

Operating Manual

NOVOS 7
NOVOS Touch
thanos EVO

RS485 BACnet data point list

NOVOS 7
NOVOS Touch
thanos EVO

novos
THE NEW ROOM SERIES BY THERMOKON®

Revision

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All information without guarantee for correctness and completeness. Subject to change.

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1 General information and safety instructions

The prerequisite for a safe working environment is the compliance with the forth-following specified safety instructions and handling instructions. Only an authorized electrician may conduct the installation and assembly of electrical devices. Due to their professional training, knowledge and experience as well as their knowledge of relevant national standards and regulations, a qualified electrician is able to conduct work on electrical systems and figure out possible threats immediately. The qualified electrician has to have an expertise for the working environment in which he/she works in and knows the relevant standards and regulations.

Please read the operating instructions carefully before commissioning the device.

- The device may only be used for the purposes and applications described in this operating manual.
- No technical changes or unauthorized modifications may be conducted to/on the device.
- The device may not be used if the ambient conditions (temperature, humidity etc.) are not within the limits given in the specification.
- The device should only be cleaned with a damp cloth. Do not use aggressive or solvent-based cleaning liquids. Failure to observe the safety instructions may result in damage to the device and harm to the user.
Detailed information can be found in the document *Care_instructions_for_room_operating_units_en.pdf*.
→ [Link PDF - Care instructions for room operating units](#)
- A faulty connection can lead to destruction of the device

1.1 Intended use

- The device is intended for use in an RS485 network.
- The room control unit is intended for use in offices, meeting or conference rooms, hotels, reception/lobby areas, nursing homes and hospitals, and generally in commercial and residential buildings. The room control unit is used for local room control for lighting, blinds, scenes and HVAC applications.

The device may only

- be used and operated in a proper environment
- be operated according to the corresponding specifications.

1.2 Improper use

- The room operating units must not be used for or be part of medical devices, which maintain, control or otherwise impact human life or physical health.
- The device must not be used in hazardous areas.
- The device must not be used in an atmosphere in which a chemically active substance is present.

1.3 Limitation of liability

All information and notes in this manual have been compiled in accordance with the applicable standards and regulations, the state of the art and our extensive knowledge and experience.

The manufacturer accepts no liability for damage due to

- Non-compliance with these instructions
- Unintended/improper use
- Installations conducted by non-professional persons
- Arbitrary conversions or technical modifications

The actual scope of delivery may deviate from the explanations and illustrations described here in the case of special designs, additional product options or latest technical changes.

1.4 Support

Our support team is available for technical information.

Information about the responsible contact person can be obtained at any time by telephone or e-mail. You may also visit our website for contact details:

See <https://www.thermokon.de/en/contact/contact-persons/>

We appreciate your contributions, feedback and user experiences in order to constantly improve our products!

2 Description of product features

The Thermokon room control units (NOVOS family and thanos EVO) combine all relevant room functionalities for an intelligent room control in one device, such as temperature control or control of fans, luminaires, blinds or screens. Additionally, depending on the device configuration, up to four sensors can be integrated (CO₂, VOC, temperature, humidity) to maintain a comfortable room climate throughout.

The room control units offer the following main features:

- Integration of up to four different sensors (temperature, relative humidity, CO₂ and VOC)
- Intuitive and comfortable control of room climate
- Call up ECO mode for energy-savings and a sustainable climate control ("Green Leaf")
- Control of fan coils and other ventilation devices
- Control of lighting fixtures and shades
- Call up individually defined scenes (e.g.: meeting, presentation, break, not occupied)
- Display of text messages, further information and operating states, such as "Window open", room occupied/unoccupied etc.
- Structured visual presentation of measured values with trends and traffic light indication
- Digital input for external devices (e.g. window contacts, dew point sensor etc.)

2.1 Device versions

NOVOS 7	NOVOS Touch	thanos EVO
		

NOVOS Touch and thanos EVO are functionally identical and only differ in design.

3 Assembly and commissioning

Proper commissioning ensures a seamless and safe use of the devices. Please observe the instructions in the corresponding data sheet.

3.1 Connection

3.1.1 RS485 Wiring

The maximum cable length per line should not exceed 1,200 meters. The last device in a line must be terminated with a 120 Ohm resistor to avoid signal reflections from the BUS. Please make sure, that both resistors are properly connected to the terminals. The RS485 specification requires the use of terminating resistors (120 - 150 Ohm, 0.25 W) at both ends. The terminating resistor is not included in the delivery of the devices.

The room operating units load the BUS with a standard BUS load (1/1 unit load according to the RS485 standard). This allows up to 32 room operating units to be operated on one single BUS line.

Please also note that RS485 does NOT support star topologies and no stub line connection!

If no signals are present on the BUS, it must be ensured that the signal levels (voltage) are fixed. This can be done through pull-up / pull-down resistors on the drivers. These form a voltage divider with the installed BUS termination resistors. It must be ensured, that there is at least a differential voltage of 200mV detectable for the receiver between the data lines A and B.

3.1.2 Operation with alternating voltage power supply (AC)

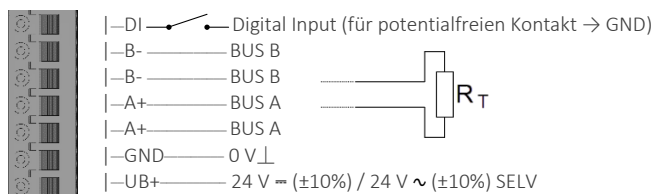
If several field devices are supplied from one AC voltage source according to the specification, it is mandatory, that all "positive" operating voltage inputs (+) of the field devices are connected to each other, and all "negative" operating voltage inputs (-) = reference potential are connected to each other (series connection of the field devices).

If the polarity of the supply voltage is reversed on one of the field devices, a short circuit of the supply voltage would occur. The short-circuit current thus flowing through this field device leads to a damage of this device.

Pay attention to a correct wiring!

3.1.3 Electrical connection

Connect the power supply and the RS485 lines according to the wiring diagram. Power must be supplied from sources that meet the requirements for protective low voltage. After switching on the power supply, the device starts up.



3.2 RS485 BUS Configuration

Each device that communicates through BACnet is assigned a unique address. In serial networks, only the node assigned as the Master may execute a command. The BUS interface can be parameterized by means of the NOVOSapp or using the onboard screen configuration menu.

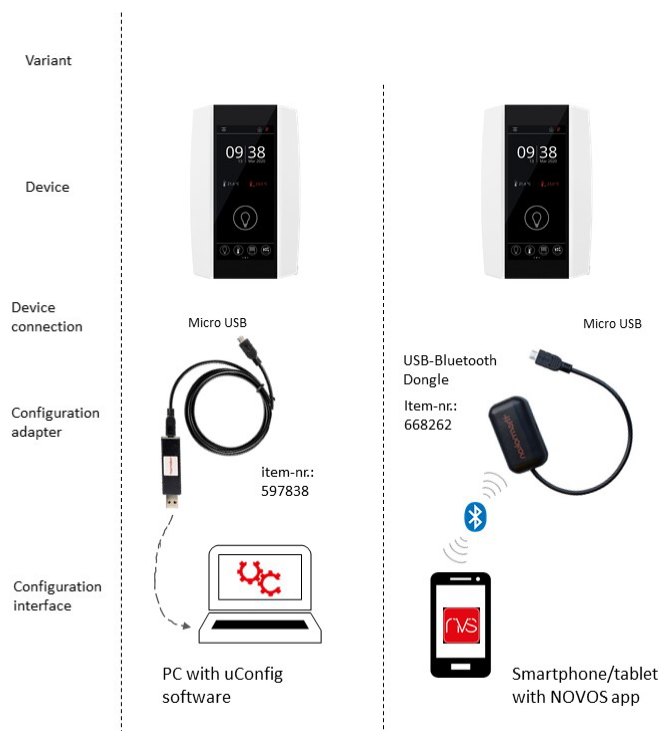
	NOVOS 7	NOVOS Touch / thanos EVO
Bus address	1-247 1/1 Bus load per device, corresponds to 32 participants per segment	
Baud rate	9600 19200 38400 57600 76800 115200	4800 9600 14400 19200 38400 56000 57600 76800 115200

3.3 Configuration

The first section of this document provides a basic overview of the functions and parameterization options of the device. For configuration, the software NOVOSapp (for mobile devices) or as a plug-in for our configuration interface uConfig (for PC/Laptops) is available.

