



## *START-UP, CALIBRATION, AND REPLACEMENT PARTS*

### **Model: AQM Air Quality Monitor**



### **AIR SYSTEMS INTERNATIONAL, INC.**

829 Juniper Crescent, Chesapeake, Va, 23320

Telephone 1(757) 424-3967

Toll Free 1(800)-866-8100

Fax No. 1(757) 424-5348

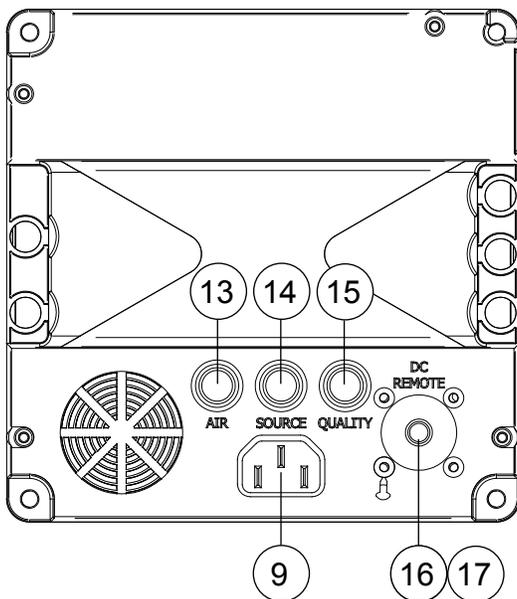
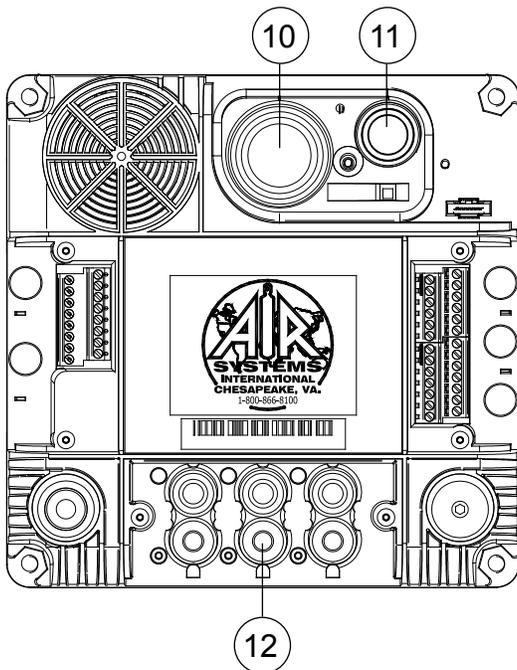
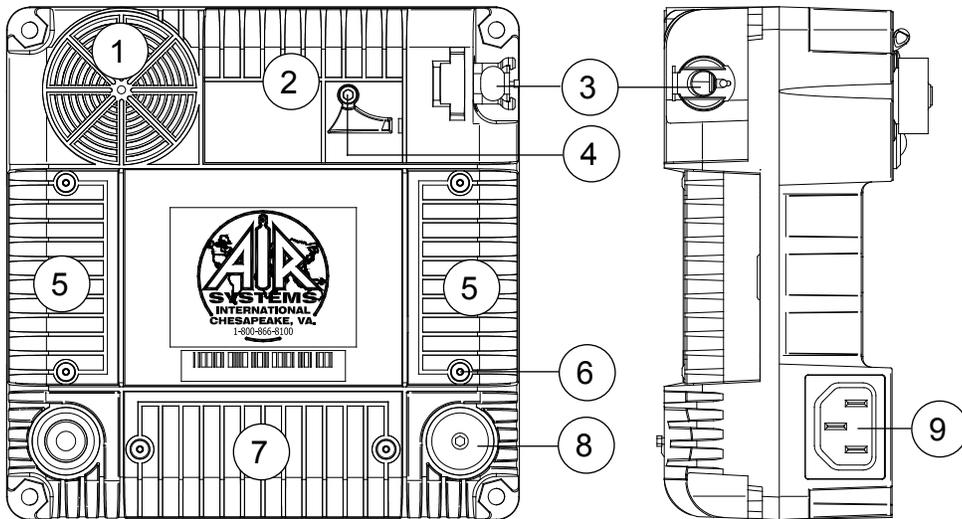
<http://www.airsystems.com>

e-mail: [sales@airsystems.com](mailto:sales@airsystems.com)

