thermokon
Sensortechnik GmbH

Software Description

for

thanos SR

enocean®
EasySens

1 Index of changes

Revision	Date	Description
A	12.09.2011	First draft
B	26.09.2011	Legend of menu line – added
C	07.11.2011	- Correction of EnOcean-ID for “Function Universal” - Description for “Time Mode” included - Description for “Temp. Unit” included
D	02.12.2011	- Description for thanos S / SQ added
E	30.01.2012	Update to new firmware (Version „Operating Unit 1.7.0“ / „Net Unit“ 1.2.0) Sub menu for thanos S / SQ Inversion function for light, shutter/blind and universal function added Lowering temperature added For EnOcean switching telegrams thanos sends 80/64 instead of 16/0 and 112/96 instead of 48/32
F	30.03.2012	Update to new firmware (Version “Operating Unit 1.8.0” / “Net Unit 1.3.0”) Function “Fan Stage OFF / AUTO only” added Description for firmware- and configuration software- update added
G	02.08.2012	Update to new firmware (Version “Operating Unit 1.8.9” / “Net Unit 1.4.0”) Various EnOcean telegrams added Learn telegram of EEP 06-00-01 changed DB3 = 0x00
H	01.11.2012	Correction of EnOcean profile description for EEP 07-10-11 Update to new firmware thanos SR (from firmware „Operating Unit 1.9.0“ / „Net Unit 1.5.0“ or higher) disposes of several registers which can be read and written via the EnOcean RF protocol. Via these registers it is possible to write/read certain settings/values and to access thanos via a superior control unit.
I	12.11.2012	Optimized Descriptions.
J	06.09.2013	Update to new firmware thanos SR (from firmware „Operating Unit 1.10.4“ / „Net Unit 1.5.2“ or higher) now supports periodic transmission of all 6 setpoints (in older versions only setpoint 1 was sent periodic and setpoint 2…6 were reserved for EnOcean valve actuators SAB02).
K	28.05.2014	Update to new firmware (Operating Unit 1.11.0 / Net Unit: 1.6.0): - Description for new functions Mode, lowest fan stage, graphics from SD card, Scene, Universal up/down, ECO/Leaf symbol and configuration menu added

2 Software Revision

Device-Firmware:
http://www.thermokon.de/ftp/thanos/doc/thanos_sr_fw_revision.pdf

Configuration-Software:
http://www.thermokon.de/ftp/thanos/doc/thanos_mb_eo_csw_revision.pdf

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3 Description

The present document describes the function and parameterization options of the room operating unit thanos SR.

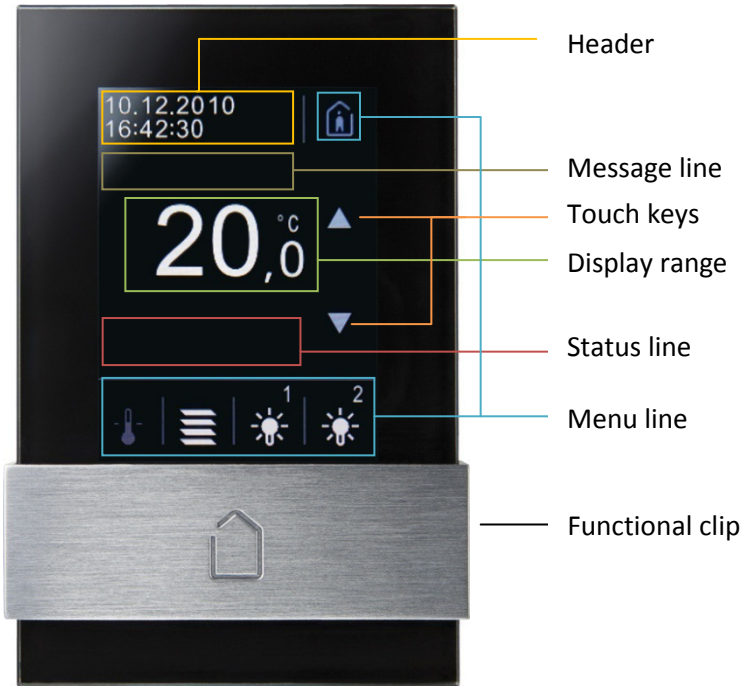
The thanos room operating unit is designed for temperature and humidity detection as well as integrated operation of HVAC, lighting and shutter/blind for single room control. By means of the high-graded optics the device is especially ideal for design-oriented applications. The operating functions can be flexibly adapted to the most different room layouts.

3.1 Operating interface

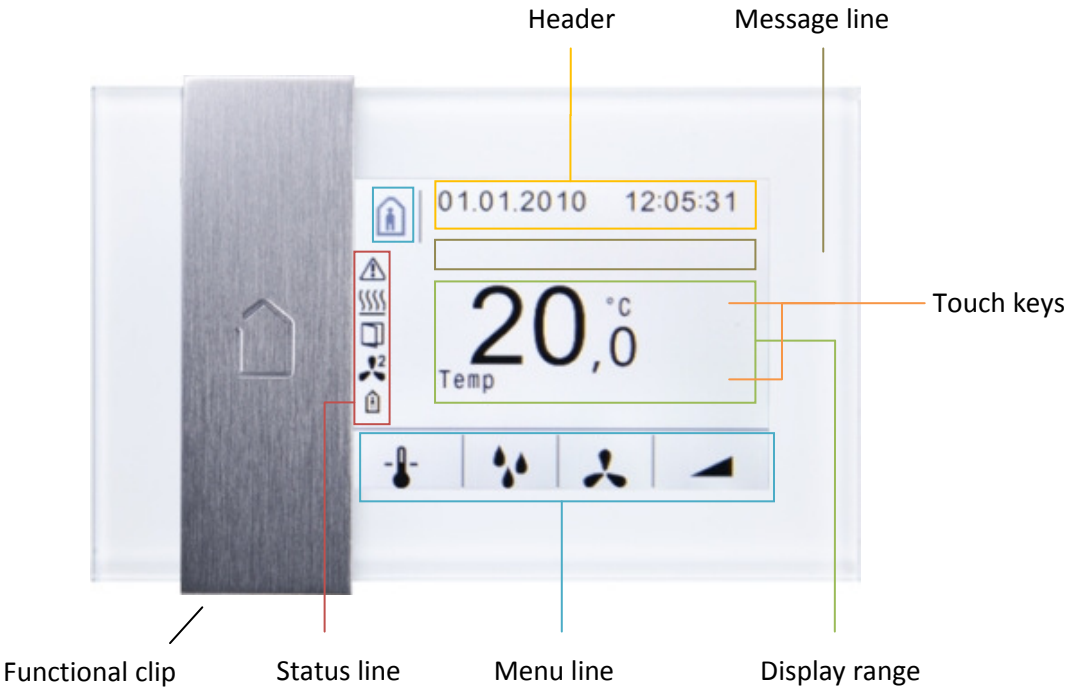
For the thanos type S / SQ the operating interface is divided into one, and for the L / LQ into two zones:

- Menu area for control and display
- Keypad for control (Version L / LQ only)

On thanos S / SQ is also the possibility to configure submenus, over which a similar functionality as the keypad on thanos L / LQ is available.

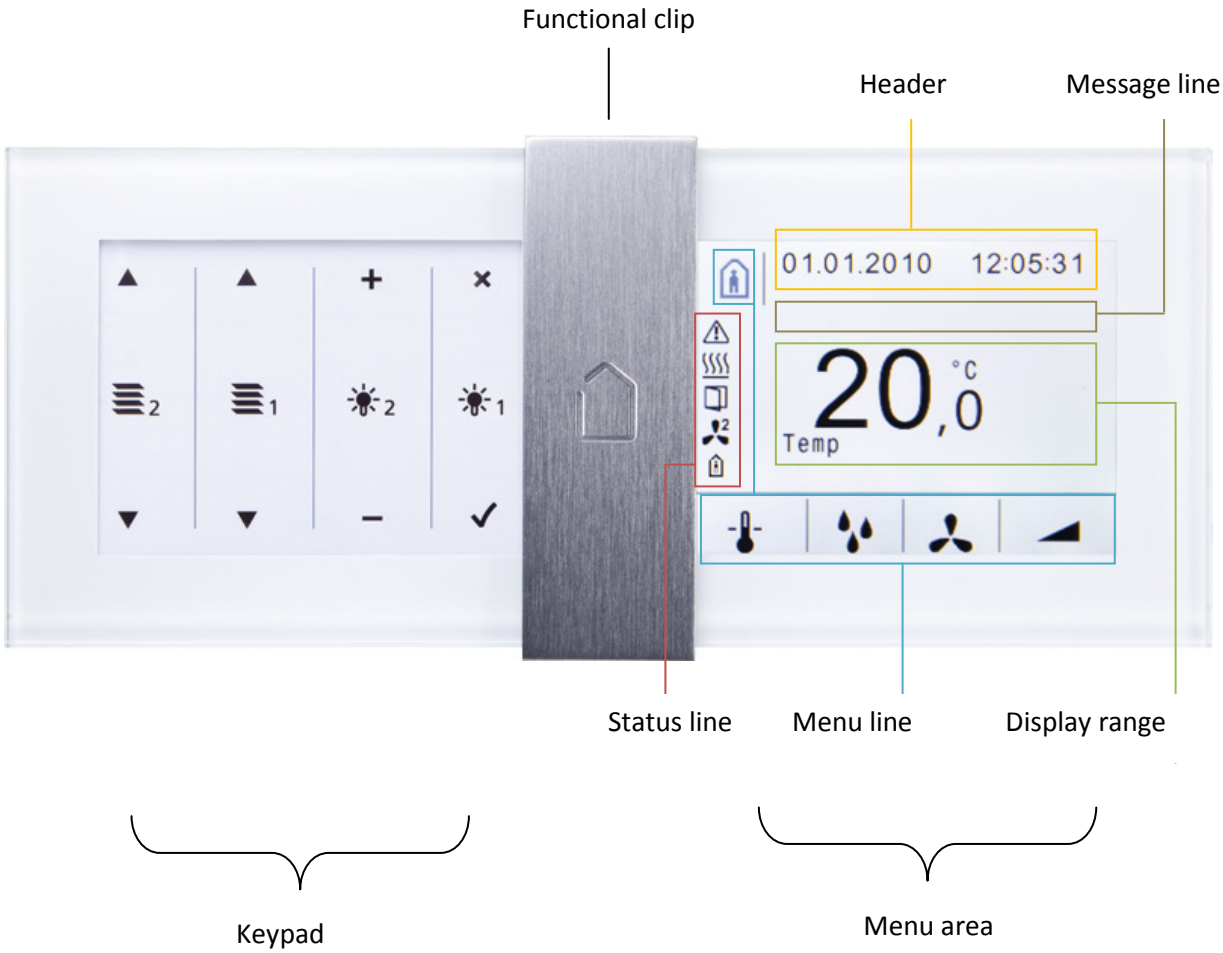


thanos S


Header
Message line
01.01.2010 12:05:31
20,0 °C
Temp
Touch keys
Functional clip
Status line
Menu line
Display range

thanos SQ

thanos L Operating interface



thanos LQ operating interface

3.2 Menu area

Header:
In the header the current date and time can be displayed in different formats.
The thanos has a battery backed Real Time Clock so that the correct time is displayed even after a voltage breakdown.

Message line:
In the message line a free selectable message text with a length of up to 14 signs can be displayed.

Display range:
Among others, the following values can be shown in the display range:

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

Moreover, the values and status of an active menu are displayed.

Status line:
In the status line the symbols for fan stages, room occupancy, failure, heating, cooling, window and dew point can be inlayed.

Menu line:
In the menu line different menu points can be saved. They can be called-off by the user when touching the corresponding symbol.

