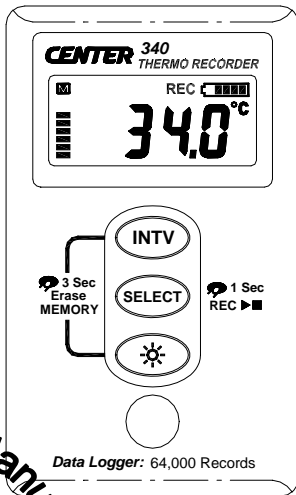


CENTER® 340

THERMO RECORDER



Instruction Manual

● SE-345

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I. SAFETY INFORMATION

- Read the following safety information carefully before attempting to operate or service the meter.
- Only qualified personnel should perform repairs or servicing not covered in this manual.
- Periodically wipe the case with a dry cloth. Do not use abrasives or solvents on this instrument.
- Safety symbols:



Dangerous, refer to this manual before using the meter.



Apply with European CE.

II. FEATURE

- LCD With Back Light
- Battery Status Display
- Memory Status Display
- Easy To Setup
- Windows Interface Software
- 64,000 Records Data Logger.
- Water Proof.(IP66)

III. GENERAL SPECIFICATION

Measurement Range: -30°C ~ 70°C ; -22°F ~ 158°F

Accuracy: $\pm 0.7^{\circ}\text{C}$ ($\pm 1.3^{\circ}\text{F}$)

Resolution: 0.1°C / 0.1°F

Data Logger: 64,000 Records

Storage Condition: -30°C ~ 70°C

Operating Condition: -30°C ~ 70°C

Response time: 20minutes to 95% under slow air.

Battery: Size AAA 1.5V x 2 (alkaline battery)

Battery Life: more than 1 year (1 minute interval @ 25°C)

Dimension: Recorder: 92 x 55 x 21mm

Base: 107.5 x 62 x 28 mm

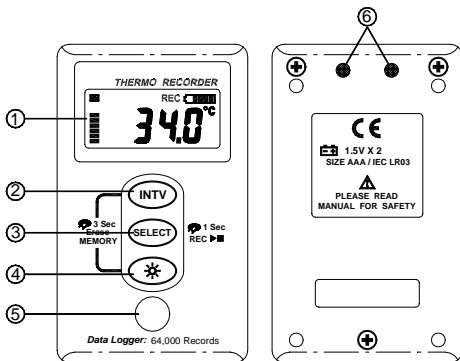
Weight: Recorder: 95g Approx.; Base: 60g Approx.

Accessory:

Instruction Menu, Wall Hanger, Alkaline Battery Size AAA 1.5V x 2, Communication Base, RS-232 Connection Cable, Windows Software Disk.

(Battery is placed in the logger before shipping.)

IV. NAME AND FUNCTION



① LCD Display

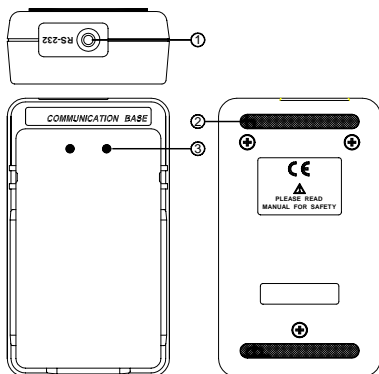
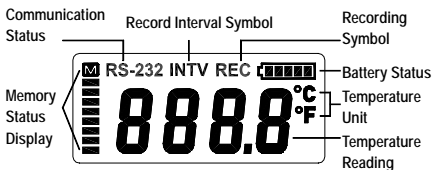
② INTV Setup Button

⑤ Temperature Sensor

⑥ Infrared RS232 Interface

③ Select Button

④ Back Light Button



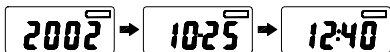
- ① RS-232 Jack
- ② Slip Proof Rubber
- ③ Infrared RS232 Port

V. OPERATION INSTRUCTIONS

5.1 Setup

Date And Time Setup:

1. Hold **INTV** **SELECT** buttons simultaneously for 3 seconds to enter date and time setup mode.
2. Press **INTV** to select year, month, day, hour and minute setup.



