# MCO MediceL® - Pack of 10

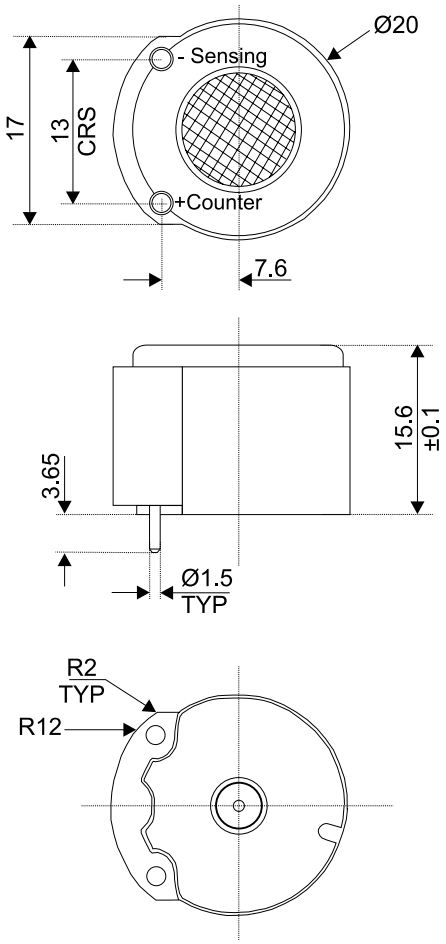
**(Filter to remove trace alcohol levels)**

## Performance Characteristics

| | |
|---|---|
| **Nominal Range** | 0-100ppm |
| **Maximum Overload** | 200ppm |
| **Expected Operating Life** | Two year in air |
| **Output Signal** | 75±15nA/ppm |
| **Resolution** | 1ppm |
| **Temperature Range** | -20°C to +50°C |
| **Pressure Range** | Atmospheric ± 10% |
| **$T_{90}$ Response Time** | <45 secs |
| **Relative Humidity Range** | 15 to 90% non-condensing |
| **Typical Baseline Range (in air)** | -2ppm to +6ppm CO equiv. |
| **Long Term Output Drift** | <15% signal loss/year* |
| **Repeatability** | 2% of signal |
| **Output Linearity** | Linear |
| **Filter Life** | 12.5 ppm hrs ethanol |

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

* Initial drift over first 3 months may be greater than 1.25%/month. Drift will stabalise to <15%/year




All dimensions in mm
All tolerances ±0.15mm unless otherwise stated

## Physical Characteristics

| | |
|---|---|
| **Weight** | Approx 5g |
| **Position Sensitivity** | None |
| **Storage Life** | Six months in CTL blister pack |
| **Recommended Storage Temperature** | 0°C to 20°C |
| **Warranty Period** | 12 months from date of despatch |
| **Pack Size** | Supplied in blister packs of 10 |

