NOVOS Touch LON

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

thermokon®
HOME OF SENSOR TECHNOLOGY

Datasheet

Subject to technical alteration
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novos
LON
LOCAL OPERATING NETWORK



» APPLICATION

Room control unit with room temperature measurement, optional humidity, CO2 or VOC and a monitoring function for colourful visualization of the measured values. The maintenance-free sensor creates conditions for a pleasant indoor climate and well-being. Typical applications are schools, office buildings, hotels or cinemas. The room control unit has a high-resolution 4.8”-display. The innovative and self-explanatory operation offers the functions of light, shading, climate and scene control for intelligent room automation.

» TYPES AVAILABLE

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

- NOVOS Touch Temp LON
- NOVOS Touch Temp_rH LON
- NOVOS Touch CO2 Temp_rH LON
- NOVOS Touch VOC Temp_rH LON
- NOVOS Touch CO2+VOC Temp_rH LON

» 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. Unauthorized modifications are prohibited! The product must not be used in relation to any equipment that in case of 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 installation. 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 is available on our website
https://www.thermokon.de/direct/en-gb/categories/novos-touch

» NOTES ON DISPOSAL

The cross-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

»MOUNTING ADVICE ROOM SENSORS

The accuracy of the room sensors is influenced by their technical specifications as well as their installation position and mounting method.

During installation, observe the following:

- Seal the flush-mounted wall box (if applicable).
- Air drafts, heat sources, radiant heat, or direct sunlight at the installation location may affect the measurement.
- The building material at the installation location (e.g. brick, concrete, stud walls, or cavity walls) may affect the measurement.

Installation is not recommended in the following locations:

- Areas exposed to air drafts (e.g. near windows, doors, or ventilation outlets)
- Near heat sources
- In direct sunlight
- In niches or behind/between furniture

»BUILD-UP OF SELF-HEATING DUE TO ELECTRICAL POWER DISSIPATION

Sensors with electronic components always dissipate power, which affects the measurement of the ambient air temperature. In active temperature sensors, the power dissipation increases linearly with the operating voltage. This dissipated power must be considered when measuring temperature. With a fixed operating voltage (±0.2 V), this can normally be compensated for by applying a constant offset value.

Thermokon transducers can be operated with variable operating voltages. The transducers are factory-calibrated at a reference operating voltage of 24 V =. At this voltage, the expected measurement error of the output signal is minimized. Operating the transducers at other voltages may result in measurement deviations due to changes in the power dissipation of the sensor electronics.

Recalibration can be performed either directly on the device or via a software parameter (app or bus).

Note: Airflow improves the dissipation of heat generated by the sensor electronics. As a result, temporary fluctuations in the measured temperature may occur.

»APPLICATION NOTES FOR HUMIDITY SENSORS

Under normal environmental conditions, it is recommended to calibrate the sensor annually to verify that it continues to meet the accuracy requirements of the application. The following conditions may damage the sensor element or, over time, cause it to fall outside the specified accuracy:

- Mechanical stress
- Contamination (e.g. dust or fingerprints)
- Exposure to aggressive chemicals
- Adverse ambient conditions (e.g. condensation on the sensor element)



Do not touch the sensor element!

Recalibration or replacement of the sensor element is not covered by the standard warranty.

»INFORMATION ON THE CO2 SELF-CALIBRATION FEATURE

All gas sensors are subject to drift over time. The extent of this drift depends on the components used and the overall product design. In addition, the following environmental conditions may accelerate sensor aging and increase drift:

- Mechanical stress (including stress caused by temperature fluctuations)
- Contamination (e.g. dust or fingerprints)
- Exposure to aggressive chemicals
- Adverse ambient conditions (e.g. high humidity or condensation on the sensor element)

An integrated self-calibration function based on dual-channel technology automatically compensates for this drift. Thermokon sensors are designed for continuous operation, making them suitable for applications with permanent occupancy (e.g. hospitals).

»INFORMATION ON INDOOR AIR QUALITY CO2

EN 13779 defines several classes for indoor air quality:

Category	CO2 content above the outdoor air concentration 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

» APPLICATION NOTES FOR VOC AIR QUALITY SENSORS

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

The VOC value is an application-specific indicator of air quality
and does not provide any information about individual VOC components

A VOC sensor oxidizes organic molecules that meet its sensing element, resulting in a change in the semiconductor's resistance.

