



Cold Sleeve Operations Manual



COLD SLEEVE

Operations Manual

Thank you for purchasing Analytical Sales and Services COLD SLEEVE™ Cooler / Heater system. This manual will guide you through setup, and operation of your new device.

Safety Warnings:

All heater systems are designed for use by properly trained individuals following Good Laboratory Practices who have read and understand this entire manual.

CAUTION: *The temperature controller must be operated away from liquids so as not to accidentally spill solvents through vent openings on top cover. Do not immerse or operate any part of the Column Cooler / Heater in liquids.*



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Product Specifications

Power Requirements:	24 VDC
Heating Range:	0°C above ambient to 55°C
Heater Accuracy:	+/- .5°C
Controller Accuracy:	+/- .1°C
Calibration Points:	15°C 35°C

This manual covers the following controlled heater products:

- COLD SLEEVE

For columns up to 30cm long x 0.75" O.D.

General Inspection

Unpacking and Inspection

Verify that the column heater package contains the following:

- Column Cooler / Heater base element, and temperature controller
- Column Cooler / Heater Manual

Please notify Customer Service if the Column Heater has any missing or damaged parts.

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The **Temperature Control Module** (PTC050) is custom designed to offer optimum performance in heating and cooling applications. It has fast “H-Bridge” circuitry which improves control responsiveness, variable time base burst firing that increases the heater life and gives better temperature controllability, and a compact size which allows it to be placed in small areas.



Figure 1. COLD SLEEVE Cooler / Heater, Temperature Controller

The **COLD SLEEVE** is designed for use in analytical size liquid chromatography applications only.



The actual temperature and the user-selected set point are displayed on the front of the temperature controller. Both the user set point and the actual temperature are in full display. The heating element supplied may be interchanged freely with any other Advantage **COLD SLEEVE** or **HOT SLEEVE** heaters. Additional heating elements are listed at the back of this manual.

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The COLD SLEEVE is a unique design, which encapsulates a single HPLC column equal to or less than 30cm in length. The COLD SLEEVE is ideally suited for Fast LC and LC/MS applications.

Insert a single HPLC column on to the cooler / heater surface. Attach both inlet and outlet fittings to the column making sure that the 1/16" O.D. tubing will be able to pass through the cover end slots.

Place the cover on to the base by sliding over one end of the column tubing at an angle, then bring the cover down fully over the base allowing the remaining tubing to slide between the slot.

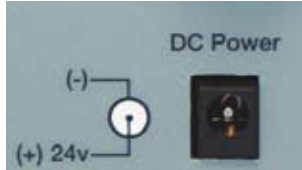


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Setup

Make certain that the temperature controller is turned off. Insert the power cord into the main receptacle, and then the plug into the supplied 24VDC Desktop Power Supply. Last, insert the silver plug into the back of the controller shown below.



9-Pin Heater Connector

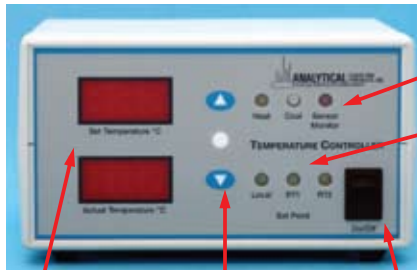


Main Fuse,
Type 2AG,
3A

24 VDC In

RS232 Control

External Contact



Diagnostic
LED's

Remote
LED's

Dual Display

Temperature Adjustment

Power Switch

Turn the Column Cooler / Heater on. The temperature controller will perform a self-diagnostic test upon power-up. If, after powering up, the display indicates something other than reasonable temperature values, notify Customer Service for further action.

The Column Cooler / Heater contains one fuse. If the display does not appear to illuminate at all, check the main fuses.

Note that the LED display on the front panel will show two numbered values displayed in °C. The upper (RED) number is the actual column enclosure temperature. The lower (RED) number is the column temperature set point. A YELLOW LED on the front panel will illuminate when the heating circuit is activated.