The following options are available to configure the device:

- Parameterization with mobile end devices via Bluetooth and NOVOSapp. A Bluetooth dongle (accessory) is required.
Bluetooth dongle item no.: 668262
The NOVOSapp for Android or Apple mobile devices is available at the Google Play Store or Apple AppStore
- Parameterization via desktop PC/laptop with the uConfig software, and a micro USB/RS232 converter (item no.: 597838)



3.4 Structure of the data points (Data blocks of BACnet-Objekte)

The parameters are split into two main groups: the configuration parameters and the communication data. The configuration parameters are e.g. device information or operating parameters that determine how the device processes the sent/received data. The configuration parameters are permanently stored in a non-volatile memory (EEPROM). The configuration is done exclusively via NOVOSapp or uConfig.

4 Display and user operation

4.1 Display and operating elements

The NOVOS 7 has an intuitive user interface using a rotary/press encoder and four capacitive keys below the screen. NOVOS Touch and thanos EVO have a high-resolution full-touch display, which is used for operating and navigating through the menus. Both devices use a structured and language-neutral graphical user interface.

NOVOS 7	NOVOS Touch	thanos EVO
3,5" TFT		4,8" TFT
320x480 Pixel		1120x480 Pixel
4 capacitive keys rotary/press encoder		Full touch

4.2 Home screen

The display on the home screen of the NOVOS room control units can be parameterized. All icons and notifications can be de-/activated individually. The set point and actual value can also be overwritten. In order to preserve the display illumination, it is recommended to either dim or completely switch off the display brightness in standby mode. To reduce the risk of ablation effects of the screen content, it is recommended to use the screen saver. By default, the screen saver switches on 120 seconds after the last user interaction.

4.2.1 Status bar (Header)

In the header of the main screen, various icons can be shown or hidden as needed through a software variable or user interaction (e.g. occupancy). Communication icons are only linked to an internal logic.













NOVOS 7



NOVOS Touch / thanos EVO

- Condensation (Icon ON/OFF)
 - Window open (Icon EIN/AUS)
 - Calibration due (Icon EIN/AUS with logic)
- In connection with the calibration countdown, the icon is automatically displayed after the time until next calibration has expired. The calibration countdown must be set so that the icon appears after specified time. After the countdown has elapsed and calibration is completed, the countdown must be reset.
- BUS communication error (logic)
- If no valid BUS communication is detected within 30 seconds, the icon will automatically appear.
- USB communication mode (logic)
- When the USB connection via the MicroUSB port on the bottom of the device is active, the icon automatically appears.
- Room occupancy - occupied/unoccupied
- Description see "ECO function".
- ECO function
- (Icon ON/OFF or user interaction)
- The room occupancy and ECO function are triggered on the device via toggle button.
- NOVOS 7:** Depending on the configuration, switching to ECO mode is conducted either in the respective submenu (carousel), in the temperature menu or through a favorite button.
- NOVOS Touch/thanos EVO:** Select ECO in the temperature menu or - if configured - also via a favorite key.
- Heating mode (Icon ON/OFF)
- The icons "heating" and "cooling" can also be displayed in color (heating = red / cooling = blue). For this purpose, the corresponding parameter must be set in the display settings. The set point in the center of the home screen is then displayed in the same color as the setting.
- Cooling mode (Icon ON/OFF)
- For additional settings, see "Heating mode".
- PIR active (Icon ON/OFF)
 - Warning (Icon ON/OFF)
 - Maintenance due
- In connection with the maintenance countdown, the icon is automatically displayed after the maintenance countdown has elapsed. In order to have the icon appear, the maintenance interval must be set. After the countdown has expired and maintenance has been conducted, the countdown must be reset.

Objects „Display“ (Icons)

- 
 - Show Icon Dewpoint
 - BV 16
 - true=1 | false=0
- 
 - Show Icon Dewpoint
 - BV 17
 - true=1 | false=0
- 
 - Show Icon USB
 - BV 20
 - true=1 | false=0
- 
 - Show Icon Heating
 - BV 22
 - true=1 | false=0
- 
 - Show Icon Cooling
 - BV 23
 - true=1 | false=0
- 
 - Show Icon Movement
 - BV 24
 - true=1 | false=0
- 
 - Show Icon Warning
 - BV 26
 - true=1 | false=0
- 
 - Calibration due
 - appears automatically when the calibration countdown has expired
- 
 - Bus communication error
- 
 - Service due
 - appears automatically when the calibration countdown has expired


Objects „Room climate“

- 
 - Occupancy
 - BV 100
 - unoccupied=0 | occupied=1
- 
 - ECO
 - BV 101
 - disabled=0 | enabled=1

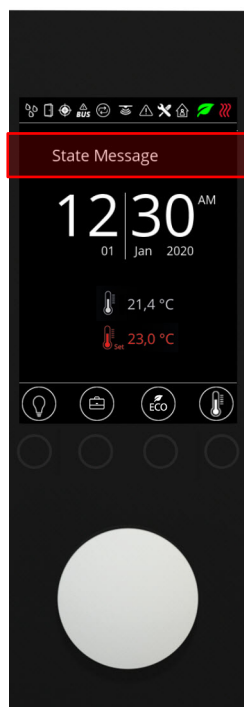
Objects „General“

- Calibration countdown; AV 1114
- Service countdown; AV 1113

Configuration via app or uConfig

- 
 - Display icons and heating/cooling set point in color (red/blue)
 - On | Off
- Calibration interval, configurable via App or uConfig: 12 or 24 month
- Service interval, configurable via App or uConfig: 6, 12 or 24 month

4.2.2 Status messages / date and time



NOVOS 7



NOVOS Touch / thanos EVO

During operation, any text messages (max. 24 characters), room names, status messages and other notifications e.g. alarms can be displayed in the main screen. The object <State Message> is available for displaying characters, letters and numbers. The text is entered in the object description and enabled or disabled with the Present Value. The status messages are not stored and must be written again by the BMS after each restart of the device. Characters are written from left to right.

Time and Date

Time and date can be shown or hidden independently of each other. The date formats DD.MM.YYYY or MM.DD.YYYY and the time formats 24h or 12h (AM/PM) are available. The date and time displays are active on delivery and are shown in the format 24h - DD.MM.YYY.

Data block „status display“

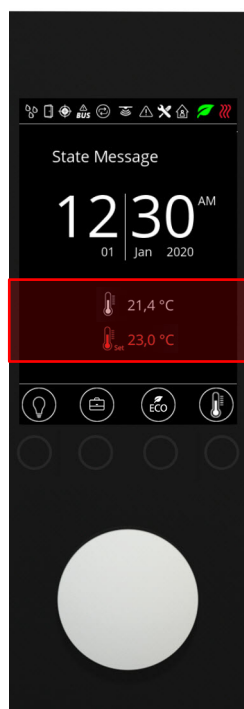
- State Message
 - BV 400

In the Device object, time and date can be set with the properties Local Date and Local Time.

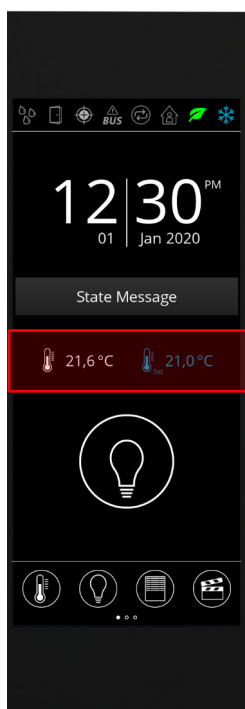
Configuration via app or uConfig

- Set point
- Room temperature
- Selection – which values are displayed on the home screen
 - Display room temperature
 - Display set point
 - Display both values
- Set point definition
 - absolute | relative
- Base set point
- Set point adjustment range
- Set point adjustment step width

4.2.3 Room temperature and set point



NOVOS 7



NOVOS Touch / thanos EVO

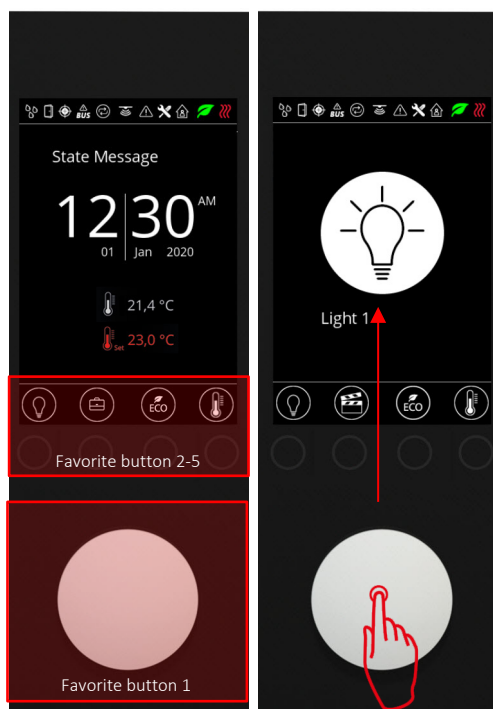
Room temperature and set point can be shown or hidden independently. In addition, the set point can be displayed as an absolute or relative value. The room temperature and set point can be overwritten by the BMS at any time during operation.

