

# thermokon®

HOME OF SENSOR TECHNOLOGY



# VIEW

PRODUCT OVERVIEW



MADE IN GERMANY





## LEADER FOR A GOOD REASON

Since 1987, Thermokon is recognized worldwide for leveraging standards in intelligent buildings with engineering, innovation and quality "Made in Germany". Thanks to the development and production of sophisticated sensors and sensor systems we are creating an additional benefit for our customers all over the world. We focus on efficiency, sustainability and openness to new fields of technology as well as a close cooperation and thorough dialogue with our clients.

As a leader for innovation with a broad scope of applications we are continuously developing our portfolio further and offer decisive benefits with regards to product-related values, customised solutions and engineering. Our complete range of products is designed to energy-efficient buildings.

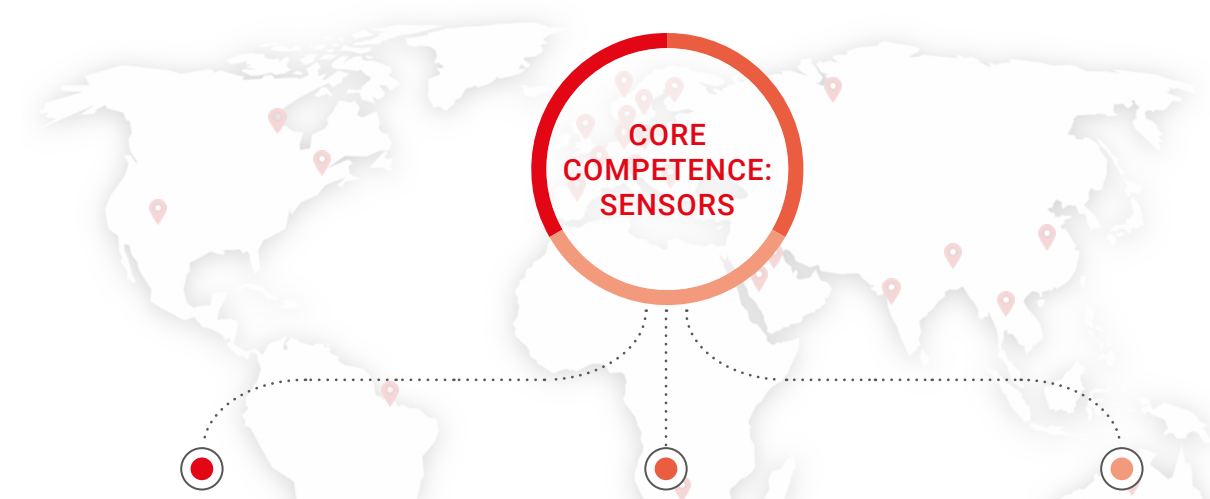
Made in Germany – Home in the world. With these goals in mind, our highly motivated 250 employees are working for your requests every day.

- » Clear focus on the best possible benefit for customers
- » Solution-oriented thinking and action
- » Achieving highest available technology and quality standards

We are glad to count manufacturers, system integrators, controller firms as well as distributors of the HVAC industry and building automation among our clients. Thanks to our success we are an A-supplier for various customers.



## A SUSTAINABLE AND ECONOMICAL PARTNERSHIP



### APPLICATION KNOW-HOW

We know and understand your applications. Thus we also understand your challenges and can interact with you on the same level.

### PROCESS KNOW-HOW

We anticipate your processes and make them more lean and efficient, enabling you to save time and money.

### TECHNOLOGY KNOW-HOW

We have the required technical know-how to deliver you customised and efficient sensor solutions as well as services.



TEMPERATURE

High-quality materials, modern production processes, and many years of experience: We produce temperature sensors for various applications in buildings for heating, refrigeration and air conditioning systems.

