Детектор оксида углерода CO Clear

Руководство по эксплуатации

По вопросам продаж и поддержки обращайтесь:

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Table of Contents

1 Safety information

1.1 Electrochemical sensors (Carbon monoxide)

Electrochemical sensors contain toxic compounds. Under normal conditions the sensor will be safely sealed. To prevent leakage, the unit must not be exposed to temperatures outside the specified range, or be exposed to organic vapours, which may cause physical damage to the body of the sensor. The unit must not be stored in areas containing organic solvents or in flammable liquid stores.

When the life of the sensor has expired, or it is leaking or otherwise damaged it must be disposed of safely in accordance with local regulations.

Carbon monoxide cell contains an acidic electrolyte (sulphuric acid). In the event of an accident, use the following first aid procedures.

Table 1 Electrochemical sensor first aid procedures

Body Part	Effect	First Aid Procedures
Skin	Contact could result in a chemical burn. Persons with pre-existing skin disorders may be more susceptible to the effects of the substance.	Immediately flush the skin thoroughly with water for at least 15 minutes. Remove contaminated clothing and wash before re-use. Obtain medical advice if continued irritation.
Ingestion	Corrosive. May cause sore throat, abdominal pain, nausea, and severe burns of the mouth, throat, and stomach, and may be fatal.	If swallowed DO NOT INDUCE VOMITING. Wash out mouth thoroughly with water and give plenty of water to drink. Obtain medical advice immediately
Eye	Persons with pre-existing eye problems may be more susceptible to the effects of the substance. Corrosive. May cause redness, pain, blurred vision, and eye burns. Contact can result in the permanent loss of sight.	Irrigate thoroughly with water for at least 15 minutes. Obtain medical advice immediately.
Inhalation	Persons with pre-existing impaired respiratory function may be more susceptible to the effects of the substance. Inhalation is not an expected hazard unless heated to high temperatures. Mist or vapour inhalation can cause irritation to the nose, throat, and upper respiratory tract.	Remove to fresh air. Rest and keep warm. Obtain medical advice if applicable.

Should leakage of any electrolyte occur as a result of misuse, incorrect operation, manufacturing error, physical damage, etc. then wear protective gloves when cleaning any spills. Should electrolyte contact skin then the affected area should be washed thoroughly with copious water and medical advice sought if there has been any contact with the eyes or mouth. If connected to any electrical equipment, the sensor should be immediately removed.

The Analox CO Clear is designed to be compliant with the following standards: EN61010-1: 2001, IEC61010-1: 2001, CAN/CSA-C22.2 No. 61010-1 Second Edition 2004, ANSI/UL 61010-1 Second Edition 2005. It is designed to be safe at least under the following conditions.

- Indoor use
- Altitude up to 2000m
- Temperature -5°C to +40°C
- Maximum relative humidity 80% for temperatures up to 31°C decreasing linearly to 50% relative humidity at 40°C.
- Mains voltage supply fluctuations not to exceed 10% of the nominal voltage
- Impulse withstand (over-voltage) category II of IEC 60364-4-443
- Pollution degree 2
- Mains voltage: -

  230V AC (Not Adjustable - Instrument will be factory set)

  110V AC (Not Adjustable - Instrument will be factory set)

  24V DC (Not Adjustable - Instrument will be factory set)
- Mains power: -

  Less than 5VA – 110V AC and 230V AC Versions

  Less than 5W – 24V DC Version.
- Mains frequency - 50/60Hz
- The Remote Alarm Repeater has ingress protection to IP43: direct sprays of water up to 60° from the vertical in accordance with EN 60529:1991 + A1. All other units have ingress protection to IP65: low pressure water jets from all directions and totally protected from dust in accordance with EN 60529:1991 + A1.
- Insulation: - Reinforced insulation, class II product according to IEC536.
- Not for use in corrosive or explosive atmospheres
- Not approved for use in vehicles, ships or aircraft

1.2 Fuse ratings

Table 2 Fuse ratings

Fuse type	Rating
230V AC, 500mA	F rating 250V (20mm x 5mm Glass Cartridge)
110V AC, 500mA	F rating 250V (20mm x 5mm Glass Cartridge)
9-24V DC, 200mA	AS rating 250V (20mm x 5mm Glass Cartridge)

1.3 Other information

Battery Back-Up
The Battery Back-Up is non-repairable. Please return faulty units to Analox for refurbishment or replacement.

4 to 20mA (or 0-1V) Output
Connected equipment must meet the requirements for reinforced insulation.

