GMI

Gas Measurement Instruments Ltd

OMD™

Optical Methane Detector

- Infrared technology
- Methane specific
- Instant response
- Sensitive to 1 ppm methane
- Very high survey speeds (to 50 kph)
- Largely unaffected by rain or surface water
- No pumps or calibration gases
- Global Positioning (GPS) option

VEHICLE-BASED GAS SURVEY

The OMD™ utilises infrared technology to detect gas leaks down to levels of 1 ppm. The infrared light beam is unaffected by particulate matter and deposits of dirt or water on the source/receiver surfaces. This allows the unit to be used in rain and other extreme weather conditions.

The high sensitivity and faster survey speed, combined with simple to operate controls, alarm indications and information storage elements allow the vehicle to survey at least twice as fast as conventional systems. Surveys can be carried out by a single operator.

The productivity savings and the increase in miles/kilometres surveyed have a significant impact on operational costs. Real life data supplied by a leading North American gas utility, shows that significant cost savings have been made using the OMD™ instead of conventional FID technology.

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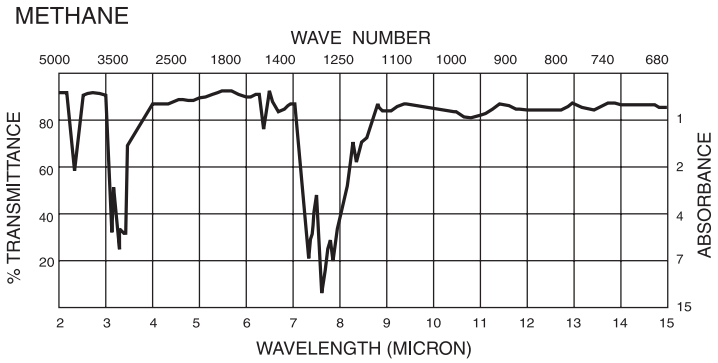
SYSTEM OPERATION

The OMD™ is based on a highly sensitive open path infrared beam detector, located at the front of the leak survey vehicle. The infrared beam allows detection of methane down to 1 ppm and because there is no pump, tubing or water filters, the response is virtually instantaneous. The OMD™ has been successfully utilised for finding low level gas leakage at speeds of up to 50 kph (over 30 mph). As the system is specifically configured to react only to methane, the occurrence of “false positives” (indications due to other products, e.g. vehicle exhaust emissions) is eliminated.

The OMD™ system comprises of the following components: optical detector & filter, light source, power box and display panel. Each component is linked via cables with MIL standard connectors. The display panel provides a continuous graphical indication of the gas concentration together with numerical values of the actual concentration, maximum concentration and alarm set point.

OPTICAL TECHNOLOGY

Methane molecules absorb energy in the infrared region of the optical spectrum (as shown graphically below). This absorption can be measured as an attenuation of the light source. The OMD™ creates an optical path from the light source to the receiver and under normal conditions the light from the source is detected by the receiver. In the presence of methane, the light is attenuated by an amount proportional to the level of gas present.

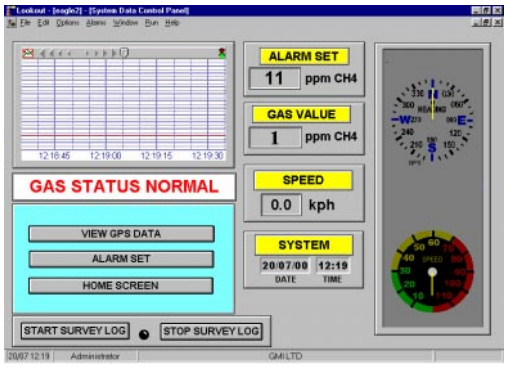


ADVANTAGES

- Safer Operation: the OMD™ is safer for the survey technician because the vehicle can keep up with traffic and no hydrogen fuel gas is needed (a potential explosive source); and safer for the utility customer because the survey is completed much faster with better reliability.
- Low Maintenance Cost: the fully electronic equipment uses no moving parts, plumbing, or sampling components typical of FIDs. Installation of the OMD™ is easier, faster and simpler.
- Faster Surveys: response to a leak is instantaneous and sensitivity is maintained when travelling at higher speeds because the electronics enable the OMD™ to take 14,000 readings per second.
- Few False Alarms: the OMD™ is methane specific, greatly reducing false positive readings.
- User Friendly Operation: the equipment is user friendly, with push button commands, data display functions and prompts displayed on the screen.