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## AQM Parts Identification



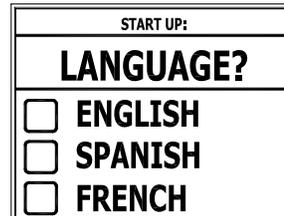
Item #	Description	Part #
1	Audible Alarm	AQMAUDALRM
2	Sensor Cover	AQMSENSCVR
3	Air Sample Inlet	AQMASQD
4	S.S. Allen Head Screw, 6-32 x 1"	AQM632X100
5	Terminal Block Cover, Left Or Right	AQMTBCVR
6	S.S. Allen Head Screw, 6-32 x 2-1/2"	AQM632X250
7	Battery Cover	AQMBTRCVR
8	Allen Tool	AQM-TOOL
9	115 VAC Receptacle	N/A
10	Carbon Monoxide Sensor	CO-91NS
11	Oxygen Sensor	O2-NS
12	"AA" Batteries (6 Required)	ELB-AA
13	Air Quality Acceptable - Green LED	AQMGRNLED
14	Back-Up Air or Low Press. Red LED	AQMREDLED
15	Air Quality Out Of Range - Red LED	AQMREDLED
16	DC Remote Alarm Jack	N/A
17	DC Remote Alarm Jack Cover	N/A

## AQM Start-Up

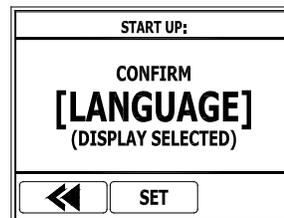
Press the black On/Off button located in the lower left hand corner of the air quality monitor. You will be greeted by the Air Systems logo followed by the Air Quality Monitor (AQM) info screen which then leads to the language selection screen.



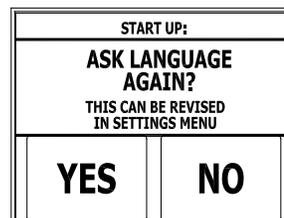
Select the preferred language by selecting the box next to the language you wish the monitor to display during use. Language can be changed later in Settings-Language.



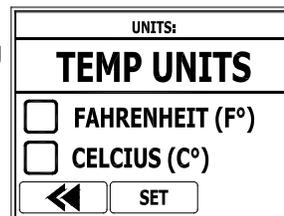
Confirm the language selection by pressing **SET**. **SAVED** will be displayed confirming the language. Press **←←** to change your selection.



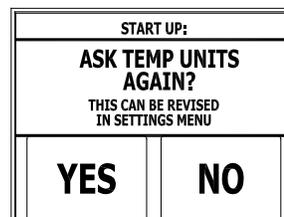
If this will be the only language used with the AQM press **NO**. If users with different language preferences will be using the AQM press **YES**. This will cause the monitor to prompt the user for language preference before each use.



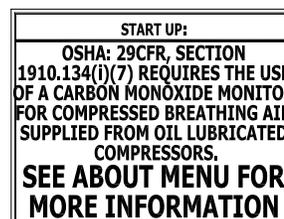
Set the temperature units by selecting the box next to the preferred temperature units and press **SET**. **SAVED** will be displayed confirming selection. Units can be changed later in Settings-Units.



If this will be the only temperature unit used with the AQM press **NO**. If Fahrenheit and Celcius may both be used depending on AQM location or user preference press **YES**. This will cause the monitor to prompt the user for temperature unit before each use.



Start-up is complete. Continue to system set-up.



## AQM System Set-Up

To set the system up for the current workshift press **YES**. This is a step by step set-up for the AQM as well as the filtration box/panel. An experienced user may select **YES**, set the temperature, and exit out of the following steps. Pressing **NO** will display the System Status screen.