NOTE: **IF THE EQUIPMENT IS USED IN A MANNER NOT SPECIFIED BY THE MANUFACTURER, THE PROTECTION PROVIDED BY THE EQUIPMENT MAY BE IMPAIRED.**

2 Package contents checklist

On receipt of the Analox CO Clear please check you have the following:

1) Analox CO *Clear* main unit and Alarm Repeater
2) User Manual
3) Test Certificate
4) Rawl Plugs and Screws for Wall Mounting
5) Drilling Template
6) Analox CO *Clear* Window Sticker
7) Analox CO *Clear* wall notice

Any optional items ordered such as:

1) Battery back-up
2) Relay junction box
3) Additional 6mm Push-fit connector
4) Additional ¼ inch Push-fit connector
5) 6mm tubing
6) ¼ inch tubing

3 About the product

Two variants of the Analox CO *Clear* are available.
The Analox CO *Clear* is designed to detect the presence of Carbon Monoxide in air or Nitrox gas compressors.
The Analox CO *Clear He* is designed to detect the presence of Carbon Monoxide in Heliox (HeO2) gas compressors. This variant can be identified by the serial number label as shown below.

Different versions of the instrument allow operation from:

1) 210/250V AC supply
2) 110/120V AC supply
3) 9-24V DC supply

The Analox CO *Clear* is intended to be used as a permanent installation. It provides a digital readout of Carbon Monoxide and 2 audio and visual alarms to warn you of elevated levels of Carbon Monoxide. The alarms are set with a small hysteresis (0.5ppm) which means the CO concentration must fall below the alarm set point before the alarm cancels. The instrument uses an Electrochemical cell together with state-of-the-art technology, built in an IP65 splash proof housing and is designed to provide long, trouble free service, with minimum maintenance.

Optional items fitted to or supplied with the unit may include the following:

1) One or two medium duty relays
2) Test Gas and control valve
3) Battery Back-Up
4) 4-20mA output

4 Sensor characteristics and helium effect

The carbon monoxide cell is a capillary type sensor. These types of sensors are affected by the presence of Helium (He), and in such cases give higher than anticipated outputs. For this reason, the Analox CO *Clear He* has been developed for use in Heliox gas applications (e.g. Saturation diving).

For a detailed explanation of what the helium effect is and how it affects the measurements of carbon monoxide please refer to document *ACO-MISC01-00 Helium sensitivity effect* available from Analox.

The basic effect of He in the sample gas is to increase the carbon monoxide sensitivity. This means that as the amount of He increases the sensitivity of the CO cell increases by what we call the 'compensation factor' (see Table 1).
For example, if a CO *Clear He* measured 3ppm CO in a tank containing 99% He, the actual CO content would be 2.1ppm (3 x 0.7 = 2.1ppm).

The look-up table below **Table 3** shows a simplified representation of the helium effect to quickly identify the compensation factor to be applied to your gas measurement.

NOTE: **THE COMPENSATION FACTORS IN TABLE 1 ARE BASED ON A CO *CLEAR HE* CALIBRATED WITH A MIX CONTAINING 79% HE BALANCE AS PROVIDE IN THE CO *CLEAR HE* CALIBRATION KIT (SEE CALIBRATION SECTION FOR DETAILS).**

Table 3 Helium effect compensation factors

% Helium in mix	Compensation factor
79 to 83	1.0
83 to 89	0.9
89 to 94	0.8
94 to 99	0.7

The helium effect increases as the He content in the sample gas increases, so it is important that the correct calibration gases are used. For this reason, the instrument **MUST** be calibrated using 21% O2 in He balance calibration gas (see Calibration section for details). This ensures that any measurement errors due to the helium effect are fail-safe.

5 Installation of the product

5.1 Wall mounting

The Analox CO *Clear* should be mounted onto a wall or vertical flat surface using the mounting lugs; a paper drilling template is supplied in the packaging. Use the paper template to drill the 4 required holes in the wall and use the Rawl plugs and screws provided to mount the unit. It is not necessary to dismantle the Analox CO *Clear* main unit in any way prior to installation. You need to ensure the mains plug, fused at 3 amps is in easy reach of a power socket.

The Alarm Repeater housing also has wall mounting lugs.

5.2 Wiring installation

It is necessary to identify the model of Analox CO *Clear* prior to installation. The Calibration Certificate accompanying each instrument will clearly identify the information required.

WARNING: ENSURE THAT THE ELECTRICAL SUPPLY TO THE INSTRUMENT IS SWITCHED OFF PRIOR TO INSTALLING ANY WIRING.