As a default configuration, the display shows room temperature and set point and the set point is displayed as an absolute value. The adjustment range of the set point is $\pm 3K$ on delivery and the step width of the adjustment is $\pm 0.5K$. All the above settings can certainly be configured as required.

In conjunction with the heating and cooling icons in the header, the set point can also be displayed in color (heating set point = red / cooling set point = blue).

4.2.4 Favorite buttons

The favorite buttons can be assigned with freely selectable functions. The names of the individual lights or scenes can be defined individually. In addition to the up to eight lightings/lighting groups or scenes, functions such as Presence (Presence/Absent), ECO (ON/OFF) and the Climate, Lighting, Blind, Scenes and Monitoring menus can be assigned as favorite buttons via NOVOSapp or uConfig.



NOVOS 7

Favorite buttons NOVOS 7

Below the screen there are four configurable capacitive touch buttons. The corresponding symbols are displayed in the footer of the main screen. These keys correspond to the parameters of the favorite buttons 2 to 5. The push function of the rotary/push encoder corresponds to the favorite button 1. If the favorite button 1 is pressed in standby or on the home screen, the respective function is triggered and the corresponding symbol is displayed on the home screen for approx. 3 seconds.

Configuration via app or uConfig



- Favorite button 1
 - Favorite button 2
 - Favorite button 3
 - Favorite button 4
 - Favorite button 5
- The following favourite functions are available:
- no function
 - Light 1 ... Light 8
 - Scene 1 ... Scene 8
 - Occupancy
 - Eco
 - Menu Climate
 - Menu Light
 - Menu Blind
 - Menu Scenes
 - Menu Monitoring
 - Menu Fan control (NOVOS 7)

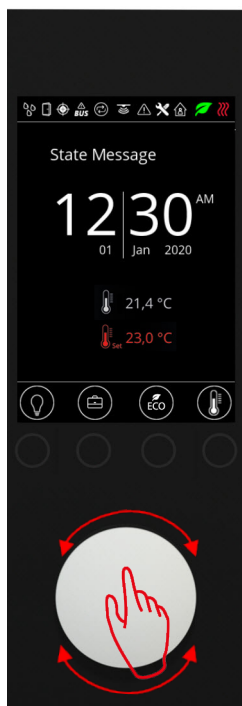


NOVOS Touch / thanos EVO

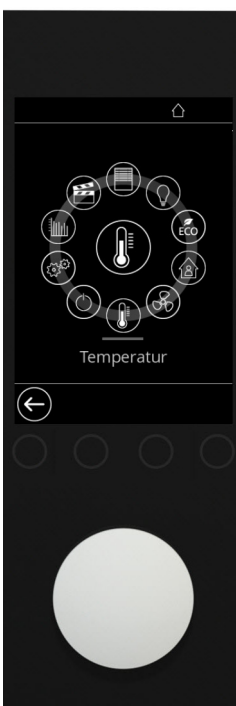
Favorite buttons NOVOS Touch / thanos EVO

If only one favourite button is required on the home screen, favourite button 1 must be defined. If several favourite keys are required (two to a maximum of four), the favourite keys 2-5 must be defined with the desired favourite functions.

4.3 Main menu

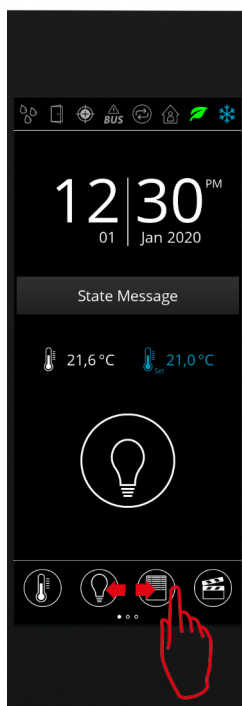


NOVOS 7

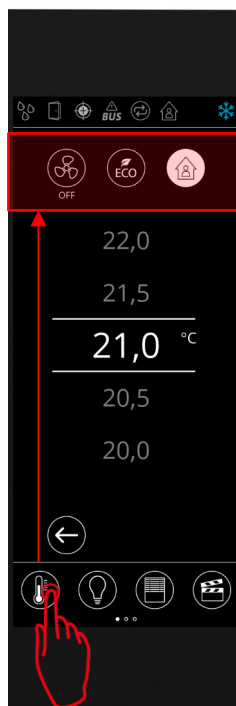


NOVOS 7 Carousel (*main menu*)

By turning the encoder, the NOVOS 7 switches to the main menu (carousel). The menu is still operated by the rotary/press encoder. All functions i.e. symbols (except the settings menu) can be activated or deactivated individually. All menu items are active during initial installation.












NOVOS Touch / thanos EVO



NOVOS Touch / thanos EVO Menu bar (*Navigation bar*)

The menu bar is located at the bottom of the touch display (equivalent to the carousel of the NOVOS 7). The menu bar is a central element on the home screen. With a swipe gesture, you can switch between the menu pages in the menu bar. In the menu bar, all menu items are displayed as buttons. The activation of the ECO mode, switching of room occupancy and the submenu for fan speed adjustment are arranged in the Climate menu - unlike the NOVOS 7. To activate or deactivate the ECO mode and to trigger the room occupancy status, simply touch the button.

Configuration via app or uConfig

-  **Display menu monitoring**
yes | no
-  **Display button standby**
yes | no
-  **Display menu temperature**
yes | no
-  **Display button ECO**
yes | no
-  **Display room occupancy**
yes | no
-  **Display fan control**
yes | no
-  **Display menu light**
yes | no
-  **Display menu shading**
yes | no
-  **Display menu scenes**
yes | no

4.3.1 Climate menu (Temperature)

The climate control menu contains the set point, fan stage adjustment, ECO function and presence. The set point (shift) can be display with relative or absolute values. With the ECO mode being active, it is not possible for the user to adjust the set point and fan stages.



NOVOS 7

NOVOS 7 climate menu

The operation of the menu is intuitively lead by using the rotary/push button. The buttons for ECO, room occupancy and fan speed adjustment can be optionally displayed in the Temperature menu. On delivery, these buttons are not active in the Climate menu, the set point is shown as an absolute value of 21°C and the set point adjustment is uses a stepwidth of 0.5K in the range of $\pm 3K$ around the base set point (21°C). This can be customized individually. If the fan stage is activated in the climate menu, the adjustment can be performed directly using the button, toggling through the fan stages (see below).

Example with factory settings



ECO mode „not active“ ► „active“



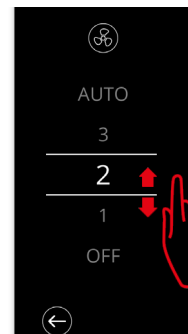
Room occupancy „unoccupied“ ► „occupied“



NOVOS Touch/thanos EVO

NOVOS Touch / thanos EVO Climate Menü

The buttons for fan stage adjustment, ECO mode and room occupancy are an integral part of the air-conditioning (AC) menu. ECO mode and room assignment are activated or deactivated directly through the toggle button. When the button for the fan function is pressed, the menu for fan stage adjustment is called up. The fan stage can be selected with a swipe gesture (up/ down). If the ECO mode is active, neither the set point nor the fan stage can be changed. Despite the option that a user can change the ECO model, the ECO mode can also be overwritten from the BMS.



