



Differential pressure | Air flow | Temperature | Humidity | Air quality

# Sensing technology for ventilation and air-conditioning



Smart in sensing

# At home all over the world

## WIKA – your partner for ventilation and air-conditioning

WIKA offers you a wide range of measurement solutions for the instrumentation of your ventilation and air-conditioning systems. It includes mechanical and electronic instruments for monitoring pressure, air flow, temperature, humidity and air quality. All products meet the highest demands due to their distinctive measurement and processing quality. Comprehensive support over the entire product life cycle completes the offering.

The WIKA Group has 43 subsidiaries and more than 11,200 employees worldwide. State-of-the-art production facilities and experienced service teams offer the highest quality and reliability.

All instrument manufacturing processes are combined under one roof, from development, toolmaking and material testing to production and calibration. Extensive testing in our own laboratories ensures product quality. This enables short and highly flexible development and production cycles, both for series products and for customer-specific solutions.



# On the road to climate neutrality

## Precise measurement data increases building performance

Around 40 percent of the global final-energy requirement is used in buildings. Many air-conditioning and ventilation systems in public and commercial buildings are not optimally adjusted, contain outdated components or are oversized and are responsible for up to 50 % of energy costs.

In order to save energy, buildings today are almost hermetically sealed. The air quality can quickly reach values that impair the well-being and performance of people and can even lead to health problems in the long term.

Precise measurement data creates the basis for both energy and cost-efficient control of the ventilation and air-conditioning systems and, in this way, ensures a healthy indoor climate and satisfied building users.

The smart sensing portfolio from WIKA ensures continuous and precise recording of pressure, temperature, humidity and air quality. Analogue and digital signal transmissions as well as LoRaWAN® radio solutions enable problem-free integration into any automation and control system as well as into cloud environments. In this way, you can also make existing systems fit for the future with retrofit solutions.



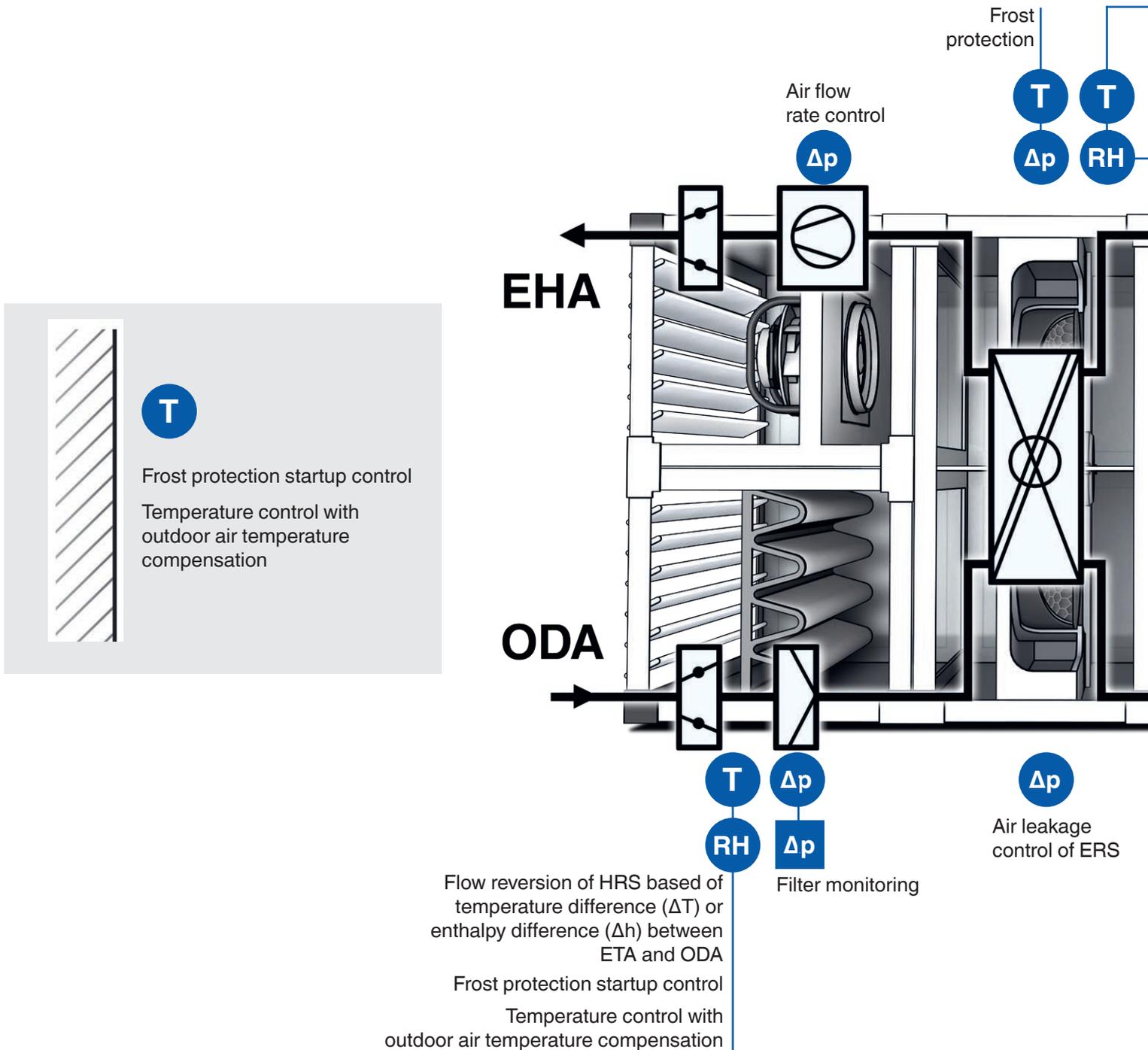
*"We want to provide our customers with the highest level of quality, which is why we have been working in partnership with WIKA for many years. They offer us comprehensive technological competence and are a reliable, experienced and innovative partner. The long-term security of supply, the ability to identify customer-specific solutions and also the excellent service are important for us."*



