Temperature Recording System

HIOKI

Software Operation Manual (Data Pico) (for Windows98/Me)

Thank you for your purchase of our product.

Before using this system, read this Software Operation Manual for the proper operation.

This manual should be retained carefully. It will surely be helpful for the future use.



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Introduction

Thank you for your purchase of the Temperature Recording System<Data Reader>.

The structure of this manual

1. Operating Requirements

The description of the Hardware requirements and the S oftware installation procedure.

4. Operating Procedure

The description of the operatingprocedures to use the Temperature Recording System. Features of the Tool buttons The contents of the menu

5.Others

2.Settings

The description of the S ettings to use the T emperature R ecording S ystem.

3.3650 Operating

The description of the operating procedure of the 3650.

2 Setting

3 3650 Operating

Operating Requirements 1

Hardware Requirements The hardware configuration of the Temperature Reader System is illustrated as below.

The Installation Procedure 1

While the following explanation applies specifically to Windows 98, the procedures are identical for Windows Me, although button names may differ slightly. (1) Before the installation,

exit all other active programs.

Otherwise, the installation procedure may be result in.

(2) Installation

Click the Start button, select Programs, select Windows Explorer.



Insert the CD-R into the CD-ROM drive of the computer, double click on the [Setup.exe] in the english ← folder on the CD-R.

Operating Requirements 2

The Installation Procedure 2

With some computer during the installation, a screen may appear asking you whether to reboot the computer to update the system configuration. In such a case, reboot the computer, then start the installation again(follow the installation procedure 1).



Pressing the 'Next' buttons will load the program into the hard disk drive of the computer. It is recommended to that the default installing directory not be changed.

Choose Destination Loc	Setup will install Temperature Recording System in the following directory.
	To install to this directory, click Next.
	To install to a different directory, click Browse and select another directory.
	You can choose not to install Temperature Recording System by clicking Cancel to exit Setup.
2	Destination Directory C:\\Temperature Recording System <u>Br</u> owse
InstallShield	< <u>B</u> ack <u>Next></u> Cancel

Operating Requirements 3

The Installation Procedure 3



Setup Complete	
	Setup has finished copying files to your computer. Setup will now launch the program. Select your option below.
	Yes, Launch the program file
	Click Finish to complete Setup.
Installöhield	< <u>B</u> ack Finish

The installation is complete.

Attention

An error message may appear during the installation, since some of the existing Windows shared files are overwritten.

in such a case, choose "Ignore" to skip the error message and continue the installation. Skipping the error message will not affect any other application programs.

Starting the System

After the installation is complete, the [Temperature R ecording S yatem] G roup is created in the program menu. C lick the [TempR ec] icon in the G roup to run the system.

Settings 1

Before using the Temperature recording System, Do the following settings.



• CSV Text : Designate the folder to save the CSV-converted data file.

COM Ports Setting

Set the serial ports connected with the Data Reader. The speed of the serial port is set automatically. ← As shown in the following figure, select Setting from the menu and click 'C omPorts'' to display COM1 I ← to COM4. Select a COM port to use.



All of the settings before using the Data Reader are complete.

6

2 Setting

Settings 2

The features of the Toolbar

In the "Temperature Recording system", toolbar is used to proceed the operation. The function of each button is illustrated as below.



Status Display Screen



Pressing the _____ button will display the dialogue as

illustrated below.

Select one of the 3650s set on the Data Reader.

Displays the selected 3650 and the operational status

- 1. Press the "Search" button to the right of "3650-Select" (All of the 3650s set on the Data Reader will be detected. Each time the 3650 is set on the Reader, be sure to press the "Search" button.)
- 2. Press "▼" to select the 3650.
 (The selected 3650 is displayed in the window to the right of "3650-Select")

🗃 Status Display		×
File(E) Options(O) System(A)		
3650-Select	000000001EC4 💌	Search
Run State 🗞		
Operational Status	Idle	
Residual Waiting Time	0	
Measuring Start Date	1999/08/09 14:45	
Measuring Interval	1 Min	
Measured Data Counts	99	
Holding Data Counts	99	
Enable Overwrite	No	
Overwritten Occured	No	
High-Temp Alarm	37°C	
Low-Temp Alarm	24°C	
Current Date/Time	2001/01/31 20:26:07	
Total Counts	20228	
(Possible recording cou		d times)
Memo	CoolBox No.22 Beef	
<com1></com1>		
Update Set	Result	Exit

