Nitrogen dioxide CiTiceL® Specification



3NDH CiTiceL

Performance Characteristics

Nominal Range | 0-20ppm

Maximum Overload 300ppm

Expected Operating Life

Two years in air

Output Signal

 $1.40 \pm 0.30 \,\mu\text{A/ppm}$

Resolution

0.1ppm

Temperature Range

 -20° C to $+50^{\circ}$ C

Pressure Range

Atmospheric ± 10%

Pressure Coefficient

No data

T₉₀ Response Time

<40 seconds

Relative Humidity Range

15 to 90% non-condensing

Typical Baseline Range

-0.1 to 0.1ppm equivalent

(pure air)

Maximum Zero Shift

0.2ppm equivalent

 $(+20^{\circ}C \text{ to } +40^{\circ}C)$ **Long Term Output Drift**

<2% signal loss/month

Recommended Load

Resistor

Bias Voltage

Not required

Repeatability

2% of signal

 33Ω

Output Linearity | Linear

All performance data is based on conditions at 20°C, 50%RH, and 1013mBar

N.B.

Physical Characteristics

Weight 22g

Position Sensitivity

None

Storage Life

Six months in CTL container

Recommended Storage

0-20°C

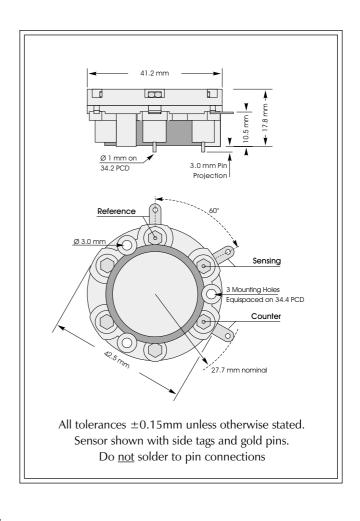
Temperature

Warranty Period

12 months from date of

despatch

3NDH.p65 Doc. Ref.: Oct 20,2000 Issue 4.5

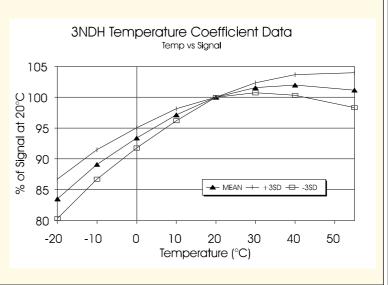




Temperature Dependence

The output of a CiTiceL can vary with temperature. The graph here shows the variation in output with temperature for 3NDH CiTiceLs based on a sample of about 16 sensors. The results are shown in the graph as a mean for the batch, and expressed as a percentage of the signal at 20°C.

From a statistical viewpoint, for a sample of this size, the range in values observed for all sensors of this type will fall within a range three times the standard deviation above or below the mean. Assuming therefore this sample is typical, then the temperature behaviour of all 3NDH CiTiceLs will fall in the band +3SD to -3SD.



Cross-sensitivity Data

CiTiceLs may exhibit a response to certain gases in a sample other than the target gas. 3NDH CiTiceLs have been tested with a number of commonly cross-interfering gases and the results are given below. The table shows the typical response to be expected from a sensor when exposed to a given test gas concentration (relevant to safety, e.g. TLV levels).

Carbon monoxide: $300ppm$ $0ppm$ Hydrogen: $100ppm$ $0ppm$ Hydrogen sulphide: $15ppm$ $-1.5 \le x \le 0ppm$ Hydrogen cyanide: $10ppm$ $0ppm$ Sulphur dioxide: $5ppm$ $-0.05 \le x \le 0ppm$ Hydrogen chloride: $5ppm$ $0ppm$ Nitric oxide: $35ppm$ $0ppm$ Ethylene: $100ppm$ $0ppm$	Gas	Conc.	3NDH	Gas	Conc.	3NDH
Sulphur dioxide: $5ppm$ $-0.05 \le x \le 0ppm$ Hydrogen chloride: $5ppm$ $0ppm$ Nitric oxide: $35ppm$ $0ppm$ Ethylene: $100ppm$ $0ppm$	Carbon monoxide:	300ppm	0ppm	Hydrogen:	100ppm	0ppm
Nitric oxide: 35ppm 0ppm Ethylene: 100ppm 0ppm	Hydrogen sulphide:	15ppm	-1.5≤ x ≤0ppm	Hydrogen cyanide:	10ppm	0ppm
	Sulphur dioxide:	5ppm	-0.05≤ x ≤0ppm	Hydrogen chloride:	5ppm	0ppm
Chloring 1ppm -1ppm -1pp	Nitric oxide:	35ppm	0ppm	Ethylene:	100ppm	0ppm
Tippin **For details of other possible cross-interfering gases contact City Technology.	Chlorine:	1ppm	≈1ppm	**For details of other possible cross-interfering gases contact City Technology.**		

Ordering Information

The 3NDH Nitrogen Dioxide CiTiceL is available with side tags, gold-plated PCB pins, or both PCB pins and side tags. To ensure the appropriate option is supplied care must be taken to provide the correct code when ordering.

Type 3NDH:- With side tag and PCB pin connections - **3NDH** With side tag connection - **3NDH(S)** With gold-plated PCB pin connection - **3NDH(G)**

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