Instructions
Freedom
F100 Series

® ▲ PSG Controls, Inc.

FOR RESIDENTIAL USE ONLY

FEATURES

- Large easy to read backlit display
- Manufactured by the makers of ACCUSTAT® controls
- Flexible applications
- Made in the USA
- Permanent memory retention
- Battery backup
- Manual or Automatic changeover
- ServiceWatch® filter, cooling, heating
- Selectable separate cycle rate and differential in heating and cooling
- Programmable password protection
- 2 year warranty
- Programmable economy setpoints, see page 7

This device should be installed by a qualified technician.

1. **CAUTION:** Make sure that power has been disconnected.
2. All wiring must comply with applicable codes and ordinances.
3. A thorough check-out of the system should be made after installation is complete.
4. If retrofitting old thermostat, remove old thermostat from wall, carefully noting the wire connections on the old unit. Record wire color and terminal legends in spaces provided.

Conventional	Thermostat terminals	Heat Pump	Cable wire color
Cool	Y1	Compressor	_____
Not Used	B/O	Rev Valve	_____
Fan	G	Fan	_____
Common (optional)	C	Common	_____
24VAC Cooling	RC	24VAC	_____
24VAC Heating	RH	24VAC	_____
Heat	W1	Aux Heat	_____

5. Using the mounting screws provided, mount the thermostat base to the wall or junction box.
6. Connect wire cables according to your wire color chart.
7. Push excess cable wires back into the wall. If there is a draft, pack the opening with non-combustible material.
8. Place batteries into battery cradle.
9. Position cover over base and press firmly to close.
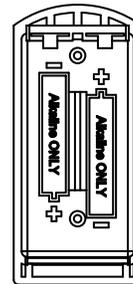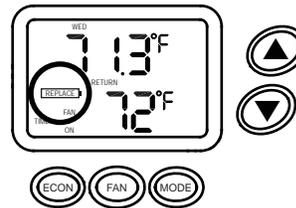
Installing or Replacing Batteries

Slotted Tab

To install or remove batteries squeeze slotted tabs on top and bottom of thermostat. Pull cover straight off of base. To replace cover, line up the sides of the cover and the base, and firmly press cover onto base.

NOTE: Even when hardwired, the thermostat will NOT work properly without the batteries installed.

Make sure batteries are placed properly into battery cradle.

Battery Replacement

The batteries need to be replaced immediately when the **REPLACE** battery icon appears on the display. The batteries should be replaced once a year, even if the replace battery icon does not appear. The programmed settings are saved even with the batteries removed.

NOTE:
The backlight cannot operate continuously, the batteries will drain quickly and the backlight will burn out.

This thermostat can be configured prior to attaching to the wall. Just install the batteries into the battery cradle and program the configurations and the advanced settings.

Cleaning:
This thermostat has a flame retardant ABS enclosure which is easily cleaned with a dry cloth or vacuum brush. Occasional soiling may be cleaned with a soft cloth lightly dampened with water and/or mild cleaning solution. IN NO CASE should this device be directly sprayed with or exposed to free flowing liquids, including water, which could penetrate its interior.

1
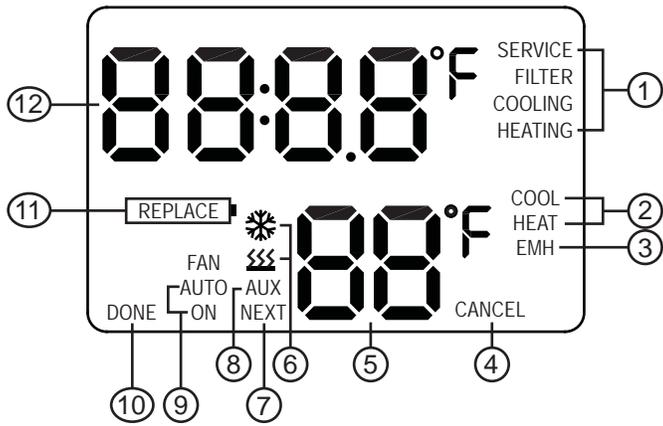
(1) – Indicates when service is needed
Filter changed or, heating or cooling systems maintained
(Does not indicate an emergency)

