

**SENCON**  
CONTROL DOWN THE LINE

# NEWS & VIEWS

## Stop customers receiving wrong labelled & badly decorated cans

**A** new range of systems is now available that will help to prevent your customers from receiving wrong labelled or badly decorated cans.

The new MCL label inspectors are capable of detecting wrong labels and serious decoration defects at speeds of up to 3,000 CPM. This is made possible by exploiting the latest vision engines and Pentium® / MMX™ processor technologies.

The initial versions of the system are single or dual camera units. Intended for location at the end of the line, they protect against wrong cans and gross decoration defects. They also provide a continuous assessment of decoration quality.

A four-camera version will soon be available which is able to inspect a greater area of the can's surface. With its increased ability to measure decoration quality, it is best suited for location at the pin stripper where it can operate as an important process monitoring tool.

Extremely simple set-up is achieved by using just three control buttons, run, stop and train. The rapid train facility means a new label is protected against



The New MCL8102 Vision System

mixed labels in just 75 to 150 cans, with full discrimination achieved after 750 cans. Protection against the previous label is always immediate.

For anyone responsible for making sure customers receive correctly labelled and well decorated cans, these inspectors provide a robust and cost effective solution.

**For more information please circle 'Vision Systems' on the reply sheet.**



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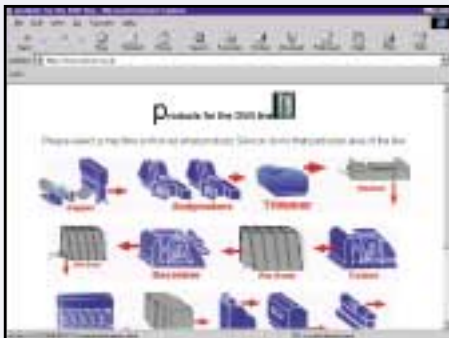
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**Website provides useful information on Sencon products & services**

**We** have now joined the multitudes in Cyberspace by developing a website to provide customers with information on our product and service offerings.

The site is currently divided into three sections: about the group; product information and contacting us.



The section on products for the DWI industry is presented in the form of a graphical can line. The user simply clicks on a machine to find out what products we have to improve that area of the process.

If you have access to the internet, please pay a visit to the site at:

<http://www.sencon.co.uk>



# Energy savings made possible with oven temperature loggers

**W**ith increasing regulation on energy usage and environmental control, it's becoming more and more important for Canmakers to find new ways of saving energy in the can plant.

One of the highest energy consumption areas in the canmaking process is curing. Internal Bake Ovens, Pin Ovens, Wicket Ovens and Side Stripe Ovens all use large quantities of energy to guarantee that a good cure quality is achieved.

The problem with curing ovens is the indirect way in which the process is controlled. Measuring air temperature at two or three places can only ever be a crude indication of the time / temperature profile for the coating being cured.

This can be overcome by performing regular temperature profiling to build a full picture of the curing process. By closely monitoring

the can or sheet temperature through the oven, it becomes possible to optimize and reduce the overall air temperature without compromising the quality of the cure.



SL2100 SmartCan Logging System

This reduction leads to direct savings in fuel consumption and can often actually improve curing quality.

We produce a complete range of logging systems for ovens used on DWI and Three-Piece lines.



SL2000 SmartLogger

Each system includes Windows based software with SPC facilities that analyze process trends and produce exception

reports to immediately highlight any problem areas.

**For more information please circle 'Oven Temperature Loggers' on the reply sheet.**

# New logger helps optimize UV lamp life

**While on the subject of oven logging, we have developed a new and innovative product that allows UV lamp performance to be monitored regularly. This means lamps can now be replaced only when really necessary.**

This translates to large savings in lamp replacement costs and also helps to guarantee the oven is running at optimum levels and is curing coatings effectively.

Due to its miniature size, the logging card is slim enough to fit through the oven's UV shielding slits during normal production, eliminating the need for line downtime. With one pass the unit logs both peak lamp power (measured in watts/cm<sup>2</sup>) and the overall energy transmitted by the oven (measured in Joules/cm<sup>2</sup>).

The peak lamp power reading helps to assess the condition of the reflectors as well as the lamps. The wide dynamic range means it can be used for both interdecks and set stacks.

A simple pushbutton operation allows the user to toggle between each type of reading, while the

L.E.D. display clearly indicates the results. By taking hundreds of measurements per second, the logger is accurate and stable, providing statistically valid readings under all operating conditions.

With better control over the curing process, metal decorators are able to improve the quality of the UV cure, which is especially important for



direct handling applications where sheets need to leave the press completely dry, ready for the next stage of the process.

The unit comes with a calibration certificate traceable to national standards. This may be needed by customers operating to ISO 9000. An annual calibration service helps to maintain guaranteed accuracy of the logger.

**For more information please circle 'UV Logger' on the reply sheet.**

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## Process capability & its benefits to the canmaker

This third article in our basic introduction to SPC takes a look at process capability studies and the benefits associated with this statistical assessment technique.

