

**NEW  
O<sub>2</sub> PPM  
Measurement**



- ✓ O<sub>2</sub> PPM ZONE MEASUREMENT
- ✓ X/Y/Z VIBRATION LEVELS
- ✓ TEMPERATURE PROFILES
- ✓ CONVEYOR SPEED
- ✓ VACUUM STAGE OPTION

**SLX**  
Reflow Profiling



## REFLOW SHUTTLE - FULL PROCESS MEASUREMENT NOW WITH OXYGEN PPM OPTION

Process measurement shuttles provide the platform for advanced and repeatable machine verification, each shuttle features the Smartlink system to quickly connect your SLX datalogger.

Measurements are auto-configured removing the need for computer set-up, making them an ideal tool for daily checking by all levels of user within the production environment.

Process specific instrumentation installed to each shuttle type enables the capture of all key parameters from soldering machines with a single pass through.

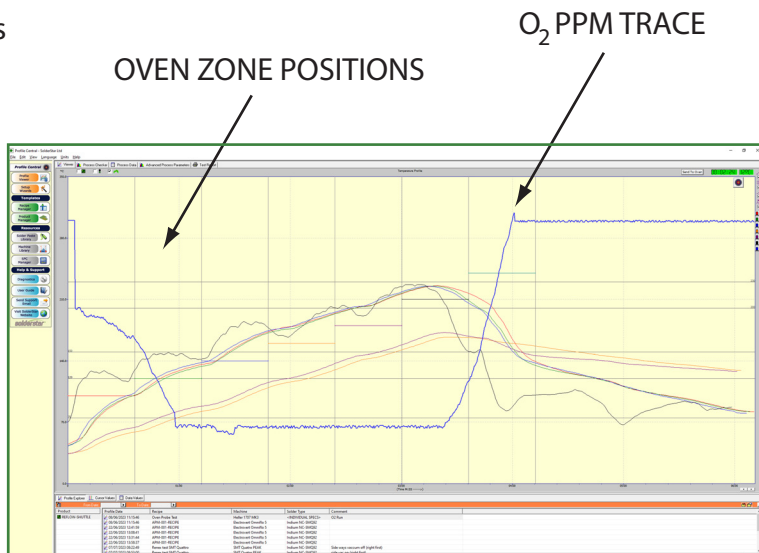
Advanced parameters such as conveyor vibration, reflow vacuum level and oxygen PPM are measured alongside standard temperature profiles.

### *New - O<sub>2</sub> Measurement Module*

The new O<sub>2</sub> Reflow Shuttle provides zone by zone analysis of oxygen levels throughout the reflow process.

Issues with nitrogen leakage throughout the oven are pin-pointed as the device captures and displays the oxygen PPM level alongside the oven zone diagram and temperature profile.

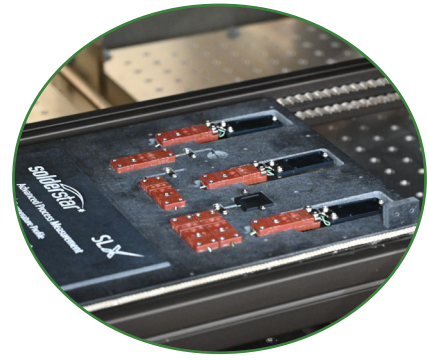
- ✓ ANALYSIS OF OXYGEN PPM PER ZONE
- ✓ DETECT ISSUES WITH NITROGEN LEAKS
- ✓ OPTIMIZE NITROGEN CONSUMPTION
- ✓ DETECT FLUX BUILD UP ISSUES



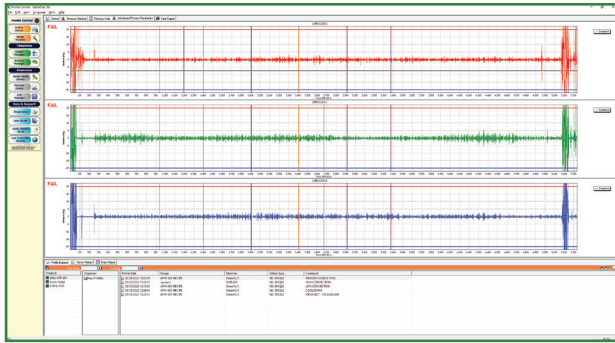
# Temperature Profile Performance

The reflow shuttle is fitted with an array of sensors for independent measurement of advanced process parameters required for modern reflow soldering applications.

Temperature profile verification is achieved with an array of type-K sensors arranged to measure top and bottom heater performance. At the front of the shuttle are matched temperature sensors which provide information regarding uniformity of heating across the width of the heated zone.



## Process Vibration Measurement



Process vibration measurement is a requirement for many manufacturers, to establish a baseline of acceptable levels in all 3-axis within the machine.

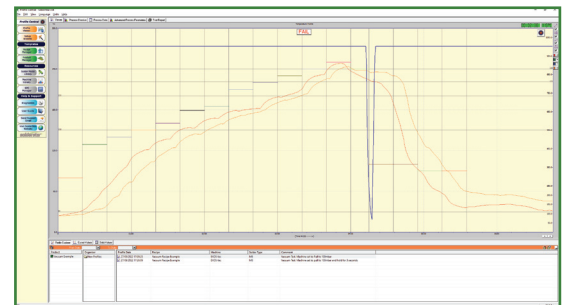
Data captured can allow the engineer to see the effect of fan speed settings on vibration/harmonics in the process, along with detection of changes in vibration levels due to issues with the machine conveyor or extraction system.

## Process Vacuum Measurement

Where a vacuum stage is added to the reflow process, an optional measurement module is fitted to the reflow shuttle allowing verification of vacuum levels down to 10 mbar.

Vacuum profiles are captured and displayed as an overlay with the PCB temperature profile.

Hold time below a desired level vacuum level, pull down and release rates are calculated - essential for ensuring that component shift does not occur.



## Reflow Shuttle Specification

Material	Ricocel ES-3261A Titanium side rails
Thermocouples	Type K, EN 05842:1993, Class 1 / ANSI MC 96.1
Sizes (LxWxH)	Single Lane : 350mm (W) x 395mm (L) Dual Lane : 200mm (W) x 395mm (L)
Vibration Sensor	3-Axis, Standard range +/-2g @12Hz , measurement sensitivity 0.244mg
Vacuum Sensor (Optional)	10 to 1200 mbar $\pm$ 1.5mbar (7.5 - 900 Torr $\pm$ 1.125Torr)
Oxygen Sensor (Optional)	Range: 2000 to 20 ppm Resolution: +/- 0.5ppm Accuracy: +/- 5% FS



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