thanos EVO BlueRange

Room operating unit temperature, optional with humidity | CO2 | VOC

thermokon®
HOME OF SENSOR TECHNOLOGY

Datasheet

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thanosEVO

WORKS WITH BlueRange

»APPLICATION

Room operating unit with detection of room temperature, optional humidity, CO2 or VOC and a monitoring function for colour visualization of the measured values. The maintenance-free sensor creates the conditions for a pleasant room climate and a sense of well-being. Typical areas of application are schools, office buildings, hotels or cinemas. The room operating unit has a high-resolution 4.8” display with an elegant glass surface. The innovative and self-explanatory operation offers lighting, shading, climate and scene control functions for intelligent room automation. In combination with BlueRange Mesh technology, the device is ideal for digital buildings to sustainably increase user comfort and energy efficiency.

»TYPES AVAILABLE

Touch screen room operating unit temperature + opt. humidity, CO2, VOC

- thanos EVO Temp Bluerange*
- thanos EVO Temp_rH Bluerange*
- thanos EVO CO2 Temp_rH Bluerange*
- thanos EVO CO2+VOC Temp_rH Bluerange*

** also available as design variant*

»SECURITY ADVICE – CAUTION

The installation and assembly of electrical equipment should only be performed by authorized personnel.

The product should only be used for the intended application. Unauthorised modifications are prohibited! The product must not be used in relation with any equipment that in case of a failure may threaten, directly or indirectly, human health or life or result in danger to human beings, animals or assets. Ensure all power is disconnected before installing. Do not connect to live/operating equipment.

Please comply with

- Local laws, health & safety regulations, technical standards and regulations
- Condition of the device at the time of installation, to ensure safe installation
- This data sheet and installation manual

»PRODUCT TESTING AND CERTIFICATION

CE

Declaration of conformity
The declaration of conformity of the products can be found on our website
https://www.thermokon.de/direct/en-gb/categories/thanos-evo

»MOUNTING ADVISE ROOM SENSORS

The Accuracy of the room sensors are influenced by the technical specifications as well as the positioning and the installation type.

During Assembly:

- Seal mounting box (if present).
- Installation type, air draught, heat source, radiation heat or direct sunlight can affect the measurement.
- Bulding material specific properties of the installation place *(brick-, concrete-, partition wall, cavity wall, …)* can affect the measurement.

Assembly not recommendet in…

- Air draught (e.g.: close to windows / doors / fans …)
- Near heating sources,
- Direct sunlight
- Niches / between furniture / …

»BUILD-UP OF SELF-HEATING BY ELECTRICAL DISSIPATIVE POWER

Sensors with electronic components always have a dissipative power, which affects the temperature measurement of the ambient air. The dissipation in active temperature sensors shows a linear increase with rising operating voltage. This dissipative power has to be considered when measuring temperature. In case of a fixed operating voltage (±0,2 V) this is normally done by adding or reducing a constant offset value.

Thermokon transducers can be operated with variable operating voltages. The transducers are set at the factory with a reference operating voltage of 24 V =. At this voltage, the expected measuring error of the output signal will be the least. Other operating voltages, can cause a measurement deviation changing power loss of the sensor electronics.

A recalibration can be carried out directly on the unit or via a software variable (app or bus).

Remark: Occurring draught leads to a better carrying-off of dissipative power at the sensor. Thus temporally limited fluctuations might occur upon temperature measurement.

»APPLICATION NOTICE FOR HUMIDITY SENSORS

At regular environmental condition, it is recommended to calibrate the sensor annually to check the compliance with the accuracy required in the application. The following conditions can damage the sensor element or lead in long therm to loss of the specified accuracy:

- Mechanical stress
- Contamination (e.g. dust / fingerprints)
- Aggressive chemicals
- Ambient conditions (e.g. condensation on measuring element)

Do not touch the sensor elements!

Re-calibration or exchange of the sensor element are not subject of the general warranty.

»INFORMATION ABOUT SELF-CALIBRATION FEATURE CO2

All gas sensors are subject to drift. The degree of drift is dependent on the use of components and product design. In addition, the following environmental conditions, among others, can accelerate/ favor the aging and wear of the sensors:

- Mechanical stress (also due to temperature fluctuation)
- Contamination (dust / fingerprints e.g.)
- Abrasive chemicals
- Environmental influences (high humidity / condensation on measuring element)

An internal self calibration function with dual channel technology compensates the caused drift. Thermokon sensors are for permanent use (e.g. hospitals).

