

**Interface Description
for**

thanos KNX

1 Revision index

Index	Firm-ware	ETS Applikation	Datum	Beschreibung
A	0.0.1	V1.0	17.11.2012	Initial publishing
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D	2.1.0	V1.2	06.02.2015	Changes in modification menu, chapter 4 Add scenes, chapter 5.4.1.4 Dimming objects removed Extend description for set points, chapter 5.3.1 and external values, chapter 5.10.1
E	2.1.0	V1.2	17.09.2015	Change of download links, chapter 8, 9
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2 Introduction

The present document constitutes a description of the

- **th**anos KNX

room control unit.

3 Unit description

3.1 User interface

The user interface of the **th**anos S/SQ control unit features one zone while the model **th**anos L/LQ features two zones:

- Control and display field
- Control keyboard (only versions L and LQ)

On top of that, on the **th**anos S/SQ the user has the option of configuring submenus with a functionality similar to the **th**anos L/LQ model keyboard. For more information, please refer to chapter 5.4.

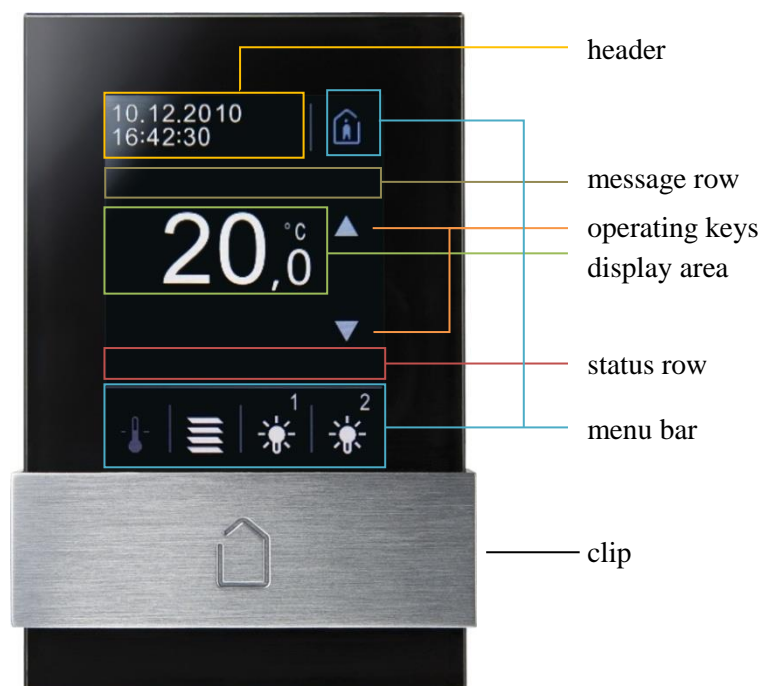


Figure 3-1 – thanos S

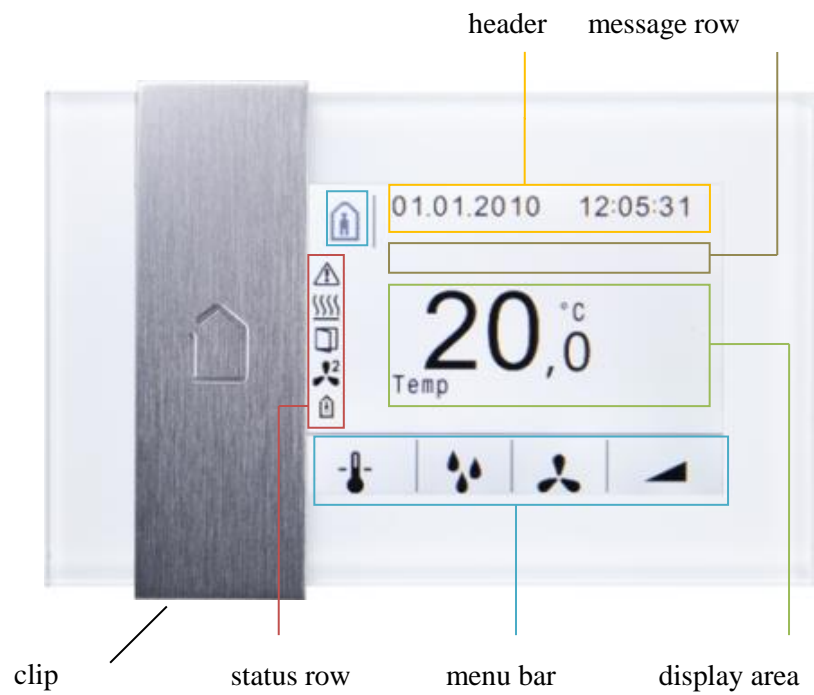


Figure 3-2 – thanos SQ



Figure 3-3 **thanos L** user interface

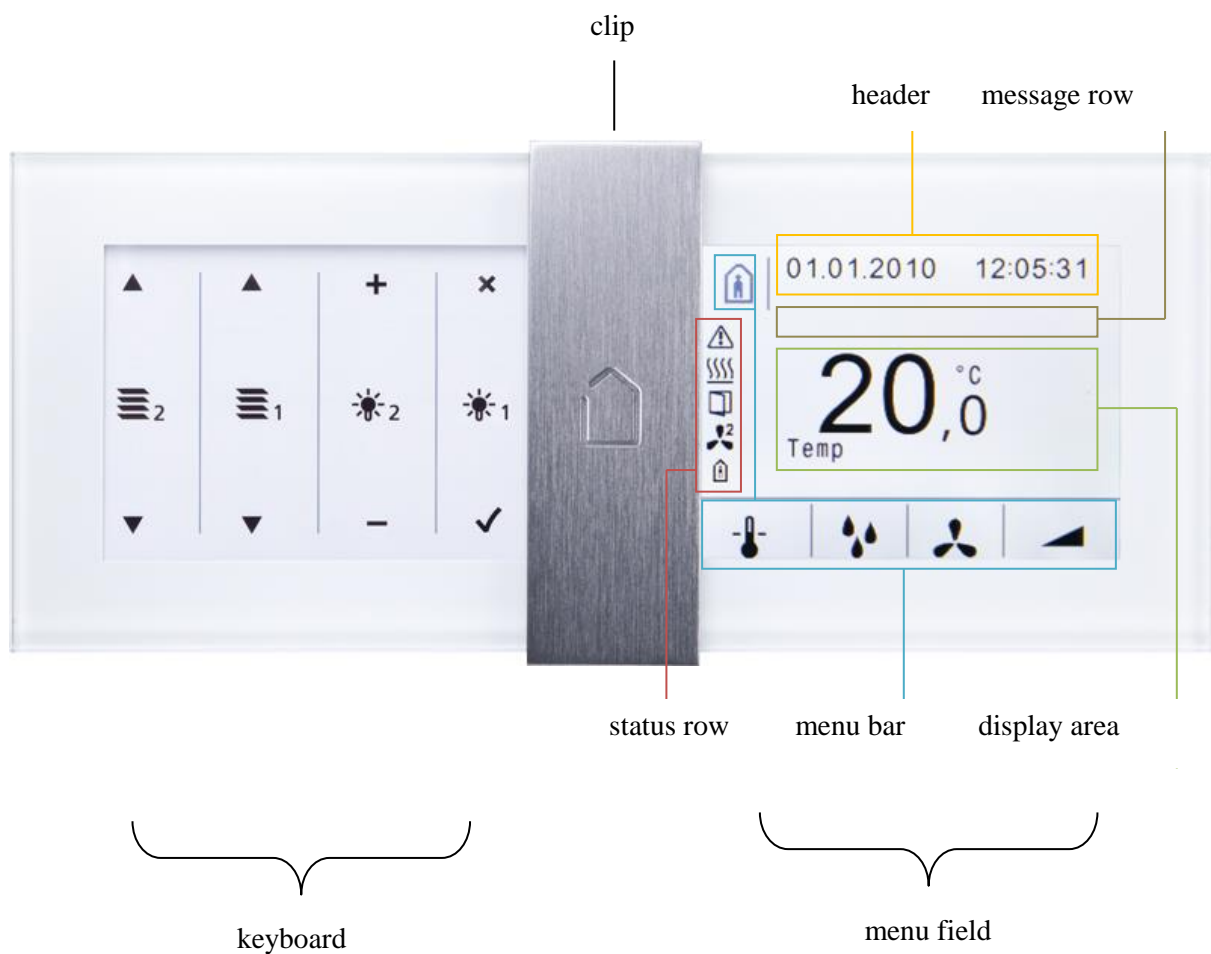


Figure 3-4 thanos LQ user interface

3.2 Menu field

Header:

The header may display the current date and time in different formats. The **th**anos control unit features a battery buffered real time clock, indicating the correct time even in case of power failure.

Message row:

The information row display's free text messages of up to 14 characters.

Display area:

The other display area may indicate the following values:

- room temperature, relative humidity (optional)
- 6 set points, effective or offset with selectable unit and description
- 6 external values with selectable unit and description

On top of that, the display area shows the readings and status of an activated menu.

Status row:

The status row may be used to show fan stages, room allocation, faults, heating, cooling, windows, and Dew point.



Menu bar:

The menu bar may be used to store various menu items which the user can call up by pushing the respective symbol.

The following menu items may be parameterized:

Set point: temperature, humidity, reading



Fan stage setting function



Room allocation function



Light, dimming, blinds, universal



Upon selecting a menu item the corresponding symbol will be shown in the menu bar in shaded grey and the display will indicate the value/status that may be adjusted in the respective menu. Using the operating keys (▲ / ▼ or ✓ / ✗ depending on the respective function), the value/status may now be adjusted.

Examples:

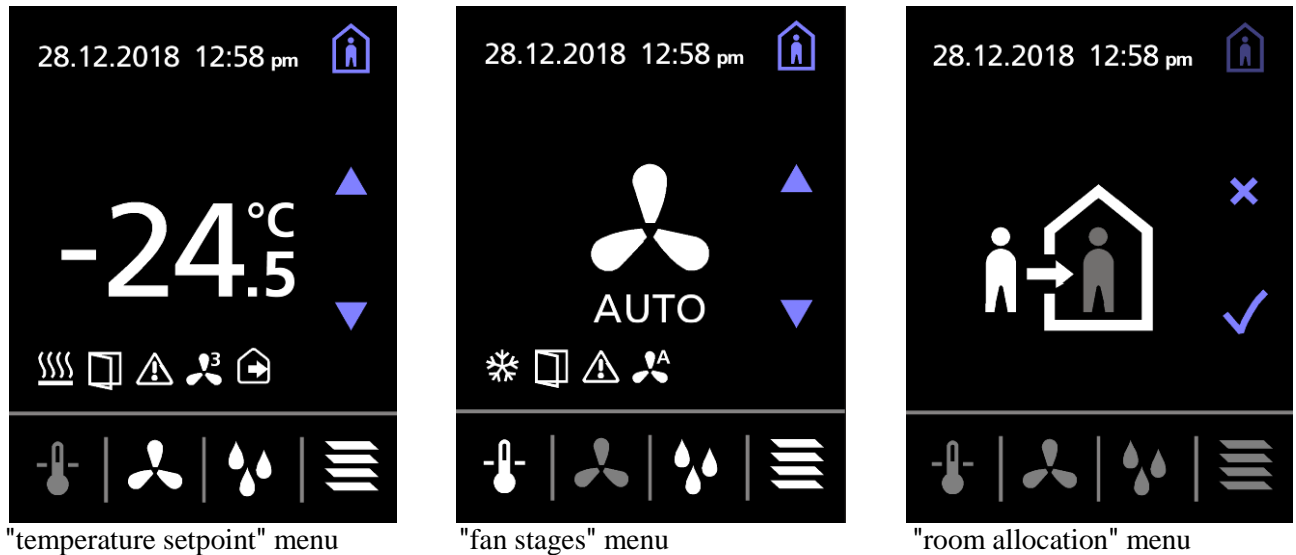


Figure 3-5 Menus


3.3 Keyboard

The **thanos** L/LQ features 8 keys, freely programmable via the configuration software. When a key is pressed the corresponding function will be shown in the display.

Example:



Figure 3-6 keyboard

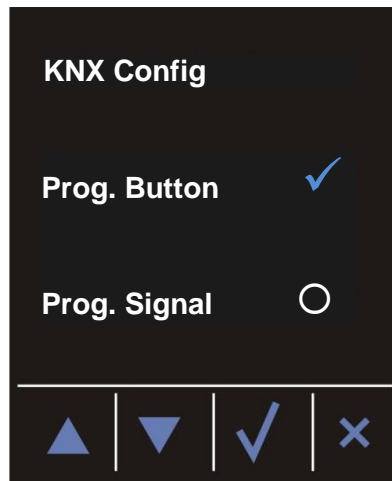
"Blinds 2 up" has been selected in the lower segment of the keyboard. The corresponding symbol will appear enlarged in the display with the pressed symbol flashing next to it, e.g. . The time period is freely programmable and when elapsed the display will return to the original image.

The **thanos** S/SQ features a function where the operator may include a number of freely programmable submenus, realizing a functionality similar to that of the **thanos** L/LQ model.

4 Startup procedure

For the purpose of KNX programming the **thanos** features an extra menu which is called up by simultaneously pressing keys 1 and 7 for about 5 seconds. If, upon the initial call-up after turning on the unit, the following screen appears, the **thanos** control unit will require a respective application program that will have to be uploaded via ETS.

Please be sure the parameters for orientation (horizontal/vertical) and background color of the display (black/white) were selected in accordance with the control unit used.



Fuction of the keys



Paging through the menu



Changing values



Adopting/interrupting the activity in question. In either case the configuration menu will be abandoned.

The modification menu permits the following settings:

Time and date adjustment, programming, sensor characteristics

The temperature and humidity offset can be parameterized via ETS, only.



Set Time

Set Date

Programming menu

Sensor characteristics menu

4.1.1 Temperature offset

As well as the voltage dependent heating of the electronics, the temperature measurement will be influenced additionally by the temperature dynamics of the wall, a recalibration of the system may be required in certain cases. The temperature offset will be parameterized in the ETS.

4.1.2 Humidity offset (in case humidity sensors are present)

For humidity measurement calibration purposes. See also chapter 4.1.1

4.1.3 Time

Via the sensor key „Select hh:mm:ss“ the value to be adjusted (hours, minutes, seconds) can be selected. The value chosen is identified by „^^“. Via the sensor keys „+“ and „-“, the value can be changed.

4.1.4 Date

Via the sensor keys „Select DD:MM:YY“ the value to be adjusted (day, month, year) can be selected. The chosen value is identified by „^^“. Via the sensor keys „+“ and „-“, the value can be changed.

4.1.5 Physical address programming via ETS

Selecting the checkmark will set the unit to programming mode. This is necessary for the programming of a new physical address. The prog. signal will be set in programming mode. The default address is **1.15.255**.

Note: the prog. signal will not replace the normal LED and may not be turned on/off at will via ETS!

4.1.6 Sensor Characteristics

The temperature reading can be switched to FAST, NORMAL, SLOW. According to the room characteristics the reading will be optimized.