Operational

Use the set point adjustment buttons to raise and lower the desired set point. You must depress the asterisk button center white button in addition to the up (▲) or down (▼) arrow button to change values. Pressing the up (▲) or down (▼) arrow button alone will not change the set point value.

Set the temperature to 35°C, after a few moments the column enclosure temperature will begin to rise as indicated by the upper (RED) display. The heat indicator LED should illuminate when the heating circuit is active. Allow the column Cooler / Heater to reach 35°C and verify that the column Cooler / Heater will control properly. The set temperature will equilibrate quickly.

Upon successful evaluation, set the Cooler / Heater to the desired control temperature.

Use and Care

The Column Cooler / Heater is engineered to be lightweight and efficient. The materials used in fabricating the Cooler / Heater and controller sections may be sensitive to solvents. Proper installation includes reliable leak testing before installing the heater for each use. Do not immerse or operate any part of the Column Heater in liquids.

The Temperature Control Module is custom designed to offer optimum performance in both cooling and heating applications. It has fast 100Hz sampling that improves control responsiveness, variable time base burst firing that increases the heater life and gives better temperature controllability, and a compact size which allows it to be placed in small areas.

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External Control

Your controller is equipped with two external control features. The first is through RS232 control with the supplied Graphical User Interface (GUI) software provided on the CD, (RS232 Cable is not provided). The second is through contact closures from an outside source, i.e.; autosampler, pump, etc. Attach leads to the supplied Green plug. Once contact is established at the other end of the leads, the controller will automatically change heating values. Keep in mind that equilibration times will vary between temperature changes. Pre-programmed remote temperatures are entered through the GUI software.



Remote Graphical User Interface (GUI)

Along with your column heater you also received a CD containing a graphical user interface which will allow you to pre-program up to two set temperatures for remote activation via external contact closures. The defaulted values for remote one and two are 35.0°C and 45.0°C respectively. You will require an RS-232 Serial Cable (not provided) for remote programming.

Place the GUI CD into your computer. You may transfer the program to your workstation or start the program directly from the CD. Start-up the program and the interface at right will appear. Select COM1 and Initialize the port. All current programmed information will appear within the display. Once the data is uploaded the program may be terminated. The controller will keep the last programmed data within its memory up to five years.

Select Comm Port (Com1 is Default) and Initialize. When communication is established, **COMM OK** will be shown.

SET TEMPS for Remote 1 and Remote 2. Press send box after selection is made to upload.

The screenshot displays a software interface with several sections:

- PC COMMUNICATIONS:** Includes a dropdown menu for 'COM1' with the text 'SELECT COMM PORT', an 'INITIALIZE' button, a status field showing 'COMM OK', and a 'CHECK COMMUNICATION' button.
- SET TEMPS:** Features two input fields for '35.0' and '45.0' labeled 'SWITCH SET1' and 'SWITCH SET2' respectively, and a 'Send Box Values' button.
- SET TEMP:** A field showing '15.00'.
- TEMP1:** A field showing '15.10' with a 'LOG ENABLE' checkbox.
- OUTPUT %:** A field showing '-100.0' with a 'LOG ENABLE' checkbox.
- STATUS INDICATORS:** Radio buttons for 'SAMPLING INDICATOR', 'SENSOR ERROR STATUS', and 'DOOR ALARM STATUS'.
- DATA LOG BOX:** A large empty text area with a 'BOX ENABLE AND RELABEL' checkbox.
- SAMPLE TIME IN SECONDS:** A field showing '1.0'.
- SAMPLE ON/OFF:** A button at the bottom left.

Red arrows point from the text instructions to the 'COM1' dropdown, the 'INITIALIZE' button, the 'SET TEMPS' section, the 'SEND BOX VALUES' button, and the 'SAMPLE ON/OFF' button.

Sensor Error = Defective Temperature Sensor. Contact Customer Service.

Door Alarm Status is NOT for this controller.

This area indicates values from the front of the controller only. Values will change only when sample On/Off is active.

**For technical support or to reorder supplies,
contact Analytical Sales and Services, Inc.**

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