

# NEWS & VIEWS

## Sensor Selection - Getting it right

The secret of success in high volume manufacturing is attention to detail. One of those details is the sensors that feed critical signals to the line and machine control systems.

Selecting the correct sensor for each application within a can line is important in order to obtain the maximum efficiency from the can handling system or machine operation. That's why Sencon make a wide range of can line and machine control sensors, each carefully designed to fulfil a very specific role.

Selecting the ideal sensor must take into account the can size, its material, conveyor size and the type of condition that we are trying to detect. It is also possible to use sensor types with built-in features such as on/off delay, motion detection etc.

Sensors are available for detecting a whole range of situations: can presence, can density, build back, jams, can counts, counting ends, gap sizes in end sticks and a number of specialist conditions in machines such as can-on-mandrel, short can or cup jams.

To make life easier, Sencon are developing an interactive, CD-based program. This is designed to help engineers through the sensor selection process and ensure the most appropriate device is selected.

In addition to the selection assistance, more detailed technical data is available on the disc supporting each device. We are sure this CD will prove to be an invaluable tool for the can line engineer.

The CD is currently in its final testing process, discs will be available free of charge from Sencon in the near future. If you would like to reserve your copy please tick the reply form or contact your nearest Sencon office.

### Main Menu



### Sample Page



For more information  
please circle 'Sensor CD'  
on the reply sheet.

VOLUME 17  
Summer 2000

## In this issue

Sensor Selection  
..Page 1

Double Sheet Detection  
..Page 2

Decorator Tripping  
..Page 2

Potential Savings  
for Coating process  
..Page 3

In Brief ..Page 3

Calibrating Coating  
Thickness Gauges  
..Page 4

News & Views is published by:

**SENCON**  
CONTROL DOWN THE LINE

# Small Sensor - Huge Cost Savings

There is a fact of life that with sheet feed processes, occasionally there will be a mis-feed where two sheets are picked up and fed into the process. This is true for sheet feed presses, printing lines, slitting and lacquering lines. It depends on the process as to how serious this problem can be.

On a lacquer line, a double sheet will mean one sheet could go through unlacquered. The cans made from this sheet could easily pass through the factory and out to a customer. On a sheet feed press a double sheet could instantly damage thousands of dollars worth of tooling.

A double sheet detection sensor is the obvious answer and there are a number on the market, so why fit a Sencon sensor? The SC230 has been specifically developed as a double sheet detection sensor for canmakers. It therefore has all the features needed to give long trouble free operation in the canmaking environment.

We often see manually adjusted double-

sheet sensors incorrectly set or even turned off leaving production lines exposed to costly tool damage or quality claims.

The Sencon SC230 is **self adjusting** and **self checking** and can be guaranteed to be **always guarding** and **always protecting**. The built-in heart beat signal from the sensor outputs a constant update to the line control system confirming that the sensor is working correctly.

The result is increased protection and decreased costs of tool damage or quality problems. Once fitted the unique SC230 provides peace of mind as well as reduced down-time when changing between sheet gauge sizes.

On a lacquer line change over, time has to be spent adjusting some types of double sheet sensor, this is lost production time. With the Sencon SC230 no setup time is required as the sensor self calibrates. This small increase in production on each change over spread over a year means the SC230 can pay for itself 18 times over in

the first year of operation.

Sencon's SC230 Double sheet detector has been recognised by some of Europe's biggest canmakers as the best solution to the double sheet problem.



**SC230**  
Double Sheet / Double End Detector

For more information please circle 'SC230' on the reply sheet.

## DECORATOR PHANTOM TRIPPING - A POSSIBLE CURE

A strange phenomenon can afflict certain DWI printing machines: "phantom tripping" That is the carriage trips for no apparent reason. Upon investigation it has been found that cans often carry an electrostatic charge and this will arc to the can-on-mandrel sensor.