Configuration via app or uConfig



- **Set point definition**
 - absolute | relative
- **Base set point**
- **Set point adjustment range**
- **Set point adjustment step width**
- **Display ECO button**
 - no | Menu bar or Carousel

additional for NOVOS 7:

 - Carousel and climate menu
- **Display room occupancy button**
 - no | Menu bar or Carousel

additional for NOVOS 7:

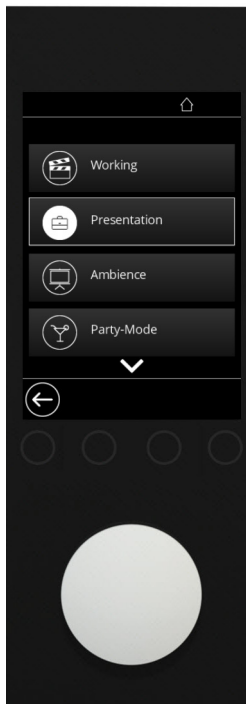
 - Carousel and climate menu
- **Room occupancy after restart**
 - unoccupied | occupied
- **Display fan control**
 - no | Menu bar or Carousel

additional for NOVOS 7:

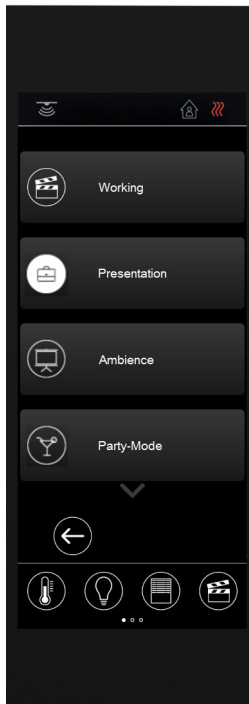
 - Carousel and climate menu
- **Number of stages**
 - 0-5
- **Fan stage AUTO available**
 - no | yes
- **Minimum fan stage**
 - 0-5
- **Fan stage after Reset**
 - Fan Off– Stage 5 | Auto

4.3.2 Scene Menu

In the Scene menu, up to eight scenes can be configured individually. Scenes can be activated or deactivated using the rotary/push button (NOVOS 7) or the touch display (NOVOS Touch).



NOVOS 7



NOVOS Touch/thanos EVO

Scene groups

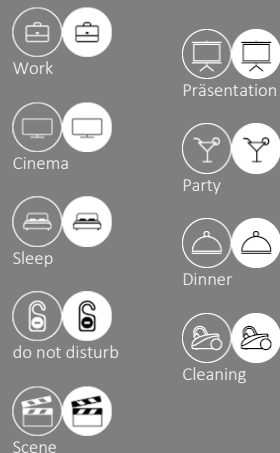
Buttons for up to eight different scenes can be created for a quick change of the room status and peripheral devices connected. The names of the individual scenes (max. 12 characters) can be freely assigned. Nine different scene icons can be selected for customization.

There is no linkage between the individual scenes. If scenes are mutually exclusive, this logic must be performed by the BMS.

Configuration via app or uConfig

- Number of scenes
 - 0-8

- Selection the icon for scenes

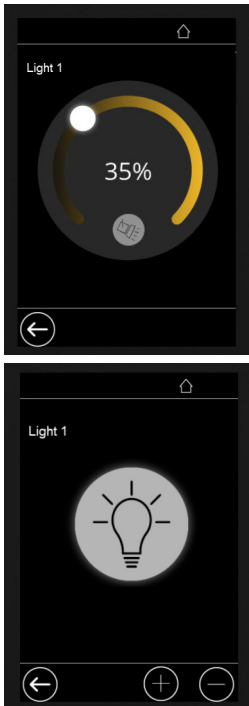


4.3.3 Light menu

In the Light menu, it is possible to manage up to eight lighting groups. Depending on the technical conditions, the individual light groups can be switched or dimmed individually.



NOVOS 7



Lighting groups NOVOS 7

There are four different icons and a maximum of 12 characters available for the name.

If a light is dimmable, this is indicated in the button with the dimming symbol. If the dimming adjustment is parameterised with a "slider", the percentage of dimming is also displayed. The dimming value can be set by the user with the rotary/push button in the respective sub-menu of the lighting group. If dimming is configured as "push button" mode instead of the "slider" bar, the percentage value does not get displayed and the dimming adjustment is performed with 2 push button commands (+) and (-).

Non-dimmable lights are switched ON or OFF directly with the push-button. In this case, a short or long push-button action is shown in the respective object. After the Present Value in the Object has been read, it will automatically be reset to "NoPress".

Example

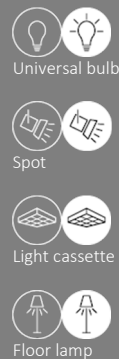
Light 1 „not active“ ► „active“

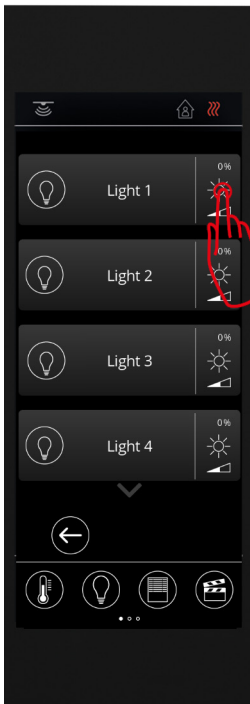


Configuration via app or uConfig

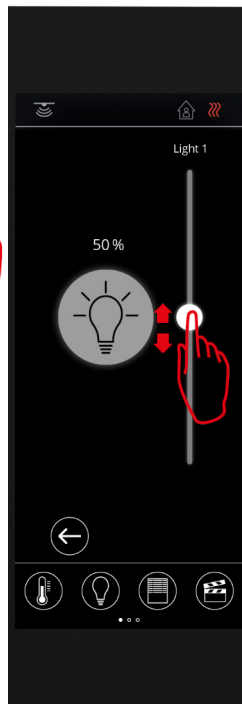
- Number of lighting groups
 - 0-8

- Selection of the lighting icons





NOVOS Touch/thanos EVO



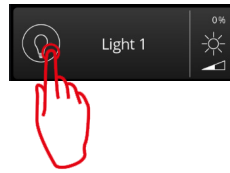
Lighting groups NOVOS Touch / thanos EVO

Equivalent to NOVOS 7, up to eight different lighting groups can be controlled with NOVOS Touch and thanos EVO. Four different icons and max. 12 characters for the name are available.

If a light is dimmable, this is indicated by the dimming symbol inside the button of the respective light group. If the dimming adjustment is parameterised as a "slider", the percentage of dimming is also displayed. The dimming value can be set by the user with a "Swipe" gesture in the respective sub-menu of the lighting group.

By clicking the button, the luminaire or lighting group can be switched ON and OFF again directly.

The last dimming value is assumed.

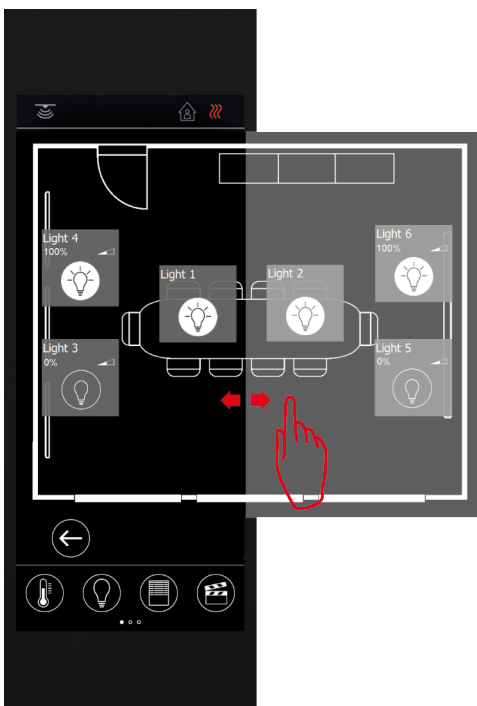


If dimming is configured as "push button" mode instead of the "slider" bar, the percentage value does not get displayed and the dimming adjustment is performed with 2 push button commands (+) and (-). In that case, a short or long key press is shown in the respective object. After the object has been read, the present value will automatically be reset to "NoPress".