PRODUCT EXAMPLES



SENSOR PROTECTION: INNOVATIVE PRESSING AND ROLLING PROCESS

Ensuring the accuracy and reliability of our sensors is our highest priority. The proven **SI-Protection** for protection against corrosion damage, vibrations and measurement

inaccuracies will be supported in future by the innovative **16-point segment pressing (IP65)** or the optionally available **roller burnishing (protection class IP67)**.



» NOVOS 3 Temp Room Sensor



» RGS03 High Temperature Duct Immersion Sensor



» AKF10+ Duct Sensor



» SFK(H)02+ Duct Immersion Sensor



» RDF-IR (Dual) Ceiling Sensor



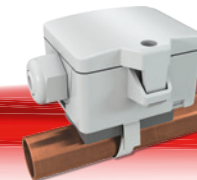
» 16-point pressed (IP65)



» Roller burnished (protection class IP67)



» TF25 Cable Sensor



» VFG54+ Contact Sensor



» AGS55+ Outdoor Sensor



HUMIDITY

Humidity sensors for reliable detection of relative humidity and temperature in residential and commercial buildings, outdoor resp. in gaseous media of heating, ventilation and air conditioning systems.

PRODUCT EXAMPLES



» FTK+  
Duct Sensor

LEAKAGE SENSOR

Leakage sensor for the detection of liquid ingress (water leaks under air conditioners, pipe bursts...) With an electrolytic alternating voltage measurement, the leakage sensor measures point-like via two electrodes.

Thus, the leakage sensor detects water and liquid leaks along the entire sensor line. With a length of up to 30 m, even larger areas can be covered.

PRODUCT EXAMPLES



» LS02+ flex  
Leakage Sensor



» NOVOS 5 rH LCD  
Room Sensor with LCD



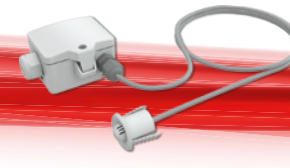
» NOVOS 3 rH  
Room Sensor



» WRF06 rH  
Room Sensor



» FTP+  
Ceiling Pendulum Sensor



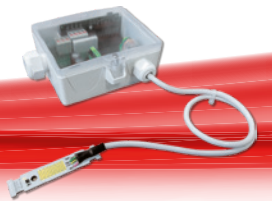
» FT-RDF18+  
Ceiling Sensor



» FTB+  
Wall-mounted Sensor



» FTA54+  
Outdoor Sensor

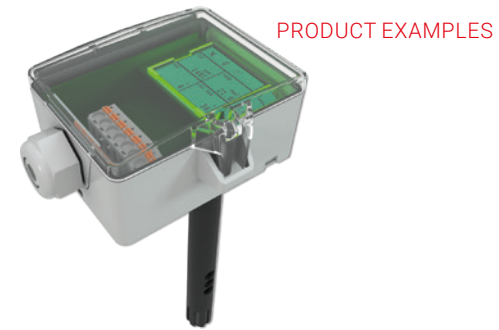


» WK02+  
Condensation Sensor



AIR QUALITY (CO2, VOC, Temp\*, rH\*)

CO2 and VOC sensors allow for individual and demand-controlled supply of fresh air. In modern buildings the use of these sensors is essential in creating energy savings and the comfort levels for everyday living and working conditions.



» LK+ CO2+VOC LCD Duct Sensor

**HIGH ACCURACY**  
DPA250+: only  $\pm 1$  Pa



» DPA+ Dual LCD Differential Pressure and Volume Flow Transducer

PRESSURE AND VELOCITY

Pressure and air flow sensors for cooling and air conditioning must resist extreme conditions. Therefore our products are customised to withstand even the harshest environments.



