

**Interface Description
for**

thanos KNX

1 Revision index

Revision index	Date	Description
A	17.11.2012	Initial publishing
B	09.04.2013	Dimmer function supplement, chapter 6.1.2.4
C		
D		
E		
F		
G		

Contents

1	Revision index	1
2	Introduction	3
3	Unit description	3
3.1	User interface.....	3
3.2	Menu field.....	7
3.3	Keyboard.....	9
4	Startup procedure	10
5	Parameter settings	12
5.1	[01] GENERAL.....	12
5.2	[02] DISPLAY.....	15
5.3	[03] SET POINTS.....	16
5.4	[04] KEYS.....	17
5.5	[05] CHANNELS.....	22
5.6	[06] TEXT MESSAGES.....	22
5.7	[07] INPUTS.....	23
5.8	[08] ROOM ALLOCATION.....	23
5.9	[09] FAN STAGES.....	24
5.10	[10] EXTERNAL VALUES.....	25
5.11	[11] CONTROLLER.....	26
5.12	[12] LOGIC.....	31
6	Communicative objects	34
7	thanos-KNX Parameter/communicative objects	42
7.1	Parameter.....	42
7.2	Communicative objects.....	50
8	Firmware update	56
9	Update ETS application.....	58

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.

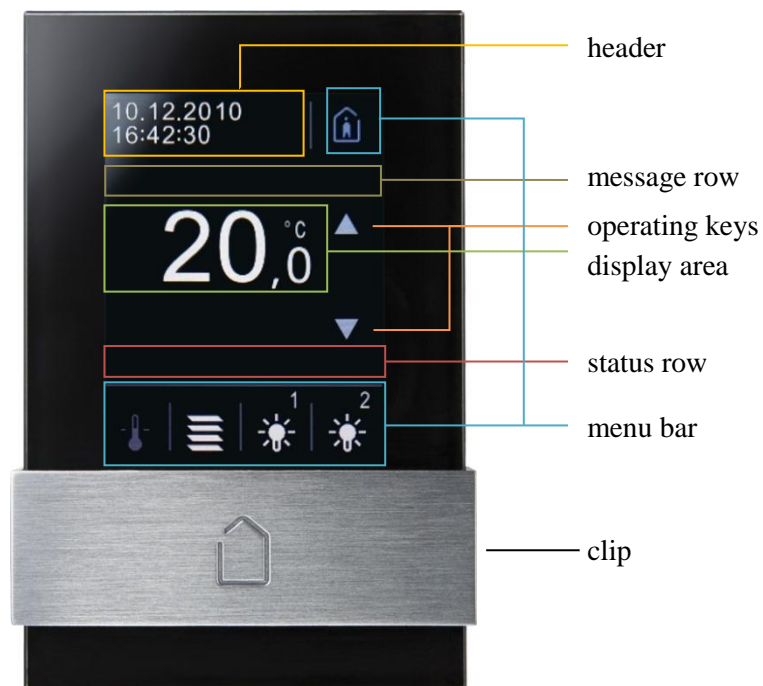


Figure 3-1 – thanos S

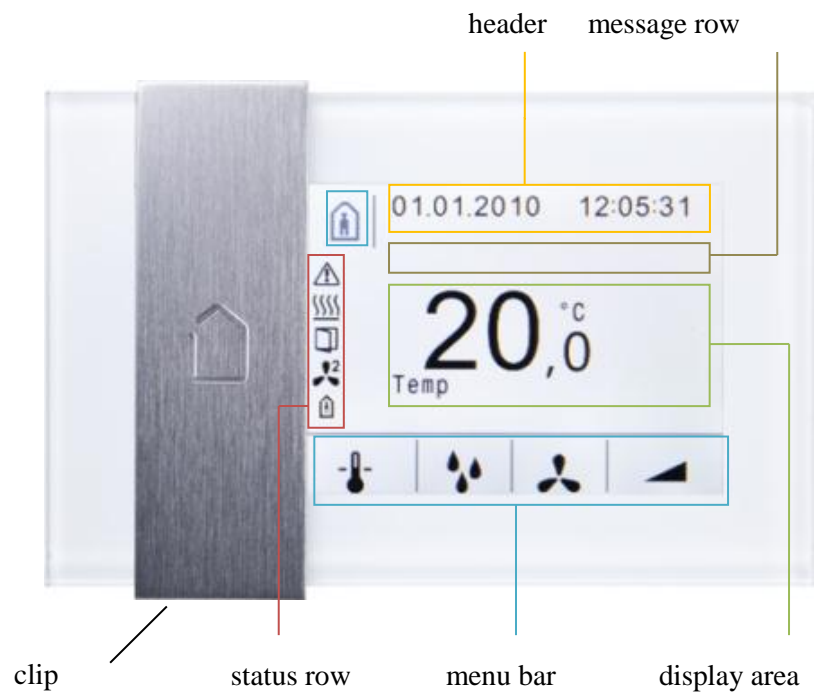


Figure 3-2 – thanos SQ



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

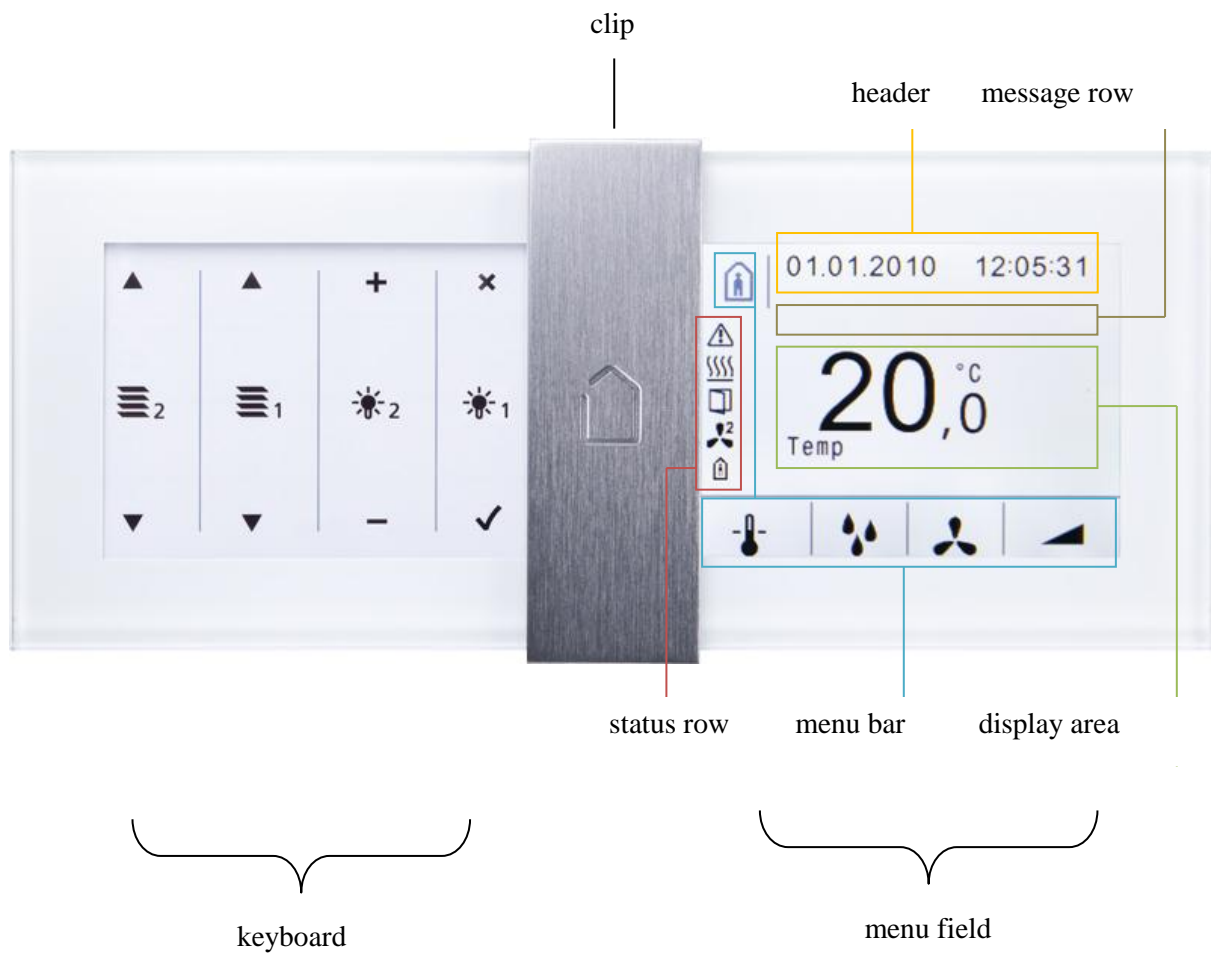


Figure 3-4 thanos LQ user interface

3.2 Menu field

Header:

The header may display the current date and time in various different formats. The thanos control unit features a battery buffered real time clock, indicating the correct time even in case of a voltage drop.

Message row:

The information row may display free text messages with a size of up to 14 characters.

Display area:

Among others the 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 statuses of an activated menu.

Status row:

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



Menu bar:

The menu bar may be used to store various menu items the operator may 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

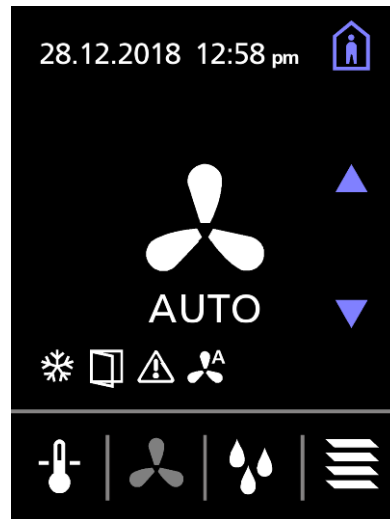


Upon selecting a menu item the corresponding symbol will be shown in the menu bar in shaded gray and the display will indicate the value/status that may be adjusted in the respective menu. Using the operating keys (▲ / ▼ or ✓ / ✗ depending on the respective function), the value/status may now be adjusted.

