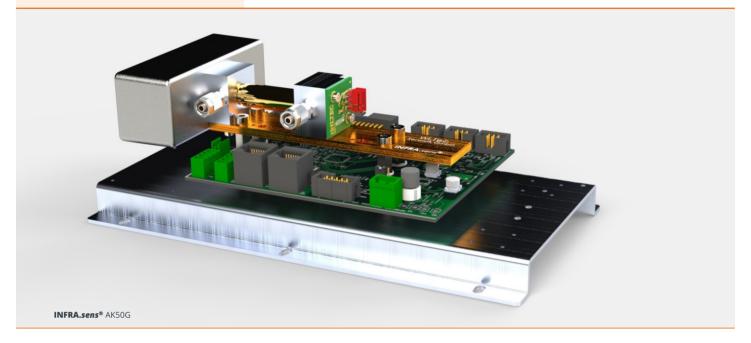
INFRA.sens® AK50G



CO_2 / CO / N_2O / C_nH_m



Applications

- > Biogas
- > Industrial gas analyzer
- > Environmental monitoring
- > Process control
- > Instrumentation

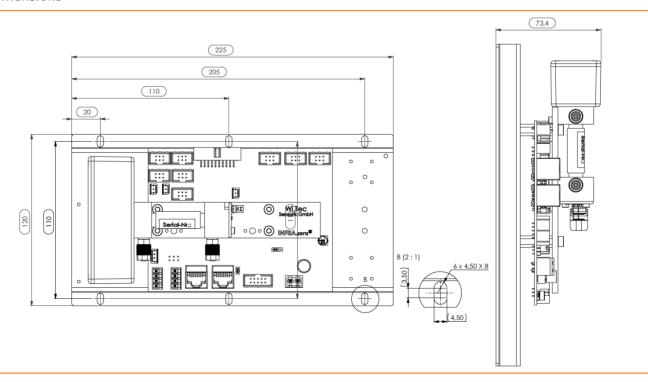
Options

- > O2.sens (Oxygen sensor)
- > P.sens (Pressure sensor)
- > HUMI.sens® (Humidity sensor)
- > Analogboard (0-10V)
- > Thermobox

Features & Benefits

- > rugged sensor design
- > low power consumption <2W @ 24V
- > different Interfaces (RS232, CANbus)
- > low drift
- > MARS-Tool (Wi.Tec Software)

Dimensions



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

INFRA.sens® AK50G

CO₂ / CO / N₂O / C_nH_m

	gas channel 1*	gas channel 2*	gas channel 3*	C	ption	**
Single Gas Module	CO / CO ₂ / C _n H _m / CH ₄ / N ₂ O			O ₂	Р	Н
Dual Gas Module	СО		$CO_2 / C_nH_m / CH_4 / N_2O$	02	Р	Н
Du Gas M		CO ₂	$CO_2 / C_nH_m / CH_4 / N_2O$	O ₂	Р	Н
Triple Gas Module	СО	CO ₂	CO ₂ / C _n H _m / CH ₄ / N ₂ O	O ₂	Р	Н

List of measurement ranges

Measurement range [*]	CO ₂	CO	N ₂ O	CH ₄	C_nH_m	CF ₄	SF ₆	H ₂ O
100Vol.%								
50Vol.%								
30Vol.%								
20Vol.%	~		~	~	~			
10Vol.%		~	~	~	~			
5Vol.%		~		~	~			
1Vol.%	~	~						
5000ppm	~							
2000ppm								
1000ppm								
500ppm								
300ppm								
100ppm								
50ppm								
10ppm								

^{*} Full scale value (F.S.)
For other measuring ranges please refer to our further datasheets



