STANNOL SMART 4D THERMAL PROFILER

4D temperature profile measuring device

PRODUCT DESCRIPTION

In today's manufacturing environment, it is crucial not only to monitor the temperature profile at the solder joints of an assembly accurately but also to keep track of critical components in order to ensure the process safety of the soldering system.

The Stannol Smart 4D Thermal Profiler offers an innovative 4D solution that, in addition to the classic temperature profile capture, analyses other important parameters. The device helps to maximize the quality of soldering processes while improving production efficiency.

The four dimensions include:

1. **Temperature at the temperature sensors:** Provides precise measurements directly at the critical points of the assembly.
2. **Vibration measurement:** Measures vibrations in the system using advanced acceleration sensors (in the X, Y, and Z directions) to detect early changes in system behaviour before they affect the process.
3. **System temperature:** Uses pyrometer technology to monitor the temperature of the soldering system itself, ensuring it stays within the optimal operating parameters.
4. Time: Considers and analyses the temporal development of the previously mentioned dimensions.

SCOPE OF DELIVERY

- Stannol 4D Smart Profiler
- USB Wi-Fi dongle
- temperature protection box
- transport case
- carrier for the device
- USB-C to USB-C cable or USB-A to USB-C cable
- protective gloves
- 6 type K thermocouples
- scissors
- 6x aluminium adhesive strips
- digital user manual
- 2 year warranty (excluding batteries) Stannol 4D Smart Profiler

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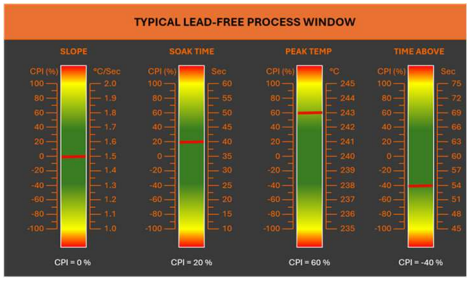
CHARACTERISTICS

- 6 measuring channels for temperature sensors (type K)
- pyrometers for system monitoring
- acceleration sensors (XYZ) for vibration measurement
- software with analysis and optimisation function
- rechargeable via USB-C connection

SOFTWARE FUNCTIONS

The Stannol Smart 4D Thermal Profiler software offers a wide range of functions to further improve your monitoring and analysis:

- **selection of soldering systems:**
  Many common soldering systems can be selected in the software to allow flexible customisation to your specific requirements.
- **live data readout:**
  Wi-Fi functions allow measurement results to be viewed during the measurement run.
- **solder paste management:**
  Define and select different solder pastes to ensure the right materials are used for your applications.
- **process windows:**
  Define process windows to control the temperature profile. Within these windows, Critical Process Indicators (CPIs) are defined, which define a target range and an exact target value (e.g. time above melting temperature: 30-60 seconds, target value 45 seconds).



Optimisation of the oven settings:
Using the CPIs used to define the process windows, the software provides the ability to optimise the oven settings to maximise the quality of your soldering processes.

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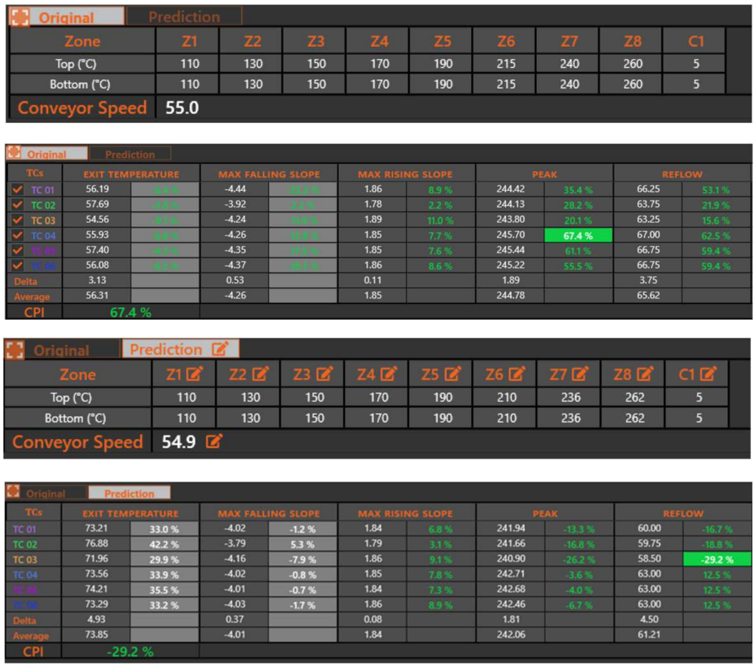

Individual process windows:
A special function of the software is the option of assigning a separate process window to each temperature sensor. This allows several process windows to be checked simultaneously on one measurement. For example, a temperature-sensitive component can be monitored with one temperature sensor while other sensors are placed at the solder joints. During the analysis, separate process windows can then be selected for the solder joints and the sensitive component. The oven settings can then be optimised so that the CPI values for both process windows are as low as possible, resulting in greater process reliability.

TECHNICAL CHARACTERISTICS

DATA LOGGER	
Internal Operating Temperatures	-0 °C bis 75 °C
Accuracy	+/- 0.5 °C
Resolution	0.1 °C
Measurement Rate	0.1 bis 50 readings per second
Temperature Range	–250 °C to 1200 °C
Wi-Fi	2.4 GHz
Measurement Input	6 channels, K type, standard
Accelerometers	1 x X-axis, 1 x Y-axis, 1 x Z-axis
Pyrometer	2
LEDs for battery status	4
Device status LED	4
Dimensions L x B x H mm	
Device dimensions	120 x 65.5 x 14.5 mm
Protective Box: steel dimensions	281 x 78 x 24 mm
Protective Box with insulation: Dimensions	281 x 80.5 x 27.5 mm
Internal power supply	2 x batteries AAA Ni-MH rechargeable via USB-C

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SOFTWARE	
CPU:	1 Ghz or faster with 2 or more cores
Memory:	4GB RAM
Hard Disc:	64 GB or more
Connections:	1 or more USB Type A ports
Operating System	Microsoft® Windows® 10 newer

DISCLAIMER

The data given are typical values but do not constitute a specification. The data sheet is for your information. Our technical advice, whether given verbally or in writing, is non-binding, irrespective of whether it comes from our company or from one of our sales representatives – also with regard to any industrial property rights of third parties – and does not exempt our customers from testing our products themselves for their suitability for the intended processes and purposes. Should liability on our part nevertheless come into question, we shall only pay compensation to the same extent as for quality defects.

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