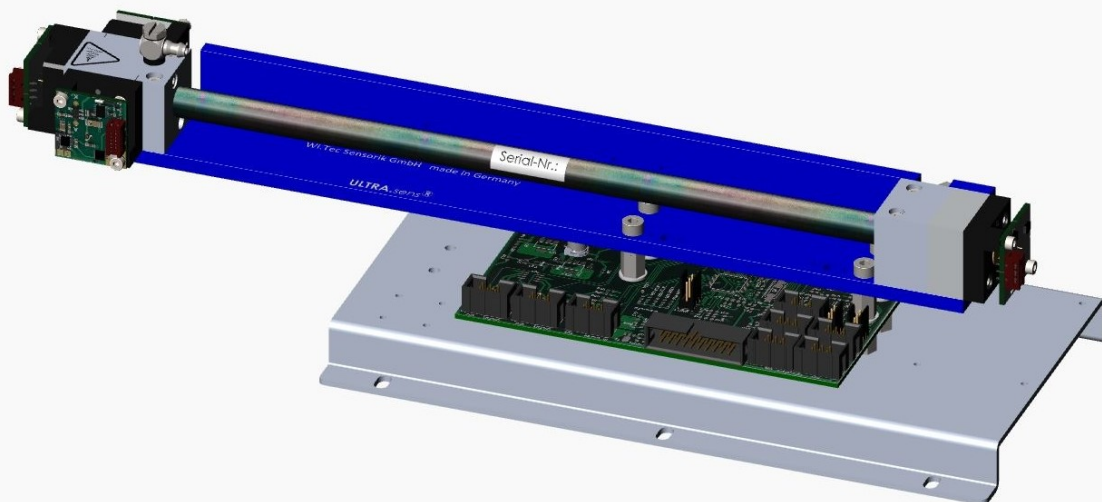# ULTRA.sens® AK250

NO_2 / SO_2 / O_3

ULTRA.*sens*® AK250

Applications

> OEM gas module
> Industrial gas analyzer
> Environmental monitoring
> Marpol monitoring
> Process control
> Instrumentation

Features & Benefits

> High dynamic range
> Rugged sensor design
> Gas tight O-ring sealing
> Low power consumption <1W @ 24V
> Different Interfaces (RS232, CANbus)

Description

The **ULTRA.*sens*®** is the world's first OEM gas measurement module based on miniaturized UV LEDs. The stability and lifetime of these UV-LEDs enables high-precision gas analyses down to the ppb range. By using two UV-LEDs 2 gases can be detected simultaneously. With this approach, 2 measuring ranges from ppm to Vol.-% can also be realized.

In the spectral range from 200nm to 500nm, nitrogen dioxide, ozone and sulphur dioxide can be reliably detected with this novel sensor platform.

Options

> O2.sens (Oxygen sensor)
> P.sens (Pressure sensor)
> INFRA.sens CO2 (0-20 Vol.%)
> HUMI.sens® (Humidity sensor)
> Thermobox
> Analog voltage board

Accessoires

> MARS Tool (Control and data logging)

For more and most recent information please have a look on our website at www.witec-sensorik.de/en/

ULTRA.sens® AK250

	NO$_2$ / SO$_2$ / O$_3$						

	gas channel 1*	gas channel 2*	gas channel 3*	gas channel 4*	Option**		
Single Gas Module			SO$_2$ / NO$_2$ / O$_3$		O$_2$	P	H
Dual Gas Module			SO$_2$ / NO$_2$ / O$_3$	SO$_2$ / NO$_2$ / O$_3$	O$_2$	P	H

* one gas per column selectable
** P = pressure sensor, H = humidity sensor

List of measurement ranges

Measuring range*	SO$_2$	NO$_2$	O$_3$
100Vol.%			
50Vol.%			
30Vol.%			
20Vol.%			
10Vol.%			
5Vol.%			
1Vol.%			
5000ppm	✔	✔	✔
2000ppm	✔	✔	
1000ppm	✔	✔	
500ppm	✔	✔	
300ppm	✔	✔	
100ppm	✔**	✔	✔
50ppm	✔**		✔
10ppm			

* Full scale value (F.S.)
** Please note the different measurement responses for the small measurement ranges
   For other measuring ranges please refer to our further datasheets

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ULTRA.sens® AK250

NO_2 / SO_2 / O_3	
General features	
Measurement principle	NDUV
Measurement range	see list of measurement ranges
Gas flow	0.1 – 1.5 l/min
Dimensions	348mm x 120mm x 82mm
Weight	approx. 750g
Tube connector	4/6mm tube
Lifetime of UV radiation source	> 40 000h
Measuring response[1]	
Warm-up time	1 min (initial), <60 min[2]
Response time(t_{90})	1s – 15s[3]
Detection limit (3·σ)	< 1ppm[4]
Linearity error	< ± 1% F.S.
Repeatibility	± 0.5% F.S.
Long term stability (zero)	< ± 1% F.S./24h > 100ppm F.S. ≤ ± 2%F.S./24h ≤ 100ppm F.S.
Temp. Influence zero	< 1% F.S./10K
Temp. Influence span	< 2% F.S./10K
Pressure influence	< 1.5% /10 hPa of reading[5]
Electrical inputs and outputs	
Supply voltage	24 (15 – 30) VDC
Supply current (peak)	< 0.1A
Average power consumption	< 1W
Digital output signal	RS 232 (ASCII) or CAN bus
Climatic conditions	
Operating temperature	15 – 45 °C
Storage temperature	-20 – 60 °C
Air pressure	800 – 1200 hPa (mbar)
Ambient humidity	0 – 95% rel. humidity (not condensing)

F.S. full scale
[1] related to P_a = 1020hPa ; T_a= 25°C // flow = 1l/min
[2] full specification
[3] depends on digital filter settings
[4] at zero point
[5] without pressure compensation

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