

# **JM CANTY**

**Process Technology**

## **VECTOR SYSTEM - WIDTH MEASUREMENT**

Width measurement is one of the many functions of the Vector System. Basically, width measurement consists of monitoring the width of a sample in a one dimensional axis, while a sample is either stationary or in motion along an axis perpendicular to, and on the same geometric plane as the one dimensional axis used to measure width.

To understand the width measurement capabilities of the Vector System, it is first necessary to understand the underlying principles behind the system. The system consists of three basic sections:

Vector System with Width Measurement Software Module

Canty Vision Camera System

Canty lights, where necessary

Width measurement is performed as follows. A Canty Vision Camera is used to visually monitor the sample in question. Typically, the camera is mounted in a position to monitor a sample as it is drawn by our camera. The video picture from this system is then fed to the Vector System. The Vector System accesses useful information about this picture as it's stored in memory. The system analyzes the image and uses a scan across the picture to locate the beginning edge of the sample. Since the system stores a picture as a matrix of numerical data relative to the color of each object, there must be a color difference between the sample to be measured and the background it is drawn across. The first edge is then located by a change of color between the background and the sample.

The system proceeds to scan across the picture to find the remaining edge of the sample to be measured. When this edge is encountered, the width measurement is calibrated to the correct units and displayed to the user. The video picture of the sample width is shown on a video monitor, and the sample width itself, including numerical value, units, etc. is displayed on the screen. An optional 4-20 mA output can be purchased on the system, which provides a 4-20 mA signal from the Vector System on the sample width measurement. This output can be easily calibrated, and interfaced with necessary instrumentation to control width measurement.

Perhaps the most important property of the system is repeatability. The Vector System is highly accurate when used properly, and will obtain results on a repeatable basis.

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