

thermokon®

HOME OF SENSOR TECHNOLOGY



PRODUCTS 2018

VALID FROM 1ST APRIL 2018

THE EFFECTIVE SENSOR MANUFACTURER FROM GERMANY



THERMOKON AT A GLANCE



USE



SR06 LCD



JOY



thanos

EasySens®

airScan airConfig

Extension of the intelligent
Wireless System EasySens®



New Company Headquarters
since January 1, 2014



SMD Assembly Line



Former Company Headquarters
in Mittenaar-Bicken

» 2020

- 2018 **Launching** ThermokonDIRECT
- 2017 **Company Anniversary** 30 Years Thermokon Sensortechnik GmbH
- 2016 **Premiere** of the new and innovative enclosure „USE“
- 2015 **Launch** of the new design room operating unit „JOY“
- 2015 **Launch** of the solar-powered room operating unit SR06 LCD
- 2015 **Investment** into a new SMD assembly line
- 2015 **Establishing** Thermokon Sensor Technology Nederland B.V., Netherlands
- 2014 **Establishing** Thermokon Norge AS, Norway
- 2013 **New Company Headquarters** in Mittenaar-Offenbach
- 2013 **Establishing** Thermokon Americas LP, USA
- 2013 **Establishing** Thermokon Sensortechnik Switzerland AG
- 2012 **A reason to celebrate:** 25 Years Thermokon Sensortechnik GmbH
- 2011 **Establishing** Thermokon Automation Equipment Co. Ltd., China
- 2011 **Launch of the** high-end touch room operating unit thanos

» 2010

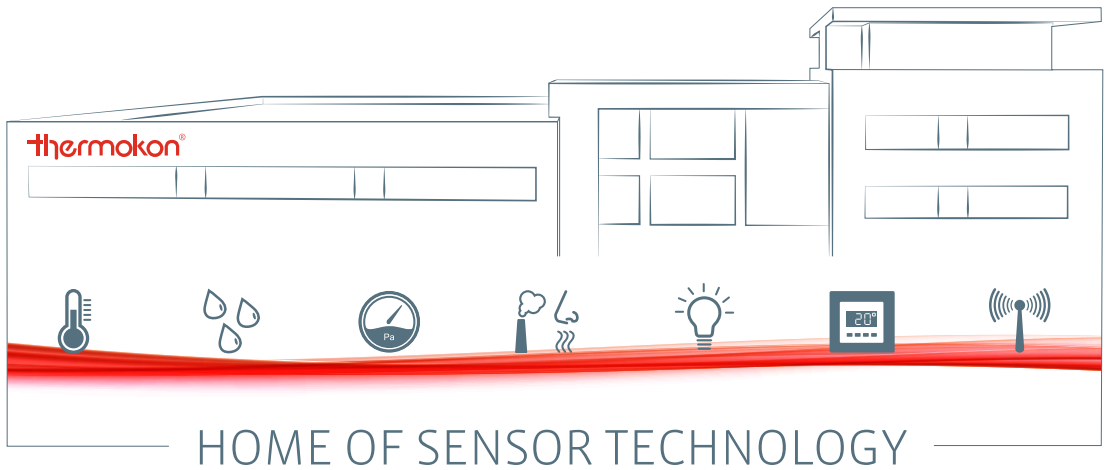
- 2009 **Extension** of the product portfolio to sensors with BACnet interface
- 2007 **Further extension** of the company building by 600 m²
- 2005 **Launch** of the design room operating unit WRF08
- 2005 **Extension** of the product portfolio to sensors with Modbus interface
- 2004 **Launch** of the innovative wireless sensor system EasySens®
- 2002 **Launch** of the surface mounted room operating unit WRF04
- 2002 **Establishing** Thermokon-Danelko Elektronik AB, Sweden
- 2002 **Anniversary** 15 Years Thermokon Sensortechnik GmbH
- 2000 **Further extension** of the company building to 2.000 m²

» 2000

- 1998 **Establishing** Thermokon Components GmbH, Austria
- 1997 **Extension** of the company building in in Mittenaar-Bicken
- 1995 **First production** of humidity sensors
- 1995 **Extension** of the product portfolio to sensors with LON interface
- 1995 **First production** of mixed gas and brightness sensors
- 1995 **Launch** of a quality management system according to DIN EN ISO 9001
- 1994 **New company building** in Mittenaar-Bicken

» 1990

- 1987 **Development and production** of temperature sensors for the heating industry
- 1987 **Company foundation** of Thermokon Sensortechnik GmbH by Harald Zygan



FROM A SINGLE PRODUCT TO A SYSTEM SOLUTION

» ENERGY-EFFICIENT HIGH-TECH PRODUCTS

What started with the foundation of Thermokon Sensortechnik GmbH by Harald Zygan in 1987 has evolved to a success story quickly: The initial specialization on temperature sensors for the boiler industry was soon followed by an extension of the portfolio to sensor solutions for the detection of relative humidity, air quality and brightness. Those products laid the foundation for energy-efficient products within our systems and solutions.

Nowadays, we are contributing actively to the sustainability of buildings as well as the reduction of CO2 emissions. When developing our high-tech products we pay especially attention to a lean and plug & play design so that our systems are "easy to install". Of course, a time and cost-saving configuration is considered as well.

» CONTINUOUS GROWTH

Our growth to a Global Player involves a consequent optimization of our headquarters and included a new building in Mittenaar-Bicken in 1994. This building was continuously extended in the following years. In 2014 we moved our headquarters to a new location in Mittenaar-Offenbach.

A generous construction, latest technologies and ideal production conditions give us the flexibility and creativity for the development and production of advanced sensor solutions.



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Core Competence: Sensors

From Mittenaar across the Globe

BECOME A USER

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The USE Family

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Light and Motion

Multi sensors

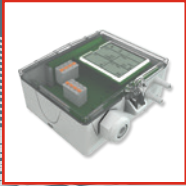
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AVAILABLE 07/2018



» JOY SR HC

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The radio room comfort controller in high-class design is used for individual temperature control in living spaces, hotels and ...

AVAILABLE 07/2018



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99

Wireless EasySens® switch for controls of lighting and air-conditioning applications in rooms ...

AVAILABLE 10/2018



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113

Bidirectional gateway between EasySens® wireless sensors and the EIB/KNX bus for mounting in a standard ...



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» FTP+

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Room pendulum sensor for sectional measuring of relative humidity and temperature in large and high ...



» FTB+

341

Wall-mounted recessed sensor measuring relative humidity and temperature for plastered flush-mounting boxes or ...



» LS02+

357

The leakage sensor with switch contacts and two signal LEDs is used to monitor containers, false floors, false ceilings...



» LA+

392

Air quality sensor for measuring CO₂, mixed gas (VOC), temperature and humidity outdoors and in areas requiring high ...



» DPA+ Dual

362

A versatile device for measuring and monitoring the overpressure, underpressure, differential pressure and ...



» Li65+

399

Outdoor sensor measuring light, temperature, humidity and atmospheric pressure typically used in lighting ...

AVAILABLE 10/2018



» WRF06 AQ

382

Flush-mounted sensor for detection of CO₂ and/or mixed gas, temperature (optional) and relative humidity (optional) ...



» LDF+

405

The brightness sensor for ceiling installations detects indoor and outdoor light levels in living rooms, offices ...

AVAILABLE 10/2018



» LP+

384

Room pendulum sensor for measuring CO₂ in large rooms (open space offices, production halls, ...

THERMOKON® **USE**app – FOR INDIVIDUAL CONFIGURATION



Thermokon® USEapp



INTEROPERABLE SYSTEM INTEGRATION

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



MODBUS

Since its development in the year 1979 the Modbus protocol had become a standard in the industrial communication and plays an important role as an application protocol 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 and the 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.



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.

COMPATIBILITY IS THE ASSET



KNX

The KNX technology has established well 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



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.



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.

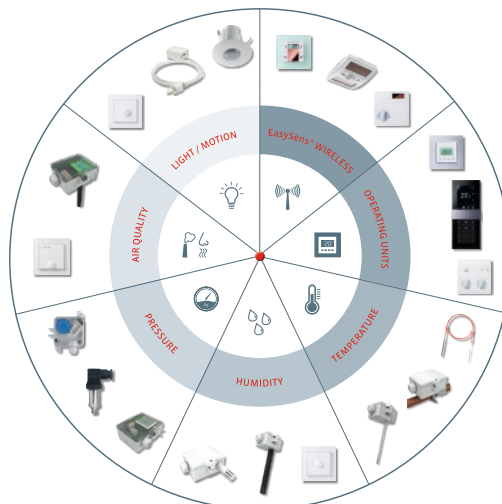
» The Effective Sensor Manufacturer
for an Efficient Partnership



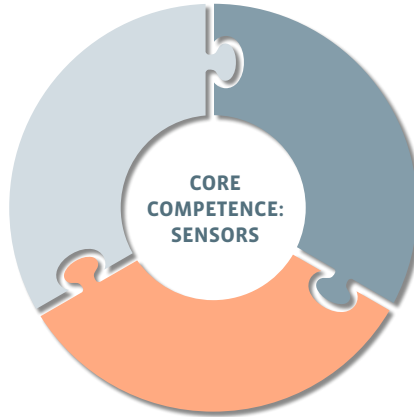
OUR EXPERTISE – YOUR SUCCESS

For more than 30 years, 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, customized solutions and engineering. Our complete range of products is designed to energy-efficient buildings striving for an “A” classification according to DIN EN 15232.



APPLICATION KNOW-HOW



PROCESS KNOW-HOW

TECHNOLOGY KNOW-HOW

QUALIFIED, RELIABLE, EFFICIENT

As the “Home of Sensor Technology” for building automation and HVAC Thermokon offers the essential knowledge to combine quality with efficiency to create customers’ benefit by innovative solutions. Your success is guaranteed by our expertise. Thanks to well-engineered and high-grade products, a 5-year warranty with accommodating exceptions and proactive initiation of new innovations, you can rely on us at any time.

Efficiency is an additional strength. We offer an excellent cost-performance ratio which pays off in terms of quality and service. Comprehensive sensor solutions are offered from a single source.

» APPLICATION KNOW-HOW

We know and understand your applications – thus we consult and act goal-oriented.

» TECHNOLOGY KNOW-HOW

We have the necessary technology know-how to offer customized products and service.

» PROCESS KNOW-HOW

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



Worldwide Subsidiaries and Distributors

FROM MITTENAAR ACROSS THE GLOBE

» GLOBAL PLAYER WITH REGIONAL ROOTS

Trend-setting sensors and sensor systems are developed and produced at our headquarters in Mittenaar-Offenbach with currently 200 employees. Besides our core values – safety, openness to new technologies and sustainability as well as our daily motivation striving for excellence in sensors, we established an own R&D department, an in-house test laboratory, a climatic chamber as well as an own SMD assembly line for our PCBs.

In addition, our finished goods warehouse ensures our delivery ability at any time. The responsible handling of resources in all corporate sectors is self-evident.

» REPRESENTED IN MORE THAN 80 COUNTRIES

Our clients are manufacturers, system integrators, controller companies and strategic distributors in the HVAC industry and building automation. Our products and systems are exported all over the world.

A local support and presence is guaranteed by branches in Austria, Sweden, China, Switzerland, Finland and the Netherlands as well as a sales agency in Russia. Due to a complementary cooperation with distributors in many parts of the world our product portfolio is available in more than 80 countries.



 **Bluetooth**[®]

THERMOKON[®] USEapp – FOR INDIVIDUAL CONFIGURATION

» HIGHLIGHTS AND FEATURES

- » Communication via Bluetooth[®] Low-Energy-Module (BLE)
- » For use on mobile terminals (Android and iOS)
- » 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 (TLF)

- » Setting of relay performance and thresholds
- » Modbus address offset (extension)
- » Possibility of firmware updates on-the-go (OTG)
- » Adjustment of maintenance intervals

All "USEapp" based products are supplied with a fully functional standard configuration for direct mounting/installation. Via the "USEapp" it is feasible to extend the range of use and to adapt the configuration individually to application requirements.



Thermokon[®] USEapp




Download on the
App Store




GET IT ON
Google Play



THE **USE** FAMILY FOR EASY AND FAST MOUNTING

» THE ENCLOSURE FOR MOUNTING EFFICIENCY

The innovative enclosures of the **USE** family are setting new standards: Mounting of sensors is easier, faster and more comfortable than ever before. **USE** makes the decisive difference.

UNIVERSALLY MOUNTABLE

SAVING TIME

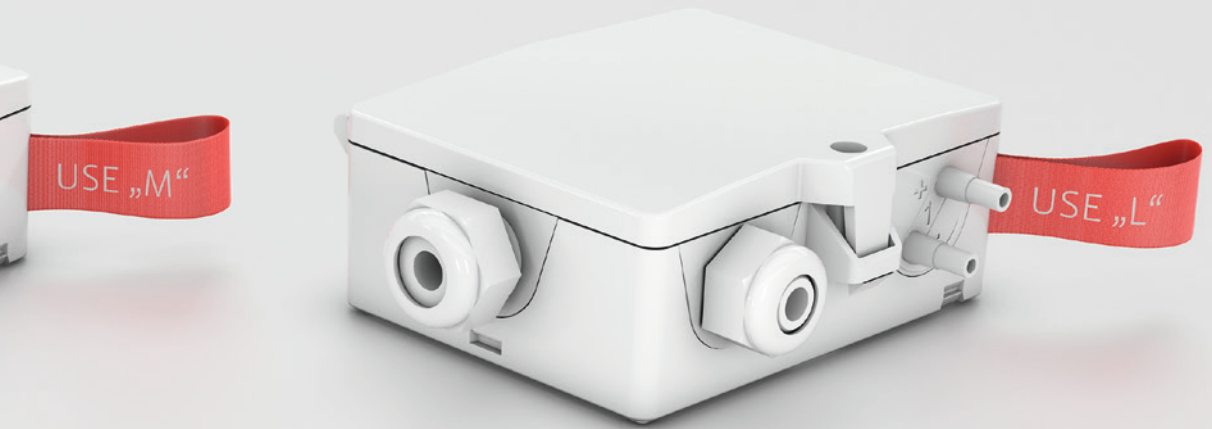
EASY TO INSTALL

» UNIVERSAL MOUNTING

USE – an intelligent and flexible mounting solution - no matter if for temperature, humidity, air quality or pressure sensors: the **USE** devices enable various mounting methods: with clip, base, flange or even on a DIN rail.

For best possible application flexibility the enclosures of the **USE** family have various modular inserts and cable glands as well as corresponding changeable sealing inserts.

» become a **USER** | The **Thermokon**[®] USE Family



UNIVERSALLY MOUNTABLE

- » Intelligent and flexible mounting solutions for temperature, humidity, air quality, pressure sensors and others
- » Various modular inserts and cable glands (M16, M20, M25) as well as different changeable sealing inserts for different cable cross-sections



SAVING OF TIME

(up to 50% less installation time)*

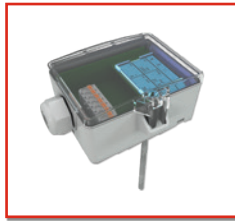
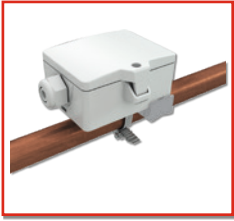
- » No tools needed for opening, closing or wiring
- » High mounting flexibility
- » Removable cable glands

EASY TO INSTALL

- » Hinged-over (captive) with quick release fastener
- » Fast connection thanks to removable terminal clamps
- » Pre-assembly possible



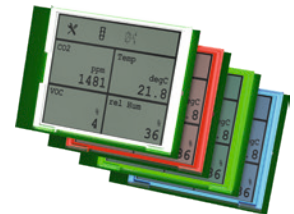
**compared to the pre-assembly of previous enclosure types*



THE 9 BENEFITS OF THE **USE** FAMILY

» (1) HIGH-RESOLUTION COLOURED DISPLAY

- » Easy to read Matrix-LCD
- » Displaying up to 4 Sensor Values simultaneously, individual selection
- » Status indicator (maintenance, failure etc.)
- » Status-dependent RGB background illumination (red, green, blue, white)
- » Dimmable luminosity
- » Horizontal or vertical display possible
- » Configurable via "USEapp"



» (2) APPLICATION-SPECIFIC, EXCHANGEABLE INSERTS AND CABLE GLANDS

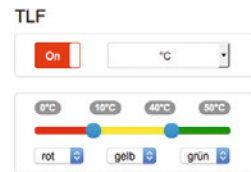
- » Cable glands Flextherm M16 (Ø=3.7 mm), M20, M25
- » Differential pressure entries: 2-fold, 4-fold (for 2 measurements)
- » Blind cover for EasySens® wireless applications
- » Multiple sealing inserts for different cables and cable diameters





» (3) VISUALIZATION OF DEVICE STATUS AND MEASURED VALUES USING TRAFFIC LIGHT FUNCTION (TLF)

- » Predefined measuring ranges and devices status are indicated using different background illumination
- » Individual configuration possible using the "USEapp" (only in case standard configuration is not suitable)



» (4) MODULAR PLATFORM CONSISTING OF BASE AND OPTION PCBs

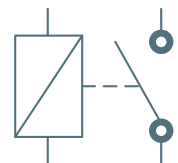
By means of the base PCB, the **USE** family offers multiple option PCBs to extend functionality of every device in order to customize to specific applications e.g.

- Display/traffic light function (TLF)
- 4..20 mA (with/without display)
- BUS systems (with/without display)
- Relay (with/without display)



» (5) THRESHOLD SWITCHES

- » Two relays (5A) to switch in case of exceeding/falling below predefined threshold values
- » Protection mechanism to remain below set limit values
- » Individual configuration possible using the "USEapp"





ALWAYS THE BEST SOLUTION

» (6) LIVE ZERO SIGNAL (E.G. 1..10 V)

- » Increase in system reliability by means of quick detection of failures and drop-outs.(e.g. defective cables)
- » The value „zero“ (0 V) will not be read as a normed signal (e.g. 1..10 V for 0..50 °C)
- » Configuration via "USEapp" possible

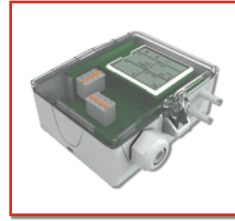
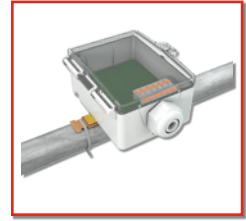
» (7) MODBUS COMPATIBILITY

- » All products in the **USE M** and **USE L** enclosures are compatible with Modbus and BACnet
- » Strainless BUS-settings via Dip-switches possible
- » Modbus-Address extension using "USE app"
- » Indication of Modbus-Address in the LCD
- » Separated cable glands for BUS connection and output signals



» (8) OUTPUT SIGNALS 0..10 V AND 4..20 mA

- » Adaptation of output signals to DDC inputs
- » All products in the **USE M** and **USE L** enclosure offer default a 0..10 V outputs
- » All types V and VV are also available with 4..20 mA outputs



» (9) CONFIGURATION VIA "USEapp" (THERMOKON APP)

By means of the innovative "USE app", the possible application range in terms of configuration and parameterization is almost limitless. Configurations can be stored and uploaded to the device afterwards.



Alle "USEapp"-compatible products are delivered fully functional with a default configuration for an immediate installation (configuration via DIP switches/jumpers).



» FURTHER INFORMATION ARE AVAILABLE AT WWW.THERMOKON.COM

» Multi-function with appealing design
 JOY SR Fancoil – JOY SR HC – JOY Fancoil – JOY HC



Type	GENERAL				
	Buttons temperature	Buttons fan control	RS485 Modbus 	EasySens® 	Configuration via
Joy Fancoil 5DO	■	■			SD Card
Joy Fancoil 5DO RS485 Modbus	■	■	■		SD Card, BUS
Joy Fancoil EC AO2DO	■	■			SD Card
Joy Fancoil EC AO2DO RS485 Modbus	■	■	■		SD Card, BUS
Joy HC AO2DO	■				SD Card
Joy HC AO2DO RS485 Modbus	■		■		SD Card, BUS
Joy SR HC AO2DO RS485 Modbus	■		■	■	SD Card, BUS
Joy Fancoil EC 3AO	■	■			SD Card
Joy Fancoil EC 3AO RS485 Modbus	■	■	■		SD Card, BUS
Joy SR Fancoil EC 3AO RS485 Modbus	■	■	■	■	SD Card, BUS
Joy HC 3AO	■				SD Card
Joy HC 3AO RS485 Modbus	■		■		SD Card, BUS
Joy SR HC 3AO RS485 Modbus	■		■	■	SD Card, BUS



Power supply	INPUTS	OUTPUTS				
	Universal (configurable)	3x digital (fan)	2x digital (heating/cooling)	1x analogue (EC fan)	1x analogue (6-way valve)	2x analogue (heating/cooling)
230 V	3x	■	■			
230 V	2x	■	■			
230 V	3x		■	■		
230 V	2x		■	■		
230 V	3x		■		■	
230 V	2x		■		■	
230 V	2x		■		■	
24 V	3x			■	■*	■
24 V	2x			■	■*	■
24 V	2x			■	■*	■
24 V	3x				■	■
24 V	2x				■	■
24 V	2x				■	■

* Instead of 2x analogue (heating/cooling)



Bikini House
Berlin, Germany



European Central Bank, New Building
Frankfurt, Germany



European Patent Office
Munich, Germany



Scandic
Berlin, Germany



Le Méridien
Stuttgart, Germany



Tower 185
Frankfurt, Germany



Alte Oper
Frankfurt, Germany



Semperoper
Dresden, Germany



Liebfrauenkirche (Cultural Heritage)
Trier, Germany



Airport Franz Josef Strauß
Munich, Germany



Waldorf Astoria
Berlin, Germany



Grand Millenium
Dubai, UAE



Fondation Louis Vuitton
Paris, France



The White House
Washington D.C., USA



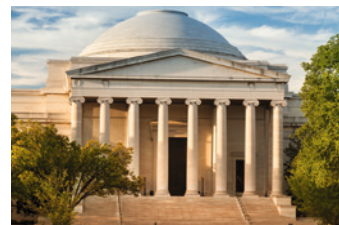
Tomson Riviera Apartment Towers
Shanghai, China



4 Towers Business Area
Madrid, Spain



Flughafen Roissy Charles de Gaulle
Paris, France



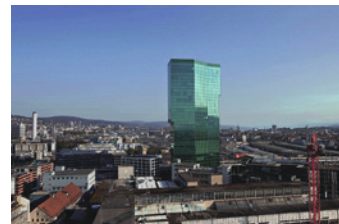
The National Gallery of Art
Washington D.C., USA



Hotel Savoyen
Vienna, Austria



Ascot Racecourse
Ascot, England



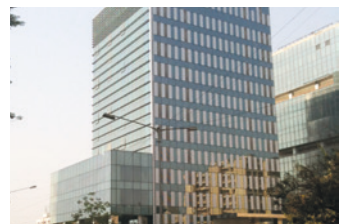
Prime Tower
Zurich, Switzerland



University of Canterbury
Christchurch, New Zealand



Changi City Point Shopping Mall
Singapore



First Rand Bank
Mumbai, India



5-YEAR WARRANTY

» LASTING RELIABILITY

Due to high quality and durability of our products we offer a 5-year warranty from date of production for all products produced as of 01.01.2014.



You are interested in details? Please visit:

www.thermokon.de/en/product-highlights/5-years-warranty/

SI-PROTECTION

» FOR NON-CORRODING SENSORS

If the ambient temperature fluctuates around dew-point, condensatation might appear. For your sensors condensate can have unpleasant consequences: Humidity penetrates into the soldering point of the sensor, the sensor oxidizes and begins to corrode. Thus, the measuring result becomes unreliable.



SI-Protection offers you a safe protection against corrosion damages, vibrations and measuring inaccuracies. The contact points of the sensors are first coated with epoxy resin and with a casting compound afterwards.

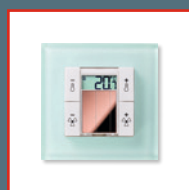
Due to the permanent connection with the insulation material of the wire a closed unit is established protecting the sensor reliably against vibration and humidity. This effect is additionally supported by the rolled pocket.



EasySens® Transmitter



Innovative self-powered wireless technology generates energy by means of harvesting ambient light or motion. Interoperable, cost-effective and energy-efficient solutions in building automation are available using our wireless sensor system EasySens®.



General Information

EasySens® / airConfig / airScan / Sample applications

Room operating units

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SR65	Outdoor temperature sensor	66
SR65 AKF	Duct temperature sensor	67
SR65 TF	Cable temperature sensor	69
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Humidity

SR07 rH	Room sensor temp. + humidity	72
SR04 rH	Room sensor temp. + humidity	74
LC-SR04 rH	Room sensor temp. + humidity	75
SR65 rH	Outdoor sensor temp. + humidity	76

Air quality

SR04 CO2	Surface mount air quality sensor	77
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Light & Motion

SR-MDS	Ceiling multi sensor	79
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» *Realization of flexible and individual building automation for new buildings and retrofit projects*

EasySens® – THE SELF-POWERED INTELLIGENT WIRELESS SYSTEM



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.

» THE BENEFITS

- » Cost saving thanks to Energy Harvesting
- » Flexibility with sensor location – quick and easy mounting and commissioning
- » Easy, wireless integration in existing buildings as well as retrofit adaptations to changed room layouts
- » Reduction of fire load
- » Direct mounting to representative measuring points
- » Compatibility and interoperability with different manufacturers by using international standards (IEC 14543-3-10)

» SELF-POWERED

Thanks to EasySens® wired power supplies and the change of batteries are things of the past. The Energy Harvesting technology enables a self-powered operation of products.

- » Energy is extracted by using integrated solar cells and kinetic energy of the sensor environment.

» INTELLIGENT

Using the approved international frequencies, EasySens® based transmitters and receivers communicate autonomously in the building automation.

- » Status synchronization and triggering of different control commands based on defined parameters
- » Bidirectional communication of self-powered devices by means of SmartACKNOWLEDGE

» WIRELESS

Thanks to EasySens® variable room layouts, reconstructions during running hotel operation or renovations in heritage-protected buildings are pretty simple.

- » No time-consuming works – no wiring
- » Low costs of material enabling cost-effective system solutions

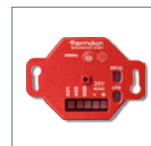


SYSTEM OVERVIEW



TRANSMITTERS

RECEIVERS (TRANSCIEVER)



TOOLBOX

INTEROPERABLE SYSTEM INTEGRATION



» Parameterization without direct interaction of the corresponding EasySens® device (Remote Commissioning)



airConfig – COMMISSIONING MADE EASY!



The use of EnOcean RF telegrams and the airScan USB transceiver make it possible: airConfig enables comfortable parameterization of your EasySens® devices by means of special remote commissioning commands.

No more direct interaction and tiresome accessing of devices in buildings. Benefit by a significant time-saving. Thus, the communication of your devices is guaranteed.

» THE BENEFITS

- » Simple seamlessly learning-in, configuration and deletion of devices via RF technology
- » Adjustment of configuration parameters – e.g. waking-up cycles or measuring ranges – in the device settings
- » Saving of configuration parameters
- » Transparent and central availability system information
- » Uncomplicated handling of maintenance and support works

» COMFORT INCLUSIVE: INSTALLATION + CONFIGURATION

- » Individual designation of sensors
- » Configuration of measured values (EEP) and sensor parameters
- » Learning-in of sensors by means of Drag & Drop via RF (Remote Management)
- » Saving of time (configuration via Copy&Paste)
- » Remote access to product and project information

» FLEXIBILITY AND SAFETY

- » Structured product presentation thanks to device ID
- » Change of product configurations even at inaccessible mounting places
- » Change of specifications and parameterization on-site or via remote access
- » Password protected configuration of actuators
- » Identification via visual and acoustic feedback





» *Field strength measuring instrument for easy planning and realization of EasySens® projects*

airScan – MEASURING AND MONITORING



You would like to plan and realize EasySens projects simply? Then airScan, the field strength measuring instrument of Thermokon, is the right tool for you: The traffic light indication (RSSI) displays the signal strengths received and shows reliably the optimal mounting place for transmitters and receivers.

Even in daily use the work with airScan cannot be easier. On the well-structured surface all telegrams received are clearly listed and allocated to the corresponding product.



» THE BENEFITS

- » Find the best location for your device
- » Monitoring function for easy evaluation of RF telegrams
- » Logging, repeater function and possibility of remote maintenance
- » Data export for further process/analysis in CSV-, XML- or XLS data formats
- » Generation and transmission of EnOcean telegrams
- » Status detection of product ID, field strength and manufacturers of integrated products
- » Full support of EEP2.6.3 standards

» GENERATION OF TELEGRAMS – EASY, FLEXIBLE, UNCOMPLICATED

- » Taking-over of desired EnOcean profile from a pre-defined EEP selection
- » Definition of telegram content via input fields
- » Easy and fast generation and transmission of telegrams

» CLEAR VISUAL STRUCTURE

- » Translation of various available measuring values
- » Reliable information on signal quality or RSSI value of telegrams by colour indicator (traffic light system) or graphs

» PROFESSIONAL MULTI-PURPOSE EVALUATION

- » Detailed evaluation of telegrams (data bytes, RSSI value, sub-telegrams etc.)
- » Decoding of measuring values
- » Background saving of received telegrams
- » Possibility of data export as well as automated forwarding to a FTP server or an e-mail account





SmartACK



SmartACK

SmartACKNOWLEDGE – BIDIRECTIONALITY IS SMART

By means of SmartACKNOWLEDGE EnOcean based self-powered devices can communicate bidirectionally. They are transmitting the measuring values detected to the building control technology in regularly intervals. In addition to the important status information, the display indicates a centrally controlled reset to default set points. There is no smarter way.

For example our bidirectional room operating units SR06 LCD: In regular intervals the device wakes-up from its sleeping mode and transmits its data and measuring values to a bidirectional receiver or a gateway within some milliseconds. Milliseconds later, SR06 LCD is waking-up again and sends a so-called reclaim telegram to signalize its readiness for receiving. Now, the gateway can transmit the ready data and information to the operating unit.

» THE BENEFITS

- » Comfort solution for the bidirectional communication of room operating units and building control technology
- » Comfort on-site control of room parameters by means of the keyboard
- » User guidance by means of clear display hints (e.g. information about opened windows)
- » Increase of energy efficiency enabled by the possibility to restore the defined basic set points
- » Self-powered operation via solar cell

Please note:

- » The use of repeaters is not feasible with SmartACKNOWLEDGE as the signal running time is delayed indefinitely.
- » Most of Thermokon gateways are capable of SmartACKNOWLEDGE. Latest information can be obtained by your personal contact.



ENERGY HARVESTING – RESOURCE FRIENDLY AND MOST FLEXIBLE

Thanks to Energy Harvesting your sensors are not powered by socket outlet but is gained directly from the sensors themselves, either by an integrated solar cell or by the use of movement as a natural energy source – e.g. upon actuation of operating elements.

Thus, your sensors are self-powered and can be freely placed in a room. No batteries are needed at all. The resources gained are used skillfully and economically so that a long lifetime of the sensors is guaranteed.

At present, the products of the following fields are available as battery- and wireless sensors:

- » Temperatur sensors
- » Humidity sensors
- » Light and motion sensors
- » Window contacts and handles
- » Switches for light and blind

EnOcean ALLIANCE

Almost 40% of the total energy requirements is needed by houses and buildings. This fact can be changed by means of the EnOcean based technology.

More than 300 worldwide leading companies of the building control technology formed the EnOcean Alliance in 2008 with the target to establish the battery- and wireless technology for flexible and maintenance-free sensor solutions in residential, commercial and industrial properties to get sustainable buildings. New standards shall be set by the creation of interoperable system solutions.














As a founder member we support the further development of a wide range of fully compatible and wireless products enabling the monitoring and control of home and building technology so to ensure the future of this innovative sensor technology.

Worldwide, EnOcean is the first and major ISO/IEC RF standard which optimizes solutions with a significant low energy consumption and energy harvesting.



» BENEFITS

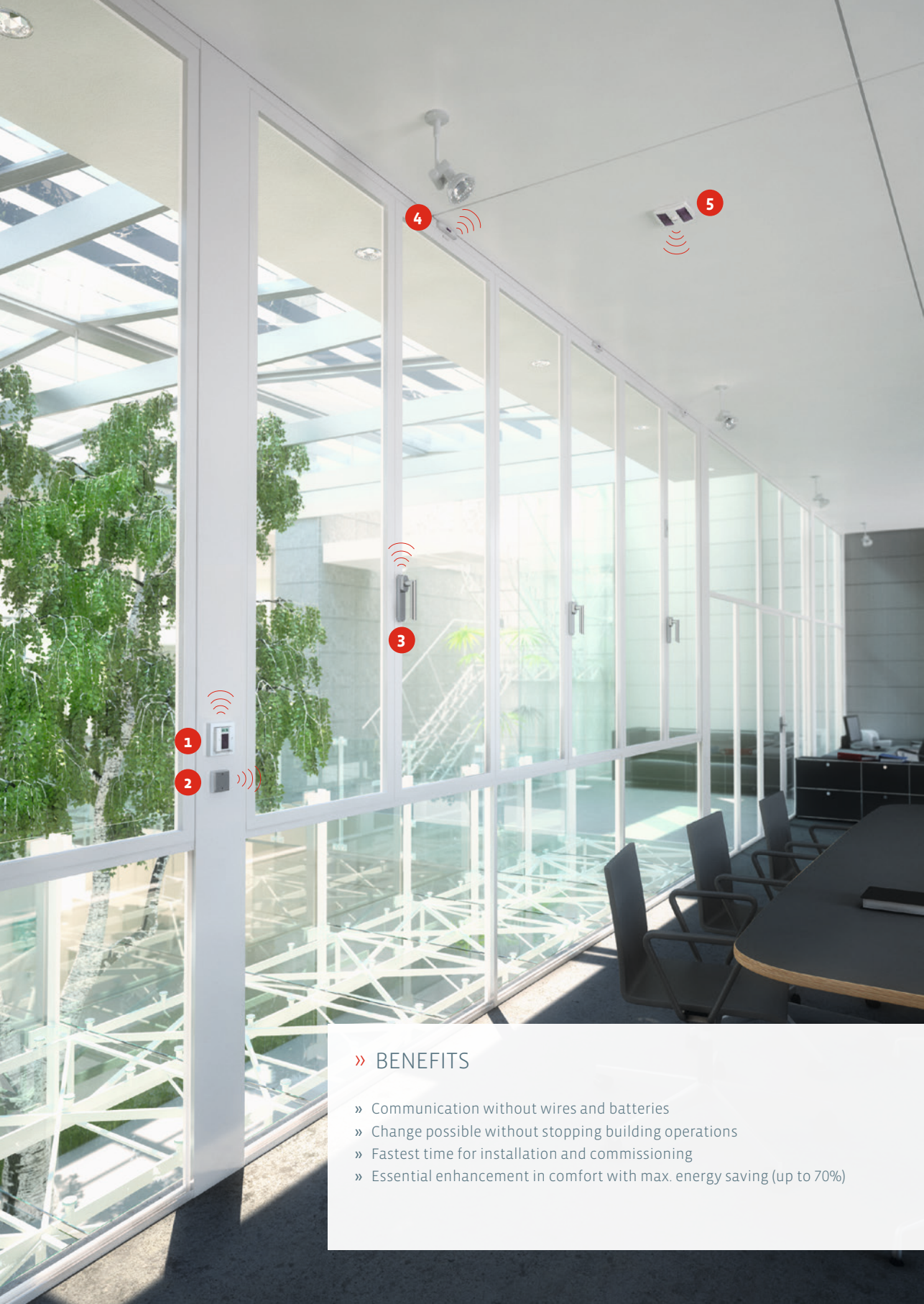
- » Communication without wires and batteries
- » Change possible without stopping hotel operations
- » Fastest time for installation and commissioning
- » Essential enhancement in comfort with max. energy saving (up to 70%)
- » Reduction of fire load

 <p>1</p> <p>thanos L High-end touch screen room operating unit, types available for wireless or BUS systems or wireless+BUS system</p>	 <p>2</p> <p>SR04 Surface-mounted wireless room sensor for temperature & rel. humidity Available with various control elements and features</p>	 <p>3</p> <p>SR04 CO2 Room sensor CO2/temperature/rel. humidity Available with display and traffic light function</p>
 <p>6</p> <p>SR-KCS02 Wireless switch for key card activation to regulate lighting and air-conditioning e.g. in hotel rooms</p>	 <p>4</p> <p>Mini Wireless switch 2-/4-channel lighting/blinds Available in various colours</p>	 <p>5</p> <p>SR-MDS Ceiling multi sensor for light and motion detection for room/space applications</p>
		 <p>7</p> <p>STC65-BUS Gateway for evaluation of EasySens transmitters/switches and connection to the defined BUS system</p> <p>     </p>

PLACE TO FEEL COMFORTABLE – YOUR HOTEL

All EasySens® devices wirelessly communicate via EnOcean radio. Temperature, set point, air quality, occupancy and switching signals are received and transmitted to superior communication protocols such as KNX, BACnet, LON or RS485 Modbus.

This system ensures the possibility to reset all used automation elements to standard values.



» BENEFITS

- » Communication without wires and batteries
- » Change possible without stopping building operations
- » Fastest time for installation and commissioning
- » Essential enhancement in comfort with max. energy saving (up to 70%)

 <p>1</p> <p>SR06 LCD 2T/4T Self powered room operation unit, for setpoint and fan stage adjustment, switch 55x55 mm of various manufacturers possible</p>	 <p>2</p> <p>Mini Wireless switch 2-/4-channel lighting/blinds, available in various colours</p>	 <p>3</p> <p>SRG02 Wireless window handle for status monitoring, available in various colours</p>
 <p>4</p> <p>SRW01 Wireless window contact for status monitoring of windows and doors</p>	 <p>5</p> <p>SR-MDS Solar Ceiling multi sensor detecting light and motion in space/office applications</p>	   

COMFORT AT WORK

All EasySens® devices wirelessly communicate via EnOcean radio. Temperature, set point, air quality, occupancy and switching signals are received and transmitted to superior communication protocols such as KNX, BACnet, LON or RS485 Modbus. This system ensures the possibility to reset all used automation elements to standard values.

thanos SR

DATA SHEETS 

The wireless touch room operating unit is used for temperature and humidity measurement (optional) as well as for integrated operation of HVAC, lighting, blinds and other switching options in individual room control. Due to the bidirectional communication and the permanent power supply the thanos can communicate directly with EasySens® actuators SAB and build up a control management. Additionally thanos has a clock with a shift schedule for setting comfort times. Due to the high-quality optics, the device is particularly suitable for design-oriented facilities. The operating functions can be flexibly used depending on the room requirement.



thanos SR S white



thanos SR S black



thanos SR L white



thanos SR L black



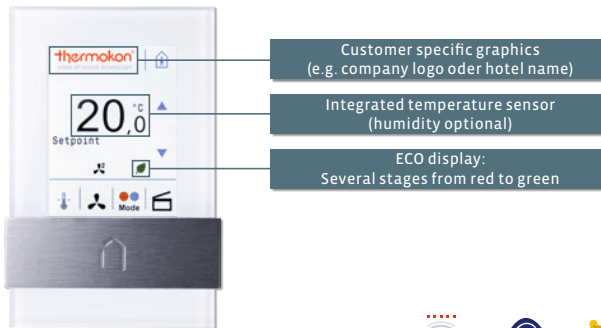
thanos SR LQ white



thanos SR LQ black

for thanos without radio please refer to 'Room Operating Units'

Highlights (type standard / type RS485 Modbus)



TECHNICAL DATA	
Measuring values	temperature, humidity (optional)
Network technology	LON FT (free topology), RS485 Modbus
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Data transmission	airConfig ready (all types without BUS)
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV, 240 V: 100..240 V ~
Power consumption	typ. 2,0 W (24 V =) 4,0 VA (24 V ~)
Measuring range temp.	0..+50 °C
Measuring range humidity	0..100% rH non-condensing
Accuracy temperature	±0,5 K (typ. at 21 °C)
Accuracy humidity	±3% between 20..80% rH (typ. at 21 °C)
Inputs	digital, 4x, individual configuration for window contact, dew point guard, key card switch, room frequency, alarm, event
Control functions	occupancy signalling, light ON/OFF/DIM, setup scenarios, blinds UP/DOWN/SET, fan stages, setpoint
Clip	anodized aluminium
No. of buttons	type L/LQ min. 8 capacitive touch sensor buttons
Labelling	type L/LQ flexible insert (for up to 8 touch buttons below/beside clip)
Display	TFT 3,5", 320x240 px, capacitive touch technology showing room temperature, setpoint, operation mode, fan stage, occupancy, alarm, date and time, ... ECO note (several steps, red to green; not available for LON) graphic and photo: Instead of date and time individual colour graphics (175x50 or 240x320 pixel) can be shown (e.g. company logo or hotel name; not available for LON)
Colour	white or black
Enclosure	PC and glass
Protection	IP20 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm)
Delivery contents	software for configuration (freeware via download)
Notes	you'll find the software description at www.thermokon.com , to use the free software airConfig (download) a USB stick, which is able to send and receive EnOcean telegrams, is necessary. The EnOcean USB stick (incl. license) is included in airScan (item No. 566704 for 868 MHz)

Item description: product | model | colour | BUS

thanos SR



Radio touch screen room operating unit temperature – 15..24 V		Item No.		ES1
Item description	902 MHz	868 MHz	€	
thanos SR L black	550147	471596	484,90	
thanos SR L white	550123	471589	484,90	
thanos SR LQ black	550161	471619	484,90	
thanos SR LQ white	550154	471602	484,90	
thanos SR S black	550185	471633	449,70	
thanos SR S white	550178	471626	449,70	



Radio touch screen room operating unit temperature – 100..240 V		Item No.		ES1
Item description	902 MHz	868 MHz	€	
thanos SR L black MVolt		493024	484,90	
thanos SR L white MVolt		493017	484,90	
thanos SR LQ black MVolt		493048	484,90	
thanos SR LQ white MVolt		493031	484,90	
thanos SR S black MVolt		493062	449,70	
thanos SR S white MVolt		493055	449,70	



Radio touch screen room operating unit temperature – LON		Item No.		ES1
Item description	902 MHz	868 MHz	€	
thanos SR L black LON		471879	529,90	
thanos SR L white LON		471862	529,90	
thanos SR LQ black LON		471893	529,90	
thanos SR LQ white LON		471886	529,90	
thanos SR S black LON		471923	494,70	
thanos SR S white LON		471916	494,70	



Radio touch screen room operating unit temperature – RS485 Modbus		Item No.		ES1
Item description	902 MHz	868 MHz	€	
thanos SR L black RS485 Modbus		472425	499,60	
thanos SR L white RS485 Modbus		472418	499,60	
thanos SR LQ black RS485 Modbus		472449	499,60	
thanos SR LQ white RS485 Modbus		472432	499,60	
thanos SR S black RS485 Modbus		472463	464,30	
thanos SR S white RS485 Modbus		472456	464,30	

thanos SR

Item description: product | humidity (rH) | model | colour | BUS



Radio touch screen room operating unit temperature + humidity – 15..24 V		Item No.		ES1
Item description	902 MHz	868 MHz	€	
thanos SR rH L black	550208	471664	536,00	
thanos SR rH L white	550192	471640	536,00	
thanos SR rH LQ black	550222	471688	536,00	
thanos SR rH LQ white	550215	471671	536,00	
thanos SR rH S black	550246	471718	500,70	
thanos SR rH S white	550239	471695	500,70	



Radio touch screen room operating unit temperature + humidity – 100..240 V		Item No.		ES1
Item description	902 MHz	868 MHz	€	
thanos SR rH L black MVolt		523103	536,00	
thanos SR rH L white MVolt		523110	536,00	
thanos SR rH LQ black MVolt		523127	536,00	
thanos SR rH LQ white MVolt		523134	536,00	
thanos SR rH S black MVolt		523141	500,70	
thanos SR rH S white MVolt		523158	500,70	

LON

LOCAL OPERATING NETWORK

Radio touch screen room operating unit temperature + humidity – LON		Item No.		ES1
Item description	902 MHz	868 MHz	€	
thanos SR rH L black LON		471985	581,00	
thanos SR rH L white LON		471978	581,00	
thanos SR rH LQ black LON		472012	581,00	
thanos SR rH LQ white LON		472005	581,00	
thanos SR rH S black LON		472043	545,70	
thanos SR rH S white LON		472036	545,70	



Radio touch screen room operating unit temperature + humidity – RS485 Modbus		Item No.		ES1
Item description	902 MHz	868 MHz	€	
thanos SR rH L black RS485 Modbus		472487	550,60	
thanos SR rH L white RS485 Modbus		472470	550,60	
thanos SR rH LQ black RS485 Modbus		472500	550,60	
thanos SR rH LQ white RS485 Modbus		472494	550,60	
thanos SR rH S black RS485 Modbus		472524	515,40	
thanos SR rH S white RS485 Modbus		472517	515,40	

Accessories				AS1
Item description	Item No.	On stock	€	
Software/Plug-In for configuration (free via www.thermokon.com)			0,00	
SD card (2 GB)	500098	🟡	11,30	
airConfig (freeware via www.thermokon.com)			0,00	
EnOcean USB transceiver for airConfig/airScan (incl. license – net price)	566704	🟡	100,80	

JOY SR Fancoil

DATA SHEETS



The fancoil controller with radio receiver in high-quality design is used for individual temperature control and control of fancoil units in hotels, offices and living rooms. The device is designed for four- or two-pipe systems with changeover. Two configurable inputs can be used as sensor input, room occupancy or energy lock. In addition to wired continuous valve actuators (also 6-way valve) and a 0..10 V EC motor, sensors and actuators can also be controlled by radio. In addition, as an alternative to wired sensors, an external radio temperature sensor, radio motion detector, a radio temperature sensor for changeover function and radio window contacts/handles can be learnt in. The override by radio is possible by means of higher-level controller profile and cable-bound via Modbus. Radio and wired sensors and actuators are processed identically and can be used in any combination. This guarantees individual and energy-efficient room air conditioning. The device (front of acrylic glass in white or black) has a monochrome display and touch-sensitive control buttons. It has a timer with three time channels of four time periods each. Mounting is designed for a flush-mounted box. For hotel applications, the device offers the option of an additional zone (bathroom heating) in conjunction with room temperature sensor and radio actuator SAB.



TECHNICAL DATA

Measuring values	temperature
Output voltage	3x 0..10 V = (to control EC fan, heating & cooling or to control 6-way control valve)
Network technology	RS485 Modbus
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	max. 2 VA
Measuring range temp.	0..+50 °C
Accuracy temperature	±1 K (typ. at 21 °C)
Inputs	1x input for floating contact, 1x input for NTC10k or floating contact
Control functions	setpoint 0..+50 °C
Functions	built-in PI controller, MSG-Server for 2nd zone
Display	LCD 60x44 mm, 240x160 px, backlight blue
Enclosure	PC, pure white, black, hardened acrylic glass with high scratch resistance
Protection	IP30 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ² , inputs: terminal block, max. 1,0 mm ²
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm)
Notes	black devices: arrows of temperature control coloured red-blue

JOY SR Fancoil



Radio fancoil controller temperature – active RS485 Modbus 24 V				ES1
Item description	Item No.	Controller	€	
JOY SR Fancoil EC 3AO RS485 Modbus pure white 24 V	701020	✓	216,20	
JOY SR Fancoil EC 3AO RS485 Modbus black 24 V	701037	✓	228,20	

Accessories				AS1
Item description	Item No.	On stock	€	
Software/Plug-In for configuration (free via www.thermokon.com)			0,00	
SD card (2 GB)	500098	⊖	11,30	
Decorative frame pure white for JOY	681452	⊖	12,00	



JOY SR with decorative frame

JOY SR HC

DATA SHEETS



The 24 V supplied type 3AO has three 0..10 V outputs for controlling heating/cooling valves or a 6-way valve. The 230 V supplied type AO2DO controls the 230 V heating and cooling valve as a 2-point or thermal 230 V actuator via PWM. The analog output is also used to control a 6-way valve. Two configurable inputs can be used as sensor input, room occupancy or energy lock. In addition to wired valve drives and sensors, sensors and actuators can also be controlled by radio. In addition, as an alternative to wired sensors, an external radio temperature sensor, radio motion detector, a radio temperature sensor for changeover function and radio window contacts/handles can be learnt in. The override by radio is possible by means of higher-level controller profile and cable-bound via Modbus. Radio and wired sensors and actuators are processed identically and can be used in any combination. This guarantees individual and energy-efficient room air conditioning. The device (front of acrylic glass in white or black) has a monochrome display and touch-sensitive control buttons. It has a timer with three time channels of four time periods each. Mounting is designed for a flush-mounted box. For hotel applications, the device offers the option of an additional zone (bathroom heating) in conjunction with room temperature sensor and radio actuator SAB.



TECHNICAL DATA	
Measuring values	temperature
Output voltage	types AO2DO: 0..10 V = (to control 6-way control valve), types 3AO: 3x 0..10 V = (to control 6-way control valve, heating & cooling)
Output switch contact	types AO2DO: 2x contact NO (1x heating, 1x cooling)
Network technology	RS485 Modbus
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz
Power supply	100..240 V ~, types 3AO: 15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	max. 2 VA
Measuring range temp.	0..+50 °C
Accuracy temperature	±1 K (typ. at 21 °C)
Inputs	1x input for floating contact, 1x input for NTC10k or floating contact
Control functions	setpoint 0..+50 °C
Functions	integrated PI and two-/three-position controller, MSG-Server for 2nd zone
Display	LCD 60x44 mm, 240x160 px, backlight blue
Enclosure	PC, pure white, black, hardened acrylic glass with high scratch resistance
Protection	IP30 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ² , inputs: terminal block, max. 1,0 mm ²
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm)

JOY SR HC



Radio room controller heating/cooling – active RS485 Modbus 100..240 V				ES1
Item description	Item No.	Controller		€
JOY SR HC AO2DO RS485 Modbus pure white MVolt	703178	✓		216,20
JOY SR HC AO2DO RS485 Modbus black MVolt	703185	✓		228,20



Radio room controller heating/cooling – active RS485 Modbus 24 V				ES1
Item description	Item No.	Controller		€
JOY SR HC 3AO RS485 Modbus pure white 24 V	700993	✓		216,20
JOY SR HC 3AO RS485 Modbus black 24 V	701006	✓		228,20

Accessories				AS1
Item description	Item No.	On stock		€
Software/Plug-In for configuration (free via www.thermokon.com)				0,00
SD card (2 GB)	500098	⊖		11,30
Decorative frame pure white for JOY	681452	⊖		12,00



JOY SR with decorative frame

SR06 LCD



Energy-harvesting design room control unit for integrated measurement of temperature and relative humidity (rH version). Depending on version and type, temperature setpoint, fan levels, room occupancy, lighting or blinds can be adjusted or switched via the buttons on the device. The device sends its measured values to corresponding receivers or gateways, which process the information directly or – depending on the application – forward it to a central control unit. Using the SmartAcknowledge Protocol, setpoint, fan level and room occupancy of the bidirectionally operating wireless room operating unit can be externally overwritten and shown in the integrated display. The room control unit is parameterised via radio using airConfig software or alternatively via the optionally available USB programming interface. By using this interface the energy storage can be additionally charged. The device, mounted via adhesive pads or screws, can be integrated into most 55x55 mm switch ranges. This allows to choose from many high quality designs.



SR06 LCD 4T pure white brilliant,
switch range Gira E2 pure white



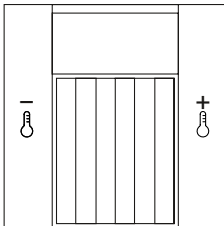
SR06 LCD 2T+Light aluminium,
switch range Gira E2 aluminium



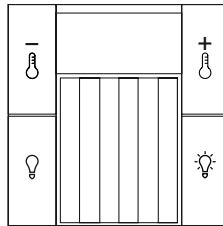
SR06 LCD 2T+Blind anthracite,
switch range Gira E2 anthracite

LABELLING TYPES

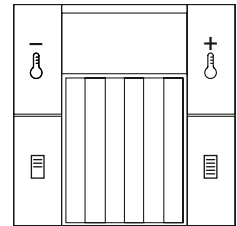
Standard labelling
for model 2T



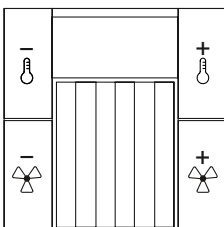
Standard labelling
for model 2T+Light



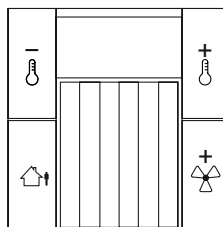
Standard labelling
for model 2T+Blind



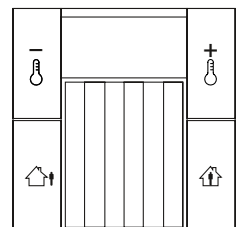
Labelling type 1 (Itype1)
for model 4T



Labelling type 2 (Itype2)
for model 4T



Labelling type 3 (Itype3)
for model 4T





TECHNICAL DATA

Measuring values	temperature, humidity (optional)
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Data transmission	bidirectional, SmartACK (SmartACKNOWLEDGE), airConfig ready
Power supply	solar cell, LiPo-battery, maintenance-free
Measuring range temp.	0..+40 °C
Measuring range humidity	0..100% rH non-condensing
Accuracy temperature	±0,4 K (typ. at 21 °C)
Accuracy humidity	±5% between 30..70% rH (typ. at 21 °C)
Measuring interval	WakeUp time = 240 sec. (default), heartbeat cycle = every 10th wakeup, optionally configurable via airConfig or SR06ConfigSW
Switch range Berker	S.1, B.7 glass
Switch range Busch-Jaeger	Busch-balance® SI, solo® *, future® linear *, Busch-axcent® *
Switch range Feller	EDIZIODue
Switch range Gira	E2, E3, Standard 55, Esprit, Event, Flächenschalter *
Switch range Jung	A 500, AS 500, A plus, A creation
Switch range Merten	M-Smart, M-Plan, M-Pure
Control functions	occupancy signalling, fan stages, setpoint
No. of buttons	2T: 2 buttons, 4T: 4 buttons
Display	LCD 29x12 mm, monochrome
Set point range	+15..+30 °C ±1..10 °C, optionally configurable via airConfig or SR06ConfigSW
Enclosure	PC, pure white, aluminium, anthracite
Protection	IP20 according to EN 60529
Ambient condition	0..+40 °C
Mounting	to be mounted flat onto the surface using adhesive foil (included) or screws
Notes	* in switch program with intermediate frame, integrated coin cell backup possibility for usage in dark rooms, for configuration an optional programming interface is available (refer to accessories), energy storage can be recharged with a separate USB-cable, to use the free software airConfig (download) a USB stick, which is able to send and receive EnOcean telegrams, is necessary. The EnOcean USB stick (incl. license) is included in airScan (item No. 566704 for 868 MHz)

Item description: product | humidity (rH) | number of buttons | labelling type | switch range | colour

SR06 LCD



Radio room operating unit temperature		Item No.		ES2
Item description	902 MHz	868 MHz		€
SR06 LCD 2T Gira E2 pure white brilliant	601214	572002		190,20
SR06 LCD 2T Gira E2 aluminium		593236		190,20
SR06 LCD 2T Gira E2 anthracite		593243		190,20
SR06 LCD 2T+Light Gira E2 pure white brilliant		646321		208,60
SR06 LCD 2T+Light Gira E2 aluminium		651677		208,60
SR06 LCD 2T+Light Gira E2 anthracite		651684		208,60
SR06 LCD 2T+Blind Gira E2 pure white brilliant		646338		208,60
SR06 LCD 2T+Blind Gira E2 aluminium		651660		208,60
SR06 LCD 2T+Blind Gira E2 anthracite		651639		208,60
SR06 LCD 4T Itype1 Gira E2 pure white brilliant	601221	572019		204,60
SR06 LCD 4T Itype1 Gira E2 aluminium		593250		204,60
SR06 LCD 4T Itype1 Gira E2 anthracite		593267		204,60



Radio room operating unit temperature + humidity		Item No.		ES2
Item description	902 MHz	868 MHz		€
SR06 LCD rH 2T Gira E2 pure white brilliant	613880	572026		272,50
SR06 LCD rH 2T Gira E2 aluminium		593274		272,50
SR06 LCD rH 2T Gira E2 anthracite		593281		272,50
SR06 LCD rH 2T+Light Gira E2 pure white brilliant		651790		290,90
SR06 LCD rH 2T+Light Gira E2 aluminium		651868		290,90
SR06 LCD rH 2T+Light Gira E2 anthracite		651875		290,90
SR06 LCD rH 2T+Blind Gira E2 pure white brilliant		651899		290,90
SR06 LCD rH 2T+Blind Gira E2 aluminium		651882		290,90
SR06 LCD rH 2T+Blind Gira E2 anthracite		651912		290,90
SR06 LCD rH 4T Itype1 Gira E2 pure white brilliant	641876	572033		286,90
SR06 LCD rH 4T Itype1 Gira E2 aluminium		593298		286,90
SR06 LCD rH 4T Itype1 Gira E2 anthracite		593304		286,90

Options

Item description	€
Switch ranges Busch-Jaeger Busch-balance® SI	0,00
Switch ranges Berker S.1 Jung A 500 Merten M-Smart Gira E3	0,00
Switch range Gira Esprit	22,30
Other switch ranges	12,50
Labelling type 2 (Itype2)	0,00
Labelling type 3 (Itype3)	0,00

Accessories

Item description	Item No.	On stock	€
Coin cell CR1632	597814	☺	4,00
Programming interface for configuration and charging (SR06 LCD)	597838	☺	34,80
airConfig (freeware via www.thermokon.com)			0,00
EnOcean USB transceiver for airConfig/airScan (incl. license – net price)	566704	☺	100,80

SR06 LCD

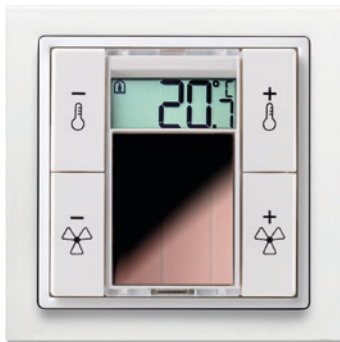
Example designs



SR06 LCD 4T Itype1 pure white brilliant,
switch range Gira Esprit glass mint



SR06 LCD 2T anthracite,
switch range Jung A Creation anthracite



SR06 LCD 4T Itype1 pure white brilliant,
switch range Busch-Jaeger future® linear studio white



SR06 LCD 4T Itype3 aluminium,
switch range Gira Event aluminium

SR07 x

DATA SHEETS



Energy-harvesting design room operating unit for integrated measurement of temperature and relative humidity (rH version) in living and office spaces. Also available with slide switch (for example "Day/Night") or occupancy button. The device sends its values unidirectionally to corresponding receivers or gateways, which process the information directly or – depending on the application – forward it to a central control unit. The device to be mounted via adhesive pad or screws can be integrated in almost all 55x55 mm switch ranges. This allows to choose from many high quality designs.



SR07 P aluminium,
switch range Gira E2



SR07 PT pure white brilliant,
switch range Gira E2



SR07 PMS (day/night) anthracite,
switch range Gira E2



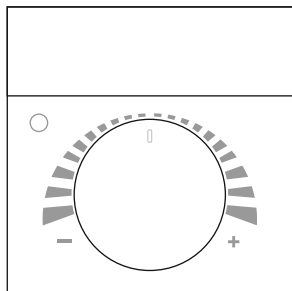
TECHNICAL DATA

Measuring values	temperature, humidity (optional)
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz
Power supply	solar cell, internal super cap, maintenance-free, optional: backup battery CR1632
Measuring range temp.	0..+40 °C
Measuring range humidity	0..100% rH non-condensing
Accuracy temperature	±0,4 K (typ. at 21 °C)
Accuracy humidity	±5% between 30..70% rH (typ. at 21 °C)
Measuring intervall	WakeUp time = 100 sec. (default)
Transmission interval	every 100 sec. at change >0,8 K or >1,6% rH, otherwise every 1000 sec.
Switch range Berker	S.1, B.7 glass
Switch range Busch-Jaeger	Busch-balance® SI, solo® *, future® linear *, Busch-axcent® *
Switch range Feller	EDIZIOdue
Switch range Gira	E2, E3, Standard 55, Esprit, Event, Flächenschalter *
Switch range Jung	A 500, AS 500, A plus, A creation
Switch range Merten	M-Smart, M-Plan, M-Pure
Set point (P)	potentiometer
Slide switch (MS)	I/O, day/night
Button (T)	for presence detection
Protection	IP20 according to EN 60529
Ambient condition	-25..+65 °C, max. 85% rH non-condensing
Mounting	to be mounted flat onto the surface using adhesive foil (included) or screws
Delivery contents	adhesive foil
Notes	* in switch program with intermediate frame, integrated coin cell backup possibility for usage in dark rooms

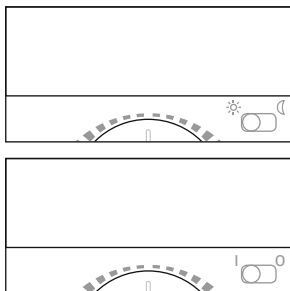
SR07 x

Labelling types

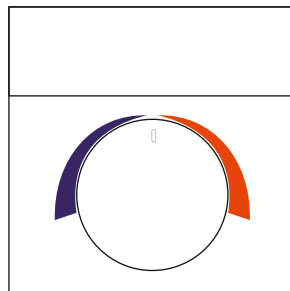
SR07 PT



SR07 PMS (day/night)
SR07 PMS (I / O)



SR07 P
standard labelling colour
(refer to options – ltypeSC)



Item description: product | operating elements | switch range | colour



Radio room operating unit temperature	Item No.		ES2
	902 MHz	868 MHz	€
SR07 P Gira E2 pure white brilliant		572040	156,10
SR07 PT Gira E2 pure white brilliant		572057	164,40
SR07 PMS (day/night) Gira E2 pure white brilliant		572064	164,40
SR07 P Gira E2 aluminium		593311	156,10
SR07 PT Gira E2 aluminium		593335	164,40
SR07 PMS (day/night) Gira E2 aluminium		593359	164,40
SR07 P Gira E2 anthracite		593328	156,10
SR07 PT Gira E2 anthracite		593342	164,40
SR07 PMS (day/night) Gira E2 anthracite		593366	164,40

Options	
Item description	€
Default labelling P colour red+blue (ltypeSC)	6,00
Default labelling MS I/O	0,00
Switch ranges Busch-Jaeger Busch-balance® SI	0,00
Switch ranges Berker S.1 Jung A 500 Merten M-Smart Gira E3	0,00
Switch range Gira Esprit	22,30
Switch ranges glass (different manufacturers)	35,10
Other switch ranges	12,50

Order example for different items:

SR07 | PMS | Busch-balance® SI alpin white

SR07 = product
PMS = potentiometer, slide switch
Busch-balance® SI alpin white = switch range Busch-Jaeger Busch-balance® SI alpin white

Item description: product | operating elements | humidity (rH) | switch range | colour

SR07 x



Radio room operating unit temperature + humidity	Item No.		ES2
	902 MHz	868 MHz	€
SR07 P rH Gira E2 pure white brilliant		597722	238,40
SR07 PT rH Gira E2 pure white brilliant		597739	246,70
SR07 PMS rH (day/night) Gira E2 pure white brilliant		597746	246,70
SR07 P rH Gira E2 aluminium		597753	238,40
SR07 PT rH Gira E2 aluminium		597760	246,70
SR07 PMS rH (day/night) Gira E2 aluminium		597777	246,70
SR07 P rH Gira E2 anthracite		597784	238,40
SR07 PT rH Gira E2 anthracite		597791	246,70
SR07 PMS rH (day/night) Gira E2 anthracite		597807	246,70

Options	
Item description	€
Default labelling P colour red+blue (ltypeSC)	6,00
Default labelling MS I/O	0,00
Switch ranges Busch-Jaeger Busch-balance® SI	0,00
Switch ranges Berker S.1 Jung A 500 Merten M-Smart Gira E3	0,00
Switch range Gira Esprit	22,30
Switch ranges glass (different manufacturers)	35,10
Other switch ranges	12,50

Order example for different items:

SR07 | PMS | rH | Gira Esprit

SR07 = product
PMS = potentiometer, slide switch
rH = humidity
Gira Esprit = switch range Gira Esprit

Accessories			AS1
Item description	Item No.	On stock	€
Coin cell CR1632	597814	⊕	4,00

SR04 x

DATA SHEETS



Energy-harvesting room operating unit for integrated measurement of temperature and relative humidity (rH version) in residential and office spaces. Also available with rotary switch for fan level adjustment, slide switch (for example, "Day/Night") or occupancy button. The device is mounted via adhesive pad or screws and sends its values unidirectionally to corresponding receivers or gateways, which process the information directly or – depending on the application – forward it to a central control unit.



SR04 P



SR04 PMS (day/night)



SR04 PST



TECHNICAL DATA

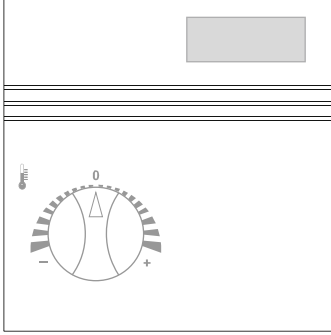
Measuring values	temperature, humidity (optional)
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas), 928 MHz
Power supply	solar cell, internal super cap, maintenance-free, optional: backup battery LS14250 (3,6 V)
Measuring range temp.	0..+40 °C
Measuring range humidity	0..100% rH non-condensing, (optional)
Accuracy temperature	±0,4 K (typ. at 21 °C)
Accuracy humidity	±5% between 30..70% rH (typ. at 21 °C)
Measuring interval	WakeUp time = 100 sec. (default)
Transmission interval	every 100 sec. at change >0,8 K, otherwise every 1000 sec. adjustable via jumper
Set point (P)	potentiometer
Slide switch (MS)	I/O, day/night
Rotary switch (S)	for fan stage adjustment (max. 5 stages), 5-stages (auto,0,I,II,III)
Button (T)	for presence detection
Enclosure	ASA, pure white
Protection	IP30 according to EN 60529
Ambient condition	0..+40 °C, max. 85% rH non-condensing
Mounting	to be mounted flat onto the surface using adhesive foil (included) or screws

SR04 x

Types with standard labelling

special labelling refer to p. 418

SR04 P



Legend:

P = potentiometer

S = rotary switch

T = button

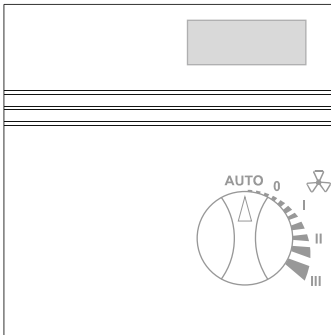
D = LED

FSx = number of fan stages

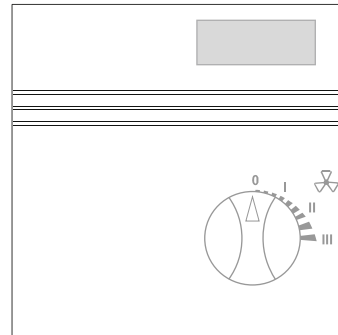
for sensor types refer to items,

SR04 without operating elements refer to p. 63

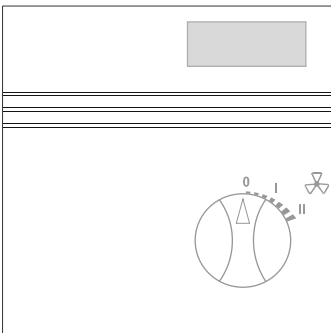
SR04 S with 5 fan stages
(FS5, standard)



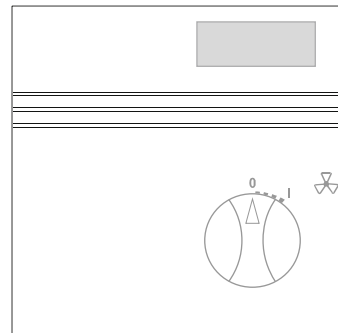
SR04 S with 4 fan stages
(FS4, refer to options)



SR04 S with 3 fan stages
(FS3, refer to options)

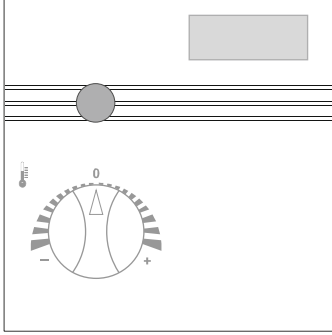


SR04 S with 2 fan stages
(FS2, refer to options)

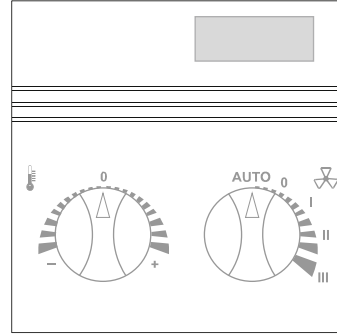


SR04 x

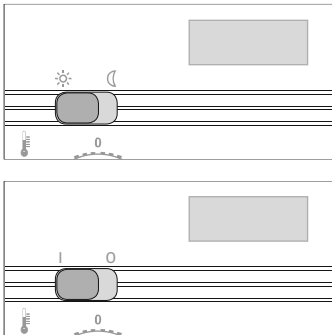
SR04 PT



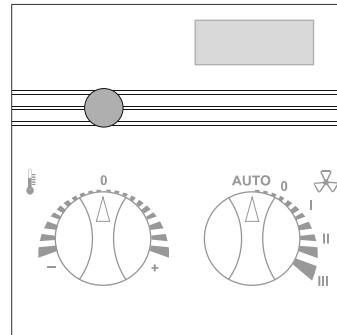
SR04 PS with 5 fan stages
FS5, also available with FS4, FS3 and FS2



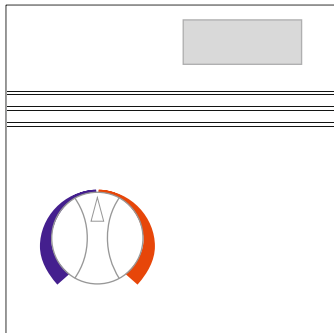
SR04 PMS (day/night) | SR04 PMS (I / O)



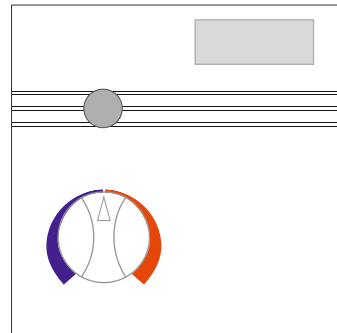
SR04 PST with 5 fan stages
FS5, also available with FS4, FS3 and FS2



SR04 P standard labelling colour
(refer to options)



SR04 PT standard labelling colour
(refer to options)



Item description: product | operating elements | fan stages

SR04 x



Radio room operating unit temperature		Item No.		ES2
Item description	902 MHz	868 MHz	On stock	€
SR04 P	550307	226172		139,60
SR04 S, FS5		693110		147,10
SR04 T	550314	229968		136,00
SR04 PT	550338	227353	☉	147,90
SR04 PS, FS5		250900		165,60
SR04 PMS (day/night)		312219		147,90
SR04 PMS (I/O)	550321	267854		147,90
SR04 PST, FS5	550352	226851		177,40

Item description: product | operating elements | humidity (rH)



Radio room operating unit temperature + humidity		Item No.		ES2
Item description	902 MHz	868 MHz	On stock	€
SR04 P rH	550420	252331	☉	236,60
SR04 PT rH	550444	261593		251,90
SR04 PMS rH (day/night)		361644		251,90
SR04 PMS rH (I/O)	550437	269469		251,90

Options		€
Item description		
Rotary switch S with 4 fan stages (FS4)		0,00
Rotary switch S with 3 fan stages (FS3)		0,00
Rotary switch S with 2 fan stages (FS2)		0,00
Default labelling P colour red+blue (ltypeSC)		6,00

Order example for different items:

SR04 | PST | FS4 | standard labelling colour red-blue

- SR04** = product
- PST** = potentiometer, rotary switch, button
- FS4** = rotary switch (S) with 4 fan stages
- Labelling** = standard labelling colour red-blue

Accessories		Item No.	On stock	AS1
Item description				€
Battery LS14250		315098	☉	4,00

SR07

DATA SHEETS



Energy-harvesting high quality designed radio room sensor for measuring temperature in living and office space. The device sends its measured values unidirectionally to corresponding receivers or gateways, which process the information directly or – depending on the application – forward it to a central control unit. It can be integrated into almost all 55x55 mm switch ranges, allowing you to choose from many high quality designs. To be mounted using an adhesive pad or screws.



SR07 pure white brilliant,
switch range Gira E2



SR07 aluminium,
switch range Gira E2



SR07 anthracite,
switch range Gira E2



TECHNICAL DATA

Measuring values	temperature
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz
Power supply	solar cell, internal super cap, maintenance-free, optional: backup battery CR1632
Measuring range temp.	0..+40 °C
Accuracy temperature	±0,4 K (typ. at 21 °C)
Measuring intervall	WakeUp time = 100 sec. (default)
Transmission interval	every 100 sec. at change >0,8 K, otherwise every 1000 sec.
Switch range Berker	S.1, B.7 glass
Switch range Busch-Jaeger	Busch-balance® SI, solo® *, future® linear *, Busch-axcent® *
Switch range Feller	EDIZIOdue
Switch range Gira	E2, E3, Standard 55, Esprit, Event, Flächenschalter *
Switch range Jung	A 500, AS 500, A plus, A creation
Switch range Merten	M-Smart, M-Plan, M-Pure
Enclosure	PC, pure white, aluminium, anthracite
Protection	IP20 according to EN 60529
Ambient condition	-25..+65 °C, max. 85% rH non-condensing
Mounting	to be mounted flat onto the surface using adhesive foil (included) or screws
Delivery contents	adhesive foil
Notes	* in switch program with intermediate frame, integrated coin cell backup possibility for usage in dark rooms, for devices with operating elements please refer to product SR07 x

Item description: product | switch range | colour

SR07



Radio room sensor temperature		Item No.		ES2
Item description	902 MHz	868 MHz		€
SR07 Gira E2 pure white brilliant		593847		139,60
SR07 Gira E2 aluminium		630481		139,60
SR07 Gira E2 anthracite		630498		139,60

Options		
Item description		€
Switch ranges Busch-Jaeger Busch-balance® SI		0,00
Switch ranges Berker S.1 Jung A 500 Merten M-Smart Gira E3		0,00
Switch range Gira Esprit		22,30
Switch ranges glass (different manufacturers)		35,10
Other switch ranges		12,50

Order example for different items:

SR07 | Gira Esprit

SR07 = product

Gira Esprit = switch range

Accessories				AS1
Item description	Item No.	On stock		€
Coin cell CR1632	597814	☺		4,00

SR04

DATA SHEETS



Energy-harvesting radio room sensor for measuring temperature in living and office spaces. To be mounted via adhesive pad or screws the device sends its measured values unidirectionally to corresponding receivers or gateways, which process the information directly or – depending on the application – forward it to a central control unit.



TECHNICAL DATA

Measuring values	temperature
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas), 928 MHz
Power supply	solar cell, internal super cap, maintenance-free, optional: backup battery LS14250 (3,6 V)
Measuring range temp.	0..+40 °C
Accuracy temperature	±0,4 K (typ. at 21 °C)
Measuring intervall	WakeUp time = 100 sec. (default)
Transmission interval	every 100 sec. at change >0,8 K, otherwise every 1000 sec., adjustable via jumper
Enclosure	PC, pure white
Protection	IP30 according to EN 60529
Ambient condition	0..+40 °C, max. 85% rH non-condensing
Mounting	to be mounted flat onto the surface using adhesive foil (included) or screws



Radio room sensor temperature	Item No.			ES2
	902 MHz	868 MHz	On stock	€
SR04	550291	228848	⊖	118,30

Accessories	Item No.		On stock	AS1
Item description				€
Battery LS14250	315098		⊖	4,00

SR04 IR

DATA SHEETS



Energy-harvesting radio room sensor with two sensors for balanced measurement of room temperature and effectively acting radiation component (for example of radiant ceiling panels and infrared heaters) in living and office spaces. To be mounted via adhesive pad or screws the device sends its measured values unidirectionally to corresponding receivers or gateways, which process the information directly or – depending on the application – forward it to a central control unit.



TECHNICAL DATA

Measuring values	radiation temperature
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz
Power supply	solar cell, internal super cap, maintenance-free, optional: backup battery LS14250 (3,6 V)
Measuring range temp.	0..+40 °C
Accuracy temperature	±0,4 K (typ. at 21 °C)
Measuring intervall	WakeUp time = 100 sec. (default)
Transmission interval	every 100 sec. at change >0,8 K, otherwise every 1000 sec., adjustable via jumper
Enclosure	PC, pure white
Protection	IP30 according to EN 60529
Ambient condition	0..+40 °C, max. 85% rH non-condensing
Mounting	to be mounted flat onto the surface using adhesive foil (included) or screws



Radio room sensor radiation temperature	Item No.		ES2
Item description	902 MHz	868 MHz	€
SR04 IR		649346	140,00

Accessories	Item No.		On stock	AS1
Item description				€
Battery LS14250		315098	☺	4,00

LC-SR04

DATA SHEETS



Energy-harvesting radio room sensor for measuring temperature in living and office spaces. To be mounted via adhesive pad or screws the device sends its measured values unidirectionally to corresponding receivers or gateways, which process the information directly or – depending on the application – forward it to a central control unit. Transmission interval and wake-up time are fixed, a battery can not be integrated.



TECHNICAL DATA

Measuring values	temperature
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas), 928 MHz
Power supply	solar cell, internal super cap, maintenance-free
Measuring range temp.	0..+40 °C
Accuracy temperature	±0,5 K (typ. at range +17..+27 °C)
Measuring intervall	WakeUp time = 100 sec. (default)
Transmission interval	every 100 sec. at change >0,8 K, otherwise every 1000 sec.
Enclosure	PC, pure white
Protection	IP30 according to EN 60529
Ambient condition	0..+40 °C, max. 85% rH non-condensing
Mounting	to be mounted flat onto the surface using adhesive foil (included) or screws



Radio room sensor temperature	Item No.		ES2
Item description	902 MHz	868 MHz	€
LC-SR04	550253	566698	81,80

SR65

DATA SHEETS 

Energy-harvesting radio sensor for detecting temperature in the outdoor or industrial environment (for example in cold stores, production halls and warehouses). The airConfig software can be used to easily parameterize measuring range, transmission interval and wake-up time. When used in dark places, a battery can be retrofitted.



TECHNICAL DATA	
Measuring values	temperature
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Data transmission	airConfig ready
Power supply	solar cell, internal super cap, optional: backup battery LS14250 (3,6 V)
Measuring range temp.	-20..+60 °C, optionally configurable via airConfig
Accuracy temperature	±1% of measuring range (typ. at 21 °C)
Measuring intervall	WakeUp time = 100 sec. (default), heartbeat cycle = every 10th wakeup, configured via airConfig
Enclosure	PA6.6, pure white, cover PC, transparent, with quick lock screws
Protection	IP65 according to EN 60529
Pocket	stainless steel V4A, Ø=6 mm, L=40 mm
Ambient condition	-25..+65 °C, max. 85% rH short term condensation
Notes	integrated battery backup possibility for usage in dark rooms, to use the free software airConfig (download) a USB stick, which is able to send and receive EnOcean telegrams, is necessary. The EnOcean USB stick (incl. license) is included in airScan (item No. 566704 for 868 MHz)

Radio outdoor sensor temperature	Item No.			ES2
	902 MHz	868 MHz	On stock	€
SR65	599832	230001		136,00

Accessories			AS1
Item description	Item No.	On stock	€
Battery LS14250	315098		4,00
airConfig (freeware via www.thermokon.com)			0,00
EnOcean USB transceiver for airConfig/airScan (incl. license – net price)	566704		100,80

SR65 AKF

DATA SHEETS



Self powered wireless EnOcean duct sensor to measure the temperature in gaseous media of heating, ventilation and air-conditioning systems. Configured via airConfig.



TECHNICAL DATA

Measuring values	temperature
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas), 928 MHz
Data transmission	airConfig ready
Power supply	solar cell, internal super cap, optional: backup battery LS14250 (3,6 V)
Measuring range temp.	-40..+130 °C (A5-02-xx EEPs), optionally configurable via airConfig
Accuracy temperature	±1% of measuring range (typ. at 21 °C)
Measuring intervall	WakeUp time = 100 sec. (default), heartbeat cycle = every 10th wakeup, configured via airConfig
Enclosure	PA6.6, pure white, cover PC, transparent, with quick lock screws
Protection	IP65 according to EN 60529
Pocket	stainless steel V4A, Ø=6 mm, L=100 mm, mounting lengths available: 50 100 150 200 250 300 450 mm
Ambient condition	-25..+65 °C, max. 85% rH short term condensation
Notes	integrated battery backup possibility for usage in dark rooms, other probe lengths on request, to use the free software airConfig (download) a USB stick, which is able to send and receive EnOcean telegrams, is necessary. The EnOcean USB stick (incl. license) is included in airScan (item No. 566704 for 868 MHz)

Item description: product | pocket (length.Ø)

SR65 AKF



Radio duct/immersion sensor temperature		Item No.		ES2
Item description		902 MHz	868 MHz	€
SR65 AKF 100.06			630566	144,30

Accessories				AS1
Item description		Item No.	On stock	€
Battery LS14250		315098	☉	4,00
Mounting flange MF6DS flexible (suitable for Ø=6 mm)		669016	☉	6,30
Mounting flange MF6 (brass)		3407	☉	6,30
airConfig (freeware via www.thermokon.com)				0,00
EnOcean USB transceiver for airConfig/airScan (incl. license – net price)		566704	☉	100,80

Accessories – thermowell pockets brass for sensors with pocket Ø=6 mm					AS2
Item description	Length	Pocket length	Item No.	On stock	€
MS-thermowell pocket 100 mm type THMSDS100	100 mm	86 mm	611008	☉	8,95

Accessories – thermowell pockets stainless steel for sensors with pocket Ø=6 mm					AS2
Item description	Length	Pocket length	Item No.	On stock	€
VA-thermowell pocket 100 mm type THVADS100	100 mm	86 mm	611817	☉	18,90
Pressure screw with sealing PTFE (without silicone) for thermowell pocket THVADS (10 pcs)			666473	☉	18,20

SR65 TF

DATA SHEETS



Self-powered wireless EnOcean sensor to measure the temperature in gaseous media of heating, ventilation and air-conditioning systems. Configured via airConfig.



TECHNICAL DATA

Measuring values	temperature
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Data transmission	airConfig ready
Power supply	solar cell, internal super cap, optional: backup battery LS14250 (3,6 V)
Measuring range temp.	-40..+130 °C (A5-02-xx EEPROMs), optionally configurable via airConfig
Working range temp.	-40..+130 °C
Accuracy temperature	±1% of measuring range (typ. at 21 °C)
Measuring intervall	WakeUp time = 100 sec. (default), heartbeat cycle = every 10th wakeup, configured via airConfig
Enclosure	PA6.6, pure white, cover PC, transparent, with quick lock screws
Protection	IP65 according to EN 60529
Pocket	stainless steel V4A, Ø=6 mm, L=50 mm, mounting lengths available: 50 100 150 200 250 mm
Ambient condition	-25..+65 °C, max. 85% rH short term condensation
Notes	integrated battery backup possibility for usage in dark rooms, other probe lengths on request, to use the free software airConfig (download) a USB stick, which is able to send and receive EnOcean telegrams, is necessary. The EnOcean USB stick (incl. license) is included in airScan (item No. 566704 for 868 MHz)

Item description: product | pocket (length.Ø) | cable length (L)

SR65 TF



Radio cable sensor temperature	Item No.		ES2
Item description	902 MHz	868 MHz	€
SR65 TF 050.06 L1000		245647	138,00

Options

Item description	€
Add per meter of connection cable -50..+180 °C	1,60

Order example for different items:

SR65 TF | 050.06 | L2000

SR65 TF = product
050.06 = pocket (length.Ø)
L2000 = cable length (mm)

Accessories

Item description	Item No.	On stock	AS1 €
Battery LS14250	315098	⊕	4,00
Mounting flange MF6DS flexible (suitable for Ø=6 mm)	669016	⊕	6,30
Mounting flange MF6 (brass)	3407	⊕	6,30
KL6VA – Compression fittings G 1/4" for Ø=6 mm with cutting ring VA, stainless steel	103213	⊕	12,70
airConfig (freeware via www.thermokon.com)			0,00
EnOcean USB transceiver for airConfig/airScan (incl. license – net price)	566704	⊕	100,80

Accessories – thermowell pockets stainless steel for sensors with pocket Ø=6 mm

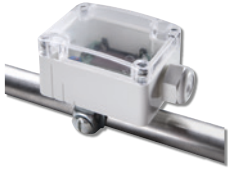
Item description	Length	Pocket length	Item No.	On stock	AS2 €
VA-thermowell pocket 50 mm type THVADS50	50 mm	36 mm	611152	⊕	17,10
VA-thermowell pocket 100 mm type THVADS100	100 mm	86 mm	611817	⊕	18,90
VA-thermowell pocket 150 mm type THVADS150	150 mm	136 mm	611824	⊕	20,30
VA-thermowell pocket 200 mm type THVADS200	200 mm	186 mm	611848	⊕	21,40
VA-thermowell pocket 250 mm type THVADS250	250 mm	236 mm	611862	⊕	26,60

Accessories – thermowell pockets brass for sensors with pocket Ø=6 mm

Item description	Length	Pocket length	Item No.	On stock	AS2 €
MS-thermowell pocket 50 mm type THMSDS50	50 mm	36 mm	610995	⊕	7,85
MS-thermowell pocket 100 mm type THMSDS100	100 mm	86 mm	611008	⊕	8,95
MS-thermowell pocket 150 mm type THMSDS150	150 mm	136 mm	611015	⊕	9,45
MS-thermowell pocket 200 mm type THMSDS200	200 mm	186 mm	611022	⊕	9,75
MS-thermowell pocket 250 mm type THMSDS250	250 mm	236 mm	611985	⊕	11,30

SR65 VFG

DATA SHEETS



Self-powered wireless EnOcean clamp on pipe temperature sensor. Configured via airConfig.



TECHNICAL DATA

Measuring values	temperature
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Data transmission	airConfig ready
Power supply	solar cell, internal super cap, optional: backup battery LS14250 (3,6 V)
Measuring range temp.	+10..+90 °C, optionally configurable via airConfig
Accuracy temperature	±1% of measuring range (typ. at 21 °C)
Measuring intervall	WakeUp time = 100 sec. (default), heartbeat cycle = every 10th wakeup, configured via airConfig
Enclosure	PA6.6, pure white, cover PC, transparent, with quick lock screws
Protection	IP65 according to EN 60529
Pocket	brass, spring loaded sensor
Ambient condition	-25..+65 °C, max. 85% rH short term condensation
Notes	integrated battery backup possibility for usage in dark rooms, to use the free software airConfig (download) a USB stick, which is able to send and receive EnOcean telegrams, is necessary. The EnOcean USB stick (incl. license) is included in airScan (item No. 566704 for 868 MHz)



Radio contact sensors temperature	Item No.		ES2
	902 MHz	868 MHz	€
SR65 VFG	616027	239615	136,00

Accessories

Item description	Item No.	On stock	AS1
			€
Battery LS14250	315098	☹	4,00
Tension clamp for pipes Ø up to 110 mm with contact fluid	658911	☹	2,65
Tension clamp for pipes Ø up to 250 mm with contact fluid	648103	☹	4,10
Tightening strap PA for pipes Ø up to 100 mm with contact fluid	668071	☹	2,65
airConfig (freeware via www.thermokon.com)			0,00
EnOcean USB transceiver for airConfig/airScan (incl. license – net price)	566704	☹	100,80

SR07 rH

DATA SHEETS



Energy-harvesting high quality designed radio room sensor for measuring temperature and relative humidity in living and office space. The device sends its measured values unidirectionally to corresponding receivers or gateways, which process the information directly or – depending on the application – forward it to a central control unit. It can be integrated into almost all 55x55 mm switch ranges, allowing you to choose from many high quality designs. To be mounted using an adhesive pad or screws.



SR07 rH pure white brilliant,
switch range Gira E2



SR07 rH aluminium,
switch range Gira E2



SR07 rH anthracite,
switch range Gira E2



TECHNICAL DATA

Measuring values	humidity, temperature
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz
Power supply	solar cell, internal super cap, maintenance-free, optional: backup battery CR1632
Measuring range temp.	0..+40 °C
Measuring range humidity	0..100% rH non-condensing
Accuracy temperature	±0,4 K (typ. at 21 °C)
Accuracy humidity	±5% between 30..70% rH (typ. at 21 °C)
Measuring intervall	WakeUp time = 100 sec. (default)
Transmission interval	every 100 sec. at change >0,8 K or >1,6% rH, otherwise every 1000 sec.
Switch range Berker	S.1, B.7 glass
Switch range Busch-Jaeger	Busch-balance® SI, solo® *, future® linear *, Busch-axcent® *
Switch range Feller	EDIZIOdue
Switch range Gira	E2, E3, Standard 55, Esprit, Event, Flächenschalter *
Switch range Jung	A 500, AS 500, A plus, A creation
Switch range Merten	M-Smart, M-Plan, M-Pure
Enclosure	PC, pure white, aluminium, anthracite
Protection	IP20 according to EN 60529
Ambient condition	-25..+65 °C, max. 85% rH non-condensing
Mounting	to be mounted flat onto the surface using adhesive foil (included) or screws
Delivery contents	adhesive foil
Notes	* in switch program with intermediate frame, integrated coin cell backup possibility for usage in dark rooms, for devices with operating elements please refer to product SR07 x

SR07 rH

Item description: product | switch range | colour



Radio room sensor temperature + humidity	Item No.		ES2
Item description	902 MHz	868 MHz	€
SR07 rH Gira E2 pure white brilliant		593182	221,90
SR07 rH Gira E2 aluminium		593205	221,90
SR07 rH Gira E2 anthracite		593199	221,90

Options	
Item description	€
Switch ranges Busch-Jaeger Busch-balance® SI	0,00
Switch ranges Berker S.1 Jung A 500 Merten M-Smart Gira E3	0,00
Switch range Gira Esprit	22,30
Switch ranges glass (different manufacturers)	35,10
Other switch ranges	12,50

Order example for different items:

SR07 rH | Gira Esprit

SR07 rH = product

Gira Esprit = switch range Gira Esprit

Accessories			AS1
Item description	Item No.	On stock	€
Coin cell CR1632	597814	⊖	4,00

SR04 rH

DATA SHEETS



Energy-harvesting radio room sensor for measuring temperature and relative humidity in living and office spaces. To be mounted via adhesive pad or screws the device sends its measured values unidirectionally to corresponding receivers or gateways, which process the information directly or – depending on the application – forward it to a central control unit.



TECHNICAL DATA

Measuring values	humidity, temperature
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas), 928 MHz
Power supply	solar cell, internal super cap, maintenance-free, optional: backup battery LS14250 (3,6 V)
Measuring range temp.	0..+40 °C
Measuring range humidity	0..100% rH non-condensing
Accuracy temperature	±0,4 K (typ. at 21 °C)
Accuracy humidity	±5% between 30..70% rH (typ. at 21 °C)
Measuring intervall	WakeUp time = 100 sec. (default)
Transmission interval	every 100 sec. at change >0,8 K or >1,6% rH, otherwise every 1000 sec., adjustable via jumper
Set point (P)	potentiometer, optional
Enclosure	PC, pure white
Protection	IP30 according to EN 60529
Ambient condition	0..+40 °C, max. 85% rH non-condensing
Mounting	to be mounted flat onto the surface using adhesive foil (included) or screws



Radio room sensor temperature + humidity	Item No.			ES2
Item description	902 MHz	868 MHz	On stock	€
SR04 rH	550413	252317	☉	200,50

Accessories

Item description	Item No.	On stock	AS1
Battery LS14250	315098	☉	4,00



LC-SR04 rH

DATA SHEETS



Room sensor for humidity and temperature detection in illuminated room/space applications. For device with operating elements, adjustable telegram intervals and battery backup please refer to product SR04 rH.



TECHNICAL DATA	
Measuring values	humidity, temperature
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Power supply	solar cell, internal super cap, maintenance-free
Measuring range temp.	0..+40 °C
Measuring range humidity	0..100% rH non-condensing
Accuracy temperature	±0,5 K (typ. at range +17..+27 °C)
Accuracy humidity	±5% between 30..70% rH (typ. at 21 °C)
Transmission interval	every 100 sec. at change >0,8 K or >1,6% rH, otherwise every 1000 sec.
Enclosure	PC, pure white
Protection	IP30 according to EN 60529
Ambient condition	0..+40 °C, max. 85% rH non-condensing
Mounting	to be mounted flat onto the surface using adhesive foil (included) or screws



Radio room sensor temperature + humidity	Item No.		ES2
Item description	902 MHz	868 MHz	€
LC-SR04 rH		555975	132,70

SR65 rH

DATA SHEETS



Energy-harvesting radio sensor for detecting temperature and relative humidity in the outdoor or industrial environment (for example in cold stores, production halls and warehouses). The airConfig software can be used to easily parameterize measuring range, transmission interval and wake-up time. When used in dark places, a battery can be retrofitted.



TECHNICAL DATA	
Measuring values	humidity, temperature
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Data transmission	airConfig ready
Power supply	solar cell, internal super cap, optional: backup battery LS14250 (3,6 V)
Measuring range temp.	-20..+60 °C, optionally configurable via airConfig
Measuring range humidity	0..100% rH non-condensing
Accuracy temperature	±1% of measuring range (typ. at 21 °C)
Accuracy humidity	±5% between 30..70% rH (typ. at 21 °C)
Measuring intervall	WakeUp time = 100 sec. (default), heartbeat cycle = every 10th wakeup, configured via airConfig
Enclosure	PA6.6, pure white, cover PC, transparent, with quick lock screws
Protection	IP65 according to EN 60529
Ambient condition	-20..+70 °C, max. 85% rH short term condensation
Delivery contents	incl. rain protection PA6, white
Notes	integrated battery backup possibility for usage in dark rooms, to use the free software airConfig (download) a USB stick, which is able to send and receive EnOcean telegrams, is necessary. The EnOcean USB stick (incl. license) is included in airScan (item No. 566704 for 868 MHz)



Radio outdoor sensor temperature + humidity	Item No.			ES2
Item description	902 MHz	868 MHz	On stock	€
SR65 rH	616287	540391	⊕	245,00

Accessories	Item No.			AS1
Item description	Item No.	On stock		€
Battery LS14250	315098	⊕		4,00
Rawplugs and screws (2 pcs. each)	102209	⊕		0,80
Filter stainless steel, wire mesh (spare part)	231169	⊕		8,80
Rain protection PA6 white, for outdoor humidity sensor	587709	⊕		5,80
airConfig (freeware via www.thermokon.com)				0,00
EnOcean USB transceiver for airConfig/airScan (incl. license – net price)	566704	⊕		100,80

SR04 CO2

DATA SHEETS



Radio room sensor for measuring CO2 content, temperature and relative humidity (optionally) in living and office spaces. The device to be mounted via adhesive pad or screws sends its measured values unidirectionally to corresponding receivers or gateways, which process the information directly or – depending on the application – forward it to a central control unit.



SR04 CO2



SR04 CO2 LCD TLF



SR04 CO2 LCD / SR04 CO2 TLF



TECHNICAL DATA

Measuring values	CO2, temperature, humidity (optional)
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	max. 1,5 W (24 V =) 3,6 VA (24 V ~)
Measuring range temp.	0..+51 °C
Measuring range humidity	0..100% rH non-condensing
Measuring range CO2	0..2550 ppm
Accuracy temperature	±1% of measuring range (typ. at 21 °C)
Accuracy humidity	±3% between 20..80% rH (typ. at 21 °C)
Accuracy CO2	±75 ppm, >750 ppm: ±10% (typ. at 21 °C)
Measuring interval	WakeUp time = 100 sec. (default)
Transmission interval	every 100 sec. at change >1 K or >2,5% rH or 50 ppm, otherwise every 1000 sec. adjustable via jumper
Calibration	self-calibration, Dual Channel
Sensor	CO2: NDIR (non-dispersive, infrared)
Display	LCD 29x12 mm, monochrome (optional) 3 LEDs indicating air quality (CO2, traffic light function 'TLF') (optional)
Enclosure	PC, pure white
Protection	IP30 according to EN 60529
Cable entry	breaking points top/bottom, rear entry
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Mounting	surface mounted on flush-mounting box (Ø=68 mm), screw mounted onto flat surface

Item description: product | LCD | TLF (traffic light function)

SR04 CO2



Radio room sensor temperature + CO2		Item No.		ES2
Item description	902 MHz	868 MHz	On stock	€
SR04 CO2	550468	442510	☉	279,70
SR04 CO2 LCD	550499	467131		308,50
SR04 CO2 TLF	550482	436557		286,90
SR04 CO2 LCD TLF	550529	630634		315,70



Radio room sensor temperature + humidity + CO2		Item No.		ES2
Item description	902 MHz	868 MHz	On stock	€
SR04 CO2 rH	550475	434768		331,10
SR04 CO2 rH LCD	550512	462228		359,90
SR04 CO2 rH TLF		516143		338,30
SR04 CO2 rH LCD TLF	550505	474757		367,10

Accessories			AS1
Item description	Item No.	On stock	€
PSU-UP24 – flush mount power supply 24 V (80..240 V ~-> 24 V =, 0,5 A)	645737	☉	42,00

SR-MDS

DATA SHEETS



Ceiling multi sensor for light and motion detection using EnOcean radio technology.