**Tobias Meyer CEO, Owner VR/GL, Seven-Air Gebr. Meyer AG, Switzerland**

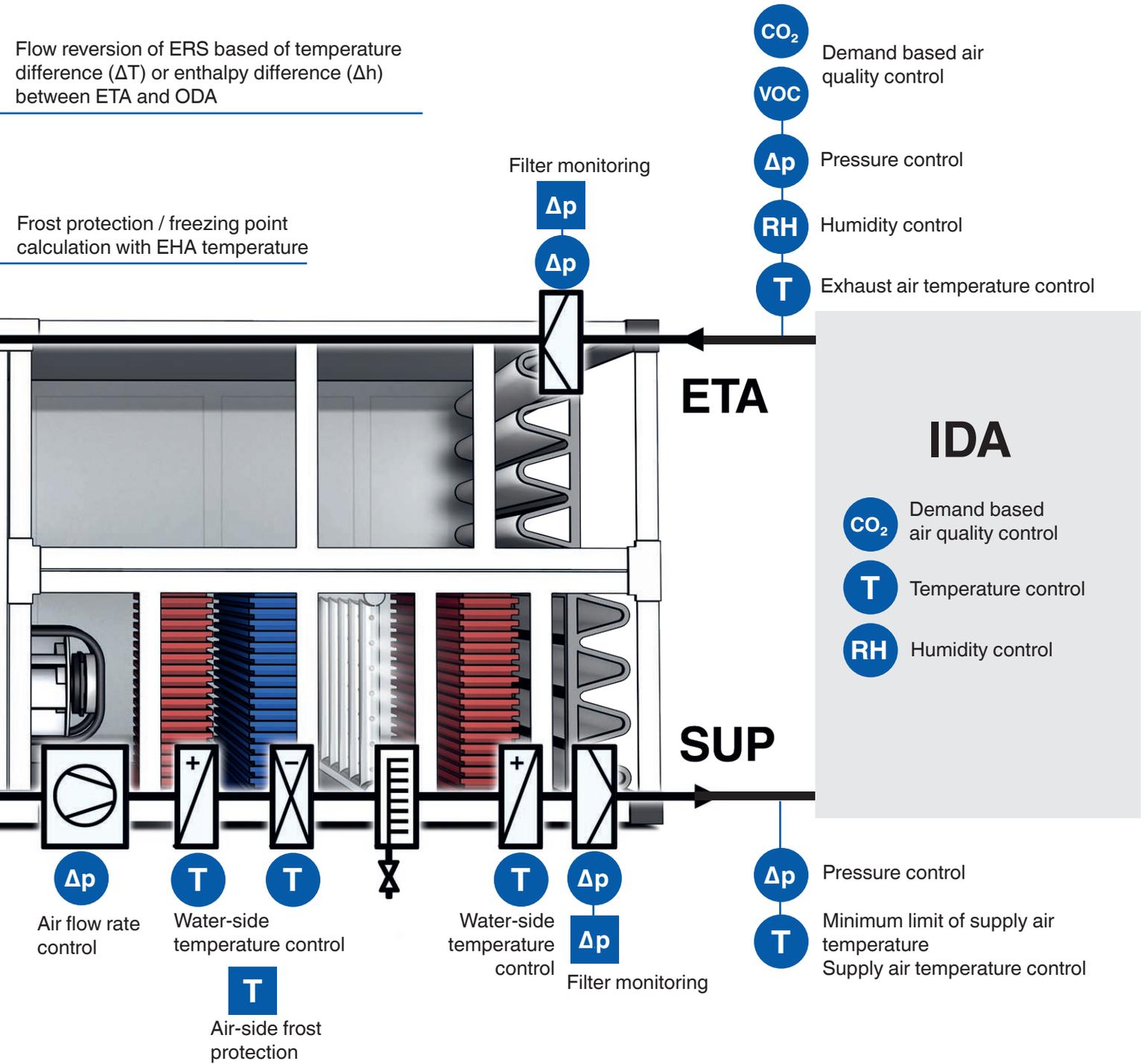
# Smart sensor portfolio

## Energy- and cost-efficient automation and control of air-handling units



Flow reversion of ERS based of temperature difference ( $\Delta T$ ) or enthalpy difference ( $\Delta h$ ) between ETA and ODA

