High Temperature Test Handler

Function

Test station for testing printed circuit boards, panels and assemblies under temperature conditions up to 140°C (in-circuit test and function test)

The system is used for testing heated electronic parts with a low thermal mass (PCBs, panels or assemblies). For this task, the DUT is preheated outside the system, then contacted in the machine and tested using a provided test system. During the test, the DUT must be kept at the target temperature. The temperature can be set from room temperature to 140°C.

The Test Handler can be operated as a mobile workstation at various test systems.

Product-specific interchangeable needle fixtures are used in the test system. The test unit is contacted on both sides (top/bottom).

The basic holder for exchangeable contacts provides a customer-specific interface to the measurement technology. It is possible to extend the interface for future requirements.

The system is manually loaded, started and unloaded via a drawer system with one test item per tray. The process then runs without an operator.

The contacting of the test item is carried out with a pneumatically driven toggle lever mechanism (additional pneumatic strokes are used to advance further contacting directions).

Two types of DUTs can be tested in the system:

- Printed circuit boards up to a maximum size of 400x220 mm, assembled on both sides, maximum height of the components 80mm
- Assemblies with a maximum size of 400x220 mm and maximum height of 160 mm

Deflection of the printed circuit boards is avoided with hold-down bolts.

High Temperature Test Handler

Utilisation

The test cell is particularly suitable for initial sampling of automotive products, but also for actuators, control units, sensors and many other assemblies in high temperature settings.

Based on the standard ENGMATEC test handler, the test cell can be used with the same interface for manual loading or automated operation.

Offline temperature control with manual loading is suitable, for example, for laboratory applications and sample construction (small series), while the inline version is suitable for series production.

If the DUTs are fed to the test at room temperature, longer cycle times are the result.

Pre-tempered assemblies enable short cycle times. For this purpose, continuous lines with automatic feed via bulkhead are used.

Features

- Stepless temperature adjustable according to test parameters
- The heating-up/cooling times depend on the thermal mass of the product as well as the contacting. Standard times for pre-tempering: < 2 min
- Active temperature control in the contacting area
- Closed control loop with surface temperature sensors on the test sample
- The plant is suitable for clean room use. It is structurally ensured that the components cannot be contaminated by lubricants, abrasion, chips, dirt etc.
- In the case that variant or type changes become necessary, set-up times can be minimized by quick set-up procedures.
- It is structurally impossible to mix up hardware and software components when restarting after the changeover.

Highlights

- Small size
- Dynamic tempering process
  - Heating times
  - Low thermal masses

High Temperature Test Handler

Technical data

PCB Specification	
PCB Width	50 - 261 mm
PCB Length	60 - 430 mm
	Contact area depends on fixture kit
PCB Ratio	0,8 (length = 0,8 x width)
PCB Thickness	> 0,8 mm
Component Height (top side)	max. 80 mm
Component Height (bottom side)	max. 40 mm
PCB Edge support	2,0 - 4.5 mm adjustable
PCB Weight	max 2,5 kg
Process	
Test temperature	50-140 °C
Oven temperature	60-140 °C
Accuracy of temperature	± 2°C
Temperature control	Adjustable
Method of heating	Convection of Hot Air (Recirculating)
Number of conveyors	1 front rail fixed, 2 sections
Transport system	Chain transport
Transport speed	max. 300 mm / sec friction free roller
Profile change	10 min for + 20 °C
Cool downtime(fixture exchange)	typical 10 min
Heat up time	typical 25 min (85°C)
Technical specification	
PCB Exchange time	typical 10 sec (product dependent)
Press down force	3 kN
Contacting method	Bottom, Top, Single Stage
Location PCB stopper	Fixture (optional transport)
Transport speed	max. 700 mm/sec
Transport height	940 - 965 mm SMEMA, Hermes prepared
Transport direction	L=R, R=L (to be specified at time of order)
19” Mounting space for electronics	10 HE
Change-overtime for fixture	<1 min (top & bottom) excluding cool down / heat up
Protection screens	ESD Safe
Controller	Omron PLC
Energy requirements	3x 400 V+N, 63 kVA
Compressed air	6 - 20% bar, according to DIN ISO 8573 3.4.5
Color	RAL 7035 ESD
Dimensions (L x D x H)	3.750 x 1.200 x 1670 mm excluding signal tower (1960 mm)
Software	Interface DLL, Optional CPC
Standards	CE Approved
Options	
Automatic width adjustment	
2nd Handler	
Heavy duty transport (< 3,5 kg)	
1-2D reader on import	