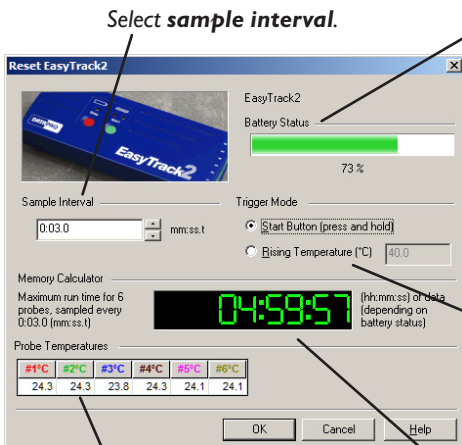


Running a temperature profile

I If... *EITHER* you are making the first profile run with a new EasyTrack2 logger, *OR* you want to change the reset conditions (sample interval or start trigger), first connect the logger to the PC and **reset the logger with Insight™**.



Select **sample interval**.

Check **battery status**.



Using **temperature as the trigger**, data-recording starts when the temperature of any probe rises to the specified value.

The **current temperature** being measured on each of the logger's channels is a useful check that the thermocouples are working properly.

Check the **maximum time** for which the logger can collect data, given the sample interval chosen. The time may be further limited by the level of battery charge.

Next...

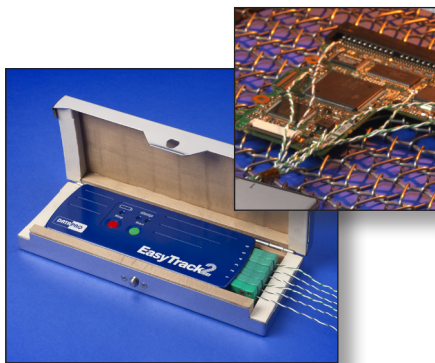
Press **green Start** button to start data-recording.



To use the same reset conditions as in the previous run, there is no need to connect to the PC: simply press the Start button.

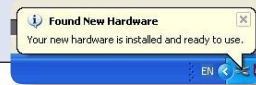
2

Place logger in thermal barrier and attach thermocouples to the product.



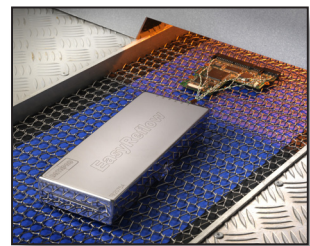
Installing the software

1. Ensure you are logged into Windows in Administrator mode.
2. Place the Insight DVD in the drive and follow the on-screen instructions. You will need your license number.
3. Remove the DVD, and use the communications lead to connect the logger to a USB port on the PC; the red LED on the logger should flash five times. Drivers will then install automatically.



3

- Send through oven.
- Collect at exit.
- Remove logger from thermal barrier.



CAUTION
Wear heat-resistant gloves.

4

- Press **red stop** button, connect communications lead and...



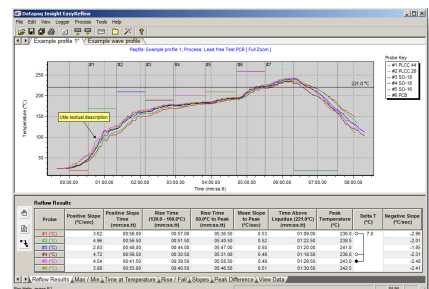
- ...download to PC.
- If using a **process file**, select one when prompted.

After download, disconnect communications lead to conserve logger battery.

5

View the temperature profile and save the data.

Print a report.



Key functions of Insight EasyReflow

Oven zone markers

Quick-access toolbar buttons (see below).

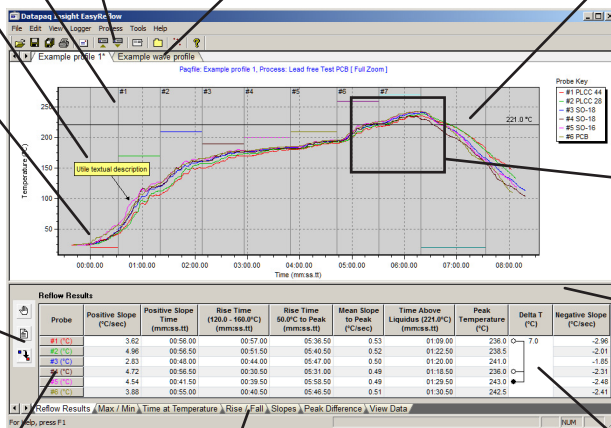
Paqfile tabs Open multiple profiles, and switch between them.