»INFORMATION ABOUT INDOOR AIR QUALITY CO2

EN 13779 defines several classes for indoor air quality:

Category	CO_2 content above the content in outdoor air in ppm		Description
	Typical range	Standard value	
IDA1	<400 ppm	350 ppm	Good indoor air quality
IDA2	400.. 600 ppm	500 ppm	Standard indoor air quality
IDA3	600..1.000 ppm	800 ppm	Moderate indoor air quality
IDA4	>1.000 ppm	1.200 ppm	Poor indoor air quality

»NOTES ON DISPOSAL

The crossed-out wheelie bin symbol indicates that the product or removable batteries must not be disposed of with household or commercial waste. Within the EU, you are legally obliged to dispose of the product separately and appropriately in accordance with the national laws of your country. Alternatively, please contact your supplier or Thermokon Sensortechnik GmbH. Further information can be found at: www.thermokon.com

»APPLICATION NOTICE FOR AIR QUALITY SENSORS VOC

Volatile organic compunds (VOC) are gaseous and vaporous substances of organic origin in the air. VOC-sensors monitor the significant part of humanly olfactory sensed air quality. (e.g. body odur | tobacco smoke | odur of materials, furniture, carpets, paint, adhesives, …)

The VOC-Value is an application-specific indication for air quality and doesn't provide any information about individual components of VOC

A VOC sensor oxidises the organic molecules that collide with it, which results in changing the resistance of the semiconductor.

Any contact with the sensitive sensors must be avoided and will invalidate the warranty.

»TECHNICAL DATA

Measuring values	temperature, optional humidity | CO2 | VOC
Network technology	BlueRange Mesh 2,4 GHz
Power supply	24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	typ. 2,5 W (24 V =) | 5 VA (24 V ~) [2]
Measuring range temp	0..+50 °C
Accuracy temperature	±0,5K (typ. at 21 °C)
Control functions	Climate: setpoint adjustment, fan stages, ECO function, presence detection Lighting: On/Off, dimming, color temperature Shading: blind and roller shutter up/down with slat adjustment, curtain, awning Other: Favorite buttons, call up scenes, measured value display & history, cleaning mode
Display	TFT 4,8", 1120x480 px, capacitive touch technology
Enclosure	PC V0 and glass, Surface glass, white or black | design variant glas + aluminium
Protection	IP30 according to DIN EN 60529
Cable entry	rear entry, breaking points bottom, drill mark top
Connection electrical	tool-free mountable spring terminal, max. 1,5 mm²
Ambient condition	0..+50 °C, max. 85% non-condensing
Mounting	surface mounted on flush-mounting box (Ø=60 mm) or to be mounted flat onto the surface using screws, base part can be mounted and wired separately

[2] type inrush current: 2A (< 5 ms)

» Humidity (optional)

Measuring range humidity *(optional configurable)*	**relative humidty** (default) 0..100% rH	**Enthalpy** 0..85 KJ/kg	**absolute humidity** 0..50 | 0..80 g/m³	**dew point** 0..+50 | -20..+80 °C
	configurable via Thermokon NOVOSapp or BUS			
Accuracy humidity	±2% between 10..90% rH (typ. at 21 °C)			

» CO2 (optional)

Measuring range CO2	0..2000 | 0..5000 ppm (Parametrisierung über BlueRange IoT Plattform)
Accuracy CO2	±50 ppm +3 % of reading, (typ. at 21 °C, 50% rH, 1015 hPa)
Calibration	self-calibration dual channel
Sensor	NDIR (non-dispersive, infrared)

» VOC (optional)

Measuring range VOC	0..100 %
Sensor	VOC sensor (heated metal oxide semiconductor)

»CONNECTION PLAN

Room operating unit

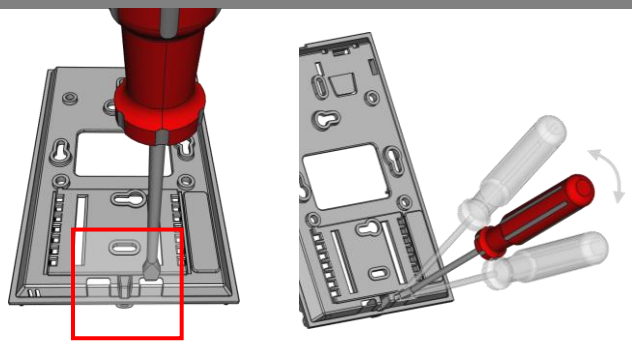
thanos EVO

|— n.c.
|— n.c.
|— n.c.
|— n.c.
|— n.c.
|— GND——— 0 V⊥
|— UB+——— 24 V = (±10%) or 24 V ~ (±10%)

»MOUNTING ADVICES

Cable entry

There are predetermined breaking points for 2 optional cable entries on the underside of the base plate.