6 Option available

6.1 AC supply models

A mains powered Analox CO *Clear* is pre-wired with a mains cable, fitted with a plug suited to the destination country. Where internal plug fuses are fitted, these are 3 Amp. Ensure that the unit is connected to the correct supply voltage (i.e. 110 or 230V AC). Where no fuse is fitted in the plug, the instrument should be powered from a 3 Amp fused outlet. The Analox CO *Clear* is fitted with an internal fuse, which is rated at 500mA.

6.2 DC supply models

A DC powered Analox CO *Clear* require a DC supply in the range 9-24V DC. A 2m cable is factory fitted to the instrument. The DC supply should be connected to this cable as follows:

1. Blue wire negative (0Volts)
2. Red wire positive (+9-24Volts)

6.3 Alarm repeaters

The Alarm Repeater has four status indicators and a Mode button, which mimic the button and indicators on the main Analox CO *Clear* enclosure.

An 8 metre, 8 core cable is pre-wired to the Analox CO *Clear* on units to be fitted with an alarm repeater. This ensures that for a basic installation, there is no need to dismantle the Analox CO *Clear* main unit. A maximum of three repeaters may be fitted in a daisy chain configuration.

To connect and disconnect a "Quick Connect" Repeater:

1] Disconnect the power supply from the Analox CO *Clear*.
2] Insert the connector on the end of the cable into the socket on the base of the Alarm Repeater.
3] Restore power to the Analox CO *Clear*. Press the mode button on the repeater once and ensure that the four indicators flash. Note that in the presence of a genuine alarm, the test feature is disabled.

6.4 Alarm relay output models

You may have ordered your Analox CO *Clear* with a relay. The relay contacts are 'Volt-Free' single pole Changeover, rated 250vAC/30vDC 2 Amps. The relay is non-latching. This means the relay will only initiate when gas is present. As standard the relays are setup in a Fail-Safe configuration. This means that the relay is energised during normal operation. Please note that on power up the relay is only energised after the 40 second warm-up period. See Figure 1 for details of how the relay should be connected.

6.5 Relay wiring

The cable gland is for cables of outside diameter between 5 and 7mm, if cable fitted is outside that range, a suitably specified cable gland must be used. Ensure that the gland is properly tightened. Test that the cable is adequately gripped by the cable gland. Ensure that the cable is suitable for purpose, the load is within the limits of the relay, 240VAC/28VDC, 2Amps, and the insulation of the external circuit meets the requirements for basic insulation 240VAC/28VDC, 2 Amps. After completing wiring, ensure that the terminal box cover is securely replaced.

