

# PRODUCT CATALOGUE 2021



Thermostats



I/O Units



U-DDC controllers



Indoor Temperature Sensors



Humidity Sensors



Pressure Controllers  
Transducers,  
Temperature Sensors



Cable Sensors



Weather Stations  
& Weather Sensors



Various  
Modbus Sensors



Brightness &  
Motion Sensors

Why Andivi?

# No.1 for Automation



## PERFORMANCE

All Andivi products have been engineered to superiorly perform at every level.



## HIGH QUALITY

Our products have been carefully thought through and created to last.



## CUSTOMISATION

Our trusted engineers will help you with customization requests for your special projects.



## TECHNICAL SUPPORT

A greater value for end-clients and system integrators due to fast & professional technical support.



## INTELLIGENCE

Building Intelligence on deep and dynamic, yet user-friendly level: The Way Your Building Wants It.



## SOLUTIONS

See how our technology is being integrated into products and interactive experiences.



## Andivi Catalogue 2021

# Dear Customers and Partners

At Andivi we believe **every building is an opportunity to save energy with intelligent building automation.**

We understand building automation as the building's central brain. Like the brain in a human's body is responsible for coordinating, controlling & monitoring the entire body, a building's automation system is responsible for managing all the building's functions. From HVAC to lighting, from efficient energy saving to responsible energy management. From midnight, to midnight, to midnight. Every day. 365 days a year.

Andivi was established in 2011 by a group of mechanical and electrical engineers. In the last 6 years Andivi has grown from producing only thermostats & room controllers to a company with a significant larger portfolio of building automation products. The new product palettes include extremely powerful controllers / automation stations, multi-functional I/O units and a variety of different sensors. We now have a product and solutions range, that is not only capable to fully entire building automation needs, but also to cover the entire measurement, regulation and control field.

This is why we have:

- ▶ massively updated the Andivi **WebServer** with new software capabilities, a more user friendly **Interface** and much more powerful **Software** and Hardware.
- ▶ upgraded the **U-DDC controllers** and **Automationstations** for more flexibility and compatibility with a wider range of products,
- ▶ upgraded and extended the **360°Hotel Room Solution.**

Focusing on the non-residential sector, we are continuing to cover automation needs for: hotels, corporate & office buildings, condominiums, public buildings, industries, healthcare facilities,

wellness facilities.

Furthermore, we are able to adjust our automation solutions and tailor them to project specific demands - according to our customer's needs. So do not hesitate to contact us if you have a challenging idea in mind.

We work with integrators and end-clients. **For integrators:** we provide you with all the support, needed to integrate Andivi products into your client's projects. This way you will be able to complete full automation setups completely independently.

**For end customers** we provide an all-in-one solution. This starts with the automation concept of your building and continues with engineering, planning and final execution. Including providing the necessary automation equipment to finish the installation and setting up the entire system.

At Andivi, we are privileged to welcome ambitious clients with daring projects and a passion for energy efficient automation. **Welcome at Andivi!**



**Danijel Muršič**, Andivi CEO

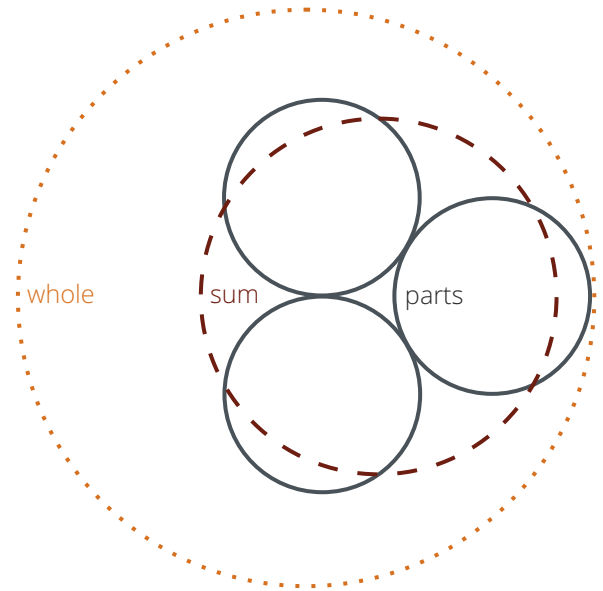
# The Sum is greater than the Value of the Parts

## Holistic Approach to Building Automation

The concept for the creating building automation solutions must be holistic.

The concepts, products and performances are linked to one another so that the entire process becomes a closed loop, more valuable as a complete system than each of the components would be apart.

The synergetic performance of the building coupled with unique and energy efficient automation solutions will likewise become an attractive tool for increasing market interest in a building.



# AISZ - American International School of Zagreb

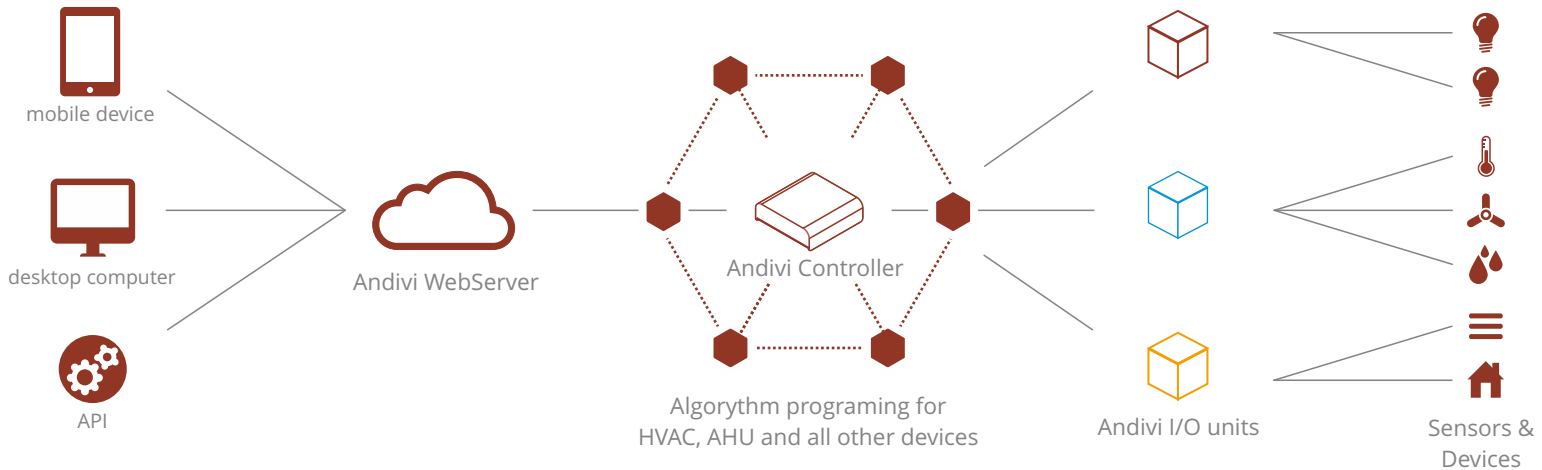
## Smart Buildings

Smart Buildings are the new standard. At Andivi we have closely followed this vision for the past decade.

This is why today, the Andivi product range makes it entirely possible to create Class A (EN15 232) levels of smart buildings.

This includes:

- ▶ Networked room automation with automatic demand control,
- ▶ Scheduled maintenance,
- ▶ Energy monitoring,
- ▶ Sustainable energy optimization.



Andivi Products & Solutions

# Sensors

CONTROLLERS



I/O UNITS

THERMOSTATS

WEBSERVER - BMS

WEBSERVER - VISUALISATION

CONTROL CABINETS

TEMPERATURE SENSORS

ACTIVE TEMPERATURE SENSORS

HUMIDITY SENSORS

AIR QUALITY SENSORS

MOTION & LIGHT SENSORS

PRESSURE SENSORS

FLOW SENSORS

MODBUS SENSORS



WEATHER STATIONS



[www.andivi.com](http://www.andivi.com)

# Controllers / Automation Stations

## U-DDC



Andivi U-DDC KNX 1.0 is a freely programmable Automation Station / DDC controller supporting KNX and Modbus. It can be used to control residential and non-residential buildings, together with integration of Andivi third-party devices.

### TYPE

Andivi U-DDC 1.0  
(supports only Modbus)

Andivi U-DDC KNX 1.0  
(supports Modbus & KNX)

### HIGHLIGHTS

- ▶ Schedulers
- ▶ Alarm management
- ▶ Remote management with any BMS
- ▶ Concurrent use of KNX or/and Modbus or/and BACnet devices on the same U-DDC controller
- ▶ Integration of various third-party devices
- ▶ Stand alone application or use in a device or system network
- ▶ Optional features: MySQL and MS SQL database support



### TECHNICAL DATA

- ▶ Digital inputs: 5 (optically isolated)
- ▶ Digital outputs: 2 (48VAC / 24 VDC 2A)
- ▶ KNX adapter for communication with KNX systems; max. 255 KNX group objects; U-DDC KNX Version only.
- ▶ BUS serial connection for temperature sensors with 3-wire BUS, 2x BUS, 10 temperature sensors/BUS, total 20 temperature sensors. Intelligent addressing system.
- ▶ Modbus TCP/IP protocol master/slave for communication with SCADA building management systems.
- ▶ Modbus RTU RS-485 protocol master/slave for communication with external modules. 4x BUS; max. 128 Modbus slave devices.
- ▶ Integrated Web server with visual and textual form, freely adaptable to project, user profiles, language select, HTTPS support.
- ▶ Local BUS connection with I/O modules connected on a DIN rail system.
- ▶ Ethernet adapter RJ-45 (10/100 MBit/s): for communication and programming.
- ▶ USB adapter 4x / RS-485, RS232 for communication with external I/O modules.
- ▶ Visual and textual programming IEC61131-3 with simulation and emulation. Custom function blocks support. CFC, ST, FDB, LD, IL, SFC support. Online error check.
- ▶ Connection with SQL data base systems. MS SQL and MySQL support.
- ▶ CPU: ARM Cortex-A7, Quad-core, 900 MHz
- ▶ Data Storage: SDRAM 1 GB
- ▶ Operation System: LINUX
- ▶ Integrated real time clock with automatic synchronization with NTP protocol.
- ▶ Hardware watchdog.
- ▶ Micro SD card for application program and data storage.
- ▶ Power Supply: 12-24VAC/DC, max 5W
- ▶ Mounting: DIN-compliant design (DIN rail)
- ▶ Dimensions: 101 × 80 × 45 mm

### OTHER

- ▶ Developed in Slovenia, EU
- ▶ 2 - year warranty
- ▶ CE certified

# Controllers / Automation Stations

## U-DDC extensions

### SOFTWARE AND HARDWARE EXTENSIONS

Andivi U-DDC 1.0 and Andivi U-DDC KNX 1.0 have several different software and hardware extensions possibilities. The software expansion packages have been summarized below:



HARDWARE TYPES		U-DDC 1.0	U-DDC 1.0 KNX
EXTENSIONS	Modbus TCP/IP	integrated	
	Modbus RTU RS-485 (U-SW-MOD)	optional software and hardware ext.	
	KNX	×	integrated
	BACnet (U-SW-BAC)	optional software extension	
	WebServer (U-SW-WEB)	optional software extension	
	SQL data base (U-SW-SQL)	optional software extension	

### EXTENDED PRODUCT FAMILY

Andivi U-DDC has been developed for several areas of application. As a product family Andivi U-DDC further more extends with two products;

- ▶ **Andivi U-MIO 2.0** - multi-functional I/O unit with 5x analog inputs, 3x analog PT1000 inputs, 9 digital inputs, 4 analog outputs, 7 digital outputs.
- ▶ **Andivi WebServer** (software extension) - that can be used with Andivi standard user interface (UI) or customized according to specific project needs.
- ▶ **Andivi WebCapsule** - touchscreen and micro computer as one integrated product for different application areas - from wall-mounted options to integrations into electric panels. See page 36.

Andivi U-DDC KNX 1.0



2 × Andivi U-MIO 2

Andivi WebCapsule





# Controllers / Automation Stations

# U-DDC with Codesys

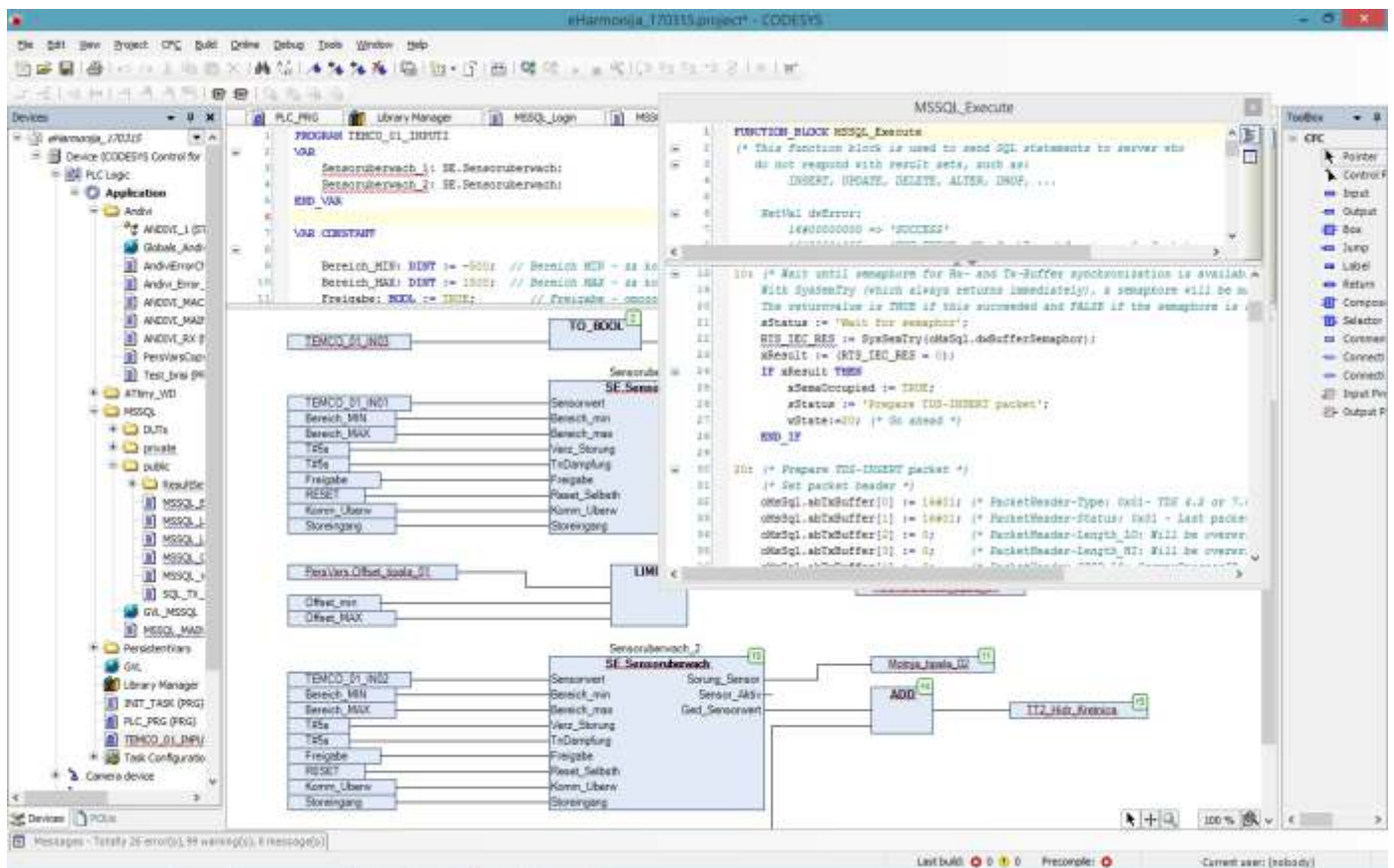
## SIMPLE & EASY PROGRAMMING

See an example of combined graphical and textual programming with Codesys IEC61131 Software (www.codesys.com) below.

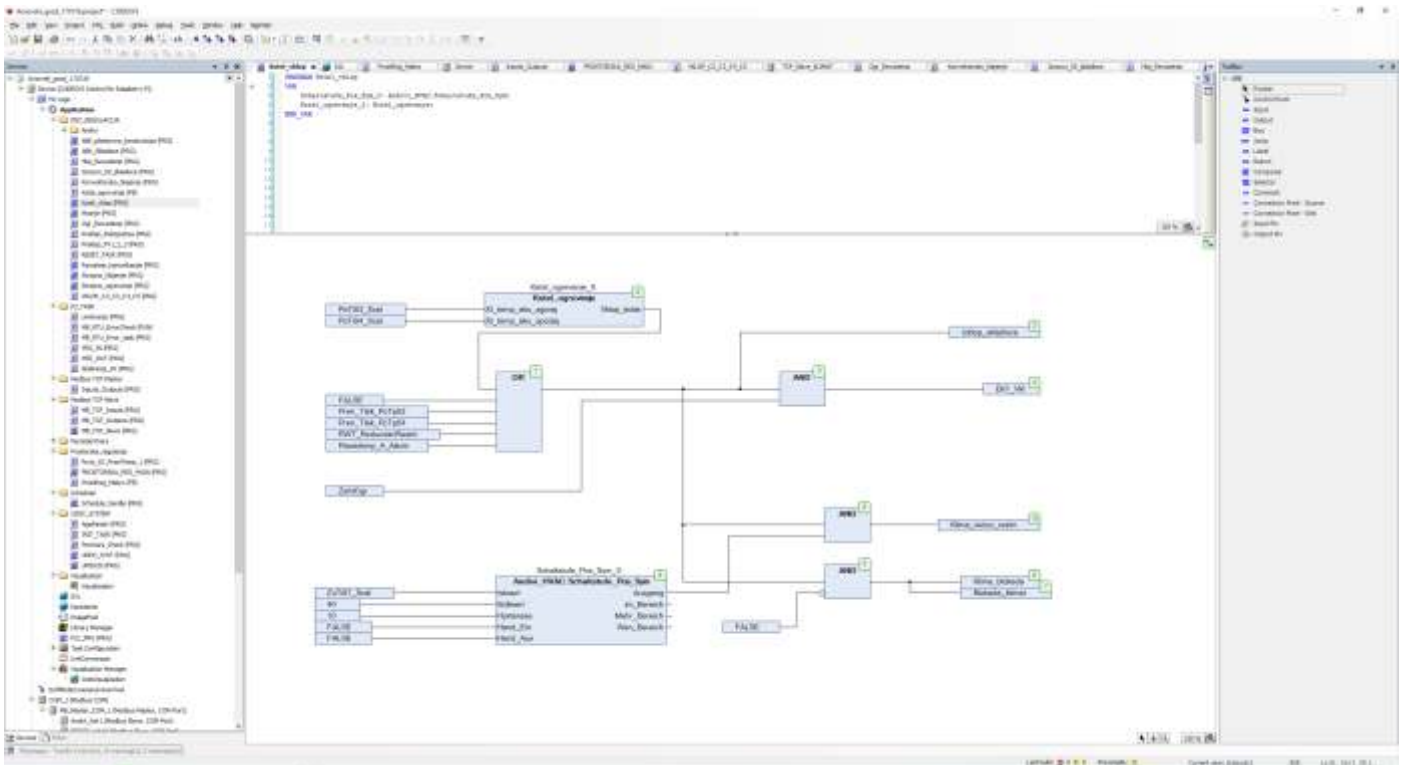
## LEARN TO PROGRAM U-DDC AT OUR WORKSHOPS

We created the Workshops to give the integrators a meaningful way to integrate the U-DDC Automation Station / Controller Andivi to their projects. At these Workshops, we will teach you how to fully set-up and configure the U-DDC for different project needs.

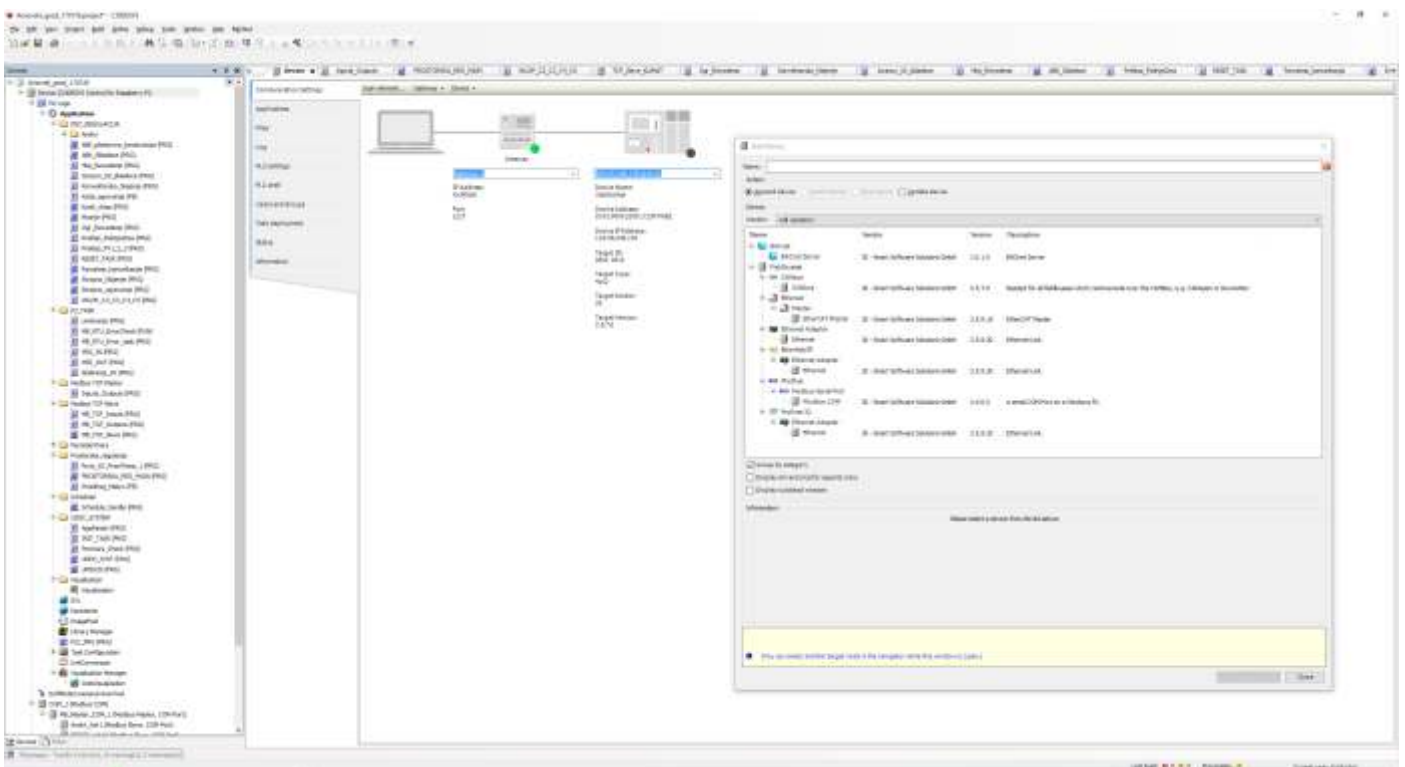
Take what you learn at the Andivi Workshop and apply it in your own way. U-DDC's powerful hardware & software capabilities will enable you to cover any of your client's demands.



