

## GAS ANALYZER & CONTROLLER

**AIO2****FLAME PROOF  
AIUTCF****AIGAC****AISO225****AO220H**

### GAS ANALYZER

The AIGA GAS Analyzer measures GAS concentration on percent levels in a single analyzer and is ideal for Percent Or PPM level measurements in applications such as GAS leakage safty, Variable Gas Generation Plant, Hazardous Gas Sensing, environment Combust Gas Measurement, Explosive Gas Detection.

### OXYGEN ANALYZER

The AIO2 Oxygen Analyzer measures oxygen concentration on percent levels in a single analyzer and is ideal for Percent level measurements in applications such as nitrogen reflow furnaces and semiconductor plants.

### FEATURES

- \* MEASURE GAS AS PER PREDEFINED GAS SELECTION
- \* POWER 24VDC & 230VAC OPTIONAL
- \* RELAY OUTPUT FOR CONTROL
- \* ALARM OPTION AVAILABLE
- \* DATA CAN BE SEND VIA SMS [OPTIONAL]
- \* DATA CAN LOGGING
- \* SCADA SOFTWARE AVAILABLE FOR TRANDING[ OPTIONAL]
- \* CUSTOMIZED SOLUTION

**ARANKA**

CE -2209

ISO 9001:2015  
COMPANY**ARANKA INSTRUMENTS LLP**

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# SPECIFICATION SHEET for AMMONIA SENSOR with FAST RESPONSE TYPE AINH3/CR-10000

## PERFORMANCE CHARACTERISTICS

Nominal Range	0 – 10'000 ppm
Maximum Overload	15'000 ppm
Expected Operation Life	2 years in air
Output Signal	2.5 – 0.5 nA/ppm
Resolution	50 ppm
Temperature Range	- 10 °C to 40 °C
Pressure Range	Atmospheric <sup>1)</sup>
Pressure Coefficient	No data
T <sub>90</sub> Response Time	< 50 sec
Relative Humidity Range	15 % to 90 % R.H. non-condensing
Baseline	-200 ppm to 200 ppm
Maximum Zero Shift (+20°C to +40°C)	- 400 ppm
Typical Long Term Output Drift	< 5% per 6 months
Recommended Load Resistor	10 Ohm
Bias Voltage	Not allowed
Repeatability	< 3 % of signal
Output Linearity	< 5 % full scale
Humidity Effect <sup>2)</sup>	< 180 ppm

<sup>1)</sup> no data for deviations

<sup>2)</sup> abrupt changes in rel. humidity causes a short term transient signal

## CROSS-SENSITIVITY DATA

Interfering Gas	Concentration	Reading
CO	1000 ppm	0 ppm
H <sub>2</sub>	1000 ppm	0 ppm
SO <sub>2</sub> <sup>3)</sup>	100 ppm	-35 ppm
H <sub>2</sub> S <sup>3)</sup>	100 ppm	35 ppm
NO <sup>3)</sup>	200 ppm	-10 ppm
NO <sub>2</sub> <sup>3)</sup>	100 ppm	-100 ppm
Cl <sub>2</sub>	20 ppm	-55 ppm
CO <sub>2</sub>	2 %	0 ppm

<sup>3)</sup> Long term exposures and high concentrations may affect the performance characteristics

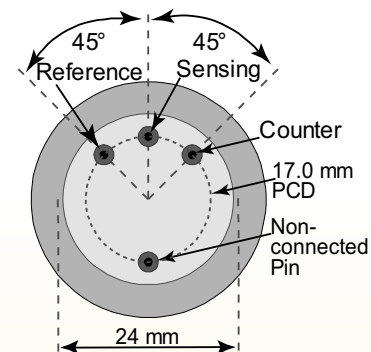
Performance data conditions:  
20 °C, 50% RH and 1013 mbar

