QUADRANT
OPERATION and MAINTENANCE MANUAL

Table of Contents

Introduction

This manual has been written to facilitate the rapid and effective use of the QUADRANT gas detector. The operation section describes in a short and concise manner the operating procedures of the QUADRANT. The maintenance section describes the necessary maintenance and calibration procedures of the QUADRANT.

Do Not Neglect To Read The Complete Manual Before Engaging In Field Use Of This Instrument.

Oxygen LED

Toxic 2 LED

Toxic 1 LED

Combustible LED

LCD Display

General Visual Alarm LED
(Flashes Either Side of Display)

On/Off

Enter/
Backlight

Combustible
Sensor

+ Advance

Oxygen Sensor

Toxic 1 Sensor

━ Reverse
(Maintenance Only)

Toxic 2 Sensor

Audio Alarm
·**Gas Alarm Pulsates**
·**Fault Alarm Steady Tone**

ATEX / Ex Label

ATEX

Ex
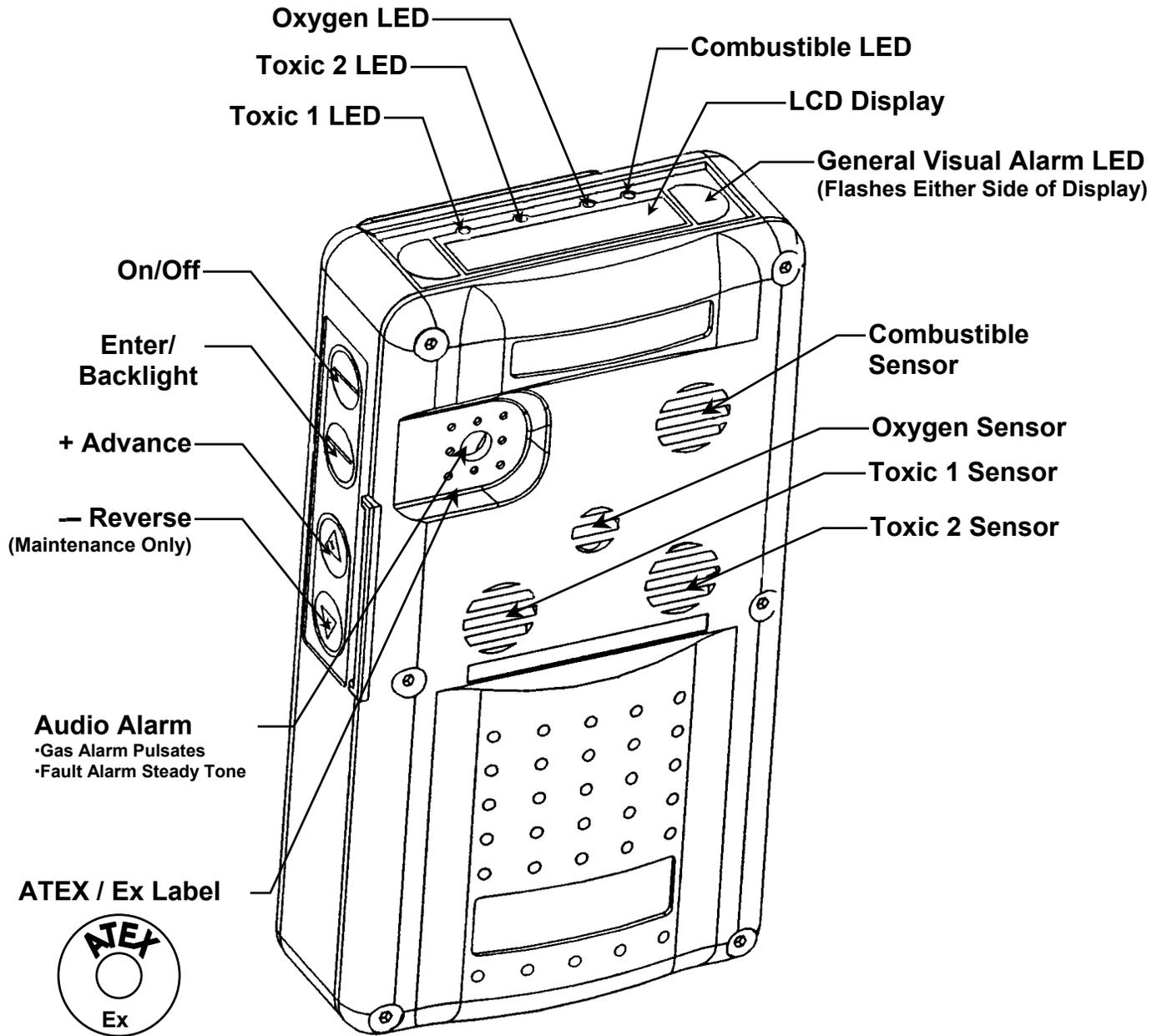
·**The label ATEX/Ex**
  indicates the instrument
  contains a Nickel Metal
  Hydride Battery
·**This label will be on both**
  the instrument and the
  charge base
·**The proper charge base**
  must be used
·**See Section 3.3**