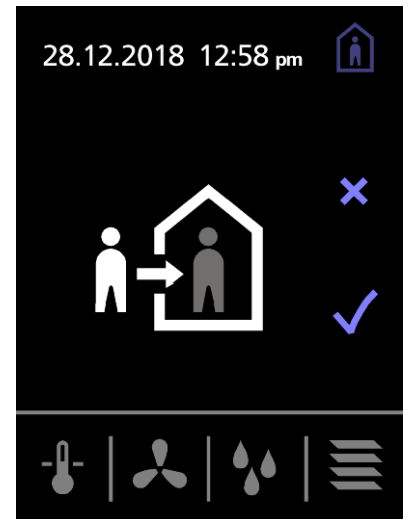
Examples:



"temperature setpoint" menu



"fan stages" menu



"room allocation" menu

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

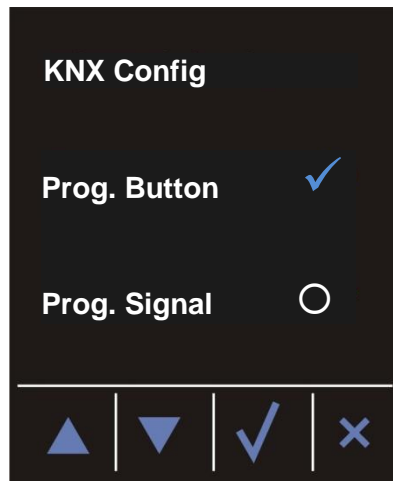
"Blinds 2 up" has been selected in the lower segment of the keyboard. The corresponding symbol will appear enlarged in the display with the pressed symbol flashing next to it, e.g. . After a freely programmable period has elapsed the display will return to the original image.

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

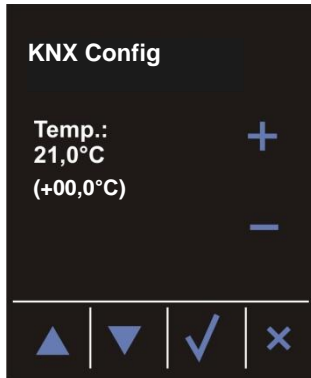


Changing values

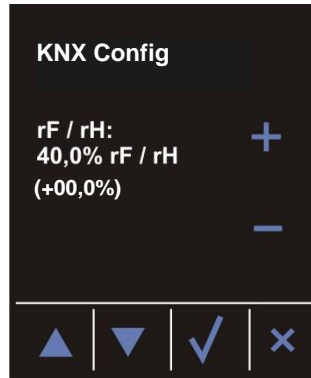


Adopting/interrupting the activity in question. In either case the configuration menu will be abandoned.

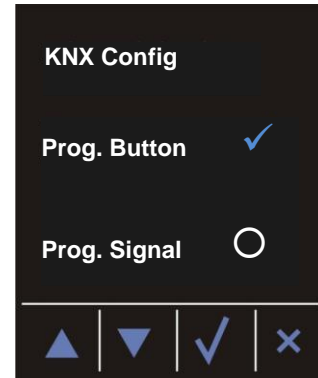
The modification menu permits the following settings: temperature offset, humidity offset, programming.



Temperature offset menu



Humidity offset menu



Programming menu

4.1.1 Temperature offset

Since, apart from 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. With the calibration mode the user has the option of initiating a recalibration procedure via the unit's operating keys.

4.1.2 Humidity offset (in case humidity sensors are present)

For humidity measurement calibration purposes.

4.1.3 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!

5 Parameter settings

5.1 [01] GENERAL

5.1.1 Settings

Parameter		
Index	Name	Description
1	Unit 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	Humidity sensor existing	(may not be configured)
5	Unit location identification	The user may provide the control unit with an individual ident. Number
6	Automatic keylock	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	Channel number display	Turn on/off channel numbers
9	Unit version	(may not be configured)
10	Orientation	Horizontal or vertical version (display orientation)
11	Key sound volume	The volume of the key sound may be adjusted between 0 and 100%
12	Date display	Turn on/off date display and define format
13	Time display	Turn on/off time display and turn on/off seconds
14	Time format	Define time format, 24h/12h
15	Lock external setting [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	Display 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 display	0 = without the tenth part 1 = including the tenth part
25	Display	0 = off 1 = on
26	Temperature unit	0 = °F 1 = °C
27	Transmit value upon modification	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.xK the temperature value will be transmitted when the modification exceeds the adjusted deviation.

Table 5-2 Temperature parameter settings

5.1.3 Humidity

The humidity sensor (if existing) operates with an accuracy of $\pm 3\%$ within the range of 20-80% rF. 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 display	0 = without the tenth part 1 = without the tenth part
30	Display	0 = off 1 = on
31	Transmit value upon modification	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.

Table 5-3 Humidity parameter settings

5.2 [02] DISPLAY

The display may be altered using the following configuration parameters. Apart from the background color the user may set various brightness values for the LCD display and the text field. The various values are in relation to an active, dimmed and a standby mode. The actuation of a key on the control causes the display to go into active mode. When, for a certain adjustable interval, 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	Background color display	Select black or white LCD background color
33	Brightness display active mode [%]	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 mode [%]	Brightness display in dimmed mode Values between 0 (OFF) and 100% may be adjusted.
35	Brightness display standby mode [%]	Brightness display in standby mode Values between 0 (OFF) and 100% may be adjusted.
36	Brightness keyboard active mode [%]	Upon actuating the control unit the unit will be in standard mode (active). Values between 0 (OFF) and 100% may be adjusted.
37	Brightness keyboard dimmed mode [%]	Brightness display in dimmed mode Values between 0 (OFF) and 100% may be adjusted.
38	Brightness keyboard standby mode [%]	Brightness display in standby mode Values between 0 (OFF) and 100% may be adjusted.
39	No. of submenus	Further submenus may be selected (only available in the S/SQ version)
40	Value display interval [s]	Interval for the display of the values to be shown in the startup screen
41	Cleaning mode display [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	Changeover active -> dimmed mode [s]	Interval without any activity on the control unit before the display changes over from active to dimmed mode
43	Changeover dimmed -> standby mode [s]	Interval without any activity on the control unit before the display changes over from dimmed to standby mode
44	Menu display interval [s]	Interval without any activity on the control unit before the display returns from a menu to the startup screen
45	Action display interval [s]	Interval without any activity on the control unit before the display returns from displaying an activity to the screen
46	Submenu display interval [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	Dividing line 1	Show/hide dividing line 1
48	Dividing line 2	Show/hide dividing line 2
49	Dividing line 3	Show/hide dividing line 3
50	Dividing line 4	Show/hide dividing line 4
51	Dividing line 5	Show/hide dividing line 5
52	Display submenus only	(Only available in the S/SQ version)

Table 5-4 Display parameter settings

5.3 [03] 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 adjustment 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 adjustment 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 width	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 basic set point 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	Name (max. 4 ASCII characters)	Name with max. 4 characters
59 69 79 89 99 109	Representation	Show/hide digit after the set point decimal point
60 70 80 90 100 110	Set point menu display	Representation of the reading in the set point menu
61 71 81 91 101 111	Effective value display	Show/hide effective value in the startup screen

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

Table 5-5 Set point parameter settings

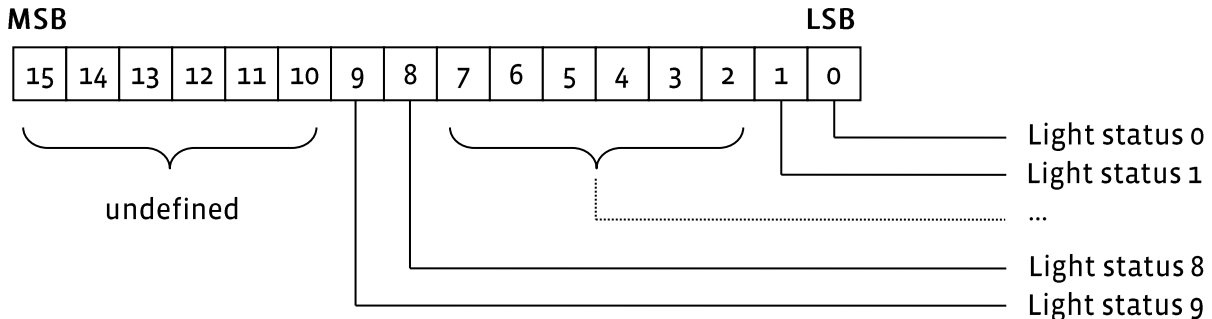
5.4 [04] KEYS

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**

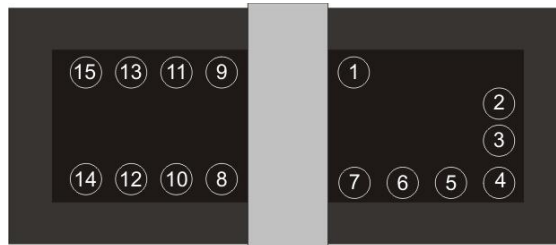


Figure 8
Key allocation **thanos LQ**

Instead of the lower keyboard segment which is only available on the **th**anos L/LQ model, the **th**anos 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 may receive the following functions:

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

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.

On top of that, the user shall define via the "number of submenus" parameter how many submenus will be required (value range 0...4).