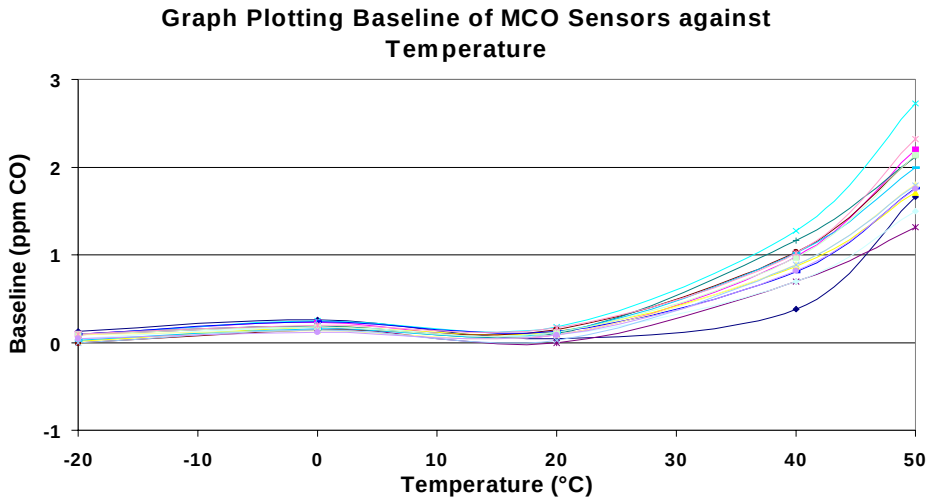
## Cross-sensitivity

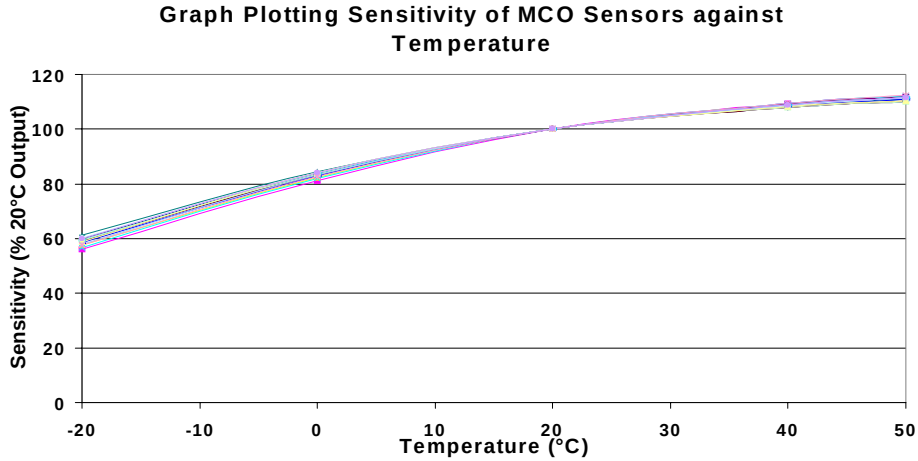
Cross-interference levels found when the MCO is exposed to 20ppm of the following gases are given below:

| | |
|---|---|
| **$H_2$** | <15% |
| **NO** | <20% |



**City Technology Ltd, City Technology Centre, Walton Rd, Portsmouth PO6 1SZ, UK**
Tel:+44 23 9232 5511, Fax:+44 23 9238 6611, sensors@citytech.co.uk, www.citytech.com




## Circuitry

The MCO MediceL is a two electrode sensor for monitoring low levels of carbon monoxide. Compared to three electrode MediceLs the performance of this sensor is limited. The circuitry required for operation, however, is much simpler.

MediceLs are current generators, and the output from a two electrode sensor may be measured by simply connecting a low value load resistor (e.g. 33 Ohm) across the terminals and measuring the resultant voltage. No external power is required. Alternatively the sensor can be operated in a current follower mode, using an op-amp to convert the current output into a voltage. In this way the response time may be reduced by using a lower value load resistor (e.g. 10 Ohm). A suitable circuit is shown in figure TOX2, where the load resistor is shown as $R_{Load}$. When the op-amp is turned off the terminals are shorted together by the J-FET.

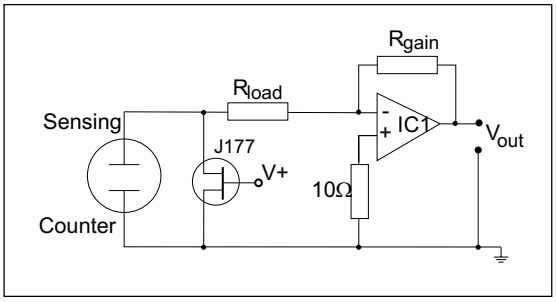



**Figure TOX2**
Two electrode MediceL operating circuit

**IC1** - This amplifier acts as a current to voltage converter and its offset performance is not critical. The OP-77 or similar is a suitable choice





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