5 Parameter settings

5.1 [01] GENERAL

5.1.1 Settings

Parameter		
Index	Name	Description
1	Device Coding	Internal Thermokon control unit ident. number (may not be configured)
2	Firmware Version	Current firmware version (may not be configured)
3	Parameter Version	Version index of the application (may not be configured)
4	Existing Humidity Sensor	(may not be configured)
5	Device Location	The user may provide the control unit with an individual ident. Number
6	Automatic Key Lock	Select whether the clip must be touched before a keyboard entry will be possible
7	Cyclic Heartbeat [s]	Interval for transmitting the automatic heartbeat objects 1..6
8	Show Channel Numbers	Turn on/off channel numbers
9	Device Version	(may not be configured)
10	Device Orientation	Horizontal or vertical version (display orientation)
11	Key press Volume	The volume of the key sound may be adjusted between 0 and 100%
12	Show Calendar Date	Turn on/off date display and define format
13	Show Time of Day	Turn on/off time display and turn on/off seconds
14	Time Mode	Define time format, 24h/12h
15	Time Input Lock [s]	The lock will be activated when room allocation, fan stages, and set points as well as menu functions light, blinds, and universal are modified. Modifying one of the above functions by the user will cause the uncoupling of the related input registers for the programmed intervals, i.e. during these intervals updates of the respective input registers will have no impact. Updates will only be adopted after the lock has elapsed. The lock is meant to provide the system with sufficient time to synchronize the conditions within the room control unit and the superior system.
16	Show Channel Number 0	Turn on/off channel number 0
17	Heartbeat Object Selection 1	Select an object to be transmitted in accordance with the adjusted heartbeat interval. If several heartbeat objects have been selected they will be transmitted one after the other!
18	Heartbeat Object Selection 2	Select an object to be transmitted in accordance with the adjusted heartbeat interval. If several heartbeat objects have been selected they will be transmitted one after the other!
19	Heartbeat Object Selection 3	Select an object to be transmitted in accordance with the adjusted heartbeat interval. If several heartbeat objects have been selected they will be transmitted one after the other!
20	Heartbeat Object Selection 4	Select an object to be transmitted in accordance with the adjusted heartbeat interval. If several heartbeat objects have been selected they will be transmitted one after the other!
21	Heartbeat Object Selection 5	Select an object to be transmitted in accordance with the adjusted heartbeat interval. If several heartbeat objects have been selected they will be transmitted one after the other!
22	Heartbeat Object Selection 6	Select an object to be transmitted in accordance with the adjusted heartbeat interval. If several heartbeat objects have been selected they will be transmitted one after the other!

Table 5-1 General parameter settings

5.1.2 Temperature

The temperature measuring range will be 0-50°C with a resolution of 0.1K. To compensate for temperature deviations due to external factors the user may include a certain offset. The temperature may be shown or hidden in the display, the temperature may be indicated using a decimal point and either in °C or °F.

5.1.2.1 Temperature settings

Parameter		
Index	Name	Description
23	Temperature Offset	To compensate for deviations of the internal sensor due to heating or other external influences
24	Temperature Appearance	0 = without the decimal place 1 = including the decimal place
25	Show on Display	0 = off 1 = on
26	Unit of Temperature	0 = °F 1 = °C
27	Send Value if changed	inactive = there will be no temperature value transmission to the BUS always = the temperature value will be transmitted to the BUS immediately upon change > x.x° the temperature value will be transmitted when the modification exceeds the adjusted deviation.
395	Degree of Mixing External Temperature	According settings the external temperature influences the internal temperature reading

Table 5-2 Temperature parameter settings

5.1.3 Humidity

The humidity sensor (if ordered) operates with an accuracy of $\pm 3\%$ within the range of 20-80% rH. Resolution is 0.1%. To compensate for measurement deviations due to external factors the operator may adjust an offset. The humidity may either be shown or hidden in the display, the display may either use a decimal point or not.

5.1.3.1 Humidity settings

Parameter		
Index	Name	Description
28	Humidity Offset	To compensate for deviations of the internal sensor due to heating or other external influences
29	Humidity Appearance	0 = without the decimal place 1 = without the decimal place
30	Show on Display	0 = off 1 = on
31	Send Value if changed	inactive = there will be no humidity value transmission to the BUS always = the humidity value will be transmitted to the BUS immediately upon change > x.x% the humidity value will be transmitted when the modification exceeds the adjusted deviation.
396	Degree of Mixing External Humidity	According settings the external humidity influences the internal humidity reading

Table 5-3 Humidity parameter settings

5.2 [02] DISPLAY

The display may be altered using the following configuration parameters. Apart from the background colour the user may set various brightness values for the LC- display and the text field. The various values are in relation to an active, dimmed and a standby mode. Any key activation on the control causes the display to go into active mode. When there is no activity on the control unit, the unit will first change to dimmed and then to standby mode.

5.2.1 Display settings

Parameter		
Index	Name	Description
32	Back Color Display	Select black or white LCD background colour
33	Brightness Display active [%]	Upon actuating the control unit the unit will be in standard mode (active). Values between 0 (OFF) and 100% may be adjusted.
34	Brightness Display dimmed [%]	Brightness display in dimmed mode Values between 0 (OFF) and 100% may be adjusted.
35	Brightness Display standby [%]	Brightness display in standby mode Values between 0 (OFF) and 100% may be adjusted.
36	Brightness Keys active [%]	Upon actuating the control unit the unit will be in standard mode (active). Values between 0 (OFF) and 100% may be adjusted.
37	Brightness Keys dimmed [%]	Brightness display in dimmed mode Values between 0 (OFF) and 100% may be adjusted.
38	Brightness Keys standby [%]	Brightness display in standby mode Values between 0 (OFF) and 100% may be adjusted.
39	Number of Submenus	Further submenus may be selected (only available in the S/SQ version)
40	Duration of Displayed Value [s]	Interval for the display of the values to be shown in the startup screen
41	Duration of Cleaning Mode [s]	By touching the clip for >10 seconds the operator may set the thanos control unit to cleaning mode. During the cleaning mode the sensor keys will not be evaluated, so the operator may clean the unit without the hazard of triggering an involuntary activity.
42	Switching Time active -> dimmed [s]	Interval without any activity on the control unit before the display changes over from active to dimmed mode
43	Switching Time dimmed-> standby [s]	Interval without any activity on the control unit before the display changes over from dimmed to standby mode
44	Display Duration Menu [s]	Interval without any activity on the control unit before the display returns from a menu to the startup screen
45	Display Duration Action [s]	Interval without any activity on the control unit before the display returns from displaying an activity to the screen
46	Display Duration Submenu [s]	Interval without any activity on the control unit before the display returns from the submenu to the startup screen (only available in the S/SQ version)
47	Division Line 1	Show/hide dividing line 1
48	Division Line 2	Show/hide dividing line 2
49	Division Line 3	Show/hide dividing line 3
50	Division Line 4	Show/hide dividing line 4
51	Division Line 5	Show/hide dividing line 5
52	Show Submenus only	(Only available in the S/SQ version)

Table 5-4 Display parameter settings

5.3 [04] SET POINTS

The operator may set up to 6 set points in the form of effective values or offsets in the display. The unit may be adjusted for each individual set point. Set points may be changed via the keys and the network. Default values will be the effective set point and the adjusted offset.

5.3.1 Set points 1 through 6 settings

Parameter		
Index	Name	Description
53 63 73 83 93 103	0.1 x Upper Setting Range [+]	Limit for the upper set point offset adjustment limit via the keyboard (e.g. input 10 = 1,0)
54 64 74 84 94 104	0.1 x Lower Setting Range [-]	Limit for the lower set point offset adjustment limit via the keyboard (e.g. input 10 = 1,0)
55 65 75 85 95 105	0.1 x Step size	Step width definition of the manual set point offset via the keyboard (e.g. input 10 = 1,0)
56 66 76 86 96 106	0.1 x Base Setpoint after Reset	Following a control unit incl. BUS restart, the value adjusted here will be used as the basic set point. This value shall remain valid until another reading is received via the associated communicative object (e.g. input 10 = 1,0)
57 67 77 87 97 107	Unit (max. 3 ASCII Characters)	Unit with max. 3 characters
58 68 78 88 98 108	Description (max. 14 ASCII Characters)	Name with max. 14 characters
59 69 79 89 99 109	Appearance	Show/hide digit after the set point decimal point
60 70 80 90 100 110	Appearance into Setpoint Menu	Representation of the reading in the set point menu
61 71 81 91 101 111	Show Effective Value on Display	Show/hide effective value in the startup screen

Parameter		
Index	Name	Description
62 72 82 92 102 112	Show Offset Value on Display	Show/hide offset in the start screen

Table 5-5 Set point parameter settings

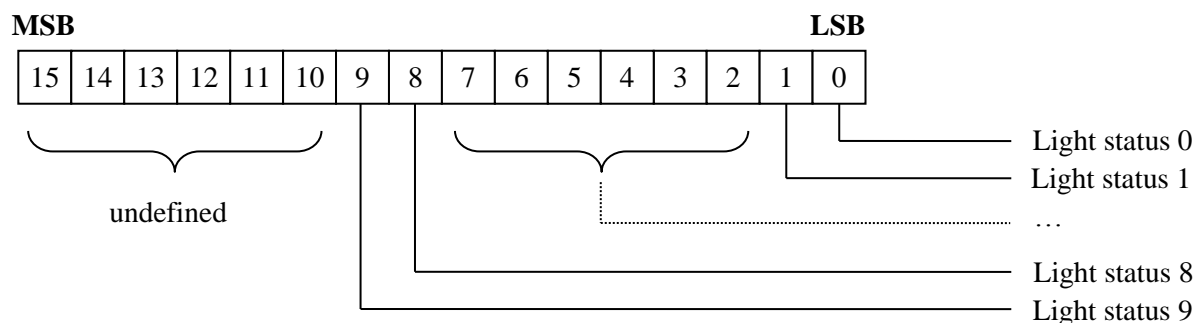
5.4 [05] KEYS

The operating unit of the **thanos** control is divided into three segments. The first segment features the menu field with up to 5 programmable keys, the second segment accommodates the field with the direct function keys with 8 keys (version L/LQ) or 24 keys (version S/SQ – via submenu programming) and the clip (on the **thanos** S/SQ the direct function keys are accessible via submenus). The keys on the menu field may only receive menu functions, while clip and direct function keys may receive additional toggle and on/off functions.

Clip, menu and direct function fields may be blocked on a higher level.

Each function (e. g. turn on/off light) may be allocated additional channel numbers from 0...9, making available a total of 10 functional channels. In 2 byte registers the status is displayed in bitcodes (bit 0 = index/channel 0, bit 1 = index/channel 1, bit 2 = index/channel 2, ...).

Communicative object "light function status":



5.4.1 Key allocation

The following figure shows the key allocation/numeration.



Figure 7
Key allocation thanos L

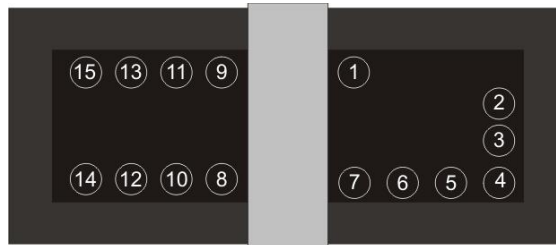


Figure 8
Key allocation thanos LQ

Instead of the lower keyboard segment which is only available on the thanos L/LQ model, the thanos S/SQ control unit offers the possibility of programming up to 4 submenus following the example shown below.

For each submenu, 6 programmable keys are available that offer the following functions:

- light on / off
- dimm light + / -
- toggle light
- shutters / blinds up /down
- universal function on / off
- universal function toggle
- room allocation toggle
- scene

To call up the submenus one of the keys 1, 4...7 must be configured as "submenu right".

The keys in the submenus have been numbered consecutively (8...31), facilitating the evaluative process.

The user shall define how many submenus are required via the "number of submenus parameter" (value range 0...4).

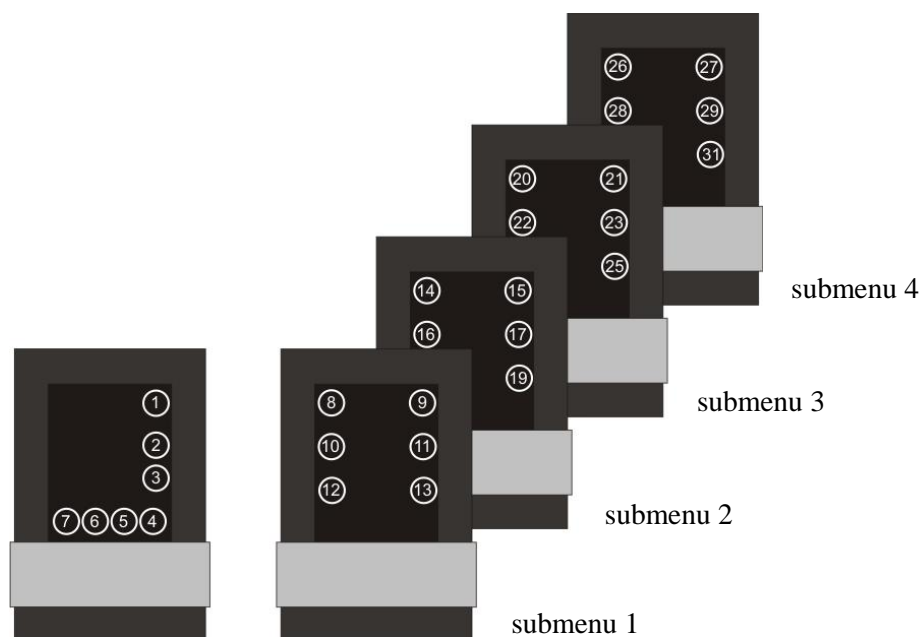


Figure 9
Key allocation **thanos S**

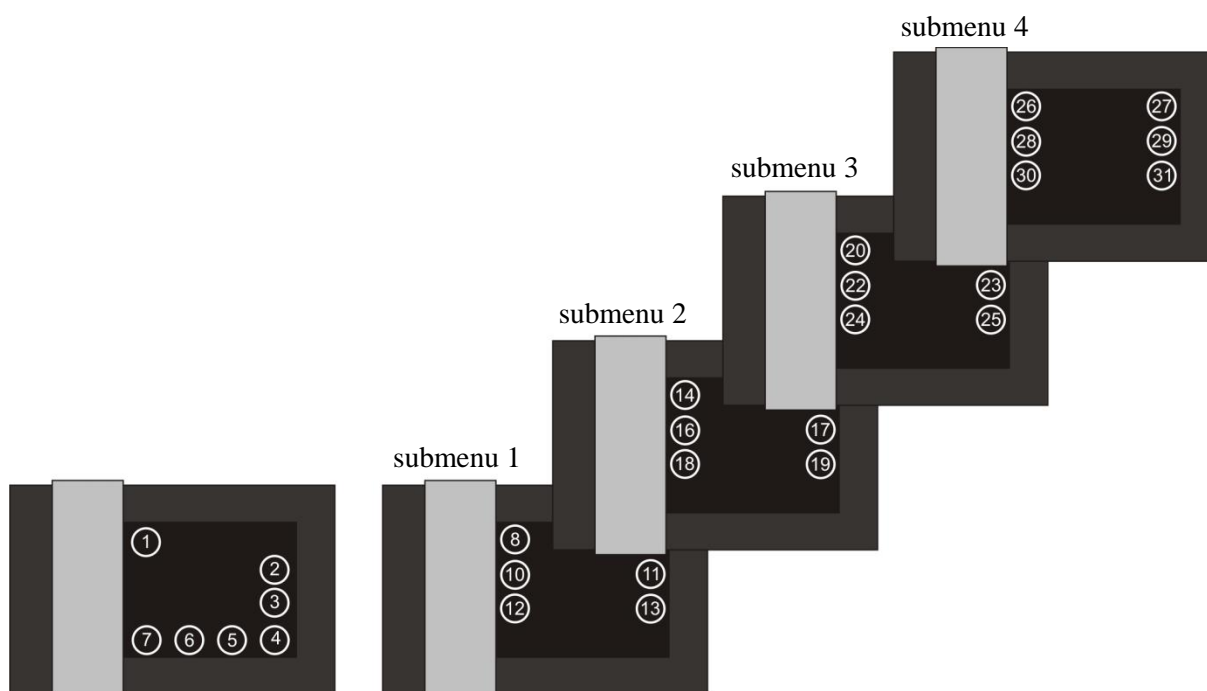


Figure 10
Key allocation **thanos SQ**

5.4.1.1 General settings

Parameter		
Index	Name	Description
408	Language selection for key naming	Sets the language (German, English, Chinese) for key naming

5.4.1.2 Clip settings

Parameter		
Index	Name	Description
113	Clip	Clip configuration
438	Naming Clip	Text option

Table 5-6 Clip parameter settings

5.4.1.3 Menu key settings

Parameter		
Index	Name	Description
114	Menu key 1	Menu key configuration
115	Menu key 4	
116	Menu key 5	
117	Menu key 6	
118	Menu key 7	
409	Naming Menu key 1	Text option
410	Naming Menu key 4	
411	Naming Menu key 5	
412	Naming Menu key 6	
413	Naming Menu key 7	

Table 5-7 Menu key parameter settings

Keys 2 and 3 may not be configured, since they are used in the menus as operating keys.