Divison Lines

The following menu points can be parameterized:

Set point

Fan coil

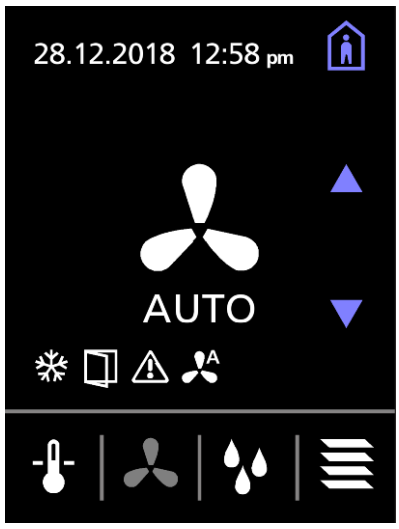
Occupancy mode

Light, Shutter/Blind, Light dimming, Scene, Iniversal ON/OFF, Universal UP/DOWN, Mode

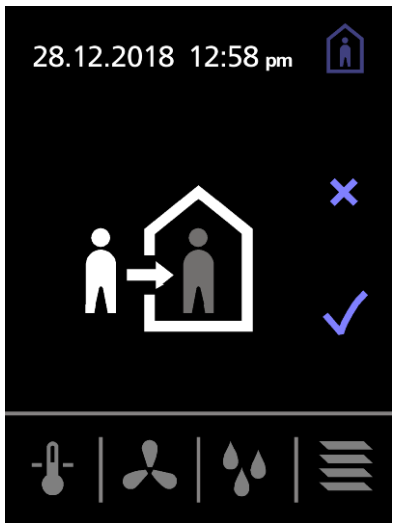
If a menu point is selected the corresponding symbol is displayed grey-shaded in the menu line and in the display line the value/status is displayed which can be changed in the corresponding menu. By means of the operating key (depending on the function: either ▲ / ▼ or ✓ / ✕) the value/status can be changed afterwards.

Examples:

Menu „Temperature set point“



Menu „Fan coil“

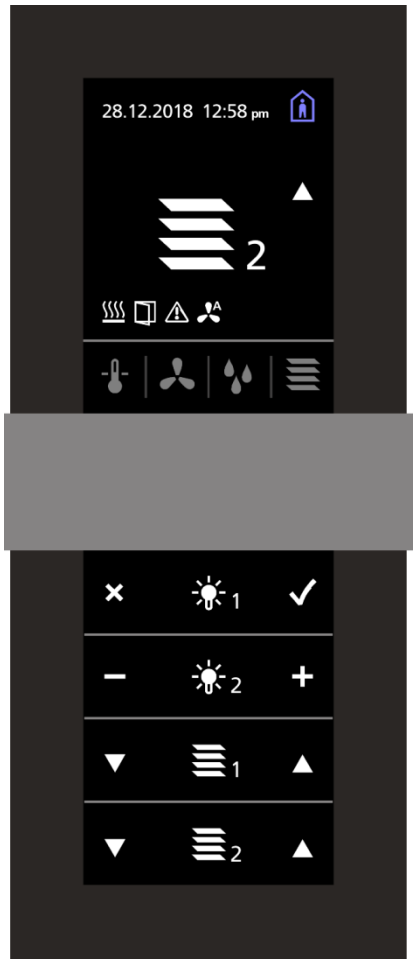


Menu „Occupancy“

3.3 Touch keys

On thanos L / LQ the keypad consists of 8 keys in total. The keys are soft keys so that the functions of the keys can be freely adjusted via the configuration software. If a key is touched, the corresponding function is visually shown in the display.

Example:



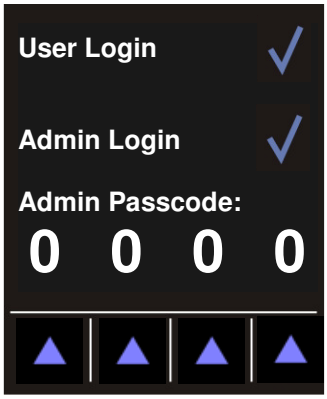
Touch keys

In the lower operating interface the key “blind 2 up” was selected. In the display area the corresponding symbol is displayed in big. Next to it the actuated symbol, e.g. ▲ is displayed.
After a freely programmable time the display indication is reset to the original display indication.

4 Installation

For the device specific parameters thanos disposes of an extra menu. The polling is made by a simultaneous touch of keys 1 and 7 (read more in chapter 3.5.1) for approx. 3s.

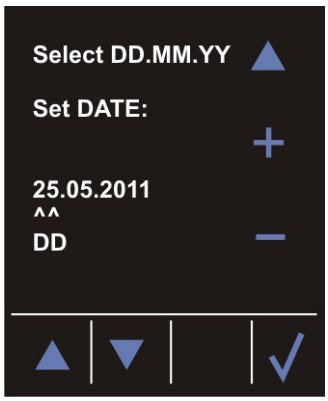
Please login as normal user (User Login) or administrator (Admin Login).
For administrator login, a passcode is required (default 0000 – can be changed via the configuration software). As normal user, only time and date can be modified, while the administrator even can modify all settings.



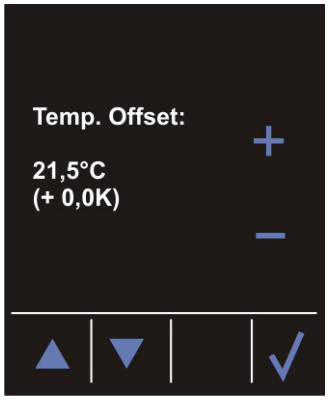
Login

The following adjustments can be made via the configuration menu:

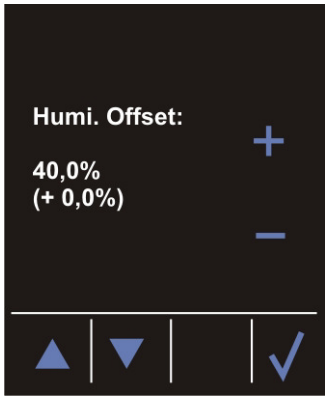
Set Time



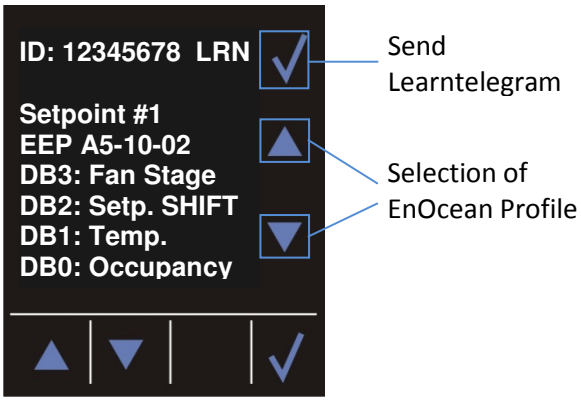
Set Date



Temperature Offset

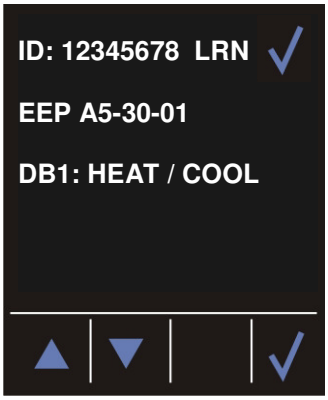


Humidity Offset

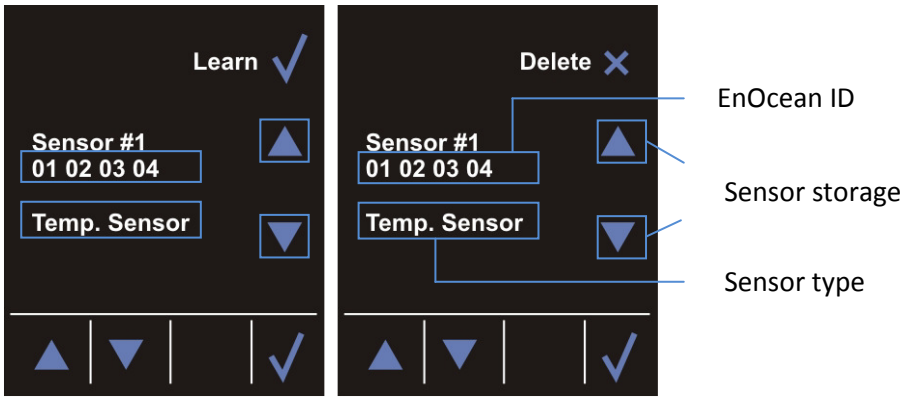


Selection of EnOcean profiles for setpoint 1…6 and sending learn telegrams

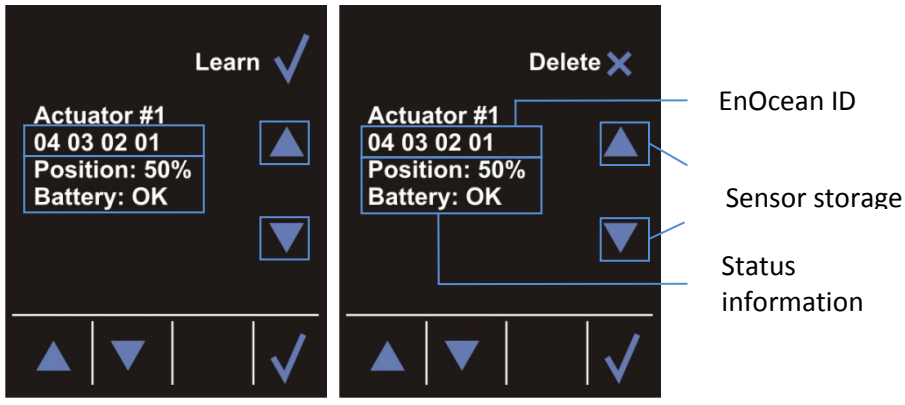
Lerntelegramm D5-00-01



Learn telegram A5-30-01

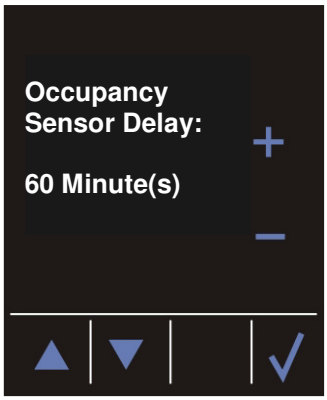


Learn-In Sensor *Delete Sensor*

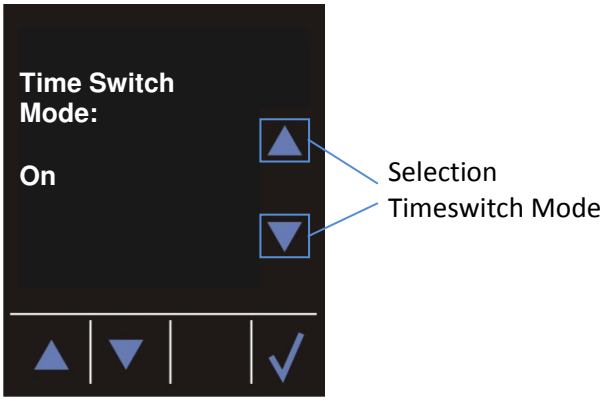


Learn-In Valve Actuator *Delete Valve Actuator*

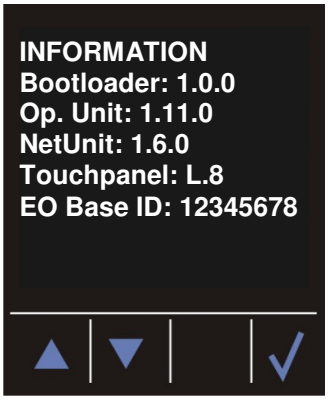
Set Transmitting Time



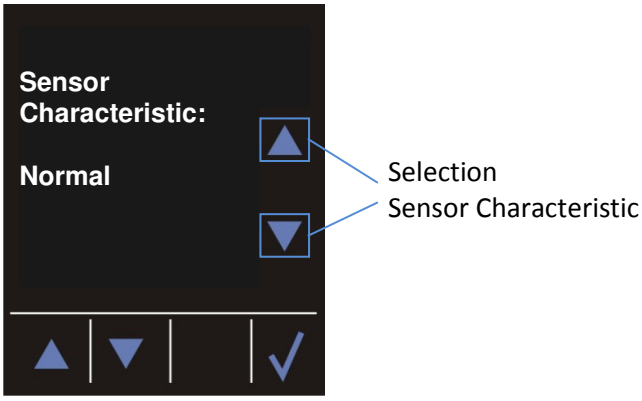
Set Occupancy Delay Time



Selection Timeswitch



Information Menu



Sensor Characteristic

4.1 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.