Frost protection / freezing point calculation with EHA temperature



# Future-proof solution

## Modular, wireless, highly precise

### Convenient commissioning

The differential pressure sensors A2G-500, A2G-520 and A2G-540 can be parameterised via NFC using the WIKA app. Intuitive menu navigation simplifies and shortens commissioning significantly. The parameters of one instrument can also be transferred directly to another instrument.



### Documentation without gaps

Measured values and instrument data can be displayed and read out via NFC and the WIKA app. This enables rapid and complete documentation of all processes.

### Integration as required

The sensors transmit their measured values via an analogue and digital signal (MODBUS®), as well as via radio (LoRaWAN®). They can therefore be integrated directly into all automation and control systems as well as into cloud solutions.

### Low cabling effort

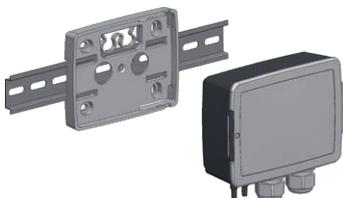
A decentralised data node for external signal conversion into MODBUS® with up to 4 input signals reduces the cabling effort and thus also installation costs.

### Wireless for retrofit projects

As battery-operated LPWAN instruments, the sensors offer a high level of flexibility. Since they do not require any wiring, they are also an ideal solution for retrofit projects.

### Time-saving mounting

The removable mounting plate/drilling template ensures simple, time-saving mounting on the air-handling system or directly on a DIN rail in the control cabinet.



### Suitable for outdoor use

Perfect balance between compact design and easy installation. There is plenty of space in the housing, which facilitates cabling. Toolless opening thanks to snap-on cover.

### Individual design

The graphics of the cover sheet insert can be customised. The instruments can thus be optimally integrated into any system design.



**Optimally readable display**

The local display shows up to 4 measured values and 2 relay states. The information can be clearly read from any viewing direction thanks to the 2" TFT colour display with traffic light function and alphanumeric labelling of the measurement parameters.

SUP FILTER <b>225</b> Pa	SUP FAN <b>6285</b> m <sup>3</sup> /h
SUP Temp <b>19.1</b> °C	R1: closed R2: open

**Immediate error detection**

The traffic light function of the display enables unambiguous recognition of critical system statuses at a glance.

ODA FILTER <b>88</b> Pa	ODA FILTER <b>151</b> Pa	ODA FILTER <b>174</b> Pa
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**Cost-saving function expansion**

In a version with 1 or 2 additional relay outputs, the A2G-500 can also be used as a differential pressure switch or 2-point controller – a cost-saving functional expansion.

**Integrated air flow calculation**

The sensor models A2G-520 and A2G-540 have an integrated air flow calculation based on all common formulae.

**Inexpensive differential pressure and air flow controller**

The integrated PID controller of the A2G-540 enables cost-effective control of ventilation systems, frequency converters or damper drives with little effort.

**Highest measurement accuracy**

With long-term stability and temperature-compensation, as well as a 2-point adjustment of the output signal, the piezoresistive measuring element ensures the highest measurement accuracy. An optional automatic zero point setting makes the sensors maintenance-free.

**Reduced stockholding costs**

The fact that the measuring ranges of the sensors are freely adjustable reduces the variety of items and thus ensures low stockholding costs.

# High performance in every environment

## Modular structure, individual design, time-saving mounting

### Individual design

The dials, scales and segments of the differential pressure gauges from the A2G product family can be customised graphically. The instruments can thus be optimally integrated into any system design.



### Flexible process connection

The pressure gauges are available with the usual connections: with a straight or angled threaded pressure connection made of plastic or brass and with a mounting thread for a pipe connection.

### Small insertion depth

The model A2G-05 has a small insertion depth. It is therefore ideal for recessed installation in doors, housing panels and walls.



### Time-saving, tool-free mounting

The instruments with a threaded bezel can be fitted to wall thicknesses of 2 ... 50 mm without tools, thus saving time.

### Minimal space requirement

With a diameter of just 63 mm, the A2G-mini fits into tight installation situations. Its display is easy to read, despite its small size.





### Easy alignment and adjustment

All differential pressure gauges (except model A2G-mini) can be aligned  $\pm 15$  degrees during mounting and the zero point can be adjusted with a screwdriver.

### Functional limit setting

A limit value can be easily set with the red mark pointer.

### Electrical output signal

The A2G-15 instrument version features an electrical output signal. 0 ... 10 V or 4 ... 20 mA (2-wire) are available.

### Precise measuring results

The optimal coordination of measuring system and diaphragm guarantees a precise measurement.