TECHNICAL DATA	
Measuring values	luminosity, motion
Radio technology	EnOcean (IEC 14543-3-10), STM
Frequency	868 MHz
Power supply	flex. 15..240 V =/~, BAT: 3x battery LS14250, 3,6 V
Power consumption	typ. 0,8 W (24 V =) 1,2 VA (24 V ~)
Measuring range light	0..510 Lux
Measuring intervall	WakeUp time = 100 sec. (default)
Transmission interval	every 100 sec. at change of brightness >10 lux in case of detected motion, every 1000 sec. at change of brightness <10 lux in case of no motion detected, every 100 sec. at change of brightness <10 lux in case of detected motion, every 10 sec. at change of brightness >10 lux in case of detected motion, immediately at status change from no motion to motion or reverse after expiring of the follow-up time (approx. 1000 sec.), adjustable via jumper
Detection range	Ø=5 m at a sensor height of approx. 2,5 m
Enclosure	ABS, pure white
Protection	IP20 according to EN 60529
Ambient condition	-10..+50 °C, max. 85% rH non-condensing
Notes	appropriate for constant light control

Item description: product | BAT (battery)

Radio ceiling sensor light + motion	Item No.			ES2
	902 MHz	868 MHz	On stock	€
SR-MDS		396486	⊕	256,20
SR-MDS BAT		396462		256,20

Accessories				AS1
Item description	Item No.	On stock		€
Battery LS14250	315098	⊕		4,00
Enclosure for surface mounting SR-MDS pure white	514439	⊕		48,20
Mounting ring for hollow ceiling with retaining clips to be used with SR-MDS	627825	⊕		6,50

SR-MDS Solar

DATA SHEETS



The EnOcean self powered multi sensor detects light and motion. No battery or wiring necessary.



TECHNICAL DATA	
Measuring values	luminosity, motion
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Data transmission	airConfig ready
Power supply	solar cell, internal super cap, maintenance-free, optional: backup battery LS14250 (3,6 V)
Measuring range light	0..510 Lux (standard), 0..1000 Lux (10 Bit), 0..1020 Lux, optionally configurable via airConfig
Transmission interval	occupancy (30, 60 sec., 10, 15 min.), light (10, 20, 30, 60 sec. when value changes), optionally configurable via airConfig, immediately at status change from no motion to motion or reverse after expiring of the follow-up time or at change of brightness > 2% FS
Detection range	Ø=5 m at a sensor height of approx. 2,8 m, 102° x 92°
Sensor	PIR (passive infrared)
Enclosure	PC, pure white
Protection	IP50 according to EN 60529
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Mounting	screw mounted onto flat surface
Notes	integrated battery backup possibility for usage in dark rooms, to use the free software airConfig (download) a USB stick, which is able to send and receive EnOcean telegrams, is necessary. The EnOcean USB stick (incl. license) is included in airScan (item No. 566704 for 868 MHz)



Radio ceiling sensor light + motion	Item No.			ES2
Item description	902 MHz	868 MHz	On stock	€
SR-MDS Solar	684927	591577	⊖	215,40

Accessories				AS1
Item description	Item No.	On stock		€
Battery LS14250	315098	⊖		4,00
airConfig (freeware via www.thermokon.com)				0,00
EnOcean USB transceiver for airConfig/airScan (incl. license – net price)	566704	⊖		100,80

SR-MOC Solar

DATA SHEETS



Solar ceiling sensor with battery backup (optional) for motion detection using EnOcean radio technology.



TECHNICAL DATA

Measuring values	motion
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz
Power supply	solar cell, internal super cap, maintenance-free, Battery: Coin cell CR2032 (optional), terminal block for external power supply 3..5 V =
Transmission interval	during occupancy: every 2 min., no occupancy: after 10 and 30 min., immediately at status change from no motion to motion, every hour as heartbeat (optional)
Detection range	Ø=5 m at a sensor height of approx. 2,5 m
Sensor	PIR (passive infrared)
Enclosure	PC, white
Protection	IP50 according to EN 60529
Ambient condition	0..+40 °C, max. 85% rH non-condensing
Mounting	surface mounting, to be mounted flat onto the surface using adhesive foil (included) or screws



Radio ceiling sensor motion	Item No.			ES2
Item description	902 MHz	868 MHz	On stock	€
SR-MOC Solar		566070	⊖	163,50

Accessories

Item description	Item No.	On stock	AS1
Coin cell CR2032	347013	⊖	4,00
Rawlplugs and screws (2 pcs. each)	102209	⊖	0,80



SR-MOW Solar

DATA SHEETS



Wireless solar wall sensor with battery backup (optional) for motion detection using EnOcean radio technology.



TECHNICAL DATA	
Measuring values	motion
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz
Power supply	solar cell, internal super cap, maintenance-free, Battery: Coin cell CR2032 (optional), terminal block for external power supply 3..5 V =
Transmission interval	immediately at status change from no motion to motion, during occupancy: every 2 min., no occupancy: after 10 and 30 min., every hour as heartbeat (optional)
Detection range	Wide angle lens up to 15 m, field lens up to 30 m when mounted at height 2,10 m
Sensor	PIR (passive infrared)
Enclosure	PC, white
Protection	IP20 according to EN 60529
Ambient condition	-10..+40 °C
Mounting	to be mounted flat onto the surface using adhesive foil (included) or screws



Radio wall sensor motion	Item No.			ES2
Item description	902 MHz	868 MHz	On stock	€
SR-MOW Solar		566094	⊖	142,90

Accessories	Item No.			AS1
Item description	Item No.	On stock		€
Coin cell CR2032	347013	⊖		4,00
Rawplugs and screws (2 pcs. each)	102209	⊖		0,80

SR65 Li

DATA SHEETS



Wireless light sensor for blind systems. Can also be used to control light at sunset. Configured via airConfig.



TECHNICAL DATA

Measuring values	luminosity
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Data transmission	airConfig ready
Power supply	solar cell, internal super cap, optional: backup battery LS14250 (3,6 V)
Measuring range light	0..510 Lux, 0..1000 Lux (10 Bit), 0..1020 Lux, 300..30.000 Lux, 600..60.000 Lux, optionally configurable via airConfig
Measuring intervall	WakeUp time = 100 sec. (default), heartbeat cycle = every 10th wakeup, configured via airConfig
Enclosure	PA6.6, pure white, cover PC, transparent, with quick lock screws
Protection	IP65 according to EN 60529
Ambient condition	-20..+70 °C, max. 85% rH short term condensation
Notes	resolution: 8 bit or 10 bit, to use the free software airConfig (download) a USB stick, which is able to send and receive EnOcean telegrams, is necessary. The EnOcean USB stick (incl. license) is included in airScan (item No. 566704 for 868 MHz)

Radio outdoor sensor light

Item No.



ES2

Item description	902 MHz	868 MHz	€
SR65 Li	599856	598354	168,50

Accessories

AS1

Item description	Item No.	On stock	€
Battery LS14250	315098	☺	4,00
airConfig (freeware via www.thermokon.com)			0,00
EnOcean USB transceiver for airConfig/airScan (incl. license - net price)	566704	☺	100,80



SR-MI

DATA SHEETS



Wireless module for evaluation of pulse signals for gas, water, electric and BTU meters with S0 interfaces.



TECHNICAL DATA	
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Antenna	external transmitting antenna with magnetic holding
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	typ. 0,2 W (24 V =) 0,4 VA (24 V ~)
Inputs	3x S0-interface
Enclosure	ABS, light grey
Protection	IP20 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Mounting	prepared for mounting on DIN rail TS35 (35x7,5 mm) according to EN 60715
Delivery contents	incl. external transmitting antenna 2,5 m with magnetic holding



Wireless module	Item No.		ES2
	Item description	902 MHz	868 MHz
SR-MI	550536	471428	169,90

Accessories	AS1		
	Item No.	On stock	€
Antenna extension 10 m	257206	☹	56,10
Antenna extension 20 m	257213	☹	68,30
Magnetic antenna holder form L, 180x180 mm (net price)	255097	☹	14,30



SR65-3AI

DATA SHEETS



The module has 3x0..10 V inputs. The input values are transmitted wirelessly to an EasySens® receiver. This allows standard analogue signals to simply integrate into a wireless EnOcean network.



TECHNICAL DATA

Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	typ. 0,2 W (24 V =) 0,4 VA (24 V ~)
Measuring interval	WakeUp time = 100 sec. (default), heartbeat cycle = every 10th wakeup, adjustable via jumper
Inputs	3x analog input, 0..10 V
Enclosure	PA6.6, pure white, cover PC, transparent, with quick lock screws
Protection	IP65 according to EN 60529
Cable entry	M16 for wire max. Ø=8 mm
Connection electrical	plug-in terminal, max. 1,5 mm ²
Ambient condition	-25..+65 °C, max. 85% rH short term condensation



Wireless module	Item No.		ES2
	Item description	902 MHz	868 MHz
SR65-3AI	606783	527071	136,00

SR65 DI

DATA SHEETS



Radio binary module for transmitting binary switching states. The status of the digital input is sent via EnOcean telegram to corresponding remote stations in the EnOcean network. Often used as a signal generator for night reduction of heating controllers or ECO/comfort switching.



TECHNICAL DATA	
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Data transmission	airConfig ready
Power supply	solar cell, internal super cap, battery LS14250 (3,6 V)
Measuring intervall	WakeUp time = 100 sec. (default), heartbeat cycle = every 10th wakeup, configured via airConfig
Inputs	1x input for floating contact, contact resistance max. 1000 Ω
Enclosure	PA6.6, pure white, cover PC, transparent, with quick lock screws
Protection	IP65 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	-25..+65 °C, max. 85% rH short term condensation
Delivery contents	1x battery LS14250
Notes	to use the free software airConfig (download) a USB stick, which is able to send and receive EnOcean telegrams, is necessary. The EnOcean USB stick (incl. license) is included in airScan (item No. 566704 for 868 MHz)



Radio module	Item No.		ES2
	902 MHz	868 MHz	€
SR65 DI	599863	267731	136,00

Accessories				AS1
Item description	Item No.	On stock	€	
Battery LS14250	315098	☺	4,00	
airConfig (freeware via www.thermokon.com)			0,00	
EnOcean USB transceiver for airConfig/airScan (incl. license - net price)	566704	☺	100,80	

SRG02

DATA SHEETS



Batteryless window handle for status monitoring of windows (option lockable available) with EnOcean technology. When actuated, the handle transmits a radio signal with the handle position to an actuator or central control unit in order, for example, to activate an energy lock. This can be used to optimize energy consumption in the building, since the heating or ventilation is deactivated when the windows are open. Square spindle with variable lengths for tread depth 32.42 mm usable in various window frames.



SRG02 aluminium pure white



SRG02 aluminium steel grey



SRG02 stainless steel



TECHNICAL DATA

Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz
Antenna	internal transmitting antenna
Power supply	maintenance-free, electrodynamic energy generator
Transmission interval	turning the window handle
Enclosure	aluminium pure white painted, aluminium steel grey, stainless steel
Ambient condition	+5..+40 °C, max. 80% rH non-condensing
Mounting	Square spindle, variable lengths (for tread depth 32..42 mm)
Notes	lockable (option), also available as sliding door handle (on request), sideways with position precision



Radio window handle	Item No.			ES1
Item description	902 MHz	868 MHz	On stock	€
SRG02 aluminium pure white		665018	⊕	105,20
SRG02 aluminium steel grey		665025	⊕	105,20
SRG02 stainless steel		665032	⊕	176,70

Radio window handle, lockable	Item No.			ES1
Item description	902 MHz	868 MHz	On stock	€
SRG02 lockable aluminium pure white		665049	⊕	151,00
SRG02 lockable aluminium steel grey		665056	⊕	151,00

SRW01

DATA SHEETS



Window contact for status monitoring of windows and doors.



SRW01



SRW01 (902 MHz)



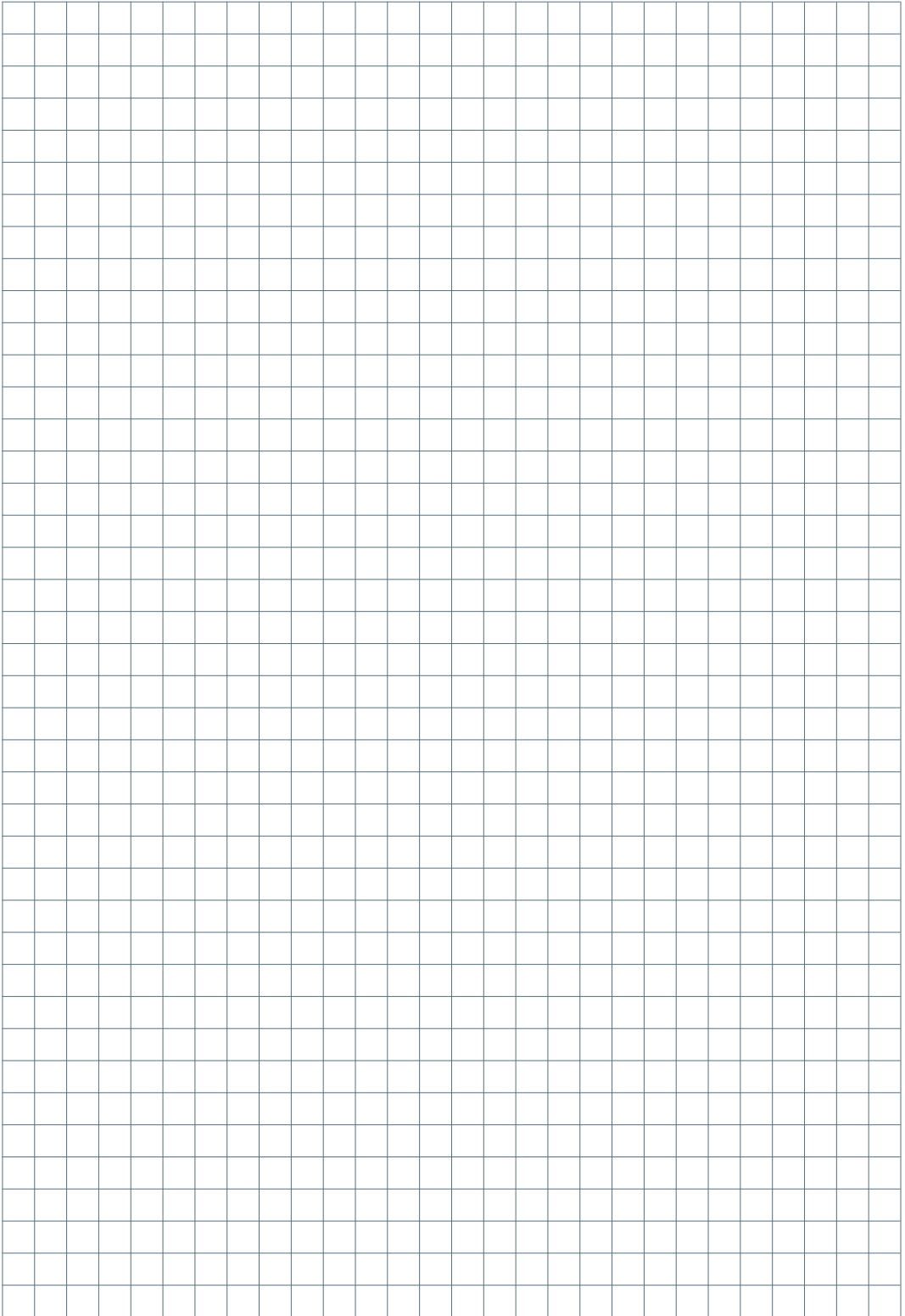
TECHNICAL DATA

Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Power supply	solar cell, internal super cap, maintenance-free, BAT: coin cell CR1220 (optional)
Transmission interval	at status change, otherwise every 1000 sec.
Sensor	Reed contact and magnet
Enclosure	ABS, pure white
Protection	IP40 according to EN 60529
Ambient condition	-25..+65 °C, max. 85% rH non-condensing
Mounting	to be mounted flat onto the surface using adhesive foil (included) or screws
Notes	special painting available on request



Radio window/door contact	Item No.			ES1
Item description	902 MHz	868 MHz	On stock	€
SRW01	551205	248051	⊕	67,90
SRW01 BAT		347044		94,70

Accessories				AS1
Item description	Item No.	On stock		€
Coin cell CR1220 (replacement for SRW01 BAT)	347006	⊕		4,00

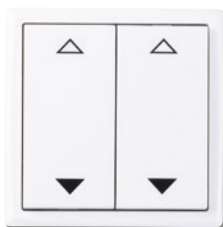


Mini

DATA SHEETS



Lighting and blind control. The self powered wireless technology enables flexible installation on glass and wall plaster via double-sided adhesive pads or screws.



4-channel blinds, pure white brilliant



2-channel light, aluminium



2-channel blinds, anthracite



TECHNICAL DATA	
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Power supply	maintenance-free, electrodynamic energy generator
Transmission interval	when pressing the switches
Control functions	actuation force 7 N, actuation range 2 mm, operating cycle quantity > 50.000
No. of buttons	2-channel (1 switch), 4-channel (2 switches)
Labelling	O, I (version light), ▲▼ (version blinds), special printing available on request
Enclosure	dimensions: 61x61x15 mm incl. frame, pure white brilliant, aluminium, anthracite
Ambient condition	-25..+65 °C, max. 85% rH non-condensing
Mounting	to be mounted flat onto the surface using adhesive foil (included) or screws
Notes	prices including frame

Mini

Item description: product | number of buttons | model light | colour



Radio control 2-channel light		Item No.		ES2
Item description	902 MHz	868 MHz	€	
Mini 2-channel light pure white brilliant	550758	430647	64,60	
Mini 2-channel light aluminium varnished	550765	430661	64,60	
Mini 2-channel light anthracite	550772	430623	64,60	

Radio control 4-channel light		Item No.		ES2
Item description	902 MHz	868 MHz	€	
Mini 4-channel light pure white brilliant	550826	430838	66,80	
Mini 4-channel light aluminium varnished	550833	430852	66,80	
Mini 4-channel light anthracite	550857	430814	66,80	

Item description: product | number of buttons | model shutters | colour



Radio control 2-channel blind		Item No.		ES2
Item description	902 MHz	868 MHz	€	
Mini 2-channel blind pure white brilliant	608770	430630	64,60	
Mini 2-channel blind aluminium varnished	550796	430654	64,60	
Mini 2-channel blind anthracite	550802	430302	64,60	

Radio control 4-channel blind		Item No.		ES2
Item description	902 MHz	868 MHz	€	
Mini 4-channel blind pure white brilliant	650366	430821	66,80	
Mini 4-channel blind aluminium varnished	550871	430845	66,80	
Mini 4-channel blind anthracite	550888	430807	66,80	

55x55

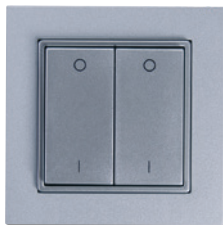
DATA SHEETS



Light and blind control. The wireless technology enables a flexible installation on glass and wall plaster via double-sided adhesive pads or screws.



2-channel blinds,
Gira E2 pure white



4-channel light,
Gira E2 aluminium



4-channel blinds,
Gira E2 anthracite



TECHNICAL DATA	
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz
Power supply	maintenance-free, electrodynamic energy generator
Transmission interval	when pressing the switches
Switch range Berker	S.1 *, B.7 glass
Switch range Busch-Jaeger	Busch-balance® S1 *
Switch range Feller	EDIZIODue *
Switch range Gira	E2 *, E3 *, Standard 55 *, Esprit *, Event *, Flächenschalter *
Switch range Jung	A 500 *, AS 500 *, A creation *,
Switch range Merten	M-Smart *, M-Pure *, 1-M, Atelier-M, Artec *, Antik *
Switch range Peha	AURA, AURA glass
Control functions	actuation force 7 N, actuation range 2 mm, operating cycle quantity > 50.000
No. of buttons	2-channel (1 switch), 4-channel (2 switches)
Labelling	O, I (version light), ▲▼ (version blinds), special printing available on request
Enclosure	luminescent intermediate frame, yellow, green phosphorescent available (see accessories); can easily be used instead of the intermediate frame, guideline: with an illumination of 400 lux for 20-30 minutes the frame will glow about 12 hours
Ambient condition	-25..+65 °C, max. 85% rH non-condensing
Mounting	to be mounted flat onto the surface using adhesive foil (included) or screws
Notes	* in switch program with intermediate frame, when ordering other switch programmes, please specify colour, prices incl. frame Gira E2

55x55

Item description: number of buttons | model light | switch range | colour



Radio control 2-channel light		Item No.		ES1
Item description	902 MHz	868 MHz	€	
2-channel light Gira E2 pure white matt		302852	74,50	
2-channel light Gira E2 pure white glossy		363051	74,50	
2-channel light Gira E2 aluminium		302807	74,50	
2-channel light Gira E2 anthracite		302814	74,50	

Radio control 4-channel light		Item No.		ES1
Item description	902 MHz	868 MHz	€	
4-channel light Gira E2 pure white matt		302883	76,70	
4-channel light Gira E2 pure white glossy		363068	76,70	
4-channel light Gira E2 aluminium		302869	76,70	
4-channel light Gira E2 anthracite		302876	76,70	

Item description: number of buttons | model shutters | switch range | colour



Radio control 2-channel blind		Item No.		ES1
Item description	902 MHz	868 MHz	€	
2-channel blind Gira E2 pure white matt		302845	74,50	
2-channel blind Gira E2 pure white glossy		364577	74,50	
2-channel blind Gira E2 aluminium		302821	74,50	
2-channel blind Gira E2 anthracite		302838	74,50	

Radio control 4-channel blind		Item No.		ES1
Item description	902 MHz	868 MHz	€	
4-channel blind Gira E2 pure white matt		302913	76,70	
4-channel blind Gira E2 pure white glossy		364591	76,70	
4-channel blind Gira E2 aluminium		302890	76,70	
4-channel blind Gira E2 anthracite		302906	76,70	

Options		€
Item description		€
Switch ranges Busch-Jaeger Busch-balance® SI		0,00
Switch ranges Berker S.1 Jung A 500 Merten M-Smart Gira E3		0,00
Switch range Gira Esprit		22,30
Switch ranges stainless steel glass aluminium (different manufacturers)		35,10
Other switch ranges		12,50

Order example for different items:

4-channel | shutters | Peha Aura Glas

4-channel = number of buttons

shutters = model

Peha Aura Glas = switch range Glas

Busch-Jaeger

DATA SHEETS



Lighting and blind control. The self powered wireless technology enables flexible installation on glass and wall plaster via double-sided adhesive pads or screws.



4-channel blinds,
future® linear studio white



4-channel light,
future® linear aluminium silver



2-channel blinds,
future® linear anthracite



TECHNICAL DATA	
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Power supply	maintenance-free, electrodynamic energy generator
Transmission interval	when pressing the switches
Switch range Busch-Jaeger	Busch-balance® SI, solo®, future® linear, Busch-axcent®
Control functions	actuation force 7 N, actuation range 2 mm, operating cycle quantity > 50.000
No. of buttons	2-channel (1 switch), 4-channel (2 switches)
Labelling	O, I (version light), ▲▼ (version blinds), special printing available on request
Enclosure	anthracite, studio white, ivory white, aluminium silver
Ambient condition	-25..+65 °C, max. 85% rH non-condensing
Mounting	to be mounted flat onto the surface using adhesive foil (included) or screws
Notes	prices including frame, frame designs Solo, Future and Axcnt at the same price, ask for Carat, white (studio) and matt black available on request

Item description: number of buttons | model light | switch range | colour

Busch-Jaeger



Radio control 2-channel light		Item No.		ES1
Item description	902 MHz	868 MHz	€	
2-channel light Busch-Jaeger future® linear studio white	550567	342971	76,70	
2-channel light Busch-Jaeger future® linear ivory white	550574	342858	76,70	
2-channel light Busch-Jaeger future® linear aluminium silver	550581	338783	76,70	
2-channel light Busch-Jaeger future® linear anthracite	550604	324571	76,70	

Radio control 4-channel light		Item No.		ES1
Item description	902 MHz	868 MHz	€	
4-channel light Busch-Jaeger future® linear studio white	550666	342988	78,90	
4-channel light Busch-Jaeger future® linear ivory white	550673	365529	78,90	
4-channel light Busch-Jaeger future® linear aluminium silver	550680	327404	78,90	
4-channel light Busch-Jaeger future® linear anthracite	550697	324595	78,90	

Item description: number of buttons | model shutters | switch range | colour



Radio control 2-channel blind		Item No.		ES1
Item description	902 MHz	868 MHz	€	
2-channel blind Busch-Jaeger future® linear studio white	550598	469630	76,70	
2-channel blind Busch-Jaeger future® linear ivory white	550628	469661	76,70	
2-channel blind Busch-Jaeger future® linear aluminium silver	550635	469548	76,70	
2-channel blind Busch-Jaeger future® linear anthracite	550642	469593	76,70	

Radio control 4-channel blind		Item No.		ES1
Item description	902 MHz	868 MHz	€	
4-channel blind Busch-Jaeger future® linear studio white	550703	469647	78,90	
4-channel blind Busch-Jaeger future® linear ivory white	550710	469685	78,90	
4-channel blind Busch-Jaeger future® linear aluminium silver	550727	469586	78,90	
4-channel blind Busch-Jaeger future® linear anthracite	550734	469609	78,90	

Options		ES1
Item description	€	
Switch ranges Busch-Jaeger solo® Busch-axcent®	0,00	

Order example for different items:

4-channel | shutters | Busch-Jaeger solo®

4-channel = number of buttons

shutters = model

Busch-Jaeger solo® = switch range Glas

Jung

DATA SHEETS



Lighting and blind control. The self powered wireless technology enables flexible installation on glass and wall plaster via double-sided adhesive pads or screws.



4-channel light,
LS990 alpin white



2-channel light,
LS990 light grey



4-channel blinds,
LS990 white



TECHNICAL DATA	
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz
Power supply	maintenance-free, electrodynamic energy generator
Transmission interval	when pressing the switches
Switch range Jung	LS 990
Control functions	actuation force 7 N, actuation range 2 mm, operating cycle quantity > 50.000
No. of buttons	2-channel (1 switch), 4-channel (2 switches)
Labelling	O, I (version light), ▲▼ (version blinds)
Enclosure	white, alpin white, light grey
Ambient condition	-25..+65 °C, max. 85% rH non-condensing
Mounting	to be mounted flat onto the surface using adhesive foil (included) or screws
Notes	prices incl. frame LS990, LS990 aluminium varnished and stainless steel varnished on request. Switch programme LS-design on request

Jung

Item description: number of buttons | model light | switch range | colour



Radio control 2-channel light	Item No.		ES1
Item description	902 MHz	868 MHz	€
2-channel light Jung LS 990 white		435390	108,00
2-channel light Jung LS 990 alpin white		435376	108,00
2-channel light Jung LS 990 light grey		435413	108,00

Radio control 4-channel light	Item No.		ES1
Item description	902 MHz	868 MHz	€
4-channel light Jung LS 990 white		435475	112,00
4-channel light Jung LS 990 alpin white		435451	112,00
4-channel light Jung LS 990 light grey		435499	112,00

Item description: number of buttons | model shutters | switch range | colour



Radio control 2-channel blind	Item No.		ES1
Item description	902 MHz	868 MHz	€
2-channel blind Jung LS 990 white		435406	108,00
2-channel blind Jung LS 990 alpin white		435383	108,00
2-channel blind Jung LS 990 light grey		435420	108,00

Radio control 4-channel blind	Item No.		ES1
Item description	902 MHz	868 MHz	€
4-channel blind Jung LS 990 white		435482	112,00
4-channel blind Jung LS 990 alpin white		435468	112,00
4-channel blind Jung LS 990 light grey		435505	112,00

Hand-held

DATA SHEETS



The EasySens® hand-held switch provides remote function for switch signals based on the self powered EnOcean technology.



TECHNICAL DATA

Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas), 928 MHz
Power supply	maintenance-free, electrodynamic energy generator
Transmission interval	when pushing the buttons
Control functions	actuation force 7 N, actuation range 2 mm, operating cycle quantity > 50.000
No. of buttons	4-channel (4 buttons)
Labelling	A, B, C, D
Enclosure	black
Ambient condition	-25..+65 °C, max. 85% rH non-condensing



Hand-held switch	Item No.		ES1
	902 MHz	868 MHz	€
Hand-held switch 4 channel	550895	314602	98,70

SR-KCS02

DATA SHEETS



Wireless EasySens® switch for controls of lighting and air-conditioning applications in rooms using key card activation. The self-powered wireless technology enables a flexible installation on glass or wall plaster via double-sided adhesive pads or screws.



TECHNICAL DATA

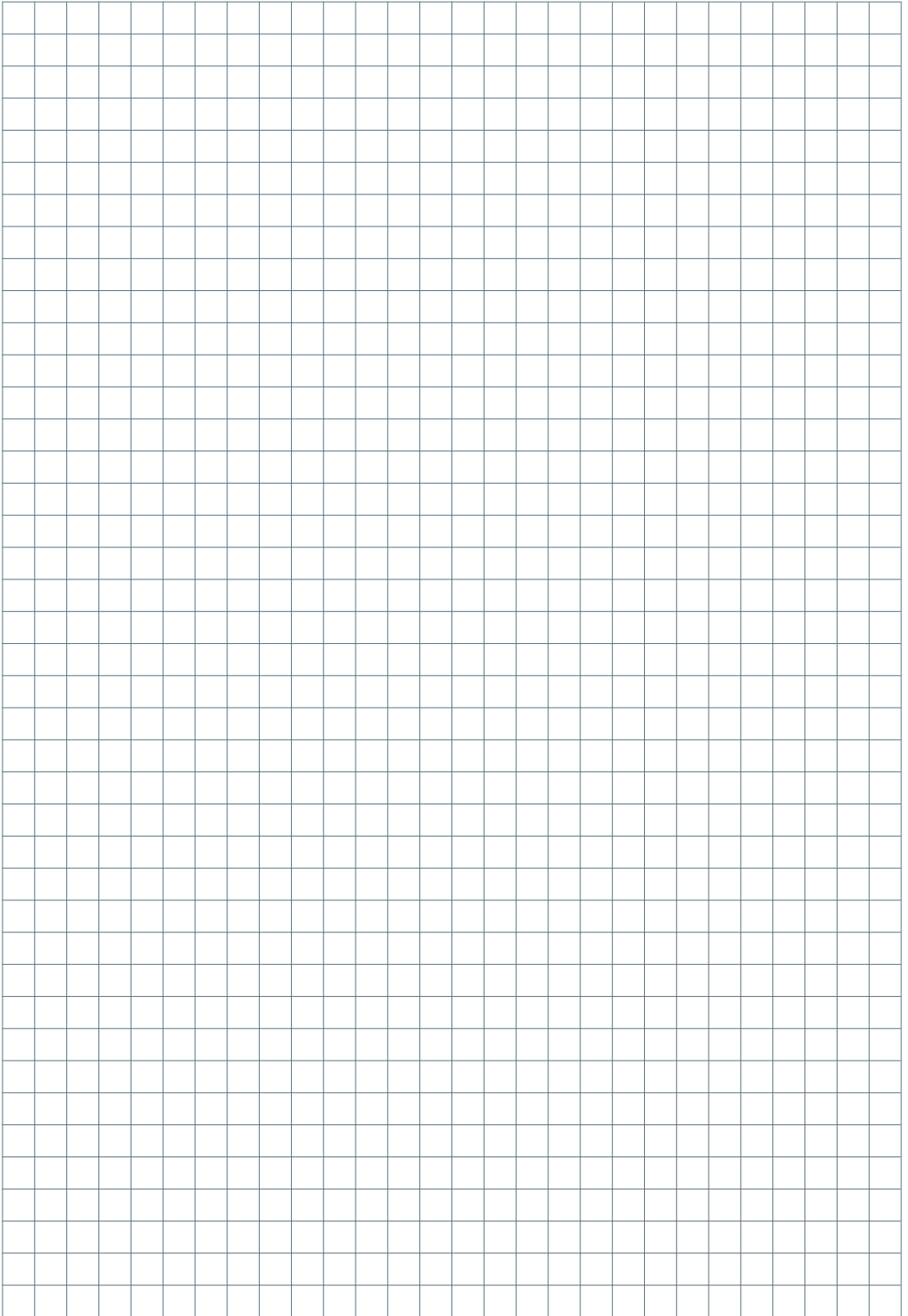
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Power supply	maintenance-free, electrodynamic energy generator
Transmission interval	at status change
Enclosure	PC, pure white
Ambient condition	-25..+65 °C, max. 85% rH non-condensing
Mounting	to be mounted flat onto the surface using adhesive foil (included) or screws



Wireless card switch

ES2

Item description	Item No.	€
SR-KCS02	691413	81,30



EasySens® Receiver

Innovative self-powered wireless technology generates energy by means of harvesting ambient light or motion. Interoperable, cost-effective and energy-efficient solutions in building automation is available using our wireless sensor system EasySens®.



Sample applications

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» BENEFITS

- » Communication without batteries or cables
- » Interoperable
- » Energy-efficient control of heating and lighting
- » High working and learning comfort through air conditioning and blind-control as required



1

SR04 CO2

Room sensor CO2/temperature/
rel. humidity
Available with display and traffic
light function



2

SR04

Surface-mounted wireless room
sensor for temperature & rel. humidity
Available with various control
elements and features



3

Mini

Wireless switch 2-/4-channel
lighting/blinds
Available in various colours



4

STC-DOB / STC-PLUS 4DO

Universal receiver with 8 digital outputs, with
expansion module STC-PLUS 4DO for control of
heating/cooling/ fan coils, for switching lights/
blinds, signal contact and more.



5

STC-DO / SRC-AO

Flush-mounted receiver (24 V or 230 V) with digital
or analogue outputs for control of thermostats,
humidistats, fans or temperature, for switching of
lights or blinds, and more



CONCENTRATION

All devices communicate wireless via EnOcean technology. Temperature, set point, air quality, occupancy and switch signals for lighting and blinds, are transmitted via bidirectional receivers, STC-DOB/ STC-PLUS 4DO resp. STC-DO/ SRC-AO as standalone with local digital or analogue outputs or to superior communication protocols such as KNX, BACnet, LON or Modbus. This system allows a substantial increase in comfort along with optimum energy savings.

STC65-RS485 Modbus

DATA SHEETS



Bidirectional gateway with interface RS485, Modbus protocol, IP42-enclosure. For evaluation of up to 32 EasySens® sensors or wireless switches. Transmission of field-programmed telegrams to 32 addresses. Incl. ext. transmitting/receiving antenna (2.5 m).

SmartACK

enOcean

Modbus

TECHNICAL DATA

Network technology	RS485 Modbus
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas), 928 MHz
Antenna	external transmitting/receiving antenna with magnetic holding
Data transmission	bidirectional, SmartACK (SmartACKNOWLEDGE)
Receive channels	32 (SAB) + 32 (Rx)
Transmit channels	32 (SAB) + 32 (Tx)
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	typ. 0,6 W (24 V =) 1,5 VA (24 V ~)
Display	4 LEDs for showing state of device
Enclosure	PA6.6, pure white, cover PC, transparent, with quick lock screws
Protection	IP42 according to EN 60529
Cable entry	M20 for wire max. Ø=8 mm, seal insert for double cable entry for wire max Ø=6 mm
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	-20..+60 °C, max. 85% rH non-condensing
Delivery contents	incl. external transmitting/receiving antenna 2,5 m with magnetic holding, software for configuration (freeware via download)
Notes	up to 15 SmartACKNOWLEDGE devices (SmartACK), magnetic antenna plate recommended to improve radio coverage

Modbus

Gateway – EnOcean ↔ RS485 Modbus	Item No.			ES2
Item description	902 MHz	868 MHz	On stock	€
STC65-RS485 Modbus	568760	385695	⊕	241,90

Accessories	Item No.			AS1
Item description	Item No.	On stock		€
Antenna extension 10 m	257206	⊕		56,10
Antenna extension 20 m	257213	⊕		68,30
Magnetic antenna holder form L, 180x180 mm (net price)	255097	⊕		14,30

STC65-RS485 EVC

DATA SHEETS



Bidirectional gateway with serial interface RS485, bi-directional interface „Multiple Access“, IP42-enclosure. For connection of up to 32 EasySens® sensors or wireless switches to different controllers with RS485 interface. Transmission of field-programmed telegrams to 127 addresses. Incl. ext. transmitting/receiving antenna (2,5 m).

SmartACK 

TECHNICAL DATA	
Network technology	RS485 EVC
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Antenna	external transmitting/receiving antenna with magnetic holding
Data transmission	bidirectional, SmartACK (SmartACKNOWLEDGE)
Receive channels	filter mode: 64 (Rx), Gateway mode: ∞ (Rx)
Transmit channels	filter mode: 128 (Tx), Gateway mode: 128 (Tx)
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	typ. 0,8 W (24 V =) 2 VA (24 V ~)
Display	4 LEDs for showing state of device
Enclosure	PA6.6, pure white, cover PC, transparent, with quick lock screws
Protection	IP42 according to EN 60529
Cable entry	M20 for wire max. Ø=8 mm, seal insert for double cable entry for wire max Ø=6 mm
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	-20..+60 °C, max. 85% rH non-condensing
Delivery contents	incl. external transmitting/receiving antenna 2,5 m with magnetic holding, software for configuration (freeware via download)
Notes	up to 15 SmartACKNOWLEDGE devices (SmartACK), magnetic antenna plate recommended to improve radio coverage

Gateway – EnOcean ↔ RS485 EVC	Item No.			ES2
	902 MHz	868 MHz	On stock	€
STC65-RS485 EVC	650939	393898	⊕	241,90

Accessories			AS1
Item description	Item No.	On stock	€
Antenna extension 10 m	257206	⊕	56,10
Antenna extension 20 m	257213	⊕	68,30
Magnetic antenna holder form L, 180x180 mm (net price)	255097	⊕	14,30

STC65-FTT LON

DATA SHEETS



Bidirectional gateway for EnOcean-based Sensors and actuators as well as controllers and control systems with LON interface. The STC65-FTT enables the receipt and transmission of radio telegrams corresponding to the EnOcean communication protocol. With predefined sensor objects (sensor, switch, ...) and corresponding output variables (SNVT) for communication in a LON system.



TECHNICAL DATA	
Network technology	LON FT (free topology)
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Antenna	external transmitting/receiving antenna with magnetic holding
Data transmission	bidirectional, SmartACK (SmartACKNOWLEDGE)
Receive channels	11 (Rx)
Transmit channels	11 (Tx)
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	typ. 0,5 W (24 V =) 0,82 VA (24 V ~)
Display	2 LEDs + service LED
Enclosure	PA6.6, pure white, cover PC, transparent, with quick lock screws
Protection	IP42 according to EN 60529
Cable entry	M20 for wire max. Ø=8 mm
Connection electrical	terminal block, max. 1,5 mm ² , seal insert for double cable entry for wire max Ø=6 mm
Ambient condition	-20..+60 °C, max. 85% rH non-condensing
Delivery contents	incl. external transmitting/receiving antenna 2,5 m with magnetic holding, incl. plug-in for turbo LONmaker
Notes	up to 4 SmartACKNOWLEDGE devices (SmartACK), magnetic antenna plate recommended to improve radio coverage



Gateway – EnOcean ↔ FTT LON	Item No.			ES2
	902 MHz	868 MHz	On stock	€
STC65-FTT LON SmartACK		616638	⊕	289,70
STC65-FTT LON	550925	393904	⊕	289,70

Accessories				AS1
Item description	Item No.	On stock		€
Antenna extension 10 m	257206	⊕		56,10
Antenna extension 20 m	257213	⊕		68,30
Magnetic antenna holder form L, 180x180 mm (net price)	255097	⊕		14,30



STC04-FTT LON

DATA SHEETS



Bidirectional gateway for EnOcean-based sensors and actuators as well as controllers and control systems with LON interface. The STC04-FTT enables the receipt and transmission of radio telegrams corresponding to the EnOcean communication protocol. With predefined sensor objects (sensor, switch, ...) and corresponding output variables (SNVT) for communication in a LON system.



TECHNICAL DATA

Network technology	LON FT (free topology)
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Antenna	enclosure antenna
Data transmission	bidirectional, SmartACK (SmartACKNOWLEDGE)
Receive channels	11 (Rx)
Transmit channels	11 (Tx)
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	typ. 0,5 W (24 V =) 0,82 VA (24 V ~)
Display	LED „Valid“ to show valid EnOcean telegrams
Enclosure	PC, pure white
Protection	IP30 according to EN 60529
Cable entry	breaking points top/bottom, rear entry
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	0..+50 °C, max. 85% rH short term condensation
Mounting	surface mounted on flush-mounting box (Ø=68 mm)
Delivery contents	incl. plug-in for turbo LONmaker



Gateway – EnOcean ↔ FTT LON	Item No.		ES2
	902 MHz	868 MHz	
Item description			€
STC04-FTT LON SmartACK		616645	258,10
STC04-FTT LON	630870	415118	258,10

STC-BACnet IP

DATA SHEETS



The EnOcean-BACnet IP gateway is designed for bidirectional communication between EasySens® sensors and actuators and controllers and control systems with BACnet IP interface. To be configured easily via EasySens® airConfig software tool. Details of the communication protocol are described in the software documentation. The scope of delivery already includes an external transmit/receive antenna for the best possible range.



TECHNICAL DATA	
Network technology	BACnet IP
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Antenna	external transmitting/receiving antenna with magnetic holding
Data transmission	bidirectional, airConfig ready
Receive channels	no limit
Transmit channels	128 (Tx)
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	typ. 3 W (24 V ~) 5 VA (24 V ~)
Enclosure	ABS, light grey
Protection	IP20 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Mounting	prepared for mounting on DIN rail TS35 (35x7,5 mm) according to EN 60715
Delivery contents	incl. external transmitting/receiving antenna 2,5 m with magnetic holding, software for configuration (freeware via download)
Notes	for network connection use a shielded standard Ethernet cable CAT 5, to use the free software airConfig (download) a USB stick, which is able to send and receive EnOcean telegrams, is necessary. The EnOcean USB stick (incl. license) is included in airScan (item No. 566704 for 868 MHz), magnetic antenna plate recommended to improve radio coverage



Gateway – EnOcean ↔ BACnet IP	Item No.		ES1
Item description	902 MHz	868 MHz	€
STC-BACnet IP V2	704106	696470	418,70

Accessories	Item No.	On stock	AS1
Item description			€
Antenna extension 10 m	257206	☺	56,10
Antenna extension 20 m	257213	☺	68,30
Magnetic antenna holder form L, 180x180 mm (net price)	255097	☺	14,30
airConfig (freeware via www.thermokon.com)			0,00
EnOcean USB transceiver for airConfig/airScan (incl. license – net price)	566704	☺	100,80

SRC65-BACnet MS/TP

DATA SHEETS



The unidirectional EnOcean-BACnet MS/TP gateway enables the acquisition of information from EasySens® sensors, pushbuttons and room control units. Details of the communication protocol are described in the software documentation. The scope of delivery already includes an external transmit/receive antenna for the best possible range.



TECHNICAL DATA

Network technology	BACnet MS/TP
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Antenna	external receiving antenna with magnetic holding
Data transmission	unidirectional
Receive channels	32 (Rx)
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	typ. 1 W (24 V =) 1,3 VA (24 V ~)
Display	4 LEDs for showing state of device
Enclosure	PA6.6, pure white, cover PC, transparent, with quick lock screws
Protection	IP42 according to EN 60529
Cable entry	M20 for wire max. Ø=8 mm
Connection electrical	terminal block, max. 1,5 mm ² seal insert for double cable entry for wire max Ø=6 mm
Ambient condition	-20..+60 °C, max. 85% rH non-condensing
Delivery contents	incl. external receiving antenna 2,5 m with magnetic holding
Notes	magnetic antenna plate recommended to improve radio coverage



Gateway – EnOcean → BACnet MS/TP	Item No.		ES1
	902 MHz	868 MHz	€
SRC65-BACnet MS/TP	568395	396431	262,80

Accessories				AS1
Item description	Item No.	On stock	€	
Antenna extension 10 m	257206	⊕	56,10	
Antenna extension 20 m	257213	⊕	68,30	
Magnetic antenna holder form L, 180x180 mm (net price)	255097	⊕	14,30	

STC-IoT

DATA SHEETS



The bidirectional wireless gateway enables seamless integration of EasySens® sensors and actuators into the Internet of Things (IoT). The new EnOcean-over-IP standard uses a JSON stream- or line-oriented (Command-Line) interface. The uncomplicated commissioning and administration is done via a browser interface. The graphical, data flow-oriented processing of the EnOcean information is carried out by the integrated Node-RED editor (<https://nodered.org/>) and enables simple, rule-based evaluation as well as notification via SMS/e-mail alerting, if values fall above or below thresholds. EasySens® devices can be integrated very easily into online applications. Suited for connecting to IP-based controller and display systems.



TECHNICAL DATA	
Network technology	TCP/IP
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Antenna	external transmitting/receiving antenna with magnetic holding
Data transmission	bidirectional
Receive channels	no limit
Transmit channels	SAB 128 (Tx)
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	typ. 3 W (24 V =) 5 VA (24 V ~)
Enclosure	ABS, light grey
Protection	IP20 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Mounting	prepared for mounting on DIN rail TS35 (35x7,5 mm) according to EN 60715
Delivery contents	incl. external transmitting/receiving antenna 2,5 m with magnetic holding, software for configuration (freeware via download)
Notes	magnetic antenna plate recommended to improve radio coverage



Gateway – EnOcean ↔ IP IoT	Item No.		ES1
	902 MHz	868 MHz	€
STC-IoT	688208	669320	395,00

Accessories	AS1		
Item description	Item No.	On stock	€
Antenna extension 10 m	257206	☹	56,10
Antenna extension 20 m	257213	☹	68,30
Magnetic antenna holder form L, 180x180 mm (net price)	255097	☹	14,30

STC-Ethernet

DATA SHEETS



Bidirectional gateway with IP/Ethernet interface for evaluation of up to 30 EasySens® sensors or wireless switches. Incl. external transmitting/receiving antenna (2,5 m).



TECHNICAL DATA

Network technology	Ethernet, data port: RJ45
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Antenna	external transmitting/receiving antenna with magnetic holding
Data transmission	bidirectional
Receive channels	filter mode: 30 (Rx), Gateway mode: ∞ (Rx)
Transmit channels	filter mode: 128 (Tx), Gateway mode: 128 (Tx)
Power supply	80..240 V ~, 15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	max. 5 VA (..240 V ~)
Display	LED „Valid“ to show valid EnOcean telegrams
Enclosure	ABS, light grey
Protection	IP20 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Mounting	prepared for mounting on DIN rail TS35 (35x7,5 mm) according to EN 60715
Delivery contents	incl. external receiving antenna 2,5 m with magnetic holding, software for configuration (freeware via download)
Notes	magnetic antenna plate recommended to improve radio coverage



Gateway – EnOcean ↔ Ethernet	Item No.			ES2
	902 MHz	868 MHz	On stock	€
STC-Ethernet 80..240 V	630818	403191	⊕	307,50
STC-Ethernet 24 V	550932	550109	⊕	307,50

Accessories	AS1		
Item description	Item No.	On stock	€
Antenna extension 10 m	257206	⊕	56,10
Antenna extension 20 m	257213	⊕	68,30
Magnetic antenna holder form L, 180x180 mm (net price)	255097	⊕	14,30



STC-KNX

DATA SHEETS



Bidirectional gateway for connection of up to 32 EasySens® sensors or wireless switches to the EIB/KNX-Bus. The device offers additional logic and control functions, which can be set to: switch and dimming, blind UP/DOWN, presence button/switch, set point adjustment, step switch, humidity sensor, window contact/handle, binary input, light sensor and motion sensor.



TECHNICAL DATA	
Network technology	KNX (TP)
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Data transmission	bidirectional
Receive channels	32 (Rx)
Transmit channels	32 (Tx)
Power supply	supply via BUS
Power consumption	max. 12 mA
Display	graphic display monochrome (internal)
Enclosure	PC, white
Protection	IP20 according to EN 60529
Connection electrical	KNX terminal block rd/bl (WAGO 243-212)
Ambient condition	-5..+45 °C, max. 85% rH non-condensing
Mounting	surface mounted on flush-mounting box (Ø=68 mm)
Notes	product database for ETS4/5 (freeware via download)



Gateway – EnOcean ↔ KNX	Item No.			ES1
	902 MHz	868 MHz	On stock	€
STC-KNX	615068	698948	⊖	420,00

STC-KNX UP

DATA SHEETS 



Bidirectional gateway between EasySens® wireless sensors and the EIB/KNX bus for mounting in a standard flush-mounted box. The device has 8 receive and transmit channels and 8 channels for logic and control functions that can be assigned with the functions switch, dimming, blinds up/down, presence, set point adjustment, step switch, humidity sensor, window handle/contact, binary input, light sensor and motion sensor.



TECHNICAL DATA	
Network technology	KNX (TP)
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz
Data transmission	bidirectional
Receive channels	8 (Rx)
Transmit channels	8 (Tx)
Power supply	supply via BUS
Power consumption	max. 12 mA
Enclosure	ABS, blue
Protection	IP20 according to EN 60529
Connection electrical	KNX terminal block rd/bl (WAGO 243-212)
Ambient condition	-5..+45 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm)
Notes	product database for ETS4/5 (freeware via download)



Gateway – EnOcean ↔ KNX			ES1
Item description	Item No.	On stock	€
STC-KNX UP	698955	☉	320,00

STC-dS

DATA SHEETS



Bidirectional gateway to extend a digitalSTROM system with EasySens® devices like sensors, units for controlling indoor climate, valve actuators, radio switches, wireless window contacts and window handles. The devices are integrated seamlessly and for the user they are used as easily as standard digitalSTROM components. The connection is made via ethernet network connection.



TECHNICAL DATA	
Network technology	digitalSTROM (dS)
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz
Antenna	external transmitting/receiving antenna with magnetic holding
Data transmission	bidirectional
Power supply	external power supply (USB micro), 5 V =, 1 A
Power consumption	typ. 3,2 W (5 V =)
Enclosure	PC, ABS, white
Protection	IP20 according to EN 60529
Connection electrical	USB Micro, RJ45 Ethernet (8P8C), 10/100 MBit/s
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Delivery contents	incl. external transmitting/receiving antenna 2,5 m with magnetic holding, incl. external power supply, Ethernet cable 1,5 m (CAT 5)
Notes	magnetic antenna plate recommended to improve radio coverage



Gateway – EnOcean ↔ digitalSTROM	Item No.		DS1
	902 MHz	868 MHz	€
STC-dS		637442	398,00

STC-DO

DATA SHEETS



The bidirectional flush-mounted radio receiver for EasySens® devices with relay output. The basic function can be configured individually by the user for heating with PWM, heating on/off, signal contact, hygrostat control, heating/cooling with PWM, light on/off or for fan release using the free Thermokon airConfig software as required.



STC-DO 24 V



STC-DO 240 V



TECHNICAL DATA

Output switch contact	changeover contact, 24 V: floating, load max. 3 A, 240 V: non-floating, load max. 10 A
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Antenna	internal transmitting/receiving antenna
Data transmission	bidirectional, airConfig ready
Power supply	24 V: 15..24 V = (±10%) or 24 V ~ (±10%) SELV, 240 V: 100..240 V ~
Power consumption	24 V: typ. 1,5 W (24 V =) 3,4 VA (24 V ~), 240 V: max. 0,5 VA (standby)
Enclosure	ABS, red
Protection	IP20 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	-20..+60 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm)
Notes	to use the free software airConfig (download) a USB stick, which is able to send and receive EnOcean telegrams, is necessary. The EnOcean USB stick (incl. license) is included in airScan (item No. 566704 for 868 MHz)

Wireless receiver – multifunctional actor

Item No.



ES2

Item description	902 MHz	868 MHz	€
STC-DO airConfig 24 V	606769	593731	139,60
STC-DO airConfig 100..240 V	615440	593748	139,60

Accessories

Item description	Item No.	On stock	€
airConfig (freeware via www.thermokon.com)			0,00
EnOcean USB transceiver for airConfig/airScan (incl. license – net price)	566704		100,80

STC-DO Light

DATA SHEETS



Bidirectional flush mounted radio receiver module for EnOcean switch telegrams to switch lighting sources (for example staircase control, time switch). The functions can be parameterized via a programming key.



TECHNICAL DATA

Output switch contact	max. 10 A (230 V)
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz
Antenna	internal transmitting/receiving antenna
Data transmission	bidirectional
Power supply	100..240 V ~
Power consumption	standby <0,5 W
Functions	lighting, fan control, switch actuator, staircase light
Enclosure	ABS, red
Protection	IP20 according to EN 60529
Connection electrical	plug-in terminal, max. 1,5 mm ²
Ambient condition	-20..+40 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm)



Wireless receiver – switch actuator light	Item No.		ES2
Item description	902 MHz	868 MHz	€
STC-DO Light 230 V		568371	139,60

STC-DO Blind

DATA SHEETS



Bidirectional flush-mounted radio receiver module for EnOcean switch telegrams to switch blind and shutter motors. The functions can be parameterized via a programming key.



TECHNICAL DATA

Output switch contact	max. 1 A (230 V)
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz
Antenna	internal transmitting/receiving antenna
Data transmission	bidirectional
Power supply	100..240 V ~
Power consumption	standby <0,5 W
Functions	blinds/shutter, switch actuator, slat changing
Enclosure	ABS, red
Protection	IP20 according to EN 60529
Connection electrical	plug-in terminal, max. 1,5 mm ²
Ambient condition	-20..+40 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm)



Wireless receiver – switch actuator blind

Item No.

ES2

Item description	902 MHz	868 MHz	€
STC-DO Blind 230 V		568364	139,60

SRC-AO Climate

DATA SHEETS



Unidirectional flush-mounted radio receiver for room temperature control of continuous heating or cooling valves (type V with 1x0..10 V), continuous heating and cooling valves (type VV with 2x 0..10 V) or 6-way valve (type 6WV).



TECHNICAL DATA	
Output voltage	V: 1x 0..10 V, VV: 2x 0..10 V
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Antenna	internal receiving antenna
Data transmission	unidirectional
Receive channels	per channel: 1 room control unit, 1 input module for night reduction, up to 10 window contacts or window handles
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	typ. 1 W (24 V =) 1,5 VA (24 V ~)
Functions	V: heating or cooling, VV: heating and cooling, continuously 0..10 V, 6WV: 6-way valve
Enclosure	ABS, red
Protection	IP20 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	-20..+60 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm)



Wireless receiver – climate actuator 0..10 V	Item No.		ES2
	902 MHz	868 MHz	€
SRC-AO Climate V	551120	508278	139,20
SRC-AO Climate VV	551137	508285	163,20
SRC-AO Climate 6WV		530255	139,20

SRC-AO Dim

DATA SHEETS



Unidirectional flush-mounted radio receiver for dimming up to two 1..10 V or 0..10 V dimming actuators or electronic ballasts (ECGs) using EnOcean wireless switches. Up to 32 wireless switches can be learnt-in.



TECHNICAL DATA

Output voltage	V: 1x 0..10 V, VV: 2x 0..10 V
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Antenna	internal receiving antenna
Data transmission	unidirectional
Receive channels	32 (Rx)
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	typ. 1 W (24 V =) 1,5 VA (24 V ~)
Functions	V: 1-fold dim actuator lighting, VV: 2-fold dim actuator lighting
Enclosure	ABS, red
Protection	IP20 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	-20..+60 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm)



Wireless receiver – dim actuator 0..10 V

Item No.

ES2

Item description	902 MHz	868 MHz	€
SRC-AO Dim V	551175	499606	139,60
SRC-AO Dim VV	551182	502931	163,20

SRC-AO Multi

DATA SHEETS



Unidirectional flush-mounted radio receiver for the evaluation of EnOcean wireless sensors for direct proportional output of various values such as temperature, temperature setpoint, humidity via one or two 0..10 V outputs.



TECHNICAL DATA	
Output voltage	V: 1x 0..10 V, VV: 2x 0..10 V
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Antenna	internal receiving antenna
Data transmission	unidirectional
Receive channels	per channel 1 (Rx)
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	typ. 1 W (24 V =) 1,5 VA (24 V ~)
Functions	per output 1 sensor value (e.g. temperature, set-point, humidity, actuating variable, dimming value)
Enclosure	ABS, red
Protection	IP20 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	-20..+60 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm)



Wireless receiver – multi-functional actuator 0..10 V	Item No.		ES2
	902 MHz	868 MHz	€
SRC-AO Multi V	551151	508315	139,60
SRC-AO Multi VV	551168	508322	163,20

STC-D08

DATA SHEETS



Bidirectional radio receiver for DIN rail mounting with 8 digital outputs (expandable to up to 12 digital outputs using the extension STC-PLUS 4DO) for the evaluation of EnOcean radio sensors, switches and room control units. Depending on the type suitable for heating/cooling control, fan coil control, light switching, shutter control and blinds control. The scope of delivery already includes an external transmit/receive antenna for the best possible range.



STC-D08



STC-D08 with extension module
STC-PLUS 4DO



TECHNICAL DATA

Output switch contact	8x relay with change-over contact (volt free contact), 230 V ~ / 6 A, 24 V = / 6 A, + 4x relay with additional module STC-PLUS 4DO
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Antenna	external transmitting/receiving antenna with magnetic holding
Data transmission	bidirectional
Power supply	100..240 V ~, 15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	typ. 2,0 W (24 V =) 3,5 VA (24 V ~ / 230 V ~)
Functions	lighting, blinds/shutter, heating/cooling (PI), fancoil controller, heating ON/OFF, heating with PWM output, heating/cooling with PWM output, signalling contact, hygrostat controller, fan release
Display	graphic display monochrome
Enclosure	ABS, light grey
Protection	IP20 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	0..+60 °C, max. 85% rH non-condensing
Mounting	prepared for mounting on DIN rail TS35 (35x7,5 mm) according to EN 60715
Delivery contents	incl. external transmitting/receiving antenna 2,5 m with magnetic holding
Notes	magnetic antenna plate recommended to improve radio coverage

STC-DO8



Wireless receiver – multi relay 100..240 V		Item No.		ES2
Item description	902 MHz	868 MHz	€	
STC-DO8 100..240 V type heating/cooling	631471	490030	324,10	
STC-DO8 100..240 V type fancoil, heating/cooling	608695	490047	324,10	
STC-DO8 100..240 V type switch actuator	631501	490054	324,10	



Wireless receiver – multi relay 24 V		Item No.		ES2
Item description	902 MHz	868 MHz	€	
STC-DO8 24 V type heating/cooling	551007	564458	324,10	
STC-DO8 24 V type fancoil, heating/cooling	597326	631495	324,10	
STC-DO8 24 V type switch actuator	551038	561273	324,10	

Extension module		Item No.		ES2
Item description			€	
STC-PLUS 4DO	517690		145,40	

Accessories			AS1
Item description	Item No.	On stock	€
Antenna extension 10 m	257206	☹	56,10
Antenna extension 20 m	257213	☹	68,30
Magnetic antenna holder form L, 180x180 mm (net price)	255097	☹	14,30
Connector STC-DO8 to STC-PLUS 4DO	517577	☹	7,50

SRC-ADO

DATA SHEETS



Unidirectional radio receiver for DIN rail mounting with 4 analog outputs 0..10 V and 2 or 4 potential-free relay outputs. For connecting EasySens® sensors, wireless switches, room control units and window contacts or window handles. Depending on the function, the device can be parameterized via the free software as a fan coil controller with change-over function, PI controller for heating/cooling, for controlling 1..10 V dimmers or as an interface between EasySens® sensors and controller inputs. The scope of delivery already includes an external transmit/receive antenna for the best possible range.



TECHNICAL DATA

Output voltage	4x 0..10 V
Output switch contact	2DO: 2x changeover contact, floating, 4DO: 4x changeover contact, floating
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Antenna	external transmitting/receiving antenna with magnetic holding
Data transmission	unidirectional
Power supply	100..240 V ~, 15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	typ. 3,5 W (24 V =) 6,5 VA (24 V ~), max. 5 VA (..240 V ~)
Functions	lighting, blinds/shutter, heating/cooling (PI), fancoil controller, heating ON/OFF, heating with PWM output, heating/cooling with PWM output, signalling contact, hygrostat controller, fan release
Switching values	8 A resistive load (24 V =/~ 230 V ~), 2 A inductive load (230 V ~)
Enclosure	ABS, light grey
Protection	IP20 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	0..+60 °C, max. 85% rH non-condensing
Mounting	prepared for mounting on DIN rail TS35 (35x7,5 mm) according to EN 60715
Delivery contents	incl. external transmitting/receiving antenna 2,5 m with magnetic holding
Notes	magnetic antenna plate recommended to improve radio coverage

SRC-ADO



Wireless receiver – multi 0..10 V relay 2DO 100..240 V		Item No.		ES2
Item description	902 MHz	868 MHz	€	
SRC-ADO 4AA/2DO 100..240 V type dimming/heating/cooling	631570	267502	314,60	
SRC-ADO 4AA/2DO 100..240 V type fancoil, change-over	631594	423236	314,60	

Wireless receiver – multi 0..10 V relay 4DO 100..240 V		Item No.		ES2
Item description	902 MHz	868 MHz	€	
SRC-ADO 4AA/4DO 100..240 V type dim/heating/cooling	631587	273275	338,20	
SRC-ADO 4AA/4DO 100..240 V type fancoil, change-over	631600	423243	338,20	



Wireless receiver – multi 0..10 V relay 2DO 24 V		Item No.		ES2
Item description	902 MHz	868 MHz	€	
SRC-ADO 4AA/2DO 24 V type dimming/heating/cooling	550963	420105	314,60	
SRC-ADO 4AA/2DO 24 V type fancoil, change-over	550970	494816	314,60	

Wireless receiver – multi 0..10 V relay 4DO 24 V		Item No.		ES2
Item description	902 MHz	868 MHz	€	
SRC-ADO 4AA/4DO 24 V type dimming/heating/cooling	550987	455428	338,20	
SRC-ADO 4AA/4DO 24 V type fancoil, change-over	550994	502955	338,20	

Accessories				AS1
Item description	Item No.	On stock	€	
Antenna extension 10 m	257206	☹	56,10	
Antenna extension 20 m	257213	☹	68,30	
Magnetic antenna holder form L, 180x180 mm (net price)	255097	☹	14,30	

STC-MSG Server

DATA SHEETS



The STC-MSG server is used for individual room control in conjunction with radio room operating units and up to 8 or 16 SAB radio valve actuators. For efficient energy saving, a timer is integrated. It is also possible to use the function „energy lock“ by learning-in radio window contacts and radio window handles. With the window open functionality the valve actuators are closed to save energy. The parameterization of the individual functions can be done via an integrated configuration menu using the display. The scope of delivery already includes an external transmit/receive antenna for the best possible range.



TECHNICAL DATA

Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Antenna	external transmitting/receiving antenna with magnetic holding
Data transmission	bidirectional
Receive channels	8/16 SAB + 1 room sensor, 10 digital input modules, switches or presence detectors + 20 window contacts or window handles (Rx)
Transmit channels	8/16 SAB + status telegrams (Tx)
Power supply	100..240 V ~
Power consumption	typ. 3,5 VA
Display	graphic display monochrome
Enclosure	ABS, light grey
Protection	IP20 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Mounting	prepared for mounting on DIN rail TS35 (35x7,5 mm) according to EN 60715
Delivery contents	incl. external transmitting/receiving antenna 2,5 m with magnetic holding
Notes	magnetic antenna plate recommended to improve radio coverage



Heating/cooling circuit controller

Item No.

ES2

Item description	902 MHz	868 MHz	€
STC-MSG server 8 channel	631792	501590	269,40
STC-MSG server 16 channel	550956	507080	306,40

Accessories

AS1

Item description	Item No.	On stock	€
Antenna extension 10 m	257206	☺	56,10
Antenna extension 20 m	257213	☺	68,30
Magnetic antenna holder form L, 180x180 mm (net price)	255097	☺	14,30

STC-MSG Server UP

DATA SHEETS



Wirelessly controlled heating regulator for control of up to 5 SAB valve actuators within one room in connection with wireless room sensors. Furthermore, it is feasible to make use of the function “energy stop” by seamlessly connecting window contacts and handles to the SAB, resulting in an automated closing of the valves, if a window is open. The device can learn in the following sensors: 5 EasySens® valve actuators (SAB), 1 room operating unit type SR04 x, SR06 x or SR07 x, 10 digital input modules SR65 DI, EasySens® switches, motion sensors (e.g. SR-MDS, SR-MOW), 20 window contacts or window handles.



TECHNICAL DATA	
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Antenna	internal transmitting/receiving antenna
Data transmission	bidirectional, airConfig ready
Power supply	100..240 V ~, 15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	max. 2 VA (100..240 V ~)
Enclosure	ABS, red
Protection	IP20 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	-20..+60 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm)
Notes	to use the free software airConfig (download) a USB stick, which is able to send and receive EnOcean telegrams, is necessary. The EnOcean USB stick (incl. license) is included in airScan (item No. 566704 for 868 MHz)



Heating/cooling circuit controller 1 channel	Item No.		ES2
	902 MHz	868 MHz	€
Item description			
STC-MSG server UP 100..240 V	585484	550048	132,70
STC-MSG Server UP 24 V	593106	688222	132,70

Accessories

Item description	Item No.	On stock	€
airConfig (freeware via www.thermokon.com)			0,00
EnOcean USB transceiver for airConfig/airScan (incl. license – net price)	566704	☺	100,80

SAB+

DATA SHEETS



Battery-free wireless (EasySens® technology) valve actuator for individual room control. The new electronic heating valve utilizes the heat dissipation between the radiator and the ambient temperature to gain electrical energy by means of a thermoelectric generator. Sufficient energy can be stored in the built-in high-performance capacitor to ensure normal operation in periods of unfavorable energy (summer months, transitional periods).



TECHNICAL DATA

Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Antenna	internal transmitting/receiving antenna
Data transmission	bidirectional, airConfig ready
Power supply	maintenance-free thermal energy harvesting
Measuring range temp.	0..+40 °C
Measuring interval	every 2..20 min., configured via airConfig, (in 2 min. steps) or via button
Transmission interval	every 2..20 min., optionally configurable via airConfig, (in 2 min. steps) or via button
Functions	radio interface, actuator operation, self-control mode, automatic closing point control, frost protection function
Display	status-LED
Enclosure	PC, pure white, aluminium
Protection	IP40 according to EN 60529
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Mounting	screw mounted, M30 x 1,5 optional adapters available
Notes	to use the free software airConfig (download) a USB stick, which is able to send and receive EnOcean telegrams, is necessary. The EnOcean USB stick (incl. license) is included in airScan (item No. 566704 for 868 MHz), with integrated, digital temperature transmitter, nominal stroke > 3.8 mm, automatically adjusting, max. speed: 0,24 mm/s, pulling load: >100 N

SAB+



Battery-free radio valve actuator EasySens® with thermal energy harvesting			Item No.	ES2
Item description	902 MHz	868 MHz	On stock	€
SAB+		669108	☉	198,00

Accessories				AS1
Item description	Item No.	On stock	€	
SAB Lock – dismounting protection SAB	688611	☉	6,00	
Safety lock dismounting protection SAB	706148	☉	10,40	
airConfig (freeware via www.thermokon.com)			0,00	
EnOcean USB transceiver for airConfig/airScan (incl. license – net price)	566704	☉	100,80	

Accessories – valve adapters				AS1
Item description	Item No.	On stock	€	
Valve adapter SAB for Giacomini Z810 (22,6 mm)	634724		24,00	
Valve adapter SAB for Oventrop Z809 (M30x1,0)	611978		24,00	
Valve adapter SAB for Herz Z807 (M28 X 1,5 mm)	595070		24,00	
Valve adapter SAB for Danfoss RA2000 Z802	589093		24,00	
Valve adapter SAB for Danfoss RAV Z803	589109		24,00	
Valve adapter SAB for Danfoss RAV-L Z804	589116		24,00	
Valve adapter SAB for Danfoss Z800	589079		24,00	
Valve adapter SAB for Danfoss Z801	589086		24,00	
Valve adapter SAB for Danfoss Z805	615181		24,00	
Further valve adapters on request				

SAB05

DATA SHEETS



The radio-controlled EasySens® valve actuator with bidirectional communication can be integrated and controlled via STG-MSG Server or EasySens® gateways. Parameterization is possible via free airConfig software. The SAB05 is completely wireless and powered by 3x AA batteries. Adapters are available for numerous valve manufacturers.



TECHNICAL DATA

Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz
Antenna	internal transmitting/receiving antenna
Data transmission	bidirectional, airConfig ready
Power supply	3 batteries (type AA)
Measuring range temp.	0..+40 °C
Measuring interval	every 2..20 min., configured via airConfig, (in 2 min. steps) or via button
Transmission interval	every 2..20 min., optionally configurable via airConfig, (in 2 min. steps) or via button
Functions	radio interface, actuator operation, self-control mode, automatic closing point control, frost protection function
Display	status-LED, multi-colored
Enclosure	PC, pure white
Protection	IP40 according to EN 60529
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Mounting	screw mounted, M30 x 1,5, optional adapters available
Delivery contents	incl. 3 batteries (type AA)
Notes	to use the free software airConfig (download) a USB stick, which is able to send and receive EnOcean telegrams, is necessary. The EnOcean USB stick (incl. license) is included in airScan (item No. 566704 for 868 MHz), with integrated, digital temperature transmitter, Regulation distance: max. 3 mm (automatic adaption by initialisation), Regulation time: 10 s/mm, pulling load: 100 N nominal

SAB05



Valve actuator	Item No.			ES2
Item description	902 MHz	868 MHz	On stock	€
SAB05		513753	☉	143,30

Accessories	Item No.	On stock	AS1
Item description	Item No.	On stock	€
Battery protection SAB05	595612	☉	18,50
SAB Lock – dismounting protection SAB	688611	☉	6,00
Safety lock dismounting protection SAB	706148	☉	10,40
airConfig (freeware via www.thermokon.com)			0,00
EnOcean USB transceiver for airConfig/airScan (incl. license – net price)	566704	☉	100,80

Accessories – valve adapters	Item No.	On stock	AS1
Item description	Item No.	On stock	€
Valve adapter SAB for Giacomini Z810 (22,6 mm)	634724	☉	24,00
Valve adapter SAB for Oventrop Z809 (M30x1,0)	611978	☉	24,00
Valve adapter SAB for Herz Z807 (M28 X 1,5 mm)	595070	☉	24,00
Valve adapter SAB for Danfoss RA2000 Z802	589093	☉	24,00
Valve adapter SAB for Danfoss RAV Z803	589109	☉	24,00
Valve adapter SAB for Danfoss RAV-L Z804	589116	☉	24,00
Valve adapter SAB for Danfoss Z800	589079	☉	24,00
Valve adapter SAB for Danfoss Z801	589086	☉	24,00
Valve adapter SAB for Danfoss Z805	615181	☉	24,00
Further valve adapters on request			

SRE-Repeater

DATA SHEETS



The repeater replicates EnOcean radio signals between sensors and receivers. Typical usage is when sensors are installed out of range or for solving problems in already existing wireless networks (e.g. by moving walls, adjusting furniture/cupboards). Level 1, Level 2 and smart repeating (role-based filters) can be configured via airConfig. Ideal for installation in false ceilings.



TECHNICAL DATA

Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Antenna	internal transmitting/receiving antenna, external transmitting/receiving antenna with magnetic holding
Data transmission	bidirectional, airConfig ready
Power supply	flex. 15..240 V =/~
Power consumption	typ. 1 VA (15..240 V =/~)
Functions	level-1, level-2, smart-operation, rule based, max. 10 rules, configured via airConfig
Enclosure	PA6.6, pure white, cover PC, transparent, with quick lock screws
Protection	IP65 according to EN 60529
Cable entry	M20 for wire max. Ø=8 mm
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	-20..+60 °C, max. 85% rH non-condensing
Delivery contents	incl. external transmitting/receiving antenna 2,5 m with magnetic holding, (only version with external antenna)
Notes	to use the free software airConfig (download) a USB stick, which is able to send and receive EnOcean telegrams, is necessary. The EnOcean USB stick (incl. license) is included in airScan (item No. 566704 for 868 MHz), magnetic antenna plate for the external antenna recommended to improve radio coverage



Wireless repeater	Item No.		ES2
	902 MHz	868 MHz	€
SRE-Repeater MultiLevel internal ant.	631839	593809	133,70
SRE-Repeater MultiLevel external ant.	618588	593830	153,30

Accessories	AS1		
Item description	Item No.	On stock	€
Antenna extension 10 m	257206	☺	56,10
Antenna extension 20 m	257213	☺	68,30
Magnetic antenna holder form L, 180x180 mm (net price)	255097	☺	14,30
airConfig (freeware via www.thermokon.com)			0,00
EnOcean USB transceiver for airConfig/airScan (incl. license – net price)	566704	☺	100,80

SRE-Repeater UP

DATA SHEETS



The flush mounted repeater replicates EnOcean radio signals between sensors and receivers. Typical usage is when sensors are placed out of range or for solving problems in already existing wireless networks (e.g. by moving walls, adjusting furniture/cupboards). Level 1, Level 2 and smart repeating (role-based filters) can be configured via airConfig.



TECHNICAL DATA	
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Antenna	internal transmitting/receiving antenna
Data transmission	bidirectional, airConfig ready
Power supply	100..240 V ~
Power consumption	max. 2 VA (100..240 V ~), standby <0,5 W
Functions	level-1, level-2, smart-operation, rule based, max. 10 rules, configured via airConfig
Enclosure	ABS, red
Protection	IP20 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	-20..+60 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm)
Notes	to use the free software airConfig (download) a USB stick, which is able to send and receive EnOcean telegrams, is necessary. The EnOcean USB stick (incl. license) is included in airScan (item No. 566704 for 868 MHz)



Wireless repeater	Item No.		ES2
	902 MHz	868 MHz	€
SRE-Repeater UP MultiLevel internal ant.	631877	556736	112,10

Accessories			
Item description	Item No.	On stock	€
airConfig (freeware via www.thermokon.com)			0,00
EnOcean USB transceiver for airConfig/airScan (incl. license – net price)	566704	☉	100,80

airScan

DATA SHEETS 



Thermokon airScan consists of an USB transmitter/receiver with software to use your PC or Mac as a field strength measuring tool. Measuring frequency ranges the tool is used to define best routing places for EnOcean transmitter and receiver. airScan gives a quick overview of EnOcean telegrams, reading status, ID, field strength and manufacturer for EnOcean products.

An optional USB extension for optimal positioning of the transmitter/receiver, even at the ceiling is available.



TECHNICAL DATA	
System requirements	the software is available for all Windows- and Apple OS X based computers, min. Windows XP, Adobe Flash, min. USB 2.0
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz, optional: 902 MHz (Americas)
Delivery contents	1x USB-Stick, software for configuration (freeware via download)
Notes	USB extension (3 m) for optimal positioning of the transmitter/receiver is available (refer to accessories)



airScan (EnOcean usb transceiver + license)	Item No.			€
	902 MHz	868 MHz	On stock	
Item description				
airScan (net price)	566711	566704	☺	100,80

Accessories			
Item description	Item No.	On stock	€
USB extension 3 m (net price)	574044	☺	13,40



airConfig

DATA SHEETS

airConfig enables remote commissioning of EasySens® based products. Remote commissioning is defined as parameterization without direct interaction with the device. airConfig uses the EnOcean based radio technology to parameterize the devices by means of special remote commissioning commands. To use remote commissioning an EnOcean USB transceiver and the free airConfig software are necessary.



TECHNICAL DATA

System requirements	the software is available for all Windows- and Apple OS X based computers. It also runs on the Microsoft surface tablet. An EnOcean based USB stick allows the communication to the devices and your network.
Radio technology	EnOcean (IEC 14543-3-10)
Notes	to use the free software airConfig (download) a USB stick, which is able to send and receive EnOcean telegrams, is necessary. The EnOcean USB stick (incl. license) is included in airScan (item No. 566704 for 868 MHz)



airConfig

Item description	Item No.	€
airConfig (free of charge)		0,00

Accessories

Item description	Item No.	On stock	€
EnOcean USB transceiver for airConfig/airScan (incl. license – net price)	566704	●	100,80

Room Operating Units / Controller

Our room operating units are used for temperature detection and integrated operation of HVAC, lighting and blinds for single room control. A variety of sophisticated and high-end designs and optional features are available.



Sample applications

Room operating units

thanos	High-end room operating unit	140
thanos dS	digitalSTROM room operating unit	144
WRF08	Room operating unit (2,4,8,12 buttons)	145
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Fancoil controller

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Room controller

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» BENEFITS

- » Compatible with multiple BUS systems
- » Various control elements to cover a wide range of applications
- » Flexible design options with various colours and design frames
- » Custom labels/engravings



1

thanos L

Touch screen room operating unit,
available with wireless EnOcean,
BUS and EnOcean + BUS only



2

WRF06 LCD

Flush-mounted room operating unit
for flexible room control, compatible
to various design frames of numerous
manufacturers

thanos



PERFECT WORKING CONDITIONS

The multifunctional room operating units combine high-end design along with sophisticated technology: Integrated sensors for temperature and humidity, switching signals for lighting and blinds, touch-sensitive surfaces in custom design variations. Communications through standard network technologies: Create the perfect working environment.



» BENEFITS

- » Compatible with multiple BUS systems
- » Various control elements to cover a wide range of applications
- » Flexible design options with various colours and design frames
- » Custom labels/engravings



WRF08

Multifunctional room operating unit used for operation of HVAC, control of lighting and blinds

1



2

WRF07

Flush-mounted room operating unit, compatible with various switch designs from many manufacturers, numerous control elements and custom labels are available.



HIGH LEVEL COMMUNICATION

The multifunctional room operating units combine high grade design along with sophisticated technology: Integrated sensors for temperature and humidity, switching signals for lighting and blinds, touch-sensitive surfaces in custom design variations. Communications via standard network technology: Create the perfect working environment.

thanos

DATA SHEETS 

The touch room control panel is used for temperature and humidity detection (optional) as well as for the intuitive operation of HVAC, lighting and blind functions. The operating functions can be flexibly used depending on the room requirement. The housing colors white and black as well as the types „L“ and „S“ in vertical and horizontal design are available. All designs are designed for installation in a flush-mounted box. Due to the high-quality optics, the device is particularly suitable for design-oriented facilities.



thanos S white



thanos S black



thanos L white



thanos L black



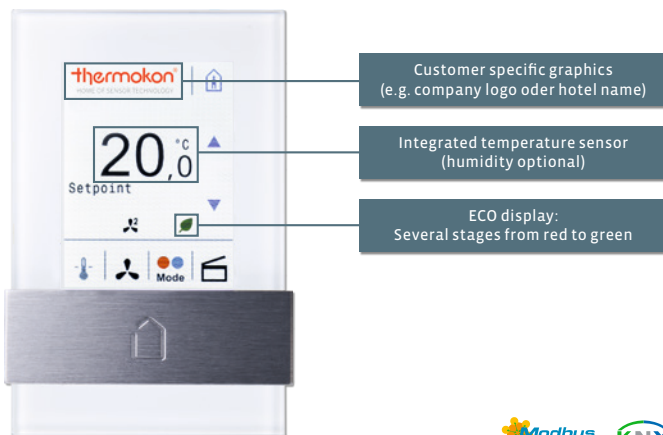
thanos LQ white



thanos LQ black

for thanos with radio please refer to 'EasySens® - Transmitter'

Highlights (type RS485 Modbus)



TECHNICAL DATA	
Measuring values	temperature, humidity (optional)
Network technology	KNX (TP), LON FT (free topology), RS485 Modbus
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	typ. 2,0 W (24 V =) 4,0 VA (24 V ~)
Measuring range temp.	0..+50 °C
Measuring range humidity	0..100% rH non-condensing
Accuracy temperature	±0,5 K (typ. at 21 °C)
Accuracy humidity	±3% between 20..80% rH (typ. at 21 °C)
Inputs	digital, 4x, individual configuration for window contact, dew point guard, key card switch, room frequency, alarm, event
Control functions	occupancy signalling, light ON/OFF/DIM, setup scenarios, blinds UP/DOWN/SET, fan stages, setpoint
Clip	anodized aluminium
No. of buttons	type L/LQ min. 8 capacitive touch sensor buttons
Labelling	type L/LQ flexible insert (for up to 8 touch buttons below/beside clip)
Display	TFT 3,5", 320x240 px, capacitive touch technology, showing room temperature, setpoint, operation mode, fan stage, occupancy, alarm, date and time, ... ECO note (several steps, red to green; available for RS485 Modbus), graphic and photo: Instead of date and time individual colour graphics (175x50 or 240x320 pixel) can be shown (e.g. company logo or hotel name; available for RS485 Modbus)
Colour	white or black
Enclosure	PC and glass
Protection	IP20 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm)
Delivery contents	software for configuration (freeware via download)
Notes	you'll find the software description at www.thermokon.com

thanos

Item description: product | model | colour | BUS



Touch screen room operating unit temperature – RS485 Modbus			RU1
Item description	Item No.		€
thanos L black RS485 Modbus	472302		448,50
thanos L white RS485 Modbus	472296		448,50
thanos LQ black RS485 Modbus	472326		448,50
thanos LQ white RS485 Modbus	472319		448,50
thanos S black RS485 Modbus	472340		413,30
thanos S white RS485 Modbus	472333		413,30



Touch screen room operating unit temperature – LON			RU1
Item description	Item No.		€
thanos L black LON	471749		478,90
thanos L white LON	471725		478,90
thanos LQ black LON	471763		478,90
thanos LQ white LON	471756		478,90
thanos S black LON	471787		443,90
thanos S white LON	471770		443,90



Touch screen room operating unit temperature – KNX			RU1
Item description	Item No.		€
thanos L black KNX	472067		478,90
thanos L white KNX	472050		478,90
thanos LQ black KNX	472081		478,90
thanos LQ white KNX	472074		478,90
thanos S black KNX	472104		443,90
thanos S white KNX	472098		443,90

thanos rH

Item description: product | model | colour | BUS



Touch screen room operating unit temperature + humidity – RS485 Modbus			RU1
Item description	Item No.	€	
thanos rH L black RS485 Modbus	472364	499,60	
thanos rH L white RS485 Modbus	472357	499,60	
thanos rH LQ black RS485 Modbus	472388	499,60	
thanos rH LQ white RS485 Modbus	472371	499,60	
thanos rH S black RS485 Modbus	472401	464,30	
thanos rH S white RS485 Modbus	472395	464,30	



Touch screen room operating unit temperature + humidity – LON			RU1
Item description	Item No.	€	
thanos rH L black LON	471800	529,90	
thanos rH L white LON	471794	529,90	
thanos rH LQ black LON	471824	529,90	
thanos rH LQ white LON	471817	529,90	
thanos rH S black LON	471848	494,70	
thanos rH S white LON	471831	494,70	



Touch screen room operating unit temperature + humidity – KNX			RU1
Item description	Item No.	€	
thanos rH L black KNX	472111	529,90	
thanos rH L white KNX	448550	529,90	
thanos rH LQ black KNX	472135	529,90	
thanos rH LQ white KNX	472128	529,90	
thanos rH S black KNX	472159	494,70	
thanos rH S white KNX	472142	494,70	

Accessories			
Item description	Item No.	On stock	€
Software/Plug-In for configuration (free via www.thermokon.com)			0,00



thanos dS

DATA SHEETS



Elegant operating unit for complete and central room control with integrated sensors for room temperature and relative humidity. All function groups of digitalSTROM are supported. Depending on configuration thanos can flexibly operate lighting, shading, heating, audio, video, presence or app button. Visualization of appartement events like alarm, panic or fire and outdoor events like wind, hail or rain is also possible.



TECHNICAL DATA	
Measuring values	temperature, humidity, (optional)
Network technology	digitalSTROM (dS)
Power supply	230 V ~ (±10%)
Power consumption	typ. 3 W / max. 0,04 A
Measuring range temp.	0..+40 °C, dS: 0..+40 °C
Measuring range humidity	0..100% rH non-condensing
Accuracy temperature	±0,5 K (typ. at 21 °C)
Accuracy humidity	±3% between 20..80% rH (typ. at 21 °C)
Control functions	light, blinds, room climate, audio, video, presence, app button
Clip	anodized aluminium
Display	showing room temperature, setpoint, operation mode, fan stage, occupancy, audio-visual presentation of events such as alarm, panic, fire is possible
Colour	white or black
Enclosure	PC and glass
Protection	IP20 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	0..+40 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm)



Touch screen room operating unit temperature + humidity – digitalSTROM		DS1
Item description	Item No.	€
thanos rH S black dS	613446	626,10
thanos rH S white dS	613439	626,10

WRF08

DATA SHEETS



Room operating unit for temperature measurement and operation of HVAC, lighting and blind control. High quality materials and design available with various stone or stainless steel designed frames for high end applications. 2, 4, 8 or 12 configurable buttons allow for flexibility in individual room control applications. The device is available in pure white, aluminium or anthracite.



WRF08 12T pure white,
without frame



WRF08 4T aluminium,
without frame



WRF08 8T anthracite,
brushed stainless steel



TECHNICAL DATA

Measuring values	temperature
Network technology	BACnet MS/TP, LON FT (free topology), RS485 Modbus
Power supply	BACnet LON: 15..24 V = (±10%) oder 24 V ~ (±10%) SELV, RS485 Modbus: 15..24 V = (±10%) SELV
Power consumption	typ. 1,5 W (24 V ~) 2,9 VA (24 V ~)
Measuring range temp.	0..+50 °C
Accuracy temperature	±0,5 K (typ. at 21 °C)
Design	brushed stainless steel
Control functions	various switching functions, e.g., light ON/OFF/DIM, blinds UP/DOWN/SET, fan stages, setpoint
No. of buttons	2, 4, 8, 12
Labelling	Button labelling: individually with printable inlay transparency
Display	LCD 39x51 mm, monochrome
Enclosure	ABS, pure white, aluminium, anthracite
Protection	IP30 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm)
Delivery contents	software for configuration (freeware via download)

WRF08

Item description: product | no. of buttons | BUS | enclosure colour



Room operating unit temperature – RS485 Modbus			RU1
Item description	Item No.	€	
WRF08 2T RS485 Modbus pure white	350457	338,20	
WRF08 2T RS485 Modbus aluminium	450904	338,20	
WRF08 2T RS485 Modbus anthracite	506397	338,20	
WRF08 4T RS485 Modbus pure white	340465	345,50	
WRF08 4T RS485 Modbus aluminium	354455	345,50	
WRF08 4T RS485 Modbus anthracite	354448	345,50	
WRF08 8T RS485 Modbus pure white	340106	353,80	
WRF08 8T RS485 Modbus aluminium	344050	353,80	
WRF08 8T RS485 Modbus anthracite	331104	353,80	
WRF08 12T RS485 Modbus pure white	330947	372,60	
WRF08 12T RS485 Modbus aluminium	338301	372,60	
WRF08 12T RS485 Modbus anthracite	354462	372,60	



Room operating unit temperature – RS485 BACnet (MS/TP)			RU1
Item description	Item No.	€	
WRF08 2T RS485 BACnet (MS/TP) pure white	500029	357,70	
WRF08 2T RS485 BACnet (MS/TP) aluminium	531245	357,70	
WRF08 2T RS485 BACnet (MS/TP) anthracite	546676	357,70	
WRF08 4T RS485 BACnet (MS/TP) pure white	485289	365,00	
WRF08 4T RS485 BACnet (MS/TP) aluminium	486330	365,00	
WRF08 4T RS485 BACnet (MS/TP) anthracite	515177	365,00	
WRF08 8T RS485 BACnet (MS/TP) pure white	437837	373,40	
WRF08 8T RS485 BACnet (MS/TP) aluminium	437547	373,40	
WRF08 8T RS485 BACnet (MS/TP) anthracite	448659	373,40	
WRF08 12T RS485 BACnet (MS/TP) pure white	476539	392,70	
WRF08 12T RS485 BACnet (MS/TP) aluminium	546683	392,70	
WRF08 12T RS485 BACnet (MS/TP) anthracite	477987	392,70	



Room operating unit temperature – LON			RU1
Item description	Item No.	€	
WRF08 2T LON pure white	270472	379,80	
WRF08 2T LON aluminium	302432	379,80	
WRF08 2T LON anthracite	506496	379,80	
WRF08 4T LON pure white	265485	387,10	
WRF08 4T LON aluminium	291330	387,10	
WRF08 4T LON anthracite	291323	387,10	
WRF08 8T LON pure white	266291	395,40	
WRF08 8T LON aluminium	290548	395,40	
WRF08 8T LON anthracite	290562	395,40	
WRF08 12T LON pure white	266512	414,20	
WRF08 12T LON aluminium	297561	414,20	
WRF08 12T LON anthracite	297554	414,20	

Options		
Item description	€	
Design frame – brushed stainless steel	28,90	

WRF06 LCD VV_DI4

DATA SHEETS



The flush-mounted room control operating unit with setpoint adjustment and occupancy button is used for individual temperature control in living, hotel and office rooms. The device with 4 control buttons and LCD can be integrated into the most common switch ranges. It is available in many color versions and suitable for design-oriented facilities. Depending on the type, it is also possible to control continuous valves for heating or cooling. The removable terminal block allows pre-wiring.



WRF06 LCD Itype1 pure white,
frame Gira E2 pure white matt



WRF06 LCD Itype1 anthracite,
frame Peha Aura Glas



WRF06 LCD LON Itype2 aluminium,
frame Merten M-Plan aluminium



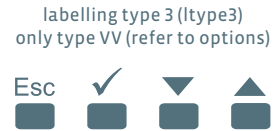
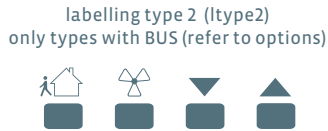
LON
LOCAL OPERATING NETWORK

TECHNICAL DATA

Measuring values	temperature
Output voltage	VV: 2x 0..10 V
Network technology	LON FT (free topology), RS485 Modbus
Power supply	15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$) SELV
Power consumption	typ. 0,8 W (24 V =) 2,5 VA (24 V ~), LON: typ. 1,3 W (24 V =) 1,5 VA (24 V ~)
Measuring range temp.	0..+50 °C
Accuracy temperature	$\pm 0,5$ K (typ. at 21 °C)
Inputs	VV: 2x input digital for floating contact, DI4: 4x input digital for floating switch contact
Switch range Berker	S.1, B.3 aluminium, B.7 glass
Switch range Busch-Jaeger	Busch-balance® SI, solo® *, future® linear *, Busch-axcent® *
Switch range Feller	EDIZIOdue
Switch range Gira	E2, E3, Standard 55, Esprit, Event, Flächenschalter *
Switch range Jung	LS 990 *, A 500, AS 500, A plus, A creation, CD 500 *
Switch range Merten	M-Smart, M-Plan, I-M, Atelier-M, M-Pure, Artec *, Antik *
Switch range Peha	AURA, AURA glass
No. of buttons	4
Display	LCD 34x21 mm, monochrome
Enclosure	PC, pure white brilliant, pure white matt, aluminium, anthracite, frame color may differ slightly
Protection	IP30 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ² , pluggable
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm)
Delivery contents	software for configuration (freeware via download)
Notes	for further variants see chapter room controller, * in switch program with intermediate frame, please specify frame design when ordering, please indicate labelling type in order, BUS: only available with labelling type 1 and 2

WRF06 LCD VV_DI4

Labelling types



Room operating unit temperature – active 0..10 V RU2

Item description	Inputs	Item No.	€
WRF06 LCD VV Itype3 Gira E2 pure white matt	2	385060	208,90
WRF06 LCD VV Itype3 Gira E2 pure white brilliant	2	611077	208,90
WRF06 LCD VV Itype3 Gira E2 aluminium	2	408783	208,90
WRF06 LCD VV Itype3 Gira E2 anthracite	2	429009	208,90



Room operating unit temperature – active RS485 Modbus RU2

Item description	Inputs	Item No.	€
WRF06 LCD DI4 RS485 Modbus Itype1 Gira E2 pure white matt	4	439527	244,60
WRF06 LCD DI4 RS485 Modbus Itype1 Gira E2 pure white brilliant	4	425919	244,60
WRF06 LCD DI4 RS485 Modbus Itype1 Gira E2 aluminium	4	444385	244,60
WRF06 LCD DI4 RS485 Modbus Itype1 Gira E2 anthracite	4	506229	244,60



Room operating unit temperature – active LON RU2

Item description	Inputs	Item No.	€
WRF06 LCD DI4 LON Itype1 Gira E2 pure white matt	4	363556	271,80
WRF06 LCD DI4 LON Itype1 Gira E2 pure white brilliant	4	532983	271,80
WRF06 LCD DI4 LON Itype1 Gira E2 aluminium	4	363570	271,80
WRF06 LCD DI4 LON Itype1 Gira E2 anthracite	4	363594	271,80

Options

Item description	€
Switch ranges Busch-Jaeger Busch-balance® SI	0,00
Switch ranges Berker S.1 Jung A 500 Merten M-Smart Gira E3	0,00
Switch range Gira Esprit	22,30
Switch ranges stainless steel glass aluminium (different manufacturers)	35,10
Other switch ranges	12,50
Labelling type 1 (Itype1) – only type VV	0,00
Labelling type 2 (Itype2) – only BUS models	0,00

FTW06 LCD dS

DATA SHEETS



The digitalSTROM control unit for flush mounting with LCD is used for temperature and humidity detection, setpoint adjustment and fan level adjustment. In combination with system and smartphone apps, a comfortable room temperature control is realized, which can be operated conveniently from home or on the move. Available in various switch ranges and color versions this device is suitable for design-oriented facilities.



FTW06 LCD dS



TECHNICAL DATA

Measuring values	temperature, humidity
Network technology	digitalSTROM (dS)
Power supply	230 V ~ (±10%)
Power consumption	typ. 1,1 W (24 V =) max. 0,04 A (230 V ~)
Measuring range temp.	0..+40 °C
Measuring range humidity	0..95% rH non-condensing
Accuracy temperature	±0,5 K (typ. at 21 °C)
Accuracy humidity	±2% between 10..90% rH (typ. at 21 °C)
Switch range Berker	S.1, B.3 aluminum, B.7 glass
Switch range Busch-Jaeger	Busch-balance® SI, solo® *, future® linear *, Busch-axcent® *
Switch range Feller	EDIZIOdue
Switch range Gira	E2, E3, Standard 55, Esprit, Event, Flächenschalter *
Switch range Jung	LS 990 *, A 500, AS 500, A plus, A creation, CD 500 *
Switch range Merten	M-Smart, M-Plan, 1-M, Atelier-M, M-Pure, Artec *, Artec stainless steel *, Antik *
Switch range Peha	AURA, AURA glass
No. of buttons	4
Display	LCD 34x21 mm, monochrome
Enclosure	PC, pure white brilliant, pure white matt, aluminium, anthracite frame color may differ slightly
Protection	IP30 according to EN 60529
Connection electrical	plug-in terminal, max. 2,5 mm ²
Ambient condition	0..+40 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm)
Notes	* in switch program with intermediate frame, please specify frame design when ordering

FTW06 LCD dS

Room operating unit humidity- + temperature digitalSTROM			DS1
Item description	Item No.	€	
FTW06 LCD dS Gira E2 pure white matt	624800	260,00	
FTW06 LCD dS Gira E2 pure white brilliant	671965	260,00	
FTW06 LCD dS Gira E2 aluminium	687041	260,00	
FTW06 LCD dS Gira E2 anthracite	688390	260,00	

Options		
Item description	€	
Switch ranges Busch-Jaeger Busch-balance® SI	0,00	
Switch ranges Berker S.1 Jung A 500 Merten M-Smart Gira E3	0,00	
Switch range Gira Esprit	22,30	
Switch ranges stainless steel glass aluminium (different manufacturers)	35,10	
Other switch ranges	12,50	

WRF07

DATA SHEETS



A visually appealing flush-mounted room operating unit in the design of various switch manufacturers. Available in different colors and different labeling variants. Possible operating elements are potentiometer (setpoint adjustment), LEDs (optical feedback), buttons (presence signal) and rocker switch (operating mode changeover). On request, a temperature sensor can be added. The peelable terminal allows pre-wiring.



