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## **INTRODUCTION**

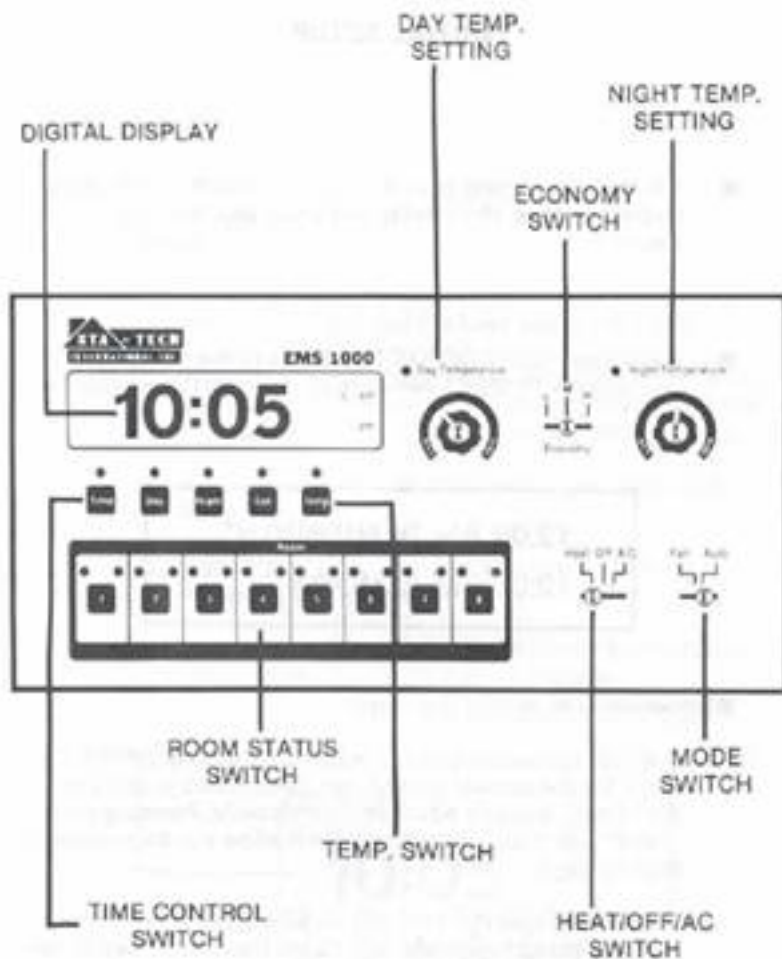
You have purchased the most technically advanced micro electronic **ENERGY MANAGEMENT SYSTEM** available. The patented **EMS-1000** has been designed to provide you with precise temperature control and versatility in order to match your personal lifestyle. The **EMS-1000** will significantly reduce your fuel bill with proper use.

## **EMS CONTROL PANEL**

The central control unit, with its microprocessor computer, operates much like the thermostat of a normal Heating and Cooling system. However, your **EMS-1000** remotely monitors and controls the temperature of each individual room within your home. Operating your system in this manner will allow you to keep occupied portions of your home at one temperature while allowing unoccupied areas of your home to be kept at a conservation temperature.

Please take a few moments to read this manual prior to using your System.

**US Patent 4,407447**



## WHAT THE EMS-1000 IS DESIGNED TO DO

Your **EMS-1000** is pre-programmed for the unique heating and cooling requirements of your home.

Your home is designed to heat or cool occupied portions to one temperature **COMFORT** while allowing temperatures in unoccupied portions to fall or rise to a different temperature (**CONSERVATION**).

The EMS-1000 has the ability to precisely measure the temperature of each room within your home and therefore control the temperature in each room, providing you with an automatic, comfortable, energy efficient home.

The **EMS-1000** must know your home if it is to provide you with the maximum comfort and energy savings possible. A detailed description of your home is placed into the permanent memory of the **EMS-1000** prior to installation.

This information contains data relating to the size of each room, which direction the room faces as related to the rising and setting sun, amount of glass exposed to each direction and each room, the size of the ducting (the pipe which allows the air to flow into the room), the size of the furnace and air conditioner and other data which is unique to your home and affects its energy consumption. This data is programmed into your system from information supplied to **STA-TECH** by your heating/cooling contractor.

## **HOW THE EMS-1000 OPERATES**

When the **EMS-1000** detects a room that is designated as **COMFORT**, and whose temperature has fallen below the desired set temperature or above it for air conditioning), it will condition that room.

