



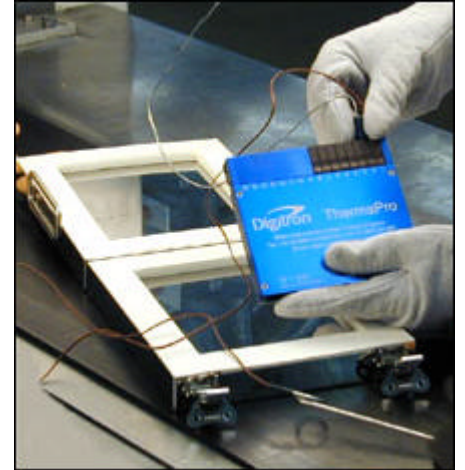
# ThermaPro 2

## Multi- Channel Oven-Datalogger for Accurate Temperature Profiling in the Food Industry.

ThermaPro 2 is the latest generation of high accuracy data logging instruments for use in extreme or hostile environments.

Suitable for applications where recording of temperature, RH or pressure is critical to the maintenance of product quality.

This datalogger is ideal for the Food Industry where process profiling is crucial to production efficiency and energy use optimisation.



### Key Features

- Slimline design for ease of use in ovens/chillers
- Monitor process efficiency and energy use
- Diagnose problems
- Develop new processes
- Controls quality
- 4,8 and 16 channel options available
- Thermocouple, Voltage or Current Inputs
- 14,280 samples per channel
- Maximum memory capacity 130,560 samples configurable
- Temperature Measurement range -270°C to +1372°C (depends on thermocouple sensor type)
- Range of Thermal Barriers
- Operating Temperature Range 0°C to 350°C (depends on thermal barrier)
- User configurable software.

### Sub sections

- ThermaPro 2 Configuration
- Simple Steps to Oven Temperature Logging
- Thermal Barrier Choice
- PC software
- Calibration Procedure
- Product Specification



# ThermaPro 2

## ThermaPro 2 Configuration

Available in 4, 8 and 16-channel models, ThermaPro 2 dataloggers are user-configurable for any number of inputs up to the maximum available. Channels will accept input from Types E, J, K, N or T thermocouples, or from devices producing a voltage or current output. On each model, channel may be configured in two blocks (i.e., 2+2, 4+4, 8+8), each block accepting a different type of input.

Depending on the model configuration, each channel can store a minimum of 14,280 data samples within maximum temperature limits of  $-270^{\circ}$  and  $+1372^{\circ}\text{C}$   
( $\pm 19.05\text{mV}$  to  $\pm 2.5\text{V}$  in 8 steps for Voltage)  
( $\pm 195\mu\text{A}$  to  $\pm 25\text{mA}$  in 8 steps for Current devices).

Depending on the number of channels in use, the total memory capacity of 130,560 data samples can be distributed across the available channels.

## 4 Simple Steps to Oven Temperature Logging

**STEP ONE** -When logger is set up, simply connect thermocouples and/or other sensors and switch on. Status is confirmed by LEDs on side of instrument.

**STEP TWO** -The logger is then enclosed in its thermal barrier, and is ready for use

**STEP THREE** -After the run, ThermaPro 2 is simply removed from the barrier and switched off. Sensors may now be disconnected.

**STEP FOUR** -A simple cable interface allows logged data to be downloaded. A safety feature ensures that stored data cannot be overwritten until downloading has taken place.

## ThermaPro 2 Thermal Barriers

Thermal barriers are an integral part of the ThermaPro system, and provide essential protection for the logger electronics against the high and low temperatures used in food industry processing. Use the graph below to select the appropriate barrier for your process application.

Before making your choice, you should consider the parameters of your process(es), and relate them to the graph. Many temperature-controlled processes include a number of pre-programmed temperature ramps. In such cases, total heat-energy exposure in terms of overall time may not be obvious. If you are not sure, please talk to your local distributor before you specify.



