



RD-Temp

Temperature Data logger



Operator's Manual
M1667/0100



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Where Do I Find Everything I Need for Process Measurement and Control? OMEGA...Of Course!

TEMPERATURE	DATA ACQUISITION
☑ Thermocouple, RTD & Thermistor Probes, Connectors, Panels & Assemblies	☑ Data Acquisition and Engineering Software
☑ Wire: Thermocouple, RTD & Thermistor	☑ Communications-Based Acquisition Systems
☑ Calibrators & Ice Point References	☑ Plug-in Cards for Apple, IBM & Compatibles
☑ Recorders, Controllers & Process Monitors	☑ Datalogging Systems
☑ Infrared Pyrometers	☑ Recorders, Printers & Plotters
PRESSURE / STRAIN FORCE	HEATERS
☑ Transducers & Strain Gages	☑ Heating Cable
☑ Load Cells & Pressure Gauges	☑ Cartridge & Strip Heaters
☑ Displacement Transducers	☑ Immersion & Band Heaters
☑ Instrumentation & Accessories	☑ Flexible Heaters
FLOW / LEVEL	☑ Laboratory Heaters
☑ Rotameters, Gas Mass Flowmeters & Flow Computers	ENVIRONMENTAL MONITORING AND CONTROL
☑ Air Velocity Indicators	☑ Metering & Control Instrumentation
☑ Turbine/Paddlewheel Systems	☑ Refractometers
☑ Totalizers & Batch Controllers	☑ Pumps & Tubing
pH / CONDUCTIVITY	☑ Air, Soil & Water Monitors
☑ pH Electrodes, Testers & Accessories	☑ Industrial Water & Wastewater Treatment
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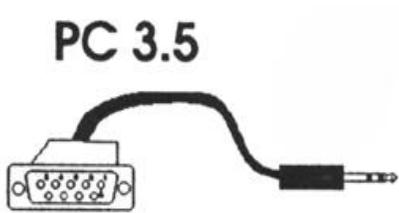
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Logger Software

RD-TEMP is launched, off-loaded and has its data plotted by Logger Software for Windows. This software is available for a PC running Windows software.

Connecting to your PC

RD-TEMP comes with PC software and a PC cable. The PC cable shown below is designed to connect directly between the PC's DB-9 serial port and the RD-TEMP logger. A DB-25 to DB-9 adapter may be needed if your computer does not have an available DB-9 port.



2

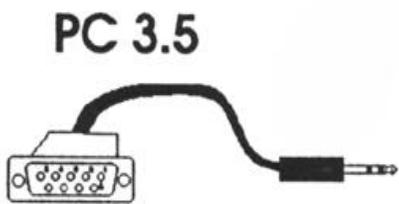
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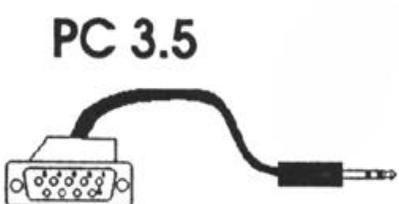
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OMEGA
USn **WARRANTY**

OMEGA 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. OMEGA Warranty adds an additional one (1) month grace period to the normal one (1) year product warranty to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product. If the unit should malfunction, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective 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 corrosion, or current, heat, moisture or vibration, improper specification, misapplication, misuse or other operating conditions outside of OMEGA's control. Components which wear or which are damaged by misuse are not warranted. These include contact points, fuses, and triacs.

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Installing the Software

Put the software diskette into the floppy drive and ...

Install the software from DOS by typing a: or b: (for appropriate drive) and pressing enter. Next, type **setup** and press enter. Setup will prompt you through the installation process allowing you to install the software for Windows.

To start **Logger Software for Windows**, inside Windows double click on the software application.

RD-TEMP must be connected for launch and readout!

The RD-TEMP must be connected to your computer for launching and data readout. However, Logger Software may be used without the data logger to view, plot and export previously saved files.

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Launching the RD-TEMP

Attach the RD-TEMP to your computer, start Logger Software and select Launch from the Windows menu bar. A launch dialog box (sample shown at the right) appears.

