STC-1000 Operation Instruction

Main function
Switch the modes between cool and heat. Control temperature by setting the temperature setting value and the difference value; Temperature calibration; Refrigerating control output delay protection; Alarm when temperature exceeds temperature limit or when sensor error.

Specification and size
- Front panel size: 75(L)×34.5(W)×45.5(H)mm
- Product size: 116(L)×28.5(W)×135(H)mm
- Sensor length: 2m (include the probe)
- Mounting size: 71(L)×29(W)×45(H)mm

Technical parameters
- Temperature measuring range: -20°C ~ 80°C
- Accuracy: ±1°C at 0°C, ±0.5°C at 30°C
- Power supply: 220VAC 50Hz/60Hz
- Power consumption: <30W
- Sensor: NTC sensor (1PC)
- Relay contact capacity: Cool:10A/250VAC; Heat:10A/250VAC
- Ambient temperature: 0°C ~ 60°C
- Storage temperature: -20°C ~ 60°C
- Relative humidity: 20 ~ 85% (No condensation)

Panel instruction
Display instruction: LCD display, +/ – digit, temperature value, status indicator light
Key instruction: “A” key: the key to select “A” key: Up key; “S” key: Down key; “Y” key: The key to turn on and off the power

Indicator light status instruction

<table>
<thead>
<tr>
<th>Indicator light</th>
<th>Function</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cool indicator light</td>
<td>On: Refrigeration starts; Off: Refrigeration stops; Flash: Compressor delay</td>
<td>Cool, Hot indicator light cannot be “on” simultaneously</td>
</tr>
<tr>
<td>Heat indicator light</td>
<td>On: Heating starts; Off: Heating stops</td>
<td></td>
</tr>
<tr>
<td>Set indicator light</td>
<td>On: Parameter setting status</td>
<td></td>
</tr>
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</table>

Key operation instruction
1. The way to check parameters:
   - Under normal working status, press “A” key, it displays temperature setting value; press “Y” key, it displays the difference value.

2. The way to set parameters:
   - Under controller normal working status, press “S” key for 3s or more to enter parameter modifying mode, and the “Set” indicator light on, screen displays the first menu code “F1.”
   - Press “A” key or “Y” key to adjust up and down, and display the menu item and the code of menu item.
   - Press “S” key to display the parameter value of the current menu. Press both “S” key and hold “A” key or “Y” key simultaneously to choose and adjust the parameter value of the current menu value promptly. After finishing the setting, press and release the “S” key instantly to save the parameter modified value and return to display the normal temperature value. If no key operation within 10s, system won’t save modified parameter, screen back to display normal temperature.

3. Restore system data
   - When activated, system will check itself, screen will display “Er” if error, please press any key at this time, and it restores default value and enter normal working mode. It is advised to reset the parameter values under such conditions.

Operation instruction
Under controller normal working status, press and hold “A” key for 3s can turn off the controller. Under controller off status, press and hold “A” key for 1s can turn on the controller.

Under the controller normal working status, screen displays the current measuring temperature value; also the controller can also switch the working mode between heating and cooling.

Controller starts refrigerating with cool indicator light on when the measuring temperature value is temperature set value + difference value, and the refrigerating relay is connected; If the “Cool” indicator light flashes, it indicates the refrigerating equipment is under compressor delay protect status; when the measuring temperature value is temperature set value, the Cool indicator light on, and refrigerating relay disconnects.

System starts heating when the measuring temperature value is the temperature set value-difference value, and the “Heat” indicator light on, the heat relay connects; When the measuring temperature value is temperature set value, the “Heat” indicator light is off, and the heat relay disconnects.

Menu instruction

<table>
<thead>
<tr>
<th>Code</th>
<th>Function</th>
<th>Set range</th>
<th>Default</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>Temperature set value</td>
<td>-50.0 ~ 50.0°C</td>
<td>10.0°C</td>
<td></td>
</tr>
<tr>
<td>F2</td>
<td>Difference set value</td>
<td>0.0 ~ 5.0°C</td>
<td>0.5°C</td>
<td></td>
</tr>
<tr>
<td>F3</td>
<td>Compressor delay time</td>
<td>1s ~ 10 minutes</td>
<td>3 minutes</td>
<td></td>
</tr>
<tr>
<td>F4</td>
<td>Temperature calibration value</td>
<td>-50.0 ~ 50.0°C</td>
<td>0°C</td>
<td></td>
</tr>
</tbody>
</table>

Error description
Alarm when sensor error. Controller activates the sensor error alarm mode when sensor open circuit or short circuit. All the running status is closed off with the buzzer alarms, and the red tube displays “EE,” press any key can cancel alarm sound, system back to display the normal temperature when the error and the fault is dissolved.

Alarm when the measuring temperature exceeds temperature measuring range. Controller activates the error alarm function when the measuring temperature exceeds the temperature measuring range. All the running status is closed off with the buzzer alarms, and the red tube displays “HH,” Press any key can cancel alarm sound, system back to display the normal working mode when the temperature returns to normal measuring range.

Safety Regulations
★ Danger
1. Strictly distinguish the sensor down-feed, power wire and output relay interface from one another, and prohibit wrong connections or overloading the relay.
2. Dangers: Prohibit connecting the wire terminals without electricity cut-off.
★ Warning
1. Please! Use the machine under the environment of over damp, high temp. strong electromagnetism interference or strong corrosion.
2. Notice
1. The power supply should conform to the voltage value indicated in the instruction.
2. To avoid the interference, the sensor down-feed and power wire should be kept a proper distance.

Wiring diagram

[Diagram of wiring connections]