Figure 1
QUADRANT Features

Scrolling display of the gas measurements

Combustible (CH4) ⟶ O2 ⟶ CO ⟶ H2S

+

Date & Time

+

Battery

+

Min ⟶ | Cycles through all Min/Max of each channel |

+

Max

+

STEL CO

+

STEL H2S

+

TWA CO

+

TWA H2S

+

Cod 0000   **E** (Bad Code) or wait about 25 seconds
(password)

To enter password see Maintenance flow chart
figure 3 page 3

| **E** = Enter Button |
| **+** = + Button |
| **–** = – Button |
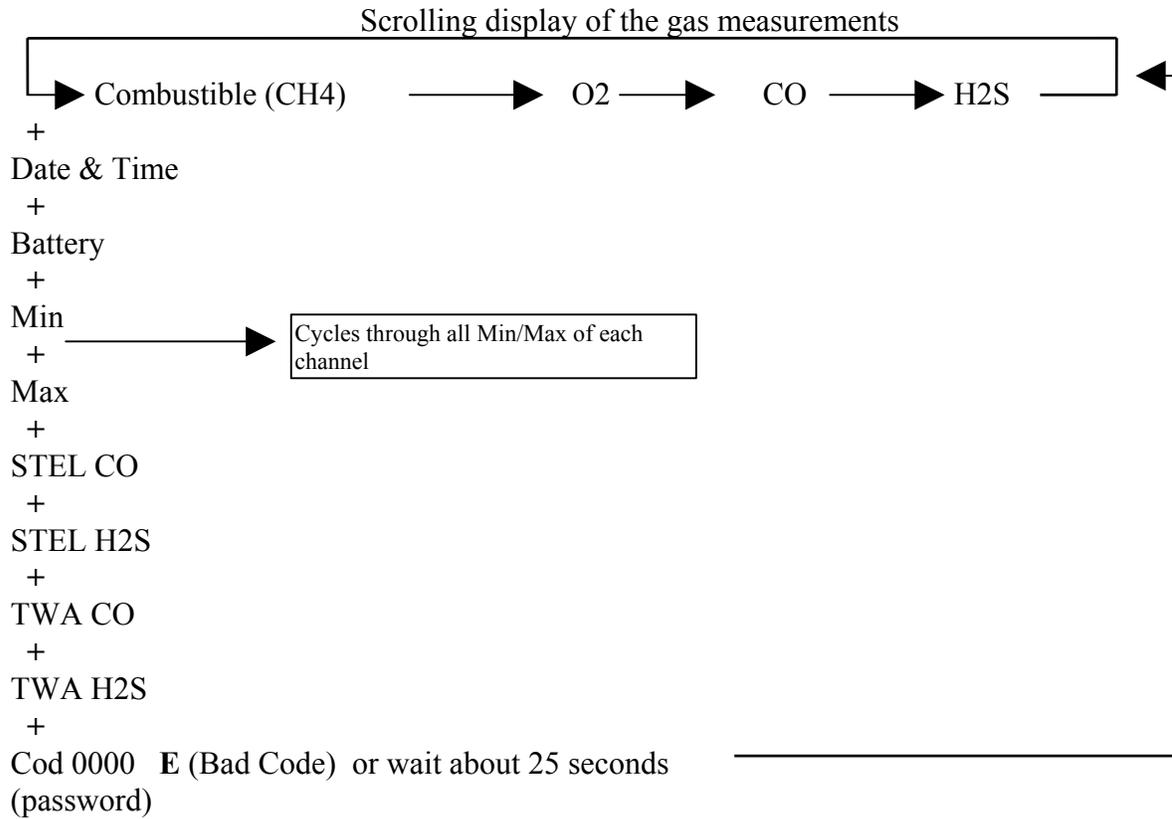
Figure 2
QUADRANT operation menu flow chart

Scrolling display of the gas measurements

Combustible (CH4) ⟶ O2 ⟶ CO ⟶ H2S

From figure 2 page 2

Cod 0000
(password)

| To input preset password |
| + to increment digit |
| – to move to next digit |