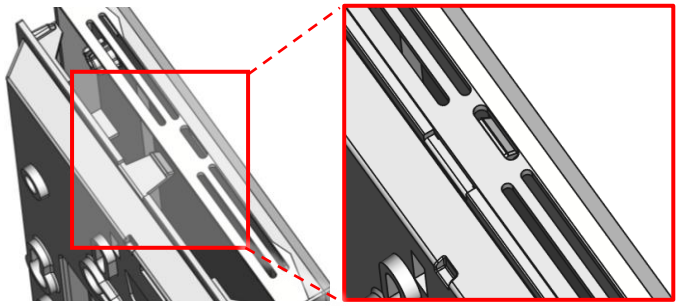
Please make sure that the device is de-energized if you want to install it!

The installation can be performed on the flat wall surface or on a flush-mounted box. A representative place should be selected. Sunshine and draft, e.g. in the installation tube should be avoided, so that the measurement result is not falsified. Seal the end of the installation tube.

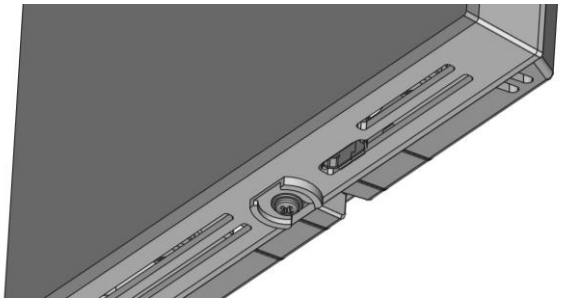
- For wiring, the upper part of the device must be removed from the base plate. Base plate and upper part are detachably connected to each other by means of locking lugs.
- The mounting of the base plate on the flat wall surface is done with rawplugs and screws.
- Finally, the device is attached to the base plate and fixed with the screw.

Housing open / close

Snap the upper part of the housing into the locking lug on the upper side

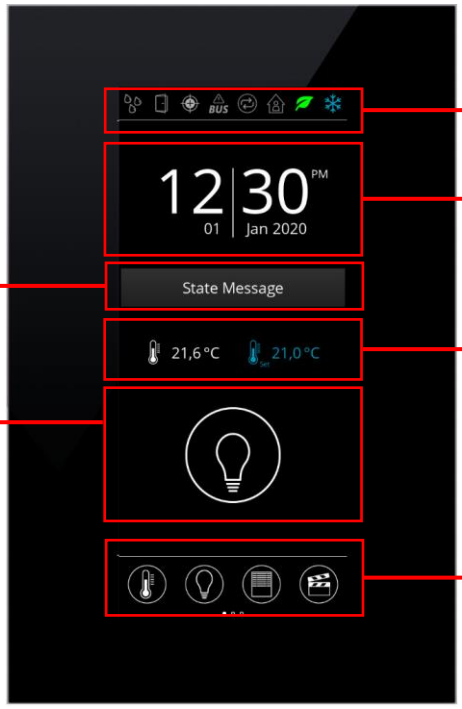


Fix the upper part of the housing on the underside with the screw



»FUNCTION DESCRIPTION – HOMESCREEN THANOS EVO

Homescreen
The display on the main screen of the thanos EVO room control unit can be freely parameterised. All icons and notifications can be switched on and off. Set point can also be overwritten.



Headline
In the header of the main screen various icons can be shown or hidden as desired.

Date / time
The time and date are in the center of the main screen.

Setpoint / room temperature
The currently set target value of the room control unit and the room temperature are shown on the display.