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

INFRA.sens® AK50G

CO_2 / CO / N_2O / C_nH_m

General features Non-dispersive infrared (NDIR); dual beam; dual to quad wavelenghts Measurement principle Non-dispersive infrared (NDIR); dual beam; dual to quad wavelenghts Measurement range see list of measurement ranges Gas flow 0.1 – 1.5 l/min Dimensions 225mm x 120mm x 73.4mm Weight approx. 540g Tube connector 446mm tube Lifetime of IR radiation source > 40.000h Measuring response! Will published to the published of		
Measurement range see list of measurement ranges Gas flow 0.1 – 1.5 l/min Dimensions 225mm x 120mm x 73.4mm Weight approx. 540g Tube connector 4/6mm tube Lifetine of IR radiation source > 40 000h Measuring response! ************************************	General features	
Gas flow 0.1 − 1.5 l/min Dimensions 225mm x 120mm x 73.4mm Weight approx. 540g Tube connector 4/6mm tube Lifetime of IR radiation source > 40 000h Measuring response! ************************************	Measurement principle	
Dimensions 225mm x 120mm x 73.4mm Weight approx. 540g Tube connector 4/6mm tube Lifetime of IR radiation source > 40 000h Measuring response¹ T min (initial), <15 min² Response time(t₂₀) 1 min (initial), <15 min² Response time(t₂₀) 1.5s - 15s³ Detection limit (3·o) < 0.5% F.5⁴ Linearity error < ± 1% F.S. Repeatibility ± 0.5% F.S. Long term stability (span) < ± 2% F.S./week Long term stability (span) < ± 2% F.S./month Temp. Influence zero < 1% F.S./10K³ Cross sensitivity < 2% F.S.% Pressure influence < 1.5%/10F3 Cross sensitivity < 2% F.S.% Pressure influence < 1.5%/10F3 Supply voltage 24 (15 - 30) VDC Supply voltage 24 (15 - 30) VDC Supply current (peak) < 0.1A Average power consumption < 2W Digital output signal R 2322 (ASCII) or CANbus Climatic conditions Temp.	Measurement range	see list of measurement ranges
Weight approx. 540g Tube connector 4/6mm tube Lifetime of IR radiation source > 40 000h Measuring response¹ 1 min (initial), <15 min²	Gas flow	0.1 – 1.5 l/min
Tube connector 4/6mm tube Lifetime of IR radiation source > 40 000h Measuring response¹ 1 min (initial), <15 min²	Dimensions	225mm x 120mm x 73.4mm
Lifetime of IR radiation source > 40 000h Measuring response¹ Warm-up time 1 min (initial), <15 min²	Weight	approx. 540g
Measuring response! Warm-up time 1 min (initial), <15 min²	Tube connector	4/6mm tube
Warm-up time 1 min (initial), <15 min²	Lifetime of IR radiation source	> 40 000h
Response time(t _{sp0}) 1.5s − 15s³ Detection limit (3·o) < 0.5% F.S⁴	Measuring response ¹	
Detection limit (3-o) \$ 0.5\% F.S^4\\ Linearity error \$ \text{	Warm-up time	1 min (initial), <15 min ²
Linearity error < \t \text{ \t	Response time(t ₉₀)	1.5s – 15s³
Repeatibility	Detection limit (3·σ)	< 0,5% F.S ⁴
Long term stability (zero)<± 2% F.S./weekLong term stability (span)<± 2% F.S./month	Linearity error	< ± 1% F.S.
Long term stability (span) Temp. Influence zero <1% F.S./10K Temp. Influence span <1% F.S./10K ⁶ Cross sensitivity <2% F.S. ⁶ Pressure influence <1.5%/10hPa of reading ⁷ Electrical inputs and outputs Supply voltage 24 (15 - 30) VDC Supply current (peak) Average power consumption <2W Digital output signal RS 232 (ASCII) or CANbus Climatic conditions Operating temperature 5 - 45 °C ⁸ Storage temperature 5 - 40 °C Air pressure 800 - 1200 hPa (mbar)	Repeatibility	± 0.5% F.S.
Temp. Influence zero < 1% F.S./10K Temp. Influence span < 1% F.S./10K5 Cross sensitivity < 2% F.S.6 Pressure influence < 1.5%/10hPa of reading? Electrical inputs and outputs Supply voltage 24 (15 – 30) VDC Supply current (peak) < 0.1A Average power consumption < 2W Digital output signal RS 232 (ASCII) or CANbus Climatic conditions Operating temperature 5 – 45 °C8 Storage temperature -20 – 60 °C Air pressure 800 – 1200 hPa (mbar)	Long term stability (zero)	< ± 2% F.S./week