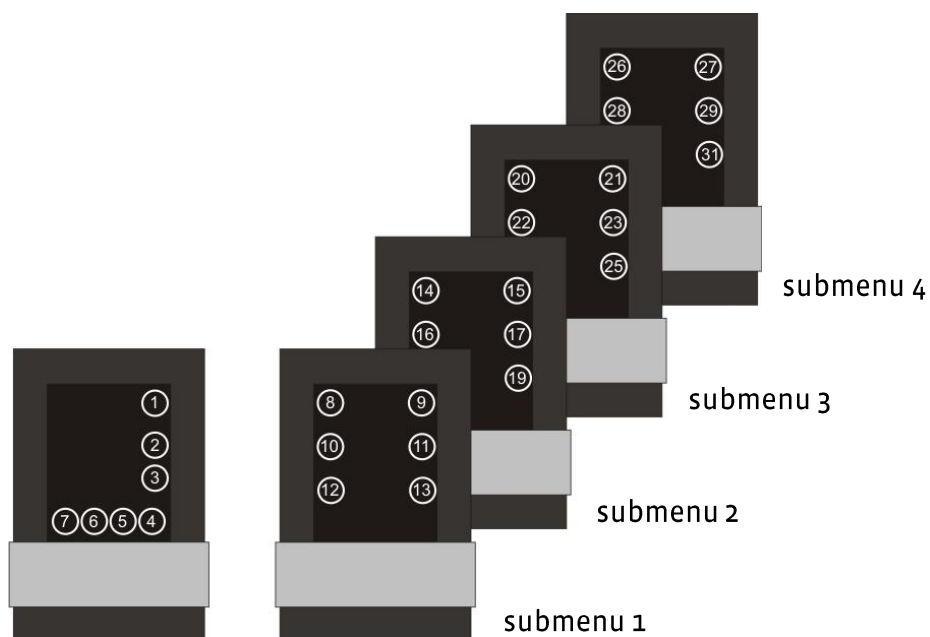


Figure 9
Key allocation **thanos S**

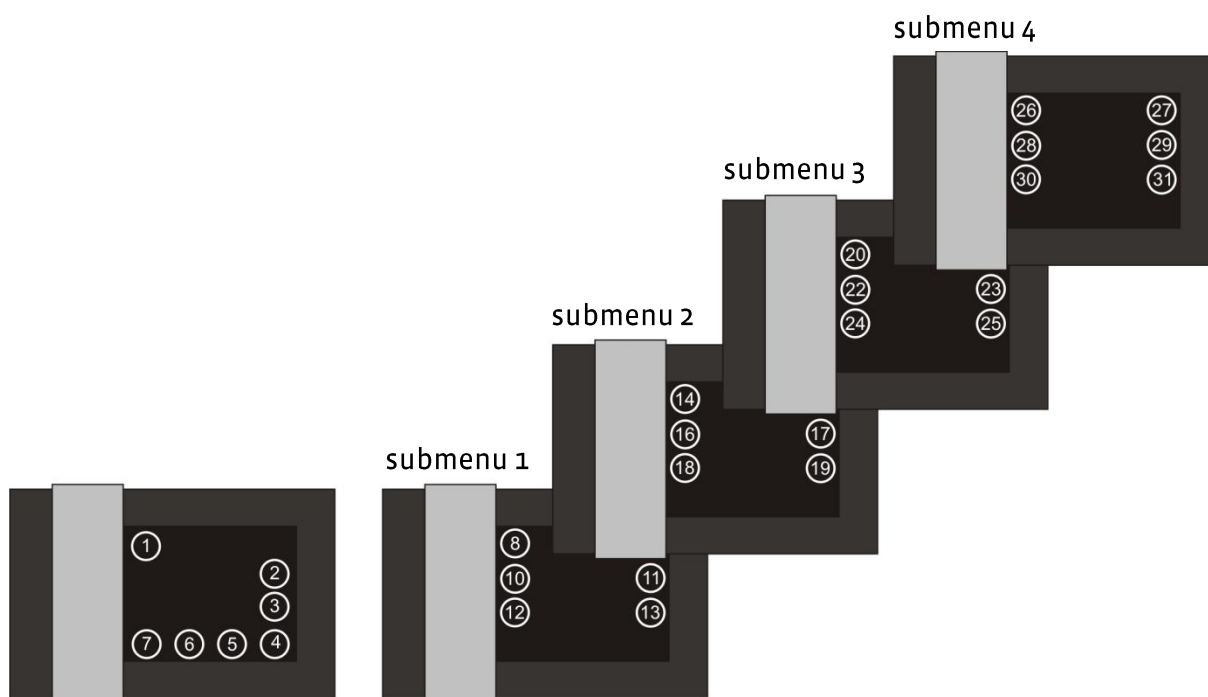


Figure 10
Key allocation **thanos SQ**

5.4.1.1 Clip settings

Parameter		
Index	Name	Description
113	Clip	Clip configuration

Table 5-6 Clip parameter settings

5.4.1.2 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	

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.

5.4.1.3 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	
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	

Table 5-8 Direct function key parameter settings

5.5 [05] CHANNELS

Normal or inverted channel transmission.

5.5.1 Channel settings

Parameter		
Index	Name	Description
143	Light switching	Transmit all light channels in normal or inverted mode
144	Universal function switching	Transmit all universal function channels in normal or inverted mode
145	Shutters/blinds	Transmit all shutter/blind channels in normal or inverted mode
146	Lamella adjustment	Transmit all lamella adjustment channels in normal or inverted mode

Table 5-9 Channel parameter settings

5.6 [06] 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	For 8 messages texts 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 may be allocated with various functions and used as an open or closed contact. Possible functions: thawing 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	Room allocation after reset	Room allocation status preset after a restart of the control unit
164	Room allocation display after reset	Upon the control unit restart 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	Party time room allocation [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

The fan stage may be modified on a higher level as well as locally via the associated menu. Up to 3 stages are possible. You may either select manual or automatic mode. The specification for the display of the fan stage may be issued in manual or in automatic mode. If you do not wish to display the fan stage in automatic mode, the automatic mode display may be turned off.

5.9.1 Fan stage settings

Parameter		
Index	Name	Description
166	Number of fan stages	Setting the maximum for the available fan stages. You may be free to choose whether, apart from the manual mode, automatic mode should also be an option.
167	Fan stage after reset	Internal fan stage preset after restart.
168	Fan stage symbol after reset	After startup the fan stage symbol may be shown or hidden. In case of selection "hide", the fan stage will not be displayed until it has been subject to a modification due to a local change or via network update.
169	Fan stage display in automatic mode	Select, whether a fan stage shall be displayed in automatic mode or not. Prerequisite: the device on the higher level also transmitted the current fan stage information.
170	OFF/AUTO changeover only	Only the stages OFF and AUTO will be available upon activation.

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

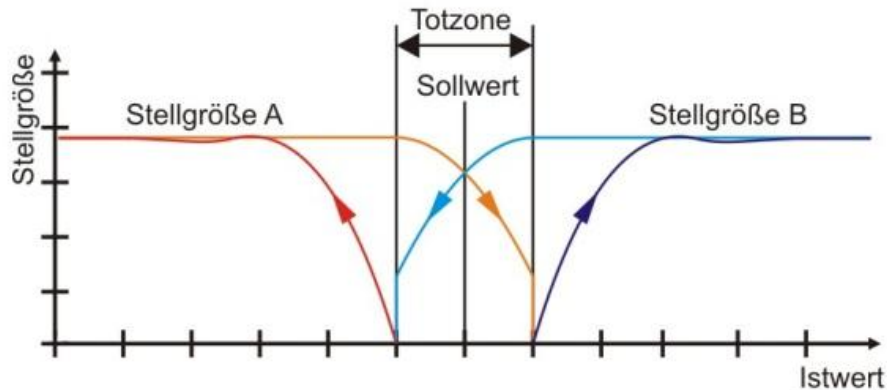
Parameter		
Index	Name	Description
171 175 179 183 187 191	Presentation	Show/hide digit after the external value decimal point
172 176 180 184 188 192	Display	Show/hide the external value in the startup screen
173 177 181 185 189 193	Unit (3 ASCII characters max.)	Unit may be displayed using three ASCII characters
174 178 182 186 190 194	Designation (4 ASCII characters max.)	External value description using 4 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 with respect 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 basic set point BUSY after reset	Basic set point of the controller in condition "busy". Equivalent to the set point for the heating function
196 228 260 292 324 356	0.1 x set point offset READY	The device may be switched to mode "ready" via the BUS. This parameter defines the difference of the set point in mode "ready" 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 set point offset NOT BUSY	Via the BUS or by manipulation on the device the status may be changed from "not busy" to "busy" and vice versa. This parameter defines the difference of the not busy 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 dead zone	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 limit	When the readings fall below this adjusted limit, controller output A will be enabled independent 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/cold boot	Control off Control variable A Control variable B Control variable A or B
201 233 265 297 329 360	Select room allocation	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 busy or not busy readings. Standby may only be specified via the respective communicative object!	
202 234 266 298 330 361	Select actual value	The actual value of a controller knows the options of internal temperature sensor, internal humidity sensor or specification of an external value via the corresponding communicative object	
203 235 267 299 331 362	Select set point	The controller set point has the option of either using an internal set point or of adopting 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	Select energy hold off	Select whether the energy hold off may only be triggered by the related communicative object <i>energy hold 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	Minimum fan running time [s]	Configuration of the minimum fan running time after fan turn-on	
208 240 272 304 336 367	Minimum variable active if	For more information please refer to the following pages	
209 241 273 305 337 368	Display controller symbol	Here various access rights may be allocated to a controller for the symbols of heating and cooling	
210 242 274 306 338 369	Display thawing point symbol	Each controller may be configured to display the thawing point symbol when this point has been reached.	
211 243 275 307 339 370	Number of fan stages	Number of fan stages when using the controller	

212 244 276 308 340 371	Fan control access	The condition of the fan allocated to the controller may be visualized using the fan symbol in 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 band 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 minimum variable	Lower variable limit of the controller in percent
216 248 280 312 344 376	0.1 x maximum variable	Upper variable limit of the controller in percent
217 249 281 313 345 377	0.1 x stage 1	Variable thresholds for the specification of the fan stage
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 band 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 minimum variable	Lower variable limit of the controller in percent
223 255 287 319 351 383	0.1 x maximum variable	Upper variable limit of the controller in percent
224 256 288 320 352 384	0.1 x stage 1	Variable thresholds for the specification of the fan stage
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	Logical "1" value	Output value allocated to condition "1"
388	Logical "0" value	Output value allocated to condition "0"

Table 5-19 Encoder A parameter settings

5.12.1.2 Einstellungen Encoder B

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 5-20 Encoder B parameter settings

5.12.1.3 Einstellungen Encoder C

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 5-21 Encoder C parameter settings

5.12.1.4 Einstellungen Encoder D

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 will be set using independent parameters for variable A and variable B, permitting an ideal adjustment of the control to the specific environment. The operator may select at will what set point or actual value he desires the control to use, giving him the possibility of also using external values received via the BUS, apart from using only internal values, thus catering for various different zones. For examples 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: *Busy*, *Not Busy*, *Ready*. This status may also be specified either via the internal status of the room allocation (ready 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 hold off / thawing point control

Energy hold off and variable B forced shutdown (e.g. thawing point) both have a direct impact on the controller. In case of an active energy hold 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 hold 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) BUSY

- *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) READY

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

(3) NOT BUSY

- *Set point variable A* =
basic set point – (dead zone/2) + set point offset – set point difference NOT BUSY
- *Set point variable B* =
basic set point + (dead zone/2) + set point offset + set point difference NOT BUSY

6 Communicative objects

6.1.1 General

All communicative objects are visible at all times and independent of the parameter settings, 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, for input objects will be rounded off accordingly.

Please find hereafter 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 Categorie [01] General

Communicative object		
Index	Name	Description
1	[01] --> Overwrite internal temperature	External temperature specification 9999 switchback to internal temperature measurement
2	[01] --> I Overwrite internal humidity	External humidity specification 9999 switchback to internal humidity measurement
3	[01] --> Set point offset inhibit	Blocks keys for set point offset
4	[01]<--> Time	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]<--> 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] --> Activation lighting	0 = lighting according to the conditions 1 = set lighting to active
9	[02] --> Fault symbol	The "fault" symbol may be shown/hidden from a higher level.
10	[02] --> Window symbol	The "window open" symbol may be shown/hidden from a higher level.
11	[02] --> Heating symbol	The "heating active" symbol may be shown/hidden from a higher level.
12	[02] --> Cooling symbol	The "cooling active" symbol may be shown/hidden from a higher level.
13	[02] --> Thawing point symbol	The "thawing point" symbol may be shown/hidden from a higher level.