## PHYSICAL CHARACTERISTICS

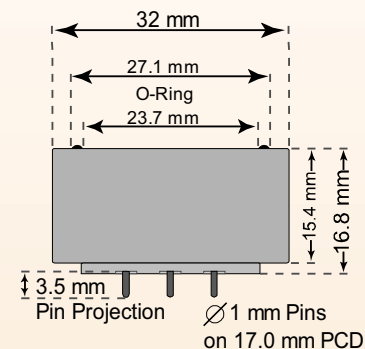
Weight	~ 13 g
Position Sensitivity	None
Storage Life	Six months in container
Recommended Storage Temperature	5 °C – 20 °C
Warranty Period	12 months from date of dispatch

## Compact-Size Outline Dimensions

### BOTTOM VIEW



### SIDE VIEW



## APPLICATIONS

Leak Detection  
Safety and Environmental Control


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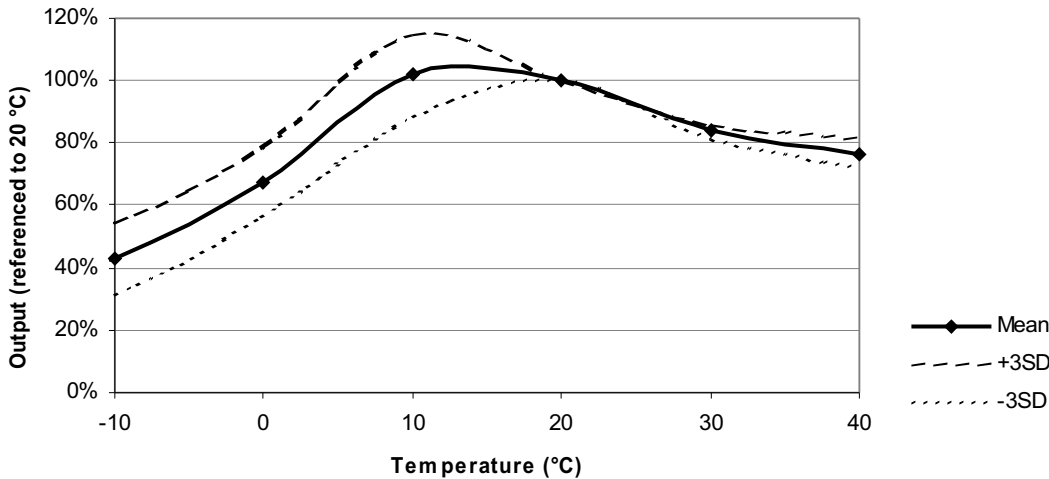
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# SPECIFICATION SHEET for AMMONIA SENSOR with FAST RESPONSE TYPE NH3/CR-10000

