

ODEM-2 Oxygen Deficiency/Enrichment Monitor

EMS Healthcare LLC has developed the **ODEM-2** specifically for detecting gas concentrations in areas where gas leaks are a safety concern such as a gas manifold room with only one entry/exit.

The **ODEM-2** (ODEM-2095) performs continuous oxygen deficiency and enrichment monitoring using a highly accurate, calibrated oxygen sensor that provides oxygen concentration in real-time on a display unit which can be configured with the sensor built-in or on a 5m cable for remote sensing. The display unit includes both audible and visual indicators if the oxygen level is outside OSHA specified limits and a button to silence the audible alarm.

In either the local or remote configurations, an additional display unit can be added to the system for displaying oxygen concentration in another location. Two relay outputs are also included for connecting the local alarm signal to remote alarm panels if the facility requires it. Additionally, the alarm indication can be latched, requiring personnel to hold the silence button to clear the alarm indication once oxygen levels return within limits. The default is unlatched so the alarm indication will self-clear once oxygen levels return within limits.



**FIGURE 1 -
MAIN DISPLAY UNIT**

Physical Installation

For remote sensing, the display unit (Figure 1) should be installed outside the entry door to a confined space (e.g., gas manifold room) where personnel who need to enter the room can see the O₂ reading and detect the audible and visual alarms if the reading is outside the safe range.

The display unit can be wall-mounted using four internal screw hole locations on the baseplate of the enclosure. Mounting hardware is not included.

Once the display unit is located, the remote O₂ sensor can be located within the gas manifold room (see Figure 2). The ODEM-2 includes a 5m long cable to the O₂ sensor so the sensor location is constrained by this cable length. After the O₂ sensor location within the room is identified, considering cable length and routing, the sensor should be wall-mounted at a height of 1.5m which is approximately nose height for an adult human.

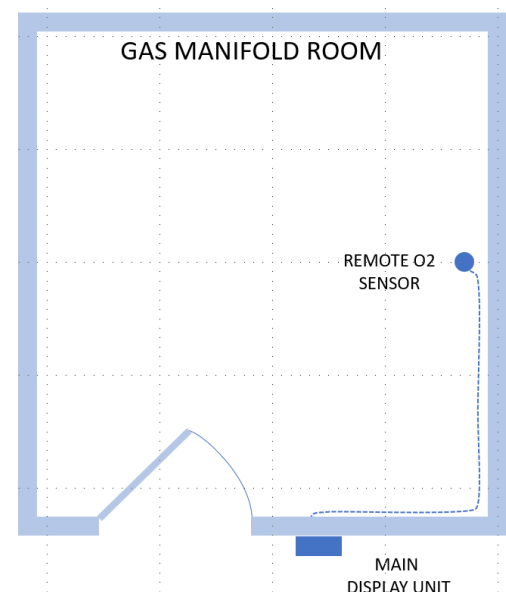


FIGURE 2 - MANIFOLD ROOM LAYOUT

Electrical Installation

The display unit requires a 120VAC source which should be provided from an essential power circuit. Cable penetrations are typically made through knockouts on each side of the enclosure or the backwall of the enclosure.

Specifications

Part Number		ODEM-2095
Description		Oxygen monitoring for deficiency (<19.5%) and enrichment (>23.5%) levels. If either level is exceeded, a local visual/audible alarm is triggered.
Performance	Response Time	Within 1 second of any change in oxygen levels
	Accuracy	± 0.5% of FS
	Repeatability	± 1% of reading
	Operating Temp	-22° to 122°F (-30° to +50°C)
	Humidity	0 – 98% RH, non-condensing
Oxygen Monitoring	Range	0 – 95% oxygen concentration
	Sensor Gas Interface	1/2" NPT male threaded connection
	Sensor Electrical Interface	M8 4-pole connector with keyway (5m connectorized cable included with remote sensing configuration)
Alarm	Local Alarm	Red light on front panel and 95dB audible buzzer when oxygen levels are outside safe limits
	Two Relay Outputs	2-wire dry contact, normally open relays commanded closed during normal operation (opens on alarm below 19.5% or above 23.5% O2 or loss of power). Can be connected to Facility Alarm Panel or Building Automation System.
Electrical	Voltage Source	110-120 VAC, 60 Hz (internal power supply includes short circuit/overload/over-voltage protection)
	Power (max)	5 Watts including oxygen transducer
Physical (Control Unit)	Dimensions	5" (W) x 7" (H) x 3" (D)
	Weight	6.5 pounds (2.9 kg) including transducer and wiring
	Enclosure Type	NEMA 1,2,4,4X rated, polycarbonate, indoor/outdoor use