

SolderStar APS - Automatic Profiling Systems



A 'True Profile' for every PCB Assembly

The SolderStar APS system provides full time process monitoring of a soldering process, the system is capable of recording process conditions and the temperature profile for every electronic assembly produced.

Ultra-thin sensor probes are permanently mounted along the length of the oven to measure product level temperature. This newly developed probe allows for a smaller physical size which offers two significant advantages, fast response to changing oven loading and the reduction of shadowing problems associated with components mounted close to the conveyor rails.

Product speed and position are monitored by way of dedicated speed monitoring instrumentation, combined with optical sensors and a new software algorithm, resulting in a 'True Profile' for every board processed. PC software automatically calculates all important process parameters and checks for values outside defined limits for the process. On exit of the PCB assembly from the machine the process conditions and calculated profile are stored along with a unique ID in a database for complete product traceability.

Should the measured parameters drift outside process limits the system immediately stops further entry of assemblies into the machine via a standard SMEMA interface and alerts line staff that remedial action is required.

Key Systems Benefits

- Automates the profiling process
- Provides 100% product traceability
- Profile verification and storage for every electronic assembly produced
- Ultrathin embedded probe technology minimises process impact
- Profile search and archive tools
- Real time alarms and notifications via standard SMEMA interface

Why measure temperature at Product Level?

The oven itself monitors and maintains the temperature of each zone. This measurement is made near to the heaters and does not closely reflect the temperature seen at product level which is a function of the machine convection.

The APS system adds independent temperature sensors mounted at product level close to the conveyor rails. These sensors are designed to closely measure the heating levels seen on passing circuit boards whilst at the same time minimizing shadowing caused by the sensor itself.

Error Conditions Detected

- Incorrect recipe loaded
- Conveyor speed faults
- Heater and fan failures
- Reflow parameters outside tolerance

Standard Equipment

- Probe Interface Unit
- Oven temperature probes (designed specifically for each oven)
- Conveyor speed sensor kit
- Optical Board-in sensor

Optional Items

- SMEMA Interface
- Barcode Interface

Technical Specification

Measurement Range	-150 to 500C
Measurement Accuracy	+/- 1C
Maximum Sampling Frequency	1 per second
Communications/Power	USB
Conveyor Speed Accuracy	+/- 1%

Software

Compatibility	Windows™ XP Vista/Windows 7/8 32 & 64 Bit
Language Support	English, French, German, Italian, Portuguese, Spanish & Chinese

For further information visit www.solderstar.com



The APS system incorporates independent sensing and verification of machine conveyor speed.



PCB sensor provides product tracking and intelligent process history recording.



Process history recording and analysis through the APS-2000 PC software.

I-TRONIK S.R.L. - Macchine e prodotti per l'industria elettronica
Via dell'Artigianato, 20 - 35010 - Peraga di Vigonza (PD)
Tel. +39.049.895.2300 - Fax +39.049.893.4822 - P.IVA 01443020282
commerciale@itronik.it - www.itronik.it

SolderStar Ltd
Manchester UK
Tel: +44 (0)1706 354846
Fax: +44 (0)1706 675296
Email: info@solderstar.com
www.solderstar.com

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