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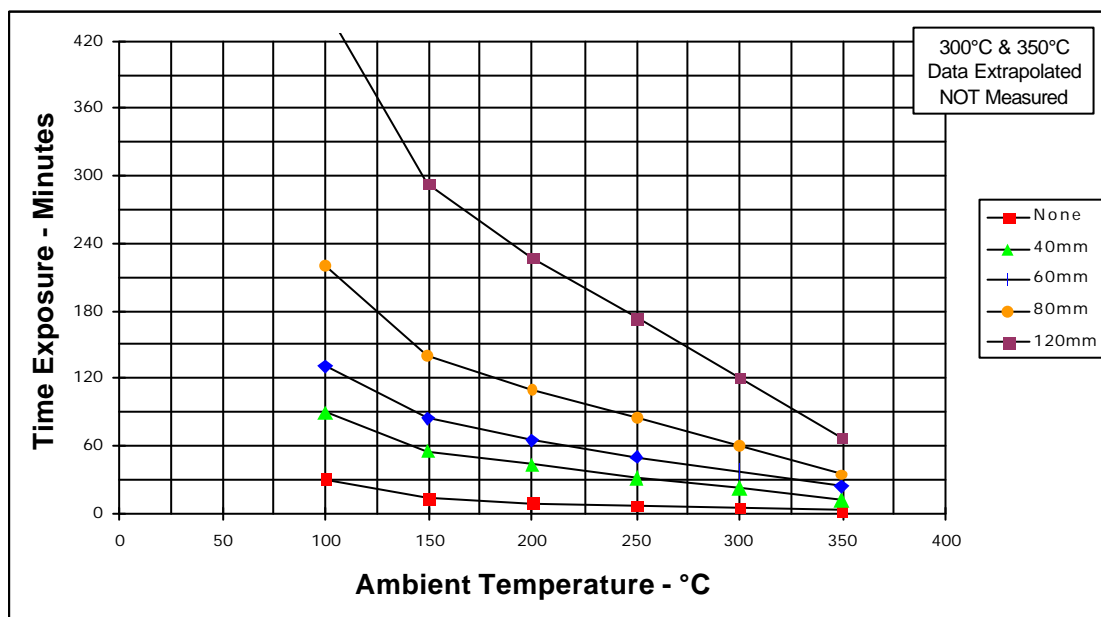
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It is important to consider your **ACTUAL** time/temperature values when specifying a barrier. On the graph, draw a vertical line from the time axis. The appropriate barrier should be the one whose trace is immediately above the intersection of your lines.

You may find that your process or processes are not covered by the graph. Digitron offer other barriers, and are also able to produce Specials

Under certain conditions, it is possible to dispense with a barrier- a considerable advantage where oven clearances are very small. However, we strongly recommend that total temperature exposure is carefully considered – please contact your local distributor for assistance.

## ThermaPro 2 Thermal Barrier Performance Graph



**NB Make available this graph as a download and expandable on screen**

## ThermaPro 2 PC software

ThermaPro 2 PC software allows individual channel configuration, logger parameters to be set and logged data to be downloaded and saved. There is also a comprehensive range of graphing facilities to rapidly analyse results on-screen, using ThermaPro's time-and date -stamped data. Operators can include user-selected parameters with logged data for oven/chiller/product performance and analysis. Data may also be exported to other PC-based graphics and analysis programmes.