WRF07 P I type1,
Gira E2 pure white matt



WRF07 P I type1,
Busch-Jaeger alpha nea®

TECHNICAL DATA

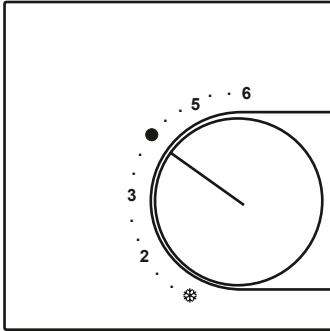
Measuring values	temperature
Output voltage	TRV: 1x 0..10 V
Power supply	15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$) SELV
Power consumption	TRV: 12mA 24 V =
Measuring range temp.	0..+50 °C, passive: -35..+70 °C
Accuracy temperature	TRV : $\pm 1\%$ of measuring range (typ. at 21 °C), passive: depending on used sensor
Switch range Berker	S.1, B.3 aluminum, B.7 glass, Q.1, Q.3, K.1, K.5 aluminum stainless steel
Switch range Busch-Jaeger	Busch-balance® SI, Busch-Duro 2000® SI, Reflex SI, solo®, future® linear, impuls, Busch-axcent®, alpha nea®
Switch range Feller	EDIZIOdue
Switch range Gira	E2, E3, Standard 55, Esprit, Event, Flächenschalter
Switch range Jung	LS 990, A 500, AS 500, A plus, A creation, CD 500
Switch range Merten	M-Smart, M-Plan, 1-M, Atelier-M, M-Pure, Artec, Artec stainless steel, Antik
Switch range Peha	AURA, AURA glass
Set point (P)	potentiometer, 3-wire connection, default value 10 k Ω (1 k Ω 5 k Ω optional, for other values please request), active output 0..10 V (optional)
Rotary switch (S)	mini rotary switch for fan stage adjustment with up to 5 stages available (please request), switching capacity max. 5 W
Rocker switch (S)	for fan speed adjustment
Button (T)	for presence detection, switching capacity max. 600 mW
LED (D)	for status feedback, green (standard), several LEDs possible (e.g. green, yellow, red)
Protection	IP20 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box ($\varnothing=68$ mm, min. depth=45 mm)
Delivery contents	software for configuration (freeware via download)
Notes	for further variants see chapter room controller, other sensors operating elements switch ranges on request

WRF07

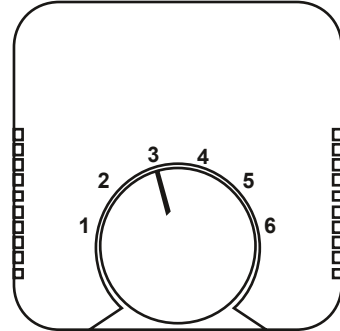
Types with standard labelling (only with standard switch ranges)

Labelling type 1 (manufacturer standard labelling, depending on switch range)

WRF07 P I type1

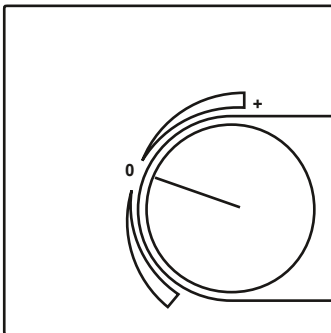


WRF07 P I type1 Busch-Jaeger

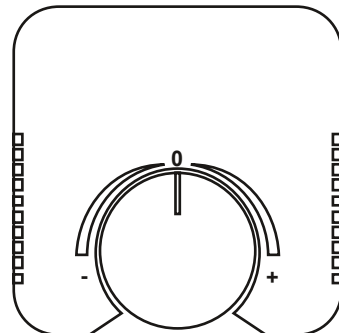


Labelling type 2 (refer to options)

WRF07 P I type2

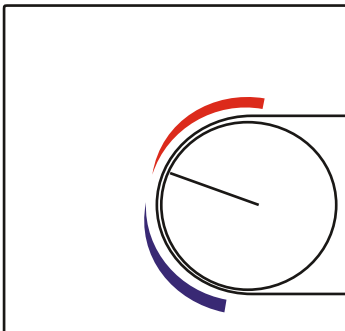


WRF07 P I type2 Busch-Jaeger

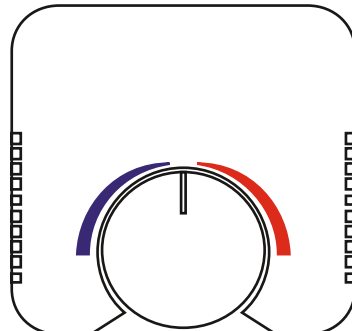


Labelling type 6 - colour red/blue (refer to options)

WRF07 P I type6



WRF07 P I type6 Busch-Jaeger



button (T) and LED (D) without labelling by default,
rocker switch (S) labelled with I/O (not available for switch range Busch-Jaeger)

Item descr.: product | operating elements | sensor | labelling type | switch range | colour | potentiometer | LED

WRF07

Room operating unit temperature – without sensor			RU2
Item description	Item No.	€	
WRF07 P without sensor ltype1 Gira E2 pure white matt, 10 kOhm	202664	78,60	
WRF07 PTD without sensor ltype1 Gira E2 pure white matt, 10 kOhm, LED green	542883	108,60	
WRF07 PSD without sensor ltype1 Gira E2 pure white matt, 10 kOhm, LED green	627917	111,90	

Room operating unit temperature – PT100			RU2
Item description	Item No.	€	
WRF07 P PT100 ltype1 Gira E2 pure white matt, 10 kOhm	628020	85,60	
WRF07 PTD PT100 ltype1 Gira E2 pure white matt, 10 kOhm, LED green	553278	115,60	
WRF07 PSD PT100 ltype1 Gira E2 pure white matt, 10 kOhm, LED green	627924	118,90	

Room operating unit temperature – PT100 1/3 DIN			RU2
Item description	Item No.	€	
WRF07 P PT100 1/3 DIN ltype1 Gira E2 pure white matt, 10 kOhm	628037	89,30	
WRF07 PTD PT100 1/3 DIN ltype1 Gira E2 pure white matt, 10 kOhm, LED green	628068	119,30	
WRF07 PSD PT100 1/3 DIN ltype1 Gira E2 pure white matt, 10 kOhm, LED green	627931	122,70	

Room operating unit temperature – PT1000			RU2
Item description	Item No.	€	
WRF07 P PT1000 ltype1 Gira E2 pure white matt, 10 kOhm	399012	87,80	
WRF07 PTD PT1000 ltype1 Gira E2 pure white matt, 10 kOhm, LED green	291767	117,80	
WRF07 PSD PT1000 ltype1 Gira E2 pure white matt, 10 kOhm, LED green	627948	121,10	

Room operating unit temperature – PT1000 1/3 DIN			RU2
Item description	Item No.	€	
WRF07 P PT1000 1/3 DIN ltype1 Gira E2 pure white matt, 10 kOhm	628044	90,80	
WRF07 PTD PT1000 1/3 DIN ltype1 Gira E2 pure white matt, 10 kOhm, LED green	628075	120,80	
WRF07 PSD PT1000 1/3 DIN ltype1 Gira E2 pure white matt, 10 kOhm, LED green	627955	124,10	

Room operating unit temperature – Ni1000			RU2
Item description	Item No.	€	
WRF07 P Ni1000 ltype1 Gira E2 pure white matt, 10 kOhm	400220	87,50	
WRF07 PTD Ni1000 ltype1 Gira E2 pure white matt, 10 kOhm, LED green	529266	117,50	
WRF07 PSD Ni1000 ltype1 Gira E2 pure white matt, 10 kOhm, LED green	627962	120,80	

Room operating unit temperature – Ni1000TK5000			RU2
Item description	Item No.	€	
WRF07 P Ni1000TK5000 ltype1 Gira E2 pure white matt, 10 kOhm	193634	91,00	
WRF07 PTD Ni1000TK5000 ltype1 Gira E2 pure white matt, 10 kOhm, LED green	628082	121,00	
WRF07 PSD Ni1000TK5000 ltype1 Gira E2 pure white matt, 10 kOhm, LED green	627979	124,30	

Room operating unit temperature – NTC10k			RU2
Item description	Item No.	€	
WRF07 P NTC10k ltype1 Gira E2 pure white matt, 10 kOhm	400237	84,30	
WRF07 PTD NTC10k ltype1 Gira E2 pure white matt, 10 kOhm, LED green	628099	114,30	
WRF07 PSD NTC10k ltype1 Gira E2 pure white matt, 10 kOhm, LED green	627986	117,60	

Item descr.: product | operating elements | sensor | labelling type | switch range | colour | potentiometer | LED

WRF07

Room operating unit temperature – NTC10k Precon			RU2
Item description	Item No.	€	
WRF07 P NTC10k Precon ltype1 Gira E2 pure white matt, 10 kOhm	628051	84,30	
WRF07 PTD NTC10k Precon ltype1 Gira E2 pure white matt, 10 kOhm, LED green	628105	114,30	
WRF07 PSD NTC10k Precon ltype1 Gira E2 pure white matt, 10 kOhm, LED green	627993	117,60	

Room operating unit temperature – NTC20k			RU2
Item description	Item No.	€	
WRF07 P NTC20k ltype1 Gira E2 pure white matt, 10 kOhm	191234	84,30	
WRF07 PTD NTC20k ltype1 Gira E2 pure white matt, 10 kOhm, LED green	611343	114,30	
WRF07 PSD NTC20k ltype1 Gira E2 pure white matt, 10 kOhm, LED green	628006	117,60	

Room operating unit temperature – NTC1,8k			RU2
Item description	Item No.	€	
WRF07 P NTC1,8k ltype1 Gira E2 pure white matt, 10 kOhm	668484	84,30	
WRF07 PTD NTC1,8k ltype1 Gira E2 pure white matt, 10 kOhm, LED green	668507	114,30	
WRF07 PSD NTC1,8k ltype1 Gira E2 pure white matt, 10 kOhm, LED green	668521	117,60	

Room operating unit temperature – LM235Z			RU2
Item description	Item No.	€	
WRF07 P LM235Z ltype1 Gira E2 pure white matt, 10 kOhm	199599	86,10	
WRF07 PTD LM235Z ltype1 Gira E2 pure white matt, 10 kOhm, LED green	164863	116,00	
WRF07 PSD LM235Z ltype1 Gira E2 pure white matt, 10 kOhm, LED green	628013	119,40	

P = potentiometer, PTD = potentiometer, button, LED, PSD = potentiometer, rocker switch, LED

Options		€
Item description		
Passive potentiometer 1 kΩ (poti_1kOhm) or 5 kΩ (Poti_5kOhm), for other values please request		0,00
Active potentiometer 0..10 V (poti_active)		22,40
Rocker switch S with 3 fan stages (FS3: 1-0-2)		0,00
Switch ranges Busch-Jaeger Busch-balance® SI Reflex SI		0,00
Switch ranges Berker S.1 Jung A 500 Merten M-Smart Gira E3		0,00
Switch range Gira Esprit		22,30
Switch ranges stainless steel glass aluminium (different manufacturers)		35,10
Other switch ranges		12,50
Labelling type 2 (ltype2)		4,50
Labelling type 6 colour red+blue (ltype6)		6,00
Additional button		22,00
Additional diode (LED)		18,00
Add to price of NTC10k for sensor NTC10k Carel		0,00
Add to price of PT100 for sensor FeT		19,30

Order example for different items:

WRF07 | PSD | FeT | ltype2 | Gira Esprit | Poti_active

WRF07 = product
PSD = potentiometer, rocker switch, LED
FeT = sensor
ltype2 = labelling type 2
Gira Esprit = switch range Gira Esprit
Poti_active = active potentiometer 0..10 V

WRF07

Item description: product | operating elements | TRV3 | labelling type | switch range | colour | LED

Room operating unit 0..+50 °C – 0..10 V, active potentiometer				RU2
Item description	Inputs	0..10 V	Item No.	€
WRF07 P TRV3 ltype1 Gira E2 pure white matt	-	1	243902	193,60
WRF07 PTD TRV3 ltype1 Gira E2 pure white matt, LED green	-	1	369602	223,50
WRF07 PSD TRV3 ltype1 Gira E2 pure white matt, LED green	-	1	332132	226,90

Options	
Item description	€
Rocker switch S with 3 fan stages (FS3: 1-0-2)	0,00
Switch ranges Busch-Jaeger Busch-balance® SI Reflex SI	0,00
Switch ranges Berker S.1 Jung A 500 Merten M-Smart Gira E3	0,00
Switch range Gira Esprit	22,30
Switch ranges stainless steel glass aluminium (different manufacturers)	35,10
Other switch ranges	12,50
Labelling type 2 (ltype2)	4,50
Labelling type 6 colour red+blue (ltype6)	6,00

Accessories			AS1
Item description	Item No.	On stock	€
PSU-UP24 – flush mount power supply 24 V (80..240 V ~-> 24 V =, 0,5 A)	645737	⊕	42,00

Design examples



WRF07 PSD Merten Artec
special model/special labelling



WRF07 PTD Jung LS stainless steel
ltype6



WRF07 P2D Berker K.1 polar white
with mini rotary-switch

WRF07 BUS

DATA SHEETS



A visually appealing flush-mounted room operating unit in the design of various switch manufacturers. Available in different colors and different labeling variants. Possible operating elements are potentiometers (setpoint adjustment), LEDs (optical feedback), buttons (presence signal) and rocker switch (operating mode changeover). On request, a temperature sensor can be added. The peelable terminal allows pre-wiring.



WRF07 P I type1,
Gira E2 pure white matt



WRF07 P I type1,
Busch-Jaeger alpha nea®



TECHNICAL DATA	
Measuring values	temperature, humidity (optional)
Network technology	RS485 BACnet (MS/TP), RS485 Modbus
Power supply	15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$) SELV
Power consumption	typ. 0,9 W (24 V =) 1 VA (24 V ~)
Measuring range temp.	0..+50 °C, passive: -35..+70 °C
Measuring range humidity	0..100% rH non-condensing
Accuracy temperature	$\pm 0,5$ K (typ. at 21 °C)
Accuracy humidity	$\pm 2\%$ between 10..90% rH (typ. at 21 °C)
Inputs	DI4: 4x input digital for floating switch contact
Switch range Berker	S.1, B.3 aluminum, B.7 glass, Q.1, Q.3, K.1, K.5 aluminum stainless steel
Switch range Busch-Jaeger	Busch-balance® SI, Busch-Duro 2000® SI, Reflex SI, solo®, future® linear, impuls, Busch-axcent®, alpha nea®
Switch range Feller	EDIZIOdue
Switch range Gira	E2, E3, Standard 55, Esprit, Event, Flächenschalter
Switch range Jung	LS 990, A 500, AS 500, A plus, A creation, CD 500
Switch range Merten	M-Smart, M-Plan, 1-M, Atelier-M, M-Pure, Artec, Artec stainless steel, Antik
Switch range Peha	AURA, AURA glass
Set point (P)	potentiometer
Rotary switch (S)	mini rotary switch for fan stage adjustment with up to 5 stages available (please request), switching capacity max. 5 W
Rocker switch (S)	for fan speed adjustment
Button (T)	for presence detection, switching capacity max. 600 mW
LED (D)	for status feedback, green (standard), several LEDs possible (e.g. green, yellow, red)
Protection	IP20 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box ($\varnothing=68$ mm, min. depth=45 mm)
Delivery contents	software for configuration (freeware via download)
Notes	for further variants see chapter room controller, other sensors operating elements switch ranges on request

Item description: product | operating elements | inputs/outputs | BUS | labelling type | switch range | colour | LED

WRF07 BUS



Room operating unit temperature – AO2V RS485 BACnet				RU2
Item description	Inputs	0..10 V	Item No.	€
WRF07 P AO2V RS485 BACnet ltype1 Gira E2 pure white matt	2	2	628150	214,90
WRF07 PTD AO2V RS485 BACnet ltype1 Gira E2 pure white matt, LED green	2	2	628167	225,30

Room operating unit temperature + humidity – AO2V RS485 BACnet				RU2
Item description	Inputs	0..10 V	Item No.	€
WRF07 P rH AO2V RS485 BACnet ltype1 Gira E2 pure white matt	2	2	703260	236,90
WRF07 PTD rH AO2V RS485 BACnet ltype1 Gira E2 pure white matt, LED green	2	2	703291	247,30



Room operating unit temperature – DI4 BUS				RU2
Item description	Inputs	0..10 V	Item No.	€
WRF07 P DI4 RS485 Modbus ltype1 Gira E2 pure white matt	4	-	613910	214,90
WRF07 PTD DI4 RS485 Modbus ltype1 Gira E2 pure white matt, LED green	4	-	628181	225,30

P = potentiometer, PTD = potentiometer, button, LED, PSD = potentiometer, rocker switch, LED

Options	
Item description	€
Rocker switch S with 3 fan stages (FS3: 1-0-2)	0,00
Switch ranges Busch-Jaeger Busch-balance® SI Reflex SI	0,00
Switch ranges Berker S.1 Jung A 500 Merten M-Smart Gira E3	0,00
Switch range Gira Esprit	22,30
Switch ranges stainless steel glass aluminium (different manufacturers)	35,10
Other switch ranges	12,50
Labelling type 2 (ltype2)	4,50
Labelling type 6 colour red+blue (ltype6)	6,00

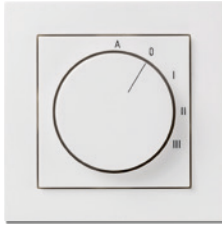
Accessories			AS1
Item description	Item No.	On stock	€
PSU-UP24 – flush mount power supply 24 V (80..240 V ~-> 24 V =, 0,5 A)	645737	⊕	42,00

WRF06 x

DATA SHEETS



A compliant flush-mounted room operating unit in the design of various switch manufacturers. Available in different colors and different labelling variants. Possible operating elements are LEDs, buttons and rotary switches for fan level adjustment, presence detection, control of other devices and visual feedback. Depending on the type, an additional temperature sensor can be added. The peelable terminal allows pre-wiring.



WRF06 S, Gira E2 pure white matt
standard labelling



WRF06 TD Gira E2 pure white matt



WRF06 4T4D Jung AS 500 alpine white
special model/special labelling



LON
LOCAL OPERATING NETWORK

TECHNICAL DATA

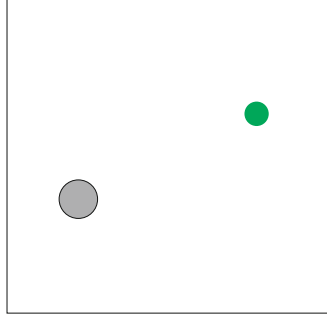
Measuring values	temperature
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	typ. 0,9 W (24 V =) 1 VA (24 V ~)
Measuring range temp.	passive: -35..+70 °C
Accuracy temperature	passive: depending on used sensor
Switch range Berker	S.1, B.3 aluminum, B.7 glass, Q.1, Q.3, K.1, K.5 aluminum stainless steel
Switch range Busch-Jaeger	Busch-balance® SI, Busch-Duro 2000® SI, Reflex SI, solo®, future® linear, impuls, Busch-axcent®, alpha nea®
Switch range Feller	EDIZIOdue
Switch range Gira	E2, E3, Standard 55, Esprit, Event, Flächenschalter
Switch range Jung	LS 990, A 500, AS 500, A plus, A creation, CD 500
Switch range Merten	M-Smart, M-Plan, 1-M, Atelier-M, M-Pure, Artec, Artec stainless steel, Antik
Switch range Peha	AURA, AURA glass
Rotary switch (S)	for fan stage adjustment (max. 5 stages), 5-stages (auto,0,I,II,III), 2-stages (0,I), 3-stages (0,I,II), 4-stages (0,I,II,III), double frame has to be used in combination with temperature sensor, switching capacity max. 5 W
Button (T)	for presence detection, switching capacity max. 600 mW
LED (D)	for status feedback, green (standard), several LEDs possible (e.g. green, yellow, red)
Protection	IP20 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ² , pluggable
Ambient condition	-35..+70 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm)
Notes	other temperature sensors on request, for other operating elements please request

WRF06 x

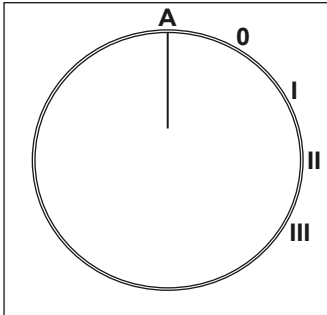
Types with standard labelling
(only with standard switch ranges)

special labelling refer to p. 346

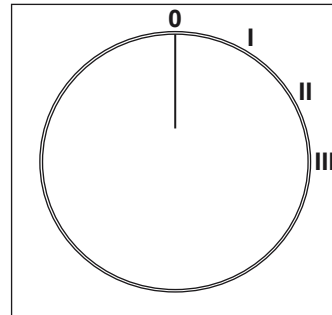
WRF06 TD without labelling
(standard)



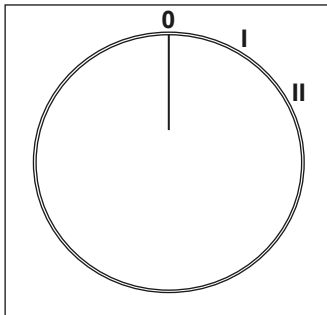
WRF06 S with 5 fan stages
(FS5, standard)



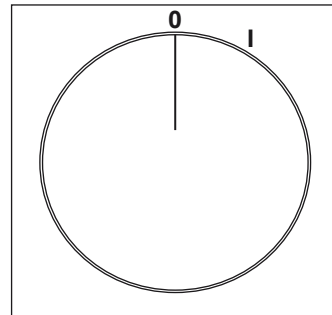
WRF06 S with 4 fan stages
(FS4, refer to options)



WRF06 S with 3 fan stages
(FS3, refer to options)



WRF06 S with 2 fan stages
(FS2, refer to options)



Item description: product | operating elements | sensor | switch range | colour | fan stages | LED

WRF06 x passive

Room operating unit temperature – without sensor			RU2
Item description	Item No.		€
WRF06 S without sensor Gira E2 pure white matt, FS5	629201		82,80
WRF06 TD without sensor Gira E2 pure white matt, LED green	285964		63,90

Room operating unit temperature – passive			RU2
Item description	Item No.		€
WRF06 TD PT100 Gira E2 pure white matt, LED green	564441		70,90
WRF06 TD PT100 1/3 DIN Gira E2 pure white matt, LED green	629409		74,60
WRF06 TD PT1000 Gira E2 pure white matt, LED green	629423		73,10
WRF06 TD PT1000 1/3 DIN Gira E2 pure white matt, LED green	629447		76,10
WRF06 TD Ni1000 Gira E2 pure white matt, LED green	195379		72,70
WRF06 TD Ni1000TK5000 Gira E2 pure white matt, LED green	629461		76,30
WRF06 TD NTC10k Gira E2 pure white matt, LED green	629324		69,60
WRF06 TD NTC10k Precon Gira E2 pure white matt, LED green	629348		69,60
WRF06 TD NTC20k Gira E2 pure white matt, LED green	629362		69,60
WRF06 TD NTC1,8k Gira E2 pure white matt, LED green	668545		69,60
WRF06 TD LM235Z Gira E2 pure white matt, LED green	563703		71,30

Options		
Item description		€
Switch ranges Busch-Jaeger Busch-balance® SI Reflex SI		0,00
Switch ranges Berker S.1 Jung A 500 Merten M-Smart Gira E3		0,00
Switch range Gira Esprit		22,30
Switch ranges stainless steel glass aluminium (different manufacturers)		35,10
Other switch ranges		12,50
Additional button		22,00
Additional diode (LED)		18,00
Rotary switch S with 4 fan stages (FS4)		0,00
Rotary switch S with 3 fan stages (FS3)		0,00
Rotary switch S with 2 fan stages (FS2)		0,00
Add to price of NTC10k for sensor NTC5k NTC10k Carel		0,00
Add to price of PT100 for sensor FeT		19,30

WRF06 INC

DATA SHEETS



The flush-mounted room operating unit with interface for RS485 Modbus is used for setpoint adjustment and triggering of an ECO mode function for energy-saving. The central button is used as a rotary knob and push button. The setpoint can be changed as required by turning the button accordingly. The current status is visualized by LEDs. Pushing the button triggers the ECO or presence mode function. The device is designed for selected switch systems in the 55x55 frame.



TECHNICAL DATA	
Measuring values	temperature
Network technology	RS485 Modbus
Power supply	15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$) SELV
Power consumption	typ. 0,3 W (24 V =) 0,9 VA (24 V ~)
Measuring range temp.	0..+50 °C
Accuracy temperature	$\pm 0,5$ K (typ. at 21 °C)
Switch range Berker	S.1
Switch range Merten	M-Smart
Set point (P)	Encoder for setpoint adjustment heating and cooling with button function for ECO mode
LED (D)	7 LEDs for displaying setpoint adjustment, LED for displaying the ECO mode function
Protection	IP30 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ² , pluggable
Ambient condition	-10..+50 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box ($\varnothing=68$ mm, min. depth=45 mm)
Notes	for other frame designs please request



Room operating unit temperature – active BUS		RU2
Item description	Item No.	€
WRF06 INC RS485 Modbus Merten M-Smart polar white brilliant	698214	213,60

Accessories		AS1
Item description	Item No.	On stock €
PSU-UP24 – flush mount power supply 24 V (80..240 V ~ ~> 24 V =, 0,5 A)	645737	⊕ 42,00

WRF04 x

DATA SHEETS



A surface-mounted room operating panel with integrated temperature sensor. The device can be mounted directly on the wall, on a flush-mounted box or in conjunction with a surface-mounted frame available as an accessory. Predetermined breaking points for surface-mounted installations are integrated. Possible operating elements are potentiometers, LEDs, buttons and rotary switches for setpoint shifting, fan level adjustment, presence detection, control of other devices and visual feedback. The connection terminal in the lower enclosure part allows pre-wiring.



WRF04 PSTD F55



WRF04 P,
standard labelling colour

TECHNICAL DATA

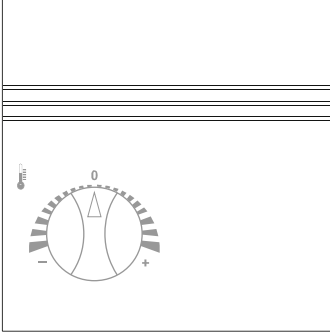
Measuring values	temperature
Output voltage	TRV: 1x 0..10 V, min. load 5 kΩ
Output switch contact	Relay: switch contact 24 V 3 A, floating
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	TRV: typ. 0,42 W (24 V =) 0,84 VA (24 V ~)
Measuring range temp.	0..+50 °C
Accuracy temperature	±0,5 K (typ. at 21 °C), passive: depending on used sensor
Set point (P)	potentiometer, 3-wire connection, default value 10 kΩ (1 kΩ 5 kΩ optional, for other values please request), active output 0..10 V (optional)
Rotary switch (S)	for fan stage adjustment (max. 5 stages), 5-stages (auto,0,I,II,III), 2-stages (0,I), 3-stages (0,I,II), 4-stages (0,I,II,III) switching capacity max. 5 W
Button (T)	for presence detection, switching capacity max. 600 mW
LED (D)	for status feedback, green (standard), several LEDs possible (e.g. green, yellow, red)
Enclosure	PC, pure white
Protection	IP30 according to EN 60529
Cable entry	breaking points top/bottom, rear entry
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	-35..+70 °C, max. 85% rH non-condensing
Mounting	surface mounted on flush-mounting box (Ø=68 mm), to be mounted flat onto the surface using adhesive foil or screws, with frame for surface mounting (accessory) or directly on the wall, base part can be mounted and wired separately
Notes	for further variants see chapter room controller, special labelling available on request, special painting available on request, other sensors operating elements on request

WRF04 x

Types with standard labelling

special labelling refer to p. 418

WRF04 P



Legend:

P = potentiometer

S = rotary switch

T = button

D = LED

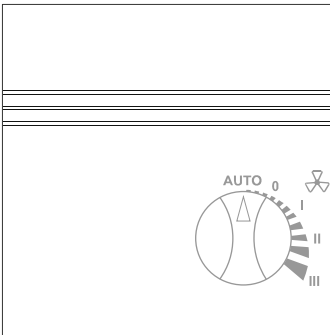
FSx = number of fan stages

for sensor types refer to items,

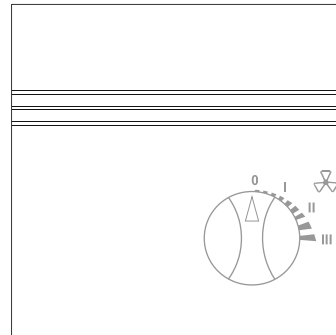
WRF04 with LCD refer to p. 172 / 188

WRF04 without operating elements refer to p. 198

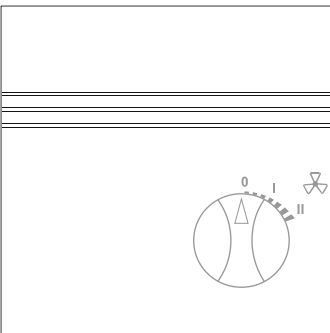
WRF04 S with 5 fan stages
(FS5, standard)



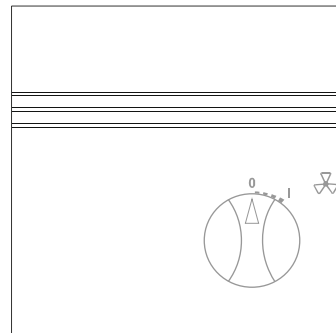
WRF04 S with 4 fan stages
(FS4, refer to options)



WRF04 S with 3 fan stages
(FS3, refer to options)

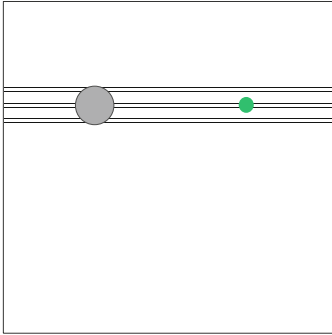


WRF04 S with 2 fan stages
(FS2, refer to options)

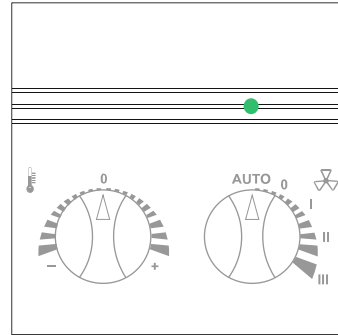


WRF04 x

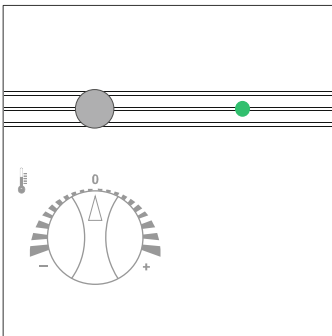
WRF04 TD



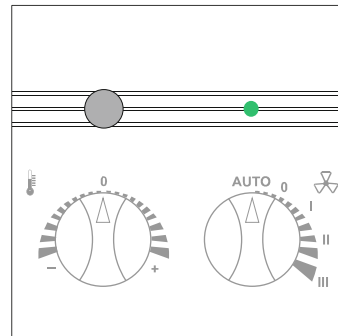
WRF04 PSD with 5 fan stages
FS5, also available with FS4, FS3 and FS2



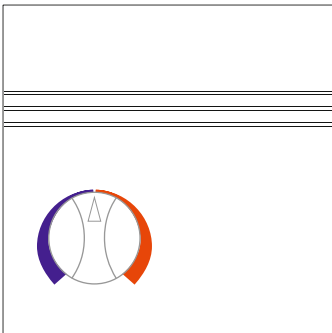
WRF04 PTD



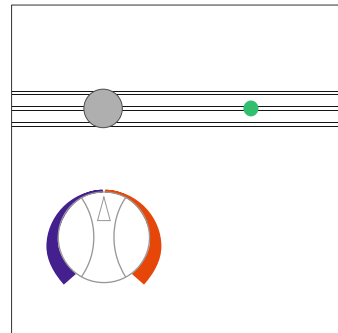
WRF04 PSTD with 5 fan stages
FS5, also available with FS4, FS3 and FS2



WRF04 P standard labelling colour
(refer to options)



WRF04 PTD standard labelling colour
(refer to options)



Item description: product | operating elements | sensor | labelling type | potentiometer | LED

WRF04 x passive

Room operating unit temperature – without sensor			RUB
Item description	Item No.		€
WRF04 P without sensor, 10 kOhm	197137		36,10
WRF04 S without sensor, F55	206204		51,80
WRF04 TD without sensor, LED green	206228		39,60
WRF04 PTD without sensor, 10 kOhm, LED green	315029		60,10
WRF04 PSD without sensor, 10 kOhm, F55, LED green	628358		79,00
WRF04 PSTD without sensor, 10 kOhm, F55, LED green	628372		95,00

Room operating unit temperature – PT100			RUB
Item description	Item No.		€
WRF04 P PT100, 10 kOhm	214100		43,10
WRF04 S PT100, F55	592451		58,80
WRF04 TD PT100, LED green	205665		46,60
WRF04 PTD PT100, 10 kOhm, LED green	409728		67,10
WRF04 PSD PT100, 10 kOhm, F55, LED green	257671		86,00
WRF04 PSTD PT100, 10 kOhm, F55, LED green	491280		102,00

Room operating unit temperature – PT100 1/3 DIN			RUB
Item description	Item No.		€
WRF04 P PT100 1/3 DIN, 10 kOhm	628402		46,80
WRF04 S PT100 1/3 DIN, F55	490115		62,60
WRF04 TD PT100 1/3 DIN, LED green	372565		50,40
WRF04 PTD PT100 1/3 DIN, 10 kOhm, LED green	628426		70,80
WRF04 PSD PT100 1/3 DIN, 10 kOhm, F55, LED green	628419		89,80
WRF04 PSTD PT100 1/3 DIN, 10 kOhm, F55, LED green	628433		105,70

Room operating unit temperature – PT1000			RUB
Item description	Item No.		€
WRF04 P PT1000, 10 kOhm	628457		45,30
WRF04 S PT1000, F55	469081		61,00
WRF04 TD PT1000, LED green	199773		48,80
WRF04 PTD PT1000, 10 kOhm, LED green	409735		69,30
WRF04 PSD PT1000, 10 kOhm, F55, LED green	628464		88,20
WRF04 PSTD PT1000, 10 kOhm, F55, LED green	628471		104,20

Room operating unit temperature – PT1000 1/3 DIN			RUB
Item description	Item No.		€
WRF04 P PT1000 1/3 DIN, 10 kOhm	287777		48,30
WRF04 S PT1000 1/3 DIN, F55	628501		64,00
WRF04 TD PT1000 1/3 DIN, LED green	319744		51,80
WRF04 PTD PT1000 1/3 DIN, 10 kOhm, LED green	628525		72,30
WRF04 PSD PT1000 1/3 DIN, 10 kOhm, F55, LED green	628518		91,20
WRF04 PSTD PT1000 1/3 DIN, 10 kOhm, F55, LED green	628549		107,20

Item description: product | operating elements | sensor | labelling type | potentiometer | LED

WRF04 x passive

Room operating unit temperature – Ni1000			RU3
Item description	Item No.		€
WRF04 P Ni1000, 10 kOhm	246361		45,00
WRF04 S Ni1000, FS5	266758		60,70
WRF04 TD Ni1000, LED green	197595		48,50
WRF04 PTD Ni1000, 10 kOhm, LED green	228923		69,00
WRF04 PSD Ni1000, 10 kOhm, FS5, LED green	628587		87,90
WRF04 PSTD Ni1000, 10 kOhm, FS5, LED green	486156		103,90

Room operating unit temperature – Ni1000TK5000			RU3
Item description	Item No.		€
WRF04 P Ni1000TK5000, 10 kOhm	218948		48,50
WRF04 S Ni1000TK5000, FS5	542982		64,20
WRF04 TD Ni1000TK5000, LED green	257480		52,00
WRF04 PTD Ni1000TK5000, 10 kOhm, LED green	409742		72,50
WRF04 PSD Ni1000TK5000, 10 kOhm, FS5, LED green	628631		91,40
WRF04 PSTD Ni1000TK5000, 10 kOhm, FS5, LED green	628648		107,40

Room operating unit temperature – NTC10k			RU3
Item description	Item No.		€
WRF04 P NTC10k, 10 kOhm	208789		41,80
WRF04 S NTC10k, FS5	348829		57,50
WRF04 TD NTC10k, LED green	216692		46,10
WRF04 PTD NTC10k, 10 kOhm, LED green	263573		65,80
WRF04 PSD NTC10k, 10 kOhm, FS5, LED green	471114		84,70
WRF04 PSTD NTC10k, 10 kOhm, FS5, LED green	491297		100,70

Room operating unit temperature – NTC10k Precon			RU3
Item description	Item No.		€
WRF04 P NTC10k Precon, 10 kOhm	218146		41,80
WRF04 S NTC10k Precon, FS5	546713		57,50
WRF04 TD NTC10k Precon, LED green	314176		46,10
WRF04 PTD NTC10k Precon, 10 kOhm, LED green	374415		65,80
WRF04 PSD NTC10k Precon, 10 kOhm, FS5, LED green	546720		84,70
WRF04 PSTD NTC10k Precon, 10 kOhm, FS5, LED green	546737		100,70

Room operating unit temperature – NTC20k			RU3
Item description	Item No.		€
WRF04 P NTC20k, 10 kOhm	209762		41,80
WRF04 S NTC20k, FS5	628655		57,50
WRF04 TD NTC20k, LED green	267199		46,10
WRF04 PTD NTC20k, 10 kOhm, LED green	409711		65,80
WRF04 PSD NTC20k, 10 kOhm, FS5, LED green	486323		84,70
WRF04 PSTD NTC20k, 10 kOhm, FS5, LED green	628662		100,70

P = potentiometer, S = rotary switch, T = button, D = LED

Item description: product | operating elements | sensor | labelling type | potentiometer | LED

WRF04 x passive

Room operating unit temperature – NTC1,8k			RUB
Item description	Item No.		€
WRF04 P NTC1,8k, 10 kOhm	409667		41,80
WRF04 S NTC1,8k, FS5	546690		57,50
WRF04 TD NTC1,8k, LED green	282482		46,10
WRF04 PTD NTC1,8k, 10 kOhm, LED green	259019		65,80
WRF04 PSD NTC1,8k, 10 kOhm, FS5, LED green	668569		84,70
WRF04 PSTD NTC1,8k, 10 kOhm, FS5, LED green	486163		100,70

Room operating unit temperature – LM235Z			RUB
Item description	Item No.		€
WRF04 PSD LM235Z, 10 kOhm, FS5, LED green	571906		87,30
WRF04 P LM235Z, 10 kOhm	223546		43,70
WRF04 S LM235Z, FS5	569897		59,30
WRF04 TD LM235Z, LED green	263238		48,00
WRF04 PTD LM235Z, 10 kOhm, LED green	223096		68,40
WRF04 PSTD LM235Z, 10 kOhm, FS5, LED green	628679		103,90

Options		€
Item description		€
Passive potentiometer 1 kΩ (poti_1kOhm) or 5 kΩ (Poti_5kOhm), for other values please request		0,00
Active potentiometer 0..10 V (poti_active)		22,40
Rotary switch S with 4 fan stages (FS4)		0,00
Rotary switch S with 3 fan stages (FS3)		0,00
Rotary switch S with 2 fan stages (FS2)		0,00
Default labelling P colour red+blue (ltypeSC)		6,00
Additional rotary switch		28,80
Additional button		22,00
Additional diode (LED)		18,00
Add to price of NTC10k for sensor NTC5k NTC10k Carel		0,00
Add to price of PT100 for sensor FeT		19,30

Accessories			AS1
Item description	Item No.	On stock	€
Rawplugs and screws (2 pcs. each)	102209	☺	0,80
Frame for surface mounting WRF04	111584	☺	12,40

Item description: product | operating elements | TRV | labelling type | LED

WRF04 x active

Room operating unit 0..+50 °C – active 0..10 V, active potentiometer				RU2
Item description	Inputs	0..10 V	Item No.	€
WRF04 P TRV3, poti_active	-	1	208864	128,80
WRF04 PTD TRV3, poti_active, LED green	-	1	192897	153,50
WRF04 PSD TRV3, poti_active, FS5, LED green	-	1	637558	172,40
WRF04 PSTD TRV3, poti_active, FS5, LED green	-	1	637565	210,80

Options

Item description	€
Rotary switch S with 4 fan stages (FS4)	0,00
Rotary switch S with 3 fan stages (FS3)	0,00
Rotary switch S with 2 fan stages (FS2)	0,00
Default labelling P colour red+blue (ltypeSC)	6,00
Additional rotary switch	28,80
Additional button	22,00
Additional diode (LED)	18,00

Accessories

Item description	Item No.	On stock	AS1
			€
Raw plugs and screws (2 pcs. each)	102209	☺	0,80
Frame for surface mounting WRF04	111584	☺	12,40

WRF04 x BUS

DATA SHEETS



A surface-mounted room operating panel with integrated temperature sensor. The device can be mounted directly on the wall, on a flush-mounted box or in conjunction with a surface-mounted frame available as an accessory. Predetermined breaking points for surface-mounted installations are integrated. Possible operating elements are potentiometers, LEDs, buttons and rotary switches for setpoint shifting, fan level adjustment, presence detection, control of other devices and visual feedback. The connection terminal in the lower enclosure part allows pre-wiring.



WRF04 PSTD FS5



WRF04 P,
standard labelling colour

BACnet

LON
LOCAL OPERATING NETWORK

TECHNICAL DATA

Measuring values	temperature
Network technology	BACnet MS/TP, LON FT (free topology)
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	BACnet: typ. 0,4 W (24 V =) 0,6 VA (24 V ~), LON: typ. 0,6 W (24 V =) 1,7 VA (24 V ~)
Measuring range temp.	0..+50 °C
Accuracy temperature	±0,5 K (typ. at 21 °C)
Inputs	LON: 2x entry for floating contacts
Set point (P)	potentiometer
Rotary switch (S)	for fan stage adjustment (max. 5 stages), 5-stages (auto,0,I,II,III), 2-stages (0,I), 3-stages (0,I,II), 4-stages (0,I,II,III), switching capacity max. 5 W
Button (T)	for presence detection, switching capacity max. 600 mW
LED (D)	for status feedback, green (standard), several LEDs possible (e.g. green, yellow, red)
Enclosure	PC, pure white
Protection	IP30 according to EN 60529
Cable entry	breaking points top/bottom, rear entry
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	-35..+70 °C, max. 85% rH non-condensing
Mounting	surface mounted on flush-mounting box (Ø=68 mm), to be mounted flat onto the surface using adhesive foil or screws, with frame for surface mounting (accessory) or directly on the wall, base part can be mounted and wired separately
Notes	for further variants see chapter room controller, special labelling available on request, special painting available on request, for other operating elements please request

Item description: product | operating elements | inputs/outputs | BUS | labelling type | LED

WRF04 x BUS



Room operating unit temperature – AO2V RS485 BACnet				RU2
Item description	Inputs	0..10 V	Item No.	€
WRF04 P AO2V BACnet	2	2	548885	154,20
WRF04 PTD AO2V BACnet, LED green	2	2	548892	161,90
WRF04 PSD AO2V BACnet, FS5, LED green	2	2	548908	179,40
WRF04 PSTD AO2V BACnet, FS5, LED green	2	2	547666	195,40



Room operating unit temperature – LON			RU2
Item description	Item No.		€
WRF04 P LON	330626		177,80
WRF04 PTD LON, LED green	312967		185,90
WRF04 PSD LON, FS5, LED green	389907		203,30
WRF04 PSTD LON, FS5, LED green	297769		211,40

Options

Item description	€
Default labelling P colour red+blue (ltypeSC)	6,00

Accessories

Item description	Item No.	On stock	AS1
			€
Rawlplugs and screws (2 pcs. each)	102209	●	0,80
Frame for surface mounting WRF04	111584	●	12,40

WRF04 x

Design examples



WRF04 PST3D,
special model/special labelling



WRF04 P4T4D,
special model/special labelling



WRF04 P,
special painting



WRF04,
special painting

standard labelling refer to p. 163
special labelling refer to p. 418

WRF04 LCD x

DATA SHEETS



A surface-mounted room operating panel with integrated temperature sensor and display showing the actual value. The device can be mounted directly on the wall, on a flush-mounted box or in conjunction with a surface-mounted frame available as an accessory. Predetermined breaking points for surface-mounted installations are integrated. Possible operating elements are potentiometers, LEDs, buttons and rotary switches for setpoint shifting, fan level adjustment, presence detection, control of other devices and visual feedback. The connection terminal in the lower enclosure part allows pre-wiring.



WRF04 LCD PSD

LON
LOCAL OPERATING NETWORK

TECHNICAL DATA

Measuring values	temperature
Output voltage	TRV: 1x 0..10 V
Output switch contact	Relay: switch contact 24 V 3 A, floating
Network technology	LON FT (free topology)
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	TRV: max. 0,6 W (24 V =) 1 VA (24 V ~), LON: typ. 0,8 W (24 V =) 2 VA (24 V ~)
Measuring range temp.	0..+50 °C
Accuracy temperature	±0,5 K (typ. at 21 °C)
Set point (P)	potentiometer, active output 0..10 V (optional)
Rotary switch (S)	for fan stage adjustment (max. 5 stages), 5-stages (auto,0,I,II,III), 2-stages (0,I), 3-stages (0,I,II), 4-stages (0,I,II,III), active output 0..10 V (optional), switching capacity max. 5 W
Button (T)	for presence detection, switching capacity max. 600 mW
LED (D)	for status feedback, several LEDs possible (e.g. green, yellow, red)
Display	LCD 29x12 mm, monochrome, status-LED, multi-colored
Enclosure	PC, pure white
Protection	IP30 according to EN 60529
Cable entry	breaking points top/bottom, rear entry
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	-35..+70 °C, max. 85% rH non-condensing
Mounting	surface mounted on flush-mounting box (Ø=68 mm), to be mounted flat onto the surface using adhesive foil or screws, with frame for surface mounting (accessory) or directly on the wall, base part can be mounted and wired separately
Notes	for further variants see chapter room controller, special labelling available on request, special painting available on request, other temperature sensors on request, for other operating elements please request

Item description: product | operating elements | TRV3 | fan stages | LED

WRF04 LCD x active

Room operating unit with display 0..50 °C - active 0..10 V, active potentiometer				RU2
Item description	Inputs	0..10 V	Item No.	€
WRF04 LCD P TRV3, poti_active	-	1	637572	168,50
WRF04 LCD PTD TRV3, poti_active, LED green	-	1	412483	193,20
WRF04 LCD PSD TRV3, poti_active, FS5, LED green	-	1	637589	212,10
WRF04 LCD PSTD TRV3, poti_active, FS5, LED green	-	1	418874	228,10

Item description: product | operating elements | inputs/outputs | BUS | fan stages | LED

WRF04 LCD x BUS

LON
LOCAL OPERATING NETWORK

Room operating unit temperature - LON			RU2
Item description	Item No.		€
WRF04 LCD P LON	413442		217,40
WRF04 LCD PTD LON, LED green	397568		225,60
WRF04 LCD PSD LON, FS5, LED green	446235		243,00
WRF04 LCD PSTD LON, FS5, LED green	574839		259,00

Options

Item description	€
Default labelling P colour red+blue (ltypeSC)	6,00

Accessories

Item description	Item No.	On stock	AS1
Rawlplugs and screws (2 pcs. each)	102209	●	0,80
Frame for surface mounting WRF04	111584	●	12,40

standard labelling refer to p. 163
special labelling refer to p. 418

JOY Fancoil

DATA SHEETS



The fancoil controller in high-quality design is used for individual temperature control in hotels, offices and living spaces. It is designed for fan coil units with 2- and 4-pipe systems. Different fans can be controlled depending on the version (type 5DO for 3-stage and type EC for 0..10 V fan). By means of type EC 3AO continuous valve actuators (also 6-way valve) and a 0..10 V EC motor can be controlled. This ensures individual and energy-efficient room air conditioning. The device (available with glass front in white or black) has a display and touch-sensitive control buttons. You can set 3 time channels with 4 time periods each. The device is designed for mounting in a flush-mounted box.



JOY Fancoil pure white



JOY Fancoil black



JOY Fancoil with decorative frame



TECHNICAL DATA

Measuring values	temperature
Output voltage	types AO2DO: 0..10 V = (to control EC fan), types 3AO: 3x0..10 V = (to control EC fan, heating & cooling or to control 6-way control valve)
Output switch contact	types 5DO: 5x contact NO (1x heating, 1x cooling, 3x fan stages), types AO2DO: 2x contact NO (1x heating, 1x cooling)
Network technology	RS485 Modbus
Power supply	85..260 V ~, types 3AO: 15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$) SELV
Power consumption	max. 2 VA (260 V ~)
Measuring range temp.	0..+50 °C
Accuracy temperature	± 1 K (typ. at 21 °C)
Inputs	1x input for NTC10k or floating contact, 1x input digital for floating contact (not types BUS), input change-over (230 V ~), 3AO: instead of input change-over (230 V ~) additional input digital for floating contact
Control functions	setpoint 0..+50 °C
Functions	integrated PI and two-/three-position controller, types 3AO: built-in PI controller
Display	LCD 60x44 mm, 240x160 px, backlight blue
Enclosure	PC, pure white, black, hardened acrylic glass with high scratch resistance
Protection	IP30 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ² , inputs: terminal block, max. 1,0 mm ²
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box ($\varnothing=68$ mm, min. depth=45 mm), hollow wall boxes with edge $\varnothing>70$ mm have to be covered by wall covering
Notes	black devices: arrows of temperature control coloured red-blue

JOY Fancoil

Fancoil controller temperature – active							RU1
Item description	Inputs	0..10 V	Relay	Item No.	Controller	€	
JOY Fancoil 5DO pure white	3	-	5	689373	✓	167,70	
JOY Fancoil 5DO black	3	-	5	689380	✓	179,70	
JOY Fancoil EC AO2DO pure white	3	1	2	689397	✓	167,70	
JOY Fancoil EC AO2DO black	3	1	2	689403	✓	179,70	
JOY Fancoil EC 3AO pure white	3	3	-	690102	✓	167,70	
JOY Fancoil EC 3AO black	3	3	-	690119	✓	179,70	



Fancoil controller temperature – active RS485 Modbus							RU1
Item description	Inputs	0..10 V	Relay	Item No.	Controller	€	
JOY Fancoil 5DO RS485 Modbus pure white	2	-	5	689434	✓	173,90	
JOY Fancoil 5DO RS485 Modbus black	2	-	5	689441	✓	185,90	
JOY Fancoil EC AO2DO RS485 Modbus pure white	2	1	2	689410	✓	173,90	
JOY Fancoil EC AO2DO RS485 Modbus black	2	1	2	689427	✓	185,90	
JOY Fancoil EC 3AO RS485 Modbus pure white	2	3	-	690089	✓	173,90	
JOY Fancoil EC 3AO RS485 Modbus black	2	3	-	690096	✓	185,90	

Options

Item description	€
Change-over sensor NTC10k (model and price on request)	

Accessories

Item description	Item No.	On stock	AS1	€
Software/Plug-In for configuration (free via www.thermokon.com)				0,00
SD card (2 GB)	500098	⊖		11,30
Decorative frame pure white for JOY	681452			12,00

LCF Touch

DATA SHEETS



Modern design fan coil room thermostat used for individual control of temperature. It is tailored for two-pipe and four-pipe fan coil units with two-wire electric valves. The device combines digital technology with a large touch screen (LCD), which enables the single room controller to be used intuitively. Integrated 7 day time clock with 4 time programs. It is designed for mounting in a flush-mounted box.



TECHNICAL DATA	
Measuring values	temperature
Output switch contact	5x contact NO (1x heating, 1x cooling, 3x fan stages), 240 V: load max. 3 A
Network technology	RS485 Modbus
Power supply	90..265 V ~
Power consumption	max. 0,9 VA (265 V ~)
Measuring range temp.	+1..+50 °C
Accuracy temperature	±0,5 K (typ. at 21 °C)
Inputs	1x input for change-over sensor NTC10k, (optional)
Control functions	setpoint +1..+50 °C, factory setting (+16..+30°C)
Display	LCD 64x64 mm, touchscreen, white background lighting
Enclosure	ABS, black, glass
Protection	IP20 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	-10..+50 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm)

Fancoil controller temperature – active			RU1
Item description	Item No.	Controller	€
LCF Touch	575768	✓	122,10



Fancoil controller temperature – active RS485 Modbus			RU1
Item description	Item No.	Controller	€
LCF Touch RS485 Modbus	575775	✓	136,30

Options

Item description	€
Change-over sensor NTC10k (model and price on request)	

LCF02

DATA SHEETS



The fancoil room thermostat for controlling cooling valves or 6-way valves has been designed for individual control of temperature in commercial, industrial and residential buildings. It is tailored for 2- (type C) or 4-pipe fancoil (type 6WV) with two-wire electric valves. With its flush mounted modern design the device combines digital technology with a large LCD and additional buttons, which enables the single room controller to be used intuitively.

TECHNICAL DATA

Measuring values	temperature
Output voltage	type C: 0..10 V (cooling), type 6WV: 0..10 V (6-way control valve heating & cooling)
Output switch contact	3x contact NO (fan stages fancoil), type C: additional 1x contact NO (cooling), 250 V, max. Last 5 A
Power supply	24 V = or 24 V ~ (±10%) SELV
Power consumption	typ. 3 W (24 V =) 5 VA (24 V ~)
Measuring range temp.	+1..+50 °C
Accuracy temperature	±1 K (typ. at 21 °C)
Inputs	1x input digital for floating contact (window contact, dew point guard), 1x input digital for floating contact (motion sensors, card switch)
Control functions	setpoint +1..+50 °C, factory setting (+16..+30°C)
Display	LCD 64x41 mm, backlight white
Enclosure	ABS, pure white
Protection	IP20 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	-10..+50 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm)

Fancoil controller temperature – active

Item description	Item No.	Controller	RU1
LCF02 C Fancoil	684606	✓	61,00
LCF02 6WV Fancoil	684613	✓	61,00

LCF02 BUS

DATA SHEETS



The fancoil controller is designed for individual control of temperature in commercial, industrial and residential buildings. It provides two configurable, digital inputs for e.g. occupancy, window contact, dew-point contact or change-over. Additionally, it is equipped with an input for external (remote) temperature sensors and Modbus interface for configuration of controls parameters. With its flush mounted modern design, the device combines digital technology with a large display and additional buttons, which makes up for an intuitive operation of the single room controller.



TECHNICAL DATA	
Measuring values	temperature
Output voltage	types 2A03DO: 2x 0..10 V = (heating & cooling or to control 6-way control valve), types 3A02DO: 3x 0..10 V = (to control EC fan, heating & cooling or to control 6-way control valve), min. load 10 kΩ
Output switch contact	types 5DO: 5x contact NO (1x heating, 1x cooling, 3x fan stages), types 2A03DO: 3x contact NO (3x fan stages), types 3A02DO: 2x contact NO (heating register 3-stage), 240 V: load max. 3 A
Network technology	RS485 Modbus
Power supply	24 V = or 24 V ~ (±10%) SELV
Power consumption	typ. 3 W (24 V =) 5 VA (24 V ~)
Measuring range temp.	+1..+50 °C
Accuracy temperature	±1 K (typ. at 21 °C)
Inputs	1x input for change-over sensor NTC10k, 1x input digital for floating contact (window contact, dew point guard), 1x input digital for floating contact (motion sensors, card switch)
Control functions	setpoint +1..+50 °C, factory setting (+16..+30°C)
Display	LCD 64x41 mm, backlight white
Enclosure	ABS, pure white
Protection	IP20 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	-10..+50 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm)

Fancoil controller temperature – active BUS 24 V			RU1
Item description	Item No.	Controller	€
LCF02 5DO RS485 Modbus 24 V	703307	✓	91,00
LCF02 2A03DO RS485 Modbus 24 V	703314	✓	101,00
LCF02 3A02DO RS485 Modbus 24 V	703321	✓	111,00

Options	
Item description	€
Change-over sensor NTC10k (model and price on request)	

LCF

DATA SHEETS



The fan coil room thermostat has been designed for individual control of temperature in commercial, industrial and residential buildings. It is tailored for two-pipe and four-pipe fan coil with two-wire electric valves. With its flush mounted modern design the device combines digital technology with a large LCD display and additional buttons, which enables the single room controller to be used intuitively.

TECHNICAL DATA

Measuring values	temperature
Output switch contact	5x contact NO (1x heating, 1x cooling, 3x fan stages), 250 V: load max. 3 A
Power supply	90..265 V ~
Power consumption	max. 0,9 W
Measuring range temp.	+1..+50 °C
Accuracy temperature	±1 K (typ. at 21 °C)
Inputs	1x input for change-over sensor NTC10k, (optional)
Display	LCD 35,5x48,5 mm, white background lighting, for indication of measured values
Enclosure	ABS, pure white
Protection	IP20 according to EN 60529
Cable entry	rear entry
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	-10..+50 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm)

Fancoil controller temperature – active

Item description	Item No.	Controller	RU1
LCF	575751	✓	€ 40,00

Options

Item description	€
Change-over sensor NTC10k (model and price on request)	

JOY HC

DATA SHEETS



The room regulator in high-quality design is used for individual temperature control in living spaces, hotels and offices. The heating/cooling valves are controlled by relay contacts or alternatively via 0..10 V signals. 6-way valves can also be controlled with this room regulator. This ensures individual and energy-efficient room air conditioning. The device (available with glass front in white or black) has a display and touch-sensitive control buttons. You can set 3 time channels with 4 time periods each. The device is designed for mounting in a flush-mounted box.



JOY HC pure white



JOY HC black



JOY Fancoil with decorative frame



TECHNICAL DATA

Measuring values	temperature
Output voltage	types AO2DO: 0..10 V = (to control 6-way control valve), types 3AO: 3x 0..10 V = (to control 6-way control valve, heating & cooling)
Output switch contact	types AO2DO: 2x contact NO (1x heating, 1x cooling)
Network technology	RS485 Modbus
Power supply	85..260 V ~, types 3AO: 15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	max. 2 VA (260 V ~)
Measuring range temp.	0..+50 °C
Accuracy temperature	±1 K (typ. at 21 °C)
Inputs	1x input for NTC10k or floating contact, 1x input digital for floating contact (not types BUS), input change-over (230 V ~), 3AO: instead of input change-over (230 V ~) additional input digital for floating contact
Control functions	setpoint 0..+50 °C
Functions	integrated two-/three-position controller, types 3AO: built-in PI controller
Display	LCD 60x44 mm, 240x160 px, backlight blue
Enclosure	PC, pure white, black, hardened acrylic glass with high scratch resistance
Protection	IP30 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ² , inputs: terminal block, max. 1,0 mm ²
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm) hollow wall boxes with edge Ø>70 mm have to be covered by wall covering
Notes	black devices: arrows of temperature control coloured red-blue

JOY HC

Room controller heating/cooling – active						RU1
Item description	Inputs	0..10 V	Relay	Item No.	Controller	€
JOY HC AO2DO pure white	3	1	2	689458	✓	167,70
JOY HC AO2DO black	3	1	2	689465	✓	179,70
JOY HC 3AO pure white	3	3	-	696142	✓	167,70
JOY HC 3AO black	3	3	-	696159	✓	179,70



Room controller heating/cooling – active RS485 Modbus						RU1
Item description	Inputs	0..10 V	Relay	Item No.	Controller	€
JOY HC AO2DO RS485 Modbus pure white	2	1	2	689472	✓	173,90
JOY HC AO2DO RS485 Modbus black	2	1	2	689489	✓	185,90
JOY HC 3AO RS485 Modbus pure white	2	3	-	696173	✓	173,90
JOY HC 3AO RS485 Modbus black	2	3	-	696180	✓	185,90

Options

Item description	€
Change-over sensor NTC10k (model and price on request)	

Accessories

Item description	Item No.	On stock	AS1	€
Software/Plug-In for configuration (free via www.thermokon.com)				0,00
SD card (2 GB)	500098	⊖		11,30
Decorative frame pure white for JOY	681452			12,00

WRF06 LCD RR

DATA SHEETS



The flush-mounted room controller with setpoint adjustment and occupancy button is used for individual temperature control in living, hotel and office rooms. The device with 4 control buttons and LCD can be integrated into the most common switch ranges, is available in many color versions and is therefore suitable for design-oriented construction projects. Depending on the type continuous, 2-point or 6-way valves for heating or cooling can be controlled. The peelable terminal allows pre-wiring.



WRF06 LCD I type1 pure white,
frame Gira E2 pure white matt



WRF06 LCD I type1 anthracite,
frame Peha Aura Glas



WRF06 LCD LON I type2 pure white,
frame Merten M-Plan aluminium



LON
LOCAL OPERATING NETWORK

TECHNICAL DATA

Measuring values	temperature
Output voltage	A02V: 2x 0..10 V
Network technology	LON FT (free topology), RS485 Modbus
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	RS485 Modbus: typ. 0,8 W (24 V =) 2,5 VA (24 V ~), LON: typ. 1,3 W (24 V =) 1,5 VA (24 V ~)
Measuring range temp.	0..+50 °C
Accuracy temperature	±0,5 K (typ. at 21 °C)
Inputs	floating switch contact
Switch range Berker	S.1, B.3 aluminium, B.7 glass
Switch range Busch-Jaeger	Busch-balance® SI, solo® *, future® linear *, Busch-axcent® *
Switch range Feller	EDIZIOdue
Switch range Gira	E2, E3, Standard 55, Esprit, Event, Flächenschalter *
Switch range Jung	LS 990 *, A 500, AS 500, A plus, A creation, CD 500 *
Switch range Merten	M-Smart, M-Plan, 1-M, Atelier-M, M-Pure, Artec *, Antik *
Switch range Peha	AURA, AURA glass
Functions	A02V: 2 inputs, 2 outputs 0..10 V, DO2R: 2 inputs, 2 outputs relay, DO2T: 2 inputs, 2 outputs Triac, OVR: 2 inputs, 2 outputs (1x 0..10 V, 1 relay), OVT: 2 inputs, 2 outputs (1x 0..10 V, 1 Triac)
No. of buttons	4
Display	LCD 34x21 mm, monochrome
Enclosure	PC, pure white brilliant, pure white matt, aluminium, anthracite frame color may differ slightly
Protection	IP30 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ² , pluggable
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm), DO2T, DO2R, OVR, OVT with IO extension need 2 flush-mounting boxes (Ø=68 mm) and double frame (alternatively, the IO unit can be mounted in a deep flush-mounted box or be detached up to 10 m)

Delivery contents	software for configuration (freeware via download)
Notes	for further variants see chapter room operating units, * in switch program with intermediate frame, please specify frame design when ordering, please indicate labelling type in order, BUS: only available with labelling type 1 and 2

Room controller temperature – AO2V BUS						RU2
Item description	Inputs	0..10 V	Item No.	Controller	€	
WRF06 LCD AO2V RS485 Modbus ltype1 Gira E2 pure white matt	2	2	382144	✓	244,60	
WRF06 LCD AO2V LON ltype1 Gira E2 pure white matt	2	2	363495	✓	271,80	



Room controller temperature – IO RS485 Modbus						RU2	
Item description	Inputs	0..10 V	Relay	Triac	Item No.	Controller	€
WRF06 LCD DO2R RS485 Modbus ltype1 Gira E2 pure white matt	2	-	2	-	406192	✓	274,30
WRF06 LCD DO2T RS485 Modbus ltype1 Gira E2 pure white matt	2	-	-	2	449441	✓	274,30
WRF06 LCD OVR RS485 Modbus ltype1 Gira E2 pure white matt	2	1	1	-	464352	✓	274,30
WRF06 LCD OVT RS485 Modbus ltype1 Gira E2 pure white matt	2	1	-	1	424806	✓	274,30



Room controller temperature – IO LON						RU2	
Item description	Inputs	0..10 V	Relay	Triac	Item No.	Controller	€
WRF06 LCD DO2R LON ltype1 Gira E2 pure white matt, IO (Doppelrahmen)	2	-	2	-	364560	✓	301,50
WRF06 LCD DO2T LON ltype1 Gira E2 pure white matt	2	-	-	2	406222	✓	301,50
WRF06 LCD OVR LON ltype1 Gira E2 pure white matt	2	1	1	-	364355	✓	301,50
WRF06 LCD OVT LON ltype1 Gira E2 pure white matt	2	1	-	1	627665	✓	301,50

Options		€
Item description		
Switch ranges Busch-Jaeger Busch-balance® SI		0,00
Switch ranges Berker S.1 Jung A 500 Merten M-Smart Gira E3		0,00
Switch range Gira Esprit		22,30
Switch ranges stainless steel glass aluminium (different manufacturers)		35,10
Other switch ranges		12,50
Labelling type 2 (ltype2) – only BUS models		0,00

Accessories			AS1
Item description	Item No.	On stock	€
PSU-UP24 – flush mount power supply 24 V (80..240 V ~-> 24 V =, 0,5 A)	645737	⊕	42,00

WRF07 RR

DATA SHEETS



The visually appealing flush-mounted room controller can be supplied in the most common switch ranges and various color variants and serves for individual temperature control in living, hotel and office rooms. Possible operating elements are potentiometer, LEDs, buttons and rocker switch for setpoint adjustment, operating mode switching, presence detection and optical feedback. Depending on the type, continuous or 2-point valves for heating or cooling can be controlled. The removable terminal allows easy pre-wiring.



WRF07 P I type1,
Gira E2 pure white matt



WRF07 P I type1,
Busch-Jaeger alpha nea®



LON
LOCAL OPERATING NETWORK

TECHNICAL DATA	
Measuring values	temperature, humidity (optional)
Output voltage	A02V: 2x 0..10 V
Network technology	LON FT (free topology), RS485 Modbus
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	typ. 1 W (24 V =) 2,5 VA (24 V ~),
Measuring range temp.	0..+50 °C
Measuring range humidity	0..100% rH non-condensing
Accuracy temperature	±0,5 K (typ. at 21 °C)
Accuracy humidity	±2% between 10..90% rH (typ. at 21 °C)
Inputs	A02V: 2 inputs, DI4: 4x input digital for floating switch contact
Switch range Berker	S.1, B.3 aluminum, B.7 glass, Q.1, Q.3, K.1, K.5 aluminum stainless steel
Switch range Busch-Jaeger	Busch-balance® SI, Busch-Duro 2000® SI, Reflex SI, solo®, future® linear, impuls, Busch-axcent®, alpha nea®
Switch range Feller	EDIZIOdue
Switch range Gira	E2, E3, Standard 55, Esprit, Event, Flächenschalter
Switch range Jung	LS 990, A 500, AS 500, A plus, A creation, CD 500
Switch range Merten	M-Smart, M-Plan, 1-M, Atelier-M, M-Pure, Artec, Artec stainless steel, Antik
Switch range Peha	AURA, AURA glass
Set point (P)	potentiometer
Rotary switch (S)	mini rotary switch for fan stage adjustment with up to 5 stages available (please request)
Rocker switch (S)	for fan speed adjustment
Button (T)	for presence detection, for fan stage adjustment (depending on the device)
LED (D)	for status feedback, green (standard), several LEDs possible (e.g. green, yellow, red)
Protection	IP20 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ²

Ambient condition	0..+50 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm), DO2T, DO2R, OVR, OVT with IO extension need 2 flush-mounting boxes (Ø=68 mm) and double frame (alternatively, the IO unit can be mounted in a deep flush-mounted box or be detached up to 10 m)
Delivery contents	software for configuration (freeware via download)
Notes	for further variants see chapter room operating units, for other operating elements please request, for other frame designs please request



Room controller temperature – AO2V RS485 Modbus					RU2
Item description	Inputs	0..10 V	Item No.	Controller	€
WRF07 P AO2V RS485 Modbus ltype1 Gira E2 pure white matt	2	2	496094	✓	214,90
WRF07 PTD AO2V RS485 Modbus ltype1 Gira E2 pure white matt, LED green	2	2	497800	✓	225,30

Room controller temperature + humidity – AO2V RS485 Modbus					RU2
Item description	Inputs	0..10 V	Item No.	Controller	€
WRF07 P rH AO2V RS485 Modbus ltype1 Gira E2 pure white matt	2	2	703246	✓	236,90
WRF07 PTD rH AO2V RS485 Modbus ltype1 Gira E2 pure white matt, LED green	2	2	703253	✓	247,30



Room controller temperature – AO2V DI4 LON					RU2
Item description	Inputs	0..10 V	Item No.	Controller	€
WRF07 P DI4 LON ltype1 Gira E2 pure white matt	4	-	615600	✓	237,40
WRF07 PTD DI4 LON ltype1 Gira E2 pure white matt, LED green	4	-	595230	✓	248,90
WRF07 P AO2V LON ltype1 Gira E2 pure white matt	2	2	583374	✓	237,40
WRF07 PTD AO2V LON ltype1 Gira E2 pure white matt, LED green	2	2	628174	✓	248,90

Options	
Item description	€
Switch ranges Busch-Jaeger Busch-balance® SI Reflex SI	0,00
Switch ranges Berker S.1 Jung A 500 Merten M-Smart Gira E3	0,00
Switch range Gira Esprit	22,30
Switch ranges stainless steel glass aluminium (different manufacturers)	35,10
Other switch ranges	12,50
Labelling type 2 (ltype2)	4,50
Labelling type 6 colour red+blue (ltype6)	6,00
Additional button	22,00

WRF04 x RR

DATA SHEETS



The surface-mounted room controller is used for individual temperature control in living, hotel and office rooms. Possible operating elements are potentiometers, rotary switches, buttons and LEDs for setpoint adjustment, fan level selection, presence detection and visual feedback. Depending on the type, continuous or 2-point valves can be controlled for heating or cooling. The connection terminal in the lower housing part allows pre-wiring.



WRF04 PSTD FSS



WRF04 P,
standard labelling colour



TECHNICAL DATA	
Measuring values	temperature
Output voltage	AO2V: 2x 0..10 V
Output switch contact	Relay: switch contact 24 V 3 A, floating, Triac: 24 V ~ 1 A, floating
Network technology	RS485 Modbus
Power supply	15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$) SELV
Power consumption	RS485 Modbus: typ. 0,4 W (24 V =) 0,6 VA (24 V ~)
Measuring range temp.	0..+50 °C
Accuracy temperature	$\pm 0,5$ K (typ. at 21 °C)
Inputs	2x entry for floating contacts
Set point (P)	potentiometer
Rotary switch (S)	for fan stage adjustment (max. 5 stages), 5-stages (auto,0,I,II,III), 2-stages (0,I), 3-stages (0,I,II), 4-stages (0,I,II,III)
Button (T)	for presence detection
LED (D)	for status feedback, green (standard)
Functions	AO2V: 2 inputs, 2 outputs 0..10 V, DO2R: 2 inputs, 2 outputs relay, DO2T: 2 inputs, 2 outputs Triac, OVR: 2 inputs, 2 outputs (1x 0..10 V, 1 relay), OVT: 2 inputs, 2 outputs (1x 0..10 V, 1 Triac)
Enclosure	PC, pure white
Protection	IP30 according to EN 60529
Cable entry	breaking points top/bottom, rear entry
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	-35..+70 °C, max. 85% rH non-condensing
Mounting	surface mounted on flush-mounting box ($\varnothing=68$ mm), to be mounted flat onto the surface using adhesive foil or screws, with frame for surface mounting (accessory) or directly on the wall, base part can be mounted and wired separately, DO2T, DO2R, OVR, OVT with IO extension need an additional flush-mounting box ($\varnothing=68$ mm)
Notes	for further variants see chapter room operating units, special labelling available on request, special painting available on request, for other operating elements please request

WRF04 x RR



Room controller temperature – AO2V RS485 Modbus						RU2
Item description	Inputs	0..10 V	Item No.	Controller	€	
WRF04 P AO2V RS485 Modbus	2	2	419956	✓	154,20	
WRF04 PTD AO2V RS485 Modbus, LED green	2	2	415613	✓	161,90	
WRF04 PSD AO2V RS485 Modbus, FS5, LED green	2	2	419949	✓	179,40	
WRF04 PSTD AO2V RS485 Modbus, FS5, LED green	2	2	480505	✓	195,40	

Room controller temperature – IO DO2R RS485 Modbus						RU2
Item description	Inputs	0..10 V	Relay	Item No.	Controller	€
WRF04 P DO2R RS485 Modbus	2	-	2	420266	✓	195,80
WRF04 PTD DO2R RS485 Modbus, LED green	2	-	2	420273	✓	203,50
WRF04 PSD DO2R RS485 Modbus, FS5, LED green	2	-	2	420280	✓	221,00

Room controller temperature – IO DO2T RS485 Modbus						RU2
Item description	Inputs	0..10 V	Triac	Item No.	Controller	€
WRF04 P DO2T RS485 Modbus	2	-	2	420617	✓	195,80
WRF04 PTD DO2T RS485 Modbus, LED green	2	-	2	420624	✓	203,50
WRF04 PSD DO2T RS485 Modbus, FS5, LED green	2	-	2	420631	✓	221,00

Room controller temperature – IO OVR RS485 Modbus						RU2
Item description	Inputs	0..10 V	Relay	Item No.	Controller	€
WRF04 P OVR RS485 Modbus	2	1	1	420679	✓	195,80
WRF04 PTD OVR RS485 Modbus, LED green	2	1	1	420686	✓	203,50
WRF04 PSD OVR RS485 Modbus, FS5, LED green	2	1	1	420693	✓	221,00

Room controller temperature – IO OVT RS485 Modbus						RU2
Item description	Inputs	0..10 V	Triac	Item No.	Controller	€
WRF04 P OVT RS485 Modbus	2	1	1	420747	✓	195,80
WRF04 PTD OVT RS485 Modbus, LED green	2	1	1	420754	✓	203,50
WRF04 PSD OVT RS485 Modbus, FS5, LED green	2	1	1	420761	✓	221,00

Options		€
Item description		
Rotary switch S with 4 fan stages (FS4)		0,00
Rotary switch S with 3 fan stages (FS3)		0,00
Rotary switch S with 2 fan stages (FS2)		0,00
Default labelling P colour red+blue (ltypeSC)		6,00

Accessories				AS1
Item description	Item No.	On stock	€	
Rawplugs and screws (2 pcs. each)	102209	☉	0,80	
PSU-UP24 – flush mount power supply 24 V (80..240 V ~-> 24 V =, 0,5 A)	645737	☉	42,00	
Frame for surface mounting WRF04	111584	☉	12,40	

WRF04 LCD x RR

DATA SHEETS



The surface-mounted room controller with LCD serves for individual temperature control in living, hotel and office rooms. Possible operating elements are potentiometers, rotary switches, buttons and LEDs for setpoint adjustment, fan level selection, presence detection and visual feedback. Depending on the type, continuous or 2-point valves can be controlled for heating or cooling. The connection terminal in the lower housing part allows pre-wiring.



WRF04 LCD PSD



TECHNICAL DATA

Measuring values	temperature
Output voltage	AO2V: 2x 0..10 V
Output switch contact	Relay: switch contact 24 V 3 A, floating, Triac: 24 V ~ 1 A, floating
Network technology	RS485 Modbus
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	RS485 Modbus: typ. 0,4 W (24 V =) 0,6 VA (24 V ~)
Measuring range temp.	0..+50 °C
Accuracy temperature	±0,5 K (typ. at 21 °C)
Inputs	2x entry for floating contacts
Set point (P)	potentiometer
Rotary switch (S)	for fan stage adjustment (max. 5 stages), 5-stages (auto,0,I,II,III), 2-stages (0,I), 3-stages (0,I,II), 4-stages (0,I,II,III)
Button (T)	for presence detection
LED (D)	for status feedback, green (standard)
Functions	AO2V: 2 inputs, 2 outputs 0..10 V, DO2R: 2 inputs, 2 outputs relay, DO2T: 2 inputs, 2 outputs Triac, OVR: 2 inputs, 2 outputs (1x 0..10 V, 1 relay), OVT: 2 inputs, 2 outputs (1x 0..10 V, 1 Triac)
Display	LCD 29x12 mm, monochrome, status-LED, multi-colored
Enclosure	PC, pure white
Protection	IP30 according to EN 60529
Cable entry	breaking points top/bottom, rear entry
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	-35..+70 °C, max. 85% rH non-condensing
Mounting	surface mounted on flush-mounting box (Ø=68 mm), to be mounted flat onto the surface using adhesive foil or screws, with frame for surface mounting (accessory) or directly on the wall, base part can be mounted and wired separately, DO2T, DO2R, OVR, OVT with IO extension need an additional flush-mounting box (Ø=68 mm)
Notes	for further variants see chapter room operating units, special labelling available on request, special painting available on request, for other operating elements please request

WRF04 LCD x RR



Room controller temperature – AO2V RS485 Modbus						RU2
Item description	Inputs	0..10 V	Item No.	Controller	€	
WRF04 LCD P AO2V RS485 Modbus	2	2	420020	✓	193,90	
WRF04 LCD PTD AO2V RS485 Modbus, LED green	2	2	415620	✓	201,60	
WRF04 LCD PSD AO2V RS485 Modbus, FS5, LED green	2	2	419987	✓	219,10	
WRF04 LCD PSTD AO2V RS485 Modbus, FS5, LED green	2	2	538442	✓	235,10	

Room controller temperature – IO DO2R RS485 Modbus						RU2
Item description	Inputs	0..10 V	Relay	Item No.	Controller	€
WRF04 LCD P DO2R RS485 Modbus	2	-	2	420327	✓	235,50
WRF04 LCD PTD DO2R RS485 Modbus, LED green	2	-	2	420334	✓	243,20
WRF04 LCD PSD DO2R RS485 Modbus, FS5, LED green	2	-	2	628822	✓	260,70

Room controller temperature – IO DO2T RS485 Modbus						RU2
Item description	Inputs	0..10 V	Triac	Item No.	Controller	€
WRF04 LCD P DO2T RS485 Modbus	2	-	2	420815	✓	235,50
WRF04 LCD PTD DO2T RS485 Modbus, LED green	2	-	2	628846	✓	243,20
WRF04 LCD PSD DO2T RS485 Modbus, FS5, LED green	2	-	2	628839	✓	260,70

Room controller temperature – IO OVR RS485 Modbus						RU2
Item description	Inputs	0..10 V	Relay	Item No.	Controller	€
WRF04 LCD P OVR RS485 Modbus	2	1	1	420891	✓	235,50
WRF04 LCD PTD OVR RS485 Modbus, LED green	2	1	1	420907	✓	243,20
WRF04 LCD PSD OVR RS485 Modbus, FS5, LED green	2	1	1	420914	✓	260,70

Room controller temperature – IO OVT RS485 Modbus						RU2
Item description	Inputs	0..10 V	Triac	Item No.	Controller	€
WRF04 LCD P OVT RS485 Modbus	2	1	1	420952	✓	235,50
WRF04 LCD PTD OVT RS485 Modbus, LED green	2	1	1	630122	✓	243,20
WRF04 LCD PSD OVT RS485 Modbus, FS5, LED green	2	1	1	628877	✓	260,70

Options		€
Item description		
Rotary switch S with 4 fan stages (FS4)		0,00
Rotary switch S with 3 fan stages (FS3)		0,00
Rotary switch S with 2 fan stages (FS2)		0,00
Default labelling P colour red+blue (ltypeSC)		6,00

Accessories				AS1
Item description	Item No.	On stock	€	
Rawplugs and screws (2 pcs. each)	102209	☹	0,80	
PSU-UP24 – flush mount power supply 24 V (80..240 V ~-> 24 V =, 0,5 A)	645737	☹	42,00	
Frame for surface mounting WRF04	111584	☹	12,40	

LCT

DATA SHEETS



The electronic room thermostat is designed for controlling temperature in commercial, industrial and residential buildings and also underfloor heating applications. LCD temperature display, dial set point and relay on/off output. Additional input is available for an external temperature sensor if required.

TECHNICAL DATA

Measuring values	temperature
Output switch contact	heating: 250 V ~, max. 16 A 30 V =, max. 10 A
Power supply	100..240 V ~
Power consumption	max. 0,5 W
Measuring range temp.	0..+40 °C
Accuracy temperature	±0,5 K (typ. at 21 °C)
Display	LCD for temperature and set point
Enclosure	PC, pure white
Protection	IP20 according to EN 60529
Cable entry	rear entry
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Mounting	surface mounted on flush-mounting box (Ø=68 mm)
Notes	set point adjustment for room temperature: +5..+30 °C, set point adjustment for floor temperature: +5..+40 °C

Room thermostat surface mount with display – active

RU1

Item description	Item No.	Controller	€
LCT	573382	✓	25,20

Options

Item description	€
Additional sensor NTC100k (model and price on request)	

LCA

DATA SHEETS



The flat surface mounted bimetallic room controller with night-time lowering (ECO function) is designed for heating or cooling via a 2-pipe system in residential, industrial and commercial premises. The setpoint temperature is set via the large rotary knob. Suitable for infrared heaters and other thermostat-controlled heating systems.

TECHNICAL DATA

Measuring values	temperature
Output switch contact	changeover contact, heating & cooling, max. 230 V ~ / 2 A (resistive, non-floating)
Power supply	230 V ~
Sensor	bimetallic contact
Inputs	entry for night reduction -3 K, 230 V ~
Control functions	setpoint
Functions	heating or cooling ON/OFF, night reduction
Set point range	+5..+30 °C
Enclosure	ABS, pure white brilliant
Protection	IP30 according to EN 60529
Cable entry	rear entry
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Mounting	surface mounted on flush-mounting box (Ø=68 mm)

Room controller heating/cooling surface mount – active

Item description	Item No.	Controller	RU1
LCA	660822	✓	31,50 €

LCA D

DATA SHEETS



The flat surface-mounted bimetallic room controller is designed for heating via a 2-pipe system in residential, industrial and business premises. The setpoint temperature is set via the large rotary knob. The operating mode is indicated by an LED.

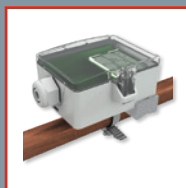
TECHNICAL DATA

Measuring values	temperature
Output switch contact	NC contact heating, max. 230 V ~ / 2 A (resistive, non-floating)
Power supply	230 V ~
Sensor	bimetallic contact
LED (D)	heating „ON“
Control functions	setpoint
Functions	heating ON/OFF
Set point range	+5..+30 °C
Enclosure	ABS, pure white brilliant
Protection	IP30 according to EN 60529
Cable entry	rear entry
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Mounting	surface mounted on flush-mounting box (Ø=68 mm)

Room thermostat heating surface mount with LED – active			RU1
Item description	Item No.	Controller	€
LCA D	660815	✓	33,50

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.

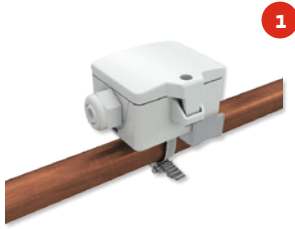


Temperature

IDEAL TEMPERATURE FOR YOUR APPLICATION

Our sensors are available in various designs and with numerous temperature sensor options, active outputs and BUS systems. Special manufacturing processes guarantee reliable operation even in demanding applications.





VFG54+

Contact temperature sensor, available with RS485-Modbus interfaces



AF25

Cable/Contact temperature sensor, various cable lengths are available



TF25

Cable temperature sensor, available with LON interface



» BENEFITS

- » Temperature sensors for various applications and harsh environments
- » Numerous passive temperature sensors, active outputs and BUS systems are available
- » High protection against external factors due to special high-end manufacturing processes

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» BENEFITS

- » Temperature sensors for various applications and harsh environments
- » Numerous passive temperature sensors, active outputs and BUS systems are available
- » High protection against external factors due to special high-end manufacturing processes

<p style="text-align: right;">1</p>  <p style="text-align: center;">AGS55+</p> <p>Outdoor/industrial temperature sensor, available with LON or Modbus interfaces as well as LCD</p>	<p style="text-align: right;">2</p>  <p style="text-align: center;">AKF10+</p> <p>Duct-/ immersion temperature sensor, available with LON or Modbus interfaces as well as LCD</p>	<p style="text-align: right;">3</p>  <p style="text-align: center;">RPF40</p> <p>Room pendulum temperature sensor, various cable lengths are available</p>
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IDEAL TEMPERATURE FOR YOUR APPLICATION

Our sensors are available in various designs and with numerous temperature sensor options, active outputs and BUS systems. Special manufacturing processes guarantee reliable operation even in demanding applications.

WRF04 passive

DATA SHEETS



Surface mounted room sensor for temperature measuring. For set point and fan stage adjustment, manual override for room and office applications please refer to 'Room Operating Units'.



WRF04



WRF04
custom paint alusilver



stainless steel enclosure

TECHNICAL DATA

Measuring values	temperature
Output passive	PT100 PT100 1/3 DIN PT1000 PT1000 1/3 DIN Ni1000 Ni1000TK5000, NTC10k NTC 10k Precon NTC20k NTC1,8k, LM235Z DS18B20 1-wire
Measuring range temp.	-35..+70 °C
Accuracy temperature	depending on used sensor
Sensor	2-wire (standard), 3-wire or 4-wire
Enclosure	PC, pure white
Protection	IP30 according to EN 60529
Cable entry	breaking points top/bottom, rear entry
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	-35..+70 °C, max. 85% rH non-condensing
Mounting	surface mounted on flush-mounting box (Ø=68 mm), to be mounted flat onto the surface using adhesive foil or screws, with frame for surface mounting (accessory) or directly on the wall, base part can be mounted and wired separately
Notes	special painting available on request, other temperature sensors on request, multi-conductor connection on request, enclosure stainless steel available (see options)

WRF04 passive

Item description: product | sensor

Room sensor temperature – passive				TP3
Item description	Item No.	On stock	€	
WRF04 without sensor	212892		12,70	
WRF04 PT100	193221	⊕	19,70	
WRF04 PT100 1/3 DIN	197731		23,40	
WRF04 PT1000	191623	⊕	21,90	
WRF04 PT1000 1/3 DIN	207980		24,90	
WRF04 Ni1000	191616	⊕	21,60	
WRF04 Ni1000TK5000	193214	⊕	25,10	
WRF04 NTC10k	207584	⊕	18,40	
WRF04 NTC10k Precon	197618		18,40	
WRF04 NTC20k	193177	⊕	18,40	
WRF04 NTC1,8k	236775	⊕	18,40	
WRF04 LM235Z	193191	⊕	20,20	
WRF04 DS18B20 1-wire	349901		19,70	

Options		€
Item description		
3-wire connection (3-wire)		1,90
4-wire connection (4-wire)		3,70
Stainless steel enclosure		92,80
Add to price of NTC10k for sensor NTC5k NTC10k Carel		0,00
Add to price of PT100 for sensor FeT		19,30

Order example for different items:

WRF04 | FeT | 3-wire | stainless steel enclosure
WRF04 = product

FeT = sensor

3-wire = number of wires

Accessories				AS1
Item description	Item No.	On stock	€	
Rawlplugs and screws (2 pcs. each)	102209	⊕	0,80	
PSU-UP24 – flush mount power supply 24 V (80..240 V ~-> 24 V =, 0,5 A)	645737	⊕	42,00	
Frame for surface mounting WRF04	111584	⊕	12,40	
Ball stroke protection BS150, transparent (for series WRF04)	647007	⊕	22,70	

WRF04 active

DATA SHEETS



Surface mounted room sensor for temperature measuring. For set point and fan stage adjustment, manual override for room and office applications please refer to 'Room Operating Units'.



WRF04



WRF04 LCD

TECHNICAL DATA

Measuring values	temperature
Output voltage	TRV: 1x 0..10 V, min. load 5 k Ω
Output ampere	TRA: 1x 4..20 mA, max. load 700 Ω
Power supply	15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$) SELV, TRA: 15..24 V = ($\pm 10\%$) SELV
Power consumption	typ. 0,6 W (24 V =) 1,0 VA (24 V ~)
Measuring range temp.	-50..+50 °C 0..+50 °C -15..+35 °C, adjustable at the transducer, default setting: 0..+50 °C
Accuracy temperature	$\pm 1\%$ of measuring range (typ. at 21 °C)
Display	LCD 29x12 mm, monochrome (optional)
Enclosure	PC, pure white
Protection	IP30 according to EN 60529
Cable entry	breaking points top/bottom, rear entry
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	-35..+70 °C, max. 85% rH non-condensing
Mounting	surface mounted on flush-mounting box ($\varnothing=68$ mm), to be mounted flat onto the surface using adhesive foil or screws, with frame for surface mounting (accessory) or directly on the wall, base part can be mounted and wired separately
Notes	special painting available on request, enclosure stainless steel available (see options)

WRF04 active

Item description: product | TRV/TRA MultiRange

Room sensor temperature – active 0..10 V						TP2
Item description	Inputs	0..10 V	4..20 mA	Item No.	On stock	€
WRF04 TRV MultiRange	-	1	-	479202	⊕	64,60
WRF04 LCD TRV MultiRange	-	1	-	593878		101,90

Room sensor temperature – active 4..20 mA						TP2
Item description	Inputs	0..10 V	4..20 mA	Item No.	On stock	€
WRF04 TRA MultiRange	-	-	1	479196	⊕	64,60

Options	
Item description	€
Stainless steel enclosure	92,80

Accessories			AS1
Item description	Item No.	On stock	€
Rawplugs and screws (2 pcs. each)	102209	⊕	0,80
PSU-UP24 – flush mount power supply 24 V (80..240 V ~-> 24 V =, 0,5 A)	645737	⊕	42,00
Frame for surface mounting WRF04	111584	⊕	12,40
Ball stroke protection BS150, transparent (for series WRF04)	647007	⊕	22,70

WRF04 BUS

DATA SHEETS



Surface mounted room sensor for temperature measuring. For set point and fan stage adjustment, manual override for room and office applications please refer to 'Room Operating Units'.



WRF04



WRF04 LCD



TECHNICAL DATA	
Measuring values	temperature
Network technology	BACnet MS/TP, KNX (TP), LON FT (free topology), RS485 Modbus
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV, KNX: supply via BUS
Power consumption	max. 0,6 W (24 V =) 1,2 VA (24 V ~), LON: typ. 0,5 W (24 V =) 1,7 VA (24 V ~), LCD LON: typ. 0,85 W (24 V =) 2,0 VA (24 V ~)
Measuring range temp.	BUS: 0..+50 °C
Accuracy temperature	±1% of measuring range (typ. at 21 °C)
Display	LCD 29x12 mm, monochrome, (optional for LON / RS485 Modbus)
Enclosure	PC, pure white
Protection	IP30 according to EN 60529
Cable entry	breaking points top/bottom, rear entry
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	-35..+70 °C, max. 85% rH non-condensing
Mounting	surface mounted on flush-mounting box (Ø=68 mm), to be mounted flat onto the surface using adhesive foil or screws, with frame for surface mounting (accessory) or directly on the wall, base part can be mounted and wired separately
Notes	special painting available on request, enclosure stainless steel available (see options)

WRF04 BUS

Item description: product | AO2V | BUS



Room sensor temperature – active RS485 Modbus					TP2
Item description	Inputs	0..10 V	4..20 mA	Item No.	€
WRF04 AO2V RS485 Modbus	2	2	-	419970	149,90
WRF04 LCD AO2V RS485 Modbus	2	2	-	420044	189,50



Room sensor temperature – active RS485 BACnet					TP2
Item description	Inputs	0..10 V	4..20 mA	Item No.	€
WRF04 AO2V RS485 BACnet	2	2	-	546065	149,90



Room sensor temperature – active KNX			TP2
Item description	Item No.	€	
WRF04 KNX	585989	185,00	



Room sensor temperature – active LON			TP2
Item description	Item No.	€	
WRF04 LON	193689	173,80	
WRF04 LCD LON	398084	213,40	

Options

Item description	€
Stainless steel enclosure	92,80

Accessories

Item description	Item No.	On stock	€
Rawplugs and screws (2 pcs. each)	102209	☺	0,80
PSU-UP24 – flush mount power supply 24 V (80..240 V ~-> 24 V =, 0,5 A)	645737	☺	42,00
Frame for surface mounting WRF04	111584	☺	12,40
Ball stroke protection BS150, transparent (for series WRF04)	647007	☺	22,70

WRF04 IR

DATA SHEETS



Surface mounted room sensor for measuring of radiation temperature in room and office applications. Designed for control and monitoring systems.

TECHNICAL DATA	
Measuring values	radiation temperature
Output passive	depending on used sensor
Measuring range temp.	passive: -35..+70 °C
Accuracy temperature	passive: depending on used sensor
Sensor	2-wire (standard)
Enclosure	PC, pure white
Protection	IP30 according to EN 60529
Cable entry	breaking points top/bottom, rear entry
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	-35..+70 °C, max. 85% rH non-condensing
Mounting	surface mounted on flush-mounting box (Ø=68 mm), to be mounted flat onto the surface using adhesive foil or screws, with frame for surface mounting (accessory) or directly on the wall, base part can be mounted and wired separately
Notes	special painting available on request, other temperature sensors on request

Room sensor radiation temperature – passive			TP2
Item description	Item No.		€
WRF04 IR PT1000	652094		75,00
WRF04 IR Ni1000	652063		75,00
WRF04 IR NTC10k	652100		75,00

Accessories				AS1
Item description	Item No.	On stock		€
Rawplugs and screws (2 pcs. each)	102209	☹		0,80
Frame for surface mounting WRF04	111584	☹		12,40

WRF06 passive

DATA SHEETS



Flush mounted sensor for measuring temperature in room and office applications. Designed for control and monitoring systems.



WRF06 Busch-Jaeger future® linear



WRF06 Gira E2 pure white matt

TECHNICAL DATA

Measuring values	temperature
Output passive	PT100 PT100 1/3 DIN PT1000 PT1000 1/3 DIN Ni1000 Ni1000TK5000, NTC10k NTC 10k Precon NTC20k NTC1,8k, LM235Z
Measuring range temp.	-35..+70 °C
Accuracy temperature	depending on used sensor
Switch range Berker	S.1, B.3 aluminum, B.7 glass, Q.1, Q.3, K.1, K.5 aluminum stainless steel
Switch range Busch-Jaeger	Busch-balance® SI, Busch-Duro 2000® SI, Reflex SI, solo® *, future® linear *, impuls, Busch-axcent® *, alpha nea®
Switch range Feller	EDIZIOdue
Switch range Gira	E2, E3, Standard 55, Esprit, Event, Flächenschalter *
Switch range Jung	LS 990 *, A 500, AS 500, A plus, A creation, CD 500 *
Switch range Merten	M-Smart, M-Plan, 1-M, Atelier-M, M-Pure, Artec *, Artec stainless steel *, Antik *
Switch range Peha	AURA, AURA glass
Protection	IP20 according to EN 60529
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm)
Notes	* in switch program with intermediate frame, for other frame designs please request

WRF06 passive

Item description: product | sensor | switch range | colour

Room sensor temperature – passive			TP1
Item description	Item No.	€	
WRF06 without sensor Gira E2 pure white matt	626194	36,20	
WRF06 PT100 Gira E2 pure white matt	128933	43,20	
WRF06 PT100 1/3 DIN Gira E2 pure white matt	137768	46,90	
WRF06 PT1000 Gira E2 pure white matt	158299	45,40	
WRF06 PT1000 1/3 DIN Gira E2 pure white matt	160773	48,40	
WRF06 Ni1000 Gira E2 pure white matt	138314	45,10	
WRF06 Ni1000TK5000 Gira E2 pure white matt	121866	48,60	
WRF06 NTC10k Gira E2 pure white matt	191050	41,90	
WRF06 NTC10k Precon Gira E2 pure white matt	265136	41,90	
WRF06 NTC20k Gira E2 pure white matt	199797	41,90	
WRF06 NTC1,8k Gira E2 pure white matt	257794	41,90	
WRF06 LM235Z Gira E2 pure white matt	121798	44,50	

Options	
Item description	€
Switch ranges Busch-Jaeger Busch-balance® SI Reflex SI	0,00
Switch ranges Berker S.1 Jung A 500 Merten M-Smart Gira E3	0,00
Switch range Gira Esprit	22,30
Switch ranges stainless steel glass aluminium (different manufacturers)	35,10
Other switch ranges	12,50
Add to price of NTC10k for sensor NTC5k NTC10k Carel	0,00
Add to price of PT100 for sensor FeT	19,30

WRF06 active

DATA SHEETS



TECHNICAL DATA

Measuring values	temperature
Output voltage	TRV: 1x 0..10 V
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	typ. 0,3 W (24 V =) 0,9 VA (24 V ~)
Measuring range temp.	0..+50 °C
Accuracy temperature	±1% of measuring range (typ. at 21 °C)
Switch range Berker	S.1, B.3 aluminum, B.7 glass, Q.1, Q.3, K.1, K.5 aluminum stainless steel
Switch range Busch-Jaeger	Busch-balance® SI, Busch-Duro 2000® SI, Reflex SI, solo® *, future® linear *, impuls, Busch-axcent® *, alpha nea®
Switch range Feller	EDIZIOdue
Switch range Gira	E2, E3, Standard 55, Esprit, Event, Flächenschalter *
Switch range Jung	LS 990 *, A 500, AS 500, A plus, A creation, CD 500 *
Switch range Merten	M-Smart, M-Plan, 1-M, Atelier-M, M-Pure, Artec *, Artec stainless steel *, Antik *
Switch range Peha	AURA, AURA glass
Protection	IP20 according to EN 60529
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm)
Notes	* in switch program with intermediate frame, for other frame designs please request

Item description: product | TRV3 | switch range | colour

Room sensor temperature – active 0..10 V		TP1
Item description	Item No.	€
WRF06 TRV3 Gira E2 pure white matt	627160	107,20
WRF06 TRV3 Berker S.1 polar white brilliant	582865	107,20
WRF06 TRV3 Busch-Jaeger Busch-balance® SI alpine white	703925	107,20
WRF06 TRV3 Busch-Jaeger Reflex SI alpine white	703932	107,20
WRF06 TRV3 Jung A 500 alpine white	703949	107,20
WRF06 TRV3 Merten M-Smart polar white brilliant	703956	107,20
WRF06 TRV3 Gira E3 pure white matt	703963	107,20

Options

Item description	€
Switch range Gira Esprit	22,30
Switch ranges stainless steel glass aluminium (different manufacturers)	35,10
Other switch ranges	12,50

Accessories

Accessories		AS1
Item description	Item No.	On stock €
PSU-UP24 – flush mount power supply 24 V (80..240 V ~ ~> 24 V =, 0,5 A)	645737	⊕ 42,00

WRF06 BUS



DATA SHEETS



TECHNICAL DATA	
Measuring values	temperature
Output voltage	A02V: 2x 0..10 V
Network technology	BACnet MS/TP, LON FT (free topology), RS485 Modbus
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	typ. 0,9 W (24 V =) 1 VA (24 V ~), LON: typ. 0,7 W (24 V =) 2,5 VA (24 V ~),
Measuring range temp.	0..+50 °C
Accuracy temperature	±1% of measuring range (typ. at 21 °C)
Inputs	DI4: 4x input digital for floating switch contact
Switch range Berker	S.1, B.3 aluminium, B.7 glass, Q.1, Q.3, K.1, K.5 aluminium stainless steel
Switch range Busch-Jaeger	Busch-balance® SI, Busch-Duro 2000® SI, Reflex SI, solo® *, future® linear *, impuls, Busch-axcent® *, alpha nea®
Switch range Feller	EDIZIOdue
Switch range Gira	E2, E3, Standard 55, Esprit, Event, Flächenschalter *
Switch range Jung	LS 990 *, A 500, AS 500, A plus, A creation, CD 500 *
Switch range Merten	M-Smart, M-Plan, 1-M, Atelier-M, M-Pure, Artec *, Artec stainless steel *, Antik *
Switch range Peha	AURA, AURA glass
Protection	IP20 according to EN 60529
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm)
Delivery contents	software for configuration (freeware via download)
Notes	* in switch program with intermediate frame, for other frame designs please request

Item description: product | BUS | switch range | colour

Room sensor temperature – active BUS				TP1
Item description	Inputs	0..10 V	Item No.	€
WRF06 DI4 RS485 Modbus Gira E2 pure white matt	4	-	644402	164,50
WRF06 A02V RS485 Modbus Gira E2 pure white matt	2	2	624190	164,50
WRF06 A02V RS485 BACnet Gira E2 pure white matt	2	2	624206	169,00
WRF06 DI4 LON Gira E2 pure white matt	4	-	644389	188,10
WRF06 A02V LON Gira E2 pure white matt	2	2	627177	188,10

Options	
Item description	€
Switch ranges Busch-Jaeger Busch-balance® SI Reflex SI	0,00
Switch ranges Berker S.1 Jung A 500 Merten M-Smart Gira E3	0,00
Switch range Gira Esprit	22,30
Switch ranges stainless steel glass aluminium (different manufacturers)	35,10
Other switch ranges	12,50

Accessories				AS1
Item description	Item No.	On stock	€	
PSU-UP24 – flush mount power supply 24 V (80..240 V ~ -> 24 V =, 0,5 A)	645737	🌐	42,00	

RDF18

DATA SHEETS



Ceiling flush mounted sensor for temperature measurement in interior spaces to be mounted inconspicuously into ceiling panels thus providing an overall architectural picture.