(2) – Indicates current operational mode

(3) – Indicates emergency heat active

(4) – Cancels programming. Use MODE button

(5) – Indicates setpoint

(6) – Indicates heating or cooling active, flashes when pending

(7) – Used in programming (FAN button)

(8) – Indicates auxiliary heat active

(9) – Indicates fan function, auto on/off or constant on

(10) – Used in programming (ECON button)

(11) – Indicates when batteries need replacement

(12) – Shows operating mode and room temperature
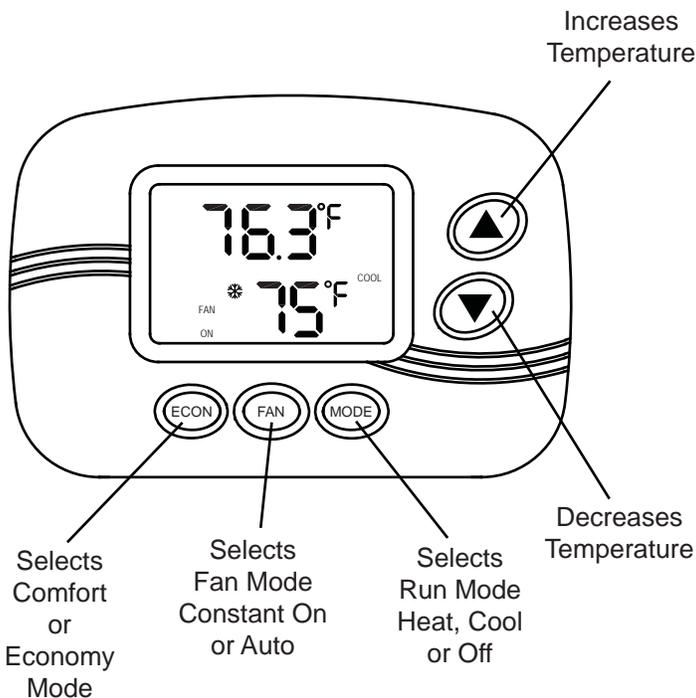
Increases
Temperature

Decreases
Temperature

Selects
Comfort
or
Economy
Mode

Selects
Fan Mode
Constant On
or Auto

Selects
Run Mode
Heat, Cool
or Off

ServiceWatch® monitors the run time hours. It is a program designed to remind the homeowner to schedule service for the HVAC equipment. The maintenance period for filter replacement and heating or cooling service is programmable based on the respective system run times. The control will monitor the run times, and when the programmed settings are reached the display will show **SERVICE** and either **FILTER, COOLING** or **HEATING.**

THIS IS NOT AN EMERGENCY, just a reminder.

Example: When the display shows SERVICE and HEATING it is time to schedule an appointment to have the heating system maintained.
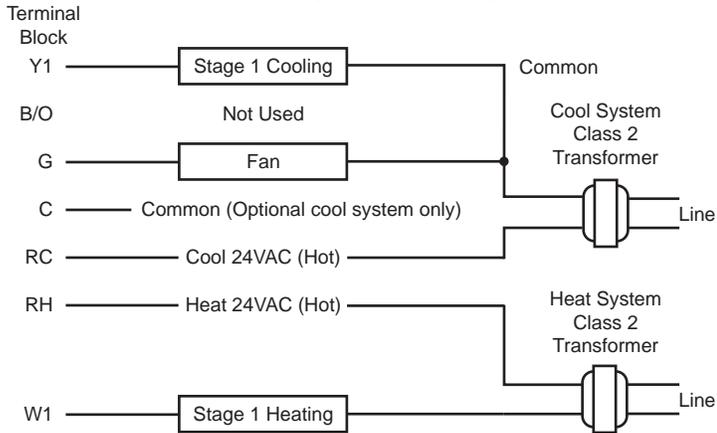
IMPORTANT NOTES - PLEASE READ

