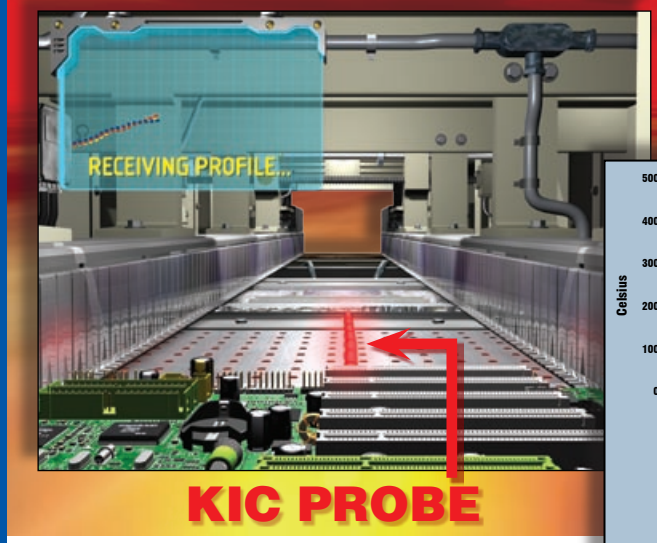
DATA SHEET

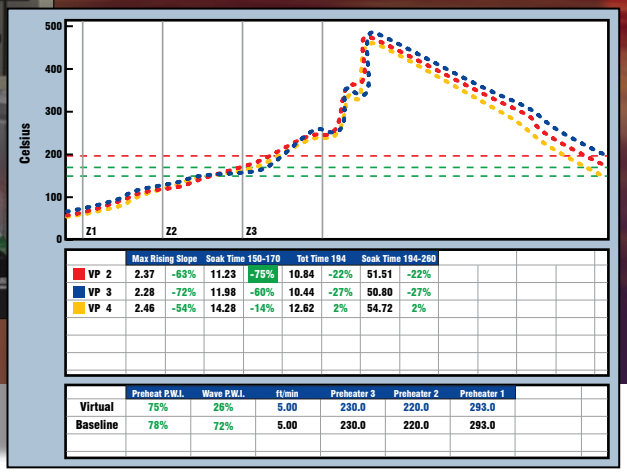
KIC® 24/7 Wave™

Wave Solder Process Management

24/7 Process Monitoring

- Automatic profiling of every product
- Eliminate verification profiling
- Automatic SPC charting
- Process traceability for each product
- Ease of use operations





Automatic Profiling, SPC and Traceability for Wave Solder

The KIC 24/7 Wave brings an innovative level of automation to the wave solder process: around-the-clock monitoring, SPC charting, analysis, documentation, and production traceability — ALL in a single, easy to use product. Continuous tracking occurs in the background, never interrupting your production. The real-time process data enables engineers and managers to make crucial cost containment and quality control decisions.

Automatic Profiling

The KIC 24/7 Wave includes a custom 14-TC KIC Probe installed inside the wave solder machine at the product level. The probe runs the length of the preheat section and gathers real-time process data. The KIC 24/7 Wave uses this data to automatically calculate the preheat profile for every product manufactured. Additionally, the solder pot temperature and conveyor speed are all continuously monitored. Through this automation, the need for periodic verification profiles is eliminated.

Automatic SPC Charting

Process data is automatically charted for all critical process specs: maximum preheat temperature, soak time, slope, wave temperature, etc. The data is plotted on real-time control charts and Process Capability (Cpk) is calculated for each specification. Any process drift outside of control limits or defined Cpk value will trigger a warning. The overall Process Window Index (PWI) is also charted, providing a real-time Cpk for the entire preheat process. Any out-of-spec process (PWI is over 100%) will immediately trigger an alarm that can shutdown the in-feed conveyor. Automated real-time SPC helps identify potential defects before they happen.

Automatic Process Traceability

The KIC 24/7 Wave provides full process traceability. All process data and its fit to the available process window is automatically recorded and stored for every product, and can be retrieved at any point in the future. When combined with the barcode option, process data for every product is automatically linked to the product's barcode number.