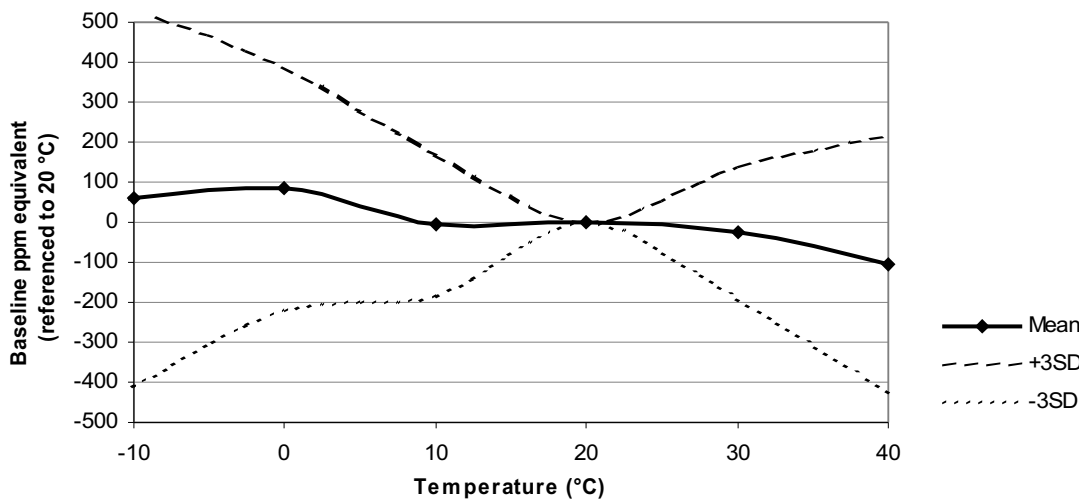
## TEMPERATURE DEPENDENCE

The output of an electrochemical sensor varies with temperature. The graphs below show the variation in output with temperature for this type of sensor. The results are shown in the graphs as a mean for a batch of sensors, along with confidence intervals corresponding to  $\pm 3$  times the standard deviation. The sensitivity dependence is expressed as a percentage of the signal at 20 °C. The shift in baseline is shown in ppm referenced to 20 °C.

**Sensitivity Temperature Dependence**



**Baseline Temperature Dependence**



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## SPECIFICATION SHEET FOR H<sub>2</sub> SENSOR TYPE AIH2/C-40000

### PERFORMANCE CHARACTERISTICS

Nominal Range	0 – 40'000 ppm
Maximum Overload	50'000 ppm
Expected Operation Life	2 years in air
Output Signal	4 3 nA/ppm
Resolution	10 ppm
Temperature Range	-20 °C to 50 °C
Pressure Range	Atmospheric 10%
Pressure Coefficient	No data
T <sub>90</sub> Response Time	< 45 sec
Relative Humidity Range	50 % to 95 % R.H. non-condensing
Typical Baseline Range (pure air, 20°C)	-60 to + 60 ppm
Maximum Zero Shift (+20°C to +40°C)	80 ppm
Long Term Output Drift	< 2% signal loss/month
Recommended Load Resistor	10 Ohm
Bias Voltage	Not required
Repeatability	2 % of signal
Output Linearity	Linear

### CROSS-SENSITIVITY DATA

Interfering Gas	Cross-Sensitivity (%)
CO	< 40

Performance data conditions:  
20 °C, 50% RH and 1013 mbar

### APPLICATIONS

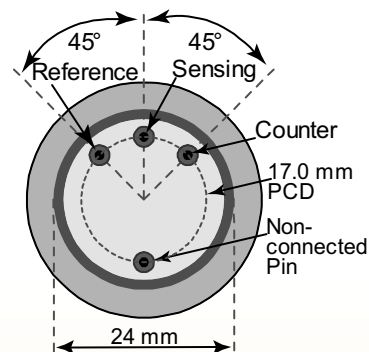
Safety and Environmental Control

### PHYSICAL CHARACTERISTICS

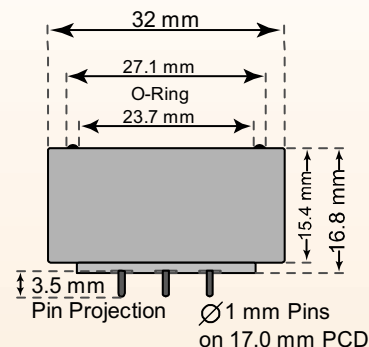
Weight	~ 13 g
Position Sensitivity	None
Storage Life	Six months in container
Recommended Storage Temperature	5 °C – 20 °C
Warranty Period	12 months from date of dispatch