Non-dimmable lights are switched on or off directly with the button.

2D room/floor plan display

As an alternative or in addition to the list visualization, a room can be graphically visualized in two dimensions with NOVOS Touch or thanos EVO. The luminaires are displayed in the plan by lighting symbols. An exact positioning of the buttons is possible through a coordinate system. For example, a floor plan (1-bit color depth, black/white) of a room can be uploaded into the device. The upload can be conducted using the "uConfig" software. It must be ensured that the image size is 960x800 pixels. If a lighting group is dimmable, the respective button in the room plan must be pressed for longer than two seconds to access the dimming menu.



NOVOS Touch/thanos EVO

Configuration via app or uConfig



Display of the lighting groups

- List view

Additionally for

NOVOS Touch and thanos EVO:

- Floor plan
- Display both

(Lighting group) dimmable

- yes | no

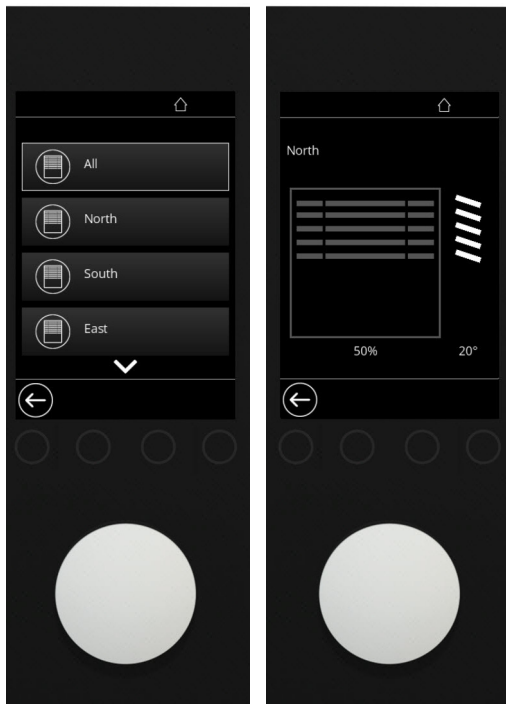
Adjustment UI (Dimming)

- Slider
- Button
- Button (RAW values)

Dimming interval (if UI Slider)

- 1 ... 100 (Percentage steps)

4.3.4 Shading menu



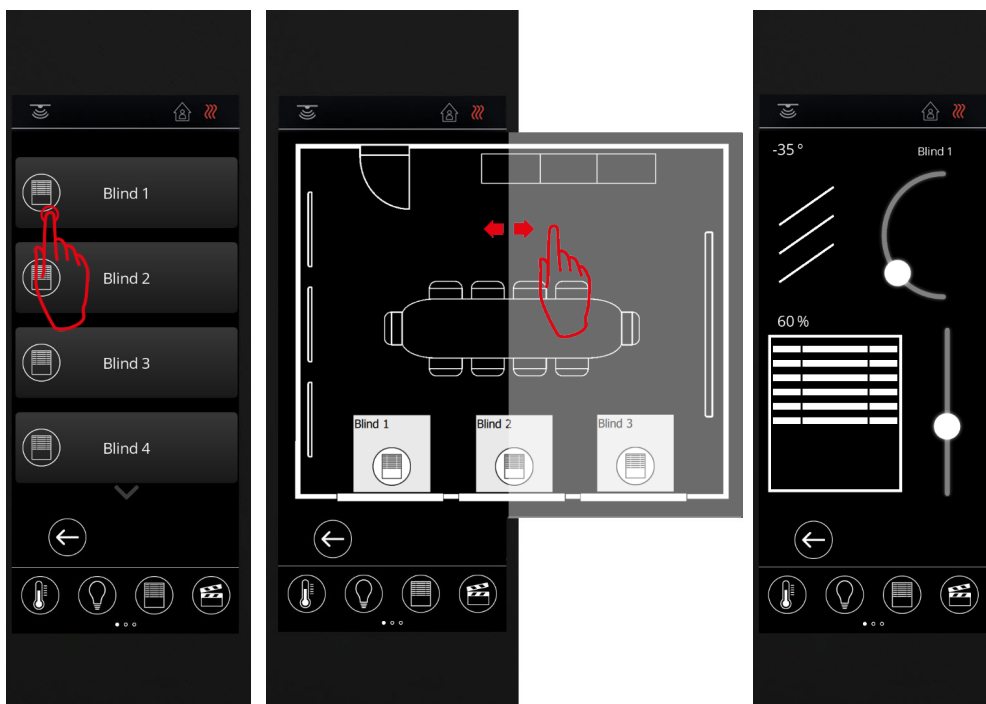
NOVOS 7

Shading groups

Just like the lighting groups, up to eight shading circuits can be controlled. The shading menu is available in the NOVOS 7, NOVOS Touch as well as thanos EVO.

Depending on the application, shutters or blinds can be configured with or without angle adjustment.

The user interface concept is identical to the lighting circuits (see chapter 4.3.2).



List view and room plan of NOVOS Touch/thanos EVO

Configuration via app or uConfig



- **Number of shading groups**
 - 0-8
- **Display of the shading groups**
 - List view

Additionally for NOVOS Touch and thanos EVO:

 - Representation in the room plan
 - Display both
- **Selection of the shading icons**
 -  
Shutter
 -  
Shutter group
 -  
Roller shutter
 -  
Roller shutter group
- **Adjustment UI**
 - Slider
 - Button
 - Button (RAW values)
- **Length interval (if UI Slider)**
 - 1 ... 100 (Percentage steps)
- **Slat adjustment min/max**
 - -180 ... +180
- **Slat adjustment interval**
 - 1 ... 100 (Percentage steps)

4.3.5 Monitoring Menu



NOVOS 7



NOVOS Touch/thanos EVO

Measured value monitoring

The Monitoring menu provides a complete overview of the measured values of the device. In addition, up to four external values can be displayed, which are transmitted from the BMS to the room unit. The "Traffic Light Function" (TLF) is used for the indicative function based on the logic of a traffic light.

Using freely selectable threshold values, the individual measured values can be clearly highlighted with freely selectable colors. In the background of the button, a line chart can be used to visually illustrate the value trend of the last 60 minutes.

This menu is for viewing measured values only and does not contain any additional control elements. Depending on the application, the entire menu or only individual measurement values can be hidden.

Configuration via app or uConfig



(The following parameters only apply to the monitoring menu)

- **Display temperature**
 - no | yes
- **Display relative humidity**
 - no | yes
- **Display absolute humidity**
 - no | yes
- **Display enthalpy**
 - no | yes
- **Display dew point**
 - no | yes
- **Display CO2**
 - no | yes
- **Display VOC**
 - no | yes
- **Display VOC/CO2 mix**
 - no | yes
- **Display extern sensor 1**
 - no | yes
- **Display extern sensor 2**
 - no | yes
- **Display extern sensor 3**
 - no | yes
- **Display extern sensor 4**
 - no | yes

4.3.6 Configuration menu



NOVOS 7

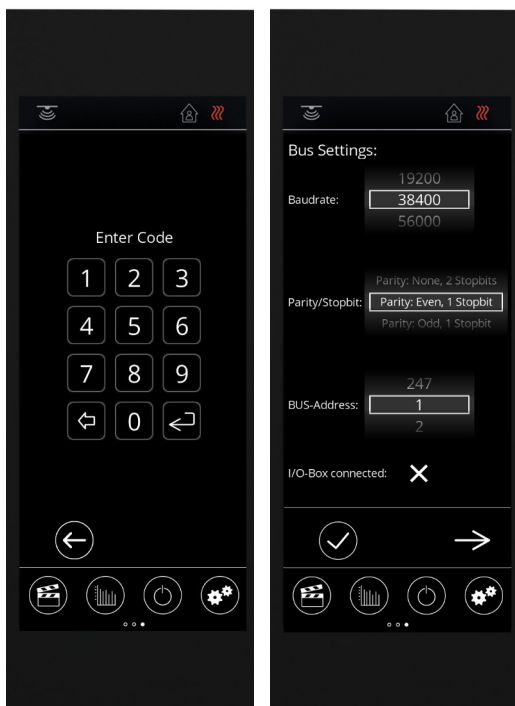
The configuration menu offers the possibility to change the interface parameters, date and time as well as offsets of the measured values. Additional information such as hardware or software versions can also be called up through the configuration menu. Furthermore, the configuration menu can be hidden automatically after a pre-defined time after switching on the power supply. Once the configuration menu is hidden, it is only available again after a power reset for the predefined time.