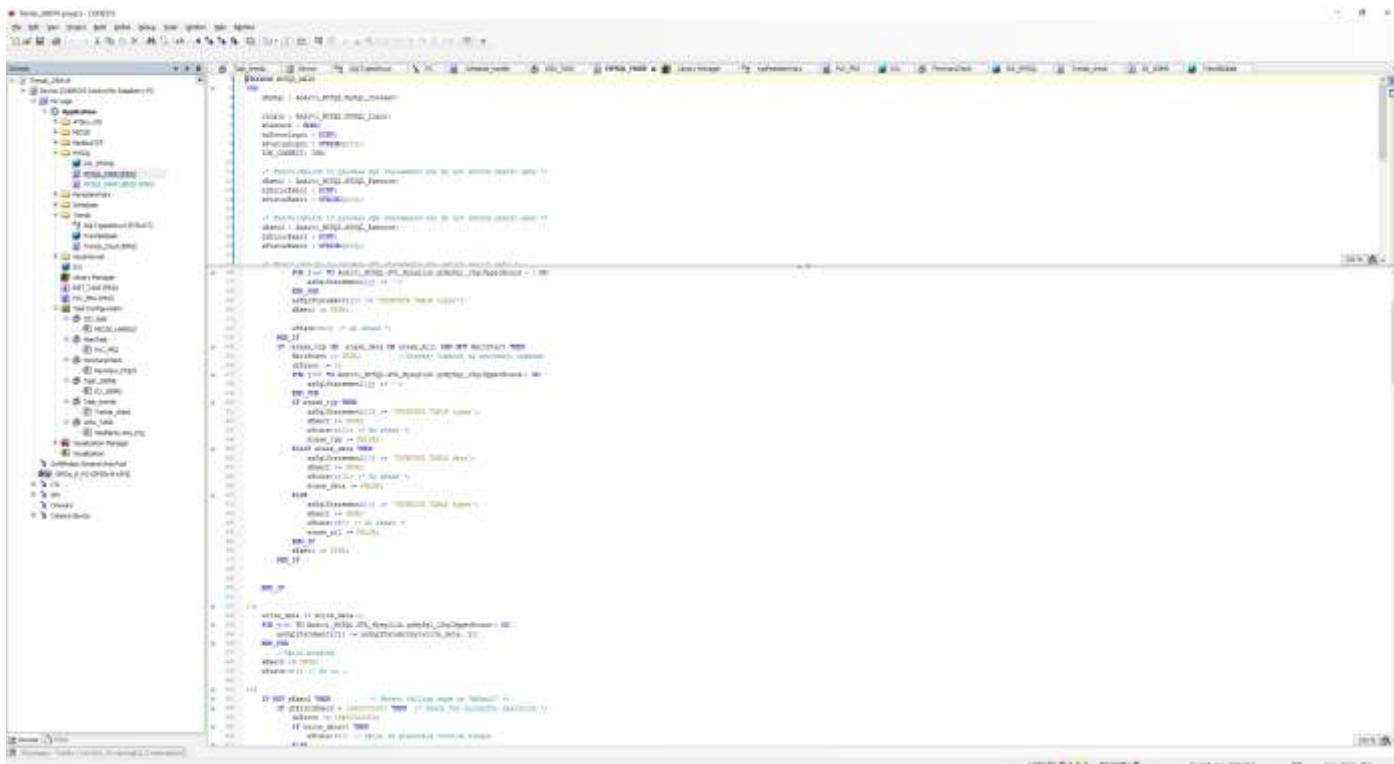
Screenshot of Codesys IEC61131 Software, which is used to program Andivi U-DDC and U-DDC KNX controllers.



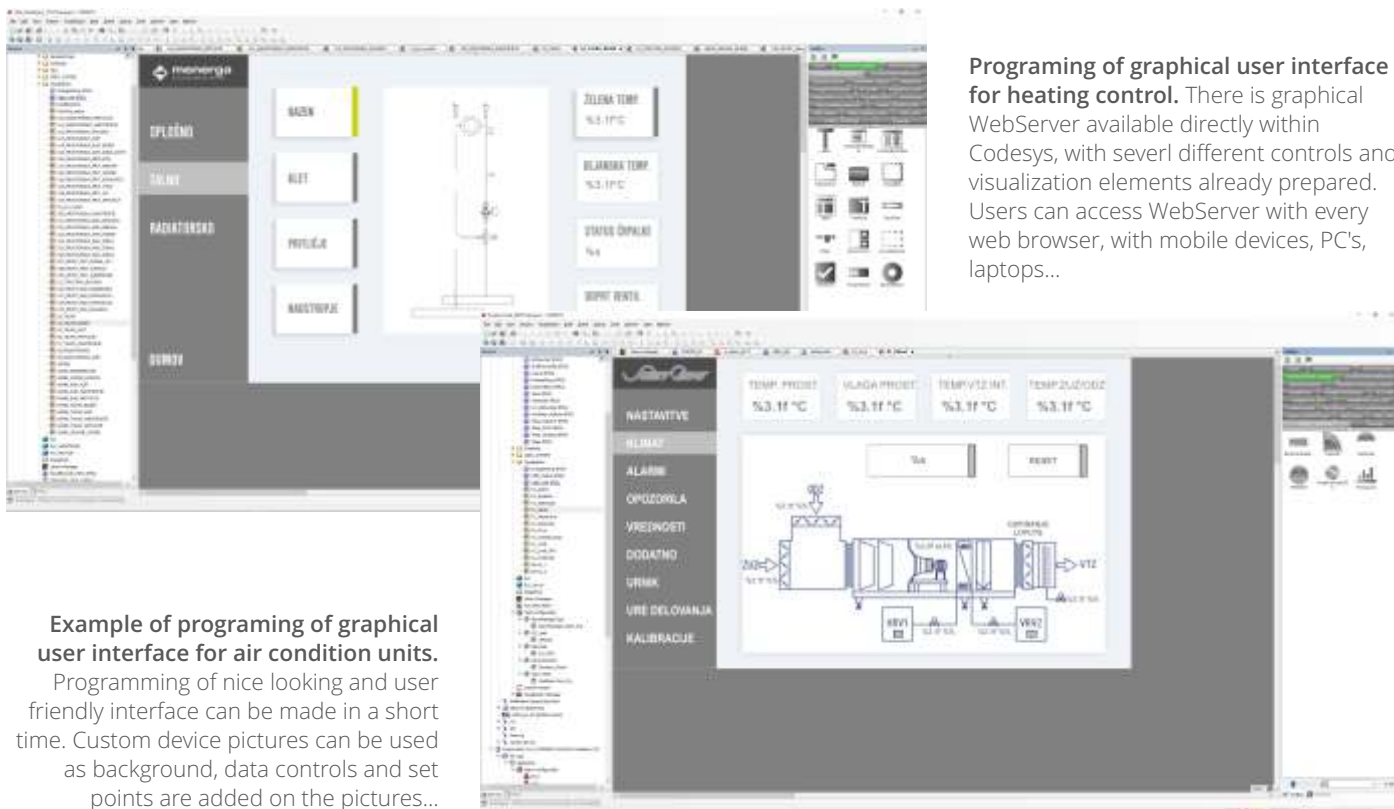
**Programming with CFC graphical language.** Programming can be simple. No special programming skills are needed. User can use standard functional blocks or can prepare custom ones.



**Adding different devices and communication protocols.** There are many devices and communication protocols already available in Codesys. It is easy to configure them. More communications can run in parallel in the same controller.



**Programming with ST structure textual language.** Advanced programming in structure text language can be used to create custom functional blocks. Complex programs can also be made with ST language.



**Programming of graphical user interface for heating control.** There is graphical WebServer available directly within Codesys, with several different controls and visualization elements already prepared. Users can access WebServer with every web browser, with mobile devices, PC's, laptops...

**Example of programming of graphical user interface for air condition units.**

Programming of nice looking and user friendly interface can be made in a short time. Custom device pictures can be used as background, data controls and set points are added on the pictures...

# I/O Units

## U-MIO 2.0

Andivi Input/Output UNIT U-MIO is a universal INPUT/OUTPUT module. It supports local I2C bus connection and standard field Modbus RTU/RS-485 connection. It can be used to control pumps, valves, fans, shades, lights etc. and to capture temperature, statuses, values from different sensors/devices.



### INPUT / OUTPUT

Andivi U-MIO 2.0

**Input:**

- ▶ 5 × analog,
- ▶ 3 × analog PT1000,
- ▶ 9 × digital

**Output:**

- ▶ 4 × analog
- ▶ 7 × digital

**Power supply:**

15-24VAC/DC, max. 5W

### HIGHLIGHTS

- ▶ Excellent value for money.
- ▶ Areas of Application: used to control pumps, valves, fans, shades, lights ... and to capture temperature, statuses, values from different sensors/devices.

### OTHER

- ▶ Developed in Slovenia, EU.
- ▶ 2 - year warranty.
- ▶ CE certified.

### FEATURES

- ▶ Analog input: 5×, 0-10 V
- ▶ Analog input: Pt1000: 3×, -30 do +170°C
- ▶ Analog output: 4×, 0-10V
- ▶ Digital input: (optically isolated): 9×
- ▶ Digital output: 7×, relay 230VAC 6A
- ▶ Communication: RS-485 Modbus communication (slave device)
- ▶ Connection: BUS local connection with U-DDC automation station over integrated connection system on DIN rail
- ▶ Connection: DIN inline or stand alone
- ▶ Power Supply: 15-24VAC/DC, max. 5W
- ▶ Mounting: DIN rail
- ▶ Dimensions (L × W × H): 101 × 80 × 45mm



# Thermostats

## TRB Thermostats

### DESCRIPTION

TRB digital programmable thermostats for fan control and temperature setting come in various versions: 2-pipe/4-pipe, 2-wired or 3-wired motorized Valve or 0-10V Valve Actuator and with **RS485** or **Modbus** communication.

The TRB series of room thermostats comes with these serial features: clock, weekly programmable, memory function. Designs come in alpine white or ultra black.

### TYPES

- ▶ TRB-ALNK
- ▶ TRB-EL
- ▶ TRB-ELN
- ▶ TRB-MLK

### TECHNICAL DATA

TRB THERMOSTAT SERIES		ALNK	EL	ELN	MLK
STAGING	Heating/cooling			✓	
	Cooling Only			✓	
	Heating Only			✓	
APPLICATION	2- Pipe	✓	✓		✓
	4- Pipe		✓	✓	
	2-Wired Motorized Valve	✓	✓	✓	
	3-Wired Motorized Valve	✓	✓ (4 pipe)	✓	
	0-10V Valve Actuator				✓
	Fan control	Auto, Low, Medium, High, Off			
COMMUNICATION	RS485	✓		✓	
	Modbus RTU	✓		✓	
LOAD	Current Load for Valve	1A Inductive, 2A Resistance			10 mA
	Current Load for Fan	1A Inductive, 2A Resistive			
POWER	Power Supply	230VAC			
FEATURES	Memory			✓	
	Clock			✓	
	Programmable (5+2 days)		✓		✓
	Keypad or reed contact	✓			✓
	Lock	all buttons or all buttons except on/off			
	Sleep		✓		✓
DISPLAY	Time display	12h or 24h			
	Temperature display	set temp. and current temp. OR display set temp. only			
DESIGN	Color	Black or White			
	Backlight	Light blue			
	Buttons	Touch			
INSTALLATION	Installation	86×86mm and 60mm European box			



### DESIGN



TRB in white



TRB in black

# Thermostats

## TRB Thermostats

### HIGHLIGHTS

- ▶ **Excellent value.**  
Thermostats from the Andivi TRB Series are rich on features and powerful in performance. Overall: excellent value for money.
- ▶ **Sleek Design.**  
Elegant thin design with large display and light blue backlight. Comes in alpine white or ultra black colors and a chrome trim.
- ▶ **Smart thermostat.**  
Andivi TRB Thermostats come with several communication varieties as a WiFi thermostat or a Modbus RS485 thermostat.
- ▶ **Quick & Easy installation.**

### OTHER

- ▶ Acrylic surface, **resistant against scratches.**
- ▶ **Capacitive touch** buttons for easy control.
- ▶ **Temp. control** accuracy: 0.5°C
- ▶ **Sensor:** NTC 3950,100K
- ▶ **Temperature range:** 5 - 35°C
- ▶ **Universal input** for energy saving switch (key card holder) or reed contact
- ▶ **Power consumption:** <1.5 W
- ▶ **Housing:** PC + ABS (fireproof)
- ▶ **Dimensions:** 86 × 86 × 13.3 mm
- ▶ **Working temperature:** 0 ~ 45 °C
- ▶ **5 ~ 95% RH** (non-condensing)
- ▶ **Storage temperature:** -5 ~ 55 °C



# Thermostats

## TRC Thermostats

### MULTI-PURPOSE THERMOSTAT

Andivi TRC-A/D room controller is a multi-purpose programmable room thermostat used to control temperature and fan speed.

With its unique intelligent thermodynamic algorithm it enables enhanced room comfort while using less energy.

### USE

It is intended for managing convectors and for regulating underfloor heating, ceiling cooling systems, radiator systems and other cooling/heating elements.

### MULTI-PURPOSE

Multi-purpose thermostat for manual/automatic control of fan coils, underfloor heating systems, ceiling cooling systems, radiator system and other cooling/heating elements.

### CALM AIR FLOW

Comfort Fan Coil regulation (PI regulation) with minimum air flow allows a pleasant heating/cooling change.

### DETECT GUEST PRESENCE

Detect guest presence in the room by directly connecting the Energy Saving Switch to the room controller: save energy while the guest is not in the room.

### CENTRAL CONTROL FROM ANY PLATFORM

Monitor in-room guest presence status and control temperature in all the rooms straight from the reception.

The Andivi TRC room thermostats have the ability to be connected to a central building automation system, to a guest room management system within a hotel or any other automation platform.

### THERMOSTAT VS. ROOM CONTROLLER

The difference between a classic thermostat and a room controller thermostat, like andivi TRC, is in its energy saving ability.

Classic thermostats do not optimize for regulation, they only turn valves on and off. Often classic thermostats overheat and overcool rooms, hence using more energy while providing a lower level of comfort.

Room controller thermostats optimize their performance by working with PI regulator functionalities. The consequence is better living conditions while saving energy over time.

### HUMIDITY MODULE

Andivi TRC-Ah/Dh room controllers have the same features as the Andivi TRC-A/D room controllers, but are upgraded with a humidity module that allows for humidity monitoring and control.

### TYPES

Andivi TRC-A  
(Analog thermostat)

Andivi TRC-D  
(Digital thermostat)

Andivi TRC-Ah  
(Analog thermostat with humidity module)

Andivi TRC-Dh  
(Digital thermostat with humidity module)



# Thermostats

## TRC Thermostats

### TECHNICAL DATA

- ▶ **Temperature range**  
-30~70°C (-22~158°F)
- ▶ **Power Supply**  
24VAC ±10%, 50-60Hz (TRC-A)  
230VAC ±10%, 50-60Hz (TRC-D)
- ▶ **3 × digital relay output**  
Fan stages
- ▶ **2 × analog output**  
0-10V – regulation valves (TRC-A)
- ▶ **2 × digital relay-output**  
On/Off Valve (TRC-D)
- ▶ **Communication interface**  
Modbus/RTU RS485
- ▶ **Temperature sensor**  
Integrated internal, optional external
- ▶ **Active temperature sensor selection**  
Internal, external, average value of both
- ▶ **Protect mode digital input**  
Included (for reed contact door/window); can also be used a universal input in combination with Andivi U-DDC
- ▶ **Economy mode digital input**  
Included (for energy saving switch); can also be used a universal input in combination with Andivi U-DDC
- ▶ **Fan coil system**  
2-pipe/4-pipe
- ▶ **Fan control**  
Manual/automatic
- ▶ **Heating/cooling change-over**  
Manual/automatic
- ▶ **temperature sensor: NTC 3K**
- ▶ **Temperature setting**  
0-50°C
- ▶ **Actual temperature indication**  
0-50°C
- ▶ **Temperature indication step**  
0,1°C
- ▶ **Temperature set-point step**  
0,5 °C
- ▶ **Temperature regulation**  
PI regulation (TRC-A), P regulation (TRC-D)
- ▶ **Fan coil regulation**  
PI regulation
- ▶ **Operating conditions**  
0~50°C, 5-95%rh
- ▶ **Fan coil relay outputs and on/off valves**  
1A/250VAC, inductive load
- ▶ **Life cycle of relay contacts**  
100.000 cycles
- ▶ **Direct output control**  
Over Modbus
- ▶ **Dimensions:** 75 × 120 × 42 mm
- ▶ **Installation:** 65 × 65 box

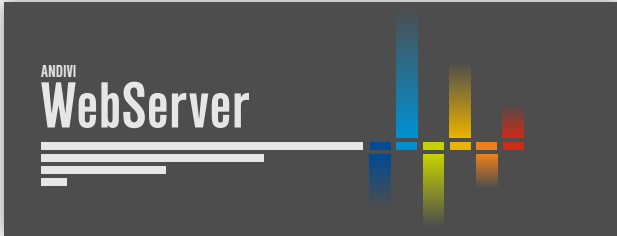


TRC Thermostat



# WebServer - Web BMS + BAS - SCADA

## WebServer



Andivi WebServer stands for a high-performance solution for regulation and control in automation of AC devices, ventilation devices, heating and cooling, boiler rooms, machine rooms, district heating stations, facilities for household hot water, pool technique, lighting, ... This is a so called **Web Building Management System** or basically a **Web SCADA** (Supervisory Control And Data Acquisition) with a far more simple, comprehensive and affordable way of regulation and control.

No **additional software is required** in order to connect to the WebServer and to display the data. The server is run over the internet or intranet with the help of an optional browser. The Web Server, which is connected to the steering device, comprises of hardware and a web application.

Andivi U-DDC controller and 2x Andivi U-MIO I/O unit on DIN-rail. Can be pre-programmed & delivered „implementation-ready“ for the electric panel or any other WebServer needs.



### HARDWARE

Freely programmable Andivi U-DDC controller with a WebServer module.



### WEB APPLICATION

Web user interface, programmed and connected according to optional requirements of the project. This includes a WebServer visualisation, which can be individually designed by the system integrator.



### ADDITIONAL

You can choose between the default Andivi visualisation or the Andivi Dashboard or any visualisation that the integrators can develop themselves or with our help.

# WebServer - Web BMS + BAS - SCADA

## WebServer Visualisation

### FUNCTIONALITIES

- ▶ Quick display of key data and information for regulation and control,
- ▶ Real-time overview of current data and target data,
- ▶ Notifications,
- ▶ Alerts,
- ▶ Disorder monitoring (log),
- ▶ Timetables,
- ▶ History (graphic display of historical data – trends),
- ▶ Display of detailed data (optional).

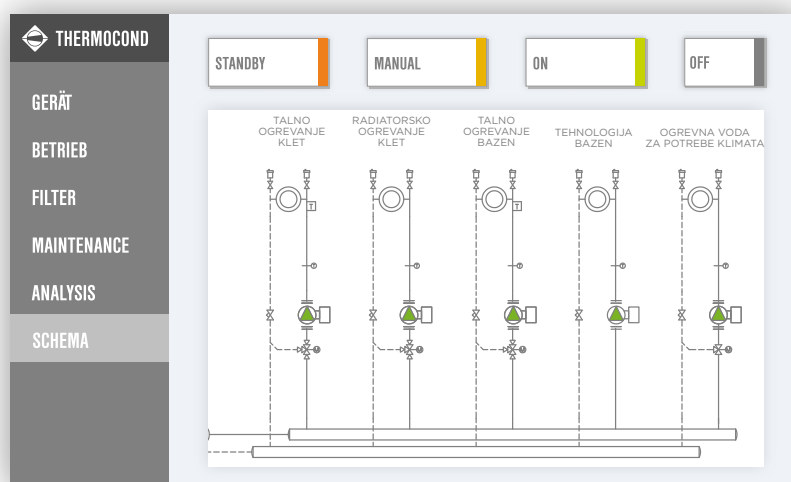


Menerga's AHU Unit Thermocond

### USE

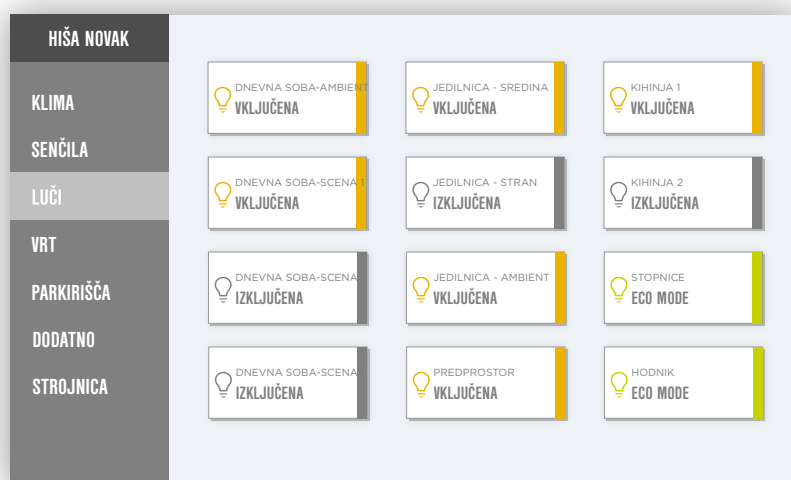
WebServer can be used:

- ▶ via a browser on a desktop computer,
- ▶ via a tablet or a smart phone (remote control),
- ▶ directly on the control cabinet, where we make sure that display and the micro computer are mounted to the control cabinet (direct control),
- ▶ independently – independent installation.