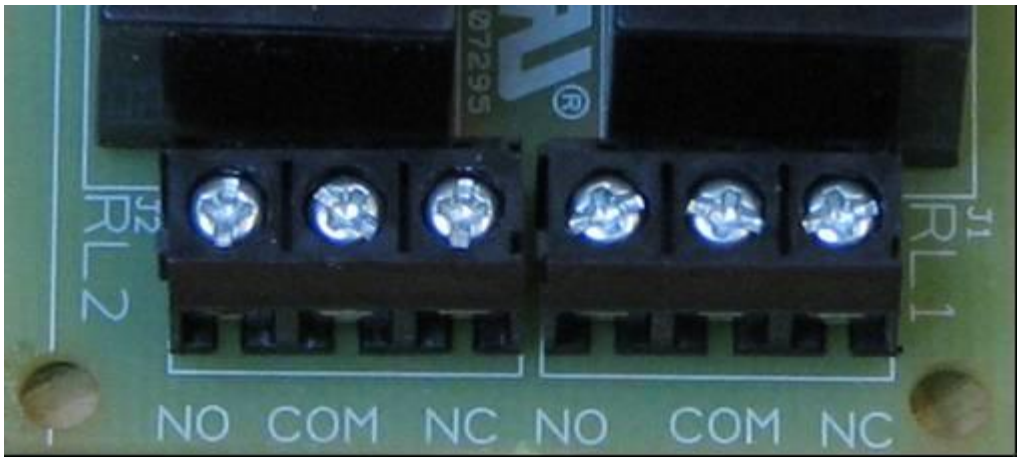


Figure 1 Relay terminal box terminations

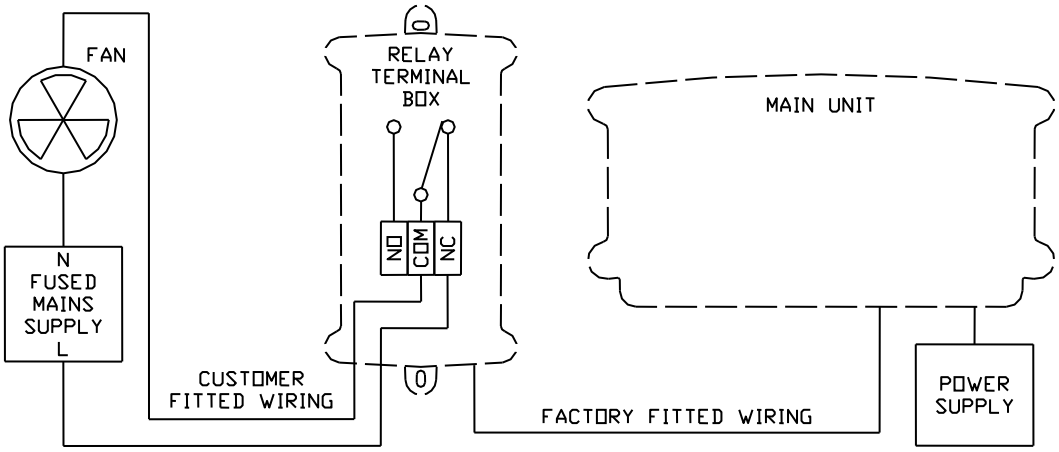


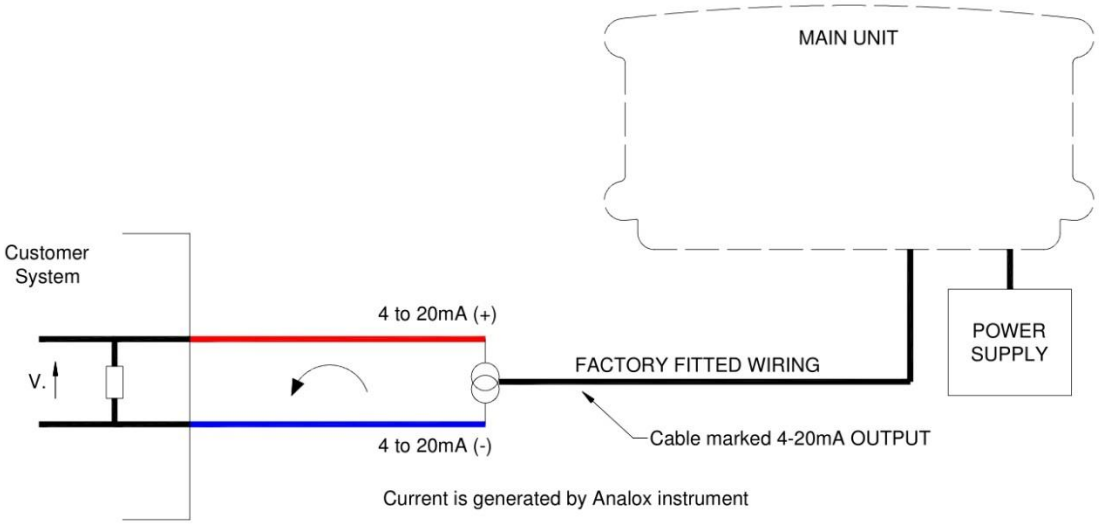
Figure 2 Relay Connections

Once the Analox CO *Clear* installation has been completed a calibration should be performed in accordance with section 10 of this manual.

6.6 4 to 20mA output models

You may have ordered your Analox CO *Clear* with a 4 to 20mA output. A 2m cable is factory fitted to the instrument. The 4 to 20mA output current is generated by the instrument. The customer system should be connected to this cable as follows and as per the following drawing:

1) Blue wire 4 to 20mA negative
2) Red wire 4 to 20mA positive



(Max load 150 Ω)

