

*Sierra Monitor Corporation's Model 2460 Environment Controller is an electronic, microprocessor based system which performs all HVAC controls in remote telecommunications structures including controlled environment cabinets, huts and vaults. Flexibility and expansion capability extend the Model 2460's applicability to larger buildings and central offices.*

## FEATURES

### Application Specific Software

The Model 2460 is designed specifically to execute full HVAC control of structures to assure a precisely controlled and safe environment for telecommunications equipment and personnel working within the structure. Application specific software is used to collect data from various sensor inputs to make continuous, real time control logic and alarm decisions. The results of the logic are used to operate control outputs, send alarms to telephone company systems and display status and alarm conditions on the front panel of the controller.

The speed, reliability and flexibility of the microprocessor eliminate the manual adjustments, opportunities for error and misadjustments and miscellaneous hardware components associated with electromechanical systems.

### Full Environmental Control

The Model 2460 is equipped with temperature and humidity sensors. Optional gas sensors for combustible gas, carbon monoxide and oxygen are available for cabinet and vault applications. Environmental controls include heating and air conditioning with lead/lag and demand logic. The Model 2460 is capable of controlling multiple air conditioning units with "Normal" set points for facility safety and "Comfort" set points for personnel comfort when the structure is occupied.

### Operator Friendly Control Panel

A large, backlit, alphanumeric, 4 line x 40 character LCD display and keypad enable convenient viewing of status and alarm conditions and configuration data. With entry of the proper authorization code, the user is able to make set point and configuration changes. From the main menu, the user can easily select sub-menus to access data on control points, analog and digital sensors, set points and system alarms.



### Computer Interface and Graphics Software

A serial port for direct connection of a portable PC enables the viewing of data or changing set points. The Model 2460 supports any terminal communication program to enable access to all menus and sub-menus without the need for specialized operator training or programming skills. The Model 2460's on-board modem enables remote interrogation and set point configuration, significantly reducing the need for and cost of on-site troubleshooting and maintenance. With optional software, interface is enhanced with real time control and environmental data displayed on graphic screens designed by the user.

### Comprehensive Alarm Capability

In addition to a total of 32 alarm relays to interface with the telephone company's alarm system, the on-board modem enables the Model 2460 to dial out automatically in the event of any alarm condition. The user may choose up to three dial-out numbers to a PC or alarm printer. Transmitted data include the structure identification, type of alarm and date of occurrence.

### Application Flexibility

The modular design of the Model 2460 provides for monitoring up to 48 digital inputs and 48 analog inputs and controlling up to 48 digital outputs and 32 analog outputs. This enables compact packaging and customized control for smaller cabinets and huts and expansion for larger structures. In addition, up to 5 controllers may be networked to manage multiple floors or zones of larger structures. Networked controllers are connected via RS485 ports and a single modem affords access to and automatic dial-out from the entire network.

## Specifications:

### System:

Power	120 VAC, 1 Amp, 240 VAC, 0.5 Amp 50/60/Hz, -48 VDC, +24 VDC, 3 Amps
Microprocessor	Motorola HD64180 with watchdog timer Clock Speed: 10 MHz 8 K bytes EEPROM 128 K bytes EPROM Real Time Clock w/ 10 year backup
Modem	Hayes Compatible 9600 Baud
Software	Supports any terminal communication program via modem or direct serial connection. Over 26 programmable set points and three level access code.

### Environmental:

Temperature	Operating Range 32° to 120°F (0° to 50°C) Storage Range 32° to 120°F (0° to 50°C)
Humidity	0 - 95% RH, non-condensing

### Front Panel:

Display	Alphanumeric LCD display (4 rows x 40 characters)
Indicators	2 LED's for serial communications status
Keypad	Membrane, 20 keys

### Malfunction

<b>Protection:</b>	Self-diagnostics w/fail safe shutdown
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### Interface:

Serial	RS232 serial port for direct connection to portable PC for viewing data or changing set points.
Front Panel	Keypad selection of main menu, sub-menus for viewing data or changing set points

### Sensor Range:

Temperature	-30°F to 125°F (-25°C to 52°C)
Humidity	0-100% Relative Humidity
Combustible Gas	5,000 PPM (10% LEL)
Carbon Monoxide	100 PPM
Oxygen	25% by volume

### Mechanical:

Enclosure	Sheet metal electrical cabinet
Mounting	Surface mount, four screw holes in base of cabinet
Dimensions	15" x 12" x 6" (HWD) (CEC Controller) 38.1 x 30.5 x 15.2 cm 22" x 18" x 5" (HWD) (Hut Controller) 55.9 x 45.7 x 12.7 cm 26" x 24" x 7" (HWD) (CEV Controller) 66.0 x 61.0 x 17.8 cm

### Inputs (Typical CEV):

Digital	Fused, selectable 12 VDC, 12 VAC, 24 VAC, 120 VAC, 240 VAC Ventilation Fan Current Sensor Air Conditioner #1 Current Sensor Air Conditioner #2 Current Sensor Air Conditioner #3 Current Sensor Heater Current Sensor Sump Pump Current Sensor Differential Pressure Switch Duct Sail Switch Intrusion Smoke alarm Gas Detection Malfunction Comfort Switch Purge Hatch Open High Water
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**Maximum Digital Inputs: 48**

### Analog

Inside Temperature
Inside Humidity
External Temperature
Combustible Gas
Carbon Monoxide
Oxygen
Discharge Pressure
Suction Pressure

**Maximum Analog Inputs: 48**

### Outputs (Typical CEV):

Fused relay, SPDT, 5 Amp, 120 VAC  
4 AMP, 240 VAC

### Controls

Ventilation Fan
Air Conditioner #1 Compressor
Air Conditioner #2 Compressor
Air Conditioner #3 Compressor
Heater
Dehumidifier
Sump Pump
Main Lights
Emergency Light
Red/Green Indicators

### Alarms

High Temperature
High Humidity
AC Power Fail
HVAC Fail
Pump Run
Combustible Gas
Carbon Monoxide
Smoke
Gas Monitor Failure

**Maximum Digital Output Relays: 48**

**Maximum Alarm Outputs: 32**

### Analog

0-5 VDC, 0-10 VDC, 4-20 maDC

**Maximum Analog Outputs: 32**