Custom heating management

### VISUALISATION EXAMPLES ▶



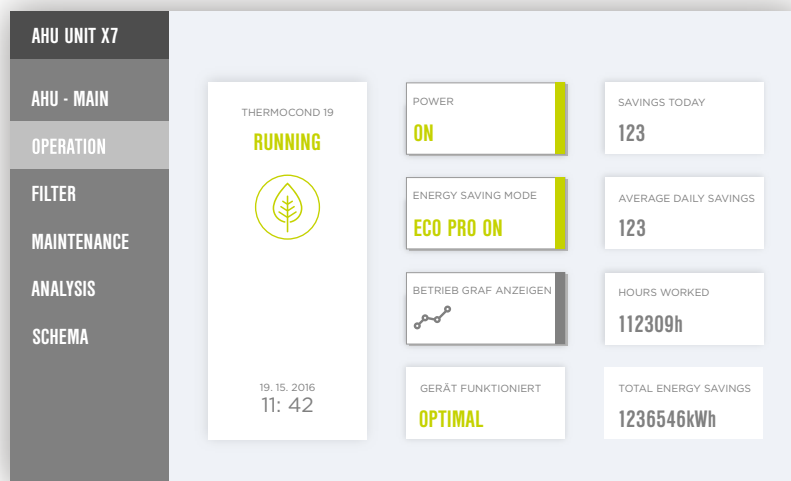
Lights management for a private villa

# WebServer - Web BMS + BAS - SCADA

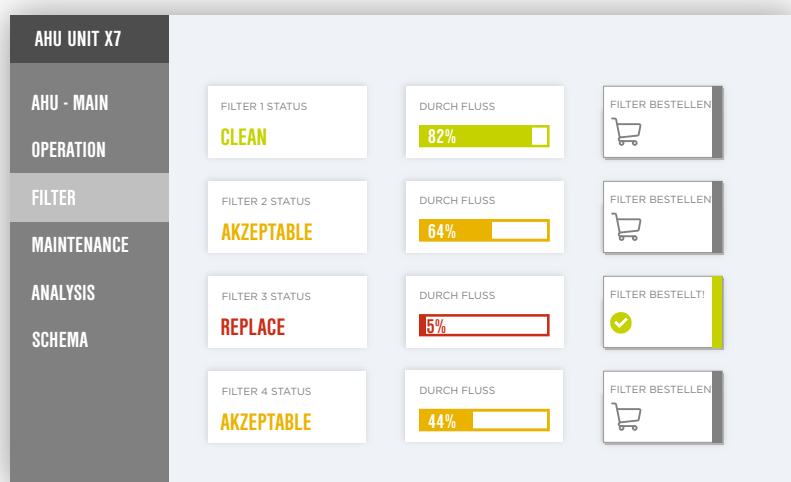
## WebServer Visualisation

### CUSTOMER BENEFITS

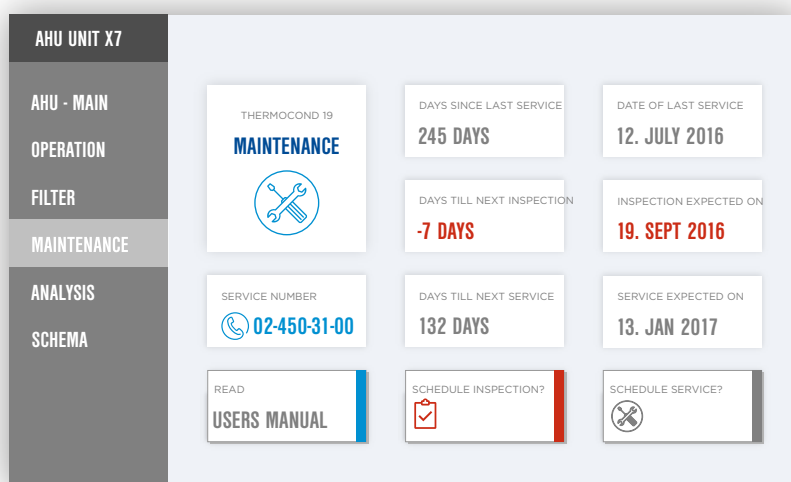
- ▶ **Affordable solution** that does not require additional licensed software,
- ▶ **Application**, adapted to project requirements and customer's wishes,
- ▶ **Intuitive graphic interface** – simple to use,
- ▶ **Flexible graphic interface**, easily adapted to project requirements and according to the integrator's needs,
- ▶ **Simple system upgrade** without additional licences and annual costs,
- ▶ **Independent hardware**: any tablet, mobile phone, computer (Mac or PC).
- ▶ **Protected access**: Changes of set points, timetables, contact channels, etc. only possible with an appropriate code. Possible to create several user accounts with various access levels and depths.
- ▶ **Adaptability**: The WebServer with its capacity of a programming environment enables a high level of adaptability to project needs. It enables flexible programming and updating with various modules.



Operations screen of an AHU Unit



Filter screen of an AHU Unit



Maintenance screen of an AHU Unit

### VISUALISATION EXAMPLES ▶

# WebServer - Web BMS + BAS - SCADA

## WebServer + Trends

### TRENDS VISUALISATION

WebServer enables simple and clear Trends & Analytics visualisation.

Below is an example of **Trend Data Analysis** for 8 variables (4 analog, 4 digital): temperature, humidity, compressor and system.



# WebServer - Web BMS + BAS - SCADA

## WebCapsule

### WEBCAPSULE TECHNICAL SPECIFICATIONS:

The Andivi WebCapsule (AND-WS-WC) is a powerful microcomputer and touch screen with multi-touch capabilities in one sleek, simple and elegant device:

- ▶ **Display:** capacitive 7" touch screen (multitouch),
- ▶ **Resolution:** 800 × 480 px,
- ▶ **Processor:** 64 bit, 1.2 GHz,
- ▶ **WiFi,**
- ▶ **Ethernet** connection,
- ▶ Micro USB power supply.



### WEBCAPSULE + WEBSERVER:



# WebServer - Web BMS + BAS - SCADA WebCapsule Housing

## FLAT-MOUNTED EDITION

Flat mounted housing (AND-WS-FM) for Andivi WebCapsule for application on Control Cabinets, AHU Units, HVAC Units ...



## WALL-MOUNTED EDITION

Wall-mounted housing (AND-WS-WM) for Andivi WebCapsule for indoor or inroom application and custom application needs ...



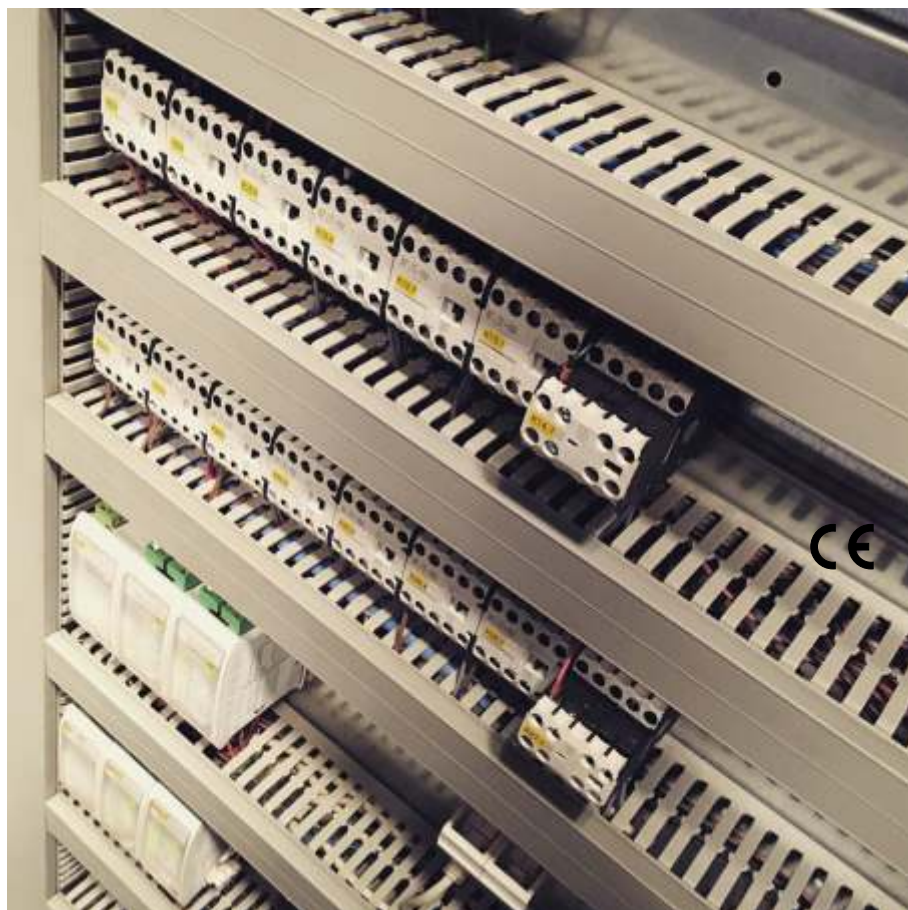
# Control Cabinets / Electric Panels

## Custom Control Cabinets

### FINISHED ELECTRIC PANELS

For our customers we take over **the entire production of control cabinets**, including **planning** and **wiring** of elements. According to the requirements of project documentation, we prepare machine and electric schemes for the manufacturing of a switching block and the installation and wiring of the elements.

We help our costumers from the first phase of **counselling**, further to **planning** and **constructing** of control cabinets and in to **programming** and **manufacturing** delivery and launch of the cabinets.



#### MANUFACTURING

---  
We make sure the control cabinets are made from a high-quality, fireproof material, which is also humidity-resistant and keeps its firmness during high or low temperatures.  
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#### EQUIPMENT

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Our control cabinets are produced with the best quality and reliable electric components of internationally renowned companies like: Andivi, Möller, Schrack, Eton, Danfoss and other.  
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#### PROGRAMMING

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We take care of programming your control cabinet. From the first line of code to stress testing and delivery of the final software version. Hardware + software from one provider: we understand the automation components in your cabinet in every little detail.  
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#### TESTING

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Before delivery, each control cabinet is tested in accordance with appropriate norms and equipped with a test report, a declaration of compliance of the installed components and a CE-Certificate.  
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# Control Cabinets / Electric Panels

## Custom Control Cabinets

### CUSTOMER BENEFITS

- ▶ From **engineering to mounting** of the control cabinet with the help of a business partner,
- ▶ Preparation of **electric plans, machine plans, electrical diagrams** and the delivery of cabinets all from one provider,
- ▶ **Programming** of the entire process according to client needs,
- ▶ **Graphic design & User Experience (UX) design** of the user interface according to project specifications or in-house custom graphic design development for WebServer User Interface.
- ▶ **Control** of the control cabinet before its delivery to the building and after it launch at the building.
- ▶ Competent technical **counselling** and technical **support**.
- ▶ Appropriate **certificates** available for each control cabinet (enclosed CE certificates).



### CUSTOMISATION:

**Version:** internal and external control cabinets.

**Type:** free-standing, surface mounting, flush mounting control cabinets.

**Dimensions:** Versions of control cabinets in various widths, heights and depths of standards and non-standard dimensions.

**Protection:** The switching block housing is protected against corrosion with a special procedure of electrostatic paint coating (powder-coated sheer metal). The high-quality corrosion protection also enables a high level of strength. All cable entries are protected with cable glands with seals.

**Color:** Control lockers can be ordered in any RAL color.





# Control Cabinets / Electric Panels

## Technical Specifications

### GENERAL

WEATHER RESISTANT	QUVB 1000h	No standing out of glass fibres
	QUVB 1000h	Colour deviations delta E < 4 according to CIE L*a*b*
TERMITE RESISTANT	Safe	
CONTENTS HALOGEN ELEMENTS	not contained	
RESISTANCE TO	Oil, gasoline, 10% hydrochloric acid, sulphuric acid, acetic acid, alcohol, sea water, sodium chloride, calcium chloride, road urine, bitumen, acid or basic soil constituents	

### MOUNTING

With the help of sub-contractors we also offer a reliable final mounting on site. We guarantee that the electricity specialists will follow all the required regulations during the installation process.

### MECHANICAL PROPERTIES

BENDING STRENGTH	EN ISO 14125	min 165 MPa
RESISTANCE TO BUMPS	EN ISO 179-1	min 165 MPa
TENSILE STRENGTH	EN ISO 527-4	min. 70MPa

### ELECTRICAL PROPERTIES

SURFACE RESISTANCE	IEC 60093	min. 1012 Ohm
INSULATION RESISTANCE	IEC 60093	min. 1012 Ohm cm
RESISTANCE TO CREEPING	IEC 60112	CTI 600
DIALECTIC STRENGTH	IEC 60243-1	min. 130kV/cm

### TEMPERATURE PROPERTIES

TEMPERATURE RESISTANCE	ISO 75-2a	min. 200°C
THE HOT WIRE TEST	EN 60695	960° C / 3mm
FLAMMABILITY	EN 60695 -11-10	V1
FIRE SAFETY	ISO 3795	VBR

# Control Cabinets / Electric Panels

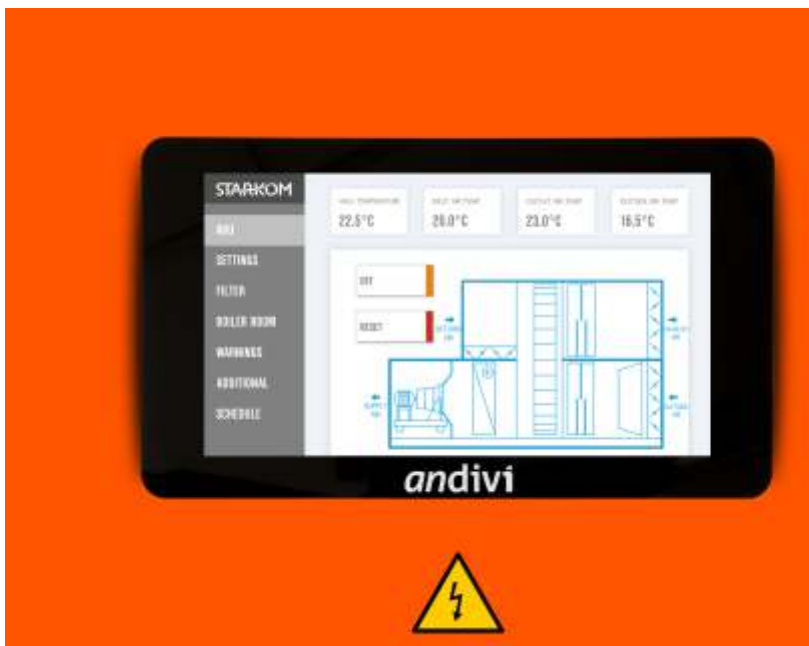
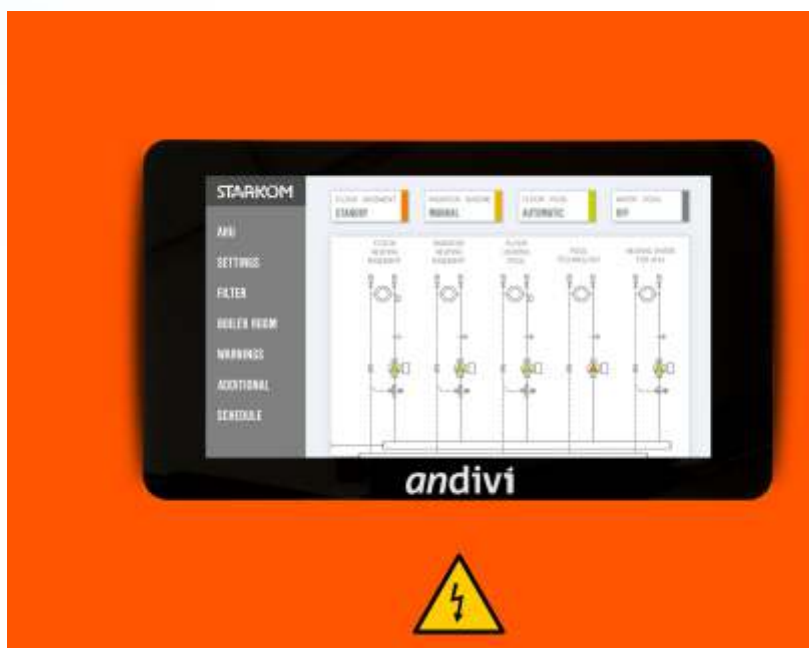
## Control Cabinets + WebServer

### ADD-ON: WEBSERVER + WEBCAPSULE

The control cabinets can also be equipped with an Andivi WebServer User Interface and an Andivi WebCapsule multi-touch screen for easy operation and control. For more information see page 31.



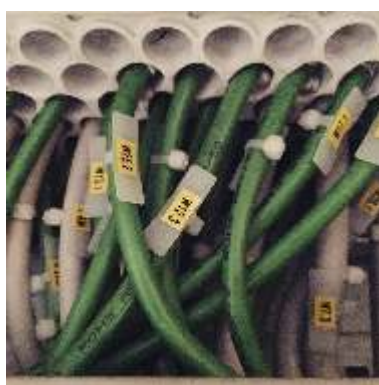
Andivi WebCapsule touch-display with micro computer in the robust electro panel mount frame. Developed for running Andivi WebServer User Interface on electric cabinets (e.g. for AHU units, HVAC units ...)



# Control Cabinets / Electric Panels Executed Examples

## EXECUTIONS

From small control cabinets, which serve as intelligent installations of a smart home, to large industrial projects – we provide planning, construction, programming and setting up of the control cabinets and their calibration on site.



Andivi Products & Solutions

# Sensors

TEMPERATURE SENSORS

ACTIVE TEMPERATURE SENSORS

HUMIDITY SENSORS

AIR QUALITY SENSORS

MOTION & LIGHT SENSORS

PRESSURE SENSORS

FLOW SENSORS

MODBUS SENSORS



WEATHER STATIONS



[www.andivi.com](http://www.andivi.com)

Temperature / Humidity / Air Quality / Motion + Light / Pressure / Flow  
**Sensors**

# Quality



**SCOPE OF DIFFERENT SENSOR RANGES:**



TEMPERATURE.



CO2 + AIR QUALITY



FLOW



TEMPERATURE ACTIVE



MOTION + LIGHT



MODBUS



HUMIDITY



PRESSURE



METEOROLOGY

# Temperature / Humidity / Air Quality / Motion + Light / Pressure / Flow

## All Sensors

### TEMPERATURE SENSORS

- ▶ Mean Value Temperature Sensor
- ▶ Duct/immersion Temperature Sensor (fast Response Time)
- ▶ Duct/immersion Temperature Sensor
- ▶ Cable/surface Temperature Sensor
- ▶ Indoor Pendulum Temperature Sensor
- ▶ Indoor Temperature Sensor (surface-mounted)
- ▶ Indoor Temperature Sensor With Control Elements (surface-mounted)
- ▶ Indoor Temperature Sensor With/without Control Element (flush-mounted)
- ▶ Immersion Temperature Sensor With Flexible Silicone Connection
- ▶ High Temperature Sensor
- ▶ Contact Temperature Sensors
- ▶ Outdoor Temperature Sensor
- ▶ Outdoor Temperature Sensor With Sun Protection
- ▶ Surface Temperature Sensor
- ▶ Radiation Sensor
- ▶ Radiation Sensor For Indoor Areas
- ▶ Radiation Sensor For Outdoor Areas
- ▶ Screw-in Sensor
- ▶ Screw-in/immersion Temperature Sensor
- ▶ Screw-in Sensor (with Neck Tube)
- ▶ Ceiling-mounted Temperature Sensor
- ▶ Sheath Thermocouple



- ▶ Sensor
- ▶ Screw-in Sensor (with Neck Tube)
- ▶ Ceiling-mounted Temperature Sensor



### HUMIDITY SENSORS

- ▶ Ceiling-mounted Temperature Sensor
- ▶ Indoor Combination Sensor For Relative Humidity And Temperature
- ▶ Outdoor Combination Sensor For Relative Humidity/Temperature
- ▶ Duct Combination Sensor For Relative Humidity And Temperature
- ▶ Indoor Sensor For Absolute Humidity
- ▶ Outdoor Combination Sensor For Absolute Humidity/Temperature
- ▶ Duct Sensor For Absolute Humidity
- ▶ Dew Point Monitor
- ▶ High Temperature/Humidity Sensor
- ▶ Condensation Monitor
- ▶ Duct Hygrostat With Internal And External Controls
- ▶ Roomhygrostat for indoor and outdoor
- ▶ Rain Sensor



### MOTION AND LIGHT SENSORS

- ▶ Motion And Light Sensor Outdoor
- ▶ Motion And Light Sensor Indoor



### PRESSURE SENSORS

- ▶ Differential Pressure Controller
- ▶ Differential Pressure Transducer
- ▶ Differential Pressure Transmitter
- ▶ Pressure Transmitter



### FLOW SENSORS

- ▶ Air Stream Monitor
- ▶ Flow Controller For Liquid Media



### ACTIVE TEMPERATURE SENSORS

- ▶ Pt1000 Temperature Measuring Transducer With Housing
- ▶ Cable-type Temperature Sensor
- ▶ Mean Value Duct Temperature Sensor
- ▶ Duct/immersion Temperature Sensor (fast Response Time)
- ▶ Duct/immersion Temperature Sensor
- ▶ Cable/surface Temperature Sensor
- ▶ Indoor Pendulum Sensor
- ▶ Indoor Temperature Sensor (surface-mounted)
- ▶ Immersion Temperature Sensor With Flexible Silicone Connection
- ▶ High Temperature Sensor
- ▶ Contact Temperature Sensors
- ▶ Outdoor Temperature Sensor
- ▶ Outdoor Temperature Sensor With Sun Protection

### AIR QUALITY SENSORS

- ▶ Indoor Air Quality Sensor
- ▶ Indoor Air Quality Sensor With Led Display
- ▶ Indoor Air Quality Sensor (flush Mounted)
- ▶ Duct Air Quality Sensor
- ▶ Indoor Sensor For Carbon Dioxide And Temperature
- ▶ Duct Sensor For Carbon Dioxide Measurements



### ADDITIONAL EQUIPMENT

- ▶ Freeze-protection Thermostat
- ▶ Contact Safety Temperature Limiter
- ▶ Contact Safety Temperature Monitor
- ▶ Contact Safety Temperature Thermostat With Exterior Controls
- ▶ Industrial Indoor Thermostat
- ▶ Indoor Thermostat
- ▶ Safety Temperature Limiter
- ▶ Double Thermostat
- ▶ Control Thermostat
- ▶ Bimetallic Contact Thermometer
- ▶ Bimetallic Flue Gas Thermometer
- ▶ Bimetallic Thermometer (Axial)
- ▶ Bimetallic Thermometer (Radial)
- ▶ Temperature Controller
- ▶ PID Controller
- ▶ Infrared Thermometer With Camera and Recorder



# Temperature / Humidity / Air Quality / Motion + Light / Pressure / Flow

## New Sensor Equipment:

### MODBUS TEMPERATURE SENSORS

- ▶ Modbus temperature measuring transducer
- ▶ Modbus Cable/Surface temperature sensor
- ▶ Modbus immersion temperature sensor
- ▶ Modbus pendulum sensor indoors
- ▶ Modbus duct temperature sensor
- ▶ Modbus Mean value sensor
- ▶ Modbus contact temperature sensor
- ▶ Modbus contact temperature sensor (cable)
- ▶ Modbus Surface temperature sensor
- ▶ Modbus Temperature sensor outdoors
- ▶ Modbus Temperature sensor outdoors (ext. Sleeve)
- ▶ Modbus Temperature sensor outdoors (fast response)
- ▶ Modbus Temperature sensor outdoors (sun protection)
- ▶ Modbus Temperature sensor indoors
- ▶ Modbus Temperature sensor outdoors (sun protection)
- ▶ Modbus Temperature sensor indoors
- ▶ Modbus Radiation sensor cable
- ▶ Modbus Radiation sensor indoors
- ▶ Modbus Ceiling-mounted temperature sensor
- ▶ Modbus Radiation sensor outdoors
- ▶ Modbus Screw-In sensor (cable)
- ▶ Modbus Screw-In sensor



### MODBUS HUMIDITY SENSORS

- ▶ Modbus Humidity sensor outdoors
- ▶ Modbus Duct humidity sensor
- ▶ Modbus High temperature/humidity sensor
- ▶ Modbus Dew point monitor
- ▶ Modbus Humidity sensor indoors



### MODBUS CO2 + AIR QUALITY SENSORS

- ▶ Modbus Duct sensor carbon dioxide/temperature
- ▶ Modbus Duct air quality sensor
- ▶ Modbus Carbon dioxide sensor indoors
- ▶ Modbus air quality sensor indoors



### DIFFERENTIAL PRESSURE SENSORS

- ▶ Modbus Differential pressure transmitter



### WEATHER STATIONS, WIND SENSOR AND WIND DIRECTION SENSOR

- ▶ Weather Station
- ▶ Wind sensor
- ▶ Wind direction sensor
- ▶ Combined wind and wind direction sensor



### TEMPERATURE SENSORS

- ▶ Stainless steel immersion sleeve THVA3 welded, with g1/2" inside-and-connective thread

### ACTIVE TEMPERATURE SENSOR

- ▶ DIN-rail measuring transducer for PT1000

### HUMIDITY TEMPERATURE SENSOR

- ▶ Leak sensor
- ▶ Stevenson screen
- ▶ Rain sensor

### CO2 + AIR QUALITY SENSORS

- ▶ Duct smoke detector
- ▶ Optical smoke detector

### DIFFERENTIAL PRESSURE SENSORS

- ▶ Pressure transmitter
- ▶ Pressure and differential pressure transducer

### FLOW SENSORS

- ▶ Air stream monitor



## 3 YEAR WARRANTY

Our 3 year warranty offers additional security. We make use of high-quality material such as high-alloy stainless steel, aluminum, brass, Inconel, Hastelloy, plastics and many more.