### Flexible mounting variants

The models A2G-10, A2G-15 and A2G-mini are also available in an add-on version.

### Silicone-free version

Depending on the instrument model, silicone-free versions are available e.g. for use in the spray painting industry.



# Pressure



	Differential pressure gauge Eco	Differential pressure gauge	Differential pressure gauge with electrical output signal	Differential pressure gauge, nominal size 63	Differential pressure gauge with pressure switch
<b>Model</b>	A2G-05	A2G-10	A2G-15	A2G-mini	A2G-90
<b>Application</b>	<ul style="list-style-type: none"> <li>■ Differential pressure monitoring for filters</li> <li>■ Overpressure monitoring for clean rooms and also under- and overpressure monitoring for laboratories and operating rooms</li> </ul>	<ul style="list-style-type: none"> <li>■ Differential pressure monitoring for filters</li> <li>■ Overpressure monitoring for clean rooms and also under- and overpressure monitoring for laboratories and operating rooms</li> </ul>	<p>Analogue display and monitoring of differential pressures with electrical measured value transmission, combined in a single instrument</p>	<ul style="list-style-type: none"> <li>■ Analogue display and monitoring of differential pressures with minimal space requirements</li> <li>■ For compact ventilation units and applications in the painting industry</li> </ul>	<ul style="list-style-type: none"> <li>■ Analogue display and monitoring of differential pressures</li> <li>■ Switching output can be used directly for plant control</li> </ul>
<b>Mounting</b>	<ul style="list-style-type: none"> <li>■ Simple and fast mounting</li> <li>■ Integrated sealing element for direct installation in a ventilation duct</li> <li>■ Very small insertion depth (42 mm), therefore ideally suited for recessed installation in doors, case panels and walls</li> </ul>	<ul style="list-style-type: none"> <li>■ Tool-free installation when using the built-in version</li> <li>■ Integrated sealing element for direct installation in a ventilation duct or instrument panel</li> <li>■ Built-in or add-on version</li> </ul>	<ul style="list-style-type: none"> <li>■ Built-in or add-on version</li> <li>■ Simple and fast mounting</li> <li>■ Tool-free installation when using the built-in version</li> <li>■ Integrated sealing element for direct installation in a ventilation duct</li> </ul>	<ul style="list-style-type: none"> <li>■ Built-in or add-on version</li> <li>■ Simple and fast mounting</li> </ul>	<p>Quick and easy mounting, as both instruments (differential pressure switch and differential pressure gauge) are preassembled in the add-on case and already connected internally to the process connection</p>
<b>Process connection</b>	Fixed back mount process connection in angular form for hoses of Ø 4 ... 6 mm	G 1/4" female thread for threaded pressure connections, straight or in angled form for Ø 4 ... 6 mm hoses	G 1/4" female thread for threaded pressure connections, straight or in angled form for Ø 4 ... 6 mm hoses	Fixed, straight process connection for Ø 4 ... 6 mm hoses	G 1/4" female thread for brass threaded pressure connections, straight for Ø 4 ... 7 mm hoses
<b>Electrical output signal / Switch contacts</b>			<ul style="list-style-type: none"> <li>■ DC 0 ... 10 V (3-wire)</li> <li>■ 4 ... 20 mA (2-wire)</li> </ul>		<ul style="list-style-type: none"> <li>■ Alternating current: AC 250 V, 3 A</li> <li>■ Direct current: DC 30 V, 3 A</li> <li>■ Single pole double throw (SPDT)</li> </ul>
<b>Special features</b>	<ul style="list-style-type: none"> <li>■ Maximum operating pressure 20 kPa</li> <li>■ Also available as a silicone-free version</li> <li>■ Separated construction of measuring chamber and display area</li> <li>■ Individual design of dial and scale</li> </ul>	<ul style="list-style-type: none"> <li>■ Maximum operating pressure 20 kPa</li> <li>■ Also available as a silicone-free version</li> <li>■ Separated construction of measuring chamber and display area</li> <li>■ Individual design of dial and scale</li> </ul>	<ul style="list-style-type: none"> <li>■ Electrical output signal 4 ... 20 mA (2-wire) or 0 ... 10 V (3-wire)</li> <li>■ Maximum operating pressure 20 kPa</li> <li>■ Separated construction of measuring chamber and display area</li> <li>■ Individual design of dial and scale</li> </ul>	<ul style="list-style-type: none"> <li>■ Optimal readability with minimal space requirements</li> <li>■ All-metal design (built-in version)</li> <li>■ Silicone-free</li> <li>■ Individual design of dial and scale</li> </ul>	<ul style="list-style-type: none"> <li>■ Compact indicator and pressure switch fitted within a plastic case</li> <li>■ Single-pin microswitch (change-over contact)</li> <li>■ Switch point adjustable when installed</li> <li>■ UV stabilised</li> <li>■ Individual design of dial and scale</li> </ul>
<b>Measuring range</b>	<ul style="list-style-type: none"> <li>■ 0 ... 50 Pa to 0 ... 6,000 Pa</li> <li>■ -25 ... +25 Pa to -1,500 ... +1,500 Pa</li> <li>■ further ± ranges on request</li> </ul>	<ul style="list-style-type: none"> <li>■ 0 ... 50 Pa to 0 ... 6,000 Pa</li> <li>■ -25 ... +25 Pa to -1,500 ... +1,500 Pa</li> <li>■ further ± ranges on request</li> </ul>	<ul style="list-style-type: none"> <li>■ 0 ... 50 Pa to 0 ... 6,000 Pa</li> <li>■ -25 ... +25 Pa to -1,500 ... +1,500 Pa</li> <li>■ further ± ranges on request</li> </ul>	<ul style="list-style-type: none"> <li>■ 0 ... 250 Pa</li> <li>■ 0 ... 500 Pa</li> <li>■ 0 ... 750 Pa</li> <li>■ 0 ... 1,000 Pa</li> </ul>	<ul style="list-style-type: none"> <li>■ 0 ... 250 Pa to 0 ... 6,000 Pa</li> </ul>
<b>Ingress protection</b>	IP54 (optional IP65)	IP54 (optional IP65)	IP54 (optional IP65)	IP68	IP65