3. Press **SELECT** to set value on year, month, day, hour and minute.

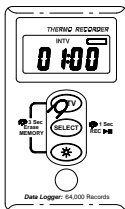
Note:

Be sure to setup date and time again after replacing battery.

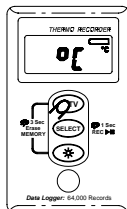
The user can also setup the time through the PC software. There is a button in the software directly synchronize the setup to the PC.

Setup Recording Interval and Temperature Unit:

1. Press and hold **INTV** for 2 seconds to recording interval setup mode.(P-1)
2. Press **SELECT** to select record interval. Options are 1,2,5,10,15,20,30 seconds and 1,2,5,10,20,30,60 minutes.
3. Press **INTV** to finish record interval setup and go to temperature unit setup mode. (P-2)
4. Press **SELECT** to select °C or °F.
5. Press **INTV** to save and exit setup mode.



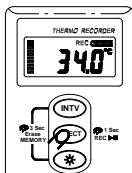
P-1



P-2

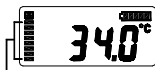
5.2 Temperature Recording

1. Press and hold **SELECT** for 1 second to start recording and LCD will display "REC".
2. To stop recording, press and hold **SELECT** for 1 second again. The "REC" symbol will disappear.
3. After step 1 and 2, it is called a data set stored in Recorder.



Note:

1. It is important to check the memory status before start recording.
2. LCD will show "FULL" when 64,000 records are stored in Recorder or 15 data sets are stored in Recorder.





64,000 records available totally and each segment represents about 8,000 records available.

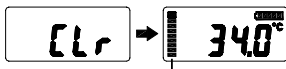
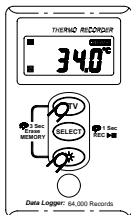
FULL

3. If temperature recording is not active, recorder will power off automatically after 60 seconds. It can be powered on by pressing any button.

- During temperature recording, recorder will turn on the LCD for 2 seconds and then go into power saving mode during each record interval.

5.3 Erase Memory

- Press and hold   simultaneously for 3 seconds to clear memory.
- LCD will display "CLR".

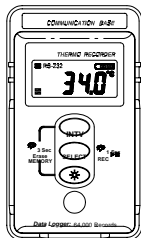


Memory display will resume in full status

Note: It is not allowed to erase memory when temperature recording is active.

5.4 Download Data

- Dock the recorder to the communication base and connect the RS-232 cable to PC.
- Run the SE-345 software, LCD will display "RS-232" to indicate the linking status.



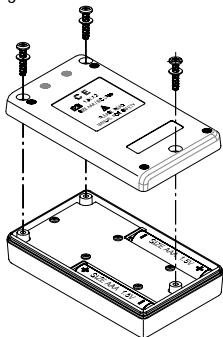
3. Click "DataLogger" from SE-345 menu to download data.

Note:

1. Refer to page 11(6.1) about installing SE-345 software.
2. Refer to page 12(6.2) about software introduction.

5.5 Replace Battery

1. Please stop data recording before replacing battery.
2. Use two Alkaline Battery Size AAA 1.5V .
3. After replacing the battery, please make sure screwing these three screws tightly with gasket to keep it airtight.



VI. Software

6.1 Installation

- System Required:

Windows 95/98/ME/NT 4.0. /2000/XP

- Minimum Hardware Required:

PC system with Pentium 233MHz or higher.

64 MB RAM.

4X CD-ROM Drive or higher.

Recommended resolution 1024X768(or 800X600).

At least 15 MB byte of free hard disk space available to install SE-345.