# Temperature Sensors

## Cable / surface temp. sensor ANDKBTF

### DESCRIPTION

For measuring the temperature in gaseous media. In combination with an immersion sleeve, the ANDKBTF can also be used for measuring the temperature of liquid media (as in pipes, kettles or water tanks). With the help of the respective sensors (see below), the device can be connected to all conventional control and display systems. The versions with PVC and Silicone connections feature a double roller-burnished sleeve as standard. The fibre glass/VA version is hexagon-shaped. Note: The ANDKBTF with fibre glass connection can not be equipped with WPC.

### TECHNICAL DATA

- ▶ Measuring range: PVC (up to 105 °C), Silicone (up to 180 °C), High-temperature Silicone (up to 250 °C), Glass fibre (up to 400 °C)
- ▶ Sensor: on request (PT100, PT100 1/3DIN, PT1000, PT1000 1/3DIN, Ni1000, Ni1000TK5000, NTC 5k, 10k, 20k, Precon, KTY81-210, NTC 1,8 kOhm, LM235Z, DS18B20)
- ▶ Switching mode: 2-wire connection (Standard)
- ▶ Connection: Core-end sleeves
- ▶ Power supply cord: 2 m
- ▶ Sleeve: stainless steel
- ▶ Measurements: Ø6 x 50 mm
- ▶ Protection class: IP65 (Standard)



## Indoor pendulum temp. sensor ANDRPF

### DESCRIPTION

For indoor temperature measuring applications. The sensor is suspended from above, making it especially suitable for temperature Measurements in large rooms and halls with a high ceiling. With the help of the respective sensors (see table), the device can be connected to all conventional control and display systems.

Further cable Types and lengths (including multiple wire connections and combination sensors) on demand.

### TECHNICAL DATA

- ▶ Measuring range: -50 °C ... +105 °C
- ▶ Sensor: on request (PT100, PT100 1/3DIN, PT1000, PT1000 1/3DIN, Ni1000, Ni1000TK5000, Fet, NTC 5k, 10k, 20k, Precon, KTY81-210, NTC 1,8 kOhm, LM235Z, DS18B20)
- ▶ Switching mode: 2-wire connection (Standard)
- ▶ Connection: Core-end sleeves
- ▶ Power supply cord: 2 m PVC (Standard)
- ▶ Sleeve: stainless steel
- ▶ Measurements: Ø8 x 110 mm
- ▶ Protection class: IP54



## Immersion temp. sensor w flexible silicon connection ANDKBTFL

### DESCRIPTION

Apparatus for measuring the temperature in gaseous media. In combination with an immersion sleeve, the ANDKBTFL can also be used for measuring the temperature of liquid media (as in pipes, kettles or water tanks). The ANDKBTFL is well suited for immersion applications thanks to the 200 mm sleeve. With the help of the respective sensors (see below), the device can be connected to all conventional control and display systems.

Various other cable materials and lengths, as well as multi-wire-connections and -sensors on demand.

### TECHNICAL DATA

- ▶ Measuring range: -50 °C ... +200 °C - depends on sensor
- ▶ Sensor: on request (PT100, PT100 1/3DIN, PT1000, PT1000 1/3DIN, Ni1000, Ni1000TK5000, NTC 5k, 10k, 20k, Precon, KTY81-210, NTC 1,8 kOhm, LM235Z, DS18B20)
- ▶ Switching mode: 2-wire connection (Standard)
- ▶ Connection: Core-end sleeves
- ▶ Power supply cord: 2 m Silicone (Standard)
- ▶ Sleeve: stainless steel
- ▶ Measurements: Ø6 x 200 mm
- ▶ Protection class: IP65
- ▶ Mounting equipment (incl.): Mounting flange





# Temperature Sensors

## Duct immersion temp. Sensor ANDKNTF

### DESCRIPTION

Our Duct/Immersion temperature sensors are equipped with dew point resistance by default. In combination with an immersion sleeve, the ANDKNTF can also be used for measuring the temperature of liquid/nonaggressive media. Gaseous media may be measured with help of our mounting flange MF. The ANDKNTF's fields of application are heating, ventilation and refrigeration engineering as well as air-conditioning. With the help of the respective sensors (see below), the device can be connected to all conventional control and display systems.

### TECHNICAL DATA

- ▶ Measuring range (head): -50 °C ... +180 °C - depends on sensor
- ▶ Tmax. (housing): +100 °C
- ▶ Sensor: on request (PT100, PT100 1/3DIN, PT1000, PT1000 1/3DIN, Ni1000, Ni1000TK5000, NTC 5k, 10k, 20k, Precon, KTY81-210, NTC 1,8 kOhm, LM235Z, DS18B20)
- ▶ Protection sleeve: Ø 6 mm, stainless steel
- ▶ Switching mode: 2-wire connection (Standard)
- ▶ Connection: Screw clamps, max 1.5 mm<sup>2</sup>
- ▶ Housing: PA6 15% GK, Colour RAL 9010
- ▶ Measurements Housing: 75 x 69 x 44 mm
- ▶ Protection class: IP65
- ▶ Mounting equipment (optional): Immersion sleeve, Mounting

## Duct immersion temp. Sensor (fast response time) ANDKNTFS

### DESCRIPTION

For fast duct temperature Measurements. Our Duct Temperature Sensors are equipped with dew point resistance by default. Gaseous media maybe measured with help of our monuting flange MF. The ANDKNTFS's fields of application include heating, ventilation and refrigeration engineering as well as air-conditioning. With the help of the respective sensors (see below), the device can be connected to all conventional control and display systems.

### TECHNICAL DATA

- ▶ Measuring range (head): -50 °C ... +180 °C - depends on sensor
- ▶ Tmax. (housing): +100 °C
- ▶ Sensor: on request (PT100, PT100 1/3DIN, PT1000, PT1000 1/3DIN, Ni1000, Ni1000TK5000, NTC 5k, 10k, 20k, Precon, KTY81-210, NTC 1,8 kOhm)
- ▶ Protection sleeve: Ø 6 mm tapered to Ø 4,5 mm, stainless steel
- ▶ Switching mode: 2-wire connection (Standard)
- ▶ Connection: Screw clamps, max 1.5 mm<sup>2</sup>
- ▶ Housing: PA6 15% GK, Colour RAL 9010
- ▶ Measurements Housing: 75 x 69 x 44 mm
- ▶ Response time t90: 20 Seconds
- ▶ Protection class: IP65
- ▶ Mounting equipment (optional): Mounting flange, Screw clamps

## Immersion temp. sensor with flexible silicon connection ANDKNTFF

### DESCRIPTION

Thanks to its design, the ANDKNTFF Immersion Temperature Sensor is suited for a variety on applications in gaseous or liquid media. The flexible silicone connections helps to easily place the measuring point even in confined spaces. The sensor is mounted with the help of screw clamps, a mounting flange or an immersion sleeve.

Various other cable materials and lenghts, as well as multi-wire-connections and -sensors on demand.

### TECHNICAL DATA

- ▶ Measuring range (head): -50 °C ... +200 °C - depends on sensor
- ▶ Tmax. (housing): +100 °C
- ▶ Sensor: on request (PT100, PT100 1/3DIN, PT1000, PT1000 1/3DIN, Ni1000, Ni1000TK5000, NTC 5k, 10k, 20k, Precon, KTY81-210, NTC 1,8 kOhm, LM235Z, DS18B20)
- ▶ Protection sleeve Sensor: 6 x 50 mm stainless steel
- ▶ Neck tube: 6 x 50 mm stainless steel
- ▶ Switching mode: 2-wire connection (Standard)
- ▶ Connection: Screw clamps, max 1.5 mm<sup>2</sup>
- ▶ Housing: PA6 15% GK, Colour RAL 9010
- ▶ Measurements Housing: 75 x 69 x 44 mm
- ▶ Power supply cord: 300 mm Silicone (Standard)
- ▶ Fitting length: max. 300 mm
- ▶ Protection class: IP65
- ▶ Mounting equipment (optional): Immersion sleeve, Mounting flange, Screw clamps



# Temperature Sensors

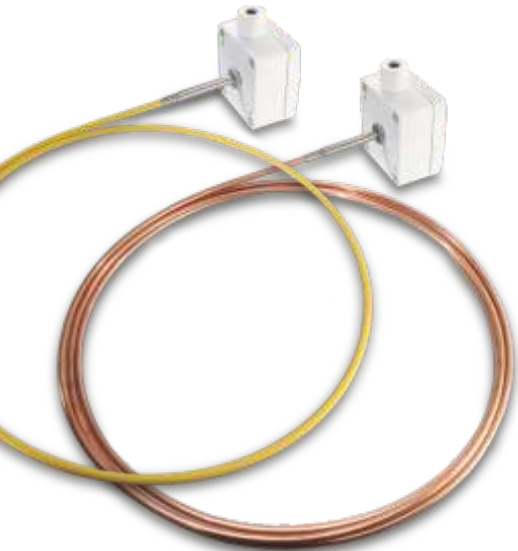
## Mean value temp. Sensor ANDMWTF

### DESCRIPTION

For measuring the temperature in gaseous media (when combined with a mounting flange). Areas of application: ventilation systems with large duct diameters. The sensor rod is mounted in a trapezoid shape and with the help of mounting brackets. With the help of the respective sensors (see below), the device can be connected to all conventional control and display systems.

### TECHNICAL DATA

- ▶ Measuring range: -30 °C ... +80 °C
- ▶ Sensor: on request (PT100, PT100 1/3DIN, PT1000, PT1000 1/3DIN, Ni1000, Ni1000TK5000)
- ▶ Measuring rod: Copper 4x0,5 mm (flexible), length (see table)
- ▶ Necktube: 60 mm stainless steel Ø 6 mm
- ▶ Switching mode: 2-wire connection (Standard)
- ▶ Connection: Screw clamps, max 1.5 mm<sup>2</sup>
- ▶ Housing: PA6 15% GK, Colour RAL 9010
- ▶ Measurements Housing: 75 x 69 x 44 mm
- ▶ Protection class: IP65
- ▶ Mounting equipment (optional): Mounting clamp, Mounting flange, Screw clamps



## High temperature sensor ANDHTFB1

### DESCRIPTION

The ANDHTFB1 is a high temperature sensor with a measuring range of -50 °C ... +600 °C. The device is equipped with an internal measuring unit and can easily be mounted on the container or duct to be measured (with the mounting flange included in the delivery). With the help of the respective sensors (see below), the device can be connected to all conventional control and display systems.

### TECHNICAL DATA

- ▶ Measuring range (sensor): -50 °C ... +600 °C
- ▶ Tmax. head: 100 °C
- ▶ Sensor: on request (PT100, PT1000)
- ▶ Protection sleeve: Ø 6 mm, stainless steel
- ▶ Switching mode: 2-wire connection (Standard)
- ▶ Connection: Screw clamps, max 1.5 mm<sup>2</sup>
- ▶ Housing: Aluminum, B shape
- ▶ Cable inlet: M20 x 1,5
- ▶ Measuring unit: Integrated, vibration-proof
- ▶ Protection class: IP54
- ▶ Mounting equipment (incl.): Mounting flange
- ▶ Mounting equipment (optional): Immersion sleeve, Screw clamps



## Screw-in sensor ANDHTFB2

### DESCRIPTION

Our ANDHTBF2 is a screw-in sensor with a B shape connecting head. It is used for measuring the temperature in liquid or gaseous media in heating, ventilation and air-conditioning applications. The screw-in sensor has a measuring range of -50 °C ... +180 °C with a maximum pressure of 40 bar. With the help of the respective sensors (see below), the device can be connected to all conventional control and display systems.

### TECHNICAL DATA

- ▶ Measuring range (sensor): -50 °C ... +400 °C (at NTC's max. +150 °C)
- ▶ Tmax. head: 100 °C
- ▶ Sensor: on request (PT100, PT100 1/3DIN, PT1000, PT1000 1/3DIN, Ni1000, Ni1000TK5000, Fet, NTC 5k, 10k, 20k, Precon, KTY81-210, NTC 1,8 kOhm)
- ▶ Protection sleeve: Ø 6 mm, stainless steel
- ▶ Switching mode: 2-wire connection (Standard)
- ▶ Connection: Screw clamps, max 1.5 mm<sup>2</sup>
- ▶ Housing: Aluminum, B shape
- ▶ Cable inlet: M20 x 1,5 mm
- ▶ Pressure resistance: 40 bar
- ▶ Connection Thread: G1/2" SW24
- ▶ Measuring unit: Integrated
- ▶ Protection class: IP54
- ▶ Mounting equipment (optional): Immersion sleeve THVA3



# Temperature Sensors

## Screw-in sensor (with neck tube) ANDHTFB3

### DESCRIPTION

Our ANDHTFB3 features an interchangeable measuring unit and has an application temperature of -50°C ... +600°C. The sensor is used to record an accurate measurement of the perceived temperature. With the help of the respective sensors (see below), the device can be connected to all conventional control and display systems. The sensor is directly connected to the pipe to be measured with the help of a stainless steel sleeve and a G1/2" thread.

### TECHNICAL DATA

- ▶ Measuring range (sensor): -50°C ... +600°C
- ▶ Tmax. head: 100 °C
- ▶ Sensor: on request (PT100, PT1000)
- ▶ Protection sleeve: Ø 6 mm, stainless steel
- ▶ Switching mode: 2-wire connection (Standard)
- ▶ Connection: Screw clamps, max 1.5 mm<sup>2</sup>
- ▶ Housing: Aluminum, B shape
- ▶ Cable inlet: M20 x 1,5
- ▶ Pressure resistance: 40 bar
- ▶ Connection Thread: G1/2" SW22
- ▶ Height connection thread+ hex: 30mm
- ▶ Measuring unit: Ø 6 mm, changeable
- ▶ Protection class: IP54



## Insertion temperature sensor ANDHTFJ1

### DESCRIPTION

The ANDHTFJ1 is a high temperature sensor with a measuring range of -50°C ... +400°C. The device is equipped with an internal measuring unit and can easily be mounted on the container or duct to be measured (with the mounting flange included in the delivery). With the help of the respective sensors (see below), the device can be connected to all conventional control and display systems.

### TECHNICAL DATA

- ▶ Measuring range (sensor): -50°C ... +400°C
- ▶ Tmax. head: 100 °C
- ▶ Sensor: on request (PT100, PT100 1/3DIN, PT1000, PT1000 1/3DIN, Ni1000, Ni1000TK5000, Fet, NTC 5k, 10k, 20k, Precon, KTY81-210, NTC 1,8 kOhm)
- ▶ Protection sleeve: Ø 6 mm, stainless steel
- ▶ Switching mode: 2-wire connection (Standard)
- ▶ Connection: Screw clamps, max 1.5 mm<sup>2</sup>
- ▶ Housing: Aluminium, Form J
- ▶ Cable inlet: M16
- ▶ Measuring unit: Integrated, vibration-proof
- ▶ Protection class: IP54
- ▶ Mounting equipment (optional): Mounting flange, Immersion sleeve and Screw clamps

## Screw-in sensor ANDHTFJ2

### DESCRIPTION

Our ANDHTFJ2 is a screw-in sensor with a J shape connecting head. It is used for measuring the temperature in liquid or gaseous media in heating, ventilation and air-conditioning applications. The screw-in sensor has a measuring range of -50°C ... +180°C with a maximum pressure of 40 bar. With the help of the respective sensors (see below), the device can be connected to all conventional control and display systems.

### TECHNICAL DATA

- ▶ Measuring range (sensor): -50°C ... +400°C (at NTC's max. +150°C)
- ▶ Tmax. head: 100 °C
- ▶ Sensor: on request (PT100, PT100 1/3DIN, PT1000, PT1000 1/3DIN, Ni1000, Ni1000TK5000, Fet, NTC 5k, 10k, 20k, Precon, KTY81-210, NTC 1,8 kOhm)
- ▶ Protection sleeve: Ø 6 mm, stainless steel
- ▶ Switching mode: 2-wire connection (Standard)
- ▶ Connection: Screw clamps, max 1.5 mm<sup>2</sup>
- ▶ Housing: Aluminium, Form J
- ▶ Cable inlet: M16
- ▶ Pressure resistance: 40 bar
- ▶ Connection Thread: G1/2" SW24
- ▶ Measuring unit: Integrated
- ▶ Protection class: IP54
- ▶ Mounting equipment (optional): Immersion sleeve THVA3



# Temperature Sensors

## Contact temperature sensor ANDANTF1 / ANDANTF2

### DESCRIPTION

For measuring the temperature on round surfaces like pipes. There are two sensor types available. Both are equipped with an aluminum prism and delivered with a tension band, allowing an easy and fast mounting on round surfaces such as cold and hot water pipes. With the help of the respective sensors (see below), the device can be connected to all conventional control and display systems.

### TECHNICAL DATA

- ▶ Measuring range:

ANDANTF1: -50 °C... +100 °C (Standard)

ANDANTF2: -50 °C... +105 °C

- ▶ Sensor: on request (PT100, PT100 1/3DIN, PT1000, PT1000 1/3DIN, Ni1000, Ni1000TK5000, NTC 5k, 10k, 20k, Precon, KTY81-210, NTC 1,8 kOhm)

- ▶ Switching mode: 2-wire connection (Standard)

- ▶ Connection: Screw clamps, max 1.5 mm<sup>2</sup>

ANDANTF1: Screw clamps, max 1.5 mm<sup>2</sup>

ANDANTF2: Core-end sleeves

- ▶ Power supply cord:

ANDANTF1: —

ANDANTF2: 2 m PVC (Standard)

- ▶ Housing: PA6 15% GK, Colour RAL 9010

- ▶ Measurements: 75 x 69 x 44 mm

ANDANTF1: 75 x 69 x 44 mm

ANDANTF2: 29 x 15 mm

- ▶ Protection class:

ANDANTF1: IP65; ANDANTF2: IP54

- ▶ Mounting equipment (incl.): Tension band



## Contact temperature sensor ANDANTF3VA / ANDANTF3MS

### DESCRIPTION

For measuring the temperature on round surfaces such as pipes. The sensors are available as stainless steel or brass version. The rounded edge at the end of the sensor and the included tension band allow an easy mounting on pipes. With help of the respective sensors (see below), the device can be connected to all conventional control and display systems. A tension band is included in the delivery.

### TECHNICAL DATA

- ▶ Measuring range: -50 °C... +105 °C

- ▶ Sensor: on request (PT100, PT100 1/3DIN, PT1000, PT1000 1/3DIN, Ni1000, Ni1000TK5000, NTC 5k, 10k, 20k, Precon, KTY81-210, NTC 1,8 kOhm, LM235Z, DS18B20)

- ▶ Switching mode: 2-wire connection (Standard)

Connection: Screw clamps, max 1.5 mm<sup>2</sup>

ANDANTF3VA: Screw clamps, max 1.5 mm<sup>2</sup>

ANDANTF3MS: Core-end sleeves

- ▶ Power supply cord: 2 m PVC (Standard)

- ▶ Sleeve: Stainless steel

ANDANTF3VA: Stainless steel

ANDANTF3MS: Brass

- ▶ Measurements: see Technical Drawing

- ▶ Protection class: IP54

- ▶ Mounting equipment (incl.): Tension band



## Surface temperature sensor ANDOBTF

### DESCRIPTION

The Surface Temperature Sensor ANDOBTF is designed for measuring the temperature on plain surfaces such as windows. The contact surface is made of aluminum and can be mounted to the respective surface with the drill hole (4,1 mm) located on the upper half of the sensor. With the help of the respective sensors (see below), the device can be connected to all conventional control and display systems.

### TECHNICAL DATA

- ▶ Measuring range: -50 °C... +105 °C

- ▶ Sensor: on request (PT100, PT100 1/3DIN, PT1000, PT1000 1/3DIN, Ni1000, Ni1000TK5000, NTC 5k, 10k, 20k, Precon, NTC 1,8 kOhm)

- ▶ Switching mode: 2-wire connection (Standard)

- ▶ Connection: Core-end sleeves

- ▶ Power supply cord: 2 m PVC (Standard)

- ▶ Measurements: 8 x 8 x 40 mm Aluminium

- ▶ Protection class: IP54

# Temperature Sensors

## Outdoor temperature sensor **ANDAUTF**

### DESCRIPTION

Our ANDAUTF is available with all common sensor Types. Measurement takes place inside the sturdy and humidityresistant plastic housing. The ANDAUTF is mainly used in weatherdependent environments, such as outer walls (please avoid direct insolation). With the help of the respective sensors (see below) , the device can be connected to all conventional control and display systems.