Inclined tube manometer	Differential pressure switch	Dual differential pressure sensor	Measuring probe
A2G-30	A2G-40	A2G-52	A2G-FM
Analogue display and monitoring of low differential pressures	For monitoring the differential pressure of air and other non-inflammable and non-aggressive gases	For measurement, monitoring and transmission of 2 differential pressures via Modbus. The function as a data node allows the integration of 2 additional, external measured values	<ul style="list-style-type: none"> <li>■ Measurement of air flows, air velocity and differential pressures in circular ventilation pipes and rectangular ventilation ducts</li> <li>■ Measurement of the total pressure and the static pressure of the air flow in accordance with the pitot tube principle</li> </ul>
Wall mounting, easy installation	Wall mounting, easy installation	Wall mounting, easy installation	<ul style="list-style-type: none"> <li>■ 2 x screw holes with Ø 5.0 mm</li> <li>■ Sizes ≥ 350 mm have a Ø 6.0 mm bolt, washer and nut attached to the other end of the measuring probe to stabilise the measuring probe</li> </ul>
Connecting nozzle for hoses with inner diameter 4 mm	Connecting nozzle, side mount, for hoses with inner diameter 4 or 6 mm	Connecting nozzle, lower mount, for hoses with inner 4 mm diameter	<ul style="list-style-type: none"> <li>■ 4.8 mm brass with barbs for pipes with inner diameter 4 mm</li> <li>■ Ideal in combination with A2G-520 (differential pressure air flow sensor) or A2G-540 (differential pressure and air flow controller)</li> </ul>
	Switching power: AC 250 V, 3 A DC 30 V, 3 A Single pole double throw	Modbus® RTU	
<ul style="list-style-type: none"> <li>■ Easy-to-read analogue display</li> <li>■ Reservoir for absorbing the volume expansion of the measuring liquid in case of a strong heating of the measuring liquid (e.g. when exposed to strong radiation from sunlight).</li> <li>■ Easy zero point correction</li> </ul>	<ul style="list-style-type: none"> <li>■ Very reliable</li> <li>■ Simple setting of the switch point</li> <li>■ Robust case and functional design</li> </ul>	<ul style="list-style-type: none"> <li>■ Two differential pressure sensors in one instrument</li> <li>■ Two inputs for temperature sensors or analogue 0 ... 10 V signal</li> <li>■ Two-line LC display for the direct reading of both pressure values</li> </ul>	<ul style="list-style-type: none"> <li>■ Multipoint averaging on the basis of the "Log-Tchebycheff" method to ensure an increased accuracy</li> <li>■ Bevelled sensor points guarantee uniform measured values</li> <li>■ Available for circular ventilation pipes (version R) and for rectangular ventilation ducts (version L)</li> <li>■ Measurement even at very low air velocities of down to 1.0 m/s</li> </ul>
0 ... 600 Pa	20 ... 200 Pa to 500 ... 4,500 Pa	<ul style="list-style-type: none"> <li>■ -250 ... +2,500 Pa</li> <li>■ -250 ... +7,500 Pa</li> </ul>	<ul style="list-style-type: none"> <li>■ For circular ventilation pipes up to Ø 1,500 mm</li> <li>■ For rectangular ventilation ducts up to 1,500 mm duct depth</li> </ul>
IP54	IP54	IP54	-

