

Datasheet: [ANDKALQ U/ ANDKALQ I](#)

Duct air quality sensor

Application

Records the air quality in ducts of air-conditioning systems. Optionally, our **ANDRALQ** is available with an integrated relay and additional sensors for measuring temperature, CO₂ and humidity.

Characteristics

The measurement is performed by a VOC- / mixed gas sensor, between 450 and 2000 ppm. The measured results are converted into a standardized analogue output signal (0-10 V, 4-20 mA). The standard series covers different measuring ranges. Additionally a passive temperature sensor can be connected. Our sensors are extensible with an optional color LCD display, that shows measured values in real time.

Note: The sensor is designed for normal ambient conditions (ambient air), aggressive gases can destroy him. The location has a decisive effect on the measurement accuracy. Windows (cold outer wall) or near door (drafts) should be avoided.

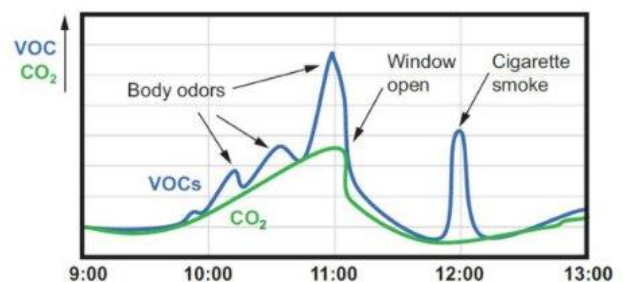
Technical Data

General information	
Power supply	12(20)...34 V AC/DC (Relay)
Connection	3-wired-connection
Connection clamp	Screw clamps, max 1.5 mm ²
Switching output (optional)	Relay 24 V / 1A, potential free changer
Power consumption	40...100 mA
Sensor setting up time	60 min

Signal output	
Typ I (3-wired)	4...20 mA
Analogue output burden	50...500 Ohm
Typ U (3-wired)	0...10 V
Analogue output load	10...100 kOhm



Casing	
Dimensions	75x69x44 mm
Material	PA6, similar RAL 9010
Cable inlet	M16x1.5 for wire diameter 4...10 mm
Protection sleeve	32x200 mm
Material	PVC
Admissible environmental conditions	0...50 °C; 0...98% r.H.
Protection class	IP65



Special sensor models available on demand.

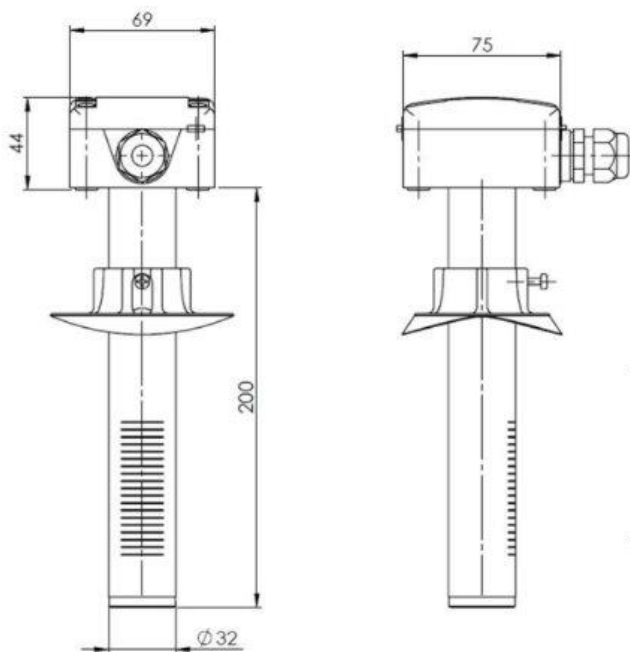
Sensor	
Type VOC	TVOC with auto calibration
Measuring range	450...2000 ppm
Type CO2	NDIR with Auto-calibration
Measuring range	0...2 000 / 0...5 000 ppm
Tolerance	0...2 000 ppm: +/- 60 ppm +/- 2% f.s. 0...5 000 ppm: +/- 150 ppm +/- 2% f.s.
Type r.h. / C°	capacitive
Measuring range	0...100 % r.h. (see measuring ranges S1)
Tolerance	25°C: +/- 2% r.h. (20...80 r.h.) + 2% f.s.
Type °C	PT1000 Class B, DIN EN 60751 (2-wired)
Measuring range	24 presetted ranges available
Tolerance	+/- 0.3 °K (5...60 °C) + 2.5% f.s.
Optional: Sensor °C passive, isolated	NTC1,8k /5k /10k /20k / Precon, KTY81-110, KTY81-210, LM235Z, DS18B20, Pt100, Pt1000 (Kl. A, B, 1/3DIN), Ni1000, Ni1000TK5000
Measuring range/tolerance °C passive	see resistance characteristics