TECHNICAL DATA

Measuring values	temperature
Output passive	passive temperature sensor
Measuring range temp.	-35..+70 °C
Accuracy temperature	depending on used sensor
Sensor	2-wire (standard)
Protection	IP30 according to EN 60529
Connection electrical	connection wire PVC, 2x Ø=0,25 mm ² , grey, 1 m (default), 2 m, 4 m, 6 m, for other lengths please request
Sensor head	ABS, white, Ø=30 mm
Ambient condition	-35..+70 °C, max. 85% rH non-condensing
Mounting	facet mounting
Notes	active types for temperature and humidity available (see humidity – FT-RDF18+)

Item description: product | sensor | cable length (L)

Ceiling flush mount sensor temperature – passive

Item description	Item No.	TP2 €
RDF18 PT100 L1000	471237	34,60
RDF18 PT100 1/3 DIN L1000	471244	38,30
RDF18 PT1000 L1000	459235	36,80
RDF18 PT1000 1/3 DIN L1000	458276	39,80
RDF18 Ni1000 L1000	463669	36,80
RDF18 Ni1000TK5000 L1000	471251	36,50
RDF18 NTC10k L1000	457828	33,20
RDF18 NTC10k Precon L1000	471282	33,20
RDF18 NTC20k L1000	459143	33,20
RDF18 NTC1,8k L1000	471275	33,20
RDF18 LM235Z L1000	456296	35,00

Options

Item description	€
Add per meter of connection cable	0,70
Add to price of NTC10k for sensor NTC5k NTC10k Carel	0,00
Add to price of PT100 for sensor FeT	19,30

RDF-IR

DATA SHEETS



Ceiling flush-mounted sensor for surface temperature measurement in room, office spaces and other workplaces. Using the infrared measuring principle, an averaged temperature over the circular detection range (optical detection range $80 \pm 5^\circ$) is performed. If two IR sensors are used, the mean, minimum or maximum value of both temperature signals can be provided in addition to the individual temperatures of each sensor (configurable via Thermokon USEapp).



TECHNICAL DATA

Measuring values	radiation temperature
Output voltage	0..10 V or 0.5 V (adjustable via jumper; live-zero configuration via Thermokon USEapp)
Power supply	15..35 V = or 19..29 V ~ SELV
Power consumption	typ. 0,6 W (24 V =) 1,5 VA (24 V ~)
Measuring range temp.	-40..+60 °C 0..+50 °C -20..+80 °C -15..+35 °C, adjustable at the transducer, default setting: 0..+50 °C
Sensor	PIR (passive infrared), optical aperture angle (50% sensitivity): $80 \pm 5^\circ$
Enclosure	enclosure USE-M, PC, pure white
Protection	IP30 according to EN 60529
Cable entry	Flextherm M16 for wire $\varnothing=3.7$ mm, removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ² , sensor wire (patch cable) length=1 m (default), max. 10 m, plug RJ45
Ambient condition	-20..+70 °C, max. 85% rH non-condensing
Delivery contents	incl. mounting base enclosure USE-M pure white

Ceiling flush mount sensor temperature – active 0..10 V

TP1

Item description	USEapp	Item No.	€
RDF-IR V L1000	✓	699150	145,00
RDF-IR VV L1000	✓	699167	190,00

Accessories

AS1

Item description	Item No.	On stock	€
Mounting base enclosure USE-M pure white	668354	☹	7,85
Sensor wire 1,5 m with RJ45 connector	628785	☹	5,60
Sensor wire 3 m with RJ45 connector	708852	☹	7,20
Sensor wire 7,5 m with RJ45 connector	708869	☹	13,40

For cable entries and sealing inserts please refer to chapter "Accessories"

RPF40 passive

DATA SHEETS



Pendulum sensor for temperature measurement for large rooms and spaces like open-plan offices, galleries and production plants. Available with black bulb for radiator or similar applications. Designed for control and monitoring applications.



RPF40 passive



RPF40 radiation sensor

TECHNICAL DATA

Measuring values	temperature
Output passive	PT100 PT100 1/3 DIN PT1000 PT1000 1/3 DIN Ni1000 Ni1000TK5000, NTC10k NTC 10k Precon NTC20k NTC1,8k, LM235Z
Measuring range temp.	-35..+70 °C
Accuracy temperature	depending on used sensor
Sensor	2-wire (standard)
Protection	IP30 according to EN 60529
Sensor head	PVC, white, black (only radiation sensor), Ø=40 mm
Notes	other sensors and cable lengths on request, multi-conductor connection on request

RPF40 passive

Item description: product | sensor | colour (sensor head) | cable length(L)

Room pendulum sensor temperature – passive			TP2
Item description	Item No.	€	
RPF40 PT100 white L1000	350006	51,00	
RPF40 PT100 1/3 DIN white L1000	265621	54,10	
RPF40 PT1000 white L1000	321068	52,80	
RPF40 PT1000 1/3 DIN white L1000	329569	55,30	
RPF40 Ni1000 white L1000	329279	52,60	
RPF40 Ni1000TK5000 white L1000	144193	55,60	
RPF40 NTC10k white L1000	351980	49,80	
RPF40 NTC10k Precon white L1000	164573	49,80	
RPF40 NTC20k white L1000	334792	49,80	
RPF40 NTC1,8k white L1000	334549	49,80	
RPF40 LM235Z white L1000	339476	50,50	

Options	
Item description	€
Add per meter of connection cable	0,70
Sensor head black (radiation sensor)	0,00
Connection box USE-S	13,80
Add to price of NTC10k for sensor NTC5k NTC10k Carel	0,00
Add to price of PT100 for sensor FeT	19,30

Order example for different items:

RPF40 | FeT | black | L2000 | USE-S

RPF40 = product

FeT = sensor

black = colour (radiation sensor)

L2000 = cable length (mm)

USE-S = connection box USE-S

Accessories				AS1
Item description	Item No.	On stock	€	
Mounting base enclosure USE-S pure white	667722	⊖	5,50	
For cable entries and sealing inserts please refer to chapter "Accessories"				

RPF40+ active

DATA SHEETS



Pendulum sensor for temperature measurement for large rooms and spaces like open-plan offices, galleries and production plants. Available with black bulb for radiator or similar applications. Designed for control and monitoring applications.



TECHNICAL DATA

Measuring values	temperature
Output voltage	TRV: 1x 0..10 V or 0..5 V, min. load 5 k Ω
Output ampere	TRA: 1x 4..20 mA, max. load 500 Ω
Power supply	TRV: 15..24 V = (\pm 10%) or 24 V ~ (\pm 10%) SELV, TRA: 15..24 V = (\pm 10%) SELV
Power consumption	TRV: typ. 0,4 W (24 V =) 0,8 VA (24 V ~), TRA: typ. 0,5 W (24 V =)
Measuring range temp.	-50..+50 -20..+80 -15..+35 -10..+120 0..+50 0..+100 0..+160 0..+250 °C, adjustable at the transducer
Accuracy temperature	\pm 0,5 K (typ. at 21 °C within default measuring range)
Enclosure	enclosure USE-S, PC, pure white, with removable cable entry
Protection	IP30 according to EN 60529, enclosure: IP65 according to EN 60529
Cable entry	Flextherm M16 for wire \varnothing =3..7 mm, removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ² , sensor wire PVC soft, \varnothing =0,25 mm ² , white, 1 m (default), 2 m, 4 m, 6 m, for other lengths please request
Sensor head	PVC, white, black (only radiation sensor), \varnothing =40 mm
Delivery contents	incl. mounting base enclosure USE-S pure white
Notes	other cable lengths on request

Item description: product | TRV/TRA MultiRange | colour (sensor head) | cable length(L)

RPF40+ active

Room pendulum sensor temperature – active 0..10 V			TP2
Item description	Item No.	€	
RPF40+ TRV MultiRange white L1000	658409	113,40	

Room pendulum sensor temperature – active 4..20 mA			TP2
Item description	Item No.	€	
RPF40+ TRA MultiRange white L1000	658416	113,40	

Options		
Item description		€
Add per meter of connection cable		0,70
Sensor head black (radiation sensor)		0,00

Accessories			AS1
Item description	Item No.	On stock	€
Mounting base enclosure USE-S pure white	667722	⊖	5,50
For cable entries and sealing inserts please refer to chapter "Accessories"			

RPF100 passive

[DATA SHEETS](#)


Pendulum sensor for temperature measurement in large, high rooms and spaces like open space offices, galleries, production plants and similar for control and monitoring applications.

TECHNICAL DATA

Measuring values	temperature
Output passive	PT100 PT100 1/3 DIN PT1000 PT1000 1/3 DIN Ni1000 Ni1000TK5000, NTC10k NTC 10k Precon NTC20k NTC1,8k LM235Z
Measuring range temp.	-35..+70 °C
Accuracy temperature	depending on used sensor
Sensor	2-wire (standard)
Protection	IP30 according to EN 60529
Pocket	stainless steel V2A, Ø=15 mm, mounting length 100 mm, hex pressed
Ambient condition	-35..+70 °C, max. 85% rH short term condensation
Notes	other sensors and cable lengths on request, multi-conductor connection on request

Room pendulum sensor temperature – passive		TP2
Item description	Item No.	€
RPF100 PT100 L1000	81566	66,30
RPF100 PT100 1/3 DIN L1000	90780	69,50
RPF100 PT1000 L1000	90827	68,20
RPF100 PT1000 1/3 DIN L1000	90865	70,70
RPF100 Ni1000 L1000	90902	67,90
RPF100 Ni1000TK5000 L1000	160612	70,90
RPF100 NTC10k L1000	91060	65,20
RPF100 NTC10k Precon L1000	91107	65,20
RPF100 NTC20k L1000	219952	65,20
RPF100 NTC1,8k L1000	278331	65,20
RPF100 LM235Z L1000	91145	65,90

Options

Item description	€
Connection box USE-S 63x51x40 mm	13,80
Add per meter of sensor wire	0,70
Add to price of NTC10k for sensor NTC5k NTC10k Carel	0,00
Add to price of PT100 for sensor FeT	19,30

Accessories

Accessories			AS1
Item description	Item No.	On stock	€
Mounting base enclosure USE-S pure white	667722	⊕	5,50

For cable entries and sealing inserts please refer to chapter "Accessories"

RPF100+ active

DATA SHEETS



Pendulum sensor for temperature measurement in large, high rooms and spaces like open space offices, galleries, production plants and similar for control and monitoring applications.

TECHNICAL DATA	
Measuring values	temperature
Output voltage	TRV: 1x 0..10 V or 0..5 V, min. load 5 kΩ
Output ampere	TRA: 1x 4..20 mA, max. load 500 Ω
Power supply	TRV: 15..24 V = (±10%) or 24 V ~ (±10%) SELV, TRA: 15..24 V = (±10%) SELV
Power consumption	TRV: typ. 0,4 W (24 V =) 0,8 VA (24 V ~), TRA: max. 0,5 W (24 V =)
Measuring range temp.	TRV TRA: adjustable at the transducer
Accuracy temperature	±0,5 K (typ. at 21 °C within default measuring range)
Enclosure	enclosure USE-S, PC, pure white, with removable cable entry
Protection	IP65 according to EN 60529
Cable entry	Flextherm M16 for wire Ø=3..7 mm, removable
Connection electrical	plug-in terminal, max. 2,5 mm ² , sensor wire white 1 m (default), 2 m, 4 m, 6 m, for other lengths please request
Pocket	stainless steel V2A, Ø=15 mm, mounting length 100 mm, hex pressed
Ambient condition	-35..+70 °C, max. 85% rH short term condensation
Delivery contents	incl. mounting base enclosure USE-S pure white

Room pendulum sensor temperature – active 0..10 V 4..20 mA			TP2
Item description	Item No.	€	
RPF100+ TRV MultiRange L1000	658423	128,70	
RPF100+ TRA MultiRange L1000	658430	128,70	

Options	
Item description	€
Add per meter of sensor wire	0,70

Accessories				AS1
Item description	Item No.	On stock	€	
Mounting base enclosure USE-S pure white	667722	☺	5,50	
For cable entries and sealing inserts please refer to chapter "Accessories"				

RPF100 LON

DATA SHEETS



Pendulum sensor for temperature measurement in large, high rooms and spaces like open space offices, galleries, production plants and similar for control and monitoring applications.

LON

LOCAL OPERATING NETWORK

TECHNICAL DATA	
Measuring values	temperature
Network technology	LON FT (free topology)
Power supply	15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$) SELV
Power consumption	typ. 0,5 W (24 V =) 1,7 VA (24 V ~)
Measuring range temp.	-35..+70 °C
Accuracy temperature	$\pm 0,5$ K (typ. at 21 °C within default measuring range)
Enclosure	PA6, pure white, with quick lock screws
Protection	IP65 according to EN 60529
Cable entry	M20 for wire max. $\varnothing=8$ mm, seal insert for double cable entry for wire max $\varnothing=6$ mm
Connection electrical	terminal block, max. 1,5 mm ² , sensor wire white 1 m (default), 2 m, 4 m, 6 m, for other lengths please request
Pocket	stainless steel V2A, $\varnothing=15$ mm, mounting length 100 mm, hex pressed
Ambient condition	-35..+70 °C, max. 85% rH short term condensation

LON

LOCAL OPERATING NETWORK

Room pendulum sensor temperature – active BUS			TP2
Item description	Item No.	€	
RPF100 LON L1000	96720	200,30	

Options	
Item description	€
Add per meter of sensor wire	0,70

AKF10+

DATA SHEETS 

Duct/Immersion sensor for measuring air temperature and other gaseous media (e.g. in ventilation and air conditioning systems). Combined with a thermowell pocket it can be used as an immersion temperature sensor. Tool-free opening, closing and wiring as well as removable cable entries ensure quick and easy installation.



TECHNICAL DATA	
Measuring values	temperature
Output voltage	TRV: 1x 0..10 V or 0..5 V, min. load 5 kΩ
Output ampere	TRA: 1x 4..20 mA, max. load 500 Ω
Output passive	PT100 PT100 1/3 DIN PT1000 PT1000 1/3 DIN Ni1000 Ni1000TK5000, NTC10k NTC 10k Precon NTC20k NTC1,8k, LM235Z DS18B20 1-wire
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV, TRA: 15..24 V = (±10%) SELV
Power consumption	TRV: typ. 0,35 W (24 V =) 0,82 VA (24 V ~), TRA: typ. 0,5 W (24 V =)
Measuring range temp.	-50..+50 -20..+80 -15..+35 -10..+120 0..+50 0..+100 0..+160 0..+250 °C, adjustable at the transducer, default setting: 0..+160 °C, passive: PT / Ni: -50..+160 °C (T160), optional -80..+260 °C (T260), NTC / KTY: -50..+150 °C (T150), LM235Z / DS18B20: -50..+120 °C (T120)
Accuracy temperature	±0,5 K (typ. at 21 °C within default measuring range), passive: depending on used sensor
Sensor	passive: 2-wire (standard), 3-wire or 4-wire
Enclosure	enclosure USE-S, PC, pure white
Protection	IP65 according to EN 60529, SI-Protection (not possible for electronic Sensors)
Cable entry	Flextherm M16 for wire Ø=3..7 mm, removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ²
Pocket	stainless steel V4A, Ø=6 mm, mounting length: 50 100 150 200 250 300 450 mm
Ambient condition	enclosure: -35..+70 °C, enclosure passive: -35..+90 °C, max. 85% rH short term condensation, mounting clip: -35..+90 °C, Sensor tip: depending on measuring element
Mounting	for duct sensors please use mounting clip, mounting flange MF6DS flexible or MF6 (brass), for immersion sensors please use immersion pocket THVADS / THMSDS
Delivery contents	incl. mounting clip enclosure USE-S pure white

AKF10+ passive

Item description: product | sensor | pocket (length.Ø)

Duct/Immersion sensor -50...+160 °C – passive PT100 TP3		
Item description	Item No.	€
AKF10+ PT100 050.06	621175	31,90
AKF10+ PT100 100.06	621182	33,20
AKF10+ PT100 150.06	621199	34,50
AKF10+ PT100 200.06	621205	35,00
AKF10+ PT100 250.06	621212	36,60
AKF10+ PT100 300.06	621229	37,80
AKF10+ PT100 450.06	621236	39,40

Duct/Immersion sensor -50...+160 °C – passive PT100 1/3 DIN TP3		
Item description	Item No.	€
AKF10+ PT100 1/3 DIN 050.06	621243	35,70
AKF10+ PT100 1/3 DIN 100.06	621250	36,90
AKF10+ PT100 1/3 DIN 150.06	621267	38,20
AKF10+ PT100 1/3 DIN 200.06	621274	38,70
AKF10+ PT100 1/3 DIN 250.06	621281	40,30
AKF10+ PT100 1/3 DIN 300.06	621298	41,60
AKF10+ PT100 1/3 DIN 450.06	621304	43,10

Duct/Immersion sensor -50...+160 °C – passive PT1000 TP3		
Item description	Item No.	€
AKF10+ PT1000 050.06	621311	34,10
AKF10+ PT1000 100.06	621328	35,40
AKF10+ PT1000 150.06	621335	36,70
AKF10+ PT1000 200.06	621342	37,20
AKF10+ PT1000 250.06	621359	38,80
AKF10+ PT1000 300.06	621366	40,00
AKF10+ PT1000 450.06	621373	41,60

Duct/Immersion sensor -50...+160 °C – passive PT1000 1/3 DIN TP3		
Item description	Item No.	€
AKF10+ PT1000 1/3 DIN 050.06	620796	37,10
AKF10+ PT1000 1/3 DIN 100.06	620802	38,40
AKF10+ PT1000 1/3 DIN 150.06	620819	39,60
AKF10+ PT1000 1/3 DIN 200.06	620826	40,10
AKF10+ PT1000 1/3 DIN 250.06	620833	41,80
AKF10+ PT1000 1/3 DIN 300.06	620840	43,00
AKF10+ PT1000 1/3 DIN 450.06	620857	44,60

Duct/Immersion sensor -50...+160 °C – passive Ni1000 TP3		
Item description	Item No.	€
AKF10+ Ni1000 050.06	620932	33,80
AKF10+ Ni1000 100.06	620949	35,10
AKF10+ Ni1000 150.06	620956	36,40
AKF10+ Ni1000 200.06	620963	36,90
AKF10+ Ni1000 250.06	620970	38,50
AKF10+ Ni1000 300.06	620987	39,70
AKF10+ Ni1000 450.06	620994	41,30

Duct/Immersion sensor -50...+160 °C – passive Ni1000TK5000 TP3		
Item description	Item No.	€
AKF10+ Ni1000TK5000 050.06	621007	37,30
AKF10+ Ni1000TK5000 100.06	621014	38,60
AKF10+ Ni1000TK5000 150.06	621021	39,90
AKF10+ Ni1000TK5000 200.06	621038	40,40
AKF10+ Ni1000TK5000 250.06	621045	42,00
AKF10+ Ni1000TK5000 300.06	621052	43,20
AKF10+ Ni1000TK5000 450.06	621069	44,80

Duct/Immersion sensor -50...+150 °C – passive NTC10k TP3		
Item description	Item No.	€
AKF10+ NTC10k 050.06	620864	30,60
AKF10+ NTC10k 100.06	620871	31,90
AKF10+ NTC10k 150.06	620888	33,20
AKF10+ NTC10k 200.06	620895	33,60
AKF10+ NTC10k 250.06	620901	35,30
AKF10+ NTC10k 300.06	620918	36,50
AKF10+ NTC10k 450.06	620925	38,10

Duct/Immersion sensor -50...+150 °C – passive NTC10k Precon TP3		
Item description	Item No.	€
AKF10+ NTC10k Precon 050.06	621380	30,60
AKF10+ NTC10k Precon 100.06	621397	31,90
AKF10+ NTC10k Precon 150.06	621403	33,20
AKF10+ NTC10k Precon 200.06	621410	33,60
AKF10+ NTC10k Precon 250.06	621427	35,30
AKF10+ NTC10k Precon 300.06	621434	36,50
AKF10+ NTC10k Precon 450.06	621441	38,10

AKF10+ passive

Item description: product | sensor | pocket (length.Ø)

Duct/Immersion sensor -50..+150 °C – passive NTC20k TP3		
Item description	Item No.	€
AKF10+ NTC20k 050.06	621458	30,60
AKF10+ NTC20k 100.06	621465	31,90
AKF10+ NTC20k 150.06	621472	33,20
AKF10+ NTC20k 200.06	621489	33,60
AKF10+ NTC20k 250.06	621496	35,30
AKF10+ NTC20k 300.06	621502	36,50
AKF10+ NTC20k 450.06	621519	38,10

Duct/Immersion sensor -50..+150 °C – passive NTC1,8k TP3		
Item description	Item No.	€
AKF10+ NTC1,8k 050.06	643030	30,60
AKF10+ NTC1,8k 100.06	632928	31,90
AKF10+ NTC1,8k 150.06	632935	33,20
AKF10+ NTC1,8k 200.06	632942	33,60
AKF10+ NTC1,8k 250.06	632959	35,30
AKF10+ NTC1,8k 300.06	643047	36,50
AKF10+ NTC1,8k 450.06	643054	38,10

Duct/Immersion sensor -50..+120 °C – passive LM235Z TP3		
Item description	Item No.	€
AKF10+ LM235Z 050.06	621106	32,40
AKF10+ LM235Z 100.06	621113	33,60
AKF10+ LM235Z 150.06	621120	34,90
AKF10+ LM235Z 200.06	621137	35,40
AKF10+ LM235Z 250.06	621144	37,10
AKF10+ LM235Z 300.06	621151	38,30
AKF10+ LM235Z 450.06	621168	39,80

Duct/Immersion sensor -50..+120 °C – passive DS18B20 1-wire TP3		
Item description	Item No.	€
AKF10+ DS18B20 1-wire 050.06	621526	31,90
AKF10+ DS18B20 1-wire 100.06	621533	33,20
AKF10+ DS18B20 1-wire 150.06	621540	34,50
AKF10+ DS18B20 1-wire 200.06	621557	35,00
AKF10+ DS18B20 1-wire 250.06	621564	36,60
AKF10+ DS18B20 1-wire 300.06	621571	37,80
AKF10+ DS18B20 1-wire 450.06	621588	39,40

Options	
Item description	€
3-wire connection (3-wire)	1,90
4-wire connection (4-wire)	3,70
Temperature -80..+260 °C (T260)	10,90
Add to price of NTC10k for sensor NTC5k NTC10k Carel	0,00
Add to price of PT100 for sensor FeT	19,30

Order example for different items:

AKF10+ | FeT | 450.06 | 3-wire | T260

AKF10+ = product
FeT = sensor
450.06 = pocket (length.Ø)
3-wire = number of wires
T260 = temperature

AKF10+ active

Item description: product | TRV/TRA | pocket (length.Ø)

Duct/Immersion sensor -50..+160 °C – active 0..10 V				TP3
Item description	Item No.	On stock	€	
AKF10+ TRV MultiRange 050.06	621595	⊕	74,20	
AKF10+ TRV MultiRange 100.06	621601	⊕	75,20	
AKF10+ TRV MultiRange 150.06	621618	⊕	76,10	
AKF10+ TRV MultiRange 200.06	621625	⊕	76,50	
AKF10+ TRV MultiRange 250.06	621632	⊕	77,80	
AKF10+ TRV MultiRange 300.06	621649	⊕	78,60	
AKF10+ TRV MultiRange 450.06	621656	⊕	79,80	

Duct/Immersion sensor -50..+160 °C – active 4..20 mA				TP3
Item description	Item No.	On stock	€	
AKF10+ TRA MultiRange 050.06	621663	⊕	74,20	
AKF10+ TRA MultiRange 100.06	621670	⊕	75,20	
AKF10+ TRA MultiRange 150.06	621687	⊕	76,10	
AKF10+ TRA MultiRange 200.06	621694	⊕	76,50	
AKF10+ TRA MultiRange 250.06	621700	⊕	77,80	
AKF10+ TRA MultiRange 300.06	621717	⊕	78,60	
AKF10+ TRA MultiRange 450.06	621724	⊕	79,80	

Options		
Item description		€
Temperature -80..+260 °C (T260)		10,90

Accessories for AKF10+				AS1
Item description	Item No.	On stock	€	
Mounting clip enclosure USE-S pure white	667739	⊕	4,60	
Mounting base enclosure USE-S pure white	667722	⊕	5,50	
Mounting flange MF6DS flexible (suitable for Ø=6 mm)	669016	⊕	6,30	
Mounting flange MF6 (brass)	3407	⊕	6,30	
Syringe thermal contact fluid	102308	⊕	1,40	
Mounting bracket with cable gland for duct sensors Ø=6 mm	670593	⊕	12,00	

For cable entries and sealing inserts please refer to chapter "Accessories"

AKF10+ relay / LCD / BUS

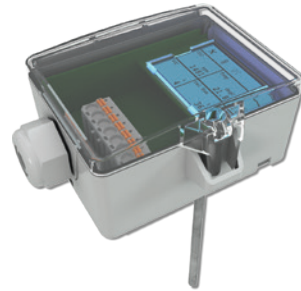
DATA SHEETS



Duct/Immersion sensor for measuring air temperature and other gaseous media (e.g. in ventilation and air conditioning systems). Combined with a thermowell pocket it can be used as an immersion temperature sensor. The devices with relay output for a 2-point controller or a 2-stage 2-point controller and color-changing LCD allow a wide range of applications. Depending on the model, the sensor can be individually configured via Thermokon USEapp. Tool-free opening, closing and wiring as well as removable cable entries ensure quick and easy installation.



AKF10+ relay / BUS



AKF10+ LCD



TECHNICAL DATA

Measuring values	temperature
Output voltage	0..10 V or 0..5 V (adjustable via jumper; live-zero configuration via Thermokon USEapp), min. load 5 kΩ
Output ampere	TRA: 1x 4..20 mA, max. load 500 Ω
Output switch contact	Relay: 2x floating contact NO for 24 V ~ or 24 V = / 3 A, (optional)
Network technology	RS485 BACnet (MS/TP), RS485 Modbus
Power supply	15..35 V = or 19..29 V ~ SELV, TRA: 15..35 V = SELV
Power consumption	max. 2,5 W (24 V =) 4,3 VA (24 V ~)
Measuring range temp.	-50..+50 -20..+80 -15..+35 -10..+120 0..+50 0..+100 0..+160 0..+250 °C, default setting: 0..+160 °C, optionally configurable via Thermokon USEapp
Accuracy temperature	±0,5 K (typ. at 21 °C within default measuring range)
Display	LCD 29x35 mm with RGB backlight, (optional)
Enclosure	enclosure USE-M, PC, pure white, LCD: cover PC, transparent
Protection	IP65 according to EN 60529, SI-Protection
Cable entry	Flextherm M16 for wire Ø=3..7 mm, Relay/BUS: M25 with fourfold cable entry for wire with max. Ø=7 mm removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ² , BUS terminal: removable plug-in terminal, max. 1,5 mm ²
Pocket	stainless steel V4A, Ø=6 mm, mounting length: 50 100 150 200 250 300 450 mm
Ambient condition	-50..+160 °C (only sensor tip), optional -80..+260 °C (only sensor tip), enclosure: -35..+70 °C, max. 85% rH short term condensation
Mounting	for duct sensors please use mounting flange MF6DS flexible or MF6 (brass), for immersion sensors please use immersion pocket THVADS / THMSDS
Delivery contents	incl. mounting flange

Item description: product | TRV MultiRange | pocket (length.0) | relay

AKF10+ relay

Duct/Immersion sensor -50..+160 °C – active 0..10 V + relay			TP2
Item description	USEapp	Item No.	€
AKF10+ TRV MultiRange 050.06 relay	✓	663304	145,20
AKF10+ TRV MultiRange 100.06 relay	✓	663311	146,20
AKF10+ TRV MultiRange 150.06 relay	✓	663328	147,10
AKF10+ TRV MultiRange 200.06 relay	✓	663335	147,50
AKF10+ TRV MultiRange 250.06 relay	✓	663342	148,80
AKF10+ TRV MultiRange 300.06 relay	✓	663359	149,60
AKF10+ TRV MultiRange 450.06 relay	✓	663366	150,80

Item description: product | TRV/TRA MultiRange | pocket (length.0) | relay

AKF10+ LCD

Duct/Immersion sensor -50..+160 °C – active 0..10 V			TP2
Item description	USEapp	Item No.	€
AKF10+ LCD TRV MultiRange 050.06	✓	663380	145,90
AKF10+ LCD TRV MultiRange 100.06	✓	663397	146,90
AKF10+ LCD TRV MultiRange 150.06	✓	663403	147,80
AKF10+ LCD TRV MultiRange 200.06	✓	663410	148,20
AKF10+ LCD TRV MultiRange 250.06	✓	663427	149,50
AKF10+ LCD TRV MultiRange 300.06	✓	663434	150,30
AKF10+ LCD TRV MultiRange 450.06	✓	663441	151,50

Duct/Immersion sensor -50..+160 °C – active 4..20 mA			TP2
Item description	USEapp	Item No.	€
AKF10+ LCD TRA MultiRange 050.06	✓	663526	145,90
AKF10+ LCD TRA MultiRange 100.06	✓	663533	146,90
AKF10+ LCD TRA MultiRange 150.06	✓	663540	147,80
AKF10+ LCD TRA MultiRange 200.06	✓	663557	148,20
AKF10+ LCD TRA MultiRange 250.06	✓	663564	149,50
AKF10+ LCD TRA MultiRange 300.06	✓	663571	150,30
AKF10+ LCD TRA MultiRange 450.06	✓	663588	151,50

Duct/Immersion sensor -50..+160 °C – active 0..10 V + relay			TP2
Item description	USEapp	Item No.	€
AKF10+ LCD TRV MultiRange 050.06 relay	✓	663458	175,20
AKF10+ LCD TRV MultiRange 100.06 relay	✓	663465	176,20
AKF10+ LCD TRV MultiRange 150.06 relay	✓	663472	177,10
AKF10+ LCD TRV MultiRange 200.06 relay	✓	663489	177,50
AKF10+ LCD TRV MultiRange 250.06 relay	✓	663496	178,80
AKF10+ LCD TRV MultiRange 300.06 relay	✓	663502	179,60
AKF10+ LCD TRV MultiRange 450.06 relay	✓	663519	180,80

Item description: product | BUS | pocket (length.Ø)

AKF10+ BUS



Duct/Immersion sensor -50..+160 °C – active RS485 Modbus			TP2
Item description	USEapp	Item No.	€
AKF10+ RS485 Modbus 050.06	✓	621823	106,20
AKF10+ RS485 Modbus 100.06	✓	621830	107,20
AKF10+ RS485 Modbus 150.06	✓	621847	108,10
AKF10+ RS485 Modbus 200.06	✓	621854	108,50
AKF10+ RS485 Modbus 250.06	✓	621861	109,80
AKF10+ RS485 Modbus 300.06	✓	621878	110,60
AKF10+ RS485 Modbus 450.06	✓	621885	111,80



Duct/Immersion sensor -50..+160 °C – active RS485 Modbus			TP2
Item description	USEapp	Item No.	€
AKF10+ LCD RS485 Modbus 050.06	✓	663618	155,20
AKF10+ LCD RS485 Modbus 100.06	✓	663625	156,20
AKF10+ LCD RS485 Modbus 150.06	✓	663632	157,10
AKF10+ LCD RS485 Modbus 200.06	✓	663649	157,50
AKF10+ LCD RS485 Modbus 250.06	✓	663656	158,80
AKF10+ LCD RS485 Modbus 300.06	✓	663663	159,60
AKF10+ LCD RS485 Modbus 450.06	✓	663670	160,80



Duct/Immersion sensor -50..+160 °C – active RS485 BACnet			TP2
Item description	USEapp	Item No.	€
AKF10+ RS485 BACnet 050.06	✓	699174	106,20
AKF10+ RS485 BACnet 100.06	✓	699181	107,20
AKF10+ RS485 BACnet 150.06	✓	683838	108,10
AKF10+ RS485 BACnet 200.06	✓	699198	108,50
AKF10+ RS485 BACnet 250.06	✓	699204	109,80
AKF10+ RS485 BACnet 300.06	✓	699211	110,60
AKF10+ RS485 BACnet 450.06	✓	699228	111,80



Duct/Immersion sensor -50..+160 °C – active RS485 BACnet			TP2
Item description	USEapp	Item No.	€
AKF10+ LCD RS485 BACnet 050.06	✓	699235	155,20
AKF10+ LCD RS485 BACnet 100.06	✓	699242	156,20
AKF10+ LCD RS485 BACnet 150.06	✓	682848	157,10
AKF10+ LCD RS485 BACnet 200.06	✓	699259	157,50
AKF10+ LCD RS485 BACnet 250.06	✓	699266	158,80
AKF10+ LCD RS485 BACnet 300.06	✓	699273	159,60
AKF10+ LCD RS485 BACnet 450.06	✓	699280	160,80

ACCESSORIES – AKF10+ relay / LCD / BUS

Accessories for AKF10+					AS1
Item description	Item No.	On stock	€		
Mounting base enclosure USE-M pure white	668354	☉	7,85		
Mounting flange MF6DS flexible (suitable for Ø=6 mm)	669016	☉	6,30		
Mounting flange MF6 (brass)	3407	☉	6,30		
Syringe thermal contact fluid	102308	☉	1,40		
Mounting bracket with cable gland for duct sensors Ø=6 mm	670593	☉	12,00		
Bluetooth dongle with micro-USB – communication between USEapp and devices USE-M/USE-L (net price)	668262	☉	29,00		
For cable entries and sealing inserts please refer to chapter "Accessories"					

Accessories – thermowell pockets stainless steel for sensors with pocket Ø=6 mm					AS2
Item description	Length	Pocket length	Item No.	On stock	€
VA-thermowell pocket 50 mm type THVADS50	50 mm	36 mm	611152	☉	17,10
VA-thermowell pocket 100 mm type THVADS100	100 mm	86 mm	611817	☉	18,90
VA-thermowell pocket 150 mm type THVADS150	150 mm	136 mm	611824	☉	20,30
VA-thermowell pocket 200 mm type THVADS200	200 mm	186 mm	611848	☉	21,40
VA-thermowell pocket 250 mm type THVADS250	250 mm	236 mm	611862	☉	26,60
VA-thermowell pocket 300 mm type THVADS300	300 mm	286 mm	611879	☉	27,80
VA-thermowell pocket 450 mm type THVADS450	450 mm	436 mm	611893	☉	28,70
Pressure screw with sealing PTFE (without silicone) for thermowell pocket THVADS (10 pcs)			666473	☉	18,20

Accessories – thermowell pockets brass for sensors with pocket Ø=6 mm					AS2
Item description	Length	Pocket length	Item No.	On stock	€
MS-thermowell pocket 50 mm type THMSDS50	50 mm	36 mm	610995	☉	7,85
MS-thermowell pocket 100 mm type THMSDS100	100 mm	86 mm	611008	☉	8,95
MS-thermowell pocket 150 mm type THMSDS150	150 mm	136 mm	611015	☉	9,45
MS-thermowell pocket 200 mm type THMSDS200	200 mm	186 mm	611022	☉	9,75
MS-thermowell pocket 250 mm type THMSDS250	250 mm	236 mm	611985	☉	11,30
MS-thermowell pocket 300 mm type THMSDS300	300 mm	286 mm	611039	☉	11,60
MS-thermowell pocket 450 mm type THMSDS450	450 mm	436 mm	611046	☉	11,80

AKF10 LON

DATA SHEETS



Duct/Immersion sensor for measuring air temperature and other gaseous media for HVAC applications (e.g. supply and exhaust ducts) with pocket $\varnothing=6$ mm for faster response. Can be used as an immersion temperature sensor combined with a thermowell pocket.



LON
LOCAL OPERATING NETWORK

TECHNICAL DATA

Measuring values	temperature
Network technology	LON FT (free topology)
Power supply	15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$) SELV
Power consumption	typ. 0,5 W (24 V =) 1,7 VA (24 V ~)
Measuring range temp.	-45..+130 °C
Accuracy temperature	$\pm 0,5$ K (typ. at 21 °C)
Enclosure	PA6, pure white, with quick lock screws
Protection	IP65 according to EN 60529
Cable entry	M20 for wire max. $\varnothing=8$ mm, seal insert for double cable entry for wire max $\varnothing=6$ mm
Connection electrical	terminal block, max. 1,5 mm ²
Pocket	stainless steel V4A, $\varnothing=6$ mm, mounting length: 50 100 150 200 250 300 450 mm
Ambient condition	enclosure: -35..+70 °C, max. 85% rH short term condensation
Mounting	for duct sensors please use mounting flange MF6DS flexible or MF6 (brass), for immersion sensors please use immersion pocket THVADS / THMSDS
Delivery contents	incl. mounting flange

AKF10 LON

LON
LOCAL OPERATING NETWORK

Duct/Immersion sensor -45...+130 °C – active LON			TP2
Item description	Item No.	€	
AKF10 LON 050.06	621748	186,00	
AKF10 LON 100.06	621755	187,30	
AKF10 LON 150.06	621762	188,60	
AKF10 LON 200.06	621779	189,00	
AKF10 LON 250.06	621786	190,70	
AKF10 LON 300.06	621793	191,90	
AKF10 LON 450.06	621816	193,40	

Accessories for AKF10			AS1
Item description	Item No.	On stock	€
Mounting flange MF6DS flexible (suitable for Ø=6 mm)	669016	☉	6,30
Mounting flange MF6 (brass)	3407	☉	6,30
Syringe thermal contact fluid	102308	☉	1,40
Mounting bracket with cable gland for duct sensors Ø=6 mm	670593	☉	12,00

Accessories – thermowell pockets stainless steel for sensors with pocket Ø=6 mm					AS2
Item description	Length	Pocket length	Item No.	On stock	€
VA-thermowell pocket 50 mm type THVADS50	50 mm	36 mm	611152	☉	17,10
VA-thermowell pocket 100 mm type THVADS100	100 mm	86 mm	611817	☉	18,90
VA-thermowell pocket 150 mm type THVADS150	150 mm	136 mm	611824	☉	20,30
VA-thermowell pocket 200 mm type THVADS200	200 mm	186 mm	611848	☉	21,40
VA-thermowell pocket 250 mm type THVADS250	250 mm	236 mm	611862	☉	26,60
VA-thermowell pocket 300 mm type THVADS300	300 mm	286 mm	611879	☉	27,80
VA-thermowell pocket 450 mm type THVADS450	450 mm	436 mm	611893	☉	28,70
Pressure screw with sealing PTFE (without silicone) for thermowell pocket THVADS (10 pcs)			666473	☉	18,20

Accessories – thermowell pockets brass for sensors with pocket Ø=6 mm					AS2
Item description	Length	Pocket length	Item No.	On stock	€
MS-thermowell pocket 50 mm type THMSDS50	50 mm	36 mm	610995	☉	7,85
MS-thermowell pocket 100 mm type THMSDS100	100 mm	86 mm	611008	☉	8,95
MS-thermowell pocket 150 mm type THMSDS150	150 mm	136 mm	611015	☉	9,45
MS-thermowell pocket 200 mm type THMSDS200	200 mm	186 mm	611022	☉	9,75
MS-thermowell pocket 250 mm type THMSDS250	250 mm	236 mm	611985	☉	11,30
MS-thermowell pocket 300 mm type THMSDS300	300 mm	286 mm	611039	☉	11,60
MS-thermowell pocket 450 mm type THMSDS450	450 mm	436 mm	611046	☉	11,80



KFK01

DATA SHEETS



Passive duct sensor for measuring air temperature and other gaseous media for HVAC applications (e.g. supply and exhaust ducts).

TECHNICAL DATA

Measuring values	temperature
Output passive	passive temperature sensor
Measuring range temp.	-50..+120 -50..+150 -50..+160 -50..+260 °C
Accuracy temperature	depending on used sensor
Sensor	passive: 2-wire (standard), 3-wire or 4-wire
Enclosure	shape J, aluminium
Protection	IP65 according to EN 60529
Cable entry	M16 for wire max. Ø=8 mm
Connection electrical	terminal block, max. 1,5 mm ²
Pocket	stainless steel V4A, Ø=6 mm, mounting length: 50 100 150 200 250 300 450 mm
Ambient condition	-25..+90 °C
Mounting	for duct sensors please use mounting flange MF6DS flexible or MF6 (brass), for immersion sensors please use immersion pocket THVADS / THMSDS
Notes	for mounting up to +260 °C Mounting flange MF6 (brass) is recommended

Duct/Immersion sensor -50..+160 °C – passive PT100 TP1

Item description	Item No.	€
KFK01 PT100 050.06	626446	42,90
KFK01 PT100 100.06	626453	43,80
KFK01 PT100 150.06	626477	45,40
KFK01 PT100 200.06	626484	46,80
KFK01 PT100 250.06	626491	49,40
KFK01 PT100 300.06	626507	51,40
KFK01 PT100 450.06	626514	54,70

Duct/Immersion sensor -50..+160 °C – passive PT100 1/3 DIN TP1

Item description	Item No.	€
KFK01 PT100 1/3 DIN 050.06	626521	46,60
KFK01 PT100 1/3 DIN 100.06	626538	47,50
KFK01 PT100 1/3 DIN 150.06	626545	49,10
KFK01 PT100 1/3 DIN 200.06	626552	50,50
KFK01 PT100 1/3 DIN 250.06	626569	53,20
KFK01 PT100 1/3 DIN 300.06	626576	55,10
KFK01 PT100 1/3 DIN 450.06	626583	58,40

Duct/Immersion sensor -50..+160 °C – passive PT1000 TP1

Item description	Item No.	€
KFK01 PT1000 050.06	626590	45,10
KFK01 PT1000 100.06	626606	46,00
KFK01 PT1000 150.06	626613	47,60
KFK01 PT1000 200.06	626620	49,00
KFK01 PT1000 250.06	626637	51,60
KFK01 PT1000 300.06	626644	53,30
KFK01 PT1000 450.06	626651	56,80

Duct/Immersion sensor -50..+160 °C – passive PT1000 1/3 DIN TP1

Item description	Item No.	€
KFK01 PT1000 1/3 DIN 050.06	626675	48,00
KFK01 PT1000 1/3 DIN 100.06	626682	48,90
KFK01 PT1000 1/3 DIN 150.06	626699	50,60
KFK01 PT1000 1/3 DIN 200.06	626705	52,00
KFK01 PT1000 1/3 DIN 250.06	626712	54,60
KFK01 PT1000 1/3 DIN 300.06	626729	56,60
KFK01 PT1000 1/3 DIN 450.06	626736	59,90

KFK01

Item description: product | sensor | pocket (length.Ø)

Duct/Immersion sensor -50..+160 °C – passive Ni1000 TP1		
Item description	Item No.	€
KFK01 Ni1000 050.06	626743	44,80
KFK01 Ni1000 100.06	626750	45,70
KFK01 Ni1000 150.06	626767	47,30
KFK01 Ni1000 200.06	626774	48,70
KFK01 Ni1000 250.06	626781	51,30
KFK01 Ni1000 300.06	626798	53,30
KFK01 Ni1000 450.06	626804	56,60

Duct/Immersion sensor -50..+160 °C – passive Ni1000TK5000TP1		
Item description	Item No.	€
KFK01 Ni1000TK5000 050.06	626811	48,30
KFK01 Ni1000TK5000 100.06	626828	49,20
KFK01 Ni1000TK5000 150.06	626835	50,80
KFK01 Ni1000TK5000 200.06	626842	52,20
KFK01 Ni1000TK5000 250.06	626859	54,80
KFK01 Ni1000TK5000 300.06	626866	56,80
KFK01 Ni1000TK5000 450.06	626873	60,10

Duct/Immersion sensor -50..+150 °C – passive NTC10k TP1		
Item description	Item No.	€
KFK01 NTC10k 050.06	626880	41,60
KFK01 NTC10k 100.06	626897	42,50
KFK01 NTC10k 150.06	626903	44,10
KFK01 NTC10k 200.06	626910	45,50
KFK01 NTC10k 250.06	626927	48,20
KFK01 NTC10k 300.06	626934	50,10
KFK01 NTC10k 450.06	626941	53,40

Duct/Immersion sensor -50..+150 °C – passive NTC10k Precon TP1		
Item description	Item No.	€
KFK01 NTC10k Precon 050.06	626958	41,60
KFK01 NTC10k Precon 100.06	626965	42,50
KFK01 NTC10k Precon 150.06	626972	44,10
KFK01 NTC10k Precon 200.06	626989	45,50
KFK01 NTC10k Precon 250.06	626996	48,20
KFK01 NTC10k Precon 300.06	627009	50,10
KFK01 NTC10k Precon 450.06	627016	53,40

Duct/Immersion sensor -50..+150 °C – passive NTC20k TP1		
Item description	Item No.	€
KFK01 NTC20k 050.06	627023	41,60
KFK01 NTC20k 100.06	627030	42,50
KFK01 NTC20k 150.06	627047	44,10
KFK01 NTC20k 200.06	627054	45,50
KFK01 NTC20k 250.06	627061	48,20
KFK01 NTC20k 300.06	627078	50,10
KFK01 NTC20k 400.06	627085	53,40

Duct/Immersion sensor -50..+150 °C – passive NTC1,8k TP1		
Item description	Item No.	€
KFK01 NTC1,8k 050.06	668590	41,60
KFK01 NTC1,8k 100.06	668606	42,50
KFK01 NTC1,8k 150.06	668613	44,10
KFK01 NTC1,8k 200.06	668620	45,50
KFK01 NTC1,8k 250.06	668637	48,20
KFK01 NTC1,8k 300.06	668644	50,10
KFK01 NTC1,8k 450.06	668651	53,40

Duct/Immersion sensor -50..+120 °C – passive LM235Z TP1		
Item description	Item No.	€
KFK01 LM235Z 050.06	627092	43,30
KFK01 LM235Z 100.06	627108	44,20
KFK01 LM235Z 150.06	627115	45,80
KFK01 LM235Z 200.06	627122	47,20
KFK01 LM235Z 250.06	627139	49,90
KFK01 LM235Z 300.06	627146	51,80
KFK01 LM235Z 450.06	627153	55,10

KFK01

Options	
Item description	€
3-wire connection (3-wire)	1,90
4-wire connection (4-wire)	3,70
Temperature -80...+260 °C (T260)	10,90
Add to price of NTC10k for sensor NTC5k NTC10k Carel	0,00
Add to price of PT100 for sensor FeT	19,30

Order example for different items:

KFK01 | FeT | 250.06 | 3-wire | T260

KFK01 = product
FeT = sensor
250.06 = pocket (length.Ø)
3-wire = number of wires
T260 = temperature

Accessories			AS1
Item description	Item No.	On stock	€
Mounting flange MF6DS flexible (suitable for Ø=6 mm)	669016	☹	6,30
Mounting flange MF6 (brass)	3407	☹	6,30

Accessories – thermowell pockets stainless steel for sensors with pocket Ø=6 mm					AS2
Item description	Length	Pocket length	Item No.	On stock	€
VA-thermowell pocket 50 mm type THVADS50	50 mm	36 mm	611152	☹	17,10
VA-thermowell pocket 100 mm type THVADS100	100 mm	86 mm	611817	☹	18,90
VA-thermowell pocket 150 mm type THVADS150	150 mm	136 mm	611824	☹	20,30
VA-thermowell pocket 200 mm type THVADS200	200 mm	186 mm	611848	☹	21,40
VA-thermowell pocket 250 mm type THVADS250	250 mm	236 mm	611862	☹	26,60
VA-thermowell pocket 300 mm type THVADS300	300 mm	286 mm	611879	☹	27,80
VA-thermowell pocket 450 mm type THVADS450	450 mm	436 mm	611893	☹	28,70
Pressure screw with sealing PTFE (without silicone) for thermowell pocket THVADS (10 pcs)			666473	☹	18,20

Accessories – thermowell pockets brass for sensors with pocket Ø=6 mm					AS2
Item description	Length	Pocket length	Item No.	On stock	€
MS-thermowell pocket 50 mm type THMSDS50	50 mm	36 mm	610995	☹	7,85
MS-thermowell pocket 100 mm type THMSDS100	100 mm	86 mm	611008	☹	8,95
MS-thermowell pocket 150 mm type THMSDS150	150 mm	136 mm	611015	☹	9,45
MS-thermowell pocket 200 mm type THMSDS200	200 mm	186 mm	611022	☹	9,75
MS-thermowell pocket 250 mm type THMSDS250	250 mm	236 mm	611985	☹	11,30
MS-thermowell pocket 300 mm type THMSDS300	300 mm	286 mm	611039	☹	11,60
MS-thermowell pocket 450 mm type THMSDS450	450 mm	436 mm	611046	☹	11,80



KFK03 passive

DATA SHEETS

Duct sensor for measuring air temperature and other gaseous media for HVAC applications (e.g. in supply and exhaust ducts).



TECHNICAL DATA	
Measuring values	temperature
Output passive	PT100 PT100 1/3 DIN PT1000 PT1000 1/3 DIN Ni1000 Ni1000TK5000, NTC10k NTC 10k Precon NTC20k NTC1,8k LM235Z
Measuring range temp.	PT / Ni: -50..+160 °C (T160), optional -80..+260 °C (T260), NTC: -50..+150 °C (T150), LM235Z: -50..+120 °C (T120)
Accuracy temperature	depending on used sensor
Sensor	2-wire (standard), 3-wire or 4-wire
Enclosure	shape B, aluminium
Protection	IP66 according to EN 60529, SI-Protection (not possible for electronic Sensors)
Cable entry	M20 for wire max. Ø=8 mm
Connection electrical	terminal block, max. 1,5 mm ²
Pocket	stainless steel V4A, Ø=8 mm, mounting length: 100 150 200 250 mm
Ambient condition	-50..+160 +150 +120 °C (only sensor tip), optional -80..+260 °C (only sensor tip), enclosure: -35..+90 °C, max. 85% rH short term condensation
Mounting	for duct sensors please use mounting flange MF8 (VA), for immersion sensors please use immersion pocket THVA / THMS
Notes	other temperature sensors on request

Duct/Immersion sensor -50..+160 °C – passive PT100 TP1		
Item description	Item No.	€
KFK03 PT100 100.08	37877	53,30
KFK03 PT100 150.08	37884	55,20
KFK03 PT100 200.08	37891	57,10
KFK03 PT100 250.08	37907	59,20

Duct/Immersion sensor -50..+160 °C – passive PT100 1/3 DIN TP1		
Item description	Item No.	€
KFK03 PT100 1/3 DIN 100.08	37914	57,00
KFK03 PT100 1/3 DIN 150.08	37921	59,00
KFK03 PT100 1/3 DIN 200.08	37938	60,90
KFK03 PT100 1/3 DIN 250.08	37945	62,90

Duct/Immersion sensor -50..+160 °C – passive PT1000 TP1		
Item description	Item No.	€
KFK03 PT1000 100.08	37952	55,40
KFK03 PT1000 150.08	37969	57,40
KFK03 PT1000 200.08	37976	59,30
KFK03 PT1000 250.08	37983	61,40

Duct/Immersion sensor -50..+160 °C – passive PT1000 1/3 DIN TP1		
Item description	Item No.	€
KFK03 PT1000 1/3 DIN 100.08	37990	58,40
KFK03 PT1000 1/3 DIN 150.08	39765	60,40
KFK03 PT1000 1/3 DIN 200.08	39772	61,60
KFK03 PT1000 1/3 DIN 250.08	39789	63,60

Duct/Immersion sensor -50..+160 °C – passive Ni1000 TP1		
Item description	Item No.	€
KFK03 Ni1000 100.08	39796	55,10
KFK03 Ni1000 150.08	39802	57,10
KFK03 Ni1000 200.08	39819	59,00
KFK03 Ni1000 250.08	39826	61,10

Duct/Immersion sensor -50..+160 °C – passive Ni1000TK5000TP1		
Item description	Item No.	€
KFK03 Ni1000TK5000 100.08	39833	58,60
KFK03 Ni1000TK5000 150.08	39840	60,60
KFK03 Ni1000TK5000 200.08	39857	62,50
KFK03 Ni1000TK5000 250.08	39864	64,60

KFK03 passive

Item description: product | sensor | pocket (length.Ø)

Duct/Immersion sensor -50..+150 °C – passive NTC10k TP1		
Item description	Item No.	€
KFK03 NTC10k 100.08	39918	51,90
KFK03 NTC10k 150.08	39925	53,90
KFK03 NTC10k 200.08	39932	55,80
KFK03 NTC10k 250.08	39949	57,90

Duct/Immersion sensor -50..+150 °C – passive NTC10k Precon TP1		
Item description	Item No.	€
KFK03 NTC10k Precon 100.08	39994	51,90
KFK03 NTC10k Precon 150.08	40006	53,90
KFK03 NTC10k Precon 200.08	40013	55,80
KFK03 NTC10k Precon 250.08	40020	57,90

Duct/Immersion sensor -50..+150 °C – passive NTC20k TP1		
Item description	Item No.	€
KFK03 NTC20k 100.08	39956	51,90
KFK03 NTC20k 150.08	39963	53,90
KFK03 NTC20k 200.08	39970	55,80
KFK03 NTC20k 250.08	39987	57,90

Duct/Immersion sensor -50..+150 °C – passive NTC1,8k TP1		
Item description	Item No.	€
KFK03 NTC1,8k 100.08	325912	51,90
KFK03 NTC1,8k 150.08	349031	53,90
KFK03 NTC1,8k 200.08	298803	55,80
KFK03 NTC1,8k 250.08	314329	57,90

Duct/Immersion sensor -50..+120 °C – passive LM235Z TP1		
Item description	Item No.	€
KFK03 LM235Z 100.08	40037	54,60
KFK03 LM235Z 150.08	40044	56,50
KFK03 LM235Z 200.08	40051	58,40
KFK03 LM235Z 250.08	40068	60,50

Options		€
Item description		€
3-wire connection (3-wire)		1,90
4-wire connection (4-wire)		3,70
Temperature -80..+260 °C (T260)		10,90
Add to price of NTC10k for sensor NTC5k NTC10k Carel		0,00
Add to price of PT100 for sensor FeT		19,30

Accessories for KFK03			AS1
Item description	Item No.	On stock	€
Mounting flange MF8 (VA)	103305	☺	18,80

Accessories – thermowell pockets stainless steel for sensors with pocket Ø=8 mm				AS2
Item description	Length	Item No.	On stock	€
VA thermowell pocket 100 mm type THVA100 (KFK03)	100 mm	584180	☺	27,00
VA thermowell pocket 150 mm type THVA150 (KFK03)	150 mm	584197	☺	28,30
VA thermowell pocket 200 mm type THVA200 (KFK03)	200 mm	584203	☺	29,90
VA thermowell pocket 250 mm type THVA250 (KFK03)	250 mm	594738	☺	31,40



KFK03 active

DATA SHEETS



Duct sensor for measuring air temperature and other gaseous media for HVAC applications (e.g. in supply and exhaust ducts).



TECHNICAL DATA

Measuring values	temperature
Output voltage	TRV: 1x 0..10 V, min. load 3 kΩ
Output ampere	TRA: 1x 4..20 mA, max. load 500 Ω
Power supply	15..24 V = (±10%) SELV
Power consumption	TRV: max. 1 W (24 V =), TRA: max. 0,5 W (24 V =)
Measuring range temp.	TRV1 TRA1: -50..+50 °C, TRV2 TRA2: -10..+120 °C, TRV3 TRA3: 0..+50 °C, TRV4 TRA4: 0..+160 °C, TRV5 TRA5: 0..+250 °C
Accuracy temperature	±0,2 K ±0,1% of measured value (typ. at 21 °C)
Enclosure	shape B, aluminium
Protection	IP66 according to EN 60529, SI-Protection
Cable entry	M20 for wire max. Ø=8 mm
Connection electrical	terminal block, max. 1,5 mm ²
Pocket	stainless steel V4A, Ø=8 mm, mounting length: 100 150 200 250 mm
Ambient condition	-50..+160 °C (only sensor tip), optional -80..+260 °C (only sensor tip), enclosure: -35..+70 °C, max. 85% rH short term condensation
Mounting	for duct sensors please use mounting flange MF8 (VA), for immersion sensors please use immersion pocket THVA / THMS

Duct/Immersion sensor -50..+50 °C – active 0..10 V			TP1
Item description	Item No.	€	
KFK03 TRV1 100.08	350983	129,20	
KFK03 TRV1 150.08	351010	130,50	
KFK03 TRV1 200.08	277860	131,90	
KFK03 TRV1 250.08	286879	133,30	

Duct/Immersion sensor -10..+120 °C – active 0..10 V			TP1
Item description	Item No.	€	
KFK03 TRV2 100.08	332453	129,20	
KFK03 TRV2 150.08	326711	130,50	
KFK03 TRV2 200.08	351096	131,90	
KFK03 TRV2 250.08	347242	133,30	

Duct/Immersion sensor 0..+50 °C – active 0..10 V			TP1
Item description	Item No.	€	
KFK03 TRV3 100.08	272315	129,20	
KFK03 TRV3 150.08	351027	130,50	
KFK03 TRV3 200.08	284905	131,90	
KFK03 TRV3 250.08	285094	133,30	

Duct/Immersion sensor 0..+160 °C – active 0..10 V			TP1
Item description	Item No.	€	
KFK03 TRV4 100.08	351003	129,20	
KFK03 TRV4 150.08	261418	130,50	
KFK03 TRV4 200.08	351102	131,90	
KFK03 TRV4 250.08	347969	133,30	

Duct/Immersion sensor 0..+250 °C – active 0..10 V			TP1
Item description	Item No.	€	
KFK03 TRV5 100.08	350990	136,80	
KFK03 TRV5 150.08	309127	138,20	
KFK03 TRV5 200.08	351119	139,50	
KFK03 TRV5 250.08	335607	140,90	

KFK03 active

Item description: product | TRVx/TRAx | pocket (length.Ø)

Duct/Immersion sensor -50..+50 °C – active 4..20 mA TP1		
Item description	Item No.	€
KFK03 TRA1 100.08	152464	129,20
KFK03 TRA1 150.08	165334	130,50
KFK03 TRA1 200.08	232166	131,90
KFK03 TRA1 250.08	204668	133,30

Duct/Immersion sensor -10..+120 °C – active 4..20 mA TP1		
Item description	Item No.	€
KFK03 TRA2 100.08	242639	129,20
KFK03 TRA2 150.08	351034	130,50
KFK03 TRA2 200.08	351041	131,90
KFK03 TRA2 250.08	351133	133,30

Duct/Immersion sensor 0..+50 °C – active 4..20 mA TP1		
Item description	Item No.	€
KFK03 TRA3 100.08	338585	129,20
KFK03 TRA3 150.08	170239	130,50
KFK03 TRA3 200.08	161909	131,90
KFK03 TRA3 250.08	134804	133,30

Duct/Immersion sensor 0..+160 °C – active 4..20 mA TP1		
Item description	Item No.	€
KFK03 TRA4 100.08	315920	129,20
KFK03 TRA4 150.08	338981	130,50
KFK03 TRA4 200.08	337380	131,90
KFK03 TRA4 250.08	303057	133,30

Duct/Immersion sensor 0..+250 °C – active 4..20 mA TP1		
Item description	Item No.	€
KFK03 TRA5 100.08	239080	136,80
KFK03 TRA5 150.08	320948	138,20
KFK03 TRA5 200.08	404792	139,50
KFK03 TRA5 250.08	281577	140,90

Accessories for KFK03 AS1			
Item description	Item No.	On stock	€
Mounting flange MF8 (VA)	103305	☉	18,80

Accessories – thermowell pockets stainless steel for sensors with pocket Ø=8 mm AS2				
Item description	Length	Item No.	On stock	€
VA thermowell pocket 100 mm type THVA100 (KFK03)	100 mm	584180	☉	27,00
VA thermowell pocket 150 mm type THVA150 (KFK03)	150 mm	584197	☉	28,30
VA thermowell pocket 200 mm type THVA200 (KFK03)	200 mm	584203	☉	29,90
VA thermowell pocket 250 mm type THVA250 (KFK03)	250 mm	594738	☉	31,40

RG03 passive

DATA SHEETS



Duct sensor (high temperature) for temperature measurement of liquids in duct applications for heating, ventilation and air-conditioning. Also suitable for exhaust systems.



TECHNICAL DATA

Measuring values	temperature
Output passive	PT100 PT1000
Measuring range temp.	0..+600 °C
Working range temp.	0..+500 °C, temporarily up to +600 °C
Accuracy temperature	depending on used sensor
Enclosure	shape B, aluminium
Protection	IP66 according to EN 60529
Cable entry	M20 for wire max. Ø=8 mm
Connection electrical	terminal block, max. 1,5 mm ²
Pocket	stainless steel V4A, Ø=11 mm, mounting length: 250 500 mm
Ambient condition	enclosure: -25..+90 °C, max. 85% rH short term condensation
Delivery contents	incl. mounting flange

Item description: product | sensor | pocket (length.Ø)

Duct/Immersion sensor 0..+600 °C – passive PT100/PT1000		TP1
Item description	Item No.	€
RG03 PT100 250.11	64361	106,80
RG03 PT100 500.11	64378	109,30
RG03 PT1000 250.11	64385	106,80
RG03 PT1000 500.11	64392	109,30

RG03 active

DATA SHEETS 

Duct sensor (high temperature) for temperature measurement of liquids in duct applications for heating, ventilation and air-conditioning. Also suitable for exhaust systems.



TECHNICAL DATA	
Measuring values	temperature
Output voltage	TRV: 1x 0..10 V, min. load 3 kΩ
Output ampere	TRA: 1x 4..20 mA, max. load 500 Ω
Power supply	15..24 V = (±10%) SELV
Power consumption	TRV: max. 1 W (24 V =), TRA: max. 0,5 W (24 V =)
Measuring range temp.	TRV6 TRA6: 0..+400 °C, TRV7 TRA7: 0..+600 °C
Working range temp.	0..+500 °C, temporarily up to +600 °C
Accuracy temperature	±0,2 K ±0,1% of measured value (typ. at 21 °C)
Enclosure	shape B, aluminium
Protection	IP66 according to EN 60529
Cable entry	M20 for wire max. Ø=8 mm
Connection electrical	terminal block, max. 1,5 mm ²
Pocket	stainless steel V4A, Ø=11 mm, mounting length: 250 500 mm
Ambient condition	enclosure: -25..+70 °C, max. 85% rH short term condensation
Delivery contents	incl. mounting flange

Item description: product | TRV/TRA | pocket (length.Ø)

Duct/Immersion sensor 0..+400 °C – active 0..10 V 4..20 mA TP1		
Item description	Item No.	€
RG03 TRV6 250.11	261982	198,70
RG03 TRV6 500.11	240789	201,10
RG03 TRA6 250.11	177405	198,70
RG03 TRA6 500.11	143936	201,10

Duct/Immersion sensor 0..+600 °C – active 0..10 V 4..20 mA TP1		
Item description	Item No.	€
RG03 TRV7 250.11	64408	198,70
RG03 TRV7 500.11	242127	201,10
RG03 TRA7 250.11	64422	198,70
RG03 TRA7 500.11	78283	201,10

MWF+

DATA SHEETS



Duct averaging temperature sensor for measuring the average temperature in air ducts. The sensor detects the applied temperature value throughout the entire length (with NTC selectively). A spring at the connection head reduces vibrations. Mounting angles for uncomplicated duct mounting are included in delivery. Tool-free opening, closing and wiring as well as removable cable entries ensure quick and easy installation.



MWF+ passive / active



MWF+ passive (NTCxx)

TECHNICAL DATA

Measuring values	temperature
Output voltage	TRV: 1x 0..10 V, min. load 5 k Ω
Output ampere	TRA: 1x 4..20 mA, max. load 500 Ω
Output passive	PT1000 Ni1000 Ni1000TK5000 Ni891, NTC10k NTC 10k Precon NTC20k
Power supply	15..24 V = (\pm 10%) or 24 V ~ (\pm 10%) SELV, TRA: 15..24 V = (\pm 10%) SELV
Power consumption	TRV: typ. 0,4 W (24 V =) 0,8 VA (24 V ~), TRA: typ. 0,5 W (24 V =)
Measuring range temp.	-50..+50 -20..+80 -15..+35 -10..+120 0..+50 0..+100 0..+160 0..+250 °C, adjustable at the transducer, default setting: -20..+80 °C, passive: -50..+80 °C, NTCxx: 0..+50 °C
Accuracy temperature	\pm 0,5 K (typ. at 21 °C within default measuring range), passive: \pm 0,4 K (typ. at 0 °C), NTC10k: \pm 0,2 K (typ. at 25 °C)
Enclosure	enclosure USE-S, PC, pure white
Protection	IP65 according to EN 60529
Cable entry	Flextherm M16 for wire \varnothing =3..7 mm, removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ²
Sensor rod	3000 mm, 6000 mm
Ambient condition	enclosure: -35..+70 °C, enclosure passive: -35..+90 °C, max. 85% rH short term condensation
Delivery contents	incl. mounting flange, incl. installation set

MWF+ passive

Item description: product | sensor | cable length (L)

Duct averaging sensor -50..+80 °C – passive			TP1
Item description	Item No.	€	
MWF+ PT1000 L3000 incl. installation kit	620413	79,80	
MWF+ PT1000 L6000 incl. installation kit	620420	88,80	
MWF+ Ni1000 L3000 incl. installation kit	620437	79,80	
MWF+ Ni1000 L6000 incl. installation kit	620444	88,80	
MWF+ Ni1000TK5000 L3000 incl. installation kit	675888	79,80	
MWF+ Ni1000TK5000 L6000 incl. installation kit	674324	88,80	
MWF+ Ni891 L3000 incl. installation kit	699297	112,90	
MWF+ Ni891 L6000 incl. installation kit	699303	144,90	

Duct averaging sensor 0..+50 °C – passive			TP1
Item description	Item No.	€	
MWF+ NTC10k L3000 incl. installation kit	670128	110,00	
MWF+ NTC10k L6000 incl. installation kit	670135	125,00	
MWF+ NTC10k Precon L3000 incl. installation kit	670142	110,00	
MWF+ NTC10k Precon L6000 incl. installation kit	670159	125,00	
MWF+ NTC20k L3000 incl. installation kit	670166	110,00	
MWF+ NTC20k L6000 incl. installation kit	670173	125,00	

MWF+ active

Item description: product | TRV/TRA MultiRange | cable length (L)

Duct averaging sensor -50..+80 °C – active 0..10 V 4..20 mA			TP1
Item description	Item No.	€	
MWF+ TRV MultiRange L3000 incl. installation kit	620475	132,70	
MWF+ TRV MultiRange L6000 incl. installation kit	620482	140,90	
MWF+ TRA MultiRange L3000 incl. installation kit	620499	132,70	
MWF+ TRA MultiRange L6000 incl. installation kit	620505	140,90	

Accessories for MWF+				AS1
Item description	Item No.	On stock	€	
Mounting base enclosure USE-S pure white	667722	☹	5,50	
Mounting flange MF6 flexible (suitable for Ø=4 6 7 mm)	399098	☹	6,30	
Mounting flange MF7 (brass)	102360	☹	6,30	
Installation set TFR/MWF	458399	☹	8,40	
For cable entries and sealing inserts please refer to chapter "Accessories"				

MWF+ relay / LCD / BUS

DATA SHEETS



Duct averaging temperature sensor for measuring the average temperature in air ducts. The sensor detects the applied temperature value throughout the entire length (with NTC selectively). A spring at the connection head reduces vibrations. Mounting angles for uncomplicated duct mounting are included in delivery. The devices with relay output for a 2-point controller or a 2-stage 2-point controller and color-changing LCD allow a wide range of applications. Depending on the model, the sensor can be individually configured via Thermokon USEapp. Tool-free opening, closing and wiring as well as removable cable entries ensure quick and easy installation.



MWF+ relay / BUS



MWF+ LCD



TECHNICAL DATA

Measuring values	temperature
Output voltage	0..10 V or 0..5 V (adjustable via jumper; live-zero configuration via Thermokon USEapp), min. load 5 k Ω
Output ampere	TRA: 1x 4..20 mA, max. load 500 Ω
Output switch contact	Relay: 2x floating contact NO for 24 V ~ or 24 V = / 3 A (optional)
Network technology	RS485 BACnet (MS/TP), RS485 Modbus
Power supply	15..35 V = or 19..29 V ~ SELV, A: 15..35 V = SELV
Power consumption	max. 2,5 W (24 V =) 4,3 VA (24 V ~)
Measuring range temp.	-50..+50 -20..+80 -15..+35 -10..+120 0..+50 0..+100 0..+160 0..+250 °C, default setting: -20..+80 °C, optionally configurable via Thermokon USEapp
Accuracy temperature	$\pm 0,5$ K (typ. at 21 °C within default measuring range)
Display	LCD 29x35 mm with RGB backlight (optional)
Enclosure	enclosure USE-M, PC, pure white, LCD: cover PC, transparent
Protection	IP65 according to EN 60529
Cable entry	Flextherm M16 for wire $\varnothing=3..7$ mm, Relay/BUS: M25 with fourfold cable entry for wire with max. $\varnothing=7$ mm removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ² , BUS terminal: removable plug-in terminal, max. 1,5 mm ²
Sensor rod	3000 mm, 6000 mm
Ambient condition	enclosure: -35..+70 °C, max. 85% rH short term condensation
Delivery contents	incl. mounting flange, incl. installation set

MWF+ LCD / relay

Item description: product | TRV/TRA MultiRange | cable length (L)

Duct averaging sensor -50..+80 °C – active 0..10 V + relay				TP1
Item description	USEapp	Item No.	€	
MWF+ TRV MultiRange relay L3000 incl. installation kit	✓	662758	171,70	
MWF+ TRV MultiRange relay L6000 incl. installation kit	✓	662765	179,90	
MWF+ LCD TRV MultiRange relay L3000 incl. installation kit	✓	662819	201,70	
MWF+ LCD TRV MultiRange relay L6000 incl. installation kit	✓	662826	209,90	

Duct averaging sensor -50..+80 °C – active 0..10 V 4..20 mA				TP1
Item description	USEapp	Item No.	€	
MWF+ LCD TRV MultiRange L3000 incl. installation kit	✓	662772	172,40	
MWF+ LCD TRV MultiRange L6000 incl. installation kit	✓	662789	180,60	
MWF+ LCD TRA MultiRange L3000 incl. installation kit	✓	662796	172,40	
MWF+ LCD TRA MultiRange L6000 incl. installation kit	✓	662802	180,60	

MWF+ BUS

Item description: product | BUS | cable length (L)



Duct averaging sensor -50..+80 °C – active RS485 Modbus				TP1
Item description	USEapp	Item No.	€	
MWF+ RS485 Modbus L3000 incl. installation kit	✓	662833	174,70	
MWF+ RS485 Modbus L6000 incl. installation kit	✓	662840	182,90	
MWF+ LCD RS485 Modbus L3000 incl. installation kit	✓	662857	223,70	
MWF+ LCD RS485 Modbus L6000 incl. installation kit	✓	662864	231,90	



Duct averaging sensor -50..+80 °C – active RS485 BACnet (MS/TP)				TP1
Item description	USEapp	Item No.	€	
MWF+ RS485 BACnet (MS/TP) L3000 incl. installation kit	✓	699310	174,70	
MWF+ RS485 BACnet (MS/TP) L6000 incl. installation kit	✓	699327	182,90	
MWF+ LCD RS485 BACnet (MS/TP) L3000 incl. installation kit	✓	699334	223,70	
MWF+ LCD RS485 BACnet (MS/TP) L6000 incl. installation kit	✓	699341	231,90	

Accessories for MWF+				AS1
Item description	Item No.	On stock	€	
Mounting base enclosure USE-M pure white	668354	☹	7,85	
Mounting flange MF6 flexible (suitable for Ø=4 6 7 mm)	399098	☹	6,30	
Mounting flange MF7 (brass)	102360	☹	6,30	
Installation set TFR/MWF	458399	☹	8,40	
Bluetooth dongle with micro-USB – communication between USEapp and devices USE-M/USE-L (net price)	668262	☹	29,00	
For cable entries and sealing inserts please refer to chapter "Accessories"				

MWF400+

DATA SHEETS



Duct averaging temperature sensor with flexible sensor rod for measuring the average temperature in gaseous media, e.g. in ventilation and air conditioning ducts. Tool-free opening, closing and wiring as well as removable cable entries ensure quick and easy installation.



TECHNICAL DATA

Measuring values	temperature
Output voltage	TRV: 1x 0..10 V or 0..5 V, min. load 5 k Ω
Output ampere	TRA: 1x 4..20 mA, max. load 500 Ω
Output passive	PT100 PT1000 Ni1000 Ni1000TK5000 Ni891, NTC10k NTC20k NTC1,8k
Power supply	15..24 V = (\pm 10%) or 24 V ~ (\pm 10%) SELV, TRA: 15..24 V = (\pm 10%) SELV
Power consumption	TRV: typ. 0,4 W (24 V =) 0,8 VA (24 V ~), TRA: max. 0,5 W (24 V =)
Measuring range temp.	-50..+50 -20..+80 -15..+35 -10..+120 0..+50 0..+100 0..+160 0..+250 °C, adjustable at the transducer, default setting: -20..+80 °C, passive: -30..+80 °C
Accuracy temperature	\pm 0,5 K (typ. at 21 °C within default measuring range), passive: depending on used sensor
Enclosure	enclosure USE-S, PC, pure white
Protection	IP65 according to EN 60529
Cable entry	Flextherm M16 for wire \varnothing =3..7 mm, removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ²
Sensor rod	copper, \varnothing =4 mm, mounting length 400 mm, Sensor neck: stainless steel V4A, \varnothing =6 mm
Ambient condition	enclosure: -35..+70 °C, enclosure passive: -35..+90 °C, max. 85% rH short term condensation
Delivery contents	incl. mounting clip enclosure USE-S pure white

MWF400+ passive

Item description: product | sensor

Duct averaging sensor -30..+80 °C – passive			TP1
Item description	Item No.	€	
MWF400+ PT100	654166	69,80	
MWF400+ PT1000	660518	69,80	
MWF400+ Ni1000	641395	69,80	
MWF400+ Ni1000TK5000	641425	69,80	
MWF400+ Ni891	699358	69,80	
MWF400+ NTC10k	641449	68,00	
MWF400+ NTC20k	670319	68,00	
MWF400+ NTC1,8k	670333	68,00	

MWF400+ active

Item description: product | TRV/TRA MultiRange

Duct averaging sensor -30..+80 °C – active 0..10 V 4..20 mA			TP1
Item description	Item No.	€	
MWF400+ TRV MultiRange	642088	122,70	
MWF400+ TRA MultiRange	642095	122,70	

Accessories for MWF400+				AS1
Item description	Item No.	On stock	€	
Mounting base enclosure USE-S pure white	667722	☺	5,50	
Mounting flange MF6DS flexible (suitable for Ø=6 mm)	669016	☺	6,30	
Mounting flange MF7 (brass)	102360	☺	6,30	
For cable entries and sealing inserts please refer to chapter "Accessories"				

MWF400+ relay / LCD / BUS

DATA SHEETS



Duct averaging temperature sensor with flexible sensor rod for measuring the average temperature in gaseous media, e.g. in ventilation and air conditioning ducts. The devices with relay output for a 2-point controller or a 2-stage 2-point controller and color-changing LCD allow a wide range of applications. Depending on the model, the sensor can be individually configured via Thermokon USEapp. Tool-free opening, closing and wiring as well as removable cable entries ensure quick and easy installation.



MWF400+ relay / BUS



TECHNICAL DATA

Measuring values	temperature
Output voltage	0..10 V or 0..5 V (adjustable via jumper; live-zero configuration via Thermokon USEapp), min. load 5 kΩ
Output ampere	TRA: 1x 4..20 mA, max. load 500 Ω
Output switch contact	Relay: 2x floating contact NO for 24 V ~ or 24 V = / 3 A (optional)
Network technology	RS485 BACnet (MS/TP), RS485 Modbus
Power supply	15..35 V = or 19..29 V ~ SELV, A: 15..35 V = SELV
Power consumption	max. 2,5 W (24 V =) 4,3 VA (24 V ~)
Measuring range temp.	-50..+50 -20..+80 -15..+35 -10..+120 0..+50 0..+100 0..+160 0..+250 °C, default setting: -20..+80 °C, optionally configurable via Thermokon USEapp
Accuracy temperature	±0,5 K (typ. at 21 °C within default measuring range)
Display	LCD 29x35 mm with RGB backlight (optional)
Enclosure	enclosure USE-M, PC, pure white, LCD: cover PC, transparent
Protection	IP65 according to EN 60529
Cable entry	Flextherm M16 for wire Ø=3..7 mm, Relay/BUS: M25 with fourfold cable entry for wire with max. Ø=7 mm removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ² , BUS terminal: removable plug-in terminal, max. 1,5 mm ²
Sensor rod	copper, Ø=4 mm, mounting length 400 mm, Sensor neck: stainless steel V4A, Ø=6 mm
Ambient condition	enclosure: -35..+70 °C, max. 85% rH short term condensation
Delivery contents	incl. mounting flange MF6DS flexible

MWF400+ LCD / relay

Item description: product | TRV/TRA MultiRange

Duct averaging sensor -30..+80 °C – active 0..10 V + relay				TP1
Item description	USEapp	Item No.	€	
MWF400+ TRV MultiRange relay	✓	662871	161,70	
MWF400+ LCD TRV MultiRange relay	✓	662963	191,70	

Duct averaging sensor -30..+80 °C – active 0..10 V 4..20 mA				TP1
Item description	USEapp	Item No.	€	
MWF400+ LCD TRV MultiRange	✓	662925	162,40	
MWF400+ LCD TRA MultiRange	✓	662956	162,40	

MWF400+ BUS

Item description: product | BUS



Duct averaging sensor -30..+80 °C – active RS485 Modbus				TP1
Item description	USEapp	Item No.	€	
MWF400+ RS485 Modbus	✓	662970	203,70	
MWF400+ LCD RS485 Modbus	✓	662987	252,70	



Duct averaging sensor -30..+80 °C – active RS485 BACnet				TP1
Item description	USEapp	Item No.	€	
MWF400+ RS485 BACnet	✓	699365	203,70	
MWF400+ LCD RS485 BACnet	✓	699372	252,70	

Accessories for MWF400+				AS1
Item description	Item No.	On stock	€	
Mounting base enclosure USE-M pure white	668354	⊕	7,85	
Mounting flange MF6DS flexible (suitable for Ø=6 mm)	669016	⊕	6,30	
Mounting flange MF7 (brass)	102360	⊕	6,30	
Bluetooth dongle with micro-USB – communication between USEapp and devices USE-M/USE-L (net price)	668262	⊕	29,00	

For cable entries and sealing inserts please refer to chapter "Accessories"



TFR

DATA SHEETS



The frost protection thermostat TFR is used for downstream temperature monitoring of water air heaters in ventilation and air-conditioning systems to prevent frost damages. It has a small differential gap and a high reproducibility. The reset can be done automatically or manually in case of type '-R'. The frost protection thermostat can be used to initiate the following frost protection functions: Stop fan, Close outside air dampers, Open heating coil valve 100%, Start heating coil pump, Switch-off chiller (condenser) and humidifier, Trigger visual and/or audible frost alarm

TECHNICAL DATA

Measuring values	temperature
Medium	air
Output switch contact	single pole change over, switching capacity max. 10 A (250 V ~)
Accuracy temperature	repeatability $\pm 0,5$ K
Set point range	-10..+15 °C (default +5 °C)
Switching values	switching differential: 2 °C ± 1 °C
Enclosure	PA6 GK30, light grey, cover ABS, transparent
Protection	IP65 according to EN 60529
Cable entry	M16 for wire max. $\varnothing=8$ mm
Connection electrical	terminal block, max. 2,5 mm ²
Capillary pipe	copper with tube filling R507, length 1,8 3 6 12 m, sensor operating length approx. 600 mm
Ambient condition	-35..+70 °C, max. 85% rH short term condensation
Delivery contents	Installation set TFR/MWF (6 pcs)

Frost protection thermostat – automatical reset

TP1

Item description	Item No.	On stock	€
TFR 1800 incl. mounting angle	426435		76,10
TFR 3000 incl. mounting angle	430371	⊕	71,90
TFR 6000 incl. mounting angle	430395	⊕	74,50
TFR 12000 incl. mounting angle	541916		86,90

Frost protection thermostat – manual reset

TP1

Item description	Item No.	On stock	€
TFR-R 1800 incl. mounting angle	430364		91,10
TFR-R 3000 incl. mounting angle	430388	⊕	89,40
TFR-R 6000 incl. mounting angle	430401	⊕	89,90

Accessories for TFR

AS1

Item description	Item No.	On stock	€
Mounting flange MF2 (for frost protection thermostats)	435642	⊕	6,30
Installation set TFR/MWF	458399	⊕	8,40

TFRe

DATA SHEETS 

Electronic frost protection thermostat for temperature monitoring of air/hot water heat exchangers to prevent damage to the ventilation system. The temperature measurement is typically carried out by a fast-response sensor in the outlet of the heat exchanger. When the set limit value is exceeded, the TFRe overrides the original control signal of the heating valve to a larger valve opening in order to prevent freezing. If the temperature drops further, the fan is stopped for system protection and the control unit gets an alert. For temperature detection in the water outlet of the heat exchanger a fast-response sensor (e.g. TF14 with KL4VA) should be used (not in delivery).



TECHNICAL DATA	
Measuring values	temperature
Output voltage	2x 0..10 V, temperature, actuating variable valve drive
Output switch contact	Fan: floating contact NO, 250 V ~ / 6 A, Alarm: floating contact NO, 30 V ~ / 1 A
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	max. 2 VA (24 V ~)
Measuring range temp.	-10..+100 °C
Accuracy temperature	±1 K (typ. at 0 °C)
Inputs	for passive sensor NTC10K (default), PT1000, Ni1000, Ni1000TK5000, adjustable, for external controller defining control value for valve, for fan (floating contact)
Functions	frost protection function, controlling valve actuator, alarm, adjustable P-Controller (temperature)
Display	LED green – indicator valve actuator, LED red – alarm, LED yellow – fan
Enclosure	ABS, white
Protection	IP20 according to EN 60529
Connection electrical	removable plug-in terminal, max. 2,5 mm ²
Ambient condition	-40..+70 °C, max. 85% rH non-condensing
Mounting	prepared for mounting on DIN rail TS35 (35x7,5 mm) according to EN 60715

Electronic frost protection thermostat		TP1
Item description	Item No.	€
TFRe	667203	148,00

SFK02+

DATA SHEETS



Immersion sensor with complete and integrated thermowell pocket for temperature measurement of gases and liquids in pipework applications. Bonded pockets are available in accessories. Tool-free opening, closing and wiring as well as removable cable entries ensure quick and easy installation.



TECHNICAL DATA	
Measuring values	temperature
Medium	gases, fluids
Output voltage	TRV: 1x 0..10 V or 0..5 V
Output ampere	TRA: 1x 4..20 mA
Output passive	PT100 PT100 1/3 DIN PT1000 PT1000 1/3 DIN Ni1000 Ni1000TK5000, NTC10k NTC 10k Precon NTC20k NTC1,8k, LM235Z
Power supply	15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$) SELV, TRA: 15..24 V = ($\pm 10\%$) SELV
Power consumption	TRV: typ. 0,4 W (24 V =) 0,8 VA (24 V ~), TRA: max. 0,5 W (24 V =)
Measuring range temp.	-50..+50 -20..+80 -15..+35 -10..+120 0..+50 0..+100 0..+160 0..+250 °C, adjustable at the transducer, default setting: 0..+160 °C, passive: PT / Ni: -50..+160 °C (T160), optional -80..+260 °C (T260), NTC: -50..+150 °C (T150), LM235Z: -50..+120 °C (T120)
Accuracy temperature	$\pm 0,5$ K (typ. at 21 °C within default measuring range), passive: depending on used sensor
Sensor	passive: 2-wire (standard), 3-wire or 4-wire
Enclosure	enclosure USE-S, PC, pure white
Protection	IP65 according to EN 60529, SI-Protection
Cable entry	Flextherm M16 for wire $\varnothing=3..7$ mm, removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ²
Pocket	stainless steel V4A, $\varnothing=8$ mm, thread G 1/2", mounting length: 50 100 150 200 250 450 mm
Ambient condition	-50..+160 +150 +120 °C (only sensor tip), optional -80..+260 °C (only sensor tip), enclosure: -35..+70 °C, enclosure passive: -35..+90 °C, max. 85% rH short term condensation
Notes	other temperature sensors on request

SFK02+ passive

Item description: product | sensor | pocket (length.Ø)

Immersion sensor -50...+160 °C – passive PT100 TP2		
Item description	Item No.	€
SFK02+ PT100 050.08	622295	41,30
SFK02+ PT100 100.08	622301	42,10
SFK02+ PT100 150.08	622318	43,70
SFK02+ PT100 200.08	622325	45,80
SFK02+ PT100 250.08	622332	47,20
SFK02+ PT100 450.08	622349	49,80

Immersion sensor -50...+160 °C – passive PT100 1/3 DIN TP2		
Item description	Item No.	€
SFK02+ PT100 1/3 DIN 050.08	622356	45,00
SFK02+ PT100 1/3 DIN 100.08	622363	45,80
SFK02+ PT100 1/3 DIN 150.08	622370	47,40
SFK02+ PT100 1/3 DIN 200.08	622387	49,50
SFK02+ PT100 1/3 DIN 250.08	622394	50,90
SFK02+ PT100 1/3 DIN 450.08	622400	53,50

Immersion sensor -50...+160 °C – passive PT1000 TP2		
Item description	Item No.	€
SFK02+ PT1000 050.08	622417	43,40
SFK02+ PT1000 100.08	622424	44,20
SFK02+ PT1000 150.08	622431	45,90
SFK02+ PT1000 200.08	622448	48,10
SFK02+ PT1000 250.08	622455	49,40
SFK02+ PT1000 450.08	622462	52,00

Immersion sensor -50...+160 °C – passive PT1000 1/3 DIN TP2		
Item description	Item No.	€
SFK02+ PT1000 1/3 DIN 050.08	621946	46,40
SFK02+ PT1000 1/3 DIN 100.08	621953	47,30
SFK02+ PT1000 1/3 DIN 150.08	621960	48,90
SFK02+ PT1000 1/3 DIN 200.08	621977	51,00
SFK02+ PT1000 1/3 DIN 250.08	621984	52,40
SFK02+ PT1000 1/3 DIN 450.08	621991	55,00

Immersion sensor -50...+160 °C – passive Ni1000 TP2		
Item description	Item No.	€
SFK02+ Ni1000 050.08	622080	43,20
SFK02+ Ni1000 100.08	622097	44,00
SFK02+ Ni1000 150.08	622103	45,60
SFK02+ Ni1000 200.08	622110	47,80
SFK02+ Ni1000 250.08	622127	49,10
SFK02+ Ni1000 450.08	622141	51,70

Immersion sensor -50...+160 °C – passive Ni1000TK5000 TP2		
Item description	Item No.	€
SFK02+ Ni1000TK5000 050.08	622158	46,60
SFK02+ Ni1000TK5000 100.08	622165	47,50
SFK02+ Ni1000TK5000 150.08	622189	49,10
SFK02+ Ni1000TK5000 200.08	622196	51,30
SFK02+ Ni1000TK5000 250.08	622202	52,60
SFK02+ Ni1000TK5000 450.08	622219	55,20

Immersion sensor -50...+150 °C – passive NTC10k TP2		
Item description	Item No.	€
SFK02+ NTC10k 050.08	622004	40,00
SFK02+ NTC10k 100.08	622011	40,80
SFK02+ NTC10k 150.08	622028	42,40
SFK02+ NTC10k 200.08	622035	44,60
SFK02+ NTC10k 250.08	622042	45,90
SFK02+ NTC10k 450.08	622059	48,50

Immersion sensor -50...+150 °C – passive NTC10k Precon TP2		
Item description	Item No.	€
SFK02+ NTC10k Precon 050.08	622479	40,00
SFK02+ NTC10k Precon 100.08	622486	40,80
SFK02+ NTC10k Precon 150.08	622493	42,40
SFK02+ NTC10k Precon 200.08	622509	44,60
SFK02+ NTC10k Precon 250.08	622516	45,90
SFK02+ NTC10k Precon 450.08	622523	48,50

SFK02+ passive

Item description: product | sensor | pocket (length.Ø)

Immersion sensor -50..+150 °C – passive NTC20k TP2		
Item description	Item No.	€
SFK02+ NTC20k 050.08	622530	40,00
SFK02+ NTC20k 100.08	622547	40,80
SFK02+ NTC20k 150.08	622554	42,40
SFK02+ NTC20k 200.08	622561	44,60
SFK02+ NTC20k 250.08	622578	45,90
SFK02+ NTC20k 450.08	622585	48,50

Immersion sensor -50..+150 °C – passive NTC1,8k TP2		
Item description	Item No.	€
SFK02+ NTC1,8k 050.08	668668	40,00
SFK02+ NTC1,8k 100.08	668675	40,80
SFK02+ NTC1,8k 150.08	668682	42,40
SFK02+ NTC1,8k 200.08	668699	44,60
SFK02+ NTC1,8k 250.08	668705	45,90
SFK02+ NTC1,8k 450.08	668712	48,50

Immersion sensor -50..+120 °C – passive LM235Z TP2		
Item description	Item No.	€
SFK02+ LM235Z 050.08	622226	41,70
SFK02+ LM235Z 100.08	622233	42,50
SFK02+ LM235Z 150.08	622240	44,20
SFK02+ LM235Z 200.08	622257	46,40
SFK02+ LM235Z 250.08	622264	47,70
SFK02+ LM235Z 450.08	622288	50,30

Options	
Item description	€
3-wire connection (3-wire)	1,90
4-wire connection (4-wire)	3,70
Temperature -80..+260 °C (T260)	10,90
Add to price of NTC10k for sensor NTC5k NTC10k Carel	0,00
Add to price of PT100 for sensor FeT	19,30

Accessories for SFK02+

Item description
For cable entries and sealing inserts please refer to chapter "Accessories"

Accessories – bonded pockets AS1					
Item description	Length	Pocket length	Item No.	On stock	€
Bonded pocket St52-3 type ESH110	110 mm	100 mm	103459	☹	44,85
Bonded pocket St52-3 type ESH160	160 mm	150 mm	103466	☹	51,40
Bonded pocket St52-3 type ESH210	210 mm	200 mm	103473	☹	57,90
Bonded pocket St52-3 type ESH260	260 mm	250 mm	173247	☹	63,70

SFK02+ active

Item description: product | TRV/TRA MultiRange | pocket (length.Ø)

Immersion sensor -50..+160 °C – active 0..10 V			TP2
Item description	Item No.	€	
SFK02+ TRV MultiRange 050.08	622592	85,50	
SFK02+ TRV MultiRange 100.08	622608	86,10	
SFK02+ TRV MultiRange 150.08	622615	87,40	
SFK02+ TRV MultiRange 200.08	622622	89,10	
SFK02+ TRV MultiRange 250.08	622639	90,10	
SFK02+ TRV MultiRange 450.08	622646	92,10	

Immersion sensor -50..+160 °C – active 4..20 mA			TP2
Item description	Item No.	€	
SFK02+ TRA MultiRange 050.08	622653	85,50	
SFK02+ TRA MultiRange 100.08	622660	86,10	
SFK02+ TRA MultiRange 150.08	622677	87,40	
SFK02+ TRA MultiRange 200.08	622684	89,10	
SFK02+ TRA MultiRange 250.08	622691	90,10	
SFK02+ TRA MultiRange 450.08	622707	92,10	

Options		
Item description	€	
Temperature -80..+260 °C (T260)	10,90	

Accessories for SFK02+		
Item description		
For cable entries and sealing inserts please refer to chapter "Accessories"		

Accessories – bonded pockets						AS1
Item description	Length	Pocket length	Item No.	On stock	€	
Bonded pocket St52-3 type ESH110	110 mm	100 mm	103459	☉	44,85	
Bonded pocket St52-3 type ESH160	160 mm	150 mm	103466	☉	51,40	
Bonded pocket St52-3 type ESH210	210 mm	200 mm	103473	☉	57,90	
Bonded pocket St52-3 type ESH260	260 mm	250 mm	173247	☉	63,70	

SFK02+ relay / LCD / BUS

DATA SHEETS



Immersion sensor with complete and integrated thermowell pocket for temperature measurement of gases and liquids in pipework applications. Bonded pockets are available in accessories. The devices with relay output for a 2-point controller or a 2-stage 2-point controller and color-changing LCD allow a wide range of applications. Depending on the model, the sensor can be individually configured via Thermokon USEapp. Tool-free opening, closing and wiring as well as removable cable entries ensure quick and easy installation.