# Pressure



	Differential pressure sensor	Differential pressure air flow sensor	Differential pressure and air flow controller
<b>Model</b>	A2G-500	A2G-520	A2G-540
<b>Application</b>	<ul style="list-style-type: none"> <li>Measurement of differential pressure, gauge pressure and vacuum</li> <li>Monitoring of filters and ventilators</li> <li>Pressure monitoring in ventilation ducts, laboratories, production areas and clean rooms</li> </ul>	<ul style="list-style-type: none"> <li>Measurement and monitoring of ventilator air flow</li> <li>Measurement and monitoring of air flow in ventilation pipes and ventilation ducts in conjunction with the A2G-FM measuring probe</li> </ul>	<ul style="list-style-type: none"> <li>Infinitely variable control of EC ventilators</li> <li>Control of frequency converters</li> <li>Control of supply air and extract air systems with constant or variable air flows</li> </ul>
<b>Mounting</b>	Screw the removable mounting plate directly to the air-handling system or mount it on a DIN rail in the control cabinet	Screw the removable mounting plate directly to the air-handling system or mount it on a DIN rail in the control cabinet	Screw the removable mounting plate directly to the air-handling system or mount it on a DIN rail in the control cabinet
<b>Process connection</b>	Connecting nozzle, lower mount, for hoses with 4 ... 6 mm inner diameter	Connecting nozzle, lower mount, for hoses with 4 ... 6 mm inner diameter	Connecting nozzle, lower mount, for hoses with 4 ... 6 mm inner diameter
<b>Electrical input signal</b>	<ul style="list-style-type: none"> <li>2 x voltage input (DC 0 ... 10 V, 0 ... 5 V or 2 ... 10 V)</li> <li>2 x resistance input (Pt1000, Ni1000, Ni1000-LG, NTC10k)</li> </ul>	<ul style="list-style-type: none"> <li>2 x voltage input (DC 0...10 V, 0 ... 5 V or 2 ... 10 V)</li> <li>2 x resistance input (Pt1000, Ni1000, Ni1000-LG, NTC10k)</li> </ul>	<ul style="list-style-type: none"> <li>2 x voltage input (DC 0 ... 10 V, 0 ... 5 V or 2 ... 10 V)</li> <li>2 x resistance input (Pt1000, Ni1000, Ni1000-LG, NTC10k)</li> </ul>
<b>Electrical output signal</b>	<ul style="list-style-type: none"> <li>4 ... 20 mA</li> <li>0 ... 5 V, 0 ... 10 V, 2 ... 10 V</li> <li>Modbus® RTU</li> <li>LoRaWAN®</li> <li>1 - 2 relay outputs (max. 5 A / DC 24 V)</li> </ul>	<ul style="list-style-type: none"> <li>4 ... 20 mA</li> <li>0 ... 5 V, 0 ... 10 V, 2 ... 10 V</li> <li>Modbus® RTU</li> <li>LoRaWAN®</li> <li>1 - 2 relay outputs (max. 5 A / DC 24 V)</li> </ul>	<ul style="list-style-type: none"> <li>4 ... 20 mA</li> <li>0 ... 5 V, 0 ... 10 V, 2 ... 10 V</li> <li>Modbus® RTU</li> <li>LoRaWAN®</li> <li>1 - 2 relay outputs (max. 5 A / DC 24 V)</li> </ul>
<b>Special features</b>	<ul style="list-style-type: none"> <li>IIoT-ready and future-proof thanks to analogue and digital signal transmission, as well as via radio</li> <li>Time-saving instrument configuration and display of current measured values on the smartphone via WIKA app</li> <li>No cabling effort for retrofit project thanks to battery operation and LoRaWAN®</li> <li>Decentralised data node – up to four input signals – reduces cabling effort and installation costs</li> <li>Traffic light function enables critical system states to be identified at a glance</li> <li>2" TFT colour display</li> <li>Automatic zero point setting</li> </ul>	<ul style="list-style-type: none"> <li>IIoT-ready and future-proof thanks to analogue and digital signal transmission, as well as via radio</li> <li>Time-saving instrument configuration and display of current measured values on the smartphone via WIKA app</li> <li>Decentralised data node – up to four input signals – reduces cabling effort and installation costs</li> <li>Traffic light function enables critical system states to be identified at a glance</li> <li>2" TFT colour display</li> <li>Automatic zero point setting</li> <li>Integrated air flow calculation based on all common formulae</li> </ul>	<ul style="list-style-type: none"> <li>IIoT-ready and future-proof thanks to analogue and digital signal transmission, as well as via radio</li> <li>Time-saving instrument configuration and display of current measured values on the smartphone via WIKA app</li> <li>Decentralised data node – up to four input signals – reduces cabling effort and installation costs</li> <li>Traffic light function enables critical system states to be identified at a glance</li> <li>2" TFT colour display</li> <li>Automatic zero point setting</li> <li>Integrated air flow calculation based on all common formulae</li> <li>PID control functionality</li> </ul>
<b>Measuring range</b>	<ul style="list-style-type: none"> <li>0 ... 25 Pa / 0 ... 12,000 Pa</li> <li>-25 ... +25 Pa / -1,000 ... +1,000 Pa</li> </ul>	<ul style="list-style-type: none"> <li>0 ... 25 Pa / 0 ... 7,000 Pa</li> <li>-25 ... +25 Pa / -1,000 ... +1,000 Pa</li> </ul>	<ul style="list-style-type: none"> <li>0 ... 25 Pa / 0 ... 7,000 Pa</li> <li>-25 ... +25 Pa / -1,000 ... +1,000 Pa</li> </ul>
<b>Ingress protection</b>	IP65	IP65	IP65

