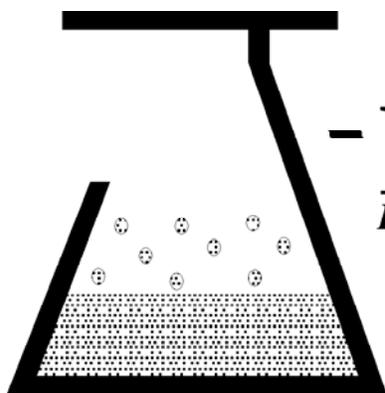# Temperature Control for Research and Industry

Digital Temperature Monitor

KEM Scientific, Inc.

Instruments for Science from Scientists

Warranty

J-KEM Scientific, Inc. warrants this unit to be free of defects in materials and workmanship and to give satisfactory service for a period of 12 months from date of purchase. If the unit should malfunction, it must be returned to the factory for evaluation.   If the unit is found to be defective upon examination by J-KEM, it will be repaired or replaced at no charge. However, this WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of being damaged as a result of excessive current, heat, moisture, vibration, corrosive materials, or misuse. This WARRANTY is VOID if devices other than those specified in Section 3.2 are powered by the controller. Components which wear or are damaged by misuse are not warranted.   This includes contact points, fuses and solid state relays.

THERE ARE NO WARRANTIES EXCEPT AS STATED HEREIN. THERE ARE NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL J-KEM SCIENTIFIC, INC. BE LIABLE FOR CONSEQUENTIAL, INCIDENTAL OR SPECIAL DAMAGES. THE BUYER'S SOLE REMEDY FOR ANY BREACH OF THIS AGREEMENT BY J-KEM SCIENTIFIC, INC. OR ANY BREACH OF ANY WARRANTY BY J-KEM SCIENTIFIC, INC. SHALL NOT EXCEED THE PURCHASE PRICE PAID BY THE PURCHASER TO J-KEM SCIENTIFIC, INC. FOR THE UNIT OR UNITS OF EQUIPMENT DIRECTLY AFFECTED BY SUCH BREACH.

Service
J-KEM Scientific maintains its own service facility and technical staff to service all parts of the controller, usually in 24 hours.   For service, contact:

J-KEM Scientific, Inc.
6970 Olive Boulevard
St. Louis, MO 63130   USA
(314) 863-5536
FAX (314) 863-6070
Web site: http://www.jkem.com
E-Mail: jkem911@jkem.com

This manual contains parameters specific to temperature controller Serial #_____.
When calling with a technical question, please have the controller's serial number available.

You've purchased the most versatile controller available to the research community.   We're confident it can regulate ANY heating/cooling situation you'll ever encounter.   If the information in this manual isn't adequate to make your application work, call our Engineering Department for assistance.

– With J-KEM's patented Microtune circuitry –

Quick Operating Instructions

The two steps below are the basics of using your temperature monitor.   For additional information or implementing additional functionality, contact J-KEM.


1	**Place the thermocouple in the solution being heated.** Place at least the first 1/4" of the thermocouple directly in the solution being heated. Thermocouples can be bent without harming them. If you're heating a corrosive liquid, use a Teflon coated thermocouple. This monitor must be used with the proper thermocouple type for accurate temperature displays.
	If the thermocouple jack on the back of the monitor is:
	      BLUE it must be used with a type T thermocouple.
	      YELLOW it must be used with a type K thermocouple.
	      BLACK it must be used with a type J thermocouple.
	
	Turn power on to the temperature monitor.