Click the "Update" button to reread current status and setup information from the 3650. At this point, the current status and settings of the selected 3650 are displayed in the "Status Display" window. The contents of the each item are as follows:

- 1. Operational Status Displays whether the 3650 is running or idle.
- 2. Residual waiting time Residual waiting time before the start of measuring temperature.
- 3. Measuring Start Date The date and time to start measuring temperature.
- 4. Measuring Interval The sampling interval to measure temperature.
- 5. Measured Data Counts The total data counts from the start of the measuring temperature.
- 6. Holding Data Counts Data Counts held in the internal memory.(max. 2048 data)
- 7. Enable Overwrite Specify whether to overwrite the existing data with the new data when the internal memory is full.(max. 2048 data)
- 8. Overwritten Occurred Indicate the occurrence of the overwriting during the measurements of temperature.
- 9. High-Temp Alarm The higher limit temperature to be alarmed.
- 10. Low-Temp Alarm
 - The lower limit temperature to be alarmed.
- 11. Current Date/Time
 - The current date and time of the 3650 internal clock.
- 12. Total Counts
 - The total measured counts. This number can be used to know the battery life.
 - The symbol "!" to the right of this number denotes that the 3650 was used in the place where the
 - temperature was over 50. In this case, the possible measuring counts may come short of the expected counts. • Note that the number displayed in YELLOW denotes the measuring counts are over 490,000 and the number in RED denotes the counts are over 500,000.
 - (*)The 3650 battery(unexchangeable) lasts for the duration of 500,000 measurements. (The usage in a place over 50 may reduce the battery life)
 - 13.Memo

The contents of the Memo. (Can be inserted when configuring the start settings)

Chattan Disalau		
Status Display		
File(F) Options(O) System(A)		
3650-Select	000000001EC4 💌	Search
Run State 🛇	000000001EC4 254000006AF6	
Operational Status	254000006E35	
Residual Waiting Time	0	
Measuring Start Date	1999/08/09 14:45	
Measuring Interval	1Min	
Measured Data Counts	99	
Holding Data Counts	99	
Enable Overwrite	No	
Overwritten Occured	No	
High-Temp Alarm	37°C	
Low-Temp Alarm	24°C	
Current Date/Time	2001/01/31 20:26:07	
Total Counts	20228	
(Possible recording cou	nts: Over 500 thousan	d times)
Memo 📔	CoolBox No.22 Beef	
<com1></com1>		
Update	Result	Exit

Operation Results Screen 1

Pressing the 'R esult' button in the Status Display Screen(8 page) will display the dialogue as illustrated I-below.

Operation Log		Histogra	am —				Alarm
	Graph				Grap	h	
Date/Time	Temp		Tem	p	Count		
1999/08/09 14:45	26.5 🔺	-40.0	То	-38.1	0		High,Start:1999/08/09 15:2
1999/08/09 14:46	26.0	-38.0	То	-36.1	0		End:1999/08/09 15:5
1999/08/09 14:47	25.5	-36.0	То	-34.1	0		Low ,Start:1999/08/09 14:5
1999/08/09 14:48	25.5	-34.0	То	-32.1	0		End:1999/08/09 15:0
1999/08/09 14:49	25.0	-32.0	То	-30.1	0		Low ,Start:1999/08/09 16:1
1999/08/09 14:50	25.0	-30.0	То	-28.1	0		End:1999/08/09 16:2
1999/08/09 14:51	24.5	-28.0	То	-26.1	0		
1999/08/09 14:52	24.5	-26.0	То	-24.1	0		
1999/08/09 14:53	24.5	-24.0	То	-22.1	0		
1999/08/09 14:54	24.5	-22.0	То	-20.1	0		
1999/08/09 14:55	24.5	-20.0	То	-18.1	0		
1999/08/09 14:56	24.5	-18.0	То	-16.1	0		
1999/08/09 14:57	24.5	-16.0	То	-14.1	0		
1999/08/09 14:58	24.0 💌	-14.0	То	-12.1	0	•	

This dialogue displays all the measured data. There are three types of results in this dialogue as described below. (All the data displayed on the "Operation Results Screen" are for display-only. Refer to "Save the measured data" to save the data)

1. Operation Log (Temp Log)

Displays the measured temperature and the date in order of time stored in the internal memory.

2. Histogram

Displays the measured counts according to the temperature zone.