5.4.1.4 Direct function key settings

Parameter		
Index	Name	Description
119	Direct function key 8	Direct function key configuration
120	Direct function key 9	
121	Direct function key 10	
122	Direct function key 11	
123	Direct function key 12	
124	Direct function key 13	
125	Direct function key 14	
126	Direct function key 15	
414	Naming direct function key 8	Text option
415	Naming direct function key 9	
416	Naming direct function key 10	
417	Naming direct function key 11	
418	Naming direct function key 12	
419	Naming direct function key 13	
420	Naming direct function key 14	
421	Naming direct function key 15	
127	Direct function key 16	Direct function key configuration (only S/SQ version)
128	Direct function key 17	
129	Direct function key 18	
130	Direct function key 19	
131	Direct function key 20	
132	Direct function key 21	
133	Direct function key 22	
134	Direct function key 23	
135	Direct function key 24	
136	Direct function key 25	
137	Direct function key 26	
138	Direct function key 27	
139	Direct function key 28	
140	Direct function key 29	
141	Direct function key 30	
142	Direct function key 31	

Paramter		
Index	Name	Beschreibung
422	Naming direct function key 16	Text option (only S/SQ version)
423	Naming direct function key 17	
424	Naming direct function key 18	
425	Naming direct function key 19	
426	Naming direct function key 20	
427	Naming direct function key 21	
428	Naming direct function key 22	
429	Naming direct function key 23	
430	Naming direct function key 24	
431	Naming direct function key 25	
432	Naming direct function key 26	
433	Naming direct function key 27	
434	Naming direct function key 28	
435	Naming direct function key 29	
436	Naming direct function key 30	
437	Naming direct function key 31	

Table 5-8 Direct function key parameter settings

5.4.1.5 Text selection

Text assignment			
No.	English	German	Chinese
1	Office	Büro	Shu Fang
2	Office 1	Büro 1	Shu Fang 1
3	Office 2	Büro 2	Shu Fang 2
4	Office 3	Büro 3	Shu Fang 3
5	Office 4	Büro 4	Shu Fang 4
6	Office 5	Büro 5	Shu Fang 5
7	Meeting	Besprechung	Hui Yi Shi
8	Meeting 1	Besprechung 1	Hui Yi Shi 1
9	Meeting 2	Besprechung 2	Hui Yi Shi 2
10	Meeting 3	Besprechung 3	Hui Yi Shi 3
11	Porch	Eingang	Xuan Guan
12	Corridor	Flur	Guo Dao
13	Cloakroom	Garderobe	Yi Mao Jian
14	Garage	Garage	Che Ku
15	Garage 1	Garage 1	Che Ku 1
16	Garage 2	Garage 2	Che Ku 2
17	Garage 3	Garage 3	Che Ku 3
18	Carport	Carport	Che Ku
19	Carport 1	Carport 1	Che Ku1
20	Carport 2	Carport 2	Che Ku2
21	Carport 3	Carport 3	Che Ku3
22	Utility Room	Hauswirtsch.	Bao Mu Jian
23	Storage Room	Abstellraum	Chu Cang Shi
24	Bedroom	Schlafzimmer	Zhu Wo
25	Bedroom 1	Schlafzimmer1	Zhu Wo 1
26	Bedroom 2	Schlafzimmer2	Zhu Wo 2
27	Bedroom 3	Schlafzimmer3	Zhu Wo 3
28	Bedroom 4	Schlafzimmer4	Zhu Wo 4
29	Bedroom 5	Schlafzimmer5	Zhu Wo 5
30	Bathroom	Badezimmer	Zhu Wei
31	Guest Room	Gästezimmer	Ke Wo
32	Guest Room 1	Gästezimmer 1	Ke Wo 1
33	Guest Room 2	Gästezimmer 2	Ke Wo 2
34	Guest Room 3	Gästezimmer 3	Ke Wo 3

Text assignment			
No.	English	German	Chinese
35	Guest WC	Gäste-WC	Ke Wei
36	Children Room	Kinderzimmer	Er Tong Fang
37	ChildrenRoom1	Kinderzimmer1	Er Tong Fang1
38	ChildrenRoom2	Kinderzimmer2	Er Tong Fang2
39	ChildrenRoom3	Kinderzimmer3	Er Tong Fang3
40	Living Room	Wohnzimmer	Ke Ting
41	Living Room 1	Wohnzimmer 1	Qi Pai Shi
42	Living Room 2	Wohnzimmer 2	Qi Pai Shi 2
43	Dining Room	Esszimmer	Can Ting
44	Kitchen	Küche	Xi Chu
45	Chin. Kitchen	Chin. Küche	Zhong Chu
46	Sun Room	Wintergarten	YangGuangFang
47	Garden	Garten	Hua Yuan
48	Front Garden	Vorgarten	QianHuaYuan
49	Back Garden	Garten hinten	Hou Hua Yuan
50	Piano Room	Klavierzimmer	Qin Fang
51	TV Lounge	Fernsehzimmer	Ying Ying Shi
52	Swimming Pool	Schwimmbad	Yong Chi
53	SPA	SPA	SPA
54	Tea Room	Teezimmer	Cha Shi
55	Billiard Room	Billardzimmer	Zhuo Qiu Ba
56	Cigar Bar	Zigarrenbar	Xue Jia Ba
57	Attic	Dachboden	Ge Lou
58	Toilet	Toilette	Gong Wei
59	Wine Cellar	Weinkeller	Jiu Jiao
60	Wine Room	Weinzimmer	Pin Jiu Qu
61	Fitness	Fitnessraum	JianShenFang
62	Laundry	Waschküche	Xi Yi Fang
63	Balcony	Balkon	Yang Tai
64	Chandelier	Kronleuchter	Diao Deng
65	Spotlights	Spot	She Deng
66	Downlight	Bodenleuchte	Tong Deng
67	LED	LED	Deng Dai
68	Wall Lamp	Wandleuchte	Bi Deng
69	Table Lamp	Tischleuchte	Tai Deng

Text assignment			
No.	English	German	Chinese
70	Floor Lamp	Stehleuchte	Luo Di Deng
71	Halogen Lamp	Halogenlampe	Jin Lu Deng
72	Flood Light	Scheinwerfer	She Deng
73	Bulb	Glühlampe	Deng Pao
74	Ind. Light	Ind. Licht	Man She Deng
75	Shutter	Rollladen	Chuang Lian
76	Blind	Jalousie	Bai Ye
77	Awning	Markise	Zhe Yang
78	Window	Fenster	Chuang Hu
79	Rooflight	Dachfenster	Tian Chuang
80	Gate	Tor	Yuan Men
81	Door	Tür	Men
82	Split Unit	Klimaanlage	Kong Tiao
83	VRV AC	VRVKlimagerät	VRV Kong Tiao
84	Fan Coil	Fan Coil	FengJiPanGuan
85	EM Valve	Magnetventil	Dian Ci Fa
86	Floor Heating	Bodenheizung	Di Nuan
87	Floor Cooling	Bodenkühlung	Di Leng
88	Wall Heating	Wandheizung	Qiang Nuan
89	Wall Cooling	Wandkühlung	Qiang Leng
90	Exhaust Fan	Abluft	Pai Feng Shan
91	Fresh Air	Belüftung	Xin Feng Ji
92	Dehumidifier	Entfeuchter	Chu Shi Ji
93	Cooling	Kühlen	Zhi Leng
94	Heating	Heizen	Zhi Re
95	Ventilation	Lüftung	Tong Feng
96	TV	Fernseher	Dian Shi
97	Audio	Musik	Yin Xiang
98	Set-top box	Set-top box	Ji Ding He
99	DVD	DVD	DVD
100	Blu-ray	Blu-ray	Lan Guang Ji
101	Beamer	Beamer	Tou Ying Yi
102	Amplifier	Verstärker	Gong Fang
103	Screen	Leinwand	Tou Ying Mu

5.4.1.6 Scene settings

Paramter		
Index	Name	Description
397	Scene No., Channel 0	Configuration of according scenes (1..64)
398	Scene No., Channel 1	
399	Scene No., Channel 2	
400	Scene No., Channel 3	
401	Scene No., Channel 4	
402	Scene No., Channel 5	
403	Scene No., Channel 6	
404	Scene No., Channel 7	
405	Scene No., Channel 8	
406	Scene No., Channel 9	

Table 5-9 Overview parameter settings scene keys

Scenes can be activated by pressing the according key and will be send out via BUS. If a key is pressed longer than 5 seconds, a beep is hearable and a teach-in telegram will be send out on the scene number.

5.5 [06] CHANNELS

Normal or inverted channel transmission.

5.5.1 Channel settings

Parameter		
Index	Name	Description
143	Switch Light	Transmit all light channels in normal or inverted mode
144	Switch Universal	Transmit all universal function channels in normal or inverted mode
145	Shutter/Blind	Transmit all shutter/blind channels in normal or inverted mode
146	Blind Adjustment	Transmit all lamella adjustment channels in normal or inverted mode

Table 5-9 Channel parameter settings

5.6 [03] TEXT MESSAGES

Up to 8 text messages with a size of 14 bytes may be programmed, to be shown via the respective communicative object.

5.6.1 Text message settings

Parameter		
Index	Name	Description
147 148 149 150 151 152 153 154	Message 1..6	8 text messages with a size of 14 bytes may be stored

Table 5-10 Text message parameter settings

5.7 [07] INPUTS

Depending on the model version there are up to 4 digital inputs available that may be programmed individually. Each input can be allocated with various functions and used as an open or closed contact. Possible functions: Dew point control, window contact control, room allocation and controller release.

5.7.1 Input settings

Parameter		
Index	Name	Description
155 156 157 158	Input 1..4	Digital input configuration (open/closed contact)

Table 5-11 Input parameter settings

5.7.2 Input functions

Parameter		
Index	Name	Description
159 160 161 162	Function input 1..4	Digital input function configuration

Table 5-12 Input function parameter settings

5.8 [08] ROOM ALLOCATION

The room allocation may be changed via the network or locally via the keyboard. The current status is defined by the last updated value, since both versions are equal.

The local modification of the room allocation may be blocked by the BUS.

5.8.1 Room allocation settings

Parameter		
Index	Name	Description
163	Occupancy after Reset	Room allocation default after a restart of the control unit
164	Show Occupancy after Reset	After restart of the control unit, the room allocation will be displayed automatically. In case the adjustment function has been deactivated, the allocation will be displayed immediately after changing, either following local modification or modification via the network.
165	Occupancy Delay Time [s]	If a time interval is configured here, room allocation on the unit will be automatically allocated to the extension of the party time.

Table 5-13 Room allocation parameter settings

5.9 [09] FAN STAGES

Up to 3 fan stages are available and can be controlled locally via the associated menu. You may either select manual or automatic mode and display accordingly. If you do not wish to display the fan stage in automatic mode, the automatic mode display can be turned off.

5.9.1 Fan stage settings

Parameter		
Index	Name	Description
166	Number of Fan Coil Stages	When setting maximum number of fans stages, manual and automatic mode is available.
167	Stage after Reset	Internal fan stage default after restart.
168	Display Icon Fan-Stage after Reset	After startup the fan stage symbol may be displayed or hidden. In hidden mode, the fan stage will not be displayed until it has been locally changed or via a network update.
169	Display Stage at Automatic	To select the automatic fan stage mode, adjust the fan stage to the higher fan stage, both current fan stage and automatic stage will be displayed.
170	Only OFF/AUTO Switching	Only the stages OFF and AUTO will be available upon activation.
171	Object type of Fan-Stage Output	Sets the object size (1Byte, 2Bytes) of datapoint 143

Table 5-14 Fan stage parameter settings

5.10 [10] EXTERNAL VALUES

The LC- display may show up to 6 external readings. Each value may be accompanied by the 3 ASCII character unit and the 4 ASCII character general designation.

5.10.1 External value settings 1 through 6

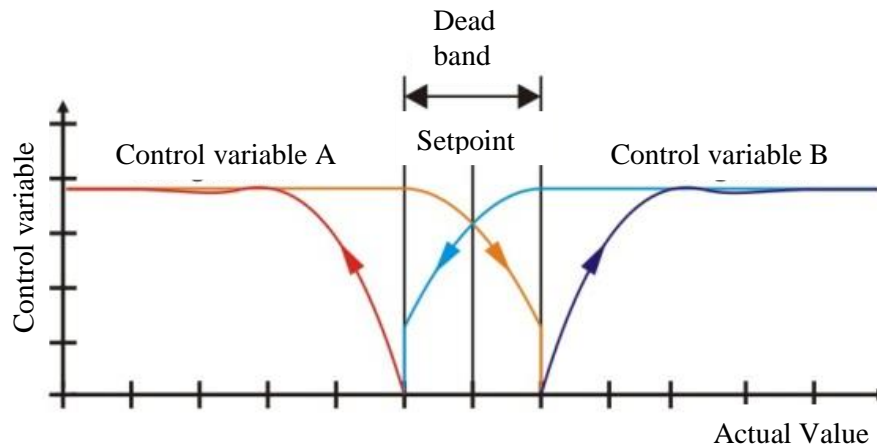
Parameter		
Index	Name	Description
171 175 179 183 187 191	Appearance	Display/hide external value decimal point
172 176 180 184 188 192	Show Value on Display	Display/hide the external value in the startup screen
173 177 181 185 189 193	Unit (max. 3 ASCII Characters)	Unit may be displayed using three ASCII characters
174 178 182 186 190 194	Description (max. 14 ASCII Characters)	External value description using 14 ASCII characters. Shown in the lower left hand corner of the startup screen

Table 5-15 External value parameter settings

5.11 [11] CONTROLLER

5.11.1 General

The **thanos** control unit features 6 PI controllers. Each controller has two variables with one output each. The graph below shall illustrate the characteristics of the controllers.



The related configuration, input and output objects are listed within the tables below. Furthermore, you will find a brief description of the individual functions.

The variable will be recalculated each second. Thus modifications to set points, window contacts, etc. will not be adopted by the controller until this time has elapsed.