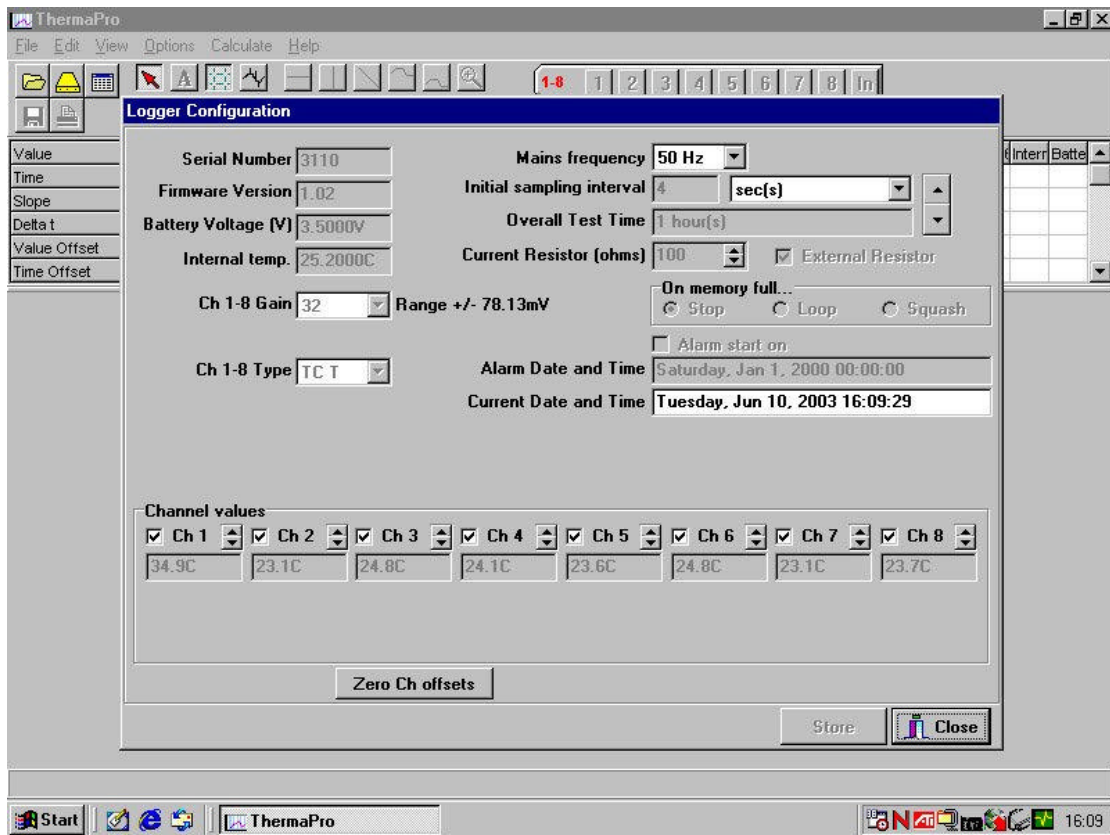
THERMAL BARRIERS  
 DIGITRON



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The Logger Setup section provides straightforward, intuitive channel configuration. It also allows features such as the sampling interval, memory full options, start/stop timings and the internal clock to be synchronised.

By deliberately avoiding complex routines, it allows first-time users to obtain high-quality results without lengthy familiarisation or training.