Table 6-2 Communicative objects - Display

6.1.2.3 Category [03] Set points

Communicative object		
Index	Name	Description
14 15 16 17 18 19	[03] --> Set point offset spec (1 through 6)	External specification for the set point offset by a higher level source
20 21 22 23 24 25	[03] --> Basic set point spec (1 through 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!
26 27 28 29 30 31	[03] <-- Current set point offset (1 through 6)	Current set point offset. May be modified by the user via the actuation of a key or via the associated communicative object.
32 33 34 35 36 37	[03] <-- Effective set point offset (1 through 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 [04] Keys

Communicative object		
Index	Name	Description
38	[04] --> Locking keys	Clip, menu field and keyboard may be locked from a higher level source. 0 = do not lock 1 = lock
39 40 41 42 43 44 45 46 47 48	[04] <-- Switching light channel (0 through 9)	Switching the respective light channel 0 = off 1 = on (reacting also to a brief actuation of the dimming function)
49	[04] <-- Switching light channel 0..9	Switching all light channels, see also chapter 5.4 (reacting also to a brief actuation of the dimming function)
50 51 52 53 54 55 56 57 58 59	[04] --> Status light channel (0 through 9)	Feedback from the corresponding light channel 0 = off 1 = on
60	[04] --> Status light channel 0..9	Setting all light channels, see also chapter 5.4

61 62 63 64 65 66 67 68 69 70	[04] <-- Dimming light channel (0 through 9)	Dimming light on the respective channel by 0..100% (reaction upon prolonged pressing)
71 72 73 74 75 76 77 78 79 80	[04] <-- Dimming light 4 bit channel (0 through 9)	Dimming light on the respective channel 4 bit (reaction upon prolonged pressing)
81 82 83 84 85 86 87 88 89 90	[04] <-- Switching universal channel (0 through 9)	Switching the respective universal channel 0 = off 1 = on
91	[04] <-- Switching universal channel 0..9	Switching all universal channels, see also chapter 5.4
92 93 94 95 96 97 98 99 100 101	[04] --> Status universal channel (0 through 9)	Feedback from the respective universal channel 0 = off 1 = on
102	[04] --> Status universal channel 0..9	Setting all universal channels, see also chapter 5.4
103 104 105 106 107 108 109 110 111 112	[04] <-- Shutters/blinds channel (0 through 9)	Switching the respective shutters/blinds channel 0 = up (long keystroke) 1 = down (long keystroke)
113	[04] <-- Shutters/blinds channel 0..9	Switching all shutters/blinds channels, see also chapter 5.4
114 115 116 117 118 119 120 121 122 123	[04] <-- Blinds channel (0 through 9)	Switching the respective shutters/blinds channel 0 = open (short keystroke) 1 = close (short keystroke)
124	[04] <-- Blinds channel 0..9	Switching all blinds channels, see also chapter 5.4

Table 6-4 Communicative objects - Keys

6.1.2.5 Category [06] Text messages

Communicative object		
Index	Name	Description
125	[06] --> Show message	0 will show the info text. 1-8 will show the parameter related messages
126	[06] --> Info text	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 (flancs, pulses)
131 132 133 134	[07] --> Issue reading 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] --> Room allocation spec (1 byte)	Specification of the room allocation by a higher level source 0 = not busy 1 = busy 2 = Bereitschaft
136	[08] --> Room allocation spec (1 bit)	Specification of the room allocation by a higher level source 0 = not busy 1 = busy
137	[08] --> Room allocation lock	The higher level source may lock or release the local room allocation key 0 = do not lock 1 = lock
138	[08] --> Temporary room allocation time	If a time is specified here, the room will be busy for that time period (party time)
139	[08] <-- Room allocation status (1 byte)	Issues the current room allocation status 0 = not busy 1 = busy 2 = Bereitschaft
140	[08] <-- Room allocation status (1 bit)	Issues the current room allocation status 0 = not busy 1 = busy

Table 6-7 Communicative objects - Room allocation

6.1.2.8 Category [09] Fan stages

Communicative object		
Index	Name	Description
141	[09] --> Fan stage spec	External fan stage specification via a higher level source. 0x0000 = none 0x0001 = 1 stage 0x0002 = 2 stages 0x0003 = 3stages 0xFF01 = 1 stage with automatic 0xFF02 = 2 stages with automatic 0xFF03 = 3 stages with automatic
142	[09] --> Lock fan stage adjustment	Locks the fan stage keys
143	[09] <-- Current fan stage	Issues the current fan stage 0x0000 = none 0x0001 = 1 stage 0x0002 = 2 stages 0x0003 = 3stages 0xFF01 = 1 stage with automatic 0xFF02 = 2 stages with automatic 0xFF03 = 3 stages with automatic
144	[09] <-- Current fan stage 1	Current fan stage 1 is issued
145	[09] <-- Current fan stage 2	Current fan stage 2 is issued
146	[09] <-- Current fan stage 3	Current fan stage 3 is issued

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] --> External value spec (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 controller spec (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] --> Basic set point controller spec (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] --> Set point offset controller spec (1 through 6)	Internal set point offset override via the higher level source

171 172 173 174 175 176	[11] --> Temporary room allocation time for controller (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] --> Controller mode spec (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] --> Variable B forced shutdown controller (1 through 6)	0 = deactivated 1 = activated
189 190 191 192 193 194	[11] --> Energy hold off spec controller (1 through 6)	0 = deactivated 1 = activated
195 196 197 198 199 200	[11] --> Room allocation for controller (1 through 6)	0 = not busy 1 = busy 2 = ready
201 202 203 204 205 206	[11] <-- Variable A controller (1 through 6)	Variable A (heating) 0..100%
207 208 209 210 211 212	[11] <-- PWM signal variable A controller (1 through 6)	PWM signal variable A (heating) is issued 0 = off 1 = on
213 214 215 216 217 218	[11] <-- Variable B controller (1 through 6)	Variable B (cooling) 0..100%
219 220 221 222 223 224	[11] <-- PWM signal variable B controller (1 through 6)	PWM signal variable B (cooling) is issued 0 = off 1 = on
225 226 227 228 229 230	[11] <-- Current controller mode controller (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 stage controller (1 through 6)	0 = off 1 = stage 1 2 = stage 2 3 = stage 3

237 238 239 240 241 242	[11] <-- Effective set point controller (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 **th**anos-KNX Parameter/communicative objects

7.1 Parameter

Index	Address	Size / bytes	ETS Text
1	4900h	2	Equipment coding
2	4902h	2	Firmware version
3	4904h	2	Parameter version
4	4906h	1	Humidity sensor existing
5	4907h	2	Equipment location identification
6	4909h	1	Automatic keylock
7	490Ah	2	Cyclic heartbeat [s]
8	490Ch	1	Channel number display
9	490Dh	1	Equipment version
10	490Eh	1	Equipment orientation
11	490Fh	1	Keysound volume
12	4910h	1	Display date
13	4911h	1	Display time
14	4912h	1	Time format
15	4913h	2	Locking external specs [s]
16	4915h	1	Display 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 display
25	491Fh	1	Display
26	4920h	1	Temperature unit
27	4921h	2	Transmit reading upon modification
28	4923h	2	Humidity offset
29	4925h	1	Humidity presentation
30	4926h	1	Display
31	4927h	2	Transmit reading upon modification
32	4929h	1	Display background color
33	492Ah	1	Brightness display active [%]
34	492Bh	1	Brightness display dimmed [%]
35	492Ch	1	Brightness display standby [%]
36	492Dh	1	Brightness keyboard active [%]
37	492Eh	1	Brightness keyboard dimmed [%]
38	492Fh	1	Brightness keyboard standby [%]
39	4930h	1	Number of submenus
40	4931h	2	Indication period display values [s]
41	4933h	2	Indication period cleaning mode [s]
42	4935h	2	Changeover active -> dimmed [s]
43	4937h	2	Changeover dimmed -> standby [s]
44	4939h	2	Indication period menu [s]

Index	Address	Size / bytes	ETS Text
45	493Bh	2	Indication period action [s]
46	493Dh	1	Indication period submenu [s]
47	493Eh	1	Dividing line 1
48	493Fh	1	Dividing line 2
49	4940h	1	Dividing line 3
50	4941h	1	Dividing line 4
51	4942h	1	Dividing line 5
52	4943h	1	Display submenus only
53	4944h	2	0.1 x upper adjustment range [+]
54	4946h	2	0.1 x lower adjustment range [-]
55	4948h	2	0.1 x step width
56	494Ah	2	0.1 x basic set point after reset
57	494Ch	3	Unit (3 ASCII characters max.)
58	494Fh	4	Designation (4 ASCII characters max.)
59	4953h	1	Visualization
60	4954h	1	Display in set point menu
61	4955h	1	Display effective value
62	4956h	1	Display offset
63	4957h	2	0.1 x upper adjustment range [+]
64	4959h	2	0.1 x lower adjustment range [-]
65	495Bh	2	0.1 x step width
66	495Dh	2	0.1 x basic set point after reset
67	495Fh	3	Unit (3 ASCII characters max.)
68	4962h	4	Designation (4 ASCII characters max.)
69	4966h	1	Visualization
70	4967h	1	Display in set point menu
71	4968h	1	Display effective value
72	4969h	1	Display offset
73	496Ah	2	0.1 x upper adjustment range [+]
74	496Ch	2	0.1 x lower adjustment range [-]
75	496Eh	2	0.1 x step width
76	4970h	2	0.1 x basic set point after reset
77	4972h	3	Unit (3 ASCII characters max.)
78	4975h	4	Designation (4 ASCII characters max.)
79	4979h	1	Visualization
80	497Ah	1	Display in set point menu
81	497Bh	1	Display effective value
82	497Ch	1	Display offset
83	497Dh	2	0.1 x upper adjustment range [+]
84	497Fh	2	0.1 x lower adjustment range [-]
85	4981h	2	0.1 x step width
86	4983h	2	0.1 x basic set point after reset
87	4985h	3	Unit (3 ASCII characters max.)
88	4988h	4	Designation (4 ASCII characters max.)
89	498Ch	1	Visualization
90	498Dh	1	Display in set point menu
91	498Eh	1	Display effective value
92	498Fh	1	Display offset
93	4990h	2	0.1 x upper adjustment range [+]