4.2 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.

4.3 Temperature Offset

Due to the fact, that for flush-mounting sensors the temperature measurement is not only affected by the voltage depending self-heating of the electronis but also by the temperature dynamic of the wall, a recalibration might become necessary. The calibration mode offers the possibility of a recalibration via the operating keys.

4.4 Humidity Offset (if humiditiy sensor is available)

For calibration of humidity measurement.

4.5 Send Learning Telegram

Via the menus „Send LRN EEP XX-XX-XX“ thanos can be learned-in (seamlessly connected) to other EnOcean based receivers. Thus, a communication path can be build up.

The following EnOcean profiles are available:

EEP A5-10-02, EEP A5-10-06, EEP A5-10-11, EEP D5-00-01 and EEP A5-30-01. A detailed list of the individual telegrams can be found in chapter 2.1.

For setpoints 1 of 3 EEP can be selected. For each profile 2 different types are available. For one type, a set point offset is transmitted in the telegram for the set point adjustment (0...225= Min...Max). In the other telegram an absolute set point (0...225=0...40,0C) is transmitted.

The selection of these two variants is depending on the receiver. If the receiver expects a set point adjustment, the learning telegram „Set point shift“ must be used.

If the receiver expects an absolute set point, however, the learning telegram „Set point abs.“ has to be used.

In principle, Thermokon receivers expect a telegram with a set point adjustment („Set point shift).

4.6 Learning-in of Sensors

By pushing the sensor button „Learn“, thanos is set into the learning mode. Afterwards, the learning button of the respective sensor which shall be seamlessly connected to the
Thanos must be pressed within 60 seconds. The corresponding sensor is saved on one of the 20 available memory locations which can be selected via the buttons “Up”/”Down”.

4.7 Delete Sensors

By touching the capacitive function clip while the thanos is in the menu “Learning-in of sensors” the device changes to the deleting mode. Press simultaneously the button „Delete“ to delete the sensor which is saved in the selected memory location.

4.8 Learning-in of Valve Actuators (EEP A5-20-01)

By pushing the sensor button „Learn“, thanos is set into the learning mode. Afterwards, the learning button of the respective valve actuators which shall be seamlessly connected to the
thanos must be pressed within 60 seconds. The corresponding actuator is saved on one of the 8 available memory locations which can be selected via the buttons “Up”/”Down”.

4.9 Delete Valve Actuators (EEP A5-20-01)

By touching the capacitive function clip while the thanos is in the menu “Learning-in of valve actuators” the device changes to the deleting mode. Press simultaneously the button „Delete“ to delete the valve actuator which is saved in the selected memory location.

4.10 Transmitting Time

By touching the sensor keys „+“ and „-„ the sending interval can be adjusted. The telegrams with the profiles A5-10-02, A5-10-11, A5-10-06, D5-00-01 and A5-30-01 are cyclically sent in this interval.

4.11 Delay Time Occupancy Sensor

Parameter for setting the follow-up time, which can be started by an EnOcean occupancy sensor.

4.12 Time Switch Mode

The timer can be enabled / disabled via this parameter or set to holiday mode.

4.13 Sensor Characteristic

With this parameter the response of the integrated temperature sensor (optional humidity) can be set.

5 EnOcean Radio Telegrams

thanos has an integrated EnOcean RF module via which it can communicate with other EnOcean based devices.

To meet the function scope of the thanos, different EnOcean telegram types are supported:

- Transmission of an EnOcean compatible telegram including information on room temperature, set point adjustment, fan stages and room occupancy.
  → EnOcean Profile A5-10-02.

- Transmission of an EnOcean compatible telegram including information on room temperature, set point adjustment and room occupancy.
  → EnOcean Profile A5-10-06.

- Transmission of an EnOcean compatible telegram including information on room temperature, set point adjustment, relative humidity and room occupancy.
  → EnOcean Profile A5-10-11.

- Transmission of an EnOcean compatible telegram including the status of wired or EnOcean based window contact/window handles
  → EnOcean Profile D5-00-01.

- Transmission of an EnOcean compatible telegram including the status of the operation mode (eg. change over heating/cooling).
  → EnOcean Profile A5-30-01.

- Transmission of EnOcean compatible telegrams including information about individual sensor keys
  → EnOcean Profile F6-02-01.

- Transmission of EnOcean compatible telegrams including information about the 4 digital inputs (not available on thanos SR MVolt)
  → EnOcean Profile F6-02-01.

The following table provides an overview which information of the thanos are sent in which telegram types:

Information / Data	Used Telegram Type / Profile
Temperature	A5-10-02 A5-10-06 A5-10-11
Relative humidity	A5-10-11
Fan stages	A5-10-02
Set point adjustment	A5-10-02 A5-10-06

	A5-10-11
Room occupancy	A5-10-02 A5-10-06 A5-10-11
Window contacts/window handles	D5-00-01
Light on / off	F6-02-01
Blind / shutter	F6-02-01
Light dimming	F6-02-01
Universal on / off	F6-02-01
Universal up / down	F6-02-01
Scene call	F6-02-01
Change Over (heating / cooling)	F6-02-01
State of the 4 digital inputs	F6-02-01

Supported EnOcean Profiles

5.1 Description of Radio Telegrams

In the following tables the EnOcean RF telegrams sent by thanos are described. Further details can be obtained in the latest version of the „EnOcean Equipment Profiles EEP“ (www.enocean.com).

Telegram Type A5-10-02

EnOcean Byte	Information / Data
ORG	A5
Data byte 3	Fan stages Stage Auto → n >210 Stage 0 → 190 < n < 210 Stage 1 → 165 < n < 190 Stage 2 → 145 < n < 165 Stage 3 → n < 145
Data byte 2	Setpoint adjustment (of Setpoint 1): SHIFT ⇒ Lower treshold…Upper threshold = 0…255 ABS ⇒ 0…40,0°C (32,0…104,0°F) = 0…255
Data byte 1	Temperature 0 … 40°C = 255 … 0
Data byte 0	Bit 3 → Learn button (0=button pushed) Bit 0 → Room occupancy (unoccupied=0 / occupied=1)

EnOcean Telegram A5-10-02

Telegram Type A5-10-06

EnOcean Byte	Information / Data
ORG	A5
Data byte 3	Lowering temperature *) 0…255 = |Lowering value|
Data byte 2	Setpoint adjustment (of Setpoint 1): SHIFT ⇒ Lower threshold…Upper threshold = 0…255 ABS ⇒ 0…40,0°C (32,0…104,0°F) = 0…255
Data byte 1	Temperature 0 … 40°C = 255 … 0
Data byte 0	Bit 3 → Learn button (0=button pushed) Bit 0 → Room occupancy (unoccupied=0 / occupied=1)

**) Data byte 3 of EEP A5-10-06 is not specified in the EnOcean standard.*
thanos sends the value of the lowering temperature in this byte (e. g. night lowering).
Probably, the evaluation of this data is not supported by every receiver.

EnOcean Telegram A5-10-02

Telegram Type A5-10-11

EnOcean Byte	Information / Data
ORG	A5
Data byte 3	Setpoint adjustment: SHIFT ⇒ Lower threshold…Upper threshold = 0…255 ABS ⇒ 0…40,0°C (32,0…104,0°F) = 0…255
Data byte 2	Relative humidity 0 … 100% rH = 0 … 250
Data byte 1	Temperature 0 … 40°C = 0 … 250
Data byte 0	Bit 3 → Learn button (0=button pushed) Bit 0 → Room occupancy (unoccupied=0 / occupied=1)

EnOcean Telegram A5-10-11

Telegram Type D5-00-01

EnOcean Byte	Information / Data
ORG	D5
Data byte 3	Bit 3 → Learn button (0=button pushed) Bit 0 → Status of windows (open=0 / closed=1)

EnOcean Telegram D1-00-01

Among others, it is possible to connect EnOcean based window contacts/window handles and wired window contacts (via the digital inputs) to thanos.
All window contacts/window handles learned-in/connected are controlling the symbol “window open” in the display. Moreover, every status is collected and transmitted to other EnOcean based receivers via the above mentioned telegram.
Thus it is feasible to teach-in/connect a certain number of window contact/window handles to the thanos and to learn in the thanos with profile D5-00-01 to one receiver only.

Telegram Type A5-30-01

EnOcean Byte	Information / Daten
ORG	A5
Data byte 1	0…195 = Operation Mode „cooling“ 196…255 = Operation Mode „heating“
Data byte 0	Bit 3 → Learn button (0=button pushed)

EnOcean Telegram A5-30-01

Telegram Type F6-02-01

EnOcean Byte	Information / Data
ORG	F6
Data byte 3	80 dec (50 hex) → Press sensor key ON 112 dec (70 hex) → Sensor key OFF is pressed 0 dec (0 hex) → Sensor key released

EnOcean Telegram F6-02-01

All keys parameterized as light, blind, shutter and universal are transmitting telegrams in accordance with the profile F6-02-01.
For every function and each index (please see chapter 3.5) an own EnOcean ID is used.
The corresponding ID is assembled as follows:

Function Light “on/off”	→	thanos-Base-ID + 00 + channel
Digital Inputs	→	thanos-Base-ID + 10 + Dig.InputNumber-1
Function Dim Light “+/-“	→	thanos-Base-ID + 20 + channel
Function Scene	→	thanos-Base-ID + 30 + channel
Function Blind / Shutter	→	thanos-Base-ID + 40 + channel
Function Universal “up/down”	→	thanos-Base-ID + 50 + channel
Function Universal “on/off”	→	thanos-Base-ID + 60 + channel

Thus, it is obvious that if a function or index of a sensor key is changed, the ID will change as well. In case of an afterwards parameter change, the corresponding key function must be learned-in to the receiver again because the functions are saved by means of their IDs.
On the other hand it is no problem to take over a certain key function with index of the thanos to another key without having to teach the same in to the receiver again because function and index remain unchanged in this case.

5.2 Transmitting Intervals

thanos is sending radio telegrams to the receiver time- or event controlled. An overview of the transmitting intervals is provided in the following table:

Telegram type	Sending interval
A5-10-02	Adjusted sending interval & upon change of fan stage & upon change of set point & upon change of temperature >= 1,0K & upon change of room occupancy
A5-10-06	Adjusted sending interval & upon change of set point & upon change of temperature >= 1,0K & upon change of room occupancy
A5-10-11	Adjusted sending interval & upon change of relative humidity >= 2,0% & upon change of set point & upon change of temperature >= 1,0K & upon change of room occupancy
D5-00-01	Adjusted sending interval & upon change of status
A5-30-01	Adjusted sending interval & upon change of status
F6-02-01	Upon button actuation / state change

Sending intervals

5.3 EnOcean Devices for Seamlessly Connection (Learning-in)

It is possible to teach-in different EnOcean based sensors to the thanos. Sensors learned-in can be used to display measuring values (e.g. CO2, outdoor temperature….) or to fade in/out message texts in the display.

The following table provides an overview which EnOcean based sensors can be learned-in and which functions can be realized.

