CasaHerrera
MANUFACTURERS OF FOOD MACHINERY

CH-51 Automated Inspection Systems

Since 1950, Casa Herrera has delivered quality equipment to the Snack Food & Tortilla Industries. We will continue to improve the "energy efficiencies of our ovens, fryers (Odyssey design) and Sheeters. As well as Industrial Baking systems for your wheat and corn tortilla production, chapati bread and tortilla chips or Start Up systems for full scale mass production.

FEATURES

- *Automated inspection solutions for the food industry*

- *Detects product's toast points, overlaps, misshape, size, pin holes, color, content and orientation.*

- *High Speed Inspections: 12,000 units per minute*

- *Handles Quality inspection in unlimited lanes for our products*

- *Easy to use touch screen interface and operative software*

- *Software can be used for management and analysis of inspection results*

- *Stainless steel construction, frame and housing*

In Association with
Sharpvision Group USA

Main Features

2 camera inputs (Simultaneous capture
In both channels)
Windows™ CE Operating System
Full Color Touch Screen Interface
On-Screen Menu Programming
EtherNet (TCP/IP) connectivity
2 USB 1.1. High Speed Ports
2 RS-232 Serial Ports
"No Good" image storage
(16 full frame images)

CCD Camera

Size:	**1/3 Format CCD**
Scan:	**Progressive Scan**
	Captures Moving objects
Readout:	**Full Frame or Partial**
Effective Pixels:	**Square (1:1) 8um x 8um**
Shutter Speeds:	**1/30, 1/40....1/10,000**
	in 1/10,000ths increments
Shutter System:	**Asynchronous, Random**
Cables:	**2,3,5,7,8 and 10 meter**
	Detachable cables
Lens:	**C-mount 3.8-100mm**
	Focal lengths available

Measurement Algorithms

Sub-Pixel Measurement Accuracy
360" Part Rotation Correction
High Speed Pattern Matching
Up to 15,000 Inspections/minute

1.	**Position/Deviation:**	**Absolute Position and Deviation from a trained reference using Gray Pattern Match and Edge Detection (MX, dy, dØ)**
2.	**Degree of Match:**	**Normalized Correlation pattern matching**
3.	**Point of Measurement:**	**Presence/Absence determined by Binary**
4.	**Lead Inspection:**	**Pitch, Number & Lengths of Leads**
5.	**Binary Area:**	**Counts the Number of Pixels for a Binary Image**
6.	**Binary Count:**	**Counts the Number of Objects (up to 3000 in the window) and Total Area**
7.	**Binary Object Features:**	**Area, Centroid, Orientation, Shape, Diameter, Circumference**
8.	**Measurement Programs:**	**64; each with 4 Measurement Algorithms per sensor**

Image Processing Controller

Processing:	**256 Gray Scale & Binary Conversion, Edge Detection**
Preprocessing:	**Edge Enhancement (Horizontal/Vertical/All) Sharpening & Smoothing**
Noise Reduction:	**Small Area Filter Morphology (Dilate/Erode, 9 step)**
Region of Interest:	**Circle, Ellipse, Rectangle**
Memory:	**16 Mbytes (Data)**
Light Level Meter:	**Alarm & Threshold adjustment**
Thresholding:	**Fixed & Auto-thresholding**
Measurement:	**Techniques Pattern Matching (Normalized Correlation), Edge Calipers & Blob Analysis**

Programmable Logic Controller

Input Relays:	**Parallel (16pts)**
Output Relays:	**Parallel (16pts)**
Special Output:	**Ready (1 pt)**
Auxiliary Relays:	**1024 Internal Registers**
Timers:	**16, Initial Value 0.01-9.99 (Down Timer)**
Counters:	**16, Initial Value 000-999 (Down Counter)**

External Interface

Parallel & Serial:	**Parallel 16 inputs, 16 outputs, 1 Special (Ready line)**
Serial:	**(2) Ports RS-232/RS-422**
USB:	**(2) Ports (Vers. 1.1)**
EtherNet:	**10/100 Base-Tx**
Video Out:	**(1) Analog SVGA and (1) Digital SVGA Monitor output**
No. Of Cameras:	**2 progressive scan**
Trigger:	**External/Parallel, Serial Keypad Internal/CCD trigger**

General Specifications

Power Supply:	**24 DC Volts (=/- 10%)**
Power Consumption:	**IV-S51M - 10 Watts w/o display**
	IV-S51M - 24 Watts w/o display
Operating Humidity and Temperature:	**35-85% RH, 0-45 degrees C° (32 to 113 degrees F°)**
Dimension & Weight:	**(CCU) 175w x 125h x 81 d mm 1.5 kg (67 oz) (Monitor) 242w x 200h x 42d mm 1.0 kg (45 oz)**