E

Auto-Zero   **E**   yes   **E**   done
 (Auto-Set)   no   +
  +

Program   +   **Calibrate(calib)** +   **Cell Change + End +**
E   **E**   **E**   **E**
chan   chan   chan
XXX ⟶ + to change channel   XXX ⟶ + to change   XXX ⟶ + to change channel
                                        channel   **E**
                                                                      CG
E   **E**   XXX ⟶ To change cal gas
ON/OFF ⟶ + to put channel in on or LEL   value (except O2)
         off mode   **E** ⟶ combustible only   + to increment
                                        + to change   – to move
                                        combustible gas   **E**
                                        display   0 settin
E   **E**
GAS   CG   YY:XX ⟶ Wait for general LED
(CH4) ⟶ + to change gas   XXX ⟶ To change cal gas   **E**   to turn off
E   (combustible)   **E**   value (except O2)   (except O2)
Ran   + to increment
XXX ⟶ Maximum range of   – to move   S settin   YY = position of
E   channel   0: XXX ⟶ Wait for the   **E**   digital pot
                                  E   reading to stabilize   YY:XX   XX = sensor reading
                                          (except O2)
AL XX ⟶ Change alarm point   ⟶ Apply calibration gas
        + to increment digit   S: XXX   **E**   and wait for general
        – to move to next digit   ⟶ Apply calibration   LED to turn off
        O2 has high & low   **E**   gas wait for the
E   alarms   reading to stabilize

Yes/No   Yes/No   Yes/No
E = Yes   **E** = Yes   **E** = Yes
– = No   – = No   – = No

Figure 3
QUADRANT maintenance menu flow chart

1.0 Description

The QUADRANT is a portable multi-gas detector. It can simultaneously detect the presence of up to four gases by means of special sensors for each type of gas to be detected. Included are explosive gases such as methane, propane, butane, etc., two toxic gases, carbon monoxide and hydrogen sulfide, and the oxygen content of the air.

1.1 Upon Receipt

1.1.1 Unpack

Unpack instrument and examine it for shipping damage. If such damage is observed, notify both ENMET customer service personnel and the commercial carrier involved immediately; save the shipping box and packing material.

1.1.2 Items Included

The following items are included in a shipment:
- the instrument, with battery and two, three or four sensors, as ordered
- the charger base
- the power supply
- the calibration shield
- the manual

1.1.3 Sensor installations are as follows:

Instrument Part Numbers	Model	Sensors
02600-000	Q-4	Comb,O2,CO,H2S
02600-001	Q-3C	Comb,O2,CO
02600-002	Q-3H	Comb,O2,H2S
02600-003	Q-2	Comb,O2

1.1.4 Check Sensors

Look into the sensor ports on the cover of the instrument, to determine the number and type of toxic sensors that are installed.

1.1.5 Check Instrument

The instrument is supplied with a wall plug power supply and a charging base. To charge the instrument, plug the power supply into the wall and its other connector into the back of the charging base. Insert the instrument into the base (note instrument contour and base contour). During the charging process, the alarm LEDs flash sequentially and a pattern is displayed on the LCD. The instrument is fully charged after about 4 hours. When the instrument is removed from the charger it performs an auto-zero which sets gas readings to 0 and oxygen to 20.9%; this must be done in clean air.

2.0 Features

The features of the QUADRANT are shown in Figure 1 on page 1. These are:

Display   An LCD upon which either the gas concentrations or prompts for the
                 operational and maintenance menus are given.

Pressure buttons – There are four as follows:
- ON/OFF,   the upper most button when the instrument is held upright
  with the display facing the user
- Enter/Backlight,   the second button
- + (advance), the third button
- – (reverse), the lower most button (this button is only used for
  maintenance)

Backlight   The backlight is activated by pressing the Enter/lBacklight button. It
                 activates, and stays on for two minutes in the operation menu. When the
                 maintenance menu is entered the backlight activates and stays on
                 continuously.

Visual alarm   There are two general alarm LEDs on either side of the LCD. Each sensor
                 has its own alarm LED below the LCD. For example, if an oxygen alarm
                 occurs, the general alarm LEDs activate as well as the oxygen sensor
                 alarm LED.

Audio alarm   The audio alarm activates under any alarm condition. Fault alarms are
                 steady tones. Gas alarms are pulsating.

2.1 Operation menu

A flow chart of the QUADRANT menus are shown in Figure 2 and 3 on pages 2 and 3.
The operation menu is the portion from the scrolling display to the Code password.

2.1.1 Scrolling Display

From the scrolling display, pressing the + button allows the user to view time and date,
battery information, minimum and maximum gas concentrations detected, and STEL and
TWA values. It also provides the entrance to the maintenance menu, which should be
accessed only by personnel performing calibration or maintenance functions. Press the
Enter/Backlight button anywhere in the Operation Menu to return to the normal scrolling
display of gas concentrations.

2.1.2 Optional Software

When optional maintenance software COM 2000 is used and the location option is
activated, the + and – buttons also allow the operator to view location stamps for data
logged into memory.

