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## **Model 1250-XX Calibrator Kit Instruction Sheet**

### **APPLICABILITY & EFFECTIVITY**

This manual provides instructions for the following Sierra Monitor products:

<u>Model</u>	<u>Description</u>
1250-01	Calibrator Kit, Type A
1250-02	Calibrator Kit, Type B
1250-03	Calibrator Kit, Type C

This manual is effective: March 1, 1997

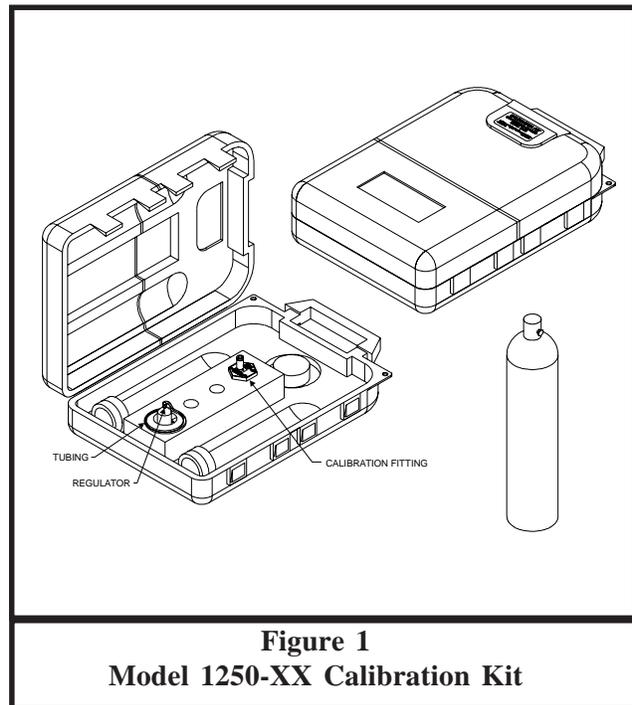
Instruction Manual Part Number: T15006

# Model 1250 Calibrator Kit

- 1250-01 Type A Calibrator Kit
- 1250-02 Type B Calibrator Kit
- 1250-03 Type C Calibrator Kit

The Model 1250 Calibrator Kit (Fig. 1) is used to deliver calibration gas to Sierra Monitor combustible gas, oxygen deficiency and toxic gas sensor modules. Each kit consists of a regulator, calibration fitting, 3-feet of tubing and carrying case. The cylinders of calibration gas are provided separately. There are three versions of the Calibrator Kit dependent upon the specific type of regulator (see Figure 2) included in the kit. The three different regulator types are required to match the three different types of calibration gas cylinders available, depending upon the calibration gas required.

While most situations will require only one type of regulator, there are cases where the user might require more than one regulator due to the use of more than one type of calibration gas cylinder. See Table 1 to determine which type of calibrator kit is required.



**Figure 1**  
**Model 1250-XX Calibration Kit**

Calibration Gas	Cylinder Part No.	Cylinder Capacity	Regulator/Kit Type
Zero Grade Air	1260-00	105 liters	A
H <sub>2</sub> S in Air, 25 ppm	1260-01	74 liters	B
Combustibles, 50% LEL	1260-02	105 liters	A
CO, 100 ppm	1260-04	105 liters	A
H <sub>2</sub> S in N <sub>2</sub> , 25 ppm	1260-05	57 liters	A
Cl <sub>2</sub> , 5 ppm	1260-06	104 liters	C
H <sub>2</sub> , 500 ppm	1260-07	105 liters	A
SO <sub>2</sub> , 50 ppm	1260-10	74 liters	B
NO <sub>2</sub> , 20 ppm	1260-12	74 liters	B
CO, 1000 ppm	1260-13	105 liters	A
NO, 20 ppm	1260-19	74 liters	B
H <sub>2</sub> S, 10 ppm	1260-21	74 liters	B
ETO (C <sub>2</sub> H <sub>4</sub> O), 20 ppm	1260-27	74 liters	B
CO <sub>2</sub> , 2000 ppm	1260-80	105 liters	A

*(Concentrations listed are nominal)*

**Table 1: Calibration Gas Cylinders**

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## Procedures using Type A Regulator

### 1. Preparation

- a. Remove the regulator, tubing, calibration adapter and calibration gas cylinder from the case.
- b. Connect the gas delivery tubing to the regulator's output port if it is not already connected.
- c. Connect the calibration fitting to the end of the gas sensor module.
- d. Connect the gas delivery tubing to the calibration fitting.
- e. Install the regulator on the gas cylinder.
- f. Check the pressure reading on the regulator's pressure gauge.