By pressing **YES**, the user will begin the set-up procedure by setting the coolest temperature anticipated for the work shift. Press **▶▶** to advance to the next screen to set the temperature by pressing the (-/+ ) tabs. Confirm the temperature by pressing **SET**. **SAVED** will be displayed confirming temperature. Press **◀◀** to go back to the previous screen, or press **EXIT** to bypass the system set-up and display system status.

If the AQM is installed in a filtration box or on a filtration panel, connect the primary breathing air source to the inlet fitting and press **▶▶** to continue.

If the AQM is installed in a filtration box or on a filtration panel equipped with a reserve breathing air source, connect the reserve breathing air source to the reserve air inlet fitting and press **▶▶** to continue.

Set the pressure regulator to the recommended respirator pressure. Press **▶▶** to continue.

SET UP: <b>SET SYSTEM UP NOW FOR CURRENT WORK SHIFT?</b>	
<b>YES</b>	<b>NO</b>

SET UP: <b>SET COOLEST TEMP ANTICIPATED FOR WORK SHIFT</b>		
◀◀	EXIT	▶▶

SET UP: <b>TEMP: XX °</b>		
-	+	
◀◀	SET	▶▶

SET UP: <b>CONNECT PRIMARY BREATHING AIR SOURCE. "NEXT" TO CONTINUE</b>		
◀◀	EXIT	▶▶

SET UP: <b>CONNECT RESERVE BREATHING AIR SOURCE. "NEXT" TO CONTINUE</b>		
◀◀	EXIT	▶▶

SET UP: <b>SET REGULATOR TO TO RECOMMENDED RESPIRATOR PRESSURE</b>		
◀◀	EXIT	▶▶

SET UP: <b>CONNECT AIR SAMPLE TUBE TO MONITOR</b>		
◀◀	EXIT	▶▶

SET UP: <b>SET SAMPLE FLOW RATE BETWEEN 50-100CC/MIN</b>		
◀◀	EXIT	▶▶

SET UP: <b>ALARMS MANUAL TEST</b>	
<b>TEST</b>	<b>EXIT</b>

SELF TEST: <b>DID ALL AUDIBLE AND VISUAL ALARMS TURN ON?</b>	
<b>YES</b>	<b>NO</b>

SELF TEST: <b>CONTACT MANUFACTURER FOR SERVICE !</b>	
<b>DONE</b>	<b>"ABOUT" FOR CONTACT INFORMATION</b>

<b>CO:0 PPM</b>	<b>O2:20.9 %</b>	
<b>ADP: 60 °F</b>		
◀◀		▶▶
SOURCE: AC	BATTERY: <div style="display: inline-block; width: 20px; height: 10px; background-color: black;"></div>	

**System Status Screen**

Connect the air sample tube from the flowmeter to the AQM and press **▶▶** to continue.

Adjust the flowmeter so the flow ball hovers between 50 and 100 CC/Min. Press **▶▶** to continue.

Press the Alarms Manual Test button to test all local and remote alarms. Press **EXIT** to bypass the alarm test and go to the system status screen.

**Note:** Audible alarm is very loud. User may wish to cover the audible alarm during this test.

Press **YES** if all audible/visual alarms turned on. Pressing **NO** will advance you to the next screen with information to contact the manufacturer for assistance.

Press **DONE** will advance to system status. Press "ABOUT" for Contact Information for assistance.

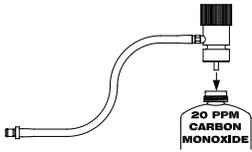
<b>ABOUT:</b>	
AIR SYSTEMS INTERNATIONAL WWW.AIRSYSTEMS.COM 1-800-866-8100	
SCAN QR CODE FOR USER MANUAL OR VISIT THE LINK BELOW	
<a href="http://www.airsystems.com/manuals/AQM.pdf">www.airsystems.com/manuals/AQM.pdf</a>	
<b>EXIT</b>	▼

## AQM Maintenance - Calibrate Sensors

To calibrate the CO and/or O<sub>2</sub> sensors press the calibrate sensor tab.

If the calibration kit is readily available press **▶▶**, otherwise press cancel.

Install the reference gas regulator on the CO reference gas cylinder and press **▶▶**.