Index	Address	Size / bytes	ETS Text
94	4992h	2	0.1 x lower adjustment range [-]
95	4994h	2	0.1 x step width
96	4996h	2	0.1 x basic set point after reset
97	4998h	3	Unit (3 ASCII characters max.)
98	499Bh	4	Designation (4 ASCII characters max.)
99	499Fh	1	Visualization
100	49A0h	1	Display in set point menu
101	49A1h	1	Display effective value
102	49A2h	1	Display offset
103	49A3h	2	0.1 x upper adjustment range [+]
104	49A5h	2	0.1 x lower adjustment range [-]
105	49A7h	2	0.1 x step width
106	49A9h	2	0.1 x basic set point after reset
107	49ABh	3	Unit (3 ASCII characters max.)
108	49AEh	4	Designation (4 ASCII characters max.)
109	49B2h	1	Visualization
110	49B3h	1	Display in set point menu
111	49B4h	1	Display effective value
112	49B5h	1	Display offset
113	49B6h	2	Clip
114	49B8h	2	Key 1
115	49BAh	2	Key 4
116	49BCh	2	Key 5
117	49BEh	2	Key 6
118	49C0h	2	Key 7
119	49C2h	2	Key 8
120	49C4h	2	Key 9
121	49C6h	2	Key 10
122	49C8h	2	Key 11
123	49CAh	2	Key 12
124	49CCh	2	Key 13
125	49CEh	2	Key 14
126	49D0h	2	Key 15
127	49D2h	2	Key 16
128	49D4h	2	Key 17
129	49D6h	2	Key 18
130	49D8h	2	Key 19
131	49DAh	2	Key 20
132	49DCh	2	Key 21
133	49DEh	2	Key 22
134	49E0h	2	Key 23
135	49E2h	2	Key 24
136	49E4h	2	Key 25
137	49E6h	2	Key 26
138	49E8h	2	Key 27
139	49EAh	2	Key 28
140	49ECh	2	Key 29
141	49EEh	2	Key 30
142	49F0h	2	Key 31

Index	Addresse	Size / bytes	ETS Text
143	49F2h	1	Switching light
144	49F3h	1	Switching universal
145	49F4h	1	Shutters/blinds
146	49F5h	1	Lamella adjustment
147	49F6h	14	Message 1
148	4A04h	14	Message 2
149	4A12h	14	Message 3
150	4A20h	14	Message 4
151	4A2Eh	14	Message 5
152	4A3Ch	14	Meldung 6
153	4A4Ah	14	Message 7
154	4A58h	14	Message 8
155	4A66h	1	Input 1
156	4A67h	1	Input 2
157	4A68h	1	Input 3
158	4A69h	1	Input 4
159	4A6Ah	1	Function input 1
160	4A6Bh	1	Function input 2
161	4A6Ch	1	Function input 3
162	4A6Dh	1	Function input 4
163	4A6Eh	1	Room allocation after reset
164	4A6Fh	1	Display room allocation after reset
165	4A70h	2	Party time room allocation [s]
166	4A72h	2	Number of fan stages
167	4A74h	2	Fan stage after reset
168	4A76h	1	Fan stage symbol after reset
169	4A77h	1	Display fan stage in automatic mode
170	4A78h	1	OFF/AUTO changeover only
171	4A79h	1	Visualization
172	4A7Ah	1	Display visualization
173	4A7Bh	3	Unit (3 ASCII characters max.)
174	4A7Eh	4	Designation (4 ASCII characters max.)
175	4A82h	1	Visualization
176	4A83h	1	Display visualization
177	4A84h	3	Unit (3 ASCII characters max.)
178	4A87h	4	Designation (4 ASCII characters max.)
179	4A8Bh	1	Visualization
180	4A8Ch	1	Display visualization
181	4A8Dh	3	Unit (3 ASCII characters max.)
182	4A90h	4	Designation (4 ASCII characters max.)
183	4A94h	1	Visualization
184	4A95h	1	Display visualization
185	4A96h	3	Unit (3 ASCII characters max.)
186	4A99h	4	Designation (4 ASCII characters max.)
187	4A9Dh	1	Visualization
188	4A9Eh	1	Display visualization
189	4A9Fh	3	Unit (3 ASCII characters max.)
190	4AA2h	4	Designation (4 ASCII characters max.)
191	4AA6h	1	Visualization

Index	Address	Size / bytes	ETS Text
192	4AA7h	1	Display visualization
193	4AA8h	3	Unit (3 ASCII characters max.)
194	4AABh	4	Designation (4 ASCII characters max.)
195	4AAFh	2	0.1 x basic set point BUSY after reset
196	4AB1h	2	0.1 x basic set point offset READY
197	4AB3h	2	0.1 x basic set point offset NOT BUSY
198	4AB5h	2	0.1 x dead zone
199	4AB7h	2	0.1 x forced activation limit
200	4AB9h	1	Controller mode after reset
201	4ABAh	1	Select room allocation
202	4ABBh	1	Select actual value
203	4ABCh	1	Select set point
204	4ABDh	1	Select energy hold off
205	4ABEh	2	PWM cycle time [s]
207	4AC2h	2	Minimum running time fan [s]
208	4AC4h	1	Minimum variable active if
209	4AC5h	1	Show controller symbol
210	4AC6h	1	Show thawing point
211	4AC7h	1	Number of fan stages
212	4AC8h	1	Fan control access
213	4AC9h	2	0.1 x proportional band Xp
214	4ACBh	2	Reset time Tn[s]
215	4ACDh	2	0.1 x minimum variable
216	4ACFh	2	0.1 x maximum variable
217	4AD1h	2	0.1 x stage 1
218	4AD3h	2	0.1 x stage 2
219	4AD5h	2	0.1 x stage 3
220	4AD7h	2	0.1 x proportional band Xp
221	4AD9h	2	Reset time Tn[s]
222	4ADBh	2	0.1 x minimum variable
223	4ADDh	2	0.1 x maximum variable
224	4ADFh	2	0.1 x stage 1
225	4AE1h	2	0.1 x stage 2
226	4AE3h	2	0.1 x stage 3
227	4AE5h	2	0.1 x basic set point BUSY after reset
228	4AE7h	2	0.1 x basic set point offset READY
229	4AE9h	2	0.1 x basic set point offset NOT BUSY
230	4AEBh	2	0.1 x dead zone
231	4AEDh	2	0.1 x forced activation limit
232	4AEFh	1	Controller mode after reset
233	4AF0h	1	Select room allocation
234	4AF1h	1	Select actual value
235	4AF2h	1	Select setpoint
236	4AF3h	1	Select energy hold off
237	4AF4h	2	PWM cycle time [s]
239	4AF8h	2	Minimum running time fan [s]
240	4AFAh	1	Minimum variable active if
241	4AFBh	1	Show controller symbol
242	4AFCh	1	Show thawing point

Index	Address	Size / bytes	ETS Text
243	4AFDh	1	Number of fan stages
244	4AFEh	1	Fan control access
245	4AFFh	2	0.1 x proportional band Xp
246	4B01h	2	Reset time Tn[s]
247	4B03h	2	0.1 x minimum variable
248	4B05h	2	0.1 x maximum variable
249	4B07h	2	0.1 x stage 1
250	4B09h	2	0.1 x stage 2
251	4B0Bh	2	0.1 x stage 3
252	4B0Dh	2	0.1 x proportional band Xp
253	4B0Fh	2	Reset time Tn[s]
254	4B11h	2	0.1 x minimum variable
255	4B13h	2	0.1 x maximum variable
256	4B15h	2	0.1 x stage 1
257	4B17h	2	0.1 x stage 2
258	4B19h	2	0.1 x stage 3
259	4B1Bh	2	0.1 x basic set point BUSY after reset
260	4B1Dh	2	0.1 x set point offset READY
261	4B1Fh	2	0.1 x set point offset NOT BUSY
262	4B21h	2	0.1 x dead zone
263	4B23h	2	0.1 x forced activation limit
264	4B25h	1	Controller mode after reset
265	4B26h	1	Select room allocation
266	4B27h	1	Select actual value
267	4B28h	1	Select set point
268	4B29h	1	Select energy hold off
269	4B2Ah	2	PWM cycle time [s]
271	4B2Eh	2	Minimum running time fan [s]
272	4B30h	1	Minimum variable aktiv wenn
273	4B31h	1	Show fan symbol
274	4B32h	1	Show thawing point symbol
275	4B33h	1	Number of fan stages
276	4B34h	1	Fan control access
277	4B35h	2	0.1 x proportional band Xp
278	4B37h	2	Reset time Tn[s]
279	4B39h	2	0.1 x minimum variable
280	4B3Bh	2	0.1 x maximum variable
281	4B3Dh	2	0.1 x stage 1
282	4B3Fh	2	0.1 x stage 2
283	4B41h	2	0.1 x stage 3
284	4B43h	2	0.1 x proportional band Xp
285	4B45h	2	Reset time Tn[s]
286	4B47h	2	0.1 x minimum variable
287	4B49h	2	0.1 x maximum variable
288	4B4Bh	2	0.1 x stage 1
289	4B4Dh	2	0.1 x stage 2
290	4B4Fh	2	0.1 x stage 3
291	4B51h	2	0.1 x basic set point BUSY after reset
292	4B53h	2	0.1 x set point offset READY

Index	Address	Size / bytes	ETS Text
293	4B55h	2	0.1 x set point offset NOT BUSY
294	4B57h	2	0.1 x dead zone
295	4B59h	2	0.1 x forced activation limit
296	4B5Bh	1	Controller mode after reset
297	4B5Ch	1	Select room allocation
298	4B5Dh	1	Select actual value
299	4B5Eh	1	Select set point
300	4B5Fh	1	Select energy hold off
301	4B60h	2	PWM cycle time [s]
303	4B64h	2	Minimum running time fan [s]
304	4B66h	1	minimum variable aktiv wenn
305	4B67h	1	Show fan symbol
306	4B68h	1	Show thawing point symbol
307	4B69h	1	Number of fan stages
308	4B6Ah	1	Fan control access
309	4B6Bh	2	0.1 x proportional band Xp
310	4B6Dh	2	Reset time Tn[s]
311	4B6Fh	2	0.1 x minimum variable
312	4B71h	2	0.1 x maximum variable
313	4B73h	2	0.1 x stage 1
314	4B75h	2	0.1 x stage 2
315	4B77h	2	0.1 x stage 3
316	4B79h	2	0.1 x proportional band Xp
317	4B7Bh	2	Reset time Tn[s]
318	4B7Dh	2	0.1 x minimum variable
319	4B7Fh	2	0.1 x maximum variable
320	4B81h	2	0.1 x stage 1
321	4B83h	2	0.1 x stage 2
322	4B85h	2	0.1 x stage 3
323	4B87h	2	0.1 x basic set point BUSY after reset
324	4B89h	2	0.1 x set point offset READY
325	4B8Bh	2	0.1 x set point offset NOT BUSY
326	4B8Dh	2	0.1 x dead zone
327	4B8Fh	2	0.1 x forced activation limit
328	4B91h	1	Controller mode after reset
329	4B92h	1	Select room allocation
330	4B93h	1	Select actual value
331	4B94h	1	Select set point
332	4B95h	1	Select energy hold off
333	4B96h	2	PWM cycle time [s]
335	4B9Ah	2	Minimum running time fan [s]
336	4B9Ch	1	minimum variable aktiv wenn
337	4B9Dh	1	Show fan symbol
338	4B9Eh	1	Show thawing point symbol
339	4B9Fh	1	Number of fan stages
340	4BA0h	1	Fan control access
341	4BA1h	2	0.1 x proportional band Xp
342	4BA3h	2	Reset time Tn[s]
343	4BA5h	2	0.1 x minimum variable