### Compact-Size Outline Dimensions

#### BOTTOM VIEW



#### SIDE VIEW



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## BROMINE SENSOR

### SPECIFICATION SHEET FOR Cl<sub>2</sub> Sensor TYPE AICI2/C-5000

#### PERFORMANCE CHARACTERISTICS

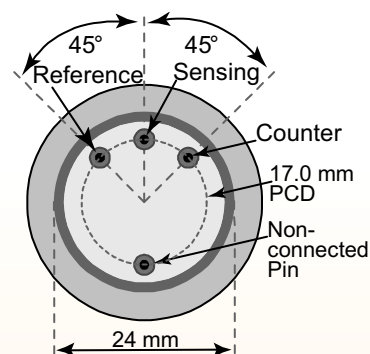
Nominal Range	0 – 5'000 ppm
Maximum Overload	25'000 ppm
Expected Operation Life	2 years in air
Output Signal	- 4 – 1 nA/ppm
Resolution	25 ppm
Temperature Range	- 20 °C to 45 °C
Pressure Range	Atmospheric – 10%
Pressure Coefficient	No data
T <sub>80</sub> Response Time	< 90 sec
Relative Humidity Range	15 % to 90 % R.H. non-condensing
Typical Baseline Range (pure air, 20°C)	< 20 ppm
Maximum Zero Shift (+20°C to +40°C)	- 50 ppm
Long Term Output Drift	< 2% signal loss/month
Recommended Load Resistor	10 – 33 Ohm
Bias Voltage	Not required
Repeatability	< 2 % of signal
Output Linearity	Linear

#### PHYSICAL CHARACTERISTICS

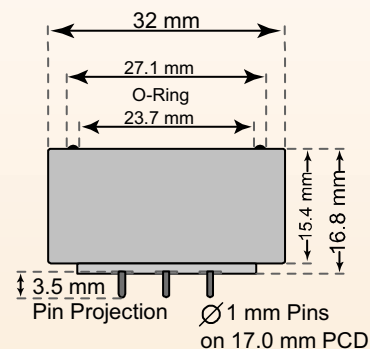
Weight	~ 13 g
Position Sensitivity	None
Storage Life	Six months in container
Recommended Storage Temperature	5 °C – 20 °C
Warranty Period	12 months from date of dispatch

#### Compact-Size Outline Dimensions

##### BOTTOM VIEW



##### SIDE VIEW



#### CROSS-SENSITIVITY DATA

Interfering Gas	Concentration	Reading
CO	300 ppm	0 ppm
SO <sub>2</sub>	5 ppm	0 ppm
NO	35 ppm	0 ppm
H <sub>2</sub>	300 ppm	0 ppm
NO <sub>2</sub>	20 ppm	~ 20 ppm
H <sub>2</sub> S		ND

Performance data conditions:  
20 °C, 50% RH and 1013 mbar

#### APPLICATIONS

Continuous Air Quality Monitoring  
Safety and Environmental Control


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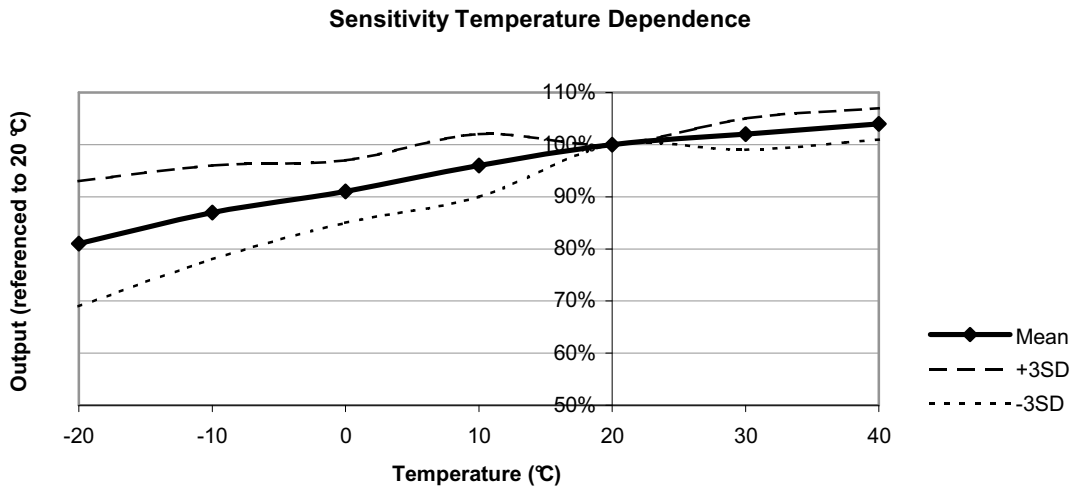
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## SPECIFICATION SHEET FOR Cl<sub>2</sub> Sensor TYPE CI2/C-5000

### TEMPERATURE DEPENDENCE

The output of an electrochemical sensor varies with temperature. The graphs below show the variation in output with temperature for this type of sensor. The results are shown in the graphs as a mean for a batch of sensors, along with confidence intervals corresponding to  $-3$  times the standard deviation. The sensitivity dependence is expressed as a percentage of the signal at 20 °C.