The password for NOVOS 7 / Touch and thanos EVO is "2030". It is not possible to change the access password.

Configuration via app or uConfig



- Automatic hiding of the configuration menu
 - Off | after 1 till 60 minutes
- Code-lock
 - password 2030
- Factory setting of the interface setting
 - Address 1
 - 38400 Bd
 - Parity Even
 - 1 Stop bit



NOVOS Touch/thanos EVO

5 RS485 Modbus Register-Specification

The objects of all NOVOS 7, NOVOS Touch and thanos EVO devices are uniformly structured. All configuration parameters are transferred to the device via BACnet file transfer and written to the EEROM of the device. The configuration file is created in uConfig offline mode. Alternatively, it is possible to connect and configure the device directly to uConfig via the USB interface.

5.1 General Objects

General device information can be read out via the following Objects.

Obj. Type	Inst.-No	Object Name	Present Value	
			ID	Description
DEV	Device ID + Offset	x_xxxx BACnet MSTP		
BV	425	Device Restart	0 1	false true
AV	4180	Device Offset ID		DWORD
MV	4183	COV Mode		
		Local-Broadcast		
		If this setting is active, the COV is sent as a local broadcast command only to the networks where the device is running.	1 2	off Local
		Global Broadcast	3	Global
		If this setting is active, the COV is sent as a global broadcast command to all networks.		
FIL	0	config.bin		
		Filetransfer		
		for transmission of configuration data		
		The configuration and the creation of a "configuration file" is done with the uConfig configuration interface		
The service or maintenance interval is set and activated in uConfig.				
AV	1113	Service Countdown		
		Hourly value Default: 24 months / Counts down every hour. If the value is 0, maintenance is recommended.		
AV	1114	Calibration Countdown		
		Hourly value Default: 24 months / Counts down every hour. If the value is 0, calibration is recommended.		

5.2 Device Object

The Device object provides all basic properties and information.

Property	Access	Range	Default
Object Identifier (Device ID)	R	0...4194302	Device Offset ID + MAC-Address
Object Name	R		DeviceID_ModelName <i>Bsp.: "1127_Novos Touch BACnet MSTP"</i>
Object Type	R		Device
Description	R/W	Max. 32 Characters	
Location	R/W	Max. 32 Characters	
System Status	R		Operational
Vendor Identifier	R		396
Vendor Name	R		Thermokon Sensortechnik GmbH
Model Name	R		Novos 3/5/7/Touch/thanosEVO BACnet MS/TP
Protocol Version	R		1
Protocol Revision	R		12
Max. APDU Length	R		480
Segmentation Support	R		no
APDU Timeout	R		3000 ms
Number APDU Retries	R		3
Max Master	R/W		127
Max Info Frames	R		1
Local Date	R/W		
Local Time	R/W		

5.3 Data block “Room Climate”

Obj. Type	Inst.-No	Object Name	Default	ID	Present Value Description
BV	100	[Occupancy] Switching the room occupancy		0	Unoccupied
				1	Occupied
BV	101	[ECO] Switching the ECO Mode	1	0	disabled
				1	enabled
MV	102	[ECO Colour] Colour of the ECO icon in the status bar	5	1	transparent
				2	white
				3	black
				4	red
				5	green
				6	blue
				7	yellow
AV	103	[Setpoint] Setpoint set by the user on the device. The value can be overwritten by the BMS at any time			
MI	104	[Internal Fan Stage] Fan stage set by the user		1	off
				2	Stage 1
				3	Stage 2
				4	Stage 3
				5	Stage 4
				6	Stage 5
				7	Auto
MV	105	[External Fan Stage] Overwriting the fan stage If the operator has selected the Auto Fan Mode (104=6), the exact fan level can be additionally displayed with the higher-level control. With NOVOS 7 the display AUTO 0 -AUTO 5 appears in the fan speed menu.		1	off
				2	Stage 1
				3	Stage 2
				4	Stage 3
				5	Stage 4
				6	Stage 5
				7	AUTO
				8	AUTO off
				9	Auto Stage 1
				10	Auto Stage 2
				11	Auto Stage 3
				12	Auto Stage 4
				13	Auto Stage 5
AV	106	[Overwrite Temp. Homescreen] This Object can be used to overwrite the room temperature value in the display through BMS		6553,50	internal value

5.4 Data block "Lighting"

If a lighting circuit is parameterized "dimmable", set dimming values are saved when a lighting circuit is switched off and restored when it is switched on.

Obj. Type	Inst.-No	Object Name	Present Value	
			ID	Beschreibung
BV	0	[Light 1]	0	off
			1	on
BV	1	[Light 2]	0	off
			1	on
BV	2	[Light 3]	0	off
			1	on
BV	3	[Light 4]	0	off
			1	on
BV	4	[Light 5]	0	off
			1	on
BV	5	[Light 6]	0	off
			1	on
BV	6	[Light 7]	0	off
			1	on
BV	7	[Light 8]	0	off
			1	on

The visual representation of the dimming value adjustment in the display is set via uConfig:

Slider: The dimming value is set via a slider or with the rotary encoders (NOVOS 7). Dimming value 0..100%.

Button: The device evaluates whether a long or short keystroke is required for up or down. After the read operation, the value in the respective object is automatically reset to not pressed (110 Button_No_Press).

Button (raw): In the respective object, the command for up / down (115 / 116) is issued as long as the button is pressed. After the button is released, the value automatically changes back to not pressed. This principle is only applicable for fast bus lines. With high latency times, it is quite possible that push-button commands are not recognised.

Dimming values or button presses are displayed in the objects of the following data block. Depending on the configuration for adjusting a dimming value, different values are output. 0..100% Dimming values can be overwritten by the BMS.

Obj. Type	Inst.-No	Object Name	Default	Present Value	
				ID	Description
AV	200	[Value Light 1] Depending on the configuration the action of the user is provided	0		
AV	201	[Value Light 2]	0		
AV	202	[Value Light 3]	0	0..100	Dimm_Value
				110	Button_No_Press
AV	203	[Value Light 4]	0	111	Button_Short_Press_UP
				112	Button_Long_Press_UP
AV	204	[Value Light 5]	0	113	Button_Short_Press_DOWN
				114	Button_Long_Press_DOWN
AV	205	[Value Light 6]	0	115	Button_Pressed_UP
				116	Button_Pressed_DOWN
AV	206	[Value Light 7]	0		
AV	207	[Value Light 8]	0		

5.5 Data block “Shading”

For shading systems there are different possibilities to adjust the level.

Slider: Adjustment of the vertical shading is done via a bar with slider, or with the rotary encoder (NOVOS 7) (0..100%)

Button: The device evaluates whether a long or short keystroke is required for “up” or “down”. After the read operation, the value in the respective object is automatically reset to “not pressed” (110 Button_No_Press).

Button (raw): In the respective object, the command for up / down (115 / 116) is issued as long as the button is pressed. After the button is released, the value automatically changes back to “not pressed” (110). This principle is only applicable for fast bus lines. With high latency times, it is quite possible that push-button commands are not recognised.

Slider horizontal: Slider for horizontal curtains.