Index	Address	Size /bytes	ETS Text
344	4BA7h	2	0.1 x maximum variable
345	4BA9h	2	0.1 x stage 1
346	4BABh	2	0.1 x stage 2
347	4BADh	2	0.1 x stage 3
348	4BAFh	2	0.1 x proportional band Xp
349	4BB1h	2	Reset time Tn[s]
350	4BB3h	2	0.1 x minimum variable
351	4BB5h	2	0.1 x maximum variable
352	4BB7h	2	0.1 x stage 1
353	4BB9h	2	0.1 x stage 2
354	4BBBh	2	0.1 x stage 3
355	4BBDh	2	0.1 x basic set point BUSY after reset
356	4BBFh	2	0.1 x set point offset READY
357	4BC1h	2	0.1 x set point offset NOT BUSY
358	4BC3h	2	0.1 x dead zone
359	4BC5h	2	0.1 x forced activation limit
360	4BC7h	1	Controller mode after reset
361	4BC8h	1	Select room allocation
362	4BC9h	1	Select actual value
363	4BCAh	1	Select set point
364	4BCBh	1	Select energy hold off
365	4BCCh	2	PWM cycle time [s]
367	4BD0h	2	Minimum running time fan [s]
368	4BD2h	1	minimum variable aktiv wenn
369	4BD3h	1	Show fan symbol
370	4BD4h	1	Show thawing point symbol
371	4BD5h	1	Number of fan stages
372	4BD6h	1	Fan control access
373	4BD7h	2	0.1 x proportional band Xp
374	4BD9h	2	Reset time Tn[s]
375	4BDBh	2	0.1 x minimum variable
376	4BDDh	2	0.1 x maximum variable
377	4BDFh	2	0.1 x stage 1
378	4BE1h	2	0.1 x stage 2
379	4BE3h	2	0.1 x stage 3
380	4BE5h	2	0.1 x proportional band Xp
381	4BE7h	2	Reset time Tn[s]
382	4BE9h	2	0.1 x minimum variable
383	4BEBh	2	0.1 x maximum variable
384	4BEDh	2	0.1 x stage 1
385	4BEFh	2	0.1 x stage 2
386	4BF1h	2	0.1 x stage 3
387	4BF3h	1	Value for logical "1"
388	4BF4h	1	Value for logical "0"
389	4BF5h	1	Value for logical "1"
390	4BF6h	1	Value for logical "0"
391	4BF7h	1	Value for logical "1"
392	4BF8h	1	Value for logical "0"

Index	Address	Size / bytes	ETS Text
393	4BF9h	1	Value for logical "1"
394	4BFAh	1	Value for logical "0"

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	K, S, Ü, A	DPT 9.001
2	[01] --> Overwrite internal humidity	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.xxx
3	[01] --> Set point adjustment lock	Input (on/off)	1 bit	K, S, Ü, A	DPT 1.001
4	[01] <--> Time	In/output time	3 bytes	K, L, S, Ü, A	DPT 10.001
5	[01] <--> Date	In/output date	3 bytes	K, L, S, Ü, A	DPT 11.001
6	[01] <-- Temperature	Output room temperature (float)	2 bytes	K, L, Ü, A	DPT 9.001
7	[01] <-- Humidity	Output room humidity (float)	2 bytes	K, L, Ü, A	DPT 9.xxx
8	[02] --> Activation lighting	Lighting (current status/on)	1 bit	K, S, Ü, A	DPT 1.001
9	[02] --> Fault symbol	Show (on/off)	1 bit	K, S, Ü, A	DPT 1.001
10	[02] --> Window symbol	Show (on/off)	1 bit	K, S, Ü, A	DPT 1.001
11	[02] --> Heating symbol	Show (on/off)	1 bit	K, S, Ü, A	DPT 1.001
12	[02] --> Cooling symbol	Show (on/off)	1 bit	K, S, Ü, A	DPT 1.001
13	[02] --> Thawing point symbol	Show (on/off)	1 bit	K, S, Ü, A	DPT 1.001
14	[03] --> Set point offset spec 1	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.002
15	[03] --> Set point offset spec 2	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.002
16	[03] --> Set point offset spec 3	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.002
17	[03] --> Set point offset spec 4	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.002
18	[03] --> Set point offset spec 5	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.002
19	[03] --> Set point offset spec 6	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.002
20	[03] --> Basic set point spec 1	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.001
21	[03] --> Basic set point spec 2	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.001
22	[03] --> Basic set point spec 3	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.001
23	[03] --> Basic set point spec 4	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.001
24	[03] --> Basic set point spec 5	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.001
25	[03] --> Basic set point spec 6	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.001
26	[03] <-- Current set point offset 1	Output value (float)	2 bytes	K, L, Ü, A	DPT 9.002
27	[03] <-- Current set point offset 2	Output value (float)	2 bytes	K, L, Ü, A	DPT 9.002
28	[03] <-- Current set point offset 3	Output value (float)	2 bytes	K, L, Ü, A	DPT 9.002
29	[03] <-- Current set point offset 4	Output value (float)	2 bytes	K, L, Ü, A	DPT 9.002
30	[03] <-- Current set point offset 5	Output value (float)	2 bytes	K, L, Ü, A	DPT 9.002
31	[03] <-- Current set point offset 6	Output value (float)	2 bytes	K, L, Ü, A	DPT 9.002
32	[03] <-- Effective set point 1	Output value (float)	2 bytes	K, L, Ü, A	DPT 9.001
33	[03] <-- Effective set point 2	Output value (float)	2 bytes	K, L, Ü, A	DPT 9.001
34	[03] <-- Effective set point 3	Output value (float)	2 bytes	K, L, Ü, A	DPT 9.001
35	[03] <-- Effective set point 4	Output value (float)	2 bytes	K, L, Ü, A	DPT 9.001
36	[03] <-- Effective set point 5	Output value (float)	2 bytes	K, L, Ü, A	DPT 9.001
37	[03] <-- Effective set point 6	Output value (float)	2 bytes	K, L, Ü, A	DPT 9.001
38	[04] --> Keylock	Lock (yes/no)	1 bit	K, S, Ü, A	DPT 1.001
39	[04] <-- Switching light channel 0	Light (on/off)	1 bit	K, L, Ü, A	DPT 1.001
40	[04] <-- Switching light channel 1	Light (on/off)	1 bit	K, L, Ü, A	DPT 1.001

Index	Communicative object	Description	Size	Flags	Data type
41	[04] <-- Switching light channel 2	Light (on /off)	1 bit	K, L, Ü, A	DPT 1.001
42	[04] <-- Switching light channel 3	Light (on /off)	1 bit	K, L, Ü, A	DPT 1.001
43	[04] <-- Switching light channel 4	Light (on /off)	1 bit	K, L, Ü, A	DPT 1.001
44	[04] <-- Switching light channel 5	Light (on /off)	1 bit	K, L, Ü, A	DPT 1.001
45	[04] <-- Switching light channel 6	Light (on /off)	1 bit	K, L, Ü, A	DPT 1.001
46	[04] <-- Switching light channel 7	Light (on /off)	1 bit	K, L, Ü, A	DPT 1.001
47	[04] <-- Switching light channel 8	Light (on /off)	1 bit	K, L, Ü, A	DPT 1.001
48	[04] <-- Switching light channel 9	Light (on /off)	1 bit	K, L, Ü, A	DPT 1.001
49	[04] <-- Switching light channel 0..9	Light (on /off), 2 bytes	2 bytes	K, L, Ü, A	DPT 7.xxx
50	[04] --> Status light channel 0	Input (on/off)	1 bit	K, S, Ü, A	DPT 1.001
51	[04] --> Status light channel 1	Input (on/off)	1 bit	K, S, Ü, A	DPT 1.001
52	[04] --> Status light channel 2	Input (on/off)	1 bit	K, S, Ü, A	DPT 1.001
53	[04] --> Status light channel 3	Input (on/off)	1 bit	K, S, Ü, A	DPT 1.001
54	[04] --> Status light channel 4	Input (on/off)	1 bit	K, S, Ü, A	DPT 1.001
55	[04] --> Status light channel 5	Input (on/off)	1 bit	K, S, Ü, A	DPT 1.001
56	[04] --> Status light channel 6	Input (on/off)	1 bit	K, S, Ü, A	DPT 1.001
57	[04] --> Status light channel 7	Input (on/off)	1 bit	K, S, Ü, A	DPT 1.001
58	[04] --> Status light channel 8	Input (on/off)	1 bit	K, S, Ü, A	DPT 1.001
59	[04] --> Status light channel 9	Input (on/off)	1 bit	K, S, Ü, A	DPT 1.001
60	[04] --> Status light channel 0..9	Input (on/off), 2 bytes	2 bytes	K, S, Ü, A	DPT 7.xxx
61	[04] <-- Light dimming channel 0	Dimming absolute (0..100%)	1 byte	K, L, Ü, A	DPT 5.001
62	[04] <-- Light dimming channel 1	Dimming absolute (0..100%)	1 byte	K, L, Ü, A	DPT 5.001
63	[04] <-- Light dimming channel 2	Dimming absolute (0..100%)	1 byte	K, L, Ü, A	DPT 5.001
64	[04] <-- Light dimming channel 3	Dimming absolute (0..100%)	1 byte	K, L, Ü, A	DPT 5.001
65	[04] <-- Light dimming channel 4	Dimming absolute (0..100%)	1 byte	K, L, Ü, A	DPT 5.001
66	[04] <-- Light dimming channel 5	Dimming absolute (0..100%)	1 byte	K, L, Ü, A	DPT 5.001
67	[04] <-- Light dimming channel 6	Dimming absolute (0..100%)	1 byte	K, L, Ü, A	DPT 5.001
68	[04] <-- Light dimming channel 7	Dimming absolute (0..100%)	1 byte	K, L, Ü, A	DPT 5.001
69	[04] <-- Light dimming channel 8	Dimming absolute (0..100%)	1 byte	K, L, Ü, A	DPT 5.001
70	[04] <-- Light dimming channel 9	Dimming absolute (0..100%)	1 byte	K, L, Ü, A	DPT 5.001
71	[04] <-- Light dimming 4 bit channel 0	Dimming, 4 bit	4 bit	K, L, Ü, A	DPT 3.007
72	[04] <-- Light dimming 4 bit channel 1	Dimming, 4 bit	4 bit	K, L, Ü, A	DPT 3.007
73	[04] <-- Light dimming 4 bit channel 2	Dimming, 4 bit	4 bit	K, L, Ü, A	DPT 3.007
74	[04] <-- Light dimming 4 bit channel 3	Dimming, 4 bit	4 bit	K, L, Ü, A	DPT 3.007
75	[04] <-- Light dimming 4 bit channel 4	Dimming, 4 bit	4 bit	K, L, Ü, A	DPT 3.007
76	[04] <-- Light dimming 4 bit channel 5	Dimming, 4 bit	4 bit	K, L, Ü, A	DPT 3.007
77	[04] <-- Light dimming 4 bit channel 6	Dimming, 4 bit	4 bit	K, L, Ü, A	DPT 3.007
78	[04] <-- Light dimming 4 bit channel 7	Dimming, 4 bit	4 bit	K, L, Ü, A	DPT 3.007
79	[04] <-- Light dimming 4 bit channel 8	Dimming, 4 bit	4 bit	K, L, Ü, A	DPT 3.007
80	[04] <-- Light dimming 4 bit channel 9	Dimming, 4 bit	4 bit	K, L, Ü, A	DPT 3.007
81	[04] <-- Switching universal channel 0	Universal (on/off)	1 bit	K, L, Ü, A	DPT 1.001
82	[04] <-- Switching universal channel 1	Universal (on/off)	1 bit	K, L, Ü, A	DPT 1.001
83	[04] <-- Switching universal channel 2	Universal (on/off)	1 bit	K, L, Ü, A	DPT 1.001
84	[04] <-- Switching universal channel 3	Universal (on/off)	1 bit	K, L, Ü, A	DPT 1.001
85	[04] <-- Switching universal channel 4	Universal (on/off)	1 bit	K, L, Ü, A	DPT 1.001
86	[04] <-- Switching universal channel 5	Universal (on/off)	1 bit	K, L, Ü, A	DPT 1.001
87	[04] <-- Switching universal channel 6	Universal (on/off)	1 bit	K, L, Ü, A	DPT 1.001
88	[04] <-- Switching universal channel 7	Universal (on/off)	1 bit	K, L, Ü, A	DPT 1.001
89	[04] <-- Switching universal channel 8	Universal (on/off)	1 bit	K, L, Ü, A	DPT 1.001