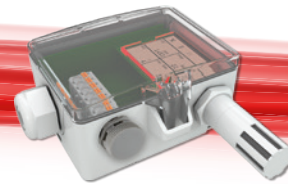
» NOVOS 5 CO2+VOC LCD Room Sensor with LCD



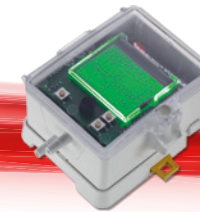
» NOVOS 3 CO2+VOC TLF Room Sensor



» WRF06 AQ TLF Room Sensor



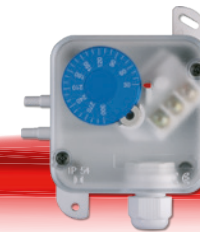
» LA+ CO2+VOC Outdoor Sensor



» DPGe Electr. Differ. Pressure manometer



» AVT Air Flow Transducer



» PS Differential Pressure Switch



» DLF Pressure Transducer

\*OPTION



## LIGHT AND MOTION

Our intelligent sensing allows an increase in physical and emotional well-being of people in the room. Motion and brightness are detected reliably. For individual, comfortable and increased energy-savings.



1

» MDS  
Ceiling Multi Sensor



2

» WRF04I  
Surface Mount Room Motion Sensor



3

» WRF06I  
Flush Mount Room Motion Sensor



4

» RDI  
Ceiling Motion Sensor



» LDF+  
Ceiling Light Sensor



» Li65+  
Outdoor Light Sensor

# ROOM OPERATING UNITS



# ROOM OPERATING UNITS



# ROOM OPERATING UNITS

Our room operating units are designed for an integrated operation of HVAC, lighting and blinds to increase energy efficiency. In addition, up to 4 measuring values can be read through one device: temperature, humidity, CO2 and VOC. A variety of precious designs and sophisticated state-of-the-art technologies are available.



» thanos EVO Design  
Touch Room Operating Unit with Design Frame

## PRODUCT EXAMPLES



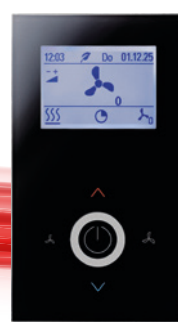
» thanos EVO  
Touch Room Operating Unit



» NOVOS Touch Design  
Touch Room Operating Unit



» NOVOS 7 Design  
Room Operating Unit



» JOY  
Fancoil Thermostat  
Room Thermostat



» NOVOS 5 x LCD  
Room Operating Unit



» NOVOS 3 x  
Room Operating Unit



» LCR Touch  
Room Operating Unit



» LCF02 Touch  
Touch Fancoil Controller



» WRF06 LCD  
Room Operating Unit



» WRF07 P3T3D  
Room Operating Unit



thanos EVO



NOVOS 7



NOVOS Touch



NOVOS 5 x LCD



NOVOS 3 x



NOVOS 5 LCD



NOVOS 3

## ADVANTAGES AND HIGHLIGHTS

### thanos EVO / NOVOS Touch

- » Controlling room climate, lights and shutters
- » Individually configurable scenes
- » Up to four integrated sensors (temperature, relative humidity, CO2 and VOC)
- » Clear visualization of values with trends and traffic light indication (TLF)
- » 4,8" Touchscreen, glass surface
- » Different enclosure colours available:  
**thanos EVO:** white, black  
 Optionally available with design frames in brushed aluminum (silver, graphite, anthracite, gold)  
**NOVOS Touch:** white, black, aluminium
- » Outputs: BACnet, KNX, LON, RS485 Modbus

### NOVOS 7

- » Controlling room climate, lights and shutters
- » Individually configurable scenes
- » Up to four integrated sensors (temperature, relative humidity, CO2 and VOC)
- » Clear visualization of values with trends and traffic light indication
- » 3,5" TFT display, push-and-rotary switch, four user defined buttons
- » Different enclosure colours available (white, black, aluminium)
- » Outputs: BACnet, KNX, LON, RS485 Modbus

