

thermokon®

HOME OF SENSOR TECHNOLOGY



VIEW 2020

PRODUCT OVERVIEW



THE EFFECTIVE SENSOR MANUFACTURER FROM GERMANY





LEADER FOR A GOOD REASON

For more than 30 years, Thermokon is recognized world-wide 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, customized solutions and engineering. Our complete range of products is designed to energy-efficient buildings.

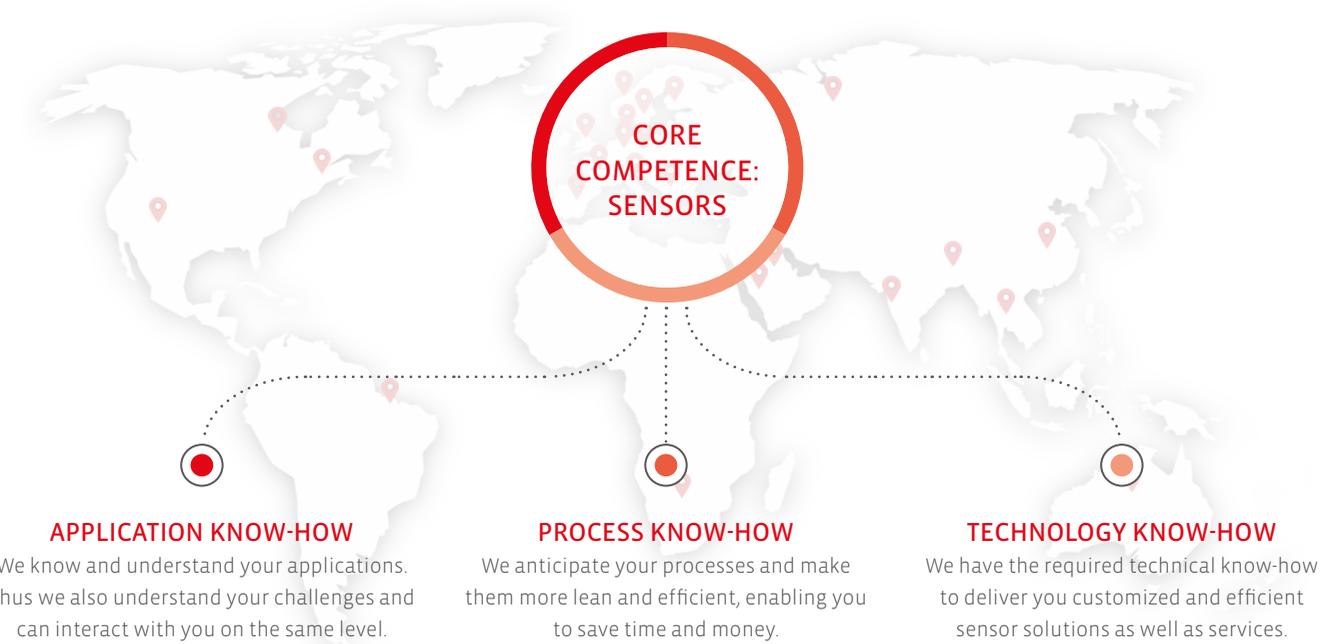
Made in Germany – Home in the world. With these goals in mind, our highly motivated 190 employees are working for your requests every day.

- » 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 customized and efficient sensor solutions as well as services.

TEMPERATURE



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: NEW 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** or the optionally available **roller burnishing (protection class IP67)**.



» 16-point pressed



» Roller burnished (protection class IP67)

NEW



» NOVOS 3 Temp Room Sensor



» RGS03 High Temperature Duct Immersion Sensor



» AKF10+ Duct Sensor



» SFK(H)02+ Duct Immersion Sensor

NEW



» RDF-IR (Dual) Ceiling Sensor



» TF25 Cable Sensor



» VFG54+ Contact Sensor



» AGS55+ Outdoor Sensor

HUMIDITY



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.