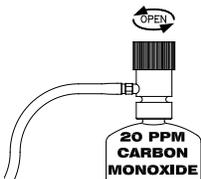


If the label on the CO reference gas cylinder matches the **XX** PPM on the AQM screen press **YES**. If not, press **NO** to adjust the PPM on the next screen.

Press (+/-) to match the PPM on the label of the CO reference gas cylinder. After adjusting, press **SET**. **✔ SAVED** will be displayed confirming selection and advance to next screen.

Remove the air sample tube from the monitor inlet. Press **▶▶** to continue.

Turn the reference gas regulator on and verify flow. Press **▶▶** to continue.



Connect the CO tube from the reference gas regulator to the monitor inlet. Press **▶▶** to continue.



MAINTENANCE:
SELF TEST
<b>CALIBRATE SENSOR</b>
REFERENCE GASES
◀◀    ▼    ▶▶

SENSOR REPLACEMENT:
HAVE CALIBRATION KIT READY BEFORE PROCEEDING
◀◀    CANCEL    ▶▶

CALIBRATE SENSOR:
<b>INSTALL REGULATOR ON CO REFERENCE GAS CYL</b>
◀◀    CANCEL    ▶▶

CALIBRATE SENSOR:
<b>CO: XX PPM</b>
DOES THIS MATCH LABEL ON CO CAL GAS CYLINDER ?
<b>YES    NO</b>

CALIBRATE SENSOR:
<b>CO: XX PPM</b>
—    +
BACK    SET

CALIBRATE SENSOR:
<b>REMOVE AIR SAMPLE TUBE FROM MONITOR INLET</b>
◀◀    CANCEL    ▶▶

CALIBRATE SENSOR:
<b>TURN REGULATOR ON VERIFY FLOW</b>
◀◀    CANCEL    ▶▶

CALIBRATE SENSOR:
<b>CONNECT CO TUBE TO MONITOR INLET</b>
◀◀    CANCEL    ▶▶

CALIBRATE SENSOR:
<b>WAITING FOR SAMPLE GAS TO FILL SENSOR CHAMBER</b>
XXs REMAINING CO: XXXmV O2: XXX mV
◀◀    CANCEL

CALIBRATE SENSOR:
<b>WAITING FOR SENSOR READING TO STABILIZE</b>
CO: XXXmV O2: XXX mV
◀◀    CANCEL

CALIBRATE SENSOR:
<b>SPAN COMPLETED SUCCESSFULLY!</b>

CALIBRATE SENSOR:
<b>REMOVE REGULATOR FROM CO REFERENCE GAS CYL</b>
◀◀    CANCEL    ▶▶

CALIBRATE SENSOR:
<b>INSTALL REGULATOR ON ZERO AIR/O2 GAS CYL</b>
◀◀    CANCEL    ▶▶

CALIBRATE SENSOR:
<b>O2: XX.X %</b>
DOES THIS MATCH LABEL ON O2 CAL GAS CYLINDER ?
<b>YES    NO</b>

CALIBRATE SENSOR:
<b>O2: XX.X %</b>
—    +
BACK    SET

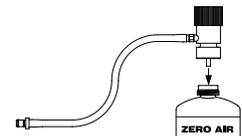
CALIBRATE SENSOR:
<b>TURN REG ON VERIFY FLOW</b>
◀◀    CANCEL    ▶▶

Monitor is self adjusting and will advance to next step when complete. If an error displays see page 8 for trouble-shooting.

When this step is complete the screen will advance automatically and display **SPAN COMPLETED SUCCESSFULLY!** During the countdown; pressing **◀◀** will take the user to the previous screen while pressing **CANCEL** will display **CALIBRATION INCOMPLETE!** If an error displays; see page 8 for trouble-shooting.

Remove the regulator from the CO reference gas and press **▶▶**.

Install the regulator on the zero air/O<sub>2</sub> reference gas cylinder and press **▶▶** to continue.



