



THERMAPRO2 DATA LOGGER



Starting

- Connect the RS232/USB cable to the 4 pin male/ RS232 cable.
- Install the Thermapro2 software CD from the USB and open Thermapro2 file icon. 
- Connect the Thermapro2 P.C. cable to the Thermapro2 unit. Marry the COMMS number to the software, via P.C Device manager and on the software - Options/Preferences. Ensure USB driver/Window is updated.
- Enter the unlock code and serial number provided on the USB stick.
- Click Logger configuration – 

Various options can be selected to configure the logger. Once completed to the users specifications, click Store at the bottom of the page. Ensure the date & time from P.C is up to date.

- Disconnect the P.C cable attached to the Thermapro2 unit.

Using the Logger

- Attach probes to the Thermapro2 unit.
- Start the Logger by clicking the Start button on the unit and place into the thermal barrier provided. A green flashing LED will appear, indicating each sample taken.
- Insert the probe(s) into the product(s) and place the Thermapro2 into the application area. (oven conveyor belt)

Once the run has completed, use the thermal protective gloves to remove the Thermapro2 from the oven. **WARNING – HOT TEMPERATURE.**

- Open the thermal barrier and press the Stop button on the logger, a red LED will flash once to indicate the logger has stopped.
- Allow the logger to cool to an ambient temperature, before downloading the data.

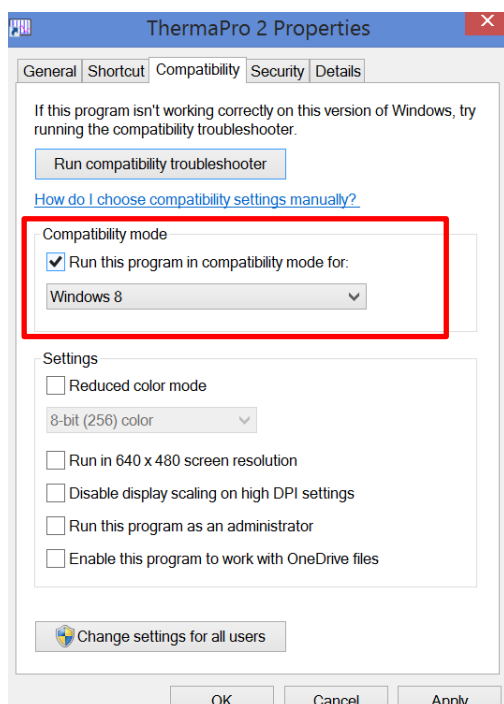
Disconnect the unit from the P.C once the data has been downloaded as a constant connection will drain the battery.

- A safety data feature ensures that stored data cannot be overwritten until downloaded.



Communication Errors

- Ensure Unlock code & Serial No. has been entered into the software and has passed.
- Ensure date & time has been updated to current date & time on software (Logger Config.) and has been stored.
- Ensure cables are fitted into their respected ports and no damaged. Check continuity.
- Marry up the COMMS No. port from P.C (Device Manager) to software (Preferences).
- Restart – Software & P.C.
- Update if necessary the COMMS driver in (Device Manager / Prolific USB-to-Serial COMMS port / Driver) (Reset P.C once updated).
- Update P.C. Windows if needed.
- Ensure battery level is normal.
- Right Click on ThermaPro2 icon and open Properties/Compatibility and select the tick box under Compatibility mode, select the Windows that the P.C is running.
- Do not open the front cover of the unit on the unit as warranty will be void.



Logger specification

Operating Temperature	-20°C to +85°C for up to 1 hour Without Thermal Barrier Up to + 350°C (Depending on Thermal Barrier size) Refer to table on next page
Instrument Accuracy	± 1°C throughout operating temperature (+ 0.1%t below -100°C) Resolution: 0.1°C
Logger Storage Temperature	- 40°C to + 100°C
Sampling Interval	0.125s to 99hrs
Features	<ul style="list-style-type: none"> • Calculation of P / Fo / Fh / C Value With selectable Tref and z value temperatures. • Data security – Does not allow overridden data until previous data has been downloaded. • Exportable excel result table • Unique unlock code password • Noise filtering • Various Thermocouple options to choose from (On purchase request) • Range of Thermal barrier protectors • Graph form with max and min guidelines with annotation note text box • Full Range of edit functions and printing facilities • Probe disconnection detection
Memory Capacity	130,560 samples
Clock/Delay Start	Data stamped with time/date by on board real-time clock. The clock also allows logger to start at a pre-selected time/date, allowing data gathering to begin without direct supervision
Battery	3.6V Lithium Thyionyl Chloride Expected life equivalent to 1 test per day for 5 years
Application	<ul style="list-style-type: none"> • Food Processing • Oven/freezer process diagnoses • Bacteria sterilization kill zone values • Sterilizing • Transporting • Freezing Processing • Adhesive manufacturing • Temperature profiling • Soldering • Textiles
Logger Dimensions	140mm x 126mm x 17mm