# Humidity and air quality



	Ventilation duct sensor for relative humidity and temperature	Ventilation duct sensor for air quality, VOC	Ventilation duct sensor for CO <sub>2</sub> and temperature	Control panels with integrated room sensor
<b>Model</b>	A2G-70	A2G-80	A2G-85	A2G-200
<b>Application</b>	For the measurement of relative humidity and temperature in ventilation ducts	For the measurement of volatile organic compounds (VOC) in ventilation ducts to determine room air quality	For the measurement of the CO <sub>2</sub> content and the temperature in the air duct	For the measurement and display of the temperature, carbon dioxide (CO <sub>2</sub> ) and relative humidity in the room
<b>Mounting</b>	<ul style="list-style-type: none"> <li>Simple mounting via adjustable mounting flange</li> <li>Screwless cover for quick wiring</li> </ul>	Simple mounting via adjustable mounting flange	<ul style="list-style-type: none"> <li>Simple mounting via adjustable mounting flange</li> <li>Screwless cover for quick wiring</li> </ul>	Wall mounting
<b>Electrical output signal / Switch contacts</b>	<ul style="list-style-type: none"> <li>DC 0/2 ... 5/10 V</li> <li>4 ... 20 mA</li> <li>Modbus®</li> </ul>	DC 0 ... 10 V the greater the output signal of the sensor (0 ... 10 V), the worse the air quality	<ul style="list-style-type: none"> <li>DC 0/2 ... 5/10 V</li> <li>4 ... 20 mA</li> <li>Modbus®</li> </ul>	<ul style="list-style-type: none"> <li>DC 0/2 ... 5/10 V</li> <li>4 ... 20 mA</li> <li>Modbus®</li> <li>Potential-free SPDT AC 250 V, 6 A / DC 30 V, 6 A with adjustable switch point and hysteresis</li> </ul>
<b>Measuring element</b>	<ul style="list-style-type: none"> <li>NTC10k temperature sensor</li> <li>Capacitive thermosetting polymer sensor element for humidity</li> </ul>	Heated metal oxide semiconductor sensor	<ul style="list-style-type: none"> <li>NTC10k temperature sensor</li> <li>Non-dispersive infrared (NDIR) CO<sub>2</sub> sensor</li> </ul>	<ul style="list-style-type: none"> <li>NTC10k temperature sensor</li> <li>Capacitive thermosetting polymer sensor element for humidity</li> <li>Non-dispersive infrared (NDIR) CO<sub>2</sub> sensor</li> </ul>
<b>Special features</b>	<ul style="list-style-type: none"> <li>Two-line LC display</li> <li>Combined instrument for temperature and humidity (reduced instrument, installation and commissioning costs)</li> </ul>	Mixed-gas probes detect gases and vapours which can be oxidised (burned): Body odours, tobacco smoke, extracts from materials (furniture, carpets, paint coatings, adhesives, etc.)	<ul style="list-style-type: none"> <li>Two-line LC display</li> <li>Combined instrument for temperature and CO<sub>2</sub> (reduced instrument, installation and commissioning costs)</li> </ul>	<ul style="list-style-type: none"> <li>Touchscreen display</li> <li>On-site configurable relay for each of the three parameters</li> </ul>
<b>Measuring range</b>	<ul style="list-style-type: none"> <li>Rel. humidity: 0 ... 95 %, non-condensing</li> <li>Temperature: 0 ... 50 °C</li> </ul>		<ul style="list-style-type: none"> <li>CO<sub>2</sub>: 400 ... 2,000 ppm</li> <li>Temperature: 0 ... 50 °C</li> </ul>	<ul style="list-style-type: none"> <li>CO<sub>2</sub>: 400 ... 2,000 ppm</li> <li>Temperature: 0 ... 50 °C</li> <li>Relative humidity: 0 ... 90 %</li> </ul>
<b>Ingress protection</b>	IP54	IP20	IP54	IP20

