



# 3MNF/F CiTiceL

## High Range mV Output CiTiceL

### High Range Version Performance Characteristics

<b>Sensor Type Used</b>	3NF/F
<b>Inboard Filters</b>	To remove SO <sub>2</sub>
<b>Expected Operating Life</b>	Three years in air
<b>Output Signal</b>	1mV/ppm (±5%)
<b>Maximum Range</b>	0-5000ppm
<b>Resolution</b>	1ppm
<b>Typical Baseline Range</b>	0 ± 1mV
<b>Maximum Zero Shift (+20°C to +40°C)</b>	30ppm equivalent
<b>Operating Temperature Range</b> *see Note1	-20°C to +40°C
<b>Pressure Range</b>	Atmospheric ± 10%
<b>Pressure Coefficient</b>	0.01% signal/mBar
<b>T<sub>90</sub> Response Time</b>	≤10 seconds
<b>Relative Humidity Range</b>	15 to 90% non-condensing
<b>Long Term Output Drift</b>	<2% of full signal/month
<b>Repeatability</b>	2% of signal
<b>Output Linearity</b>	Linear

Note1: While not being used to measure NO the 3MNF/F can withstand temperatures of up to +50°C

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

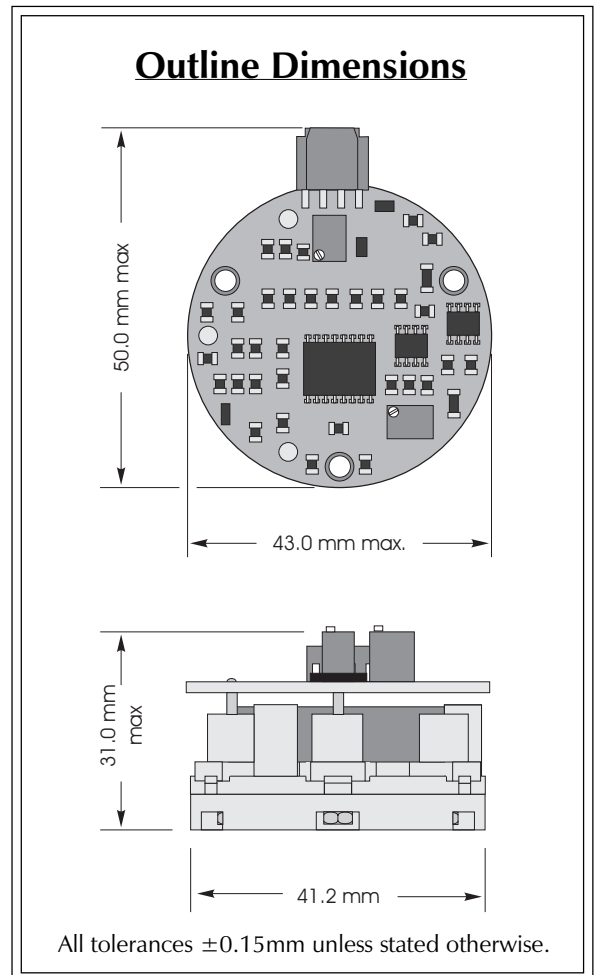
### Physical Characteristics

<b>Weight</b>	38g (with connector)
<b>Position Sensitivity</b>	None
<b>Storage Life</b>	Six months in CTL container
<b>Recommended Storage Temperature</b>	0-20°C
<b>Warranty Period</b>	12 months from date of despatch

### Electrical Properties

<b>Power Supply Required</b>	7 to 18V d.c. single ended or ± 3.5 to ± 9V d.c. dual
<b>Power Consumption</b>	250µA @ 9V d.c.
<b>Calibration</b>	Via built-in span and zero potentiometers

### Outline Dimensions





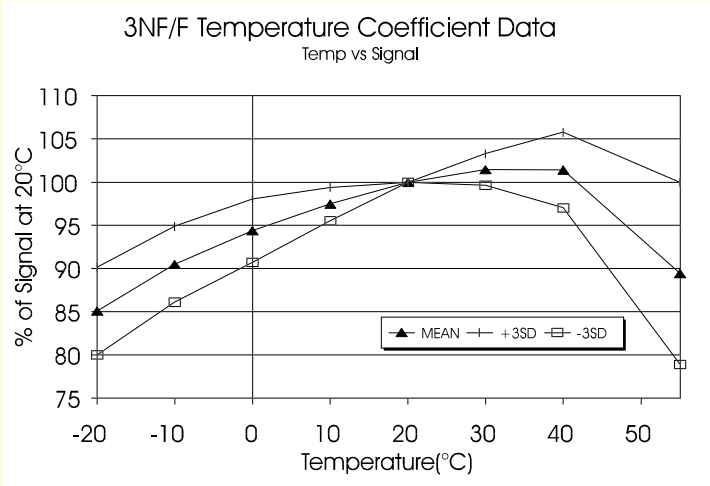
## Start Up

Nitric oxide CiTiceLs require biased operation, (i.e. with a bias potential between the sensing and reference electrodes, see page TOX-8). **This potential must be maintained at all times, otherwise very long start up times will result when the instrument is switched on.** When supplied with a mV output, these sensors are in a ready-to-work condition as each is despatched from City Technology with a 9V battery to supply the bias potential. The battery may be used to maintain the bias throughout storage, but must be removed before installation. After installation it is recommended the sensor remains powered at all times, even when the instrument is switched off.

### Temperature Dependence

The output of a CiTiceL can vary with temperature. The graph here shows the variation in output with temperature for 3NF/F 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 3NF/F 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. The table below shows the typical response of 3NF/F sensors to a number of common cross-interfering gases. The figures are expressed as a percentage of the primary sensitivity (i.e. nitric oxide = 100%).

Gas	Response	Gas	Response
Carbon monoxide:	0	Hydrogen:	0
Hydrogen sulphide:	0	Hydrogen chloride:	<5
Sulphur dioxide:	0	Ethylene:	0
Nitrogen dioxide:	<10	** For details of other possible cross-interfering gases contact City Technology.**	

### Ordering Information

High Range mV NO CiTiceL ..... MFF60-014

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