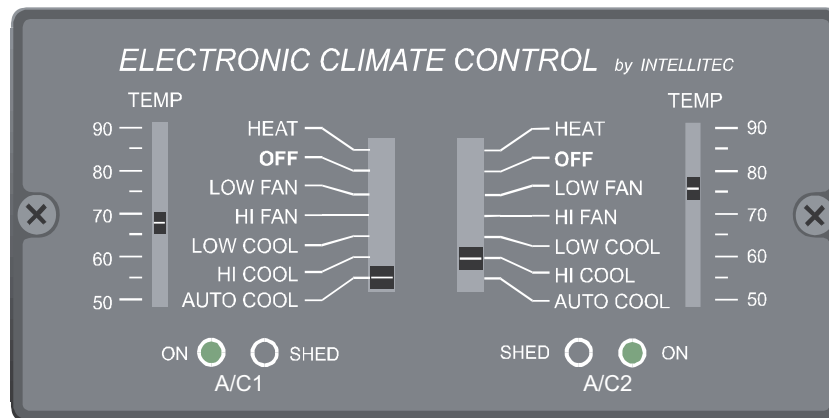


# FLEETWOOD - ELECTRONIC CONTROL CENTER

## OWNERS GUIDE



00-00591-000 Master Controller

00-00597-000 Display Panel

The **ELECTRONIC CLIMATE CONTROL** system offers automatic and manual control of the roof-top air conditioners and the furnace/s in the motorhome. It includes a number of features that help provide the owner with the most comfortable temperature possible. While the system is simple to operate, to fully appreciate the complete benefits, the owner should become familiar with the controls and their functions.

The system offers automatic control of temperature as normally found on RV air conditioners. When in the **AUTOMATIC** mode, it also controls the fan speed to provide the cooling required, at the most quiet speed.

In addition to controlling the comfort level of temperature, the system constantly monitors the current being drawn by all the electrical appliances in the coach and will control the air conditioners to prevent them from overloading the circuit breakers. Once the system turns them off, it will keep them off as long as required and then automatically returns them to normal operation.

The system has been designed to operate from a 120 VAC, 30 Amp service **ONLY**. Connection of the coach to any other power source will cause *improper* operation of the system. *If there is only 20 Amp service available, load management must be done manually by the owner and only one air conditioner can be operated at one time.*

### GETTING TO KNOW THE SYSTEM

Your interface to the system is the central control panel. There are two identical sets of controls on this panel, one for each air conditioner and furnace.

### CONTROLS

**TEMPERATURE** - The temperature control is used to select the desired temperature for each area of the coach. Moving the control down, lowers the set temperature. The approximate range of these controls is 50 to 90 degrees.

**FUNCTION** - The function switch is used to select the desired function of the system, heating or cooling.

### INDICATORS

**“ON”** - The green “ON” LED indicator will be on at all times when the function switch is set to operate the system for either heating or cooling.

**“SHED”** - The red “SHED” LED indicator will be on steady when the temperature conditions are demanding cooling, but there is insufficient power available to operate all the functions. The indicator will be blinking when the system is holding off the compressor for the two minute shut-down period.

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### COOLING

To operate the air conditioners, first select a desired temperature for the A/C1 (front) and A/C2 (rear) of the coach. Then select the cooling functions desired with the function switches. The normal setting of these switches will be **AUTO COOL**. Once the system cools the coach to the set point, the temperature can be adjusted to suit your individual preference.

### HEATING

To operate the furnace/s, first select a desired temperature. A good starting point is about mid-point of the range. Then select the **HEAT** setting on the function switch. Once the system heats the coach to the set point, the temperature can be adjusted to suit your individual preference.

### FUNCTION SWITCH SETTINGS

The following describes the intended purpose for each of the Function Switch settings. Four of the settings are used to manually control the air conditioner functions. The **Auto Cool** setting is the most useful setting for cooling as it provides *automatic* control of both the fan speed and the temperature.

**HEAT** - In HEAT, the furnace/s will operate to maintain the set temperature in the coach.

**OFF** - The air conditioners and furnace/s are off. To minimize unnecessary battery drain, the function selector should be left in this position when neither heat, nor cooling are desired.

**LOW FAN** - LOW FAN operates the fan only, on low speed. The thermostat is *NOT* operative in this mode, load shed is active.

**HIGH FAN** - HIGH FAN operates the fan only on high speed. The thermostat is *NOT* operative in this mode, load shed is active.

**LOW COOL** - LOW COOL operates the fan continuously on low speed, the compressor is controlled by the thermostat. Load shed is active.

**HIGH COOL** - HIGH COOL operates the fan continuously on high speed, the compressor is controlled by the thermostat. Load shed is active.

**AUTO COOL** - AUTO COOL provides automatic control of both the fan speed and temperature. The speed of the fan and temperature are controlled by the thermostat setting. When the coach temperature is higher than the thermostat setting, the compressor will run and the fan will operate at high speed to provide maximum cooling. As the temperature cools to the set point, the fan will switch to low speed and the compressor will continue to run to provide cooling. Once the set temperature is reached, the fan will continue to operate at low speed and the compressor will go off. If the temperature in the coach drops below the set point, as would happen during a cool evening, the fan will stop.

As the temperature rises again, the fan will come on at low speed. If the temperature rises further, the compressor will come on to provide cooling. As the temperature rises still further, the fan will switch to high speed to provide maximum cooling.

