an additional menu item will open below the parameter scene object X.

First activate the required number of scene objects (up to 16 objects, no. 862-877).

Object value after restart	Initial value Value before restart
Object type	1 bits 8-bit value [0...255] 8-bit value [0...100] 8-bit value [0...360] 16 bit floating point

Table 181: Assigning parameters for scene object

These scene objects (e.g. the dimming linked with the living room light) can now be assigned to the individual scenes (1...16) and defined with a value. As a result, a link can be used repeatedly (e.g. dimming to 20% for scene "television", diming to 60% for scene "guest").

Scene 1 -16	Not active Active
If a scene is set to "active", the following value parameters will appear depending on the object type:	
Value *for "object type 1-bit"*	0 1
Value *for "object type 8-bit value [0...255]"*	0...255
Value *for "object type 8-bit value [0...100%]"*	0...100
Value *for "object type 8-bit value [0...360°]"*	0...360
Value (*0.1) *for "object type 16-bit floating point"*	-6707600...6707600; 0

Table 182: Value assignment for scenes

The object type is defined together for all individual scenes (1…16) under one scene object, which means that all scenes in a scene object are from the same object type.

15.4 Logic (ETS)

ETS: Logic

Activate the logic inputs and assign the initial object values that apply after a restart or download.

Logic inputs	Active Not active
Logic value at initialization	
Logic input 1 ...16	0 1

Table 183: Activating logic inputs

Activate the required AND and OR logics.

– AND logic

AND Logic 1...4	Not active Active

Table 184: Activating AND logic gates

– OR Logic

OR Logic 1...4	Not active Active

Table 185: Activating OR logic gate

15.4.1 AND Logic 1/2/3/4 and OR Logic 1/2/3/4

The same setting options are available for the AND and OR logic.

Each logic output can emit a 1-bit object or two 8-bit objects. Define what the output emits if logic = 1 and if logic = 0 in each case.

A logic input 1 … 16 must be assigned to each input (1.; 2.; 3.; 4.;), but at least two.

1. Input 2. Input 3. Input 4. Input	Not active Logic input 1 ... 16 Logic input 1 ... 16 inverted
Logic output	a 1-bit object two 8-bit objects

Table 186: Setting options for the logic gates

– Logic output emits a 1-bit object:

Object value if logic output = 1	1 0
Object value if logic output = 0	1 0
Logic output sends	By logic result value change By logic result value change to 1 By logic result value change to 0 By logic result value change and periodically By logic result value change to 1 and periodically By logic result value change to 0 and periodically by input value change\n By input change and periodically

Table 187: Transmission behaviour with 1-bit object

– Logic output emits two 8-bit objects:

Object type	Value [0…255] Value [0…100%] Value [0…360°] Scene call-up

Table 188: Transmission behaviour with two 8-bit objects

Object value A if logic result = 1	
Value	Value 0 … 255; 1 Percentage 0 … 100%; 1% Angle 0 … 360°; 1° Scene call-up 0 … 127; 1

Table 189: Object value A if logic result = 1

Object value A if logic result = 0	
Value	Value 0 … 255; 1 Percentage 0 … 100%; 1% Angle 0 … 360°; 1° Scene call-up 0 … 127; 1

Table 190: Object value A if logic result = 0

Object value B if logic result = 1	
Value	Value 0 … 255; 1 Percentage 0 … 100%; 1% Angle 0 … 360°; 1° Scene call-up 0 … 127; 1

Table 191: Object value B with logic output =1

Object value B if logic result = 0	
Value	Value 0 … 255; 1 Percentage 0 … 100%; 1% Angle 0 … 360°; 1° Scene call-up 0 … 127; 1

Table 192: Object value B with logic output =0

Example: Objects for shading control

Object A: Shading position height (0 = safe position, 255 = fully extended).

Object B: Shading position slat angle (255 = 100% closed, 200 = approx. 80% closed).

Logic output sends	By logic result value change By logic result value change 1 By logic result value change 0 By logic result value change and periodically By logic result value change to 1 and periodically By logic result value change to 0 and periodically by input value change\n By input change and periodically
Periodical emission *(only if emitted periodically)*	5 s 10 s ... 2 h

Table 193: Transmission behaviour of the logic gate

15.4.1.1Lock-up

Specify the behaviour, initial object value of the lock-up object and the lock-up behaviour.