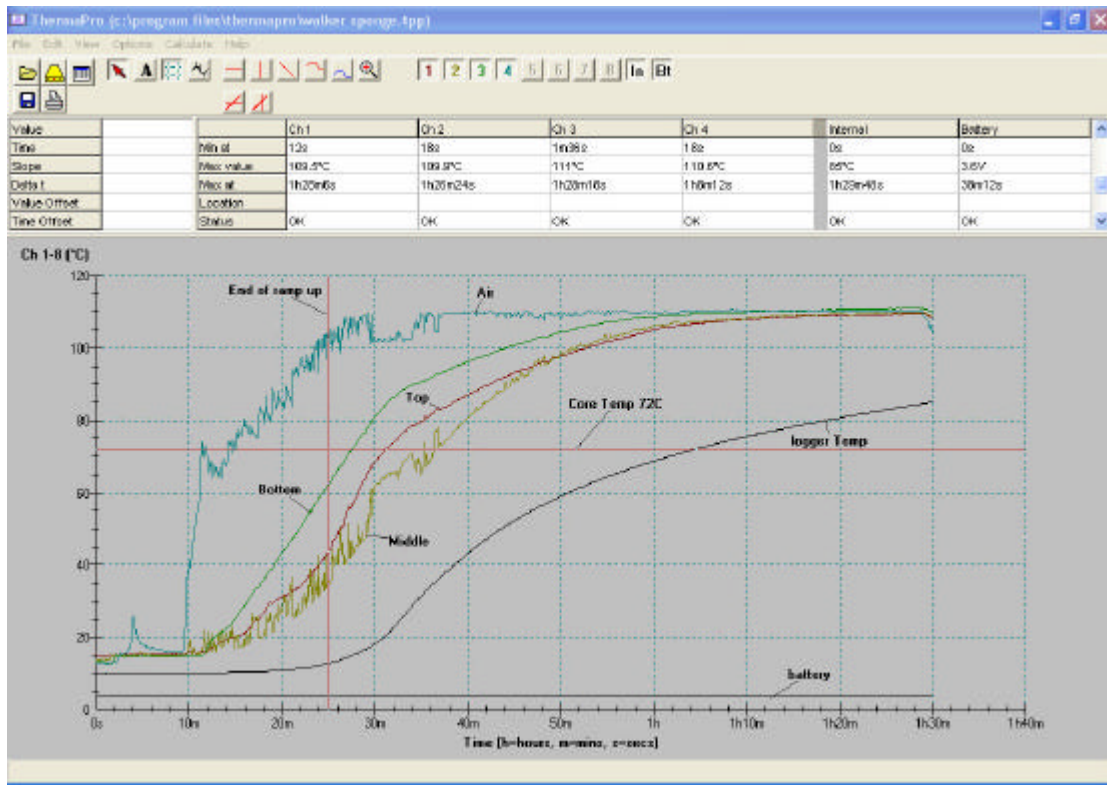
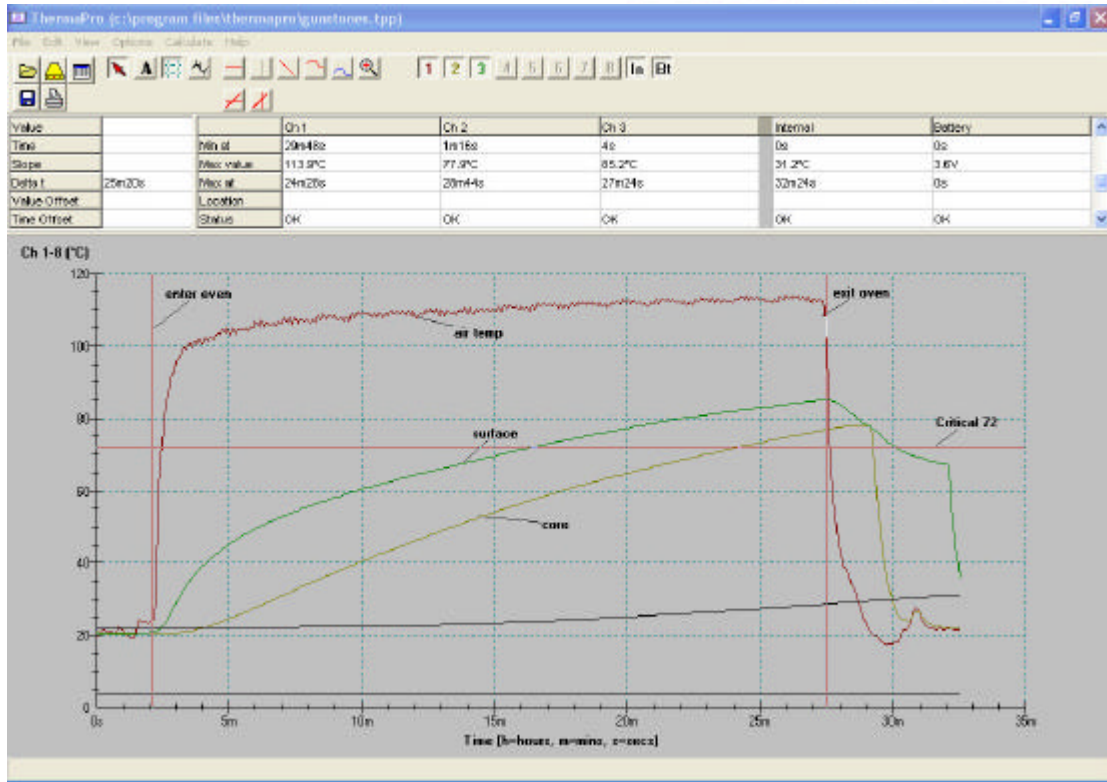