Profile	Device Type	Thermokon Device	Function
A5-10-01 … A5-10-0D	Room sensor Temperature	SR04 … / SR06 …. / SR07 …	Display of temperature, temperature for valve actuator
A5-10-10 … A5-10-14	Room sensor Temp. & humidity	SR04 rH …	Display of temperature and humidity, temperature for valve actuator
A5-02-01 … A5-02-1B	Outdoor sensor Temperature	SR65 …	Display of temperature
A5-09-04	Room sensor Temp., CO2, humidity	SR04 CO2 …	Display of temperature, CO2 and humidity, temperature for valve actuator
D5-00-01 & F6-10-00	Window contact & window handle	SRW01 & SRG01	Display of window symbol and forwarding to other EnOcean based receivers
F6-04-01	Key-card activated switch	KCS …	Switching-over room occupancy
A5-08-01	Motion sensor	SR-MDS	Room occupancy after-running time & display of light intensity
A5-30-01	Digital input module	SR65 DI	Fading-in of message texts and graphics
A5-20-01	Valve Actuator	SAB0x	Valve Actuator

Overview of sensors to be learned-in

5.4 Superior Control Unit

thanos SR (from firmware „Operating Unit 1.9.0“ / „Net Unit 1.5.0“ or higher) disposes of several registers which can be read and written via the EnOcean RF protocol. Via these registers it is possible to write/read certain settings/values and to access thanos via a superior control unit.

5.4.1 Telegram Layout

Communication between thanos and the superior control unit is made bidirectional. In order to set up a communication path between both devices, the superior control unit must be teached to thanos and thanos must be learned-in to the superior control unit.
Therefore, please proceed as follows:

1. Set thanos sensor channel #20 into learning mode (the superior control unit can be learned-in to channel #20 only).
2. Send the following telegram from the superior control unit via a suitable EnOcean based gateway:
ORG=0xA5 Data Byte3=0xFF Data Byte2=0xF8 Data Byte1=0x?? Data Byte0=0x80
(EEP 07-3F-7F)

This is a special learning telegram by which thanos directly recognizes that the telegram was sent by a superior control unit. After receipt of this learning telegram thanos retransmits the following telegram under its EnOcean-ID within 2 seconds. Thereby, the superior control unit can teach in thanos as well.
ORG=0xA5 DataByte3=0xFF DataByte2=0xF8 DataByte1=0x02 (Manufacturer ID) DataByte0=0x80
(EEP 07-3F-7F, Manufacturer ID 0x02 = Thermokon)

As soon as the communication patch is built up, registers can be written and read.

Write:

Write instruction

ORG:	0xA5
Data byte3	value HIGH-Byte
Data byte2	value LOW-Byte
Data byte1	Register address
Data byte0	0x08

done

Read:

Read request

ORG:	0xA5
Data byte3:	*not relevant*
Data byte2:	*not relevant*
Data byte1:	Register address
Data byte0:	0x09

response of thanos (within 2s)

ORG:	0x07
Data byte3:	value HIGH-Byte of register read out
Data byte2:	value LOW-Byte of register read out
Data byte1:	address of register read out
Data byte0:	*not relevant*

ready

5.4.2 Register Overview

Register	Description	Value Range	
General			
0x00	Temperature	0…40°C	0…250
0x01	Relative humidity	0…100%rH	0…250
0x02	Time „hours“	0…23 hours	0…23
0x03	Time „minutes“	0…59 minutes	0…59
0x04	Time „seconds“	0…59 seconds	0…59
0x05	Date „Day“	1…31 days	1…31
0x06	Date „Month“	1…12 months	1…12
0x07	Date „Year“	2000…2099 year	0…99
Display			
0x10	Standard activate brightness	Inactive / active	0 / 1
0x11	Show symbol „failure“	Inactive / active	0 / 1
0x12	Show symbol „window“	Inactive / active	0 / 1
0x13	Show symbol „heating“	Inactive / active	0 / 1
0x14	Show symbol „cooling“	Inactive / active	0 / 1
0x15	Show symbol „dew point“	Inactive / active	0 / 1
0x16	Show symbol „ECO“ / „Leaf“	Inactive Green Light green Yellow Orange Red	0 1 2 3 4 5

Text Messages			
0x20	Message activate text 1…8	No message text, Message text 1…8	0, 1…8
0x21	Activate graphic Topimg01.bmp…topimg08.bmp	No graphic, topimg01.bmp…topimg08.bmp	0, 1…8
Room Occupancy			
0x30	Room occupancy	Unoccupied / occupied	0 / 1
0x31	Lock change of room occupancy	Not locked / locked	0 / 1
Operation Mode			
0x35	Operation Mode	Off Heating Cooling Heating / Cooling (automatic) Fan Dehumidify	0 1 2 3 4 5
Fan Stage			
0x40	Fan stage	Stage 0…3 (manual) Stage 0…3 (automatic)	0…3 4…7
0x41	Lock change of fan stage	Not locked / locked	0 / 1
Set Points			
0x50	Base set point/effective set point 1 *)	-3000,0…3000,0	0…60000
0x51	Base set point/effective set point 2 *)	-3000,0…3000,0	0…60000
0x52	Base set point/effective set point 3 *)	-3000,0…3000,0	0…60000

0x53	Base set point/effective set point 4 *)	-3000,0…3000,0	0…60000
0x54	Base set point/effective set point 5 *)	-3000,0…3000,0	0…60000
0x55	Set point adjustment 1	-3000,0…3000,0	0…60000
0x56	Set point adjustment 2	-3000,0…3000,0	0…60000
0x57	Set point adjustment 3	-3000,0…3000,0	0…60000
0x58	Set point adjustment 4	-3000,0…3000,0	0…60000
0x59	Set point adjustment 5	-3000,0…3000,0	0…60000

**)*
During writing the base set point is written.
During reading the effective set point (base set point + set point adjustment) is read out.

Example – activate symbol „dew point“ :
ORG=0xA5 Data Byte3=0x00 Data Byte2=0x01 Data Byte1=0x15 Data Byte0=0x08

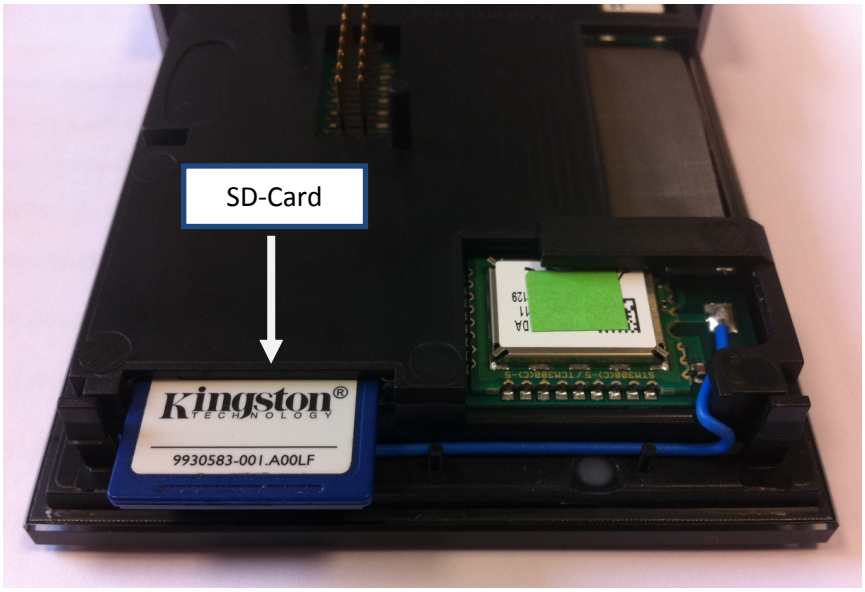
Example – read out relative humidity (measuring value 44%rF):
Inquiry by superior control unit:
ORG=0xA5 Data Byte3=0x00 Data Byte2=0x00 Data Byte1=0x01 Data Byte0=0x09
Response of thanos:
ORG=0xA5 Data Byte3=0x00 Data Byte2=0x6E Data Byte1=0x01 Data Byte0=0xXX

6 Parameterization

6.1 Parameterization via SD Card

In order to parameterize the thanos, please proceed as follows:

- Install the configuration software to your PC and open it.
  Configuration software for Windows XP, Windows Vista, Windows 7 (32-Bit):
  http://www.thermokon.de/ftp/thanos/thanos_mb_eo_csw_update.zip
  Configuration software for Windows XP, Windows Vista, Windows 7 (64-Bit):
  http://www.thermokon.de/ftp/thanos/thanos_mb_eo_csw_64-bit_update.zip
- Settings/parameterization shall be made according to your needs by means of the following description.
- Save the parameterization on the SD card (format with FAT16 or FAT32 data system) under the file name thanos.xml in the main directory.
- Connect thanos according to the terminal connection plan in the product data sheet and remove the operating unit.
- Insert the SD card with the saved parameterization file thanos.xml in the operating unit as shown below.

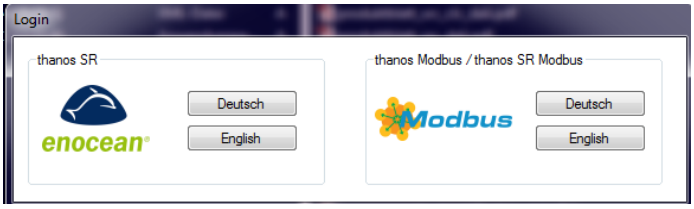


Insert of SD card in the thanos operating unit

- Mount the operating unit again to the wall section and follow the instructions in the the thanos display.
- After the parameterization is finished, the SD-card can be removed again from the thanos.

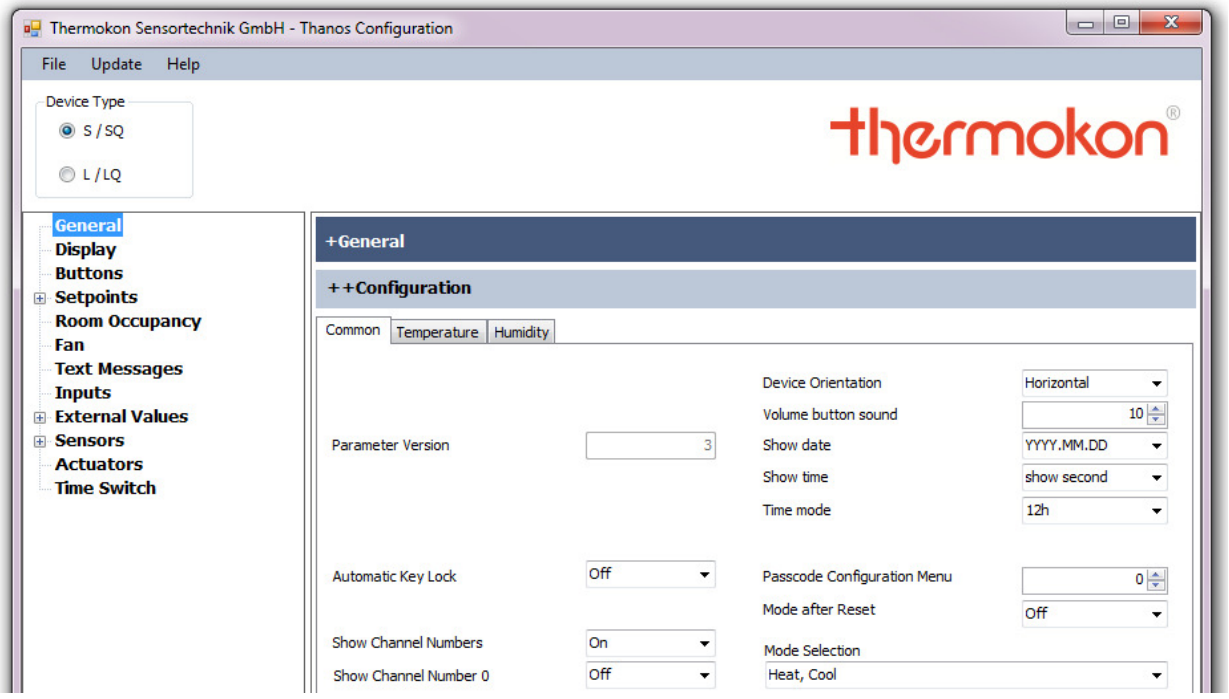
7 Configuration Software

After having started the program, a start screen is appearing first. Select the device type „thanos SR“ by pressing the language button.