### NOVOS 5 x / 3 x

- » Up to four integrated sensors (temperature, relative humidity, CO2 and VOC)
- » Outputs: Passive, 0..10 V, 4..20 mA, BACnet, RS485 Modbus, KNX
- » Setpoint adjuster, rotary switch and button with integrated RGB LED
- » **NOVOS 3 x:**  
Available with EasySens® radio
- » Different enclosure colours available (white, black, aluminium)
- » Optionally available with RGB display and/or design cover (aluminium or black)

### NOVOS 5 / 3

- » Measuring of:  
Temperature, relative humidity, CO2 or VOC
- » Outputs: Passive, 0..10 V, 4..20 mA, BACnet, RS485 Modbus, KNX
- » **NOVOS 3:**  
Available with EasySens® radio
- » Different enclosure colours available (white, black, aluminium)
- » Optionally available with RGB display and/or design cover (aluminium or black)

passive | 0..10 V | 4..20 mA







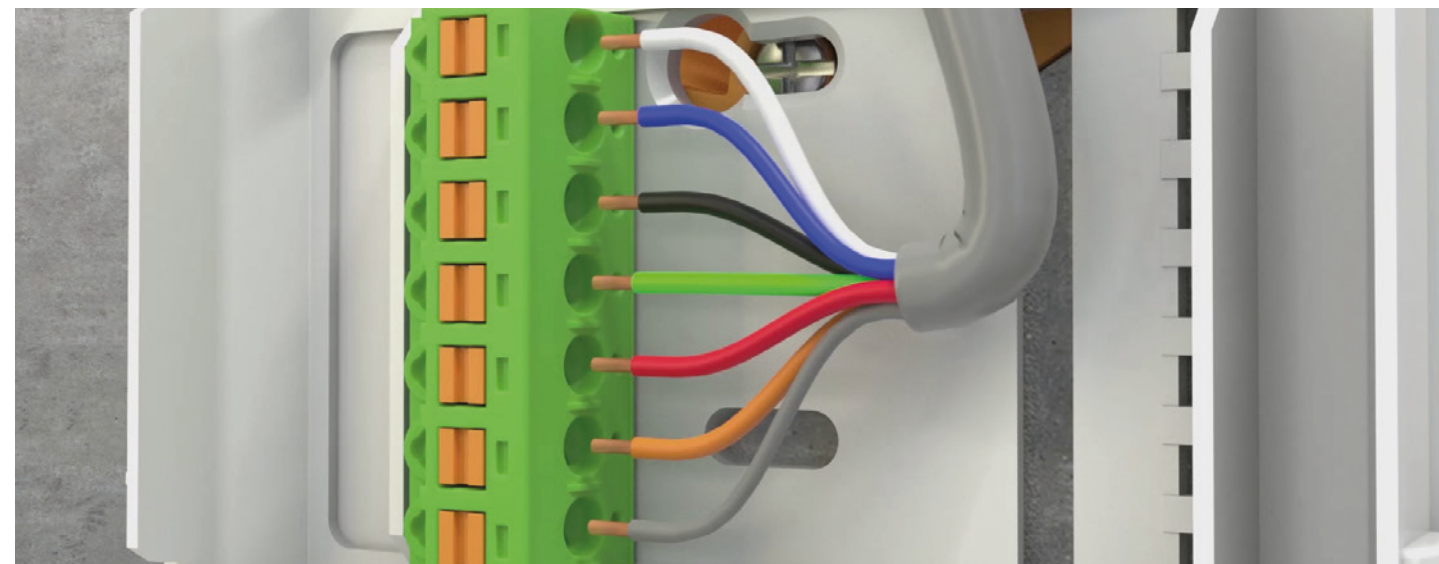
## EASY CONFIGURATION VIA APP

Although every thanos EVO and NOVOS will come with a standard configuration that matches the majority of typical applications in room automation, the devices can be further customised with an individual configuration to suit also complex applications by means of the new app, which also simplifies the integration.