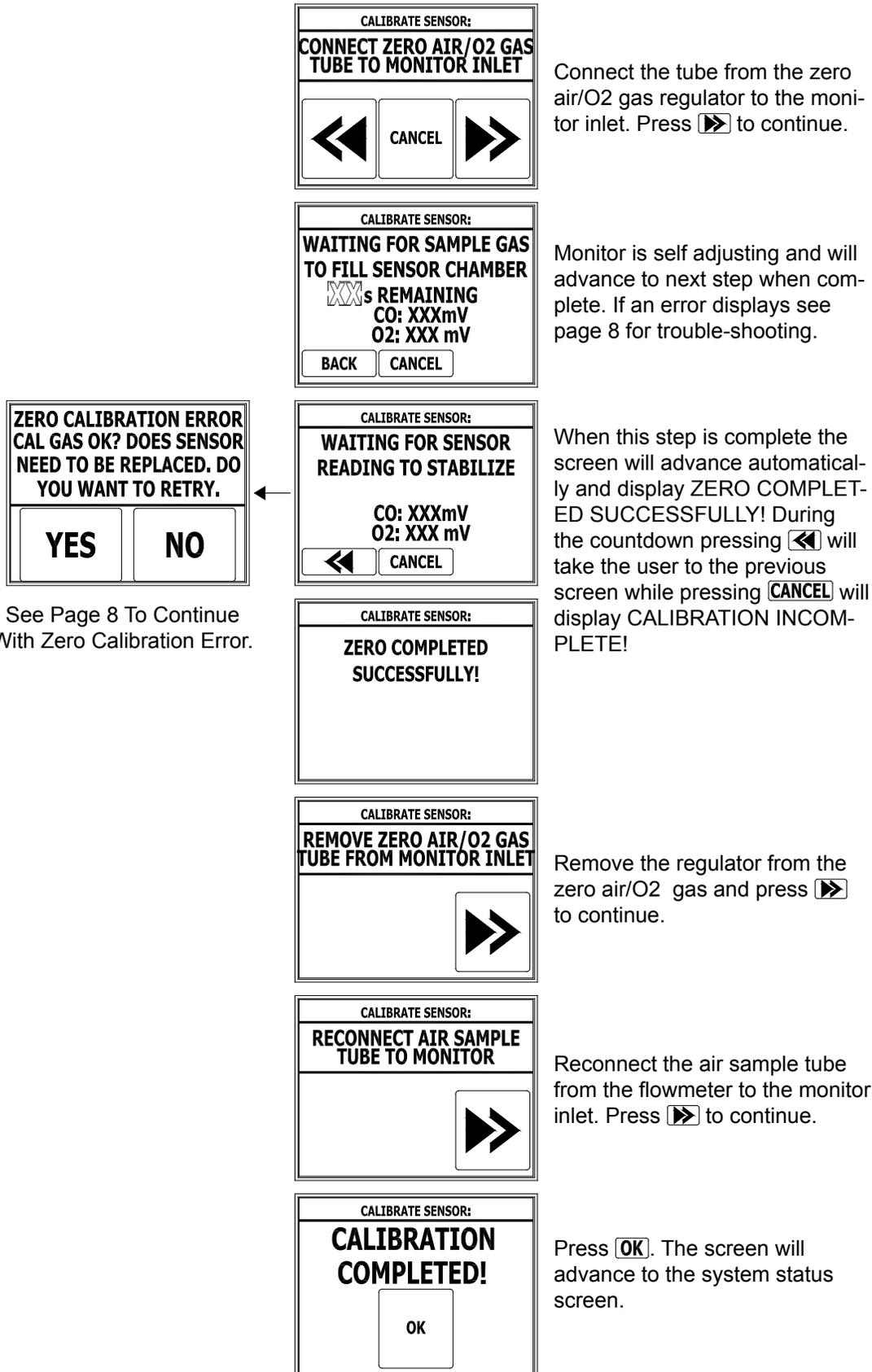
If the label on the O<sub>2</sub> reference gas cylinder matches the O<sub>2</sub> % on the AQM screen; press **YES**. If not, press **NO** to adjust the O<sub>2</sub>% on the next screen.

Press (+/-) to match the O<sub>2</sub>% on the label of the zero reference gas cylinder. After adjusting, press **SET**. **✔ SAVED** will be displayed confirming selection and advance to the next screen.