7 Operation

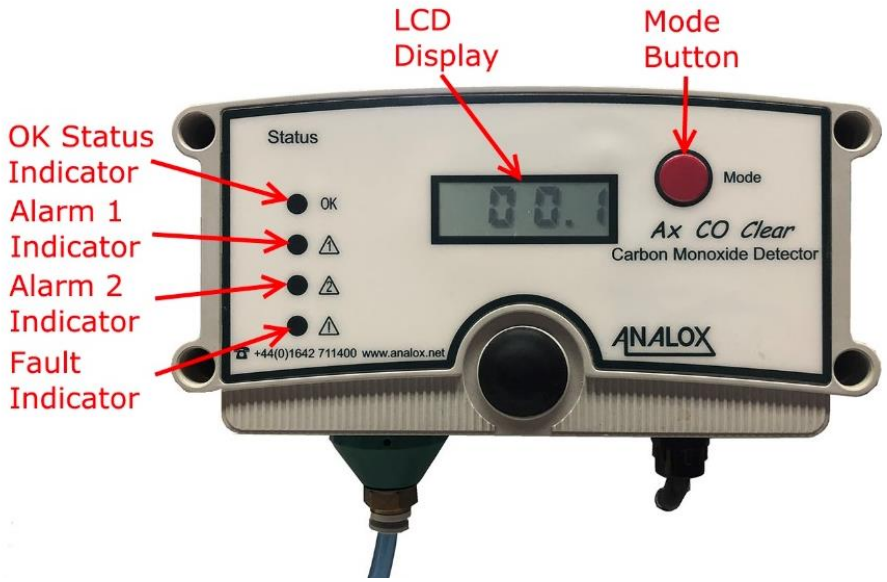
7.1 Normal operation

When the Analox CO *Clear* is turned on it will take approximately 40 seconds to warm up and stabilise. During this period, the 'Good/OK' and 'Fault' status indicators will be turned on. After the initial stabilising period has expired, the 'Fault' status indicator will turn off. The 'Good/OK' status indicator will be illuminated and flash off briefly every few seconds, indicating normal operation. The status indicators on any Alarm Repeaters will mimic this operation. On display models the display will briefly read '.8.8.8.8' on power up before reverting to the CO reading.

7.2 Alarm indications

If the Analox CO *Clear* detects a CO concentration which is greater than the first alarm level, then the 'Alarm 1' indicator will begin to flash and the buzzer will sound at its slow speed.

If the measured concentration of CO continues to rise above the second alarm level, then the 'Alarm 2' indicator will begin to flash, and the buzzer will sound at its medium speed. The 'Alarm 1' indicator will continue to flash.



On standard units the alarms are self-cancelling when the CO level drops below the alarm limits.

Momentarily pressing the 'Mode' button on either the Analox CO *Clear* or any Alarm Repeaters, in the absence of any alarm conditions, causes an alarm test to be performed. The indicator lamps will flash 4 times and the buzzer will sound.
In all circumstances the Alarm repeater will mimic the status indications and buzzer of the main unit.

Units fitted with relays are configured such that relays may operate in conjunction with Alarm1 or Alarm2. They are factory set to be energised in the absence of alarms, and de-energised in the presence of alarms. They may be factory configured in the opposite sense if required.

8 Compressor connection

Connection of the Analox CO *Clear* to the compressor will require a pressure regulator. The pressure regulator must fit the following specifications:

- Maximum inlet pressure 200Bar
- Outlet pressure 0-3 BarG

For systems where 1/4" pipe work is used the push fitting in the sensor housing must be swapped out.

Remove the sensor housing and carefully remove the 6mm push fitting and replace with the provided 1/4" push fitting and tighten, replace the sensor housing into the bulkhead.



To ensure trouble free operation of the CO *Clear* a 2-stage pressure regulation should be used. The output of the selected regulator should be set a 2 bar

9 Maintenance

9.1 Recommended calibration interval

The Analox CO *Clear* should be calibrated on a regular basis to maintain measurement accuracy. It is recommended that a calibration should be performed every six months.

9.2 Carbon Monoxide sensor replacement

The Carbon Monoxide sensor is mounted in a special housing on the under-side of the Analox CO Clear enclosure. This housing allows the Carbon Monoxide sensor to be easily replaced when necessary. To ensure continuous operation it is recommended to replace the sensor at 18-month intervals.
The procedure for replacing the cell is as follows:

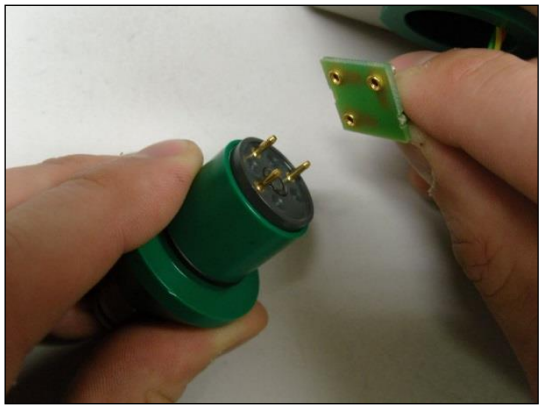
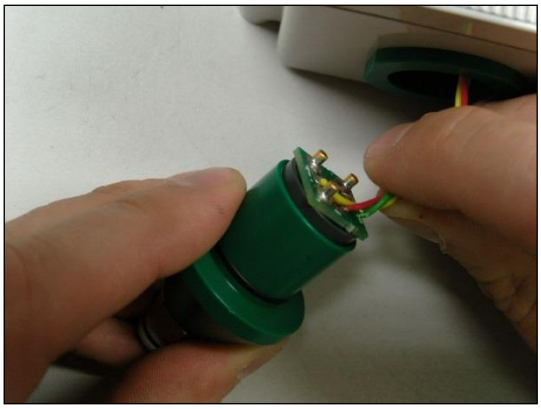
CAUTION: DO NOT PULL ON HOSE CONNECTION TO REMOVE THE SENSOR. USE A FLAT BLADE SCREW DRIVER AS DESCRIBED BELOW.

1] **Switch off the instrument**
2] **Use a large flat blade screw driver to release the sensor housing. This is done by inserting the blade into the recess under the flange of the housing and twisting the screwdriver.**

3] **The top of the Carbon Monoxide sensor will now be visible. Gently pull the sensor housing downwards to release it from the bulkhead. It will be retained by an electrical connector.**

4] Carefully pull the electrical connector from the rear of the Carbon Monoxide sensor.

5] Fit the new Carbon Monoxide sensor to the connector, note it will only connect in one orientation.

NOTE: THE NEW CARBON MONOXIDE SENSOR IS SUPPLIED IN A HOUSING, READY TO BE FITTED.

6] Carefully feed the sensor wire and sensor housing through into the bulkhead and then firmly push the housing into the Bulkhead on the under-side of the Analox CO *Clear* enclosure.

7] Switch the instrument back on.
8] Allow the sensor to settle for 1 hour.
9] Perform a Zero and Span Calibration Check to calibrate the new sensor.
10] Test the operation of the Carbon Monoxide alarms (see Alarm Check section).

10 Calibration

The Analox CO *Clear* should be calibrated on a regular basis to maintain measurement accuracy. It is recommended that a calibration should be performed every six months.

All calibration gases should be sourced locally, calibration gases change depending on the variant, calibration gases are listed below.

In order to perform a calibration check, you will need the following equipment:

10.1 0 to 10ppm in nitrogen range calibration gases

Air and Nitrox Kit (for use with Analox CO *Clear*)

1) Zero Gas, 20.9% O2 in N2 balance
2) Span Gas, 10ppm CO/20.9% O2 in N2 balance
3) Control valve

0 To 10ppm in helium range calibration gases
Heliox Kit (for use with Analox CO *Clear He*)

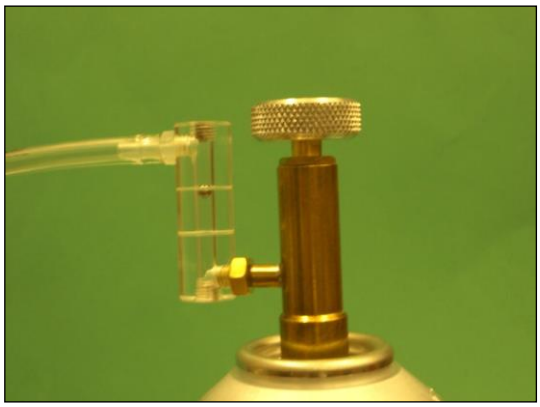
1) Zero Gas, 20.9% O2 in He balance
2) Span Gas, 10ppm CO/20.9% O2 in He balance
3) Control valve

10.2 0 to 25ppm in nitrogen range calibration gases

Air and Nitrox Kit (for use with Analox CO *Clear*)

1) Zero Gas, 20.9% O2 in N2 balance
2) Span Gas, 20ppm CO/20.9% O2 in N2 balance
3) Control valve

Connecting of the gas cylinder



Correct flow rate

10.3 Zero calibration

NOTE: **WHEN SETTING THE GAS FLOW RATE ON THE CONTROL VALVE, SO LONG AS THE FLOW INDICATION BALL IS RAISED OFF THE BOTTOM OF THE GAS FLOW INDICATOR THIS IS SUFFICIENT FLOW TO CALIBRATE THE INSTRUMENT ACCURATELY.**