5.11.1.1 Controller settings 1 through 6

Parameter		
Index	Name	Description
195 227 259 291 323 355	0.1 x Base Setpoint after Reset OCCUPIED	Basic set point of the controller in condition "occupied". Equivalent to the set point for the heating function
196 228 260 292 324 356	0.1 x Setpoint Offset STANDBY	The device may be switched to mode "standby" via the BUS. This parameter defines the difference of the set point in mode "standby" towards the basic set point in relation to the controller status (variable A or variable B)
197 229 261 293 325 357	0.1 x Setpoint Offset UNOCCUPIED	Via the BUS or manually on the device, the status can be changed from "unoccupied" to "occupied" and vice versa. This parameter defines the difference of the unoccupied set point to the basic set point in relation to the controller status (variable A or variable B)
198 230 262 294 326	0.1 x Deadband	Determines the difference between set point A (basic set point) and set point B. Controller set point A = basic set point – (dead zone / 2) Controller set point B = basic set point + (dead zone / 2)
199 231 263 295 327 358	0.1 x Forced Activation Boarder	When the readings fall below this adjusted limit, controller output A, will be enabled independently of the selected operating mode and controller inhibit (e.g. anti-freeze protection). "0" will deactivate the limit

200 232 264 296 328 359	Controller Mode after Reset	Controller mode following a reset/reboot	Control off Control variable A Control variable B Control variable A or B
201 233 265 297 329 360	Selection unoccupied/occupied	Select whether the allocation may only be triggered by the communicative object or only by the internal condition or both (OR link). To be observed: the internal condition may only be specified by two occupied or unoccupied readings. Standby may only be specified via the respective communicative object!	
202 234 266 298 330 361	Selection Actual Value	The internal temperature sensor, internal humidity sensor or of an external value via the corresponding communicative object is read by the controller	
203 235 267 299 331 362	Selection Setpoint	The controller set point has the option of either using an internal set point or of an external value via communicative object. When selecting the internal set point, controller and set point are automatically linked with the same index, e.g. controller 1 and set point 1	
204 236 268 300 332 363	Selection Hold Off	Select whether the energy shut off, may only be triggered by the related communicative object <i>energy shut off</i> or only by the internal condition or both (OR link)	
205 237 269 301 333 364	PWM Cycle time [s]	Cycle time=0, the PWM controller is deactivated, at a value > 0 the current variable will be transformed into a corresponding PWM signal and issued via the output register <i>PWM Signal controller A or controller B</i>	
207 239 271 303 335 366	Minimal Fan Coil Stage ON-Time	Configuration of the minimum fan running time after fan turn-on	
208 240 272 304 336 367	Minimal Control Variable	For more information please refer to the following pages	
209 241 273 305 337 368	Show Icon Controller	Various access rights may be allocated to a controller for the symbols of heating and cooling	
210 242 274 306 338 369	Show Icon Dew Point	Each controller may be configured to display the Dew point symbol when this point has been reached.	
211 243 275 307 339 370	Number of Fan Coil Stages	Number of fan stages when using the controller	

212 244 276 308 340 371	Access to Fan Coil Control	The controllers fan status may be viewed using the fan symbol on the main screen
--	----------------------------	--

Table 5-16 Controller parameter settings

5.11.1.2 Controller configuration variable A (heating)

Parameter		
Index	Name	Description
213 245 277 309 341 373	0.1 x Proportional Factor Xp	Proportional band for variable A (e.g. heating)
214 246 278 310 342 374	Reset Time Tn [s]	Controller reset time
215 247 279 311 343 375	0.1 x minimal Control Variable	Lower variable limit of the controller in percent
216 248 280 312 344 376	0.1 x maximal Control Variable	Upper variable limit of the controller in percent
217 249 281 313 345 377	0.1 x Stage 1	Selectable fan stage options
218 250 282 314 346 378	0.1 x Stage 2	
219 251 283 315 347 379	0.1 x Stage 3	

Table 5-17 Variable A parameter settings

5.11.1.3 Controller configuration variable B (cooling)

Parameter		
Index	Name	Description
220 252 284 316 348 380	0.1 x Proportional Factor Xp	Proportional band for variable B (e.g. cooling)
221 253 285 317 349 381	Reset Time Tn [s]	Controller reset time
222 254 286 318 350 382	0.1 x minimal Control Variable	Lower variable limit of the controller in percent
223 255 287 319 351 383	0.1 x maximal Control Variable	Upper variable limit of the controller in percent
224 256 288 320 352 384	0.1 x Stage 1	Selectable fan stage options
225 257 289 321 353 385	0.1 x Stage 2	
226 258 290 322 354 386	0.1 x Stage 3	

Table 5-18 Variable B parameter settings

5.12 [12] LOGIC

5.12.1 General

The **thanos** control unit features 4 independent encoders. The logic input condition "0" or "1" will provide the output value configured accordingly on the BUS.

5.12.1.1 Encoder A settings

Parameter		
Index	Name	Description
387	Value for Logical "1"	Output value allocated to condition "1"
388	Value for Logical "0"	Output value allocated to condition "0"

Table 5-19 Encoder A parameter settings

5.12.1.2 Encoder B settings

Parameter		
Index	Name	Description
387	Value for Logical "1"	Output value allocated to condition "1"
388	Value for Logical "0"	Output value allocated to condition "0"

Table 5-20 Encoder B parameter settings

5.12.1.3 Encoder C settings

Parameter		
Index	Name	Description
387	Value for Logical "1"	Output value allocated to condition "1"
388	Value for Logical "0"	Output value allocated to condition "0"

Table 5-21 Encoder C parameter settings

5.12.1.4 Encoder D settings

Parameter		
Index	Name	Description
387	Logical "1" value	Output value allocated to condition "1"
388	Logical "0" value	Output value allocated to condition "0"

Table 5-22 Encoder D parameter settings

5.12.2 Controller configuration

A controller can be set using independent parameters for variable A and variable B, allowing control of the specific environment. The operator may select what set point or actual value's he desires, giving him the possibility to also use external values received via the BUS, thus not having to using only internal values and being able to cater for various zones.

For examples on how to calculate the set points please refer to the end of the chapter.

5.12.3 Room allocation

The controller set point will be determined via the room allocation status which may assume the following conditions: *Occupied*, *Unoccupied*, *Standby*. This status may also be specified either via the internal status of the room allocation (standby status not included!!) or from a higher level. Furthermore, each controller features a bypass mode (party time extension) which will be defined via the "temporary room allocation time" communicative object.

5.12.4 Controller type

The controller may be used as a constant, PWM or FanCoil controller. For this purpose various communicative objects are available.

5.12.5 Energy shut off / Dew point control

Energy shut off and variable B forced shutdown (e.g.Dew point) both have a direct impact on the controller. In case of an active energy shut off variables A and B will be deactivated automatically. In case of an active variable B forced shutdown, only variable B will be deactivated. Energy shut off may either be triggered by an internal condition or by the respective input register.

5.12.6 Minimum variable

The "minimum variable active if" parameter is used to issue the variable to the output when the minimum variable has been exceeded, provided the calculated variable is ≥ 0 . In case the parameter is adjusted to "calculated variable > 0 ", the minimum variable shall be preserved until the mode is changed by the controller.

5.12.7 Set point determination:

(1) OCCUPIED

- *Set point variable A* = basic set point – (dead zone/2) + set point offset
- *Set point variable B* = basic set point + (dead zone/2) + set point offset

(2) STANDBY

- *Set point variable A* =
basic set point – (dead zone/2) + set point offset – set point difference STANDBY
- *Set point variable B* =
basic set point + (dead zone/2) + set point offset + set point difference STANDBY

(3) UNOCCUPIED

- *Set point variable A* =
basic set point – (dead zone/2) + set point offset – set point difference UNOCCUPIED
- *Set point variable B* =
basic set point + (dead zone/2) + set point offset + set point difference UNOCCUPIED

6 Communicative objects

6.1.1 General

All communicative objects are visible at all times and independent of the parameter settings (beside object 127 to 130), always giving you a complete view of the entire scope of functions.

The objects are marked by a square bracket (e.g. [01]) corresponding to the same category as during parametrization.

All objects are marked with an arrow, specifying whether the object in question is an input or output object.

Input object: -->| (KNX Bus transmitting data to **th**anos)

Output object: <--| (**th**anos transmitting data to KNX Bus)

Input/output object: <-->| (bidirectional)

6.1.2 Notes

Please observe that the resolution is limited by 2byte float objects. Therefore it is a particularly good idea to use a grid in connection with input objects as they will be rounded off accordingly.

Please see below our recommendation for the minimum resolution/step width to use. Values between:

0.00	through	163.76	-> resolution	0.1
163.77	through	327.52	-> resolution	0.2
327.53	through	1310.08	-> resolution	1.0
1310.09	through	10000.00	-> resolution	10.0
-0.01	through	-163.84	-> resolution	-0.1
- 163.85	through	-327.68	-> resolution	-0.2
-327.69	through	-1310.72	-> resolution	-1.0
-1310.73	through	- 10000.00	-> resolution	-10.0

For instance, if you wish to specify a set point between -1000 and 1000, choose a minimum step width > or equal to 1.0

6.1.2.1 Kategorie [01] General

Communicative object		
Index	Name	Description
1	[01] --> Overwrite Internal Temperature	External temperature specification 9999 switchback to internal temperature measurement
2	[01] --> Overwrite Internal Humidity	External humidity specification 9999 switchback to internal humidity measurement
3	[01] --> Lock Setpoint Adjustment	Blocks keys for set point offset
4	[01]<--> Time Of Day	The time may be set via this communicative object. At the same time the object may be used for internal time read out.
5	[01]<--> Calendar Date	The date may be set via this communicative object. At the same time the object may be used for internal date read out.
6	[01] <-- Temperature	Measured or specified sensor reading incl. offset
7	[01] <-- Humidity	Measured or specified sensor reading incl. offset

Table 6-1 Communicative objects in general

6.1.2.2 Category [02] Display

Communicative object		
Index	Name	Description
8	[02] --> Illumination	0 = lighting according to the conditions 1 = set lighting to active
9	[02] --> Icon Failure	The "fault" symbol may be shown/hidden from a higher level.
10	[02] --> Icon Window	The "window open" symbol may be shown/hidden from a higher level.
11	[02] --> Icon Heating	The "heating active" symbol may be shown/hidden from a higher level.
12	[02] --> Icon Cooling	The "cooling active" symbol may be shown/hidden from a higher level.
13	[02] --> Icon Dew Point	The "Dew point" symbol may be shown/hidden from a higher level.

Table 6-2 Communicative objects - Display

6.1.2.3 Category [04] Set points

Communicative object		
Index	Name	Description
16 17 18 19 20 21	[04] --> Setpoint (1..6)	External specification for the set point offset by a higher level source
22 23 24 25 26 27	[04] --> Base Setpoint (1..6)	External specification for the basic set point offset by a higher level source. Until a valid reading has been received in this object, the value from the parameter basic set point after reset shall remain valid!
28 29 30 31 32 33	[04] <-- Effective Offset Setpoint (1..6)	Current set point offset. May be modified by the user via the actuation of a key or via the associated communicative object.
34 35 36 37 38 39	[04] <-- Effective Setpoint (1..6)	The effective set point is calculated from the set point offset and the basic set point

Table 6-3 Communicative objects - Set points

6.1.2.4 Category [05] Keys

Communicative object		
Index	Name	Description
40	[05] --> Lock Keys	Clip, menu field and keyboard may be locked from a higher level source. 0 = do not lock 1 = lock
41 42 43 44 45 46 47 48 49 50	[05] <-- Light Channel (0 through 9)	Switching the respective light channel 0 = off 1 = on (reacting also to a brief actuation of the dimming function)
51	[05] <-- Light Channel 0..9	Switching all light channels, see also chapter 5.4 (reacting also to a brief actuation of the dimming function)
52 53 54 55 56 57 58 59 60 61	[05] --> State Of Light Channel (0 through 9)	Feedback from the corresponding light channel 0 = off 1 = on
62	[05] --> State Of Light Channel 0..9	Setting all light channels, see also chapter 5.4

63 64 65 66 67 68 69 70 71 72	[05] <-- Scene Channel (0 through 9)	Scene according scene numbers 1..64 (reaction upon prolonged pressing)
73 74 75 76 77 78 79 80 81 82	[05] <-- Light Dimming 4 Bit Channel (0 through 9)	Dimming light on the respective channel 4 bit (reaction upon prolonged pressing)
83 84 85 86 87 88 89 90 91 92	[05] <-- Universal Switch Channel (0 through 9)	Switching the respective universal channel 0 = off 1 = on
93	[05] <-- Universal Switch Channel 0..9	Switching all universal channels, see also chapter 5.4
94 95 96 97 98 99 100 101 102 103	[05] --> State Of Universal Channel (0 through 9)	Feedback from the respective universal channel 0 = off 1 = on
104	[05] --> State Of Universal Channel 0..9	Setting all universal channels, see also chapter 5.4
105 106 107 108 109 110 111 112 113 114	[05] <-- Shutter/Blind Channel (0 through 9)	Switching the respective shutters/blinds channel 0 = up (long keystroke) 1 = down (long keystroke)
115	[05] <-- Shutter/Blind Channel 0..9	Switching all shutters/blinds channels, see also chapter 5.4
116 117 118 119 120 121 122 123 124 125	[05] <-- Blind Channel (0 through 9)	Switching the respective shutters/blinds channel 0 = open (short keystroke) 1 = close (short keystroke)
126	[05] <-- Blind Channel 0..9	Switching all blinds channels, see also chapter 5.4

Table 6-4 Communicative objects - Keys

6.1.2.5 Category [03] Text messages

Communicative object		
Index	Name	Description
14	[03] --> Show Message	0 will show the info text. 1-8 will show the parameter related messages
15	[03] --> Info Message	Info text - dynamic 14 byte text

Table 6-5 Communicative objects - Text messages

6.1.2.6 Category [07] Inputs

Communicative object		
Index	Name	Description
127 128 129 130	[07] <-- Input (1 through 4)	Digital input presentation in relation to the parameter setting As signal: 0- open 1- closed As counter: 0-65535 (flangs, pulses)
131 132 133 134	[07] --> Output Value Of Input (1 through 4)	0=value not issued 1=issue value and set counter to 0

Table 6-6 Communicative objects - Inputs

6.1.2.7 Category [08] Room allocation

Communicative object		
Index	Name	Description
135	[08] --> Occupancy (1 Byte)	Specification of the room allocation by a higher level source 0 = unoccupied 1 = occupied 2 = Bereitschaft
136	[08] --> Occupancy (1 Bit)	Specification of the room allocation by a higher level source 0 = unoccupied 1 = occupied
137	[08] --> Lock Occupancy	The higher level source may lock or release the local room allocation key 0 = do not lock 1 = lock
138	[08] --> Temporary Occupancy Time	If a time is specified here, the room will be occupied for that time period (party time)
139	[08] <-- Status Occupancy (1 Byte)	Issues the current room allocation status 0 = unoccupied 1 = occupied 2 = Standby
140	[08] <-- Status Occupancy (1 Bit)	Issues the current room allocation status 0 = unoccupied 1 = occupied

