C1206-A Thermostat manual by Heatec

This manual is part of the product and should be kept near the instrument for easy and quick reference.
The instrument shall not be used for purposes different from those described hereunder. It cannot be used as a safety device.
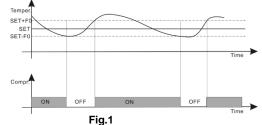Check the application limits before proceeding.

GENERAL DESCRIPTION

Model C1206-A format, is a general purpose microprocessor based controllers suitable for applications on medium or normal temperature refrigerating units and heating control. It has 1 NTC probe input for temperature control.

CONTROLLING LOADS

Temperature control – example for compressor control in cooling：(not applicable to typical Heatec heating applications)

F7 = 1 :When the real temperature of sensor is higher than the total value of the control temperature and temperature difference (F0), the compressor time delay (F4) starts, the compressor starts and KI is on. When it is lower than the value that the control temperature minus the temperature difference (F0), the compressor stops and KI is off.

Fig.1

F7= 2 :When it is lower than the value that the control temperature minus the temperature difference (F0) , the time delay (F4) starts,k1 is on. When the real temperature of sensor is higher than the total value of the control temperature and temperature difference (F0),   KI is off.

F7= 3 : After working for a whole defrosting cycle (F5), it automatically enters the defrosting state, the compressor stops, and the cooling indicator goes out. And when the defrosting time reaches F6, the compressor starts.

Special working modes, including error conditions:

When the sensor temperature surpasses the highest working temperature (60 °C) of the sensor shows "HH2", or when the sensor temperature is below the lowest working temperature (-40 °C) of the sensor shows "LL2", it enters the fixed time working mode. The compressor operates for 45 minutes and stops for 15 minutes.

When the temperature is higher than the highest working temperature point (**F2**) or lower than the lowest working temperature point(**F1**) and the time is over the delay time of HACCP(**F9**).The alarm will show HH1 or LL1.

The alarm display "LL1" "HH1" "LL2" "HH2" then it will have alarm output

▲ (**UP)**: Push the ▲ key 3 second, the display will show the last maximum alarm temperature.

▼ (**DOWN**): Push the ▼ key 3 second, the display will show the last minimum alarm temperature.

FRONT PANEL, and SETTING

LED	MODE	FUNCTION
❄	ON	Load switch on
❄	Flash	ON delay running
🔔	ON	Alarm output
S	ON	Super freeze mode is on
((!))	ON	Setup

SET: To display target set point; in programming mode it selects a parameter or confirm an operation.

By holding it pressed for 3s the fast freezing is started.

▲ (**UP)**: Push the ▲ key 3 second, the display will show the last maximum alarm temperature.
in programming mode it browses the parameter codes or increases the displayed value.

▼ (**DOWN**): Push the ▼ key 3 second, the display will show the last minimum alarm temperature.
in programming mode it browses the parameter codes or decreases the displayed value.

S   Key for Super freeze, The super freeze function will expire automatically after 50 hour

SET + ▼   To lock & unlock the keyboard**.**

SET   +▲   To enter in programming mode.

S :   Press **S** for over 3 seconds, Turns ON or OFF the super freeze mode.

S +▲ :   Press **S +▲** for over 3 seconds, to mandatorily turn on the light or close the function of mandatorily turning on the light.

▲+▼ :   Press **▲+▼** for over 3 seconds, Open or close controller.

HOW TO SEE AND MODIFY THE SET POINT

1. Push and immediately release the **SET** key 3 second: the display will show the Set point value;
2. The SET LED start lighting;
3. Use ▲ or ▼ to change its value.
4. Return the Set key push the **SET** or n arrows within 10s.
5. To memorize the new set point value push the **SET** key again.

HOW TO LOCK THE KEYBOARD

1. Keep the **SET** and ▼ keys pressed together for more than 3 s.
2. TO LOCK OR UNLOCK THE KEYBOARD
Keep the **SET** and ▼ keys pressed together for more than 3s.

HOW TO TURN ON THE LIGHT PERMANENTLY

    1. Keep the S and ▲ keys pressed together for more than 3 s.

    2. To mandatorily turn on the light or close the function of mandatorily turning on the light.

HOW TO ON OR OFF THE CONTROLLER

    1. Keep the ▲ and ▼ keys pressed together for more than 3 s.

    2. TO on or off the controller

    Keep the ▲ and ▼ keys pressed together for more than 3s.