Startscreen

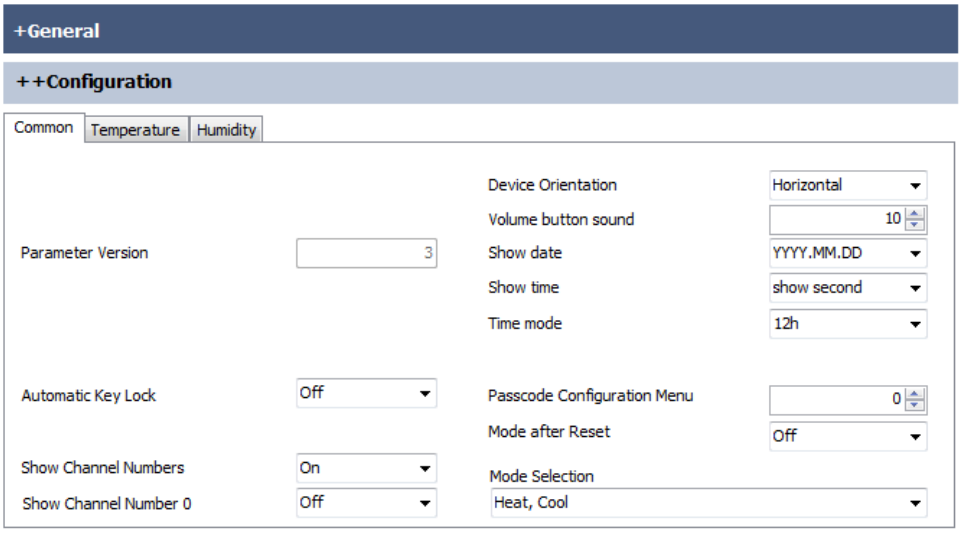
Afterwards, the configuration surface is opened via which the thanos can be parameterized.



Configuration surface

7.1 General

7.1.1 General



Automatic Key Lock:
Via these parameters it can be selected whether the thanos is in the standby or dimmed mode. First, the clip must be touched before the other keys react. The clip is designed as a kind of wake-up key.

Show Channel Number:
In order to distinguish the individual functions and to enable a clear and easy operation of the thanos channels can be allocated to the different functions (e.g. light 1, light 2, …). By means of the parameter “Show Channel Numbers” the indication of the channels in the display can be switched on or off.

Show Channel Number 0:
Via „Show Channel Number 0„ it is adjusted if an Index shall also be displayed if the same is < 1.

Device Orientation:
Via this parameter the device orientation can be selected (vertical / horizontal).

Key press Volume:
Via this parameter the intensity of the key sound volume can be adjusted (0…100).

Show Calendar Date:
Via this parameter it can be selected if and how the date shall be indicated in the display (fade out, JJJJ/MM/DD, DD/MM/JJJJ or MM/DD/JJJJ).

Show Time of Day:
Via this parameter it can be selected if and how the time shall be displayed (fade in, without seconds/with seconds).

Time Mode:
Via this parameter the time mode can be selected (12h or 24h mode).

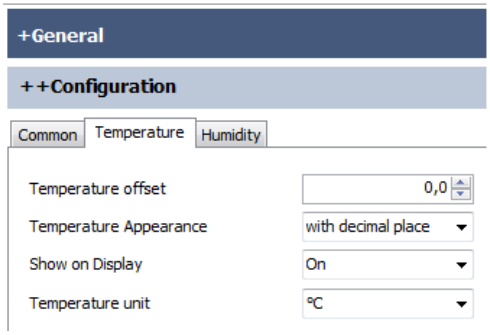
Passcode Configuration Menu:
Via this parameter the passcode for the configuration menu can be set.

Mode after Reset:
On thanos different operating modes can be set (heat, cool, dehumidify, ...). This parameter determines which mode is after power up reset.

Mode Selection:
This parameter defines the choice of available operation modes.

Please note that the "heating and cooling", "air", "dehumidifying" only works if a superior control unit is used. For the "stand-alone" operation - for example, heating/cooling change over with the Thermokon STC DO8 - this parameter should be set to "heating, cooling".

7.1.2 Temperature



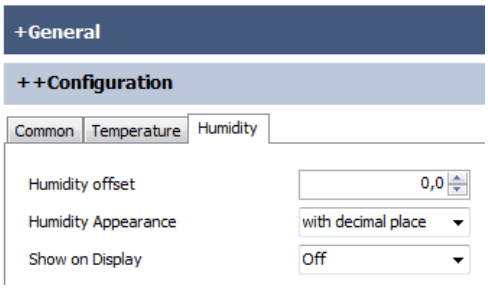
Temperature Offset:
Setting of temperature offset

Temperature Appearance:
Selection if the temperature value shall be displayed with or without a tenth part.

Show on Display:
It is stipulated, if the temperature shall be displayed in the standard screen.
If the display is activated, temperature is shown in succession with e.g. the external values or the set point is shown in the so-called standard screen. The succession interval is set via the parameter “Updating interval” (chapter 3.3).

Unit of Temperature:
Setting of temperature unit (°C or °F).

7.1.1 Humidity

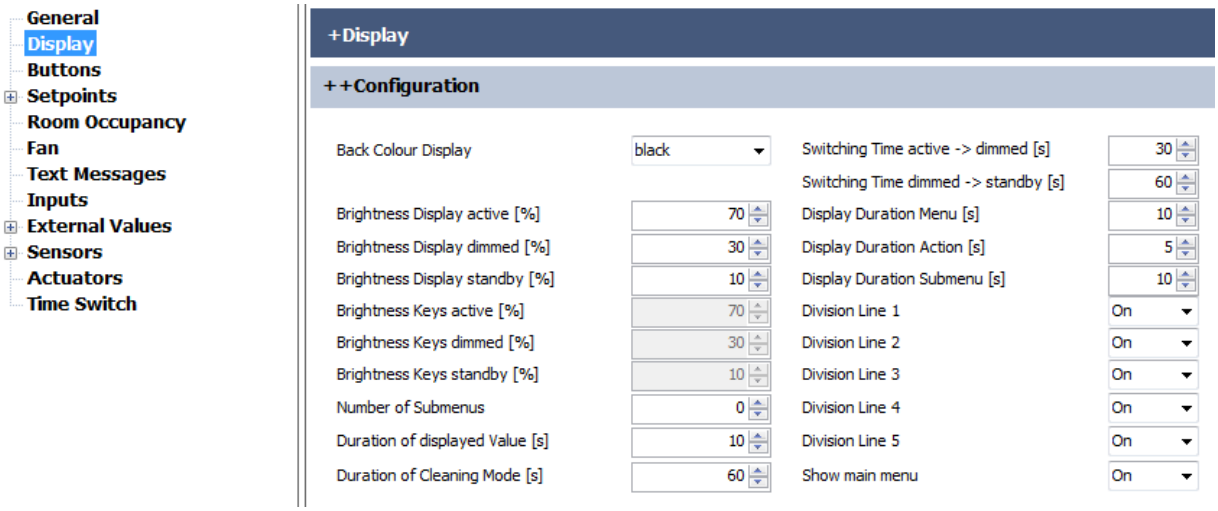


Humidity Offset:
Setting of humidity offset

Humidity Appearance:
Selection if the humidity value shall be displayed with or without a tenth figure.

Show on Display:
It is stipulated, if the humidity shall be displayed in the standard screen.
If the display is activated, humidity is shown in succession with e.g. the external values or the set point is shown in the so-called standard screen. The succession interval is set via the parameter “Updating interval” (chapter 3.3).

7.2 Display



Back Colour Display:
Selection of display background color (black /white).

Brightness Display ACTIVE [%]:
Setting of display brightness in ACTIVE operation.

Brightness Display DIMMED [%]:
Setting of display brightness in DIMMED operation.

Brightness LCD STANDBY [%]:
Setting of display brightness in STANDBY.

Brightness Touch Keys ACTIVE [%]:
Setting of key area brightness in ACTIVE operation.

Brightness Touch Keys DIMMED [%]:
Setting of key area brightness in DIMMED operation.

Brightness Touch Keys STANDBY [%]:
Setting of key area brightness in STANDBY operation.

Duration of displayed Values [s]:
Setting of time intervals in which the different values like temperature, humidity and external values shall be displayed.

Duration of Cleaning Mode [s]:
By touching the capacitive clip for >10 seconds, the thanos can be set in a cleaning mode.
During the cleaning mode the sensor keys are not interpreted so that the device can be cleaned without triggering an undesired action. By means of the parameter “Time Cleaning Function” the time of the clearing period can be adjusted.

Switching Time ACTIVE -> DIMMED [s]:
Setting of the time after which the device shall switch from the ACTIVE operation to the DIMMED operation in case no key is actuated.

Switch DIMMED -> STANDBY [s]:
Setting of the time after which the device shall switch from the DIMMED operation to the STANDBY operation in case no key is actuated.

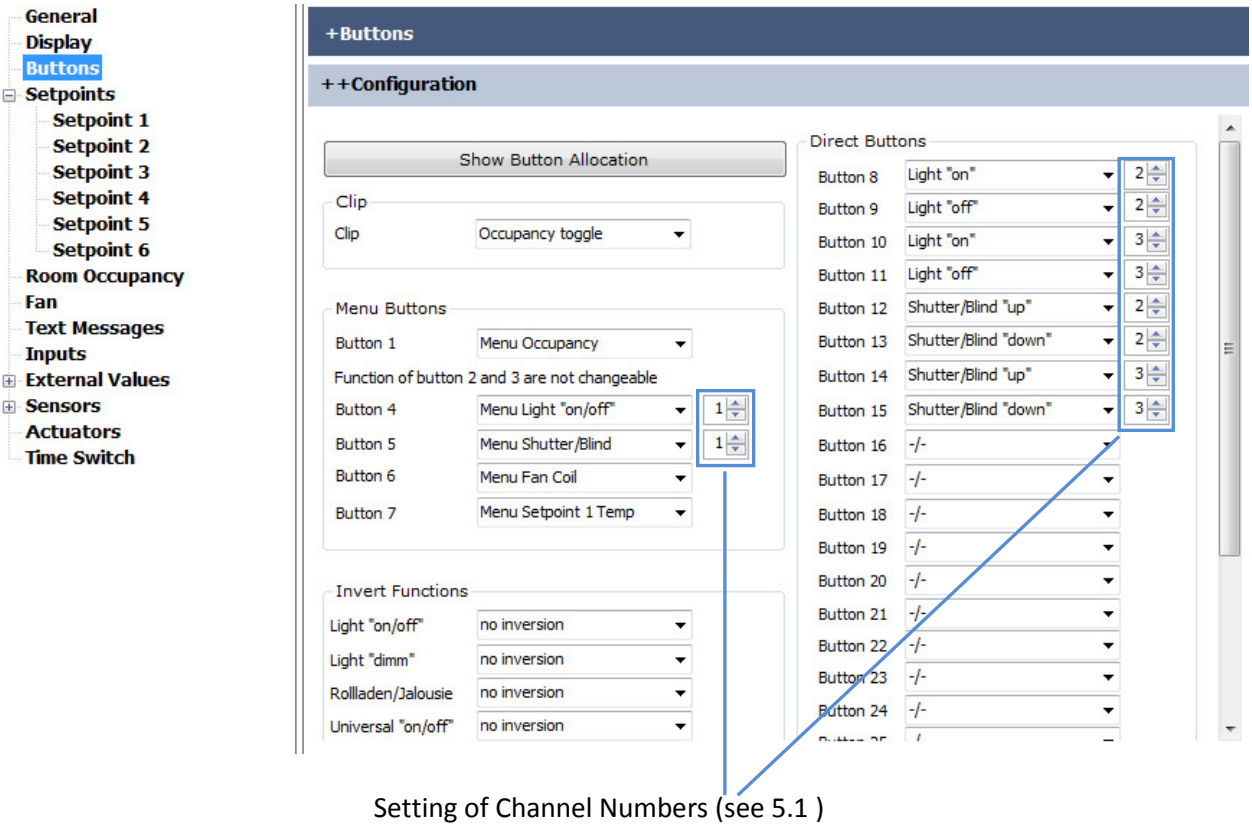
Display Duration Menu [s]:
Setting of the time how long a called menu point shall be displayed before the device is reset to the standard screen (temperature, humidity, external values…).