The baseline is virtually not affected by changes in temperature.

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## SPECIFICATION SHEET

# NO/CF-100

### Nitric Oxide Gas Sensor in Compact Housing

#### MEASUREMENT

Operation Principle	3-Electrode Electrochemical
Nominal Range	0 – 100 ppm
Maximum Overload	N.D.
Inboard Filter	To remove effect of SO <sub>2</sub>
Output Signal	400 ± 80 nA/ppm
Resolution (Electronics dependent)	< 0.5 ppm
T90 Response Time	< 25 sec
Typical Baseline Range (pure air, 20°C)	1 ppm to 4 ppm
Maximum Zero Shift (+20°C to +40°C)	12 ppm
Repeatability	< 2 % of signal
Output Linearity	Linear
Gain	–

#### ELECTRICAL

Rec. Load Resistor	10 Ohm
Bias (V <sub>Sens</sub> -V <sub>Ref</sub> )	+300 mV
Conformity to RoHS directive	RoHS Compliance

#### ENVIRONMENTAL

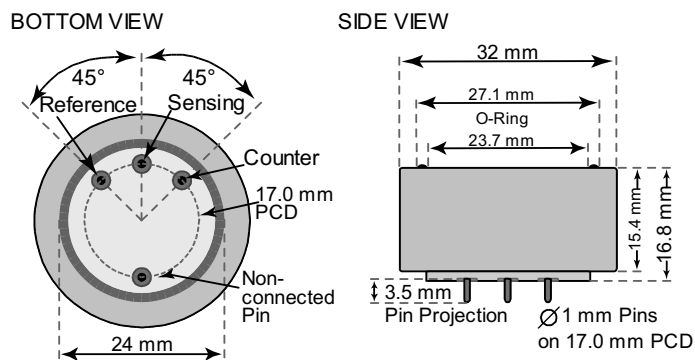
Relative Humidity Range	15 % to 90 % R.H. non-condensing
Temperature Range	-20 °C to 50 °C
Pressure Range	Atmospheric ± 10%
Pressure Coefficient	N.D.
Humidity Effect	none

#### LIFETIME

Expected Operation Life	3 years in air
Expected Long Term Output Drift in air	N.D.
Filter Life	N.D.
Storage Life	6 months in container
Rec. Storage Temperature	5 °C – 20 °C
Warranty Period	12 months from date of dispatch

Performance data conditions: 20 °C, 50% RH, 1013 mbar

#### Compact-Size Outline Dimensions



± 0.10 mm

#### MECHANICAL

Weight	13 g
Position Sensitivity	None

#### APPLICATIONS

Air Quality Monitoring  
Emission Monitoring

#### CROSS-SENSITIVITY DATA

The table below does not claim to be complete. Interfering gases should not be used for calibration.

Interfering Gas	Conc. ppm	Reading ppm
CO	300	0
SO <sub>2</sub>	30	0
H <sub>2</sub> S	15	0
NO <sub>2</sub>	100	1
H <sub>2</sub>	300	0


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## SPECIFICATION SHEET

### NO/CF-100

Nitric Oxide Gas Sensor in Compact Housing

#### TEMPERATURE DEPENDENCE

The output of an electrochemical sensor varies with temperature. The graphs below show the variation in output with temperature for this type of sensor. The results are shown in the graphs as a mean for a batch of sensors. The sensitivity dependence is expressed as a percentage of the signal at 20 °C. The shift in baseline is shown in ppm referenced to 20 °C and a relative humidity of 50%.

Please note:

It is highly recommended to acquire the temperature dependence curves with the whole instrument. The sampling system, the humidity, the electronics, the interaction between the electronics and the sensor, all have a significant impact on the temperature dependence of the final measurement reading.

