



- Software motion interlocks (sets of prohibited ranges of motions based on any combination of I/O states and other axis positions).
- Software digital output interlocks (sets of prohibited output signal conditions based on any combination of I/O states and axis positions).
- Number of machine vision cameras for the machine.
- Camera definition parameters (pixel resolution, linear scaling per pixel, image acquisition control and synchronization parameters). Interactive machine vision analysis editor screens simplify the addition of vision analysis to any application or process.
- Alarm conditions (sets of different levels of alarm conditions based on any combination of I/O states and axis positions, and control variable values).
- User access privilege by user level to each standard and custom user interface screen and function.
- Completely customizable initialization sequence and motion/vision process sequences for different products. No limit on number of product sequences.
- Completely customizable alarm sequences for handling different severities of alarm conditions.

## 6.0 High Level Motion Control and Machine Vision Functions

Control logic definition for machine initialization, alarm condition handling, and main process sequences is defined using a series of FlexAuto control function blocks. You simply select the required function blocks for your application in order to create motion and machine vision sequences. Numerous conditional logic function blocks provide the ability to define sophisticated sequences.

Double click a function block in a control sequence and FlexAuto displays the parameters for that step in the sequence. Double click a parameter and FlexAuto presents the available options for that parameter. There is no complex language syntax to learn or memorize.

FlexAuto function blocks support over 250 high level and mathematical/conditional functions using the same real-time database. All motion control, machine vision, user interface, and other process control functions can be easily coordinated. Many single function blocks, such as for defining complex matrix motion patterns and machine vision functions, would require hundreds of lines of Visual Basic or C/C++. They would also require complex flowcharts in typical graphical programming systems. FlexAuto makes it easy.

### Automation Engineering Incorporated

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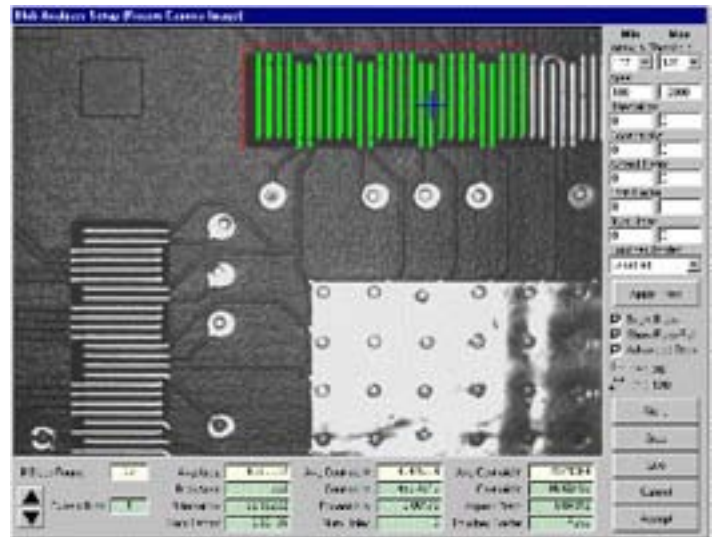


Figure 3: Sample FlexAuto Vision Analysis Setup Screen

## 7.0 Custom and Standard HMI Screens

FlexAuto includes an easy to learn and use HMI panel editor to allow you to completely customize your operator interface. This editor uses familiar graphical toolboxes and property sheets to add and edit user interface panels and objects. Available properties for each object support a wide variety of formatting, animation, data links, and click action functions.

FlexAuto also includes numerous customizable standard screens for functions such as interactive machine vision analysis, teaching of motion axis positions for sequences, sequence tracing/debugging, I/O monitoring, and alarms tracking. FlexAuto's custom function block editor can be used to define macro functions to create application-specific versions of the sequence editing environment. This provides end users a customized approach to control sequence editing that only includes the functionality needed. Simple to use, yet powerful.