If no other rooms have fallen below set temperature it would seem logical that the **EMS-1000** should close the dampers to all the other rooms; however this presents a problem; The heating system must be able to move a minimum amount of air or the heater will be damaged. In a similar manner, if the air conditioner cannot move enough air, it will be damaged.

Since the **EMS-1000** knows the volume of air it controls to each room, in the course of normal

operation the system must occasionally dump or spill excess capacity to **CONSERVATION** or even **OUT OF SERVICE** rooms by opening additional dampers to meet the minimum requirements of your system before turning it on. This function acts to protect your equipment from failures, extend it's useful life, while providing you with the most comfortable and economical method of heating and cooling your home.

## INITIAL SETUP

- The first time power is connected to the unit or following a power outage, the display will show four flashing dashes (----).
- Make sure **HEAT/OFF/AC** switch is in the **OFF** position and the **MODE** switch is in the **AUTO** position.

**12:00 AM is MIDNIGHT**

**12:00 PM is NOON**

## SETTING THE CLOCK

The first procedure you will want to perform is setting the clock for the current time of day.

Continuous holding o the **TIME** key will advance digits rapidly. Pressing the TIME key once and releasing will allow you to sequence digit by digit.

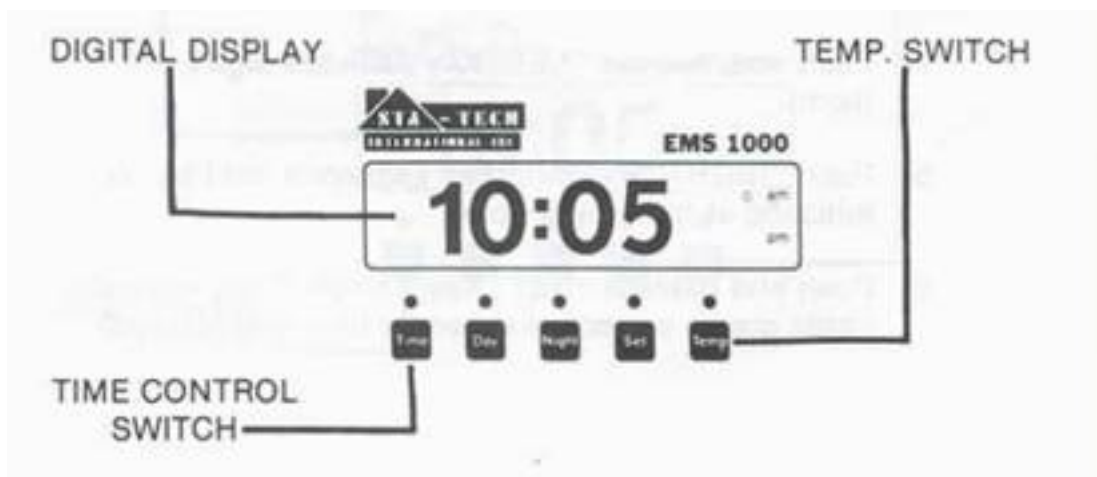
Please note that the **TIME** set up procedure, if not completed within 15 seconds, will cause the

time of day to appear in the digital display as you had left it. There is no need to be alarmed just repeat the setup procedure if you had not quite finished.

### Steps:

- 1) Push and Release **SET** Key (The green lamp above the key will light and the hour d will flash).
- 2) Push **TIME** Key (Hour digits sequence until key is released. Release key at proper hour. Make sure the clock shows the proper AM indication).
- 3) Push and Release **SET** Key (Minutes digits will flash).
- 4) Push **TIME** Key (Minutes sequence until key is released at proper time).
- 5) Push and Release **SET** Key (**TIME** key indicator lights green, correct time is displayed).

### DIGITAL DISPLAY



## **DAY AND NIGHT CHANGEOVER TIME**

The **DAY** and **NIGHT** changeover times should be set to the time of day you normally go to bed at night and when you awaken in the day. For your convenience, the **NIGHT** changeover time comes preset for **10:00 P.M.** and the **DAY** changeover time is preset for **6:00 AM**. In order to change the preset settings, follow the simple steps outlined below.

•Change **NIGHT** Changeover Time (Preset for **10:00 P.M.**)

### **Steps:**

1) Push **NIGHT** Key (Green lamp will light).