**NOTE:** Do not use a cylinder if the pressure drops below 50 psi; get a new gas cylinder. Also, do not leave the regulator on the cylinder when not in use.

### 2. Calibration

- a. Depress the flow control valve and make a 1/4 turn to start the flow of gas
- b. Allow the gas to flow to the gas sensor module for the time specified by the module instructions.
- c. Calibrate the sensor module following the instructions in the sensor module instruction manual.
- d. Depress the flow control valve and make a 1/4 turn to stop the flow of gas..
- e. Remove the regulator from the cylinder
- f. Remove the tube fitting from the calibration fitting.
- g. Unscrew the calibration fitting from the detector head by turning it counterclockwise.
- h. Return the gas cylinder, regulator, calibration fitting and tubing to the calibration kit case.

## Procedures using Type B or C Regulator

### 1. Preparation

- a. Remove the regulator, tubing, calibration adapter and calibration gas cylinder from the case.
- b. Install the regulator on the gas cylinder.

- c. Check the pressure in the gas cylinder
  - 1) Make sure the cylinder valve is turned off.
  - 2) Make sure the valve on the regulator is closed by turning it to off position.
  - 3) Open the gas cylinder slightly by turning it counter clockwise to the on position.
  - 4) Check the pressure reading on the regulator's pressure gauge.

**NOTE:** Do not use a cylinder if the pressure drops below 50 psi; get a new gas cylinder.

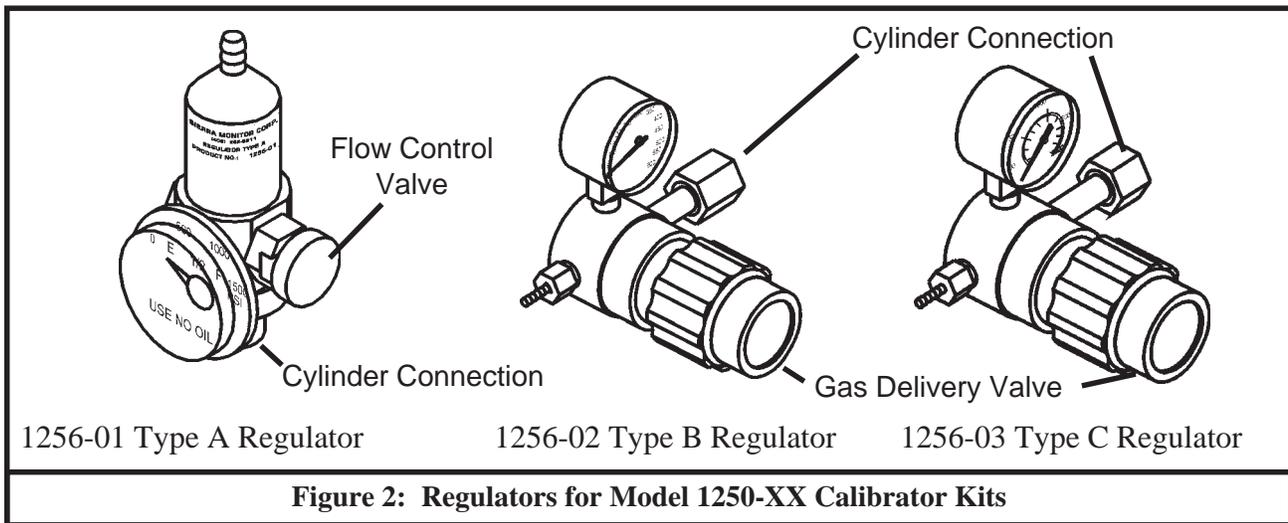
- 5) Close the gas cylinder valve by turning it to the off position.
- d. Connect the gas delivery tubing to the regulator's output port if it is not already connected.
- e. Connect the calibration fitting to the end of the gas sensor module.
- f. Connect the gas delivery tubing to the calibration fitting.

