

WATCHGAS 10+ OXYMED

Oxygen monitor



KEY FEATURES

- Flexible output options
- CANbus / 4~20mA outputs
- Addressable or standalone
- Backlit alpha numeric full status display
- Data logging
- Robust and weatherproof
- Optional alarm relays
- Hyperterminal communications RS232 line data and set up with 232 adapter

The WatchGas 10+ OxyMed oxygen enrichment monitor has been specifically designed to monitor oxygen levels in the vicinity of assisted breathing apparatus requiring oxygen cylinders or dedicated oxygen supply lines. The compact style offers functionality for the monitor to be used as a fixed or a transportable device, boasting further benefits for quick installation via a standard wall socket outlet.

SET UP PROCEDURE

TECHNICAL	
GAS TYPE	Oxygen
INPUT VOLTAGE	12~30v DC – 24v nominal Optional Mains 230/115vAC 50/60hz Nominal 30mA – 120mA full alarm
OUTPUT STANDARD	Analogue 4~20 mA (250 ohms max) – sink/source (source mode – standard) Option 1~5v output – solder G
CV-SENSOR CABLE	3 core screened
ALARM RELAY	Main relay S.P.C.O. 3A/230v AC Fire Alarm panel signalling – cut F Trip Indicator LED – trip point selectable 10% to full scale (Auto reset) On board sounder Auxiliary output DC volts – standard—as input volts 24v DPM – gas readout display – (zero and span potentiometers used only for DPM setting)

INSTALLATION

Siting of the equipment should be chosen with regard to the following points:

1. Safe area use only (not hazardous zone)
2. Away from sources of heat and with room for adequate air circulation.
3. Within easy reach for operating and maintenance personnel.
4. Connecting cables to be electrically shielded.
5. For further information regarding sensor location see our website www.watchgas.com.

NOTE: Sensor cables should not be run in the same ducting as power cables.

REMOVING LID (30J)

Using a 2.5mm Allan key withdraw the two lid screws until they clear the lid bezels. Push the lid up until it is stopped by the circuit board located inside the enclosure; pull one side to remove the lid.

MOUNTING

Direct wall mount – use M4 or No.8 screws through the membrane of the 4 stand-offs. Where the stand-offs are to be removed (rotate each stand-off using pliers) drill at mounting points marked C or utilise knock out slots.

For surface mount box drill at points B (2 off)

For conduit box fixing drill at points A (2 off)

SUPPLY INPUT

Ensure that the supply is correct for the voltage rating of the indicator. Ensure that the supply is OFF before making any connections and wire only in accordance with the terminal detail.

CALIBRATION (FACTORY SET)

1. Connect a digital voltmeter (millivolt range) to the X and Y test terminals, the CV is preset in the current source mode.
2. Remove the sensor terminal connector from the PCB J4 or yellow wire and adjust the 4mA potentiometer for 4mA (4mV).
3. Where a digital panel meter is fitted to the CV card the reading may be adjusted by the DPM Zero potentiometer.

Reconnect the cell and allow reading to stabilise adjust the DVM reading to 17.3mV (20.8% ambient oxygen) using the 20mA potentiometer.

Where a Digital panel meter is fitted the display may be adjusted by using the DPM S potentiometer (span).

ALARM TRIP POINT ADJUSTMENT (FACTORY SET)

This level will normally be set at 23% for oxygen.

1. Connect the DVM as above, using the 20mA potentiometer adjust for the required trip level (OM DPM).
2. Adjust the alarm level potentiometer until the alarm LED just comes on.
3. Using the 20mA potentiometer re-adjust the DVM to 17.3mV.

The above adjustment may be carried out in house by connecting the CV transmitter directly to a DC power supply and connecting a 100Ω load resistor. See diagrams on left.

Should a full board be required to operate on a 2 wire 4-20mA loop then the alarm relay / LED must be disabled – remove JP2.

ENVIRONMENTAL DATA

1. THE HAZARDS – FIRE & EXPLOSION

Oxygen enrichment is the term often used to describe a situation where the oxygen level is greater than in the air we breathe (approximately 21% Oxygen). This may vary slightly depending upon local conditions i.e. the number of people within a given space or where oxygen is being displaced by normal day to day events. When enrichment occurs, even a small increase in the oxygen level to just 24% can create a dangerous situation where:

- It becomes easier to start a fire, which will then burn hotter and more fiercely than in normal air.
- It may be almost impossible to put the fire out

The main danger to people from an oxygen enriched atmosphere if ignited is that hair or clothing can easily catch fire causing serious or even fatal burns while receiving oxygen treatment.

2. OXYGEN ENRICHMENT ALARM – ACTION

Action where oxygen enrichment is suspected or indicated:

- The instrument alarm will sound with the red LED illuminating
- Where possible turn off the oxygen supply
- Remove any potential ignition points
- Make sure the room is well ventilated
- Find the source of any leak and remedy
- It is possible that oxygen may contaminate clothing or bedding within the area. If you suspect contamination remove items outside for airing

3. SITING THE EQUIPMENT

Siting of the equipment should be chosen with regards to the following points.

- Away from sources of heat with room for adequate air circulation
- Convenient to a 230v mains socket outlet
- Within easy access and audible distance of local staff
- Within the target area at 1 to 1.5m height

4. OPERATION

The instrument may be a permanent fixture or be used as transportable device and will automatically power up and operate when connected to a 230v mains supply.

When first powered up the sensor cell will require 2 to 3 minutes to stabilize and achieve the correct ambient oxygen reading. The instrument is designed for continuous operation and should only be switched off when permanently no longer required or is undergoing routine service.

5. KEY INFORMATION

- Normal ambient oxygen level 20.8 to 21%
- Instrument alarm set point 23% oxygen
- Critical oxygen enrichment level 24%
- Alarm status – continuous sounder and red LED indicator.
NOTE: the instrument sounder and LED cannot be reset beyond the trip point
- Full scale reading for the instrument is 25% oxygen

6. TECHNICAL AND MAINTENANCE

For instrument technical details see page 1. The sensor cell mounted in the base of the instrument will require replacement at 18-month intervals, contact your equipment supplier for details.

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SPECIFICATION

WATCHGAS 10+ OXYMED FIXED OR TRANSPORTABLE	
CHANNELS	Single Channel
MEASUREMENTS	Oxygen – 0 ~ 25% vol.
CHANNEL OUTPUTS	Analogue output 4–20mA – option 1~5 volts. 250 ohms max load
RELAYS	S.P.C.O. per relay – auto reset RL1 – 3A/230v AC control relay RL2 – 1A/24v DC signal relay
SINGLE STAGE ALARM	Oxygen Enrichment
POWER	230/115v AC 12 to 30v DC – optional
PANEL INDICATION	Alarm – Red LED
AUDIBLE ALARM	Auto reset 75dBs @ 1m
OPERATING TEMPERATURE	–10 to + 50° C
STORAGE TEMPERATURE	+5° C to + 55° C
HUMIDITY	0–95 non condensing
INGRESS PROTECTION	IP64 Weatherproof
DIMENSIONS	147mm * 145mm * 100mm (AC Version)
WEIGHT	0.76 KG (AC Version)
ENCLOSURE MATERIAL	ABS Flame Retardant FR40 – Lid Screws M4SS Finish – Signal White RAL 9003
NOTES	Mains lead supplied as standard. For additional information, please see C1798

FOR MORE INFORMATION

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