Obj. Type	Inst.-No	Object Name	Default	Present Value	
				ID	Description
AV	300	[Value Shutter/Blind 1] Depending on the configuration, the action of the user is output.	0	0..100	Dimm_Value
				110	Button_No_Press
				111	Button_Short_Press_UP
				112	Button_Long_Press_UP
				113	Button_Short_Press_DOWN
				114	Button_Long_Press_DOWN
				115	Button_Pressed_UP
				116	Button_Pressed_DOWN
AV	301	[Angle Blind 1]		-180°.. +180°	
AV	302	[Value Shutter/Blind 2]		See [Value Shutter/Blind 1]	
AV	303	[Angle Blind 2]		See [Angle Blind 1]	
AV	304	[Value Shutter/Blind 3]		See [Value Shutter/Blind 1]	
AV	305	[Angle Blind 3]		See [Angle Blind 1]	
AV	306	[Value Shutter/Blind 4]		See [Value Shutter/Blind 1]	
AV	307	[Angle Blind 4]		See [Angle Blind 1]	
AV	308	[Value Shutter/Blind 5]		See [Value Shutter/Blind 1]	
AV	309	[Angle Blind 5]		See [Angle Blind 1]	
AV	310	[Value Shutter/Blind 6]		See [Value Shutter/Blind 1]	
AV	311	[Angle Blind 6]		See [Angle Blind 1]	
AV	312	[Value Shutter/Blind 7]		See [Value Shutter/Blind 1]	
AV	313	[Angle Blind 7]		See [Angle Blind 1]	
AV	314	[Value Shutter/Blind 8]		See [Value Shutter/Blind 1]	
AV	315	[Angle Blind 8]		See [Angle Blind 1]	

5.6 Data block „Scenes“

Obj. Typ	Inst.-No	Objekt Name	Standard	ID	Present Value Beschreibung
BV	8	[Scene 1]		0	off
				1	on
BV	9	[Scene 2]		0	off
				1	on
BV	10	[Scene 3]		0	off
				1	on
BV	11	[Scene 4]		0	off
				1	on
BV	12	[Scene 5]		0	off
				1	on
BV	13	[Scene 6]		0	off
				1	on
BV	14	[Scene 7]		0	off
				1	on
BV	15	[Scene 8]		0	off
				1	on

5.7 Data block „Status display“

Obj. Type	Inst.-No	Object Name	ID	Present Value Description
BV	424	[Display OFF] The display is switched off. The next time you interact, the display wakes up again. Alternatively, the display can be reactivated via bus.	0	false
			1	true
BV	400	[State Message] Message is displayed in the Home screen. Max. 24 characters. Not defined by default The status text is written into the description of the object	0	off
			1	on

5.8 Datenblock „Icons“

Obj. Type	Inst.-No	Object Name	Standard	ID	Present Value Description
BV	16	[Show Icon Dewpoint]	0	0	false
				1	true
BV	17	[Show Icon Window open]	0	0	false
				1	true
BV	22	[Show Icon Heating]	0	0	false
				1	true
BV	23	[Show Icon Cooling]	0	0	false
				1	true
BV	24	[Show Icon Movement]	0	0	false
				1	true
BV	26	[Show Icon Warning]	0	0	false
				1	true

5.9 Data block “Sensors”

The following data points contain sensor values or external values specified by the BMS and the status of the digital input of the device.

Obj. Typ	Inst.-No	Objekt Name	Standard	Present Value	
				ID	Beschreibung
AI	500	[Temperature] [°C °F]			
AI	501	[Relative Humidity] [%]			
AI	502	[Absolute Humidity] [g/m ³ gr/ft ³]			
AI	503	[Enthalpy] [kJ/kg BTU/lb]			
AI	504	[Dewpoint] [°C °F]			
AI	505	[CO2] [ppm]			
AI	506	[VOC] [%]			
AI	507	[CO2 VOC Mix] [%]			
AV	509	[External 1]			
AV	510	[External 2]			Additionally configurable values, which can be displayed in the monitoring menu
AV	511	[External 3]			
AV	512	[External 4]			
BI	514	[Digital Input] Connection to terminal 7		0	open
				1	closed

5.10 Offset/correction values

Via uConfig offset/correction values can be specified for the following measured values.

Physical Measurand	Offset-range
Offset Temperature	± 6,0K
Offset Relative Humidity	± 5,0%
Offset Co2	± 150ppm
Offset VOC	± 15%

6 uConfig Parameter – Filetransfer

Auf den folgenden Seiten werden die Parameter aufgelistet, welche mit der uConfig Konfigurationssoftware verändert werden können. Alternativ kann eine Konfigurationsdatei erzeugt werden, die mit BACnet Filetransfer in das Gerät übertragen werden können.

6.1 Configuration data block “General”

Parameter	Description	Default
Measuring system	Change of the measurement unit system SI Imp	SI
Language	Setting the language German English	English
Definition “long” button push	Threshold value where a button push is interpreted as a short or long push x milliseconds	700
Maintenance interval	Factory default setting 0 = Maintenance deactivated (Icon not active after countdown expire, at value >0, icon active after countdown expire) 0 ... 48 Months	0
Calibration interval	Factory default setting 0 = Calibration deactivated (Icon not active after countdown expire, at value >0, icon active after countdown expire) 0 ... 48 Months	0
Favourite button 1	Select the function of the favourite button(s) on the Home screen. The favourite button is directly linked to the linked function menu. The assignment of favourite buttons for NOVOS 7 / Touch and Thanos EVO is explained in detail in the corresponding data sheets. no function Lighting 1 ... 8 Scene 1 ... 8 Occupancy Eco Menu Climate Menu Lighting Menu Shading Menu Scenes Menu Monitoring	Occupancy
Favourite button 2	see Favourite button 1	Light 1
Favourite button 3	see Favourite button 1	Light 2
Favourite button 4	see Favourite button 1	Eco
Favourite button 5	see Favourite button 1	Menu Shading
Menu Monitoring (Display ON/OFF)	Display of the monitoring menu for internal and external sensors no yes	yes

6.2 Configuration data block “Display”

Parameter	Description	Default
Brightness (Active)	Brightness of the backlight during interaction 0..100 %	100
Brightness (Standby)	Brightness of the backlight after interaction (LCD Standby)	30
Change to standby after x seconds	Display switches to standby mode after x seconds 1..120 seconds (0 disables the function)	120
Change to main screen after x seconds	Time in seconds until the device automatically switches back to the Home screen 1..120 seconds (0 disables the function)	60
Duration Cleaning mode	Duration of the cleaning mode 1..60 seconds (0 disables the function)	15
Screensaver	Activating the screensaver OFF Date/Time individual graphic	1
Colour GUI background	Individual background colour Colour 32-bit hex-coded	0x000000FF
Colour GUI Text	Individual character colour Colour 32-bit hex-coded	0xFFFFFFFF
Display heating/cooling text and icons in colour (blue/red)	Setting whether the setpoint and the icons for heating and cooling should be displayed in colour no yes	yes

6.3 Configuration data block “Climate”









Parameter	Description	Default
Display climate menu (Display ON/OFF)	Display climate menu in menu bar no yes	yes
Setpoint Definition	Defining, how the setpoint should be displayed absolute relative	absolute
Base Setpoint	Determination of the base setpoint	21°C
Setpoint adjustment range	The offset applies to both the positive and negative adjustment range	±3,0 K
Setpoint step width	Step width during setpoint adjustment	±0,5K
ECO button (Display ON/OFF)	Display ECO button (menu bar and temperature menu) no yes ¹ Only NOVOS 7: yes, climate menu and carousel	yes
Room Occupancy button (Display ON/OFF)	In ECO mode, users cannot adjust the setpoint and fan stage. The room occupancy function is shown in the display no yes ¹ Only NOVOS 7: yes, climate menu and carousel If the value = 0, the room occupancy is not displayed in the status bar. If the value is changed to =1 by the BMS or by pressing the room occupancy button, the icon reappears in the status bar.	yes
Room Occupancy after power reset	State room occupancy after device restart. unoccupied occupied	occupied
Fan Stages (Display ON/OFF)	Displaying the fan stage menu in the display no yes ¹ Only NOVOS 7: = yes, climate menu and carousel	yes
Number of Fan Stages	Number of selectable fan stages 0 1 2 3 4 5	3
Fan Stage “Auto”	Auto Fan Stage available no yes	ja
Minimum Fan Stage	Minimum selectable Fan stage 0 1 2 3 4 5	0
Fan Stage after power reset	Preset Fan Stage after power reset OFF Stage 1 Stage 2 Stage 3 Stage 4 Stage 5 Auto	Auto
Value display on home screen	Select, which value should be displayed in the home screen. Display actual temperature and/or Display setpoint	3

6.4 Configuration data block “Lighting”

Up to 8 different light circuits can be operated and parameterized.