- Installation :

1. We recommend to close all other applications before install the TestLink SE-345 software.

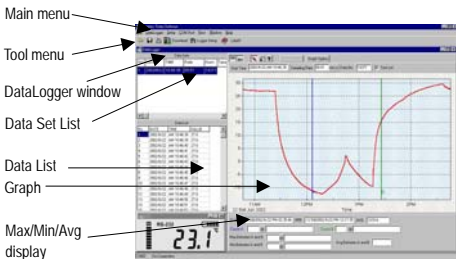
2. Insert the setup CD disc to CD-ROM drive and the installation program would start automatically.

- 3.If installation dose not start automatically, choose the start button on the Taskbar and select Run.

- 4.Type E:\SETUP and choose OK, then it will copy SE345.exe (executable file) and help file to your hard disk (default is c:\program files\SE345).

6.2 Introduction

- **Main Screen**



- **Main Menu**

File : Open - Open files saved previously from the disk.

Save - Save the data to the disk.

Print - Print the data (graph or list).

Printer Setup - Select printer.

Exit - Terminates program.

DataLogger : By opening the DataLogger Window, the user can download recorded data from meter to PC in this window.

Setup : Setup Recorder from PC.


COM port : Select PC communication port manually.

View : Open LCD display window.

Window : Arrange windows

Help : On line help.

- **DataLogger**

When you have the Temperature Recorder connected to PC. Start SE345 software and select "DataLogger" from main menu or click  from tool bar to load recorded data from the logger. There will be a progress indicator to show the download progress. If error occurs, just click "DataLogger" again. After the data was downloaded completely, on the top left hand side the widow will show how many data sets were loaded and information for each data set (start data, start time, recording rate and record numbers).

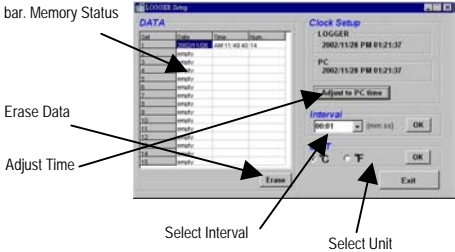
For examples, the figure below indicates that there are two data sets. Set 1 has 1325 records and set 2 has 19349 records.

Set	DATE	TIME	Rate	Nums	Type
1	10/02/2007	21:10:25	00:00:02	1325	C
2	10/02/2007	21:56:26	00:00:02	19349	C

Note: It will transfer first data set to the graph on the right hand side and list data after loading; you can click other data set to view the graph and list of the data set you select.

- **Setup Logger**

You can setup Logger from software, just select "Setup" from main menu or click  from tool.



Note: After you select interval or unit , you have to click OK button to make this change valid.


• Tutorial Quick Start

(1) Recording real time data from PC.

1. Put the Temperature Recorder on the Communication Base, and connect it to a PC serial port with the SE-120 cable.
2. Run the SE345 Software.
3. If the connection is successful, the LCD will display the same value as the Temperature Recorder. If the communication fails, there will be no "RS-232" symbol on the LCD window.




(2) How to save the recorded real time data to a file ?

1. Select the window you want to save by click it, then choose File|Save from main menu or click  from the tool bar.
2. There will be a save dialog window for you to assign the file name and file type to save.
3. There are three types of file you can choose, they are binary file(*.ghf), text file(*.txt) and EXCEL format file(*.csv). The *.ghf file use much fewer disk space to save the data than the other two file formats, but it can only be used in TestLink SE345 software. Text file can be opened by TestLink SE345 and any other word processor program like word, notepad etc. EXCEL format file can be opened by TestLink SE345 and Microsoft EXCEL.



(3)How to download the recorded data from the memory of Temperature Recorder and save it to a file ?

1. Connect the Communication Base to PC
 2. Put the Temperature Recorder on the Communication Base.
 3. Start SE345 program.
 4. Choose Data Logger from main menu or click  from tool bar.
 5. In reference to Data Logger, see [Page 22] about DataLogger.
- **For more operation instruction, please refer to the online help while executing SE-345.**

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