Turn the reference gas regulator on and verify flow. Press **▶▶** to continue. See next page.



## AQM Maintenance - Calibrate Sensors



## AQM Maintenance - Calibration Error

CALIBRATE SENSOR:
<b>WAITING FOR SENSOR READING TO STABILIZE</b>
CO: XXXmV O2: XXX mV
◀ CANCEL

SERVICE LOG:
<b>SPAN CALIBRATION ERROR: THE READING(S) TOOK TOO LONG TO STABILIZE. DO YOU WANT TO RETRY?</b>
<b>YES</b> <b>NO</b>

If this error appears; it's possible the reference gas cylinder is empty or not flowing. Check cylinder and press **YES** to retry or **NO** to cancel the calibration.

SENSOR REPLACEMENT:
<b>HAVE CALIBRATION KIT READY BEFORE PROCEEDING</b>
◀ CANCEL ▶

If you pressed **YES** the calibration procedure will re-start from step 1.

CALIBRATE SENSOR:
<b>CALIBRATION INCOMPLETE!</b>
<b>RETRY</b> <b>CANCEL</b>

If **NO** was pressed, CALIBRATION INCOMPLETE! will be displayed. Press **RETRY** to start the calibration procedure over from step 1 or press **CANCEL** to cancel the calibration and return to the maintenance menu.

CALIBRATE SENSOR:
<b>WAITING FOR SAMPLE GAS TO FILL SENSOR CHAMBER</b>
XXs REMAINING CO: XXXmV O2: XXX mV
BACK CANCEL

CALIBRATE SENSOR:
<b>WAITING FOR SENSOR READING TO STABILIZE</b>
CO: XXXmV O2: XXX mV
◀ CANCEL

If this error appears the CO sensor's span to zero value is not large enough indicating the calibration gas may not match the value set on page 9 under reference gases or the reference gas cylinder is empty or not flowing or the CO sensor's life is expired. Check cylinder and press **YES** to retry or **NO** to cancel the calibration.

SERVICE LOG:
<b>ZERO CALIBRATION ERROR: CAL GAS OK? DOES SENSOR NEED TO BE REPLACED? DO YOU WANT TO RETRY?</b>
<b>YES</b> <b>NO</b>

SERVICE LOG:
<b>ZERO CALIBRATION ERROR: THE READING(S) TOOK TOO LONG TO STABILIZE. DO YOU WANT TO RETRY?</b>
<b>YES</b> <b>NO</b>

If this error appears it's possible the reference gas cylinder is empty or not flowing. Check cylinder and press **YES** to retry or **NO** to cancel the calibration.

CALIBRATE SENSOR:
<b>CALIBRATION INCOMPLETE!</b>
<b>RETRY</b> <b>CANCEL</b>

If **NO** was pressed, CALIBRATION INCOMPLETE! will be displayed. Press **RETRY** to start the calibration procedure over from step 1 or press **CANCEL** to cancel the calibration and return to the maintenance menu.

SENSOR REPLACEMENT:
<b>HAVE CALIBRATION KIT READY BEFORE PROCEEDING</b>
◀ CANCEL ▶

If **YES** was pressed the calibration procedure will re-start from step 1.

## AQM Maintenance - Reference Gases

<b>CO:0 PPM</b>
<b>O2:20.9 %</b>
<b>ADP: 60 °F</b>
◀▶
SOURCE: AC BATTERY:

From the system status screen-press ▶▶ to advance to the next screen.

<b>CO:</b>
<b>0 PPM</b>
◀▶
SOURCE: AC BATTERY:

From the cycling display screen-press ▶▶ to advance to the maintenance screen.

<b>MAINTENANCE:</b>
MANUAL TEST
CALIBRATE SENSOR
<b>REFERENCE GASES</b>
◀▼▶

Press the REFERENCE GASES tab. This will advance the user to the next screen.

<b>REFERENCE GASES:</b>
<b>CO: 20 PPM</b>
- +
◀ SET ▶

Air Systems' CO reference gas is 20 PPM. Other manufacturers PPM may vary. If the PPM displayed is correct; press the ▶▶ to advance to the next screen. If not, adjust using the (+/-) tabs and press **SET** when complete.