Parameter	Description	Default
Display lighting menu (Display ON/OFF)	Display lighting menu in the menu bar no yes	yes
Number lighting circuits	Number of adjustable lighting circuits 0...8	8
Graphical representation of the lighting circuits	With NOVOS Touch and thanos EVO this function can be displayed via the corresponding submenu and/or via a 2D room graphic List view 2D Floor plan view both	both

The following parameterization options are available for each light circuit:

Lighting 1 - Description	Name for the first lighting circuit max. 12 characters	Light 1
Lighting 1 – Icon	<div> <div> <div>0</div> <div>   </div> </div> <div> <div>1</div> <div>   </div> </div> <div> <div>2</div> <div>   </div> </div> <div> <div>3</div> <div>   </div> </div> </div> <div> Selection of the icon for Lighting 1 Universal light bulb Spot Light-cassette Floor lamp </div>	
Lighting 1 - Adjustment		
Lighting 1 - Dimmable		
Lighting 1 - Dimming intervals		


6.5 Configuration data block “Shading”

Parameter	Description	Default
Display shading menu (Display ON/OFF)	Display “Shading” menu in the menu bar no yes	1
Number of Shading circuits	Number of adjustable shading circuits 1...8	8
Graphical representation of the Shading circuits	With NOVOS Touch and thanos EVO, this function can be displayed via the corresponding submenu and/or via a 2D room graphic List view 2D Floor plan view both	List view
Shading 1 - Description	Name for the first Shading circuit max. 12 characters	Blind 1
Shading 1 – Icon	<p>Selection of the icon for Shading 1</p> <p>Blind Blind group Roller shutter Roller shutter group</p>	Jalousie
0		
1		
2		
3		

The following setting options are available for each shading area:

Shading 1 – Adjustment GUI	<p>For shading systems there are different possibilities to adjust the level</p> <p>Slider: Slider for vertical shading systems. Adjustment of the position is done through a slider bar.</p> <p>Push button operation: NOVOS evaluates whether a long or short button push for up or down is actuated. After the read operation, the value in Object X must be reset by the BMS to “not pressed”.</p> <p>Push button operation (raw): In Object X the command for up / down is performed as long as the button is pressed. After releasing the button, the value automatically switches back to “not pressed”. This principle is only suitable for fast BUS topologies. In case of high latency times, it may well happen that button commands are not recognized due to the high latencies.</p> <p>Slider horizontal: Slider for curtains</p>	Slider
Shading 1 - Slat adjustment	Selection, whether it is a shading system with slat adjustment no yes	yes
Shading 1 – Slat angle position min.	Setting the slat adjustment range -90°	-80
Shading 1 – Slat angle position max.	Setting the blade adjustment range +90°	80
Shading 1 – Slat angle position - step width	Step width adjustment 1..90	20
Shading 1 – Blind/Shutter UP/DOWN - step width	Step width 1..100	10

6.6 Configuration data block “Scenes”

Parameter	Description	Default
Display Scene Menu (Display ON/OFF)	Display “Scene” menu in the menu bar no yes	1
Number of Scenes	Number of Scenes 0...8	8
Description Scene 1	Name for the first scene. max. 12 characters	Scene 1
Icon Scene 1	<div> <div> <div>0</div> <div>   </div> </div> <div> <div>1</div> <div>   </div> </div> <div> <div>2</div> <div>   </div> </div> <div> <div>3</div> <div>   </div> </div> <div> <div>4</div> <div>   </div> </div> <div> <div>5</div> <div>   </div> </div> <div> <div>6</div> <div>   </div> </div> <div> <div>7</div> <div>   </div> </div> <div> <div>8</div> <div>   </div> </div> </div> <div> <p>Selecting the icon for Scene 1</p> <p>0 = Work 1 = Presentation 2 = Cinema 3 = Party 4 = Sleeping 5 = Food 6 = Do not disturb 7 = Cleaning 8 = Scene (movie flap)</p> </div>	

6.7 Configuration data block “Sensors”

Parameter	Description	Default
Unit	Unit of the measured value °C	°C
Offset	Offset for compensation of external influences (Surface temperature, draught, etc.) -3°C...+3°C	0
Measuring range lower limit	Min. value of the measuring range must be within the sensor limitation [Select measuring range]	0
Measuring range upper limit	Max. value of the measuring range must be within the sensor limitation [Select measuring range]	500
Show value YES/NO	Select, whether the value should be displayed in the monitoring menu No Yes	yes
Value TLF On / Off	Colour visualization of the measured value via TLF (Traffic Light Function). The colour thresholds can be adjusted individually. not active active with TLF w/o 60 min. chart active w/o TLF with 60 min. chart active with TLF with 60 min chart active with HTLF w/o 60 min chart active with HTLF with 60 min chart	active with TLF with 60 min chart
Range 1 colour	Colour definition for the first range. Range 1 begins with the lower measuring range limit and ends with threshold value 1-2. transparent white black red green blue yellow magenta turquoise orange Contrast colour (do not use for TLF!)	red
Range 2 colour	Colour definition for the second area. Range 2 starts with threshold 1-2 and ends with threshold 2-3. See Range 1	yellow
Range 3 colour	Colour definition for the third range. Range 3 starts with threshold 2-3 and ends with threshold 3-4. See Range 1	green
Range 4 colour	Colour definition for the fourth range. Range 4 starts with threshold value 3-4 and ends with threshold value 4-5. See Range 1	yellow
Range 5 colour	Colour definition for the fifth range. Range 5 begins with the threshold value 4-5 and ends with the upper range limit. See Range 1	red
Threshold value 1 - 2	Threshold value between range 1 and range 2 Absolute value (within measuring range limits)	16 °C
Threshold value 2 - 3	Threshold value between range 2 and range 3 Absolute value (within measuring range limits)	19 °C
Threshold value 3 - 4	Threshold value between range 3 and range 4 Absolute value (within measuring range limits)	23 °C
Threshold value 4 - 5	Threshold value between range 4 and range 5 Absolute value (within measuring range limits)	26 °C
Sensor Icon	Selection of the icon for the measured variable no Icon Temperature rel. Humidity abs. Humidity Enthalpy Dew point CO ₂ VOC CO ₂ / VOC Mix Pressure Brightness Energy Particles Values (universal)	no Icon
Sensor Text	Name for the sensor Max. 12 characters	
Display Number of decimal places		

7 BACnet PICS

BACnet Protocol Implementation Conformance Statement

Date:	07.07.2020
Vendor Name:	Thermokon Sensortechnik GmbH (Vendor ID: 396)
Product Names:	NOVOS 7 NOVOS Touch Thanos EVO
Firmware Revision:	1.3.0
Application Software Version:	1.3.0
BACnet Protocol Revision:	1.12
Product Description:	Sensor device with BACnet MS/TP RS485 interface.
BACnet Standardized Device Profile:	BACnet Smart Sensor (B-SS)

8 BACnet BIBBs

Supported BIBBS	BIBB Name
DS-RP-B	Data Sharing, Read Property, B
DS-RPM-B	Data Sharing, Read Property Multiple, B
DS-WP-B	Data Sharing, Write Property, B
DS-COVU-B	Data Sharing, COV Unsubscribed, B
DM-DOB-B	Device Management, Dynamic Object Binding, B
DM-DCC-B	Device Management, Device Communication Control, B
DM-DDB-B	Device Management, Dynamic Device Binding, B

BACnet Standard Application Services Supported:

ReadProperty
 ReadPropertyMultiple
 WriteProperty
 DeviceCommunicationControl
 WhoHas
 Whols

Standard Object Types Supported:

Object-Type	Dynamically Creatable Deleteable	Optional Properties supported	Writable Properties
Analog Input	<input type="checkbox"/>	COV Increment	COV Increment
Analog Value	<input type="checkbox"/>	COV Increment	COV Increment Present Value
Device	<input type="checkbox"/>	Description	Description Max Master Location Local Date Local Time
Binary Input	<input type="checkbox"/>		
Binary Value	<input type="checkbox"/>	Description	Present Value Description*
Multistate Input	<input type="checkbox"/>		
Multistate Value	<input type="checkbox"/>		Present Value
File	<input type="checkbox"/>		

*) BV400 only

Data Link Layer Option:

MS/TP master. Baud rate(s): [9600, 19200, 38400, 57600, 76800, 115200]

Device Address Binding:

Is static device binding supported?

Yes

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No

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Character Sets Supported:

UTF-8

Special Functionality:

Maximum APDU size in octets: 480

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