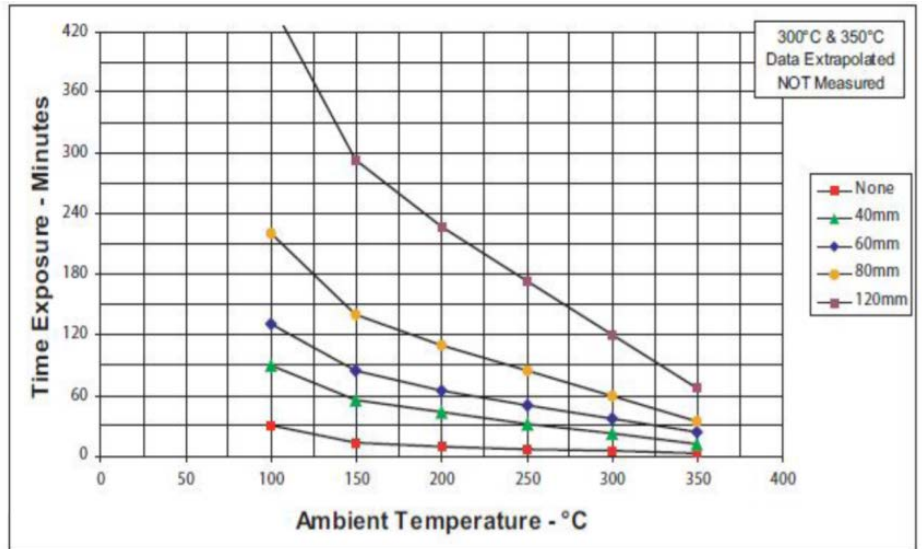
Thermal Barriers:

- TB40 - 40 mm x 220mm x 260mm
- TB60 - 60 mm x 220mm x 260mm
- TB80 - 80 mm x 220mm x 260mm
- TB100 - 100 mm x 240mm x 280mm
- TB120 - 120 mm x 240mm x 280mm

Thermocouple Inputs

Range:

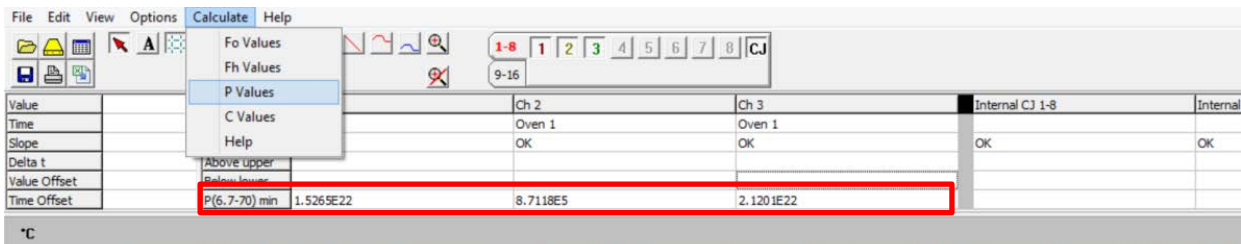
Refer to IEC 60584 - 2013



Software Features

Value	Ch 1	Ch 2	Ch 3	Internal CJ 1-8	Internal CJ 9-16
Time	4h2m54s	4h2m54s	4h12m30s	3h34m28s	3h34m4s
Slope	223.6°C	107.9°C	222.7°C	33.6°C	33.6°C
	Max at 3h37m14s	3h39m20s	3h36m58s	3h59m42s	4h2m22s
	Location Oven 1	Oven 1	Oven 1		
	Status OK	OK	OK	OK	OK

Calculation of P / Fo / Fh / P / C Values



Calculation Parameters

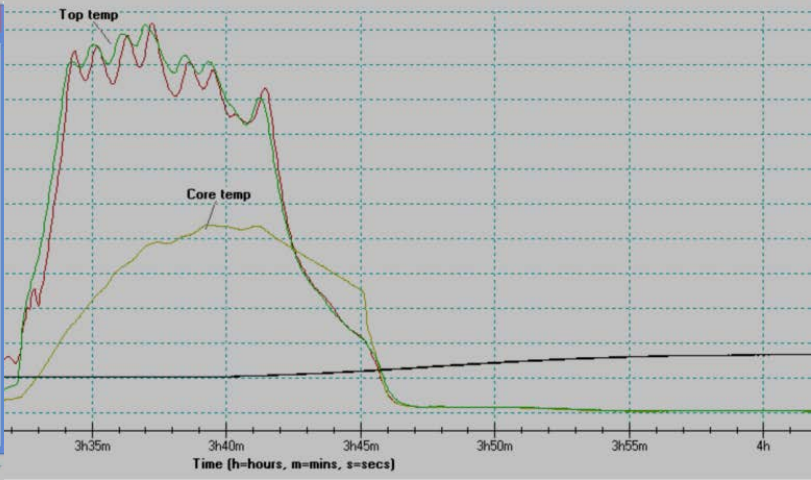
The calculation function uses the standard lethality equation:
 $L = 10^{-(T-T_{ref})/z}$
 For Fo calculations Tref is 121.1°C and z is 10.
 For P, Fh and C value calculations Tref and z must be supplied.

Tref (°C) :

z value (C°) :

List of typical z values

- Enterococcus Faecalis (6.7)
- Staphylococcus aureus (4.6)
- Salmonella seftenberg (5.7)
- Lactobacillus plantarum (12.5)
- Listeria monocytogenes (6.7)
- Clostridium boulinum non-proteolytic B (9.7)
- Clostridium boulinum non-proteolytic E (9.4)
- Clostridium butyricum (8.3)
- Byssochlamys fulva (7.8)
- Zygosaccharomyces bailii (5.0)



Calibration

- Calibration and tolerance adjustments
- UKAS traceable Calibration certificate
- Battery change if necessary
- Probe check

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digitronsales@rototherm.co.uk

★ Calibration + Service Plus ★

- New set of thermal gloves
- Battery change
- Thermal barrier, heat protection relining
- Thermal barrier, thermal sheath replacement
- Calibration and tolerance adjustments
- UKAS traceable Calibration certificate
- Calibration graph
- USB with most updated software + unlock code
- Replacement probes if necessary
- Deep contamination clean
- Replacement thermocouple sockets if necessary

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