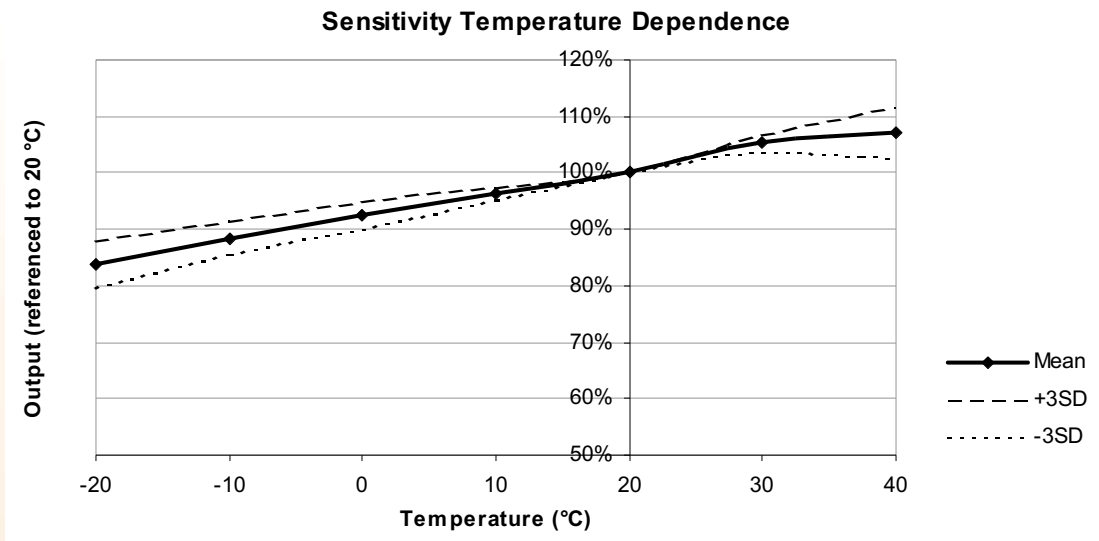


Figure 1: Sensitivity dependence expressed as a percentage of the signal at 20 °C. The result is shown along with confidence intervals corresponding to  $\pm 3$  times the standard deviation.

**SPECIFICATION SHEET**
**NO/CF-100**

Nitric Oxide Gas Sensor in Compact Housing

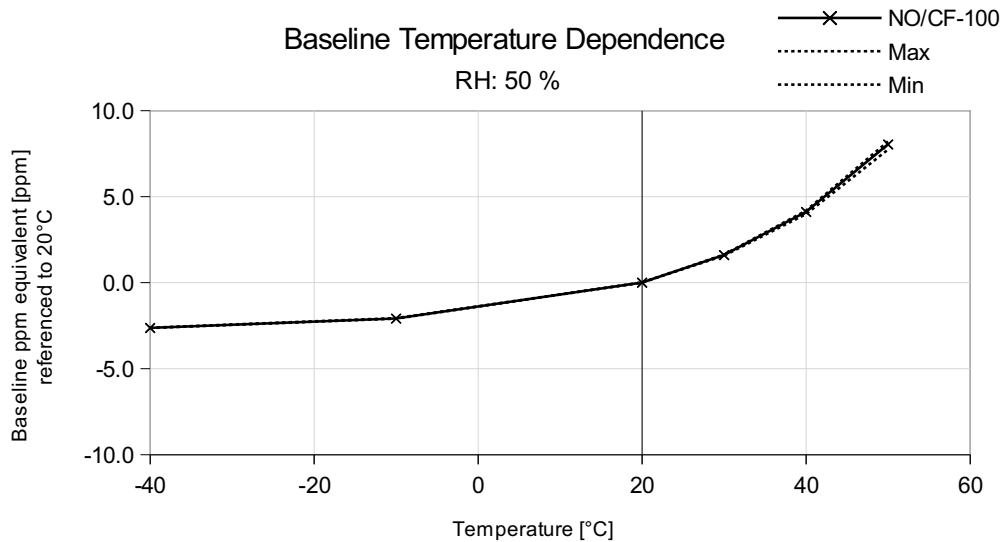
**TEMPERATURE DEPENDENCE**


Figure 2: The shift in baseline shown in ppm referenced to 20 °C and a relative humidity of 50%.