Measurement ranges DIP-Switch (S1)

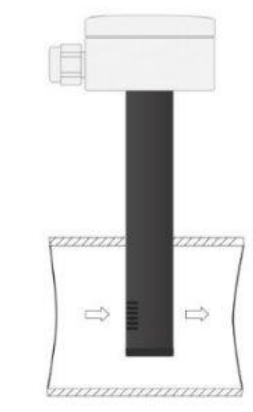
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Temperature Ranges						
Range	1	2	3	4	5	6/7/8
-100... 50 °C	OFF	OFF	OFF	OFF	OFF	N/A
-50...0 °C	ON	OFF	OFF	OFF	OFF	N/A
-50...50 °C	OFF	ON	OFF	OFF	OFF	N/A
-50...150 °C	ON	ON	OFF	OFF	OFF	N/A
-30...20 °C	OFF	OFF	ON	OFF	OFF	N/A
-30...60 °C	ON	OFF	ON	OFF	OFF	N/A
-30...70 °C	OFF	ON	ON	OFF	OFF	N/A
-20...50 °C	ON	ON	ON	OFF	OFF	N/A
-20...80 °C	OFF	OFF	OFF	ON	OFF	N/A
-20...120 °C	ON	OFF	OFF	ON	OFF	N/A
-20...150 °C	OFF	ON	OFF	ON	OFF	N/A
-10...15 °C	ON	ON	OFF	ON	OFF	N/A
-10...120 °C	OFF	OFF	ON	ON	OFF	N/A
0...40 °C	ON	OFF	ON	ON	OFF	N/A
0...50 °C	OFF	ON	ON	ON	OFF	N/A
0...70 °C	ON	ON	ON	ON	OFF	N/A
0...100 °C	OFF	OFF	OFF	OFF	ON	N/A
0...150 °C	ON	OFF	OFF	OFF	ON	N/A
0...160 °C	OFF	ON	OFF	OFF	ON	N/A
0...200 °C	ON	ON	OFF	OFF	ON	N/A
0...250 °C	OFF	OFF	ON	OFF	ON	N/A
0...400 °C	ON	OFF	ON	OFF	ON	N/A
0...600 °C	OFF	ON	ON	OFF	ON	N/A
10...35 °C	ON	ON	ON	OFF	ON	N/A

Technical drawing



Mounting advise



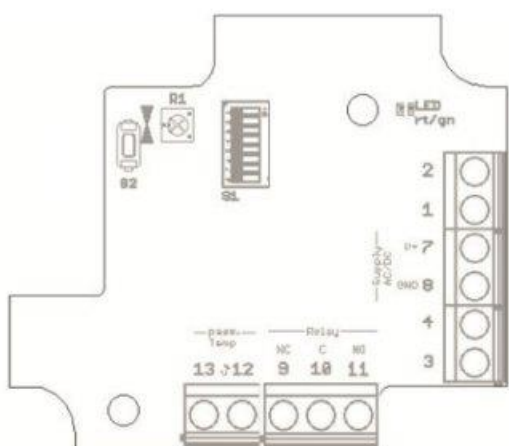
The sensor must comply with the ventilation slots against the flow direction the measured medium are attached. An external indication of the location of ventilation slits offers Inappropriate Gland, which always towards the vents shows.