The temperature displayed is the current temperature, updated each second, as measured by the RD-TEMP. The duration, interval, measurement unit, wrap around status, and description text are carried over from the previous launch of the RD-TEMP connected to the computer.

RD-TEMP can display data in Celsius or Fahrenheit. The measurement unit box allows you to set the default plotting or display units, but does not preclude displaying the data in different units later. Select the default unit by clicking in the measurement unit box.

The text entered into the Description Field will be displayed under the X-axis on the plot.

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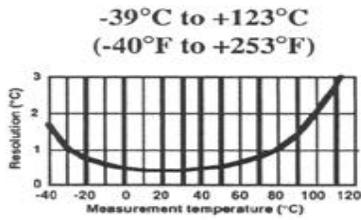
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Temperature Resolution



Best resolution 0.35° at +25°C.
Covers the widest range.

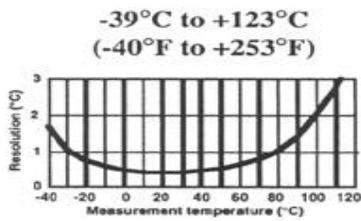


To start the RD-TEMP, modify the settings as desired, then select **Start**. Disconnect your RD-TEMP after launching. The RD-TEMP's LED will blink once with each measurement. For long periods of use, the LED will blink weakly every two seconds between measurements.

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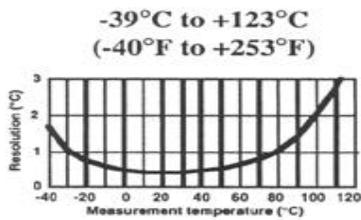


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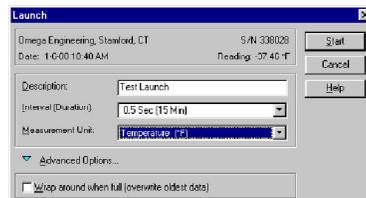
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Off-loading and Plotting Data with Software for Windows

Select **Readout** to off-load RD-TEMP data. The software will prompt for a file name for your data. It is recommended you name your data files with the extension .DTF.

Off-loading RD-TEMP data automatically opens a plot window showing the temperatures seen during the entire usage period. Sub-selections of data can be made by drawing a box around the data of interest with a mouse. A new plot of the selected data is activated by clicking inside the box, or deselected by clicking outside the box. All data windows are shown in Celsius or Fahrenheit depending on which is chosen with the plot menu.

The plot menu also allows you to select or deselect connecting the points and marking the points (making a small circle around each point).

Plots can be copied and pasted into other Windows applications or saved as pictures that can be opened by drawing programs.

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Temperature Accuracy

RD-TEMP's thermistor has an accuracy of $\pm 0.2^{\circ}\text{C}$ between 0°C and $+80^{\circ}\text{C}$. Below 0°C , the error can increase to as much as $\pm 0.4^{\circ}\text{C}$ by -40°C and above $+80^{\circ}\text{C}$ it increases to about $\pm 0.6^{\circ}\text{C}$ by $+120^{\circ}\text{C}$.

Thermal Time Constant

The RD-TEMP's time constant is about 5 minutes in water, and longer in air. Applications requiring a shorter time constant will require mounting the thermistor externally (RD-TEMP-XT) which has a time constant of 3 minutes.



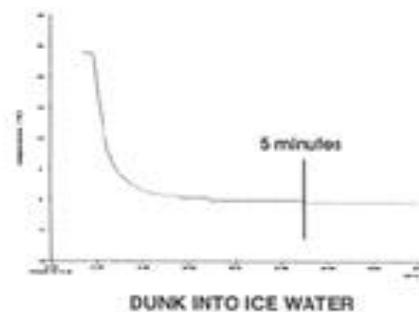
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11

Intervals and Durations

RD-TEMP can make exactly 1800 measurements. The launch dialog box lets you select the Interval and the Duration of the logging experiment. The table below shows the selectable durations/intervals.