1. Active run modes are displayed as follows:

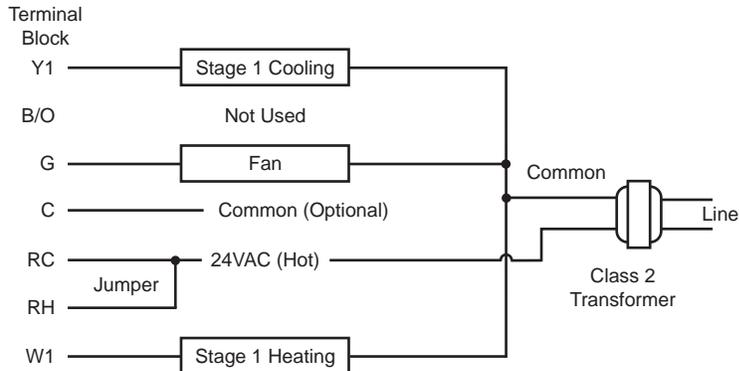|	
AUtO Auto changeover mode is active	**COOL** Cooling mode is active
HEAt Heating mode is active	**OFF** Thermostat is in off mode

2. If the thermostat is in the OFF mode and the temperature drops below 38°F the freeze protection feature automatically activates the heating system.
ICE will appear on the display.

3. The thermostat can be in the OFF mode but the fan can be constantly active.
OFF and FAN ON will appear on the display.

4. If the auto changeover option (Auto) has been selected,the display will alternate between Auto and room temperature. Setpoint will remain blank when room temperature is between heat and cool setpoints; the system is idle. When either heating or cooling become active the setpoint will be visible.

5. To adjust the setpoint when AUTO mode is active, press the up or down arrow button. The last operating mode (heat or cool) will be recalled or the setpoint closest to room temperature and AUTO will appear. To adjust either heating or cooling setpoints, press the MODE button. Press the up or down arrow button in COOL or HEAT to adjust the setpoint up or down. The heat and cool settings will automatically adjust to a four degree separation. This four degree separation is fixed and cannot be changed. When AUTO no longer appears on the display, pressing the mode button will deactivate AUTO mode.

Conventional System Wiring
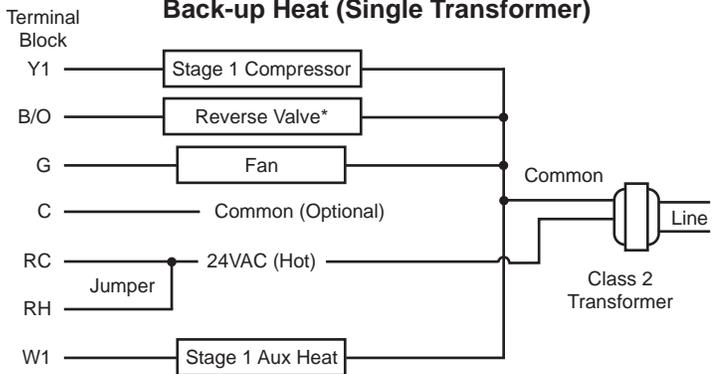
Conventional System (Split System)

Terminal Block

Y1 — Stage 1 Cooling — Common

B/O — Not Used

G — Fan

C — Common (Optional cool system only)

RC — Cool 24VAC (Hot)

Cool System Class 2 Transformer — Line

RH — Heat 24VAC (Hot)

Heat System Class 2 Transformer

W1 — Stage 1 Heating — Line

Conventional System (Single Transformer)

Terminal Block

Y1 — Stage 1 Cooling

B/O — Not Used

G — Fan — Common

C — Common (Optional)

RC — 24VAC (Hot)