Any contact with the sensitive sensor element must be avoided, as it may invalidate the warranty.

The VOC sensor is factory-calibrated and can be recalibrated via the NOVOSapp if required.

» TECHNICAL DATA

Measuring values	Temperature, optional humidity | CO2 | VOC
Network technology	LON TP/FT-10 (twisted pair / free topology)
Power supply	24 V = (±10 %) Power supplies with a 'hiccup' start-up behaviour are not suitable. *When using AC voltage, care must be taken to ensure correct polarity.*
Power consumption	Typ. 3 W (24 V =)
Inputs	2 x input for floating contact, 1x input for external NTC10k
Control functions	Occupancy signalling, light ON/OFF/DIM, setup scenarios, blinds UP/DOWN/SET, fan stages, setpoint, measured value display & history
Display	TFT 4,8", 1120x480 px, capacitive touch technology
Enclosure	PC V0, pure white, touch interface, design surface glass colour enclosure: pure white, black or aluminium, design panel: glass, white or black
Protection	IP30 according to DIN EN 60529
Cable entry	Rear entry, drill mark top
Connection electrical	Tool-free mountable spring terminal, max. Ø 0,8 mm
Ambient condition	0..+50 °C, max. 85 % non-condensing
Mounting	Surface mounted on flush-mounting box (Ø = 60 mm), base part can be mounted and wired separately

» Temperature

Measuring range temp	0..+50 °C
Accuracy temperature	±0,5 K (typ. at 21 °C)

» Humidity *(optional)*

Measuring range humidity *(optional configurable)*	**Relative humidity** 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 (configurable via Thermokon NOVOSapp or BUS)
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)

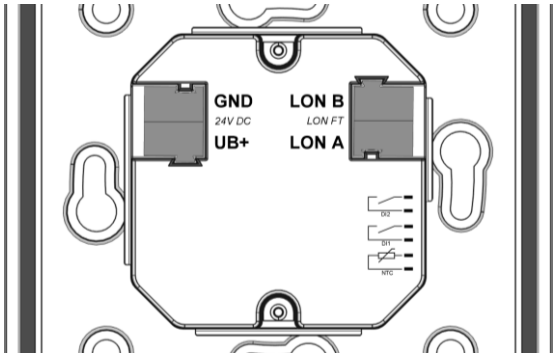
» VOC *(optional)*

Measuring range VOC	0..100 %
Calibration	Self-calibration
Sensor	VOC sensor (heated metal oxide semiconductor)
Notes	Mixed gas sensors detect gases and vapours which can be oxidised (burnt): Body odours, tobacco smoke, exhalations emitted by materials (furniture, carpets, paint, glue ...)