SFK02+ relay / BUS



SFK02+ LCD



TECHNICAL DATA

Measuring values	temperature
Medium	gases, fluids
Output voltage	0..10 V or 0..5 V (adjustable via jumper; live-zero configuration via Thermokon USEapp)
Output ampere	TRA: 1x 4..20 mA
Output switch contact	Relay: 2x floating contact NO for 24 V ~ or 24 V = / 3 A, (optional)
Network technology	RS485 BACnet (MS/TP), RS485 Modbus
Power supply	15..35 V = or 19..29 V ~ SELV, A: 15..35 V = SELV
Power consumption	max. 2,5 W (24 V =) 4,3 VA (24 V ~)
Measuring range temp.	-50..+50 -20..+80 -15..+35 -10..+120 0..+50 0..+100 0..+160 0..+250 °C, default setting: -20..+80 °C, BUS: -20..+120 °C, optionally configurable via Thermokon USEapp
Accuracy temperature	±0,5 K (typ. at 21 °C within default measuring range)
Display	LCD 29x35 mm with RGB backlight, (optional)
Enclosure	enclosure USE-M, PC, pure white, LCD: cover PC, transparent
Protection	IP65 according to EN 60529, SI-Protection
Cable entry	Flextherm M16 for wire Ø=3..7 mm, Relay/BUS: M25 with fourfold cable entry for wire with max. Ø=7 mm removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ² , BUS terminal: removable plug-in terminal, max. 1,5 mm ²
Pocket	stainless steel V4A, Ø=8 mm, thread G 1/2", mounting length: 50 100 150 200 250 450 mm
Ambient condition	-50..+160 °C (only sensor tip), optional -80..+260 °C (only sensor tip), enclosure: -35..+70 °C, max. 85% rH short term condensation

SFK02+ LCD / relay

Item description: product | TRV/TRA MultiRange | pocket (length.0)

Immersion sensor -50..+160 °C – active 0..10 V + relay				TP2
Item description	USEapp	Item No.	€	
SFK02+ TRV MultiRange relay 050.08	✓	665568	115,20	
SFK02+ TRV MultiRange relay 100.08	✓	665575	115,80	
SFK02+ TRV MultiRange relay 150.08	✓	665582	117,10	
SFK02+ TRV MultiRange relay 200.08	✓	665599	118,80	
SFK02+ TRV MultiRange relay 250.08	✓	665605	119,80	
SFK02+ TRV MultiRange relay 450.08	✓	665612	121,80	

Immersion sensor -50..+160 °C – active 0..10 V				TP2
Item description	USEapp	Item No.	€	
SFK02+ LCD TRV MultiRange 050.08	✓	665476	125,20	
SFK02+ LCD TRV MultiRange 100.08	✓	665483	125,80	
SFK02+ LCD TRV MultiRange 150.08	✓	665490	127,10	
SFK02+ LCD TRV MultiRange 200.08	✓	665506	128,80	
SFK02+ LCD TRV MultiRange 250.08	✓	665513	129,80	
SFK02+ LCD TRV MultiRange 450.08	✓	665520	131,80	

Immersion sensor -50..+160 °C – active 4..20 mA				TP2
Item description	USEapp	Item No.	€	
SFK02+ LCD TRA MultiRange 050.08	✓	665681	125,20	
SFK02+ LCD TRA MultiRange 100.08	✓	665698	125,80	
SFK02+ LCD TRA MultiRange 150.08	✓	665704	127,10	
SFK02+ LCD TRA MultiRange 200.08	✓	665711	128,80	
SFK02+ LCD TRA MultiRange 250.08	✓	665728	129,80	
SFK02+ LCD TRA MultiRange 450.08	✓	665735	131,80	

Immersion sensor -50..+160 °C – active 0..10 V + relay				TP2
Item description	USEapp	Item No.	€	
SFK02+ LCD TRV MultiRange relay 050.08	✓	665629	145,20	
SFK02+ LCD TRV MultiRange relay 100.08	✓	665636	145,80	
SFK02+ LCD TRV MultiRange relay 150.08	✓	665643	147,10	
SFK02+ LCD TRV MultiRange relay 200.08	✓	665650	148,80	
SFK02+ LCD TRV MultiRange relay 250.08	✓	665667	149,80	
SFK02+ LCD TRV MultiRange relay 450.08	✓	665674	151,80	

SFK02+ BUS

Item description: product | BUS | pocket (length.Ø)



Immersion sensor -50..+160 °C – active RS485 Modbus				TP2
Item description	USEapp	Item No.	€	
SFK02+ RS485 Modbus 050.08	✓	665742	118,20	
SFK02+ RS485 Modbus 100.08	✓	665759	118,80	
SFK02+ RS485 Modbus 150.08	✓	665766	120,10	
SFK02+ RS485 Modbus 200.08	✓	665773	121,80	
SFK02+ RS485 Modbus 250.08	✓	665780	122,80	
SFK02+ RS485 Modbus 450.08	✓	665797	124,80	

Immersion sensor -50..+160 °C – active RS485 Modbus				TP2
Item description	USEapp	Item No.	€	
SFK02+ LCD RS485 Modbus 050.08	✓	665803	167,20	
SFK02+ LCD RS485 Modbus 100.08	✓	665810	167,80	
SFK02+ LCD RS485 Modbus 150.08	✓	665827	169,10	
SFK02+ LCD RS485 Modbus 200.08	✓	665834	170,80	
SFK02+ LCD RS485 Modbus 250.08	✓	665841	171,80	
SFK02+ LCD RS485 Modbus 450.08	✓	665858	173,80	



Immersion sensor -50..+160 °C – active RS485 BACnet				TP2
Item description	USEapp	Item No.	€	
SFK02+ RS485 BACnet 050.08	✓	699389	118,20	
SFK02+ RS485 BACnet 100.08	✓	699396	118,80	
SFK02+ RS485 BACnet 150.08	✓	699402	120,10	
SFK02+ RS485 BACnet 200.08	✓	699419	121,80	
SFK02+ RS485 BACnet 250.08	✓	699426	122,80	
SFK02+ RS485 BACnet 450.08	✓	699433	124,80	

Immersion sensor -50..+160 °C – active RS485 BACnet				TP2
Item description	USEapp	Item No.	€	
SFK02+ LCD RS485 BACnet 050.08	✓	699440	167,20	
SFK02+ LCD RS485 BACnet 100.08	✓	699457	167,80	
SFK02+ LCD RS485 BACnet 150.08	✓	699464	169,10	
SFK02+ LCD RS485 BACnet 200.08	✓	699471	170,80	
SFK02+ LCD RS485 BACnet 250.08	✓	699488	171,80	
SFK02+ LCD RS485 BACnet 450.08	✓	699495	173,80	

SFK02+ relay / LCD / BUS

Accessories for SFK02+				AS1
Item description	Item No.	On stock	€	
Bluetooth dongle with micro-USB – communication between USEapp and devices USE-M/USE-L (net price)	668262	☉	29,00	
For cable entries and sealing inserts please refer to chapter "Accessories"				

Accessories – bonded pockets					AS1
Item description	Length	Pocket length	Item No.	On stock	€
Bonded pocket St52-3 type ESH110	110 mm	100 mm	103459	☉	44,85
Bonded pocket St52-3 type ESH160	160 mm	150 mm	103466	☉	51,40
Bonded pocket St52-3 type ESH210	210 mm	200 mm	103473	☉	57,90
Bonded pocket St52-3 type ESH260	260 mm	250 mm	173247	☉	63,70

SFK02 LON

DATA SHEETS



Immersion sensor with complete and integrated thermowell pocket for temperature measurement of gases and liquids in pipework applications.



LON
LOCAL OPERATING NETWORK

TECHNICAL DATA

Measuring values	temperature
Medium	gases, fluids
Network technology	LON FT (free topology)
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	typ. 0,5 W (24 V =) 1,7 VA (24 V ~)
Measuring range temp.	-45..+130 °C
Accuracy temperature	±0,5 K (typ. at 21 °C within default measuring range)
Enclosure	PA6, pure white, with quick lock screws
Protection	IP65 according to EN 60529, SI-Protection
Cable entry	M20 for wire max. Ø=8 mm, seal insert for double cable entry for wire max Ø=6 mm
Connection electrical	terminal block, max. 1,5 mm ²
Pocket	stainless steel V4A, Ø=8 mm, thread G 1/2", mounting length: 50 100 150 200 250 450 mm
Ambient condition	enclosure: -35..+70 °C, max. 85% rH short term condensation

LON
LOCAL OPERATING NETWORK

Immersion sensor -50..+120 °C – active LON

Item description	Item No.	TP1 €
SFK02 LON 050.08	95181	195,30
SFK02 LON 100.08	95198	196,10
SFK02 LON 150.08	95204	197,80
SFK02 LON 200.08	95211	200,00
SFK02 LON 250.08	95228	201,30
SFK02 LON 450.08	95235	203,90



SFK02+ FR

DATA SHEETS



Immersion sensor with pocket $\varnothing=4$ mm for faster response and integrated thermowell pocket for temperature measurement of gases and liquids in pipework applications. Bonded pockets are available in accessories. Tool-free opening, closing and wiring as well as removable cable entries ensure quick and easy installation.



TECHNICAL DATA	
Measuring values	temperature
Medium	gases, fluids
Output voltage	TRV: 1x 0..10 V or 0..5 V
Output ampere	TRA: 1x 4..20 mA
Output passive	PT100 PT100 1/3 DIN PT1000 PT1000 1/3 DIN Ni1000 Ni1000TK5000, NTC10k NTC 10k Precon NTC20k NTC1,8k
Power supply	15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$) SELV, TRA: 15..24 V = ($\pm 10\%$) SELV
Power consumption	TRV: typ. 0,4 W (24 V =) 0,8 VA (24 V ~), TRA: max. 0,5 W (24 V =)
Measuring range temp.	-50..+50 -20..+80 -15..+35 -10..+120 0..+50 0..+100 0..+160 0..+250 °C, adjustable at the transducer, default setting: 0..+160 °C, passive: PT / Ni: -50..+160 °C (T160), NTC: -50..+150 °C (T150)
Accuracy temperature	$\pm 0,5$ K (typ. at 21 °C within default measuring range), passive: depending on used sensor
Sensor	passive: 2-wire
Enclosure	enclosure USE-S, PC, pure white, with removable cable entry
Protection	IP65 according to EN 60529, SI-Protection
Cable entry	Flextherm M16 for wire $\varnothing=3..7$ mm, removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ²
Pocket	stainless steel V4A, $\varnothing=6$ mm, end of sensor $\varnothing=4$ mm, 50 mm: $\varnothing=4$ mm, thread R 1/2", mounting length: 50 100 200 mm
Ambient condition	-50..+160 +150 °C (only sensor tip), enclosure: -35..+70 °C, enclosure passive: -35..+90 °C, max. 85% rH short term condensation
Notes	other temperature sensors on request, multi-conductor connection on request

Immersion sensor -50..+160 °C – passive PT100			TP2
Item description	Item No.	€	
SFK02+ FR PT100 050.04	665926	44,30	
SFK02+ FR PT100 100.06/04	665933	45,10	
SFK02+ FR PT100 200.06/04	665940	48,80	

Immersion sensor -50..+160 °C – passive PT100 1/3 DIN			TP2
Item description	Item No.	€	
SFK02+ FR PT100 1/3 DIN 050.04	665957	48,00	
SFK02+ FR PT100 1/3 DIN 100.06/04	665964	48,80	
SFK02+ FR PT100 1/3 DIN 200.06/04	665971	52,50	

Immersion sensor -50..+160 °C – passive PT1000			TP2
Item description	Item No.	€	
SFK02+ FR PT1000 050.04	655583	46,40	
SFK02+ FR PT1000 100.06/04	638807	47,20	
SFK02+ FR PT1000 200.06/04	640749	51,10	

Immersion sensor -50..+160 °C – passive PT1000 1/3 DIN			TP2
Item description	Item No.	€	
SFK02+ FR PT1000 1/3 DIN 050.04	665988	49,40	
SFK02+ FR PT1000 1/3 DIN 100.06/04	665995	50,30	
SFK02+ FR PT1000 1/3 DIN 200.06/04	666008	54,00	

SFK02+ FR passive

Item description: product | sensor | pocket (length.Ø)

Immersion sensor -50...+160 °C – passive Ni1000 TP2		
Item description	Item No.	€
SFK02+ FR Ni1000 050.04	666015	46,20
SFK02+ FR Ni1000 100.06/04	657280	47,00
SFK02+ FR Ni1000 200.06/04	666022	50,80

Immersion sensor -50...+160 °C – passive Ni1000TK5000 TP2		
Item description	Item No.	€
SFK02+ FR Ni1000TK5000 050.04	655590	49,60
SFK02+ FR Ni1000TK5000 100.06/04	640732	50,50
SFK02+ FR Ni1000TK5000 200.06/04	640770	54,30

Immersion sensor -50...+150 °C – passive NTC10k TP2		
Item description	Item No.	€
SFK02+ FR NTC10k 050.04	655545	43,00
SFK02+ FR NTC10k 100.06/04	640725	43,80
SFK02+ FR NTC10k 200.06/04	640763	47,60

Immersion sensor -50...+150 °C – passive NTC10k Precon TP2		
Item description	Item No.	€
SFK02+ FR NTC10k Precon 050.04	666053	43,00
SFK02+ FR NTC10k Precon 100.06/04	666060	43,80
SFK02+ FR NTC10k Precon 200.06/04	666077	47,60

Immersion sensor -50...+150 °C – passive NTC20k TP2		
Item description	Item No.	€
SFK02+ FR NTC20k 050.04	655552	43,00
SFK02+ FR NTC20k 100.06/04	645690	43,80
SFK02+ FR NTC20k 200.06/04	655576	47,60

Immersion sensor -50...+150 °C – passive NTC1,8k TP2		
Item description	Item No.	€
SFK02+ FR NTC1,8k 050.04	655538	43,00
SFK02+ FR NTC1,8k 100.06/04	640718	43,80
SFK02+ FR NTC1,8k 200.06/04	640756	47,60

SFK02+ FR active

Item description: product | TRV/TRA MultiRange | pocket (length.Ø)

Immersion sensor -50...+160 °C – active 0...10 V TP2		
Item description	Item No.	€
SFK02+ FR TRV MultiRange 050.04	655620	88,50
SFK02+ FR TRV MultiRange 100.06/04	645881	89,10
SFK02+ FR TRV MultiRange 200.06/04	655637	92,10

Immersion sensor -50...+160 °C – active 4...20 mA TP2		
Item description	Item No.	€
SFK02+ FR TRA MultiRange 050.04	655606	88,50
SFK02+ FR TRA MultiRange 100.06/04	645867	89,10
SFK02+ FR TRA MultiRange 200.06/04	655613	92,10

Accessories

Item description

For cable entries and sealing inserts please refer to chapter "Accessories"

SFK02+ FR relay / LCD / BUS

DATA SHEETS



Immersion sensor with pocket $\varnothing=4$ mm for faster response and integrated thermowell pocket for temperature measurement of gases and liquids in pipework applications. Bonded pockets are available in accessories. The devices with relay output for a 2-point controller or a 2-stage 2-point controller and color-changing LCD allow a wide range of applications. Depending on the model, the sensor can be individually configured via Thermokon USEapp. Tool-free opening, closing and wiring as well as removable cable entries ensure quick and easy installation.



SFK02+ FR relay / BUS



SFK02+ FR LCD



TECHNICAL DATA	
Measuring values	temperature
Medium	gases, fluids
Output voltage	0..10 V or 0.5 V (adjustable via jumper; live-zero configuration via Thermokon USEapp)
Output ampere	TRA: 1x 4..20 mA
Output switch contact	Relay: 2x floating contact NO for 24 V ~ or 24 V = / 3 A (optional)
Network technology	RS485 BACnet (MS/TP), RS485 Modbus
Power supply	15..35 V = or 19..29 V ~ SELV, A: 15..35 V = SELV
Power consumption	max. 2,5 W (24 V =) 4,3 VA (24 V ~)
Measuring range temp.	-50..+50 -20..+80 -15..+35 -10..+120 0..+50 0..+100 0..+160 0..+250 °C, default setting: -20..+80 °C, BUS: -20..+120 °C, optionally configurable via Thermokon USEapp
Accuracy temperature	$\pm 0,5$ K (typ. at 21 °C within default measuring range)
Display	LCD 29x35 mm with RGB backlight (optional)
Enclosure	enclosure USE-M, PC, pure white, LCD: cover PC, transparent, with removable cable entry
Protection	IP65 according to EN 60529, SI-Protection
Cable entry	Flextherm M16 for wire $\varnothing=3..7$ mm, Relay/BUS: M25 with fourfold cable entry for wire with max. $\varnothing=7$ mm removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ² , BUS terminal: removable plug-in terminal, max. 1,5 mm ²
Pocket	stainless steel V4A, $\varnothing=6$ mm, end of sensor $\varnothing=4$ mm, 50 mm: $\varnothing=4$ mm, thread R 1/2", mounting length: 50 100 200 mm
Ambient condition	-50..+160 °C (only sensor tip), enclosure: -35..+70 °C, max. 85% rH short term condensation

Item description: product | TRV/TRA MultiRange | relay | pocket (length.Ø)

SFK02+ FR LCD / relay

Immersion sensor -50..+160 °C – active 0..10 V + relay				TP2
Item description	USEapp	Item No.	€	
SFK02+ FR TRV MultiRange relay 050.04	✓	666169	127,50	
SFK02+ FR TRV MultiRange relay 100.06/04	✓	666176	128,10	
SFK02+ FR TRV MultiRange relay 200.06/04	✓	666183	131,10	

Immersion sensor -50..+160 °C – active 0..10 V				TP2
Item description	USEapp	Item No.	€	
SFK02+ FR LCD TRV MultiRange 050.04	✓	666091	137,50	
SFK02+ FR LCD TRV MultiRange 100.06/04	✓	666107	138,10	
SFK02+ FR LCD TRV MultiRange 200.06/04	✓	666114	141,10	

Immersion sensor -50..+160 °C – active 4..20 mA				TP2
Item description	USEapp	Item No.	€	
SFK02+ FR LCD TRA MultiRange 050.04	✓	666121	137,50	
SFK02+ FR LCD TRA MultiRange 100.06/04	✓	666138	138,10	
SFK02+ FR LCD TRA MultiRange 200.06/04	✓	666145	141,10	

Immersion sensor -50..+160 °C – active 0..10 V + relay				TP2
Item description	USEapp	Item No.	€	
SFK02+ FR LCD TRV MultiRange relay 050.04	✓	666190	157,50	
SFK02+ FR LCD TRV MultiRange relay 100.06/04	✓	666206	158,10	
SFK02+ FR LCD TRV MultiRange relay 200.06/04	✓	666213	161,10	

Accessories				AS1
Item description	Item No.	On stock	€	
Bluetooth dongle with micro-USB – communication between USEapp and devices USE-M/USE-L (net price)	668262	⊖	29,00	

For cable entries and sealing inserts please refer to chapter "Accessories"

Item description: product | BUS | pocket (length.Ø)

SFK02+ FR BUS



Immersion sensor -50..+160 °C – active RS485 Modbus				TP2
Item description	USEapp	Item No.	€	
SFK02+ FR RS485 Modbus 050.04	✓	666220	130,50	
SFK02+ FR RS485 Modbus 100.06/04	✓	666237	131,10	
SFK02+ FR RS485 Modbus 200.06/04	✓	666244	134,10	

Immersion sensor -50..+160 °C – active RS485 Modbus				TP2
Item description	USEapp	Item No.	€	
SFK02+ FR LCD RS485 Modbus 050.04	✓	666251	179,50	
SFK02+ FR LCD RS485 Modbus 100.06/04	✓	666268	180,10	
SFK02+ FR LCD RS485 Modbus 200.06/04	✓	666275	183,10	



Immersion sensor -50..+160 °C – active RS485 BACnet				TP2
Item description	USEapp	Item No.	€	
SFK02+ FR RS485 BACnet 050.04	✓	699501	130,50	
SFK02+ FR RS485 BACnet 100.06/04	✓	699518	131,10	
SFK02+ FR RS485 BACnet 200.06/04	✓	699525	134,10	

Immersion sensor -50..+160 °C – active RS485 BACnet				TP2
Item description	USEapp	Item No.	€	
SFK02+ FR LCD RS485 BACnet 050.04	✓	699532	179,50	
SFK02+ FR LCD RS485 BACnet 100.06/04	✓	699549	180,10	
SFK02+ FR LCD RS485 BACnet 200.06/04	✓	699556	183,10	

Accessories				AS1
Item description	Item No.	On stock	€	
Bluetooth dongle with micro-USB – communication between USEapp and devices USE-M/USE-L (net price)	668262	⊕	29,00	
For cable entries and sealing inserts please refer to chapter "Accessories"				

SFKH02+

DATA SHEETS



Immersion sensor with neck pipe for temperature measurement of gases and liquids in pipework applications. With the 70 mm neck pipe it is designed for applications with insulation materials. The sensor can optionally be screwed directly into a bonded pocket (see accessories). The measuring insert can be exchanged without disassembling the entire sensor. Tool-free opening, closing and wiring as well as removable cable entries ensure quick and easy installation.



TECHNICAL DATA	
Measuring values	temperature
Medium	gases, fluids
Output voltage	TRV: 1x 0..10 V or 0..5 V
Output ampere	TRA: 1x 4..20 mA
Output passive	PT100 PT100 1/3 DIN PT1000 PT1000 1/3 DIN Ni1000 Ni1000TK5000, NTC10k NTC 10k Precon NTC20k NTC1,8k, LM235Z
Power supply	15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$) SELV, TRA: 15..24 V = ($\pm 10\%$) SELV
Power consumption	TRV: typ. 0,4 W (24 V =) 0,8 VA (24 V ~), TRA: max. 0,5 W (24 V =)
Measuring range temp.	-50..+50 -20..+80 -15..+35 -10..+120 0..+50 0..+100 0..+160 0..+250 °C, adjustable at the transducer, default setting: 0..+160 °C, passive: PT / Ni: -50..+160 °C (T160), optional -80..+260 °C (T260), NTC: -50..+150 °C (T150), LM235Z: -50..+120 °C (T120)
Accuracy temperature	$\pm 0,5$ K (typ. at 21 °C within default measuring range), passive: depending on used sensor
Sensor	passive: 2-wire (standard), 3-wire or 4-wire
Enclosure	enclosure USE-S, PC, pure white
Protection	IP65 according to EN 60529, SI-Protection
Cable entry	Flextherm M16 for wire $\varnothing = 3..7$ mm, removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ²
Neck pipe	stainless steel V2A, $\varnothing = 12$ mm, L=70 mm
Pocket	stainless steel V4A, $\varnothing = 8$ mm, thread G 1/2", mounting length: 50 100 150 200 250 450 mm
Ambient condition	-50..+160 +150 +120 °C (only sensor tip), optional -80..+260 °C (only sensor tip), enclosure: -35..+70 °C, enclosure passive: -35..+90 °C, max. 85% rH short term condensation
Notes	other temperature sensors on request

SFKH02+ passive

Item description: product | sensor | pocket (length.Ø)

Immersion sensor -50...+160 °C – passive PT100 TP1		
Item description	Item No.	€
SFKH02+ PT100 050.08	623537	60,20
SFKH02+ PT100 100.08	623544	61,00
SFKH02+ PT100 150.08	623551	62,70
SFKH02+ PT100 200.08	623568	64,90
SFKH02+ PT100 250.08	623575	66,20
SFKH02+ PT100 450.08	623582	68,80

Immersion sensor -50...+160 °C – passive PT100 1/3 DIN TP1		
Item description	Item No.	€
SFKH02+ PT100 1/3 DIN 050.08	623599	64,00
SFKH02+ PT100 1/3 DIN 100.08	623605	64,80
SFKH02+ PT100 1/3 DIN 150.08	623612	66,40
SFKH02+ PT100 1/3 DIN 200.08	623629	68,70
SFKH02+ PT100 1/3 DIN 250.08	623636	69,90
SFKH02+ PT100 1/3 DIN 450.08	623643	72,50

Immersion sensor -50...+160 °C – passive PT1000 TP1		
Item description	Item No.	€
SFKH02+ PT1000 050.08	623650	62,40
SFKH02+ PT1000 100.08	623667	63,30
SFKH02+ PT1000 150.08	623674	64,90
SFKH02+ PT1000 200.08	623681	67,10
SFKH02+ PT1000 250.08	623698	68,40
SFKH02+ PT1000 450.08	623704	71,00

Immersion sensor -50...+160 °C – passive PT1000 1/3 DIN TP1		
Item description	Item No.	€
SFKH02+ PT1000 1/3 DIN 050.08	623223	65,40
SFKH02+ PT1000 1/3 DIN 100.08	623230	66,20
SFKH02+ PT1000 1/3 DIN 150.08	623247	67,90
SFKH02+ PT1000 1/3 DIN 200.08	623254	70,10
SFKH02+ PT1000 1/3 DIN 250.08	623261	71,40
SFKH02+ PT1000 1/3 DIN 450.08	623278	74,00

Immersion sensor -50...+160 °C – passive Ni1000 TP1		
Item description	Item No.	€
SFKH02+ Ni1000 050.08	623353	62,20
SFKH02+ Ni1000 100.08	623360	63,00
SFKH02+ Ni1000 150.08	623377	64,60
SFKH02+ Ni1000 200.08	623384	66,80
SFKH02+ Ni1000 250.08	623391	68,10
SFKH02+ Ni1000 450.08	623407	70,70

Immersion sensor -50...+160 °C – passive Ni1000TK5000 TP1		
Item description	Item No.	€
SFKH02+ Ni1000TK5000 050.08	623414	65,60
SFKH02+ Ni1000TK5000 100.08	623421	66,50
SFKH02+ Ni1000TK5000 150.08	623438	68,10
SFKH02+ Ni1000TK5000 200.08	623445	70,30
SFKH02+ Ni1000TK5000 250.08	623452	71,60
SFKH02+ Ni1000TK5000 450.08	623469	74,20

Immersion sensor -50...+150 °C – passive NTC10k TP1		
Item description	Item No.	€
SFKH02+ NTC10k 050.08	623285	58,90
SFKH02+ NTC10k 100.08	623292	59,70
SFKH02+ NTC10k 150.08	623308	61,40
SFKH02+ NTC10k 200.08	623315	63,60
SFKH02+ NTC10k 250.08	623322	64,90
SFKH02+ NTC10k 450.08	623339	67,50

Immersion sensor -50...+150 °C – passive NTC10k Precon TP1		
Item description	Item No.	€
SFKH02+ NTC10k Precon 050.08	623711	58,90
SFKH02+ NTC10k Precon 100.08	623728	59,70
SFKH02+ NTC10k Precon 150.08	623735	61,40
SFKH02+ NTC10k Precon 200.08	623742	63,60
SFKH02+ NTC10k Precon 250.08	623759	64,90
SFKH02+ NTC10k Precon 450.08	623766	67,50

SFKH02+ passive

Item description: product | sensor | pocket (length.Ø)

Immersion sensor -50..+150 °C – passive NTC20k TP1		
Item description	Item No.	€
SFKH02+ NTC20k 050.08	623773	58,90
SFKH02+ NTC20k 100.08	623780	59,70
SFKH02+ NTC20k 150.08	623797	61,40
SFKH02+ NTC20k 200.08	623803	63,60
SFKH02+ NTC20k 250.08	623810	64,90
SFKH02+ NTC20k 450.08	623827	67,50

Immersion sensor -50..+150 °C – passive NTC1,8k TP1		
Item description	Item No.	€
SFKH02+ NTC1,8k 050.08	668729	58,90
SFKH02+ NTC1,8k 100.08	668743	59,70
SFKH02+ NTC1,8k 150.08	668736	61,40
SFKH02+ NTC1,8k 200.08	668750	63,60
SFKH02+ NTC1,8k 250.08	668767	64,90
SFKH02+ NTC1,8k 450.08	668774	67,50

Immersion sensor -50..+120 °C – passive LM235Z TP1		
Item description	Item No.	€
SFKH02+ LM235Z 050.08	623476	60,70
SFKH02+ LM235Z 100.08	623483	61,50
SFKH02+ LM235Z 150.08	623490	63,10
SFKH02+ LM235Z 200.08	623506	65,40
SFKH02+ LM235Z 250.08	623513	66,60
SFKH02+ LM235Z 450.08	623520	69,20

Options	
Item description	€
3-wire connection (3-wire)	1,90
4-wire connection (4-wire)	3,70
Temperature -80..+260 °C (T260)	10,90
Add to price of NTC10k for sensor NTC5k NTC10k Carel	0,00
Add to price of PT100 for sensor FeT	19,30
Price reduction to PT100 for sensor KTY81-110 KTY81-121 KTY81-122 KTY81-210	-3,40

Replacement articles – mounting accessories USE

Item description

For cable entries and sealing inserts please refer to chapter "Accessories"

Accessories – bonded pockets AS1					
Item description	Length	Pocket length	Item No.	On stock	€
Bonded pocket St52-3 type ESH110	110 mm	100 mm	103459	☹	44,85
Bonded pocket St52-3 type ESH160	160 mm	150 mm	103466	☹	51,40
Bonded pocket St52-3 type ESH210	210 mm	200 mm	103473	☹	57,90
Bonded pocket St52-3 type ESH260	260 mm	250 mm	173247	☹	63,70

SFKH02+ active

Item description: product | TRV/TRA MultiRange | pocket (length.Ø)

Immersion sensor -50..+160 °C – active 0..10 V			TP1
Item description	Item No.	€	
SFKH02+ TRV MultiRange 050.08	623858	104,30	
SFKH02+ TRV MultiRange 100.08	623865	104,90	
SFKH02+ TRV MultiRange 150.08	623872	106,20	
SFKH02+ TRV MultiRange 200.08	623889	107,70	
SFKH02+ TRV MultiRange 250.08	623896	108,90	
SFKH02+ TRV MultiRange 450.08	623902	110,90	

Immersion sensor -50..+160 °C – active 4..20 mA			TP1
Item description	Item No.	€	
SFKH02+ TRA MultiRange 050.08	623919	104,30	
SFKH02+ TRA MultiRange 100.08	623926	104,90	
SFKH02+ TRA MultiRange 150.08	623933	106,20	
SFKH02+ TRA MultiRange 200.08	623940	107,70	
SFKH02+ TRA MultiRange 250.08	623957	108,90	
SFKH02+ TRA MultiRange 450.08	623964	110,90	

Options		
Item description	€	
Temperature -80..+260 °C (T260)	10,90	

Replacement articles – mounting accessories USE		
Item description		
For cable entries and sealing inserts please refer to chapter "Accessories"		

Accessories – bonded pockets						AS1
Item description	Length	Pocket length	Item No.	On stock	€	
Bonded pocket St52-3 type ESH110	110 mm	100 mm	103459	☹	44,85	
Bonded pocket St52-3 type ESH160	160 mm	150 mm	103466	☹	51,40	
Bonded pocket St52-3 type ESH210	210 mm	200 mm	103473	☹	57,90	
Bonded pocket St52-3 type ESH260	260 mm	250 mm	173247	☹	63,70	

SFKH02+ relay / LCD / BUS

DATA SHEETS



Immersion sensor with neck pipe for temperature measurement of gases and liquids in pipework applications. With the 70 mm neck pipe it is designed for applications with insulation materials. The sensor can optionally be screwed directly into a bonded pocket (see accessories). The measuring insert can be exchanged without disassembling the entire sensor. The devices with relay output for a 2-point controller or a 2-stage 2-point controller and color-changing LCD allow a wide range of applications. Depending on the model, the sensor can be individually configured via Thermokon USEapp. Tool-free opening, closing and wiring as well as removable cable entries ensure quick and easy installation.



SFK02+ FR relay / BUS



TECHNICAL DATA

Measuring values	temperature
Medium	gases, fluids
Output voltage	0..10 V or 0..5 V (adjustable via jumper; live-zero configuration via Thermokon USEapp)
Output ampere	TRA: 1x 4..20 mA
Output switch contact	Relay: 2x floating contact NO for 24 V ~ or 24 V = / 3 A (optional)
Network technology	RS485 BACnet (MS/TP), RS485 Modbus
Power supply	15..35 V = or 19..29 V ~ SELV, A: 15..35 V = SELV
Power consumption	max. 2,5 W (24 V =) 4,3 VA (24 V ~)
Measuring range temp.	-50..+50 -20..+80 -15..+35 -10..+120 0..+50 0..+100 0..+160 0..+250 °C, default setting: -20..+80 °C, BUS: -20..+120 °C, optionally configurable via Thermokon USEapp
Accuracy temperature	±0,5 K (typ. at 21 °C within default measuring range)
Display	LCD 29x35 mm with RGB backlight (optional)
Enclosure	enclosure USE-M, PC, pure white, LCD: cover PC, transparent
Protection	IP65 according to EN 60529, SI-Protection
Cable entry	Flextherm M16 for wire Ø=3..7 mm Relay/BUS: M25 with fourfold cable entry for wire with max. Ø=7 mm removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ² , BUS terminal: removable plug-in terminal, max. 1,5 mm ²
Neck pipe	stainless steel V2A, Ø=12 mm, L=70 mm
Pocket	stainless steel V4A, Ø=8 mm, thread G 1/2", mounting length: 50 100 150 200 250 450 mm
Ambient condition	-50..+160 °C (only sensor tip), optional -80..+260 °C (only sensor tip), enclosure: -35..+70 °C, max. 85% rH short term condensation

Item description: product | TRV/TRA MultiRange | relay | pocket (length.0)

SFKH02+ LCD / relay

Immersion sensor -50..+160 °C – active 0..10 V + relay				TP1
Item description	USEapp	Item No.	€	
SFKH02+ TRV MultiRange relay 050.08	✓	666312	143,30	
SFKH02+ TRV MultiRange relay 100.08	✓	666329	143,90	
SFKH02+ TRV MultiRange relay 150.08	✓	666336	145,20	
SFKH02+ TRV MultiRange relay 200.08	✓	666343	146,70	
SFKH02+ TRV MultiRange relay 250.08	✓	666367	147,90	
SFKH02+ TRV MultiRange relay 450.08	✓	666374	149,90	

Immersion sensor with display -50..+160 °C – active 0..10 V				TP1
Item description	USEapp	Item No.	€	
SFKH02+ LCD TRV MultiRange 050.08	✓	623988	144,00	
SFKH02+ LCD TRV MultiRange 100.08	✓	623995	144,60	
SFKH02+ LCD TRV MultiRange 150.08	✓	624008	145,90	
SFKH02+ LCD TRV MultiRange 200.08	✓	624015	147,40	
SFKH02+ LCD TRV MultiRange 250.08	✓	624022	148,60	
SFKH02+ LCD TRV MultiRange 450.08	✓	624039	150,60	

Immersion sensor with display -50..+160 °C – active 4..20 mA				TP1
Item description	USEapp	Item No.	€	
SFKH02+ LCD TRA MultiRange 050.08	✓	624046	144,00	
SFKH02+ LCD TRA MultiRange 100.08	✓	624053	144,60	
SFKH02+ LCD TRA MultiRange 150.08	✓	624060	145,90	
SFKH02+ LCD TRA MultiRange 200.08	✓	624077	147,40	
SFKH02+ LCD TRA MultiRange 250.08	✓	624084	148,60	
SFKH02+ LCD TRA MultiRange 450.08	✓	624091	150,60	

Immersion sensor with display -50..+160 °C – active 0..10 V + relay				TP1
Item description	USEapp	Item No.	€	
SFKH02+ LCD TRV MultiRange relay 050.08	✓	666381	173,30	
SFKH02+ LCD TRV MultiRange relay 100.08	✓	666398	173,90	
SFKH02+ LCD TRV MultiRange relay 150.08	✓	666404	175,20	
SFKH02+ LCD TRV MultiRange relay 200.08	✓	666411	176,70	
SFKH02+ LCD TRV MultiRange relay 250.08	✓	666428	177,90	
SFKH02+ LCD TRV MultiRange relay 450.08	✓	666435	179,90	

Item description: product | BUS | pocket (length.Ø)

SFKH02+ BUS



Immersion sensor -50..+160 °C – active RS485 Modbus				TP1
Item description	USEapp	Item No.	€	
SFKH02+ RS485 Modbus 050.08	✓	666442	146,30	
SFKH02+ RS485 Modbus 100.08	✓	666459	146,90	
SFKH02+ RS485 Modbus 150.08	✓	666466	148,20	
SFKH02+ RS485 Modbus 200.08	✓	666480	149,70	
SFKH02+ RS485 Modbus 250.08	✓	666497	150,90	
SFKH02+ RS485 Modbus 450.08	✓	666503	152,90	



Immersion sensor -50..+160 °C – active RS485 Modbus				TP1
Item description	USEapp	Item No.	€	
SFKH02+ LCD RS485 Modbus 050.08	✓	666510	195,30	
SFKH02+ LCD RS485 Modbus 100.08	✓	666527	195,90	
SFKH02+ LCD RS485 Modbus 150.08	✓	666534	197,20	
SFKH02+ LCD RS485 Modbus 200.08	✓	666541	198,70	
SFKH02+ LCD RS485 Modbus 250.08	✓	666558	199,90	
SFKH02+ LCD RS485 Modbus 450.08	✓	666565	201,90	



Immersion sensor -50..+160 °C – active RS485 BACnet				TP1
Item description	USEapp	Item No.	€	
SFKH02+ RS485 BACnet 050.08	✓	699563	146,30	
SFKH02+ RS485 BACnet 100.08	✓	699570	146,90	
SFKH02+ RS485 BACnet 150.08	✓	699587	148,20	
SFKH02+ RS485 BACnet 200.08	✓	699594	149,70	
SFKH02+ RS485 BACnet 250.08	✓	699600	150,90	
SFKH02+ RS485 BACnet 450.08	✓	699617	152,90	



Immersion sensor -50..+160 °C – active RS485 BACnet				TP1
Item description	USEapp	Item No.	€	
SFKH02+ LCD RS485 BACnet 050.08	✓	699624	195,30	
SFKH02+ LCD RS485 BACnet 100.08	✓	699631	195,90	
SFKH02+ LCD RS485 BACnet 150.08	✓	699648	197,20	
SFKH02+ LCD RS485 BACnet 200.08	✓	699655	198,70	
SFKH02+ LCD RS485 BACnet 250.08	✓	699662	199,90	
SFKH02+ LCD RS485 BACnet 450.08	✓	699679	201,90	

SFKH02+ relay / LCD / BUS

Replacement articles – mounting accessories USE				AS1
Item description	Item No.	On stock		€
Bluetooth dongle with micro-USB – communication between USEapp and devices USE-M/USE-L (net price)	668262	☉		29,00
For cable entries and sealing inserts please refer to chapter "Accessories"				

Accessories – bonded pockets					AS1
Item description	Length	Pocket length	Item No.	On stock	€
Bonded pocket St52-3 type ESH110	110 mm	100 mm	103459	☉	44,85
Bonded pocket St52-3 type ESH160	160 mm	150 mm	103466	☉	51,40
Bonded pocket St52-3 type ESH210	210 mm	200 mm	103473	☉	57,90
Bonded pocket St52-3 type ESH260	260 mm	250 mm	173247	☉	63,70

SFKH02 LON

DATA SHEETS



Immersion sensor with neck pipe in enclosure PA6, pure white, with quick lock screws. Integrated thermowell pocket for temperature measurement of gases and liquids in pipework applications.



LON
LOCAL OPERATING NETWORK

TECHNICAL DATA	
Measuring values	temperature
Medium	gases, fluids
Network technology	LON FT (free topology)
Power supply	15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$) SELV
Power consumption	typ. 0,5 W (24 V =) 1,7 VA (24 V ~)
Measuring range temp.	-45..+130 °C
Accuracy temperature	$\pm 0,5$ K (typ. at 21 °C within default measuring range)
Enclosure	PA6, pure white, with quick lock screws
Protection	IP65 according to EN 60529, SI-Protection
Cable entry	M20 for wire max. $\varnothing=8$ mm, seal insert for double cable entry for wire max $\varnothing=6$ mm
Connection electrical	terminal block, max. 1,5 mm ²
Neck pipe	stainless steel V2A, $\varnothing=12$ mm, L=70 mm
Pocket	stainless steel V4A, $\varnothing=8$ mm, thread G 1/2", mounting length: 50 100 150 200 250 450 mm
Ambient condition	-50..+160 °C (only sensor tip), enclosure: -35..+70 °C, max. 85% rH short term condensation

LON
LOCAL OPERATING NETWORK

Immersion sensor -50..+120 °C – active LON		TP1
Item description	Item No.	€
SFKH02 LON 050.08	95365	214,30
SFKH02 LON 100.08	95372	215,10
SFKH02 LON 150.08	95389	216,80
SFKH02 LON 200.08	95396	219,00
SFKH02 LON 250.08	95402	220,30
SFKH02 LON 450.08	95419	222,90

SFK01

DATA SHEETS



Passive immersion sensor with neck pipe and integrated thermowell pocket for high temperature measurement of liquids in duct applications.



TECHNICAL DATA	
Measuring values	temperature
Medium	gases, fluids
Output passive	PT100 PT100 1/3 DIN PT1000 PT1000 1/3 DIN Ni1000 Ni1000TK5000, NTC10k NTC 10k Precon NTC20k NTC1,8k, LM235Z
Measuring range temp.	PT / Ni: -50..+160 °C (T160), optional -80..+260 °C (T260), NTC: -50..+150 °C (T150), LM235Z: -50..+120 °C (T120)
Accuracy temperature	depending on used sensor
Sensor	2-wire (standard), 3-wire or 4-wire
Enclosure	shape J, aluminium
Protection	IP65 according to EN 60529, SI-Protection
Cable entry	M16 for wire max. Ø=8 mm
Connection electrical	terminal block, max. 1,5 mm ²
Pocket	stainless steel V4A, Ø=8 mm, thread G 1/2", mounting length: 50 100 150 200 250 450 mm
Ambient condition	-50..+160 +150 +120 °C (only sensor tip), optional -80..+260 °C (only sensor tip), enclosure: -25..+90 °C, max. 85% rH short term condensation
Notes	other temperature sensors on request

SFK01

Item description: product | sensor | pocket (length.Ø)

Immersion sensor -50...+160 °C – passive PT100 TP1		
Item description	Item No.	€
SFK01 PT100 050.08	37662	45,90
SFK01 PT100 100.08	27717	46,80
SFK01 PT100 150.08	27724	48,30
SFK01 PT100 200.08	27731	50,10
SFK01 PT100 250.08	27748	50,60
SFK01 PT100 450.08	27755	53,60

Immersion sensor -50...+160 °C – passive PT100 1/3 DIN TP1		
Item description	Item No.	€
SFK01 PT100 1/3 DIN 050.08	27762	49,70
SFK01 PT100 1/3 DIN 100.08	27779	50,60
SFK01 PT100 1/3 DIN 150.08	27786	52,10
SFK01 PT100 1/3 DIN 200.08	27793	53,90
SFK01 PT100 1/3 DIN 250.08	27809	54,40
SFK01 PT100 1/3 DIN 450.08	27816	57,40

Immersion sensor -50...+160 °C – passive PT1000 TP1		
Item description	Item No.	€
SFK01 PT1000 050.08	27823	48,00
SFK01 PT1000 100.08	27830	49,00
SFK01 PT1000 150.08	27847	50,50
SFK01 PT1000 200.08	27854	52,40
SFK01 PT1000 250.08	27861	52,80
SFK01 PT1000 450.08	27878	55,90

Immersion sensor -50...+160 °C – passive PT1000 1/3 DIN TP1		
Item description	Item No.	€
SFK01 PT1000 1/3 DIN 050.08	27885	51,10
SFK01 PT1000 1/3 DIN 100.08	27892	52,10
SFK01 PT1000 1/3 DIN 150.08	36740	53,60
SFK01 PT1000 1/3 DIN 200.08	36757	55,50
SFK01 PT1000 1/3 DIN 250.08	36764	55,90
SFK01 PT1000 1/3 DIN 450.08	36771	59,00

Immersion sensor -50...+160 °C – passive Ni1000 TP1		
Item description	Item No.	€
SFK01 Ni1000 050.08	36788	47,80
SFK01 Ni1000 100.08	36795	48,80
SFK01 Ni1000 150.08	36801	50,20
SFK01 Ni1000 200.08	36818	52,10
SFK01 Ni1000 250.08	36825	52,50
SFK01 Ni1000 450.08	45292	55,60

Immersion sensor -50...+160 °C – passive Ni1000TK5000 TP1		
Item description	Item No.	€
SFK01 Ni1000TK5000 050.08	45308	51,30
SFK01 Ni1000TK5000 100.08	45315	52,30
SFK01 Ni1000TK5000 150.08	45322	53,80
SFK01 Ni1000TK5000 200.08	45339	55,70
SFK01 Ni1000TK5000 250.08	45346	56,10
SFK01 Ni1000TK5000 450.08	45353	59,20

Immersion sensor -50...+150 °C – passive NTC10k TP1		
Item description	Item No.	€
SFK01 NTC10k 050.08	45421	44,40
SFK01 NTC10k 100.08	45438	45,50
SFK01 NTC10k 150.08	45445	46,90
SFK01 NTC10k 200.08	45452	48,80
SFK01 NTC10k 250.08	45469	49,20
SFK01 NTC10k 450.08	45476	52,30

Immersion sensor -50...+150 °C – passive NTC10k Precon TP1		
Item description	Item No.	€
SFK01 NTC10k Precon 050.08	45544	44,40
SFK01 NTC10k Precon 100.08	45551	45,50
SFK01 NTC10k Precon 150.08	45568	46,90
SFK01 NTC10k Precon 200.08	45575	48,80
SFK01 NTC10k Precon 250.08	45582	49,20
SFK01 NTC10k Precon 450.08	45599	52,30

SFK01

Item description: product | sensor | pocket (length.Ø)

Immersion sensor -50..+150 °C – passive NTC20k TP1		
Item description	Item No.	€
SFK01 NTC20k 050.08	45483	44,40
SFK01 NTC20k 100.08	45490	45,50
SFK01 NTC20k 150.08	45506	46,90
SFK01 NTC20k 200.08	45513	48,80
SFK01 NTC20k 250.08	45520	49,20
SFK01 NTC20k 450.08	45537	52,30

Immersion sensor -50..+150 °C – passive NTC1,8k TP1		
Item description	Item No.	€
SFK01 NTC1,8k 050.08	351140	44,40
SFK01 NTC1,8k 100.08	270311	45,50
SFK01 NTC1,8k 150.08	270304	46,90
SFK01 NTC1,8k 200.08	263566	48,80
SFK01 NTC1,8k 250.08	249362	49,20
SFK01 NTC1,8k 450.08	293655	52,30

Immersion sensor -50..+120 °C – passive LM235Z TP1		
Item description	Item No.	€
SFK01 LM235Z 050.08	45605	46,30
SFK01 LM235Z 100.08	45612	47,20
SFK01 LM235Z 150.08	45629	48,70
SFK01 LM235Z 200.08	45636	50,50
SFK01 LM235Z 250.08	45643	51,00
SFK01 LM235Z 450.08	45650	54,00

Options	
Item description	€
3-wire connection (3-wire)	1,90
4-wire connection (4-wire)	3,70
Temperature -80..+260 °C (T260)	10,90
Add to price of NTC10k for sensor NTC5k NTC10k Carel	0,00
Add to price of PT100 for sensor FeT	19,30

Order example for different items:

SFK01 | FeT | 450.08 | 3-wire | T260

SFK01 = product
FeT = sensor
450.08 = pocket (length.Ø)
3-wire = number of wires
T260 = temperature

Accessories – bonded pockets AS1					
Item description	Length	Pocket length	Item No.	On stock	€
Bonded pocket St52-3 type ESH110	110 mm	100 mm	103459	☺	44,85
Bonded pocket St52-3 type ESH160	160 mm	150 mm	103466	☺	51,40
Bonded pocket St52-3 type ESH210	210 mm	200 mm	103473	☺	57,90
Bonded pocket St52-3 type ESH260	260 mm	250 mm	173247	☺	63,70

SFKH01

DATA SHEETS



Passive immersion sensor with neck pipe and integrated thermowell pocket for high temperature measurement of liquids in duct applications.



TECHNICAL DATA	
Measuring values	temperature
Medium	gases, fluids
Output passive	PT100 PT100 1/3 DIN PT1000 PT1000 1/3 DIN Ni1000 Ni1000TK5000, NTC10k NTC 10k Precon NTC20k NTC1,8k, LM235Z
Measuring range temp.	PT / Ni: -50..+160 °C (T160), optional -80..+260 °C (T260), NTC: -50..+150 °C (T150), LM235Z: -50..+120 °C (T120)
Accuracy temperature	depending on used sensor
Sensor	2-wire (standard), 3-wire or 4-wire
Enclosure	shape J, aluminium
Protection	IP65 according to EN 60529, SI-Protection
Cable entry	M16 for wire max. Ø=8 mm
Connection electrical	terminal block, max. 1,5 mm ²
Neck pipe	stainless steel V2A, Ø=12 mm, L=70 mm
Pocket	stainless steel V4A, Ø=8 mm, thread G 1/2", mounting length: 50 100 150 200 250 450 mm
Ambient condition	-50..+160 +150 +120 °C (only sensor tip), optional -80..+260 °C (only sensor tip), enclosure: -25..+90 °C, max. 85% rH short term condensation
Notes	other temperature sensors on request

SFKH01

Item description: product | sensor | pocket (length.Ø)

Immersion sensor -50...+160 °C – passive PT100 TP1		
Item description	Item No.	€
SFKH01 PT100 050.08	54652	70,70
SFKH01 PT100 100.08	55567	71,60
SFKH01 PT100 150.08	55574	73,10
SFKH01 PT100 200.08	55581	74,90
SFKH01 PT100 250.08	55598	75,40
SFKH01 PT100 450.08	55604	78,50

Immersion sensor -50...+160 °C – passive PT100 1/3 DIN TP1		
Item description	Item No.	€
SFKH01 PT100 1/3 DIN 050.08	55611	74,50
SFKH01 PT100 1/3 DIN 100.08	55628	75,40
SFKH01 PT100 1/3 DIN 150.08	55635	76,90
SFKH01 PT100 1/3 DIN 200.08	55642	78,80
SFKH01 PT100 1/3 DIN 250.08	55659	79,30
SFKH01 PT100 1/3 DIN 450.08	55666	82,30

Immersion sensor -50...+160 °C – passive PT1000 TP1		
Item description	Item No.	€
SFKH01 PT1000 050.08	55673	73,00
SFKH01 PT1000 100.08	55680	73,90
SFKH01 PT1000 150.08	55697	75,30
SFKH01 PT1000 200.08	55703	77,20
SFKH01 PT1000 250.08	55710	77,70
SFKH01 PT1000 450.08	55727	80,80

Immersion sensor -50...+160 °C – passive PT1000 1/3 DIN TP1		
Item description	Item No.	€
SFKH01 PT1000 1/3 DIN 050.08	55734	76,10
SFKH01 PT1000 1/3 DIN 100.08	55741	77,00
SFKH01 PT1000 1/3 DIN 150.08	55758	78,40
SFKH01 PT1000 1/3 DIN 200.08	55765	80,30
SFKH01 PT1000 1/3 DIN 250.08	55772	80,80
SFKH01 PT1000 1/3 DIN 450.08	55789	83,90

Immersion sensor -50...+160 °C – passive Ni1000 TP1		
Item description	Item No.	€
SFKH01 Ni1000 050.08	55796	72,70
SFKH01 Ni1000 100.08	55802	73,60
SFKH01 Ni1000 150.08	55819	75,00
SFKH01 Ni1000 200.08	55826	76,90
SFKH01 Ni1000 250.08	55833	77,40
SFKH01 Ni1000 450.08	55840	80,50

Immersion sensor -50...+160 °C – passive Ni1000TK5000 TP1		
Item description	Item No.	€
SFKH01 Ni1000TK5000 050.08	55857	76,30
SFKH01 Ni1000TK5000 100.08	55864	77,20
SFKH01 Ni1000TK5000 150.08	55871	78,60
SFKH01 Ni1000TK5000 200.08	55888	80,50
SFKH01 Ni1000TK5000 250.08	55895	81,00
SFKH01 Ni1000TK5000 450.08	55901	84,10

Immersion sensor -50...+150 °C – passive NTC10k TP1		
Item description	Item No.	€
SFKH01 NTC10k 050.08	55970	69,40
SFKH01 NTC10k 100.08	55987	70,30
SFKH01 NTC10k 150.08	55994	71,70
SFKH01 NTC10k 200.08	56007	73,60
SFKH01 NTC10k 250.08	56014	74,10
SFKH01 NTC10k 450.08	56021	77,20

Immersion sensor -50...+150 °C – passive NTC10k Precon TP1		
Item description	Item No.	€
SFKH01 NTC10k Precon 050.08	56090	69,40
SFKH01 NTC10k Precon 100.08	56106	70,30
SFKH01 NTC10k Precon 150.08	56113	71,70
SFKH01 NTC10k Precon 200.08	56120	73,60
SFKH01 NTC10k Precon 250.08	56137	74,10
SFKH01 NTC10k Precon 450.08	56144	77,20

SFKH01

Item description: product | sensor | pocket (length.Ø)

Immersion sensor -50..+150 °C – passive NTC20k TP1		
Item description	Item No.	€
SFKH01 NTC20k 050.08	56038	69,40
SFKH01 NTC20k 100.08	56045	70,30
SFKH01 NTC20k 150.08	56052	71,70
SFKH01 NTC20k 200.08	56069	73,60
SFKH01 NTC20k 250.08	56076	74,10
SFKH01 NTC20k 450.08	56083	77,20

Immersion sensor -50..+150 °C – passive NTC1,8k TP1		
Item description	Item No.	€
SFKH01 NTC1,8k 050.08	351287	69,40
SFKH01 NTC1,8k 100.08	258708	70,30
SFKH01 NTC1,8k 150.08	351317	71,70
SFKH01 NTC1,8k 200.08	351379	73,60
SFKH01 NTC1,8k 250.08	351393	74,10
SFKH01 NTC1,8k 450.08	351416	77,20

Immersion sensor -50..+120 °C – passive LM235Z TP1		
Item description	Item No.	€
SFKH01 LM235Z 050.08	56151	71,10
SFKH01 LM235Z 100.08	56168	72,00
SFKH01 LM235Z 150.08	56175	73,50
SFKH01 LM235Z 200.08	56182	75,20
SFKH01 LM235Z 250.08	56199	75,90
SFKH01 LM235Z 450.08	56205	78,90

Options	
Item description	€
3-wire connection (3-wire)	1,90
4-wire connection (4-wire)	3,70
Temperature -80..+260 °C (T260)	10,90
Add to price of NTC10k for sensor NTC5k NTC10k Carel	0,00
Add to price of PT100 for sensor FeT	19,30

Order example for different items:

SFKH01 | FeT | 450.08 | 3-wire | T260

SFKH01 = product
FeT = sensor
450.08 = pocket (length.Ø)
3-wire = 3-wire connection
T260 = temperature

Accessories – bonded pockets AS1					
Item description	Length	Pocket length	Item No.	On stock	€
Bonded pocket St52-3 type ESH110	110 mm	100 mm	103459	●	44,85
Bonded pocket St52-3 type ESH160	160 mm	150 mm	103466	●	51,40
Bonded pocket St52-3 type ESH210	210 mm	200 mm	103473	●	57,90
Bonded pocket St52-3 type ESH260	260 mm	250 mm	173247	●	63,70



SFK03 passive

DATA SHEETS



Immersion sensor in enclosure form B with neck pipe and integrated thermowell pocket for high temperature measurement of liquids in duct applications.



TECHNICAL DATA	
Measuring values	temperature
Medium	gases, fluids
Output passive	PT100 PT100 1/3 DIN PT1000 PT1000 1/3 DIN Ni1000 Ni1000TK5000, NTC10k NTC 10k Precon NTC20k NTC1,8k, LM235Z
Measuring range temp.	PT / Ni: -50..+160 °C (T160), optional -80..+260 °C (T260), NTC: -50..+150 °C (T150), LM235Z: -50..+120 °C (T120)
Accuracy temperature	depending on used sensor
Sensor	2-wire (standard), 3-wire or 4-wire
Enclosure	shape B, aluminium
Protection	IP66 according to EN 60529, SI-Protection
Cable entry	M20 for wire max. Ø=8 mm
Connection electrical	terminal block, max. 1,5 mm ²
Pocket	stainless steel V4A, Ø=8 mm, thread G 1/2", mounting length: 100 150 200 250 mm
Ambient condition	-50..+160 +150 +120 °C (only sensor tip), optional -80..+260 °C (only sensor tip), enclosure: -25..+90 °C, max. 85% rH short term condensation
Notes	other temperature sensors on request

Immersion sensor -50..+160 °C – passive PT100			TP1
Item description	Item No.	€	
SFK03 PT100 100.08	64309	54,30	
SFK03 PT100 150.08	71079	56,30	
SFK03 PT100 200.08	71086	58,30	
SFK03 PT100 250.08	71093	61,30	

Immersion sensor -50..+160 °C – passive PT100 1/3 DIN			TP1
Item description	Item No.	€	
SFK03 PT100 1/3 DIN 100.08	71109	58,30	
SFK03 PT100 1/3 DIN 150.08	71116	60,30	
SFK03 PT100 1/3 DIN 200.08	71123	62,30	
SFK03 PT100 1/3 DIN 250.08	71130	65,20	

Immersion sensor -50..+160 °C – passive PT1000			TP1
Item description	Item No.	€	
SFK03 PT1000 100.08	71147	56,60	
SFK03 PT1000 150.08	71154	58,60	
SFK03 PT1000 200.08	71161	60,50	
SFK03 PT1000 250.08	71178	63,50	

Immersion sensor -50..+160 °C – passive PT1000 1/3 DIN			TP1
Item description	Item No.	€	
SFK03 PT1000 1/3 DIN 100.08	71185	59,90	
SFK03 PT1000 1/3 DIN 150.08	71192	61,80	
SFK03 PT1000 1/3 DIN 200.08	71208	63,90	
SFK03 PT1000 1/3 DIN 250.08	71215	66,90	

SFK03 passive

Item description: product | sensor | pocket (length.Ø)

Immersion sensor -50...+160 °C – passive Ni1000 TP1		
Item description	Item No.	€
SFK03 Ni1000 100.08	71222	56,30
SFK03 Ni1000 150.08	71239	58,20
SFK03 Ni1000 200.08	71246	60,30
SFK03 Ni1000 250.08	71253	63,20

Immersion sensor -50...+160 °C – passive Ni1000TK5000 TP1		
Item description	Item No.	€
SFK03 Ni1000TK5000 100.08	71260	59,90
SFK03 Ni1000TK5000 150.08	71277	61,80
SFK03 Ni1000TK5000 200.08	71284	63,90
SFK03 Ni1000TK5000 250.08	71291	66,80

Immersion sensor -50...+150 °C – passive NTC10k TP1		
Item description	Item No.	€
SFK03 NTC10k 100.08	71345	53,00
SFK03 NTC10k 150.08	71352	54,90
SFK03 NTC10k 200.08	71369	56,90
SFK03 NTC10k 250.08	71376	59,90

Immersion sensor -50...+150 °C – passive NTC10k Precon TP1		
Item description	Item No.	€
SFK03 NTC10k Precon 100.08	71420	53,00
SFK03 NTC10k Precon 150.08	71437	54,90
SFK03 NTC10k Precon 200.08	71444	56,90
SFK03 NTC10k Precon 250.08	71451	59,90

Immersion sensor -50...+150 °C – passive NTC20k TP1		
Item description	Item No.	€
SFK03 NTC20k 100.08	71383	53,00
SFK03 NTC20k 150.08	71390	54,90
SFK03 NTC20k 200.08	71406	56,90
SFK03 NTC20k 250.08	71413	59,90

Immersion sensor -50...+150 °C – passive NTC1,8k TP1		
Item description	Item No.	€
SFK03 NTC1,8k 100.08	351652	53,00
SFK03 NTC1,8k 150.08	351676	54,90
SFK03 NTC1,8k 200.08	351683	56,90
SFK03 NTC1,8k 250.08	351706	59,90

Immersion sensor -50...+120 °C – passive LM235Z TP1		
Item description	Item No.	€
SFK03 LM235Z 100.08	71468	55,70
SFK03 LM235Z 150.08	71475	57,60
SFK03 LM235Z 200.08	71482	59,70
SFK03 LM235Z 250.08	71499	62,70

Options

Item description	€
3-wire connection (3-wire)	1,90
4-wire connection (4-wire)	3,70
Temperature -80...+260 °C (T260)	10,90
Add to price of NTC10k for sensor NTC5k NTC10k Carel	0,00
Add to price of PT100 for sensor FeT	19,30

Accessories – bonded pockets

Item description	Length	Pocket length	Item No.	On stock	€
Bonded pocket St52-3 type ESH110	110 mm	100 mm	103459	☺	44,85
Bonded pocket St52-3 type ESH160	160 mm	150 mm	103466	☺	51,40
Bonded pocket St52-3 type ESH210	210 mm	200 mm	103473	☺	57,90
Bonded pocket St52-3 type ESH260	260 mm	250 mm	173247	☺	63,70

SFK03 active

DATA SHEETS 

Immersion sensor in enclosure form B with neck pipe and integrated thermowell pocket for high temperature measurement of liquids in duct applications.



TECHNICAL DATA	
Measuring values	temperature
Medium	gases, fluids
Output voltage	TRV: 1x 0..10 V
Output ampere	TRA: 1x 4..20 mA
Power supply	TRV: 15..24 V = (±10%) or 24 V ~ (±10%) SELV, TRA: 15..24 V = (±10%) SELV
Power consumption	TRV: typ. 1 W (24 V =) 1,4 VA (24 V ~), TRA: typ. 0,5 W (24 V =)
Measuring range temp.	TRV1 TRA1: -50..+50 °C, TRV2 TRA2: -10..+120 °C, TRV3 TRA3: 0..+50 °C, TRV4 TRA4: 0..+160 °C, TRV5 TRA5: 0..+300 °C
Accuracy temperature	±0,2 K ±0,1% of measured value (typ. at 21 °C)
Enclosure	shape B, aluminium
Protection	IP66 according to EN 60529, SI-Protection
Cable entry	M20 for wire max. Ø=8 mm
Connection electrical	terminal block, max. 1,5 mm ²
Pocket	stainless steel V4A, Ø=8 mm, thread G 1/2", mounting length: 100 150 200 250 mm
Ambient condition	-50..+160 °C (only sensor tip), optional -80..+260 °C (only sensor tip), enclosure: -25..+70 °C, max. 85% rH short term condensation

SFK03 active

Item description: product | TRVx / TRAx | pocket (length.Ø)

Immersion sensor -50...+50 °C – active TRV1 0..10 V TP1		
Item description	Item No.	€
SFK03 TRV1 100.08	318853	139,20
SFK03 TRV1 150.08	352024	140,50
SFK03 TRV1 200.08	352062	141,90
SFK03 TRV1 250.08	352109	143,90

Immersion sensor -10...+120 °C – active TRV2 0..10 V TP1		
Item description	Item No.	€
SFK03 TRV2 100.08	335744	139,20
SFK03 TRV2 150.08	352031	140,50
SFK03 TRV2 200.08	246958	141,90
SFK03 TRV2 250.08	352253	143,90

Immersion sensor 0...+50 °C – active TRV3 0..10 V TP1		
Item description	Item No.	€
SFK03 TRV3 100.08	281775	139,20
SFK03 TRV3 150.08	352048	140,50
SFK03 TRV3 200.08	352079	141,90
SFK03 TRV3 250.08	352260	143,90

Immersion sensor 0...+160 °C – active TRV4 0..10 V TP1		
Item description	Item No.	€
SFK03 TRV4 100.08	298414	139,20
SFK03 TRV4 150.08	292115	140,50
SFK03 TRV4 200.08	324403	141,90
SFK03 TRV4 250.08	352277	143,90

Immersion sensor 0...+300 °C – active TRV5 0..10 V TP1		
Item description	Item No.	€
SFK03 TRV5 100.08	243933	146,80
SFK03 TRV5 150.08	295314	148,10
SFK03 TRV5 200.08	297509	149,50
SFK03 TRV5 250.08	306607	151,60

Immersion sensor -50...+50 °C – active TRA1 4..20 mA TP1		
Item description	Item No.	€
SFK03 TRA1 100.08	194440	139,20
SFK03 TRA1 150.08	200899	140,50
SFK03 TRA1 200.08	352055	141,90
SFK03 TRA1 250.08	254908	143,90

Immersion sensor -10...+120 °C – active TRA2 4..20 mA TP1		
Item description	Item No.	€
SFK03 TRA2 100.08	189316	139,20
SFK03 TRA2 150.08	344166	140,50
SFK03 TRA2 200.08	315746	141,90
SFK03 TRA2 250.08	352086	143,90

Immersion sensor 0...+50 °C – active TRA3 4..20 mA TP1		
Item description	Item No.	€
SFK03 TRA3 100.08	132220	139,20
SFK03 TRA3 150.08	165044	140,50
SFK03 TRA3 200.08	165280	141,90
SFK03 TRA3 250.08	303835	143,90

Immersion sensor 0...+160 °C – active TRA4 4..20 mA TP1		
Item description	Item No.	€
SFK03 TRA4 100.08	293051	139,20
SFK03 TRA4 150.08	295024	140,50
SFK03 TRA4 200.08	239226	141,90
SFK03 TRA4 250.08	352093	143,90

Immersion sensor 0...+300 °C – active TRA5 4..20 mA TP1		
Item description	Item No.	€
SFK03 TRA5 100.08	131674	146,80
SFK03 TRA5 150.08	146821	148,10
SFK03 TRA5 200.08	152884	149,50
SFK03 TRA5 250.08	157421	151,60



SFKH03 passive

DATA SHEETS



Immersion sensor in enclosure form B with neck pipe and integrated thermowell pocket for high temperature measurement of liquids in duct applications.



TECHNICAL DATA	
Measuring values	temperature
Medium	gases, fluids
Output passive	PT100 PT100 1/3 DIN PT1000 PT1000 1/3 DIN Ni1000 Ni1000TK5000, NTC10k NTC 10k Precon NTC20k NTC1,8k, LM235Z
Measuring range temp.	PT / Ni: -50..+160 °C (T160), optional -80..+260 °C (T260), NTC: -50..+150 °C (T150), LM235Z: -50..+120 °C (T120)
Accuracy temperature	depending on used sensor
Sensor	2-wire (standard), 3-wire or 4-wire
Enclosure	shape B, aluminium
Protection	IP66 according to EN 60529, SI-Protection
Cable entry	M20 for wire max. Ø=8 mm
Connection electrical	terminal block, max. 1,5 mm ²
Neck pipe	stainless steel V2A, Ø=15 mm, L=70 mm
Pocket	stainless steel V4A, Ø=8 mm, thread G 1/2", mounting length: 100 150 200 250 mm
Ambient condition	-50..+160 +150 +120 °C (only sensor tip), optional -80..+260 °C (only sensor tip), enclosure: -25..+90 °C, max. 85% rH short term condensation
Notes	other temperature sensors on request

Immersion sensor -50..+160 °C – passive PT100			TP1
Item description	Item No.	€	
SFKH03 PT100 100.08	64323	72,90	
SFKH03 PT100 150.08	75053	74,80	
SFKH03 PT100 200.08	75077	76,90	
SFKH03 PT100 250.08	75084	79,90	

Immersion sensor -50..+160 °C – passive PT100 1/3 DIN			TP1
Item description	Item No.	€	
SFKH03 PT100 1/3 DIN 100.08	75091	76,90	
SFKH03 PT100 1/3 DIN 150.08	75107	78,80	
SFKH03 PT100 1/3 DIN 200.08	75114	80,90	
SFKH03 PT100 1/3 DIN 250.08	75121	83,90	

Immersion sensor -50..+160 °C – passive PT1000			TP1
Item description	Item No.	€	
SFKH03 PT1000 100.08	75138	75,10	
SFKH03 PT1000 150.08	75145	77,10	
SFKH03 PT1000 200.08	75152	79,20	
SFKH03 PT1000 250.08	75169	82,10	

Immersion sensor -50..+160 °C – passive PT1000 1/3 DIN			TP1
Item description	Item No.	€	
SFKH03 PT1000 1/3 DIN 100.08	75176	78,40	
SFKH03 PT1000 1/3 DIN 150.08	75183	80,40	
SFKH03 PT1000 1/3 DIN 200.08	75190	82,40	
SFKH03 PT1000 1/3 DIN 250.08	75206	85,40	

SFKH03 passive

Item description: product | sensor | pocket (length.Ø)

Immersion sensor -50...+160 °C – passive Ni1000 TP1		
Item description	Item No.	€
SFKH03 Ni1000 100.08	75213	74,80
SFKH03 Ni1000 150.08	75220	76,80
SFKH03 Ni1000 200.08	75237	78,80
SFKH03 Ni1000 250.08	75244	81,80

Immersion sensor -50...+160 °C – passive Ni1000TK5000 TP1		
Item description	Item No.	€
SFKH03 Ni1000TK5000 100.08	75251	78,40
SFKH03 Ni1000TK5000 150.08	75268	80,40
SFKH03 Ni1000TK5000 200.08	75275	82,40
SFKH03 Ni1000TK5000 250.08	75282	85,40

Immersion sensor -50...+150 °C – passive NTC10k TP1		
Item description	Item No.	€
SFKH03 NTC10k 100.08	74568	71,50
SFKH03 NTC10k 150.08	75343	73,50
SFKH03 NTC10k 200.08	75350	75,50
SFKH03 NTC10k 250.08	75367	78,50

Immersion sensor -50...+150 °C – passive NTC10k Precon TP1		
Item description	Item No.	€
SFKH03 NTC10k Precon 100.08	75411	71,50
SFKH03 NTC10k Precon 150.08	75428	73,50
SFKH03 NTC10k Precon 200.08	75435	75,50
SFKH03 NTC10k Precon 250.08	75442	78,50

Immersion sensor -50...+150 °C – passive NTC20k TP1		
Item description	Item No.	€
SFKH03 NTC20k 100.08	75374	71,50
SFKH03 NTC20k 150.08	75381	73,50
SFKH03 NTC20k 200.08	75398	75,50
SFKH03 NTC20k 250.08	75404	78,50

Immersion sensor -50...+150 °C – passive NTC1,8k TP1		
Item description	Item No.	€
SFKH03 NTC1,8k 100.08	351553	71,50
SFKH03 NTC1,8k 150.08	351607	73,50
SFKH03 NTC1,8k 200.08	351638	75,50
SFKH03 NTC1,8k 250.08	351669	78,50

Immersion sensor -50...+120 °C – passive LM235Z TP1		
Item description	Item No.	€
SFKH03 LM235Z 100.08	75459	74,20
SFKH03 LM235Z 150.08	75466	76,30
SFKH03 LM235Z 200.08	75473	78,20
SFKH03 LM235Z 250.08	75480	81,20

Options		€
Item description		
3-wire connection (3-wire)		1,90
4-wire connection (4-wire)		3,70
Temperature -80...+260 °C (T260)		10,90

Accessories – bonded pockets					AS1
Item description	Length	Pocket length	Item No.	On stock	€
Bonded pocket St52-3 type ESH110	110 mm	100 mm	103459	☺	44,85
Bonded pocket St52-3 type ESH160	160 mm	150 mm	103466	☺	51,40
Bonded pocket St52-3 type ESH210	210 mm	200 mm	103473	☺	57,90
Bonded pocket St52-3 type ESH260	260 mm	250 mm	173247	☺	63,70

SFKH03 active

DATA SHEETS



Immersion sensor in enclosure form B with neck pipe and integrated thermowell pocket for high temperature measurement of liquids in duct applications.



TECHNICAL DATA	
Measuring values	temperature
Medium	gases, fluids
Output voltage	TRV: 1x 0..10 V
Output ampere	TRA: 1x 4..20 mA
Power supply	TRV: 15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$) SELV, TRA: 15..24 V = ($\pm 10\%$) SELV
Power consumption	TRV: typ. 1 W (24 V =) 1,4 VA (24 V ~), TRA: typ. 0,5 W (24 V =)
Measuring range temp.	TRV1 TRA1: -50..+50 °C, TRV2 TRA2: -10..+120 °C, TRV3 TRA3: 0..+50 °C, TRV4 TRA4: 0..+160 °C, TRV5 TRA5: 0..+300 °C
Accuracy temperature	$\pm 0,2$ K $\pm 0,1\%$ of measured value (typ. at 21 °C)
Enclosure	shape B, aluminium
Protection	IP66 according to EN 60529, SI-Protection
Cable entry	M20 for wire max. $\varnothing=8$ mm
Connection electrical	terminal block, max. 1,5 mm ²
Neck pipe	stainless steel V2A, $\varnothing=15$ mm, L=70 mm
Pocket	stainless steel V4A, $\varnothing=8$ mm, thread G 1/2", mounting length: 100 150 200 250 mm
Ambient condition	-50..+160 °C (only sensor tip), optional -80..+260 °C (only sensor tip), enclosure: -25..+70 °C, max. 85% rH short term condensation

SFKH03 active

Item description: product | TRVx / TRAx | pocket (length.Ø)

Immersion sensor -50...+50 °C – active TRV1 0..10 V TP1		
Item description	Item No.	€
SFKH03 TRV1 100.08	320986	150,40
SFKH03 TRV1 150.08	351782	151,70
SFKH03 TRV1 200.08	351812	153,10
SFKH03 TRV1 250.08	351904	155,10

Immersion sensor -10...+120 °C – active TRV2 0..10 V TP1		
Item description	Item No.	€
SFKH03 TRV2 100.08	351737	150,40
SFKH03 TRV2 150.08	351799	151,70
SFKH03 TRV2 200.08	351829	153,10
SFKH03 TRV2 250.08	351911	155,10

Immersion sensor 0...+50 °C – active TRV3 0..10 V TP1		
Item description	Item No.	€
SFKH03 TRV3 100.08	351744	150,40
SFKH03 TRV3 150.08	288071	151,70
SFKH03 TRV3 200.08	351836	153,10
SFKH03 TRV3 250.08	351928	155,10

Immersion sensor 0...+160 °C – active TRV4 0..10 V TP1		
Item description	Item No.	€
SFKH03 TRV4 100.08	344784	150,40
SFKH03 TRV4 150.08	351805	151,70
SFKH03 TRV4 200.08	258548	153,10
SFKH03 TRV4 250.08	256711	155,10

Immersion sensor 0...+300 °C – active TRV5 0..10 V TP1		
Item description	Item No.	€
SFKH03 TRV5 100.08	115001	158,00
SFKH03 TRV5 150.08	261944	159,30
SFKH03 TRV5 200.08	258555	160,70
SFKH03 TRV5 250.08	152716	162,70

Immersion sensor -50...+50 °C – active TRA1 4..20 mA TP1		
Item description	Item No.	€
SFKH03 TRA1 100.08	180832	150,40
SFKH03 TRA1 150.08	256193	151,70
SFKH03 TRA1 200.08	215350	153,10
SFKH03 TRA1 250.08	351843	155,10

Immersion sensor -10...+120 °C – active TRA2 4..20 mA TP1		
Item description	Item No.	€
SFKH03 TRA2 100.08	307888	150,40
SFKH03 TRA2 150.08	227940	151,70
SFKH03 TRA2 200.08	338011	153,10
SFKH03 TRA2 250.08	274265	155,10

Immersion sensor 0...+50 °C – active TRA3 4..20 mA TP1		
Item description	Item No.	€
SFKH03 TRA3 100.08	200622	150,40
SFKH03 TRA3 150.08	217828	151,70
SFKH03 TRA3 200.08	200110	153,10
SFKH03 TRA3 250.08	202909	155,10

Immersion sensor 0...+160 °C – active TRA4 4..20 mA TP1		
Item description	Item No.	€
SFKH03 TRA4 100.08	284479	150,40
SFKH03 TRA4 150.08	351768	151,70
SFKH03 TRA4 200.08	276788	153,10
SFKH03 TRA4 250.08	336857	155,10

Immersion sensor 0...+300 °C – active TRA5 4..20 mA TP1		
Item description	Item No.	€
SFKH03 TRA5 100.08	147071	158,00
SFKH03 TRA5 150.08	291873	159,30
SFKH03 TRA5 200.08	328425	160,70
SFKH03 TRA5 250.08	145312	162,70



RGS03 passive

DATA SHEETS



Immersion sensor (high temperature) with integrated thermowell pocket for temperature measurement of liquids in duct applications for heating, ventilation and air-conditioning. Also suitable for exhaust systems.

TECHNICAL DATA

Measuring values	temperature
Medium	gases, fluids
Output passive	PT100 PT1000
Measuring range temp.	max. +600 °C
Working range temp.	0..+500 °C, temporarily up to +600 °C
Accuracy temperature	depending on used sensor
Sensor	3-wire
Enclosure	shape B, aluminium
Protection	IP66 according to EN 60529
Cable entry	M20 for wire max. Ø=8 mm
Connection electrical	terminal block, max. 1,5 mm ²
Neck pipe	stainless steel V2A
Pocket	stainless steel V4A, Ø=9 mm, thread G 1/2", mounting length: 250 500 mm
Ambient condition	enclosure: -25..+90 °C, max. 85% rH short term condensation

Item description: product | sensor | pocket (length.Ø)

Immersion sensor -50..+600 °C – passive PT100/PT1000		TP1
Item description	Item No.	€
RGS03 PT100 250.09 3-wire	79297	144,60
RGS03 PT100 500.09 3-wire	385190	147,00
RGS03 PT1000 250.09 3-wire	79310	144,60
RGS03 PT1000 500.09 3-wire	79327	147,00



RGS03 active

DATA SHEETS



Immersion sensor (high temperature) with integrated thermowell pocket for temperature measurement of liquids in duct applications for heating, ventilation and air-conditioning. Also suitable for exhaust systems.

TECHNICAL DATA	
Measuring values	temperature
Medium	gases, fluids
Output voltage	TRV: 1x 0..10 V
Output ampere	TRA: 1x 4..20 mA
Power supply	15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$) SELV, TRA: 15..24 V = ($\pm 10\%$) SELV
Power consumption	TRV: typ. 1 W (24 V =) 1,4 VA (24 V ~), TRA: typ. 0,5 W (24 V =)
Measuring range temp.	TRV6 TRA6: 0..+400 °C, TRV7 TRA7: 0..+600 °C
Working range temp.	0..+500 °C, temporarily up to +600 °C
Accuracy temperature	$\pm 0,2$ K $\pm 0,1\%$ of measured value (typ. at 21 °C)
Enclosure	shape B, aluminium
Protection	IP66 according to EN 60529
Cable entry	M20 for wire max. $\varnothing=8$ mm
Connection electrical	terminal block, max. 1,5 mm ²
Neck pipe	stainless steel V2A
Pocket	stainless steel V4A, $\varnothing=9$ mm, thread G 1/2", mounting length: 250 500 mm
Ambient condition	enclosure: -25..+70 °C, max. 85% rH short term condensation

Item description: product | TRVx/TRAx | pocket (length.Ø)

Immersion sensor temperature 0..+400 °C – active TRV6 0..10 V TRA6 4..20 mA			TP1
Item description	Item No.	€	
RGS03 TRV6 250.09	223942	236,50	
RGS03 TRV6 500.09	351959	238,90	
RGS03 TRA6 250.09	164115	236,50	
RGS03 TRA6 500.09	155281	238,90	

Immersion sensor temperature 0..+600 °C – active TRV7 0..10 V TRA7 4..20 mA			TP1
Item description	Item No.	€	
RGS03 TRV7 250.09	351935	236,50	
RGS03 TRV7 500.09	244824	238,90	
RGS03 TRA7 250.09	79334	236,50	
RGS03 TRA7 500.09	79341	238,90	

AGS54+

DATA SHEETS 

Passive sensor for outdoor temperature measurement, in cold rooms, greenhouses, production plants and warehouses. Tool-free opening, closing and wiring as well as removable cable entries ensure quick and easy installation.



TECHNICAL DATA	
Measuring values	temperature
Output passive	passive temperature sensor
Measuring range temp.	depending on used sensor
Accuracy temperature	depending on used sensor
Enclosure	enclosure USE-S, PC, pure white
Protection	IP65 according to EN 60529
Cable entry	Flextherm M16 for wire Ø=3..7 mm, removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ²
Ambient condition	enclosure: -35..+90 °C, max. 85% rH short term condensation
Delivery contents	incl. mounting base enclosure USE-S pure white
Notes	other temperature sensors on request

AGS54+

Item description: product | sensor

Outdoor sensor -35..+90 °C – passive			TP2
Item description	Item No.	On stock	€
AGS54+ without sensor	622776		11,00
AGS54+ PT100	622837	☉	14,90
AGS54+ PT100 1/3 DIN	622844		18,60
AGS54+ PT1000	622851	☉	17,10
AGS54+ PT1000 1/3 DIN	622783		20,00
AGS54+ Ni1000	622806	☉	16,70
AGS54+ Ni1000TK5000	622813	☉	20,30
AGS54+ NTC10k	622790	☉	13,60
AGS54+ NTC10k Precon	622868		13,60
AGS54+ NTC5k	624275		13,60
AGS54+ NTC20k	622875	☉	13,60
AGS54+ NTC1,8k	643825	☉	13,60
AGS54+ LM235Z	622820	☉	15,30
AGS54+ KTY81-110	622899		11,50
AGS54+ KTY81-121	622905		11,50
AGS54+ KTY81-122	622912		11,50
AGS54+ KTY81-210	622929		11,50
AGS54+ DS18B20 1-wire	622882		14,90

Options	
Item description	€
Add to price of NTC10k for sensor NTC10k Carel	0,00
Add to price of PT100 for sensor FeT	19,30

Order example for different items:

AGS54+ | FeT
AGS54+ = product

FeT = sensor

Accessories			AS1
Item description	Item No.	On stock	€
Mounting clip enclosure USE-S pure white	667739	☉	4,60
Mounting base enclosure USE-S pure white	667722	☉	5,50
Rawplugs and screws (2 pcs. each)	102209	☉	0,80
Sun/rain protection RS150	103329	☉	22,70

For cable entries and sealing inserts please refer to chapter "Accessories"

AGS55+

DATA SHEETS



Sensor with stainless steel external probe for faster response to measure temperature in outdoor areas, cold rooms, greenhouses, production plants and warehouses. Tool-free opening, closing and wiring as well as removable cable entries ensure quick and easy installation.



TECHNICAL DATA	
Measuring values	temperature
Output voltage	TRV: 1x 0..10 V or 0..5 V
Output ampere	TRA: 1x 4..20 mA
Output passive	PT100 PT100 1/3 DIN PT1000 PT1000 1/3 DIN Ni1000 Ni1000TK5000, NTC10k NTC 10k Precon NTC5k NTC20k NTC1,8k, KTY81-110 KTY81-121 KTY81-122 KTY81-210
Power supply	15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$) SELV, TRA: 15..24 V = ($\pm 10\%$) SELV
Power consumption	TRV: typ. 0,4 W (24 V =) 0,8 VA (24 V ~), TRA: max. 0,5 W (24 V =)
Measuring range temp.	-50..+50 -20..+80 -15..+35 -10..+120 0..+50 0..+100 0..+160 0..+250 °C, adjustable at the transducer, default setting: -50..+50 °C, passive: -35..+90 °C
Accuracy temperature	$\pm 0,5$ K (typ. at 21 °C within default measuring range), passive: depending on used sensor
Sensor	passive: 2-wire (standard), 3-wire or 4-wire
Enclosure	enclosure USE-S, PC, pure white
Protection	IP65 according to EN 60529, SI-Protection (not possible for electronic Sensors)
Cable entry	Flextherm M16 for wire $\varnothing=3.7$ mm, removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ²
Pocket	stainless steel V2A, $\varnothing=6$ mm, L=25 mm
Ambient condition	enclosure: -35..+70 °C, enclosure passive: -35..+90 °C, max. 85% rH short term condensation
Delivery contents	incl. mounting base enclosure USE-S pure white
Notes	other temperature sensors on request

AGS55+ passive

Item description: product | sensor

Outdoor sensor -35..+90 °C – passive				TP2
Item description	Item No.	On stock	€	
AGS55+ PT100	622998	☉	32,50	
AGS55+ PT100 1/3 DIN	623001		36,20	
AGS55+ PT1000	623018	☉	34,70	
AGS55+ PT1000 1/3 DIN	622943		37,70	
AGS55+ Ni1000	622967	☉	34,40	
AGS55+ Ni1000TK5000	622974	☉	37,90	
AGS55+ NTC10k	622950	☉	31,20	
AGS55+ NTC10k Precon	623025		31,20	
AGS55+ NTC5k	624268		31,20	
AGS55+ NTC20k	623032	☉	31,20	
AGS55+ NTC1,8k	645812	☉	31,20	
AGS55+ LM235Z	622981	☉	32,00	
AGS55+ KTY81-110	623049		29,10	
AGS55+ KTY81-121	623056		29,10	
AGS55+ KTY81-122	623063		29,10	
AGS55+ KTY81-210	623070		29,10	

Options

Item description	€
Add to price of NTC10k for sensor NTC10k Carel	0,00
Add to price of PT100 for sensor FeT	19,30

AGS55+ active

Item description: product | TRV/TRA MultiRange

Outdoor sensor -35..+70 °C – active 0..10 V 4..20 mA				TP2
Item description	Item No.	On stock	€	
AGS55+ TRV MultiRange	623087	☉	75,30	
AGS55+ TRA MultiRange	623094	☉	75,30	

Accessories

Accessories				AS1
Item description	Item No.	On stock	€	
Mounting clip enclosure USE-S pure white	667739	☉	4,60	
Mounting base enclosure USE-S pure white	667722	☉	5,50	
Rawplugs and screws (2 pcs. each)	102209	☉	0,80	
Sun/rain protection RS150	103329	☉	22,70	

For cable entries and sealing inserts please refer to chapter "Accessories"

AGS55+ relay / LCD / BUS

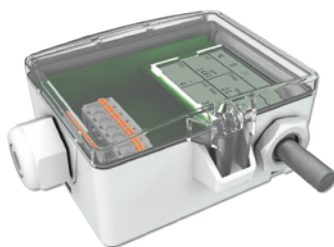
DATA SHEETS



Sensor with stainless steel external probe for faster response to measure temperature in outdoor areas, cold rooms, greenhouses, production plants and warehouses. The devices with relay output for a 2-point controller or a 2-stage 2-point controller and color-changing LCD allow a wide range of applications. Depending on the model, the sensor can be individually configured via Thermokon USEapp. Tool-free opening, closing and wiring as well as removable cable entries ensure quick and easy installation.



AGS55+ relay / BUS



AGS55+ LCD



TECHNICAL DATA	
Measuring values	temperature
Output voltage	0..10 V or 0..5 V (adjustable via jumper; live-zero configuration via Thermokon USEapp)
Output ampere	TRA: 1x 4..20 mA
Output switch contact	Relay: 2x floating contact NO for 24 V ~ or 24 V = / 3 A, (optional)
Network technology	RS485 BACnet (MS/TP), RS485 Modbus
Power supply	15..35 V = or 19..29 V ~ SELV, A: 15..35 V = SELV
Power consumption	max. 2,5 W (24 V =) 4,3 VA (24 V ~)
Measuring range temp.	-50..+50 -20..+80 -15..+35 -10..+120 0..+50 0..+100 0..+160 0..+250 °C, default setting: -20..+80 °C, optionally configurable via Thermokon USEapp
Accuracy temperature	±0,5 K (typ. at 21 °C within default measuring range)
Display	LCD 29x35 mm with RGB backlight, (optional)
Enclosure	enclosure USE-M, PC, pure white, LCD: cover PC, transparent
Protection	IP65 according to EN 60529, SI-Protection
Cable entry	Flextherm M16 for wire Ø=3..7 mm, Relay/BUS: M25 with fourfold cable entry for wire with max. Ø=7 mm removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ² , BUS terminal: removable plug-in terminal, max. 1,5 mm ²
Pocket	stainless steel V2A, Ø=6 mm, L=25 mm
Ambient condition	enclosure: -35..+70 °C, max. 85% rH short term condensation
Delivery contents	incl. mounting base enclosure USE-M pure white

AGS55+ LCD_Relais

Item description: product | TRV/TRA MultiRange

Outdoor sensor -35..+70 °C – active 0..10 V + relay				TP2
Item description	USEapp	Item No.	€	
AGS55+ TRV MultiRange relay	✓	663069	114,30	
AGS55+ LCD TRV MultiRange relay	✓	663076	154,00	

Outdoor sensor -35..+70 °C – active 0..10 V 4..20 mA				TP2
Item description	USEapp	Item No.	€	
AGS55+ LCD TRV MultiRange	✓	658614	115,00	
AGS55+ LCD TRA MultiRange	✓	658621	115,00	

AGS55+ BUS

Item description: product | BUS



Outdoor sensor -35..+70 °C – active RS485 Modbus				TP2
Item description	USEapp	Item No.	€	
AGS55+ RS485 Modbus	✓	658584	105,30	
AGS55+ LCD RS485 Modbus	✓	658607	145,00	



Outdoor sensor -35..+70 °C – active RS485 BACnet				TP2
Item description	USEapp	Item No.	€	
AGS55+ RS485 BACnet	✓	699686	105,30	
AGS55+ LCD RS485 BACnet	✓	699693	145,00	

Accessories				AS1
Item description	Item No.	On stock	€	
Mounting base enclosure USE-M pure white	668354	⊕	7,85	
Rawplugs and screws (2 pcs. each)	102209	⊕	0,80	
Sun/rain protection RS150	103329	⊕	22,70	
Bluetooth dongle with micro-USB – communication between USEapp and devices USE-M/USE-L (net price)	668262	⊕	29,00	
For cable entries and sealing inserts please refer to chapter "Accessories"				

AGS54 ext. LON

DATA SHEETS



Sensor for outdoor temperature measurement: cold rooms, greenhouses, production plants and warehouses. Stainless Steel external probe for faster response.



LON
LOCAL OPERATING NETWORK

TECHNICAL DATA

Measuring values	temperature
Network technology	LON FT (free topology)
Power supply	15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$) SELV
Power consumption	typ. 0,5 W (24 V =) 1,7 VA (24 V ~)
Measuring range temp.	-45..+130 °C
Accuracy temperature	$\pm 0,5$ K (typ. at 21 °C within default measuring range)
Enclosure	PA6, pure white, with quick lock screws
Protection	IP65 according to EN 60529
Cable entry	M20 for wire max. $\varnothing=8$ mm, seal insert for double cable entry for wire max $\varnothing=6$ mm
Connection electrical	terminal block, max. 1,5 mm ²
Pocket	stainless steel V2A, $\varnothing=6$ mm, L=25 mm
Ambient condition	-35..+70 °C, max. 85% rH short term condensation

LON
LOCAL OPERATING NETWORK

Outdoor sensor -35..+70 °C – active BUS

TP2

Item description	Item No.	€
AGS54 ext. LON	25775	186,60

Accessories

AS1

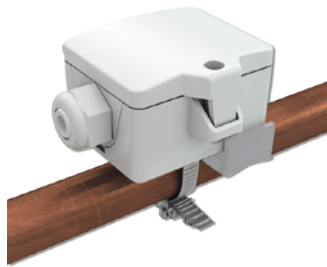
Item description	Item No.	On stock	€
Rawplugs and screws (2 pcs. each)	102209	☺	0,80
Sun/rain protection RS150	103329	☺	22,70

VFG54+

DATA SHEETS



Sensor for temperature measurement at the surface of pipes (cold or warm water) and round surfaces. Spring loaded brass contact sensor with direct contact for fast response. For tightening straps and contact fluid please see accessories. Tool-free opening, closing and wiring as well as removable cable entries ensure quick and easy installation.



TECHNICAL DATA

Measuring values	temperature
Output voltage	TRV: 1x 0..10 V or 0..5 V, min. load 5 k Ω
Output ampere	TRA: 1x 4..20 mA, max. load 500 Ω
Output passive	PT100 PT100 1/3 DIN PT1000 PT1000 1/3 DIN Ni1000 Ni1000TK5000, NTC10k NTC 10k Precon NTC5k NTC20k NTC1,8k, LM235Z DS18B20 1-wire, KTY81-110 KTY81-121 KTY81-122 KTY81-210
Power supply	15..24 V = (\pm 10%) or 24 V ~ (\pm 10%) SELV, TRA: 15..24 V = (\pm 10%) SELV
Power consumption	TRV: typ. 0,42 W (24 V =) 0,84 VA (24 V ~), TRA: typ. 0,5 W (24 V =)
Measuring range temp.	-50..+50 -20..+80 -15..+35 -10..+120 0..+50 0..+100 0..+160 0..+250 $^{\circ}$ C, adjustable at the transducer, default setting: 0..+100 $^{\circ}$ C, passive: -35..+90 $^{\circ}$ C
Accuracy temperature	measuring current typ. <1 mA, \pm 0,5 K (typ. at 21 $^{\circ}$ C within default measuring range), passive: depending on used sensor
Sensor	passive: 2-wire (standard), 3-wire or 4-wire
Enclosure	enclosure USE-S, PC, pure white
Protection	IP65 according to EN 60529, SI-Protection (not possible for electronic Sensors)
Cable entry	Flextherm M16 for wire \varnothing =3..7 mm, removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ²
Pocket	brass, spring loaded sensor
Ambient condition	enclosure passive: -35..+90 $^{\circ}$ C, max. 85% rH short term condensation, enclosure TRV/TRA: -35..+70 $^{\circ}$ C, max. 85% rH short term condensation
Mounting	along the pipe or sideways
Notes	other temperature sensors on request

VFG54+ passive

Contact sensor -35...+90 °C – passive				TP3
Item description	Item No.	On stock	€	
VFG54+ PT100	620642	☉	19,50	
VFG54+ PT100 1/3 DIN	620659		23,50	
VFG54+ PT1000	620666	☉	21,80	
VFG54+ PT1000 1/3 DIN	620598		24,90	
VFG54+ Ni1000	620611	☉	21,50	
VFG54+ Ni1000TK5000	620628	☉	25,20	
VFG54+ NTC10k	620604	☉	18,10	
VFG54+ NTC10k Precon	620673		18,10	
VFG54+ NTC5k	624244		18,10	
VFG54+ NTC20k	620680	☉	18,10	
VFG54+ NTC1,8k	643832	☉	18,10	
VFG54+ LM235Z	620635	☉	20,80	
VFG54+ KTY81-110	620697		16,00	
VFG54+ KTY81-121	620703		16,00	
VFG54+ KTY81-122	620710		16,00	
VFG54+ KTY81-210	620727		16,00	
VFG54+ DS18B20 1-wire	620734		19,50	

Options		
Item description		€
Add to price of NTC10k for sensor NTC10k Carel		0,00
Add to price of PT100 for sensor FeT		19,30

VFG54+ active

Item description: product | TRV/TRA MultiRange

Contact sensors -35...+70 °C – active 0..10 V 4..20 mA				TP2
Item description	Item No.	On stock	€	
VFG54+ TRV MultiRange	620741	☉	71,70	
VFG54+ TRA MultiRange	620758	☉	71,70	

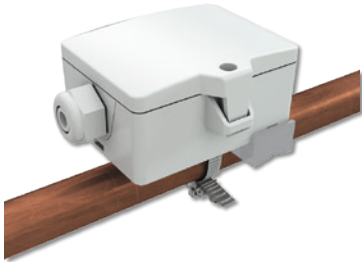
Accessories				AS1
Item description	Item No.	On stock	€	
Tension clamp for pipes Ø up to 110 mm with contact fluid	658911	☉	2,65	
Tension clamp for pipes Ø up to 250 mm with contact fluid	648103	☉	4,10	
Tightening strap PA for pipes Ø up to 100 mm with contact fluid	668071	☉	2,65	
For cable entries and sealing inserts please refer to chapter "Accessories"				

VFG54+ relay / LCD / BUS

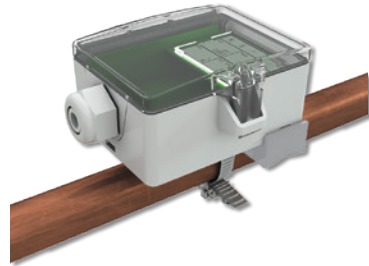
DATA SHEETS



Sensor for temperature measurement at the surface of pipes (cold or warm water) and round surfaces. Spring loaded brass contact sensor with direct contact for fast response. For tightening straps and contact fluid please see accessories. The devices with relay output for a 2-point controller or a 2-stage 2-point controller and color-changing LCD allow a wide range of applications. Depending on the model, the sensor can be individually configured via Thermokon USEapp. Tool-free opening, closing and wiring as well as removable cable entries ensure quick and easy installation.