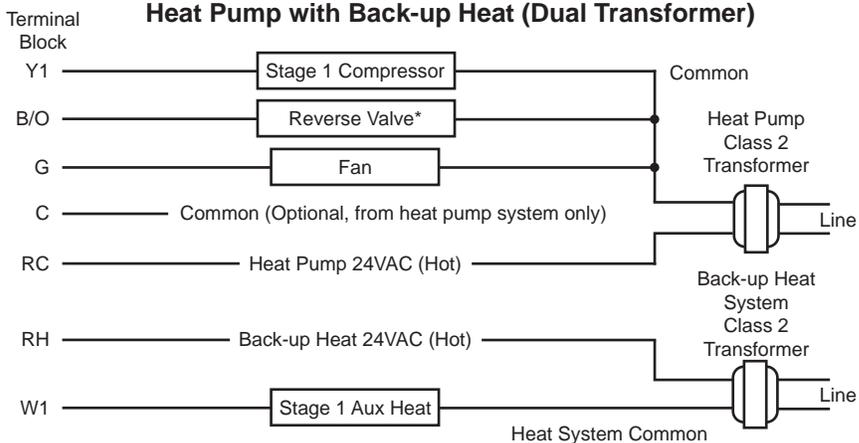RH — Jumper

Class 2 Transformer — Line

W1 — Stage 1 Heating

Measured voltage across all terminals MUST NOT exceed 24VAC.

Heat Pump Wiring

Heat Pump with Conventional Back-up Heat (Single Transformer)

Terminal Block

Y1 — Stage 1 Compressor

B/O — Reverse Valve*

G — Fan — Common

C — Common (Optional)

RC — 24VAC (Hot)

RH — Jumper

Class 2 Transformer — Line

W1 — Stage 1 Aux Heat

Heat Pump with Back-up Heat (Dual Transformer)

Terminal Block

Y1 — Stage 1 Compressor — Common

B/O — Reverse Valve*

Heat Pump Class 2 Transformer

G — Fan

C — Common (Optional, from heat pump system only) — Line

RC — Heat Pump 24VAC (Hot)

Back-up Heat System Class 2 Transformer

RH — Back-up Heat 24VAC (Hot)

W1 — Stage 1 Aux Heat — Line

Heat System Common

IMPORTANT:
For this configuration do not use a jumper between RC and RH.

*Reverse Valve B = energize on heat   O = energize on cool

Configuring Instructions

Preprogrammed Configurations:
The parameters listed below are the ONLY ones available in the Quick Start-up Mode.
If other parameters are needed, continue to press the up or down arrow button until
Othr Ad appears on the display.
Press the ECON button and refer to the instructions on the next page.

System	H1	A1	A1H1	HP12
Reverse Valve				Type O (cool)
Minimum Off Time	3	3	3	3
Aux. Temp. Offset				4°
Fan in Heat	Off (fuel)		Off (fuel)	On (electric)
Auto Changeover	Off	Off	Off	Off
Differential	0.4°	0.4°	0.4° cool/0.4° heat	0.4° cool/0.4° heat
Cycle Rate	5/hr	6/hr	6/hr cool; 5/hr heat	6/hr cool; 5/hr heat
ServiceWatch®**	Off	Off	Off	Off
Password Protection	Off	Off	Off	Off

This thermostat can be configured prior to attaching to the wall. Just install the batteries into the battery cradle and program the configurations and the advanced settings.

EASY CONFIGURE (EC) - QUICK START-UPS

There are five available options in the easy configure mode. Four of the options are preprogrammed for usual installations:

        H1 - heating only
        A1 - cooling only
        A1H1 - single cool/single heat
        HP12 - heat pump single cool/2 heat
        Othr Ad - see below

The last option Othr Ad is for any other installation or to change any parameter setting not listed above.

ServiceWatch® monitors the run time hours. It is a program designed to remind the homeowner to schedule service for the HVAC equipment. The maintenance period for filter replacement and heating or cooling service is programmable based on the respective system run times. The control will monitor the run times, and when the programmed settings are reached the display will show **SERVICE and either **FILTER, COOLING** or **HEATING.**

        THIS IS NOT AN EMERGENCY, just a reminder.

How to Use Easy Configure

Please read the instructions prior to configuring the thermostat to operate with the equipment.

STEP 1: **Enter configuration mode**

PRESS and hold the ECON and MODE buttons until **CFg** appears on the display.

PRESS the FAN button to begin.

