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Digital Stir-Kool – Thermoelectric Laboratory Cold Plate
Catalog Number: 21485
Operating Instructions

For optimum performance of this instrument please follow these instructions.

- For maximum heat transfer from the solution to the cold plate, use flat bottom glassware or accessories with very flat bottoms.
- Use approximately five drops of heat transfer fluid on the top plate to make an efficient heat transfer junction to the beaker.
- When using water cooling, maintain minimum water flow at about 1 liter per minute.
- Use the polyfoam jacket around the cooled beaker.
- The cold plate will reach a temperature approximately 40 degrees C below that of the heat exchanger, e.g. 10 degrees C tap water generates a –30 degree C cold plate. Beware of frostbite.
- Treat aluminum cooling blocks like beakers. Use heat transfer fluid for a good seal to the top plate, and the polyfoam jacket for insulation.

If you have questions about the operation of the Stir-Kool, please write, email or telephone the company. Do not try to repair the instrument yourself, as the top plate assembly may be easily damaged.

Calibration of the instrument:

Your instrument has been calibrated at exactly 4.0°C by the factory. This instrument will not need recalibration unless one of the following occurs:

1. A different sensor than the original is to be used.
2. Temperature regulation is desired that is 5°C or more away from the 4.0° factory setting.
3. Temperature regulation must be extremely accurate, i.e. within 0.2°C.

Recalibration Procedure

1. Set desired temperature and activate unit as normal.
2. Use a thermometer to measure temperature **after** unit has reached equilibrium.
3. If the thermometer reading does not match the upper (red) display, push and release the leftmost key (the level key), holding it down for less than one second. The upper display should now read _____, the calibration mode. If it does not, push and release the

key (the mode key), until this symbol is displayed. You are now ready to change the input shift value, which alters the temperature calibration of the instrument.

4. If the actual temperature as read on the thermometer is higher than the readout temperature, change the input shift in the positive direction equal to the difference between them using the up/down keys. If it is lower, change the input shift in the negative direction, also equal to the difference noted. Note that the adjustment is in tenths of degrees.
5. To return the controller to the operating mode, press and release the level key, holding it down for less than one second. Regular operation is now restored, but it is advisable to let the instrument run for 30 to 45 minutes to establish a new equilibrium, and check for the temperature difference between the thermometer and the controller readout before changing the setpoint.
6. If a difference is still noted, repeat steps 2 through 4.
7. If the display is "lost" in the calibration mode, turn the power off for a few seconds. The controller will automatically reset to the operating mode when the power is turned back on, then repeat steps 1 through 4.

Operation of the unit with Omron Digital Meter

- Refer to the operating instructions for basic setup guidelines.
- Insert the glass temperature probe into the cooling load and plug the opposite end of the probe into the socket on the right side of the instrument.
- Turn Power on. The meter will briefly go through a self-test mode in which all the lights will go on, then settle into the operating mode. The top (red) display indicates the temperature sensed by the temperature probe. The bottom (green) display indicates the setpoint temperature.
- Changing the setpoint is easy – simply depress either the up or down key to move the setpoint higher or lower. Push and release to change one degree; push and hold to change many degrees quickly.
- The instrument will cool the load to the setpoint temperature and cycle power to the top plate automatically to maintain the setpoint temperature.