The heating-up phase takes about 15 minutes, until the sensor emits a signal. Meanwhile the sensor should be exposed to fresh

air, since it takes this as a reference. If you take away the supply voltage, described process repeats.

Generally the sensor should at least once per day to be supplied with fresh air, as he regularly calibrates itself to this. This procedure prevents a long-term drift whereby the sensor is very stable.

Electrical connection



Electrical connection						
Pin	Typ U (0-10 V)			Typ I (4-20 mA)		
	VOC	VOC/C°	VOC/°C/rF	VOC/C°	VOC/°C/rF	VOC
1	ppm	temp	temp	-	-	-
2	(VOC)	ppm	humidity	-	-	-
3	-	(VOC)	ppm	temp	humidity	ppm
4	-	-	(VOC)	ppm	ppm	(VOC)
5	(passive poti)					
6	(passive poti)					
7	V+					
8	GND					
9	(relay NC)					
10	(relay C)					
11	(relay NO)					
12	(passive sensor)					
13	(passive sensor)					
R	-	temp. adjustment		-		

General notifications

Important: In-phase connection is necessary for parallel operation with 24 V/AC in order to avoid short circuits. The devices are built for safety extra-low volt-age operation. The technical data from the data sheet apply when connecting the devices. Especially with passive sensors (f. ex. PT100...) in two-wire configurations, the output resistance of the feed line must be observed and possibly adjusted via the evaluation electronics. The measuring current affects the accuracy of the measurement due to self-heating. Therefore, this current should be set to the sensor specs.

These instruments must be installed by authorised specialists only! Devices shall only be used for their intended purpose. The customer has to ensure adherence to the building and safety regulations and has to avoid all dangers of any kind.

Standards

[EU-Richtline 2014/30/EU](#)

[DIN EN 61326-2-1:2013](#)

Installation / Guarantee

The installation of the devices should be done only by qualified personnel. - The device may only be connected with the power off. - The safety of the VDE, the states, the TÜV and the local energy supply company must be observed. - The EMC directives must be observed. It must be shielded connecting lines, laying parallel with current-carrying - Lines should be avoided. - Operation in the vicinity of equipment that do not comply with EMC directives may adversely affect the functioning - The buyer has to ensure compliance with the relevant building and safety guidelines - This product should not be used for safety-related tasks, such as the protection of persons as an emergency stop switch on equipment. - Improper use of any defects and damages are excluded from the warranty and liability. - Consequential damages caused by a fault in this device are excluded from warranty or liability. - Solely the technical data and connecting conditions of the mounting and operating instructions supplied with the instrument. Changes are possible at any time in the sense of technical progress and the improvement of products. - Changes of the device by the user, all warranty claims.

Order information

Product code and specification			
Type	Output pp	Output r.h.	Output °C
ANDKALQ/U	0...10 V	-	-
ANDKALQ/T-U	0...10 V	-	0...10 V
ANDKALQ/T/F-U	0...10 V	0...10 V	0...10 V
ANDKALQ/I	4...20 mA	-	-
ANDKALQ/T-I	4...20 mA	-	4...20 mA
ANDKALQ/T/F-I	4...20 mA	4...20 mA	4...20 mA
Optional:			
inkl. Display - Order code: ANDKALQ[...] – D			
inkl. CO2 Sensor - Order code: ANDKACO2LQ/			

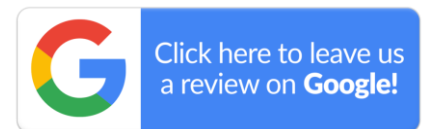
Product Web Links:

EN <https://www.andivi.com/product/duct-air-quality-sensor-andkalq/>

SI <https://www.andivi.si/artikel/kanalski-senzor-kvalitete-zraka-andkalq/>

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