A1H1 and EC will appear on the display.

STEP 2: **Selecting equipment:**

PRESS the up or down arrow button to select the proper system.
    H1 - heat only
    A1 - cool only
    A1H1 - 1 cool/1 heat
    HP12 - heat pump 1 cool/ 2 heat
    Othr Ad

STEP 3: **Save and Exit**

PRESS the ECON button to complete the entry.

The options above have been preprogrammed.

If any change in these parameters is needed select Othr Ad.

PRESS the ECON button and refer to the instructions on page 5.

Configuring "Othr Ad" to Operate the Equipment

Please read the instructions prior to configuring the thermostat to operate the equipment.

It is also advised that the details are noted before beginning, such as the type of equipment, time delays, temperature offsets, etc.

NOTE: The configuring mode has a time limit of 10 minutes. The timer is automatically activated when the configuring is started. At the end of the 10 minutes the thermostat will resume normal operation. The configuring parameters will remain unchanged unless the configuring mode was completed in the ▢ End ▢ mode.

STEP 2: Selecting equipment

PRESS the FAN button to enter the equipment mode.

PRESS the up or down arrow buttons to select the proper equipment.

- **HP12 -** Single stage heat pump with auxiliary heat
- **HP11 -** Single stage heat pump, no auxiliary heat
- **A1H0 -** Single stage cool, single stage heat, conventional cooling, normally open heat valve
- **A1H1 -** Single stage cool, single stage heat, conventional and normally closed valves
- **A1 -** Cool only, single stage compressor
- **H0 -** Heat only, single stage, normally open heat valve
- **H1 -** Heat only, single stage, conventional and normally closed valves

PRESS the FAN button to enter the equipment type.

STEP 3: Selecting equipment options

THE FOLLOWING OPTIONS APPEAR DEPENDING ON THE EQUIPMENT SELECTED

■ **tyPE -** Selects the reverse valve type "O" or "B"
PRESS the up or down arrow button to select.
PRESS the FAN button to continue.

■ **toFF -** Selects the minimum number of minutes between the equipment cycling off and back on again
Selectable range: 01 to 07 minutes, in 1 minute increments
PRESS the up or down arrow button to select.
PRESS the FAN button to continue.

■ **h2SP -** Selects the temperature offset from setpoint for second stage heating or auxiliary heat to turn on
Selectable range: 02 to 10 degrees, in 2 degree increments
PRESS the up or down arrow button to select.
PRESS the FAN button to continue.

■ **ELEC/FUEL -** Selects when the fan cycles
  - **FUEL -** Fan cycles only with cooling calls
    Heating system controls fan during heating calls
    Filter hours will still be logged during heating calls
  - **ELEC -** Fan cycles with both heating and cooling calls
PRESS the up or down arrow button to select.
PRESS the FAN button to continue.

■ **tESt -** electronically tests equipment selected
PRESS the FAN button to continue and to test each function defined below.
    Functions will appear based on equipment type selected.
NOTE: Wait for equipment to respond before continuing.
  ▲ **F1 -** fan turns on
  ▲ **C1 -** 1st stage cooling and fan turn on
  ▲ **H1 -** 1st stage heating and fan turn on
  ▲ **H1 AUX -** 1st stage auxiliary heating and fan turn on
  ▲ **tESt -** All outputs turn off

PRESS the ECON button to continue.

STEP 4: Selecting special options

▢ **EqUP** ▢ **will appear on the display.**

PRESS the up or down arrow button to continue.

▢ **Auto** ▢ **-** Selects auto changeover either on or off
PRESS the FAN button to select.
PRESS the up or down arrow button to continue.

▢ **dIFF** ▢ **-** Selects cooling and heating differential settings
PRESS the FAN button to continue.
  - **cd -** Selects cooling differential
    Selectable range: 0.0°F to 2.0°F
    Example - 1.0°F will represent ± 0.5°F
PRESS the up or down arrow button to select.
PRESS the FAN button to continue.
  - **hd -** Selects heating differential
    Selectable range: 0.0°F to 2.0°F
    Example - 1.0°F will represent ± 0.5°F
PRESS the up or down arrow button to select.
PRESS the FAN button to continue.