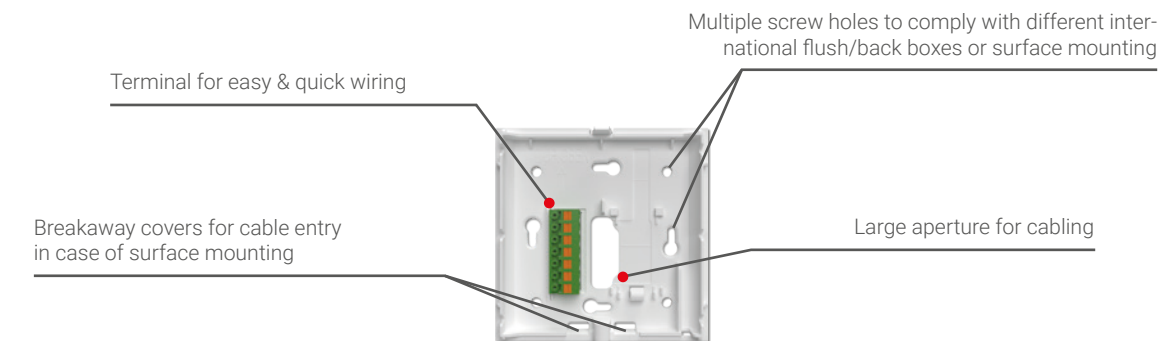
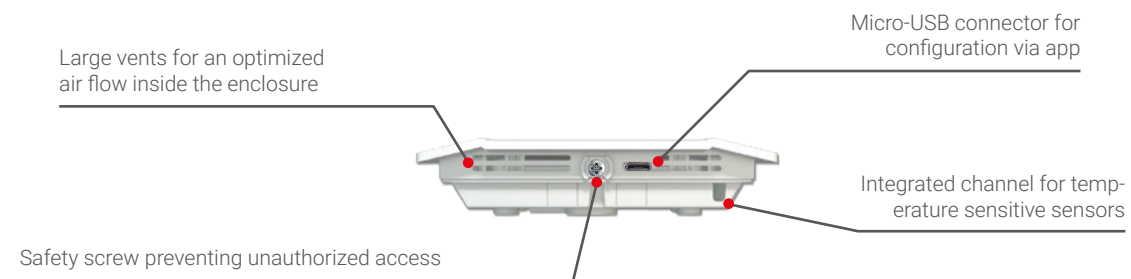
Additionally, each device can be customised post-integration to further extend the functionality to suit new requirements – from changing measuring ranges to configuration of displayed values (e.g. setpoints and fan stages), adjustment of offset values or adjusting thresholds for the traffic light indication.

The communication between the thanos EVO / NOVOS devices and a mobile end device is enabled by a Bluetooth® dongle, that is connected temporarily to the device.

- » Individual configuration of output signals
- » Adjustment of display features and values
- » Setting individual measuring ranges and maintenance intervals
- » Parameterisation of live-zero signals (e.g. 1..10 V etc.)
- » Subsequent setting of offset values to compensate external temperature influencing factors
- » Modbus address offset (extendable up to 247 addresses)



## HIGHLIGHTS





JOY FANCOIL



JOY HEATING/COOLING

## JOY – MULTIFUNCTION WITH APPEALING DESIGN

Appealing design, touch sensitive operation, different communication options to adapt to all building infrastructures: JOY provides efficient and comfortable climate control in room applications.

The visual aspect equals a slimline housing, scratch-proof glass touch interface, exclusive stainless steel power button, large and clear backlit display.

The different models (BUS, standalone, wireless) and types provide flexible building infrastructures meeting customer's requirements and integration into the existing BMS.

Human interaction and integration into the BMS, the JOY is easy to configure and control making it a JOYful experience for users as well as integrators to work with.