VFG54+ relay / BUS



VFG54+ LCD



TECHNICAL DATA

Measuring values	temperature
Output voltage	0..10 V or 0..5 V (adjustable via jumper; live-zero configuration via Thermokon USEapp), min. load 5 kΩ
Output ampere	TRA: 1x 4..20 mA, max. load 500 Ω
Output switch contact	Relay: 2x floating contact NO for 24 V ~ or 24 V = / 3 A, (optional)
Network technology	RS485 BACnet (MS/TP), RS485 Modbus
Power supply	15..35 V = or 19..29 V ~ SELV, A: 15..35 V = SELV
Power consumption	max. 2,5 W (24 V =) 4,3 VA (24 V ~)
Measuring range temp.	-50..+50 -20..+80 -15..+35 -10..+120 0..+50 0..+100 0..+160 0..+250 °C, default setting: -20..+80 °C, optionally configurable via Thermokon USEapp
Accuracy temperature	±0,5 K (typ. at 21 °C within default measuring range)
Display	LCD 29x35 mm with RGB backlight, (optional)
Enclosure	enclosure USE-M, PC, pure white
Protection	IP65 according to EN 60529, SI-Protection
Cable entry	Flextherm M16 for wire Ø=3..7 mm, Relay/BUS: M25 with fourfold cable entry for wire with max. Ø=7 mm removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ² , BUS terminal: removable plug-in terminal, max. 1,5 mm ²
Pocket	brass, spring loaded sensor
Ambient condition	enclosure: -35..+70 °C, max. 85% rH short term condensation
Mounting	along the pipe or sideways

VFG54+ LCD_Relais

Item description: product | TRV/TRA MultiRange

Contact sensors -35..+70 °C – active 0..10 V + relay				TP2
Item description	USEapp	Item No.	€	
VFG54+ TRV MultiRange relay	✓	662994	110,70	

Contact sensors with display -35..+70 °C – active 0..10 V 4..20 mA relay				TP2
Item description	USEapp	Item No.	€	
VFG54+ LCD TRV MultiRange	✓	663014	111,40	
VFG54+ LCD TRA MultiRange	✓	663021	111,40	
VFG54+ LCD TRV MultiRange relay	✓	663038	140,70	

VFG54+ BUS

Item description: product | BUS



Contact sensors -35..+70 °C – active RS485 Modbus				TP2
Item description	USEapp	Item No.	€	
VFG54+ RS485 Modbus	✓	663045	113,70	
VFG54+ LCD RS485 Modbus	✓	663052	162,70	



Contact sensors -35..+70 °C – active RS485 BACnet				TP2
Item description	USEapp	Item No.	€	
VFG54+ RS485 BACnet	✓	699709	113,70	
VFG54+ LCD RS485 BACnet	✓	699716	162,70	

Accessories				AS1
Item description	Item No.	On stock	€	
Tension clamp for pipes Ø up to 110 mm with contact fluid	658911	☹	2,65	
Tension clamp for pipes Ø up to 250 mm with contact fluid	648103	☹	4,10	
Tightening strap PA for pipes Ø up to 100 mm with contact fluid	668071	☹	2,65	
Bluetooth dongle with micro-USB – communication between USEapp and devices USE-M/USE-L (net price)	668262	☹	29,00	

For cable entries and sealing inserts please refer to chapter "Accessories"

VFG54 LON

DATA SHEETS



Sensor for temperature measurement of pipes and round surfaces. Spring loaded brass contact sensor.



LON

LOCAL OPERATING NETWORK

TECHNICAL DATA

Measuring values	temperature
Network technology	LON FT (free topology)
Power supply	15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$) SELV
Power consumption	typ. 0,5 W (24 V =) 1,7 VA (24 V ~)
Measuring range temp.	-45..+130 °C
Accuracy temperature	$\pm 0,5$ K (typ. at 21 °C)
Enclosure	PA6, pure white, with quick lock screws
Protection	IP65 according to EN 60529
Cable entry	M20 for wire max. $\varnothing=8$ mm, seal insert for double cable entry for wire max $\varnothing=6$ mm
Connection electrical	terminal block, max. 1,5 mm ²
Pocket	brass, spring loaded sensor
Ambient condition	enclosure: -35..+70 °C, max. 85% rH short term condensation
Mounting	LON: Use tightening straps for installation
Notes	other temperature sensors on request

LON

LOCAL OPERATING NETWORK

Contact sensors -35..+70 °C – active BUS

TP2

Item description	Item No.	€
VFG54 LON	98144	173,20

Accessories

AS1

Item description	Item No.	On stock	€
Tightening strap PA for pipes \varnothing up to 100 mm with contact fluid	668071	☺	2,65

AF25 passive

DATA SHEETS



Contact sensor with connection cable and brass strap used to measure the surface temperature of pipes (cold or hot water) and other contact surfaces. Tightening strap/tension clamp and thermal contact fluid are available as accessories.



TECHNICAL DATA

Measuring values	temperature
Output passive	PT100 PT100 1/3 DIN PT1000 PT1000 1/3 DIN Ni1000 Ni1000TK5000, NTC10k NTC 10k Precon NTC5k NTC20k NTC1,8k
Measuring range temp.	-35..+100 °C, optionally: -50..+135 °C (T135)
Accuracy temperature	depending on length of connection wire, depending on used sensor
Sensor	2-wire (standard), 3-wire or 4-wire
Protection	IP65 according to EN 60529, SI-Protection
Pocket	brass, Ø=6 mm, mounting length 35 mm
Ambient condition	-35..+100 °C, optionally: -50..+135 °C, max. 85% rH short term condensation
Notes	other sensors and cable lengths on request

AF25 passive

Item description: product | sensor | temperaure | cable length (L)

Contact sensor -35..+100 °C – passive			TP3
Item description	Item No.	€	
AF25 PT100 T100 L1000	81610	12,80	
AF25 PT100 1/3 DIN T100 L1000	46411	16,60	
AF25 PT1000 T100 L1000	54263	15,00	
AF25 PT1000 1/3 DIN T100 L1000	54300	18,00	
AF25 Ni1000 T100 L1000	54348	14,70	
AF25 Ni1000TK5000 T100 L1000	54386	18,20	
AF25 NTC10k T100 L1000	92005	11,50	
AF25 NTC10k Precon T100 L1000	92043	11,50	
AF25 NTC5k T100 L1000	54461	11,50	
AF25 NTC20k T100 L1000	141994	11,50	
AF25 NTC1,8k T100 L1000	241687	11,50	

Options		€
Item description		
Add per meter of connection cable -35..+100 °C	0,70	
Add per meter of connection cable -50..+135 °C	1,60	
Temperature -50..+135 °C	3,80	
Add to price of NTC10k for sensor NTC10k Carel	0,00	

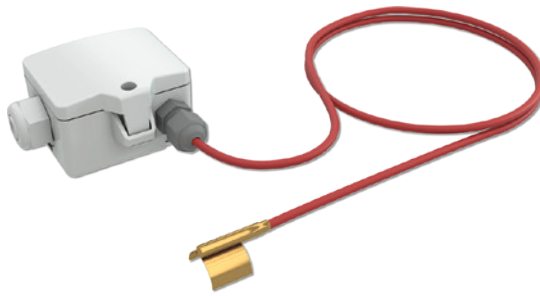
Accessories			AS1
Item description	Item No.	On stock	€
Tension clamp for pipes Ø up to 110 mm with contact fluid	658911	●	2,65
Tension clamp for pipes Ø up to 250 mm with contact fluid	648103	●	4,10
Tightening strap PA for pipes Ø up to 100 mm with contact fluid	668071	●	2,65

AF25+ active

DATA SHEETS



Contact sensor with enclosure USE-S, connection cable and brass strap used to measure the surface temperature of pipes (cold or hot water) and other contact surfaces. Tightening strap/tension clamp and thermal contact fluid are available as accessories.



TECHNICAL DATA

Measuring values	temperature
Output voltage	TRV: 1x 0..10 V, min. load 5 k Ω
Output ampere	TRA: 1x 4..20 mA, max. load 500 Ω
Power supply	15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$) SELV, TRA: 15..24 V = ($\pm 10\%$) SELV
Power consumption	TRV: typ. 0,4 W (24 V =) 0,8 VA (24 V ~), TRA: typ. 0,5 W (24 V =)
Measuring range temp.	-50..+50 -20..+80 -15..+35 -10..+120 0..+50 0..+100 0..+160 0..+250 °C, adjustable at the transducer
Accuracy temperature	depending on length of connection wire, $\pm 0,5$ K (typ. at 21 °C within default measuring range)
Enclosure	enclosure USE-S, PC, pure white, with removable cable entry
Protection	IP65 according to EN 60529, SI-Protection
Cable entry	Flextherm M16 for wire $\varnothing=3..7$ mm, removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ² , connection wire PVC, 2x $\varnothing=0,25$ mm ² , grey, sensor wire active silicone, $\varnothing=25$ mm, 1 m (default), 2 m, 4 m, 6 m, for other lengths please request
Pocket	brass, $\varnothing=6$ mm, mounting length 35 mm
Ambient condition	-35..+100 °C, optionally: -50..+135 °C (only sensor), enclosure: -35..+70 °C, max. 85% rH short term condensation
Delivery contents	incl. mounting base enclosure USE-S pure white
Notes	other cable lengths on request

AF25+ active

Item description: product | TRV/TRA MultiRange | temperature | cable length (L)

Contact sensors -50..+135 °C – active 0..10 V 4..20 mA			TP2
Item description	Item No.	€	
AF25+ TRV MultiRange T135 L1000	658751	70,80	
AF25+ TRA MultiRange T135 L1000	658768	70,80	

Options	
Item description	€
Add per meter of connection cable -50..+135 °C	1,60

Accessories			AS1
Item description	Item No.	On stock	€
Mounting clip enclosure USE-S pure white	667739	☺	4,60
Mounting base enclosure USE-S pure white	667722	☺	5,50
Tension clamp for pipes Ø up to 110 mm with contact fluid	658911	☺	2,65
Tension clamp for pipes Ø up to 250 mm with contact fluid	648103	☺	4,10
Tightening strap PA for pipes Ø up to 100 mm with contact fluid	668071	☺	2,65
For cable entries and sealing inserts please refer to chapter "Accessories"			

PR25 passive

DATA SHEETS



The contact sensor with connection cable and aluminum prism is used to measure the surface temperature of pipes (cold or hot water) and other contact surfaces. Tightening strap/tension clamp and thermal contact fluid are available as accessories.



TECHNICAL DATA	
Measuring values	temperature
Output passive	PT100 PT100 1/3 DIN PT1000 PT1000 1/3 DIN Ni1000 Ni1000TK5000, NTC10k NTC 10k Precon NTC5k NTC20k NTC1,8k, LM235Z, KTY81-110 KTY81-121 KTY81-210
Measuring range temp.	-35..+100 °C, optionally: PT / Ni: -50..+180 °C (T180), NTC / KTY: -50..+150 °C (T150), LM235Z: -50..+120 °C (T120)
Accuracy temperature	depending on length of connection wire, depending on used sensor
Sensor	2-wire (standard), 3-wire or 4-wire
Protection	IP65 according to EN 60529, SI-Protection
Pocket	aluminium, Ø=11 mm, mounting length 28 mm
Ambient condition	-35..+100 °C, optionally: -50..+180 +150 +120 °C, max. 85% rH short term condensation
Notes	other sensors and cable lengths on request

PR25 passive

Item description: product | sensor | cable length (L)

Sensor for pipes and round surfaces -35..+100 °C – passive			TP2
Item description	Item No.	€	
PR25 PT100 T100 L1000	81696	18,20	
PR25 PT100 1/3 DIN T100 L1000	94771	21,90	
PR25 PT1000 T100 L1000	94894	20,40	
PR25 PT1000 1/3 DIN T100 L1000	94931	23,30	
PR25 Ni1000 T100 L1000	94979	20,10	
PR25 Ni1000TK5000 T100 L1000	95686	23,60	
PR25 NTC10k T100 L1000	95808	16,90	
PR25 NTC10k Precon T100 L1000	95846	16,90	
PR25 NTC5k T100 L1000	95761	16,90	
PR25 NTC20k T100 L1000	362641	16,90	
PR25 NTC1,8k T100 L1000	287128	16,90	
PR25 LM235Z T100 L1000	96089	18,60	
PR25 KTY81-110 T100 L1000	95884	14,80	
PR25 KTY81-121 T100 L1000	95921	14,80	
PR25 KTY81-210 T100 L1000	96003	14,80	

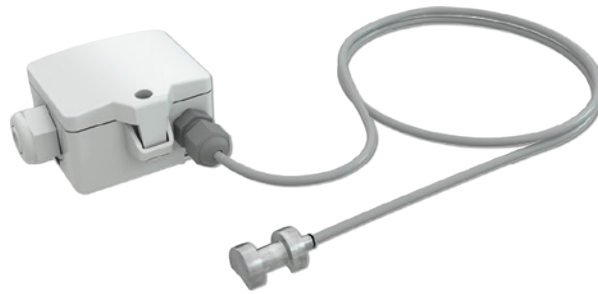
Options		
Item description		€
Temperature -50..+180 °C		3,80
Add per meter of connection cable -35..+100 °C		0,70
Add per meter of connection cable -50..+180 °C		1,60
Add to price of NTC10k for sensor NTC10k Carel		0,00

Accessories			AS1
Item description	Item No.	On stock	€
Tension clamp for pipes Ø up to 110 mm with contact fluid	658911	●	2,65
Tension clamp for pipes Ø up to 250 mm with contact fluid	648103	●	4,10
Tightening strap PA for pipes Ø up to 100 mm with contact fluid	668071	●	2,65

PR25+ active

DATA SHEETS 

The contact sensor with enclosure USE-S, connection cable and aluminum prism is used to measure the surface temperature of pipes (cold or hot water) and other contact surfaces. Tightening strap/tension clamp and thermal contact fluid are available as accessories.



TECHNICAL DATA	
Measuring values	temperature
Output voltage	TRV: 1x 0..10 V, min. load 5 kΩ
Output ampere	TRA: 1x 4..20 mA, max. load 500 Ω
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV, TRA: 15..24 V = (±10%) SELV
Power consumption	TRV: typ. 0,4 W (24 V =) 0,8 VA (24 V ~), TRA: typ. 0,5 W (24 V =)
Measuring range temp.	-50..+50 -20..+80 -15..+35 -10..+120 0..+50 0..+100 0..+160 0..+250 °C, adjustable at the transducer
Accuracy temperature	depending on length of connection wire, ±0,5 K (typ. at 21 °C within default measuring range)
Enclosure	enclosure USE-S, PC, pure white, with removable cable entry
Protection	IP65 according to EN 60529, SI-Protection
Cable entry	Flextherm M16 for wire Ø=3..7 mm, removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ² , connection wire PVC, 2x Ø=0,25 mm ² , grey, sensor wire active silicone, Ø=25 mm, 1 m (default), 2 m, 4 m, 6 m, for other lengths please request
Pocket	aluminium, Ø=11 mm, mounting length 28 mm
Ambient condition	-35..+100 °C, optionally: -50..+180 °C (only sensor), enclosure: -35..+70 °C, max. 85% rH short term condensation
Delivery contents	incl. mounting base enclosure USE-S pure white
Notes	other cable lengths on request

PR25+ active

Item description: product | TRV/TRA | cable length (L)

Contact sensors -50..+180 °C – active 0..10 V 4..20 mA			TP2
Item description	Item No.	€	
PR25+ TRV MultiRange T180 L1000	658782	74,20	
PR25+ TRA MultiRange T180 L1000	658799	74,20	

Options	
Item description	€
Add per meter of connection cable -50..+180 °C	1,60

Accessories			AS1
Item description	Item No.	On stock	€
Mounting clip enclosure USE-S pure white	667739	☉	4,60
Mounting base enclosure USE-S pure white	667722	☉	5,50
Tension clamp for pipes Ø up to 110 mm with contact fluid	658911	☉	2,65
Tension clamp for pipes Ø up to 250 mm with contact fluid	648103	☉	4,10
Tightening strap PA for pipes Ø up to 100 mm with contact fluid	668071	☉	2,65
For cable entries and sealing inserts please refer to chapter "Accessories"			

OF14 passive

DATA SHEETS



Sensor for temperature measurement on glass surfaces or similar. Designed for control and monitoring applications.



TECHNICAL DATA

Measuring values	temperature
Output passive	PT100 PT100 1/3 DIN PT1000 PT1000 1/3 DIN Ni1000 Ni1000TK5000, NTC10k NTC 10k Precon NTC5k NTC20k NTC1,8k, LM235Z
Measuring range temp.	-35..+70 °C
Sensor	2-wire (standard), 3-wire or 4-wire
Protection	IP65 according to EN 60529
Pocket	aluminium, dimensions: 35x10x6 mm
Ambient condition	-35..+70 °C, max. 85% rH short term condensation
Mounting	surface mounting due to self-adhesive sensor surface
Notes	other sensors and cable lengths on request

OF14 passive

Item description: product | sensor | cable length (L)

Contact sensor -35..+70 °C – passive			TP2
Item description	Item No.	€	
OF14 PT100 L1000	132596	31,30	
OF14 PT100 1/3 DIN L1000	167307	35,10	
OF14 PT1000 L1000	114851	33,50	
OF14 PT1000 1/3 DIN L1000	219303	36,50	
OF14 Ni1000 L1000	113922	33,20	
OF14 Ni1000TK5000 L1000	141864	36,70	
OF14 NTC10k L1000	190367	30,10	
OF14 NTC10k Precon L1000	165006	30,10	
OF14 NTC5k L1000	351263	30,10	
OF14 NTC20k L1000	147736	30,10	
OF14 NTC1,8k L1000	356541	30,10	
OF14 LM235Z L1000	216760	31,80	

Options	
Item description	€
Add per meter of connection cable -35..+100 °C	0,70
Add to price of NTC10k for sensor NTC10k Carel	0,00

Order example for different items:

OF14 | NTC1,8k | L2000

OF14 = product

NTC1,8k = sensor

L2000 = cable length (mm)

OF14+ active

DATA SHEETS



Sensor for temperature measurement on glass surfaces or similar in enclosure USE-S. Designed for control and monitoring applications.



TECHNICAL DATA

Measuring values	temperature
Output voltage	TRV: 1x 0..10 V, min. load 5 k Ω
Output ampere	TRA: 1x 4..20 mA, max. load 500 Ω
Power supply	TRV: 15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$) SELV, TRA: 15..24 V = ($\pm 10\%$) SELV
Power consumption	TRV: typ. 0,4 W (24 V =) 0,8 VA (24 V ~), TRA: typ. 0,5 W (24 V =)
Measuring range temp.	TRV3 TRA3: 0..+50 °C
Accuracy temperature	$\pm 0,5$ K (typ. at 21 °C)
Enclosure	enclosure USE-S, PC, pure white, with removable cable entry
Protection	IP65 according to EN 60529
Cable entry	Flextherm M16 for wire $\varnothing=3..7$ mm, removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ² , connection wire PVC, 2x $\varnothing=0,25$ mm ² , grey, sensor wire active silicone, $\varnothing=25$ mm, 1 m (default), 2 m, 4 m, 6 m, for other lengths please request
Pocket	aluminium, dimensions: 35x10x6 mm
Ambient condition	-35..+70 °C, max. 85% rH short term condensation
Mounting	surface mounting due to self-adhesive sensor surface
Delivery contents	incl. mounting base enclosure USE-S pure white
Notes	other cable lengths on request

OF14+ active

Item description: product | TRV3/TRA3 | cable length (L)

Contact sensors 0..+50 °C – active 0..10 V 4..20 mA			TP2
Item description	Item No.	€	
OF14+ TRV3 L1000	658812	88,10	
OF14+ TRA3 L1000	658836	88,10	

Options	
Item description	€
Add per meter of connection cable -35..+100 °C	0,70

Accessories			AS1
Item description	Item No.	On stock	€
Mounting clip enclosure USE-S pure white	667739	☺	4,60
Mounting base enclosure USE-S pure white	667722	☺	5,50
For cable entries and sealing inserts please refer to chapter "Accessories"		☺	

TF14 passive

DATA SHEETS



Cable sensor for temperature measurement in HVAC applications. Depending on the application, PVC, silicone and PTFE cables are available.



TECHNICAL DATA

Measuring values	temperature
Output passive	PT100 PT100 1/3 DIN PT1000 PT1000 1/3 DIN Ni1000 Ni1000TK5000, NTC10k NTC 10k Precon NTC5k NTC20k NTC1,8k
Measuring range temp.	-35..+100 °C, PT / Ni: -50..180 °C -80..+260 °C, NTC: -50..+150 °C
Accuracy temperature	depending on used sensor
Protection	IP65 according to EN 60529, hex pressed, Rolled: IP67 according to EN 60529, with SI-Protection
Pocket	stainless steel V4A, Ø=4 mm, mounting length: 50 100 150 200 400 mm
Ambient condition	with connection wire: PVC -35..+100 °C, silicone -50..+180 °C, PTFE -80..+260 °C
Notes	other temperature sensors on request, other probe lengths on request

Item description: product | sensor | temperature | pocket (length.Ø) | cable length (L)

TF14 passive 100 °C

Cable sensors -35..+100 °C – PT100			TP3
Item description	Item No.	€	
TF14 PT100 T100 050.04 L1000	64347	12,20	
TF14 PT100 T100 100.04 L1000	57554	13,30	
TF14 PT100 T100 150.04 L1000	57561	13,70	

Cable sensors -35..+100 °C – PT1000			TP3
Item description	Item No.	€	
TF14 PT1000 T100 050.04 L1000	69267	14,40	
TF14 PT1000 T100 100.04 L1000	69274	15,50	
TF14 PT1000 T100 150.04 L1000	69281	15,90	

Cable sensors -35..+100 °C – Ni1000			TP3
Item description	Item No.	€	
TF14 Ni1000 T100 050.04 L1000	73080	14,10	
TF14 Ni1000 T100 100.04 L1000	73097	15,30	
TF14 Ni1000 T100 150.04 L1000	73103	15,60	

Cable sensors -35..+100 °C – NTC10k			TP3
Item description	Item No.	€	
TF14 NTC10k T100 050.04 L1000	73844	10,90	
TF14 NTC10k T100 100.04 L1000	73851	12,00	
TF14 NTC10k T100 150.04 L1000	73868	12,30	

Cable sensors -35..+100 °C – NTC5k			TP3
Item description	Item No.	€	
TF14 NTC5k T100 050.04 L1000	73806	10,90	
TF14 NTC5k T100 100.04 L1000	73813	12,00	
TF14 NTC5k T100 150.04 L1000	73820	12,30	

Cable sensors -35..+100 °C – NTC1,8k			TP3
Item description	Item No.	€	
TF14 NTC1,8k T100 050.04 L1000	270687	10,90	
TF14 NTC1,8k T100 100.04 L1000	355797	12,00	
TF14 NTC1,8k T100 150.04 L1000	233293	12,30	

Cable sensors -35..+100 °C PT100 1/3 DIN			TP3
Item description	Item No.	€	
TF14 PT100 1/3 DIN T100 050.04 L1000	69106	15,90	
TF14 PT100 1/3 DIN T100 100.04 L1000	69113	17,10	
TF14 PT100 1/3 DIN T100 150.04 L1000	69120	17,40	

Cable sensors -35..+100 °C – PT1000 1/3 DIN			TP3
Item description	Item No.	€	
TF14 PT1000 1/3 DIN T100 050.04 L1000	69427	17,40	
TF14 PT1000 1/3 DIN T100 100.04 L1000	69434	18,50	
TF14 PT1000 1/3 DIN T100 150.04 L1000	69441	18,80	

Cable sensors -35..+100 °C – Ni1000TK5000			TP3
Item description	Item No.	€	
TF14 Ni1000TK5000 T100 050.04 L1000	73240	17,60	
TF14 Ni1000TK5000 T100 100.04 L1000	73257	18,70	
TF14 Ni1000TK5000 T100 150.04 L1000	73264	19,10	

Cable sensors -35..+100 °C – NTC10k Precon			TP3
Item description	Item No.	€	
TF14 NTC10k Precon T100 050.04 L1000	77002	10,90	
TF14 NTC10k Precon T100 100.04 L1000	77019	12,00	
TF14 NTC10k Precon T100 150.04 L1000	77026	12,30	

Cable sensors -35..+100 °C – NTC20k			TP3
Item description	Item No.	€	
TF14 NTC20k T100 050.04 L1000	73899	10,90	
TF14 NTC20k T100 100.04 L1000	73905	12,00	
TF14 NTC20k T100 150.04 L1000	73912	12,30	

Options		
Item description		€
Add per meter of connection cable 2-wire -35..+100 °C		0,70
Protection class IP67		2,00
Add to price of NTC10k for sensor NTC10k Carel		0,00

Item description: product | sensor | temperature | pocket (length.Ø) | cable length (L)

TF14 passive 150/180 °C

Cable sensors -50..+180 °C – PT100			TP3
Item description	Item No.	€	
TF14 PT100 T180 050.04 L1000	64354	16,90	
TF14 PT100 T180 100.04 L1000	78009	18,00	
TF14 PT100 T180 150.04 L1000	78016	18,30	

Cable sensors -50..+180 °C – PT100 1/3 DIN			TP3
Item description	Item No.	€	
TF14 PT100 1/3 DIN T180 050.04 L1000	78207	20,50	
TF14 PT100 1/3 DIN T180 100.04 L1000	78214	21,70	
TF14 PT100 1/3 DIN T180 150.04 L1000	78221	22,00	

Cable sensors -50..+180 °C – PT1000			TP3
Item description	Item No.	€	
TF14 PT1000 T180 050.04 L1000	78405	19,00	
TF14 PT1000 T180 100.04 L1000	78443	20,20	
TF14 PT1000 T180 150.04 L1000	78481	20,50	

Cable sensors -50..+180 °C – PT1000 1/3 DIN			TP3
Item description	Item No.	€	
TF14 PT1000 1/3 DIN T180 050.04 L1000	78603	22,00	
TF14 PT1000 1/3 DIN T180 100.04 L1000	78641	23,20	
TF14 PT1000 1/3 DIN T180 150.04 L1000	78689	23,50	

Cable sensors -50..+180 °C – Ni1000			TP3
Item description	Item No.	€	
TF14 Ni1000 T180 050.04 L1000	78795	18,70	
TF14 Ni1000 T180 100.04 L1000	78832	19,90	
TF14 Ni1000 T180 150.04 L1000	78870	20,20	

Cable sensors -50..+180 °C – Ni1000TK5000			TP3
Item description	Item No.	€	
TF14 Ni1000TK5000 T180 050.04 L1000	78993	22,20	
TF14 Ni1000TK5000 T180 100.04 L1000	79037	23,30	
TF14 Ni1000TK5000 T180 150.04 L1000	79075	23,70	

Cable sensors -50..+150 °C – NTC10k			TP3
Item description	Item No.	€	
TF14 NTC10k T150 050.04 L1000	80408	15,50	
TF14 NTC10k T150 100.04 L1000	81443	16,60	
TF14 NTC10k T150 150.04 L1000	80484	17,00	

Cable sensors -50..+150 °C – NTC10k Precon			TP3
Item description	Item No.	€	
TF14 NTC10k Precon T150 050.04 L1000	76807	15,50	
TF14 NTC10k Precon T150 100.04 L1000	76845	16,60	
TF14 NTC10k Precon T150 150.04 L1000	76883	17,00	

Cable sensors -50..+150 °C – NTC5k			TP3
Item description	Item No.	€	
TF14 NTC5k T150 050.04 L1000	80200	15,50	
TF14 NTC5k T150 100.04 L1000	80248	16,60	
TF14 NTC5k T150 150.04 L1000	76975	17,00	

Cable sensors -50..+150 °C – NTC20k			TP3
Item description	Item No.	€	
TF14 NTC20k T150 050.04 L1000	80606	15,50	
TF14 NTC20k T150 100.04 L1000	80644	16,60	
TF14 NTC20k T150 150.04 L1000	80682	17,00	

Cable sensors -50..+150 °C – NTC1,8k			TP3
Item description	Item No.	€	
TF14 NTC1,8k T150 050.04 L1000	256131	15,50	
TF14 NTC1,8k T150 100.04 L1000	352307	16,60	
TF14 NTC1,8k T150 150.04 L1000	352291	17,00	

Options		€
Item description		
Add per meter of connection cable -50..+180 °C		1,60
Protection class IP67		2,00
Add to price of NTC10k for sensor NTC10k Carel		0,00

Item description: product | sensor | temperature | pocket (length.Ø) | cable length (L)

TF14 passive 260°C

Cable sensors -80..+260 °C – PT100			TP3
Item description	Item No.	€	
TF14 PT100 T260 050.04 L1000	95563	19,10	
TF14 PT100 T260 100.04 L1000	96126	20,20	
TF14 PT100 T260 150.04 L1000	96195	20,50	

Cable sensors -80..+260 °C – PT100 1/3 DIN			TP3
Item description	Item No.	€	
TF14 PT100 1/3 DIN T260 050.04 L1000	96775	22,80	
TF14 PT100 1/3 DIN T260 100.04 L1000	96805	23,90	
TF14 PT100 1/3 DIN T260 150.04 L1000	96843	24,20	

Cable sensors -80..+260 °C – PT1000			TP3
Item description	Item No.	€	
TF14 PT1000 T260 050.04 L1000	97185	21,30	
TF14 PT1000 T260 100.04 L1000	97239	22,40	
TF14 PT1000 T260 150.04 L1000	91510	22,70	

Cable sensors -80..+260 °C – PT1000 1/3 DIN			TP3
Item description	Item No.	€	
TF14 PT1000 1/3 DIN T260 050.04 L1000	91633	24,30	
TF14 PT1000 1/3 DIN T260 100.04 L1000	91671	25,40	
TF14 PT1000 1/3 DIN T260 150.04 L1000	91718	25,70	

Cable sensors -80..+260 °C – Ni1000			TP3
Item description	Item No.	€	
TF14 Ni1000 T260 050.04 L1000	91831	21,00	
TF14 Ni1000 T260 100.04 L1000	91879	22,10	
TF14 Ni1000 T260 150.04 L1000	91916	22,40	

Cable sensors -80..+260 °C – Ni1000TK5000			TP3
Item description	Item No.	€	
TF14 Ni1000TK5000 T260 050.04 L1000	97338	24,50	
TF14 Ni1000TK5000 T260 100.04 L1000	97376	25,60	
TF14 Ni1000TK5000 T260 150.04 L1000	97413	25,90	

Options		€
Item description		
3-wire connection -80..+260 °C (3-wire)		1,65
4-wire connection -80..+260 °C (4-wire)		2,50
Add per meter of connection cable 2-wire -80..+260 °C		2,70
Add per meter of connection cable 3-wire -80..+260 °C		3,10
Add per meter of connection cable 4-wire -80..+260 °C		5,00
Protection class IP67		2,00
Connection box USE-S		13,80

Accessories			AS1
Item description	Item No.	On stock	€
Mounting clip enclosure USE-S pure white	667739	☺	4,60
Mounting base enclosure USE-S pure white	667722	☺	5,50
Mounting flange MF6 flexible (suitable for Ø=4 6 7 mm)	399098	☺	6,30
Mounting flange MF4 (brass)	102438	☺	5,10
KL4VA – Compression fittings G 1/4" for Ø=4 mm with cutting ring VA, stainless steel	103206	☺	12,70
Tension clamp for pipes Ø up to 110 mm with contact fluid	658911	☺	2,65
Tension clamp for pipes Ø up to 250 mm with contact fluid	648103	☺	4,10
Tightening strap PA for pipes Ø up to 100 mm with contact fluid	668071	☺	2,65

For cable entries and sealing inserts please refer to chapter "Accessories"

TF14+ active

DATA SHEETS



Cable sensor for temperature measurement in HVAC applications. Depending on the application, PVC, silicone and PTFE cables are available. Tool-free opening, closing and wiring as well as removable cable entries ensure quick and easy installation.



TECHNICAL DATA	
Measuring values	temperature
Output voltage	TRV: 1x 0..10 V or 0..5 V, min. load 5 k Ω
Output ampere	TRA: 1x 4..20 mA, max. load 500 Ω
Power supply	TRV: 24 V = or 24 V ~ ($\pm 20\%$) SELV, TRA: 15..24 V = ($\pm 10\%$) SELV
Power consumption	TRV: typ. 0,4 W (24 V =) 0,8 VA (24 V ~), TRA: typ. 0,5 W (24 V =)
Measuring range temp.	-50..+50 -20..+80 -15..+35 -10..+120 0..+50 0..+100 0..+160 0..+250 °C, adjustable at the transducer, default setting: 0..+160 °C
Accuracy temperature	$\pm 0,5$ K (typ. at 21 °C within default measuring range)
Enclosure	enclosure USE-S, PC, pure white, with removable cable entry
Protection	IP65 according to EN 60529, SI-Protection, hex pressed, Rolled: IP67 according to EN 60529, with SI-Protection, enclosure (active): IP65 according to EN 60529
Cable entry	Flextherm M16 for wire $\varnothing=3..7$ mm
Connection electrical	removable plug-in terminal, max. 2,5 mm ²
Pocket	stainless steel V4A, $\varnothing=4$ mm, mounting length: 50 100 150 200 400 mm
Ambient condition	enclosure: -35..+70 °C, max. 85% rH short term condensation, with connection wire: PVC -35..+100 °C, silicone -50..+180 °C, PTFE -80..+260 °C
Delivery contents	incl. mounting base enclosure USE-S pure white
Notes	other probe lengths on request

Item description: product | TRV/TRA MultiRange | temperature | pocket (length.Ø) | cable length (L)

TF14+ active

Cable sensors -50..+180 °C – active TRV 0..10 V			TP2
Item description	Item No.	€	
TF14+ TRV MultiRange T180 050.04 L1000	658850	68,70	
TF14+ TRV MultiRange T180 100.04 L1000	658867	70,10	
TF14+ TRV MultiRange T180 150.04 L1000	658874	70,50	

Cable sensors -50..+180 °C – active TRA 4..20 mA			TP2
Item description	Item No.	€	
TF14+ TRA MultiRange T180 050.04 L1000	658881	68,70	
TF14+ TRA MultiRange T180 100.04 L1000	658898	70,10	
TF14+ TRA MultiRange T180 150.04 L1000	658904	70,50	

Options		
Item description		€
TRV/TRA: Temperature -80..+260 °C (T260)		10,90
Protection class IP67		2,00
TRV/TRA: Add per meter of connection for measuring range up to 180 °C		1,60
TRV/TRA: Add per meter of connection for measuring range up to 260 °C		2,70

Order example for different items:

TF14+ | TRV MultiRange | T260 | 150.04 | L3000

TF14+ = product
TRV MultiRange = output
T260 = temperature
150.04 = pocket (length.Ø)
L3000 = cable length (mm)

Accessories				AS1
Item description	Item No.	On stock	€	
Mounting clip enclosure USE-S pure white	667739	☹	4,60	
Mounting base enclosure USE-S pure white	667722	☹	5,50	
Mounting flange MF6 flexible (suitable for Ø=4 6 7 mm)	399098	☹	6,30	
Mounting flange MF4 (brass)	102438	☹	5,10	
KL4VA – Compression fittings G 1/4" for Ø=4 mm with cutting ring VA, stainless steel	103206	☹	12,70	
Tension clamp for pipes Ø up to 110 mm with contact fluid	658911	☹	2,65	
Tension clamp for pipes Ø up to 250 mm with contact fluid	648103	☹	4,10	
Tightening strap PA for pipes Ø up to 100 mm with contact fluid	668071	☹	2,65	

For cable entries and sealing inserts please refer to chapter "Accessories"

TF25 passive

DATA SHEETS



Cable sensor for temperature measurement in HVAC or refrigeration applications. In combination with a thermowell pocket suitable for temperature measurement in duct applications. Depending on the application, PVC, silicone, PTFE and glass fiber cables are available.



TECHNICAL DATA

Measuring values	temperature
Output passive	PT100 PT100 1/3 DIN PT1000 PT1000 1/3 DIN Ni1000 Ni1000TK5000, NTC10k NTC 10k Precon NTC5k NTC20k NTC1,8k, LM235Z DS18B20 1-wire, KTY81-110 KTY81-121 KTY81-122 KTY81-210
Measuring range temp.	-35..+100 °C, PT / Ni: -50..180 °C -80..+250 °C, NTC / KTY: -50..+150 °C, PT: -50..+400 °C
Accuracy temperature	depending on used sensor
Sensor	2-wire (standard), 3-wire or 4-wire, sensor cable: 1 2 4 6 m
Protection	IP65 according to EN 60529, hex pressed, Rolled: IP67 according to EN 60529, with SI-Protection
Pocket	stainless steel V4A, Ø=6 mm, mounting length: 50 100 150 200 250 mm, tension spring (optional)
Ambient condition	with connection wire: PVC -35..+100 °C, silicone -50..+180 °C, PTFE -80..+260 °C, GI/GI-V2A: -50..+400 °C
Notes	cable ends with conductor sleeves as standard, other sensors and cable lengths on request, PE connection wire available (please request)

Item description: product | sensor | temperature | pocket (length.Ø) | cable length (L)

TF25 passive 100 °C

Cable sensors -35..+100 °C – PT100			TP3
Item description	Item No.	€	
TF25 PT100 T100 050.06 L1000	35019	11,80	
TF25 PT100 T100 100.06 L1000	35026	13,20	
TF25 PT100 T100 150.06 L1000	35033	13,60	

Cable sensors -35..+100 °C – PT1000			TP3
Item description	Item No.	€	
TF25 PT1000 T100 050.06 L1000	35484	14,00	
TF25 PT1000 T100 100.06 L1000	35491	15,40	
TF25 PT1000 T100 150.06 L1000	35507	15,70	

Cable sensors -35..+100 °C – Ni1000			TP3
Item description	Item No.	€	
TF25 Ni1000 T100 050.06 L1000	26116	13,70	
TF25 Ni1000 T100 100.06 L1000	26154	15,10	
TF25 Ni1000 T100 150.06 L1000	26192	15,40	

Cable sensors -35..+100 °C – NTC10k			TP3
Item description	Item No.	€	
TF25 NTC10k T100 050.06 L1000	41539	10,50	
TF25 NTC10k T100 100.06 L1000	41812	11,90	
TF25 NTC10k T100 150.06 L1000	40723	12,20	

Cable sensors -35..+100 °C – NTC5k			TP3
Item description	Item No.	€	
TF25 NTC5k T100 050.06 L1000	41522	10,50	
TF25 NTC5k T100 100.06 L1000	41805	11,90	
TF25 NTC5k T100 150.06 L1000	40716	12,20	

Cable sensors -35..+100 °C – NTC1,8k			TP3
Item description	Item No.	€	
TF25 NTC1,8k T100 050.06 L1000	233309	10,50	
TF25 NTC1,8k T100 100.06 L1000	258272	11,90	
TF25 NTC1,8k T100 150.06 L1000	319201	12,20	

Cable sensors -35..+100 °C – KTY81-110			TP3
Item description	Item No.	€	
TF25 KTY81-110 T100 050.06 L1000	42819	8,35	
TF25 KTY81-110 T100 100.06 L1000	42857	9,80	
TF25 KTY81-110 T100 150.06 L1000	42895	10,10	

Cable sensors -35..+100 °C PT100 1/3 DIN			TP3
Item description	Item No.	€	
TF25 PT100 1/3 DIN T100 050.06 L1000	25799	15,50	
TF25 PT100 1/3 DIN T100 100.06 L1000	35255	16,90	
TF25 PT100 1/3 DIN T100 150.06 L1000	35262	17,20	

Cable sensors -35..+100 °C – PT1000 1/3 DIN			TP3
Item description	Item No.	€	
TF25 PT1000 1/3 DIN T100 050.06 L1000	35729	17,00	
TF25 PT1000 1/3 DIN T100 100.06 L1000	35736	18,40	
TF25 PT1000 1/3 DIN T100 150.06 L1000	35743	18,70	

Cable sensors -35..+100 °C – Ni1000TK5000			TP3
Item description	Item No.	€	
TF25 Ni1000TK5000 T100 050.06 L1000	26352	17,20	
TF25 Ni1000TK5000 T100 100.06 L1000	26390	18,60	
TF25 Ni1000TK5000 T100 150.06 L1000	388238	18,90	

Cable sensors -35..+100 °C – NTC10k Precon			TP3
Item description	Item No.	€	
TF25 NTC10k Precon T100 050.06 L1000	41300	10,50	
TF25 NTC10k Precon T100 100.06 L1000	41348	11,90	
TF25 NTC10k Precon T100 150.06 L1000	41386	12,20	

Cable sensors -35..+100 °C – NTC20k			TP3
Item description	Item No.	€	
TF25 NTC20k T100 050.06 L1000	41546	10,50	
TF25 NTC20k T100 100.06 L1000	41829	11,90	
TF25 NTC20k T100 150.06 L1000	40730	12,20	

Cable sensors -35..+100 °C – LM235Z			TP3
Item description	Item No.	€	
TF25 LM235Z T100 050.06 L1000	43786	13,10	
TF25 LM235Z T100 100.06 L1000	43823	14,50	
TF25 LM235Z T100 150.06 L1000	43861	14,90	

Cable sensors -35..+100 °C – KTY81-121			TP3
Item description	Item No.	€	
TF25 KTY81-121 T100 050.06 L1000	42826	8,35	
TF25 KTY81-121 T100 100.06 L1000	42864	9,80	
TF25 KTY81-121 T100 150.06 L1000	42901	10,10	

Item description: product | sensor | temperature | pocket (length.Ø) | cable length (L)

TF25 passive 100 °C

Cable sensors -35..+100 °C – KTY81-122			TP3
Item description	Item No.	€	
TF25 KTY81-122 T100 050.06 L1000	42833	8,35	
TF25 KTY81-122 T100 100.06 L1000	42871	9,80	
TF25 KTY81-122 T100 150.06 L1000	42918	10,10	

Cable sensors -35..+100 °C – KTY81-210			TP3
Item description	Item No.	€	
TF25 KTY81-210 T100 050.06 L1000	42840	8,35	
TF25 KTY81-210 T100 100.06 L1000	42888	9,80	
TF25 KTY81-210 T100 150.06 L1000	42925	10,10	

Cable sensors -35..+100 °C – DS18B20 1-wire			TP3
Item description	Item No.	€	
TF25 DS18B20 1-wire T100 050.06 L1000	496735	11,80	
TF25 DS18B20 1-wire T100 100.06 L1000	592901	13,20	
TF25 DS18B20 1-wire T100 150.06 L1000	592918	13,60	

Options		€
Item description		
3-wire connection -35..+100 °C (3-wire)		1,70
4-wire connection -35..+100 °C (4-wire)		2,50
Add per meter of connection cable 2-wire -35..+100 °C		0,70
Add per meter of connection cable 3-wire -35..+100 °C		1,00
Add per meter of connection cable 4-wire -35..+100 °C		1,20
Protection class IP67		2,00
Tension spring (tensp)		1,30
Add to price of NTC10k for sensor NTC10k Carel		0,00
Connection box USE-S		13,80

TF25 passive 125 | 150 | 180 °C

Cable sensors -50..+180 °C – PT100			TP3
Item description	Item No.	€	
TF25 PT100 T180 050.06 L1000	52771	15,50	
TF25 PT100 T180 100.06 L1000	52788	16,90	
TF25 PT100 T180 150.06 L1000	52795	17,20	

Cable sensors -50..+180 °C – PT100 1/3 DIN			TP3
Item description	Item No.	€	
TF25 PT100 1/3 DIN T180 050.06 L1000	57493	19,20	
TF25 PT100 1/3 DIN T180 100.06 L1000	57509	20,70	
TF25 PT100 1/3 DIN T180 150.06 L1000	57516	21,00	

Cable sensors -50..+180 °C – PT1000			TP3
Item description	Item No.	€	
TF25 PT1000 T180 050.06 L1000	58247	17,70	
TF25 PT1000 T180 100.06 L1000	58254	19,10	
TF25 PT1000 T180 150.06 L1000	58261	19,40	

Cable sensors -50..+180 °C – PT1000 1/3 DIN			TP3
Item description	Item No.	€	
TF25 PT1000 1/3 DIN T180 050.06 L1000	58483	20,70	
TF25 PT1000 1/3 DIN T180 100.06 L1000	58490	22,10	
TF25 PT1000 1/3 DIN T180 150.06 L1000	58506	22,40	

Cable sensors -50..+180 °C – Ni1000			TP3
Item description	Item No.	€	
TF25 Ni1000 T180 050.06 L1000	58728	17,40	
TF25 Ni1000 T180 100.06 L1000	58735	18,80	
TF25 Ni1000 T180 150.06 L1000	58742	19,20	

Cable sensors -50..+180 °C – Ni1000TK5000			TP3
Item description	Item No.	€	
TF25 Ni1000TK5000 T180 050.06 L1000	58964	20,90	
TF25 Ni1000TK5000 T180 100.06 L1000	58971	22,30	
TF25 Ni1000TK5000 T180 150.06 L1000	58988	22,70	

Item description: product | sensor | temperature | pocket (length.Ø) | cable length (L)

TF25 passive 125 | 150 | 180 °C

Cable sensors -50..+150 °C – NTC10k			TP3
Item description	Item No.	€	
TF25 NTC10k T150 050.06 L1000	59466	14,20	
TF25 NTC10k T150 100.06 L1000	59473	15,60	
TF25 NTC10k T150 150.06 L1000	59480	15,90	

Cable sensors -50..+150 °C – NTC5k			TP3
Item description	Item No.	€	
TF25 NTC5k T150 050.06 L1000	59404	14,20	
TF25 NTC5k T150 100.06 L1000	59411	15,60	
TF25 NTC5k T150 150.06 L1000	59428	15,90	

Cable sensors -50..+150 °C – NTC1,8k			TP3
Item description	Item No.	€	
TF25 NTC1,8k T150 050.06 L1000	259484	14,20	
TF25 NTC1,8k T150 100.06 L1000	282611	15,60	
TF25 NTC1,8k T150 150.06 L1000	388252	15,90	

Cable sensors -50..+150 °C – KTY81-110			TP3
Item description	Item No.	€	
TF25 KTY81-110 T150 050.06 L1000	68031	12,10	
TF25 KTY81-110 T150 100.06 L1000	68048	13,60	
TF25 KTY81-110 T150 150.06 L1000	68055	13,90	

Cable sensors -50..+150 °C – KTY81-122			TP3
Item description	Item No.	€	
TF25 KTY81-122 T150 050.06 L1000	68154	12,10	
TF25 KTY81-122 T150 100.06 L1000	68161	13,60	
TF25 KTY81-122 T150 150.06 L1000	68178	13,90	

Options		€
Item description		
3-wire connection -50..+180 °C (3-wire)		1,80
4-wire connection -50..+180 °C (4-wire)		3,20
Add per meter of connection cable 2-wire -50..+180 °C		1,60
Add per meter of connection cable 3-wire -50..+180 °C		2,10
Add per meter of connection cable 4-wire -50..+180 °C		2,60
Protection class IP67		2,00
Tension spring (tensp)		1,30
Add to price of NTC10k for sensor NTC10k Carel		0,00
Connection box USE-S		13,80

Cable sensors -50..+150 °C – NTC10k Precon			TP3
Item description	Item No.	€	
TF25 NTC10k Precon T150 050.06 L1000	59718	14,20	
TF25 NTC10k Precon T150 100.06 L1000	59725	15,60	
TF25 NTC10k Precon T150 150.06 L1000	59732	15,90	

Cable sensors -50..+150 °C – NTC20k			TP3
Item description	Item No.	€	
TF25 NTC20k T150 050.06 L1000	59527	14,20	
TF25 NTC20k T150 100.06 L1000	59534	15,60	
TF25 NTC20k T150 150.06 L1000	59541	15,90	

Cable sensors -50..+125 °C – LM235Z			TP3
Item description	Item No.	€	
TF25 LM235Z T125 050.06 L1000	143042	15,90	
TF25 LM235Z T125 100.06 L1000	141024	17,40	
TF25 LM235Z T125 150.06 L1000	387521	17,70	

Cable sensors -50..+150 °C – KTY81-121			TP3
Item description	Item No.	€	
TF25 KTY81-121 T150 050.06 L1000	68093	12,10	
TF25 KTY81-121 T150 100.06 L1000	68109	13,60	
TF25 KTY81-121 T150 150.06 L1000	68116	13,90	

Cable sensors -50..+150 °C – KTY81-210			TP3
Item description	Item No.	€	
TF25 KTY81-210 T150 050.06 L1000	68215	12,10	
TF25 KTY81-210 T150 100.06 L1000	68222	13,60	
TF25 KTY81-210 T150 150.06 L1000	68239	13,90	

Item description: product | sensor | temperature | pocket (length.Ø) | cable length (L)

TF25 passive 250 °C

Cable sensors -50..+250 °C – PT100			TP3
Item description	Item No.	€	
TF25 PT100 T250 050.06 L1000	167406	19,10	
TF25 PT100 T250 100.06 L1000	209731	20,20	
TF25 PT100 T250 150.06 L1000	205658	20,50	

Cable sensors -50..+250 °C – PT100 1/3 DIN			TP3
Item description	Item No.	€	
TF25 PT100 1/3 DIN T250 050.06 L1000	195478	22,80	
TF25 PT100 1/3 DIN T250 100.06 L1000	345835	23,90	
TF25 PT100 1/3 DIN T250 150.06 L1000	388276	24,30	

Cable sensors -50..+250 °C – PT1000			TP3
Item description	Item No.	€	
TF25 PT1000 T250 050.06 L1000	168717	21,30	
TF25 PT1000 T250 100.06 L1000	209724	22,40	
TF25 PT1000 T250 150.06 L1000	388283	22,70	

Cable sensors -50..+250 °C – PT1000 1/3 DIN			TP3
Item description	Item No.	€	
TF25 PT1000 1/3 DIN T250 050.06 L1000	356749	24,30	
TF25 PT1000 1/3 DIN T250 100.06 L1000	356756	25,40	
TF25 PT1000 1/3 DIN T250 150.06 L1000	388290	25,70	

Cable sensors -50..+250 °C – Ni1000			TP3
Item description	Item No.	€	
TF25 Ni1000 T250 050.06 L1000	151863	21,00	
TF25 Ni1000 T250 100.06 L1000	182430	22,10	
TF25 Ni1000 T250 150.06 L1000	388306	22,40	

Cable sensors -50..+250 °C – Ni1000TK5000			TP3
Item description	Item No.	€	
TF25 Ni1000TK5000 T250 050.06 L1000	150781	24,90	
TF25 Ni1000TK5000 T250 100.06 L1000	157018	25,60	
TF25 Ni1000TK5000 T250 150.06 L1000	388313	25,90	

Options		
Item description		€
Add per meter of connection cable 2-wire -50..+250 °C		2,70
Protection class IP67		2,00
Tension spring (tensp)		1,30
Connection box USE-S		13,80

TF25 passive 400 °C

Cable sensors -50..+400 °C – PT100/PT1000			TP3
Item description	Item No.	€	
TF25 PT100 T400 050.06 L2000	166195	33,80	
TF25 PT1000 T400 050.06 L2000	166201	33,80	

Options		
Item description		€
Add per meter of connection cable 2-wire -80..+400 °C		4,80
Protection class IP67		2,00
Tension spring (tensp)		1,30
Connection box USE-S		13,80

TF25+

DATA SHEETS



Cable sensor for temperature measurement in HVAC or refrigeration applications. In combination with a thermowell pocket suitable for temperature measurement in duct applications. Depending on the application, PVC, silicone, PTFE and glass fiber cables are available. Tool-free opening, closing and wiring as well as removable cable entries ensure quick and easy installation.



TECHNICAL DATA

Measuring values	temperature
Output voltage	TRV: 1x 0..10 V or 0..5 V, min. load 5 k Ω
Output ampere	TRA: 1x 4..20 mA, max. load 500 Ω
Power supply	15..24 V = (\pm 10%) or 24 V ~ (\pm 10%) SELV, TRA: 15..24 V = (\pm 10%) SELV
Power consumption	TRV: max. 0,45 W (24 V =) 0,8 VA (24 V ~), TRA: max. 0,5 W (24 V =)
Measuring range temp.	-50..+50 -20..+80 -15..+35 -10..+120 0..+50 0..+100 0..+160 0..+250 °C, adjustable at the transducer, default setting: 0..+160 °C
Working range temp.	-50..180 °C, -80..+260 °C (optional)
Accuracy temperature	\pm 0,5 K (typ. at 21 °C within default measuring range)
Enclosure	enclosure USE-S, PC, pure white
Protection	IP65 according to EN 60529, SI-Protection, hex pressed, Rolled: IP67 according to EN 60529, with SI-Protection, enclosure: IP65 according to EN 60529
Cable entry	Flextherm M16 for wire \varnothing =3..7 mm, removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ²
Pocket	stainless steel V4A, \varnothing =6 mm, mounting length: 50 100 150 200 250 mm, tension spring (optional)
Ambient condition	enclosure: -35..+70 °C, max. 85% rH short term condensation
Delivery contents	incl. mounting base enclosure USE-S pure white
Notes	other cable lengths on request, PE connection wire available (please request)

Item description: product | TRV / TRA | temperature | pocket (length.Ø) | cable length (L)

TF25+

Cable sensors -50..+180 °C – active TRV 0..10 V			TP2
Item description	Item No.		€
TF25+ TRV MultiRange T180 050.06 L1000	658959		69,90
TF25+ TRV MultiRange T180 100.06 L1000	658966		71,30
TF25+ TRV MultiRange T180 150.06 L1000	658973		71,70

Cable sensors -50..+180 °C – active TRA 4..20 mA			TP2
Item description	Item No.		€
TF25+ TRA MultiRange T180 050.06 L1000	658980		69,90
TF25+ TRA MultiRange T180 100.06 L1000	658997		71,30
TF25+ TRA MultiRange T180 150.06 L1000	659000		71,70

Options		
Item description		€
Protection class IP67 (rolled)		2,00
Add per meter of connection cable -50..+180 °C		1,60
Add per meter of connection cable -50..+250 °C		2,70
Tension spring (tensp)		1,30
Temperature -50..+250 °C (T250)		10,90

TF25+ relay / LCD / BUS

DATA SHEETS



Cable sensor for temperature measurement in HVAC or refrigeration applications. In combination with a thermowell pocket suitable for temperature measurement in duct applications. Depending on the application, PVC, silicone, PTFE and glass fiber cables are available. Tool-free opening, closing and wiring as well as removable cable entries ensure quick and easy installation.



TF25+ relay / BUS



TECHNICAL DATA

Measuring values	temperature
Output voltage	0..10 V or 0..5 V (adjustable via jumper; live-zero configuration via Thermokon USEapp), min. load 5 kΩ
Network technology	RS485 BACnet (MS/TP), RS485 Modbus
Power supply	15..35 V = or 19..29 V ~ SELV
Power consumption	max. 2,5 W (24 V =) 4,3 VA (24 V ~)
Measuring range temp.	-20..+120 °C
Accuracy temperature	±0,5 K (typ. at 21 °C within default measuring range)
Display	LCD 29x35 mm with RGB backlight (optional), warning when measuring range is exceeded ('OL') or sensor is defective/disconnected ('check sensor')
Enclosure	enclosure USE-M, PC, pure white, LCD: cover PC, transparent
Protection	IP65 according to EN 60529, SI-Protection, hex pressed, Rolled: IP67 according to EN 60529, with SI-Protection, enclosure: IP65 according to EN 60529
Cable entry	M25 with fourfold cable entry for wire with max. Ø=7 mm
Connection electrical	removable plug-in terminal, max. 2,5 mm ² , BUS terminal: removable plug-in terminal, max. 1,5 mm ²
Pocket	stainless steel V4A, Ø=6 mm, mounting length: 50 100 150 200 250 mm, tension spring (optional)
Ambient condition	enclosure: -35..+70 °C, max. 85% rH short term condensation
Delivery contents	incl. mounting base enclosure USE-M pure white
Notes	other cable lengths on request, PE connection wire available (please request)

Item description: product | BUS | temperature | pocket (length.Ø) | cable length (L)

TF25+ relay / LCD / BUS



Cable sensors -20...+120 °C – active RS485 Modbus			TP2
Item description	USEapp	Item No.	€
TF25+ RS485 Modbus T120 050.06 L1000	✓	659024	104,00
TF25+ RS485 Modbus T120 100.06 L1000	✓	668255	105,40



Cable sensors -20...+120 °C – active RS485 BACnet			TP2
Item description	USEapp	Item No.	€
TF25+ RS485 BACnet T120 050.06 L1000	✓	699723	104,00
TF25+ RS485 BACnet T120 100.06 L1000	✓	699730	105,40

Options	
Item description	€
Protection class IP67	2,00
Tension spring (tensp)	1,30
LCD	39,70

ACCESSORIES – TF25 passive | TF25+ active | TF25+ relay / LCD / BUS

Accessories					AS1
Item description	Item No.	On stock	€		
Mounting base enclosure USE-M pure white	668354	☉	7,85		
Mounting flange MF6DS flexible (suitable for Ø=6 mm)	669016	☉	6,30		
Mounting flange MF6 (brass)	3407	☉	6,30		
KL6VA – Compression fittings G 1/4" for Ø=6 mm with cutting ring VA, stainless steel	103213	☉	12,70		
Bluetooth dongle with micro-USB – communication between USEapp and devices USE-M/USE-L (net price)	668262	☉	29,00		
For cable entries and sealing inserts please refer to chapter "Accessories"		☉			

Accessories – thermowell pockets stainless steel for sensors with pocket Ø=6 mm					AS2
Item description	Length	Pocket length	Item No.	On stock	€
VA-thermowell pocket 50 mm type THVADS50	50 mm	36 mm	611152	☉	17,10
VA-thermowell pocket 100 mm type THVADS100	100 mm	86 mm	611817	☉	18,90
VA-thermowell pocket 150 mm type THVADS150	150 mm	136 mm	611824	☉	20,30
VA-thermowell pocket 200 mm type THVADS200	200 mm	186 mm	611848	☉	21,40
VA-thermowell pocket 250 mm type THVADS250	250 mm	236 mm	611862	☉	26,60
VA-thermowell pocket 300 mm type THVADS300	300 mm	286 mm	611879	☉	27,80
VA-thermowell pocket 450 mm type THVADS450	450 mm	436 mm	611893	☉	28,70
VA-thermowell pocket 600 mm type THVADS600	600 mm	586 mm	611923	☉	35,20
Pressure screw with sealing PTFE (without silicone) for thermowell pocket THVADS (10 pcs)			666473	☉	18,20

Accessories – thermowell pockets brass for sensors with pocket Ø=6 mm					AS2
Item description	Length	Pocket length	Item No.	On stock	€
MS-thermowell pocket 50 mm type THMSDS50	50 mm	36 mm	610995	☉	7,85
MS-thermowell pocket 100 mm type THMSDS100	100 mm	86 mm	611008	☉	8,95
MS-thermowell pocket 150 mm type THMSDS150	150 mm	136 mm	611015	☉	9,45
MS-thermowell pocket 200 mm type THMSDS200	200 mm	186 mm	611022	☉	9,75
MS-thermowell pocket 250 mm type THMSDS250	250 mm	236 mm	611985	☉	11,30
MS-thermowell pocket 300 mm type THMSDS300	300 mm	286 mm	611039	☉	11,60
MS-thermowell pocket 450 mm type THMSDS450	450 mm	436 mm	611046	☉	11,80

TF25 LON

DATA SHEETS



Cable sensor for temperature measurement in HVAC applications. In conjunction with a Thermowell pocket suitable for temperature measurement in duct applications. Designed for control and monitoring applications.



LON
LOCAL OPERATING NETWORK

TECHNICAL DATA

Measuring values	temperature
Network technology	LON FT (free topology)
Power supply	15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$) SELV
Power consumption	typ. 0,5 W (24 V =) 1,7 VA (24 V ~)
Measuring range temp.	-45..+130 °C
Working range temp.	-50..180 °C
Accuracy temperature	$\pm 0,5$ K (typ. at 21 °C within default measuring range)
Enclosure	PA6, pure white, with quick lock screws
Protection	IP65 according to EN 60529, SI-Protection, hex pressed, Rolled: IP67 according to EN 60529, with SI-Protection
Cable entry	M20 for wire max. $\varnothing=8$ mm, seal insert for double cable entry for wire max $\varnothing=6$ mm
Connection electrical	terminal block, max. 1,5 mm ²
Pocket	stainless steel V4A, LON: $\varnothing=6,5$ mm, mounting length: 50 100 150 200 250 mm, tension spring (optional)
Ambient condition	enclosure: -35..+70 °C, max. 85% rH short term condensation
Notes	other cable lengths on request, PE connection wire available (please request)

Item description: product | BUS | temperature | pocket (length.Ø) | cable length (L)

TF25 LON

LON

LOCAL OPERATING NETWORK

Cable sensors -45..+130 °C – active LON

TP2

Item description	Item No.	€
TF25 LON T130 050.06,5 L1000	95440	181,00

Accessories

AS1

Item description	Item No.	On stock	€
Mounting flange MF6DS flexible (suitable for Ø=6 mm)	669016	☉	6,30
Mounting flange MF6 (brass)	3407	☉	6,30
KL4VA – Compression fittings G 1/4" for Ø=4 mm with cutting ring VA, stainless steel	103206	☉	12,70
KL6VA – Compression fittings G 1/4" for Ø=6 mm with cutting ring VA, stainless steel	103213	☉	12,70

Accessories – thermowell pockets stainless steel for sensors with pocket Ø=6 mm

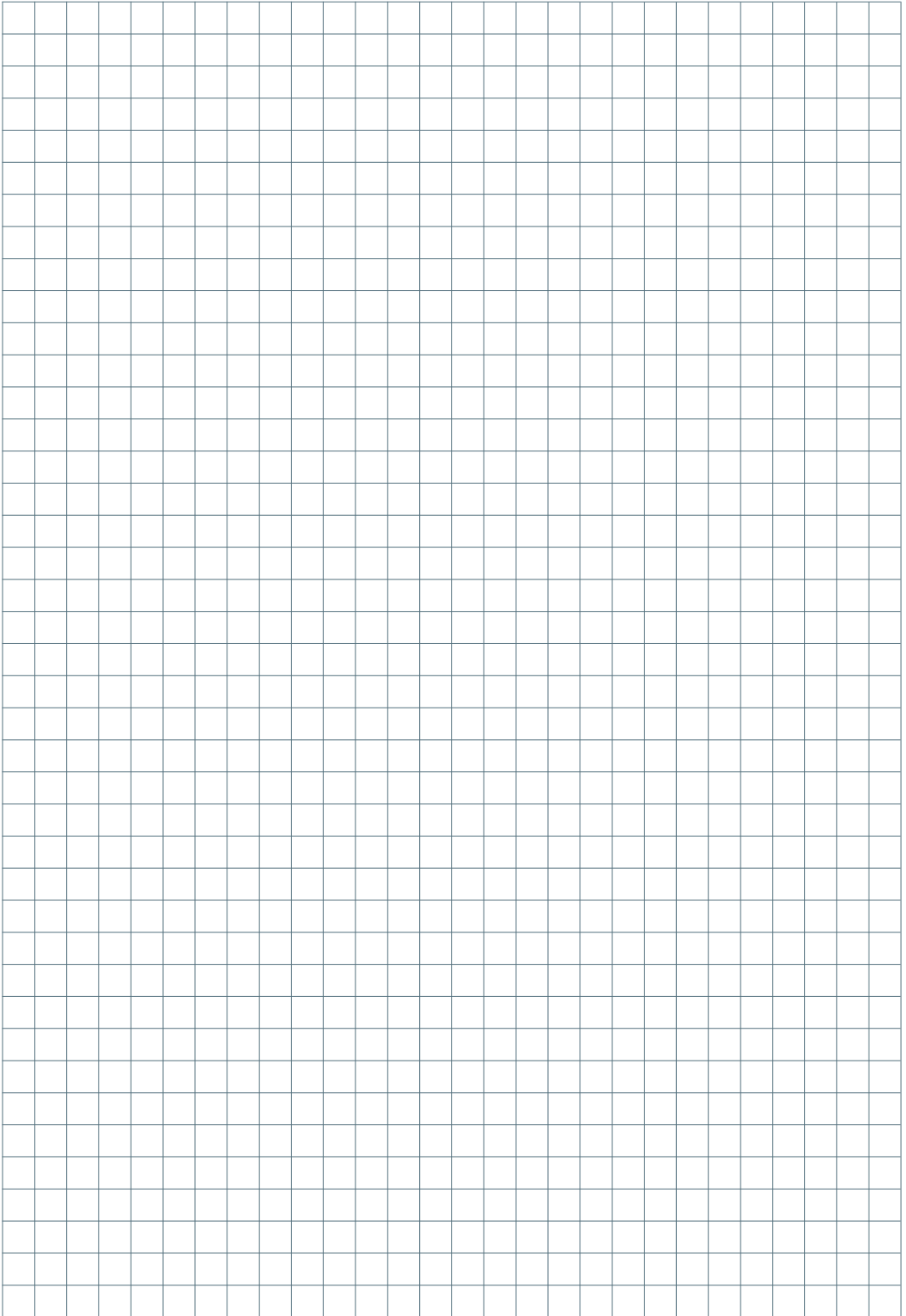
AS2

Item description	Length	Pocket length	Item No.	On stock	€
VA-thermowell pocket 50 mm type THVADS50	50 mm	36 mm	611152	☉	17,10
VA-thermowell pocket 100 mm type THVADS100	100 mm	86 mm	611817	☉	18,90
VA-thermowell pocket 150 mm type THVADS150	150 mm	136 mm	611824	☉	20,30
VA-thermowell pocket 200 mm type THVADS200	200 mm	186 mm	611848	☉	21,40
VA-thermowell pocket 250 mm type THVADS250	250 mm	236 mm	611862	☉	26,60
VA-thermowell pocket 300 mm type THVADS300	300 mm	286 mm	611879	☉	27,80
VA-thermowell pocket 450 mm type THVADS450	450 mm	436 mm	611893	☉	28,70
VA-thermowell pocket 600 mm type THVADS600	600 mm	586 mm	611923	☉	35,20
Pressure screw with sealing PTFE (without silicone) for thermowell pocket THVADS (10 pcs)			666473	☉	18,20

Accessories – thermowell pockets brass for sensors with pocket Ø=6 mm

AS2

Item description	Length	Pocket length	Item No.	On stock	€
MS-thermowell pocket 50 mm type THMSDS50	50 mm	36 mm	610995	☉	7,85
MS-thermowell pocket 100 mm type THMSDS100	100 mm	86 mm	611008	☉	8,95
MS-thermowell pocket 150 mm type THMSDS150	150 mm	136 mm	611015	☉	9,45
MS-thermowell pocket 200 mm type THMSDS200	200 mm	186 mm	611022	☉	9,75
MS-thermowell pocket 250 mm type THMSDS250	250 mm	236 mm	611985	☉	11,30
MS-thermowell pocket 300 mm type THMSDS300	300 mm	286 mm	611039	☉	11,60
MS-thermowell pocket 450 mm type THMSDS450	450 mm	436 mm	611046	☉	11,80



Humidity

Humidity sensor 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.



Sample applications

Room sensors

FTW04	Surface mount sensor Temp. + rH	
FTW04 dS	digitalSTROM sensor Temp. + rH	
FTW06	Flush mount sensor Temp. + rH	
FTW06 dS	digitalSTROM sensor Temp. + rH	
FTP+	Room pendulum Temp. + rH	
FT-RDF18+	Ceiling sensor Temp. + rH	
FTB+	Wall sensor Temp. + rH	

Duct sensors

FTK+	Duct sensor Temp. + rH	342
FTK+ relay / LCD / BUS		344
FTK LON	Duct sensor Temp. + rH	347

265 Outdoor sensors

WSA	Outdoor sensor Temp. + rH	348
FTA54+	Outdoor sensor Temp. + rH	350
FTA54 LON	Outdoor sensor Temp. + rH	352

332 335 336 Hygrostats

338 FSR01	Room humidistat	353
339 FSK01	Duct hygrostat	354

341 Condensation / Leakage

WK01+	Condensation sensor	355
LS02+	Leakage sensor	357



1

2

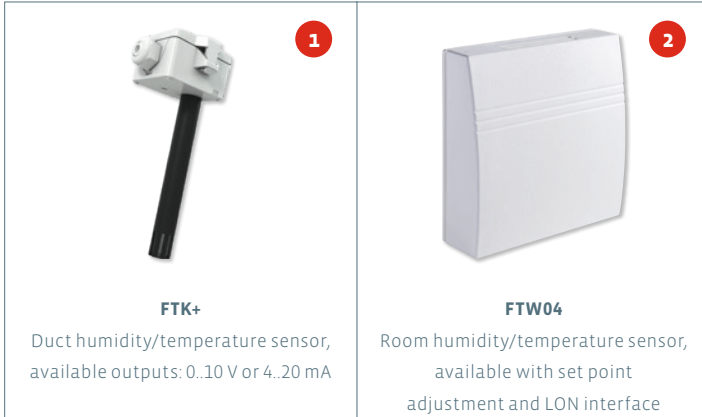
Abfahrt / Departure

Abfahrt	Zugnummer	Abfahrtsort	Abfahrtszeit
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102	102	Frankfurt	10:15
103	103	Frankfurt	10:30
104	104	Frankfurt	10:45
105	105	Frankfurt	11:00
106	106	Frankfurt	11:15
107	107	Frankfurt	11:30
108	108	Frankfurt	11:45
109	109	Frankfurt	12:00
110	110	Frankfurt	12:15

← 1 - 16 und 10
i s
Ausgang Stadtmitte
H&M City Travel Center

» BENEFITS

- » Reliable measurement of relative humidity
- » High Accuracy
- » Optional temperature sensor



ALREADY WET HANDS?

Whether room or duct: Highest precision in relative humidity is of paramount importance. Not only for creating comfortable working conditions, a consistent and accurate monitoring of humidity is necessary. In increasingly insulated buildings, hazardous mold formations get observance to the sustainable protection of humans and the building. In order to act precautionary and to control this risk, humidity sensors are additionally equipped with temperature sensors and designed for communication in BUS systems, for wireless EnOcean communication and for direct hook-up.

FTW04

DATA SHEETS



The surface-mounted sensor measures relative humidity and temperature of air and non-aggressive indoor gases. Moisture detection makes it possible to achieve a pleasant indoor climate and prevent mold. The accuracy of the humidity sensor is 2%. Optionally, the sensor is available with LCD and control elements. The device can be mounted directly on the wall, on a flush-mounted box or in conjunction with a surface-mounted frame available as an accessory. Predetermined breaking points for surface-mounted installations are available.



FTW04



FTW04 LCD



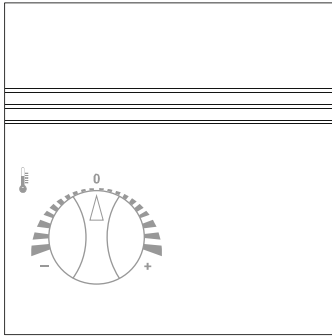
TECHNICAL DATA

Measuring values	humidity, temperature
Output voltage	VV VVS: 2x 0..10 V (min. load 10 kΩ)
Output ampere	AA AAS: 2x 4..20 mA (max. load 500 Ω)
Output passive	VVS AAS: passive temperature sensor
Network technology	BACnet MS/TP, KNX (TP), LON FT (free topology), RS485 Modbus
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV, AA AAS: 15..24 V = (±10%) SELV, KNX: supply via BUS
Power consumption	VV VVS: max. 0,3 W (24 V =) 0,5 VA (24 V ~), AA AAS: max. 1 W (24 V =), BACnet: typ. 0,4 W (24 V =) 0,6 VA (24 V ~), RS485 Modbus: typ. 0,4 W (24 V =) 0,6 VA (24 V ~)
Measuring range temp.	0..+50 °C, passive: -35..+70 °C
Measuring range humidity	0..100% rH non-condensing
Accuracy temperature	±0,5 K (typ. at 25 °C), passive: depending on used sensor
Accuracy humidity	±2% between 10..90% rH (typ. at 21 °C)
Inputs	RS485 BACnet (MS/TP)/RS485 Modbus: 2 digital entries, floating, max. wire length 10 m
Display	LCD 29x12 mm, monochrome, (optional)
Enclosure	PC, pure white
Protection	IP30 according to EN 60529
Cable entry	breaking points top/bottom, rear entry
Connection electrical	terminal block, max. 1,5 mm ² , KNX: KNX terminal block
Ambient condition	-35..+70 °C, KNX: -20..+60 °C, max. 85% rH short term condensation
Mounting	surface mounted on flush-mounting box (Ø=68 mm), to be mounted flat onto the surface using adhesive foil or screws, with frame for surface mounting (accessory) or directly on the wall, base part can be mounted and wired separately
Notes	special painting available on request, additional passive temperature sensor available (type VVS/AAS), for other operating elements please request

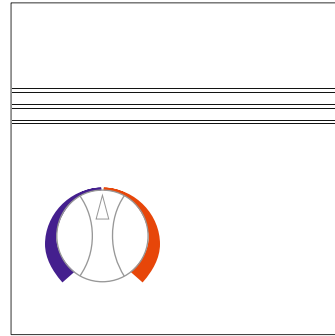
FTW04

Standard labelling (only with option potentiometer)

FTW04 P standard labelling
(ltypeS)



FTW04 P standard labelling colour
(refer to options – ltypeSC)



Item description: product | VV / AA

Room sensor humidity + temperature – active 2x 0..10 V 2x 4..20 mA			HU2
Item description	Item No.	On stock	€
FTW04 VV	196352	●	135,00
FTW04 AA	609555	●	135,00

Options	
Item description	€
LCD (only type VV VVS)	39,70
Potentiometer (passive)	22,40
Default labelling P colour red+blue (ltypeSC)	6,00
Additional passive temperature sensor	14,30

Order example for different items:

FTW04 | P | VV | PT1000 | LCD

- FTW04** = product
- P** = potentiometer (10 kOhm)
- VV** = 2x 0..10 V output
- PT1000** = additional passive temperature sensor
- LCD** = display

FTW04 BUS



Room sensor humidity + temperature – active BUS				HU1
Item description	Item No.	On stock	€	
FTW04 RS485 Modbus	601153	☉	173,90	
FTW04 RS485 BACnet (MS/TP)	548298		173,90	
FTW04 KNX	585606		231,30	
FTW04 LON	297776		242,70	

Options	
Item description	€
LCD (available for LON and RS485 Modbus)	39,70
Potentiometer (passive; available for LON and RS485 Modbus)	22,40
Default labelling P colour red+blue (ItypeSC)	6,00

Order example for different items:

FTW04 | P | LON | LCD | standard labelling colour

- FTW04** = product
- P** = potentiometer (10 kOhm)
- LON** = BUS
- LCD** = display
- Labelling** = standard red-blue

Accessories				AS1
Item description	Item No.	On stock	€	
Rawlplugs and screws (2 pcs. each)	102209	☉	0,80	
PSU-UP24 – flush mount power supply 24 V (80..240 V ~-> 24 V =, 0,5 A)	645737	☉	42,00	
Frame for surface mounting WRF04	111584	☉	12,40	
Ball stroke protection BS150, transparent (for series WRF04)	647007	☉	22,70	



FTW04 dS

DATA SHEETS



Room sensor for recording temperature and relative humidity transmitting the measured data directly to the digitalSTROM system. This allows a closed loop for precise and comfortable control of the indoor climate. The device can be mounted directly on the wall, on a flush-mounted box or in conjunction with a surface-mounted frame available as an accessory. Predetermined breaking points for surface-mounted installations are available.



TECHNICAL DATA

Measuring values	humidity, temperature
Network technology	digitalSTROM (dS)
Power supply	230 V ~ (±10%)
Power consumption	typ. 0,5 VA (230 V ~)
Measuring range temp.	-20..+60 °C
Measuring range humidity	0..100% rH non-condensing
Accuracy temperature	±0,5 K (typ. at 21 °C)
Accuracy humidity	±2% between 10..90% rH (typ. at 21 °C)
Enclosure	PC, pure white
Protection	IP30 according to EN 60529
Cable entry	breaking points top/bottom, rear entry
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	-20..+70 °C, max. 85% rH short term condensation
Mounting	surface mounted on flush-mounting box (Ø=68 mm), to be mounted flat onto the surface using adhesive foil or screws, with frame for surface mounting (accessory) or directly on the wall, base part can be mounted and wired separately
Notes	special painting available on request



Room sensor temperature + humidity – active digitalSTROM

DS1

Item description	Item No.	€
FTW04 dS	619219	169,00

Accessories

AS1

Item description	Item No.	On stock	€
Rawplugs and screws (2 pcs. each)	102209	☺	0,80
Frame for surface mounting WRF04	111584	☺	12,40
Ball stroke protection BS150, transparent (for series WRF04)	647007	☺	22,70

FTW06

DATA SHEETS



Flush-mounted room sensor for humidity and temperature detection. The sensor meets increased design requirements and is available in standard switch ranges as well as in different color versions. The device is mounted in a flush-mounted box. The sensor is used for a comfortable indoor climate and for mold avoidance, e.g. in hotels, offices, living rooms and meeting rooms. The accuracy of the humidity sensor is 2%.



FTW06
Gira E2 pure white matt

TECHNICAL DATA	
Measuring values	humidity, temperature
Output voltage	VV VVS: 2x 0..10 V (min. load 10 kΩ)
Output passive	VVS: passive temperature sensor
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	VV VVS: max. 0,3 W (24 V =) 0,5 VA (24 V ~)
Measuring range temp.	0..+50 °C
Measuring range humidity	0..100% rH non-condensing
Accuracy temperature	±0,5 K (typ. at 25 °C), passive: depending on used sensor
Accuracy humidity	±2% between 10..90% rH (typ. at 21 °C)
Switch range Berker	S.1, B.3 aluminum, B.7 glass
Switch range Busch-Jaeger	Busch-balance® SI, solo® *, future® linear *, Busch-axcent® *
Switch range Feller	EDIZIOdue
Switch range Gira	E2, E3, Standard 55, Esprit, Event, Flächenschalter *
Switch range Jung	LS 990 *, A 500, AS 500, A plus, A creation, CD 500 *
Switch range Merten	M-Smart, M-Plan, 1-M, Atelier-M, M-Pure, Artec *, Artec stainless steel *, Antik *
Switch range Peha	AURA, AURA glass
Protection	IP30 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ² , pluggable
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm)
Notes	* in switch program with intermediate frame, please specify frame design when ordering, additional passive sensor available (please specify in order) e.g.: PT100, PT1000, NI1000, NI1000TK5000, NTCxx, LM235Z, other sensors on request

FTW06

Item description: product | VV/dS | switch range | colour

Room sensor humidity + temperature – active VV 2x 0..10 V			HU1
Item description	Item No.	€	
FTW06 VV Gira E2 pure white matt	459167	208,00	
FTW06 VV Berker S.1 polar white matt	501798	208,00	
FTW06 VV Busch-Jaeger Busch-balance® SI alpine white	615341	208,00	
FTW06 VV Jung A 500 alpine white	630177	208,00	
FTW06 VV Merten M-Smart polar white brilliant	571746	208,00	

Options	
Item description	€
Additional passive temperature sensor	14,30
Switch range Gira Esprit	22,30
Switch ranges stainless steel glass aluminium (different manufacturers)	35,10
Other switch ranges	12,50

Order example for different items:

FTW06 | VVS | PT1000 | Gira Esprit

- FTW06** = product
- VV** = 2x 0..10 V output
- PT1000** = additional passive temperature sensor
- Gira Esprit** = switch range Gira Esprit

Accessories			AS1
Item description	Item No.	On stock	€
PSU-UP24 – flush mount power supply 24 V (80..240 V ~-> 24 V =, 0,5 A)	645737	●	42,00

FTW06 dS

DATA SHEETS



Room sensor for recording temperature and relative humidity transmitting the measured data directly to the digitalSTROM system. This allows a closed loop for precise and comfortable control of the indoor climate. The sensor meets increased design requirements and is available in standard switch ranges as well as in different color versions. The device is mounted in a flush-mounted box.

FTW06 dS
Gira E2 pure white matt



TECHNICAL DATA	
Measuring values	humidity, temperature
Network technology	digitalSTROM (dS)
Power supply	230 V ~ (±10%)
Power consumption	typ. 0,5 VA (230 V ~)
Measuring range temp.	0..+50 °C
Measuring range humidity	0..100% rH non-condensing
Accuracy temperature	±0,5 K (typ. at 25 °C)
Accuracy humidity	±2% between 10..90% rH (typ. at 21 °C)
Switch range Berker	S.1, B.3 aluminum, B.7 glass
Switch range Busch-Jaeger	Busch-balance® SI, solo® *, future® linear *, Busch-axcent® *
Switch range Feller	EDIZIOdue
Switch range Gira	E2, E3, Standard 55, Esprit, Event, Flächenschalter *
Switch range Jung	LS 990 *, A 500, AS 500, A plus, A creation, CD 500 *
Switch range Merten	M-Smart, M-Plan, 1-M, Atelier-M, M-Pure, Artec *, Artec stainless steel *, Antik *
Switch range Peha	AURA, AURA glass
Protection	IP30 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ² , pluggable
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm)
Notes	* in switch program with intermediate frame please specify frame design when ordering



Room sensor humidity + temperature – active digitalSTROM		DS1
Item description	Item No.	€
FTW06 dS Gira E2 pure white matt	624787	220,00
FTW06 dS Berker S.1 polar white matt	691147	220,00
FTW06 dS Jung A 500 alpine white	641548	220,00
FTW06 dS Gira E3 pure white brilliant	696951	220,00

Options	
Item description	€
Switch range Gira Esprit	22,30
Switch ranges stainless steel glass aluminium (different manufacturers)	35,10
Other switch ranges	12,50

FTP+

DATA SHEETS



Room pendulum sensor for sectional measurement of relative humidity and temperature in large and high rooms (e.g. exhibition halls, gyms or similar). Alternatively to relative humidity, the output can be set to absolute humidity, enthalpy or dew point. The design allows for an optimal installation with precise measurements. Accuracy of the humidity sensor is 2%.



TECHNICAL DATA

Measuring values	humidity, temperature
Output voltage	VV: 2x 0..10 V or 0..5 V (adjustable via jumper), min. load 10 kΩ
Output ampere	AA: 2x 4..20 mA, max. load 500 Ω
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV, AA: 15..24 V = (±10%) SELV
Power consumption	typ. 0,4 W (24 V =) 0,8 VA (24 V ~), AA: max. 1 W (24 V =)
Measuring range temp.	-40..+60 °C 0..+50 °C -20..+80 °C -15..+35 °C, adjustable at the transducer, default setting: -20..+80 °C
Measuring range humidity	0..100% rH non-condensing, enthalpy: 0..85 kJ/kg, absolute humidity: 0..50 0..80 g/m ³ , dew point: 0..+50 -20..+80 °C, adjustable at the transducer
Accuracy temperature	±0,3 K (typ. at 21 °C within default measuring range)
Accuracy humidity	±2% between 10..90% rH (typ. at 21 °C)
Enclosure	enclosure USE-M, PC, pure white, with removable cable entry
Protection	enclosure: IP65 according to EN 60529
Cable entry	Flextherm M16 for wire Ø=3..7 mm, removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ² , sensor wire length=2 m or 4 m
Pipe	PA6, with stainless steel weight, black, Ø=20 mm, length 210 mm
Filter	stainless steel wire mesh
Ambient condition	-20..+70 °C, max. 85% rH non-condensing
Delivery contents	incl. mounting base enclosure USE-M pure white

Room pendulum sensor humidity + temperature – active 2x 0..10 V | 2x 4..20 mA

Item description	Item No.	HU1 €
FTP+ VV L2000	699952	165,00
FTP+ VV L4000	699983	170,00
FTP+ AA L2000	699976	165,00
FTP+ AA L4000	700016	170,00

FT-RDF18+

DATA SHEETS



Ceiling built-in sensor for detecting humidity and temperature indoors. The ideal solution for inconspicuous, architectural integration in the ceiling slab or hollow walls, e.g. in museums or showrooms. The precise data logging serves for a pleasant room climate and for mold avoidance.



TECHNICAL DATA	
Measuring values	humidity, temperature
Output voltage	VV: 2x 0..10 V, min. load 5 k Ω
Output ampere	AA: 2x 4..20 mA, max. load 500 Ω
Power supply	15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$) SELV, AA: 15..24 V = ($\pm 10\%$) SELV
Power consumption	VV: max. 0,45 W (24 V =) 0,8 VA (24 V ~), AA: max. 1 W (24 V =)
Measuring range temp.	-40..+60 °C 0..+50 °C -20..+80 °C -15..+35 °C, adjustable at the transducer, default setting: 0..+50 °C
Measuring range humidity	0..100% rH non-condensing, enthalpy: 0..85 KJ/kg, absolute humidity: 0..50 0..80 g/m ³ , dew point: 0..+50 -20..+80 °C, adjustable at the transducer
Accuracy temperature	$\pm 0,3$ K (typ. at 21 °C within default measuring range)
Accuracy humidity	$\pm 2\%$ between 10..90% rH (typ. at 21 °C)
Enclosure	enclosure USE-S, PC, pure white, with removable cable entry
Protection	IP65 according to EN 60529, sensor head: IP30 according to EN 60529
Cable entry	Flextherm M16 for wire $\varnothing=3..7$ mm
Connection electrical	removable plug-in terminal, max. 2,5 mm ² , connection wire sensor head to plug RJ12: PVC 0,15 m, connection wire bush RJ12 to enclosure: PVC 3 m
Sensor head	ABS, white, $\varnothing=30$ mm
Ambient condition	-35..+70 °C, max. 85% rH short term condensation
Delivery contents	incl. mounting base enclosure USE-S pure white

Ceiling sensor humidity + temperature – active 2x 0..10 V 2x 4..20 mA			HU1
Item description	Item No.		€
FT-RDF18+ VV	659031		297,10
FT-RDF18+ AA	659055		297,10

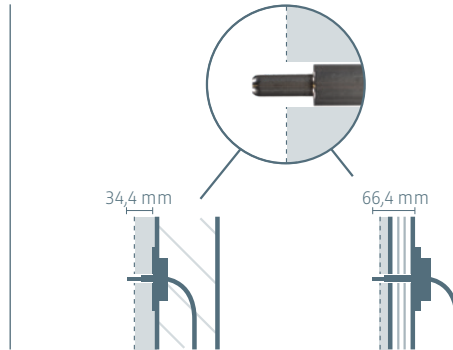
Accessories				AS1
Item description	Item No.	On stock		€
Mounting base enclosure USE-S pure white	667722	🌐		5,50
For cable entries and sealing inserts please refer to chapter „Accessories“				

FTB+

DATA SHEETS



Wall-mounted recessed sensor measuring relative humidity and temperature for plastered flush-mounting boxes or installation in hollow walls with high-quality, inconspicuous stainless steel design. Especially for museums and exhibition rooms, where measurement accuracy and almost invisible sensors have to be installed due to aesthetics. The precise measurement serves for a comfortable room climate and to avoid mold.



TECHNICAL DATA

Measuring values	humidity, temperature
Output voltage	VV: 2x 0..10 V or 0..5 V (adjustable via jumper), min. load 10 k Ω
Output ampere	AA: 2x 4..20 mA, max. load 500 Ω
Power supply	15..24 V = (\pm 10%) or 24 V ~ (\pm 10%) SELV, AA: 15..24 V = (\pm 10%) SELV
Power consumption	AA: max. 1 W (24 V =)
Measuring range temp.	-40..+60 °C 0..+50 °C -20..+80 °C -15..+35 °C, adjustable at the transducer, default setting: -20..+80 °C
Measuring range humidity	0..100% rH non-condensing, enthalpy: 0.85 KJ/kg, absolute humidity: 0.50 0.80 g/m ³ , dew point: 0..+50 -20..+80 °C, adjustable at the transducer
Accuracy temperature	\pm 0,3 K (typ. at 21 °C within default measuring range)
Accuracy humidity	\pm 2% between 10..90% rH (typ. at 21 °C)
Enclosure	enclosure USE-M, PC, pure white, with removable cable entry
Protection	enclosure: IP65 according to EN 60529
Cable entry	Flextherm M16 for wire \varnothing =3..7 mm
Connection electrical	removable plug-in terminal, max. 2,5 mm ² , sensor wire PVC 15 m
Sensor head	stainless steel V2A, \varnothing =13 mm, length=34,4 66,4 mm
Ambient condition	-35..+70 °C, max. 85% rH short term condensation
Delivery contents	incl. mounting base enclosure USE-M pure white

Wall-mounted sensor humidity + temperature – active 2x 0..10 V | 2x 4..20 mA

Item description	Item No.	HU1 €
FTB+ VV 34.06 L15m	689205	490,00
FTB+ VV 66.06 L15m	689083	530,00
FTB+ AA 34.06 L15m	700108	490,00
FTB+ AA 66.06 L15m	700115	530,00

FTK+

DATA SHEETS



Duct sensor for measuring relative and absolute humidity, enthalpy, dew point and temperature in gaseous media of heating, ventilation and air-conditioning systems as well as in clean room technology. Accuracy of the humidity sensor is 2%. Tool-free opening, closing and wiring as well as removable cable entries ensure quick and easy installation.



TECHNICAL DATA	
Measuring values	humidity, temperature
Output voltage	VV VVS: 2x 0..10 V (min. load 10 kΩ)
Output ampere	AA AAS: 2x 4..20 mA (max. load 500 Ω)
Output passive	VVS AAS: passive temperature sensor
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV, AA: 15..24 V = (±10%) SELV
Power consumption	VV VVS: max. 0,4 W (24 V =) 0,8 VA (24 V ~), AA AAS: max. 1 W (24 V =)
Measuring range temp.	-40..+60 °C 0..+50 °C -20..+80 °C -15..+35 °C, adjustable at the transducer, default setting: -20..+80 °C, passive: depending on used sensor
Measuring range humidity	0..100% rH non-condensing, enthalpy: 0..85 kJ/kg, absolute humidity: 0..50 0..80 g/m ³ , dew point: 0..+50 -20..+80 °C, adjustable at the transducer
Accuracy temperature	±0,3 K (typ. at 21 °C within default measuring range)
Accuracy humidity	±2% between 10..90% rH (typ. at 21 °C)
Air speed	max. 12 m/s
Enclosure	enclosure USE-S, PC, pure white, with removable cable entry
Protection	IP65 according to EN 60529
Cable entry	Flextherm M16 for wire Ø=3..7 mm
Connection electrical	removable plug-in terminal, max. 2,5 mm ²
Pipe	PA6, black, Ø=19,5 mm, length 140 270 400 mm
Filter	stainless steel wire mesh
Ambient condition	-20..+70 °C, max. 85% rH short term condensation
Delivery contents	incl. mounting flange
Notes	additional passive temperature sensor available (type VVS/AAS)

FTK+ active

Item description: product | pipe (length) | output (VV/AA)

Duct sensor humidity + temperature – active 2x 0..10 V				HU2
Item description	Item No.	On stock		€
FTK+ 140 VV incl. MF20	626347	●		159,70
FTK+ 270 VV incl. MF20	626354	●		166,80
FTK+ 400 VV incl. MF20	626361	●		173,90

Duct sensor humidity + temperature – active 2x 4..20 mA				HU2
Item description	Item No.	On stock		€
FTK+ 140 AA incl. MF20	626378	●		159,70
FTK+ 270 AA incl. MF20	626385	●		166,80
FTK+ 400 AA incl. MF20	626392	●		173,90

Options		
Item description		€
Additional passive temperature sensor		14,30

Accessories				AS1
Item description	Item No.	On stock		€
Mounting base enclosure USE-S pure white	667722	●		5,50
Rawlplugs and screws (2 pcs. each)	102209	●		0,80
Filter stainless steel, wire mesh (spare part)	231169	●		8,80
Mounting flange MF20	612562	●		11,70
Weather protection for FTK, FTK+, WSA (replacement)	625241	●		99,00
For cable entries and sealing inserts please refer to chapter „Accessories“				

FTK+ relay / LCD / BUS

DATA SHEETS



Duct sensor for measuring relative and absolute humidity, enthalpy, dew point and temperature in gaseous media of heating, ventilation and air-conditioning systems as well as in clean room technology. The devices with relay output for a 2-point controller or a 2-stage 2-point controller and color-changing LCD allow a wide range of applications. Depending on the model, the sensor can be individually configured via Thermokon USEapp. Accuracy of the humidity sensor is 2%. Tool-free opening, closing and wiring as well as removable cable entries ensure quick and easy installation.



FTK+ relay / BUS



FTK+ LCD



TECHNICAL DATA

Measuring values	humidity, temperature
Output voltage	2x 0..10 V or 0..5 V (adjustable via jumper; live-zero configuration via Thermokon USEapp), min. load 10 kΩ
Output ampere	AA: 2x 4..20 mA, max. load 500 Ω
Output switch contact	Relay: 2x floating contact NO for 24 V ~ or 24 V = / 3 A, (optional)
Network technology	RS485 BACnet (MS/TP), RS485 Modbus
Power supply	15..35 V = or 19..29 V ~ SELV, AA: 15..35 V = SELV
Power consumption	max. 2,5 W (24 V =) 4,3 VA (24 V ~)
Measuring range temp.	-40..+60 °C 0..+50 °C -20..+80 °C -15..+35 °C, adjustable at the transducer, default setting: -20..+80 °C
Measuring range humidity	0..100% rH non-condensing, enthalpy: 0..85 kJ/kg, absolute humidity: 0..50 0..80 g/m ³ , dew point: 0..+50 -20..+80 °C, adjustable at the transducer, optionally configurable via Thermokon USEapp
Accuracy temperature	±0,3 K (typ. at 21 °C within default measuring range)
Accuracy humidity	±2% between 10..90% rH (typ. at 21 °C)
Air speed	max. 12 m/s
Display	LCD 29x35 mm with RGB backlight, (optional)
Enclosure	enclosure USE-M, PC, pure white, LCD: cover PC, transparent, with removable cable entry
Protection	IP65 according to EN 60529
Cable entry	Flextherm M16 for wire Ø=3..7 mm, Relay/BUS: M25 with fourfold cable entry for wire with max. Ø=7 mm removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ² , BUS terminal: removable plug-in terminal, max. 1,5 mm ²
Pipe	PA6, black, Ø=19,5 mm, length 140 270 400 mm
Filter	stainless steel wire mesh
Ambient condition	-20..+70 °C, max. 85% rH short term condensation
Delivery contents	incl. mounting flange

FTK+ active

Item description: product | pipe (length) | output (VV/AA)

Duct sensor humidity + temperature – active 2x 0..10 V				HU1
Item description	USEapp	Item No.		€
FTK+ 140 LCD VV incl. MF20	✓	663083		199,40
FTK+ 270 LCD VV incl. MF20	✓	663090		206,50
FTK+ 400 LCD VV incl. MF20	✓	663113		213,60

Duct sensor temperature + humidity – active 2x 4..20 mA				HU1
Item description	USEapp	Item No.		€
FTK+ 140 LCD AA incl. MF20	✓	663120		199,40
FTK+ 270 LCD AA incl. MF20	✓	663137		206,50
FTK+ 400 LCD AA incl. MF20	✓	663144		213,60

Duct sensor temperature + humidity – active 2x 0..10 V + relay				HU1
Item description	USEapp	Item No.		€
FTK+ 140 VV relay incl. MF20	✓	663151		198,70
FTK+ 270 VV relay incl. MF20	✓	663168		205,80
FTK+ 400 VV relay incl. MF20	✓	663175		212,90
FTK+ 140 LCD VV relay incl. MF20	✓	663205		228,70
FTK+ 270 LCD VV relay incl. MF20	✓	663229		235,80
FTK+ 400 LCD VV relay incl. MF20	✓	663236		242,90

Accessories				AS1
Item description	Item No.	On stock		€
Mounting base enclosure USE-M pure white	668354	●		7,85
Rawlplugs and screws (2 pcs. each)	102209	●		0,80
Filter stainless steel, wire mesh (spare part)	231169	●		8,80
Mounting flange MF20	612562	●		11,70
Weather protection for FTK, FTK+, WSA (replacement)	625241	●		99,00
Bluetooth dongle with micro-USB – communication between USEapp and devices USE-M/USE-L (net price)	668262	●		29,00

For cable entries and sealing inserts please refer to chapter „Accessories“

Item description: product | pipe (length) | BUS

FTK+ BUS



Duct sensor humidity + temperature – active RS485 Modbus			HU1
Item description	USEapp	Item No.	€
FTK+ 140 RS485 Modbus incl. MF20	✓	659093	198,70
FTK+ 270 RS485 Modbus inkl. MF20	✓	659109	205,70
FTK+ 400 RS485 Modbus inkl. MF20	✓	659116	212,80
FTK+ 140 LCD RS485 Modbus incl. MF20	✓	663243	247,70
FTK+ 270 LCD RS485 Modbus incl. MF20	✓	663250	254,70
FTK+ 400 LCD RS485 Modbus incl. MF20	✓	663267	261,80



Duct sensor humidity + temperature – active RS485 BACnet (MS/TP)			HU1
Item description	USEapp	Item No.	€
FTK+ 140 RS485 BACnet (MS/TP) incl. MF20	✓	700122	198,70
FTK+ 270 RS485 BACnet (MS/TP) incl. MF20	✓	700139	205,70
FTK+ 400 RS485 BACnet (MS/TP) incl. MF20	✓	700146	212,80
FTK+ 140 LCD RS485 BACnet (MS/TP) incl. MF20	✓	700153	247,70
FTK+ 270 LCD RS485 BACnet (MS/TP) incl. MF20	✓	692878	254,70
FTK+ 400 LCD RS485 BACnet (MS/TP) incl. MF20	✓	700177	261,80

Accessories				AS1
Item description	Item No.	On stock		€
Mounting base enclosure USE-M pure white	668354	☹		7,85
Rawlplugs and screws (2 pcs. each)	102209	☹		0,80
Filter stainless steel, wire mesh (spare part)	231169	☹		8,80
Mounting flange MF20	612562	☹		11,70
Weather protection for FTK, FTK+, WSA (replacement)	625241	☹		99,00
Bluetooth dongle with micro-USB – communication between USEapp and devices USE-M/USE-L (net price)	668262	☹		29,00

For cable entries and sealing inserts please refer to chapter „Accessories“



FTK LON

DATA SHEETS



Duct humidity and temperature sensor for all HVAC duct applications. Designed for control and monitoring applications.