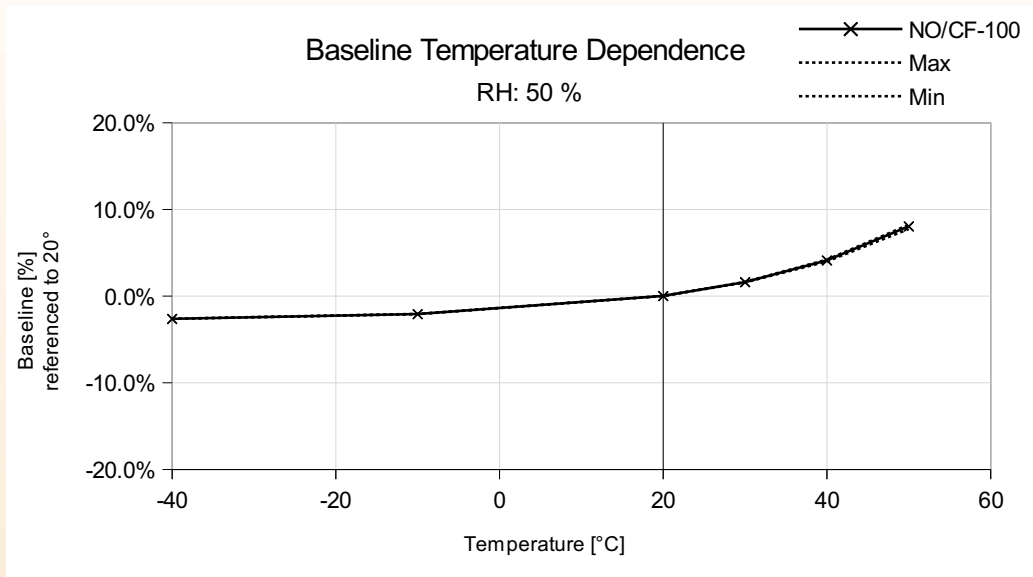


Figure 3: The shift in baseline expressed as percentage of the measurement range referenced to 20 °C and a R.H. of 50%.

## SPECIFICATION SHEET

### NO<sub>2</sub>/C-500

#### Nitrogen Dioxide Gas Sensor in Compact Housing

##### MEASUREMENT

Operation Principle	3-Electrode Electrochemical
Nominal Range	0 – 500 ppm
Maximum Overload	1'000 ppm
Inboard Filter	–
Output Signal	-370 ± 70 nA/ppm
Resolution (Electronics dependent)	< 0.5 ppm
T90 Response Time	< 60 sec
Typical Baseline Range (pure air, 20°C)	< 0.2 ppm
Maximum Zero Shift (+20°C to +40°C)	-1 ppm
Repeatability	< 2 % of signal
Output Linearity	Linear
Gain	–

##### ELECTRICAL

Rec. Load Resistor	10 – 33 Ohm
Bias (V <sub>Sens</sub> -V <sub>Ref</sub> )	not recommended
Conformity to RoHS directive	RoHS Compliance

##### ENVIRONMENTAL

Relative Humidity Range	15 % to 90 % R.H. non-condensing
Temperature Range	-40 °C to 50 °C
Pressure Range	Atmospheric ± 10%
Pressure Coefficient	N.D.
Humidity Effect	none

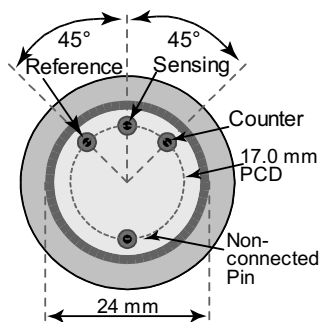
##### LIFETIME

Expected Operation Life	2 years in air
Expected Long Term Output Drift in air	< 2 % per month
Filter Life	–
Storage Life	6 months in container
Rec. Storage Temperature	5 °C – 20 °C
Warranty Period	12 months from date of dispatch