2	**Enter an over-temperature alarm setpoint** (i.e., the temperature at with the over-temperature alarm sounds). This unit is equipped with an audible alarm that sounds when the reaction temperature exceeded a user entered high temperature limit. To enter an alarm setpoint, hold in the ✳ button and simultaneously press the ▲ key to increase or the ▼ key to decrease the setpoint. The setpoint can be seen at anytime by holding in the ✳ button, the setpoint appears as a blinking number in the display. The over temperature alarm can not be disabled, but if you don't want to use this feature simply enter a setpoint of 400º C, which virtually guarantees that an over-temperature condition will not be reached.	
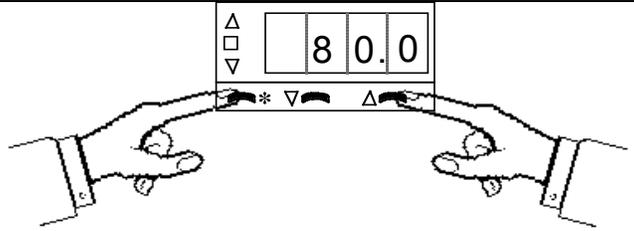
KEM-Net Data Logging and Control Software

At the beginning of 2008, J-KEM implemented a redesign of it's research grade temperature and vacuum controllers.   The redesign involved both the hardware running your controller and software for remote control and data logging.

Hardware –   The controller may look the same, but inside is our 3rd generation microcontroller.   This controller is FLASH programmable and capable of downloading *program modules*(software) from our web site at no charge.

Software -   Your controller is equipped with a USB port to allow remote control and data logging. J-KEM is currently developing a complementary software package, **KEM-Net**, that remotely controls and data logs up to 16 controllers simultaneously.   Until KEM-Net is available, J-KEM is offering KEM-Log at no charge.

KEM-Log provides remote control and data logging for one J-KEM controller. KEM-Log implements:
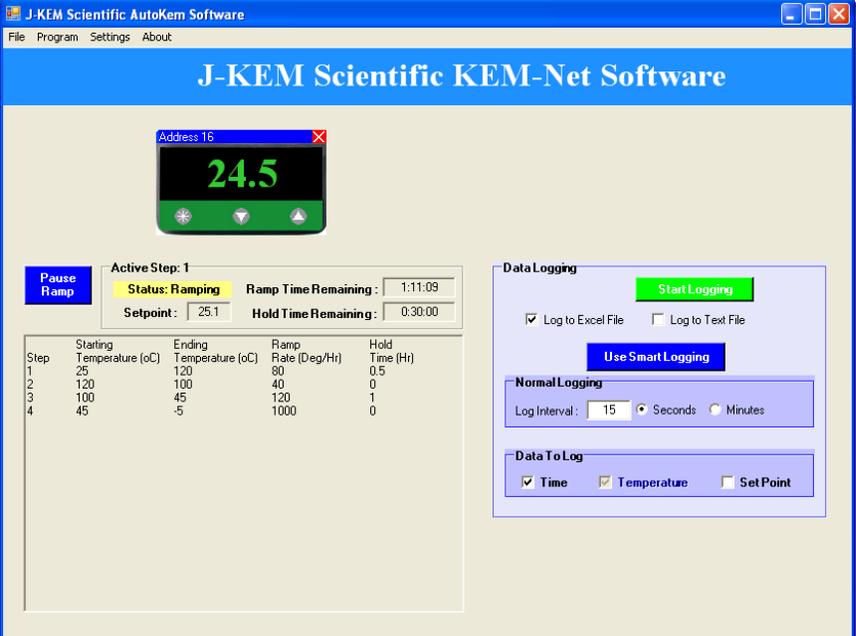
* Data logging directly to Excel or a text file.

* A 16-step temperature ramp that's constructed in an Excel-like table.

* Easy entry of the setpoint

KEM-Log is free of charge.   To load KEM-Log to your PC, follow these steps:

1. Enter this link in your web browser: http://www.jkem.com/kemnetzip.exe
   A popup window appears presenting the options of RUN, SAVE and CANCEL.   Selecting the SAVE option brings up a Save File Dialog window.   Save the file kemnetzip.exe to your C drive, then exit your web browser.
2. Kemnetzip.exe is a self-extracting zip file.   Double click on its icon to expand it.   Once expanded, kemnetzip.exe creates a new folder on your C drive titled "JKEM" which contains the KEM-Net Installation Project and copies of user's manuals and USB drivers.
3. Print the document titled PrintMe_Now.pdf for instruction on how to install the USB drivers and the KEM-Net software.