Memos Add comments: select Edit > Memos.

User-corrected oven start
To make data consistent between runs, set the zero time as the point where the system enters the oven.

Data-display controls for analysis options (see opposite), probe names, and grid orientation (see below).

Color-coded probe buttons Click to select which probe results are viewed and reported.



Liquidus temperature and user-defined threshold temperatures can be displayed: select View > Graph Options.

Mouse-operated zooming
Drag out an area to zoom into. The data grid and analysis then apply to that section of the data alone.

Movable splitter bar
Choose how much of the screen to devote to the graph or to the data.

Reflow Results analysis
Conveniently shows all the key reflow analyses in one table (see opposite).



Save the results

For future use, save the results of your profile run as a **paqfile**.



Print report

Print a comprehensive report of the data and its analysis. To customize the report, select File > Print Options.



Email the results

Send the profile results as an email. In case the email recipient does not have Insight, the email contains a link to download free **Paqfile Viewer** software with which to view the temperature profile.



Reset (program) the logger

Before a profile run, set the data-collection parameters – sample interval and trigger mode – and check the logger status (see p. 1).



Download data

After a profile run, transfer to the PC the temperature data collected from the run.



Wave solder

Run a wizard to guide you through the process of obtaining a temperature profile with a wave solder oven (see opposite).



Wizards

Select a wizard to guide you, step by step, through various operations.

- Setup a new **process**, or a new oven, product or recipe.
- **Reset** the logger.
- **Download** data.
- Run a **wave solder** temperature profile.



Process files

Create template files that specify the details of your process. Apply them to your data to permit rapid interpretation and analysis (see opposite).



Mouse right-click

Right-click on the graph to show a menu of commonly used options, including:

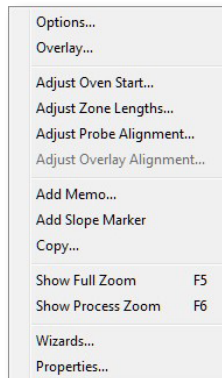
Overlay Overlay different temperature profiles on the same graph for direct comparison.

Adjust Oven Start
Reposition the markers for oven start and process end in a paqfile.

Copy Export a paqfile's data to the Windows clipboard – as text or as spreadsheet data.

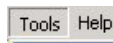
Show Full Zoom Set the graph zoom to show all the data in the paqfile.

Show Process Zoom Set the graph zoom to show all the data between oven start and process end.



Help

In any dialog, press the **Help button** for information specific to the operation you are performing.



Options

Select options for system operation, including display features, units and logger operation.



Switch grid orientation

Toggle between displays which show the probes listed along the side or along the top of the analysis grid.

Specify the details of your process



Enter the **oven's settings** so that these can be shown on the graph to aid interpretation. Each zone can be given a **name**.

Add and remove zones to match your oven.

Without alignment, no adjustment is made for differences in the probe positions, so the probe traces may not coincide. If you **align probe data**, the probe traces are aligned according to the relative positions of the probes as specified here (if 'Auto Align' is not selected) – or select both options to have the **probe traces adjusted to coincide automatically**, according to their shape.

Select each analysis mode one at a time to change the analysis parameters (see below, and the Help system).

Zone	Name	Length (cm)	Lower (°C)	Upper (°C)
Entrance lead		24.0	20.0	20.0
1 #1		36.0	170.0	170.0
2 #2		36.0	210.0	210.0
3 #3		36.0	190.0	190.0
4 #4		40.0	200.0	200.0
5 #5		40.0	210.0	210.0
6 #6		36.0	260.0	260.0
7 #7		36.0	270.0	270.0

Name	X (cm)	Y (cm)
#1 PLCC 44	15.9	7.7
#2 PLCC 28	12.4	10.2
#3 SO-18	4.0	6.6
#4 SO-18	6.0	14.3
#5 SO-16	11.6	6.6
#6 PCB	14.4	2.6

Insert a **picture of the product** to aid in positioning the probes.

So that non-auto alignment can be done, enter each probe's **coordinates** relative to top right of the product, or... drag the **yellow probe markers** on the diagram. (Not for wave solder ovens.)

Entering the **product size** gives correct probe alignment and picture display.