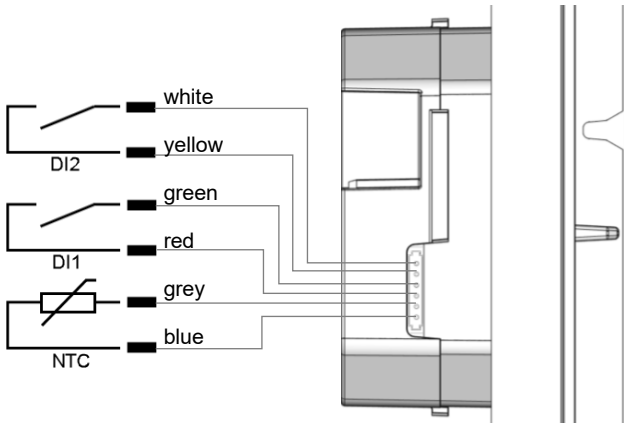
»CONNECTION PLAN

Room operating unit – Active LON

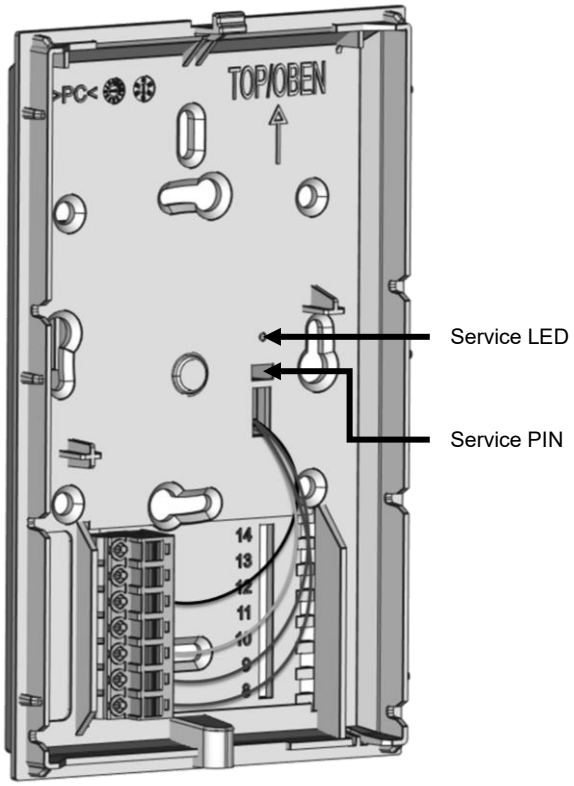
The power supply and the bus line are connected via socket terminals on the rear of the device.



On the side of the lower part of the housing there is a socket connector for connecting up to two digital inputs and one NTC10k sensor. The connection is made via a pre-assembled female connector (included in the scope of delivery).



When the service pin is activated, the service pin telegram is transmitted with the LON device identification - the Neuron chip ID.



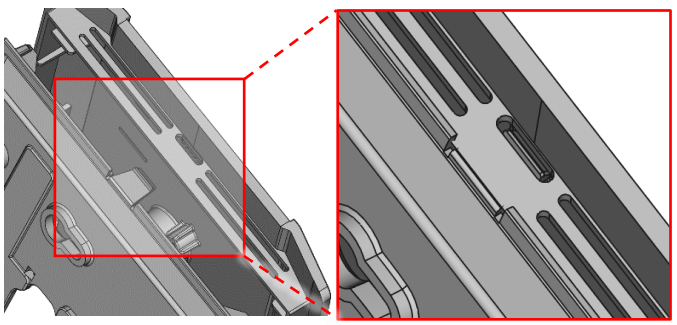
»MOUNTING ADVICE

Please ensure that the device is de-energized before installation!

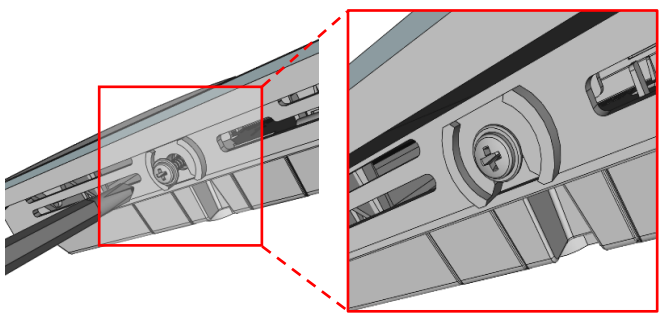
The installation can be performed on a flat wall surface or on a flush-mounted box. A representative installation location should be selected. Direct sunlight and drafts, e.g. through the installation tube, should be avoided to prevent falsification of the measurement result. Seal the end of the installation tube.

- For wiring, the upper part of the device must be removed from the base plate. The base plate and the upper part are detachably connected by means of locking lugs.
- The base plate is mounted on the flat wall surface using wall plugs and screws.
- Finally, the device is attached to the base plate and secured with the screw.

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



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



» FUNCTION DESCRIPTION – HOME SCREEN NOVOS TOUCH

Home screen
The display on the home screen of the NOVOS 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 home screen various icons can be shown or hidden as desired.

Date / time
The time and date are in the centre of the home screen.

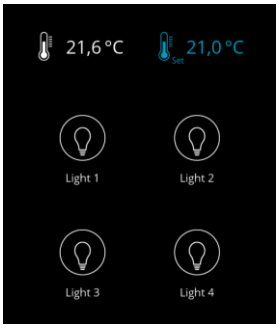
Setpoint / room temperature
The currently set target value of the room control unit and the room temperature are shown on the display.