Display Duration Action [s]:
Setting of the time how long a called function (e.g. light ON) shall be displayed before the device is reset to the standard screen (temperature, humidity, external values…).

Division Line 1 … 5:
Via this parameter it is determined which dividing lines shall be shown in the display.

7.3 Buttons

In the configuration field „Buttons“ the functions of the sensor keys and the capacitive clip of the thanos are set.



Setting of Channel Numbers (see 5.1)

Invert Functions:

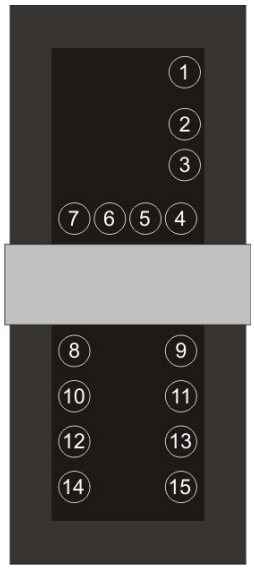
By this parameter you can select wether the transmitted EnOcean switch telegrams (EEP F6-02-01) should be send inverted or not inverted by the thanos.

Example → not inverted: Light ON pressed -> thanos sends 80 / 64
Light OFF pressed -> thanos sends 112 / 96

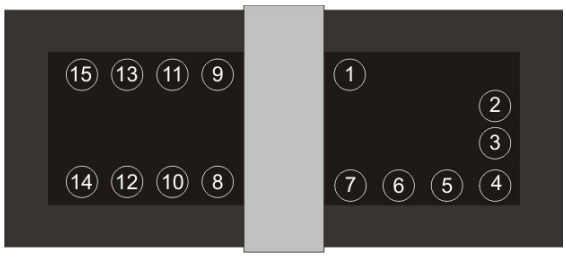
Example → inverted: Light ON pressed -> thanos sends 112 / 96
Light OFF pressed -> thanos sends 80 / 64

7.3.1 **Assignment of Keys**

Following the key assignment and key numbering is shown:



Key assignment thanos SR L



Key assignment thanos SR LQ

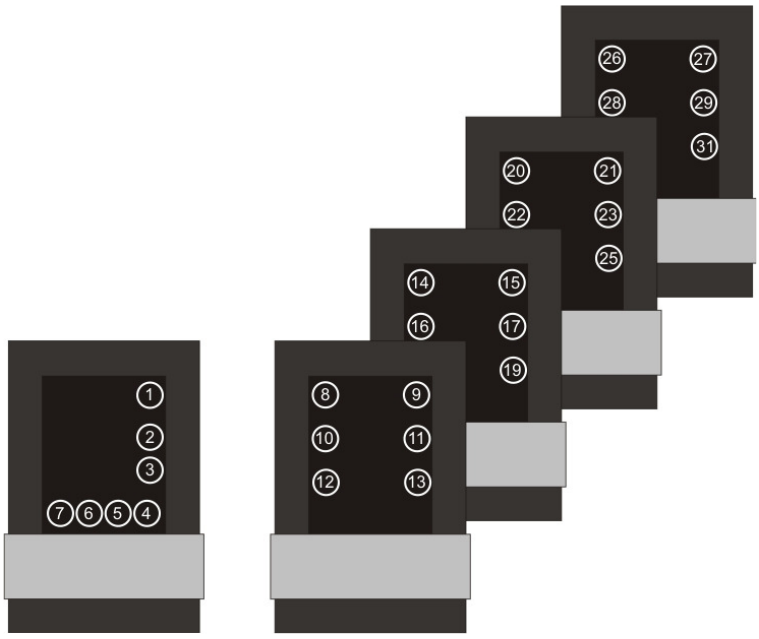
Instead of the lower direct buttons, which are only available on thanos L / LQ, on thanos S / SQ up to 4 submenus can be configured.
Up to 6 configurable buttons for each submenu can be configured with the functions given below:

- Light on / off
- Light dimming + / -
- Light toggle
- Shutter / Blind up / down
- Universal on / off
- Universal up / down
- Universal toggle
- Occupancy toggle
- Scene

To switch to the submenu, one of the buttons 1, 4…7 has to be configured as „sebmenu right“.

The buttons in the submenus are numbered consecutively (8 ... 31).

In addition, the number of submenus must be set via the parameter "number of sub-menus" (range 0 ... 4).



Buttons thanos S

Buttons thanos SQ

7.3.2 **Menu Keys**

Menu Set Point 1…6 Temp:
A sensor key with this configuration polls the setting menu for the set point 1 – a temperature symbol is displayed.
In this menu point the set point can be adjusted by the user according to chapter 3.4

Menu Set Point 1…6 Humidity:
A sensor key with this configuration polls the setting menu for the set point 1 – a humidity symbol is displayed.
In this menu point the set point can be adjusted by the user according to chapter 3.4

Menu Set Point 1…6 Value:
A sensor key with this configuration polls the setting menu for the set point 1 – an universal symbol (rectangular triangle) is displayed.
In this menu point the set point can be adjusted by the user according to chapter 3.4

Menu Fan Coil:
A sensor key with this configuration polls the setting menu for the fan stages.
In this menu point the fan stage can be adjusted by the user according to chapter 3.5 .

Menu Light “on/off”:
A sensor key with this configuration polls the setting menu for the function light on/off

Menu Light “dimming”:
A sensor key with this configuration polls the setting menu for the function dim light.

Menu Shutter/Blind:
A sensor key with this configuration polls the setting menu for the function blind/shutter.

Menu Universal “on/off”:
A sensor key with this configuration polls the setting menu for the function Universal “on/off”.

Menu Universal “up/down”:
A sensor key with this configuration polls the setting menu for the function Universal “up/down”.

Menu Scene:
A sensor key with this configuration polls the setting menu for the function Scene.

Menu Occupancy:
A sensor key with this configuration polls the setting menu for the function room occupancy. In the presence menu it can be selected between occupied and unoccupied.

Menu Submenu right:
A sensor key with this configuration calls the first submenu of thanos S / SQ.

Menu Operation Mode:
A sensor key with this configuration polls the setting menu for the Operation Mode.

7.3.3 Key Area & Capacitive Clip

Light On:
A sensor key with this configuration triggers a “light on” action.

Light Off:
A sensor key with this configuration triggers a “light off” action.

Blind Up:
A sensor key with this configuration triggers a “blind up” action.

Blind down:
A sensor key with this configuration triggers a “blind down” action.

Universal On:
A sensor key with this configuration triggers a “universal on” action.

Universal Off:
A sensor key with this configuration triggers a “universal off” action.

Light Toggle:
A sensor key with this configuration triggers a “ light toggle/reversal of light status” action.

Universal Toggle:
A sensor key with this configuration triggers a “universal toggle/reversal of universal status” action

Occupancy toggle:
A sensor key with this configuration triggers a reverse of the room occupancy status.

Light dimming +:
A sensor key with this configuration triggers a “light dim +” action.

Light dimming -:
A sensor key with this configuration triggers a “light dim -” action.

Universal up:
A sensor key with this configuration triggers a “universal up” action.

Universal down:
A sensor key with this configuration triggers a “universal down” action.

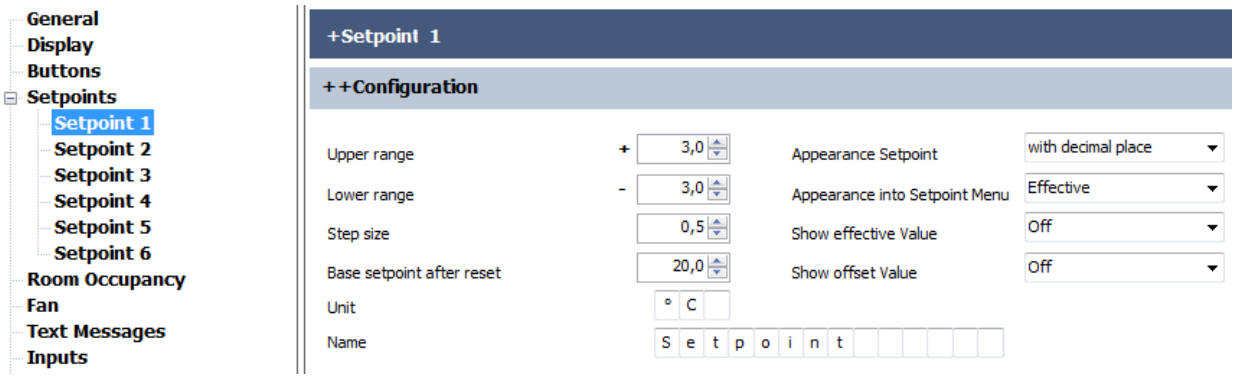
Scene:
A sensor key with this configuration triggers a “Scene” action.

Notice

It is of paramount importance that the sensor keys which are assigned with the same function type (e.g. 2 or more light channels) are having different index via the configuration software, because otherwise the channels would have the same ID and no distinction could be made by the receiver.

7.4 Set Point

In total there are 6 set points which can be parameterized via the menu points 1…6.



Upper Range:
Via this parameter it is determined up to which upper adjustment value the set basic set point can be changed by the user.

Lower Range:
Via this parameter it is determined up to which lower adjustment value the set basic set point can be changed by the user.

Step Size:
This parameter stipulates in which steps the set point is changed by the operating keys.

Base Setpoint after Reset:
Via this parameter the base set point is determined.

Unit:
Via the parameter „Unit“ 3 ASCII signs can be stipulated which are shown at the display as a value unit at the right side above the set point.

Name:
Via the parameter „Description“ 14 ASCII signs can be determined which are shown at the display as a value description at the left side below the set point.
Appearance Setpoint:
This parameter stipulates if the set point is displayed with or without a tenth part.

Appearance into Setpoint Menu:
Via this parameter it is determined if the effective set point (basis set point +/- set point adjustment) or the offset (set point adjustment) shall be displayed.

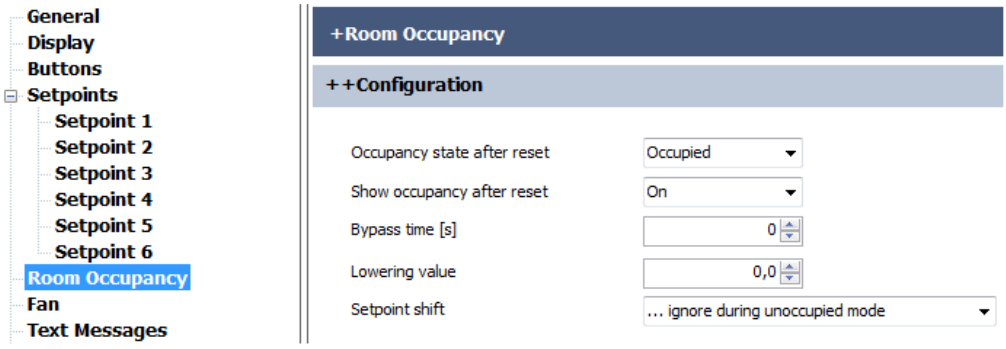
Show Effective Value on Display:
It is stipulated if the effective set point shall be displayed in the standard screen.

If the display is activated the corresponding value is displayed in succession with the temperature/humidity value in the so called standard screen. The succession interval is set via the parameter “Updating Interval” (chapter 3.3).

Show Offset Value on Display:
It is stipulated if the offset value shall be displayed in the standard screen.
If the display is activated the corresponding value is displayed in succession with the temperature/humidity value in the so-called standard screen. The succession interval is set via the parameter “Updating Interval” (chapter 3.3).

7.5 Occupancy

Via the properties in the menu „Occupancy“ the behaviour of the room occupancy is determined.



Occupancy after Reset:
Via this property it is determined in which occupancy mode the thanos shall be after a device reset.

Show Occupancy after Reset:
This property stipulates, if the symbols of the room occupancy status shall be displayed immediately after a reset or only after the status has changed and thus a defined status is given.

