Indoor kart racing releases exhaust fumes which can present a potential risk. Each kart is powered by a petrol engine, consuming around 10 litres of fuel per day. Efficient ventilation is therefore needed in all indoor karting venues. If gases and dust are not fully cleared out, carbon monoxide can rapidly saturate the atmosphere and be a source of intoxication. This colourless, tasteless and toxic gas is completely undetectable by human senses, which makes it extremely dangerous.

The International Karting Commission (CIK-FIA) is one of the sporting commissions of the FIA and states that “indoor circuit buildings should be equipped with a ventilation system and a continuously operating alarm system for the carbon monoxide (CO) content in the air.” (Leisure Karting Guidelines, 5.2.2). The installation of carbon monoxide detectors is made easy with our cost-effective solution, 3M Gas & Flame Detection help you to prevent the risk of poisoning and ensure people are not put at risk.

Solution:

In the example below, 4 CO detectors have been installed 5 feet from the ground and 5 feet from the track with automatic alarms and data-logging. The transmitters send a digital signal to the controller and when the alarm level (quantity of gas detected in the atmosphere) has been reached, turn on a visual and/or audible alarm and can also manage ventilation. In addition, other relays can be configured depending on the chosen solution.
Dangers of carbon monoxide (CO)

Odorless, colourless gas (asphyxiant) that is formed by burning carbon based fuels (gas, wood). Carbon monoxide inhibits the body’s ability to transport oxygen to all parts of the body and will cause suffocation by interfering with the bloods ability to carry oxygen.

<table>
<thead>
<tr>
<th>Time weighted average exposure level</th>
<th>Headache after several hours</th>
<th>Headache within 2 hours</th>
<th>Mental confusion, possible loss of consciousness</th>
<th>Fatal</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 ppm</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>200 ppm</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>400 ppm</td>
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<td></td>
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<tr>
<td>1500 ppm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2500 ppm</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

3M Gas & Flame Detection products & solutions

The MX 43 controller comes with 4 or 8 measurement lines to manage alarms and programmable relays, its datalogging capability allows to record events for a duration of up to 18 months. The registered data is easily exploitable (one file per day under Excel).

The MX 43 controller records in real-time of all events (alarms, faults, alarm resets, calibration etc.). It also provides an automatic backup of the configuration & firmware.

The OLCT 10N is a digital transmitter designed to detect oxygen, combustible and toxic gases. Intended for use in combination with the MX 43 controller, the OLCT 10N provides a fast and accurate response. Up to 32 detectors can be connected on the same digital line or distributed on 8 lines.

All transmitter information is received by the controller in less than 1 second. Non-intrusive operator interface allows one man calibration without opening the enclosure.

Other products

Our quality assurance programmes demand the continuous assessment and improvement of all 3M | Gas & Flame Detection products. Information in this leaflet could thus change without notification and does not constitute a product specification.

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