Static charged cans are not news - Sencon has always built extensive static protection into all of its sensors so no damage will be done. However, the spark does turn the sensor off momentarily. So

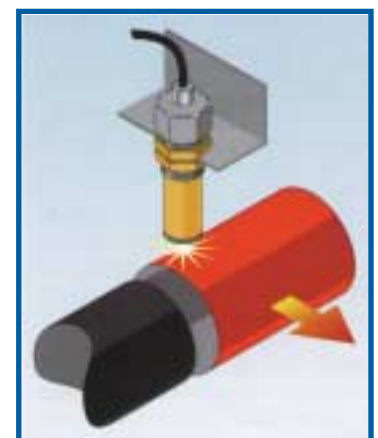
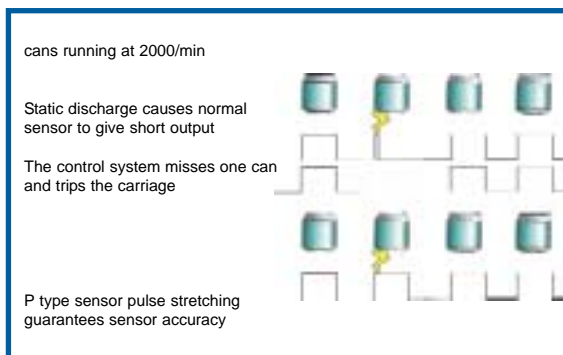
the sensor detects the can, but is then turned off again by the static discharge before the control system has time to accept the signal! At high speeds there is insufficient time to recover, hence the carriage trips as the system assumes there is no can on the mandrel.

Once the problem was recognized the solution was easy. Sencon has for some time built special sensors for the can-on-mandrel application. These sensors have built in circuitry to guarantee a minimum pulse width so, regardless of machine speed or static discharges, the control system receives an assured signal duration.

This type of sensor is fitted to all new machines and carries the suffix P1 for a 25mS pulse length or P5 for a 12mS pulse length.

One remaining problem is that not all electricians realize that the

can-on-mandrel sensors are special. We commonly find that after some time they get replaced with regular Sencon metal discriminating sensors, as used on the bodymaker (they appear identical). So if you notice occasional 'phantom tripping' on your printer at high speed, check out the can-on-mandrel sensor. If the label is obscured, the part number can be found engraved on the hexagon flats.



# Big Saving on Coatings

A 7% reduction in coating usage would represent a major saving in production cost. But could an easily installed system, which requires little maintenance or operator involvement, achieve this goal?

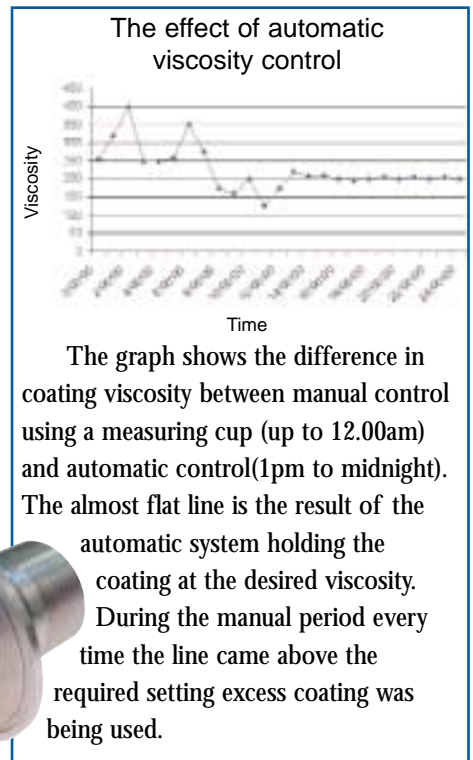
In practice even in low ambient temperatures there is sufficient evaporation from a coating process to cause the coating in the day tank to get thicker. A thicker coating means higher usage due to a thicker finished coating layer and therefore more cost in the process. Changes in ambient temperature during the day only serve to confuse the situation. Cooler early morning temperatures can make a coating appear thicker when manually measured, although the ratio of solids to solvent is normal. Often this leads to excessive solvent being added. In all it can be a complex if not an impossible task to manually measure and control coating