Lock-up logic via object	1 = lock-up | 0 = release 0 = lock-up | 1 = release
Value at initialization lock-up object	0 1
Behaviour of the output	
Logic output after lock-up	no emission Transmit object value if logic result = 0 Transmit object value if logic result = 1
Logic output after authorisation *(with 2 seconds release delay)*	[dependent on the setting for "Logic output emits"] *(see table 195)*

Table 194: Blocking behaviour before first communication

The setting options of the release behaviour "Logic output after authorisation" are dependent on the value of the parameter "Logic output emits".

Logic output emits…	
By logic result value change	no emission Transmit object value of current logic result
By logic result value change to 1	no emission Emission object value if logic result = 1
By logic result value change to 0	no emission Transmit object value if logic result = 0
By logic result value change and periodically	not adjustable, the object value of the current logic result is emitted
By logic result value change to 1 and periodically	not adjustable, the object value is always transmitted if logic output = 1
By logic result value change to 0 and periodically	not adjustable, the object value is always transmitted if logic output = 0
By logic result value change to 0 and periodically	no emission Transmit object value of current logic result
on input change and periodically	not adjustable, the object value of the current logic result is emitted

Table 195: Transmission behaviour of the logic outputs

16. Appendix

16.1 Table of the logic function

Input 4	Input 3	Input 2	Input 1	OR	AND
-	-	0	0	0	0
-	-	0	1	1	0
-	-	1	0	1	0
-	-	1	1	1	1
-	0	0	0	0	0
-	0	0	1	1	0
-	0	1	0	1	0
-	0	1	1	1	0
-	1	0	0	1	0
-	1	0	1	1	0
-	1	1	0	1	0
-	1	1	1	1	1
0	0	0	0	0	0
0	0	0	1	1	0
0	0	1	0	1	0
0	0	1	1	1	0
0	1	0	0	1	0
0	1	0	1	1	0
0	1	1	0	1	0
0	1	1	1	1	0
1	0	0	0	1	0
1	0	0	1	1	0
1	0	1	0	1	0
1	0	1	1	1	0
1	1	0	0	1	0
1	1	0	1	1	0
1	1	1	0	1	0
1	1	1	1	1	1

Table 196: Logic functions

16.2 Characteristics

Max. number of group addresses	1024
Max. number of group addresses	1024
Communication objects	1022

Table 197: Characteristics

16.3 Technical data

KNX medium	TP 1
Start-up mode	S-Mode
Rated voltage KNX	DC 21 ... 32 V SELV
Current consumption KNX	10 mA
Auxiliary voltage	DC 24 V +/- 10% SELV
Screen diagonal	3.5´´
Resolution	320 x 320 pixels
Viewing angle:	
- horizontal	type - 75 … + 75°
- vertical	typ. - 55 … + 75°
Connection mode	KNX bus connecting terminal C
Power consumption KNX:	
- Normal operation	approx. 0.9 W (at 50% screen brightness)
- Standby mode	approx. 0.6 W
Operating temperature	0 ... 50 ° C
Storage/transport temperature	-10 ... +50 °C
Humidity	max. 95 % - no condensation
Degree of protection	IP20
Protection class	III
Dimensions (W x H x D)	95 x 75 x 44 mm
Assembling height on wall	18 mm
Dimension with design adapter (W x H x D)	95 x 93 x 44 mm
Connection of external temperature sensor/binary contacts	
- - Connection mode 4 x analogue/digital (pre-assembled)	
- Conductor cross-section (flexible) with conductor sleeve 0.25 mm^2	
- Max. cable length 10 m	
Test mark	KNX, CE
Conformity	acc. EMV Directive 2004/108/EC
Standards	EN 50491- 5 -1: 2010
	EN 50491- 5 -2: 2011
	EN 50491- 5 -3

16.4 Accessories

Temperature sensor	EK090
Design adaper	1319 xx xx

16.5 Warranty

We reserve the right to realise technical and formal changes to the product in the interest of technical progress.

Our products are under guarantee within the scope of the statutory provisions.

If you have a warranty claim, please contact the point of sale.

Table of Figures

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