In managing any manufacturing process, the usual aim is not to achieve identical physical values for every product (e.g. weight, dimensions etc.) but to reduce the variation of products and process parameters around target values and to operate within specific tolerance levels.

By considering the standard deviation ( $\sigma$ ) of a process, (see News & Views Vol. 10) it is possible to show the important relationship between process variability and tolerances. To manufacture within a specification, the distance between the Upper Control Limit (UCL) or upper tolerance (+T) and Lower Control Limit (LCL) or lower tolerance (-T), i.e. (UCL-LCL) or  $2T$  must be equal to or greater than the base of the normal distribution of the process i.e.  $6\sigma$ . This is illustrated in Figure 1 below:

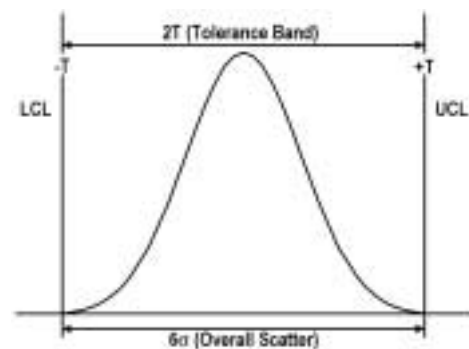


Figure 1: Process capability

Comparing the width of the tolerance band with the overall scatter of the process allows us to assess the process capability. This can then be categorised into one of three levels:

(i) Where Overall Scatter < Tolerance Band, you have a high relative precision.

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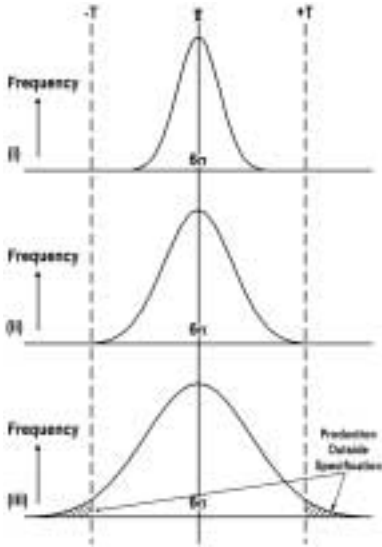


Figure 2: The three levels of process precision

(ii) Where Overall Scatter  $\leq$  Tolerance Band, you have a medium relative precision.

(iii) Where Overall Scatter  $>$  Tolerance Band, you have a low relative precision.

These levels of process capability are illustrated in Figure 2 opposite.

Process capability can also be quantified using a simple calculation. By dividing the tolerance band by the overall scatter you create an index known as the Cp of the process:

$$Cp = \frac{UCL - LCL}{6\sigma}$$

A Cp value of less than one indicates the process is incapable. The higher the Cp value the greater the process capability (a usual value to aim for is  $Cp > 3$ ). However in using the Cp index we are assuming the mid-tolerance point is centred on the mean of the normal distribution.

A more advanced index, which takes account of process variation and centring, is known as Cpk. This is the most widely used system for measuring process capability. Values are calculated for both the Upper Control Limit ( $Cpk_U$ ) and the Lower Control Limit ( $Cpk_L$ ):

$$Cpk_U = \frac{UCL - \bar{X}}{3\sigma} \quad Cpk_L = \frac{\bar{X} - LCL}{3\sigma}$$

The lowest value is then taken as the overall process Cpk. As with Cp, a Cpk of less than one suggests at least one of the control limits will be exceeded. A Cpk of two is required to assume a high level of confidence in a process.

The benefits of a process capability study include timely and powerful information on process performance and the ability to accurately make product classifications. By conducting regular studies, Canmakers are able to reassure their customers of the consistent quality of their product, with proven statistical evidence to support these claims.

To carry out these assessments, it's important the systems and gauges used to measure the process are statistically capable of supplying valid data. Gauge R&R values (see News & Views Vol. 8) need to be around 10% or lower.

Here at Sencon we have a range of coating process control gauges with proven R&R's. These include an automatic coatings tester, automatic and manual enamel raters, and a film weight gauge and hoverprobe unit.

We have an active development programme and continue to look for new ways of further improving the accuracy and capability of these gauges.

**For more information please circle 'Coating Control Gauges' on the reply sheet.**

## Year 2000 compliance

With less than 487 days until the start of the next millennium, it's becoming increasingly important to check all affected computer systems will smoothly pass through the Year 2000 transition.

We are currently completing checks on all products which use dates as a critical part of their operation.

Most Sencon systems are Year 2000 compliant, but where doubt exists, we will be contacting customers before the end of the year.

## In Brief

### New solid state light source for ELTP

A solid state light source has been developed for our End Light Tester Package.

This will provide greater sensitivity with reduced maintenance and is currently under trial.

More details will follow in the next issue of News & Views.

## Comments on The Product Guide

Most of our customers will have received a copy of our first full product catalog. We are now in the process of preparing the next issue.

We would really welcome your comments or information on any extra items and features you would like to see in the next version.

Please let us know by completing the information update form and returning it to your local sales office.

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