1] Fit the control valve to the zero gas.
2] Push the calibration valve pipe fully into the push-fit connector of the sensor housing of the unit.
3] Fully open the control valve by turning the control knob anti-clockwise.
4] Allow the gas to flow for 2 minutes.
5] Enter Technician Mode by pressing the mode switch 3 times. If entered successfully the green LED will flash off for 1.5 seconds and on for 0.5 of a second.
6] Select Zero Calibration by pressing the mode switch 5 times. The Red Alarm 1 LED will light up to show you are now in this mode.
7] Press the mode switch 2 times to start the Zero Calibration, the Red Alarm 1 LED will turn off and the Green LED will continue to flash.
8] Wait one minute for the instrument to adjust. When the instrument has a new calibration value, the buzzer will sound one bleep and all the LED's will be off.
9] Accept this new calibration value by pressing the mode switch 2 times. The green LED will flash to show the instrument has accepted the new Carbon Monoxide value.
10] To return to normal operation, press the mode switch once. The LED's and buzzer will illuminate / sound 4 times before returning to normal operation.
11] Fully close the control valve by turning the control knob clockwise.
12] Remove the calibration valve pipe from the elbow push-fit connector of the sensor housing of the unit.

NOTE: **IF AT ANY TIME YOU WOULD LIKE TO ABORT ZERO CALIBRATION, PRESS THE MODE SWITCH ONCE AFTER STEP 9), THIS WILL BRING YOU BACK TO TECHNICIAN MODE WITHOUT ACCEPTING THE NEW CARBON MONOXIDE VALUE. PRESS THE MODE SWITCH ONCE AGAIN, THIS WILL BRING YOU BACK TO NORMAL OPERATION, THE LED'S AND BUZZER WILL ILLUMINATE / SOUND 4 TIMES. ALTERNATIVELY, DISCONNECT THE POWER SUPPLY TO THE *ANALOX* CO *CLEAR*, WAIT A MOMENT AND RE-CONNECT POWER.**

10.4 Span calibration

1] Fit the control valve to the span gas.
2] Push the calibration valve pipe fully into the elbow push-fit connector of the sensor housing of the unit.
3] Fully open the control valve by turning the control knob anti-clockwise.
4] Allow the gas to flow for 2 minutes.
5] Enter Technician Mode by pressing the mode switch 3 times. If entered successfully the green LED will flash off for 1.5 seconds and on for 0.5 of a second.
6] Select Span Calibration by pressing the mode switch 4 times. The Red Alarm 2 LED will light up to show you are now in this mode.
7] Press the mode switch 2 times to start the Span Calibration, the Red Alarm LED will turn off and the Green LED will continue to flash.
8] Wait one minute for the instrument to adjust. When the instrument has a new calibration value, the buzzer will sound one bleep and all the LED's will be off.
9] Accept this new calibration value by pressing the mode switch 2 times. The green LED will flash to show the instrument has accepted the new Carbon Monoxide value.
10] To return to normal operation, press the mode switch once. The LED's and buzzer will illuminate / sound 4 times before returning to normal operation.
11] Fully close the control valve by turning the control knob clockwise.
12] Remove the calibration valve pipe from the elbow push-fit connector of the sensor housing of the unit.

10.5 Alarm check

To verify that the indicators and the audible alarms are working, press the Mode switch on the *Analox* CO *Clear*. The indicators and the audible alarm will pulse four times.

To verify that the alarm levels are correctly set, you will need the following equipment:

1) Test Gas cylinder containing 10ppm Carbon Monoxide, 21% Oxygen in the appropriate balance gas for that particular instrument
2) Control valve

Then follow the procedure below:

1] Fit the control valve to the test gas cylinder.
2] Push the calibration valve pipe fully into the elbow push-fit connector of the sensor housing of the unit.
3] Fully open the control valve by turning the control knob anti-clockwise.
4] After a short time the 'Alarm 1' alarm should operate.
5] After further period of time the 'Alarm 2' alarm should operate.
6] Fully close the control valve by turning the control knob clockwise.
7] Remove the calibration valve pipe from the elbow push-fit connector of the sensor housing of the unit.

