

ULTRASONIC BLOW DETECTION

ZCPJ-COM-SY04

INTRODUCTION

This ZCPJ-COM-SY04 ultrasonic composite-panel defect-detection system automatically detects blows, bursts and unglued areas during the production of wood-based composite panels.

The system transmits inaudible ultrasound through panels and can be deployed in harsh production environments with dust, steam and high temperatures. It performs online automatic calibration utilizing panel gaps and provides automatic compensation for sensor contamination and temperature drift.

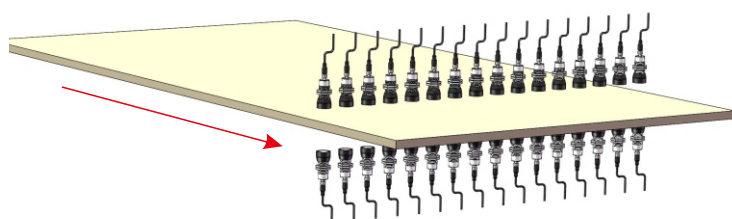
Besides detecting existing defects, it monitors subtle changes in panel properties to realize early warning of blows. It alerts operators to adjust hot-pressing process parameters in advance, so as to reduce blow defects at source, optimize production capacity and avoid overly-conservative process settings.

FEATURES

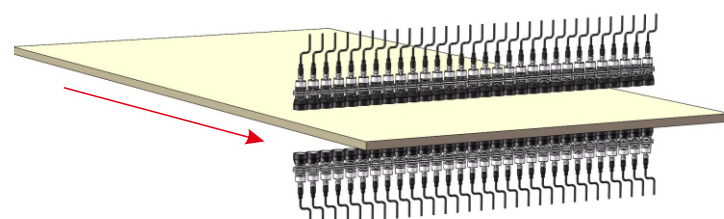
- ① Automatic "online calibration" — no moving-frame construction required.
- ② Automatic adjustment of all sensors to uniform sensitivity; no calibration plates required.
- ③ Automatic compensation for sensor contamination.
- ④ Automatic compensation for temperature drift.
- ⑤ Real-time system ensures high system stability (GAUGE-CONTROLLER)
- ⑥ Supports high production-line speed up to 5.5 m/s (330 m/min)

INSTALLATION

1.2 × 2.4 m Panel



16×2 pcs



30×2 pcs

SCHEMATIC DIAGRAM



SPECIFICATIONS

Item	Parameters
Main Control Unit	1 set
Ultrasonic Sensors	16×2 pcs / 30×2 pcs quantity configurable according to application
Terminals	Supplied as required
Operating Voltage	12 V DC / 3 A or 24 V DC / 2 A
Operating Current	Main control unit ≤200 mA; Communication host: 50 mA each; Sensor: 30 mA each
Detection Range	≥4cm/≥8cm
Defect Specifications	Support setting defect length, width, area ratio and defect-judgement sensitivity
Output Settings	pnp, npn, push-pull output; output-protection configurable
Short-circuit Protection	Automatic protection upon short-circuit / overload; auto-recovery after fault clearance
Operating Temperature	-20°C~+70°C
Storage Temperature	-25°C~+80°C
Max. Line Speed	Up to 5.5 m/s (330 m/min)
Calibration Method	Auto Calibration, No Calibration Template Required
Automatic Compensation	Automatic compensation for sensor contamination and temperature drift