(The overwritten data in memory full condition is also counted)

3. Alarm

Displays the duration of alarm if it occurred. (The overwritten data in memory full condition is also alarmed)

Pressing the "Graph" button in the "Operation Log" or "Histogram" screen will display the simple graph. (The Red zone in the graph denotes high temperature alarm and the Blue zone denote low temperature alarm)

Operation Log (Temp Log)



Operation Results Screen 2

The procedure to change Vertical Line

1.Press "Set Vertical Line" button.

(The button starts blinking and "Set Vert: from" appears in the upper left of the screen)



2. Move the mouse cursor to the any place on the graph and click, then the upper(or lower) limit of the temperature graph to zoom is selected.

(The boundary of the selected zone is displayed with a yellow line and "Set Vert: to" appears in the upper left of the screen)



3. Move the mouse cursor to any place on the graph and click, then the lower(or upper) limit of the temperature graph to zoom is selected. At this point, the selected area of the graph is zoomed-in and displayed.

= Congriting				_ 🗆 🛛
Terno		Set Vertica Linn	Herite modal in the	Rohar
**** (5000000				
		/		
•• { 4	j			
			·····	
·····				<u></u>
ممصححها واري				
1999-00-4	19-4 D 18009-	19-4-0-18009	19-4-0-180-19	199-01-011
1445	1010	16:35	15:52	5123

Operation Results Screen 3

4. Pressing the "Reload" button will reload the graph.



1.Press "Set Horizontal Line" button.

(The button starts blinking and "Set Horiz: from" appears in the upper left of the screen)



2.Move the mouse cursor to the any place on the graph and click, then the leftmost (or rightmost) of the duration to zoom is selected.

(The boundary of the selected duration is displayed with a yellow line and "Set Horiz: to" appears in the upper left of the screen)



Operation Results Screen 4

3.Move the mouse cursor to the any place on the graph and click, then the rightmost (or leftmost) limit of the duration to zoom is selected. At this point, the selected area of the graph is zoomed-in and displayed.



4. Pressing the "Reload" button will reload the graph.



While the zoomed-in graph is displayed, 'S et Vertical Line'' or 'S et Horizontal Line'' can be used again to zoom in the graph.

Histogram



Like the O peration Log, the Histogram S creen has the 'S et Vertical Line'' function. This function zoom in the graph with the selected counts as the maximum.

Operation Results Screen 5

The procedure to change Vertical Line

1.Press "Set Vertical Line" button.

(The button starts blinking and "Set Vertical Line: Set Max. Counts Position" appears in the upper left of the screen)



2.Move the mouse cursor to the any place on the graph and click, then the upper limit of the count is selected. At this point, the selected area of the graph is zoomed-in and displayed.







While the zoomed-in graph is displayed, "Set Vertical Line" can be used again to zoom in the graph.

3650 Initial Settings

Pressing the 'S et' button in the S tatus Display S creen (8 page) will display the dialogue as il	lustrated ⊷
below.	

Date/Time: 🔽 Adjust	to PC Time	
	3650-Time	2001/01/31 20:44:33
	PC-Time	2001/01/31_21:11:04
Start Date : 2001	/ <mark>01 </mark>	31 🗧 21 🗧 : 12 🗧
		Wait Time 0 Min
Measuring Interval 5	Min Mem	ory Size 7.1 days
Enable Overwrite 🗖 (Po		Counts 20228 punts: Over 500 thousand times)
Alarm : High-Tem	p: 35.0 💌	°C
Low-Tem;	o: 0.0 💌	°C
	CoolBox No.22	2 Boof
	CoolBoy No 22	2 Boof

Configure the 3650 Initial Settings from this dialogue. The contents of the each item are as follows:

1.Date/Time

Mark off the checkbox next to the "Adjust to PC Time", and the Time of the 3650 will be adjusted to the Time of the personal computer when the "OK" button is selected.

2.Start Date

Set the Date and Time to start measuring temperature. (After the "Date and Time" is set, the wait time before measuring is displayed next to the "Wait Time".)

3.Sample Interval

Set the sampling interval. (After the "Sample Interval" is set, the residual time for the memory to become full is displayed next to the "Memory Size".)

4.Enable Overwrite

Specify whether to overwrite the memory when the measured data counts exceeds the internal memory capacity. (max. 2048 data)

Mark off the checkbox to enable overwriting the internal memory with the new data.