### AUTOMATIC SHEDDING

The Climate Control System allows both air conditioners to operate at the same time, as long as there is enough current available. In any cooling setting of the FUNCTION switch, the current drawn by the electrical loads in the coach is constantly monitored. When there isn't enough current available to operate both units, the system will "shed" the air conditioners as necessary to prevent the circuit breakers from opening.

When both air conditioners are operating, they draw approximately 26 Amps. Since there is only 30 Amps available from the shore power outlet, there is 4 Amps left to operate all the other electrical loads, including the refrigerator and converter.

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### AUTOMATIC SHEDDING *(continued)*

If other appliances are turned on, the total current draw could exceed 30 Amps. This would normally cause the circuit breaker to open.

The Climate Control System however, monitors the total current drawn by all the loads in the coach. If the total draw exceeds 30 Amps, it will begin to turn off the air conditioners to keep the total draw to less than 30 Amps.

The turn off sequence will be as follows:

1. Rear (A/C2) compressor (if running)
2. Front (A/C1) compressor (if running)
3. Rear (A/C2) Fan
4. Front (A/C1) Fan

When this happens, the **SHED** indicator/s on the thermostat will be lit continuously to indicate the overload. When the total current draw drops below the point that will allow the air conditioners to return to normal operation, the indicator will go out and they will be brought back on in the reverse sequence.

When a compressor is shut off, it will always be held off for at least two minutes, to prevent it from starting into a high load. If there is enough current to operate an air conditioner, but it hasn't been off for the required two minutes, the **SHED** indicator will blink. When the two minutes has passed, the compressor will come back on and the indicator will be out.

If the current remains above the level that would allow operation of both air conditioners for more than a half hour, the system will switch compressors and operate the other one until it's thermostat is satisfied, or a half hour passes. If either air conditioner is turned off, the system will continue to work by shedding the remaining air conditioner.

### TYPICAL OPERATION

In actual use, all this automatic "work" will be hardly noticeable to you. It's benefit is that you will always have the *maximum* amount of cooling and comfort available to you without tripping circuit breakers.

As an example of how the system works, let's say that the air conditioners are running; you decide to make coffee in the electric coffee pot and toast in the toaster at the same time. The total current will exceed 30 Amps. The system senses this current and begins *shedding* the air conditioner compressors. It will first turn off the rear air (A/C2) conditioner compressor. If it was not running, then the front (A/C1) compressor will be turned off.

When either the coffee maker or the toaster go off, which drops the current to a level that will allow the air conditioner to come back on, and at least two minutes have past since the air was turned off, it will be turned back on again. This process goes on continuously.

### GENERATOR OPERATION

Operation of the system from the generator is similar to operating from shore power. The controls operate in the same manner. However, the generator is capable of operating both air conditioners as well as a few appliances at the same time. Therefore, when the generator is running, the front (A/C1) air conditioner is operated directly from the generator and it will not be shed. The rear (A/C2) air conditioner will still be controlled as if it were operating from shore power.

The generator is sized to operate both air conditioners, but it will not start them at the same time. To prevent this from happening, there are two built-in functions. First, when the power from the generator is first applied to the system, the power is delayed to the front (A/C1) air conditioner by about 30 seconds to let the generator warm up. After the first unit is turned on, there is approximately another minute delay before the rear (A/C2) unit is turned on. This lets the generator get the front (A/C1) unit running normally before trying to start the rear (A/C2) unit.

To prevent the two compressors from ever starting at the same time, the system always provides at least ten seconds between compressor starts, regardless of how it happens.

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### Symptom

### Possible Cause

"ON" indicator won't come on

Check Function Switch setting. Should be set at an air conditioner or heat setting.

Check 5 Amp, 12 volt fuse in distribution panel.

"ON" indicator on, air conditioner not cooling

Check Function Switch setting. Should be set at a cooling setting (Low Cool, High Cool, Auto Cool)

Check Temperature setting. Move thermostat down for more cooling.

Check 120 volt circuit breakers in distribution panel. Reset if necessary.

"ON" indicator on, "SHED" indicator on, air conditioners not cooling.

Current draw too high. Turn off unnecessary appliances to reduce current draw.

Air conditioners not off long enough. Wait two minutes.

"ON" indicator on, "SHED" indicator blinking, air conditioner not cooling.

Be sure coach is plugged in to "live" outlet.

### TEST SWITCH

The system is equipped with a **TEST** switch that helps locate system problems and can be used to manually operate an air conditioner when that occurs. This switch is located on the control module between the connectors. The control module is typically located under the refrigerator, behind the distribution panel.

The **TEST** switch is a three-position slide switch located on the center, front edge of the control box. It is marked **TEST** on the box label. The normal setting of this switch is in the center position.

Moving this switch to the left will operate (A/C1) the front air conditioner continuously, in the **HIGH COOL** mode. Moving the switch to the right, will operate (A/C2) the rear air conditioner continuously in the **HIGH COOL** mode. If the air conditioners **do not** operate with this switch, the problem is in the air conditioner, or power being supplied to it.

This switch can be used to manually operate the air conditioners in the event of a system failure.

### SHORT INDICATOR

The Short Indicator is an LED located on the edge of the control module. If the system is not operating properly and this indicator is ON, there is a short in the wiring to the air conditioners. When this indicator is ON, neither air conditioner will operate. The problem can be localized by unplugging the four-pin connectors feeding each air conditioner. Unplugging one, or the other should make the indicator go out. The other air conditioner should then operate normally. Refer the shorted wiring problem to your dealer to locate and repair the short.

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