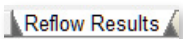
Save the details as a file which can then be applied quickly to the data for any profile run. Choose the **whole** of the process details, or just those relating to the **oven**, the **analysis** or the **product**. Select **Open** to browse to an existing process file.

Click **OK** to **apply** all the details shown in the dialog to the data from the profile run.

Fully-detailed **context-sensitive help** is always just a click away. Or press **FI** for the full Help system, including details of the **analysis modes**.

The analysis options

Reflow Results



Clear analysis of each probe's data for each of the temperature profile's critical **reflow soldering** parameters.

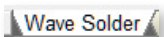


For each analysis mode, click on the **Options button** in the Analysis Window to **select parameters** for that analysis – or set parameters using the Process Details dialog (above).



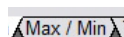
Click button to **edit the probes' names**.

Wave Solder



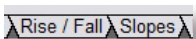
Show temperature and time data specific to use of the **wave solder process**.

Maximum/Minimum



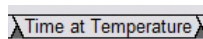
Analyse the **maximum and minimum temperatures** achieved by each probe.

Rise/Fall and Slopes



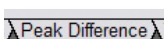
Calculates and analyses the **rates of heating and cooling** for each probe.

Time at Temperature



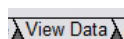
Calculate the time at which a specified temperature is reached, and the time for which the product was at, or above, that temperature.

Peak Difference



Data for the **two probes which recorded temperatures with the biggest difference** at any single point in the profile.

View Data



Display the **raw temperature data** for any point in the profile.

- Click on the probe-trace of interest.
- Drag the vertical bar to the appropriate position and read time and temperature information.

The logger's battery

The EasyTrack2 logger requires a 9V PP3 alkaline battery.

It is important to use only good-quality, branded batteries.

Do not use zinc-carbon or zinc-chloride batteries, rechargeable batteries, batteries that may have been used previously, or batteries outside their shelf life.

The EasyTrack2 employs non-volatile memory, so – even when the battery is replaced – data stored in the logger will not be lost.

Fitting batteries

1. Open the battery compartment by releasing the magnetic catch on the battery compartment.
2. Remove the old battery by gently pulling the white connector block.
3. Replace with a new alkaline 9V PP3 battery.
4. Replace the battery compartment lid.



For the first profile run after replacing the battery, you must reset the logger using Insight (see p. 1).

Battery status LEDs

During a profile run, or immediately after the communications lead is inserted, battery status is as shown below.

Battery Status LED – Yellow	Logger Status LEDs Red/Green	Meaning
Flashing	Flashing or off	Battery low: replace
Off	Off	Battery dead: replace
Off	Flashing (red or green)	Battery OK



Battery Status LED

Yellow

Logger Status LEDs

Red

Green

Saving Battery Life

To limit power consumption and maximize battery life, the logger will power itself down (all LEDs off) at the following times.

- When the communications lead is removed from the logger after a download.
- Five minutes after the red Stop button has been pressed if the data is not downloaded.
- When the communications lead is plugged into the logger, and the logger detects no activity for 5 minutes.

To **power down the logger manually**, press the green and red buttons simultaneously and hold them for 3 s.

To **power up the logger**, either plug in the communications lead or (to start a profile run) press the green Start button. If the logger has data in memory that has not yet been downloaded, pressing the Start button will not start a new run or delete data but will simply power the logger up; the red LED will then flash every 5 s to indicate that data needs to be downloaded.

EasyTrack2 logger status LEDs

Red	Green	Meaning	Action
5 flashes, alternating with green LED	5 flashes, alternating with red LED	Logger successfully reset	None
Flashing, alternating with green LED, at sample interval	Flashing, alternating with red LED, at sample interval	Logger awaiting trigger (either Start button or temperature)	None
Flashing together with green LED	Flashing together with red LED	All probes are above trigger temperature, and thus data-recording cannot be triggered by rising temperature	Reset Temperature Trigger from PC
Off	Flashing at sample interval	Logger acquiring data	None
Flashes 5 times (once per second)	Off	Connection between communications lead and logger has been made	None
Flashing every second	Off	Serious internal error	Contact Datapaq
Flashing every 5 seconds	Off	Logger has data in memory which has not been downloaded	Download to PC, or perform a PC reset to delete data
2 quick flashes every second	Off	Logger too hot to start logging (after pressing Start button)	Allow logger to cool



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