AUTOMATED OPTICAL INSPECTION

VCTA Z5P

Offline 2D AOI system for SMT and THT assemblies

Offline AOI, Z series | Colour camera, 12 / 15 / 20 µm | PCBs 25 × 25 to 330 × 480 mm | Barcode program call-up | MES and SPC connection



OVERVIEW

The **VCTA Z5P** is a high-end offline AOI system from the new Z series, designed for Industry 4.0. It inspects after solder paste printing, before and after reflow, after wave soldering, and handles other non-standard inspection tasks.

The camera reads the barcode or label on the PCB and calls up the right program automatically, including the front and back side programs. Communication modules connect the Z5P to other station equipment and to MES; in large data server mode the SPC software controls several machines centrally, so one operator can run multiple devices.

Detection algorithms can be freely combined in a single inspection box, which raises the first-pass yield and reduces false calls.

KEY FEATURES

High-resolution optics
colour CCD camera with 12, 15 or 20 µm resolution, 3-ring RGB LED lighting, coaxial optics as an option

Original colour extraction
micro colour extraction against the template for accurate, high-precision detection

Multi-program, multi-board
automatic switching between front and back side test programs

Easy programming
graphical programming, offline programming and debugging, programming without a PCB

Multi-algorithm inspection
WIDM, colour image contrast, colour vector analysis, similarity, binarisation, OCR, contour analysis

Solder ball detection
on individual components or across the whole board

Barcode recognition
1D and 2D codes read by the inspection camera

Factory integration
MES docking, central database mode, automatic SPC reports, intelligent data alarm

DETECTABLE DEFECTS

- Solder paste printing: misaligned, overflow, insufficient, open, stain
- Components: missing, misaligned, skewed, tombstone, billboard, overturned, reversed polarity, wrong, damaged
- Solder joints: overflow, insufficient, short, stain, false solder
- Wave soldering: overflow, insufficient, short, excess solder, solder void

TECHNICAL SPECIFICATIONS

Inspection Algorithms	WIDM, colour image contrast, colour vector analysis, similarity, binarisation, OCR, contour analysis, solder ball and wave / DIP analysis
Camera	colour CCD camera, 12 / 15 / 20 µm resolution (option)
Lighting	3-ring RGB LED, special coaxial optics as an option
Image Processing Speed	0201 chip < 10 ms; per image < 170 ms
Minimum Component Spacing	20 µm: 0201 chip, 0.4 mm pitch IC; 15 µm: 01005 chip, 0.3 mm pitch IC
PCB Size	25 × 25 mm to 330 × 480 mm (larger on request)
PCB Thickness	0.5 to 2.5 mm
PCB Warp Tolerance	< 2 mm (fixture-assisted correction)
Component Clearance	top < 30 mm, bottom < 75 mm
XY Table	AC servo drive, positioning < 10 µm, 700 mm/s
Fiducial Marks	up to 3 marks, 0.5 s per mark
Software	Microsoft Windows 7, graphical programming, SPC reports
Computer / Display	Intel dual core, 4 GB RAM, 500 GB HDD / 23-inch TFT
ESD Protection	anti-static outlet and wrist strap
Dimensions (L × W × H)	870 × 1040 × 1300 mm
Weight	approx. 360 kg
Power Supply	AC 220 V ±10%, single phase, 50/60 Hz, 800 W

Configuration, demo and quotation

InterElectronic supplies VCTA inspection systems in Hungary and Central Europe: application advice, installation, training and service.

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Specifications according to VCTA (ZhenHuaXing Technology, Shenzhen). Subject to change without notice.