Table 6-7 Communicative objects - Room allocation

6.1.2.8 Category [09] Fan stages

Communicative object																											
Index	Name	Description																									
141	[09] --> Set Fan Coil Stage	External fan stage specification via a higher level source. 0x00 = none 0x01 = 1 stage 0x02 = 2 stages 0x03 = 3 stages 0x10 = 0 stage with automatic 0x11 = 1 stage with automatic 0x12 = 2 stages with automatic 0x13 = 3 stages with automatic																									
142	[09] --> Lock Fan Coil Stages	Locks the fan stage keys																									
143	[09] <-> Current Fan Coil Stage	Issues the current fan stage																									
		<table> <tr> <th>1 Byte no Auto</th><th>1 Byte incl. Auto</th><th>2 Bytes incl. Auto</th></tr> <tr> <td>0x00 = none</td><td>0x00 = none</td><td>0x00 = none</td></tr> <tr> <td>0x01 = 1 Stage</td><td>0x01 = 1 Stage</td><td>0x01 = 1 Stage</td></tr> <tr> <td>0x02 = 2 Stages</td><td>0x02 = 2 Stages</td><td>0x02 = 2 Stages</td></tr> <tr> <td>0x03 = 3 Stages</td><td>0x03 = 3 Stages</td><td>0x03 = 3 Stages</td></tr> <tr> <td>0x10 = 0 stage</td><td>0x10 = Auto</td><td>0xFF00 = Auto</td></tr> <tr> <td>0x11 = 1 Auto</td><td>0x11 = 1 Auto</td><td>0xFF01 = 1 Auto</td></tr> <tr> <td>0x12 = 2 Auto</td><td>0x12 = 2 Auto</td><td>0xFF02 = 2 Auto</td></tr> <tr> <td>0x13 = 3 Auto</td><td>0x13 = 3 Auto</td><td>0xFF03 = 3 Auto</td></tr> </table>	1 Byte no Auto	1 Byte incl. Auto	2 Bytes incl. Auto	0x00 = none	0x00 = none	0x00 = none	0x01 = 1 Stage	0x01 = 1 Stage	0x01 = 1 Stage	0x02 = 2 Stages	0x02 = 2 Stages	0x02 = 2 Stages	0x03 = 3 Stages	0x03 = 3 Stages	0x03 = 3 Stages	0x10 = 0 stage	0x10 = Auto	0xFF00 = Auto	0x11 = 1 Auto	0x11 = 1 Auto	0xFF01 = 1 Auto	0x12 = 2 Auto	0x12 = 2 Auto	0xFF02 = 2 Auto	0x13 = 3 Auto
1 Byte no Auto	1 Byte incl. Auto	2 Bytes incl. Auto																									
0x00 = none	0x00 = none	0x00 = none																									
0x01 = 1 Stage	0x01 = 1 Stage	0x01 = 1 Stage																									
0x02 = 2 Stages	0x02 = 2 Stages	0x02 = 2 Stages																									
0x03 = 3 Stages	0x03 = 3 Stages	0x03 = 3 Stages																									
0x10 = 0 stage	0x10 = Auto	0xFF00 = Auto																									
0x11 = 1 Auto	0x11 = 1 Auto	0xFF01 = 1 Auto																									
0x12 = 2 Auto	0x12 = 2 Auto	0xFF02 = 2 Auto																									
0x13 = 3 Auto	0x13 = 3 Auto	0xFF03 = 3 Auto																									
144	[09]<-> Fan Coil Stage 1	In/output of fan stage 1																									
145	[09]<-> Fan Coil Stage 2	In/output of fan stage 2																									
146	[09]<-> Fan Coil Stage 3	In/output of fan stage 3																									

Table 6-8 Communicative objects - Fan stages

6.1.2.9 Category [10] External values

Communicative object		
Index	Name	Description
147 148 149 150 151 152	[10] --> Input External Value (1 through 6)	External specification for external values to be shown in the display

Table 6-9 Communicative objects - External values

6.1.2.10 Category [11] Controller

Communicative object		
Index	Name	Description
153 154 155 156 157 158	[11] --> Actual Value CTR (1 through 6)	Actual value of the controller in case option "external value specification" was selected for the <i>actual value selection</i> parameter
159 160 161 162 163 164	[11] --> Base Setpoint CTR (1 through 6)	Basic set point of the controller in case option "external value specification" was selected for the <i>set point selection</i> parameter

165 166 167 168 169 170	[11] --> Actual Setpoint Offset CTR (1 through 6)	Internal set point offset override via the higher level source
171 172 173 174 175 176	[11] --> Trigger Lowering Delay Time CTR (1 through 6)	Writing a value >0 will set the controller allocation status into decrease delay mode for the period indicated. Writing 0 will cause an immediate decrease delay reset
177 178 179 180 181 182	[11] --> Set Mode CTR (1 through 6)	Specification issued to the controller, telling it which mode to use. Permits the locking of one or both controllers via the higher level source. 0 = off 1 = variable A (heating) 2 = variable B (cooling) 3 = auto
183 184 185 186 187 188	[11] --> Forced Shutdown Control Variable B CTR (1 through 6)	0 = deactivated 1 = activated
189 190 191 192 193 194	[11] --> CTR (1 through 6) Hold Off	0 = deactivated 1 = activated
195 196 197 198 199 200	[11] --> Occupancy CTR (1 through 6)	0 = unoccupied 1 = occupied 2 = standby
201 202 203 204 205 206	[11] <-- Control Variable A CTR (1 through 6)	Variable A (heating) 0..100%
207 208 209 210 211 212	[11] <-- PWM Output Control Variable A CTR (1 through 6)	PWM signal variable A (heating) is issued 0 = off 1 = on
213 214 215 216 217 218	[11] <-- Control Variable B CTR (1 through 6)	Variable B (cooling) 0..100%
219 220 221 222 223 224	[11] <-- PWM Output Control Variable B CTR (1 through 6)	PWM signal variable B (cooling) is issued 0 = off 1 = on
225 226 227 228 229 230	[11] <-- Output Mode CTR (1 through 6)	0 = off 1 = variable A (heating) 2 = variable B (cooling) 3 = variable A auto 4 = variable B auto

231 232 233 234 235 236	[11] <-- Fan Coil Stage CTR (1 through 6)	0 = off 1 = stage 1 2 = stage 2 3 = stage 3
237 238 239 240 241 242	[11] <-- Effective Setpoint CTR (1 through 6)	The effective set point will be calculated from the set point offset and the basic set point

Table 6-10 Communicative objects - Controller

6.1.2.11 Category [12] Logic

Communicative object		
Index	Name	Description
243	[12] --> Encoder A Input	Specification of "0" or "1" generates a corresponding value at the output
244	[12] <-- Encoder A Output	The respective parameterized value is issued
245	[12] --> Encoder B Input	Specification of "0" or "1" generates a corresponding value at the output
246	[12] <-- Encoder B Output	The respective parameterized value is issued
247	[12] --> Encoder C Input	Specification of "0" or "1" generates a corresponding value at the output
248	[12] <-- Encoder C Output	The respective parameterized value is issued
249	[12] --> Encoder D Input	Specification of "0" or "1" generates a corresponding value at the output
250	[12] <-- Wertgeber D Output	The respective parameterized value is issued

Table 6-11 Communicative objects - Logic

7 thanos-KNX Parameter/communicative objects

7.1 Parameter

Index	Address	Size / bytes	ETS Text
1	4900h	2	Device Coding
2	4902h	2	Firmware Version
3	4904h	2	Parameter Version
4	4906h	1	Existing Humidity Sensor
5	4907h	2	Device Location
6	4909h	1	Automatic Key Lock
7	490Ah	2	Cyclic Heartbeat [s]
8	490Ch	1	Show Channel Numbers
9	490Dh	1	Device Version
10	490Eh	1	Device Orientation
11	490Fh	1	Key press Volume
12	4910h	1	Show Calendar Date
13	4911h	1	Show Time of Day
14	4912h	1	Time Mode
15	4913h	2	Time Input Lock [s]
16	4915h	1	Show Channel Number 0
17	4916h	1	Heartbeat Object Selection 1
18	4917h	1	Heartbeat Object Selection 2
19	4918h	1	Heartbeat Object Selection 3
20	4919h	1	Heartbeat Object Selection 4
21	491Ah	1	Heartbeat Object Selection 5
22	491Bh	1	Heartbeat Object Selection 6
23	491Ch	2	Temperature Offset
24	491Eh	1	Temperature Appearance
25	491Fh	1	Show on Display
26	4920h	1	Unit of Temperature
27	4921h	2	Send Value if changed
28	4923h	2	Humidity Offset
29	4925h	1	Humidity Appearance
30	4926h	1	Show on Display
31	4927h	2	Send Value if changed
32	4929h	1	Back Color Display
33	492Ah	1	Brightness Display active [%]
34	492Bh	1	Brightness Display dimmed [%]
35	492Ch	1	Brightness Display standby [%]
36	492Dh	1	Brightness Keys active [%]
37	492Eh	1	Brightness Keys dimmed [%]
38	492Fh	1	Brightness Keys standby [%]
39	4930h	1	Number of Submenus
40	4931h	2	Duration of Displayed Value [s]
41	4933h	2	Duration of Cleaning Mode [s]
42	4935h	2	Switching Time active -> dimmed [s]
43	4937h	2	Switching Time dimmed-> standby [s]
44	4939h	2	Display Duration Menu [s]

Index	Address	Size / bytes	ETS Text
45	493Bh	2	Display Duration Action [s]
46	493Dh	1	Display Duration Submenu [s]
47	493Eh	1	Division Line 1
48	493Fh	1	Division Line 2
49	4940h	1	Division Line 3
50	4941h	1	Division Line 4
51	4942h	1	Division Line 5
52	4943h	1	Show Submenus only
53	4944h	2	0.1 x Upper Setting Range [+]
54	4946h	2	0.1 x Lower Setting Range [-]
55	4948h	2	0.1 x Step size
56	494Ah	2	0.1 x Base Setpoint after Reset
57	494Ch	3	Unit (max. 3 ASCII Characters)
58	494Fh	14	Description (max. 14 ASCII Characters)
59	495Dh	1	Appearance
60	495Eh	1	Appearance into Setpoint Menu
61	495Fh	1	Show Effective Value on Display
62	4960h	1	Show Offset Value on Display
63	4961h	2	0.1 x Upper Setting Range [+]
64	4963h	2	0.1 x Lower Setting Range [-]
65	4965h	2	0.1 x Step size
66	4967h	2	0.1 x Base Setpoint after Reset
67	4969h	3	Unit (max. 3 ASCII Characters)
68	496Ch	14	Description (max. 14 ASCII Characters)
69	497Ah	1	Appearance
70	497Bh	1	Appearance into Setpoint Menu
71	497Ch	1	Show Effective Value on Display
72	497Dh	1	Show Offset Value on Display
73	497Eh	2	0.1 x Upper Setting Range [+]
74	4980h	2	0.1 x Lower Setting Range [-]
75	4982h	2	0.1 x Step size
76	4984h	2	0.1 x Base Setpoint after Reset
77	4986h	3	Unit (max. 3 ASCII Characters)
78	4989h	14	Description (max. 14 ASCII Characters)
79	4997h	1	Appearance
80	4998h	1	Appearance into Setpoint Menu
81	4999h	1	Show Effective Value on Display
82	499Ah	1	Show Offset Value on Display
83	499Bh	2	0.1 x Upper Setting Range [+]
84	499Dh	2	0.1 x Lower Setting Range [-]
85	499Fh	2	0.1 x Step size
86	49A1h	2	0.1 x Base Setpoint after Reset
87	49A3h	3	Unit (max. 3 ASCII Characters)
88	49A6h	14	Description (max. 14 ASCII Characters)
89	49B4h	1	Appearance
90	49B5h	1	Appearance into Setpoint Menu
91	49B6h	1	Show Effective Value on Display
92	49B7h	1	Show Offset Value on Display
93	49B8h	2	0.1 x Upper Setting Range [+]

Index	Address	Size / bytes	ETS Text
94	49BAh	2	0.1 x Lower Setting Range [-]
95	49BCh	2	0.1 x Step size
96	49BEh	2	0.1 x Base Setpoint after Reset
97	49C0h	3	Unit (max. 3 ASCII Characters)
98	49C3h	14	Description (max. 14 ASCII Characters)
99	49D1h	1	Appearance
100	49D2h	1	Appearance into Setpoint Menu
101	49D3h	1	Show Effective Value on Display
102	49D4h	1	Show Offset Value on Display
103	49D5h	2	0.1 x Upper Setting Range [+]
104	49D7h	2	0.1 x Lower Setting Range [-]
105	49D9h	2	0.1 x Step size
106	49DBh	2	0.1 x Base Setpoint after Reset
107	49DDh	3	Unit (max. 3 ASCII Characters)
108	49E0h	14	Description (max. 14 ASCII Characters)
109	49EEh	1	Appearance
110	49EFh	1	Appearance into Setpoint Menu
111	49F0h	1	Show Effective Value on Display
112	49F1h	1	Show Offset Value on Display
113	49F2h	2	Clip
114	49F4h	2	Key 1
115	49F6h	2	Key 4
116	49F8h	2	Key 5
117	49FAh	2	Key 6
118	49FCh	2	Key 7
119	49FEh	2	Key 8
120	4A00h	2	Key 9
121	4A02h	2	Key 10
122	4A04h	2	Key 11
123	4A06h	2	Key 12
124	4A08h	2	Key 13
125	4A0Ah	2	Key 14
126	4A0Ch	2	Key 15
127	4A0Eh	2	Key 16
128	4A10h	2	Key 17
129	4A12h	2	Key 18
130	4A14h	2	Key 19
131	4A16h	2	Key 20
132	4A18h	2	Key 21
133	4A1Ah	2	Key 22
134	4A1Ch	2	Key 23
135	4A1Eh	2	Key 24
136	4A20h	2	Key 25
137	4A22h	2	Key 26
138	4A24h	2	Key 27
139	4A26h	2	Key 28
140	4A28h	2	Key 29
141	4A2Ah	2	Key 30
142	4A2Ch	2	Key 31

Index	Addresse	Size / bytes	ETS Text
143	4A2Eh	1	Switch Light
144	4A2Fh	1	Switch Universal
145	4A30h	1	Shutter/Blind
146	4A31h	1	Blind Adjustment
147	4A32h	14	Message 1
148	4A40h	14	Message 2
149	4A4Eh	14	Message 3
150	4A5Ch	14	Message 4
151	4A6Ah	14	Message 5
152	4A78h	14	Message 6
153	4A86h	14	Message 7
154	4A94h	14	Message 8
155	4AA2h	1	Input 1
156	4AA3h	1	Input 2
157	4AA4h	1	Input 3
158	4AA5h	1	Input 4
159	4AA6h	1	Function Input 1
160	4AA7h	1	Function Input 2
161	4AA8h	1	Function Input 3
162	4AA9h	1	Function Input 4
163	4AAAh	1	Occupancy after Reset
164	4AABh	1	Show Occupancy after Reset
165	4AACh	2	Occupancy Delay Time [s]
166	4AAEh	2	Number of Fan Coil Stages
167	4AB0h	2	Stage after Reset
168	4AB2h	1	Display Icon Fan-Stage after Reset
169	4AB3h	1	Display Stage at Automatic
170	4AB4h	1	Only OFF/AUTO Switching
171	4C9Eh	1	Object Type of Fan-Stage Output
172	4AB5h	1	Appearance
173	4AB6h	1	Show Value on Display
174	4AB7h	3	Unit (max. 3 ASCII Characters)
175	4ABAh	14	Description (max. 14 ASCII Characters)
176	4AC8h	1	Appearance
177	4AC9h	1	Show Value on Display
178	4ACAh	3	Unit (max. 3 ASCII Characters)
179	4ACDh	14	Description (max. 14 ASCII Characters)
180	4ADBh	1	Appearance
181	4ADCh	1	Show Value on Display
182	4ADDh	3	Unit (max. 3 ASCII Characters)
183	4AE0h	14	Description (max. 14 ASCII Characters)
184	4AEEh	1	Appearance
185	4AEFh	1	Show Value on Display
186	4AF0h	3	Unit (max. 3 ASCII Characters)
187	4AF3h	14	Description (max. 14 ASCII Characters)
188	4B01h	1	Appearance
189	4B02h	1	Show Value on Display
190	4B03h	3	Unit (max. 3 ASCII Characters)