# Temperature



	Air velocity meter	Duct temperature sensor	Frost protection thermostat	Bimetal thermometer
<b>Model</b>	A2G-20	A2G-60	A2G-65	A2G-61
<b>Application</b>	For the measurement of air velocity and temperature in ventilation ducts	For temperature measurement in ventilation ducts and in liquid media, e.g. in pipeline systems	For air-side temperature monitoring and to prevent frost damage to water heating coils	For temperature measurement in ventilation ducts
<b>Mounting</b>	Mounting flange for mounting on circular ventilation pipes or rectangular ventilation ducts	<ul style="list-style-type: none"> <li>■ For direct mounting on circular ventilation pipes or rectangular ventilation ducts with mounting clip</li> <li>■ With additional thermowell for liquid media</li> </ul>	Wall mounting Mounting clamps for capillaries included in delivery	<ul style="list-style-type: none"> <li>■ NBR sealing for leak-free mounting</li> <li>■ Mounting template</li> </ul>
<b>Electrical output signal / Switch contacts</b>	<ul style="list-style-type: none"> <li>■ Air velocity 0 ... 10 V or 4 ... 20 mA</li> <li>■ Temperature 0 ... 10 V or 4 ... 20 mA</li> <li>■ potential-free, change-over contact, max. AC 250 V, 6 A, DC 30 V, 6 A, adjustable switching threshold and hysteresis</li> </ul>	Available in 2-, 3- or 4-wire connection <ul style="list-style-type: none"> <li>■ Output signal 0 ... 5 V / 0 ... 10 V or 4 ... 20 mA</li> </ul>	Change-over contact, max. AC 250 V, max 10 A	
<b>Measuring element</b>	<ul style="list-style-type: none"> <li>■ Temperature: ntc10k</li> <li>■ Air velocity: Pt1000</li> </ul>	Pt1000 or Ni1000	Copper capillary tube, filling with R 507	Bimetal coil
<b>Special features</b>	<ul style="list-style-type: none"> <li>■ Electrical output signal 0 ... 10 V or 4 ... 20 mA directly adjustable at the instrument via jumpers</li> <li>■ Output signal for velocity and air temperature in one instrument</li> <li>■ With switching output (optional)</li> <li>■ Maintenance-free</li> </ul>	<ul style="list-style-type: none"> <li>■ Compact and robust design</li> <li>■ Insertion length: 50 ... 450 mm</li> <li>■ Thermowell available in brass or stainless steel</li> </ul>	<ul style="list-style-type: none"> <li>■ Automatic reset (optional: manual reset)</li> <li>■ Small switch differential</li> <li>■ Capillary tube length 1.8, 3, 6 or 12 m</li> </ul>	<ul style="list-style-type: none"> <li>■ Insertion length 100, 160, 200, 300 mm</li> <li>■ Nominal size 100</li> </ul>
<b>Measuring range</b>	<b>Air velocity:</b> 0 ... 2 m/s, 0 ... 10 m/s and 0 ... 20 m/s (adjustable at the instrument via jumpers) <b>Temperature:</b> 0 ... 50 °C	-50 ... + 160 °C	Setting range for set point -10 ... +12 °C (factory setting 5 °C)	Scale range -20 ... +60 °C
<b>Ingress protection</b>	IP54	IP65	IP65	



Duct temperature probe	Outdoor thermometer	Insertion thermometer	Insertion thermometer with connection lead
TF40	TF41	TF43	TF45
For monitoring the temperature in ventilation systems	Measurement of the external temperature (ambient)	Temperature measurement of gaseous and liquid media	Temperature measurement of gaseous or liquid media
<ul style="list-style-type: none"> <li>■ For direct mounting to circular ventilation pipes or square ventilation ducts with mounting flange</li> <li>■ With additional thermowell for liquid media</li> </ul>	<ul style="list-style-type: none"> <li>■ Mounting with screws on the outside of buildings</li> <li>■ Optional: Clip-on sun protector</li> </ul>	<p>For mechanical stabilisation and fixing, the thermometer can be delivered with an additional probe sleeve made of stainless steel (probe sleeve Ø 6 mm, length: 50 or 100 mm)</p>	<ul style="list-style-type: none"> <li>■ Direct installation possible for gaseous media</li> <li>■ With additional thermowell for liquid media</li> </ul>
2-wire connection	2-wire connection	2-wire connection	2- or 4-wire connection
NTC, Pt100, Pt1000	NTC, Pt100, Pt1000	NTC, Pt100, Pt1000	NTC, Pt100, Pt1000
<ul style="list-style-type: none"> <li>■ Smallest case design</li> <li>■ Simple, fast mounting</li> <li>■ Nominal lengths: 100, 150, 200, 250 mm</li> <li>■ Material: Stainless steel 1.4571</li> <li>■ Diameter: 6 mm</li> </ul>	<ul style="list-style-type: none"> <li>■ Smallest case design</li> <li>■ UV-resistant</li> </ul>	<p>Fitting with customer-specific plug connectors possible</p>	<ul style="list-style-type: none"> <li>■ Connection lead from PVC, silicone, PTFE</li> <li>■ Probe sleeve from stainless steel</li> </ul>
<ul style="list-style-type: none"> <li>■ -30 ... +130 °C (NTC)</li> <li>■ -50 ... +200 °C (Pt100 and Pt1000)</li> </ul>	<ul style="list-style-type: none"> <li>■ -30 ... +100 °C (NTC)</li> <li>■ -40 ... +100 °C (Pt100, Pt1000)</li> </ul>	-50 ... +105 °C	-50 ... +260 °C
IP65	IP65	IP68	IP65 ... IP67

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