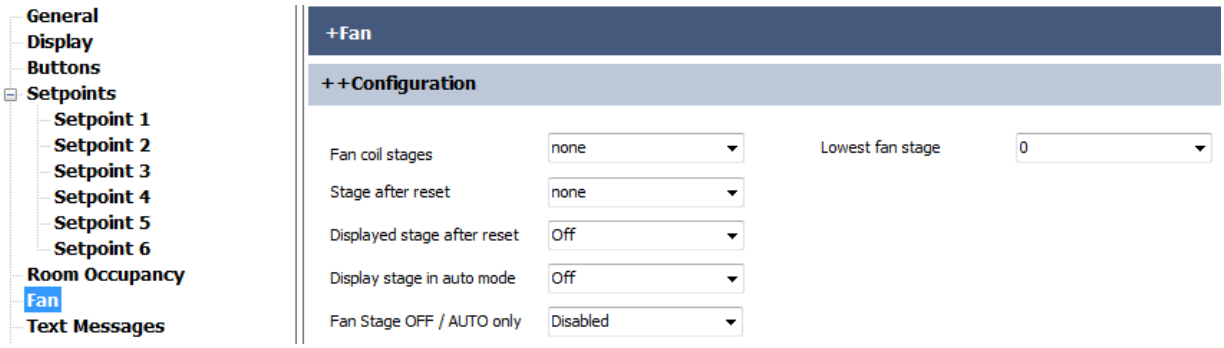
Occupancy Delay Time [s] (Party Time):
A value greater 0 for this property results in the fact, that thanos is going back automatically in the mode “unoccupied” after x seconds after having switched over in the “occupied” mode.

Lowering Value:
By this parameter the setpoints 1…6 will be reduced, if the thanos is in unoccupied mode.

Setpoint shift:
By this parameter you set if the setpoint shift is ignored or not ignored during the unoccupied mode Thermokon receivers normally need the “…ignore during unoccupied mode” setting.

7.6 Fan Stages

Via the properties in the menu „fan stages“ the behaviour of the fan functions is stipulated.



Number of Fan Coil Stages:
This property determines the number of fan stages.

Stage after Reset:
Via this value it is determined which fan stage shall be pre-adjusted after a device reset.

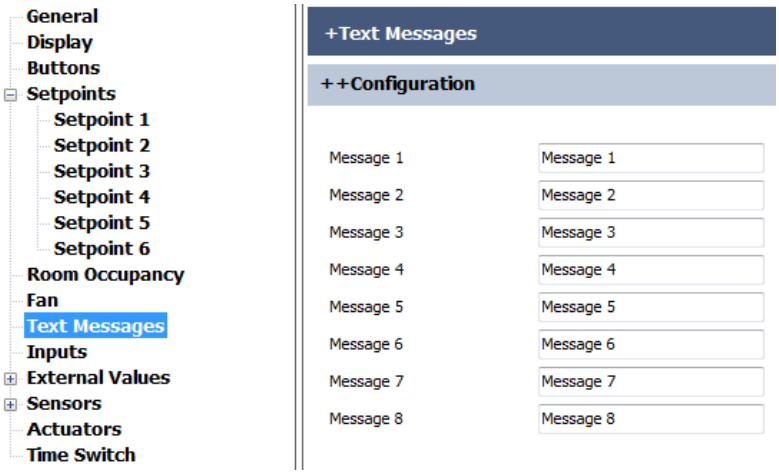
Display Icon Fan Stage after Reset:
This property stipulates if the fan stages shall be immediately displayed in the status line after a device reset or only after adjusting of the fan stage.

Display Stage in Automatic:
This property determines if the AUTO Mode „Fan AUTO & Fan Stage 1…3“ or only „Fan AUTO“ is displayed in the status line of the fan.

Only OFF/ AUTO toggling:
If this parameter is activated the user can toggle between fan ON and fan AUTO.

Lowest Fan Stage:
This parameter defines the lowest available fan stage.

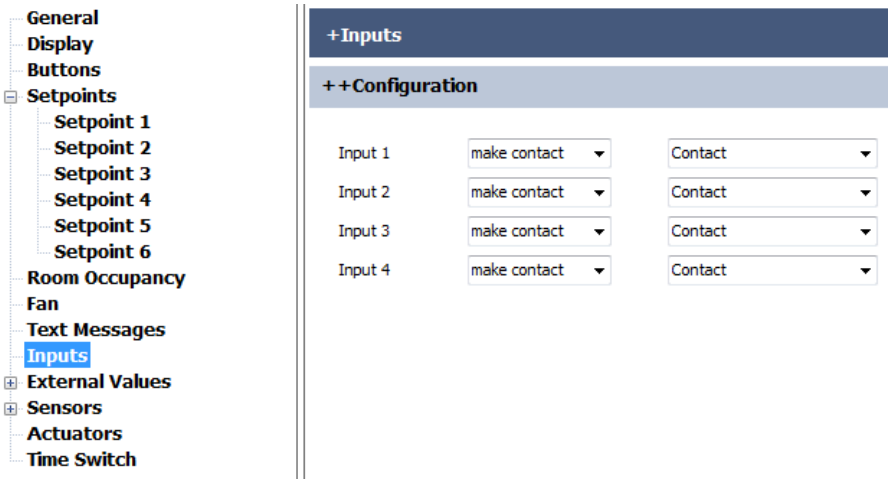
7.7 Text Messages



Message 1…8:
It is possible to save up to 8 message texts in the thanos which can be faded in/out via a SR65 DI or via the digital inputs at the thanos.

7.8 Inputs

Via the configuration point „Inputs“ up to 4 digital inputs of the thanos can be parameterized. The following selection is possible:



Icon Dewpoint:
Display of dew point symbol in status line.

Icon Window:
Display of a symbol „window opened“ in the status line. Moreover the status of the window contact is transmitted via the EEP D5-00-01 profile of thanos via the EnOcean protocol and can thus also be received by other EnOcean based devices.

Icon Failure:
Display of alarm/failure symbol in status line.

Occupancy:
Change of room occupancy status

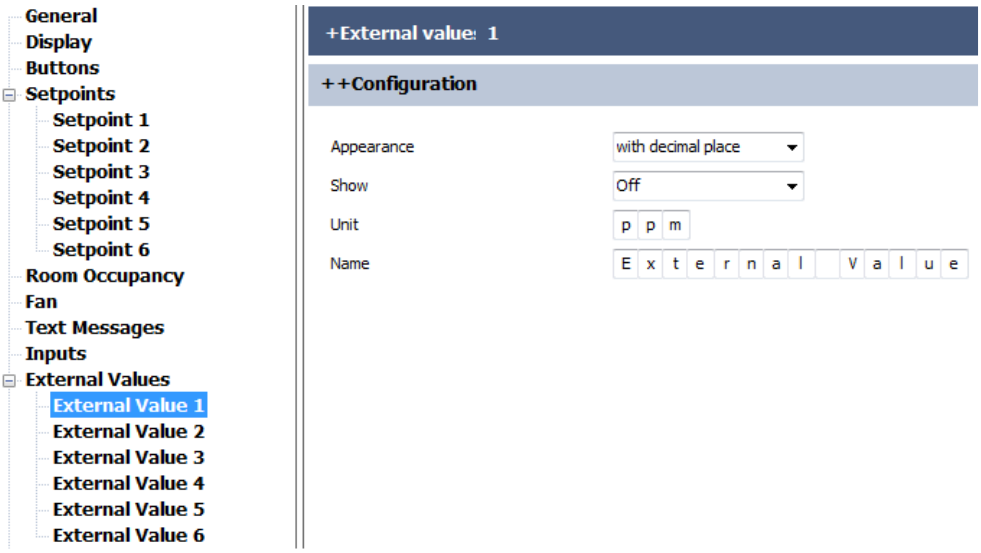
Show Message:
Fading-in of text message no. 1 (chapter 7.4)

topimg01.bmp … topimg08.bmp
Fading-in SD card graphics topimg01.bmp … topimg08.bmp.

Enable Controller 1 … 6
Mode Controller 1 … 6
Pulse Counter, Edge Counter
Time
Reset Offset Set Point 1 … 6
Reserved for future device variants – no function at the moment

7.9 External Values

External values can be used to display measuring values of EnOcean sensors which are learned-in to thanos.



Appearance:
Selection if the external values shall be displayed with our without a thenth figure.

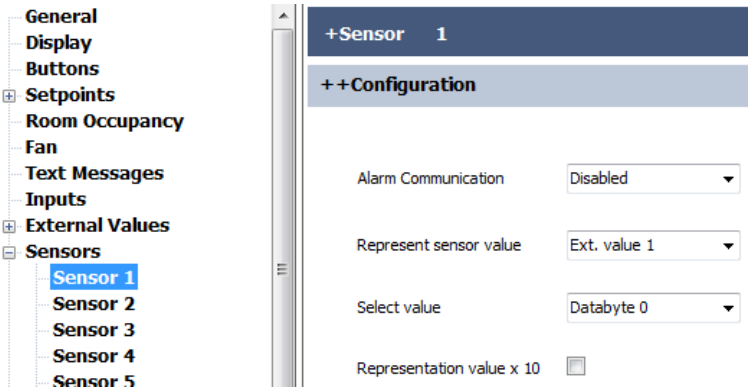
Show Value on Display:
Activation/Deactivation of external value indication in the display. If the indication is activated, the corresponding value is shown in the so-called standard screen in succession with temperature/humidity value. The succession interval is set via the property “updating interval” (chapter 3.3.)

Unit:
Via the property „unit“ 3 ASCII characters can be set which shall be shown in the display as a value unit at the right side above the external value.

Description:
Via the property „description“ 14 ASCII signs can be set which shall be shown in the display as value units at the left side below the external value.

7.10 Sensors

7.10.1 EnOcean Sensor 1 … 20



In total the thanos disposes of 20 sensor storage places in which any EnOcean sensors can be learned-in (see chapter 1.2.5.). Via the following configuration it can be determined, how the learned-in sensors shall be used/processed.

Select Value:
Property for selection of a display mode of a sensor which is learned-in at the selected memory location.
Options for selection:
Show sensor data as external value (1…6) or fading-in of a message text (1…8) (only for EnOcean sensors of type A5-30-01 / digital input module).

Represent Sensor Value:
Property for selection which data of the sensor selected shall be indicated.
Options for selection:
Data byte 0 … 3 → The corresponding data byte is directly shown as a value – no interpretation of data.
Temperature* → The temperature value of the corresponding sensor is shown at the display.
Humidity* → The humidity value of the corresponding sensor is shown at the display.
CO2* → The CO2 value of the corresponding sensor is indicated in the display.
LUX* → The brightness intensity of the display is indicated in the display.
*) Therefore it is necessary, that the sensor supports the supply of the corresponding measuring values.