Performance data conditions: 20 °C, 50% RH, 1013 mbar

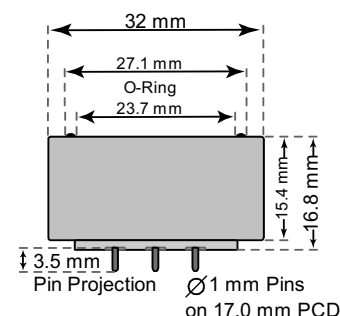
##### Compact-Size Outline Dimensions

BOTTOM VIEW



± 0.10 mm

SIDE VIEW



##### MECHANICAL

Weight	13 g
Position Sensitivity	None

##### APPLICATIONS

Stack/ Flue Gas Monitoring  
Emission Monitoring

##### CROSS-SENSITIVITY DATA

The table below does not claim to be complete. Interfering gases should not be used for calibration.

Interfering Gas	Conc. ppm	Reading ppm
CO	300	0
SO <sub>2</sub>	5	0
NO	35	0 <sup>1</sup>
H <sub>2</sub>	300	0
C <sub>2</sub> H <sub>4</sub>	100	0

1) NO readily forms NO<sub>2</sub> in the presence of O<sub>2</sub>


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## SPECIFICATION SHEET

### NO<sub>2</sub>/C-500

#### Nitrogen Dioxide Gas Sensor in Compact Housing

#### TEMPERATURE DEPENDENCE

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Please note:

It is highly recommended to acquire the temperature dependence curves with the whole instrument. The sampling system, the humidity, the electronics, the interaction between the electronics and the sensor, all have a significant impact on the temperature dependence of the final measurement reading.

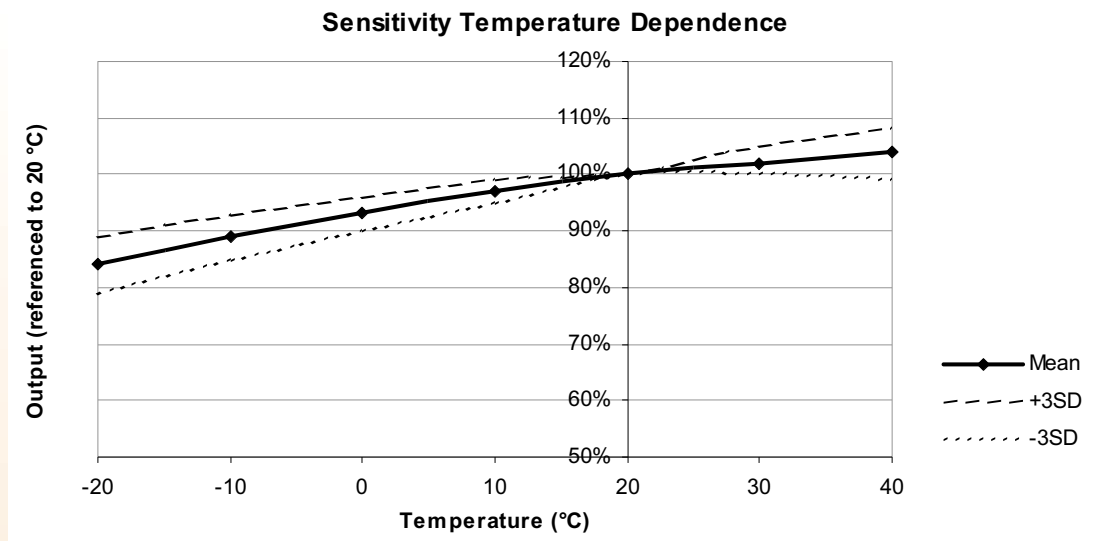


Figure 1: Sensitivity dependence expressed as a percentage of the signal at 20 °C. The result is shown along with confidence intervals corresponding to  $\pm 3$  times the standard deviation.