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.



Favourite buttons
Light, scene groups or complete submenu can be placed on the home screen as a favourite button that is quickly accessible (if only one favourite key is used = favourite button 1). Up to 4 favourite buttons (favourite buttons 2-5) are possible.

Example below: 4 different Light circles (Favourite buttons 2-5)



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.

»CONFIGURATION AND COMMISSIONING

A plug-in for the LonMaker® integration tool is available for configuring and commissioning the room operating panel. To use the plug-in, install it and then register it with the respective network.

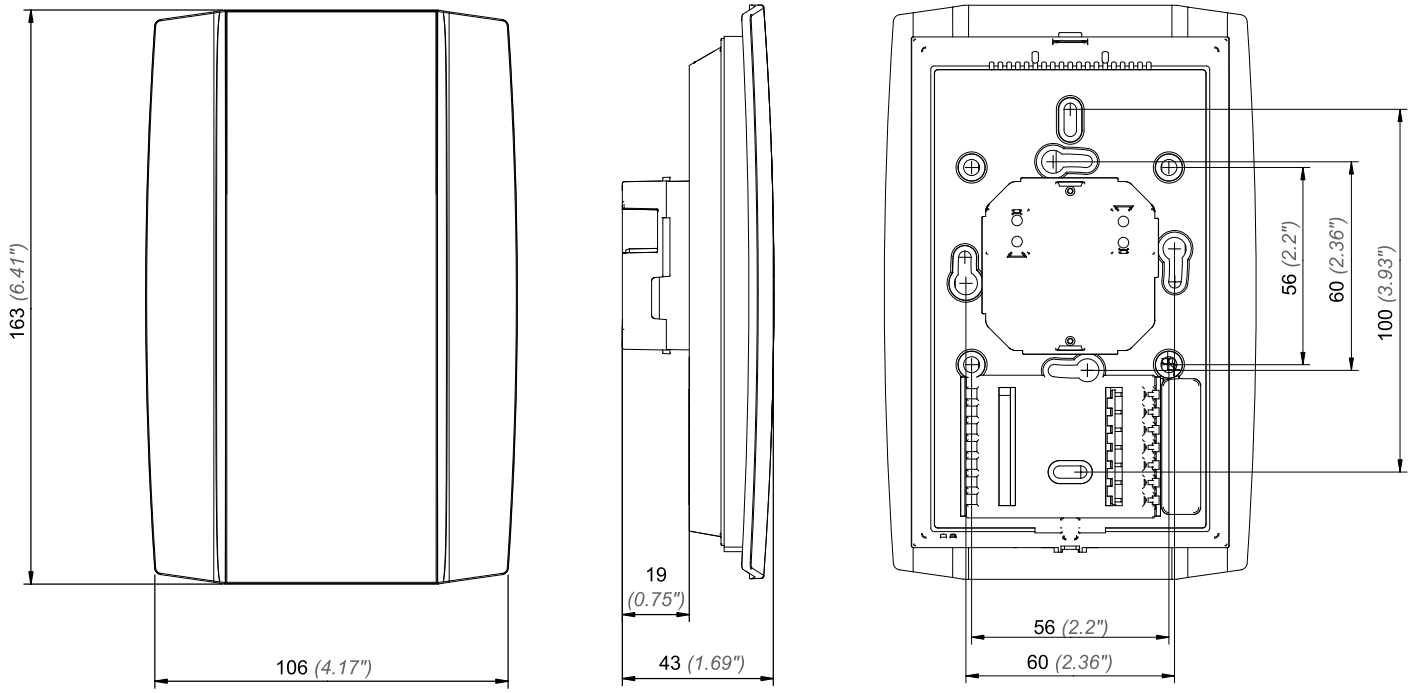
You can download the setup for the installation under the following link:

https://thermokon.de/direct/files/novos-thanos-evo-lon-plugin.zip

Specification LON:
LON interface TP/FT-10

A detailed description of the LON variables can be found in our download centre:
→ **Download**

»DIMENSIONS IN MM (IN.)



»ACCESSORIES (OPTIONAL)

Wall plugs 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
Bluetooth dongle	Item No. 668262
Thermokon USB-Interface	Item No. 597838