2.2 Maintenance menus

Auto-Zero   or Auto-set is for resetting displays to 0 ppm toxic, 0 %LEL combustible
                 and 20.9% for the oxygen

Program   the program section is for placing channels in the on or off mode and for setting alarm points. The gas displayed on the combustible channel can be changed from this menu also

Calibration   the calibration section is for calibrating the gas channels of the QUADRANT

Change cell   the change cell section is for disabling a channel and changing the associated sensor. As part of the procedure, the instrument must be recalibrated after a cell change

2.3 Intrinsic Safety

The QUADRANT has been tested in Europe to current CENELEC standards, determined to be intrinsically safe, and certified EEx d ia II C T4, which is equivalent to a Class I, Groups A, B, C, and D rating in the United States. Use only the ni-cad battery pack supplied by ENMET, part number 02601-006. The only alkaline batteries authorized to use in the housing, ENMET part number 02602-012,are: Duracell MN1500LRG, Wonder LR6, Varta 4006, Panasonic LR6AM3. Substitution of batteries or other components may compromise the intrinsic safety of the instrument.

The QUADRANT has been tested and certified by the Canadian Standards Association to CSA Standard C22.2 No. 152-M1984, Combustible Gas Detection Instruments. Under this Standard, the performance of the combustible gas detection channel, only, is evaluated.

The QUADRANT has been examined and found in compliance with the European directive relating to electromagnetic compatibility, and bears the $C\epsilon$ mark in this regard.

3.0 Operation

3.1 Turn on/off

The instrument is turned on by pressing and releasing the ON/OFF button. Upon power up, the instrument displays program version and goes through an internal test which takes about 30 seconds. Then the display scrolls through the concentrations of each gas. There is a confidence chirp and general alarm flash that activates about once every 60 seconds. To turn the instrument off, press and hold the ON/OFF button for about 3 seconds. From the scrolling display of gas measurements(see operation menu flow chart, page2) press the + button to view date & time. By repeatedly pressing the + button the battery information, minimum, maximum, STEL, and TWA measurements can also be viewed.

3.2 Alarms

The instrument display shows the peak value (or minimum, in the case of oxygen deficiency) during any alarm condition, and latches until the Enter/Backlight button is pressed. Factory set alarm points are 10% LEL methane, 19.5% and 23.5% oxygen, 35 PPM CO, and 10 PPM H_2S.

3.2.1 Acknowledging Alarms

Alarms are acknowledged by pressing the Enter/Backlight button. Activating this button silences the audio alarm and allows viewing of the current gas concentrations, while the visual alarm continues. Exceptions are a fault alarm, low battery alarm and overrange.

3.2.2 Summary of Alarms

3.2.2.1 Gas alarms, instrument in pulsating visual and audible alarm

XXX is the numerical gas concentration.

Display	Cause	Possible remedy
AL O2 alternated with XXX O2	Exceeding of Oxygen threshold: over or under	-Acknowledgeable general visual and audible alarms -The O2 indicator LED remains flashing as long as threshold is exceeded
AL GAS alternated with XXX GAS	Momentary exceeding of threshold	-Acknowledgeable general visual and audible alarms -The corresponding indicator LED remains flashing as long as threshold is exceeded
STE GAS alternated with XXX GAS	STEL threshold is exceeded	-Acknowledgeable general visual and audible alarms -The corresponding indicator LED remains flashing as long as threshold is exceeded
TWA GAS alternated with XXX GAS	TWA threshold exceeded	-Acknowledgeable general visual and audible alarms -The corresponding indicator LED remains flashing as long as threshold is exceeded
DISCH	Battery is starting to be depleted: approximately 30 minutes use time remain	-Acknowledgeable general visual and audible alarms •recharge battery

3.2.2.2 Fault alarms, instrument in continuous visual and audible alarm

GAS is the type of gas detected, for example, CO.

Display	Possible cause	Alarm & Possible remedy
DISCH	Battery discharged: the instrument can on longer be used	-Acknowledgeable audible alarm -Unacknowledgeable visual alarm

		• recharge the battery
HGAM alternated with >100 **GAS**	overrange of combustible gas	-Unacknowledgeable visual and audible alarms in combustible gases -Acknowledgeable visual and audible alarms in oxygen and toxic gases •leave dangerous area and turn off instrument, it may then be restarted
GAS faul	The sensor is defective or absent	-Unaknowledgeable visual and audible alarms •turn off instrument and install or change associated sensor •disable channel
	Calibration is unsuccessful Measurement is too negative	•perform new calibration: the sensor must be changed if fault persists
GAS used	Sensor is worn out	-Unaknowledgeable visual and audible alarms •turn off instrument and change sensor •disable channel
GAS CAL	Auto -zero is unsuccessful	-Unaknowledgeable visual and audible alarms •repeat Auto-zero •change sensor or cell
FAULT	Lithium battery is worn out Memory loss	-Unaknowledgeable visual and audible alarms •change the lithium battery •the instrument must be returned to ENMET if fault persists

3.3 Low battery alarm

When the battery approaches depletion and approximately 30 minutes use time remain, a pulsating alarm sounds, the battery status display reads "DISCH", and the audible and visual alarms are acknowledgeable.

When the battery energy level is critically low, and battery failure is imminent, the battery status display reads "DISCH", and the instrument is in continuous visual and audible alarm. The audible alarm is acknowledgeable but the visual is not. Recharge the battery.