HOW TO CHANGE THE PARAMETER VALUE

    1. Push the **SET+▲** key enter the Programming mode.

    2. Select the required parameter with ▲ or ▼.

    3. Press the **SET** key to display its value (and **SET** LED starts lighting).

    4. Use ▲ or ▼ to change its value.

    5. Press **SET** key to store the new value and move to the following parameter.

    6. Select End or wait 10s without pressing a key.

PARAMETER LIST   **(Heatec version pre-programmed for heating – settings in red)**

Mark：**F0**—difference between the set temperature 1 and the control point temperature. The range: 0~15℃（0-27F），and the default is 2℃（3.6F）1.5 C

Mark：**F1**—the lowest working control temperature，-40-0C（-40-139.9F）and the default is -35℃（-31F）（the lowest working temperature point 2.0 C

Mark：**F2**—the highest working control temperature，0.1-+60℃（-39.9-140F）and the default is 60℃（the highest working temperature point）30 C

Mark：**F3**—the calibration of RT1 temperature　and the range is -5℃-5℃（-9~9F）. The default is 0.

Mark：**F4**　after the relay gets the power, it delays the time of both the opening and closing. The range: 0~+9minutes，and the default is 2 minutes. 0

Mark：**F5**—defrosting intervals. The range: 0-24hours. The default is 6 hours. 1

Mark：**F6**—defrosting duration The range：1-60minutes. The default is 20 minutes. 1

Mark：**F7**—Output mode: cooling control =1 , heating control =2, defrosting control =3, The default is 1.　2 (very important)

Mark：**F8**—C/F change F8=1 unit is C　F8=2 unit is F　The default is 1.　1

Mark：**F9**—HACCP Delay time. The range: 0-200 minutes. The default is 20 minutes. 0

Mark：**FA**—The time of Super freeze. The range: 0-99 hours. The default is 0 . 0

        *　If FA=0, disable the super freeze mode.

Mark：**FB**---NOT USED.

Mark：**FC**—select"1",defaults. select "2" Parameter is unchanged. 2

Mark：**End** exit the program parameter setting

    The customers can make relative adjustments of the above parameters according to their demands.

INSTALLATION AND MOUNTING

    Instruments shall be mounted on vertical panel, in a 71x29 mm hole, and fixed using the special bracket supplied. To obtain an IP54 protection grade use the front panel rubber gasket (mod. RG-C) as shown in fig.3.

    The temperature range allowed for correct operation is 0–60 °C. Avoid places subject to strong vibrations, corrosive gases, excessive dirt or humidity. The same recommendations apply to probes. Let air circulate by the cooling holes.
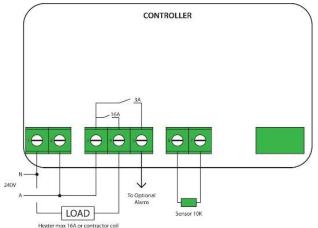
SAFETY PRECAUTIONS

    1. Check the supply voltage is correct before connecting the instrument.

    2. Do not expose to water or moisture: use the controller only within the operating limits avoiding sudden temperature changes with high atmospheric humidity to prevent formation of condensation

    3. Warning: disconnect all electrical connections before any kind of maintenance.

    4. Fit the probe where it is not accessible by the End User. The instrument must not be opened.

    5. Consider the maximum current which can be applied to each relay (see Technical Data).

    6. Ensure that the wires for probes, loads and the power supply are separated and far enough from each other, without crossing or intertwining.

    7. In case of applications in industrial environments, the use of mains filters parallel with inductive loads could be useful.

Technical Data：

Protective classification：　　　Front，IP54

Working Condition：　　　　　　-10℃～55℃，RH＜85％，no condensing

Storage Condition：　　　　-10℃～70℃，RH＜85％，no condensing

Measure Range：　　　　　-40℃～60℃/-40-140F

Resolution：　　　　　　0.1 ℃/F

Power Supply：　　　　　220VAC,±10％,50~60Hz

Power Consumption：　　　　no more than 2W

Shockproof：　　　　qualified to the demands of I and II instruments

Heat Insulation and Fire Resistance：　　　D

Relay Connection：　　K1, 250VAC，16A （Load）

                    K2, 250VAC，3A （Alarm）

Note: The sensor resistance is 10 k ohm at 25 DegC and 30 k ohm at 0 DegC