### TECHNICAL DATA

- ▶ Measuring range: -50 °C... +100 °C
- ▶ Tmax.(housing)+100°C
- ▶ Sensor: on request (PT100, PT100 1/3DIN, PT1000, PT1000 1/3DIN, Ni1000, Ni1000TK5000, NTC 5k, 10k, 20k, Precon, KTY81-210, NTC 1,8 kOhm, LM235Z, DS18B20)
- ▶ Switching mode: 2-wire connection (Standard)
- ▶ Connection: Screw clamps, max 1.5 mm<sup>2</sup>
- ▶ Housing: PA6 15% GK, Colour RAL 9010
- ▶ Measurements Housing: 75 x 69 x 44 mm
- ▶ Protection class: IP65
- ▶ Mounting equipment (incl.): Screws and dowels



## Outdoor temperature sensor **ANDAUTFext / ANDAUTFextS**

### DESCRIPTION

Our ANDAUTFEXT/ANDAUTFEXTS are available with all common sensor types. The temperature is measured inside the sensor tube. The ANDAUTFEXTS is equipped with a tapered sleeve for an ever faster response time. The sensors are mainly used in weather-dependent environments, such as outer walls (avoid direct insolation). With the help of the respective sensors (see below) , the device can be connected to all conventional control and display systems.

### TECHNICAL DATA

- ▶ Measuring range: -50 °C... +100 °C
- ▶ Tmax.(housing)+100°C
- ▶ Sensor: PT100, PT100 1/3DIN, PT1000, PT1000 1/3DIN, Ni1000, Ni1000TK5000, NTC 5k, 10k, 20k, Precon, KTY81-210, NTC 1,8 kOhm, LM235Z, DS18B20
- ▶ Switching mode: 2-wire connection (Standard)
- ▶ Connection : max. 1,5 mm<sup>2</sup>
- ▶ Housing: PA6 15% GK, Colour RAL 9010
- ▶ Measurements Housing: ANDAUTFext: 75 x 69 x 44mm, ANDAUTFextS: 75 x 69 x 44mm
- ▶ Sleeve length: ANDAUTFext: 6 x 42mm ANDAUTFextS: 5 x 47mm (tapered to 3,5 x 25mm)
- ▶ Protection class: IP65
- ▶ Response time t90: ANDAUTFext: 20 Seconds ANDAUTFextS: 16 Seconds
- ▶ Mounting equipment (incl.): Screws and dowels Screws and dowelsequipment (incl.): Tension band



## Outdoor temperature sensor w. sun protection **ANDAUTFext2**

### DESCRIPTION

The ANDAUTFEXT2 is used for temperature measurements in outdoor areas. Radiant heat is diverted via the integrated feeler tube, protecting the device from insolation and thus allowing a more accurate measurement. With the help of the respective sensors (see below) , the device can be connected to all conventional control and display systems.

### TECHNICAL DATA

- ▶ Measuring range: -50 °C... +100 °C
- ▶ Tmax.(housing): 100°C
- ▶ Sensor: on request (PT100, PT100 1/3DIN, PT1000, PT1000 1/3DIN, Ni1000, Ni1000TK5000, NTC 5k, 10k, 20k, Precon, KTY81-210, NTC 1,8 kOhm, LM235Z, DS18B20)
- ▶ Switching mode: 2-wire connection (Standard)
- ▶ Connection: Screw clamps, max 1.5 mm<sup>2</sup>
- ▶ Housing: PA6 15% GK, Colour RAL 9010
- ▶ Measurements Housing: 75 x 69 x 44 mm
- ▶ Sun protection (Sleeve): 10 x 42 mm
- ▶ Protection class: IP65
- ▶ Mounting equipment (incl.): Screws and dowels



# Temperature Sensors

## Indoor temp. sensor (surface mounted)

ANDRTF3 / ANDRTFVA

### DESCRIPTION

For measuring the temperature in living and office spaces, reception halls, foyers etc. The modern and plain design allows for easy and inconspicuous mounting. With the help of the respective sensors (see below), the device can be connected to all conventional control and display systems.

### TECHNICAL DATA

- ▶ Measuring range: -35°C... +70°C
- ▶ Sensor: on request (PT100, PT100 1/3DIN, PT1000, PT1000 1/3DIN, Ni1000, Ni1000TK5000, NTC 5k, 10k, 20k, Precon, KTY81-210, NTC 1,8 kOhm, LM235Z, DS18B20)
- ▶ Switching mode: 2-wire connection (Standard)
- ▶ Connection: Screw clamps, max 1.5 mm<sup>2</sup>
- ▶ Housing: ANDRTF3: ABS in RAL 9010, ANDRTFVA: Stainless steel 1.4571
- ▶ Measurements Housing: ANDRTF3: 87,5 x 87,5 x 30 mm, ANDRTFVA: 75 x 75 x 25 mm
- ▶ Protection class: IP30



## Indoor temp. sensor w. control elements

ANDRTF3XXX

### DESCRIPTION

Our Indoor Temperature Sensors with optional control elements are designed for measuring the temperature in living and office spaces, reception halls, foyers etc. With the help of the respective sensors (see table), the device can be connected to all conventional control and display systems.

### TECHNICAL DATA

- ▶ Measuring range: -35°C... +70°C
- ▶ Temperature sensor: on request (P1k, P5k, P10k, PA, T, T/L, Lgr, Lge, Lrt, S)
- ▶ Power supply: 24VAC/VDC
- ▶ Potentiometer: 0-10V, 1 kOhm, 5 kOhm, 10 kOhm
- ▶ Pushbutton: 10 mA, 35 VDC
- ▶ LED: 24VDC (green, yellow and red)
- ▶ Switch: 5-step-slide-switch
- ▶ Housing: ABS in RAL 9010
- ▶ Measurements: 87,5 x 87,5 x 30 mm
- ▶ Connection: Screw clamps max. 1.5 mm<sup>2</sup>
- ▶ Switching mode Sensor: 2-wire connection (Standard)
- ▶ Protection class: IP30

### TYPE

- ▶ ANDRTF3 basic passive (incl. sensor)
- ▶ ANDRTF3.1 basic active (incl. Sensor)



## Indoor temp. sensor w./ wo. control elements (flush-mounted)

### DESCRIPTION

For measuring the temperature in living and office spaces, reception halls, foyers etc. The modern and plain design allows for easy and inconspicuous mounting. With the help of the respective sensors (see below), the device can be connected to all conventional control and display systems.

### TECHNICAL DATA

- ▶ Power supply: 24VAC/VDC (active device)
- ▶ Measuring range (temp): 0°C... +50°C
- ▶ Switching mode: 2-wire connection (Standard)
- ▶ Potentiometer: 1 kOhm (Standard)
- ▶ Pushbutton: Make contacts, 24VAC, 8 mA
- ▶ Rotary switch: 24VAC +20%; -15%, 50/60 Hz
- ▶ LED: Green/Red, 8 mA 24VDC
- ▶ Electrical Connection: plug-in/screw terminals (dependent on switch range)
- ▶ Protection rating: III
- ▶ Protection class: IP20
- ▶ Temperature sensors: Pt100, Pt1000, Ni1000, Ni1000TK5000 (L+G), NTC1,8 k, NTC10k, NTC20k, LM235Z or active output 0-10V
- ▶ Switch ranges: Berker Module2 (BM2) - Berker S1 (BS1) - Busch Jaeger Reflex SI alpine white (BJR) - Busch Jaeger Duro 2000I white (BJD), Busch Jaeger Future manhattan/graphite (BJF) - GIRA S55, pure white (GS55) - GIRA E2, silk matt (GE2) - Jung LS990 - (JLS990) - Merten M-Plan (MMP) - Merten M-SMART (MMS)



# Temperature Sensors

## Radiation sensor ANDSTF

### DESCRIPTION

For indoor temperature measuring applications. The sensor is suspended from above, making it especially suitable for temperature Measurements in large rooms and halls with a high ceiling. The Radiation sensor is used to record an accurate measurement of the perceived temperature. With the help of the respective sensors (see table), the device can be connected to all conventional control and display systems. Various other cable materials and lengths, as well as multi-wire-connections and -sensors on demand.

### TECHNICAL DATA

- ▶ Measuring range: -30 °C ... +70 °C
- ▶ Sensor: on request (PT100, PT100 1/3DIN, PT1000, PT1000 1/3DIN, Ni1000, Ni1000TK5000, NTC 5k, 10k, 20k, Precon, KTY81-210, NTC 1,8 kOhm, LM235Z, DS18B20)
- ▶ Switching mode: 2-wire connection (Standard)
- ▶ Connection: Core-end sleeves
- ▶ Protection class: IP30



## Radiation sensor - indoor ANDRSTF

### DESCRIPTION

For indoor temperature measuring applications. The Radiation sensor is used to record an accurate measurement of the perceived temperature. With the help of the respective sensors (see table), the device can be connected to all conventional control and display systems.

### TECHNICAL DATA

- ▶ Measuring range: -35 °C ... +70 °C
- ▶ Sensor: on request (PT100, PT100 1/3DIN, PT1000, PT1000 1/3DIN, Ni1000, Ni1000TK5000, NTC 5k, 10k, 20k, Precon, KTY81-210, NTC 1,8 kOhm, LM235Z, DS18B20)
- ▶ Switching mode: 2-wire connection (Standard)
- ▶ Connection: Screw clamps, max 1.5 mm<sup>2</sup>
- ▶ Housing: ABS in RAL 9010
- ▶ Measurements Housing: 87,5 x 87,5 x 47,5 mm
- ▶ Protection class: IP30
- ▶ Sphere: Diameter: 37 mm



## Radiation sensor - indoor ANDASTF

### DESCRIPTION

For outdoor temperature measuring applications. The Radiation sensor is used to record an accurate measurement of the perceived temperature. With the help of the respective sensors (see table), the device can be connected to all conventional control and display systems.

### TECHNICAL DATA

- ▶ Measuring range: -50 °C ... +100 °C
- ▶ Sensor: on request (PT100, PT100 1/3DIN, PT1000, PT1000 1/3DIN, Ni1000, Ni1000TK5000, NTC 5k, 10k, 20k, Precon, KTY81-210, NTC 1,8 kOhm, LM235Z, DS18B20)
- ▶ Switching mode: 2-wire connection (Standard)
- ▶ Connection: Screw clamps, max 1.5 mm<sup>2</sup>
- ▶ Housing: PA6 15% GK, Colour RAL 9010
- ▶ Measurements Housing: 75 x 69 x 44 mm
- ▶ Protection class: IP65
- ▶ Mounting equipment (incl.): Screws and dowels
- ▶ Sphere: Diameter: 37 mm



# Temperature Sensors

## Screw-in sensor G1/2"

ANDES F

### DESCRIPTION

Our ANDES F Screw-in Sensor has a G1/2" thread and can be applied in gaseous and liquid media with pressures up to 40 bar. The ANDES F is used in heating, ventilation, refrigeration and air conditioning applications. With the help of the respective sensors (see below), the device can be connected to all conventional control and display systems.

Note: The ANDES F with glass fibre connection can not be equipped with WPC.

### TECHNICAL DATA

- ▶ Measuring range: Fitting length (PVC-cord max. 105 °C) "P" Fitting length (Silicone cord max. 180 °C) "S" Fitting length (Glass fibre cord max. 400 °C) "G"
- ▶ Sensor: on request (PT100, PT100 1/3DIN, PT1000, PT1000 1/3DIN, Ni1000, Ni1000TK5000, NTC 5k, 10k, 20k, Precon, KTY81-210, NTC 1,8 kOhm, LM235Z, DS18B20)
- ▶ Switching mode: 2-wire connection (Standard)
- ▶ Connection: Core-end sleeves
- ▶ Power supply cord: 2000 mm PVC (+105 °C), Silicone (+180 °C) or Glass fibre (+400 °C)
- ▶ Connection thread: G 1/2", SW27
- ▶ Material: stainless steel
- ▶ Protection class: IP54
- ▶ Pressure resistance: 40 bar
- ▶ Mounting equipment (optional): Immersion sleeve THVA3



## Screw-in sensor G1/4"

ANDES F2

### DESCRIPTION

Our ANDES F2 Screw-in Sensor has a G1/4" thread and can be applied in gaseous and liquid media with pressures up to 40 bar. The ANDES F2 is used in heating, ventilation, refrigeration and air conditioning applications. With the help of the respective sensors (see below), the device can be connected to all conventional control and display systems.

Note: The ANDES F2 with glass fibre connection can not be equipped with WPC.

### TECHNICAL DATA

- ▶ Measuring range: Fitting length (PVC-cord max. 105 °C) "P" Fitting length (Silicone cord max. 180 °C) "S" Fitting length (Glass fibre max. 400 °C) "G"
- ▶ Sensor: on request (PT100, PT100 1/3DIN, PT1000, PT1000 1/3DIN, Ni1000, Ni1000TK5000, NTC 5k, 10k, 20k, Precon, KTY81-210, NTC 1,8 kOhm, LM235Z, DS18B20)
- ▶ Switching mode: 2-wire connection (Standard)
- ▶ Connection: Core-end sleeves
- ▶ Power supply cord: 2000 mm PVC (+105 °C), Silicone (+180 °C) or Glass fibre (+400 °C)
- ▶ Connection thread: G 1/4", SW27
- ▶ Material: stainless steel
- ▶ Protection class: IP54
- ▶ Pressure resistance: 40 bar

## Screw-in immersion temp. sensor ANDES F

### DESCRIPTION

For measuring the temperature of liquid/aggressive and gaseous media. The ANDES F is used in heating, ventilation, refrigeration and air conditioning applications. The sensor can easily be mounted to the container or duct to be measured via the G 1/2" terminal thread. With the help of the respective sensors (see below), the device can be connected to all conventional control and display systems.

### TECHNICAL DATA

- ▶ Measuring range (sensor): -50 °C ... +180 °C - depends on sensor
- ▶ Tmax. (housing): +100 °C
- ▶ Sensor: on request (PT100, PT100 1/3DIN, PT1000, PT1000 1/3DIN, Ni1000, Ni1000TK5000, NTC 5k, 10k, 20k, Precon, KTY81-210, NTC 1,8 kOhm)
- ▶ Switching mode: 2-wire connection (Standard)
- ▶ Connection: Screw clamps max 1,5 mm<sup>2</sup>
- ▶ Housing: PA6 15% GK, Colour RAL 9010
- ▶ Measurements Housing: 75 x 69 x 44 mm
- ▶ Protection class: IP65
- ▶ Connection Thread: G 1/2"-SW24
- ▶ Protection sleeve: Ø 6 mm stainless steel
- ▶ Mounting equipment (optional): Immersion sleeve THVA3





# Temperature Sensors

## Ceiling mounted temp. sensor ANDDEBF

### DESCRIPTION

For indoor temperature measuring applications (to be flush-mounted). The sensor features a plain and modern design and is mounted to the ceiling with the help of two tension springs. With the help of the respective sensors (see below), the device can be connected to all conventional control and display systems.

### TECHNICAL DATA

- ▶ Measuring range: -20°C... +90°C (Standard)
- ▶ Sensor: on request (PT100, PT100 1/3DIN, PT1000, PT1000 1/3DIN, Ni1000, Ni1000TK5000, NTC 5k, 10k, 20k, Precon, KTY81-210, NTC 1,8 kOhm)
- ▶ Power supply cord: 0,3 m PVC 2 x 0,25 mm<sup>2</sup> (Standard)
- ▶ Switching mode: 2-wire connection (Standard)
- ▶ Protection class: IP20



## Sheath thermocouple ANDMTE

### DESCRIPTION

For temperature Measurements between -220 and +1150°C in liquid or gaseous media. Because of their special interior design with magnesium oxide, thermocouple elements can be used for applications with high pressure and vibrations while guaranteeing a long life span. Sheath Thermocouples are bendable and have a fast response time. The ANDMTEs are installed with the help of screw clamps.

### TECHNICAL DATA

- ▶ Thermocouple: NiCr-Ni Type K acc. DIN IEC 584 – isolated
- ▶ Diameter: 1 mm, 1,5 mm, 3 mm or 6 mm
- ▶ Fitting length: 100 mm, 150 mm, 200 mm, 300 mm, or 500 mm
- ▶ Material: Inconel - 2.4816
- ▶ Connective sleeve: 8 x 40 mm diameter 6 mm, otherwise 5 x 35 mm
- ▶ Power supply cord: Glass-fibre cord, stainless steel coating 2 x 0,22 mm<sup>2</sup>
- ▶ Length of supply cord: 2.000 mm (Standard)
- ▶ Terminal connection: 50 mm loose ends with core-end sleeves
- ▶ Protection class: IP54
- ▶ Max. operating temp. MTE: -220°C... +1150°C
- ▶ Max. operating temp. cord: -50°C... +400°C

## Temperature measuring transducer for PT1000 ANDMUG / ANDMIG

### DESCRIPTION

The measuring transducer records the temperature via a connected Pt1000 sensor and converts the value into a standardized analogue output signal in the range between 0-10V/4-20 mA. 24 measuring ranges can be selected and adjusted with the help of a DIP switch. The offset can be corrected by ±5K using the potentiometer.

### TECHNICAL DATA

- ▶ Power supply: 12... 34VAC/VDC
- ▶ Analogue output burden (4...20 mA) 50...500 Ohms (at 4... 20 mA)
- ▶ Analogue output load: 10... 100 kOhms (at 0... 10V)
- ▶ Power input at 0... 10V: 20 mA
- ▶ Power input at 4... 20 mA: 24... 44 mA
- ▶ Accuracy: ± 0,2K + max 3% fullscale
- ▶ Measuring range: 24 measuring ranges available (request)
- ▶ Operating temperature MUF: -30°C... +70°C
- ▶ Required temperature sensor: PT1000 DIN EN 60751, Kl. B (2-wire)
- ▶ Connection: Screw clamps max. 1.5 mm<sup>2</sup>
- ▶ Housing: PA6 15% GK, Colour RAL 9010
- ▶ Measurements Housing: 75 x 69 x 44 mm
- ▶ Protection class: IP65
- ▶ Norms: CE, Electromagnetic Compatibility acc. EN 61326-1 2013, EG Act 2004/108/EG
- ▶ Connection: 3-wire (at 4-20 mA optional 2-wire)



# Temperature Sensors

## DIN-rail measuring transducer for PT1000

ANDMUF-HS

### DESCRIPTION

Our measuring transducer ANDMUF-HS records the temperature via a connected Pt1000 sensor and converts the value into a standardized analogue output signal in the range between 0-10V/4-20 mA. The transmitter has an EMG housing and the Pt1000 can be connected by 2- or 3-wire. 24 measuring ranges can be selected and adjusted with the help of a DIP switch. On request additional options can be offered. Offset can be corrected by  $\pm 8^{\circ}\text{K}$  using the potentiometer.

### TECHNICAL DATA

- ▶ Power supply: 12 ... 34VAC/VDC
- ▶ Analogue output burden (4...20mA) 50...500 Ohms
- ▶ Analogue output load (0...10V) 10 ... 100 kOhms
- ▶ Power input at 0 ... 10V: 20 mA
- ▶ Power input at 4 ... 20 mA: 24 ... 44 mA
- ▶ Accuracy:  $\pm 0,2\text{K} + \text{max } 3\% \text{ fullscale}$
- ▶ Measuring range: 24 measuring ranges available (request)
- ▶ Operating temperature MUF:  $-30^{\circ}\text{C} \dots +70^{\circ}\text{C}$
- ▶ Required temperature sensor: PT1000 DIN EN 60751, Class B (2-wire)
- ▶ Connection: Screw clamps max. 1.5 mm<sup>2</sup>
- ▶ Housing Material: Polycarbonat PC-F
- ▶ Measurements Housing: 15 x 75 x 53 mm
- ▶ Protection class: IP65
- ▶ Norms: CE, Electromagnetic Compatibility acc. EN 61326-1 2013,
- ▶ EG Act 2004/108/EG
- ▶ Connection: 3-wire (at 4-20 mA optional 2-wire)



## Freeze-protection thermostat ANDFST - 0,6

### DESCRIPTION

Our ANDFST freeze-protection switch is used for downstream temperature control of water-air heaters in ventilation and air-conditioning system in order to prevent frost damage. The thermostat features a remarkably small differential gap, high reproducibility and an automatic reset function.

### TECHNICAL DATA

- ▶ Switching capacity: 250 V/AC, 10(6)A; Signal voltage due to the gold-plated connectors
- ▶ Adjustment range:  $-10^{\circ}\text{C} \dots +15^{\circ}\text{C}$
- ▶ Factory setting:  $+5^{\circ}\text{C}$
- ▶ Differential gap:  $2 \pm 1\text{K}$
- ▶ Reproducibility:  $\pm 0,5\text{K}$
- ▶ Length of capillary tube: 600 m
- ▶ Reset: automatic
- ▶ Mounting position: variable
- ▶ Electrical connection: up to 2.5 mm<sup>2</sup> at microswitch
- ▶ Cable inlet: cable glands M16 x 1.5
- ▶ Protection class: IP65
- ▶ Max. Operating temperature:  $+70^{\circ}\text{C}$
- ▶ Min. Operating temperature:  $w + \text{min. } 2^{\circ}\text{C}$
- ▶ Storage temperature:  $-30^{\circ}\text{C} \dots +70^{\circ}\text{C}$

## Freeze-protection thermostat ANDFST3 / ANDFST6

### DESCRIPTION

Device surveilling hot water heating coils and heat exchangers in ventilation and air-conditioning systems as well as heating appliances. The freeze-protection thermostat prevents waterbearing tanks and heat exchangers from freezing over and is equipped with an automatic reset.

### TECHNICAL DATA

- ▶ Switching capacity: 16 A, 250 V open or closed, 1 A, 250 V opposite side
- ▶ Terminals: 1 common, 2 opens contact at higher temperature. 4 closes contact when temperature rises
- ▶ Cable inlet: conductor isolation, 14 mm
- ▶ Storage temperature:  $-30^{\circ}\text{C} \dots +55^{\circ}\text{C}$
- ▶ Installation: Two threaded holes in the backside of the casing (M4x6, incl.)
- ▶ Setting: via hex nut
- ▶ Housing: Plastic Noryl SE1, grey cover
- ▶ Measurements: 86 x 49 x 76 mm
- ▶ Protection rating: IP44
- ▶ Sensor element: Gas-filled tin-coated copper capillary tube
- ▶ Temperature/adjustment range:  $-18^{\circ}\text{C} \dots +13^{\circ}\text{C}$
- ▶ Accuracy:  $\pm 1,2^{\circ}\text{C}$
- ▶ Accessories (incl.) Set of fasteners for the capillaries + mounting bracket



# Temperature Sensors

## Contact Safety Temperature Limiter

ANDANSTB1

## Contact Safety Temperature Monitor

ANDANTW1

## Contact Safety Temp. Thermostat

ANDANTH3 / ANDANTH4

### DESCRIPTION

The type ANDAN Contact Sensors are suited for temperature control and adjustment in pipes/drain pipes.