The internal memory will keep the oldest data (max. 2048) by disabling this function, and will keep the latest data (max. 2048) by disabling this function.

5.Alarm

Set the higher limit and the lower limit of the temperature. The High Temperature Alarm occures when the measured temperature is beyond the higher limit, and the Low Temperature Alarm occurs when the measured temperature is below the lower limit.

6.Total Counts

Indicates the total measured data counts. (Refer to P.8 for details)

7.Memo

Memo can be attached to any measured data (within 20 characters). (Press "Memo" button to write a memo)

Press "OK" button when all the fields are filled.

(*) The settings are not valid if the "Start Date" is behind the current date and time.

Save the	e measured data in a file
The measured data i	read from 3650 Logger can be saved in as a file.
	🗃 Status Display
	File(E) Options(D) System(A) Save as
	3050-Selett 00000001EC4 Search
Select 'Save As'' fro	m the File Menu.
	Save As
	Save jn: 🗁 My Documents 💌 🖭 🗭 👘 🏢
	🗃 000001.ml3
	i 1223s1.ml3 ■ 1223s2.ml3
	i and a second
	M A00006.ml3
	File name: A00001 Save as type: ML3 File(*.ML3) Cancel
	Save as type: ML3 File(*.ML3)
Entortho filo namo a	and proce "S avo" button to cave the measured data in the file
	nd press 'S ave'' button to save the measured data in the file.
Abort fu	nction
The running 3650 ca	n be aborted, however the internal clock continues to run.
	🗃 Status Display
	File(E) Options(0) System(A) Abort 000000001EC4 Search
	36 50-Select 00000001EC4 Search

Select "Abort" in the Options menu.

Alarm Warning Software

This software is attached with an Alarm Warning software. Alarming condition of 3650 temperature can easily be detected with this software.

How to Use

Double click on the [AlmWng.exe] in the folder where this program is installed. And the following dialogue will appear.

🗃 Alarm Warning Checker	×
Set one 3650 at least.	
,	

Alarm Warning --- Set 3650 ---

As soon as the 3650 is set on the Data Reader, the screen displays whether the temperature alarm warning has occurred. (This won't happen if several 3650s are set together. Only a single 3650 must be set on the Reader when using this function.)

🚍 Alarm Warning Checker	×
ID No: 25400006E35	
Memo CoolBox No.22 Beef	
Abnormal	

In this dialogue, the following fields are displayed.

1.ID number

The Identification Number of the 3650

2.Memo

The content of the memo

3."Normal" or "Abnormal" message is displayed in the lower window.

Normal : The temperature alarm warning has not occurred. Abnormal : The temperature alarm warning has occurred.

Drav	ving a g	jraph						
Pressing t	he 🚺 b	utton will display th	ne following a	lialogue.				
🚰 Graph Data (Data Selection) 🔤								
						1		
	Data Position 0.1	РБООЗБЛЯ НЕНКО НИРНИ	ALTER PERCENT	.0 -1M. 0.1A	Spara			
	- MES FID ED DOL					1		
	Fà Ann	Shel Day	Concie	Man				
	□ □CaTA1	1959# 1/00 C0 C0 C0	7Dev C2 09 C0	SA MPLET				
	□ □ C ATA2	1959# 1/00 C0 C0 C0	0Der: C1 00 C0	SA MPLE2				
	□ (\$T\$)	1999/09/29/09/29/00	Dettin 0 CF C0	SA MPLEC				
	Don M	13696660716060	7E07 C2 C5 C0	SA MPLE4				
	2.35 1-9	20040464200500	JLWYLULSLU	SA MPLES				
	CDA 76	19690525030000	1107100-00	SA MPLEE				
	Date: No.	196900020-0900	1107100-00	SA MPLET				
	TDA 740	13690008144500	JL07 01 00 00	SA MPLES				
	□D25-7-9	15690-0-124000	7107 C2 C5 C0	SV-MPLLS				
	De extec C 1			□ D :	o ay listogram			

Select the graph data by marking off the checkbox. Sixteen data at maximum can be selected. After selecting the graph data, press the "Draw" button.

Clicking a checkbox will display the corresponding dialogue as illustrated below.

E	Draw Graph	x
ľ	Flution	L IIIE(:4
	Flekend	CoolDox No.22 Deer
	Measuring merval	1.000
	Start Care	08/08/17/9
	Durston	10
		<u> 0 066 </u>

The contents of the items in this dialogue are follows.