QUADRANT Instruments contain either a NiCAD or a NiMH battery. Charge bases are not interchangeable. Be sure to place the instrument into the proper charging base. Instruments and charge base with **ATEX/Ex** labels must be used together.

3.4 Auto-Zero

Auto-Zero or Auto-Set is a feature which allows the user to set the sensors and display to read 0 ppm and %LEL for the toxic and combustible sensors, and 20.9% for the oxygen sensor. It is done automatically when the instrument is removed from the charging base. It can also be accomplished by entering the maintenance menu after the instrument has been on for 10 minutes. **Auto Zero should only be performed in a fresh-air environment!**

3.5 Combustible Display

The instrument's combustible sensor and associated display can be set to correlate with any one of 25 pre-programmed gases and vapors. This is accomplished by starting with the instrument turned off, pressing the + button and simultaneously pressing the ON/OFF button and releasing them both. The display reads the currently programmed combustible gas and can be scrolled through the entire list by pressing the + button repeatedly. When the desired gas is displayed, press the Enter/Backlight button.

NOTE: The combustible sensor is non-specific and does not have the ability to distinguish or be selective for a particular gas. Correct use of the instrument depends upon the user's knowledge of the application to identify which combustible gas to display.

3.6 Data Logging

The QUADRANT can maintain sampling data in memory. The QUADRANT is capable of data logging in intervals from one second to 15 minutes. Depending on the interval, the storage duration ranges from 40 minutes to 600 hours. The normal 1 minute interval yields a 40 hour duration period. The data logged into the QUADRANT is held in nonvolatile memory so it is not lost when the instrument is turned off.

3.7 Downloading Data

Optional Maintenance COM 2000 software may be purchased from ENMET Corp. or an authorized distributor. This software enables downloading the data kept in the QUADRANT memory.

4.0 Field Test the QUADRANT

To field test the QUADRANT, enter the operation menu, which is the scrolling display of the gas measurements. Assure the correct field test gas is available, connect the calibration adapter to the cylinder of gas and the QUADRANT calibration cover. Attach calibration cover to instrument (aligning notch in cover with horn opening) and open valve so gas flows gently over sensors. Apply gas for about two minutes, if instrument goes into alarm in all channels which are turned on and gas supplied, it passes the field test.
If instrument fails to go into alarm in any of the channels which are turned on and gas supplied the instrument must be calibrated before use.

Note that if ENMET field test gas P/N 03299-000 is used, the H_2S channel is not tested.

5.0 Maintenance

5.0.1 Scheduling QUADRANT Maintenance

It is recommended that all channels of a QUADRANT instrument be completely recalibrated at least ever ninety days, utilizing the procedures given in this manual. The sensor responses of an instrument should be checked at least every thirty days, by exposing the sensors to appropriate gases and monitoring for expected instrument response. Good practice dictates more frequent checking and calibration under particularly dangerous conditions, conditions of heavy usage, and when the electrochemical gas sensors are nearing the end of their useful lives. Some instrument users check sensor responses at the beginning of every period of usage, such as every shift. National, state, local, or company specifications may dictate minimum calibration intervals. Check flammable sensor response after exposure to more than 100% LEL of any flammable gas, and check electrochemical sensor response after exposure to massive quantities of gas, such as 1000 ppm CO or 200 ppm H_2S.

5.0.2 Maintenance Menu Entry

To enter the maintenance section use the preset password. The factory default password, with which the instrument is shipped, is 1270. If this has been changed, per section 5.6, use the correct password.

5.1 Auto-Zero

After instrument has been on for 10 minutes Auto-Zero or Auto-set is able to be done from the maintenance section (see maintenance menu flow chart on page 3). **This should only be performed in a fresh-air environment!!**

5.2 Program

To program the QUADRANT, enter the program menu (see maintenance menu flow chart on page 3). Select the channel to be programmed. Place the channel on or off mode. The gas displayed on the combustible channel can be selected in this section (see also combustible display). At this point the alarm point can also be set, or use the default alarm point programmed in the instrument.

5.3 Calibration

5.3.1 To calibrate the QUADRANT

NOTE: Always calibrate the Combustible sensor first.

Enter the calibration menu (see maintenance menu flow chart; maintenance functions on page 3). The program is set to use the calibration gases supplied by ENMET and listed in section 6, below. Assure that the correct calibration gas is available. Connect the calibration adapter to the cylinder of gas and the QUADRANT calibration cover. Select the channel to be calibrated and enter. Verify the calibration gas value and enter. Verify the zero reading and enter. Attach calibration cover to instrument (aligning notch in cover with horn opening) and open valve so gas flows gently over sensor. Wait for reading to stabilize. Pressing the Enter button accepts the calibration. Pressing the – button returns to the beginning of calibration menu without calibrating the instrument.

CAUTION: Use only calibration gas during calibration, see Section 6.0. *Do Not* use field test gas for calibration.