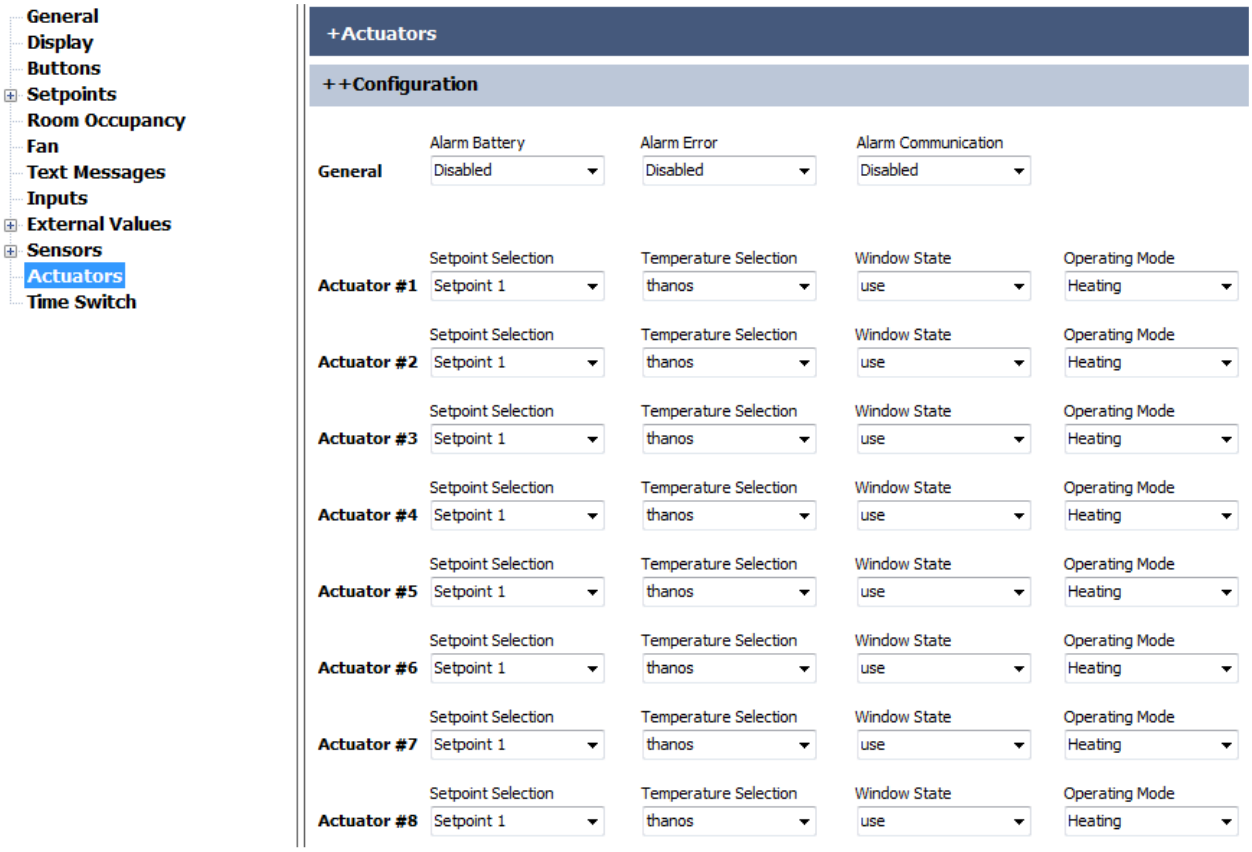
Representation Value x 10:
This property can be used for indication of the raw/non-interpreted data (data byte 0 … 3).
A non-interpreted value of e.g. 100 is normal shown in the display as 10,0.
If the property “x10” is activated, the value is shown in the display as 100,0 respectively 100 (depending on the selected resolution of the external value).
For display of interpreted values such as temperature, humidity, CO2 and LUX this property has no affect.

7.11 Actuators

Via the integrated Message-Server, the communication to EnOcean based valve actuators is feasible (e.g. Thermokon SAB0x).

Function:
The integrated Message-Service is designed as an interface between the EnOcean valve actuator (EEP A5-20-01) and common EnOcean based temperature sensors. The sensors are transmitting time/event controlled values to thanos. To achieve a long lifetime of the actuator's battery, the actuator is placed in an energy-saving mode (sleep mode) and is waking-up in a certain time intervals (Wake-UP time). If the valve actuators "wakes-up", it sends a request telegram to thanos.
Afterwards, thanos transmits (within 0.5 s) the room temperature and the set point to the valve actuator. Then, the valve actuator starts the new valve position and falls back into the sleep-mode again.

In the menu point „Actuators“ the parameters for the operation of thanos in connection with the EnOcean based valve actuators (EEP A5-20-01, e.g. SAB02) are set.



General Information

Signal tone battery status:
If an EnOcean based valve actuator transmits the information that its batteries are almost empty, it can be adjusted via this parameter if thanos shall output a signal tone.

Signal tone error message:
If an EnOcean based valve actuator transmits the information that an error occurred, in can be adjusted via this parameter if thanos shall output a signal tone.

Signal tone communication lost:
If for a period of >90 minutes no communication to the EnOcean based valve actuator is possible, it can be adjusted via this parameter if thanos shall output a signal tone.

Actuator #...

Selection of set point:
Via this parameter it is determined which set point shall be used for the corresponding EnOcean based valve actuator (set point 1…6).

Selection of temperature:
Via this parameter it is determined which temperature shall be transmitted to the corresponding actuator.

thanos:	The temperature measured by thanos is transmitted.
Sensor 1…20:	The temperature measured by sensor x is transmitted. You have to make sure that a valid temperature sensor is learned-in/stored in the respective sensor storage location (see chapters 2.3).

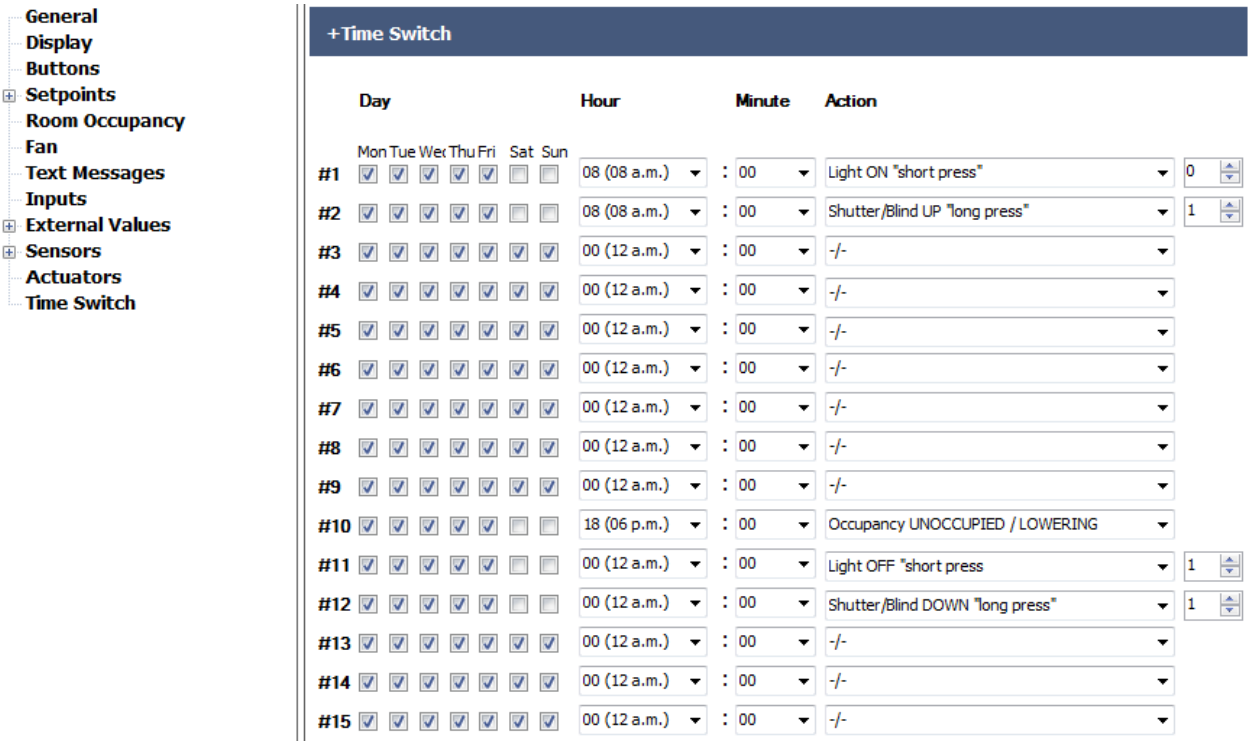
Selection of window mode:
Via this parameter it is determined if the status of the window sensors learned-in to thanos shall be considered in the controller of the corresponding EnOcean based valve actuator. If this function is used, please make sure that at least one EnOcean based window contact/window handle is seamlessly connected to thanos.

Operating mode:
Via this parameter it is determined if the valve actuator shall work in the heating or cooling mode.

7.12 Timeswitch

By the built-in timeswitch the thanos can trigger predefined actions. Up to 15 switching points (day of the week, time, and action) can be set.

About the configuration menu of thanos (button 1 & 7 press for about 3 seconds) the timeswitch can be enabled, disabled, or set to holiday mode. In holiday mode only shutter/blind functions are enabled. In addition, these functions run randomly to 1 ... 30 minutes offset from the actual switching point, to realize an occupancy simulation.



8 Graphics

In thanos display user-defined graphics can be displayed.
The graphics must be located in the root directory of the SD card inserted in the thanos.

8.1 Graphics in Top Area of the Display

The displaying of graphics in the upper display area (eg, warnings, general information and notes, ...) can be done by the digital inputs or via superior control unit.

Graphic Specifications:

Resolution:	175 x 50 Pixel
Colour depth:	24 Bit
File Format:	BMP Windows Bitmap
Valid file names:	topimg01.bmp, topimg02.bmp, topimg03.bmp, topimg04.bmp, topimg05.bmp, topimg06.bmp, topimg07.bmp, topimg08.bmp *(Sequential numbering with no gaps required!)*

8.2 Screen Saver

If a "backimg.bmp" file is located in the root directory of the SD card, the corresponding image will be displayed (full screen) when the display switches to “Standby”-mode.

Graphic Specifications:

Resolution:	240 x 320 Pixel
Colour depth:	24 Bit
File format:	BMP Windows Bitmap
Valid file names:	backimg.bmp

8.3 Logo in upper Display Area

If a "toplogo.bmp" file is located in the root directory of the SD card, the corresponding image will be displayed in the top area of the display (eg. company logo, hotel name, room number, …).
Please note: If “toplogo.bmp” will be displayed, time/date (on thanos LQ/SQ even text messages) will be disabled.

Resolution:	175 x 50 Pixel
Colour depth:	24 Bit
File format:	BMP Windows Bitmap
Valid file names:	toplogo.bmp

9 Update Firmware

To update the thanos firmware, please proceed as follows:

1. Please check if a firmware update of your thanos is feasible at all.
   Therefore, please restart the device.
   During the start procedure the version numbers of the individual software modules are listed in the display.
   A firmware update is only possible if the following is shown in the first line:
   „Bootloader: Version 1.0.0“ (or higher version number)

thanos Start Screen
Operating Unit 1.x.x

thanos Start Screen
Operating Unit 2.x.x

2. Format an SD memory card (FAT16 or FAT32 file system).

3. Please download the ZIP-archive of the latest firmware from the Thermokon homepage.
   Unpack the ZIP file and copy all the files to the main directory of the SD card.

   Download-Link:

   thanos Modbus:
   http://www.thermokon.de/ftp/thanos/thanos_eo_fw_update.zip

4. Remove the thanos operating unit from the wall part and put the SD-card to the operating unit as shown below.

5. Assemble the operating unit to the wall part again. Now, thanos scans automatically for an update on the SD-card and installs the same automatically.

6. After the firmware has been loaded, following message will be displayed:

Loading Firmware … finished!

In order to check if the update procedure is completed successfully, please look at the version number which is indicated in the display during the following start process.

7. Ready – SD-card can be removed again.

Note:

- The thanos parameter settings are retained even after the firmware update.
- Always use the latest version of the configuration software to ensure error-free operation.
- After the actual firmware a *readme* file is lying in the ZIP archive containing further information for the update. It is very important to read this file carefully before doing the update!

10 Update Configuration Software

To perform an update of thanos configuration software, please proceed as follows:

1. Uninstall the thanos configuration software, which is already located on your PC.

2. Download the ZIP archive of latest configuration software-version.
   Unzip the zip file and run the setup file.
   Please follow the instructions on the screen.

   Download-Link:

   Configuration software for Windows XP, Windows Vista, Windows 7 (32-Bit):
   http://www.thermokon.de/ftp/thanos/thanos_mb_eo_csw_update.zip

   Configuration software for Windows XP, Windows Vista, Windows 7 (64-Bit):
   http://www.thermokon.de/ftp/thanos/thanos_mb_eo_csw_64-bit_update.zip

Note:

- Always use the latest version of the firmware to ensure error-free operation.