**SAVED** will be displayed and advance to the next screen.

<b>REFERENCE GASES:</b>
<b>O2: 20.9 %</b>
- +
◀ SET ▶

Pressing the ▶▶ advances to the next screen **WITHOUT** saving the change.

Repeat the above process for the O2 reference gas. Air Systems' reference gas is 20.9% oxygen.

<b>MAINTENANCE:</b>
MANUAL TEST
CALIBRATE SENSOR
<b>REFERENCE GASES</b>
◀▼▶

These settings will now be the default settings in the calibration routine.

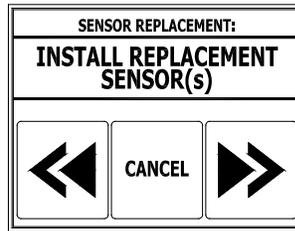
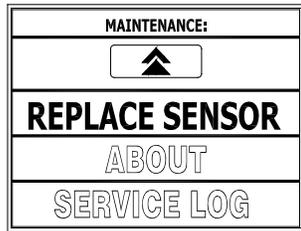
<b>CO:0 PPM</b>
<b>O2:20.9 %</b>
<b>ADP: 60 °F</b>
◀▶
SOURCE: AC BATTERY:

<b>MAINTENANCE:</b>
▲
<b>REPLACE SENSOR</b>
<b>ABOUT</b>
<b>SERVICE LOG</b>

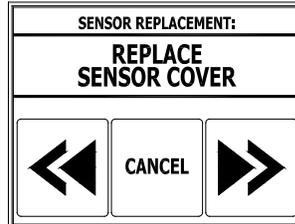
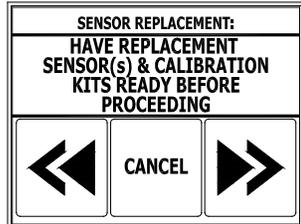
<b>SETTINGS:</b>
<b>UNITS</b>
LANGUAGE/IDIOMA/LANGUE
<b>CONFIGURE</b>
◀▼▶

# AQM Maintenance - Replace Sensors

Press REPLACE SENSOR.

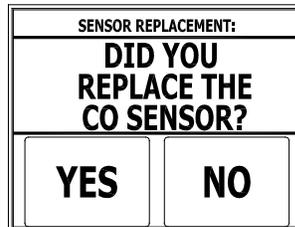
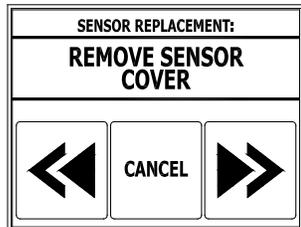


Install the replacement sensor(s) and press **▶▶**. Align sensor pins with sockets and push straight in.

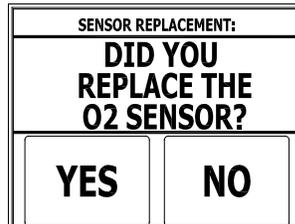
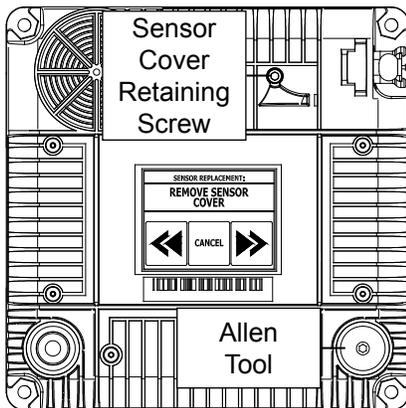


Replace the sensor cover and tighten the allen head screw. Press **▶▶**. Pressing **CANCEL** takes the user back to Step 1.

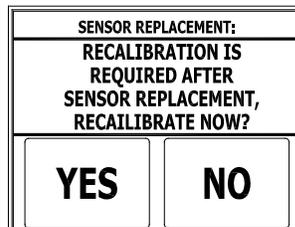
Remove the allen head screw from the sensor cover using the included tool or a 7/64" allen key. Remove the sensor cover to reveal the CO sensor and the O2 sensor (if used) and press **▶▶**.