## ONE PRODUCT – 5 OPTIONS

- » **JOY FANCOIL 5DO**  
5x normally open contact (for heating/cooling and 3x fan stages), 3x input (2x universal, 1x change-over 230 V)
- » **JOY FANCOIL A02DO**  
2x normally open contact (heating/cooling), 1x 0..10 V output (for control of an EC fan), 3x input (2x universal, 1x change-over 230 V)
- » **JOY FANCOIL 3AO**  
3x 0..10 V output (for control of an EC fan or 6-way valve and for heating/cooling)
- » **JOY HEATING/COOLING A02DO**  
2x normally open contact (for heating/cooling), 1x 0..10 V output (for 6-way valves)
- » **JOY HEATING/COOLING 3AO**  
3x 0..10 V output (for control of an EC fan and heating/cooling)

## TECHNICAL HIGHLIGHTS

- » Smart and flat high-quality design
- » Various types provide high application flexibility
- » Easy configuration
- » Available with EasySens® radio
- » Optional connection of an external temperature sensor for change-over applications
- » Scheduler included for adapting to most different user profiles
- » Integration into BMS (BACnet | EnOcean | Modbus)
- » Integrated ECO function for high energy efficiency



FURTHER INFORMATION  
THERMOKON.DE/EN-GB/HIGHLIGHTS/JOY





GENERAL INFORMATION

Long Range Wide Area Network – short LoRaWAN® – is a radio technology that is capable of transmitting data over a long distance and even from remote and hard-to-reach locations in an energy-efficient, cost-effective and secure manner. Due to the low energy consumption, the batteries of the sensors are extremely durable and can last for several years.

LoRaWAN® uses the so-called ISM frequency band around 868 MHz in Europe, for which no licence fees and no cellular costs are incurred. LoRaWAN® is heavily involved in the development of so-called „smart cities“. In Germany for example, cities and municipalities in particular are building a sustainable and process-optimised infrastructure for building security and monitoring or controlling street lighting.

In Switzerland, France and the Netherlands, telecommunications providers operate a nationwide network of gateways. In addition to the public networks, companies can also set up their own networks (private networks).



**STEP 1 – SENSOR:**  
Sensor value acquisition and bidirectional transmission



**STEP 2 – GATEWAY:**  
Receiving and forwarding data

SYSTEM ARCHITECTURE:  
CLOUD



**STEP 3 – NETWORK AND APPLICATION SERVER (CLOUD):**  
Network management and data routing



**STEP 4 – APPLICATION:**  
Data processing through IoT platforms, e.g. visualisation (Datacake, etc.)

SYSTEM ARCHITECTURE:  
BMS

Network server integrated in gateway



**STEP 3 – BUILDING MANAGEMENT SYSTEM (BMS):**  
Integration into building management systems e.g. via BACnet IP, Modbus TCP/IP, ...

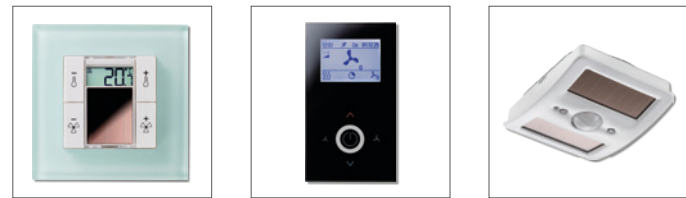


# EasySens®

The Self-Powered, Intelligent Wireless System

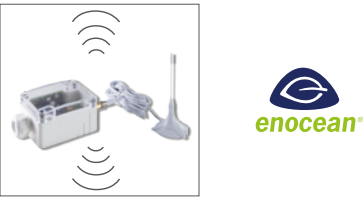


TRANSMITTERS



## ADVANTAGES

- » Cost savings due to Energy Harvesting: Producing energy from the sensor environment
- » Flexibility with sensor location – quick and easy mounting and commissioning
- » Reduction of fire load – no need for wires
- » Easy integration into existing buildings – no wiring
- » High-end designs and direct mounting to all surfaces
- » Compatibility to other manufacturers: International Standard (IEC 14543-3-10)
- » **airConfig:** Convenient parameterisation of the devices using special remote commissioning commands
- » **airScan:** Field strength measuring system for evaluation and ideal placement of transmitters and receivers



## RECEIVERS (TRANSCEIVER)



TOOLBOX



## INTEROPERABLE SYSTEM INTEGRATION





## SR06 LCD

Stylish, compact, user-optimised – the self-powered room operating unit SR06 LCD enables a comfortable control of the room climate.