NEW



» NOVOS 5 rH LCD Room Sensor with LCD

NEW



» NOVOS 3 rH Room Sensor



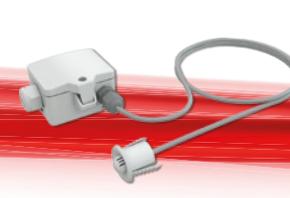
» FTW06 Room Sensor



» FTK+ Duct Sensor



» FTP+ Ceiling Pendulum Sensor



» FT-RDF18+ Ceiling Sensor



» FTB+ Wall-mounted Sensor



» FTA54+ Outdoor Sensor



» LS02+ Leakage Sensor

PRODUCT EXAMPLES

NEW WK02+ 24 V / 230 V

The WK02+ Condensation sensor with LED indication and relay output detects and prevents further condensation on chilled surfaces such as chilled beams.

Designed to be used in control and monitoring applications or for series connection with a cooling valve in order to interrupt the chilled water flow directly at the beginning of condensation. The sensor wire length is 2 meters.

PRODUCT EXAMPLES



» 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.

PRODUCT EXAMPLES



» LK+ CO₂+VOC LCD Duct Sensor

HIGH ACCURACY
DPA250+: only ± 1 Pa



» DPA+ Dual LCD Differential Pressure and Volume Flow Transducer

PRESSURE & VELOCITY

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

NEW



» NOVOS 5 CO₂+VOC LCD Room Sensor with LCD

NEW



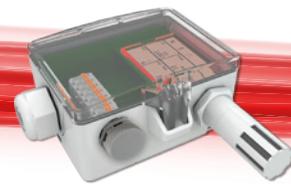
» NOVOS 3 CO₂+VOC TLF Room Sensor

NEW



» WRF06 AQ TLF Room Sensor

NEW



» LA+ CO₂+VOC Outdoor Sensor



» AVT Air Flow Transducer



» PS Differential Pressure Switch



» DPL Differential Pressure Transducer



» Universal-Display (UD-A) for DPL and DLF available

NEW



» DLF Pressure Transducer

*AVAILABLE WITH TEMPERATURE AND HUMIDITY SENSOR



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



» Li04
Surface Mount Room Light Sensor



» LDF+
Ceiling Light Sensor



» Li65+
Outdoor Light Sensor

ROOM OPERATING UNITS



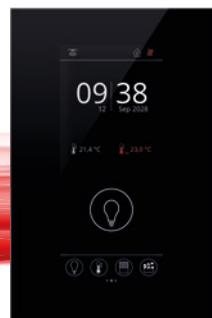
ROOM OPERATING UNITS

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.

PRODUCT EXAMPLES

NEW



» thanos EVO
Touch Room Operating Unit

NEW



» NOVOS Touch
Touch Room Operating Unit

NEW



» NOVOS 7 Design
Room Operating Unit



» JOY
Fancoil Controller /
Room Controller

NEW



» LCR Touch
Room Operating Unit

NEW



» NOVOS 5 x LCD
Room Operating Unit

NEW



» NOVOS 3 x
Room Operating Unit



» LCF02 Touch
Touch Fancoil Controller



» WRF06 LCD
Room Operating Unit



» WRF07 P3T3D
Room Operating Unit



thanos EVO



NOVOS Touch



NOVOS 7



NOVOS 5 x Design LCD



NOVOS 3 x



NOVOS 5 Design 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
NOVOS Touch: white, black, aluminium
- » **Outputs:**
BACnet, RS485 Modbus, KNX*

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, RS485 Modbus, KNX*

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 **NEW**
- » Different enclosure colours available (white, black, aluminium)
- » Optionally available with RGB display and/or design cover (aluminium or black)