- 1.File Name
 - The File Name of data
- 2.FileMemo

The memo attached to the file

3.Measuring Interval

The time interval between the measurements of successive data

4.Start Date

The measured data of the oldest data in saved in the internal memory

5.Duration

The duration of the measured data saved in the internal memory

Zoom	
Zoom in and zoom out	the graph.
Central	
Resolution 10 Start from 1999 Duration 12	
Help	OK Exit Update
Set the fields properly and click the "C	DK" or "Apply" button.

Reload



Reload the original size of the graph.





The conversion of the measured data into the CSV format 1

The data taken from the 3650 Temperature Logger can be converted into the CSV format for the use of spread sheet application, such as EXCEL. ←

The following operation converts the specified data file into CSV format. \boxtimes

🖳 Ten	nperatu	re Reco	ording	System	
File(E)	Edit(<u>E</u>)	View[⊻) Set	ting <u>(S)</u>	
Dra	iw(<u>0)</u>	(Ctrl+O		
Prin	nt(P)	(Ctrl+P		
Prin	Ľ				
CSV	√Text(<u>C</u>)				
Bat	ch-CSV (Dutput		2	
Exit	:(X)			pf0-	

Select 'CSV Text' from the File menu.

CSV-Convert
< Source File >
File Name C:\PROGRAM FILES\TEMPERATURE RECORD Search
Measuring Interval
Measured Count
Measured From
Measured To
Convert Range C Specified Below 💿 All Data
Convert From 🔁 / 🗮 / 🗮 🗮 🗧
Convert To \Rightarrow / \Rightarrow / \Rightarrow \Rightarrow : \Rightarrow
< Destination File >
File Name C:\PROGRAM FILES\TEMPERATURE RECORDING Search
Convert Exit

Fill in the Source File Name and the Destination File Name for conversion, then press the 'C onvert' button will create the CSV format file in the specified folder.

The conversion of the measured data into the CSV format 2

The waveform data being drawn is converted into text data in a format that can be opened by spreadsheet applications, such as Excel. Select Batch-CSV Output from the File menu.

File[] F44E) Year() Saling() Drav() D4-J FrintR D4-P ReceifS45(s) COVIT-c40 P Balds1C2VUdpt Eal()

Enter a file name, then click the OK button.



Drawing a histogram



Pressing the

button will display the following dialogue.

To display the saved histogram file, click "Display Histogram" and enable the check mark.

HTG File Sylpt.						
Fill A mu	Stel Day	Seni i	Man			
E a TA1	1959# 1/00 C0 C0 C0	7Det: C2 19 C0	SA MPLET			
E staz	1999# 1/00 00 00 00	3D#1 C1 C0 C0	SA MPLES			
∏: >T>)	1999(05(35(0) 29(0)	D#1110 C7 C0	SA MPLEC			
Dat M	15690603110000	/Lev C2C5 C0	SA VIPLEA			
2.37 1-9	20040464200500	JUGYLULSLU	SA VIPLET			
FL2A 746	15696525630000	1107101-10	SA MPLEE			
ELSA AN	156900020-0900	1107101-10	SA MPLET			
ED28-740	15690008144500	JEAV C1 C0 C0	SA MPLES			
DUN 7-9	15690-0-124000	/Lev C2 C5 C0	SP-MPLLS			
De extec C (L			🔽 🕽 solati lislogram			

Select the graph data by marking off the checkbox. Select the data to be drawn, then click the "Draw" button. For a histogram, you may select only one unit of data.

Operating Procedure on the Histogram Display Screen 🚾 Temperature Histogram X Count File DataTable Alarm data Set Vertical Line Reload Print Print Alarm Back 40 20 0 -40.0 -30.0 -20.0 -10.0 0.0 10.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 Temp Range



File

Reselects the data to be displayed. Data Table Displays history data on a histogram. (Click these buttons again to close the data display.) Alarm data Displays alarm data on a histogram. (Click these buttons again to close the data display.) Set Vertical Line Rescales the vertical line in a histogram. Reload Resets the scale of the vertical line in a histogram. Print Prints a histogram. Print Alarm Prints alarm data. Back Closes the histogram window.

Others

Others

See O nline H elp for other details. \boxtimes

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Production Number					
Date of purchase					
Shop Name					
	TEL ()	-		