WARNING: **Do not enter the calibration menu and attempt a calibration without a supply of calibration gas.**

5.3.2 Escape Calibration

Calibration of a channel, other than a oxygen channel, without calibration gas results in an inoperative channel; and displays "**GAS** used" for that channel.

If in the calibration menu, and calibration gas is not available:

- At the zero stabilization prompt, 0:XXX, or the span stabilization prompt, S:XXX, press the – button; the display returns to "calib."
- At the span stabilization prompt, when the ENTER button is pressed, "**GAS** used" is displayed. Do not press the enter button again, instead press the – button, the display returns to "calib."

If at "**GAS** used", the ENTER button is pressed, the "**GAS** used" fault alarm is on continuously for that channel. Disable the channel if it is necessary to use the other channels; note that there is no detection capability for the disabled channel. Obtain the calibration gas, enable the channel, and go through the sensor replacement procedure, section 5.4, without actually changing the sensor; note that this procedure includes recalibration.

5.4 Sensor replacement

To change sensors and oxygen cell, turn instrument off and remove the enclosure cover (6, 2MM hex screws) unplug the sensor or cell and replace with new sensor or cell. Replace enclosure cover. Turn instrument on. Enter the cell change menu (see operation flow chart on page 3). Select the channel with the sensor or cell that has been changed. Allow to stabilize in clean air for 30 minutes. "0 setting" is displayed. Ensure you are in a clean atmosphere and press the enter button. "YY:XX" is displayed, general and associated LED's are lit. When the general LED turns off press the enter button. "S:XXX" is displayed press the enter button. "YY:XX" is displayed, general and associated LEDs are lit. Apply calibration gas. When the instrument is completed with its adjustment the general LED turns off, press the enter button.
YY is the position of the digital potentiometer and XX is the sensor reading.

5.5 Battery replacement

To replace the battery remove enclosure cover.(6, 2MM hex screws) and unplug the battery pack. Plug in proper replacement battery and replace enclosure cover.

Use only the battery pack supplied by ENMET:
  NiCad battery pack, part number 02601-006 for instruments s/n 16700 and below.
  NiMH battery pack part number 02601-036 for instruments s/n 16822 and above.
  CAUTION: Battery Packs and Base Chargers are *Not* interchangeable.

The only alkaline batteries authorized to use in the housing, ENMET part number 02602-012, are: Duracell MN1500LRG, Wonder LR6, Varta 4006, Panasonic LR6AM3.

WARNING: **Substitution of batteries or other components may compromise the intrinsic safety of the instrument or damage the electronics of the QUADRANT.**

5.6 Maintenance section password

The password can be changed form 1270 to any four digit number by mean of the optional C0M 2000 software.

5.7 Adding A Sensor

An instrument may be purchased with fewer than four sensors, and a sensor added in the field.
- Purchase the required sensor.
- Upon receipt of new sensor, turn the instrument off, remove the enclosure cover and shorting clip from the new sensor pins.
- Insert the new sensor into the correct position in the circuit board.
  NOTE: CO = TOXIC 1 and H2S = TOXIC 2
- Remove the protective gasket from the enclosure cover over the position of the new sensor.
- Replace the enclosure cover and turn the instrument on.
- Enter the program portion of the maintenance menu. (see the flow chart, Figure 3)
- Turn the channel associated with the new sensor on.
- Enter the cell change menu and select the correct channel.
- Proceed with the instructions given in section 5.4 above.

6.0 ENMET part numbers for replacement parts and accessories.

Description	ENMET part number
Combustible sensor	02601-001
Oxygen sensor	02601-002
H_2S sensor	02601-004
CO sensor	02601-003
*H_2S sensor	02601-021
*CO sensor	02601-020
•Replacement Battery Pack, NiCad	02601-006
•Base, charging NiCad/computer interface	02601-005
♦Replacement Battery Pack, NiMH	02601-036
♦Base, charging NiMH/computer interface	02601-037
Power Supply, 110 VDC	67051-046
Replacement Calibration Cover	02602-013
Harness	02602-015
Housing for Alkaline Battery Pack	02602-012
Calibration Gas, 50% LEL Methane	03220-050
Calibration Gas, 100 PPM CO	03219-100
Calibration Gas, 20 PPM H_2S	03214-020
Field Test Gas: 15% LEL Methane,75 ppm CO, & 18% O_2	03299-000
Calibration Adapter, CO & Methane	02506-000
Calibration Adapter, H_2S	02506-002
Motorized Sample Pump	03700-011
Aspirator, with 36" probe	02602-010
Aspirator, with 12' hose	02602-011
Maintenance Software, COM 2000 for QUADRANT	02601-014
Serial Computer Cable	02601-015

*For instruments with serial numbers between 2000 and 4999.

CAUTION: Battery Pack and Base Charger are *Not* interchangeable.