KIC gives you the optimal wave solder process ...and keeps you there 24/7!

KIC ON BOARD

KIC® *Innovation That Works™*

KIC 24/7 Wave System

Base System Components

KIC Probe: A probe contains 14 internal TC's for monitoring process temperature . The probe runs the length of the preheat process and is positioned at the product level *(see KIC Probe diagram)*. One additional TC is installed to monitor the solder pot temperature.

Sensor/Encoder: The Sensor monitors, tracks and documents all product that passes through the oven. The Encoder continuously measures conveyor speed.

eTPU: The *Ethernet Thermocouple Processing Unit* acquires data from the probes and sensors, and transmits it to the computer.

Communication cables: Cables are included for connecting the eTPU to the KIC Probe, Product Sensor and computer. A USB to Serial Adapter is included for connecting the SlimKIC 2000 to the computer.

Software and User Manual

Optional System Components

KIC RPM™ (Remote Process Monitoring): Process data for every board is output and monitored remotely in real-time. *See the KIC RPM data sheet for complete product details and specifications.*

Alarm Relay: The KIC Alarm Relay connects to the eTPU and allows KIC 24/7 Wave to activate warning lights, audible alarms, and/or stop the process in-feed conveyor.

Barcode Option: With a customer supplied serial barcode reader, the Barcode Option enables Process Traceability and/or Process Control for every product linked to its barcode number.

eTPU/KIC Probe

Accuracy: ..... ±1.2°C

Readings/second:..... 13

Thermocouples:..... Type K

Temperature Range: . -150°C to 450°C

Dimensions:

eTPU (LxWxH): ..... 308.6mm x 173.5mm x 35.8mm

KIC Probe: ..... length and thermocouple spacing is customized to each oven

Communications:..... Ethernet, RJ-45 connector

Computer Capability: PC

Power Requirements:. 12V DC @ 300mA

System Requirements

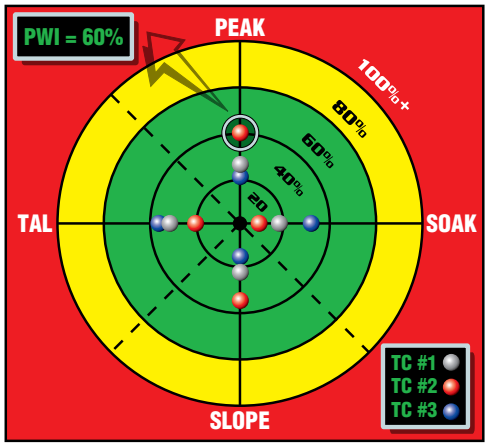
The KIC 24/7 Wave requires a SlimKIC® 2000 Thermal Profiler, or later models. *See the SlimKIC 2000 data sheet for complete product details and specifications.*

For forced convection style heated zone wave solder machines only. Contact KIC for more information.

Risk-Free Guarantee

All KIC products are designed to give maximum value and fast payback by streamlining your thermal process. Investment in a KIC product is a step toward total process control and quality management. All KIC products come with a no questions asked, 30-day money back guarantee.

The Process Window Index™



Profiling Reduced to a Single Number

The PWI measures the profile's fit to the process window in a mathematical and objective manner by using a single number. This aids in optimizing the process by comparing and ranking alternative profiles in terms of their fit to the available process window. The lower the PWI, the more efficient and stable the process! *(See the PWI data sheet for a detailed explanation)*

Computer Configuration

Minimum System Requirements

800 MHz Processor / 256 MB RAM[1]

2 Gb available storage (for product history)

Video 1024 x768 resolution / 16-bit

1 NIC (Network Interface Card) or 1 USB with Ethernet adapter

1 available USB port

Microsoft® Windows® 2000, XP[2]

1 When KIC 24/7 Wave is running on a computer with other applications, a faster CPU and more RAM may be required.

2 Contact KIC for issues with operating systems other than those listed.

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