Index	Communicative object	Description	Size	Flags	Data type
90	[04] <-- Switching universal channel9	Universal (on/off)	1 bit	K, L, Ü, A	DPT 1.001
91	[04] <-- Switching universal channel0..9	Universal (on/off), 2 bytes	2 bytes	K, L, Ü, A	DPT 7.xxx
92	[04] --> Status universal channel 0	Input (on/off)	1 bit	K, S, Ü, A	DPT 1.001
93	[04] --> Status universal channel 1	Input (on/off)	1 bit	K, S, Ü, A	DPT 1.001
94	[04] --> Status universal channel 2	Input (on/off)	1 bit	K, S, Ü, A	DPT 1.001
95	[04] --> Status universal channel 3	Input (on/off)	1 bit	K, S, Ü, A	DPT 1.001
96	[04] --> Status universal channel 4	Input (on/off)	1 bit	K, S, Ü, A	DPT 1.001
97	[04] --> Status universal channel 5	Input (on/off)	1 bit	K, S, Ü, A	DPT 1.001
98	[04] --> Status universal channel 6	Input (on/off)	1 bit	K, S, Ü, A	DPT 1.001
99	[04] --> Status universal channel 7	Input (on/off)	1 bit	K, S, Ü, A	DPT 1.001
100	[04] --> Status universal channel 8	Input (on/off)	1 bit	K, S, Ü, A	DPT 1.001
101	[04] --> Status universal channel 9	Input (on/off)	1 bit	K, S, Ü, A	DPT 1.001
102	[04] --> Status universal channel 0..9	Input (on/off), 2 bytes	2 bytes	K, S, Ü, A	DPT 7.xxx
103	[04] <-- Shutters/blinds channel 0	Move (up/down)	1 bit	K, L, Ü, A	DPT 1.008
104	[04] <-- Shutters/blinds channel 1	Move (up/down)	1 bit	K, L, Ü, A	DPT 1.008
105	[04] <-- Shutters/blinds channel 2	Move (up/down)	1 bit	K, L, Ü, A	DPT 1.008
106	[04] <-- Shutters/blinds channel 3	Move (up/down)	1 bit	K, L, Ü, A	DPT 1.008
107	[04] <-- Shutters/blinds channel 4	Move (up/down)	1 bit	K, L, Ü, A	DPT 1.008
108	[04] <-- Shutters/blinds channel 5	Move (up/down)	1 bit	K, L, Ü, A	DPT 1.008
109	[04] <-- Shutters/blinds channel 6	Move (up/down)	1 bit	K, L, Ü, A	DPT 1.008
110	[04] <-- Shutters/blinds channel 7	Move (up/down)	1 bit	K, L, Ü, A	DPT 1.008
111	[04] <-- Shutters/blinds channel 8	Move (up/down)	1 bit	K, L, Ü, A	DPT 1.008
112	[04] <-- Shutters/blinds channel 9	Move (up/down)	1 bit	K, L, Ü, A	DPT 1.008
113	[04] <-- Shutters/blinds channel 0..9	Move (up/down), 2 bytes	2 bytes	K, L, Ü, A	DPT 7.xxx
114	[04] <-- Blinds channel 0	Lamella adjustment	1 bit	K, L, Ü, A	DPT 1.009
115	[04] <-- Blinds channel 1	Lamella adjustment	1 bit	K, L, Ü, A	DPT 1.009
116	[04] <-- Blinds channel 2	Lamella adjustment	1 bit	K, L, Ü, A	DPT 1.009
117	[04] <-- Blinds channel 3	Lamella adjustment	1 bit	K, L, Ü, A	DPT 1.009
118	[04] <-- Blinds channel 4	Lamella adjustment	1 bit	K, L, Ü, A	DPT 1.009
119	[04] <-- Blinds channel 5	Lamella adjustment	1 bit	K, L, Ü, A	DPT 1.009
120	[04] <-- Blinds channel 6	Lamella adjustment	1 bit	K, L, Ü, A	DPT 1.009
121	[04] <-- Blinds channel 7	Lamella adjustment	1 bit	K, L, Ü, A	DPT 1.009
122	[04] <-- Blinds channel 8	Lamella adjustment	1 bit	K, L, Ü, A	DPT 1.009
123	[04] <-- Blinds channel 9	Lamella adjustment	1 bit	K, L, Ü, A	DPT 1.009
124	[04] <-- Blinds channel 0..9	Lamella adjustment, 2 bytes	2 bytes	K, L, Ü, A	DPT 7.xxx
125	[06] --> Show message	Show (0..8)	1 Byte	K, S, Ü, A	DPT 5.xxx
126	[06] --> Info text	Text input, 14 bytes	14 bytes	K, S, Ü, A	DPT 16.000
127	[07] <-- Input 1	Output (status/value)	2 bytes	K, L, Ü, A	DPT 7.xxx
128	[07] <-- Input 2	Output (status/value)	2 bytes	K, L, Ü, A	DPT 7.xxx
129	[07] <-- Input 3	Output (status/value)	2 bytes	K, L, Ü, A	DPT 7.xxx
130	[07] <-- Input 4	Output (status/value)	2 bytes	K, L, Ü, A	DPT 7.xxx
131	[07] --> Output value input 1	Output value and reset	1 bit	K, S, Ü, A	DPT 1.001
132	[07] --> Output value input 2	Output value and reset	1 bit	K, S, Ü, A	DPT 1.001
133	[07] --> Output value input 3	Output value and reset	1 bit	K, S, Ü, A	DPT 1.001
134	[07] --> Output value input 4	Output value and reset	1 bit	K, S, Ü, A	DPT 1.001
135	[08] --> Room allocation spec (1 byte)	Input (not busy/busy/...)	1 Byte	K, S, Ü, A	DPT 5.xxx
136	[08] --> Room allocation spec (1 bit)	Input (not busy/busy)	1 bit	K, S, Ü, A	DPT 1.001
137	[08] --> Room allocation lock	Input (on/off)	1 bit	K, S, Ü, A	DPT 1.001
138	[08] --> Temporary room allocation time	Input bypass time	2 bytes	K, S, Ü, A	DPT 7.xxx

Index	Communicative object	Description	Size	Flags	Data type
139	[08] <-- Room allocation status (1 byte)	Output (not busy/busy/...)	1 byte	K, L, Ü, A	DPT 5.xxx
140	[08] <-- Room allocation status (1 bit)	Output (not busy/busy)	1 bit	K, L, Ü, A	DPT 1.001
141	[09] --> Fan stage spec	Input (none/stage1/...)	2 bytes	K, S, Ü, A	DPT 7.xxx
142	[09] --> Fan stage adjustment lock	Input (on/off)	1 bit	K, S, Ü, A	DPT 1.001
143	[09] <-- Current fan stage	Output (none/stage1/...)	2 bytes	K, L, Ü, A	DPT 7.xxx
144	[09] <-- Current fan stage 1	Output (on/off)	1 bit	K, L, Ü, A	DPT 1.001
145	[09] <-- Current fan stage 2	Output (on/off)	1 bit	K, L, Ü, A	DPT 1.001
146	[09] <-- Current fan stage 3	Output (on/off)	1 bit	K, L, Ü, A	DPT 1.001
147	[10] --> External value spec 1	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.xxx
148	[10] --> External value spec 2	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.xxx
149	[10] --> External value spec 3	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.xxx
150	[10] --> External value spec 4	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.xxx
151	[10] --> External value spec 5	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.xxx
152	[10] --> External value spec 6	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.xxx
153	[11] --> Actual value controller spec 1	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.xxx
154	[11] --> Actual value controller spec 2	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.xxx
155	[11] --> Actual value controller spec 3	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.xxx
156	[11] --> Actual value controller spec 4	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.xxx
157	[11] --> Actual value controller spec 5	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.xxx
158	[11] --> Actual value controller spec 6	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.xxx
159	[11] --> Basic set point spec controller 1	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.xxx
160	[11] --> Basic set point spec controller 2	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.xxx
161	[11] --> Basic set point spec controller 3	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.xxx
162	[11] --> Basic set point spec controller 4	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.xxx
163	[11] --> Basic set point spec controller 5	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.xxx
164	[11] --> Basic set point spec controller 6	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.xxx
165	[11] --> Set point offset spec controller 1	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.xxx
166	[11] --> Set point offset spec controller 2	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.xxx
167	[11] --> Set point offset spec controller 3	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.xxx
168	[11] --> Set point offset spec controller 4	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.xxx
169	[11] --> Set point offset spec controller 5	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.xxx
170	[11] --> Set point offset spec controller 6	Input value (float)	2 bytes	K, S, Ü, A	DPT 9.xxx
171	[11] --> Temporary room allocation time for controller 1	Input bypass time	2 bytes	K, S, Ü, A	DPT 7.xxx
172	[11] --> Temporary room allocation time for controller 2	Input bypass time	2 bytes	K, S, Ü, A	DPT 7.xxx
173	[11] --> Temporary room allocation time for controller 3	Input bypass time	2 bytes	K, S, Ü, A	DPT 7.xxx
174	[11] --> Temporary room allocation time for controller 4	Input bypass time	2 bytes	K, S, Ü, A	DPT 7.xxx
175	[11] --> Temporary room allocation time for controller 5	Input bypass time	2 bytes	K, S, Ü, A	DPT 7.xxx
176	[11] --> Temporary room allocation time for controller 6	Input bypass time	2 bytes	K, S, Ü, A	DPT 7.xxx
177	[11] --> Controller mode spec controller 1	Input (off/heating/...)	1 byte	K, S, Ü, A	DPT 5.xxx
178	[11] --> Controller mode spec controller 2	Input (off/heating/...)	1 byte	K, S, Ü, A	DPT 5.xxx
179	[11] --> Controller mode spec controller 3	Input (off/heating/...)	1 byte	K, S, Ü, A	DPT 5.xxx
180	[11] --> Controller mode spec controller 4	Input (off/heating/...)	1 byte	K, S, Ü, A	DPT 5.xxx
181	[11] --> Controller mode spec controller 5	Input (off/heating/...)	1 byte	K, S, Ü, A	DPT 5.xxx
182	[11] --> Controller mode spec controller 6	Input (off/heating/...)	1 byte	K, S, Ü, A	DPT 5.xxx
183	[11] --> Forced shutdown variable B controller 1	Input (not active/...)	1 bit	K, S, Ü, A	DPT 1.001
184	[11] --> Forced shutdown variable B controller 2	Input (not active/...)	1 bit	K, S, Ü, A	DPT 1.001
185	[11] --> Forced shutdown variable B controller 3	Input (not active/...)	1 bit	K, S, Ü, A	DPT 1.001