10.6 Adjusting alarm set points

The following procedure is very similar for setting either Alarm 1 or Alarm 2:

1] **Whilst the *Analox* CO *Clear* is switched on, enter Technician Mode by pressing the mode switch 3 times. If entered successfully the green LED will flash off for 1.5 seconds and on for 0.5 of a second.**
2] **From Technician Mode, press the Mode switch 2 times to set Alarm 1 or 3 times to set Alarm 2. The buzzer will bleep on each press. If this is done successfully, the instrument will show the Fault indicator and the appropriate Alarm indicator. If this is done inadvertently, or if another mode is selected, press the Mode switch once to return to Technician Mode and then repeat this selection.**
3] **The display will indicate the present value of the alarm.**
4] **Press the Mode switch twice to proceed to define a new setting, or once to abort and return to Technician Mode.**
5] **When setting Alarm 1 or Alarm 2, the display will show the maximum display value (full scale).**
6] **Press and hold the Mode switch. The displayed value will count down at approximately one count per second. Release the switch when the displayed value is equal to the desired alarm value.**
7] **Upon release of the Mode switch, the display will continue to show the new value. Accept the new setting by pressing the Mode switch twice, or alternatively ignore the new setting by pressing the switch once. This will return to the Technician Mode.**
8] **To exit from Technician Mode, press the Mode switch once. The *Analox* CO *Clear* then restarts by performing the normal power on sequence (4 flashes).**

11 Fault conditions

During normal operation, the instrument carries out a continuous self-test procedure. If operation is satisfactory, the 'OK' status indicator will be on, blinking off momentarily every few seconds.

1) If there are no indicator lamps lit on the *Analox* CO *Clear*, check that power is connected and that the fuses are OK.
2) If the 'OK' indicator is off, and the alarm indications are believed to be incorrect, carry out a calibration as described in section 5. If this fails to correct the problem, contact your qualified service engineer.

A summary of the indicator lamps and buzzer operations is shown below.

OK LAMP (GREEN)	ALARM1 LAMP (RED)	ALARM2 LAMP (RED)	FAULT LAMP (YELLOW)	MEANING
OFF	OFF	OFF	OFF	Power Off
ON/ BLIP OFF	OFF	OFF	OFF	Normal Operation
OFF	FLASHING AND SLOW BUZZER	OFF	OFF	CO Level is > 3.0ppm *
OFF	FLASHING	FLASHING AND MED. BUZZER	OFF	CO Level is > 5.0ppm *
OFF	OFF	OFF	FLASHING AND SLOW BUZZER	Calibration Error at Switch On**
OFF	FLASHING	OFF	FLASHING AND FAST BUZZER	CO Cell Fault Output too High
OFF	FLASHING	FLASHING	FLASHING AND FAST BUZZER	System Fault ***

* Note that Alarm levels may be set at different values, depending on customer requirement
** A Calibration error or a Cell fault requires the attention of a Service Engineer. A recalibration procedure may overcome the problem.
*** Only when Alarm 1 and Alarm 2 are enabled

12 Specifications

CO Range(s)	0.0 to 10.0ppm (Air, Nitrox & Heliox systems) 0.0 to 25.0ppm (Air & Nitrox systems only)	
Inlet Pressure Range	1 – 3 Bar Gauge (14.5 - 42.5 PSI)	
Sensor Accuracy	< ±1ppm, ±5% of reading (At Constant Temperature and Pressure*)	
Response Time (T90)	<90 Seconds	
Operating Temperature	0 - 40▪C (32 – 104▪F)	
Temperature Effect	0.04% of Reading/▪C	
Atmospheric Pressure Range	800mbar to 1200 mbar	
Warm Up Time	2 Minutes	
Weight (without cables)	Analox CO Clear	400g (0.8lbs)
Dimensions	Analox CO Clear	175x130x70 mm (6.8x5.11x2.75inches)
IP Rating	Analox CO Clear	IP65
Sensor Type	Electro-Chemical Cell	
Sensor Life (Expected)	2 years at Standard Temperature and Pressure	
Sensor Warranty	9 months graded	
Electronics Warranty	1 year	
Display	4 digit Liquid Crystal Display	
Alarms	2 x Alarm Visual Indicators 1 x System Fault Indicator 1 x Status Indicator Common Audible Alarm	
Relays	One or Two Optional Alarm Relays with changeover contacts assigned to Alarm 1, Alarm 2 or System Fault. Contact Rating 230V AC or 30V DC at up to 2A. Contacts are non-latching Fail-Safe.	
Outputs	2 wire 4 to 20mA (Max load 150 Ω)	
Power Supply Options	Option selected at time of manufacture/order a) 210/250V A.C. supply b) 110/120V A.C. supply c) 9-24V DC supply	

- This accuracy applies to an instrument calibrated using Nitrogen balance gas and the monitoring of Nitrogen balance gas only.

По вопросам продаж и поддержки обращайтесь:

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