LON
LOCAL OPERATING NETWORK

TECHNICAL DATA	
Measuring values	humidity, temperature
Network technology	LON FT (free topology)
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	LON: max. 0,7 W (24 V =) 1,9 VA (24 V ~)
Measuring range temp.	-20..+80 °C
Measuring range humidity	0..100% rH non-condensing
Accuracy temperature	±0,5 K (typ. at 25 °C)
Accuracy humidity	±2% between 10..90% rH (typ. at 21 °C)
Air speed	max. 12 m/s
Enclosure	PA6, pure white, with quick lock screws
Protection	IP65 according to EN 60529
Cable entry	M20 for wire max. Ø=8 mm, seal insert for double cable entry for wire max Ø=6 mm
Connection electrical	terminal block, max. 1,5 mm ²
Pipe	PA6, black, Ø=19 mm, length 130 260 390 mm
Filter	PVDF
Ambient condition	-20..+70 °C, max. 85% rH short term condensation
Delivery contents	incl. mounting flange

LON
LOCAL OPERATING NETWORK

Duct sensor temperature + humidity – active LON			HU1
Item description	Item No.	€	
FTK 130 LON incl. MF19	120609	248,70	
FTK 260 LON incl. MF19	120296	255,70	
FTK 390 LON incl. MF19	174855	262,80	

Accessories				AS1
Item description	Item No.	On stock	€	
Rawplugs and screws (2 pcs. each)	102209	⊕	0,80	
Filter PVDF (spare part)	118583	⊕	20,50	
Mounting flange MF19	527705	⊕	11,70	
Weather protection for FTK, FTK+, WSA (replacement)	625241	⊕	99,00	

WSA

DATA SHEETS



Protected humidity and temperature sensor for outside applications. The radiation shield protects the outside sensors from rain and radiated heat. With the curved shape and color of the plates air flow is able to move across the sensors to keep radiated temperatures from rooftops and surrounding surfaces from affecting humidity readings. Typical applications are meteorology, greenhouses and industrial environments.



TECHNICAL DATA	
Measuring values	humidity, temperature
Output voltage	VV: 2x 0..10 V, min. load 10 kΩ
Output ampere	AA: 2x 4..20 mA, max. load 500 Ω
Network technology	RS485 BACnet (MS/TP), RS485 Modbus
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV, AA: 15..24 V = (±10%) SELV, BUS: 15..35 V = or 19..29 V ~ SELV
Power consumption	max. 2,5 W (24 V =) 4,3 VA (24 V ~), VV: max. 0,4 W (24 V =) 0,8 VA (24 V ~), AA: max. 1 W (24 V =)
Measuring range temp.	-20..+80 °C
Measuring range humidity	0..100% rH non-condensing, enthalpy: 0..85 KJ/kg, absolute humidity: 0..50 0..80 g/m ³ , dew point: 0..+50 -20..+80 °C, optionally configurable via Thermokon USEapp
Accuracy temperature	±0,3 K (typ. at 21 °C within default measuring range)
Accuracy humidity	±2% between 10..90% rH (typ. at 21 °C)
Enclosure	enclosure USE-S, BUS: enclosure USE-M PC, pure white
Protection	IP65 according to EN 60529
Cable entry	Flextherm M16 for wire Ø=3..7 mm, BUS: M25 with fourfold cable entry for wire with max. Ø=7 mm
Connection electrical	removable plug-in terminal, max. 2,5 mm ² , BUS terminal: removable plug-in terminal, max. 1,5 mm ²
Pipe	PA6, black, Ø=19,5 mm
Filter	stainless steel wire mesh
Ambient condition	-20..+70 °C, max. 85% rH short term condensation
Mounting	mounting at the wall or at a pole

WSA

Weather protection outdoor sensor humidity + temperature – active 2x 0..10 V 2x 4..20 mA			HU2
Item description	Item No.		€
WSA VV	626408		258,70
WSA AA	626415		258,70



Weather protection outdoor sensor humidity + temperature – BUS				HU1
Item description	USEapp	Item No.		€
WSA RS485 Modbus	✓	626439		297,70
WSA RS485 BACnet (MS/TP)	✓	700184		297,70

Accessories				AS1
Item description	Item No.	On stock		€
Filter stainless steel, wire mesh (spare part)	231169	☉		8,80
Weather protection for FTK, FTK+, WSA (replacement)	625241	☉		99,00
Bluetooth dongle with micro-USB – communication between USEapp and devices USE-M/USE-L (net price)	668262	☉		29,00

For cable entries and sealing inserts please refer to chapter „Accessories“

FTA54+

DATA SHEETS

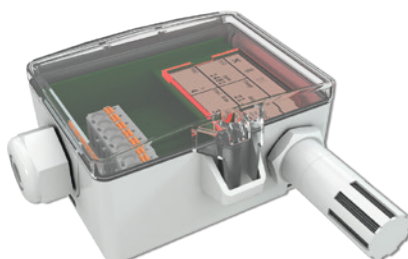


Outdoor sensor for measuring humidity and temperature in HVAC applications, greenhouses, industrial halls and in meteorology.

Alternatively to relative humidity the output can be set to absolute humidity, enthalpy or dew point. The devices with relay output for a 2-point controller or a 2-stage 2-point controller and color-changing LCD allow a wide range of applications. Depending on the model, the sensor can be individually configured via Thermokon USEapp. Accuracy of the humidity sensor is 2%. Tool-free opening, closing and wiring as well as removable cable entries ensure quick and easy installation.



FTA54+



FTA54+ LCD



TECHNICAL DATA	
Measuring values	humidity, temperature
Output voltage	VV VVS: 2x 0..10 V (min. load 10 kΩ)
Output ampere	AA AAS: 2x 4..20 mA (max. load 500 Ω)
Output passive	VVS AAS: passive temperature sensor
Output switch contact	Relay: 2x floating contact NO for 24 V ~ or 24 V = / 3 A, (optional)
Network technology	RS485 BACnet (MS/TP), RS485 Modbus
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV, AA AAS: 15..24 V = (±10%) SELV, LCD/relay/BUS: 15..35 V = or 19..29 V ~ SELV
Power consumption	VV VVS: max. 0,3 W (24 V =) 0,5 VA (24 V ~), AA AAS: max. 40 mA (24 V =), LCD/relay/BUS: max. 2,5 W (24 V =) 4,3 VA (24 V ~)
Measuring range temp.	-40..+60 °C 0..+50 °C -20..+80 °C -15..+35 °C, adjustable at the transducer, LCD/relay/RS485 Modbus: optionally configurable via Thermokon USEapp, default setting: -20..+80 °C, passive: depending on used sensor
Measuring range humidity	0..100% rH non-condensing, enthalpy: 0..85 KJ/kg, absolute humidity: 0..50 0..80 g/m³, dew point: 0..+50 -20..+80 °C, adjustable at the transducer, LCD/relay/RS485 Modbus: optionally configurable via Thermokon USEapp
Accuracy temperature	±0,3 K (typ. at 21 °C within default measuring range), passive: depending on used sensor
Accuracy humidity	±2% between 10..90% rH (typ. at 21 °C)
Display	LCD 29x35 mm with RGB backlight, (optional)
Enclosure	enclosure USE-M, PC, pure white, LCD: cover PC, transparent, with removable cable entry
Protection	IP65 according to EN 60529

Cable entry	Flextherm M16 for wire Ø=3..7 mm, Relay/BUS: M25 with fourfold cable entry for wire with max. Ø=7 mm removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ² , BUS terminal: removable plug-in terminal, max. 1,5 mm ²
Pipe	PC, pure white
Filter	stainless steel wire mesh
Ambient condition	-20..+70 °C
Delivery contents	incl. mounting base enclosure USE-M pure white, incl. rain protection PA6, white
Notes	other temperature sensors on request

FTA54+ active

Item description: product | VV / AA / BUS

Outdoor sensor humidity + temperature – active 2x 0..10 V 2x 4..20 mA relay				HU1
Item description	USEapp	Item No.	On stock	€
FTA54+ VV	✓	659147	⊕	160,00
FTA54+ AA	✓	659154	⊕	160,00
FTA54+ VV relay	✓	661003		199,00
FTA54+ LCD VV	✓	660983		199,70
FTA54+ LCD AA	✓	660990		199,70
FTA54+ LCD VV relay	✓	661010		238,70

FTA54+ BUS



Outdoor sensor humidity + temperature – active BUS				HU1
Item description	USEapp	Item No.	On stock	€
FTA54+ RS485 Modbus	✓	659178		199,00
FTA54+ LCD RS485 Modbus	✓	661034		248,00
FTA54+ RS485 BACnet (MS/TP)	✓	700191		199,00
FTA54+ LCD RS485 BACnet (MS/TP)	✓	700214		248,00

Options

Item description	€
Additional passive temperature sensor	14,30

Accessories

Item description	Item No.	On stock	AS1
Mounting base enclosure USE-M pure white	668354	⊕	7,85
Rawplugs and screws (2 pcs. each)	102209	⊕	0,80
Filter stainless steel, wire mesh (spare part)	231169	⊕	8,80
Rain protection PA6 white, for outdoor humidity sensor	587709	⊕	5,80
Bluetooth dongle with micro-USB – communication between USEapp and devices USE-M/USE-L (net price)	668262	⊕	29,00
For cable entries and sealing inserts please refer to chapter „Accessories“			

FTA54 LON

DATA SHEETS



Sensor for measuring humidity and temperature in outdoor areas and to transmit data to a LON network.



FTA54 LON
with rain protection

LON
LOCAL OPERATING NETWORK

TECHNICAL DATA

Measuring values	humidity, temperature
Network technology	LON FT (free topology)
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	LON: typ. 0,6 W (24 V =) 1,2 VA (24 V ~)
Measuring range temp.	-20..+80 °C
Measuring range humidity	0..100% rH non-condensing
Accuracy temperature	±0,5 K (typ. at 21 °C)
Accuracy humidity	±2% between 10..90% rH (typ. at 21 °C)
Enclosure	PA6, pure white, with quick lock screws
Protection	IP65 according to EN 60529
Cable entry	M20 for wire max. Ø=8 mm, seal insert for double cable entry for wire max Ø=6 mm
Connection electrical	terminal block, max. 1,5 mm ²
Pipe	PC, pure white
Filter	stainless steel wire mesh
Ambient condition	-20..+70 °C
Delivery contents	incl. rain protection PA6, white

LON
LOCAL OPERATING NETWORK

Outdoor sensor humidity + temperature – active BUS

HU1

Item description	Item No.	€
FTA54 LON	139564	284,10

Accessories

AS1

Item description	Item No.	On stock	€
Rawplugs and screws (2 pcs. each)	102209	☺	0,80
Filter stainless steel, wire mesh (spare part)	231169	☺	8,80
Rain protection PA6 white, for outdoor humidity sensor	587709	☺	5,80

FSR01

DATA SHEETS



FSR humidistats are designed for the on/off control of ventilation and air conditioning, humidification and dehumidification equipment in room applications.



FSR01
standard labelling for outside adjustment

TECHNICAL DATA	
Measuring values	humidity
Medium	air, non-pressurized, non-aggressive
Output switch contact	switching difference, 4% rH (at 50% rH), 20..250 V~, max. 2 A
Measuring range humidity	30..100% rH non-condensing
Working range humidity	35..95% rH
Accuracy humidity	±3% between 20..80% rH (typ. at 21 °C)
Air speed	max. 15 m/s
Sensor	Polyga® measuring element, water resistant, washable
Enclosure	ASA, pure white
Protection	IP20 according to EN 60529
Cable entry	breaking points top/bottom, rear entry
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	0..+60 °C
Notes	threshold adjustment via potentiometer or internal adjuster

Room hygostat			HU1
Item description	Item No.	On stock	€
FSR01	427623	⊕	80,00
FSR01 internal adjuster	450607		80,00

Accessories			AS1
Item description	Item No.	On stock	€
Rawplugs and screws (2 pcs. each)	102209	⊕	0,80
Frame for surface mounting WRF04	111584	⊕	12,40

FSK01

DATA SHEETS



Hygrostat (ON-OFF controller) to control the relative air humidity. It is designed for applications, where air humidity has to be controlled or monitored as ventilation and air conditioning, humidification and dehumidification equipment, in offices and computer rooms, food stores, cooling rooms for fruit and vegetables, greenhouses for gardening use, textile industry, paper and printing industry, film industry, hospitals and similar applications.



FSK01



FSK01 internal adjuster

TECHNICAL DATA

Measuring values	humidity
Medium	air, non-pressurized, non-aggressive
Output switch contact	switching difference, 4% rH (at 50% rH), 20..250 V~, max. 2 A
Measuring range humidity	30..100% rH non-condensing
Working range humidity	35..95% rH
Accuracy humidity	±3% between 20..80% rH (typ. at 21 °C)
Air speed	max. 8 m/s, with sensor protection max. 15 m/s
Sensor	Polyga® measuring element, water resistant, washable
Enclosure	ABS, pure white, light grey
Protection	IP54 according to EN 60529
Cable entry	M20 for wire max. Ø=8 mm
Connection electrical	terminal block, max. 1,5 mm ²
Pipe	stainless steel, Ø=16 mm, length 220 mm
Filter	PTFE
Ambient condition	0..+60 °C

Duct hygrostat

HU1

Item description	Item No.	On stock	€
FSK01	427593	⊕	220,00
FSK01 internal adjuster	708517		220,00

Accessories

AS1

Item description	Item No.	On stock	€
PTFE filter	429054	⊕	41,70
Mounting flange MF19	527705	⊕	11,70
Sensor protection (wire mesh) for fan speeds 8..15 m/s	429047	⊕	22,50
Wall mounting for duct hygrostat	429030	⊕	38,00

WK01+

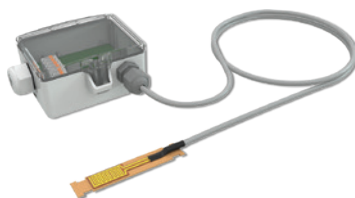
DATA SHEETS



Condensation sensor with LED signal designed to provide a switched output signal to prevent condensation on chilled surfaces such as chilled beams. With signaling LED and relay contact for control and monitoring applications or for series connection with the cooling valve in order to interrupt the cooling water flow directly at the beginning of condensation. Type ext. has a 2 m remote sensor.



WK01+ 24 V



WK01+ ext. 230 V



WK01 UP

TECHNICAL DATA

Measuring values	Conductivity
Output switch contact	changeover contact, 24 V: max. 24 V / 1,0 A (resistive, floating), 230 V: max. 230 V ~ / 0,5 A (resistive, non-floating)
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV, 230 V: 230 V ~ (±10%)
Power consumption	24 V: typ. 0,8 W (24 V =) 1,6 VA (24 V ~), 230 V: typ. 3,5 VA
Display	LED green – power supply OK, LED red – condensation
Enclosure	enclosure USE-L, PC, pure white, cover, transparent, WK01+ 24 V: enclosure USE-S, PC, pure white
Protection	IP65 according to EN 60529
Cable entry	M20 for wire max. Ø=8 mm
Connection electrical	removable plug-in terminal, max. 2,5 mm ²
Ambient condition	-20..+60 °C, max. 85% rH short term condensation
Delivery contents	1x syringe with terminal contact fluid
Notes	WK01 UP: type flush mounting Berker K1 polar white brilliant, other switch programmes on request, WK01 ext.: with external sensor (PVC, diameter 0,25 mm ² , L=2 m)

WK01+ 24 V

Item description: product | volt

Condensation sensor – 24 V			HU2
Item description	Item No.	On stock	€
WK01+ 24 V	659215	⊕	94,30
WK01+ ext. 24 V L2000	659222	⊕	108,80

WK01+ 230 V

Condensation sensor – 230 V			HU2
Item description	Item No.		€
WK01+ 230 V	659239		130,40
WK01+ ext. 230 V L2000	659246		150,00

WK01 UP 24V

Item description: product | switch range | colour | volt

Condensation sensor flush mount – 24 V			HU2
Item description	Item No.		€
WK01 UP L2500 Berker K.1 polar white brilliant 24 V	446624		133,70

LS02+

DATA SHEETS



The leakage sensor with switch contacts and two signal LEDs is used to monitor containers, false floors, false ceilings or rooms for unwanted ingress of water and thus helps to prevent major water damages. The height-adjustable sensor contacts allow to select the height level of water the device should respond on.



TECHNICAL DATA

Measuring values	Conductivity
Output switch contact	changeover contact, 24 V: max. 24 V / 1,0 A (resistive, floating)
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	typ. 0,6 W (24 V =) 1,5 VA (24 V ~)
Sensor	2x 2 detector electrodes stainless steel V2A
Display	LED green – power supply OK, LED red – alarm
Enclosure	enclosure USE-S, PC, pure white, with removable cable entry
Protection	IP65 according to EN 60529
Cable entry	Flextherm M16 for wire Ø=3..7 mm, removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ²
Ambient condition	-35..+90 °C, max. 85% rH short term condensation
Mounting	adjustable contacts

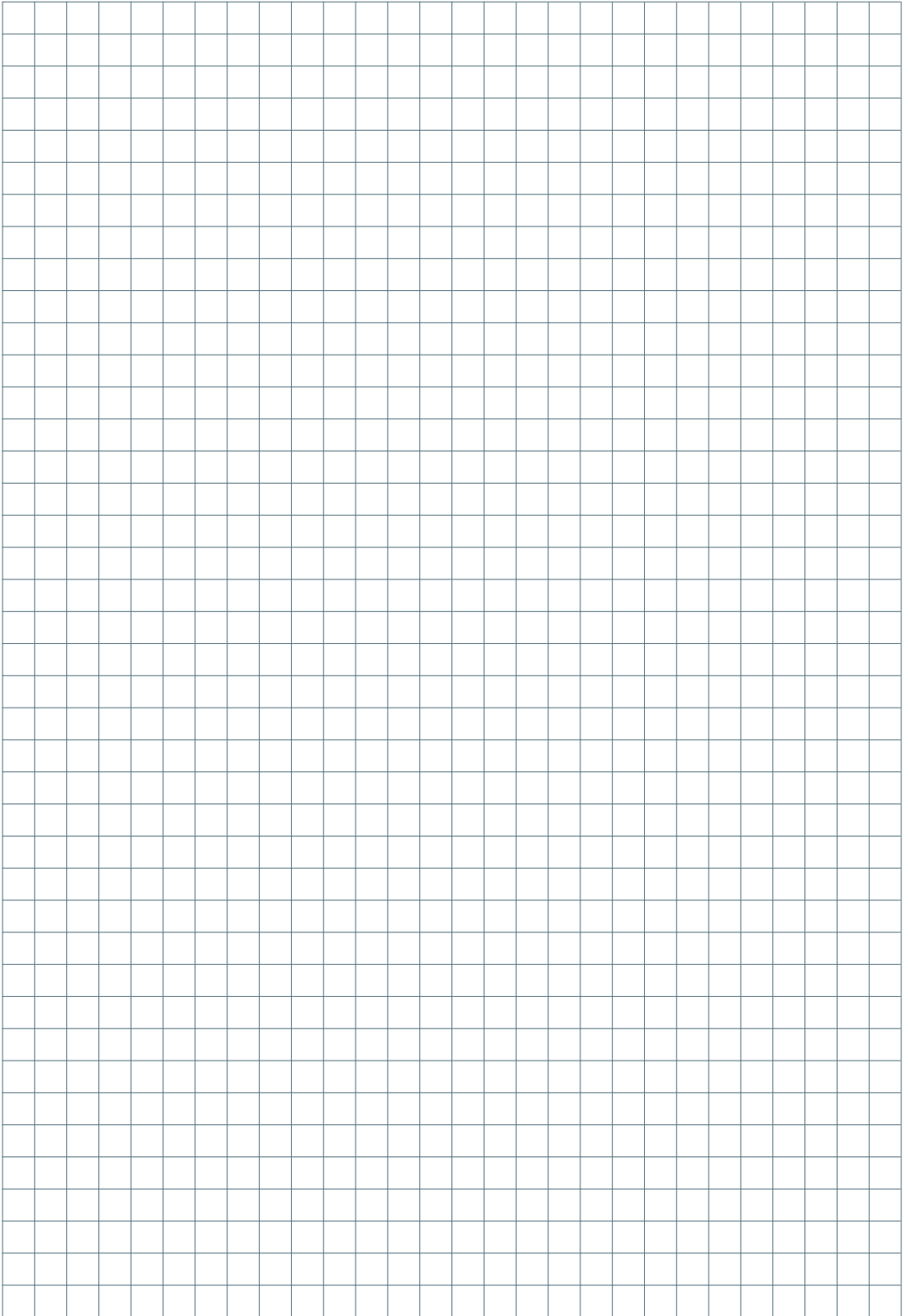
Water leak detection sensor

Item description	Item No.	On stock	€	HU2
LS02+	659253	⊕	87,90	

Accessories

Item description

For cable entries and sealing inserts please refer to chapter „Accessories“



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.



Sample applications

287

Gases

DPA+	Differential pressure transducer / Volume flow transducer	362
PS	Differential pressure switch	367
AVT	Air velocity and temp. transducer	368

Manometer

MM	Differential pressure manometer	369
DPG	Differential pressure manometer	370
DPG PS	Diff. pressure manometer/switch	371






Fluids

DLF	Pressure transducer	372
DPL	Differential pressure transducer	374



» BENEFITS

- » Reliable detection of pressure, differential pressure & velocity
- » High protection
- » Highest accuracies for a precise monitoring
- » Selectable measuring ranges for flexibility

 <p>1</p> <p>DPA+ Differential pressure and volume flow transducer with 8 selectable measuring ranges</p>	 <p>2</p> <p>DLF Pressure transmitter for detecting pressure in liquid media</p>	 <p>3</p> <p>DPL Differential pressure transducer for detecting differential pressure in liquid media</p>
 <p>4</p> <p>PS Adjustable differential pressure switch for detecting differential air pressure</p>	 <p>5</p> <p>DPG Differential pressure manometer for monitoring differential pressure</p>	



THE CORRECT PRESSURE

Our customized pressure and flow rate sensors are used for monitoring of pressure, differential pressure, flow rate of liquids and non-flammable gases in air filters, industrial air cooling cycles and ventilation ducts.

DPA+

DATA SHEETS 

A versatile device for measuring and monitoring the overpressure, underpressure, differential pressure and volumetric flow of air and other non-aggressive gases in fans and filters in duct applications. With 8 adjustable pressure and volumetric flow ranges and high measuring accuracy, the sensor is suitable for air conditioning and ventilation applications as well as for clean room and process applications. The devices with relay outputs for a 2-point controller or a 2-stage 2-point controller and large LCD allow for a wide range of applications. Depending on the model, the sensor can be individually configured via Thermokon USEapp. Tool-free opening, closing and wiring as well as removable cable entries ensure quick and easy installation. Dual versions with 2 independent sensors for the output of 2x differential pressure and/or 2x volumetric flow are available. The mounting base (included in the delivery content) is used to mount the DPA+ on a flat surface (duct) or on DIN rail TS35 (35x7,5 mm) according to EN 60715.



DPA+



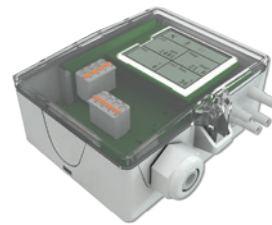
DPA+ LCD



DPA+
with additional cable entry
(refer to mounting accessories USE)



DPA+ Dual



DPA+ LCD Dual



TECHNICAL DATA

Measuring values	differential pressure, volume flow
Medium	air or other non-flammable/non-aggressive gases
Output voltage	2x 0..10 V or 0..5 V (adjustable via jumper; live-zero configuration via Thermokon USEapp), Dual: 2x 0..10 V (differential pressure) or 4x 0..10 V (differential pressure and volume flow), min. load 10 kΩ
Output ampere	2x 4..20 mA, max. load 500 Ω
Output switch contact	Relay: 2x floating contact NO for 24 V ~ or 24 V = / 3 A, (optional)
Network technology	RS485 BACnet (MS/TP), RS485 Modbus
Power supply	15..35 V = or 19..29 V ~ SELV
Power consumption	max. 2,5 W (24 V =) 4,3 VA (24 V ~)
Measuring range pressure	type 250: 0..+25 0..+50 0..+100 0..+250 -25..+25 -50..+50 -100..+100 -150..+150 Pa, type 2500: -100..+100 0..+100 0..+250 0..+500 0..+1000 0..+1500 0..+2000 0..+2500 Pa, type 7000: 0..+1000 0..+1500 0..+2000 0..+2500 0..+3000 0..+4000 0..+5000 0..+7000 Pa, selectable at the device, Volume flow 0..750.000 m ³ /h, optionally configurable via Thermokon USEapp
Accuracy pressure	type 250: ±1 Pa at range <250 Pa, type 2500: ±5 Pa at range <500 Pa, ±10 Pa at range >500 Pa, type 7000: ±10 Pa at range <2000 Pa, ±25 Pa at range >2000 Pa, deviation from calibration reference device (calibrator)
Max. working overpressure	40 kPa
Calibration	Automatic zero point calibration (optional)
Sensor	piezo measuring element
Inputs	RS485 BACnet (MS/TP)/RS485 Modbus: 2x input for NTC10k or floating contact, (optional)
Display	LCD 29x35 mm with RGB backlight, (optional), measured values: pressure in Pa or inchWC, volume flow in m ³ /h oder cfm, configurable via Thermokon USEapp
Enclosure	enclosure USE-L, PC, pure white, with removable cable entry
Protection	IP65 according to EN 60529
Cable entry	Flextherm M16 for wire Ø=3..7 mm, Relay/BUS: M25 with fourfold cable entry for wire with max. Ø=7 mm, 4xV: M20 for wire max. Ø=8 mm incl. seal insert for double cable entry for wire max Ø=6 mm removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ² , BUS terminal: removable plug-in terminal, max. 1,5 mm ²
Connection mechanical	pressure connection male Ø=5,0 mm / Ø=6,3 mm, connection tube: PVC, soft
Ambient condition	-10..+50 °C, max. 85% rH short term condensation
Mounting	screw mounted onto flat surface, prepared for mounting on DIN rail TS35 (35x7,5 mm) according to EN 60715
Delivery contents	2 mounting screws, 2 plastic duct flanges, 2 m PVC connection tube, Dual: 2x2 each, incl. mounting base enclosure USE-L pure white

DPA+ active

Differential pressure and volume flow transducer – 2x 0..10 V					PR2
Item description	USEapp	Item No.	On stock	€	
DPA250+ VV MultiRange	✓	659321	⊕	128,50	
DPA2500+ VV MultiRange	✓	659369	⊕	128,50	
DPA7000+ VV MultiRange	✓	659376	⊕	128,50	
DPA250+ VV AZ MultiRange	✓	692397	⊕	182,50	
DPA2500+ VV AZ MultiRange	✓	675970	⊕	182,50	
DPA7000+ VV AZ MultiRange	✓	675994	⊕	182,50	

Differential pressure and volume flow transducer – 2x 4..20 mA					PR2
Item description	USEapp	Item No.			€
DPA250+ AA MultiRange	✓	666978			128,50
DPA2500+ AA MultiRange	✓	666985			128,50
DPA7000+ AA MultiRange	✓	666992			128,50
DPA250+ AA AZ MultiRange	✓	691598			182,50
DPA2500+ AA AZ MultiRange	✓	693981			182,50
DPA7000+ AA AZ MultiRange	✓	705325			182,50

Differential pressure and volume flow transducer – 2x 0..10 V + relay					PR1
Item description	USEapp	Item No.			€
DPA250+ VV MultiRange relay	✓	663687			167,50
DPA2500+ VV MultiRange relay	✓	663694			167,50
DPA7000+ VV MultiRange relay	✓	663700			167,50

Differential pressure and volume flow transducer – 2x 0..10 V					PR1
Item description	USEapp	Item No.	On stock	€	
DPA250+ LCD VV MultiRange	✓	659383	⊕	171,20	
DPA2500+ LCD VV MultiRange	✓	659390	⊕	171,20	
DPA7000+ LCD VV MultiRange	✓	659406	⊕	171,20	
DPA250+ LCD VV AZ MultiRange	✓	688420	⊕	225,20	
DPA2500+ LCD VV AZ MultiRange	✓	676007	⊕	225,20	
DPA7000+ LCD VV AZ MultiRange	✓	676021	⊕	225,20	

Differential pressure and volume flow transducer – 2x 4..20 mA					PR1
Item description	USEapp	Item No.			€
DPA250+ LCD AA MultiRange	✓	667104			171,20
DPA2500+ LCD AA MultiRange	✓	667111			171,20
DPA7000+ LCD AA MultiRange	✓	667128			171,20
DPA250+ LCD AA AZ MultiRange	✓	700962			225,20
DPA2500+ LCD AA AZ MultiRange	✓	679725			225,20
DPA7000+ LCD AA AZ MultiRange	✓	703147			225,20

Differential pressure and volume flow transducer – 2x 0..10 V + relay					PR1
Item description	USEapp	Item No.			€
DPA250+ LCD VV MultiRange relay	✓	663724			197,50
DPA2500+ LCD VV MultiRange relay	✓	663748			197,50
DPA7000+ LCD VV MultiRange relay	✓	663755			197,50

Item description: product | BUS | AZ (automatic zero-point calibration) | MultiRange

DPA+ BUS



Differential pressure and volume flow transducer – active RS485 Modbus				PR1
Item description	USEapp	Item No.	€	
DPA250+ RS485 Modbus MultiRange	✓	659413	132,70	
DPA2500+ RS485 Modbus MultiRange	✓	659420	132,70	
DPA7000+ RS485 Modbus MultiRange	✓	659437	132,70	
DPA250+ RS485 Modbus AZ MultiRange	✓	693745	186,70	
DPA2500+ RS485 Modbus AZ MultiRange	✓	676083	186,70	
DPA7000+ RS485 Modbus AZ MultiRange	✓	676090	186,70	



Differential pressure and volume flow transducer – active RS485 Modbus				PR1
Item description	USEapp	Item No.	€	
DPA250+ LCD RS485 Modbus MultiRange	✓	659444	175,40	
DPA2500+ LCD RS485 Modbus MultiRange	✓	659451	175,40	
DPA7000+ LCD RS485 Modbus MultiRange	✓	659468	175,40	
DPA250+ LCD RS485 Modbus AZ MultiRange	✓	697767	229,40	
DPA2500+ LCD RS485 Modbus AZ MultiRange	✓	676106	229,40	
DPA7000+ LCD RS485 Modbus AZ MultiRange	✓	676113	229,40	



Differential pressure and volume flow transducer – active RS485 BACnet (MS/TP)				PR1
Item description	USEapp	Item No.	€	
DPA250+ RS485 BACnet (MS/TP) MultiRange	✓	700221	132,70	
DPA2500+ RS485 BACnet (MS/TP) MultiRange	✓	700238	132,70	
DPA7000+ RS485 BACnet (MS/TP) MultiRange	✓	700252	132,70	
DPA250+ RS485 BACnet (MS/TP) AZ MultiRange	✓	705387	186,70	
DPA2500+ RS485 BACnet (MS/TP) AZ MultiRange	✓	700306	186,70	
DPA7000+ RS485 BACnet (MS/TP) AZ MultiRange	✓	700313	186,70	



Differential pressure and volume flow transducer – active RS485 BACnet (MS/TP)				PR1
Item description	USEapp	Item No.	€	
DPA250+ LCD RS485 BACnet (MS/TP) MultiRange	✓	700269	175,40	
DPA2500+ LCD RS485 BACnet (MS/TP) MultiRange	✓	682855	175,40	
DPA7000+ LCD RS485 BACnet (MS/TP) MultiRange	✓	683463	175,40	
DPA250+ LCD RS485 BACnet (MS/TP) AZ MultiRange	✓	705370	229,40	
DPA2500+ LCD RS485 BACnet (MS/TP) AZ MultiRange	✓	700320	229,40	
DPA7000+ LCD RS485 BACnet (MS/TP) AZ MultiRange	✓	700337	229,40	

Options	
Item description	€
RS485 BACnet (MS/TP)/RS485 Modbus with 2x input for NTC10k or floating contact	54,00

Item description: product | VV/4xV | MultiRange

DPA+ Dual active

Dual differential pressure transducer – active 2x 0..10 V 2x 4..20 mA				PR1
Item description	USEapp	Item No.	€	
DPA2500+ Dual VV MultiRange	✓	700344	192,00	
DPA2500+ Dual AA MultiRange	✓	702898	192,00	
DPA2500+ LCD Dual VV MultiRange	✓	705417	234,70	
DPA2500+ LCD Dual AA MultiRange	✓	705431	234,70	

Dual differential pressure and volume flow transducer – active 4x 0..10 V				PR1
Item description	USEapp	Item No.	€	
DPA2500+ Dual 4xV MultiRange	✓	705448	204,30	
DPA2500+ LCD Dual 4xV MultiRange	✓	700351	247,00	

DPA+ Dual BUS

Item description: product | BUS | MultiRange



Dual differential pressure and volume flow transducer – active BUS				PR1
Item description	USEapp	Item No.	€	
DPA2500+ Dual RS485 Modbus	✓	703000	214,00	
DPA2500+ Dual RS485 BACnet (MS/TP)	✓	703017	214,00	
DPA2500+ LCD Dual RS485 Modbus	✓	705455	256,70	
DPA2500+ LCD Dual RS485 BACnet (MS/TP)	✓	705462	256,70	

Options				
Item description				€
Automatic zero-point calibration dual (2x AZ)				108,00
RS485 BACnet (MS/TP)/RS485 Modbus with 2x input for NTC10k or floating contact				54,00

Accessories				AS1
Item description	Length	Item No.	On stock	€
T-hose connector for pressure hoses Ø=4 mm (10 pcs)		668323	☹	29,90
Adapter 90° angle for pressure hoses Ø=4 mm		668330	☹	8,00
Mounting base enclosure USE-L pure white		668361	☹	11,00
Metal duct connector MKS40	40 mm	265138	☹	4,00
Metal duct connector MKS100	100 mm	302531	☹	4,80
Bluetooth dongle with micro-USB – communication between USEapp and devices USE-M/USE-L (net price)		668262	☹	29,00
For cable entries and sealing inserts please refer to chapter „Accessories“				



PS

DATA SHEETS

Adjustable differential pressure switch with mounting accessories for air and other non-flammable and non-aggressive gases for monitoring of air filters in ventilation and differential pressure switches for clean rooms and industrial processing.

TECHNICAL DATA

Measuring values	differential pressure
Medium	air, non-aggressive gases non-flammable gases
Output switch contact	NO/NC circuit, switching difference, 20 Pa, PS1500: 80 Pa, PS4500: 180 Pa
Measuring range pressure	PS300: 30..300 Pa, PS500: 30..500 Pa, PS1500: 100..1500 Pa, PS4500: 500..4500 Pa
Accuracy pressure	typ. ±5 Pa, PS1500 typ. ±10 Pa, PS4500 typ. ±50 Pa
Max. working overpressure	50 kPa
Switching values	switching capacity max. 3 A resistive load, 2 A inductive load, max. 250 V ~, miniature switches with silver contacts, service life: >1.000.000 switching operations
Enclosure	ABS, cover PC, membrane silicone
Protection	IP54 according to EN 60529
Cable entry	M16 for wire max. Ø=8 mm
Connection electrical	terminal block, max. 1,5 mm ²
Connection mechanical	pressure connection: ABS, connection tube: PVC, soft
Ambient condition	-20..+60 °C, max. 85% rH short term condensation
Delivery contents	2 mounting screws, 2 plastic duct flanges, 2 m PVC connection tube soft, Ø=4/7 mm

Differential pressure switch PR2

Item description	Item No.	On stock	€
PS300	269971	⊕	29,40
PS500	269995	⊕	29,40
PS1500	255202	⊕	29,40
PS4500	273138	⊕	29,40

Accessories AS1

Item description	Length	Item No.	On stock	€
T-hose connector for pressure hoses Ø=4 mm (10 pcs)		668323	⊕	29,90
Adapter 90° angle for pressure hoses Ø=4 mm		668330	⊕	8,00
Metal duct connector MKS40	40 mm	265138	⊕	4,00
Metal duct connector MKS100	100 mm	302531	⊕	4,80
Mounting bracket differential pressure switch 110x80x20 mm		669009	⊕	3,50



AVT

DATA SHEETS



Air velocity and temperature transducer with 3 selectable ranges engineered for building automation in the HVAC/R industry measuring air velocity and temperature in ducts for fancoil, valve and electric heater applications. Optionally, an LCD as well as realy outputs for limiting and monitoring are available.

TECHNICAL DATA

Measuring values	air velocity, temperature
Medium	air or other non-flammable/non-aggressive gases
Output voltage	2x 0..10 V, min. load 1 k Ω
Output ampere	2x 4..20 mA, max. load 400 Ω
Output switch contact	AVT LCD relay: relay with change-over contact (volt free contact), 250 V ~ / 6 A, 30 V = / 6 A
Power supply	15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$) SELV
Power consumption	max. 2 W, AVT-R LCD: max. 2,4 W
Measuring range temp.	0..+50 °C
Measuring range velocity	0..2 m/s, 0..10 m/s, 0..20 m/s, selectable at the device
Accuracy temperature	<0,5 K (v> 0,5 m/s), $\pm 0,5$ K (typ. at 21 °C)
Accuracy velocity	0..2 m/s: <0,2 m/s + 5% of measuring value, 0..10 m/s: <0,5 m/s + 5% of measuring value, 0..20 m/s: <1,0 m/s + 5% of measuring value (typ. at 21 °C)
Sensor	calorimetric measuring principle
Display	LCD 3,5", 45,7 x 12,7 mm, (optional), for indication of measured values
Enclosure	ABS, cover PC
Protection	IP54 according to EN 60529
Cable entry	M16 for wire max. $\varnothing=8$ mm, AVT-R LCD: 2x M16
Connection electrical	terminal block, max. 1,5 mm ²
Pocket	stainless steel V2A, L=210 mm
Ambient condition	0..+50 °C, max. 85% rH short term condensation
Delivery contents	incl. mounting flange
Notes	optional with display „LCD“, optional with relay, Adjustable Immersion length: 50..180 mm, using mounting flange, adjustable switching threshold and hysteresis

Air velocity transducer – 2x 0..10 V | 2x 4..20 mA

PR1

Item description	Item No.	On stock	€
AVT	430005	⊕	146,80
AVT LCD	430036	⊕	188,40
AVT LCD relay	430067	⊕	208,10

MM

DATA SHEETS



Compact differential pressure inclined tube manometer (mounting accessories included) for reliable display and monitoring of air pressure in ventilation and air conditioning technology.

TECHNICAL DATA

Measuring values	differential pressure
Medium	air, non-aggressive gases non-flammable gases
Working range temp.	-40..+60 °C, MM PS: -20..+60 °C
Measuring range pressure	MM50: -50..50 Pa, MM100: -20..100 Pa, MM500: -100..500 Pa, MM600: 0..600 Pa
Accuracy pressure	MM50 MM100: 1 Pa, MM500: 5 Pa (-100..0 Pa) / 25 Pa (1..500 Pa), MM600: 5 Pa (0..200 Pa) / 25 Pa (201..600 Pa)
Max. working overpressure	200 kPa, MM PS: 50 kPa
Switching values	MM PS: switching capacity max. 3 A resistive load, 2 A inductive load
Enclosure	ABS, cover PMMA, MM PS: cover PC, membrane silicone
Protection	IP54 according to EN 60529
Cable entry	MM PS: M16 for wire max. Ø=8 mm
Connection electrical	MM PS: terminal block, max. 1,5 mm ²
Connection mechanical	connection tube: PVC, soft, MM PS: pressure connection ABS
Ambient condition	MM PS: -40..+85 °C, max. 85% rH short term condensation
Delivery contents	2 mounting screws, 2 plastic duct flanges, 2 m PVC connection tube soft, Ø=4/7 mm, 30 ml gauge fluid, 2 indication stickers (red/green)

Differential pressure inclined tube manometer			PR1
Item description	Item No.	On stock	€
MM50 (-50..+50 Pa)	268912	⊕	45,70
MM100 (-20..100 Pa)	284516	⊕	45,70
MM500 (-100..500 Pa)	384452	⊕	45,70
MM600 (0..600 Pa)	255240	⊕	45,70

Differential pressure inclined tube manometer with switch contact			PR1
Item description	Item No.	On stock	€
MM600/PS600 (0..600 Pa)	255257	⊕	115,10

DPG

DATA SHEETS



Compact differential pressure indicator including mounting accessories for reliable display and monitoring of air pressure in ventilation and air conditioning.

TECHNICAL DATA

Measuring values	differential pressure
Medium	air, non-aggressive gases, non-flammable gases
Working range temp.	-5..+60 °C
Measuring range pressure	DPG60: 0..60 Pa, DPG100: 0..100 Pa, DPG250: 0..250 Pa, DPG500: 0..500 Pa, DPG1k: 0..1 kPa
Accuracy pressure	DPG60: $\pm 4\%$ of measuring range, DPG100: $\pm 3\%$ of measuring range, DPG250 DPG500 DPG1k: $\pm 2\%$ of measuring range
Display	display $\varnothing=100$ mm
Enclosure	ABS, cover PC
Protection	IP54 according to EN 60529
Connection mechanical	connection tube: PVC, soft
Ambient condition	-40..+85 °C, max. 85% rH short term condensation
Delivery contents	2 mounting screws, 2 plastic duct flanges, 2 m PVC connection tube, 2 m PVC connection tube soft, $\varnothing=4/7$ mm
Notes	please contact us for other ranges.

Differential pressure gauge				PR1
Item description	Item No.	On stock		€
DPG60	384438			128,10
DPG100	384445			128,10
DPG250	255264	⊕		118,00
DPG500	255271	⊕		118,00
DPG1k	285025	⊕		118,00

Accessories					AS1
Item description	Length	Item No.	On stock		€
T-hose connector for pressure hoses $\varnothing=4$ mm (10 pcs)		668323	⊕		29,90
Adapter 90° angle for pressure hoses $\varnothing=4$ mm		668330	⊕		8,00
Metal duct connector MKS40	40 mm	265138	⊕		4,00
Metal duct connector MKS100	100 mm	302531	⊕		4,80

DPG PS

DATA SHEETS



Differential pressure indicator for reliable indication and monitoring of the air pressure including an adjustable switching point suitable for use in ventilation and air conditioning.

TECHNICAL DATA	
Measuring values	differential pressure
Medium	air, non-aggressive gases, non-flammable gases
Output switch contact	switching difference, PS250: 20 Pa, PS600: 30 Pa, PS1500: 80 Pa
Working range temp.	-5..+60 °C
Measuring range pressure	DPG250/PS300: 0..250 Pa, DPG600/PS600: 0..600 Pa, DPG1,5k/PS1500: 0..1500 Pa
Accuracy pressure	±2% of measuring range
Max. working overpressure	50 kPa
Display	display Ø=100 mm
Switching values	switching capacity: 3 A resistive load, 2 A inductive load, max. 250 V ~, miniature switches with silver contacts, range: DPG250/PS300: 30..300 Pa, DPG600/PS600: 40..600 Pa, DPG1,5k/PS1500: 100..1500 Pa service life: >1.000.000 switching operations
Enclosure	ABS, cover PC
Protection	IP54 according to EN 60529
Cable entry	M16 for wire max. Ø=8 mm
Connection electrical	terminal block, max. 1,5 mm ²
Connection mechanical	pressure connection: ABS, connection tube: PVC, soft
Ambient condition	-40..+85 °C, max. 85% rH short term condensation
Delivery contents	2 mounting screws, 2 plastic duct flanges, 2 m PVC connection tube soft, Ø=4/7 mm

Differential pressure gauge/differential pressure switch				PR1
Item description	Item No.	On stock	€	
DPG250/PS300	559966		151,00	
DPG600/PS600	267205	⊕	151,00	
DPG1,5k/PS1500	338066		151,00	

Accessories					AS1
Item description	Length	Item No.	On stock	€	
T-hose connector for pressure hoses Ø=4 mm (10 pcs)		668323	⊕	29,90	
Adapter 90° angle for pressure hoses Ø=4 mm		668330	⊕	8,00	
Metal duct connector MKS40	40 mm	265138	⊕	4,00	
Metal duct connector MKS100	100 mm	302531	⊕	4,80	



DLF

DATA SHEETS



Pressure transmitter for measuring the pressure in liquid media and in air or non-aggressive gases for refrigeration, hydraulics, plant engineering and process engineering. Thanks to the dense stainless steel membrane, the sensor can also be used in refrigerants. For easy connection we recommend the 5 m connecting cable with plug (see accessories).

TECHNICAL DATA	
Measuring values	pressure
Medium	fluids, air or other non-flammable/non-aggressive gases
Output voltage	0..10 V, min. load 5 kΩ
Output ampere	4..20 mA, max. load 600 Ω
Power supply	V: 15..24 V = (±10%) or 24 V ~ (±10%) SELV, A: 15..24 V = (±10%) SELV
Power consumption	V: typ. 0,15 W 0,3 VA, A: max. 0,5 W
Working range temp.	-40..+125 °C
Measuring range pressure	depending on device
Accuracy pressure	±0,5% (typ. at +25 °C)
Max. working overpressure	2 nominal pressure
Enclosure	wetted parts stainless steel V2A
Protection	IP65 according to EN 60529
Connection electrical	plug MVS according to DIN EN175301-803
Connection mechanical	G 1/2", G 1/4"
Ambient condition	-40..+105 °C
Notes	please contact us for other ranges.

Accessories			AS1
Item description	Item No.	On stock	€
Connection wire DLF/DPL – connection plug and wire 5 m	668309	⊕	12,50

Pressure transmitter G1/4" – 0..10 V			PR1
Item description	Item No.	On stock	€
DLF-1..0 V G1/4"	665070		105,30
DLF1 V G1/4"	665087	⊕	105,30
DLF1,6 V G1/4"	665094		105,30
DLF2 V G1/4"	665100		105,30
DLF2,5 V G1/4"	665117	⊕	105,30
DLF4 V G1/4"	665124	⊕	105,30
DLF6 V G1/4"	665131	⊕	105,30
DLF10 V G1/4"	665148	⊕	105,30
DLF16 V G1/4"	665155	⊕	105,30
DLF25 V G1/4"	665162	⊕	105,30
DLF40 V G1/4"	665179		105,30
DLF60 V G1/4"	665186		105,30
DLF100 V G1/4"	665193		105,30

DLF

Item description: product | V/A | thread

Pressure transmitter G1/2" – 0..10 V				PR1
Item description	Item No.	On stock		€
DLF-1..0 V G1/2"	682541			111,80
DLF1 V G1/2"	681193	☉		111,80
DLF1,6 V G1/2"	682558			111,80
DLF2 V G1/2"	682565			111,80
DLF2,5 V G1/2"	681209	☉		111,80
DLF4 V G1/2"	681216	☉		111,80
DLF6 V G1/2"	681223	☉		111,80
DLF10 V G1/2"	681230	☉		111,80
DLF16 V G1/2"	681247	☉		111,80
DLF25 V G1/2"	681254	☉		111,80
DLF40 V G1/2"	682572			111,80
DLF60 V G1/2"	682589			111,80
DLF100 V G1/2"	682596			111,80

Pressure transmitter G1/4" – 4..20 mA				PR1
Item description	Item No.	On stock		€
DLF-1..0 A G1/4"	665209			99,40
DLF1 A G1/4"	665216	☉		99,40
DLF1,6 A G1/4"	665223			99,40
DLF2 A G1/4"	665230			99,40
DLF2,5 A G1/4"	665247	☉		99,40
DLF4 A G1/4"	665254	☉		99,40
DLF6 A G1/4"	665261	☉		99,40
DLF10 A G1/4"	665278	☉		99,40
DLF16 A G1/4"	665285	☉		99,40
DLF25 A G1/4"	665292	☉		99,40
DLF40 A G1/4"	665308			99,40
DLF60 A G1/4"	665315			99,40
DLF100 A G1/4"	665322			99,40

Pressure transmitter G1/2" – 4..20 mA				PR1
Item description	Item No.	On stock		€
DLF-1..0 A G1/2"	682602			105,90
DLF1 A G1/2"	681261	☉		105,90
DLF1,6 A G1/2"	682619			105,90
DLF2 A G1/2"	682626			105,90
DLF2,5 A G1/2"	681278	☉		105,90
DLF4 A G1/2"	681285	☉		105,90
DLF6 A G1/2"	681292	☉		105,90
DLF10 A G1/2"	681308	☉		105,90
DLF16 A G1/2"	681315	☉		105,90
DLF25 A G1/2"	681322	☉		105,90
DLF40 A G1/2"	682633			105,90
DLF60 A G1/2"	682640			105,90
DLF100 A G1/2"	682657			105,90



DPL

DATA SHEETS



The differential pressure transmitter detects the differential pressure in liquid media. Typical areas of application include supply and return liquid flows in heating systems as well as the monitoring of filters and compressors. For easy connection we recommend the 5 m connecting cable with plug (see accessories).

TECHNICAL DATA	
Measuring values	differential pressure
Medium	fluids
Output voltage	0..10 V, min. load 2 k Ω
Output ampere	4..20 mA, max. load 900 Ω
Power supply	V: 15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$) SELV, A: 15..24 V = ($\pm 10\%$) SELV
Power consumption	V: typ. 0,37 W (24 V =) 0,9 VA (24 V ~), A: max. 0,5 W
Working range temp.	-10..+80 °C
Measuring range pressure	DPL1: 0..+1 bar, DPL2,5: 0..+2,5 bar, DPL4: 0..+4 bar, DPL6: 0..+6 bar
Accuracy pressure	< $\pm 1\%$ of measuring range (typ. at -5..+75 °C)
Enclosure	stainless steel V2A, cover: aluminium pressure die casting, measuring cell ceramic
Protection	IP65 according to EN 60529
Connection electrical	angle plug according to DIN 43650
Connection mechanical	G 1/4"
Ambient condition	-10..+50 °C
Notes	please contact us for other ranges.

Differential pressure transmitter – 0..10 V				PR1
Item description	Item No.	On stock		€
DPL1 V	346580	⊕		306,00
DPL2,5 V	346665	⊕		306,00
DPL4 V	346672	⊕		306,00
DPL6 V	346689	⊕		306,00

Differential pressure transmitter – 4..20 mA				PR1
Item description	Item No.	On stock		€
DPL1 A	346597	⊕		306,00
DPL2,5 A	346696	⊕		306,00
DPL4 A	346702	⊕		306,00
DPL6 A	346719	⊕		306,00

Accessories				AS1
Item description	Item No.	On stock		€
Connection wire DLF/DPL – connection plug and wire 5 m	668309	⊕		12,50
Mounting bracket differential pressure transmitter 40x40x60 mm	663892	⊕		8,90
Screw connection set $\varnothing=6$ mm stainless steel (2 pcs.)	373388	⊕		56,50
Screw connection set $\varnothing=6$ mm brass (2 pcs.)	373401	⊕		13,30
Screw connection set $\varnothing=8$ mm stainless steel (2 pcs.)	373395	⊕		64,90
Screw connection set $\varnothing=8$ mm brass (2 pcs.)	373418	⊕		13,40

Air Quality

Mixed gas and CO₂ sensors provide for an individual and demand-controlled fresh air supply. In modern buildings the use of these sensors is essential in order to increase energy savings and care for highest comfort levels in living and working spaces.



Function overview duct sensors 377

Room sensors

WRF04 CO ₂	Surface mount air quality sensor CO ₂	378
LC-WRF04 CO ₂	Surface mount air quality sensor CO ₂	381
WRF06 AQ	Flush mount air quality sensor CO ₂	382
LP+	Pendulum air quality sensor CO ₂	384
LW04	Surface mount air quality sensor VOC	385

Duct sensors

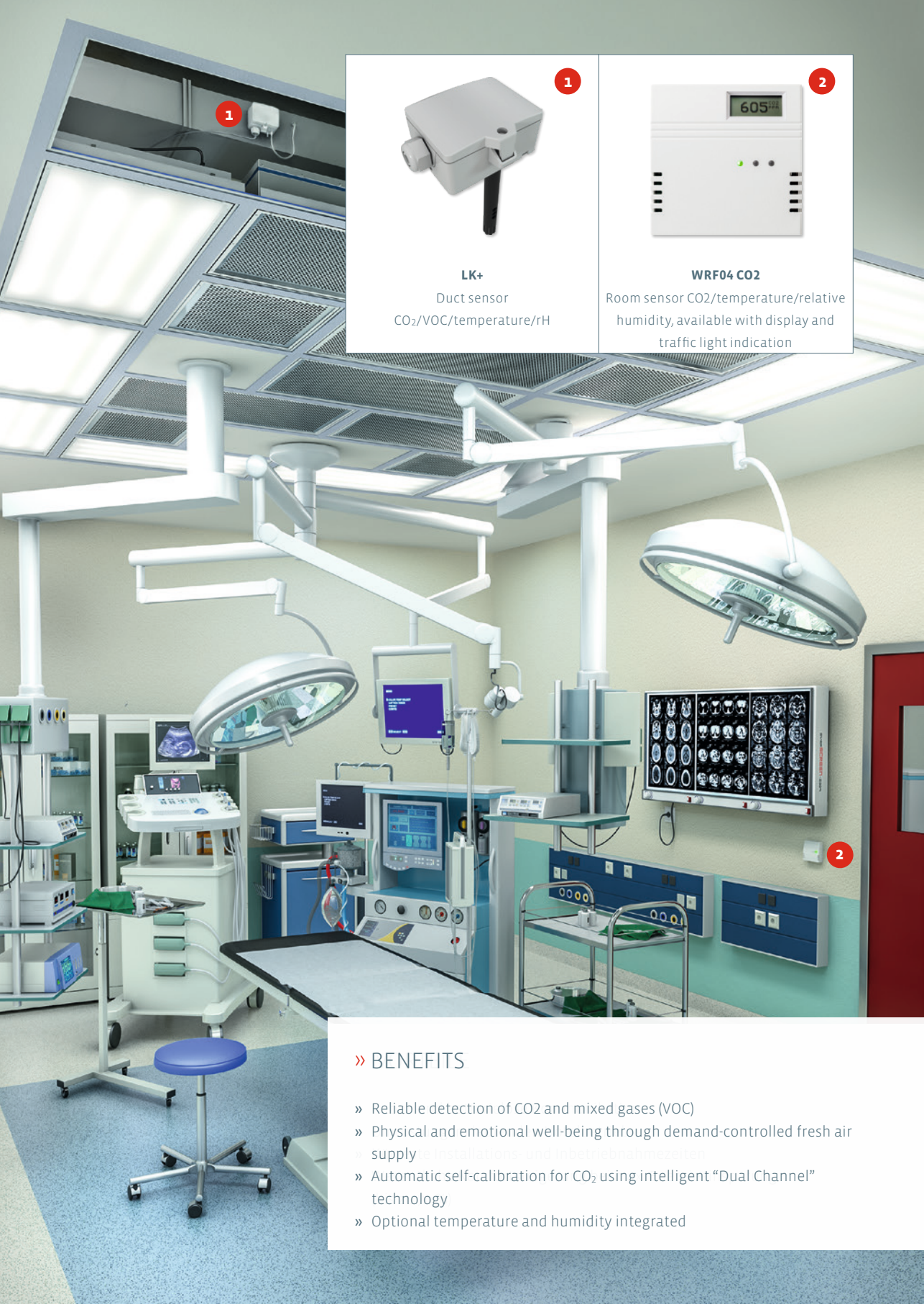
LK+	Duct air quality sensor CO ₂ /VOC	386
LK-S CO ₂ LON	Duct air quality sensor CO ₂	391

Outdoor sensors

LA+	Outdoor air quality sensor CO ₂ /VOC, ...	392
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» ALL CO₂ SENSORS WITH AUTOMATIC SELF CALIBRATION



1



LK+

Duct sensor
CO₂/VOC/temperature/rH

2



WRF04 CO2

Room sensor CO₂/temperature/relative
humidity, available with display and
traffic light indication

2

» BENEFITS

- » Reliable detection of CO₂ and mixed gases (VOC)
- » Physical and emotional well-being through demand-controlled fresh air supply
- » Automatic self-calibration for CO₂ using intelligent "Dual Channel" technology
- » Optional temperature and humidity integrated

Function overview duct sensors

Duct sensors		LK+ CO2+VOC VV	LK+ CO2+VOC AA	LK+ CO2+VOC VV relay	LK+ CO2+VOC Temp 3xV	LK+ CO2+VOC Temp_rH 4xV	LK+ CO2 V	LK+ CO2 Temp VV	LK+ CO2 Temp AA	LK+ CO2 Temp VV relay	LK+ CO2 Temp_rH 3xV	LK+ CO2 100 V	LK+ CO2 100 Temp VV	LK+ CO2 100 Temp AA	LK+ CO2 100 Temp VV relay	LK+ CO2 100 Temp_rH 3xV	LK+ VOC V	LK+ VOC Temp VV	LK+ VOC Temp AA	LK+ VOC Temp VV relay	LK+ VOC Temp_rH 3xV	
Page		starting from 386																				
Output	CO2	0..10 V	■	■	■	■	■	■	■	■	■	■	■	■	■	■						
		4..20 mA		■						■						■						
	VOC	0..10 V	■	■	■	■	■											■	■	■	■	■
		4..20 mA		■																■		
	Temp.	0..10 V				■	■		■	■	■	■		■	■	■	■		■	■	■	■
		4..20 mA								■					■					■		
	Humidity	0..10 V					■					■					■					■
BUS	RS485 Modbus	□			□	□		□			□		□		□		□		□		□	
	RS485 BACnet	□			□	□		□			□		□		□		□		□		□	
Pipe length	180 mm				■	■		■	■	■	■							■	■	■	■	
	150 mm	■	■	■			■										■					
	100 mm												■	■	■	■						
	70 mm											■										
additional pass. Sensor		□	□					□	□				□	□				□	□			
Cable entry	M16	■	■				■	■	■			■	■	■			■	■	■			
	M20				■	■					■					■					■	
	M25			■						■					■					■		
Relay	configurable			■					■						■					■		
LCD		□	□	□	□	□		□	□	□	□		□	□	□	□	□	□	□	□	□	
TLF	Traffic Light Function	□	□	□	□	□		□	□	□	□		□	□	□	□	□	□	□	□	□	

Explanation: ■ standard □ optional

WRF04 CO2

DATA SHEETS



Room sensor for detecting CO2 content and optionally temperature and humidity. The maintenance-free sensor creates the conditions for a pleasant room climate and increased well-being. Typical applications are schools, office buildings, hotels, cinemas and similar. The device is additionally available with LED display (traffic light function), LCD and relay output with adjustable threshold values. The device is mounted directly on the wall, on a flush-mounted box or in conjunction with a frame for surface-mounting (see accessories).



WRF04 CO2



WRF04 CO2 LCD TLF



WRF04 CO2 LCD / WRF04 CO2 TLF



TECHNICAL DATA

Measuring values	CO2, humidity, temperature
Output voltage	VV: 2x 0..10 V, 3xV: 3x 0..10 V, max. load 10 kΩ
Output switch contact	relay with change-over contact (volt free contact, optional), adjustable CO2 threshold value, (valid with version active VV 3xV)
Network technology	BACnet MS/TP, LON FT (free topology), RS485 Modbus
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	max. 3 W (24 V =) 6 VA (24 V ~)
Measuring range temp.	0..+50 °C
Measuring range humidity	0..100% rH non-condensing
Measuring range CO2	0..2000 ppm
Accuracy temperature	±0,5 K (typ. at 21 °C)
Accuracy humidity	±2% between 10..90% rH (typ. at 21 °C)
Accuracy CO2	±75 ppm, >750 ppm: ±10% (typ. at 21 °C)
Calibration	self-calibration, Dual Channel
Sensor	CO2: NDIR (non-dispersive, infrared)
Display	LCD 29x12 mm, monochrome, (optional, not with BACnet), 3 LEDs indicating air quality (CO2, traffic light function 'TLF')
Enclosure	PC, pure white
Protection	IP30 according to EN 60529
Cable entry	breaking points top/bottom, rear entry
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Mounting	to be mounted flat onto the surface using adhesive foil or screws, with frame for surface mounting (accessory) or directly on the wall, base part can be mounted and wired separately
Notes	optional with display "LCD", optional with relay (floating, max. 24 V / 2 A (ohmic)), optional with traffic light function "TLF"

WRF04 CO2

Item description: product | humidity (rH) | 3xV | LCD | TLF (traffic light function)

Room sensor CO2 + temperature – active 2x 0..10 V				AQ2
Item description	Item No.	On stock		€
WRF04 CO2 VV	423717	☹		244,70
WRF04 CO2 VV LCD	423731			273,50
WRF04 CO2 VV TLF	423724			251,90
WRF04 CO2 VV LCD TLF	439114			280,70

Room sensor CO2 + temperature + relative humidity – active 3xV 0..10 V				AQ1
Item description	Item No.	On stock		€
WRF04 CO2 rH 3xV	423748	☹		296,10
WRF04 CO2 rH 3xV LCD	423762			324,90
WRF04 CO2 rH 3xV TLF	423755			303,30
WRF04 CO2 rH 3xV LCD TLF	447164			332,10

Options		
Item description		€
Potential free relay output with adjustable CO2 threshold value (relay 2 A/ 24 V ~ or 24 V =)		19,80

Item description: product | BUS | LCD | TLF (traffic light function)



Room sensor CO2 + temperature – active RS485 Modbus			AQ1
Item description	Item No.		€
WRF04 CO2 RS485 Modbus	470629		266,30
WRF04 CO2 RS485 Modbus LCD	470643		295,10
WRF04 CO2 RS485 Modbus TLF	470636		273,50
WRF04 CO2 RS485 Modbus LCD TLF	630344		302,30



Room sensor CO2 + temperature – active BACnet MS/TP			AQ1
Item description	Item No.		€
WRF04 CO2 BACnet MS/TP	548274		266,30
WRF04 CO2 BACnet MS/TP TLF	548847		273,50



Room sensor CO2 + temperature – active LON			AQ1
Item description	Item No.		€
WRF04 CO2 LON	470544		279,70
WRF04 CO2 LON LCD	470575		308,50
WRF04 CO2 LON TLF	470551		286,90
WRF04 CO2 LON LCD TLF	630337		315,70

Item description: product | humidity (rH) | BUS | LCD | TLF (traffic light function)

WRF04 CO2



Room sensor CO2 + temperature + relative humidity – active RS485 Modbus			AQ1
Item description	Item No.		€
WRF04 CO2 rH RS485 Modbus	470650		317,70
WRF04 CO2 rH RS485 Modbus LCD	470674		346,50
WRF04 CO2 rH RS485 Modbus TLF	470667		324,90
WRF04 CO2 rH RS485 Modbus LCD TLF	630351		353,70



Room sensor CO2 + temperature + relative humidity – active BACnet MS/TP			AQ1
Item description	Item No.		€
WRF04 CO2 rH BACnet MS/TP	548854		317,70
WRF04 CO2 rH BACnet MS/TP TLF	597012		324,90



Room sensor CO2 + temperature + relative humidity – active LON			AQ1
Item description	Item No.		€
WRF04 CO2 rH LON	470582		331,10
WRF04 CO2 rH LON LCD	470612		359,90
WRF04 CO2 rH LON TLF	470599		338,30
WRF04 CO2 rH LON LCD TLF	630368		367,10

Accessories				AS1
Item description	Item No.	On stock		€
Rawlplugs and screws (2 pcs. each)	102209	☺		0,80
PSU-UP24 – flush mount power supply 24 V (80..240 V ~-> 24 V =, 0,5 A)	645737	☺		42,00
Frame for surface mounting WRF04	111584	☺		12,40
Ball stroke protection BS150, transparent (for series WRF04)	647007	☺		22,70

LC-WRF04 CO2

DATA SHEETS



Room sensor for recording CO2 content in living rooms and bedrooms, offices and classrooms. The maintenance-free sensor creates the conditions for a pleasant room climate and increased well-being. The device is mounted directly on the wall, on a flush-mounted box or in conjunction with a frame for surface-mounting (see accessories).

TECHNICAL DATA

Measuring values	V: CO2
Output voltage	V: 1x 0..10 V, max. load 10 kΩ
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	max. 3 W (24 V =) 6 VA (24 V ~)
Measuring range CO2	0..2000 ppm
Accuracy CO2	±75 ppm, >750 ppm: ±10% (typ. at 21 °C)
Calibration	self-calibration, Dual Channel
Sensor	CO2: NDIR (non-dispersive, infrared)
Enclosure	PC, pure white
Protection	IP20 according to EN 60529
Cable entry	breaking points top/bottom, rear entry
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Mounting	to be mounted flat onto the surface using adhesive foil or screws, with frame for surface mounting (accessory) or directly on the wall, base part can be mounted and wired separately
Notes	for devices with temperature sensor, humidity sensor, display and traffic light function please refer to product WRF04 CO2

Room sensor CO2 – active 0..10 V

AQ2

Item description	Item No.	On stock	€
LC-WRF04 CO2	547994	⊕	189,70
LC-WRF04 CO2 with operating unit (potentiometer/switch + LED) on request			

Accessories

AS1

Item description	Item No.	On stock	€
Rawplugs and screws (2 pcs. each)	102209	⊕	0,80
PSU-UP24 – flush mount power supply 24 V (80..240 V ~-> 24 V =, 0,5 A)	645737	⊕	42,00
Frame for surface mounting WRF04	111584	⊕	12,40
Ball stroke protection BS150, transparent (for series WRF04)	647007	⊕	22,70

WRF06 AQ

DATA SHEETS



Flush-mounted air quality sensor for detecting CO2 and/or mixed gas, optionally with temperature and humidity. The sensor meets increased design requirements and is available in standard switch ranges as well as in different color versions. The sensor is typically used in offices, living rooms and hotels. The maintenance-free sensor creates the conditions for a pleasant room climate and increased well-being. The device is additionally available with LED display (traffic light function).



WRF06 CO2 3xV,
Gira E2 pure white matt



WRF06 CO2 3xV TLF,
Gira E2 pure white matt



TECHNICAL DATA	
Measuring values	CO2, VOC, humidity, temperature, (depending on the device)
Output voltage	V: 1x 0..10 V, VV: 2x 0..10 V, 3xV: 3x 0..10 V, 4xV: 4x 0..10 V, max. load 10 kΩ
Network technology	RS485 Modbus
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	max. 1,6 W (24 V ~) 3,9 VA (24 V ~)
Measuring range temp.	0..+50 °C, (optional)
Measuring range humidity	0..100% rH non-condensing, (optional)
Measuring range CO2	0..2000 ppm
Accuracy temperature	±0,5 K (typ. at 21 °C), (optional)
Accuracy humidity	±2% between 10..90% rH (typ. at 21 °C), (optional)
Accuracy CO2	±50 ppm +3% of measured value (typ. at 21 °C, 50% rH)
Calibration	self-calibration, CO2: Dual Channel
Sensor	VOC sensor (heated metal oxide semiconductor), CO2: NDIR (non-dispersive, infrared)
Switch range Berker	S.1, B.3 aluminum, B.7 glass
Switch range Busch-Jaeger	Busch-balance® SI, solo® *, future® linear *, Busch-axcent® *
Switch range Feller	EDIZIOdue
Switch range Gira	E2, E3, Standard 55, Esprit, Event, Flächenschalter *
Switch range Jung	LS 990 *, A 500, AS 500, A plus, A creation, CD 500 *
Switch range Merten	M-Smart, M-Plan, 1-M, Atelier-M, M-Pure, Artec *, Artec stainless steel *, Antik *
Switch range Peha	AURA, AURA glass
Display	3 LEDs indicating air quality (CO2, traffic light function 'TLF'), (optional)
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	-20..+70 °C, max. 85% rH non-condensing
Notes	* in switch program with intermediate frame, optional with traffic light function "TLF", please specify frame design when ordering

Item description: product | output (V/VV/3xV/4xV/BUS) | switch range | colour

WRF06 AQ active

Room sensor CO2 + temperature (opt.) + relative humidity (opt.) – active 1x/2x/3x 0..10 V			AQ1
Item description	Item No.	€	
WRF06 CO2 V Gira E2 pure white matt	702355	286,00	
WRF06 CO2 Temp VV Gira E2 pure white matt	702362	290,00	
WRF06 CO2 Temp_rH 3xV Gira E2 pure white matt	702379	310,00	

Room sensor VOC + temperature – active 2x 0..10 V			AQ1
Item description	Item No.	€	
WRF06 VOC Temp VV Gira E2 pure white matt	702423	280,00	

Room sensor CO2 + VOC + temperature (opt.) + relative humidity (opt.) – active 2x/4x 0..10 V			AQ1
Item description	Item No.	€	
WRF06 CO2+VOC VV Gira E2 pure white matt	702409	334,00	
WRF06 CO2+VOC Temp_rH 4xV Gira E2 pure white matt	702430	338,00	

WRF06 AQ BUS



Room sensor CO2 + temperature (opt.) + relative humidity (opt.) – active BUS			AQ1
Item description	Item No.	€	
WRF06 CO2 RS485 Modbus Gira E2 pure white matt	702447	294,00	
WRF06 CO2 Temp RS485 Modbus Gira E2 pure white matt	702461	298,00	
WRF06 CO2 Temp_rH RS485 Modbus Gira E2 pure white matt	702478	318,00	

Room sensor VOC + temperature – active BUS			AQ1
Item description	Item No.	€	
WRF06 VOC Temp RS485 Modbus Gira E2 pure white matt	702492	288,00	

Room sensor CO2 + VOC + temperature (opt.) + relative humidity (opt.) – active BUS			AQ1
Item description	Item No.	€	
WRF06 CO2+VOC RS485 Modbus Gira E2 pure white matt	702485	342,00	
WRF06 CO2+VOC Temp_rH RS485 Modbus Gira E2 pure white matt	702508	366,00	

Options			
Item description			€
TLF – traffic light function, 3 LEDs indicating air quality			7,20

Accessories			AS1
Item description	Item No.	On stock	€
PSU-UP24 – flush mount power supply 24 V (80..240 V ~-> 24 V =, 0,5 A)	645737	☉	42,00



LP+

DATA SHEETS



Room pendulum sensor for measuring CO₂ in large rooms (open space offices, production halls, ...). For direct connection onto a DDC or a monitoring system, the LP+ provides an analogue 0..10 V output.

TECHNICAL DATA	
Measuring values	CO ₂
Output voltage	0..10 V or 0..5 V (adjustable via jumper), min. load 10 kΩ
Power supply	15..35 V = or 19..29 V ~ SELV
Power consumption	max. 2,5 W (24 V =) 4,3 VA (24 V ~)
Measuring range CO ₂	0..2000 ppm
Accuracy CO ₂	±50 ppm +3% of measured value (typ. at 21 °C, 50% rH)
Calibration	self-calibration, Dual Channel
Sensor	NDIR (non-dispersive, infrared)
Enclosure	enclosure USE-L, PC, pure white, with removable cable entry
Protection	IP65 according to EN 60529
Cable entry	Flextherm M16 for wire Ø=3..7 mm, removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ² , sensor wire white 5 m, for other lengths please request
Ambient condition	0..+50 °C, max. 85% rH short term condensation
Delivery contents	incl. mounting base enclosure USE-L pure white, incl. universal mounting set (cover screw, self-drilling screws, dowels, spax screws and screw cover)

Room pendulum sensor CO ₂ – active 0..10 V			AQ1
Item description	Item No.		€
LP+ CO ₂ V L5000	690331		250,00

Options	
Item description	€
Add per meter of connection cable	0,70
Measuring element separable from housing via plug contact	75,00

Accessories				AS1
Item description	Item No.	On stock		€
Mounting base enclosure USE-L pure white	668361	☹		11,00
Mounting kit universal for enclosure USE	698511	☹		8,80
Bluetooth dongle with micro-USB – communication between USEapp and devices USE-M/USE-L (net price)	668262	☹		29,00
For cable entries and sealing inserts please refer to chapter "Accessories"				



LW04

DATA SHEETS



The surface-mounted mixed gas sensor records air quality for demand-dependent ventilation of rooms. The sensor is suitable for the detection of cigarette smoke, exhalations, kitchen odors in living rooms, restaurants, kitchens, meeting rooms and similar. The device can be mounted directly on the wall, on a flush-mounted box or in conjunction with a frame for surface-mounting, available as an accessory.

LON
LOCAL OPERATING NETWORK

TECHNICAL DATA	
Measuring values	VOC
Output voltage	V: 1x 0..10 V, min. load 10 kΩ
Network technology	LON FT (free topology)
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	V: typ. 1,2 W (24 V =) 2,2 VA (24 V ~), LON: typ. 1,5 W (24 V =) 3,5 VA (24 V ~)
Sensor	VOC sensor (heated metal oxide semiconductor)
Enclosure	PC, pure white
Protection	IP30 according to EN 60529
Cable entry	breaking points top/bottom, rear entry
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Mounting	to be mounted flat onto the surface using adhesive foil or screws, with frame for surface mounting (accessory) or directly on the wall, base part can be mounted and wired separately
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 ...)

Room sensor VOC – active 0..10 V			AQ2
Item description	Item No.	On stock	€
LW04 V	191746	⊕	169,70

Room sensor VOC – active LON			AQ1
Item description	Item No.	On stock	€
LW04 LON	191753	⊕	201,50

Accessories			AS1
Item description	Item No.	On stock	€
Rawplugs and screws (2 pcs. each)	102209	⊕	0,80
PSU-UP24 – flush mount power supply 24 V (80..240 V ~-> 24 V =, 0,5 A)	645737	⊕	42,00
Frame for surface mounting WRF04	111584	⊕	12,40
Ball stroke protection BS150, transparent (for series WRF04)	647007	⊕	22,70

LK+

DATA SHEETS 

The maintenance-free, multifunctional duct air quality sensor measures CO2 content and mixed gas and additionally temperature and humidity (relative, absolute, enthalpy, dew point). The devices with relay output for a 2-point controller or a 2-stage 2-point controller and color-changing LCD display allow a wide range of applications. Depending on the model, the sensor can be individually configured via Thermokon USEapp. Tool-free opening, closing and wiring as well as removable cable entries ensure quick and easy installation.



LK+



LK+ LCD



TECHNICAL DATA	
Measuring values	CO2, VOC, temperature + humidity (depending on the device), types CO2+VOC: each output can be set to get a variable mix of CO2 and VOC by configuration via Thermokon USEapp
Output voltage	1..4x 0..10 V or 0..5 V (adjustable via jumper; live-zero configuration via Thermokon USEapp), min. load 10 kΩ
Output ampere	1x/2x 4..20 mA, max. load 500 Ω
Output switch contact	Relay: 2x floating contact NO for 24 V ~ or 24 V = / 3 A, (optional)
Network technology	RS485 BACnet (MS/TP), RS485 Modbus
Power supply	15..35 V = or 19..29 V ~ SELV, A: 15..35 V = SELV
Power consumption	max. 2,5 W (24 V =) 4,3 VA (24 V ~)
Measuring range temp.	-40..+60 °C 0..+50 °C -20..+80 °C -15..+35 °C, default setting: 0..+50 °C, optionally configurable via Thermokon USEapp
Measuring range humidity	0..100% rH non-condensing, enthalpy: 0..85 KJ/kg, absolute humidity: 0..50 0..80 g/m ³ , dew point: 0..+50 -20..+80 °C, optionally configurable via Thermokon USEapp
Measuring range CO2	0..2000 ppm, 0..5000 ppm (optionally configurable via Thermokon USEapp)
Accuracy temperature	±0,5 K (typ. at 21 °C within default measuring range)
Accuracy humidity	±2% between 10..90% rH (typ. at 21 °C)
Accuracy CO2	±50 ppm +3% of measured value (typ. at 21 °C, 50% rH)
Air speed	min. 0,3 m/s, max. 12 m/s
Calibration	self-calibration, CO2: Dual Channel
Sensor	VOC sensor (heated metal oxide semiconductor), CO2: NDIR (non-dispersive, infrared)
Display	LCD 29x35 mm with RGB backlight, (optional)

Enclosure	enclosure USE-M, PC, pure white, LCD: cover PC, transparent, with removable cable entry
Protection	IP65 according to EN 60529
Cable entry	Flextherm M16 for wire Ø=3..7 mm, Relay/BUS: M25 with fourfold cable entry for wire with max. Ø=7 mm, 3xV/4xV: M20 for wire max. Ø=8 mm incl. seal insert for double cable entry for wire max Ø=6 mm, removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ² , BUS terminal: removable plug-in terminal, max. 1,5 mm ²
Pipe	PA6, black, Ø=19,5 mm, length 180 mm, types 100: length 100 mm, types without temperature: length 150 mm; types 100: 70 mm
Filter	stainless steel wire mesh
Ambient condition	0..+50 °C, max. 85% rH short term condensation
Mounting	installation is also possible using mounting base
Delivery contents	MF20 flange included
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 ...)

LK+ aktiv

Item description: product | output

Duct sensor CO2 VOC CO2 + VOC or Mix – active 1x/2x 0..10 V 2x 4..20 mA				AQ2
Item description	USEapp	Item No.	On stock	€
LK+ CO2 V		662253	⊖	211,80
LK+ CO2 100 V		670418		211,80
LK+ VOC V	✓	662413	⊖	193,30
LK+ CO2+VOC VV	✓	662024	⊖	339,30
LK+ CO2+VOC AA	✓	662031		339,30

Duct sensor CO2 + VOC or Mix – active 2x 0..10 V 2x 4..20 mA relay				AQ1
Item description	USEapp	Item No.	On stock	€
LK+ CO2+VOC VV relay	✓	662062		378,30
LK+ CO2+VOC LCD VV	✓	662079		388,30
LK+ CO2+VOC LCD AA	✓	662086		388,30
LK+ CO2+VOC LCD VV relay	✓	662093		408,30

Duct sensor CO2 VOC CO2 + VOC or Mix + temperature – active 2x/3x 0..10 V 2x 4..20 mA				AQ2
Item description	USEapp	Item No.	On stock	€
LK+ CO2 Temp VV	✓	662260	⊖	267,30
LK+ CO2 100 Temp VV	✓	670432		267,30
LK+ CO2 Temp AA	✓	662277		267,30
LK+ CO2 100 Temp AA	✓	670449		267,30
LK+ VOC Temp VV	✓	662437	⊖	248,80
LK+ VOC Temp AA	✓	662444		248,80
LK+ CO2+VOC Temp 3xV	✓	662130		357,80

LK+ aktiv

Item description: product | output (VV/AA/3xV/4xV)

Duct sensor CO2 VOC CO2 + VOC or Mix + temperature – active 2x/3x 0..10 V 2x 4..20 mA relay				AQ1
Item description	USEapp	Item No.	On stock	€
LK+ CO2 Temp VV relay	✓	662307		306,30
LK+ CO2 100 Temp VV relay	✓	670456		306,30
LK+ VOC Temp VV relay	✓	662475		287,80
LK+ CO2 LCD Temp VV	✓	662284	⊖	307,00
LK+ CO2 100 LCD Temp VV	✓	670463		307,00
LK+ CO2 LCD Temp AA	✓	662291		307,00
LK+ CO2 100 LCD Temp AA	✓	670470		307,00
LK+ VOC LCD Temp VV	✓	662468		288,50
LK+ VOC LCD Temp AA	✓	662482		288,50
LK+ CO2+VOC LCD Temp 3xV	✓	662147		406,80
LK+ CO2 LCD Temp VV relay	✓	662314		336,30
LK+ CO2 100 LCD Temp VV relay	✓	670487		336,30
LK+ VOC LCD Temp VV relay	✓	662499		317,80

Duct sensor CO2 VOC CO2 + VOC or Mix + temperature + humidity – active 3x/4x 0..10 V				AQ2
Item description	USEapp	Item No.		€
LK+ CO2 Temp_rH 3xV	✓	662321		318,70
LK+ CO2 100 Temp_rH 3xV	✓	670494		318,70
LK+ VOC Temp_rH 3xV	✓	662505		300,20
LK+ CO2+VOC Temp_rH 4xV	✓	662154		406,10

Duct sensor CO2 VOC CO2 + VOC or Mix + temperature + humidity – active 3x/4x 0..10 V				AQ1
Item description	USEapp	Item No.		€
LK+ CO2 LCD Temp_rH 3xV	✓	662338		358,40
LK+ CO2 100 LCD Temp_rH 3xV	✓	670500		358,40
LK+ VOC LCD Temp_rH 3xV	✓	662529		339,90
LK+ CO2+VOC LCD Temp_rH 4xV	✓	662161		455,10

Options	
Item description	€
Additional passive temperature sensor (for AA VV)	14,30

LK+ BUS

Item description: product | measuring values | output (BUS)



Duct sensor CO ₂ + VOC or Mix – active RS485 Modbus				AQ1
Item description	USEapp	Item No.		€
LK+ CO ₂ +VOC RS485 Modbus	✓	662109		381,30
LK+ CO ₂ +VOC LCD RS485 Modbus	✓	662116		430,30



Duct sensor CO ₂ + VOC or mix – active RS485 BACnet (MS/TP)				AQ1
Item description	USEapp	Item No.		€
LK+ CO ₂ +VOC RS485 BACnet (MS/TP)	✓	700368		381,30
LK+ CO ₂ +VOC LCD RS485 BACnet (MS/TP)	✓	700382		430,30



Duct sensor CO ₂ VOC CO ₂ + VOC or Mix + temperature – active RS485 Modbus				AQ1
Item description	USEapp	Item No.		€
LK+ CO ₂ Temp RS485 Modbus	✓	662345		309,30
LK+ CO ₂ 100 Temp RS485 Modbus	✓	670555		309,30
LK+ VOC Temp RS485 Modbus	✓	662536		290,80
LK+ CO ₂ +VOC Temp RS485 Modbus	✓	662178		399,80
LK+ CO ₂ LCD Temp RS485 Modbus	✓	662352		349,00
LK+ CO ₂ 100 LCD Temp RS485 Modbus	✓	670562		349,00
LK+ VOC LCD Temp RS485 Modbus	✓	662550		330,50
LK+ CO ₂ +VOC LCD Temp RS485 Modbus	✓	662185		448,80



Duct sensor CO ₂ VOC CO ₂ + VOC or Mix + temperature – active RS485 BACnet (MS/TP)				AQ1
Item description	USEapp	Item No.		€
LK+ CO ₂ Temp RS485 BACnet (MS/TP)	✓	700405		309,30
LK+ CO ₂ 100 Temp RS485 BACnet (MS/TP)	✓	704120		309,30
LK+ VOC Temp RS485 BACnet (MS/TP)	✓	700412		290,80
LK+ CO ₂ +VOC Temp RS485 BACnet (MS/TP)	✓	700429		399,80
LK+ CO ₂ LCD Temp RS485 BACnet (MS/TP)	✓	700436		349,00
LK+ CO ₂ 100 LCD Temp RS485 BACnet (MS/TP)	✓	704137		349,00
LK+ VOC LCD Temp RS485 BACnet (MS/TP)	✓	700443		330,50
LK+ CO ₂ +VOC LCD Temp RS485 BACnet (MS/TP)	✓	700450		448,80

Item description: product | measuring values | output (BUS)

LK+ BUS



Duct sensor CO2 VOC CO2 + VOC or Mix + temperature + humidity – active RS485 Modbus				AQ1
Item description	USEapp	Item No.	€	
LK+ CO2 Temp_rH RS485 Modbus	✓	662376	360,70	
LK+ CO2 100 Temp_rH RS485 Modbus	✓	670579	360,70	
LK+ VOC Temp_rH RS485 Modbus	✓	662574	342,20	
LK+ CO2+VOC Temp_rH RS485 Modbus	✓	662192	448,10	
LK+ CO2 LCD Temp_rH RS485 Modbus	✓	662383	400,40	
LK+ CO2 100 LCD Temp_rH RS485 Modbus	✓	670586	400,40	
LK+ VOC LCD Temp_rH RS485 Modbus	✓	662581	381,90	
LK+ CO2+VOC LCD Temp_rH RS485 Modbus	✓	662208	497,10	



Duct sensor CO2 VOC CO2 + VOC or Mix + temperature + humidity – active RS485 BACnet (MS/TP)				AQ1
Item description	USEapp	Item No.	€	
LK+ CO2 Temp_rH RS485 BACnet (MS/TP)	✓	700467	360,70	
LK+ CO2 100 Temp_rH RS485 BACnet (MS/TP)	✓	704144	360,70	
LK+ VOC Temp_rH RS485 BACnet (MS/TP)	✓	700481	342,20	
LK+ CO2+VOC Temp_rH RS485 BACnet (MS/TP)	✓	682862	448,10	
LK+ CO2 LCD Temp_rH RS485 BACnet (MS/TP)	✓	700504	400,40	
LK+ CO2 100 LCD Temp_rH RS485 BACnet (MS/TP)	✓	704151	400,40	
LK+ VOC LCD Temp_rH RS485 BACnet (MS/TP)	✓	700511	381,90	
LK+ CO2+VOC LCD Temp_rH RS485 BACnet (MS/TP)	✓	700528	497,10	

Accessories				AS1
Item description	Item No.	On stock	€	
Mounting base enclosure USE-M pure white	668354	⊕	7,85	
Bluetooth dongle with micro-USB – communication between USEapp and devices USE-M/USE-L (net price)	668262	⊕	29,00	

For cable entries and sealing inserts please refer to chapter "Accessories"



LK-S CO2 LON

DATA SHEETS



Duct air quality sensor for detection of CO₂, temperature and humidity. Designed for duct mounted applications with connection to a LON FTT system for up to 3 values.

LON
LOCAL OPERATING NETWORK

TECHNICAL DATA

Measuring values	CO ₂ , temperature + humidity
Network technology	LON FT (free topology)
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	max. 3 W (24 V =) 6 VA (24 V ~)
Measuring range temp.	0..+50 °C
Measuring range humidity	0..100% rH non-condensing
Measuring range CO ₂	0..2000 ppm
Accuracy temperature	±0,5 K (typ. at 21 °C)
Accuracy humidity	±2% between 10..90% rH (typ. at 21 °C)
Accuracy CO ₂	±75 ppm, >750 ppm: ±10% (typ. at 21 °C)
Air speed	min. 0,3 m/s, max. 12 m/s
Calibration	self-calibration, Dual Channel
Sensor	NDIR (non-dispersive, infrared)
Enclosure	PA6, pure white, with quick lock screws
Protection	IP65 according to EN 60529
Cable entry	M20 for wire max. Ø=8 mm, seal insert for double cable entry for wire max Ø=6 mm
Connection electrical	terminal block, max. 1,5 mm ²
Pipe	PA6, black, Ø=19,5 mm, length 180 mm
Filter	stainless steel wire mesh
Ambient condition	0..+50 °C, max. 85% rH short term condensation
Delivery contents	MF20 flange included

LON
LOCAL OPERATING NETWORK

Duct sensor CO₂ + temperature + humidity – active LON

AQ1

Item description	Item No.	€
LK-S CO ₂ LON	504966	342,20

LA+

DATA SHEETS 

Air quality sensor for measuring CO₂, mixed gas (VOC), temperature and humidity outdoors and in areas requiring high IP protection class (e.g. subway stations, tunnels, exhibition halls, cooling and greenhouses as well as in production halls and warehouses). If required, default values can be adjusted via Thermokon USEapp. For devices with CO₂ and VOC, each output can be configured to be a mixed output (selectable signal ratio between CO₂ and VOC). Devices with a relay option can be used as 2-point controllers or 2-step controllers.



LA+



LA+ LCD Temp_rH



TECHNICAL DATA	
Measuring values	CO ₂ , VOC, temperature + humidity (depending on the device), types CO ₂ +VOC: each output can be set to get a variable mix of CO ₂ and VOC by configuration via Thermokon USEapp
Output voltage	1..3x 0..10 V or 0..5 V (adjustable via jumper; live-zero configuration via Thermokon USEapp), min. load 10 kΩ
Output ampere	1x/2x 4..20 mA, max. load 500 Ω
Output switch contact	Relay: 2x floating contact NO for 24 V ~ or 24 V = / 3 A, (optional)
Network technology	RS485 BACnet (MS/TP), RS485 Modbus
Power supply	15..35 V = or 19..29 V ~ SELV, A: 15..35 V = SELV
Power consumption	max. 2,5 W (24 V =) 4,3 VA (24 V ~)
Measuring range temp.	-40..+60 °C 0..+50 °C -20..+80 °C -15..+35 °C, default setting: 0..+50 °C, optionally configurable via Thermokon USEapp
Measuring range humidity	0..100% rH non-condensing, enthalpy: 0..85 kJ/kg, absolute humidity: 0..50 0..80 g/m ³ , dew point: 0..+50 -20..+80 °C, optionally configurable via Thermokon USEapp
Measuring range CO ₂	0..2000 ppm, 0..5000 ppm (optionally configurable via Thermokon USEapp)
Accuracy temperature	±0,5 K (typ. at 21 °C within default measuring range)
Accuracy humidity	±2% between 10..90% rH (typ. at 21 °C)
Accuracy CO ₂	±50 ppm +3% of measured value (typ. at 21 °C, 50% rH)
Calibration	self-calibration, CO ₂ : Dual Channel
Sensor	VOC sensor (heated metal oxide semiconductor), CO ₂ : NDIR (non-dispersive, infrared)
Enclosure	enclosure USE-M, PC, pure white, LCD: cover PC, transparent, with removable cable entry
Protection	IP65 according to EN 60529
Cable entry	Flextherm M16 for wire Ø=3..7 mm, Relay/BUS: M25 with fourfold cable entry for wire with max. Ø=7 mm, 3xV: M20 for wire max. Ø=8 mm incl. seal insert for double cable entry for wire max Ø=6 mm, removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ² , BUS terminal: removable plug-in terminal, max. 1,5 mm ²
Ambient condition	0..+50 °C, max. 85% rH short term condensation
Delivery contents	incl. mounting base enclosure USE-M pure white, incl. universal mounting set (cover screw, self-drilling screws, dowels, spax screws and screw cover)

LA+ active

Outdoor sensor CO ₂ – active 0..10 V 4..20 mA				AQ1
Item description	USEapp	Item No.	€	
LA+ CO ₂ V		690171	219,00	
LA+ CO ₂ A	✓	693424	219,00	

Outdoor sensor VOC – active 0..10 V 4..20 mA				AQ1
Item description	USEapp	Item No.	€	
LA+ VOC V	✓	698405	200,50	
LA+ VOCA	✓	698412	200,50	

Outdoor sensor CO ₂ + VOC or mix – active 2x 0..10 V 2x 4..20 mA relay				AQ1
Item description	USEapp	Item No.	€	
LA+ CO ₂ +VOC VV	✓	698993	346,50	
LA+ CO ₂ +VOC AA	✓	699006	346,50	
LA+ CO ₂ +VOC VV relay	✓	700535	385,50	

Outdoor sensor CO ₂ + temperature – 2x 0..10 V 2x 4..20 mA relay				AQ1
Item description	USEapp	Item No.	€	
LA+ CO ₂ Temp VV	✓	700542	274,50	
LA+ CO ₂ Temp AA	✓	700559	274,50	
LA+ CO ₂ Temp VV relay	✓	700566	313,50	

Outdoor sensor VOC + temperature – 2x 0..10 V 2x 4..20 mA relay				AQ1
Item description	USEapp	Item No.	€	
LA+ VOC Temp VV	✓	698399	256,00	
LA+ VOC Temp AA	✓	698429	256,00	
LA+ VOC Temp VV relay	✓	703086	295,00	

Outdoor sensor CO ₂ + temperature + humidity – 3x 0..10 V				AQ1
Item description	USEapp	Item No.	€	
LA+ CO ₂ Temp_rH 3xV	✓	700573	325,90	

Outdoor sensor VOC + temperature + humidity – 3x 0..10 V				AQ1
Item description	USEapp	Item No.	€	
LA+ VOC Temp_rH 3xV	✓	703093	307,40	

Options			
Item description	€		
LCD	39,70		

LA+ BUS



Outdoor sensor CO2 – active BUS				AQ1
Item description	USEapp	Item No.	€	
LA+ CO2 RS485 Modbus	✓	698719	268,00	
LA+ CO2 RS485 BACnet	✓	700580	268,00	

Outdoor sensor VOC – active BUS				AQ1
Item description	USEapp	Item No.	€	
LA+ VOC RS485 Modbus	✓	700597	248,00	
LA+ VOC RS485 BACnet	✓	700603	248,00	

Outdoor sensor CO2 + VOC – active BUS				AQ1
Item description	USEapp	Item No.	€	
LA+ CO2+VOC RS485 Modbus	✓	700610	365,00	
LA+ CO2+VOC RS485 BACnet	✓	700627	365,00	

Outdoor sensor CO2 + temperature – active BUS				AQ1
Item description	USEapp	Item No.	€	
LA+ CO2 Temp RS485 Modbus	✓	700634	316,50	
LA+ CO2 Temp RS485 BACnet	✓	700641	316,50	

Outdoor sensor VOC + temperature – active BUS				AQ1
Item description	USEapp	Item No.	€	
LA+ VOC Temp RS485 Modbus	✓	703154	298,00	
LA+ VOC Temp RS485 BACnet	✓	703161	298,00	

Outdoor sensor CO2 + VOC + temperature + humidity – active BUS				AQ1
Item description	USEapp	Item No.	€	
LA+ CO2+VOC Temp_rH RS485 Modbus	✓	700658	392,00	
LA+ CO2+VOC Temp_rH RS485 BACnet	✓	700665	392,00	

Options			
Item description	€		
LCD	39,70		

Accessories				AS1
Item description	Item No.	On stock	€	
Mounting base enclosure USE-M pure white	668354	☹	7,85	
Mounting kit universal for enclosure USE	698511	☹	8,80	
Bluetooth dongle with micro-USB – communication between USEapp and devices USE-M/USE-L (net price)	668262	☹	29,00	
For cable entries and sealing inserts please refer to chapter "Accessories"				

Light & Motion

Our intelligent sensors provide for a physical and emotional well-being of people in rooms. Motion and brightness are detected reliably: For individual, comfortable and increased energy-saving.



Sample applications 327

Multi sensors

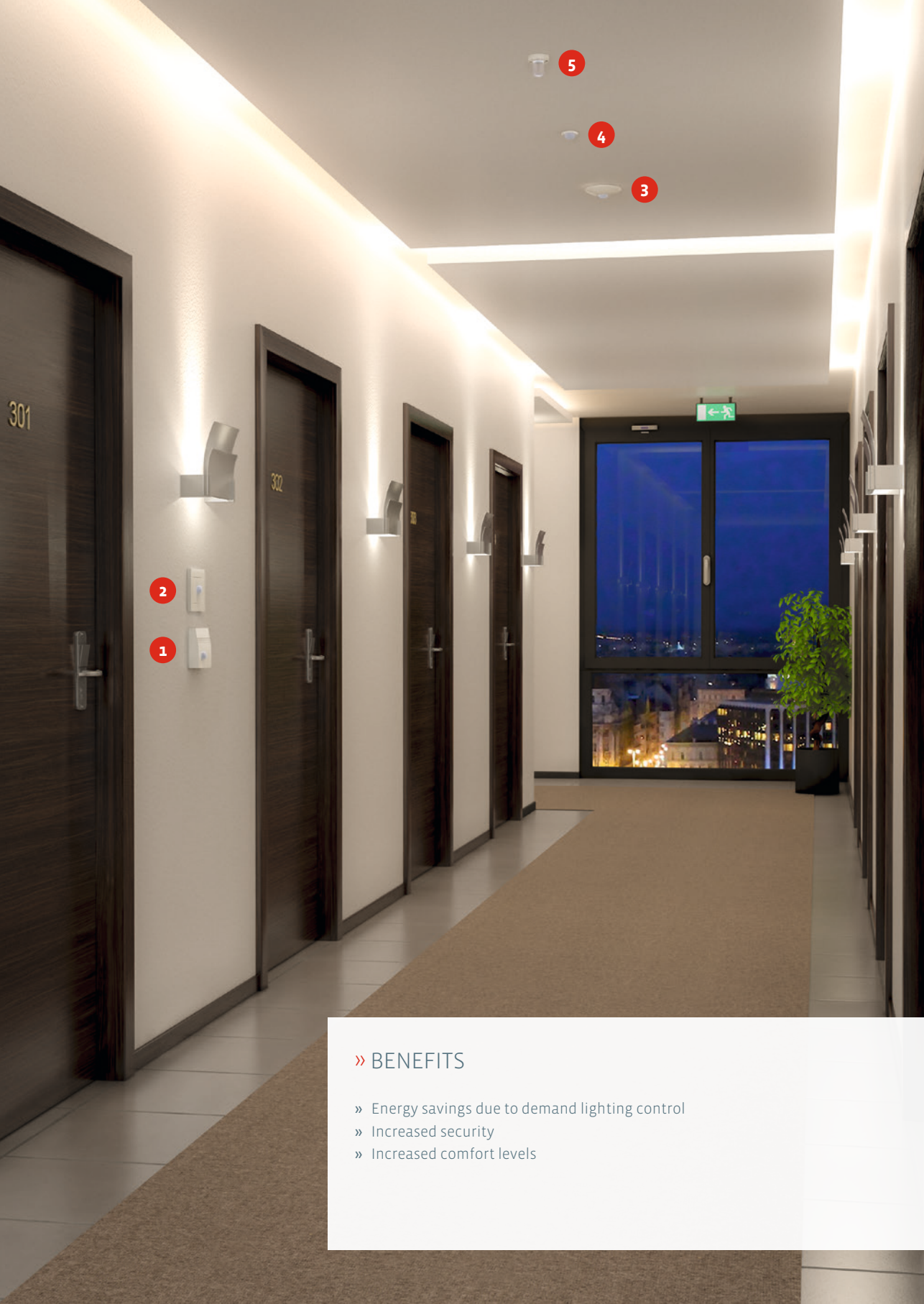
MDS	Ceiling sensor light + motion	398
Li65+	Outdoor sensor light + motion	399

Motion sensors

RDI	Ceiling sensor motion	401
WRF04I	Surface mount motion sensor	402
WRF06I	Flush mount motion sensor	403

Light sensors

LDF+	Ceiling sensor light	405
LDF LON	Ceiling sensor light	407
Li04	Surface mount light sensor	408
Li65 LON	Outdoor light sensor	409



» BENEFITS

- » Energy savings due to demand lighting control
- » Increased security
- » Increased comfort levels

 <p>1</p> <p>WRF04I Surface-mounted motion sensor, available with LON interface</p>	 <p>2</p> <p>WRF06I Flush-mounted motion sensor, compatible with switch frames 55x55 mm</p>	 <p>3</p> <p>MDS Ceiling-mounted multi sensor light/ motion, available with LON interface</p>
 <p>4</p> <p>RDI Ceiling-mounted motion sensor, available with various detection ranges</p>	 <p>5</p> <p>LDF+ Ceiling-mounted light sensor, available with Modbus and BACnet interface</p>	



HOTEL SECURITY AND ENERGY-EFFICIENCY

Intelligent light, motion and multi sensors reliably detect light and motion and define the lighting control conditions. The guest feels safe and comfortable, the hotel owner saves energy.