186	[11] --> Forced shutdown variable B controller 4	Input (not active/...)	1 bit	K, S, Ü, A	DPT 1.001
187	[11] --> Forced shutdown variable B controller 5	Input (not active/...)	1 bit	K, S, Ü, A	DPT 1.001
Index	Communicative object	Description	Size	Flags	Data type
188	[11] --> Forced shutdown variable B controller 6	Input (not active/...)	1 bit	K, S, Ü, A	DPT 1.001
189	[11] --> Energy hold off spec controller 1	Input (deactivated/...)	1 bit	K, S, Ü, A	DPT 1.001
190	[11] --> Energy hold off spec controller 2	Input (deactivated/...)	1 bit	K, S, Ü, A	DPT 1.001
191	[11] --> Energy hold off spec controller 3	Input (deactivated/...)	1 bit	K, S, Ü, A	DPT 1.001
192	[11] --> Energy hold off spec controller 4	Input (deactivated/...)	1 bit	K, S, Ü, A	DPT 1.001
193	[11] --> Energy hold off spec controller 5	Input (deactivated/...)	1 bit	K, S, Ü, A	DPT 1.001
194	[11] --> Energy hold off spec controller 6	Input (deactivated/...)	1 bit	K, S, Ü, A	DPT 1.001
195	[11] --> Room allocation for controller 1	Input (not busy/...)	1 byte	K, S, Ü, A	DPT 5.xxx
196	[11] --> Room allocation for controller 2	Input (not busy/...)	1 byte	K, S, Ü, A	DPT 5.xxx
197	[11] --> Room allocation for controller 3	Input (not busy/...)	1 byte	K, S, Ü, A	DPT 5.xxx
198	[11] --> Room allocation for controller 4	Input (not busy/...)	1 byte	K, S, Ü, A	DPT 5.xxx
199	[11] --> Room allocation for controller 5	Input (not busy/...)	1 byte	K, S, Ü, A	DPT 5.xxx
200	[11] --> Room allocation for controller 6	Input (not busy/...)	1 byte	K, S, Ü, A	DPT 5.xxx
201	[11] <-- Variable A controller 1	Output value (0..100%)	1 byte	K, L, Ü, A	DPT 5.001
202	[11] <-- Variable A controller 2	Output value (0..100%)	1 byte	K, L, Ü, A	DPT 5.001
203	[11] <-- Variable A controller 3	Output value (0..100%)	1 byte	K, L, Ü, A	DPT 5.001
204	[11] <-- Variable A controller 4	Output value (0..100%)	1 byte	K, L, Ü, A	DPT 5.001
205	[11] <-- Variable A controller 5	Output value (0..100%)	1 byte	K, L, Ü, A	DPT 5.001
206	[11] <-- Variable A controller 6	Output value (0..100%)	1 byte	K, L, Ü, A	DPT 5.001
207	[11] <-- PWM signal variable A controller 1	PWM (on/off)	1 bit	K, L, Ü, A	DPT 1.001
208	[11] <-- PWM signal variable A controller 2	PWM (on/off)	1 bit	K, L, Ü, A	DPT 1.001
209	[11] <-- PWM signal variable A controller 3	PWM (on/off)	1 bit	K, L, Ü, A	DPT 1.001
210	[11] <-- PWM signal variable A controller 4	PWM (on/off)	1 bit	K, L, Ü, A	DPT 1.001
211	[11] <-- PWM signal variable A controller 5	PWM (on/off)	1 bit	K, L, Ü, A	DPT 1.001
212	[11] <-- PWM signal variable A controller 6	PWM (on/off)	1 bit	K, L, Ü, A	DPT 1.001
213	[11] <-- Variable B controller 1	Output value (0..100%)	1 byte	K, L, Ü, A	DPT 5.001
214	[11] <-- Variable B controller 2	Output value (0..100%)	1 byte	K, L, Ü, A	DPT 5.001
215	[11] <-- Variable B controller 3	Output value (0..100%)	1 byte	K, L, Ü, A	DPT 5.001
216	[11] <-- Variable B controller 4	Output value (0..100%)	1 byte	K, L, Ü, A	DPT 5.001
217	[11] <-- Variable B controller 5	Output value (0..100%)	1 byte	K, L, Ü, A	DPT 5.001
218	[11] <-- Variable B controller 6	Output value (0..100%)	1 byte	K, L, Ü, A	DPT 5.001
219	[11] <-- PWM signal variable B controller 1	PWM (on/off)	1 bit	K, L, Ü, A	DPT 1.001
220	[11] <-- PWM signal variable B controller 2	PWM (on/off)	1 bit	K, L, Ü, A	DPT 1.001
221	[11] <-- PWM signal variable B controller 3	PWM (on/off)	1 bit	K, L, Ü, A	DPT 1.001
222	[11] <-- PWM signal variable B controller 4	PWM (on/off)	1 bit	K, L, Ü, A	DPT 1.001
223	[11] <-- PWM signal variable B controller 5	PWM (on/off)	1 bit	K, L, Ü, A	DPT 1.001
224	[11] <-- PWM signal variable B controller 6	PWM (on/off)	1 bit	K, L, Ü, A	DPT 1.001
225	[11] <-- Current controller mode controller 1	Output (off/heating/...)	1 byte	K, L, Ü, A	DPT 5.xxx
226	[11] <-- Current controller mode controller 2	Output (off/heating/...)	1 byte	K, L, Ü, A	DPT 5.xxx
227	[11] <-- Current controller mode controller 3	Output (off/heating/...)	1 byte	K, L, Ü, A	DPT 5.xxx
228	[11] <-- Current controller mode controller 4	Output (off/heating/...)	1 byte	K, L, Ü, A	DPT 5.xxx
229	[11] <-- Current controller mode controller 5	Output (off/heating/...)	1 byte	K, L, Ü, A	DPT 5.xxx
230	[11] <-- Current controller mode controller 6	Output (off/heating/...)	1 byte	K, L, Ü, A	DPT 5.xxx
231	[11] <-- Fan stage controller 1	Output (none/stage1/...)	1 byte	K, L, Ü, A	DPT 5.xxx
232	[11] <-- Fan stage controller 2	Output (none/stage1/...)	1 byte	K, L, Ü, A	DPT 5.xxx
233	[11] <-- Fan stage controller 3	Output (none/stage1/...)	1 byte	K, L, Ü, A	DPT 5.xxx
234	[11] <-- Fan stage controller 4	Output (none/stage1/...)	1 byte	K, L, Ü, A	DPT 5.xxx

235	[11] <-- Fan stage controller 5	Output (none/stage1/...)	1 byte	K, L, Ü, A	DPT 5.xxx
236	[11] <-- Fan stage controller 6	Output (none/stage1/...)	1 byte	K, L, Ü, A	DPT 5.xxx
Index	Communicative object	Description	Size	Flags	Data type
237	[11] <-- Effective set point controller 1	Output value (float)	2 bytes	K, L, Ü, A	DPT 9.xxx
238	[11] <-- Effective set point controller 2	Output value (float)	2 bytes	K, L, Ü, A	DPT 9.xxx
239	[11] <-- Effective set point controller 3	Output value (float)	2 bytes	K, L, Ü, A	DPT 9.xxx
240	[11] <-- Effective set point controller 4	Output value (float)	2 bytes	K, L, Ü, A	DPT 9.xxx
241	[11] <-- Effective set point controller 5	Output value (float)	2 bytes	K, L, Ü, A	DPT 9.xxx
242	[11] <-- Effective set point controller 6	Output value (float)	2 bytes	K, L, Ü, A	DPT 9.xxx
243	[12] --> Encoder A input	Input (on/off)	1 bit	K, S, Ü, A	DPT1.001
244	[12] <-- Encoder A output	Output (1byte)	1 byte	K, L, Ü, A	DPT 5.xxx
245	[12] --> Encoder B input	Input (on/off)	1 bit	K, S, Ü, A	DPT1.001
246	[12] <-- Encoder B output	Output (1byte)	1 byte	K, L, Ü, A	DPT 5.xxx
247	[12] --> Encoder C input	Input (on/off)	1 bit	K, S, Ü, A	DPT1.001
248	[12] <-- Encoder C output	Output (1byte)	1 byte	K, L, Ü, A	DPT 5.xxx
249	[12] --> Encoder D input	Input (on/off)	1 bit	K, S, Ü, A	DPT1.001
250	[12] <-- Encoder D output	Output (1byte)	1 byte	K, L, Ü, A	DPT 5.xxx

Table 7-2 Communicative objects list

8 Firmware update

To update the **thanos** firmware, please proceed as follows:

1. Check whether a firmware update is available for your **thanos** product.
For that purpose 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 startup screen

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:

http://www.thermokon.de/ftp/thanos/thanos_knx_fw_update.zip

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



2. Reassemble 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:

http://www.thermokon.de/ftp/thanos/thanos_knx_ets_update.zip

Note:

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