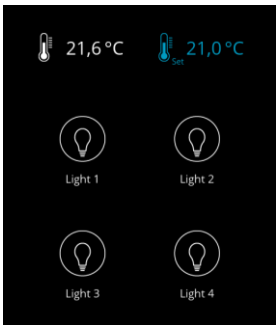
Navigation bar
The navigation bar is a central element on the Home screen. It contains all menus such as climate, light, blinds, scene, monitoring, display ON/OFF and settings. If certain menus are not needed, they can be switched off as desired. With a swipe gesture you can scroll between the menu pages in the navigation bar.

Status messages
At any time, any text message (max. 24 characters) can be displayed on the main screen for status reporting or notification.

Favorites button

Light, blind circles or complete submenu can be placed on the home screen as a favourites button that is quickly accessible. Up to 4 favourite buttons are possible.

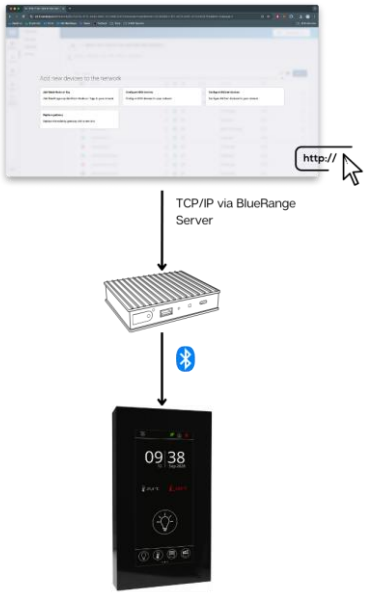
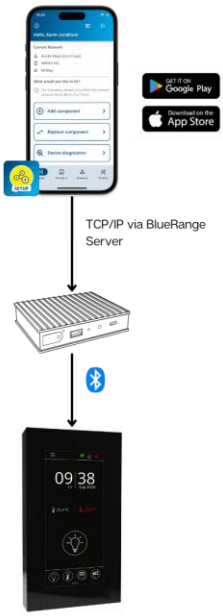
Example below: 4 different Light circles



To reduce the risk of burnt-in effects of the screen contents, it is recommended to activate the screen saver. By default, the screen saver switches on 120 seconds after the last interaction.

»REGISTRATION AND CONFIGURATION

Commissioning is basically carried out in three steps: Installation, enrollment and configuration. Once the installation has been prepared, the enrollment and configuration are carried out in a powered state. The following options are available for this.

User Interface	BlueRange IoT platform (PC/notebook)	BlueRange Setup App (smartphone/tablet)*
Communication	via BlueRange Gateway	via BlueRange Gateway
Diagram		
Configuration	Parameterization with BlueRange IoT platform or BlueRange Setup App	Parameterization with BlueRange IoT platform or BlueRange Setup App

** You can download the BlueRange Setup App free of charge from the Google Play Store or the Apple App Store. For the full range of functions, you need a mobile device that supports at least Bluetooth version 4.1.*