Besides displaying the actual room temperature it also allows for displaying the adjusted temperature setpoint and switching of lights and blinds (depending on the type).

)))(((SmartACK



## TECHNICAL HIGHLIGHTS

- » Energy self-powered thanks to Energy Harvesting Technology, no wiring and no batteries required
- » Indication of actual temperature and setpoint temperature as well as room occupancy by means of the integrated display
- » Adjustment of room temperature via function buttons
- » Integrated temperature and humidity sensor (optional)
- » Powerful energy storage system with very good energy balance
- » Customised configuration options with airConfig
- » Compatible with switch ranges of various manufacturers



## MCS SR

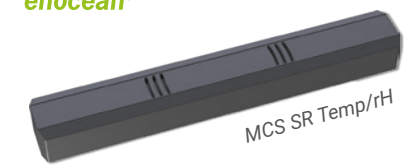
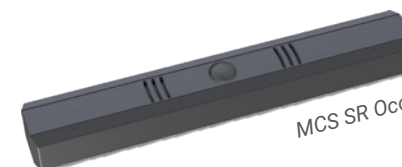
NEW

The new MCS SR compact multi-sensors from Thermokon support the efficient automation of buildings. The small multi sensor can be mounted virtually everywhere and is connected through EnOcean wireless with the Building Management System (BMS).

Barely 15 cm in length and only 1 cm high, the slim sensors are ideal for an inconspicuous mounting on ceilings, walls or work desks. The enclosure, which is identical to the wireless window contact SRW03, ensures a consistent and homogeneous design. Besides the standard colours white and anthracite, the sensors can be painted in multiple other colours to match the installation spots to be as inconspicuous as possible.

## TECHNICAL HIGHLIGHTS

- » Variety of applications due to different types:
  - Occ** – for detecting occupancy
  - Lum** – for measuring luminosity
  - Temp/rH** – for measuring temperature and humidity
  - Occ/Lum** – for measuring occupancy and luminosity
- » Long-lasting battery lifetime (up to 10 years)
- » Flexible positioning by means of adhesive pads or screws
- » Standard colours: White, anthracite
- » High design flexibility: Custom painting on request





**ROOM OPERATING UNITS**

For temperature/humidity detection and integrated operation of HVAC, lighting and blinds.



**LIGHT AND MOTION**

For detection of light and motion in rooms (ceiling or wall mounting) or in outdoor areas.



**SWITCHES**

For control of lights and blinds. Available in switch programmes of different manufacturers.



**WINDOW- / DOOR CONTACTS**

For status monitoring of windows and doors.



**TEMPERATURE**

Temperature sensors for various applications in buildings. (e.g. heating, refrigeration and air conditioning systems).



**HUMIDITY**

For measurement of rel. humidity in rooms, ducts and outdoor areas. Also available with a combined temperature sensor.



**GATEWAYS**

For easy connection to common BUS systems (including BACnet, KNX, LON, RS485 Modbus).



**ACTUATORS**

Radio-controlled valve actuators and receivers for converting electrical signals.



