



Portable Monitors

For flammable hydrocarbons or carbon dioxide, oxygen and toxic gases

Triple Plus+ IR

Incorporating the latest infrared detection technology Triple Plus+ IR extends the capability of the established Triple Plus range for detection of carbon dioxide as a toxic gas, or for the measurement of hydrocarbons in inert backgrounds at both % volume and % LEL levels for tank purging and inert atmosphere monitoring. The infrared hydrocarbon sensor is equally suitable for detection of hydrocarbons in air for confined space entry and other safety applications.

Infrared hydrocarbon sensor

- Volume % measurement for purging applications
- % LEL measurement in air or inert background
- Single or dual range measurement
- Calibration for methane, propane, butane, pentane or ethylene
- No poisoning effects
- No sensor burnout at high concentration
- Fail safe
- Long sensor lifetime – reduced cost of maintenance

Infrared CO₂ sensor

- Range 0 - 2%
- Alarms at 0.5% and 1.5%

Convenient and easy to Use

- Large four channel simultaneous display
- Loud and clear alarms
- Visual and audible confidence indication
- Low battery alarm
- Rugged and reliable

Flexible

- Available for diffusion, manual aspirator or pumped sampling
- Interchangeable sensors
- Comprehensive Datalogging with user and site names
- Simple Windows™ software interface to PC

Triple Plus+IR

Specification

Weight	900 g (2 lb)																																	
Dimensions	118 h x 167 w x 73 d mm (4.65 x 6.6 x 2.9 inches)																																	
Ranges and alarms	<p>Up to three levels of alarm are available per channel. Flammable Gas can be supplied as a single range, 0-100% LEL, or as a dual range, 0-100% LEL/0-100% volume, which then occupies two channels. CO₂ is supplied as 0-2%. Only one IR sensor can be fitted. Triple Plus + IR can have up to four channels.</p> <table border="1"> <thead> <tr> <th></th> <th>Standard Range</th> <th>Typical Alarm</th> </tr> </thead> <tbody> <tr> <td>Flammable Gas</td> <td>0-100%</td> <td>20% LEL</td> </tr> <tr> <td>Flammable Gas</td> <td>0-100% volume</td> <td>No alarm</td> </tr> </tbody> </table> <p>Flammable Gas calibrations are available for methane, propane, butane or ethylene.</p> <table border="1"> <thead> <tr> <th></th> <th>Standard range</th> <th>Typical alarms</th> </tr> </thead> <tbody> <tr> <td>Carbon dioxide</td> <td>0-5%</td> <td>0.5/1.5%</td> </tr> <tr> <td>Oxygen</td> <td>0-25%</td> <td>19%/23.5%</td> </tr> <tr> <td>Hydrogen sulphide</td> <td>0-50ppm</td> <td>5ppm</td> </tr> <tr> <td>Carbon monoxide</td> <td>0-500ppm</td> <td>30ppm</td> </tr> <tr> <td>Sulphur dioxide</td> <td>0-10ppm</td> <td>2ppm</td> </tr> <tr> <td>Chlorine</td> <td>0-5ppm</td> <td>0.5ppm</td> </tr> <tr> <td>Ammonia</td> <td>0-50ppm</td> <td>25ppm</td> </tr> </tbody> </table> <p>Required ranges and alarms may vary by country and application and these can be configured as required.</p> <p>For a full list of other toxic gas sensors consult Crowcon.</p>		Standard Range	Typical Alarm	Flammable Gas	0-100%	20% LEL	Flammable Gas	0-100% volume	No alarm		Standard range	Typical alarms	Carbon dioxide	0-5%	0.5/1.5%	Oxygen	0-25%	19%/23.5%	Hydrogen sulphide	0-50ppm	5ppm	Carbon monoxide	0-500ppm	30ppm	Sulphur dioxide	0-10ppm	2ppm	Chlorine	0-5ppm	0.5ppm	Ammonia	0-50ppm	25ppm
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Typical response times	IR 30 s, Oxygen 10 s, Typical Toxic Gas 20 s.																																	
Expected sensor life	IR 5 years, Toxic 3 years, Oxygen 2 years.																																	
Audible alarms	<p>Piercing, rapid intermittent, piezo-electric tone, 85 dBA at 1 m.</p> <p>Confidence blip (selectable).</p> <p>Distinctive double blip for low battery.</p>																																	
Visible alarms	<p>Ultra bright flashing red LED in gas hazard.</p> <p>Slow flashing green LED indicates instrument is working.</p> <p>Distinctive double flash of green LED indicates low battery.</p>																																	
Display	<p>2 lines of 24 characters, dot matrix high contrast LCD with back light operating for 30 minutes.</p> <p>Values and units for up to 4 gases displayed simultaneously at current, TWA or peak levels.</p> <p>Low battery, pump failure, real time and elapsed time, calibration and configuration data also displayed.</p>																																	
Datalogging	Adjustable sample rate, 100 hours @ 1 minute sample rate (maximum 6000 data points per channel), logging of events, user and site.																																	

Battery	Sealed lead acid 1.2 Ah, interchangeable rechargeable battery pack.
Battery life	Standard instrument 12 hours. Pumped instrument 8-10 hours.
Battery charging	Dual rate 'drop in' charger for instrument. Dual rate charger/PC interface for instrument and battery pack.
Electric pump	Optional internal pump with on/off button.
Operating temp. range	-20°C to +50°C (-4°F to 122°F).
Humidity	0 – 95% RH non condensing.
Approval codes	
Europe USA and Canada	ATEX EX II 2G: EEx ib d IIC T4 Class 1 Division 1, Groups A, B, C, D
Standards and Directives	
Europe	EN61779, EN50104, EN45544, EN60079-0, EN60079-11, EN60079-1 94/9/EC
USA and Canada	UL 913, CSA 22.2
Ingress protection	IP65
EMC	EN50270, FCC CFR47 Part 15, IC ICES03
PC Interface	PC access is achieved through an RS232 serial link by locating the instrument in the charger/PC interface. Portables PC software is then used to adjust or set: all alarms, levels of alarm (3 for all channels, oxygen 2 descending 1 ascending), clock, password, time zones, user and site. Data log management software gives the user a choice of direct graphical display or a datafile compatible with all leading spreadsheets.
Autocalibrator	Triple Plus+ IR can be routinely calibrated quickly and simply using Checkbox IMH, by using Portables PC or the on-board menu system.
Accessories	<p>Carry case and belt</p> <p>Baffle plate (to protect sensors)</p> <p>Aspirator Manual bulb and 2 m hose, both non-absorbent and hydrocarbon resistant, 1 m probe, water trap and extra hose available</p>