Index	Address	Size / bytes	ETS Text
191	4B06h	14	Description (max. 14 ASCII Characters)
192	4B14h	1	Appearance
193	4B15h	1	Show Value on Display
194	4B16h	3	Unit (max. 3 ASCII Characters)
195	4B19h	14	Description (max. 14 ASCII Characters)
196	4B27h	2	0.1 x Base Setpoint after Reset OCCUPIED
197	4B29h	2	0.1 x Setpoint Offset STANDBY
198	4B2Bh	2	0.1 x Setpoint Offset UNOCCUPIED
199	4B2Dh	2	0.1 x Deadband
200	4B2Fh	2	0.1 x Forced Activation Boarder
201	4B31h	1	Controller Mode after Reset
202	4B32h	1	Selection unoccupied/occupied
203	4B33h	1	Selection Actual Value
204	4B34h	1	Selection Setpoint
205	4B35h	1	Selection Hold Off
207	4B36h	2	PWM Cycle time [s]
208	4B3Ah	2	Minimal Fan Coil Stage ON-Time
209	4B3Ch	1	Minimal Control Variable
210	4B3Dh	1	Show Icon Controller
211	4B3Eh	1	Show Icon Dew Point
212	4B3Fh	1	Number of Fan Coil Stages
213	4B40h	1	Access to Fan Coil Control
214	4B41h	2	0.1 x Proportional Factor Xp
215	4B43h	2	Reset Time Tn [s]
216	4B45h	2	0.1 x minimal Control Variable
217	4B47h	2	0.1 x maximal Control Variable
218	4B49h	2	0.1 x Stage 1
219	4B4Bh	2	0.1 x Stage 2
220	4B4Dh	2	0.1 x Stage 3
221	4B4Fh	2	0.1 x Proportional Factor Xp
222	4B51h	2	Reset Time Tn [s]
223	4B53h	2	0.1 x minimal Control Variable
224	4B55h	2	0.1 x maximal Control Variable
225	4B57h	2	0.1 x Stage 1
226	4B59h	2	0.1 x Stage 2
227	4B5Bh	2	0.1 x Stage 3
228	4B5Dh	2	0.1 x Base Setpoint after Reset OCCUPIED
229	4B5Fh	2	0.1 x Setpoint Offset STANDBY
230	4B61h	2	0.1 x Setpoint Offset UNOCCUPIED
231	4B63h	2	0.1 x Deadband
232	4B65h	2	0.1 x Forced Activation Boarder
233	4B67h	1	Controller Mode after Reset
234	4B68h	1	Selection unoccupied/occupied
235	4B69h	1	Selection Actual Value
236	4B6Ah	1	Selection Setpoint
237	4B6Bh	1	Selection Hold Off
239	4B6Ch	2	PWM Cycle time [s]
240	4B70h	2	Minimal Fan Coil Stage ON-Time

Index	Address	Size / bytes	ETS Text
241	4B72h	1	Minimal Control Variable
242	4B73h	1	Show Icon Controller
243	4B74h	1	Show Icon Dew Point
244	4B75h	1	Number of Fan Coil Stages
245	4B76h	1	Access to Fan Coil Control
246	4B77h	2	0.1 x Proportional Factor Xp
247	4B79h	2	Reset Time Tn [s]
248	4B7Bh	2	0.1 x minimal Control Variable
249	4B7Dh	2	0.1 x maximal Control Variable
250	4B7Fh	2	0.1 x Stage 1
251	4B81h	2	0.1 x Stage 2
252	4B83h	2	0.1 x Stage 3
253	4B85h	2	0.1 x Proportional Factor Xp
254	4B87h	2	Reset Time Tn [s]
255	4B89h	2	0.1 x minimal Control Variable
256	4B8Bh	2	0.1 x maximal Control Variable
257	4B8Dh	2	0.1 x Stage 1
258	4B8Fh	2	0.1 x Stage 2
259	4B91h	2	0.1 x Stage 3
260	4B93h	2	0.1 x Base Setpoint after Reset OCCUPIED
261	4B95h	2	0.1 x Setpoint Offset STANDBY
262	4B97h	2	0.1 x Setpoint Offset UNOCCUPIED
263	4B99h	2	0.1 x Deadband
264	4B9Bh	2	0.1 x Forced Activation Boarder
265	4B9Dh	1	Controller Mode after Reset
266	4B9Eh	1	Selection unoccupied/occupied
267	4B9Fh	1	Selection Actual Value
268	4BA0h	1	Selection Setpoint
269	4BA1h	1	Selection Hold Off
271	4BA2h	2	PWM Cycle time [s]
272	4BA6h	2	Minimal Fan Coil Stage ON-Time
273	4BA8h	1	Minimal Control Variable
274	4BA9h	1	Show Icon Controller
275	4BAAh	1	Show Icon Dew Point
276	4BABh	1	Number of Fan Coil Stages
277	4BACH	1	Access to Fan Coil Control
278	4BADh	2	0.1 x Proportional Factor Xp
279	4BAFh	2	Reset Time Tn [s]
280	4BB1h	2	0.1 x minimal Control Variable
281	4BB3h	2	0.1 x maximal Control Variable
282	4BB5h	2	0.1 x Stage 1
283	4BB7h	2	0.1 x Stage 2
284	4BB9h	2	0.1 x Stage 3
285	4BBBh	2	0.1 x Proportional Factor Xp
286	4BBDh	2	Reset Time Tn [s]
287	4BBFh	2	0.1 x minimal Control Variable
288	4BC1h	2	0.1 x maximal Control Variable
289	4BC3h	2	0.1 x Stage 1

Index	Address	Size / bytes	ETS Text
290	4BC5h	2	0.1 x Stage 2
291	4BC7h	2	0.1 x Stage 3
292	4BC9h	2	0.1 x Base Setpoint after Reset OCCUPIED
293	4BCBh	2	0.1 x Setpoint Offset STANDBY
294	4BCDh	2	0.1 x Setpoint Offset UNOCCUPIED
295	4BCFh	2	0.1 x Deadband
296	4BD1h	2	0.1 x Forced Activation Boarder
297	4BD3h	1	Controller Mode after Reset
298	4BD4h	1	Selection unoccupied/occupied
299	4BD5h	1	Selection Actual Value
300	4BD6h	1	Selection Setpoint
301	4BD7h	1	Selection Hold Off
303	4BD8h	2	PWM Cycle time [s]
304	4BDCh	2	Minimal Fan Coil Stage ON-Time
305	4BDEh	1	Minimal Control Variable
306	4BDFh	1	Show Icon Controller
307	4BE0h	1	Show Icon Dew Point
308	4BE1h	1	Number of Fan Coil Stages
309	4BE2h	1	Access to Fan Coil Control
310	4BE3h	2	0.1 x Proportional Factor Xp
311	4BE5h	2	Reset Time Tn [s]
312	4BE7h	2	0.1 x minimal Control Variable
313	4BE9h	2	0.1 x maximal Control Variable
314	4BEBh	2	0.1 x Stage 1
315	4BEDh	2	0.1 x Stage 2
316	4BEFh	2	0.1 x Stage 3
317	4BF1h	2	0.1 x Proportional Factor Xp
318	4BF3h	2	Reset Time Tn [s]
319	4BF5h	2	0.1 x minimal Control Variable
320	4BF7h	2	0.1 x maximal Control Variable
321	4BF9h	2	0.1 x Stage 1
322	4BFBh	2	0.1 x Stage 2
323	4BFDh	2	0.1 x Stage 3
324	4BFFh	2	0.1 x Base Setpoint after Reset OCCUPIED
325	4C01h	2	0.1 x Setpoint Offset STANDBY
326	4C03h	2	0.1 x Setpoint Offset UNOCCUPIED
327	4C05h	2	0.1 x Deadband
328	4C07h	2	0.1 x Forced Activation Boarder
329	4C09h	1	Controller Mode after Reset
330	4C0Ah	1	Selection unoccupied/occupied
331	4C0Bh	1	Selection Actual Value
332	4C0Ch	1	Selection Setpoint
333	4C0Dh	1	Selection Hold Off
335	4C0Eh	2	PWM Cycle time [s]
336	4C12h	2	Minimal Fan Coil Stage ON-Time
337	4C14h	1	Minimal Control Variable
338	4C15h	1	Show Icon Controller
339	4C16h	1	Show Icon Dew Point

Index	Address	Size /bytes	ETS Text
340	4C17h	1	Number of Fan Coil Stages
341	4C18h	1	Access to Fan Coil Control
342	4C19h	2	0.1 x Proportional Factor Xp
343	4C1Bh	2	Reset Time Tn [s]
344	4C1Dh	2	0.1 x minimal Control Variable
345	4C1Fh	2	0.1 x maximal Control Variable
346	4C21h	2	0.1 x Stage 1
347	4C23h	2	0.1 x Stage 2
348	4C25h	2	0.1 x Stage 3
349	4C27h	2	0.1 x Proportional Factor Xp
350	4C29h	2	Reset Time Tn [s]
351	4C2Bh	2	0.1 x minimal Control Variable
352	4C2Dh	2	0.1 x maximal Control Variable
353	4C2Fh	2	0.1 x Stage 1
354	4C31h	2	0.1 x Stage 2
355	4C33h	2	0.1 x Stage 3
356	4C35h	2	0.1 x Base Setpoint after Reset OCCUPIED
357	4C37h	2	0.1 x Setpoint Offset STANDBY
358	4C39h	2	0.1 x Setpoint Offset UNOCCUPIED
359	4C3Bh	2	0.1 x Deadband
360	4C3Dh	2	0.1 x Forced Activation Boarder
361	4C3Fh	1	Controller Mode after Reset
362	4C40h	1	Selection unoccupied/occupied
363	4C41h	1	Selection Actual Value
364	4C42h	1	Selection Setpoint
365	4C43h	1	Selection Hold Off
367	4C44h	2	PWM Cycle time [s]
368	4C48h	2	Minimal Fan Coil Stage ON-Time
369	4C4Ah	1	Minimal Control Variable
370	4C4Bh	1	Show Icon Controller
371	4C4Ch	1	Show Icon Dew Point
372	4C4Dh	1	Number of Fan Coil Stages
373	4C4Eh	1	Access to Fan Coil Control
374	4C4Fh	2	0.1 x Proportional Factor Xp
375	4C51h	2	Reset Time Tn [s]
376	4C53h	2	0.1 x minimal Control Variable
377	4C55h	2	0.1 x maximal Control Variable
378	4C57h	2	0.1 x Stage 1
379	4C59h	2	0.1 x Stage 2
380	4C5Bh	2	0.1 x Stage 3
381	4C5Dh	2	0.1 x Proportional Factor Xp
382	4C5Fh	2	Reset Time Tn [s]
383	4C61h	2	0.1 x minimal Control Variable
384	4C63h	2	0.1 x maximal Control Variable
385	4C65h	2	0.1 x Stage 1
386	4C67h	2	0.1 x Stage 2
387	4C69h	2	0.1 x Stage 3

Index	Address	Size /bytes	ETS Text
388	4C6Bh	1	Value for Logical "1"
389	4C6Ch	1	Value for Logical "0"
390	4C6Dh	1	Value for Logical "1"
391	4C6Eh	1	Value for Logical "0"
392	4C6Fh	1	Value for Logical "1"
393	4C70h	1	Value for Logical "0"
394	4C71h	1	Value for Logical "1"
395	4C72h	1	Value for Logical "0"

Index	Address	Size / bytes	ETS Text
396	4C73h	1	Degree of Mixing External Temperature
397	4C74h	1	Degree of Mixing External Humidity
398	4C75h	1	Scene No., Channel 0
399	4C76h	1	Scene No., Channel 1
400	4C77h	1	Scene No., Channel 2
401	4C78h	1	Scene No., Channel 3
402	4C79h	1	Scene No., Channel 4
403	4C7Ah	1	Scene No., Channel 5
404	4C7Bh	1	Scene No., Channel 6
405	4C7Ch	1	Scene No., Channel 7
406	4C7Dh	1	Scene No., Channel 8
407	4C7Eh	1	Scene No., Channel 9
408	4C7Fh	1	Language for Key Naming
409	4C80h	1	Naming Key 1
410	4C81h	1	Naming Key 4
411	4C82h	1	Naming Key 5
412	4C83h	1	Naming Key 6
413	4C84h	1	Naming Key 7
414	4C85h	1	Naming Key 8
415	4C86h	1	Naming Key 9
416	4C87h	1	Naming Key 10
417	4C88h	1	Naming Key 11
418	4C89h	1	Naming Key 12
419	4C8Ah	1	Naming Key 13
420	4C8Bh	1	Naming Key 14
421	4C8Ch	1	Naming Key 15
422	4C8Dh	1	Naming Key 16
423	4C8Eh	1	Naming Key 17
424	4C8Fh	1	Naming Key 18
425	4C90h	1	Naming Key 19
426	4C91h	1	Naming Key 20
427	4C92h	1	Naming Key 21
428	4C93h	1	Naming Key 22
429	4C94h	1	Naming Key 23
430	4C95h	1	Naming Key 24
431	4C96h	1	Naming Key 25
432	4C97h	1	Naming Key 26
433	4C98h	1	Naming Key 27
434	4C99h	1	Naming Key 28
435	4C9Ah	1	Naming Key 29
436	4C9Bh	1	Naming Key 30
437	4C9Ch	1	Naming Key 31
438	4C9Dh	1	Naming Clip