### 2. Calibration

- a. Open the gas flow valve on top of the sample gas cylinder by turning it counter clockwise.
- b. Open the gas delivery valve on the regulator by turning it clockwise.
- c. Allow the gas to flow to the gas sensor module for the time specified by the module instructions.
- d. Calibrate the sensor module following the instructions in the sensor module instruction manual.
- e. Close the gas delivery valve by turning it counterclockwise.
- f. Remove the tube fitting from the calibration fitting.
- g. Unscrew the calibration fitting from the detector head by turning it counterclockwise.

### 3. Finishing the calibration

- a. Be sure the cylinder gas flow valve is closed.
- b. Remove the regulator from the sample gas cylinder.
- c. Return the gas cylinder, regulator, calibration fitting and tubing to the calibration kit case.



**Specifications for 1260 Series Gas Cylinders:**

**Type A Gas Cylinders (Combustible Gas - LEL, CO, H<sub>2</sub>, Air)**

Dimensions (cylinder): 13.75 x 3.25 in. (34.9 x 8.2 cm)  
 Weight (cylinder): 2.3 lb. (1.05 Kg)  
 Cylinder pressure: Max 1000 psig  
 Volume: 3.6 cu. ft. (105 liters) at STP

**Type A Gas Cylinders (H<sub>2</sub>S for 4101/5100-05)**

Dimensions (cylinder): 13.5 x 3.5 in. (34.3 x 8.9 cm)  
 Weight (cylinder): 1.8 lb. (0.8 Kg)  
 Cylinder pressure: Max 500 psig  
 Volume: 2.0 cu. ft. (57 liters) at STP

**Type B Gas Cylinders (SO<sub>2</sub>, NO<sub>2</sub>, NO, H<sub>2</sub>S, ETO)**

Dimensions (cylinder): 16.25 x 4.0 in. (41.3 x 10.2 cm)  
 Weight (cylinder): 1.75 lb. (0.8 Kg)  
 Cylinder pressure: Max 480 psig  
 Volume: 2.6 cu. ft. (74 liters) at STP

**Type C Gas Cylinders (Cl<sub>2</sub>)**

Dimensions (cylinder): 12.25 x 3.25 in. (31.1 x 8.2 cm)  
 Weight (cylinder): 2.2 lb. (1.0 Kg)  
 Cylinder pressure: Max 1800 psig  
 Volume: 3.7 cu. ft. (104 liters) at STP

**Specifications for 1256 Series Regulators (See Figure 2):**

**Type A Regulator - 1256-01**

Maximum Inlet Pressure: 1000 psig (69 bar)  
 Weight (cylinder): 1.0 lb.  
 Inlet Connection: C-10 (5/5" - 18 UNF)  
 Outlet Connection: 3/16" hose barb

**Type B Regulator - 1256-02**

Maximum Inlet Pressure: 480 psig  
 Weight (cylinder): 1.0 lb.  
 Inlet Connection: CGA 170/ 1/8" hose barb  
 Outlet Connection: 1/8" hose barb

**Type C Regulator - 1256-03**

Maximum Inlet Pressure: 1800 psig  
 Weight (cylinder): 1.0 lb.  
 Inlet Connection: CGA-180 1/8" hose barb  
 Outlet Connection: 1/8" hose barb

**Spare Parts**

Description	Part No.
Carrying Case	1255-01
Calibration Tubing, 36" PTFE	1255-02
Calibration Adapter	5358-00

**LIMITED WARRANTY**

SIERRA MONITOR CORPORATION warrants its products to be free from defects in workmanship or material under normal use and service for two years after date of shipment. SMC will repair or replace without charge any equipment found to be defective during the warranty period. Final determination of the nature and responsibility for defective or damaged equipment will be made by SMC personnel.

All warranties hereunder are contingent upon proper use in the application for which the product was intended and do not cover products which have been modified or repaired without SMC approval or which have been subjected to accident, improper maintenance, installation or application, or on which original identification marks have been removed or altered. This Limited Warranty also will not apply to inter-connecting cables or wires, consumables (ie. calibration gases, batteries, sensors), nor to any damage resulting from battery leakage.

In all cases SMC's responsibility and liability under this warranty shall be limited to the cost of the equipment. The purchaser must obtain shipping instructions for the prepaid return of any item under this warranty provision and compliance with such instruction shall be a condition of this warranty.

Except for the express warranty stated above, SMC disclaims all warranties with regard to the products sold hereunder including all implied warranties of merchantability and fitness and the express warranties stated herein are in lieu of all obligations or liabilities on the part of SMC for damages including, but not limited to, consequential damages arising out of/or in connection with the use or performance of the product.