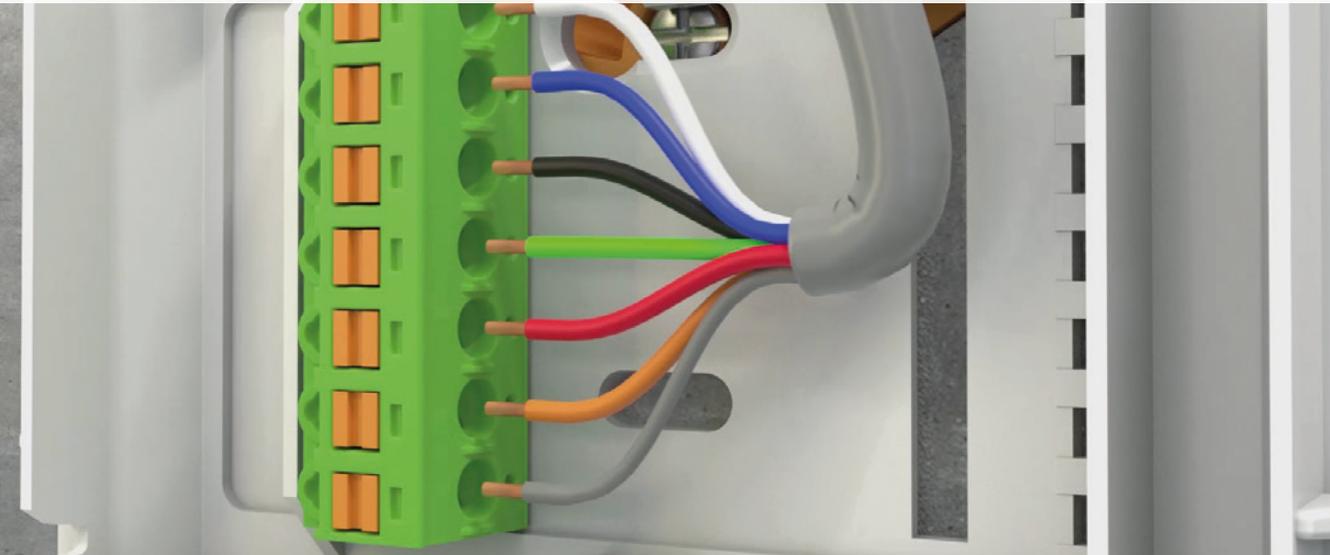
NOVOS 5 / 3

- » 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 **NEW**
- » 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



* available from 2021



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 customized with an individual configuration to suit also complex applications by means of the new app, which also simplifies the integration.

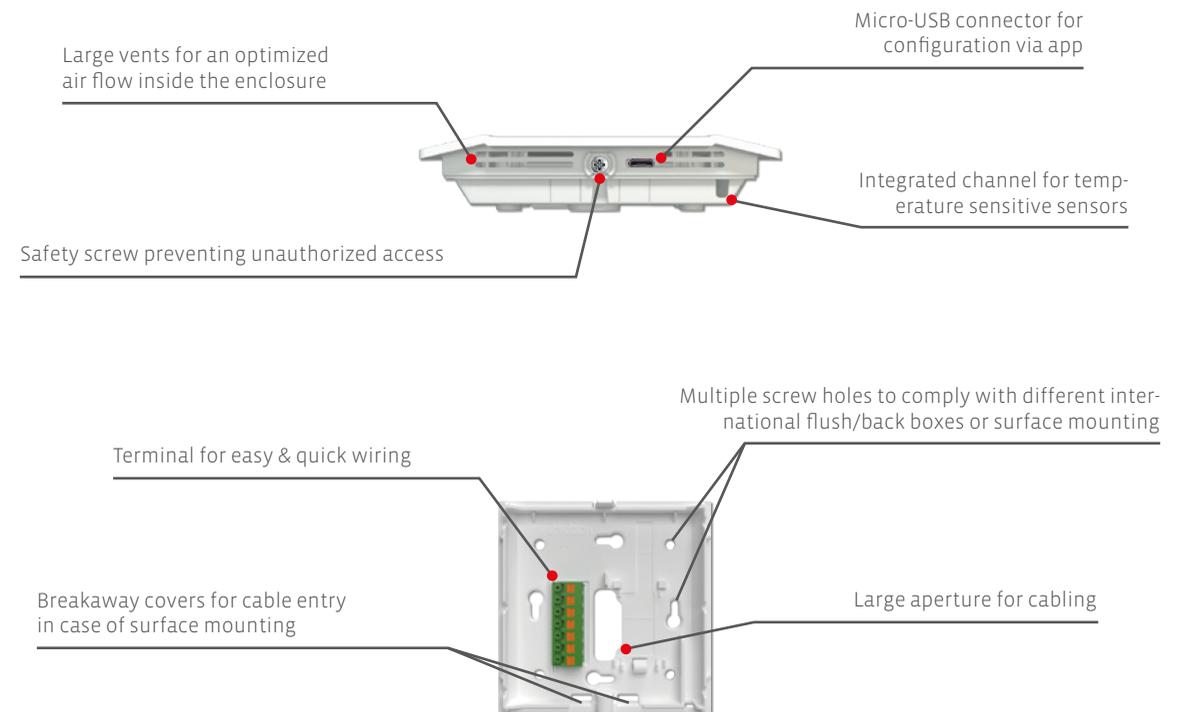
Additionally, each device can be customized post-integration to further extend the functionality to suit new requirements – from changing measuring ranges to configuration of displayed values (e.g. setpoints and fan stages), adjustment of offset values or adjusting thresholds for the traffic light indication.