- • Instruments with s/n 16700 and below require 02601-006 Battery and must be used with the 02601-005 Base
- ♦ Instruments with s/n 16822 and above require 02601-036 Battery and must be used with the 02601-037 Base. These products have the **ATEX/Ex** approval label on them.

7.0 Warranty

ENMET warrants new instruments to be free from defects in workmanship and material under normal use for a period of one year from date of shipment from ENMET. The warranty covers both parts and labor excluding instrument calibration and expendable parts such as calibration gas, filters, batteries, etc... Equipment believed to be defective should be returned to ENMET within the warranty period (transportation prepaid) for inspection. If the evaluation by ENMET confirms that the product is defective, it will be repaired or replaced at no charge, within the stated limitations, and returned prepaid to any location in the United States by the most economical means, e.g. Surface UPS/RPS. If an expedient means of transportation is requested during the warranty period, the customer is responsible for the difference between the most economical means and the expedient mode. ENMET shall not be liable for any loss or damage caused by the improper use of the product. The purchaser indemnifies and saves harmless the company with respect to any loss or damages that may arise through the use by the purchaser or others of this equipment.
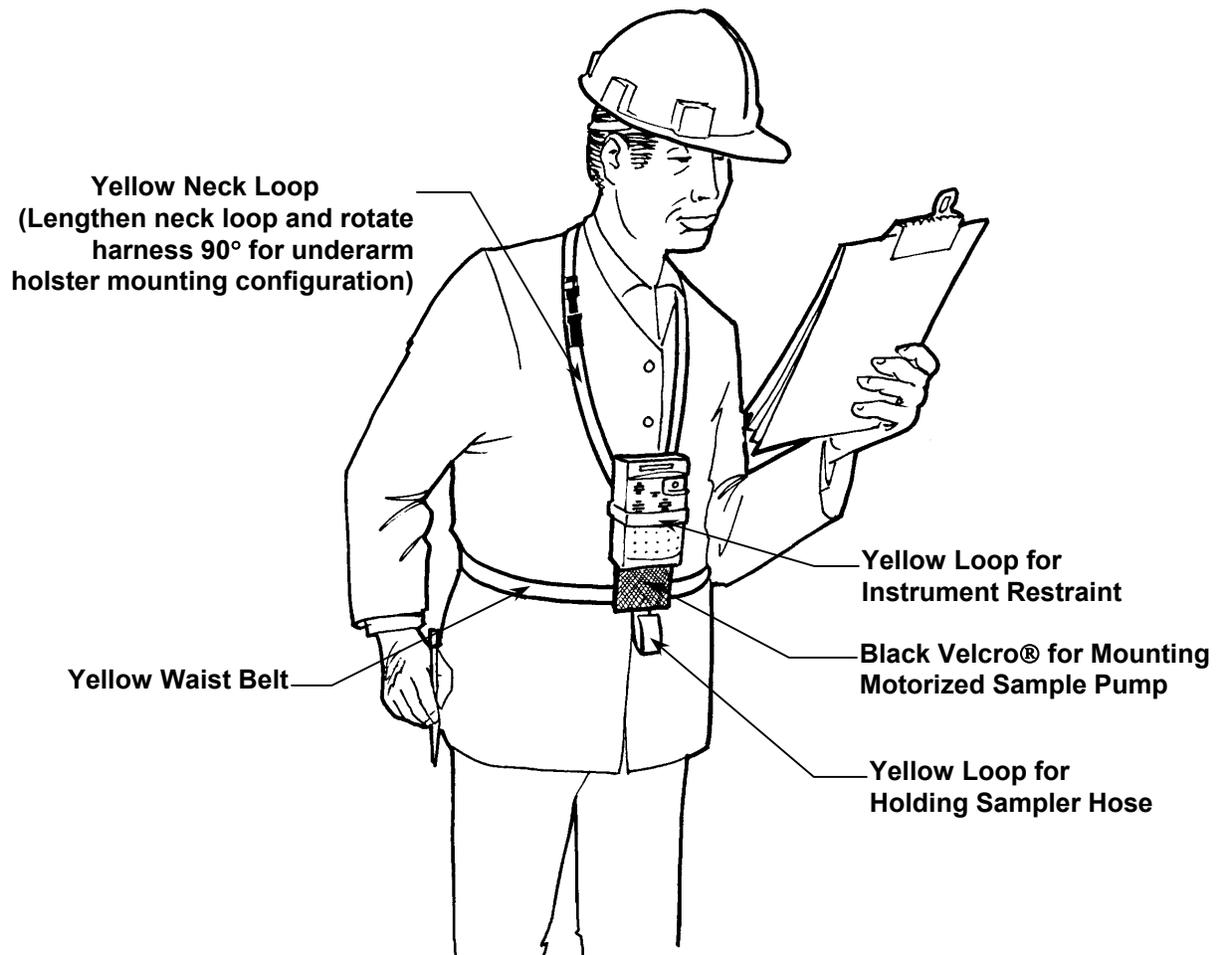
This warranty is expressly given in lieu of all other warranties, either expressed or implied, including that of merchantability, and all other obligations or liabilities of ENMET which may arise in connection with this equipment. ENMET neither assumes nor authorizes any representative or other person to assume for it any obligation or liability other than that which is set forth herein.