2) Push and Release **SET** Key (The green lamp above the key will light and the hour digits will flash).

3) Push **NIGHT** Key Hour digits sequence until key is released. Release key at proper hour. Make sure the clock shows the proper PM indication.

4) Push and Release **SET** Key (Minutes digits will flash).

5) Push **NIGHT** Key (Minutes sequence until key is released at the proper hour).

6) Push and Release **SET** Key (**NIGHT** key indicator lights green, correct changeover time is displayed).

- Change **DAY** Changeover Time (Preset for **6:00 A.M.**)

### Steps:

- 1) Push **DAY** Key (Green lamp will light).
- 2) Push and Release **SET** Key (The green lamp above the key will light and the hour digits will flash).
- 3) Push **DAY** Key Hour digits sequence until key is released. Release key at proper hour. Make sure the clock shows the proper AM indication.
- 4) Push and Release **SET** Key (Minutes digits will flash).
- 5) Push **DAY** Key (Minutes sequence until key is released at the proper hour).
- 6) Push and Release **SET** Key (**DAY** key indicator lights green, correct changeover time is displayed).

## ROOM STATUS INDICATORS

Each controlled room has a **ROOM STATUS INDICATOR**. **COMFORT ROOM** is a room normally occupied. Rooms in **COMFORT STATUS** are kept at the **DAY TEMPERATURE**, or **NIGHT TEMPERATURE** setting, depending on the time of day. Uncontrolled rooms such as some

bathrooms. Entry halls and laundry rooms are always maintained at **COMFORT STATUS**.

A **CONSERVATION ROOM** is a room normally unoccupied. Rooms in **CONSERVATION STATUS** are maintained at the **ECONOMY** setting.

An **OUT OF SERVICE** Room is a room you don't intend to occupy for an extended period of time, or is available for use later in case you remodel. An **OUT OF SERVICE** Room is not conditioned until you decide to use it.

You may change the status of a room at any time. A room which is seldom used may be placed completely out of service; a room may be upgraded from a **CONSERVATION STATUS** to a Comfort Status when you intend to use it.

Any changes to the room status which are made while the time of day is displayed (**TIME** indicator is on) will be temporary changes effective only until the next time period change. (**DAY** to **NIGHT** or **NIGHT** to **DAY**).

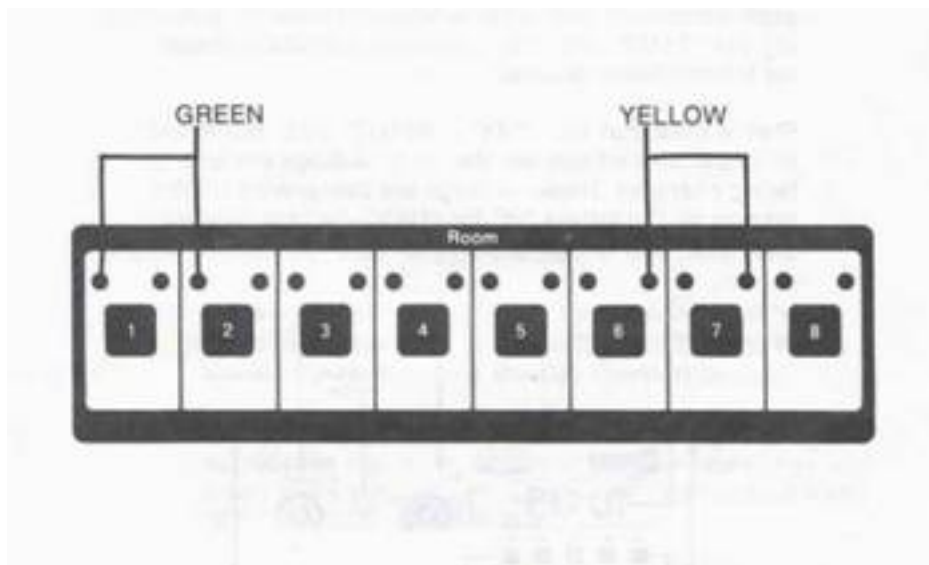
The room status may also be permanently changed to suit your family's personal lifestyle. Please refer to CAUTION.

The **EMS-1000** puts the whole house into a Comfort Status for 30 minutes after the **DAY** changeover time. This feature is provided so your family awakens to a comfortable temperature thru-out your home during the morning period while you move from the bedroom areas to the living

areas, this feature applies to heating only.