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
- » Parameterization 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)



TECHNICAL HIGHLIGHTS





JOY – MULTI-FUNCTION 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, FANCOIL EC, JOY SR FANCOIL EC 3AO

» **Types: 5DO / 5DO RS485 Modbus**
5x normally open contact (for heating/cooling and 3x fan stages), 3x input (2x universal, 1x change-over 230 V)

» **Types: EC AO2DO / EC AO2DO RS485 Modbus**
2x normally open contact (heating/cooling), 1x 0..10 V Ausgang output (for control of an EC fan), 3x input (2x universal, 1x change-over 230 V)

» **Types: EC 3AO / EC 3AO RS485 Modbus**
3x 0..10 V output (for control of an EC fan or 6 way valve and for heating/cooling)

JOY HEATING/COOLING, JOY SR HEATING/COOLING

» **Types: HC AO2DO / HC AO2DO RS485 Modbus**
2x normally open contact (for heating/cooling), 1x 0..10 V output (for 6 way valves)

» **Types: HC 3AO / HC 3AO RS485 Modbus**
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 **NEW**
- » Optional connection of an external temperature sensor for change-over applications
- » Scheduler included for adapting to most different user profiles
- » Connection to BMS possible through Modbus
- » Integrated ECO function for high energy efficiency

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





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 parameterization of the devices using special remote commissioning commands
- » **airScan:**
Field strength measuring system for evaluation and ideal placement of transmitters and receivers

**RECEIVERS
(TRANSCIEVER)**



TOOLBOX

**INTEROPERABLE
SYSTEM INTEGRATION**





SR06 LCD – THE TECHNICAL DESIGN HIGHLIGHT

Stylish, compact, user-optimized – the self-sufficient 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.

Emphasis during design has been put on flexibility and maintenance. The room operating unit is energy self-powered solely by solar-cell hence is maintenance-free.

In addition, the SR06 LCD is wireless – no wiring needed. This is optimal for a flexible mounting of the unit especially on glass surfaces and for retrofits on all kind of wall materials.

Thanks to the intelligent EnOcean teach-in process, the SR06 LCD can be easily integrated in receivers and gateways.

EasySens®
The Self-Powered, Intelligent Wireless System



enocean®
SmartACK



» SR06 LCD 2T



» SR06 LCD 4T BTyp1

» SR06 LCD 4T BTyp2

» SR06 LCD 4T BTyp3



» SR06 LCD 2T+Light

» SR06 LCD 2T+Blind

TECHNICAL HIGHLIGHTS

- » Energy self-powered thanks to Energy Harvesting Technology
- » 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 significantly improved energy balance
- » Customized configuration options with airConfig
- » No wiring and no batteries required
- » Compatible with switch ranges of various manufacturer

NEW

FURTHER INFORMATION

THERMOKON.DE/EN/PRODUCT-HIGHLIGHTS/SR06-LCD





ROOM OPERATING UNITS

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



LIGHT & 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.





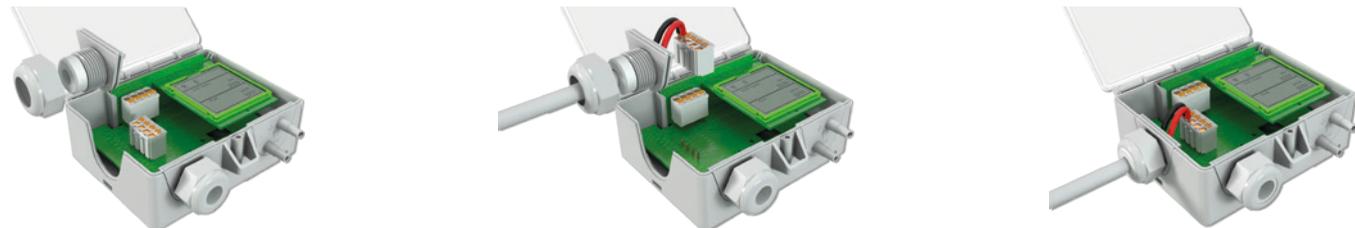
ADVANTAGES AND HIGHLIGHTS

- » High-resolution coloured display
- » Application-specific, exchangeable inserts and cable entries
- » Visualization of device status and measured values using traffig light function (TLF)
- » Modular platform consisting of base and option PCBs