MDS

DATA SHEETS



Ceiling mounted multi sensor designed for measuring light and motion in room and office spaces and typically used in lighting applications to optimize energy efficiency through lighting control and temperature reduction in unused rooms. Low profile design with various output signals compatible to all BMS manufacturers. For mounting on concrete ceilings an enclosure for surface mounting is available.

LON
LOCAL OPERATING NETWORK

TECHNICAL DATA	
Measuring values	luminosity, motion
Output voltage	Standard: 1x 0..10 V
Output switch contact	Standard: floating contact NO, with follow-up time 1 second..30 minutes, selectable at the device / via BUS
Network technology	LON FT (free topology)
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	typ. 1,5 W (24 V ~) 4 VA (24 V ~)
Measuring range light	0..1 kLux
Accuracy Light	±50 Lux
Detection range	Cone-shaped detection range, angle 105°, range > 10 m, 444 detection zones. With an installation height of 2,7 m circular detection range will have a R= 7 m.
Sensor	PIR (passive infrared)
Enclosure	ABS, pure white
Protection	IP20 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ² , pluggable
Ambient condition	0..+50 °C, max. 85% rH non-condensing
Notes	Enclosure for surface mounting available

Ceiling multi sensor light + motion – active 0..10 V (light), relay (motion)					LM2
Item description	0..10 V	Relay	Item No.	On stock	€
MDS Standard	1	1	271318	⊕	178,70

LON
LOCAL OPERATING NETWORK

Ceiling multi sensor light + motion – BUS				LM1
Item description	Item No.	On stock	€	
MDS LON	279000	⊕	237,80	

Accessories				AS1
Item description	Item No.	On stock	€	
Enclosure for surface mounting MDS pure white	448512	⊕	48,20	

Li65+

DATA SHEETS 



Outdoor sensor measuring light, temperature, humidity and atmospheric pressure typically used in lighting applications to optimise energy efficiency through lighting control. The device is designed for outdoor areas, greenhouses, warehouses or industrial halls. The device has an integrated ambient light sensor with precise optical filtering adapted to the human eye. The devices with relay outputs for a 2-point controller or a 2-stage 2-point controller allow for a wide range of applications. Depending on the model, the sensor can be individually configured via Thermokon USEapp. Tool-free opening, closing and wiring as well as removable cable entries ensure quick and easy installation.



TECHNICAL DATA

Measuring values	luminosity, temperature, humidity, atmospheric pressure
Output voltage	1..4x 0..10 V or 0..5 V (adjustable via jumper; live-zero configuration via Thermokon USEapp), min. load 10 kΩ
Output ampere	1x/2x 4..20 mA, max. load 500 Ω
Output switch contact	Relay: 2x floating contact NO for 24 V ~ or 24 V = / 3 A, (optional)
Network technology	RS485 Modbus
Power supply	15..35 V = or 19..29 V ~ SELV
Power consumption	typ. 0,6 W (24 V =) 1,5 VA (24 V ~)
Measuring range temp.	-40..+60 °C 0..+50 °C -20..+80 °C -15..+35 °C, adjustable at the transducer, default setting: -20..+80 °C, (optional)
Measuring range humidity	0..100% rH non-condensing, (optional)
Measuring range light	0..200 Lux 0..1000 Lux 0..2 kLux 0..10 kLux 0..20 kLux 0..50 kLux, selectable at the device
Measuring range atm. pressure	500..1500 hPa, (optional)
Accuracy Light	±5% of measuring range
Sensor	Ambient light sensor with precise optical filtering appropriate to the human eye
Enclosure	enclosure USE-M, PC, pure white, cover PC, translucent
Protection	IP65 according to EN 60529
Cable entry	Flextherm M16 for wire Ø=3..7 mm, Relay/BUS: M25 with fourfold cable entry for wire with max. Ø=7 mm removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ² , BUS terminal: removable plug-in terminal, max. 1,5 mm ²
Ambient condition	-30..+70 °C, max. 85% rH non-condensing
Delivery contents	incl. mounting base enclosure USE-M pure white

Li65+ active

Item description: product | output (V/A)

Outdoor sensor light – active 0..10 V 4..20 mA				LM2
Item description	USEapp	Item No.	On stock	€
Li65+ V	✓	662680	⊕	126,90
Li65+ A	✓	662697	⊕	126,90

Outdoor sensor light + temperature – active 2x 0..10 V 2x 4..20 mA relay				LM1
Item description	USEapp	Item No.		€
Li65+ Temp VV	✓	700672		144,90
Li65+ Temp AA	✓	700689		144,90
Li65+ Temp VV relay	✓	707305		183,90

Outdoor sensor light + temperature + humidity + atmospheric pressure (opt.) – active 3x/4x 0..10 V				LM1
Item description	USEapp	Item No.		€
Li65+ Temp_rH 3xV	✓	700696		196,30
Li65+ Temp_rH_hPa 4xV	✓	700702		216,30

Li65+ BUS

Item description: product | measuring values | BUS



Outdoor sensor light + temperature – active BUS				LM1
Item description	USEapp	Item No.		€
Li65+ Temp RS485 Modbus	✓	700733		152,90
Li65+ Temp RS485 BACnet	✓	700740		152,90

Outdoor sensor light + temperature + humidity – active BUS				LM1
Item description	USEapp	Item No.		€
Li65+ Temp_rH RS485 Modbus	✓	700757		204,30
Li65+ Temp_rH RS485 BACnet	✓	700764		204,30

Outdoor sensor light + temperature + humidity + atmospheric pressure – active BUS				LM1
Item description	USEapp	Item No.		€
Li65+ Temp_rH_hPa RS485 Modbus	✓	700771		224,30
Li65+ Temp_rH_hPa RS485 BACnet	✓	700788		224,30

Accessories				AS1
Item description		Item No.	On stock	€
Mounting base enclosure USE-M pure white		668354	⊕	7,85
For cable entries and sealing inserts please refer to chapter "Accessories"				

RDI

DATA SHEETS



The ceiling motion detector detects the movement of persons indoors and can switch light as required or also provide a temperature reduction in unused rooms. The installation is inconspicuous in false ceilings because of the small design. There are 3 types available with different detection ranges.



RDI Standard



RDI Small Range



RDI Spot

TECHNICAL DATA

Measuring values	motion
Output switch contact	floating contact NO for 24 V, load max. 1 A (resistive), with follow-up time 8 seconds
Power supply	15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$) SELV
Power consumption	typ. 0,5 W (24 V =) 1,1 VA (24 V ~)
Detection range	Standard: Cone-shaped detection range, angle 110°/93° (H/V), range 10 m, 80 detection zones. With an installation height of 2,8 m range detection will be 7x5 m. Small Range: Cone-shaped detection range, angle 91°, range 2 m, 104 detection zones. With an installation height of 2 m circular detection range will have a R= 5 m. Spot: Cone-shaped detection range, angle 38°/22° (H/V), range 5 m, 24 detection zones. With an installation height of 2,8 m range detection will be approx. 2x1,4 m.
Sensor	PIR (passive infrared)
Enclosure	ABS, pure white
Protection	IP20 according to EN 60529
Connection electrical	terminal block, max. 1,5 mm ² , connection wire PVC diameter=0,25 mm ² length=10 cm
Ambient condition	-20..+50 °C, max. 85% rH non-condensing

Ceiling sensor motion – active relay

Item description	Item No.	On stock	LM2 €
RDI Standard	187060	⊕	87,70
RDI Small Range	426503		87,70
RDI Spot	436670		87,70



WRF04I

DATA SHEETS



The surface-mounted motion sensor detects movement of persons and switches a relay contact for lighting control or for lowering the temperature of unused rooms. Fields of application of the sensor are residential and business premises, offices and corridors. The device can be mounted directly on the wall (predetermined breaking point), on a flush-mounted box or in conjunction with a surface-mounted frame available as accessory.

LON
LOCAL OPERATING NETWORK

TECHNICAL DATA

Measuring values	motion
Output switch contact	floating contact NO for 24 V, load max. 1 A (resistive), with follow-up time 8 seconds
Network technology	LON FT (free topology)
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	Relay: typ. 0,5 W (24 V =) 1,1 VA (24 V ~), LON: max. 0,9 W (24 V =) 2,5 VA (24 V ~)
Detection range	Cone-shaped detection range, angle 110°/93° (H/V), range 10 m, 80 detection zones. With an installation height of 2,8 m range detection will be 7x5 m.
Sensor	PIR (passive infrared)
Enclosure	PC, pure white
Protection	IP30 according to EN 60529
Cable entry	breaking points top/bottom, rear entry
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	-5..+50 °C, max. 85% rH non-condensing
Mounting	surface mounted on flush-mounting box (Ø=68 mm), to be mounted flat onto the surface using adhesive foil or screws, with frame for surface mounting (accessory) or directly on the wall, base part can be mounted and wired separately

Item description: product | output (relay/BUS)

LON
LOCAL OPERATING NETWORK

Wall sensor motion – active relay | BUS

LM1

Item description	Relay	Item No.	On stock	€
WRF04I LON	-	199476		161,40
WRF04I Relay	1	195812	⊕	91,80

Accessories

AS1

Item description	Item No.	On stock	€
Rawplugs and screws (2 pcs. each)	102209	⊕	0,80
PSU-UP24 – flush mount power supply 24 V (80..240 V ~ → 24 V =, 0,5 A)	645737	⊕	42,00
Frame for surface mounting WRF04	111584	⊕	12,40

WRF06I

DATA SHEETS



The flush-mounted motion sensor detects movement of persons and switches a relay contact for lighting control or for lowering the temperature of unused rooms. Applications of the sensor, available in various switch ranges and colors, are residential and business rooms, offices and corridors. The device is mounted in a flush-mounted box.



WRF06I,
Gira E2 pure white matt



WRF06I,
Jung AS 500 alpine white

TECHNICAL DATA

Measuring values	motion
Output switch contact	floating contact NO for 24 V, load max. 1 A (resistive), with follow-up time 8 seconds
Power supply	15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$) SELV
Power consumption	max. 0,5 W (24 V =) 1,1 VA (24 V ~)
Detection range	range max. 10 m, horizontal 110°, vertical 93°, 80 zones
Sensor	PIR (passive infrared)
Switch range Berker	S.1, B.3 aluminum, B.7 glass, Q.1, Q.3, K.1, K.5 aluminum stainless steel
Switch range Busch-Jaeger	Busch-balance® SI, Busch-Duro 2000® SI, Reflex SI, solo® *, future® linear *, impuls, Busch-axcent® *, alpha nea®
Switch range Feller	EDIZIOdue
Switch range Gira	E2, E3, Standard 55, Esprit, Event, Flächenschalter *
Switch range Jung	LS 990 *, A 500, AS 500, A plus, A creation, CD 500 *
Switch range Merten	M-Smart, M-Plan, 1-M, Atelier-M, M-Pure, Artec *, Artec stainless steel *, Antik *
Switch range Peha	AURA, AURA glass
Protection	IP30 according to EN 60529
Connection electrical	plug-in terminal, max. 1,5 mm ²
Ambient condition	-20..+60 °C, max. 85% rH non-condensing
Mounting	flush mounted in standard EU box (Ø=68 mm, min. depth=45 mm)
Notes	* in switch program with intermediate frame

WRF06I

Item description: product | switch range | colour

Wall sensor motion – active relay			LM2
Item description	Item No.		€
WRF06I Gira E2 pure white matt	187183		104,30
WRF06I Berker S.1 polar white	223997		104,30
WRF06I Busch-Jaeger Busch-balance® SI alpine white	630405		104,30
WRF06I Busch-Jaeger Reflex SI alpine white	413350		104,30
WRF06I Jung A 500 alpine white	630412		104,30
WRF06I Merten M-Smart polar white brilliant	630429		104,30

Options		
Item description		€
Switch range Gira Esprit		22,30
Switch ranges stainless steel glass aluminium (different manufacturers)		35,10
Other switch ranges		12,50

Accessories			AS1
Item description	Item No.	On stock	€
PSU-UP24 – flush mount power supply 24 V (80..240 V ~-> 24 V =, 0,5 A)	645737	⊕	42,00

LDF+

DATA SHEETS



The brightness sensor for ceiling installations detects indoor and outdoor light levels in living rooms, offices or at workplaces depending on the type of prism. The sensor is adapted to the spectral sensitivity of the human eye and serves together with control systems for an on-demand light or sun protection control. The remote sensor is connected to the enclosure via conventional RJ45 cables, making it easy to install in hardly accessible places. If two sensors are used, the individual values, the mean, minimum or maximum value can be provided through both output signals (configurable via Thermokon USEapp).



LDF+ straight prism



LDF+ diagonal prism



TECHNICAL DATA

Measuring values	luminosity
Output voltage	1x/2x 0..10 V or 0..5 V (adjustable via jumper; live-zero configuration via Thermokon USEapp), min. load 10 kΩ
Output ampere	1x/2x 4..20 mA, max. load 500 Ω
Output switch contact	Relay: 2x floating contact NO for 24 V ~ or 24 V = / 3 A (optional)
Network technology	RS485 BACnet (MS/TP), RS485 Modbus
Power supply	15..35 V = or 19..29 V ~ SELV, A: 15..35 V = SELV
Power consumption	typ. 0,6 W (24 V =) 1,5 VA (24 V ~), A: max. 20 mA (24 V =), AA: max. 40 mA (24 V =)
Measuring range light	0..200 Lux 0..1000 Lux 0..2 kLux 0..10 kLux 0..20 kLux 0..50 kLux, selectable at the device
Accuracy Light	±5% of measuring range, calibration via Thermokon USEapp
Sensor	Ambient light sensor with precise optical filtering appropriate to the human eye
Prism	acrylic glass clear, straight, diagonal
Enclosure	enclosure USE-M, PC, pure white, with removable cable entry
Protection	IP30 according to EN 60529
Cable entry	Flextherm M16 for wire Ø=3.7 mm, Relay/BUS: M25 with fourfold cable entry for wire with max. Ø=7 mm removable
Connection electrical	removable plug-in terminal, max. 2,5 mm ² , BUS terminal: removable plug-in terminal, max. 1,5 mm ² , sensor wire (patch cable) length=1 m (default), max. 10 m, plug RJ45
Ambient condition	-25..+65 °C, max. 85% rH non-condensing
Delivery contents	incl. mounting base enclosure USE-M pure white

LDF+ active

Ceiling sensor light – active 0..10 V 4..20 mA relay				LM2
Item description	USEapp	Item No.	€	
LDF+ V L1000 straight prism	✓	662604	153,00	
LDF+ V L1000 diagonal prism	✓	662628	153,00	
LDF+ A L1000 straight prism	✓	662635	153,00	
LDF+ A L1000 diagonal prism	✓	662642	153,00	
LDF+ V L1000 straight prism relay	✓	707336	192,00	
LDF+ V L1000 diagonal prism relay	✓	707350	192,00	

Dual ceiling sensor light – active 2x 0..10 V 2x 4..20 mA relay				LM1
Item description	USEapp	Item No.	€	
LDF+ Dual VV L1000 straight prism	✓	700849	199,00	
LDF+ Dual VV L1000 diagonal prism	✓	700856	199,00	
LDF+ Dual AA L1000 straight prism	✓	700863	199,00	
LDF+ Dual AA L1000 diagonal prism	✓	700870	199,00	
LDF+ Dual VV L1000 straight prism relay	✓	707374	238,00	
LDF+ Dual VV L1000 diagonal prism relay	✓	707381	238,00	

LDF+ BUS



Ceiling sensor light – active BUS				LM1
Item description	USEapp	Item No.	€	
LDF+ RS485 Modbus L1000 straight prism	✓	700887	161,00	
LDF+ RS485 Modbus L1000 diagonal prism	✓	700894	161,00	
LDF+ RS485 BACnet L1000 straight prism	✓	700900	161,00	
LDF+ RS485 BACnet L1000 diagonal prism	✓	700917	161,00	

Dual ceiling sensor light – active BUS				LM1
Item description	USEapp	Item No.	€	
LDF+ Dual RS485 Modbus L1000 straight prism	✓	700924	207,00	
LDF+ Dual RS485 Modbus L1000 diagonal prism	✓	700931	207,00	
LDF+ Dual RS485 BACnet L1000 straight prism	✓	700948	207,00	
LDF+ Dual RS485 BACnet L1000 diagonal prism	✓	700955	207,00	

Accessories				AS1
Item description	Item No.	On stock	€	
Mounting base enclosure USE-M pure white	668354	☹	7,85	
Sensor wire 1,5 m with RJ45 connector	628785	☹	5,60	
Sensor wire 3 m with RJ45 connector	708852	☹	7,20	
Sensor wire 7,5 m with RJ45 connector	708869	☹	13,40	

For cable entries and sealing inserts please refer to chapter "Accessories"

LDF LON

DATA SHEETS



Depending on the design of the prism, the brightness sensor for ceiling installation measures the light level in living rooms, offices or at workplaces. The sensor has a built-in color filter (green filter), which is adapted to the sensitivity of the human eye and serves together with control systems for on-demand light or sun protection control.



LDF LON straight prism



LDF LON diagonal prism

LON
LOCAL OPERATING NETWORK

TECHNICAL DATA

Measuring values	luminosity
Network technology	LON FT (free topology)
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	LON: typ. 0,5 W (24 V =) 2 VA (24 V ~)
Measuring range light	0..2 kLux, 0..20 kLux, selectable at the device
Sensor	photodiode with green filter
Prism	acrylic glass clear, straight, diagonal
Enclosure	PA6, pure white
Protection	IP65 according to EN 60529
Cable entry	M20 for wire max. Ø=8 mm
Connection electrical	Connection wire PVC screened diameter=0,25 mm ² , length=1 m (standard), 2 m
Ambient condition	-25..+65 °C, max. 85% rH non-condensing

LON
LOCAL OPERATING NETWORK

Ceiling sensor light – active BUS

Item description	Item No.	€	LM1
LDF LON L1000 straight prism	185707	223,60	
LDF LON L1000 diagonal prism	201582	223,60	



Li04

DATA SHEETS



The room brightness sensor with selectable measuring ranges and color filter to adjust the sensitivity similar to the human eye captures the brightness indoors. Designed for controlling lighting or sun protection systems. The device can be mounted directly on the wall, on a flush-mounted box or in conjunction with a frame for surface-mounting (see accessories).

LON
LOCAL OPERATING NETWORK

TECHNICAL DATA	
Measuring values	luminosity
Output voltage	V: 1x 0..10 V, min. load 5 kΩ
Output ampere	A: 1x 4..20 mA, max. load 500 Ω
Network technology	LON FT (free topology)
Power supply	V LON: 15..24 V = (±10%) oder 24 V ~ (±10%) SELV, A: 15..24 V = (±10%) SELV
Power consumption	V: typ. 0,15 W (24 V =) 0,5 VA (24 V ~), A: max. 20 mA (24 V =), LON: typ. 0,5 W (24 V =) 2 VA (24 V ~)
Measuring range light	0..2 kLux, 0..20 kLux, 0..100 kLux, selectable at the device
Sensor	photodiode with green filter
Enclosure	PC, pure white
Protection	IP30 according to EN 60529
Cable entry	breaking points top/bottom, rear entry
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	-20..+70 °C, max. 85% rH non-condensing
Mounting	surface mounted on flush-mounting box (Ø=68 mm), to be mounted flat onto the surface using adhesive foil or screws, with frame for surface mounting (accessory) or directly on the wall, base part can be mounted and wired separately

Wall sensor light – active 0..10 V 4..20 mA			LM2
Item description	Item No.	On stock	€
Li04 V	207904	⊕	126,90
Li04 A	207911		126,90

LON
LOCAL OPERATING NETWORK

Wall sensor light – active BUS			LM1
Item description	Item No.		€
Li04 LON	207898		223,60

Accessories			AS1
Item description	Item No.	On stock	€
Rawplugs and screws (2 pcs. each)	102209	⊕	0,80
PSU-UP24 – flush mount power supply 24 V (80..240 V ~ → 24 V =, 0,5 A)	645737	⊕	42,00
Frame for surface mounting WRF04	111584	⊕	12,40

Li65 LON

DATA SHEETS 




The outdoor brightness sensor with selectable measuring ranges and color filter for adapting the sensitivity similar to the human eye detects the brightness in outdoor areas, greenhouses, warehouses or industrial halls. Designed for controlling lighting systems or sun protection systems.

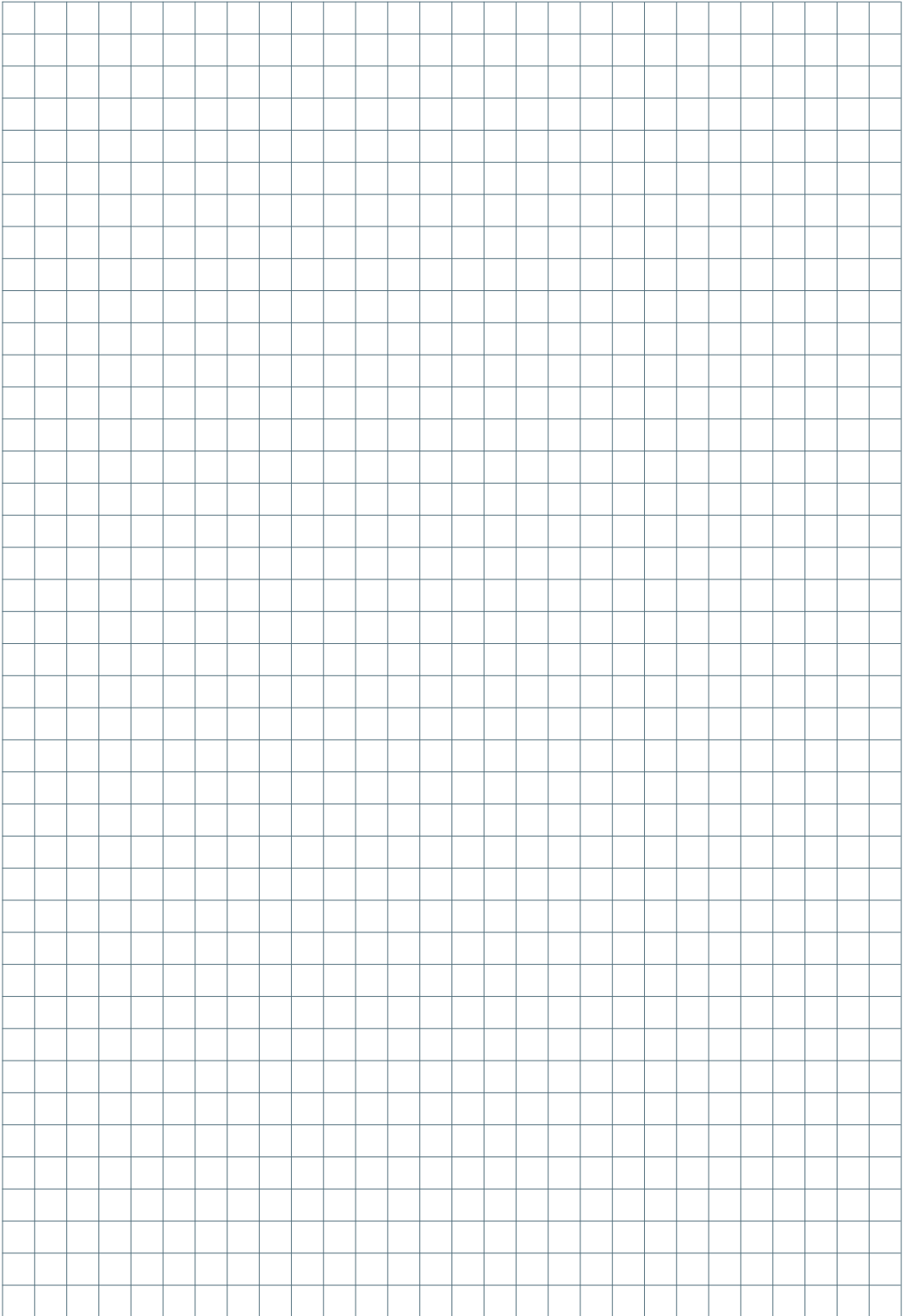
LON
LOCAL OPERATING NETWORK

TECHNICAL DATA	
Measuring values	luminosity
Network technology	LON FT (free topology)
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	LON: typ. 0,5 W (24 V =) 2 VA (24 V ~)
Measuring range light	0..2 kLux 0..20 kLux 0..100 kLux, LON: 0..2 kLux 0..20 kLux 0..65 kLux, selectable at the device
Accuracy Light	±5% of measuring range
Sensor	photodiode with green filter, (BPW21)
Enclosure	PA6, pure white, cover PC, translucent, with quick lock screws
Protection	IP65 according to EN 60529
Cable entry	M20 for wire max. Ø=8 mm
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	-30..+70 °C, max. 85% rH short term condensation

LON
LOCAL OPERATING NETWORK

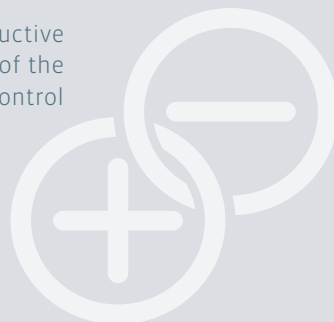
Outdoor sensor light – active LON			LM1
Item description	Item No.		€
Li65 LON	185745		223,60

Accessories				AS1
Item description	Item No.	On stock		€
Rawlplugs and screws (2 pcs. each)	102209			0,80



Power Thyristors

Power thyristors can more and more be found where ohmic and inductive loads must be controlled (e.g. in industrial furnaces ...) By means of the modular and compact construction and control with a continuous control signal power thyristors become the perfect actuators for industrial power control.



Power Thyristors Single-phase

TS1 1-phase Industrial power thyristor
TS3 1-phase Industrial power thyristor

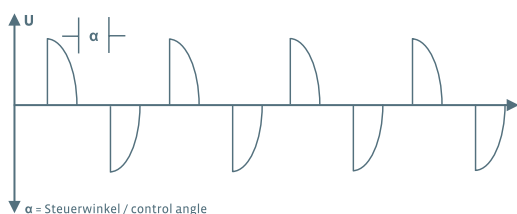
412
413

Three-phase

TS1 3-phase Industrial power thyristor 414
TS3 3-phase Industrial power thyristor 415
TS2 3-phase Industrial power thyristor 416

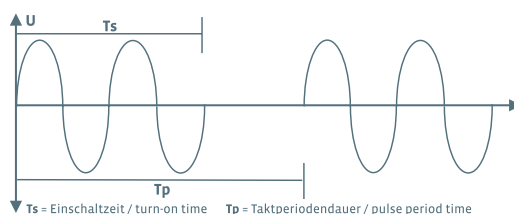
Phase angle control

The phase angle control can be used for almost any ohmic and inductive consumers and is the most common way to control the power consumption of a consumer. The consumer is connected to the supply network via the power thyristor. The thyristors are controlled in such a way, that the consumer is not supplied with the complete sinusoidal oscillation but only a part (depending on the steering angle), whereas the voltage average value can be adjusted continuously.



Oscillation control

The oscillation control is used with inert consumers such as heaters. Contrary to the phase angle control, complete sinusoidal waves are switched through to the consumer with the oscillation control. The control of the average voltage value is made by switching through a certain number of oscillations (depending on the switch-on time) within a certain time slot (clock cycle). Thus convertor feedback effects to the power supply network in form of harmonic components are avoided.



TS1 1-phase

DATA SHEETS



Power thyristors are used as actuators for industrial power controls (e.g. fans, pumps, lamps, heating registers, industrial furnaces). Their solid and compact construction ensures reliable control and high efficiency.

TECHNICAL DATA

Power output	output for ohmic and inductive loads: 2 A: 0,46 kW (230 V ~ / 2 A) 4 A: 0,92 kW (230 V ~ / 4 A) 6 A: 1,38 kW (230 V ~ / 6 A) 8 A: 1,84 kW (230 V ~ / 8 A) 10 A: 2,3 kW (230 V ~ / 10 A) 12 A: 2,76 kW (230 V ~ / 12 A)
Output voltage	reference voltage for potentiometer: 10 V =
Output switch contact	signal contact at 100% U _a , floating contact NO for 250 V ~ / 3 A or 24 V = / 3 A
Power supply	L1, N: 230 V ~ 48..62 Hz self-synchronizing
Inputs	electrical activation via set point signal 0..10 V = or 0..20 mA (selectable via DIP switches), input for potentiometer 2,5..10 kΩ
Functions	phase angle, optional oscillation
Display	LED – power supply OK, LED – modulation amplitude 100%
Enclosure	PA
Protection	IP40 according to EN 60529, screw terminals IP23 according to DIN EN 60529
Connection electrical	terminal block, max. 2,5 mm ²
Ambient condition	0..+45 °C
Mounting	prepared for mounting on DIN rail TS35 (35x7,5 mm) according to EN 60715
Notes	versions up to 4 A with heat sink, version 6 A with heat sink, versions 8 A and higher with heat sink and fan

Power thyristor – phase angle

Item description	Item No.	TR1 €
TS1 1-phase 1-ph 2A 0,46 kW	229678	183,40
TS1 1-phase 1-ph 4A 0,92 kW	226639	213,80
TS1 1-phase 1-ph 6A 1,38 kW	224000	248,70
TS1 1-phase 1-ph 8A 1,84 kW	236980	274,50
TS1 1-phase 1-ph 10A 2,3 kW	223874	295,90
TS1 1-phase 1-ph 12A 2,76 kW	230605	321,80

Power thyristor – oscillation

Item description	Item No.	TR1 €
TS1 1-phase SP 1-ph 2A 0,46 kW	283137	183,40
TS1 1-phase SP 1-ph 4A 0,92 kW	226622	213,80
TS1 1-phase SP 1-ph 6A 1,38 kW	238885	248,70
TS1 1-phase SP 1-ph 8A 1,84 kW	255189	274,50
TS1 1-phase SP 1-ph 10A 2,3 kW	266109	295,90
TS1 1-phase SP 1-ph 12A 2,76 kW	233712	321,80

TS3 1-phase

DATA SHEETS



Power thyristors are used as actuators for industrial power controls (e.g. fans, pumps, lamps, heating registers, industrial furnaces). Their solid and compact construction ensures reliable control and and high efficiency.

TECHNICAL DATA

Power output	output for ohmic and inductive loads: 15 A: 3,5 kW (230 V ~ / 15 A) 25 A: 5,75 kW (230 V ~ / 25 A) 35 A: 8,05 kW (230 V ~ / 35 A) 50 A: 11,5 kW (230 V ~ / 50 A)
Output voltage	reference voltage for potentiometer: 10 V =
Output switch contact	signal contact in case of fault state, floating contact NO for 230 V ~ / 2 A
Power supply	L1, N: 230 V ~ 45..65 Hz self-synchronizing
Inputs	electrical activation via set point signal 0..10 V =, 0..20 mA or 4..20 mA (selectable via DIP switches), input for potentiometer 2,5..10 kΩ
Functions	phase angel, optional oscillation
Display	4 LEDs for showing state of device
Enclosure	aluminium
Protection	IP40 according to EN 60529
Connection electrical	terminal block, max. 1,5..10 mm ² (depending on type)
Ambient condition	0..+50 °C
Mounting	prepared for mounting on DIN rail TS35 (35x7,5 mm) according to EN 60715

Power thyristor – phase angel

Item description	Item No.	TR1 €
TS3 1-phase 1-ph 15A 3,45 kW	237161	353,30
TS3 1-phase 1-ph 25A 5,75 kW	241649	501,80
TS3 1-phase 1-ph 35A 8,05 kW	238489	531,00
TS3 1-phase 1-ph 50A 11,5 kW	361200	615,40

Power thyristor – oscillation

Item description	Item No.	TR1 €
TS3 1-phase SP 1-ph 15A 3,45 kW	245500	353,30
TS3 1-phase SP 1-ph 25A 5,75 kW	231091	501,80
TS3 1-phase SP 1-ph 35A 8,05 kW	270977	531,00
TS3 1-phase SP 1-ph 50A 11,5 kW	344333	615,40



TS1 3-phase

DATA SHEETS



Power thyristors are used as actuators for industrial power controls (e.g. fans, pumps, lamps, heating registers, industrial furnaces). Their solid and compact construction ensures reliable control and high efficiency.

TECHNICAL DATA

Power output	output for ohmic and inductive loads: 2 A: 1,2 kW (400 V ~ / 2 A) 4 A: 2,5 kW (400 V ~ / 4 A) 6 A: 4,0 kW (400 V ~ / 6 A) 8 A: 5,0 kW (400 V ~ / 8 A) 10 A: 6,5 kW (400 V ~ / 10 A)
Output voltage	reference voltage for potentiometer: 10 V =
Output switch contact	signal contact at 100% U _a , floating contact NO for 250 V ~ / 3 A or 24 V = / 3 A
Power supply	L1, L2, L3, N: 400 V ~ 48..62 Hz self-synchronizing
Inputs	electrical activation via set point signal 0..10 V = or 0..20 mA (selectable via DIP switches), input for potentiometer 2,5..10 kΩ
Functions	phase angel, optional oscillation
Display	LED – power supply OK, LED – modulation amplitude 100%
Enclosure	PA
Protection	IP40 according to EN 60529, screw terminals IP23 according to DIN EN 60529
Connection electrical	terminal block, max. 2,5 mm ²
Ambient condition	0..+45 °C
Mounting	prepared for mounting on DIN rail TS35 (35x7,5 mm) according to EN 60715
Notes	versions up to 4 A with heat sink, version 6 A with heat sink, versions 8 A and higher with heat sink and fan

Power thyristor – phase angel

TR1

Item description	Item No.	€
TS1 3-phase 3-ph 2A 1,2 kW	230148	209,30
TS1 3-phase 3-ph 4A 2,5 kW	246514	230,70
TS1 3-phase 3-ph 6A 4,0 kW	224260	256,50
TS1 3-phase 3-ph 8A 5,0 kW	233736	283,50
TS1 3-phase 3-ph 10A 6,5 kW	224314	313,90

Power thyristor – oscillation

TR1

Item description	Item No.	€
TS1 3-phase SP 3-ph 2A 1,2 kW	273558	209,30
TS1 3-phase SP 3-ph 4A 2,5 kW	268226	230,70
TS1 3-phase SP 3-ph 6A 4,0 kW	275910	256,50
TS1 3-phase SP 3-ph 8A 5,0 kW	275927	283,50
TS1 3-phase SP 3-ph 10A 6,5 kW	241182	313,90

TS3 3-phase

DATA SHEETS



Power thyristors are used as actuators for industrial power controls (e.g. fans, pumps, lamps, heating registers, industrial furnaces). Their solid and compact construction ensures reliable control and high efficiency.

TECHNICAL DATA

Power output	output for ohmic and inductive loads: 15 A: 10 kW (400 V ~ / 15 A) 25 A: 16 kW (400 V ~ / 25 A) 35 A: 23 kW (400 V ~ / 35 A) 50 A: 33 kW (400 V ~ / 50 A)
Output voltage	reference voltage for potentiometer: 10 V =
Output switch contact	signal contact in case of fault state, changeover contact floating for 230 V ~ / 2 A, signal contact at 100% U _a , changeover contact floating for 230 V ~ / 2 A, operation signal, changeover contact floating for 230 V ~ / 2 A
Power supply	L1, L2, L3: 400 V ~ 45..65 Hz self-synchronizing
Inputs	electrical activation via set point signal 0..10 V = or 0..20 mA (selectable via DIP switches), input for potentiometer 2,5..10 kΩ, PWM input 5 V / 5..10 kHz, entrée pour PTC selon DIN 44081, input for reset
Functions	phase angel, optional oscillation, start-up period adjustable (0..10 sec.)
Display	4 LEDs for showing state of device
Enclosure	aluminium
Protection	IP40 according to EN 60529
Connection electrical	terminal block, max. 1,5..10 mm ² (depending on type)
Ambient condition	0..+50 °C
Mounting	4 mounting holes Ø=8 mm for mounting on galvanized mounting plates (control cabinet)

Power thyristor – phase angel

Item description	Item No.	TR1 €
TS3 3-phase 3-ph 15A 10 kW	224796	687,40
TS3 3-phase 3-ph 25A 16 kW	225649	785,30
TS3 3-phase 3-ph 35A 23 kW	225656	916,90
TS3 3-phase 3-ph 50A 33 kW	256353	1022,70

Power thyristor – oscillation

Item description	Item No.	TR1 €
TS3 3-phase SP 3-ph 15A 10 kW	225236	687,40
TS3 3-phase SP 3-ph 25A 16 kW	240970	785,30
TS3 3-phase SP 3-ph 35A 23 kW	241014	916,90
TS3 3-phase SP 3-ph 50A 33 kW	223836	1022,70

TS2 3-phase

DATA SHEETS



Power thyristors are used as actuators for industrial power controls (e.g. fans, pumps, lamps, heating registers, industrial furnaces). Their solid and compact construction ensures reliable control and high efficiency.

TECHNICAL DATA

Power output	output for ohmic and inductive loads: 75 A: 50 kW (400 V ~ / 75 A) 90 A: 60 kW (400 V ~ / 90 A) 120 A: 78 kW (400 V ~ / 120 A)
Output voltage	reference voltage for potentiometer: 10 V =
Output switch contact	signal contact in case of fault state, changeover contact floating for 230 V ~ / 2 A, signal contact at 100% U _a , changeover contact floating for 230 V ~ / 2 A, operation signal, changeover contact floating for 230 V ~ / 2 A
Power supply	L1, L2, L3: 400 V ~ (± 15%) 48..62 Hz self-synchronizing
Inputs	electrical activation via set point signal 0..10 V =, 0..20 mA or 4..20 mA (selectable via DIP switches), input for potentiometer 2,5..10 kΩ, entrée pour PTC selon DIN 44081
Functions	phase angle, optional oscillation
Display	9 LEDs for showing state of device
Enclosure	aluminium with plexiglas cover
Protection	IP23 according to DIN EN 60529
Connection electrical	Power connections, M8 connection screw for cable lug, connection control electronics, max. 1.5 mm ²
Ambient condition	0..+55 °C
Mounting	4 mounting holes Ø=8 mm for mounting on galvanized mounting plates (control cabinet)

Power thyristor – phase angle

TR1

Item description	Item No.	€
TS2 3-phase 3-ph 75A 50 kW	236522	1676,30
TS2 3-phase 3-ph 90A 60 kW	260190	1973,30
TS2 3-phase 3-ph 120A 78 kW	304719	2257,90

Power thyristor – oscillation

TR1

Item description	Item No.	€
TS2 3-phase SP 3-ph 75 A 50 kW	339094	1676,30
TS2 3-phase SP 3-ph 90 A 60 kW	326926	1973,30
TS2 3-phase SP 3-ph 120 A 78 kW	336482	2257,90

Accessories Information



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Special labelling/painting

Labeling according to your requirements – individualize your device with our special printings, special engravings or special lasering.

With a special painting, your device can be integrated technically and optically perfect into your project.

Special printing (minimum order amount 20 pcs.)

Item description	€
Special printing – order quantity 20..49 pcs. (each per colour)	9,70
Special printing – order quantity 50..99 pcs. (each per colour)	6,55
Special printing – order quantity 100..249 pcs. (each per colour)	5,25
Special printing – order quantity 250..499 pcs. (each per colour)	4,00
Special printing – order quantity 500..1000 pcs. (each per colour)	2,00
Special printing setup and tool costs (once for one-colour print – net price)	160,00
Special printing setup and tool costs (once for two-colour print – net price)	245,00

Special painting

Item description	€
Special painting – order quantity 1..9 pcs. (each)	22,40
Special painting – order quantity 10..49 pcs. (each)	15,40
Special painting – order quantity 50..100 pcs. (each)	11,20
Special painting setup costs (once per colour – net price)	160,00

Special engraving / special lasering

Item description	€
Engraving/lasering – order quantity 1..5 pcs. (each)	49,30
Engraving/lasering – order quantity 6..10 pcs. (each)	35,90
Engraving/lasering – order quantity 11..20 pcs. (each)	26,90



Communication interfaces

Bluetooth dongle to configure sensors via Thermokon USEapp:

All Thermokon devices with the USEapp logo can be comfortably set via Bluetooth (measuring ranges, measured values, limit values, BUS settings, ...) using mobile end devices such as smartphones or tablets based on Android® and Apple® OS.

Converter RS485 Modbus – USB:

Used to transmit Modbus signals to a computer.



Communication interface			
Item description	Item No.	On stock	€
Bluetooth dongle with micro-USB – communication between USEapp and devices USE-M/USE-L (net price)	668262	●	29,00
Converter RS485 Modbus - USB incl. driver CD for connection to a computer (net price)	668293	●	54,00



Inspection certificate 3.1 according to EN 10204

The inspection certificate documents traceability to national standards, measuring devices and methods for representing the physical units in accordance with the international unit system and includes two tested measured values according to customer specifications.

Material test reports are assigned to one sensor and can be created for measured values in:

- temperature at range -30..+150 °C
- humidity at range 5..95% rH.

Inspection certificate (please specify 2 measuring points)			
Item description	Item No.	On stock	€
Inspection certificate 3.1 (EN 10204) temperature – 2 values within range -30..+150 °C (net price)	119030	●	45,00
Inspection certificate 3.1 (EN 10204) humidity – 2 values within range 5..95% (net price)	665407	●	45,00

Mounting accessories enclosure USE

For easy and quick mounting of our sensors in the USE enclosures, we offer a variety of application-specific exchangeable sealing inserts, cable entries and mounting solutions. A quick screw connection is used to connect a protective hose. Requi-

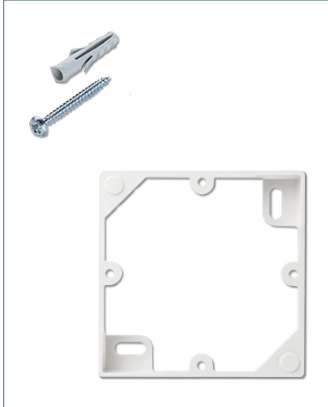
red standard accessories are already included in the scope of delivery of the sensor in most cases.



Replacement articles – mounting accessories USE			AS1
Item description	Item No.	On stock	€
Mounting clip enclosure USE-S pure white	667739	⊕	4,60
Mounting base enclosure USE-S pure white	667722	⊕	5,50
Mounting base enclosure USE-M pure white	668354	⊕	7,85
Mounting base enclosure USE-L pure white	668361	⊕	11,00
Mounting kit AKF10+ for enclosure USE-S	637978	⊕	9,20
Mounting kit universal for enclosure USE	698511	⊕	8,80
Sensor wire 1,5 m with RJ45 connector	628785	⊕	5,60
Sensor wire 3 m with RJ45 connector	708852	⊕	7,20
Sensor wire 7,5 m with RJ45 connector	708869	⊕	13,40

Accessories – cable entry and sealing inserts M16			AS1
Item description	Item No.	On stock	€
Cable entry M16 USE white, sealing insert Ø=8 mm (4 pcs)	641340	⊕	9,95
Flextherm M16 – sealing insert USE white, Ø=3..7 mm (10 pcs)	690683	⊕	9,95
Quick-type connector plastic conduit M16x1,5 black, for cable entry M16 (5 pcs)	669634	⊕	29,90

Accessories – cable entry and sealing inserts M20 M25			AS1
Item description	Item No.	On stock	€
Cable entry M20 USE white, sealing insert Ø=10 mm (4 pcs)	641357	⊕	9,95
Cable entry M25 USE white, sealing insert 4x Ø=7 mm (4 pcs)	641364	⊕	9,95
Sealing insert M20 USE white, Ø=8 mm (10 pcs)	641081	⊕	9,95
Sealing insert M20 USE white, Ø=6 mm (10 pcs)	641074	⊕	9,95
Sealing insert M20 USE white, 2x Ø=7 mm (10 pcs)	641333	⊕	9,95
Sealing insert M20 USE white, 2x Ø=6 mm (10 pcs)	641319	⊕	9,95



Mounting accessories general

With the appropriate rawplugs and screws, you will be able to install your device quickly at the desired installation location.

With the surface frame for our enclosure series 04, you will have additional storage space for the connection wire.

Rawplugs and screws			AS1
Item description	Item No.	On stock	€
Rawplugs and screws (2 pcs. each)	102209	⊕	0,80

Frame for surface mounting			AS1
Item description	Item No.	On stock	€
Frame for surface mounting WRF04	111584	⊕	12,40
Decorative frame pure white for JOY	681452	⊕	12,00



Power supply

If only 230 V is available on site, all 24 V devices can be supplied with the flush-mounted power supply unit.

Power supply			AS1
Item description	Item No.	On stock	€
PSU-UP24 – flush mount power supply 24 V (80..240 V ~-> 24 V =, 0,5 A)	645737	⊕	42,00

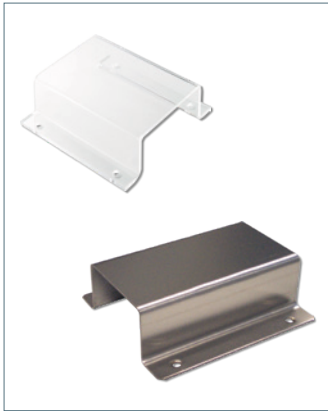
Enclosure protection/enclosures

For protection against damage to the enclosure due to external influences and/or weather conditions, we offer the proper protection:

- Ball stroke protection BS150 – for enclosure series 04
- Sun/rain protection RS150 – for enclosure series 04

For alternative mounting we offer the following accessories:

- Enclosure for surface mounting MDS – for MDS



Enclosure Protection			AS1
Item description	Item No.	On stock	€
Ball stroke protection BS150, transparent (for series WRF04)	647007	⊕	22,70
Sun/rain protection RS150	103329	⊕	22,70

Enclosures			AS1
Item description	Item No.	On stock	€
Enclosure for surface mounting MDS pure white	448512	⊕	48,20



airScan



Thermokon airScan consists of an USB transmitter/receiver with software to use your PC or Mac as a field strength measuring tool. Measuring frequency ranges the tool is used to define best routing places for EnOcean transmitter and receiver. airScan gives a quick overview of EnOcean telegrams, reading status, ID, field strength and manufacturer for EnOcean products.

An optional USB extension for optimal positioning of the transmitter/receiver, even at the ceiling is available.

Accessories airScan			
Item description	Item No.	On stock	€
EnOcean USB transceiver for airConfig/airScan (incl. license – net price)	566704	⊕	100,80
USB extension 3 m (net price)	574044	⊕	13,40



Accessories for antennas

Antenna extensions (10 m or 20 m) for convenient positioning of the antenna away from the receiver.

Magnetic antenna holder for easy positioning at an ideal position.

Accessories for antennas				AS1
Item description	Item No.	On stock	€	
Antenna extension 10 m	257206	⊕	56,10	
Antenna extension 20 m	257213	⊕	68,30	
Magnetic antenna holder form L, 180x180 mm (net price)	255097	⊕	14,30	



Power supply

If the energy from solar cells is not sufficient, many EasySens® transmitter are equipped with an additional battery/coin cell holder.

Battery			AS1
Item description	Item No.	On stock	€
Battery LS14250	315098	☹	4,00
Coin cell CR1220 (replacement for SRW01 BAT)	347006	☹	4,00
Coin cell CR1632	597814	☹	4,00
Coin cell CR2032	347013	☹	4,00



Software/Configuration

For the radio room operating unit SR06 LCD a programming interface is available to configure the device and to charge the energy storage.

All Thermokon devices with the airConfig logo can be configured comfortably via the software airConfig (free of charge, by download). This requires only an EnOcean USB transceiver to transmit the data from a computer to the device (bidirectional communication).

The configuration software for all Thermokon devices is free of charge and can be downloaded from the website in the newest version.

Software/Configuration			AS1
Item description	Item No.	On stock	€
Programming interface for configuration and charging (SR06 LCD)	597838	☹	34,80
airConfig (freeware via www.thermokon.com)			0,00
Software/Plug-In for configuration (free via www.thermokon.com)			0,00



Storage media

Our wireless room thermostat thanos SR has various setting options and can display graphics in the display. The required data is stored on a suitable SD card, which is already included in the delivery. Our room controller Joy also transmits various parameters via an SD card.

Storage media			AS1
Item description	Item No.	On stock	€
SD card (2 GB)	500098	⊕	11,30



Mounting

Mounting accessories for radio multi-sensor sensor SR-MDS for hollow ceiling installation.

Connector for the radio receiver STC-DO8 for extension STC-PLUS 4DO.

Mounting			AS1
Item description	Item No.	On stock	€
Enclosure for surface mounting SR-MDS pure white	514439	⊕	48,20
Mounting ring for hollow ceiling with retaining clips to be used with SR-MDS	627825	⊕	6,50
Connector STC-DO8 to STC-PLUS 4DO	517577	⊕	7,50

Valve adapters/enclosure protection SAB

Various valve adapters are available for adapting SAB+ and SAB05 to valves from different manufacturers. Additional types on request. To protect the SAB wireless valve actuator from dis-

mounting, we offer SAB Lock and a safety lock. For SAB05 an additional battery protection is available.



Valve adapters			
Item description	Item No.	On stock	€
Valve adapter SAB for Giacomini Z810 (22,6 mm)	634724	⊕	24,00
Valve adapter SAB for Oventrop Z809 (M30x1,0)	611978	⊕	24,00
Valve adapter SAB for Herz Z807 (M28 X 1,5 mm)	595070	⊕	24,00
Valve adapter SAB for Danfoss RA2000 Z802	589093	⊕	24,00
Valve adapter SAB for Danfoss RAV Z803	589109	⊕	24,00
Valve adapter SAB for Danfoss RAV-L Z804	589116	⊕	24,00
Valve adapter SAB for Danfoss Z800	589079	⊕	24,00
Valve adapter SAB for Danfoss Z801	589086	⊕	24,00
Valve adapter SAB for Danfoss Z805	615181	⊕	24,00
Further valve adapters on request			

Enclosure protection			
Item description	Item No.	On stock	€
SAB Lock – dismounting protection SAB	688611	⊕	6,00
Safety lock dismounting protection SAB	706148	⊕	10,40
Battery protection SAB05	595612	⊕	18,50

AS1

Mounting

An extensive range of mounting accessories simplifies installation of our sensors. It includes mounting flanges for the various pocket diameters for use at different temperature ranges, com-

pression fittings for cable sensors, installation set for averaging temperature sensors and frost protection thermostats and tightening straps with contact fluid.



Mounting flanges			AS1
Item description	Item No.	On stock	€
Mounting flange MF2 (for frost protection thermostats)	435642	⊕	6,30
Mounting flange MF6DS flexible (suitable for Ø=6 mm)	669016	⊕	6,30
Mounting flange MF4 (brass)	102438	⊕	5,10
Mounting flange MF6 (brass)	3407	⊕	6,30
Mounting flange MF7 (brass)	102360	⊕	6,30
Mounting flange MF8 (VA)	103305	⊕	18,80

Compression fittings			AS1
Item description	Item No.	On stock	€
KL4VA - Compression fittings G 1/4" for Ø=4 mm with cutting ring VA, stainless steel	103206	⊕	12,70
KL6VA - Compression fittings G 1/4" for Ø=6 mm with cutting ring VA, stainless steel	103213	⊕	12,70

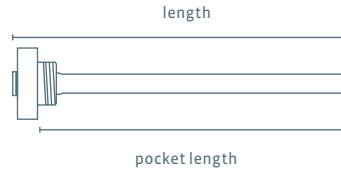
Installation sets			AS1
Item description	Item No.	On stock	€
Installation set TFR/MWF	458399	⊕	8,40
Mounting bracket with cable gland for duct sensors Ø=6 mm	670593	⊕	12,00

Tightening strap with contact fluid			AS1
Item description	Item No.	On stock	€
Tension clamp for pipes Ø up to 110 mm with contact fluid	658911	⊕	2,65
Tension clamp for pipes Ø up to 250 mm with contact fluid	648103	⊕	4,10
Tightening strap PA for pipes Ø up to 100 mm with contact fluid	668071	⊕	2,65
Syringe thermal contact fluid	102308	⊕	1,40



Thermowell pockets

For using our sensors in liquid media thermowell pockets are available for the standard mounting lengths made of brass and stainless steel, also without silicone if necessary.



Accessories – thermowell pockets brass for sensors with pocket Ø=6 mm						AS2
Item description	Length	Pocket length	Item No.	On stock	€	
MS-thermowell pocket 50 mm type THMSDS50	50 mm	36 mm	610995	☉	7,85	
MS-thermowell pocket 100 mm type THMSDS100	100 mm	86 mm	611008	☉	8,95	
MS-thermowell pocket 150 mm type THMSDS150	150 mm	136 mm	611015	☉	9,45	
MS-thermowell pocket 200 mm type THMSDS200	200 mm	186 mm	611022	☉	9,75	
MS-thermowell pocket 250 mm type THMSDS250	250 mm	236 mm	611985	☉	11,30	
MS-thermowell pocket 300 mm type THMSDS300	300 mm	286 mm	611039	☉	11,60	
MS-thermowell pocket 450 mm type THMSDS450	450 mm	436 mm	611046	☉	11,80	

Accessories – thermowell pockets stainless steel for sensors with pocket Ø=6 mm						AS2
Item description	Length	Pocket length	Item No.	On stock	€	
VA-thermowell pocket 50 mm type THVADS50	50 mm	36 mm	611152	☉	17,10	
VA-thermowell pocket 100 mm type THVADS100	100 mm	86 mm	611817	☉	18,90	
VA-thermowell pocket 150 mm type THVADS150	150 mm	136 mm	611824	☉	20,30	
VA-thermowell pocket 200 mm type THVADS200	200 mm	186 mm	611848	☉	21,40	
VA-thermowell pocket 250 mm type THVADS250	250 mm	236 mm	611862	☉	26,60	
VA-thermowell pocket 300 mm type THVADS300	300 mm	286 mm	611879	☉	27,80	
VA-thermowell pocket 450 mm type THVADS450	450 mm	436 mm	611893	☉	28,70	
VA-thermowell pocket 600 mm type THVADS600	600 mm	586 mm	611923	☉	35,20	
Pressure screw with sealing PTFE (without silicone) for thermowell pocket THVADS (10 pcs)			666473	☉	18,20	

Accessories – thermowell pockets stainless steel for sensors with pocket Ø=8 mm						AS2
Item description	Length	Item No.	On stock	€		
VA thermowell pocket 100 mm type THVA100 (KFK03)	100 mm	584180	☉	27,00		
VA thermowell pocket 150 mm type THVA150 (KFK03)	150 mm	584197	☉	28,30		
VA thermowell pocket 200 mm type THVA200 (KFK03)	200 mm	584203	☉	29,90		
VA thermowell pocket 250 mm type THVA250 (KFK03)	250 mm	594738	☉	31,40		



Bonded pockets

For the use of our immersion temperature sensors in systems with high pressure bonded pockets are available.

Accessories - bonded pockets					AS1
Item description	Length	Pocket length	Item No.	On stock	€
Bonded pocket St52-3 type ESH110	110 mm	100 mm	103459	☺	44,85
Bonded pocket St52-3 type ESH160	160 mm	150 mm	103466	☺	51,40
Bonded pocket St52-3 type ESH210	210 mm	200 mm	103473	☺	57,90
Bonded pocket St52-3 type ESH260	260 mm	250 mm	173247	☺	63,70



Mounting

Our installation accessories simplify mounting our sensors. Suitable mounting flanges are available for our humidity sensors. For the duct hygrostat the wall holder provides a secure attachment.

Mounting flanges			AS1
Item description	Item No.	On stock	€
Mounting flange MF19	527705	☹	11,70
Mounting flange MF20	612562	☹	11,70

Enclosure Protection			AS1
Item description	Item No.	On stock	€
Rain protection PA6 white, for outdoor humidity sensor	587709	☹	5,80

Wall mounting			AS1
Item description	Item No.	On stock	€
Wall mounting for duct hygrostat	429030	☹	38,00



Protection filters

The following replacement filters are available:

- Stainless steel, wire mesh – suitable for FTK +, FTA54 +
- PVDF – suitable for FP / FTP
- PTFE – suitable for FSK01

Filter elements			AS1
Item description	Item No.	On stock	€
Filter stainless steel, wire mesh (spare part)	231169	☉	8,80
Filter PVDF (spare part)	118583	☉	20,50
PTFE filter	429054	☉	41,70

Gases

We offer accessories for our air pressure and display units:

- Metal duct connectors – suitable for connection to air ducts
- Adapter 90° angle – suitable for all pressure hoses $\varnothing=4$ mm
- T-hose connector – suitable for the connection of several devices (pressure hoses $\varnothing = 4$ mm)
- Mounting bracket differential pressure switch – suitable for PS



Duct connectors				AS1
Item description	Length	Item No.	On stock	€
Adapter 90° angle for pressure hoses $\varnothing=4$ mm		668330	⊕	8,00
Metal duct connector MKS40	40 mm	265138	⊕	4,00
Metal duct connector MKS100	100 mm	302531	⊕	4,80

Pressure hoses				AS1
Item description		Item No.	On stock	€
T-hose connector for pressure hoses $\varnothing=4$ mm (10 pcs)		668323	⊕	29,90

Mounting bracket				AS1
Item description		Item No.	On stock	€
Mounting bracket differential pressure switch 110x80x20 mm		669009	⊕	3,50

Fluids

We offer accessories for our water pressure sensors:

- Stainless steel and brass fitting sets – suitable for DPL
- Connection cable 5 m with plug – suitable for DLF/DPL
- Connection adapter G1/4" to G1/2" – suitable for DLF
- Mounting bracket differential pressure transmitter – suitable for DPL



Screw Connection Kit			AS1
Item description	Item No.	On stock	€
Screw connection set Ø=6 mm stainless steel (2 pcs.)	373388	●	56,50
Screw connection set Ø=6 mm brass (2 pcs.)	373401	●	13,30
Screw connection set Ø=8 mm stainless steel (2 pcs.)	373395	●	64,90
Screw connection set Ø=8 mm brass (2 pcs.)	373418	●	13,40

Connection wires			AS1
Item description	Item No.	On stock	€
Connection wire DLF/DPL – connection plug and wire 5 m	668309	●	12,50

Adapters			AS1
Item description	Item No.	On stock	€
Connection adapter G 1/4" to G 1/2"	277068	●	8,90

Mounting bracket			AS1
Item description	Item No.	On stock	€
Mounting bracket differential pressure transmitter 40x40x60 mm	668892	●	8,90

» SENSOR CHARACTERISTICS

Temp. °C	PT100 Ohm	PT1000 Ohm	Ni1000 Ohm	Ni1000 TK5000 Ohm	KTY81-110 Ohm	KTY81-121 Ohm	KTY81-122 Ohm
-50	80,31	803,10	743,00	790,88	515	505	525
-40	84,27	842,70	791,00	830,83	567	557	577
-30	88,22	882,20	842,00	871,69	624	614	634
-20	92,16	921,60	893,00	913,48	684	674	694
-10	96,09	960,90	946,00	956,24	747	737	757
0	100,00	1.000,00	1.000,00	1.000,00	815	805	825
10	103,90	1.039,00	1.056,00	1.044,79	886	876	896
20	107,79	1.077,90	1.112,00	1.090,65	961	951	971
25	109,74	1.097,40	1.141,00	1.113,99	1.000	990	1.010
30	111,67	1.116,70	1.171,00	1.137,61	1.040	1.030	1.050
40	115,54	1.155,40	1.230,00	1.185,71	1.122	1.112	1.132
50	119,40	1.194,00	1.291,00	1.234,97	1.209	1.199	1.219
60	123,24	1.232,40	1.353,00	1.285,44	1.299	1.289	1.309
70	127,07	1.270,00	1.417,00	1.337,14	1.392	1.382	1.402
80	130,89	1.308,90	1.483,00	1.390,12	1.490	1.480	1.500
90	134,70	1.347,00	1.549,00	1.444,39	1.591	1.581	1.601
100	138,50	1.385,00	1.618,00	1.500,00	1.696	1.686	1.706
110	142,29	1.422,00	1.688,00	1.556,98	1.805	1.795	1.815
120	146,06	1.460,60	1.760,00	1.615,36	1.915	1.905	1.925
130	149,82	1.498,20	1.853,00	1.675,18	2.023	2.013	2.033
140	153,58	1.535,80	1.909,00	1.736,47	2.124	2.114	2.134
150	157,31	1.573,10	1.987,00	1.799,26	2.211	2.201	2.221

Temp. °C	KTY81-210 Ohm	FeT Ohm	LM235Z mVolt	BALCO 500 OHM	NTC 1,6K OHM	NTC1,8k Ohm	NTC2,2K OHM
-50	1.030	-	-	382,1	-	-	-
-40	1.135	-	2.332	399,8	53.370	40.375	73.060
-30	1.247	1.934,70	2.432	418,0	28.173	22.906	38.550
-20	1.367	2.030,41	2.532	435,6	15.489	13.477	21.200
-10	1.495	2.127,68	2.632	453,3	8.840	8.198	12.110
0	1.630	2.226,53	2.732	471,0	5.222	5.141	7.162
10	1.772	2.327,01	2.832	488,7	3.184	3.315	4.372
20	1.922	2.429,15	2.932	497,3	1.999	2.193	2.747
25	2.000	2.480,86	2.982	506,3	1.600	1.800	2.200
30	2.080	2.533,00	3.032	523,6	1.289	1.486	1.773
40	2.245	2.638,60	3.132	541,3	851,9	1.028	1.173
50	2.417	2.745,99	3.232	558,5	576,1	726	793
60	2.597	2.855,23	3.332	576,2	397,9	522	548
70	2.785	2.966,36	3.432	593,4	280,2	382	386
80	2.980	3.079,42	3.532	610,6	200,9	284	276
90	3.182	3.194,47	3.632	627,8	146,5	214	201
100	3.392	3.311,56	3.732	645,1	108,5	164	149
110	3.607	3.430,75	3.832	662,3	81,5	127	112
120	3.817	3.552,09	3.932	679,1	62,1	99	85
130	4.008	3.675,65	-	696,3	47,9	-	66
140	4.166	3.801,48	-	713,1	37,4	-	51
150	4.280	3.929,65	-	-	29,5	-	40

Temp. °C	NTC3K OHM	NTC 3,3K OHM	NTC 5K OHM	NTC 5,369 OHM	NTC-SAT OHM	NTC 10K KOHM	NTC 10K PRE KOHM
-50	-	-	333.914,00	-	-	667,83	-
-40	102.690	109.600	167.835,50	116.300	9.709	335,67	239,80
-30	53.730	57.820	88.341,50	66.190	9.462	176,68	135,20
-20	29.346	31.800	48.487,00	39.100	9.063	96,97	78,91
-10	16.674	18.160	27.649,00	23.890	8.468	55,30	47,54
0	9.822	10.740	16.325,40	15.060	7.658	32,65	29,49
10	5.976	6.558	9.951,75	9.778	6.665	19,90	18,79
20	3.750	4.121	6.246,85	6.517	5.573	12,49	12,26
25	3.000	3.300	5.000,00	5.369	5.025	10,00	10,00
30	2.417	2.660	4.028,00	4.449	4.493	8,06	8,19
40	1.598	1.759	2.662,45	3.104	3.519	5,32	5,59
50	1.081	1.190	1.800,50	2.209	2.704	3,60	3,89
60	747,3	822	1.243,55	1.600	2.059	2,49	2,76
70	526,8	579	875,80	1.178	1.566	1,75	1,99
80	378,3	415	628,09	880,5	1.198	1,26	1,46
90	276,3	302	458,06	666,6	925	0,92	1,08
100	204,9	224	339,32	510,3	725	0,68	0,82
110	154,2	168	255,03	393,6	577	0,51	0,62
120	117,7	128	194,30	305,2	468	0,39	0,48
130	90,9	98	149,91	238,9	386	0,30	0,38
140	71,1	77	117,04	188,4	325	0,23	0,30
150	56,2	60	92,40	150,2	278	0,18	0,24

Temp. °C	NTC10-CAREL OHM	NTC12K OHM	NTC20k kOhm	NTC30K OHM	NTC50K OHM	NTC100K OHM
-50	-	-	1.490,40	-	4.168.934	-
-40	186.796	396.422,72	803,20	1.219.114	2.033.606	3.216.000
-30	110.881	204.948,28	412,80	622.924	1.038.697	1.721.000
-20	67.683	111.626,16	220,60	331.871	553.243	955.400
-10	42.431	63.671,20	122,40	183.696	306.183	548.800
0	27.280	37.841,88	70,20	105.305	175.508	325.500
10	17.961	23.332,63	41,60	62.343	103.903	198.900
20	12.092	14.869,02	25,34	38.019	63.364	125.000
25	10.000	12.000	20,00	30.000	50.000	100.000
30	8.312	9.761,37	15,88	23.828	39.714	80.530
40	5.826	6.582,83	10,21	15.317	25.529	53.140
50	4.159	4.548,87	6,71	10.079	16.799	35.860
60	3.020	3.213,88	4,51	6.778	11.297	24.690
70	2.228	2.317,13	3,10	4.651	7.750,9	17.330
80	1.668	1.701,83	1,82	3.251	5.418,7	12.830
90	1.266	1.271,35	1,54	2.313	3.854,8	8.996
100	974	964,72	1,11	1.673	2.787,2	6.636
110	758	742,67	0,81	1.228	2.046,1	4.966
120	597	579,39	0,60	915	1.523,4	3.766
130	475	457,60	0,45	-	1.149,5	2.892
140	382	365,57	0,34	-	878,2	2.247
150	310	-	0,27	-	678,8	1.766

» SWITCH RANGES FOR FLUSH MOUNTED DEVICES

Type	Dimensions (WxH)	Price class	Colours	SR06 LCD	SR07 / SR07 P	WRF06 CO2/LCD	FTW06	WRF06 / WRF06I	WRF07	Radio switches
Berker										
Berker S.1	55x55	1	polar white (b/m), white, anthracite, red	■	■	■	■	■	■	■
Berker B.3	55x55	3	polar white (b/m), anthracite	■	■	■	■	■	■	■
Berker B.7	55x55	3	polar white (b/m), anthracite, alu painted	■	■	■	■	■	■	■
Berker Q.1	60x60	2	polar white (b/m), anthracite, red, green, orange	-	-	-	-	■	■	-
Berker Q.3	60x60	2	polar white (b/m), anthracite, red, green, orange	-	-	-	-	■	■	-
Berker K.1	72x57	2	polar wh. (b/m), anthracite, red, green, orange, yellow	-	-	-	-	■	■	-
Berker K.5	72x57	3	-	-	-	-	-	■	■	-
Busch-Jaeger										
Busch-balance® SI	55x55	1	alpin white	■	■	■	■	■	■	■
Busch-Duro 2000® SI	54x54	2	white	-	-	-	-	■	■	-
Reflex SI	54x54	1	alpin white	-	-	-	-	■	■	-
solo®	63x63	2	studio white (m), ivory white, yellow, grey metallic	■	■	■	■	■	■	■
future® linear	63x63	2	studio wh. (b/m), ivory wh., anthracite, alu silver, black	■	■	■	■	■	■	■
Impuls	71x71	2	studio white (m), yellow, green, blue, red, black	-	-	-	-	■	■	-
Busch-axcent®	63x63	2	studio white (m), yellow, green, blue, red, black	■	■	■	■	■	■	■
alpha nea®	70x56	2	studio white (b&m), ivory white	-	-	-	-	■	■	-
Gira										
E2 (System55)	55x55	1	pure white (b/m), alu, anthracite	■	■	■	■	■	■	■
E3	55x55	1	various colours	■	■	■	■	■	■	■
Standard 55 (Syst55)	55x55	2	pure white (b/m), creme white	■	■	■	■	■	■	■
Esprit (System55)	55x55	4	various colours	■	■	■	■	■	■	■
Event (System55)	55x55	2	various colours	■	■	■	■	■	■	■
F100	71x71	2	pure white (b), brilliant chrome, brass, platin	■	■	■	■	■	■	■
Jung										
LS 990 plastic	70x70	2	white, alpin white, black, light grey	-	-	■	■	■	■	■
A 500	55x55	1	alpin white, alu (painted), black	■	■	■	■	■	■	■
AS 500/AS 500 antib.	55x55	2	white, alpin white	■	■	■	■	■	■	■
A Plus	55x55	2	alpin white, alu (painted), anthracite, blue	■	■	■	■	■	■	■
ACreation	55x55	2	alpin white, alu, anthracite, black, champagne, mokka	■	■	■	■	■	■	■
CD 500	67x67	2	white, alpin white, black, grey, light grey, brown	-	-	■	■	■	■	-
Merten										
M-Smart	55,4x55,4	1	white (b/m), polar wh. (b/m), active wh. (b), anthracite	■	■	■	■	■	■	■
M-Arc	55,4x55,4	2	white (b/m), polar wh. (b/m), active wh. (b), anthracite	■	■	■	■	■	■	■
M-Plan	55,4x55,4	2	wh. (b/m), polar wh. (b/m), active wh. (b), alu, anthracite	■	■	■	■	■	■	■
1-M	55,4x55,4	2	white (b), polar white (b), active white (b)	-	-	■	■	■	■	■
Atelier-M	55,4x55,4	2	white (b), polar white (b), active white (b)	-	-	■	■	■	■	■
M-Pure	55,4x55,4	2	wh. (b/m), polar wh. (b/m), active wh. (b), alu, anthracite	■	■	■	■	■	■	■
Artec	66,3x66,3	2	white, polar wh. (m), light grey, dark brasil, grey black	-	-	■	■	■	■	■
Artec stainless steel	66,3x66,3	3	-	-	-	■	■	■	■	■
Antik	66,3x66,3	2	white (m), polar white (m), dark brasil, antique brass	-	-	■	■	■	■	■
Peha										
Aura	55x55	2	pure white alu (painted), anthracite	-	-	■	■	■	■	■
Aura glass frame	55x55	3	matt-pure white, clear-alu, matt-mintgreen...	-	-	■	■	■	■	■

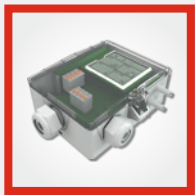
Price classes: 1 - price equal to Gira E2
2 - other switch ranges

3 - stainless steel | glass | aluminium
4 - Gira Esprit

b = brilliant
m = matt

USE

Product overview



Temperature

RPF40+	Pendulum temp. sensor large rooms	438
RPF100+	Pendulum temp. sensor large rooms	438
RDF-IR	Ceiling temperature sensor	438
AKF10+	Duct temperature sensor	438
MWF+	Averaging temperature sensor	438
MWF400+	Averaging temperature sensor	438
SFK02+	Temperature sensor liquid temp.	440
SFK02+ FR	Temperature sensor liquid temp.	440
SFKH02+	Temperature sensor liquid temp.	440
TFR+	Thermostat frost protection	440
AGS54+	Outdoor temperature sensor	442
AGS55+	Outdoor temperature sensor	442
VFG54+	Temperature sensor pipe	442
AF25+	Temperature sensor pipe	442
PR25+	Temperature sensor pipe	444
OF14+	Temperature sensor glass surface	444
TF14+	Cable temperature sensor	444
TF25+	Cable temperature sensor	444

Humidity

FTP+	Pendulum sensor Temp. + rH	446
FT-RDF18+	Ceiling sensor Temp. + rH	446
FTB+	Wall sensor Temp. + rH	446
FTK+	Duct sensor Temp. + rH	446
WSA	Outdoor sensor Temp. + rH	446
FTA54+	Outdoor sensor Temp. + rH	446
LS02+	Leakage sensor	446
WK01+	Condensation sensor	446

Pressure and Velocity

DPA+	Differential pressure transducer / Volume flow transducer	448
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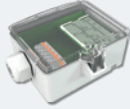

Air Quality

LP+	Pendulum air quality sensor CO2/VOC	450
LK+	Duct air quality sensor CO2/VOC	450
LK+ CO2 100	Duct air quality sensor CO2	450
LA+	Outdoor air quality sensor VOC	450

Light & Motion

Li65+	Outdoor light sensor Temp./rH/Pa	456
LDF+	Ceiling light sensor	456

» PRODUCT OVERVIEW

TEMPERATURE 						
		USE-S	USE-M	USE-M (LCD)	USEapp	
Room sensors	RPF40+	RPF40+ active	✓			
	RPF100+	RPF100+ active	✓			
	RDF-IR	V/VV		✓	✓	
Duct sensors	AKF10+	passive	✓			
		TRV/TRA	✓			
		LCD TRV/TRA			✓	✓
		TRV relay		✓		✓
		LCD TRV relay			✓	✓
		BUS		✓		✓
		LCD BUS			✓	✓
	MWF+	passive	✓			
		TRV/TRA	✓			
		LCD TRV/TRA			✓	✓
		TRV relay		✓		✓
		LCD TRV relay			✓	✓
		BUS		✓		✓
		LCD BUS			✓	✓
	MWF400+	passive	✓			
		TRV/TRA	✓			
		LCD TRV/TRA			✓	✓
		TRV relay		✓		✓
		LCD TRV relay			✓	✓
		BUS		✓		✓
		LCD BUS			✓	✓

Explanation: ■ included in delivery □ optional - not compatible

Cable entry	Mounting clip	Mounting base	Mounting flange	Accessories
M16	-	■	-	SET 2
M16	-	■	-	SET 2
M16	-	■	-	SET 2
M16	■	□	□	SET 1
M16	■	□	□	SET 1
M16	-	□	■	SET 2
M25	-	□	■	SET 2
M25	-	□	■	SET 2
M25	-	□	■	SET 2
M25	-	□	■	SET 2
M16	-	-	■	SET 2
M16	-	-	■	SET 2
M16	-	□	■	SET 2
M25	-	□	■	SET 2
M25	-	□	■	SET 2
M25	-	□	■	SET 2
M25	-	□	■	SET 2
M16	■	□	□	SET 1
M16	■	□	□	SET 1
M16	-	□	■	SET 2
M25	-	□	■	SET 2
M25	-	□	■	SET 2
M25	-	□	■	SET 2
M25	-	□	■	SET 2

ACCESSORIES (included in delivery)

SET 1	Cable entry M16	1x
	Cover screw	1x
	Mounting clip	1x
	Sealing insert (rubber based)	1x
	Screws (countersunk head)	2x
	Screw cover	1x
SET 2	Cover screw	1x
	Screws (rounded head)	2x
	Rawlplugs	2x
	Screws (countersunk head)	2x
	Screw cover	1x

TEMPERATURE 

							
			USE-S	USE-M	USE-M (LCD)	USE-L	USE
Immersion sensors	SFK02+	passive	✓				
		TRV/TRA	✓				
		LCD TRV/TRA			✓		
		TRV relay		✓			
		LCD TRV relay			✓		
		BUS		✓			
		LCD BUS			✓		
	SFK02+ FR	passive	✓				
		TRV/TRA	✓				
		LCD TRV/TRA			✓		
		TRV relay		✓			
		LCD TRV relay			✓		
		BUS		✓			
		LCD BUS			✓		
	SFKH02+	passive	✓				
		TRV/TRA	✓				
		LCD TRV/TRA			✓		
		TRV relay		✓			
		LCD TRV relay			✓		
		BUS		✓			
		LCD BUS			✓		
Frost protect.	TFR+	TFR+				✓	

Explanation: included in delivery optional - not compatible

Eapp					
Eapp	Cable entry	Mounting clip	Mounting base	Mounting flange	Accessories
	M16	-	-	-	SET 2
	M16	-	-	-	SET 2
✓	M16	-	-	-	SET 2
✓	M25	-	-	-	SET 2
✓	M25	-	-	-	SET 2
✓	M25	-	-	-	SET 2
✓	M25	-	-	-	SET 2
	M16	-	-	-	SET 2
	M16	-	-	-	SET 2
✓	M16	-	-	-	SET 2
✓	M25	-	-	-	SET 2
✓	M25	-	-	-	SET 2
✓	M25	-	-	-	SET 2
✓	M25	-	-	-	SET 2
✓	M25	-	-	-	SET 2
	M16	-	-	-	SET 2
	M16	-	-	-	SET 2
✓	M16	-	-	-	SET 2
✓	M25	-	-	-	SET 2
✓	M25	-	-	-	SET 2
✓	M25	-	-	-	SET 2
✓	M25	-	-	-	SET 2
	M16	-	■	□	SET 2

ACCESSORIES (included in delivery)

SET 1	Cable entry M16	1x
	Cover screw	1x
	Mounting clip	1x
	Sealing insert (rubber based)	1x
	Screws (countersunk head)	2x
	Screw cover	1x
SET 2	Cover screw	1x
	Screws (rounded head)	2x
	Rawlplugs	2x
	Screws (countersunk head)	2x
	Screw cover	1x


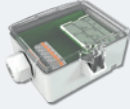

TEMPERATURE 						
		USE-S	USE-M	USE-M (LCD)	USEapp	
Outdoor sensors	AGS54+	passive	✓			
	AGS55+	passive	✓			
		TRV/TRA	✓			
		LCD TRV/TRA			✓	✓
		TRV relay		✓		✓
		LCD TRV relay			✓	✓
		BUS		✓		✓
		LCD BUS			✓	✓
Contact sensors	VFG54+	passive	✓			
		TRV/TRA	✓			
		LCD TRV/TRA			✓	✓
		TRV relay		✓		✓
		LCD TRV relay			✓	✓
		BUS		✓		✓
		LCD BUS			✓	✓
	AF25+	TRV/TRA	✓			
		LCD TRV/TRA			✓	✓
		TRV relay		✓		✓
		LCD TRV relay			✓	✓
		BUS		✓		✓
		LCD BUS			✓	✓

Explanation: ■ included in delivery □ optional - not compatible

Cable entry	Mounting clip	Mounting base	Mounting flange	Accessories
M16	□	■	-	SET 2
M16	□	■	-	SET 2
M16	□	■	-	SET 2
M16	□	■	-	SET 2
M25	□	■	-	SET 2
M25	□	■	-	SET 2
M25	□	■	-	SET 2
M25	□	■	-	SET 2
M16	-	-	-	SET 2
M16	-	-	-	SET 2
M16	-	-	-	SET 2
M25	-	-	-	SET 2
M25	-	-	-	SET 2
M25	-	-	-	SET 2
M25	-	-	-	SET 2
M16	-	■	-	SET 2
M16	-	■	-	SET 2
M25	-	■	-	SET 2
M25	-	■	-	SET 2
M25	-	■	-	SET 2
M25	-	■	-	SET 2

ACCESSORIES (included in delivery)

SET 1	Cable entry M16	1x
	Cover screw	1x
	Mounting clip	1x
	Sealing insert (rubber based)	1x
	Screws (countersunk head)	2x
	Screw cover	1x
SET 2	Cover screw	1x
	Screws (rounded head)	2x
	Rawlplugs	2x
	Screws (countersunk head)	2x
	Screw cover	1x

TEMPERATURE 					
		USE-S	USE-M	USE-M (LCD)	USEapp
Contact sensors	PR25+	TRV/TRA	✓		
		LCD TRV/TRA			✓
		TRV relay		✓	
		LCD TRV relay			✓
		BUS		✓	
		LCD BUS			✓
	OF14+	TRV/TRA	✓		
		LCD TRV/TRA			✓
		TRV relay		✓	
		LCD TRV relay			✓
		BUS		✓	
		LCD BUS			✓
Cable sensors	TF14+	TRV/TRA	✓		
	TF25+	TRV/TRA	✓		
		LCD TRV/TRA			✓
		TRV relay		✓	
		LCD TRV relay			✓
		BUS		✓	
		LCD BUS			✓

Explanation: ■ included in delivery □ optional - not compatible

Cable entry	Mounting clip	Mounting base	Mounting flange	Accessories
M16	-	■	-	SET 2
M16	-	■	-	SET 2
M25	-	■	-	SET 2
M25	-	■	-	SET 2
M25	-	■	-	SET 2
M25	-	■	-	SET 2
M16	-	■	-	SET 2
M16	-	■	-	SET 2
M25	-	■	-	SET 2
M25	-	■	-	SET 2
M25	-	■	-	SET 2
M25	-	■	-	SET 2
M16	-	■	□	SET 2
M16	-	■	□	SET 2
M16	-	■	□	SET 2
M25	-	■	□	SET 2
M25	-	■	□	SET 2
M25	-	■	□	SET 2
M25	-	■	□	SET 2

ACCESSORIES (included in delivery)

SET 1	Cable entry M16	1x
	Cover screw	1x
	Mounting clip	1x
	Sealing insert (rubber based)	1x
	Screws (countersunk head)	2x
	Screw cover	1x
SET 2	Cover screw	1x
	Screws (rounded head)	2x
	Rawlplugs	2x
	Screws (countersunk head)	2x
	Screw cover	1x

» PRODUCT OVERVIEW


HUMIDITY 						
		USE-S	USE-M	USE-M (LCD)	USEApp	
Room sensors	FTP+	VV/AA		✓		
	FT-RDF18+	VV/AA	✓			
	FTB+	VV/AA		✓		
Duct sensors	FTK+	VV/AA	✓			
		LCD VV/AA			✓	
		VV relay		✓		✓
		LCD VV relay			✓	✓
		BUS		✓		✓
		LCD BUS			✓	✓
Outdoor sensors	WSA	VV/AA	✓			
		BUS		✓		✓
	FTA54+	VV		✓		
		AA		✓		
		LCD VV/AA			✓	✓
		VV relay		✓		✓
		LCD VV relay			✓	✓
		BUS		✓		✓
		LCD BUS			✓	✓
		Condensation/ Leakage	LS02+	LS02+	✓	
WK01+	24 V		✓			
	ext. 24 V		✓			
	230 V			available Q3 2018		
	ext. 230 V			available Q3 2018		

Explanation: ■ included in delivery □ optional - not compatible

Cable entry	Mounting clip	Mounting base	Mounting flange	Accessories
M16	-	■	-	SET 2
M16	-	■	-	SET 2
M16	-	■	-	SET 2
M16	-	□	■	SET 2
M16	-	□	■	SET 2
M25	-	□	■	SET 2
M25	-	□	■	SET 2
M25	-	□	■	SET 2
M25	-	□	■	SET 2
M16	-	-	-	SET 2
M25	-	-	-	SET 2
M16	-	■	-	SET 2
M16	-	■	-	SET 2
M16	-	■	-	SET 2
M25	-	■	-	SET 2
M25	-	■	-	SET 2
M25	-	■	-	SET 2
M25	-	■	-	SET 2
M16	-	-	-	SET 2
M20	-	-	-	SET 2
M20	-	■	-	SET 2

ACCESSORIES (included in delivery)

SET 1	Cable entry M16	1x
	Cover screw	1x
	Mounting clip	1x
	Sealing insert (rubber based)	1x
	Screws (countersunk head)	2x
	Screw cover	1x
SET 2	Cover screw	1x
	Screws (rounded head)	2x
	Rawlplugs	2x
	Screws (countersunk head)	2x
	Screw cover	1x

PRESSURE & VELOCITY 				
		USE-L	USE-L (LCD)	USEapp
Differential pressure transducer	DPA+			
	VV	■		
	AA Dual VV/AA	■		■
	LCD VV/AA LCD Dual VV/AA		■	■
	VV relay	■		■
	LCD VV relay LCD Dual 4xV		■	■
	BUS Dual BUS	■		■
LCD BUS LCD Dual BUS		■	■	




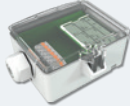

Explanation: ■ included in delivery □ optional - not compatible

Cable entry	Mounting clip	Mounting base	Mounting flange	Accessories
M16	-	■	-	SET 2
M16	-	■	-	SET 2
M16	-	■	-	SET 2
M25	-	■	-	SET 2
M25	-	■	-	SET 2
M25	-	■	-	SET 2
M25	-	■	-	SET 2

ACCESSORIES (included in delivery)

SET 1	Cable entry M16	1x
	Cover screw	1x
	Mounting clip	1x
	Sealing insert (rubber based)	1x
	Screws (countersunk head)	2x
	Screw cover	1x
SET 2	Cover screw	1x
	Screws (rounded head)	2x
	Rawlplugs	2x
	Screws (countersunk head)	2x
	Screw cover	1x

» PRODUCT OVERVIEW






AIR QUALITY 						
			USE-S	USE-M	USE-M (LCD)	USEapp
Room sensors	LP+	V			✓	
Duct sensors	LK+ CO2+VOC	V/VV		✓		
		AA		✓		✓
		LCD VV/AA			✓	✓
		3xV/4xV		✓		✓
		LCD 3xV/4xV			✓	✓
		VV relay		✓		✓
		LCD VV relay			✓	✓
		BUS		✓		✓
		LCD BUS			✓	✓
		Temp BUS		✓		✓
		LCD Temp BUS			✓	✓
		Temp_rH BUS		✓		✓
		LCD Temp_rH BUS			✓	✓

Explanation: ■ included in delivery □ optional - not compatible

Cable entry	Mounting clip	Mounting base	Mounting flange	Accessories
M16	-	■	-	SET 2
M16	-	-	■	SET 2
M16	-	-	■	SET 2
M16	-	-	■	SET 2
M20	-	-	■	SET 2
M20	-	-	■	SET 2
M25	-	-	■	SET 2
M25	-	-	■	SET 2
M25	-	-	■	SET 2
M25	-	-	■	SET 2
M25	-	-	■	SET 2
M25	-	-	■	SET 2
M25	-	-	■	SET 2
M25	-	-	■	SET 2

ACCESSORIES (included in delivery)

SET 1	Cable entry M16	1x
	Cover screw	1x
	Mounting clip	1x
	Sealing insert (rubber based)	1x
	Screws (countersunk head)	2x
	Screw cover	1x
SET 2	Cover screw	1x
	Screws (rounded head)	2x
	Rawlplugs	2x
	Screws (countersunk head)	2x
	Screw cover	1x






AIR QUALITY 						
		USE-S	USE-M	USE-M (LCD)	USEapp	
Duct sensors	LK+ CO2 100	V/VV		✓		
		AA		✓	✓	
		LCD VV/AA			✓	✓
		3xV		✓		✓
		LCD 3xV			✓	✓
		VV relay		✓		✓
		LCD VV relay			✓	✓
		Temp BUS		✓		✓
		LCD Temp BUS			✓	✓
		Temp_rH BUS		✓		✓
		LCD Temp_rH BUS			✓	✓

Explanation: ■ included in delivery □ optional - not compatible

Cable entry	Mounting clip	Mounting base	Mounting flange	Accessories
M16	-	□	■	SET 2
M16	-	□	■	SET 2
M16	-	□	■	SET 2
M20	-	□	■	SET 2
M20	-	□	■	SET 2
M25	-	□	■	SET 2
M25	-	□	■	SET 2
M25	-	□	■	SET 2
M25	-	□	■	SET 2
M25	-	□	■	SET 2
M25	-	□	■	SET 2

ACCESSORIES (included in delivery)

SET 1	Cable entry M16	1x
	Cover screw	1x
	Mounting clip	1x
	Sealing insert (rubber based)	1x
	Screws (countersunk head)	2x
	Screw cover	1x
SET 2	Cover screw	1x
	Screws (rounded head)	2x
	Rawlplugs	2x
	Screws (countersunk head)	2x
	Screw cover	1x




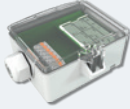

AIR QUALITY 					
		USE-S	USE-M	USE-M (LCD)	USEapp
Outdoor sensors	LA+	V	✓		
		VV/A/AA	✓		✓
		LCD VV/AA		✓	✓
		3xV	✓		✓
		LCD 3xV		✓	✓
		VV relay	✓		✓
		LCD VV relay		✓	✓
		BUS	✓		✓
		LCD BUS		✓	✓
		Temp BUS	✓		✓
		LCD Temp BUS		✓	✓
		Temp_rH BUS	✓		✓
		LCD Temp_rH BUS		✓	✓

Explanation: ■ included in delivery □ optional - not compatible

Cable entry	Mounting clip	Mounting base	Mounting flange	Accessories
M16	-	■	-	SET 2
M16	-	■	-	SET 2
M16	-	■	-	SET 2
M20	-	■	-	SET 2
M20	-	■	-	SET 2
M25	-	■	-	SET 2
M25	-	■	-	SET 2
M25	-	■	-	SET 2
M25	-	■	-	SET 2
M25	-	■	-	SET 2
M25	-	■	-	SET 2
M25	-	■	-	SET 2
M25	-	■	-	SET 2

ACCESSORIES (included in delivery)

SET 1	Cable entry M16	1x
	Cover screw	1x
	Mounting clip	1x
	Sealing insert (rubber based)	1x
	Screws (countersunk head)	2x
	Screw cover	1x
SET 2	Cover screw	1x
	Screws (rounded head)	2x
	Rawlplugs	2x
	Screws (countersunk head)	2x
	Screw cover	1x

LIGHT & MOTION 						
			USE-S	USE-M	USE-M (LCD)	USEapp
Multi sensors	Li65+	V/VV/3xV/4xV		✓		✓
		A/AA		✓		✓
		Temp BUS		✓		✓
		Temp_rH BUS		✓		✓
		Temp_rH_hPa BUS		✓		✓
Light sensors	LDF+	V/A		✓		✓
		Dual VV/AA		✓		✓
		BUS		✓		✓
		Dual BUS		✓		✓

Explanation: ■ included in delivery □ optional - not compatible

Cable entry	Mounting clip	Mounting base	Mounting flange	Accessories
M16	-	■	-	SET 2
M16	-	■	-	SET 2
M25	-	■	-	SET 2
M25	-	■	-	SET 2
M25	-	■	-	SET 2
M16	-	■	-	SET 2
M16	-	■	-	SET 2
M25	-	■	-	SET 2
M25	-	■	-	SET 2

ACCESSORIES (included in delivery)

SET 1	Cable entry M16	1x
	Cover screw	1x
	Mounting clip	1x
	Sealing insert (rubber based)	1x
	Screws (countersunk head)	2x
	Screw cover	1x
SET 2	Cover screw	1x
	Screws (rounded head)	2x
	Rawlplugs	2x
	Screws (countersunk head)	2x
	Screw cover	1x

Glossary



OUTPUTS

A, AA, 2A	1 resp. 2 outputs 4..20 mA; output values depending on product
V, VV, 3xV, 4xV or 2V, 3V, 4V	1, 2, 3, 4 outputs 0..10 V; output values depending on product
AS, AAS, VS, VVS	1 resp. 2 active outputs + 1 passive output temperature (S)
TRA	output 4..20 mA, digit for measuring range temperature following
TRV	output 0..10 V, digit for measuring range temperature following
TRA1/TRV1	range -50..+50 °C
TRA2/TRV2	range -10..+120 °C
TRA3/TRV3	range 0..+50 °C
TRA4/TRV4	range 0..+160 °C
TRA5/TRV5	range 0..+250 °C
TRA6/TRV6	range 0..+400 °C
TRA7/TRV7	range 0..+600 °C
TRA8/TRV8	range -15..+35 °C
MultiRange	range adjustable at the device

SI-PROTECTION

Changes in temperature are causing formation of humidity. Thus, there is a risk that the humidity can permeate in the contact point of the sensor. As a result, the sensor would corrode and oxygenate. Thus, the contact point would become unreliable. The SI-Protection procedure provides the contact point with epoxy gum and a fluidized bed coating which unites with the insulation material of the wire. Thus, a complete unit is built protecting the sensor against vibrations and humidity.



DUAL CHANNEL – SELF CALIBRATION

Dual Channel self calibration utilizes an independent 2nd optical beam to compare and reference the measuring beam. Because the 2nd beam is used only once a day it will wear off much less resulting in a negligible error. Contrary to products using the commonly used ABC-Logic™, dual channel sensors can be used for all applications including hospitals, casinos, horticulture and livestock etc, which are in use 24/7.

COMMUNICATION

EasySens®	Thermokon radio based on EnOcean IEC 14543-3-10
BACnet	RS485 BACnet (MS/TP), communication protocol specifically designed for building automation; BACnet IP, if mentioned in catalogue
KNX	EIB-KNX interface
LON	LON FTX, communication protocol specifically designed for building automation; other standards, if mentioned in catalogue
Modbus	RS485 Modbus RTU
dS	digitalSTROM

ROOM OPERATING UNITS OPERATING ELEMENTS

P	potentiometer (setpoint adjustment)
MS	slide switch
S	switch (e.g. for fan stages)
T	button (e.g. for occupancy status)
D	LED
LCD	inclusive display
TLF	traffic light showing air quality (3 LEDs)
AZ	Automatic zero-point calibration

TERMS AND CONDITIONS

Orders

We will happily take your order by phone, email or fax, stating the product name and item number from the catalogue. Please do not hesitate to contact us for technical support or support with specific applications or sensor technology.

Delivery Time

We stock a variety of standard sensors in limited quantities, of which delivery is within 1 week, often immediately after receipt of order. Delivery times for larger quantities or custom designs available on request.

Pricing

All prices are list prices in € and do not include value added tax. Prices are valid from 1st April 2018. All previous prices are invalid.

Delivery Conditions

Delivery is done ex works by parcel or forwarding service, excluding cost for packing / insurance.

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Catalogue products can be returned within a period of 6 months after delivery for 2/3 credit of the initial purchase price. Only unused products in original packing will be accepted. Custom manufactured products such as room sensors with control elements, custom engraving, custom varnish or custom printing can not be returned.

Our general business and warranty conditions are available on www.thermokon.com or can be send to you on request. Subject to technical and price modifications; no responsibility is accepted for the accuracy of this information. Illustrations may vary.

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Publisher: Thermokon Sensortechnik GmbH, Platanenweg 1, 35756 Mittenaar, Managing Director Harald Zygan
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HOME OF SENSOR TECHNOLOGY

CONTACT

Thermokon Sensortechnik GmbH

Platanenweg 1 | 35756 Mittenaar | GERMANY
Phone: +49 2778 6960-0 | Fax: +49 2778 6960-400
email@thermokon.de | www.thermokon.com

AUSTRIA

Thermokon Components GmbH

Heid-Werkstraße 4 | 2000 Stockerau
Phone: +43 2266 67485 | Fax: +43 2266 67485-34
info@thermokon.at | www.thermokon.at

FINLAND

Thermokon Sensor Technology Finland OY

Edelfeltinkatu 13 | 48200 Kotka
Phone: +358 40 5525 442
info@thermokon.fi | www.thermokon.fi

NETHERLANDS

Thermokon Sensor Technology Nederland B.V.

Rozenstraat 11 | 6361 HS Nuth
Phone: +31 65 05 5 61 99
email@thermokon.nl | www.thermokon.nl

SWEDEN

Thermokon-Danelko Elektronik AB

Metallgatan 1b | 26272 Ängelholm
Phone: +46 4 3144 84 54 | Fax: +46 4 3114 19 0
info@thermokon.se | www.thermokon.se

SWITZERLAND

Thermokon Sensortechnik Schweiz AG

Zürichstraße 46 | 8303 Bassersdorf
Phone: +41 44 752 50 00 | Fax: +41 44 752 50 01
info@thermokon.ch | www.thermokon.ch

CHINA

Thermokon Automation Equipment Co. Ltd.

479 Chun Dong Road | Xin Zhuang Industry Park,
Building C-1, 2/Floor | 201108 Shanghai
Phone: +86 21 5176 0211 | Fax: +86 21 5176 0213
info@thermokon.asia | www.thermokon.asia

HONG KONG

Thermokon Sensor Technology Ltd.

Flat 6, 21/F., Lucida Industrial Building
43, Wang Lung Street | Tsuen Wan | Hong Kong
Phone: +852 3628 3760 | Fax: +852 3628 3762
info@thermokon.asia | www.thermokon.asia