### TECHNICAL DATA

#### Contact safety temperature limiter

- ▶ Preset limiting temperature: +60 °C
- ▶ Limiting temperature range: +40 °C... +70 °C
- ▶ Tolerance: 0... 10K
- ▶ Reset temperature: Resolution at 25 K ± 8 K
- ▶ Protection rating: IP40
- ▶ Insulation rating: I
- ▶ Temperature gradient: <1 K/min.
- ▶ Max. head temperature: +55 °C
- ▶ Max. sensor temperature: +125 °C
- ▶ Storage temperature: -15 °C... +60 °C

### TECHNICAL DATA

#### Contact safety temperature monitor

- ▶ Limiting temperature range: 0 °C... +90 °C
- ▶ Tolerance: ±5K
- ▶ Differential: 10±3K
- ▶ Protection rating: IP40
- ▶ Insulation rating: I
- ▶ Temperature gradient: <1 K/min.
- ▶ Max. head temperature: +55 °C
- ▶ Max. sensor temperature: +125 °C
- ▶ Storage temperature: -15 °C... +60 °C

### TECHNICAL DATA

#### Contact safety temperature thermostat with ext. controls ANDANTH3

- ▶ Limiting temperature range: +20 °C... +90 °C
- ▶ Tolerance: 8 ± 3 K
- ▶ Differential: 8 ± 3 K
- ▶ Protection rating: IP40
- ▶ Insulation rating: I
- ▶ Temperature gradient: <1 K/min.
- ▶ Max. head temperature: +85 °C
- ▶ Storage temperature: -15 °C... +60 °C

#### Contact safety temperature thermostat with int. controls ANDANTH4

- ▶ Limiting temperature range: +20 °C... +90 °C
- ▶ Tolerance: 8 ± 3 K
- ▶ Differential: 8 ± 3 K
- ▶ Protection rating: IP40
- ▶ Insulation rating: I
- ▶ Temperature gradient: <1 K/min.
- ▶ Max. head temperature: +85 °C
- ▶ Storage temperature: -15 °C... +60 °C



# Temperature Sensors

## Industrial indoor thermostat ANDIRTH1 Indoor thermostatt ANDRTH1

### DESCRIPTION

The Thermostats is suited for indoor temperature control and adjustment. Because of its higher protection class, the ANDIRTH 1 can be applied for industrial purposes.

### TECHNICAL DATA

#### Industrial indoor thermostat - **ANDIRTH1**

- ▶ Adjustment range:  $-5^{\circ}\text{C} \dots +35^{\circ}\text{C} \pm 2^{\circ}\text{C}$
- ▶ Differential gap:  $\Delta t \pm 1\text{K}$
- ▶ Max. Temperatur housing:  $+50^{\circ}\text{C}$
- ▶ Max. Temperatur capillaries:  $+50^{\circ}\text{C}$
- ▶ IP Protection class: IP54
- ▶ Contact load: C1 16 (2,5)A / 250V
- ▶ C2 6 (2,5)V

#### Indoor thermostat - **ANDRTH1**

- ▶ Adjustment range:  $-5^{\circ}\text{C} \dots +30^{\circ}\text{C}$
- ▶ Differential gap:  $\Delta t < 1\text{K}$
- ▶ Max. Temperatur housing:  $+50^{\circ}\text{C}$
- ▶ IP Protection class: IP20
- ▶ Contact load: NC 16 (2,5) 250V, NC 16 (2,5) 250V



## Remote sensor single level ANDKTTH

### DESCRIPTION

The Thermostats are suited for temperature control and adjustment indoors as well as in pipes/drain pipes (in combination with an immersion sleeve).

### TECHNICAL DATA

#### **ANDKTTH1**

- ▶ Adjustment range:  $0^{\circ}\text{C} \dots +55^{\circ}\text{C} \pm 2^{\circ}\text{C}$
- ▶ Differential gap:  $\Delta t 3\text{K} \pm 1$
- ▶ Max. Temperatur housing:  $85^{\circ}\text{C}$
- ▶ Max. Temperatur capillaries:  $60^{\circ}\text{C}$
- ▶ Protection class: IP54
- ▶ Contact load: C1 16 (6)A / 250V, C2 6 (4)A / 250V

#### **ANDKTTH2**

- ▶ Adjustment range:  $0^{\circ}\text{C} \dots +90^{\circ}\text{C} \pm 3^{\circ}\text{C}$
- ▶ Differential gap:  $\Delta t 4^{\circ}\text{C} \pm 1^{\circ}\text{C}$
- ▶ Max. Temperatur housing:  $80^{\circ}\text{C}$
- ▶ Max. Temperatur capillaries:  $150^{\circ}\text{C}$
- ▶ Protection class: IP40
- ▶ Contact load: C1 10 (2,5)A NC / 250V, C2 6 (2,5)A NA / 250V
- ▶ Length of capillaries: 1000 mm
- ▶ Immersion sleeve, brass R 1/2": 7 x 8 x 100 mm



## Immersion thermostat - Safety temp. limiter

ANDTSTB1

### DESCRIPTION

The assortment of switching immersion thermostats ANDTTH1, is specially designed to guarantee an optimal control and adjustment of temperature behavior inner pipes and drain pipes.

### TECHNICAL DATA

- ▶ Temperature adjustment range:  $+90^{\circ}\text{C} \dots +110^{\circ}\text{C}$
- ▶ Tolerance:  $-6\text{K} / -15\text{K}$  (acc. model)
- ▶ Differential:  $25 \pm 8\text{K} / 15 \pm 8\text{K}$  (acc. model)
- ▶ Reset: manual
- ▶ Protection class: IP
- ▶ Insulation class: I
- ▶ Temperature gradient:  $< 1\text{K}/\text{min}$ .
- ▶ Max. start temperature:  $+80^{\circ}\text{C}$
- ▶ Max. sensor temperature:  $+125^{\circ}\text{C}$
- ▶ Storage temperature:  $-15^{\circ}\text{C} \dots +55^{\circ}\text{C}$
- ▶ Max. envelope pressure: 10 bar
- ▶ Response time:  $> 1'$
- ▶ Load at contacts C-1: 0,5 A / 250 VAC, C-2: 10 (2,5) A / 250 VAC
- ▶ Cable inlet: M20 x 1,5
- ▶ Immersion sleeve, brass R 1/2": 7 x 8 x 120 mm



# Temperature Sensors

## Immersion thermostat - Safety double thermostat ANDDTTH1

### DESCRIPTION

The assortment of switching immersion thermostats ANDTTH1, is specially designed to guarantee an optimal control and adjustment of temperature behavior inner pipes and drain pipes.

### TECHNICAL DATA

- ▶ Temperature adjustment range: Controller 0°C ... +90°C, Limiter +90°C ... +110°C
- ▶ Tolerance: Controller ±5K, Limiter -15K; -6K (acc. model)
- ▶ Differential: Controller 6 ± 2K; 4 ± 1K (acc. model), Limiter 25 ± 8K; 15 ± 8K (acc. model)
- ▶ Reset: manual and automatic
- ▶ Protection class: IP
- ▶ Insulation class: I
- ▶ Temperature gradient: <1 K/min.
- ▶ Max. start temperature: +80°C
- ▶ Max. sensor temperature: +125°C
- ▶ Storage temperature: -15°C ... +55°C
- ▶ Max. envelope pressure: 10 bar
- ▶ Response time: >1'
- ▶ Load at contacts: C-1 REG.: 10(2,5)A/250VAC, C-2 REG.: 6(2,5)A/250VAC, C-1 LIM.: 0,5A/250VAC, C-2 LIM.: 10(2,5)A/250VA
- ▶ Cable inlet: M20x1,5
- ▶ Immersion sleeve, brass R1/2": 15x16x100 mm



## Immersion thermostat - Control thermostat ANDTTH1

### DESCRIPTION

The assortment of switching immersion thermostats ANDTTH1, is specially designed to guarantee an optimal control and adjustment of temperature behavior inner pipes and drain pipes.

### TECHNICAL DATA

- ▶ Control Thermostat
- ▶ Temperature adjustment range: 0°C ... +90°C
- ▶ Tolerance: ±5K
- ▶ Differential: 6 ± 2K
- ▶ Protection class: IP
- ▶ Insulation class: I
- ▶ Temperature gradient: <1 K/min.
- ▶ Max. start temperature: +80°C
- ▶ Max. sensor temperature: +125°C
- ▶ Storage temperature: -15°C ... +55°C
- ▶ Max. envelope pressure: 10 bar
- ▶ Response time: >1'
- ▶ Load at contacts: C-1: 10(2,5)A/250VAC, C-2: 6(2,5)A/250VAC
- ▶ Cable inlet: M20x1,5
- ▶ Immersion sleeve, brass R1/2": 7x8x100 mm



## Immersion thermostat - Control thermostat ANDTTH1.1

### DESCRIPTION

The assortment of switching immersion thermostats ANDTTH1, is specially designed to guarantee an optimal control and adjustment of temperature behavior inner pipes and drain pipes.

### TECHNICAL DATA

- ▶ Control Thermostat
- ▶ Temperature adjustment range: 0°C ... +90°C
- ▶ Tolerance: ±5K
- ▶ Differential: 6 ± 2K
- ▶ Protection class: IP
- ▶ Insulation class: I
- ▶ Temperature gradient: <1 K/min.
- ▶ Max. start temperature: +80°C
- ▶ Max. sensor temperature: +125°C
- ▶ Storage temperature: -15°C ... +55°C
- ▶ Max. envelope pressure: 10 bar
- ▶ Response time: >1'
- ▶ Load at contacts: C-1: 10(2,5)A/250VAC, C-2: 6(2,5)A/250VAC
- ▶ Cable inlet: M20x1,5
- ▶ Immersion sleeve, brass R1/2": 7x8x100 mm



# Temperature Sensors

## PID controller ANDETC4420

### DESCRIPTION

The Temperature Controller ANDETC4420 is equipped with ON/OFF function or PID control with self-adjustment. Actual and set value can be displayed simultaneously. Additionally, the ANDETC4420 is equipped with a soft start function (ramp function) and a security code function to prevent unauthorized value adjustment. Measuring input for 2/3-wire connection with Pt100 or thermocouples type J, K, T, S and R. The horizontal and vertical menu navigation allow for easy and intuitive operation.

### TECHNICAL DATA

- ▶ Power supply: 230VAC / Optional 9...30VDC or 7...24VAC
- ▶ Power consumption: max. 5VA
- ▶ Input (sensor): PT100, Thermocouple Typ J, K, T, S, R
- ▶ Resolution: 0,1 °C
- ▶ Accuracy:  $\pm 0,2\%$  full scale:

#### Output:

AL2 controller output: Relay: Changeover contact 250V/AC/2A

AL1 alarm output: Relay: Make contact 250V/AC/2A

- ▶ SSR output: max. 12V/20mA
- ▶ Relay life span: Switching Operations: 30 Mio. without load / 300,000 at 250VAC/2A
- ▶ Control type: ON/OFF setting / P, PI, PD, PID
- ▶ Measurements: 48 x 48 x 94 mm
- ▶ Protection class: Front IP65 - Rear IP20



## PID temperature controller ANDETC4420

### DESCRIPTION

Digital adjustable thermostat for heating and cooling applications. Conveniently operable via the front buttons. With adjustable hysteresis, set value and off-set function. Depending on the model, the controller is available with input signals Pt100 or type J and K thermocouples.

### TECHNICAL DATA

- ▶ Power supply: 230VAC / optional: 9-30VDC
- ▶ Power consumption: max. 5VA
- ▶ Input (sensor): Type J or K thermocouples or Pt100 (please specify at order)
- ▶ Scale: Type J and K thermocouples: 0°C...+600°C / PT100: -100°C...+600°C
- ▶ Resolution: 1 °C
- ▶ Accuracy:  $\pm 0,5^\circ\text{C}$  full scale
- ▶ Switching output: Relay, Changeover contact
- ▶ Reference Value adjustment: 1 set value setting
- ▶ Control response: ON/OFF switching mode
- ▶ Hysteresis: Adjustable between +1°C and +20°C
- ▶ Housing: Switchboard installation (DIN43700), mounting equipment
- ▶ Measurements: 35 x 77 x 71 mm
- ▶ Display: 4 digits



# Humidity Sensors

## Indoor combination sensor for rel. humidity and temp. ANDRFFT/R-X/S

### DESCRIPTION

Apparatus for measuring the relative humidity and/or temperature in living and office spaces, reception halls, foyers etc. The measuring transducer records the temperature and humidity via an internal sensor and converts the value into a standardized analogue output signal in the range between 0-10V/4-20 mA.

### TECHNICAL DATA

- ▶ Power supply: 12 ... 34 VAC/VDC
- ▶ Sensor element humidity: capacitive sensor
- ▶ Sensor element temp.: capacitive sensor
- ▶ Sensor element temperature passive (opt.): at customer's option
- ▶ Measuring range humidity: 0 ... 100% r.h.
- ▶ Output humidity: 0 ... 10V or 4 ... 20 mA
- ▶ Tolerance Humidity 35% ... 70% r.h.: ± 2% (25 ... 90% r.h.)
- ▶ Measuring ranges temp.: request
- ▶ Active output signal temperature 0 ... 10V or 4 ... 20 mA
- ▶ Tolerance temperature: ± 0,5 K
- ▶ Load at analogue output (0 ... 10V): 10 ... 100 kOhms
- ▶ Analogue output burden (4 ... 20 mA): 300 ... 1000 Ohms
- ▶ Operating temperature: -30 °C ... +50 °C
- ▶ Operating range: 0 ... 98% r.h.
- ▶ Response time (r.h.): 8 Sec. (at 63% condensation)
- ▶ Connection: Screwclamps max. 1.5 mm
- ▶ Housing: Material ABS, Colour RAL 9010
- ▶ Measurements housing: 87,5 x 87,5 x 30 mm
- ▶ Protection class: IP30



## Outdoor combination sensor for rel. humidity and temp. ANDARFT/R-X/S

### DESCRIPTION

Device for measuring the relative humidity/temperature in outdoor areas or indoor areas subject to high requirements. The measuring transducer records the temperature and humidity via an internal sensor and converts the value into a standardized analogue output signal in the range between 0-10V/4-20 mA. Additionally, a passive temperature sensor can be connected. The sensor features long-term stability and no recalibration is required.

### TECHNICAL DATA

- ▶ Power supply: 12 ... 34 VAC/VDC
- ▶ Sensor element humidity: capacitive
- ▶ Sensor element temp.: capacitive
- ▶ Sensor element temperature passive (opt.): at customer's option
- ▶ Measuring range humidity: 0 ... 100% r.h.
- ▶ Output humidity: 0 ... 10V or 4 ... 20 mA
- ▶ Tolerance humidity 35% ... 70% r.h.: ± 2% (25 ... 90% r.h.)
- ▶ Measuring range temperature: -30 °C ... +70 °C
- ▶ Active output signal temperature 0 ... 10V or 4 ... 20 mA
- ▶ Tolerance temperature: ± 0,5 K
- ▶ Load at analogue output (0 ... 10V): 10 ... 100 kOhms
- ▶ Analogue output burden (4 ... 20 mA): 300 ... 1000 Ohms
- ▶ Operating temp.: -30 °C ... +70 °C
- ▶ Operating range: 0 ... 98% r.h.
- ▶ Response time (r.h.): 8 Sec. (at 63% condensation)
- ▶ Protection sleeve: 12 x 75 mm stainless steel
- ▶ Connection: Screwclamps max. 1.5 mm
- ▶ Housing: PA6 15% GK, Colour RAL 9010
- ▶ Measurements housing: 75 x 69 x 44 mm
- ▶ Protection class: IP65
- ▶ Sensor protection: Sintered filter, HD polyethylene



## Duct combination sensor for rel. humidity and temp. ANDKFFT/R-X/S

### DESCRIPTION

Device for measuring the relative humidity/temperature in ducts or indoor areas subject to high requirements. The measuring transducer records the temperature and humidity via an internal sensor and converts the value into a standardized analogue output signal in the range between 0-10V/4-20 mA.

### TECHNICAL DATA

- ▶ Power supply: 12 ... 34 VAC/VDC
- ▶ Sensor element humidity: capacitive
- ▶ Sensor element temp.: capacitive
- ▶ Sensor element temperature passive (opt.): at customer's option
- ▶ Measuring range humidity: 0 ... 100% r.h.
- ▶ Output humidity: 0 ... 10V or 4 ... 20 mA
- ▶ Tolerance humidity 35% ... 70% r.h.: ± 2% (25 ... 90% r.h.)
- ▶ Measuring range temp.: -30 °C ... +70 °C
- ▶ Active output signal temperature 0 ... 10V or 4 ... 20 mA
- ▶ Tolerance temperature: ± 0,5 K
- ▶ Load at analogue output (0 ... 10V): 10 ... 100 kOhms
- ▶ Analogue output burden 4 ... 20 mA: 300 ... 1000 Ohms
- ▶ Operating temperature: -30 °C ... +70 °C
- ▶ Operating range: 0 ... 98% r.h.
- ▶ Response time (r.h.): 8 Sec. (at 63% condensation)
- ▶ Protection sleeve: 12 x 75 mm stainless steel
- ▶ Connection: Screw clamps max. 1.5 mm
- ▶ Housing: PA6 15% GK, Colour RAL 9010
- ▶ Measurements housing: 75 x 69 x 44 mm
- ▶ Protection class: IP65
- ▶ Sensor protection: Sintered filter, HD polyethylene



# Humidity Sensors

## Leak sensor .ANDLGM

### DESCRIPTION

Our ANDLGM reliably detects conductive liquids which is making it ideal for monitoring leakage and moisture content. The Main applications are in the building and climate technology. Using integrated switching output can be used to activate or disable actuators. There is the option to connect an acoustic / optical signal transmitter. The sensitivity is adjusted via a potentiometer, while switching polarity and optional alarm output can be configured via a DIP switch.

### TECHNICAL DATA

- ▶ Power supply: 12 ... 34 VAC/VDC
- ▶ Measuring principle: Electrolytic AC voltage measurement
- ▶ Switching point: Adjustable via potentiometer
- ▶ Operating current: 50mA
- ▶ Relay contact: Potential free (changeover) 60 V / DC 1A
- ▶ Relay contact: NO & NC adjustable via DIP switch
- ▶ Housing: PA6 15% GK, Colour RAL 9010
- ▶ Measurements housing: 75 x 69 x 44 mm
- ▶ Protection class: IP65



## Stevenson screen .ANDWHT

### DESCRIPTION

There exist various fields of application of our weather shelter in home and building automation. They're used to regulate actuators depend on the temperature and the measured moisture. The standardized output signals of 0-10V or 4-20mA make it easy to connect it with an existing control unit. The sensor provides an analog output signal, which is linear to moisture and temperature.

### TECHNICAL DATA

- ▶ Power supply (0...10 V): 12 ... 34 VAC/VDC
- ▶ Power supply (4...20 mA): 12 ... 34 VAC/VDC
- ▶ Sensor element humidity: capacitive
- ▶ Sensor element temp.: capacitive
- ▶ Measuring range humidity: 0 ... 100% r.h.
- ▶ Output humidity: 0 ... 10V or 4 ... 20 mA
- ▶ Tolerance humidity 35% ... 70% r.h.: ± 2% (25 ... 90% r.h.)
- ▶ Measuring range temp.: -30°C ... +70°C
- ▶ Output temperatur: 0 ... 10V or 4 ... 20 mA
- ▶ Tolerance temperature: ± 0,5K
- ▶ Load at analogue output (0...10V): 10 ... 100 kOhms
- ▶ Analogue output burden (4...20 mA): 300 ... 1000 Ohms
- ▶ Operating temperature: -30°C ... +70°C
- ▶ Operating range: 0 ... 98% r.h.
- ▶ Response time (r.h.): 8 Sec. (at 63% condensation)
- ▶ Connection: Screwclamps max. 1.5 mm
- ▶ Housing: grey
- ▶ Measurements housing: 265 x 155mm
- ▶ Protection class: IP65

## Rain sensor .ANDRGM

### DESCRIPTION

The measuring procedure via electrolytic AC voltage allows the Rain-Sensor ANDRGM to detect various kinds of precipitation e.g. rain or snow. Thanks to the installed passive potentiometer the circuit sensitivity can be adjusted optimally to the required field of application. The integrated heating accelerates the drying phase of the device and avoids the freezing of contact surfaces.

### TECHNICAL DATA

- ▶ Power supply: 24 VDC / VAC + 10%
- ▶ Power consumption: 20 mA, heating ca. 80-90 mA
- ▶ Measuring principle: electrolytic AC voltage measurement
- ▶ Contact load: max. 30VDC / 4A
- ▶ Connection: 0,5 mm – 1,5 mm<sup>2</sup>, Screw-In terminals with wire protection
- ▶ Housing: 75x 69 x 44 mm
- ▶ Cable inlet: M16
- ▶ Protection class: IP65





# Humidity Sensors

## Dew Point Monitor

ANDTPW / ANDTPWext

### DESCRIPTION

The Dew Point Monitor measures the relative humidity on pipes, cooling ceilings or other surfaces and transfers the value as a linear analogue 4...20 mA output signal. The device also features a changeover contact for which the limiting value can be adjusted between 75 and 100 % r.h. with the help of a potentiometer. This way the respective signal can be transferred to the control/DDC when condensation is forming in order to activate the respective actuators.

### TECHNICAL DATA

- ▶ Power supply: 20 ... 34 VAC/VDC
- ▶ Power input (0 ... 10 V): 20 mA
- ▶ Power input (4 ... 20 mA): 24 ... 44 mA
- ▶ Electrical connection: Screw clamps 1.5 mm<sup>2</sup>
- ▶ Sensor: digital combination sensor for humidity and temperature
- ▶ Measuring range for continuous output 0 ... 100% r.h.
- ▶ Measuring range for switching output (adjustable): 85 ... 95% r.h.
- ▶ Load at analogue output (0...10V): 10 ... 100 kOhms
- ▶ Analogue output burden (4...20 mA): 300 ... 1000 Ohms
- ▶ Switching output: Potential free (changeover) 60V/DC 1A
- ▶ Housing: PA6 15% GK, Colour RAL 9010
- ▶ Length supply cord: 2.0 meters Silicone up to 180 °C
- ▶ Measur. housing: 75 x 69 x 44 mm
- ▶ Cable inlet: M16x1.5
- ▶ Protection class: IP65
- ▶ Admissible ambient T.: -30°C ... +70 °C
- ▶ Admissible ambient humidity: Max. 95% non-condensing
- ▶ Optional: E-Paper Display 1,44"; Visible surface: 29x22 mm; Res: 128x96 px



## High temp. / humidity sensor ANDARFT/R-X/HT

### DESCRIPTION

Device for measuring the relative humidity/temp. in outdoor areas or indoor areas subject to high requirements. The measuring transducer measures the temperature and humidity via an internal sensor and converts the value into a standardized analogue output signal in the range between 0-10V/4-20 mA. Additionally, a passive temperature sensor can be connected. Various measuring ranges are available depending on the model. The sensor features longterm stability and no recalibration is required.