PRESS the up or down arrow button to continue.

▢ **CyCL** ▢ **-** Selects the heating and cooling cycle rates
PRESS the FAN button to continue.
  - **cr with HEATING and COOLING -** Selects cycle rate for heat pump compressor or for conventional systems, cooling only
    Selectable range: 2 to 12 cycles per hour
PRESS the up or down arrow button to select.
PRESS the FAN button to continue.
  - **cr with HEATING and AUX -** Selects cycle rate for auxiliary heat or for conventional systems, heating only
    Selectable range: 2 to 12 cycles per hour
PRESS the up or down arrow button to select.
PRESS the FAN button to continue.

PRESS the up or down arrow button to continue.

SEr **-** Selects ServiceWatch® on or off
PRESS the MODE button to turn on or off.
PRESS the FAN button to continue.
  ● **SH** with SERVICE FILTER - Selects when, in hours, the filter
       needs to be changed
     Selectable Range: 100 to 9900 hours, in 100 hour increments
     Suggested Hours: 1000
PRESS the up or down arrow button to select.
PRESS the FAN button to continue.
  ● **AH** with SERVICE FILTER - indicates the number of hours
       accumulated by the ServiceWatch® monitor
PRESS the MODE button to clear accumulated hours.
PRESS the FAN button to continue.
  ● **SH** with SERVICE COOLING - Selects when, in hours, the
       cooling system needs to be checked
     Selectable Range: 0 to 9900 hours, in 100 hour increments
     Suggested Hours: 2000
PRESS the up or down arrow button to select.
PRESS the FAN button to continue.
  ● **AH** with SERVICE COOLING - indicates the number of hours
       accumulated by the ServiceWatch® monitor
PRESS the MODE button to clear accumulated hours.
PRESS the FAN button to continue.
  ● **SH** with SERVICE HEATING - Selects when, in hours, the
       heating system needs to be checked
     Selectable Range: 0 to 9900 hours, in 100 hour increments
     Suggested Hours: 2000
PRESS the up or down arrow button to select.
PRESS the FAN button to continue.
  ● **AH** with SERVICE HEATING - indicates the number of hours
       accumulated by the ServiceWatch® monitor
PRESS the MODE button to clear accumulated hours.
PRESS the FAN button to continue.

PRESS the up or down arrow button to continue.

SAFE **-** Selects password protection on or off
PRESS the FAN button to continue.
PRESS the up or down arrow button to turn on or off (yES or no).
PRESS the FAN button to continue.
PRESS the up or down arrow button to select the proper d1 digit.
PRESS the FAN button to proceed to the d2 digit. Continue until
     all four digits are correct.
PRESS the ECON button to continue.

PRESS the ECON button again to continue.

STEP 5:   Save parameters and Exit
PRESS the up or down arrow button to **END.**
PRESS the ECON button to save parameters and exit.

REMINDER - This step MUST be completed to save parameters.

How to Program Advanced Settings

How to Program Advanced Settings

Please read the instructions prior to beginning to program.

NOTE: The advanced settings mode has a time limit of 10 minutes. The timer is automatically activated when the programming is started. At the end of the 10 minutes the thermostat will resume normal operation. The advanced settings parameters will remain unchanged unless the advanced settings mode was completed in the **End** mode.

STEP 1: Enter advanced settings mode

PRESS and hold the ECON and FAN buttons until **PSEt** appears on the display.

PRESS the FAN button to begin.

If the advanced settings mode has been password protected (safe mode), the display will show (4) 0's and d1. The proper password, (4) digits, is needed.
PRESS the up or down arrow button to select the proper d1 digit.
PRESS the FAN button to proceed to the d2 digit. Continue until all (4) digits are correct.
PRESS the ECON button to continue.
unit will appear on the display.

If the advanced settings mode has not been password protected,
PRESS the FAN button and **unit** will appear on the display.