## PRE ROOM STATUS

- 1) Green light: Indicates that the room is in the **COMFORT STATUS**.
- 2) Yellow light: Indicates that the room is in the **CONSERVATION STATUS**.
- 3) No lights on: Indicates that the room is **OUT OF SERVICE** or is not used now and available for future use in case you remodel.



## TEMPERATURE CONTROLS

There are three temperature settings you will want to set:

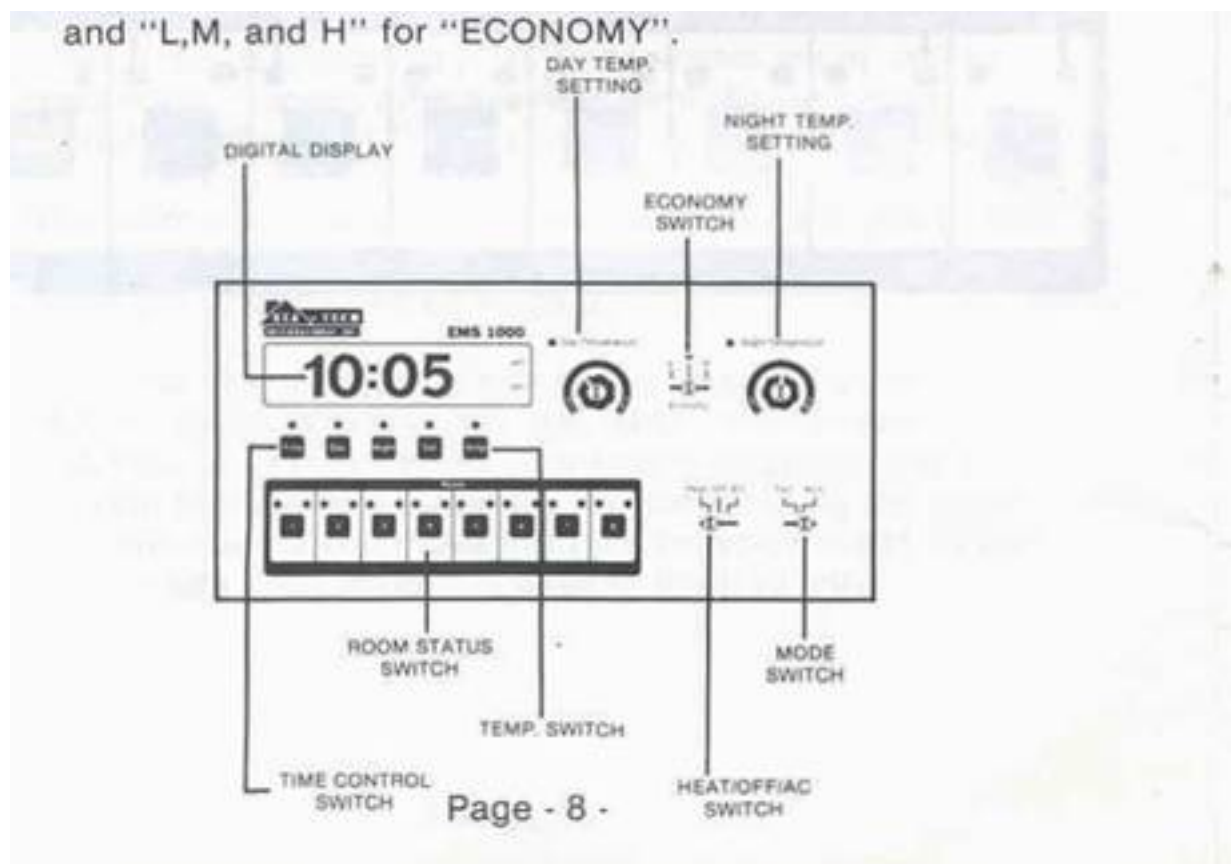
**DAY TEMPERATURE:** Controls the temperature in the rooms designated **COMFORT** during the day.

**NIGHT TEMPERATURE:** Controls the temperature of the rooms designated **COMFORT** at night.

**ECONOMY SETTING:** Controls the amount of temperature difference between **COMFORT** rooms and **CONSERVATION** rooms.

After setting the temperatures you desire, you can examine the temperature outside and the temperature reach controlled room of our home by pushing and releasing the **TEMP** key. The outside temperature display is for informational purposes only.