### TECHNICAL DATA

- ▶ Power supply: 12 ... 34 VAC/VDC
- ▶ Sensor element humidity: capacitive
- ▶ Sensor element temp: capacitive
- ▶ Sensor element temperature passive (opt.): at customer's option
- ▶ Measuring range humid.: 0 ... 100% r.h.
- ▶ Output humidity: 0 ... 10V or 4 ... 20 mA
- ▶ Tolerance humidity 35% ... 70% r.h.: ± 2% (25 ... 90% r.h.)
- ▶ Measuring range T.: -30°C ... +120°C
- ▶ Active output sign. T. 0...10V or 4...20 mA
- ▶ Tolerance temperature: ± 0,5 K
- ▶ Load at analogue output (0...10V): 10 ... 100 kOhms
- ▶ Analogue output burden (4...20 mA): 300 ... 1000 Ohms
- ▶ Operating tem.: -30 °C ... +120 °C
- ▶ Operating range: 0 ... 98% r.h.
- ▶ Response time (r.h.): 8 Sec. (at 63% condensation)
- ▶ Power sup. cord: Silicone up to 180°C
- ▶ Protection sleeve: 12 x 150 mm stainless steel
- ▶ Length supply cord: 2 m (standard)
- ▶ Connection: Screwclamps max. 1.5mm
- ▶ Housing: PA6 15% GK, Colour RAL 9010
- ▶ Measur. housing: 75 x 69 x 44 mm
- ▶ Protection class: IP65
- ▶ Sensor protection: Sinterfilter, brass



## Condensation monitor

ANDKDW2 and ANDKDW2ext

### DESCRIPTION

Our ANDKDW2 and ANDKDW2EXT condensation monitors are typically mounted to cooling and cold water pipes, cooling ceilings or other cooled surfaces. Both models offer reliable detection of condensation and protect the objects against the former. The ANDKDW2Ext has an external measuring point and can easily be mounted in confined spaces. Our ANDKDWs can be used as monitors on cooling ceilings and pipes and the additional internal switching output is capable of activating heatings or other actuators.

### TECHNICAL DATA

#### Sensor system:

- ▶ Switching point: Adjustable between 80 and 100%
- ▶ Switching hysteresis: ca 5% r. h.
- ▶ Operating range: 0 ... 100% r.h.
- ▶ Operating temperature: -30°C ... +70°C

#### Dew: admissible

- ▶ Condensation: briefly admissible
- ▶ Medium: Ambient air without atmospheric pollution
- ▶ Response time: 120 sec at switching point from 75 % to condensation
- ▶ Power supply cord (KDWext:) 2000 mm Silicone up to 180 °C

#### Electric supply

- ▶ Power supply: 20 ... 34 VAC/VDC
- ▶ Operating current (24VDC): max. 30 mA with energized relay
- ▶ Relais: max. 15 mA with deenergized relay
- ▶ Function control: LED
- ▶ LED: red when relay is energized

#### Output circuit

- ▶ Switching characteristics: Isolated relay with switching contact, closed at normal operation (condensate-free). Open at missing operating voltage or forming of condensation
- ▶ Contact load: max. 60 Vss
- ▶ Switching current: Max. 1 AAC/DC
- ▶ Display: LED green (Relay deenergized)
- ▶ LED red (Relay energized)
- ▶ Switching capacity Relay: 60 V / 1 A

# Humidity Sensors

## Duct hygrostat with int. and ext. controls

ANDKHY

### DESCRIPTION

The ANDKHY HG80 Hygrostat is a two-level controller for controlling the relative humidity in air ducts of air-conditioning system, conditioning cabinets. The device is also applied in food storages, cooling chambers for fruits and vegetables, greenhouses of gardening companies, textile industry, paper and printing industry, movie industry and hospitals - basically in all places where humidity monitoring and control is required.

### TECHNICAL DATA

- ▶ Scale: 30... 100% r.h.
- ▶ Accuracy:  $\pm 3,5\%$  r.h.  $> 50\%$  r. h.
- ▶  $\pm 4\%$  r. h.  $< 50\%$  r. h.
- ▶ Operating range: 35... 95% r. h.
- ▶ Medium: Air (nonaggressiv), depressurized
- ▶ Differential gap: at 50% r. h. ca. 4% r. h.
- ▶ Max voltage: 250 VAC
- ▶ Switching capacity changeover contact  
Ohmic load ( $\cos \phi = 1$ ) 15AAC 230V,  
Inductive load ( $\cos \phi = 0,7$ ) 2AAC 230V,  
Voltage 0,25ADC 230V
- ▶ Switching capacity, minimum load: 100 mA, 125 VAC
- ▶ Weight: 700 g
- ▶ Protection class KHY-A: IP54
- ▶ Protection class KHY-I: IP65
- ▶ Protection rating: III
- ▶ Admissible air velocity 8 m/sec
- ▶ Medium temperature:
- ▶ Operating temperature: 0 °C... +60 °C
- ▶ Storage temperature: -30 °C... +60 °C



## Indoor hygrostat with int. and ext. controls

ANDRHY

### DESCRIPTION

The Indoor Hygrostat is a two-level controller for controlling the relative humidity. The device is typically used for controlling air moistening and demisting in office spaces and IT rooms. The device is also applied in food storages, cooling chambers for fruits and vegetables, greenhouses of gardening companies, textile industry, paper and printing industry, movie industry and hospitals. The Hygroswitch features an internal adjustment wheel with scale instead of an external control knob. The wheel must be aligned according to the red indication marks.

### TECHNICAL DATA

- ▶ Scale: 30... 100% r.h.
- ▶ Accuracy:  $\pm 3,0\%$  r.h.  $> 40\%$  r. h.
- ▶  $\pm 4,0\%$  r. h.  $< 40\%$  r. h.
- ▶ Operating range: 35... 95% r. h.
- ▶ Medium: Air (nonaggressiv), depressurized
- ▶ Differential gap: at 50% r. h. ca. 4% r. h.
- ▶ Switching capacity: max. 250 VAC and 0,1...5A at ohmic load for demisting, 0,1...2A at ohmic load for moistening, 0,1...1A at inductive load with  $\cos \phi = 0,7$
- ▶ Life span: around 100.000 operation cycles
- ▶ Weight: 58 g
- ▶ Protection class: IP30D
- ▶ Operating temperature: 0 °C... +60 °C
- ▶ Storage temperature: -40 °C... +60 °C  
Sinterfilter, brass



# CO<sub>2</sub> + Air Quality Sensors

## Indoor air quality w. LED display

ANDRALQA-U/ANDRALQA-I

### DESCRIPTION

For measuring the air quality in living and office spaces etc, optionally with 0-10 V or 4-20 mA output. The ANDRALQA-U/ANDRALQA-I is a VOC/ mixed gas sensor. The CO<sub>2</sub> equivalents are derived from a conforming algorithm as the odor emissions are overlaying the CO<sub>2</sub> value. Long-term drifting and operational deterioration can be eliminated by regularly running the automatic calibration. The integrated LED displays the quality of the air by means of an LED color scheme. Green means good, yellow means average and red means poor.

### TECHNICAL DATA

- ▶ Power supply: 12 ... 34 VAC/VDC
- ▶ Output: 0 ... 10V or 4 ... 20 mA
- ▶ Measuring range: 0 ... 2000 ppm
- ▶ Analogue output load: min. Load resistance 10 kOhm / load 600 Ohm
- ▶ Operating temperature: 0 °C ... +50 °C
- ▶ Housing: Material ABS, Colour RAL 9010
- ▶ Measurements housing: 87,5 x 87,5 x 30 mm
- ▶ Connection: Screw clamps max. 1.5 mm<sup>2</sup>
- ▶ Protection class: IP20
- ▶ Ampel:  
Green LED at 0 ... 800 ppm  
Orange LED at 800 ... 1600 ppm  
Red LED at 1600 ... 2000 ppm



## Indoor air quality sensor ANDRALQ-U / ANDRALQ-I

### DESCRIPTION

For measuring the air quality in living and office spaces etc, optionally with 0-10 V or 4-20 mA output. The ANDRALQ-U/ANDRALQ-I is a VOC/mixed gas sensor. The CO<sub>2</sub> equivalents are derived from a conforming algorithm as the odor emissions are overlaying the CO<sub>2</sub> value. Long-term drifting and operational deterioration can be eliminated by regularly running the automatic calibration.

### TECHNICAL DATA

- ▶ Power supply: 12 ... 34 VAC/VDC
- ▶ Measuring range: 0-2000 ppm
- ▶ Power consumption: max. 45 mA
- ▶ Output: 0 ... 10V or 4 ... 20 mA
- ▶ Calibration:  
1 V ... 5,6 mA = 200 ppm CO<sub>2</sub> equivalent  
5 V ... 12 mA = 1000 ppm CO<sub>2</sub> equiv.  
10 V ... 20 mA = 2000 ppm CO<sub>2</sub> equiv.
- ▶ Operating temperature: 0 °C ... +50 °C
- ▶ Humidity: 5 ... 95 r.h.
- ▶ Protection class: IP20
- ▶ Housing: Material ABS, Colour RAL 9010
- ▶ Measurements housing: 87,5 x 87,5 x 30 mm



## Indoor air quality sensor (flush mounted)

ANDRALQ-UP

### DESCRIPTION

The sensor is equipped with a 0-10 V/DC output signal and is available for up to 3 measuring categories (only available as VOC sensor for the moment). The VOCup can be combined with the following switch series: GIRA E2, Event / Merten System M / Jung A500, Ap581, AS500 / Berker B.1, B.7

### TECHNICAL DATA

#### Sensor system

- ▶ VOC sensor: Metal oxide sensor with semi-automatic calibration
- ▶ Fields of application: Indoors  
0 °C ... +50 °C, 5 ... 95% r.h. (without dewing)
- ▶ Measuring range: 450 ... 2000 ppm CO<sub>2</sub> equivalent

#### Electronics

- ▶ Supply voltage: 12 ... 25 VAC or 12 ... 25 VDC
- ▶ Power consumption: 14 mA at 24 VDC
- ▶ Signal output: 0 ... 10 VDC (Standard)
- ▶ Warm-up phase: 15 min after current contact

#### Measurements

- ▶ Housing (W x H): 55 x 55 mm
- ▶ Casing depth: ca. 10 mm
- ▶ Wall mounting: receptacle provided by customer, Ø 60 mm, with steel mounting plate
- ▶ Connections: Plug with screw clamps for 0.25-1.5 mm<sup>2</sup> (cable/strand)
- ▶ Housing: Plastic (partially painted)
- ▶ Pure white, gloss (similar to RAL 9010), matt or special colors



# CO<sub>2</sub> + Air Quality Sensors

## Indoor sensor for CO<sub>2</sub> and temperature

ANDKALQ-U / ANDKALQ-I

### DESCRIPTION

For measuring the air quality in ducts of air-conditioning systems, optionally with 0-10 V or 4-20 mA output. The ANDRALQ-U/RALQ-I is a VOC/mixed gas sensor. The CO<sub>2</sub> equivalents are derived from a conforming algorithm as the odor emissions are overlaying the CO<sub>2</sub> value (see graphics). Long-term drifting and operational deterioration can be eliminated by regularly running the automatic calibration.

### TECHNICAL DATA

- ▶ Power supply: 12 ... 34 VAC/VDC
- ▶ Power consumption: max. 45 mA
- ▶ Output: 0 ... 10 V or 4 ... 20 mA
- ▶ Measuring range: 0-2000 ppm
- ▶ Calibration:  
1 V ... 5,6 mA = 200 ppm CO<sub>2</sub> equivalent  
5 V ... 12 mA = 1000 ppm CO<sub>2</sub> equiv.  
10 V ... 20 mA = 2000 ppm CO<sub>2</sub> equiv.
- ▶ Operating temperature: 0 °C ... +50 °C
- ▶ Humidity: 5 ... 95 r.h.
- ▶ Protection class: IP65 (Housing)
- ▶ Housing: ABS
- ▶ Mounting material (incl.): Mounting flange



## Indoor sensor for CO<sub>2</sub> and temperature

ANDRACO2

### DESCRIPTION

Our ANDRACO2 records the ambient air's CO<sub>2</sub> concentration in living and office spaces. The ANDRACO2 converts the values measured in the ranges of optionally 0-2000 ppm or 0-5000 ppm into a linear 0-10 V output signal. The CO<sub>2</sub> value is measured via the NDIR sensor, which is able to compensate possible pollution with the help of its 2-ray measuring principle. Optionally, our ANDRACO2 is available with an additional sensor for measuring temperature and humidity.

### TECHNICAL DATA

- ▶ Power supply: 12 ... 34 VAC/VDC
- ▶ Power consumption: 100 ... 130 mA
- ▶ Electrical connection: Screw clamps
- ▶ Output: 0 ... 10 V or 4-20 mA
- ▶ Sensor element: (NDIR) sensor with automatic background calibration
- ▶ Measuring range CO<sub>2</sub>: 0 ... 2000 ppm / 0 ... 5000 ppm
- ▶ Accuracy: <math>\pm(50\text{ppm} + 2\% \text{ of scale reading})</math> at 25 °C and 1013 mbar
- ▶ Optional:
  - ▶ Temperature: 0 ... 10 V or 4-20 mA
  - ▶ Accuracy:  $\pm 0,2\text{K} + \text{max } 3\% \text{ full scale}$
  - ▶ Humidity: 0 ... 10 V or 4-20 mA
  - ▶ Accuracy: <math>\pm 3\%</math> bei 25 °C between 10 ... 90% r.F.
- ▶ Operating temperature: 0 °C ... +50 °C
- ▶ Humidity: 10 ... 95 r.h.
- ▶ Protection class: IP30
- ▶ Housing: Material ABS
- ▶ Colour: RAL 9010



## Duct sensor for CO<sub>2</sub> measurements

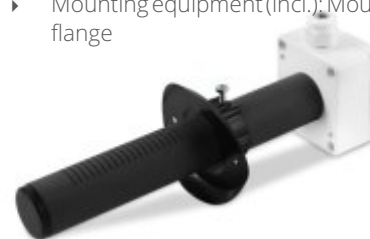
ANDKACO2

### DESCRIPTION

Our ANDKACO2 records the ambient air's CO<sub>2</sub> concentration in air ducts of air-conditioning systems. The ANDKACO2 converts the values measured in the ranges of optionally 0-2000 ppm or 0-5000 ppm into a linear 0-10 V output signal. The CO<sub>2</sub> value is measured via the NDIR sensor, which is able to compensate possible pollution with the help of its 2-ray measuring principle. Optionally, our ANDKACO2 is available with an additional sensor for measuring temperature and humidity.

### TECHNICAL DATA

- ▶ Power supply: 12 ... 34 VAC/VDC
- ▶ Power consumption: <math>< 9\text{mA}</math>
- ▶ Electrical connection: Screw clamps
- ▶ Output: 0 ... 10 V or 4-20 mA
- ▶ Sensor element: (NDIR) sensor with automatic background calibration
- ▶ Measuring range CO<sub>2</sub>: 0 ... 2000 ppm / 0 ... 5000 ppm
- ▶ Accuracy: <math>\pm(50\text{ppm} + 2\% \text{ of scale reading})</math> at 25 °C and 1013 mbar
- ▶ Optional:
  - ▶ Temperature: 0 ... 10 V or 4-20 mA
  - ▶ Accuracy:  $\pm 0,2\text{K} + \text{max } 3\% \text{ full scale}$
  - ▶ Humidity: 0 ... 10 V or 4-20 mA
  - ▶ Accuracy: <math>\pm 3\%</math> at 25 °C between 10 ... 90% r.h.
- ▶ Operating temperature: 0 °C ... +50 °C
- ▶ Humidity: 10 ... 95 r.h.
- ▶ Protection class: IP65 (Housing)
- ▶ Housing: Plastic
- ▶ Mounting equipment (incl.): Mounting flange



# Motion & Light Sensors

## Motion and light sensor outdoor ANDAPIRLUX

### DESCRIPTION

The combination sensor for motion and light can be used both indoors and outdoors. The light sensor is equipped with a DIP switch for 4 different light levels. The motion sensor's time constant of the relay output can be set between 1 second and 10 minutes.

### TECHNICAL DATA

- ▶ Power supply: 12 ... 34 VAC/VDC
- ▶ Analog output U: min. Load resistance 10 kOhm
- ▶ Analog output I: Load: 300 ... 1000 Ohm
- ▶ Power input: Relay PIR 60 VDC / 1 A
- ▶ Accuracy LUX:  $\pm 10\%$
- ▶ Measuring range LUX: 4 Measuring ranges available (0 ... 1000, 0 ... 10000, 0 ... 50000, 0 ... 100000)
- ▶ Operating temperature:  $-15^{\circ}\text{C} \dots +70^{\circ}\text{C}$
- ▶ Connection: Screw clamps max. 1.5 mm<sup>2</sup>
- ▶ Protection class: IP54
- ▶ Norms: CE, EMC pursuant to EN 61326-1 2006, EMC directive 89/336/EEC

## Motion and light sensor indoor ANDIPIRLUX

### DESCRIPTION

The combination sensor for motion and light can be used both indoors and outdoors. The light sensor is equipped with a DIP switch for 4 different light levels. The motion sensor's time constant of the relay output can be set between 1 second and 10 minutes.

### TECHNICAL DATA

- ▶ Power supply: 12 ... 34 VAC/VDC
- ▶ Analog output U: min. Load resistance 10 kOhm
- ▶ Analog output I: Load: 300 ... 1000 Ohm
- ▶ Power input: Relay PIR 60 VDC / 1 A
- ▶ Housing: Material ABS, Colour RAL 9010
- ▶ Accuracy LUX:  $\pm 10\%$
- ▶ Measuring range LUX: 4 Measuring ranges available (0 ... 1000, 0 ... 10000, 0 ... 50000, 0 ... 100000)
- ▶ Operating temperature:  $0^{\circ}\text{C} \dots +50^{\circ}\text{C}$
- ▶ Connection: Screw clamps max. 1.5 mm<sup>2</sup>
- ▶ Protection class: IP30



# Pressure Sensors

## Differential pressure controller ANDDDW

### DESCRIPTION

For monitoring incombustible and non-aggressive gaseous media. Our Differential Pressure Controllers are available with various measuring ranges and are delivered as standard with a connection set. Further features:

- ▶ Adjustable with large scale
- ▶ Metric cable glands
- ▶ Duct connection nipples: length 60 mm
- ▶ Horizontal or vertical mounting position

### TECHNICAL DATA

- ▶ Pressure range: 20 ... 300 Pa, 30 ... 400 Pa, 50 ... 500 Pa, 200 ... 1000 Pa
- ▶ Pressure media: Air, incombustible and nonaggressive gases
- ▶ Protection class: IP54
- ▶ Housing: Switch casing PA 6.6, fastening parts POM
- ▶ Life span: 106 Switching operations
- ▶ Material diaphragm: Silicone
- ▶ Temperature range: -20 °C ... +85 °C
- ▶ Max. operating excess pressure: 50 mbar
- ▶ Pressure connections: Plastic with a diameter of 6.00 mm
- ▶ Switching capacity: 1,0 A, 250 VAC
- ▶ Electrical connection: Blade terminal 6.3x0.8mm pursuant to DIN 64244 with screw clamps up to 2.5 mm<sup>2</sup>
- ▶ Accessories Mounting kit:
- ▶ 2 plastic duct connection nipples with mounting screws PVC hose Ø 6 mm



## Differential pressure transducer ANDDDMU1/2

### DESCRIPTION

Digital differential pressure transducer for overpressure, underpressure and differential pressure Measurements. Various measuring ranges can be selected with the help of a DIP switch. The integrated potentiometer can be used for offset calibration, a second potentiometer is used for selector shaft adjustment of the integrated relay. Optionally, the differential pressure switch is available with a graphic 1.44" e-Paper display.

### TECHNICAL DATA

- ▶ Power supply: 20 ... 34 VAC/VDC
- ▶ Measuring ranges: Settable via DIP-Switch
- ▶ Pressure range A = DDMX1  
0 ... 1/3/5/10 mbar  
-1 ... +1/-3 ... +3/-5 ... +5/-10 ... +10 mbar
- ▶ Pressure range B = DDMX2  
0 ... 20/30/50/70 mbar  
-20 ... +20/-30 ... +30/-50 ... +50/-70 ... +0 mbar
- ▶ Bursting pressure:  
0,6 bar DDMU1 and DDM1  
1,2 bar DDMU2 and DDM2
- ▶ Characteristic deviation:  
± 1,0% Fullscale + 0,5% full scale  
± 1,0% Fullscale + 0,5% full scale
- ▶ Medium: clean, nonaggressive, noncondensing and nonflammable
- ▶ Output: 0 ... 10 V or 4 ... 20 mA
- ▶ Switching output: Relay: NO/NC
- ▶ Relayswitching load: 1 A
- ▶ Connec.: Screwclamps max. 1.5 mm<sup>2</sup>
- ▶ Pressure type: Differential pressure
- ▶ Zero-point offset: max. 5%
- ▶ Operating temperature: -5 °C ... +65 °C
- ▶ Admissible Humidity: 95 r.h. non-condensing
- ▶ Connection Housing: 66 x 60 x 39 mm
- ▶ Polyamide, pure white, IP65
- ▶ Pressure connection: Stainless steel connection fitting
- ▶ Accessories (incl.): Pressure connection set with 2 air connection fittings and PVC hose

## Pressure / differential pressure transducer ANDFDE28

### DESCRIPTION

Digital pressure transducer for the measurement of excess pressure, negative pressure and differential pressure. This series' transmitter is well suited for a wide range of measurement tasks in the fields of heating and sanitary engineering. Typical areas of application: Differential pressure measurement between supply and return flow in heating systems or the surveillance of filters, compressors etc.