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## Software Features

- Windows compatible (95 – XP)
- Provides simple logger set up
- Multi-language option
- Full graphic display of up to 16 Channels on automatically or manually scaled time/temperature axes.
- Separate vertical axes are displayed for temperature and voltage/current data.
- (Can be offset/scaled to read corresponding values across the display.)
- User-defined annotations allow text to be added to graph.
- On-screen information panel shows time and data value at pointer position.
- User-set vertical (time) cursor shows all channel temperature values at cursor position.
- User-set horizontal (temperature) cursors show time above, between and below important temperature values.
- User-saved overlays allow you to show actual data compared to ideal performance.
- Full range of edit functions and printing facilities.
- Logger data may be exported to other Windows-based programmes.
- Automatic display of battery status and internal temperature logged during run.

## Sampling Interval

- 0.125s to 96s,
- 1 min to 99 min,
- 1hr to 99 hrs.

**Process duration:** Select an overall time covering process duration: select an overall time covering process duration and the software will choose a sampling interval which maximises the number of sampling events spanning time selected.



## ThermaPro 2

**Data security:** ThermaPro2 will not accept new data if previous data has not been downloaded. Status clearly indicated by front panel LED.

**Clock / Delay Start:** data stamped with time/date by onboard real-time clock. The clock also allows logger to start at a pre-selected time/date, allowing data gathering to begin without direct supervision.

**Calibration:** Automatic calibration validity check every time data is downloaded.

### Calibration Procedure

We believe our calibration procedure is uniquely comprehensive within our industry.

(1) Logger is connected to a thermocouple simulator producing a set output (eg 300°C).

(2) Logger is put into an oven and heated until it reaches its maximum internal operating temperature of 85°C (even inside a thermal barrier it could come near this maximum). Simulator output is logged continually.

(3) Logged data is downloaded to a PC and displayed as a trace that will highlight any deviations from “ideal” simulator output.

(4) The resulting data is used to create a calibration file for the logger.

(5) A similar procedure is followed for low temperature performance, down to the logger's lower limit of -40°C.

As the logger set-up procedure also allows known variations in output device performance to be entered. ThermaPro 2 can provide the most accurately calibrated data available to the food industry.

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# ThermaPro 2

## Specifications

### Dimensions

**Logger:** 140 mm x 126 mm x 17mm

### Thermal Barriers:

TB40	40 mm x	180mm x	220mm
TB60	60 mm x	210mm x	250mm
TB80	80 mm x	220mm x	260mm
TB100	100 mm x	220mm x	260mm

### Thermocouple Inputs:

#### Range:

Type E:	- 270°C to + 1000°C
Type J:	- 270°C to + 1200°C
Type K:	- 270°C to + 1372°C
Type N:	- 210°C to + 1300°C
Type T:	- 250°C to + 400°C

### Voltage Inputs

#### Range

$\pm 19.5$  mV to  $\pm 2.5$  in 8 steps

#### Resolution

600 nV to 76  $\mu$ V in 8 Steps

#### Accuracy

0.01% FS or 50 $\mu$ V, whichever the greater

### Current Inputs

(NB Special plugs required)

#### Range

$\pm 195$   $\mu$ A to  $\pm 25$  mA in 8 steps (100ohm sense resistor)

#### Resolution

6 nA to 763 nA in 8 steps (100 ohm sense resistor)

#### Accuracy

0.01% or 500 nA, whichever is greater

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## ThermaPro 2

### Noise Reduction

Common Mode  
100dB (sampling interval 2s or more)

Common Mode 50/60 Hz  
150dB (sampling interval 2s or more)

Normal Mode 50/60 Hz  
100dB (sampling interval 2s or more)

### Battery

Lithium Thionyl Chloride  
3.6V  
Expected life equivalent to one test per day for five years

### Photos available