NOTE: When returning an instrument to the factory for service:

- Be sure to include paperwork.
- A purchase order, return address and telephone number will assist in the expedient repair and return of your unit.
- Include any specific instructions.
- For warranty service, include date of purchase
- If you require an estimate, please tell us.

QUADRANT Harness

Optional holster assembly.

CHEST MOUNT CONFIGURATION
FOR QUADRANT HARNESS HOLSTER ASSEMBLY

Yellow Neck Loop
(Lengthen neck loop and rotate
harness 90° for underarm
holster mounting configuration)

Yellow Loop for
Instrument Restraint

Black Velcro® for Mounting
Motorized Sample Pump

Yellow Waist Belt

Yellow Loop for
Holding Sampler Hose

Instructions:

- The shorter strap (Yellow Neck Loop) at the top of the base pad loops around the neck of the user. Adjust the strap length so that the instrument is at the center of the chest to ensure good visibility of the LCD display. Lengthen neck loop and rotate harness 90° for underarm holster mounting configuration.

- The Longer yellow strap (Yellow Waist Belt) at the bottom of the base pad is to be adjusted to fit around the waist. Adjust for comfortable mounting of the instrument so that it does not bounce against the chest or waist.

- Insert the QUADRANT instrument from the top of the harness into the 4 inch yellow loop portion of the harness. Keep the belt clip toward the wearer's chest. The final one inch of the insertion process should be done with the spring-mounted belt clip in the "open" position. Allow the clip to snap in place over the top of the harness pad as the instrument slides down into place. This will secure the instrument firmly in the harness/holster assembly.

Notes:

Returning an Instrument for Repair

ENMET instruments may be returned to the factory or any one of our Field Service Centers for regular repair service or calibration. The **ENMET** Repair Department and Field Service Centers also perform warranty service work.

When returning an instrument to the factory or service center for service, paperwork must be included which contains the following information:

> ➢ A purchase order number or reference number.

> ➢ A contact name with return address, telephone and fax numbers

> ➢ Specific instructions regarding desired service or description of the problems being encountered.

> ➢ Date of original purchase and copy of packing slip or invoice for warranty consideration.

> ➢ If a price estimate is required, please note it accordingly *and be sure to include a **fax number***.

Providing the above information assists in the expedient repair and return of your unit.

Failure to provide this information can result in processing delays.

ENMET charges a one hour minimum billing for all approved repairs with additional time billed to the closest tenth of an hour. All instruments sent to **ENMET** are subject to a minimum $30 evaluation fee, even if returned unrepaired. Unclaimed instruments that **ENMET** has received without appropriate paperwork or attempts to advise repair costs that have been unanswered, after a period of 60 days, may be disposed of or returned unrepaired COD with the evaluation fee.

Service centers may have different rates or terms. Be sure to contact them for this information.

Repaired instruments are returned by UPS/FedEx Ground and are <u>not insured</u> unless otherwise specified. If expedited shipping methods or insurance is required, it must be stated in your paperwork.

Note: Warranty of customer installed components.

If a component is purchased and installed in the field, and fails within the warranty term, it can be returned to **ENMET** and will be replaced, free of charge, per **ENMET**'s returned goods procedure.

If the entire instrument is returned to **ENMET** Corporation with the defective item installed, the item will be replaced at no cost, but the instrument will be subject to labor charges at half of the standard rate.

ENMET
CORPORATION

Repair Return Form

Mailing Address:
    ENMET Corporation
    PO Box 979
    Ann Arbor, Michigan 48106

Shipping Address:
    ENMET Corporation
    Attn: Repair Department
    680 Fairfield Court
    Ann Arbor, Michigan 48108

Phone Number: 734.761.1270
FAX Number: 734.761.3220

Your Mailing Address:

_____

_____

_____

_____

Your Shipping Address:

_____

_____

_____

_____

Contact Name: _____ **Your Phone:** _____

Your PO/Reference Number: _____ **Your FAX:** _____

Payment Terms: ❏ *COD*
(Check one)   ❏ *VISA / MasterCard*_____ _____
                                Card number   Expiration

Return Shipping Method:

    ❏ UPS: ❏ Ground   ❏ 3 Day Select ❏ Next Day Air ❏ ND Air Saver ❏ 2-Day Air

    ❏ Federal Express: ❏ Ground ❏ Express Saver   ❏ P-1 ❏ Standard ❏ 2-Day Air

    ❏ FedEx Account number: _____

Would you like *ENMET* to insure the return shipment?

        ❏ No   ❏ Yes   **Insurance Amount: $**_____