### TECHNICAL DATA

- ▶ Pressure range (bar): 0 ... 400 mbar, 0 ... 0,6 bar, 0 ... 1 bar, 0 ... 1,6 bar, 0 ... 2,5 bar, 0 ... 4 bar, 0 ... 06 bar
- ▶ Nenndruck des Messsystems: 16 bar
- ▶ Max. Druckbelastung: safe against excess pressure up to nominal pressure of the measurement system, (+) and (-)-sided
- ▶ Admissible ambient temperature: 0 °C ... +70 °C
- ▶ Max. Storage temperature: 70 °C
- ▶ Protection class: IP54 acc. DIN EN 60529
- ▶ Electrical connection:  
(a) 3-wire,  
(b) 3-wire
- ▶ Power supply:  
(a) 24 VDC / VAC  
(b) 24 VDC / VAC
- ▶ Admissible supply voltage:  
(a) 15 ... 30 VDC, 15 ... 30 VDC  
(b) 20 ... 30 VAC, 20 ... 28 VAC
- ▶ Output signal:  
(a) 4 ... 20 mA 0 ... 10 V  
(b) 0 ... 20 mA

Material:

- ▶ Housing: Polycarbonat
- ▶ Pressure chamber: Brass
- ▶ Diaphragm: NBR / Viton®



## Pressure transmitter

ANDDT1

### DESCRIPTION

The pressure transmitter ANDDT1 with ceramic measuring cell is ideal for measuring relative pressure of non-aggressive media. Areas like the building automation, industrial and pneumatic and hydraulic applications.

### TECHNICAL DATA

- ▶ Pressure range: 0 ... 1,6 bar; 0 ... 2,5 bar; 0 ... 4 bar; 0 ... 6 bar; 0 ... 10 bar; 0 ... 16 bar; 0 ... 60 bar; 1 ... 1,5 bar; -1 ... 9 bar; 0 ... 25 bar; -1 ... 0 bar; -1 ... 3 bar; -1 ... 15 bar; 0 ... 40 bar; -1 ... 0,6 bar; -1 ... 5 bar; 0 ... -1 bar, Special\*
- ▶ Linearity: < 1% FS (Fullscale)
- ▶ Hysteresis: < 0,5% FS
- ▶ Admissible ambient T.: 0 °C ... +60 °C
- ▶ Admissible medium T.: 0 °C ... +85 °C
- ▶ Pressure connection: see table
- ▶ Electrical connection: standard plug acc. DIN EN 175301-803-A
- ▶ Protection class: IP65 acc. DIN EN 60529

#### Typ I

- ▶ Output: 4 ... 20 mA
- ▶ Connection: 2-wire
- ▶ Power supply: 24 VDC
- ▶ Zul. Power supply: 12 ... 30 VDC
- ▶ Burden:  $R_a[\Omega] = (U_v[V] - 10V) 0,02 A$

#### Typ U

- ▶ Output: 0 ... 10 V
- ▶ Connection: 3-wire
- ▶ Rated voltage 24 VAC/VDC
- ▶ admissible operating voltage 12 ... 30 VAC/VDC



## Pressure and differential pressure transducer

ANDFDE40

### DESCRIPTION

Our ANDFDE40 is a pressure transmitters for overpressure, vacuum and differential pressure Measurements. The transmitter of this series is suitable for Measurements of broadly neutral liquids and gases. He can be used in all areas of industrial or sanitary Measurement.

### TECHNICAL DATA

- ▶ Pressure ranges: 0 ... 2 bar, 0 ... 4 bar, 0 ... 6 bar, 0 ... 10 bar
- ▶ Pressure media: Largely neutral liquids and gases
- ▶ Protection class: IP65
- ▶ Mounting position: variable
- ▶ Characteristic deviation: < 1%
- ▶ Electrical Connection: 3-wire
- ▶ Output signal: 0-10V or 4-20mA
- ▶ Power supply: 24 VAC/VDC
- ▶ Power consumption: < 1,5 W (VA)
- ▶ Pressure chamber, stainless steel, (axial) G1/8"
- ▶ Standard plug DIN EN 175 301-803-A
- ▶ For wall mounting



## Flow controller for liquid media ANDSW1/2

### DESCRIPTION

Device for controlling the flow of liquid media in pipes with a diameter of 1/2" to 8". Used as water shortage protection in HVAC systems. The monitor is equipped with a potential free changeover switch responsible for reliably activating an actuator.

### TECHNICAL DATA

- ▶ Switching values: see table online
- ▶ Contacts: Microswitch as single-pole potential-free changeover switch
- ▶ Switching capacity: 16(8)A, 24- 250 VAC, at 24 VAC min. 150 mA
- ▶ Life span: 100.000 cycles at nominal capacity
- ▶ Electrical connection: Screw clamp 1.5 mm<sup>2</sup>, cable Ø 6...9 mm
- ▶ Max. pressure: See table
- ▶ Housing: ABS, white
- ▶ Cable inlet: PG 20 x 1,5 mm
- ▶ Connection Thread: 1" GAS, Brass or Stainless steel VA
- ▶ Material paddle: Stainless steel V2A/ Brass
- ▶ Dimensions: See drawing
- ▶ Weight: 600 g
- ▶ Protection class: IP65
- ▶ Protection rating: III
- ▶ Medium temperature: -25 °C ... +120 °C
- ▶ Ambient humidity: 10 ... 95% RH, without Condensation
- ▶ Ambient temperature: -40 °C ... +85 °C
- ▶ Storage temperature: -20 °C ... +60 °C
- ▶ Norms: CE, RoHS



## Air stream monitor

ANDSTF1

### DESCRIPTION

Air flow controller based on a microcontroller for measuring nonaggressive gaseous flows in the range of 0.5 to 10/30 m/s. Available with both 0-10 V and 4-20 mA output. Additionally, a separate output signal for temperature pickup can be added.

### TECHNICAL DATA

- ▶ Power supply: 24 VAC/VDC
- ▶ Power consumption (4...20 mA): 50 mA (0...10 V)/90 mA (4...20 mA)
- ▶ Output signal flow: 0 ... 10 V (Lmin = 1 kOhm), linear 4 ... 20 mA (Lmax = 0,4 kOhm), linear
- ▶ Output temperatur: 0 ... 10 V (Lmin = 1 kOhm), linear 4 ... 20 mA (Lmax = 0,4 kOhm), linear
- ▶ Measuring range: 0 ... 2 m/s, 0 ... 10 m/s, 0 ... 20 m/s
- ▶ Relais output (STF1 only): Switching voltage 250 VAC, 6A / 30VDC, 6A; NO/NC: Contact opens or closes at flow detection
- ▶ Function at flow presens: Switching point, adjustable via potentiometer
- ▶ Display (STF1 only): 45,7 x 12,7 mm
- ▶ Electrical connection: Screw clamps 1,5 mm<sup>2</sup>
- ▶ Medium temperature: 0 °C ... +50 °C
- ▶ Switching point: Settable via potentiometer
- ▶ Fitting length: Manually adjustable 50-180 mm
- ▶ Protection class Sensor: IP54
- ▶ Measurements Housing: 90 mm x 95 mm x 36 mm







## Modbus temperature sensors

### Modbus temperature measuring transducer

ANDMDG

- ▶ Protocol: Modbus (ASCII/RTU), RS485
- ▶ Power supply: 12-34 VAC/VDC
- ▶ Dimensions: 75 x 69 x 44 mm
- ▶ Housing: PA6, Colour RAL 9010
- ▶ Protection class: IP65

### Modbus Cable/Surface temperature sensor

ANDKBTF/MD

- ▶ Protocol: Modbus (ASCII/RTU), RS485
- ▶ Power supply: 12-34 VAC/VDC
- ▶ Dimensions: 75 x 69 x 44 mm
- ▶ Housing: PA6, Colour RAL 9010
- ▶ Protection class: IP65
- ▶ Sensor: Cable sensor

### Modbus immersion temperature sensor

ANDKBTF/MD

- ▶ Protocol: Modbus (ASCII/RTU), RS485
- ▶ Power supply: 12-34 VAC/VDC
- ▶ Dimensions: 75 x 69 x 44 mm
- ▶ Housing: PA6, Colour RAL 9010
- ▶ Protection class: IP65
- ▶ Sensor: immersion sensor

### Modbus pendulum temperature sensor

ANDRPF/MD

- ▶ Protocol: Modbus (ASCII/RTU), RS485
- ▶ Power supply: 12-34 VAC/VDC
- ▶ Dimensions: 75 x 69 x 44 mm
- ▶ Housing: PA6, Colour RAL 9010
- ▶ Protection class: IP65
- ▶ Sensor: indoor pendulum temperature sensor

### Modbus duct temperature sensor

ANDKNTF/MD

- ▶ Protocol: Modbus (ASCII/RTU), RS485
- ▶ Power supply: 12-34 VAC/VDC
- ▶ Dimensions: 75 x 69 x 44 mm
- ▶ Housing: PA6, Colour RAL 9010
- ▶ Protection class: IP65
- ▶ Sensor: Duct sensor

### Modbus Mean value sensor

ANDMWTF/MD

- ▶ Protocol: Modbus (ASCII/RTU), RS485
- ▶ Power supply: 12-34 VAC/VDC
- ▶ Dimensions: 75 x 69 x 44 mm
- ▶ Housing: PA6, Colour RAL 9010
- ▶ Protection class: IP65
- ▶ Sensor: Mean value sensor

### Modbus contact temperature sensor

ANDANTF1/MD

- ▶ Protocol: Modbus (ASCII/RTU), RS485
- ▶ Power supply: 12-34 VAC/VDC
- ▶ Dimensions: 75 x 69 x 44 mm
- ▶ Housing: PA6, Colour RAL 9010
- ▶ Protection class: IP65
- ▶ Sensor: contact temp. sensor

### Modbus contact temperature sensor (cable)

ANTF3VA/MD

- ▶ Protocol: Modbus (ASCII/RTU), RS485
- ▶ Power supply: 12-34 VAC/VDC
- ▶ Dimensions: 75 x 69 x 44 mm
- ▶ Housing: PA6, Colour RAL 9010
- ▶ Protection class: IP65
- ▶ Sensor: contact temp. sensor

### Modbus surface temperature sensor

ANDOBTF/MD

- ▶ Protocol: Modbus (ASCII/RTU), RS485
- ▶ Power supply: 12-34 VAC/VDC
- ▶ Dimensions: 75 x 69 x 44 mm
- ▶ Housing: PA6, Colour RAL 9010
- ▶ Protection class: IP65
- ▶ Sensor: surface temp. sensor

### Modbus temperature sensor outdoors

ANDAUTF/MD

- ▶ Protocol: Modbus (ASCII/RTU), RS485
- ▶ Power supply: 12-34 VAC/VDC
- ▶ Dimensions: 75 x 69 x 44 mm
- ▶ Housing: PA6, Colour RAL 9010
- ▶ Protection class: IP65
- ▶ Sensor: Outdoor temp. sensor

### Modbus Temperature sensor outdoors

(ext. Sleeve) ANDAUTFext/MD

- ▶ Protocol: Modbus (ASCII/RTU), RS485
- ▶ Power supply: 12-34 VAC/VDC
- ▶ Dimensions: 75 x 69 x 44 mm
- ▶ Housing: PA6, Colour RAL 9010
- ▶ Protection class: IP65
- ▶ Sensor: Outdoor temp. sensor

### Modbus Temperature sensor outdoors

(fast response) ANDAUTFextS/MD

- ▶ Protocol: Modbus (ASCII/RTU), RS485
- ▶ Power supply: 12-34 VAC/VDC
- ▶ Dimensions: 75 x 69 x 44 mm
- ▶ Housing: PA6, Colour RAL 9010
- ▶ Protection class: IP65
- ▶ Sensor: Outdoor temp. sensor



## Modbus temperature sensors

### Modbus Temperature sensor outdoors

(sun protection) ANDAUTFext2/MD

- ▶ Protocol: Modbus (ASCII/RTU), RS485
- ▶ Power supply: 12-34 VAC/VDC
- ▶ Dimensions: 75 x 69 x 44 mm
- ▶ Housing: PA6, Colour RAL 9010
- ▶ Protection class: IP65
- ▶ Sensor: Outdoor temperature sensor

### Modbus temperature sensor indoors

ANDRTF3/MD

- ▶ Protocol: Modbus (ASCII/RTU), RS485
- ▶ Power supply: 12-34 VAC/VDC
- ▶ Dimensions: 87,5 x 87,5 x 30 mm
- ▶ Housing: PA6, Colour RAL 9010
- ▶ Protection class: IP30
- ▶ Sensor: Indoor temperature sensor

### Modbus Radiation sensor cable

ANDSTF/MD

- ▶ Protocol: Modbus (ASCII/RTU), RS485
- ▶ Power supply: 12-34 VAC/VDC
- ▶ Dimensions: 75 x 69 x 44 mm
- ▶ Housing: PA6, Colour RAL 9010
- ▶ Protection class: IP65
- ▶ Sensor: Radiation sensor

### Modbus Radiation sensor indoors

ANDRSTF/MD

- ▶ Protocol: Modbus (ASCII/RTU), RS485
- ▶ Power supply: 12-34 VAC/VDC
- ▶ Dimensions: 87,5 x 87,5 x 47,5 mm
- ▶ Housing: PA6, Colour RAL 9010
- ▶ Protection class: IP30
- ▶ Sensor: Radiation temperature sensor

### Modbus ceiling-mounted temperature sensor

ANDKNTF/MD

- ▶ Protocol: Modbus (ASCII/RTU), RS485
- ▶ Power supply: 12-34 VAC/VDC
- ▶ Dimensions: 75 x 69 x 44 mm
- ▶ Housing: PA6, Colour RAL 9010
- ▶ Protection class: IP65
- ▶ Sensor: Ceiling-mounted temperature sensor

### Modbus Radiation sensor outdoors

ANDASTF/MD

- ▶ Protocol: Modbus (ASCII/RTU), RS485
- ▶ Power supply: 12-34 VAC/VDC
- ▶ Dimensions: 75 x 69 x 44 mm
- ▶ Housing: PA6, Colour RAL 9010
- ▶ Protection class: IP65
- ▶ Sensor: Radiation temperature sensor

### Modbus Screw-In sensor (cable)

ANDESF/MD

- ▶ Protocol: Modbus (ASCII/RTU), RS485
- ▶ Power supply: 12-34 VAC/VDC
- ▶ Dimensions: 75 x 69 x 44 mm
- ▶ Housing: PA6, Colour RAL 9010
- ▶ Protection class: IP65
- ▶ Sensor: Screw-In sensor

### Modbus Screw-In sensor

ANDENTF/MD

- ▶ Protocol: Modbus (ASCII/RTU), RS485
- ▶ Power supply: 12-34 VAC/VDC
- ▶ Dimensions: 75 x 69 x 44 mm
- ▶ Housing: PA6, Colour RAL 9010
- ▶ Protection class: IP65
- ▶ Sensor: Screw-In sensor



## Modbus humidity sensors

### Modbus humidity sensor outdoors

ANDARTF/R-MD/S

- ▶ Protocol: Modbus (ASCII/RTU), RS485
- ▶ Power supply: 12-34 VAC/VDC
- ▶ Dimensions: 75 x 69 x 44 mm
- ▶ Housing: PA6, Colour RAL 9010
- ▶ Protection class: IP65
- ▶ Sensor: outdoor humidity sensor

### Modbus duct humidity sensor

ANDKFFT/R-MD/S

- ▶ Protocol: Modbus (ASCII/RTU), RS485
- ▶ Power supply: 12-34 VAC/VDC
- ▶ Dimensions: 75 x 69 x 44 mm
- ▶ Housing: PA6, Colour RAL 9010
- ▶ Protection class: IP65
- ▶ Sensor: duct humidity sensor

### High temp./humidity sensor

ANDARFT/R-MD/HT

- ▶ Protocol: Modbus (ASCII/RTU), RS485
- ▶ Power supply: 12-34 VAC/VDC
- ▶ Dimensions: 75 x 69 x 44 mm
- ▶ Housing: PA6, Colour RAL 9010
- ▶ Protection class: IP65
- ▶ Sensor: high temperature/humidity sensor

### Modbus dew point monitor

ANDTPWext-MD

- ▶ Protocol: Modbus (ASCII/RTU), RS485
- ▶ Power supply: 12-34 VAC/VDC
- ▶ Dimensions: 75 x 69 x 44 mm
- ▶ Housing: PA6, Colour RAL 9010
- ▶ Protection class: IP65
- ▶ Sensor: Dew point sensor

### Modbus humidity sensor indoors

ANDRFFT/R-MD/S

- ▶ Protocol: Modbus (ASCII/RTU), RS485
- ▶ Power supply: 12-34 VAC/VDC
- ▶ Dimensions: 87,5 x 87,5 x 30 mm
- ▶ Housing: PA6, Colour RAL 9010
- ▶ Protection class: IP30
- ▶ Sensor: Indoor humidity sensor

## Modbus CO2 +air quality sensors

### Modbus duct air quality sensor

ANDKALQ-MD

- ▶ Protocol: Modbus (ASCII/RTU), RS485
- ▶ Power supply: 12-34 VAC/VDC
- ▶ Dimensions: 75 x 69 x 44 mm
- ▶ Housing: PA6, Colour RAL 9010
- ▶ Protection class: IP65
- ▶ Sensor: Duct

### Modbus duct sensor CO2 /temperture

ANDKAC02-MD

- ▶ Protocol: Modbus (ASCII/RTU), RS485
- ▶ Power supply: 12-34 VAC/VDC
- ▶ Dimensions: 75 x 69 x 44 mm
- ▶ Housing: PA6, Colour RAL 9010
- ▶ Protection class: IP65
- ▶ Sensor: Duct air quality sensor

### Modbus CO2 sensor indoors

ANDRALQ-MD

- ▶ Protocol: Modbus (ASCII/RTU), RS485
- ▶ Power supply: 12-34 VAC/VDC
- ▶ Dimensions: 87,5 x 87,5 x 30 mm
- ▶ Housing: PA6, Colour RAL 9010
- ▶ Protection class: IP30
- ▶ Sensor: Carbon dioxide sensor

### Modbus air quality sensor indoors

ANDRAC02-MD

- ▶ Protocol: Modbus (ASCII/RTU), RS485
- ▶ Power supply: 12-34 VAC/VDC
- ▶ Dimensions: 87,5 x 87,5 x 30 mm
- ▶ Housing: PA6, Colour RAL 9010
- ▶ Protection class: IP30
- ▶ Sensor: Air quality sensor

## Modbus differential pressure sensors

### Modbus differential pressure transmitter

ANDDDMU/MD

- ▶ Protocol: Modbus (ASCII/RTU), RS485
- ▶ Power supply: 12-34 VAC/VDC
- ▶ Dimensions: 75 x 69 x 44 mm
- ▶ Housing: PA6, Colour RAL 9010
- ▶ Protection class: IP65
- ▶ Sensor: differential pressure sensor
- ▶ Further information about the sensor on page 74

Several sensor families now with:



# Quality



Sturdiness



Reliability

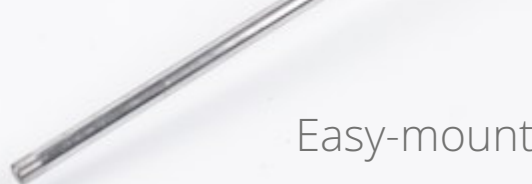


Efficiency



Precision

Easy-mountable



## Weather station ANDWST

### DESCRIPTION

Our weather stations can optionally be configured with different measurement ranges like wind, rain and sun. They are available with two different outputs 0-10V and 4-20mA and can thus be connected to all standard display and control systems.

### TECHNICAL DATA

- ▶ Power supply: 24AC/DC or 230 VAC
- ▶ Measuring range: 0...35 m/s or 0...100000 lux
- ▶ Start speed: Ca. 1 m/s
- ▶ Max. wind load 50 m/s
- ▶ Output wind: 0...10V or 4...20mA
- ▶ Output sun: 0...10V or 4...20mA
- ▶ Output rain: Floating changeover
- ▶ Delay switch on: Rain: instant
- ▶ Delay switch off: Rain: after drying
- ▶ Weight: 1,5 kg
- ▶ Height: 190mm
- ▶ Mast holder: max. 50mm Diameter
- ▶ Anemometer diameter: 160mm
- ▶ Colour: White/grey
- ▶ Protection class: IP65



## Wind sensor ANDWM1

### DESCRIPTION

The wind transmitter is designed in order to detect the wind speed, the evaluation system is integrated in the wind sensor itself. Our wind transmitters are used in home automation and building automation. They are used for actuators in dependence on the wind speed in order to enable or disable them. Through the standardized output signal of 0-10V or 4-20mA can easily be attached to existing controls and schemes.

### TECHNICAL DATA

- ▶ Power supply: 24 AC/DC or 230 VAC
- ▶ Measuring range: 0...35 m/s
- ▶ Start speed: Ca. 1 m/s
- ▶ Max. wind load 50 m/s
- ▶ Output: 0-10V or 4-20mA
- ▶ Height: 190mm
- ▶ Mast holder: max. 50mm Diameter
- ▶ Anemometer diameter: 160mm
- ▶ Protection class: IP65



## Wind direction sensor

ANDWM2

### DESCRIPTION

The wind direction sensor used to detect the wind direction, the evaluation system is integrated in the wind sensor. It is used as a sensor in home automation and building automation. They are used for actuators in dependence on the wind direction to use. Through the standardized output signal of 0-10V or 4-20mA, you can easily connect them to existing controls and regulations.

### TECHNICAL DATA

- ▶ Power supply: 24 AC/DC or 230 VAC
- ▶ Start speed: Ca. 1 m/s
- ▶ Max. wind load 50 m/s
- ▶ Output: 0-10V or 4-20mA
- ▶ Height: 220mm
- ▶ Weather vane: 350mm
- ▶ Mast holder: Bis 50mm Diameter
- ▶ Protection class: IP65



## Combined wind sensor and wind direction sensor ANDWM3

### DESCRIPTION

The combined wind transmitter / wind direction sensor is used to detect the wind direction and the wind speed in one combination device, the evaluation system is integrated in the sensor. Our wind transmitters are made exclusively in Germany and therefore deserve the predicate "Made in Germany".

### TECHNICAL DATA

- ▶ Power supply: 24AC/DC or 230 VAC
- ▶ Measuring range: 0...360° and 0...35 m/s
- ▶ Start speed: Ca. 1 m/s
- ▶ Max. wind load 50 m/s
- ▶ Output: 0-10V or 4-20mA
- ▶ Height: 400mm
- ▶ Weather vane: 350mm
- ▶ Mast holder: max. 50mm Diameter
- ▶ Anemometer diameter: 160mm
- ▶ Protection class: IP65



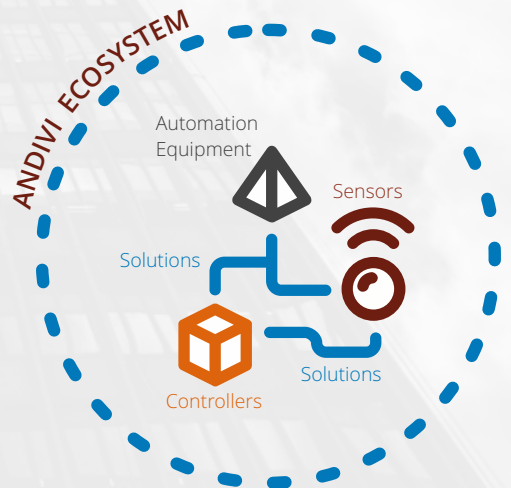


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