SOFTWARE OPTIONS

The OMD™ can be supplied with the GMI Eagle Eye Software, which provides a detailed display of all essential gas survey data, including gas concentration, GPS co-ordinates and vehicle speed.

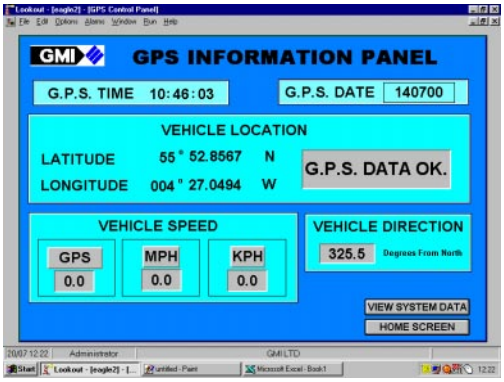


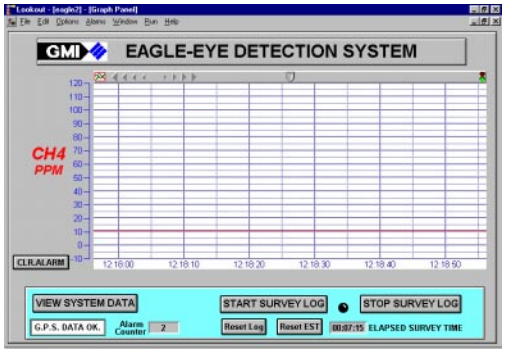
1) Datalogging

The main display enables viewing of the key data fields including gas trace, alarm set point, vehicle speed/direction and time/date. In the event of an alarm condition, the details are automatically logged complete with GPS co-ordinates.

2) GPS

The Global Positioning System accurately tracks the position and speed of the vehicle using a network of satellites. The GPS information is displayed on the screen in real-time and can also be included with the gas trace data.





3) Display

The home screen shows a continuous trace of the gas concentration versus a time log. The viewing function enables the display to be scrolled forward or back, to identify gas leaks.

CALIBRATION

Unlike other vehicle-based survey equipment, the OMD™ does not require expensive calibration gas or complex pump/pipework arrangements installed on the vehicle. The OMD™ has no pump and uses a quick and easy push-button calibration check device installed in the sensor. This calibration cell simply drops into the light path to confirm the calibration and operation of the OMD™ unit.

TYPICAL CHARACTERISTICS

Ranges

0 to 10 ppm
0 to 30 ppm
0 to 90 ppm
Over-range 200 ppm

Resolution

1 ppm

Sensitivity

1 ppm / methane CH_4

Accuracy

± 10% of reading (1 to 100 ppm)

Response

t_{90} < 1 second

Calibration Gas

Methane

Protection

IP54

Construction

External Casing: Aluminium

Display

High clarity LCD with indication of concentration in actual value and trace graph

Operating Temperature

-10^{0}C to 50^{0}C continuous

Alarms

High pitched audible with adjustable setpoint and volume

Weight

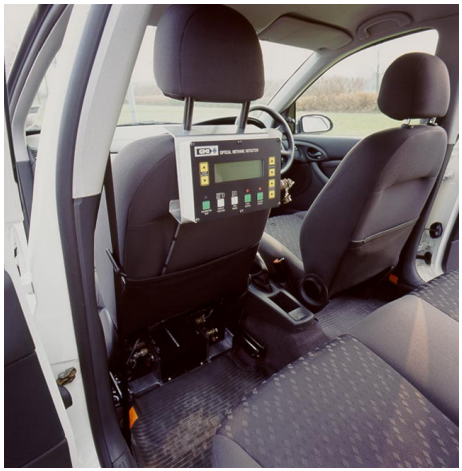
7.7 kg (external sub-assemblies)

Crossbar Assembly Length (standard options)

1.45 metres
1.75 metres
(other options available on request)

Power

12 – 16 V d.c.
60 watts @ 12 V



Thank you for reading this data sheet.

For pricing or for further information, please contact us at our UK Office, using the details below.

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