STEP 2: Selecting advanced options

unit - Selects the unit of measure (°F or °C)
PRESS the up or down arrow button to select.
PRESS the FAN button to continue.

HL - Selects the heating limit temperature
Selectable range: 40°F to 90°F
PRESS the up or down arrow button to select.
PRESS the FAN button to continue.

CL - Selects the cooling limit temperature
Selectable range: 40°F to 90°F
PRESS the up or down arrow button to select.
PRESS the FAN button to continue.

ECONOMY SETPOINTS

EH - Selects the economy heating setpoint
Selectable range: 40°F to 68°F
PRESS the up or down arrow button to select.
PRESS the FAN button to continue.

EC - Selects the economy cooling setpoint
Selectable range: 72°F to 90°F
PRESS the up or down arrow button to select.
PRESS the FAN button to continue.

SAFE - Selects the level of password protection desired
Selectable parameters:
- **oFF** - No password protection
- **LSEt** - Advanced settings protected
- **LALL** - All modes protected (See note below)

PRESS the up or down arrow button to select.

If **oFF** is selected -
PRESS the ECON button to continue.
PRESS the FAN button again to continue to Step 3.

If **LSEt** or **LALL** is selected -
PRESS the FAN button to continue.
PRESS the up or down arrow button to select the proper d1 digit.
PRESS the FAN button to proceed to the d2 digit. Continue until all (4) digits are correct.
PRESS the ECON button to continue.
PRESS the ECON button again to continue.
PRESS the FAN button again to continue to Step 3.

NOTE: LALL locks all parameters, buttons and modes.
The temperature cannot be raised or lowered; the time cannot be changed; auto/constant fan cannot be changed; etc.
When any of the buttons are pressed the password protection display appears (4 0's and d1). Entering the password enables access to the buttons for 5 minutes. At that time temperatures can be changed, auto/constant fan can be changed and access to the programming modes are available. Password protection can also be disabled. Changes are automatically saved. If the 5 minutes lapses then the password must be entered again.

STEP 3: Save parameters and Exit

END will appear on the display.
PRESS the ECON button to save parameters and exit.

REMINDER - This step MUST be completed to save parameters.

PSG Controls, Inc.
LIMITED WARRANTY POLICY

PSG Controls, Inc. (Hereinafter referred to as "PSG") warrants the following:

Only cataloged products sold to distributors are warranted to the original purchaser, to conform with specifications furnished or approved by PSG, and to be free from defects in material and workmanship, for a period of two (2) years from the date of purchase, unless specified in writing for a different period.

Any PSG product that proves defective within the above described warranty period will be repaired or replaced (at PSG's option) free of any charge if returned to the PSG factory at 1225 Tunnel Road, Perkasie, PA. 18944 with transportation charges prepaid. Prior to returning this product to PSG, the purchaser shall give PSG notice in writing stating how this product fails to fulfill this warranty. No product shall be accepted for repair or replacement without a required written notice and without prior written authorization and shipping instructions having been received by the purchaser from PSG. Only PSG's factory is authorized to perform services under this warranty.

This warranty does not extend to any product that has been subjected to misuse, abuse, neglect, accidents, alterations, improper installation or use in violation of the printed instructions furnished by PSG. This warranty neither applies to batteries nor deterioration of, nor damage to the product caused by the use of faulty batteries. Final determination as to whether any product is actually defective rests solely with PSG.

This warranty is expressly in lieu of all other agreements and warranties, expressed, implied, or statutory and PSG has no other obligations or liabilities in connection with this product. In no event shall PSG's obligation or liability hereunder exceed the purchase price of this product. PSG SHALL NOT IN ANY EVENT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES. This warranty gives you specific legal rights, and you also have other rights which vary from state to state. Some states do not allow the exclusion or limitation of incidental or consequential damages, or implied warranties, so the above limitations or exclusion may not apply to you.

Toll free technical assistance is available
via our technical hotline: 1-800-523-2558
Mon-Fri, 8:00 A.M. to 4:30 P.M. Eastern Standard Time

® **PSG Controls, Inc.**

The Innovators of
ACCUSTAT ®

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