Table 7-1 Parameter list

7.2 Communicative objects

Index	Communicative object	Description	Size	Flags	Data type
1	[01] --> Overwrite Internal Temperature	Input Value (float)	2 bytes	-WCTU-	DPT 9.001
2	[01] --> Overwrite Internal Humidity	Input Value (float)	2 bytes	-WCTU-	DPT 9.xxx
3	[01] --> Lock Setpoint Adjustment	Input (on/off)	1 bit	-WCTU-	DPT 1.001
4	[01]<--> Time Of Day	In/Output Time Of Day	3 bytes	RWCTU-	DPT 10.001
5	[01]<--> Calendar Date	In/Output Calendar Date	3 bytes	RWCTU-	DPT 11.001
6	[01] <-- Temperature	Output Temperature (float)	2 bytes	R-CTU-	DPT 9.001
7	[01] <-- Humidity	Output Humidity (float)	2 bytes	R-CTU-	DPT 9.xxx
8	[02] --> Illumination	Illumination (cur. State/on)	1 bit	-WCTU-	DPT 1.001
9	[02] --> Icon Failure	Display (on/off)	1 bit	-WCTU-	DPT 1.001
10	[02] --> Icon Window	Display (on/off)	1 bit	-WCTU-	DPT 1.001
11	[02] --> Icon Heating	Display (on/off)	1 bit	-WCTU-	DPT 1.001
12	[02] --> Icon Cooling	Display (on/off)	1 bit	-WCTU-	DPT 1.001
13	[02] --> Icon Dew Point	Display (on/off)	1 bit	-WCTU-	DPT 1.001
14	[03] --> Show Message	Display (0..8)	1 Byte	-WCTU-	DPT 5.xxx
15	[03] --> Info Message	Text Input, 14 Bytes	14 bytes	-WCTU-	DPT 16.000
16	[04] --> Setpoint 1	Input Value (float)	2 bytes	-WCTU-	DPT 9.002
17	[04] --> Setpoint 2	Input Value (float)	2 bytes	-WCTU-	DPT 9.002
18	[04] --> Setpoint 3	Input Value (float)	2 bytes	-WCTU-	DPT 9.002
19	[04] --> Setpoint 4	Input Value (float)	2 bytes	-WCTU-	DPT 9.002
20	[04] --> Setpoint 5	Input Value (float)	2 bytes	-WCTU-	DPT 9.002
21	[04] --> Setpoint 6	Input Value (float)	2 bytes	-WCTU-	DPT 9.002
22	[04] --> Base Setpoint 1	Input Value (float)	2 bytes	-WCTU-	DPT 9.001
23	[04] --> Base Setpoint 2	Input Value (float)	2 bytes	-WCTU-	DPT 9.001
24	[04] --> Base Setpoint 3	Input Value (float)	2 bytes	-WCTU-	DPT 9.001
25	[04] --> Base Setpoint 4	Input Value (float)	2 bytes	-WCTU-	DPT 9.001
26	[04] --> Base Setpoint 5	Input Value (float)	2 bytes	-WCTU-	DPT 9.001
27	[04] --> Base Setpoint 6	Input Value (float)	2 bytes	-WCTU-	DPT 9.001
28	[04] <-- Effective Offset Setpoint 1	Output Value (float)	2 bytes	R-CTU-	DPT 9.002
29	[04] <-- Effective Offset Setpoint 2	Output Value (float)	2 bytes	R-CTU-	DPT 9.002
30	[04] <-- Effective Offset Setpoint 3	Output Value (float)	2 bytes	R-CTU-	DPT 9.002
31	[04] <-- Effective Offset Setpoint 4	Output Value (float)	2 bytes	R-CTU-	DPT 9.002
32	[04] <-- Effective Offset Setpoint 5	Output Value (float)	2 bytes	R-CTU-	DPT 9.002
33	[04] <-- Effective Offset Setpoint 6	Output Value (float)	2 bytes	R-CTU-	DPT 9.002
34	[04] <-- Effective Setpoint 1	Output Value (float)	2 bytes	R-CTU-	DPT 9.001
35	[04] <-- Effective Setpoint 2	Output Value (float)	2 bytes	R-CTU-	DPT 9.001
36	[04] <-- Effective Setpoint 3	Output Value (float)	2 bytes	R-CTU-	DPT 9.001
37	[04] <-- Effective Setpoint 4	Output Value (float)	2 bytes	R-CTU-	DPT 9.001
38	[04] <-- Effective Setpoint 5	Output Value (float)	2 bytes	R-CTU-	DPT 9.001
39	[04] <-- Effective Setpoint 6	Output Value (float)	2 bytes	R-CTU-	DPT 9.001
40	[05] --> Lock Keys	Locking (yes/no)	1 bit	-WCTU-	DPT 1.001
41	[05] <-- Light Channel 0	Light (on/off)	1 bit	R-CTU-	DPT 1.001
42	[05] <-- Light Channel 1	Light (on/off)	1 bit	R-CTU-	DPT 1.001
43	[05] <-- Light Channel 2	Light (on/off)	1 bit	R-CTU-	DPT 1.001
44	[05] <-- Light Channel 3	Light (on/off)	1 bit	R-CTU-	DPT 1.001
45	[05] <-- Light Channel 4	Light (on/off)	1 bit	R-CTU-	DPT 1.001
46	[05] <-- Light Channel 5	Light (on/off)	1 bit	R-CTU-	DPT 1.001

Index	Communicative object	Description	Size	Flags	Data type
47	[05] <-- Light Channel 6	Light (on/off)	1 bit	R-CTU-	DPT 1.001
48	[05] <-- Light Channel 7	Light (on/off)	1 bit	R-CTU-	DPT 1.001
49	[05] <-- Light Channel 8	Light (on/off)	1 bit	R-CTU-	DPT 1.001
50	[05] <-- Light Channel 9	Light (on/off)	1 bit	R-CTU-	DPT 1.001
51	[05] <-- Light Channel 0..9	Light (on/off), 2 Bytes	2 bytes	R-CTU-	DPT 7.xxx
52	[05] --> State Of Light Channel 0	Input (on/off)	1 bit	-WCTU-	DPT 1.001
53	[05] --> State Of Light Channel 1	Input (on/off)	1 bit	-WCTU-	DPT 1.001
54	[05] --> State Of Light Channel 2	Input (on/off)	1 bit	-WCTU-	DPT 1.001
55	[05] --> State Of Light Channel 3	Input (on/off)	1 bit	-WCTU-	DPT 1.001
56	[05] --> State Of Light Channel 4	Input (on/off)	1 bit	-WCTU-	DPT 1.001
57	[05] --> State Of Light Channel 5	Input (on/off)	1 bit	-WCTU-	DPT 1.001
58	[05] --> State Of Light Channel 6	Input (on/off)	1 bit	-WCTU-	DPT 1.001
59	[05] --> State Of Light Channel 7	Input (on/off)	1 bit	-WCTU-	DPT 1.001
60	[05] --> State Of Light Channel 8	Input (on/off)	1 bit	-WCTU-	DPT 1.001
61	[05] --> State Of Light Channel 9	Input (on/off)	1 bit	-WCTU-	DPT 1.001
62	[05] --> State Of Light Channel 0..9	Input (on/off), 2 Bytes	2 bytes	-WCTU-	DPT 7.xxx
63	[05] <-- Scene Channel 0	Output (0..64)	1 byte	R-CTU-	DPT 5.xxx
64	[05] <-- Scene Channel 1	Output (0..64)	1 byte	R-CTU-	DPT 5.xxx
65	[05] <-- Scene Channel 2	Output (0..64)	1 byte	R-CTU-	DPT 5.xxx
66	[05] <-- Scene Channel 3	Output (0..64)	1 byte	R-CTU-	DPT 5.xxx
67	[05] <-- Scene Channel 4	Output (0..64)	1 byte	R-CTU-	DPT 5.xxx
68	[05] <-- Scene Channel 5	Output (0..64)	1 byte	R-CTU-	DPT 5.xxx
69	[05] <-- Scene Channel 6	Output (0..64)	1 byte	R-CTU-	DPT 5.xxx
70	[05] <-- Scene Channel 7	Output (0..64)	1 byte	R-CTU-	DPT 5.xxx
71	[05] <-- Scene Channel 8	Output (0..64)	1 byte	R-CTU-	DPT 5.xxx
72	[05] <-- Scene Channel 9	Output (0..64)	1 byte	R-CTU-	DPT 5.xxx
73	[05] <-- Light Dimming 4 Bit Channel 0	Dimming , 4 Bit	4 bit	R-CTU-	DPT 3.007
74	[05] <-- Light Dimming 4 Bit Channel 1	Dimming , 4 Bit	4 bit	R-CTU-	DPT 3.007
75	[05] <-- Light Dimming 4 Bit Channel 2	Dimming , 4 Bit	4 bit	R-CTU-	DPT 3.007
76	[05] <-- Light Dimming 4 Bit Channel 3	Dimming , 4 Bit	4 bit	R-CTU-	DPT 3.007
77	[05] <-- Light Dimming 4 Bit Channel 4	Dimming , 4 Bit	4 bit	R-CTU-	DPT 3.007
78	[05] <-- Light Dimming 4 Bit Channel 5	Dimming , 4 Bit	4 bit	R-CTU-	DPT 3.007
79	[05] <-- Light Dimming 4 Bit Channel 6	Dimming , 4 Bit	4 bit	R-CTU-	DPT 3.007
80	[05] <-- Light Dimming 4 Bit Channel 7	Dimming , 4 Bit	4 bit	R-CTU-	DPT 3.007
81	[05] <-- Light Dimming 4 Bit Channel 8	Dimming , 4 Bit	4 bit	R-CTU-	DPT 3.007
82	[05] <-- Light Dimming 4 Bit Channel 9	Dimming , 4 Bit	4 bit	R-CTU-	DPT 3.007
83	[05] <-- Universal Switch Channel 0	Universal (on/off)	1 bit	R-CTU-	DPT 1.001
84	[05] <-- Universal Switch Channel 1	Universal (on/off)	1 bit	R-CTU-	DPT 1.001
85	[05] <-- Universal Switch Channel 2	Universal (on/off)	1 bit	R-CTU-	DPT 1.001
86	[05] <-- Universal Switch Channel 3	Universal (on/off)	1 bit	R-CTU-	DPT 1.001
87	[05] <-- Universal Switch Channel 4	Universal (on/off)	1 bit	R-CTU-	DPT 1.001
88	[05] <-- Universal Switch Channel 5	Universal (on/off)	1 bit	R-CTU-	DPT 1.001
89	[05] <-- Universal Switch Channel 6	Universal (on/off)	1 bit	R-CTU-	DPT 1.001
90	[05] <-- Universal Switch Channel 7	Universal (on/off)	1 bit	R-CTU-	DPT 1.001
91	[05] <-- Universal Switch Channel 8	Universal (on/off)	1 bit	R-CTU-	DPT 1.001
92	[05] <-- Universal Switch Channel 9	Universal (on/off)	1 bit	R-CTU-	DPT 1.001
93	[05] <-- Universal Switch Channel 0..9	Universal (on/off), 2 Bytes	2 bytes	R-CTU-	DPT 7.xxx
94	[05] --> State Of Universal Channel 0	Input (on/off)	1 bit	-WCTU-	DPT 1.001

Index	Communicative object	Description	Size	Flags	Data type
95	[05] --> State Of Universal Channel 1	Input (on/off)	1 bit	-WCTU-	DPT 1.001
96	[05] --> State Of Universal Channel 2	Input (on/off)	1 bit	-WCTU-	DPT 1.001
97	[05] --> State Of Universal Channel 3	Input (on/off)	1 bit	-WCTU-	DPT 1.001
98	[05] --> State Of Universal Channel 4	Input (on/off)	1 bit	-WCTU-	DPT 1.001
99	[05] --> State Of Universal Channel 5	Input (on/off)	1 bit	-WCTU-	DPT 1.001
100	[05] --> State Of Universal Channel 6	Input (on/off)	1 bit	-WCTU-	DPT 1.001
101	[05] --> State Of Universal Channel 7	Input (on/off)	1 bit	-WCTU-	DPT 1.001
102	[05] --> State Of Universal Channel 8	Input (on/off)	1 bit	-WCTU-	DPT 1.001
103	[05] --> State Of Universal Channel 9	Input (on/off)	1 bit	-WCTU-	DPT 1.001
104	[05] --> State Of Universal Channel 0..9	Input (on/off), 2 Bytes	2 bytes	-WCTU-	DPT 7.xxx
105	[05] <-- Shutter/Blind Channel 0	Moving (up/down)	1 bit	R-CTU-	DPT 1.008
106	[05] <-- Shutter/Blind Channel 1	Moving (up/down)	1 bit	R-CTU-	DPT 1.008
107	[05] <-- Shutter/Blind Channel 2	Moving (up/down)	1 bit	R-CTU-	DPT 1.008
108	[05] <-- Shutter/Blind Channel 3	Moving (up/down)	1 bit	R-CTU-	DPT 1.008
109	[05] <-- Shutter/Blind Channel 4	Moving (up/down)	1 bit	R-CTU-	DPT 1.008
110	[05] <-- Shutter/Blind Channel 5	Moving (up/down)	1 bit	R-CTU-	DPT 1.008
111	[05] <-- Shutter/Blind Channel 6	Moving (up/down)	1 bit	R-CTU-	DPT 1.008
112	[05] <-- Shutter/Blind Channel 7	Moving (up/down)	1 bit	R-CTU-	DPT 1.008
113	[05] <-- Shutter/Blind Channel 8	Moving (up/down)	1 bit	R-CTU-	DPT 1.008
114	[05] <-- Shutter/Blind Channel 9	Moving (up/down)	1 bit	R-CTU-	DPT 1.008
115	[05] <-- Shutter/Blind Channel 0..9	Moving (up/down), 2 Bytes	2 bytes	R-CTU-	DPT 7.xxx
116	[05] <-- Blind Channel 0	Blind Adjustment	1 bit	R-CTU-	DPT 1.009
117	[05] <-- Blind Channel 1	Blind Adjustment	1 bit	R-CTU-	DPT 1.009
118	[05] <-- Blind Channel 2	Blind Adjustment	1 bit	R-CTU-	DPT 1.009
119	[05] <-- Blind Channel 3	Blind Adjustment	1 bit	R-CTU-	DPT 1.009
120	[05] <-- Blind Channel 4	Blind Adjustment	1 bit	R-CTU-	DPT 1.009
121	[05] <-- Blind Channel 5	Blind Adjustment	1 bit	R-CTU-	DPT 1.009
122	[05] <-- Blind Channel 6	Blind Adjustment	1 bit	R-CTU-	DPT 1.009
123	[05] <-- Blind Channel 7	Blind Adjustment	1 bit	R-CTU-	DPT 1.009
124	[05] <-- Blind Channel 8	Blind Adjustment	1 bit	R-CTU-	DPT 1.009
125	[05] <-- Blind Channel 9	Blind Adjustment	1 bit	R-CTU-	DPT 1.009
126	[05] <-- Blind Channel 0..9	Blind Adjustment, 2 Bytes	2 bytes	R-CTU-	DPT 7.xxx
127	[07] <-- Input 1	Output(State)/	1 Bit	R-CTU-	DPT 1.001
127	[07] <-- Input 1	Output(Value)	2 bytes	R-CTU-	DPT 7.xxx
128	[07] <-- Input 2	Output(State)	1 Bit	R-CTU-	DPT 1.001
128	[07] <-- Input 2	Output(Value)	2 bytes	R-CTU-	DPT 7.xxx
129	[07] <-- Input 3	Output(State)	1 Bit	R-CTU-	DPT 1.001
129	[07] <-- Input 3	Output(Value)	2 bytes	R-CTU-	DPT 7.xxx
130	[07] <-- Input 4	Output(State)	1 Bit	R-CTU-	DPT 1.001
130	[07] <-- Input 4	Output(Value)	2 bytes	R-CTU-	DPT 7.xxx
131	[07] --> Output Value Of Input 1	Read Value And Reset	1 bit	-WCTU-	DPT 1.001
132	[07] --> Output Value Of Input 2	Read Value And Reset	1 bit	-WCTU-	DPT 1.001
133	[07] --> Output Value Of Input 3	Read Value And Reset	1 bit	-WCTU-	DPT 1.001
134	[07] --> Output Value Of Input 4	Read Value And Reset	1 bit	-WCTU-	DPT 1.001
135	[08] --> Occupancy (1 Byte)	Input (un-/occupied/...)	1 Byte	-WCTU-	DPT 5.xxx
136	[08] --> Occupancy (1 Bit)	Input (un-/occupied)	1 bit	-WCTU-	DPT 1.001
137	[08] --> Lock Occupancy	Input (on/off)	1 bit	-WCTU-	DPT 1.001
138	[08] --> Temporary Occupancy Time	Input Time	2 bytes	-WCTU-	DPT 7.xxx