Duration	Interval	Duration	Interval
15 min	0.5 sec	3 days	2.4 min
30 min	1 sec	4 days	3.2 min
45 hr	1.5 sec	6 days	4.8 min
1 hr	2 sec	8 days	6.4 min
1.5 hr	3 sec	12 days	9.6 min
2 hr	4 sec	15 days	12 min
3 hr	6 sec	20 days	16 min
4 hr	8 sec	30 days	24 min
6 hr	12 sec	45 days	36 min
8 hr	16 sec	60 days	48 min
12 hr	24 sec	90 days	1.2 hr
15 hr	30 sec	120 days	1.6 hr
20 hr	40 sec	180 days	2.4 hr
1 days	48 sec	240 days	3.2 hr
1.5 days	1.2 min	360 days	4.8 hr
2 days	1.6 min		

Exporting Data

Logger Software allows you to export your RD-TEMP's data to an ASCII text file for subsequent import into spreadsheet, charting or database programs. To specify the format for exporting your data, choose Export from the File menu in the software for Windows. The Export Setup Dialog is displayed.

Choose Microsoft Excel, Lotus 123, or custom. The custom option allows you to customize how the date and time will appear in the export file.

Click the Multi-File button to spread the exported data over more than one file.

Note that you must first display the plot, and then choose Export from the File menu. Data from the current plot will be exported.

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3 hr	6 sec	20 days	16 min
4 hr	8 sec	30 days	24 min
6 hr	12 sec	45 days	36 min
8 hr	16 sec	60 days	48 min
12 hr	24 sec	90 days	1.2 hr
15 hr	30 sec	120 days	1.6 hr
20 hr	40 sec	180 days	2.4 hr
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Exporting Data

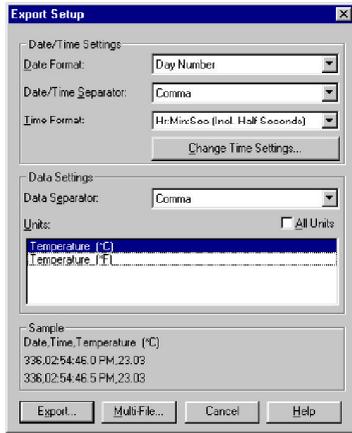
Logger Software allows you to export your RD-TEMP's data to an ASCII text file for subsequent import into spreadsheet, charting or database programs. To specify the format for exporting your data, choose Export from the File menu in the software for Windows. The Export Setup Dialog is displayed.

Choose Microsoft Excel, Lotus 123, or custom. The custom option allows you to customize how the date and time will appear in the export file.

Click the Multi-File button to spread the exported data over more than one file.

Note that you must first display the plot, and then choose Export from the File menu. Data from the current plot will be exported.

Export Setup Dialog Box



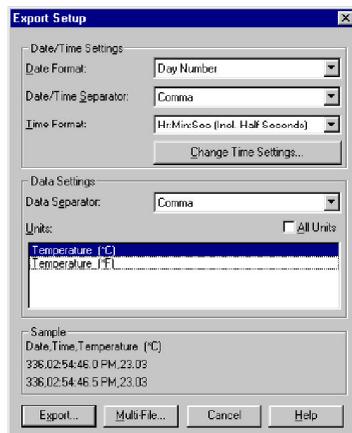
8

RD-TEMP Characteristics

Range: -36°F to +253°F (-39°C to +123°C) (Unit limited to +75°C)
Sensor: Thermistor, 10K
External Probe Options: 6', 3/16" tip, water resistant
Memory: 1800 data points stored in EEPROM
Battery : Lithium cell, 2 year life
Measurement duration: 15 minutes to 360 days
Measurement intervals: 0.5 seconds to 4.8 hours
Resolution: 0.35°C at +25°C (resolution degrades at extremes)
Dimensions: 1.26"H x 1.75"W x .58" (32 mm x 44.5mm x 14.7mm)
Weight: 1 ounce

9

Export Setup Dialog Box



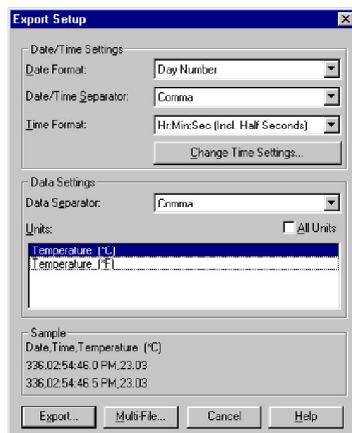
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