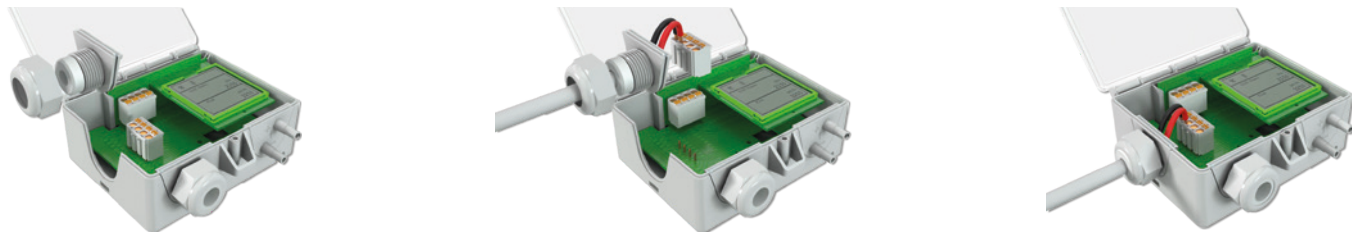


ADVANTAGES AND HIGHLIGHTS



- » High-resolution coloured display
- » Application-specific, exchangeable inserts and cable entries
- » Visualisation of device status and measured values using traffic light function (TLF)
- » Modular platform consisting of base and option PCBs
- » Threshold switch relays
- » Live-zero-signal (e.g. 1..10 V)
- » Interfaces: BACnet, KNX, LON, Modbus
- » Output signals 0..10 V and 4..20 mA
- » Configuration via „USEapp“ (Thermokon® APP)

Removable cable entry and plug-in terminal for easy pre-assembly:

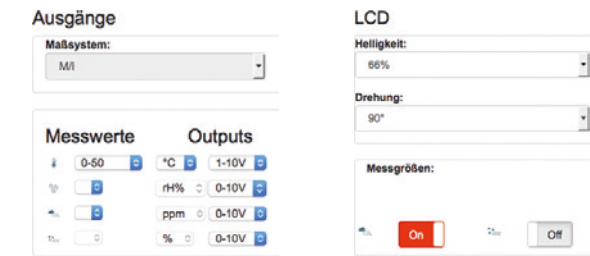


USEapp – FOR INDIVIDUAL CONFIGURATION

All „USEapp“ based products are supplied with a fully functional standard configuration.

Via the „USEapp“ it is possible to extend the range of use and to adapt the configuration individually to application requirements.

- » Communication via Bluetooth® Low-Energy-Module (BLE)
- » Individual configuration of output signals
- » Setting of different measuring ranges
- » Additional adjustment of offset values
- » Parameterisation of Live-Zero-Signal (1...10 V etc.)
- » Setting options for display indications
- » Customised parameterisation of traffic-light function
- » Setting of relay performance and thresholds
- » Modbus address offset (extension)
- » Possibility of firmware updates on-the-go (OTG)
- » Adjustment of maintenance intervals





EUROPEAN CENTRAL BANK  
FRANKFURT, GERMANY  
MORE THAN 13.000 DEVICES



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BELGIAN POLAR RESEARCH STATION,  
QUEEN MAUD LAND, ANTARCTIC



INVESTMENT BANK SCHLESWIG-HOLSTEIN  
KIEL, GERMANY



HAMAD INTERNATIONAL AIRPORT  
DOHA, QATAR



OPERA TOWER  
FRANKFURT, GERMANY



STADE ROLAND GARROS  
TENNIS STADIUM, PARIS, FRANCE



SHELL GLOBAL HEADQUARTERS  
THE HAGUE, NETHERLANDS



SHEIKH ABDULLAH AL SALEM  
CULTURAL CENTER, KUWAIT CITY



FAIRMONT HOTEL VIER JAHRESZEITEN  
HAMBURG, GERMANY



UNIVERSITY OSLO  
OSLO, NORWAY



PRIME TOWER  
ZURICH, SWITZERLAND



TOMSON RIVIERA APARTMENT TOWERS  
SHANGHAI, CHINA



FONDATION LOUIS VUITTON  
PARIS, FRANCE



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HOME OF SENSOR TECHNOLOGY

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