Please note that the **DAY**, **NIGHT** and **ECONOMY** temperature se are the only settings capable of being changed. These settings are designated on the display by the letters **d** for **DAY**, **n** for **NIGHT**, and **L**, **M** and **H** for **ECONOMY**.



## • INTRODUCTION TO CHANGING PRE-SET ROOM STATUS

Your **EMS-1000** is pre-programmed for the unique heating and cooling requirements of your home in order to achieve maximum efficiency. There will be occasions you will want to change the **PRE-SET ROOM STATUS**; such as when guests stay for an extended period of time, children moving off to college or converting a bedroom into a den or office.

### CAUTION

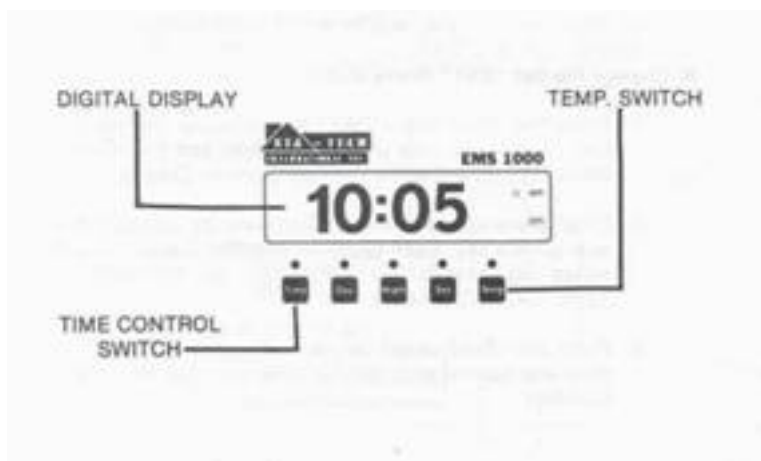
Your home is designed to heat or cool occupied portion to one temperature, while allowing temperatures in unoccupied portions to fall or rise to a different temperature. **By changing too many rooms to COMFORT status the energy conserving properties of the EMS -1000 and your comfort, may be affected.**

### CHANGE PRE-SET DAY ROOM STATUS

- 1) Press the **DAY** key. (**DAY** Key indicator will light. Day changeover time will be displayed and the **ROOM STATUS LIGHTS** will show the **DAY COMFORT STATUS**).
- 2) Change the status of the desired room by pressing the appropriate key. Each depression of the **Status Key** will rotate room status from **COMFORT** to **CONSERVATION** to **OUT OF SERVICE**.
- 3) Press the **TIME** key. (Display will revert to normal time and current room status.) The new **Day** status is in effect.

## CHANGE PRESET NIGHT ROOM STATUS

- 1) Press the **NIGHT** Key. **NIGHT** key indicator will light, night changeover time will be displayed and the room status lights will show the normal night status).
- 2) Change the status of the desired room by pressing the appropriate room key. Each depression of the status key will rotate room status from **COMFORT** to **CONSERVATION** to **OUT OF SERVICE**.
- 3) Press the **TIME** Key. Display will revert to normal time and current room status. The new night status is in effect.



## ADDITIONAL INFORMATION

- After a Power Outage, four flashing dashes --•) will appear Push the SET' Key and repeat **INITIAL SETUP** procedures. If you experience what appears to be a locked up display turn off then turn on the power supply at the circuit breaker.

- A flashing **CALL FOR SERVICE** indication informs you the system is still functioning, but one element, such as a damper, is not responding properly. Call us as soon as practical. You can help your us to diagnose the problem by telling us the status and settings of all controls and indicator lights.
- Your **EMS - 1000** has a three minute delay that protects your Air Conditioner's compressor from being damaged. If, after switching your system to AC, you switch the system off and then on again, the safety system will not allow the system to operate for three minutes. This delay also applies to the Heat Mode of the Heat-Pump type systems.

## **EMS- INSTALLATION RECORD**

Model Number: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Notes:

Room #1      Room Name: \_\_\_\_\_

Room #2      Room Name: \_\_\_\_\_

Room #3      Room Name: \_\_\_\_\_

Room #4 Room Name: \_\_\_\_\_

Room #5 Room Name: \_\_\_\_\_

Room #6 Room Name: \_\_\_\_\_

Room #7 Room Name: \_\_\_\_\_

Room #8 Room Name: \_\_\_\_\_