Pressing **YES** or **NO** to "Did You Replace The CO Sensor" advances the user to the next screen. Pressing **YES** or **NO** to "Did You Replace The O2 Sensor" advances the user to "Recalibration Is Required" screen.

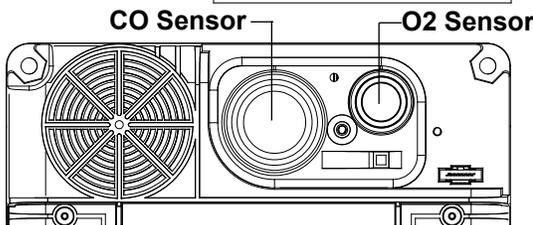
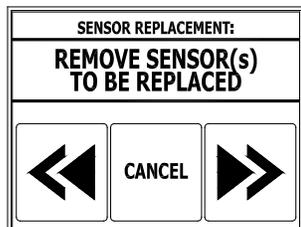


Pressing **YES** on the replacement of either or both sensors logs the install date of the sensor(s) and resets the calibration schedule and calibration reminder.

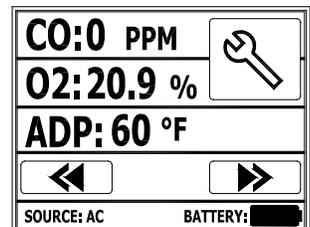
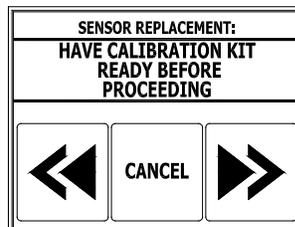


Pressing **NO** takes the user to the SYSTEM STATUS screen. Pressing **YES** takes the user to the sensor calibration procedure found on pages 6 and 7.

Remove the sensor(s) to be replaced and press **▶▶**. Pull sensor(s) straight out of sockets. Do **NOT** twist when removing.



**Shown With Sensor Cover Removed**



## Warranty

Air Systems' manufactured equipment is warranted to the original user against defects in workmanship or materials under normal use for one year from the date of purchase. Any part which is determined by Air Systems to be defective in material or workmanship will be, as the exclusive remedy, repaired or replaced at Air Systems' option. This warranty does not apply to electrical systems or electronic components. Electrical parts are warranted, to the original user, for 90 days from the date of sale. During the warranty period, electrical components will be repaired or replaced at Air Systems' option.

**NO OTHER WARRANTY, EXPRESSED OR IMPLIED, AS TO DESCRIPTION, QUALITY, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ANY OTHER MATTER IS GIVEN BY AIR SYSTEMS IN CONNECTION HERewith. UNDER NO CIRCUMSTANCES SHALL THE SELLER BE LIABLE FOR LOSS OF PROFITS, ANY OTHER DIRECT OR INDIRECT COSTS, EXPENSES, LOSSES, OR DAMAGES ARISING OUT OF DEFECTS IN, OR FAILURE OF THE PRODUCT OR ANY PART THEREOF.**

The purchaser shall be solely responsible for compliance with all applicable Federal, State and Local OSHA and/or MSHA requirements. Although Air Systems International believes that its products, if operated and maintained as shipped from the factory and in accordance with our "Operations Manual", conform to OSHA and/or MSHA requirements, there are no implied or expressed warranties of such compliance extending beyond the limited warranty described herein. Product designs and specifications are subject to change without notice. Rev. 2, 12/98

Air leaks are not covered under warranty except when they result from a defective system component, i.e. an on/off valve or regulator or upon initial delivery due to poor workmanship. Air leaks due to poor delivery or damage will be covered under delivery claims. Minor air leaks are part of routine service and maintenance and are the responsibility of the customer just as are filters and oil changes.



**AIR SYSTEMS INTERNATIONAL, INC.**

829 Juniper Crescent, Chesapeake, Va 23320

Telephone 1(757) 424-3967

Toll Free 1-800-866-8100

Fax No. 1(757) 424-5348

<http://www.airsystems.com>

e-mail: [sales@airsystems.com](mailto:sales@airsystems.com)