Index	Communicative object	Description	Size	Flags	Data type
139	[08] <-- Status Occupancy (1 Byte)	Output (un-/occupied/...)	1 byte	R-CTU-	DPT 5.xxx
140	[08] <-- Status Occupancy (1 Bit)	Output (un-/occupied)	1 bit	R-CTU-	DPT 1.001
141	[09] --> Set Fan Coil Stage	Input (no Stage/Stage1/...)	2 bytes	-WCTU-	DPT 7.xxx
142	[09] --> Lock Fan Coil Stages	Input (on/off)	1 bit	-WCTU-	DPT 1.001
143	[09] <-- Current Fan Coil Stage (1 Byte)	Output (no Stage/Stage1/...)	1 byte	R-CTU-	DPT 5.xxx
143	[09] <-- Current Fan Coil Stage (2 Bytes)	Output (no Stage/Stage1/...)	2 bytes	R-CTU-	DPT 7.xxx
144	[09]<--> Fan Coil Stage 1	In/Output (on/off)	1 bit	RWCTU-	DPT 1.001
145	[09]<--> Fan Coil Stage 2	In/Output (on/off)	1 bit	RWCTU-	DPT 1.001
146	[09]<--> Fan Coil Stage 3	In/Output (on/off)	1 bit	RWCTU-	DPT 1.001
147	[10] --> Input External Value 1	Input Value (float)	2 bytes	-WCTU-	DPT 9.xxx
148	[10] --> Input External Value 2	Input Value (float)	2 bytes	-WCTU-	DPT 9.xxx
149	[10] --> Input External Value 3	Input Value (float)	2 bytes	-WCTU-	DPT 9.xxx
150	[10] --> Input External Value 4	Input Value (float)	2 bytes	-WCTU-	DPT 9.xxx
151	[10] --> Input External Value 5	Input Value (float)	2 bytes	-WCTU-	DPT 9.xxx
152	[10] --> Input External Value 6	Input Value (float)	2 bytes	-WCTU-	DPT 9.xxx
153	[11] --> Actual Value CTR 1	Input Value (float)	2 bytes	-WCTU-	DPT 9.xxx
154	[11] --> Actual Value CTR 2	Input Value (float)	2 bytes	-WCTU-	DPT 9.xxx
155	[11] --> Actual Value CTR 3	Input Value (float)	2 bytes	-WCTU-	DPT 9.xxx
156	[11] --> Actual Value CTR 4	Input Value (float)	2 bytes	-WCTU-	DPT 9.xxx
157	[11] --> Actual Value CTR 5	Input Value (float)	2 bytes	-WCTU-	DPT 9.xxx
158	[11] --> Actual Value CTR 6	Input Value (float)	2 bytes	-WCTU-	DPT 9.xxx
159	[11] --> Base Setpoint CTR 1	Input Value (float)	2 bytes	-WCTU-	DPT 9.xxx
160	[11] --> Base Setpoint CTR 2	Input Value (float)	2 bytes	-WCTU-	DPT 9.xxx
161	[11] --> Base Setpoint CTR 3	Input Value (float)	2 bytes	-WCTU-	DPT 9.xxx
162	[11] --> Base Setpoint CTR 4	Input Value (float)	2 bytes	-WCTU-	DPT 9.xxx
163	[11] --> Base Setpoint CTR 5	Input Value (float)	2 bytes	-WCTU-	DPT 9.xxx
164	[11] --> Base Setpoint CTR 6	Input Value (float)	2 bytes	-WCTU-	DPT 9.xxx
165	[11] --> Actual Setpoint Offset CTR 1	Input Value (float)	2 bytes	-WCTU-	DPT 9.xxx
166	[11] --> Actual Setpoint Offset CTR 2	Input Value (float)	2 bytes	-WCTU-	DPT 9.xxx
167	[11] --> Actual Setpoint Offset CTR 3	Input Value (float)	2 bytes	-WCTU-	DPT 9.xxx
168	[11] --> Actual Setpoint Offset CTR 4	Input Value (float)	2 bytes	-WCTU-	DPT 9.xxx
169	[11] --> Actual Setpoint Offset CTR 5	Input Value (float)	2 bytes	-WCTU-	DPT 9.xxx
170	[11] --> Actual Setpoint Offset CTR 6	Input Value (float)	2 bytes	-WCTU-	DPT 9.xxx
171	[11] --> Trigger Lowering Delay Time CTR 1	Input Value	2 bytes	-WCTU-	DPT 7.xxx
172	[11] --> Trigger Lowering Delay Time CTR 2	Input Value	2 bytes	-WCTU-	DPT 7.xxx
173	[11] --> Trigger Lowering Delay Time CTR 3	Input Value	2 bytes	-WCTU-	DPT 7.xxx
174	[11] --> Trigger Lowering Delay Time CTR 4	Input Value	2 bytes	-WCTU-	DPT 7.xxx
175	[11] --> Trigger Lowering Delay Time CTR 5	Input Value	2 bytes	-WCTU-	DPT 7.xxx
176	[11] --> Trigger Lowering Delay Time CTR 6	Input Value	2 bytes	-WCTU-	DPT 7.xxx
177	[11] --> Set Mode CTR 1	Input (Off/Heating/...)	1 byte	-WCTU-	DPT 5.xxx
178	[11] --> Set Mode CTR 2	Input (Off/Heating/...)	1 byte	-WCTU-	DPT 5.xxx
179	[11] --> Set Mode CTR 3	Input (Off/Heating/...)	1 byte	-WCTU-	DPT 5.xxx
180	[11] --> Set Mode CTR 4	Input (Off/Heating/...)	1 byte	-WCTU-	DPT 5.xxx
181	[11] --> Set Mode CTR 5	Input (Off/Heating/...)	1 byte	-WCTU-	DPT 5.xxx
182	[11] --> Set Mode CTR 6	Input (Off/Heating/...)	1 byte	-WCTU-	DPT 5.xxx
183	[11] --> Forced Shutdown Control Variable B CTR 1	Input(inactive/...)	1 bit	-WCTU-	DPT 1.001
184	[11] --> Forced Shutdown Control Variable B CTR 2	Input(inactive/...)	1 bit	-WCTU-	DPT 1.001
185	[11] --> Forced Shutdown Control Variable B CTR 3	Input(inactive/...)	1 bit	-WCTU-	DPT 1.001

Index	Communicative object	Description	Size	Flags	Data type
186	[11] --> Forced Shutdown Control Variable B CTR 4	Input(inactive/...)	1 bit	-WCTU-	DPT 1.001
187	[11] --> Forced Shutdown Control Variable B CTR 5	Input(inactive/...)	1 bit	-WCTU-	DPT 1.001
188	[11] --> Forced Shutdown Control Variable B CTR 6	Input(inactive/...)	1 bit	-WCTU-	DPT 1.001
189	[11] --> CTR 1 Hold Off	Input(inactive/...)	1 bit	-WCTU-	DPT 1.001
190	[11] --> CTR 2 Hold Off	Input(inactive/...)	1 bit	-WCTU-	DPT 1.001
191	[11] --> CTR 3 Hold Off	Input(inactive/...)	1 bit	-WCTU-	DPT 1.001
192	[11] --> CTR 4 Hold Off	Input(inactive/...)	1 bit	-WCTU-	DPT 1.001
193	[11] --> CTR 5 Hold Off	Input(inactive/...)	1 bit	-WCTU-	DPT 1.001
194	[11] --> CTR 6 Hold Off	Input(inactive/...)	1 bit	-WCTU-	DPT 1.001
195	[11] --> Occupancy CTR 1	Input(unoccupied/...)	1 byte	-WCTU-	DPT 5.xxx
196	[11] --> Occupancy CTR 2	Input(unoccupied/...)	1 byte	-WCTU-	DPT 5.xxx
197	[11] --> Occupancy CTR 3	Input(unoccupied/...)	1 byte	-WCTU-	DPT 5.xxx
198	[11] --> Occupancy CTR 4	Input(unoccupied/...)	1 byte	-WCTU-	DPT 5.xxx
199	[11] --> Occupancy CTR 5	Input(unoccupied/...)	1 byte	-WCTU-	DPT 5.xxx
200	[11] --> Occupancy CTR 6	Input(unoccupied/...)	1 byte	-WCTU-	DPT 5.xxx
201	[11] <-- Control Variable A CTR 1	Output Value (0..100%)	1 byte	R-CTU-	DPT 5.001
202	[11] <-- Control Variable A CTR 2	Output Value (0..100%)	1 byte	R-CTU-	DPT 5.001
203	[11] <-- Control Variable A CTR 3	Output Value (0..100%)	1 byte	R-CTU-	DPT 5.001
204	[11] <-- Control Variable A CTR 4	Output Value (0..100%)	1 byte	R-CTU-	DPT 5.001
205	[11] <-- Control Variable A CTR 5	Output Value (0..100%)	1 byte	R-CTU-	DPT 5.001
206	[11] <-- Control Variable A CTR 6	Output Value (0..100%)	1 byte	R-CTU-	DPT 5.001
207	[11] <-- PWM Output Control Variable A CTR 1	PWM (on/off)	1 bit	R-CTU-	DPT 1.001
208	[11] <-- PWM Output Control Variable A CTR 2	PWM (on/off)	1 bit	R-CTU-	DPT 1.001
209	[11] <-- PWM Output Control Variable A CTR 3	PWM (on/off)	1 bit	R-CTU-	DPT 1.001
210	[11] <-- PWM Output Control Variable A CTR 4	PWM (on/off)	1 bit	R-CTU-	DPT 1.001
211	[11] <-- PWM Output Control Variable A CTR 5	PWM (on/off)	1 bit	R-CTU-	DPT 1.001
212	[11] <-- PWM Output Control Variable A CTR 6	PWM (on/off)	1 bit	R-CTU-	DPT 1.001
213	[11] <-- Control Variable B CTR 1	Output Value (0..100%)	1 byte	R-CTU-	DPT 5.001
214	[11] <-- Control Variable B CTR 2	Output Value (0..100%)	1 byte	R-CTU-	DPT 5.001
215	[11] <-- Control Variable B CTR 3	Output Value (0..100%)	1 byte	R-CTU-	DPT 5.001
216	[11] <-- Control Variable B CTR 4	Output Value (0..100%)	1 byte	R-CTU-	DPT 5.001
217	[11] <-- Control Variable B CTR 5	Output Value (0..100%)	1 byte	R-CTU-	DPT 5.001
218	[11] <-- Control Variable B CTR 6	Output Value (0..100%)	1 byte	R-CTU-	DPT 5.001
219	[11] <-- PWM Output Control Variable B CTR 1	PWM (on/off)	1 bit	R-CTU-	DPT 1.001
220	[11] <-- PWM Output Control Variable B CTR 2	PWM (on/off)	1 bit	R-CTU-	DPT 1.001
221	[11] <-- PWM Output Control Variable B CTR 3	PWM (on/off)	1 bit	R-CTU-	DPT 1.001
222	[11] <-- PWM Output Control Variable B CTR 4	PWM (on/off)	1 bit	R-CTU-	DPT 1.001
223	[11] <-- PWM Output Control Variable B CTR 5	PWM (on/off)	1 bit	R-CTU-	DPT 1.001
224	[11] <-- PWM Output Control Variable B CTR 6	PWM (on/off)	1 bit	R-CTU-	DPT 1.001
225	[11] <-- Output Mode CTR 1	Output Value (0..100%)	1 byte	R-CTU-	DPT 5.xxx
226	[11] <-- Output Mode CTR 2	Output Value (0..100%)	1 byte	R-CTU-	DPT 5.xxx
227	[11] <-- Output Mode CTR 3	Output Value (0..100%)	1 byte	R-CTU-	DPT 5.xxx
228	[11] <-- Output Mode CTR 4	Output Value (0..100%)	1 byte	R-CTU-	DPT 5.xxx
229	[11] <-- Output Mode CTR 5	Output Value (0..100%)	1 byte	R-CTU-	DPT 5.xxx
230	[11] <-- Output Mode CTR 6	Output Value (0..100%)	1 byte	R-CTU-	DPT 5.xxx
231	[11] <-- Fan Coil Stage CTR 1	PWM (on/off)	1 byte	R-CTU-	DPT 5.xxx
232	[11] <-- Fan Coil Stage CTR 2	PWM (on/off)	1 byte	R-CTU-	DPT 5.xxx
233	[11] <-- Fan Coil Stage CTR 3	PWM (on/off)	1 byte	R-CTU-	DPT 5.xxx

Index	Communicative object	Description	Size	Flags	Data type
234	[11] <-- Fan Coil Stage CTR 4	PWM (on/off)	1 byte	R-CTU-	DPT 5.xxx
235	[11] <-- Fan Coil Stage CTR 5	PWM (on/off)	1 byte	R-CTU-	DPT 5.xxx
236	[11] <-- Fan Coil Stage CTR 6	PWM (on/off)	1 byte	R-CTU-	DPT 5.xxx
237	[11] <-- Effective Setpoint CTR 1	Output Value (float)	2 bytes	R-CTU-	DPT 9.xxx
238	[11] <-- Effective Setpoint CTR 2	Output Value (float)	2 bytes	R-CTU-	DPT 9.xxx
239	[11] <-- Effective Setpoint CTR 3	Output Value (float)	2 bytes	R-CTU-	DPT 9.xxx
240	[11] <-- Effective Setpoint CTR 4	Output Value (float)	2 bytes	R-CTU-	DPT 9.xxx
241	[11] <-- Effective Setpoint CTR 5	Output Value (float)	2 bytes	R-CTU-	DPT 9.xxx
242	[11] <-- Effective Setpoint CTR 6	Output Value (float)	2 bytes	R-CTU-	DPT 9.xxx
243	[12] --> Encoder A Input	Input (on/off)	1 bit	-WCTU-	DPT1.001
244	[12] <-- Encoder A Output	Output (1 Byte)	1 byte	R-CTU-	DPT 5.xxx
245	[12] --> Encoder B Input	Input (on/off)	1 bit	-WCTU-	DPT1.001
246	[12] <-- Encoder B Output	Output (1 Byte)	1 byte	R-CTU-	DPT 5.xxx
247	[12] --> Encoder C Input	Input (on/off)	1 bit	-WCTU-	DPT1.001
248	[12] <-- Encoder C Output	Output (1 Byte)	1 byte	R-CTU-	DPT 5.xxx
249	[12] --> Encoder D Input	Input (on/off)	1 bit	-WCTU-	DPT1.001
250	[12] <-- Encoder D Output	Output (1 Byte)	1 byte	R-CTU-	DPT 5.xxx

Table 7-2 Communicative objects list

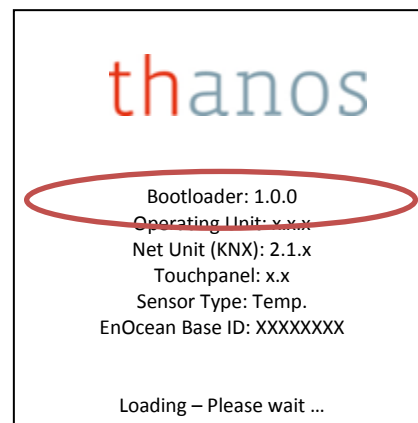
8 Firmware update

To update the **th**anos firmware, please proceed as follows:

1. Check whether a firmware update is available for your **th**anos product.
Then perform a restart of your device.
During the startup procedure the display will indicate the version numbers of the individual software modules.
A firmware update will only be possible when the first row displays *"Bootloader: Version 1.0.0"* (or a higher version).



*thanos Startbildschirm bei
Operating Unit 2.0.0*



*thanos Startbildschirm bei
Operating Unit 2.1.x*

2. Format SD card (FAT16 or FAT32 file system).
3. Download the ZIP archive of the latest firmware version on the Thermokon homepage.
Unpack the ZIP file and copy all data into the SD card main directory (please observe that the update may only be performed using a normal SD card - SDHC cards may not be used).

Download link:

thanos KNX:

[Software description, ETS-files, Firmware update](#)

1. Remove the **th**anos operating unit from the wall unit and insert SD card into the operating unit as shown below.



2. Re-assemble operating unit and wall unit. **th**anos will now automatically search the SD card for an update and install the update without further prompting required.
3. Following the update procedure the display will show the following message:

Loading Firmware ...
finished!

To check whether the update has been completed successfully, check the version numbers displayed on the screen during the following startup procedure.

4. Finished ¹⁾ - the SD card may now be removed.

Note:

- The **th**anos settings will remain intact even after a firmware update.
- Always use the latest version of the configuration software to ensure troublefree operation.
- Apart from the firmware update the ZIP file also includes a *readme* file with additional information on the update. Be sure to read this file prior to performing the update!

9 Update ETS application

To perform an update of the ETS application, please proceed as follows:

1. Download the ZIP archive containing the latest ETS application.
2. Unpack the ZIP file and import the file into the ETS.

Download link:

[Software description, ETS-files, Firmware update](#)

Note:

- Always use the latest firmware version to ensure troublefree operation.