- » Threshold switch relays
- » Live-zero-signal (e.g. 1..10 V)
- » Types with BACnet, LON or Modbus interface available
- » 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:

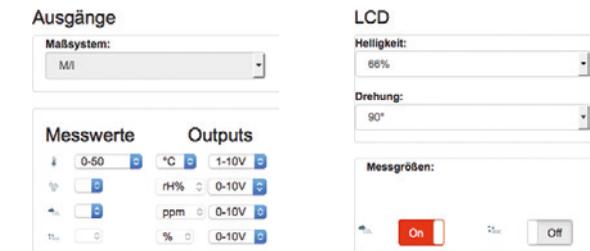


USEapp – FOR INDIVIDUAL CONFIGURATION

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
- » Parameterization of Live-Zero-Signal (1..10 V etc.)
- » Setting options for display indications
- » Customized parameterization 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



Intelligent building technology requires a seamless communication between all components. When developing new solutions we take care, that our products are compatible with all common BUS systems to enable an easy interoperable system integration.



Modbus

Since its development in 1979 the Modbus protocol has become a standard in the industrial communication and plays an important role as an application pro-ocol for data transmission. As the Modbus TCP type, it had significantly advanced the Ethernet communication in

the automation. The combination of manufacturer independent data visualization via Modbus and the universal network standard TCP/IP as well as Ethernet enable the open exchange of process data.



BACnet

The communication protocol BACnet, which is independent of manufacturers, is especially designed for applications in the building automation. The objective of BACnet is the allocation of uniform, non-committed standards for data communication. In Europe BACnet is

represented by the BACnet Interest Group Europe (BIG-EU), the industrial association for the use of global BACnet standards according to ISO 16484-5. BACnet distinguishes itself by high transfer rates.



LOCAL OPERATING NETWORK

LON

The idea of LON technology (Local Operating Network), a worldwide standardized communication and automation protocol, is the interoperability, a high application width and a comprehensive possibility of field applications

enabling the realization of global building automation solutions. Data transmission is made directly from device to device. A central control system is not needed.



KNX

The KNX technology has established itself as a worldwide standard for all applications in the field of home and building system technology – from energy management, HVAC applications or security systems via lighting and shutter control up to the operation of household appliances and

audio/video solutions. KNX is based on the installation tool ETS which is independent of manufacturers and products. ETS is equipped with a full set of transmission media as well as a configuration mode enabling an overall use.



EasySens®

The use of innovative technology makes it possible: The wireless EnOcean based system EasySens® enables a networked building automation – self-powered,

intelligent and maintenance-free. Thus, EasySens® offers best possible flexibility for realizing individual requirements in new buildings and refurbishments.



digitalSTROM

digitalSTROM networks all electrical devices in a household via the existing circuit lines and enables a new dimension of living comfort. From individual light changes up to more energy efficiency and security at home, there is almost nothing that cannot be easily and comfortably be controlled and

automated with digitalSTROM. All necessary components can be mounted everywhere fast and clean. All applications can be controlled via switch or virtually via PC and smart phone. digitalSTROM is the future of your current – but can be used today already.

REFERENCES

REFERENCES

EUROPEAN CENTRAL BANK
FRANKFURT, GERMANY
MORE THAN 13.000 DEVICES



HAMAD INTERNATIONAL AIRPORT
DOHA, QATAR



STAR ARCTIC HOTEL
SAARISELKÄ, FINLAND



SHELL GLOBAL HEADQUARTERS
THE HAGUE, NETHERLANDS



PRIME TOWER
ZURICH, SWITZERLAND



SHEIKH ABDULLAH AL SALEM
CULTURAL CENTER, KUWAIT CITY



FAIRMONT HOTEL VIER JAHRESZEITEN
HAMBURG, GERMANY



UNIVERSITY OSLO
OSLO, NORWAY



FONDATION LOUIS VUITTON
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OPERA TOWER
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SHANGHAI, CHINA



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