Temp. Influence span \$ 1\% \text{F.S.}/10\K^\5 \\ Cross sensitivity \$ 2\% \text{F.S.}^6 \\ Pressure influence \$ 1.5\%/10\hPa of reading^7 \\ Electrical inputs and outputs Supply voltage \$ 24 \(15 - 30\) VDC Supply current (peak) \$ < 0.1A \\ Average power consumption \$ < 2\W \\ Digital output signal \$ \text{RS 232 (ASCII) or CANbus} \\ Climatic conditions Operating temperature \$5 - 45 \circ \text{C8} \\ Storage temperature \$-20 - 60 \circ C Air pressure \$ 800 - 1200 \hPa \text{(mbar)}	Long term stability (span)	< ± 2% F.S./month
Cross sensitivity Pressure influence \$\square \text{1.5\%/10hPa of reading}^7\$ Electrical inputs and outputs Supply voltage \$\square 24(15 - 30) \text{VDC}\$ Supply current (peak) Average power consumption \$\square 2W\$ Digital output signal RS 232 (ASCII) or CANbus Climatic conditions Operating temperature \$\square -45 \circ 8\$ Storage temperature \$\square -20 - 60 \circ C\$ Air pressure \$\square 800 - 1200 \text{ hPa (mbar)}\$	Temp. Influence zero	< 1% F.S./10K
Pressure influence <1.5%/10hPa of reading? Electrical inputs and outputs Supply voltage 24 (15 - 30) VDC Supply current (peak) <0.1A Average power consumption <2W Digital output signal RS 232 (ASCII) or CANbus Climatic conditions Operating temperature 5 - 45 °C8 Storage temperature 5-0 °C Air pressure 800 - 1200 hPa (mbar)	Temp. Influence span	< 1% F.S./10K ⁵
Electrical inputs and outputs Supply voltage 24 (15 - 30) VDC Supply current (peak) < 0.1A Average power consumption < 2W Digital output signal RS 232 (ASCII) or CANbus Climatic conditions Operating temperature 5 - 45 °C8 Storage temperature 5-0 - 60 °C Air pressure 800 - 1200 hPa (mbar)	Cross sensitivity	< 2% F.S. ⁶
Supply voltage24 (15 - 30) VDCSupply current (peak)< 0.1AAverage power consumption< 2WDigital output signalRS 232 (ASCII) or CANbusClimatic conditionsOperating temperature5 - 45 °C8Storage temperature-20 - 60 °CAir pressure800 - 1200 hPa (mbar)	Pressure influence	< 1.5%/10hPa of reading ⁷
Supply current (peak) Average power consumption Climatic conditions Operating temperature Storage temperature Air pressure Consumption Consumption Consumption Consumption Consumption Consumption Consumption Consumption Cany bus RS 232 (ASCII) or CANbus For a consumption Cany bus Consumption Consum	Electrical inputs and outputs	
Average power consumption <2W Digital output signal RS 232 (ASCII) or CANbus Climatic conditions Operating temperature 5 - 45 °C8 Storage temperature -20 - 60 °C Air pressure 800 - 1200 hPa (mbar)	Supply voltage	24 (15 – 30) VDC
Digital output signal RS 232 (ASCII) or CANbus Climatic conditions Operating temperature 5 - 45 °C8 Storage temperature -20 - 60 °C Air pressure 800 - 1200 hPa (mbar)	Supply current (peak)	< 0.1A
Climatic conditions Operating temperature 5 - 45 °C8 Storage temperature -20 - 60 °C Air pressure 800 - 1200 hPa (mbar)	Average power consumption	< 2W
Operating temperature5 - 45 °C8Storage temperature-20 - 60 °CAir pressure800 - 1200 hPa (mbar)	Digital output signal	RS 232 (ASCII) or CANbus
Storage temperature -20 - 60 °C Air pressure 800 - 1200 hPa (mbar)	Climatic conditions	
Air pressure 800 – 1200 hPa (mbar)	Operating temperature	5 – 45 °C ⁸
	Storage temperature	-20 – 60 °C
Ambient humidity 0 – 95% rel. humidity (not condensing)	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, demands to environmental conditions ³ depends on digital filter settings ⁴ at zero point ⁵ with span temperature compensation ⁶ to each calibrated gas channel, other gases on request ⁷ without pressure compensation ⁸ stable climatic conditions recommended, please check dewpoint considerations