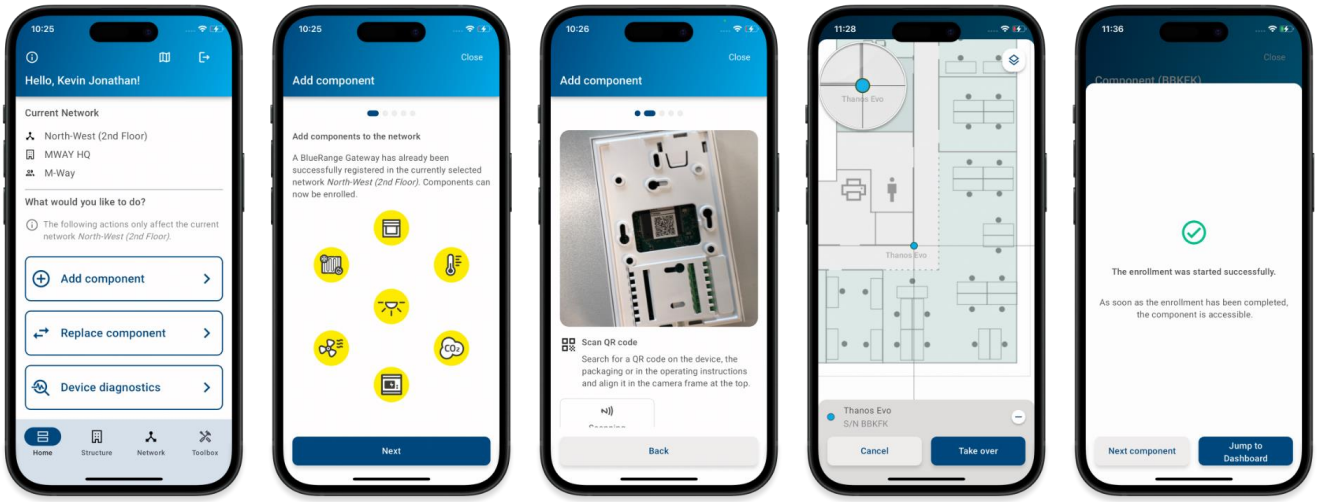
»BLUERANGE BRIEF DESCRIPTION & NOTICE

BlueRange is a mesh network technology that operates on the 2.4 GHz frequency. This enables the room operating unit to communicate wirelessly with other devices in the network in order to record and exchange data on temperature, humidity, CO2 concentration and VOC values. During commissioning, therefore, only a power supply needs to be taken into account - no data cabling is required. The use of mesh network technology increases reliability and data transparency, as the component can be easily kept up to date via over-the-air (OTA) updates. This enables more comprehensive monitoring and control of the indoor climate in real time, resulting in greater comfort and energy efficiency. The system is configured and commissioned either via the BlueRange IoT platform or the BlueRange Setup App, which establishes a direct connection to the device via the BlueRange Gateway.

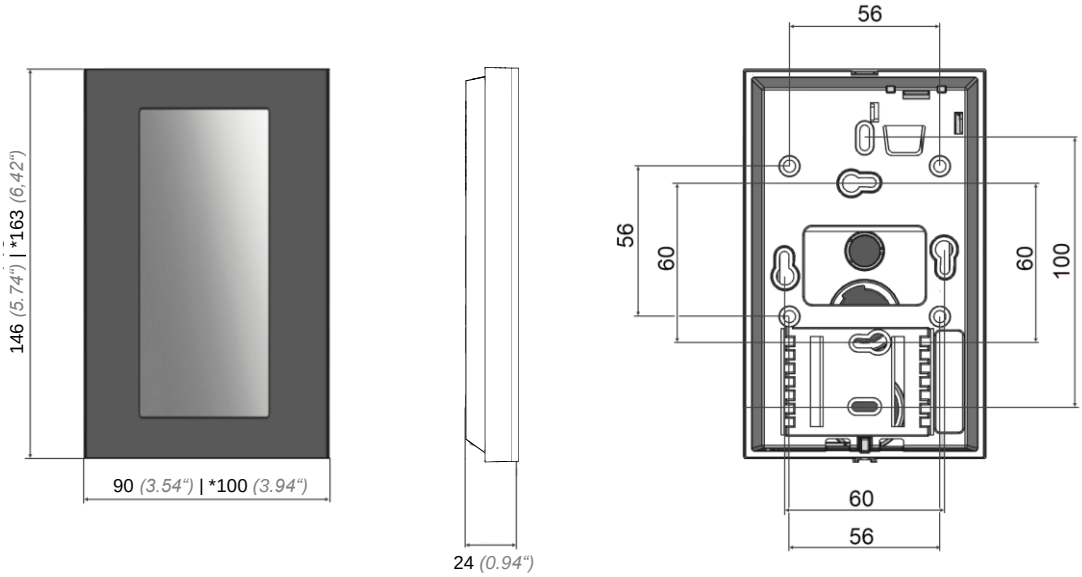
The use of a BlueRange Gateway and the BlueRange IoT platform is required to operate a BlueRange Mesh network. The gateway enables access to the mesh network data and forwards it securely to the BlueRange IoT platform. This architecture supports the central collection and visualization of building data, which allows operations to be continuously optimized and adapted to needs-based usage.

»COMMISSIONING: REGISTRATION VIA APP

To better illustrate this, the enrolment of the room operating unit via the BlueRange Setup app is visualized below. The application guides the user intuitively through the enrollment process. Please note that a QR code is required to identify the device, which you must scan during enrollment. This can be found on the back of the circuit board as well as in the enclosed box.



»DIMENSIONS (MM)



** Thanos Evo Design Dimensions*

»ACCESSORIES (OPTIONAL)

Rawlplugs and screws (2 pcs. each)	Item No. 102209
PSU-UP24 – flush mount power supply 24 V (AC Input: 100..240 V ~ | DC Output 24 V = 0,5 A)	Item No. 645737