**Coating reductions of 7%** solids content is detected and small quantities of solvent are

viscosity to any degree of accuracy. An automated control system continually monitors the coatings viscosity and temperature and then calculates the true ratio of solids to solvent. Any increase in solids content is detected and small quantities of solvent are metered into the coating. Once an operator has selected the desired viscosity on the control panel the system continues unaided indefinitely.



Sencon's SC500 Viscosity Control System Sensor is designed for long service life with minimal maintenance



For more information please circle 'Viscosity Control' on the reply sheet.

## In Brief

### Automatic enamel rating goes from strength to strength.

In a single order, a US customer will be taking delivery of 18 Automatic Enamel Rater systems later this year. Having proved the effectiveness of the system over the past two years, the benefits of high accuracy and minimal operator involvement speak for themselves. The Automatic Enamel Rater tirelessly returns the production data needed to operate a line at maximum efficiency.

## Cannex 2001

Cannex, the can industry's dedicated exhibition, is in Denver, Colorado, USA next April 24-27. Sencon will be there with all key products working on the stand. There could be no better way of seeing the best in can line control than at Cannex 2001. See you there!

### New technology to help coating quality

Nacanco (Rexam) have ordered 20 of Sencon's new SC500 Coating Viscosity Control Systems to be installed on all of Nacanco production lines in Europe. Following intensive studies at the Runcorn plant in the UK, the system enabled Nacanco to improve both base coating and

over varnish quality whilst reducing overall coating consumption. The system measures and automatically controls the viscosity and solids ratio of the coating, resulting in significant cost savings.

The study also highlighted the poor accuracy of manual viscosity measurement. Existing methods, which do not compensate for base coat and ambient temperature, were found to be misleading and produce inaccurate adjustments to coating viscosity.

Mr. Phil Daufel of Nacanco commented: "Following the positive findings of the study an order for 20 systems has been placed with Sencon to ensure all of Nacanco lines in Europe benefit from this new technology."

# Calibrating Coating Thickness Gauges

Coating Thickness gauges (or Film Weight gauges as they are often called) are highly precise comparitors and therefore need frequent calibration to a known sample of coating that they are measuring. This known sample is sometimes called the “setting piece” or “calibration standard”. But whatever you call it, all too often it is made, stored or used incorrectly, resulting in poor gauge performance.

Consider how incredibly small a dimension we are trying to measure with the gauge. One gram per square metre is roughly one micron (0.001mm) thick. So we are often measuring thicknesses of only a few microns. To put this in perspective, many bacteria are around three microns in size!



Sencon Film Weight Gauge and Formed can probe

When working with these small dimensions all sorts of apparently minor things can affect the apparent measured thickness of the calibration standard. Finger prints, minor scratches, dust, abrasion from over use and poor methods for producing standards all affect the

readings taken from the standard. If the calibration reading is inaccurate all the subsequent production readings will be inaccurate. This inaccuracy leads to incorrect adjustment of the process, poor product quality, and loss of confidence in the equipment when the error is discovered.

Best practice must be applied to the calibration process itself if coating process control is to work. Here are just a few pointers to improving coating measurement:

- Calibration standards must be well made and as flat as possible, 10% variations in thickness are regularly seen. (a 10% variation in the standard is bound to lead to an equal variation in the production readings).
- Standards must be well kept, free from contaminants and damage. Ideally keep them in a pouch with a small cut-out just big enough for the probe tip (this reduces the risk of getting a different reading from elsewhere on the standard as well as providing protection).
- To improve accuracy of the final readings the calibration standard should be as close as possible to the production film weight. Linearity of the gauge can only be taken so far before errors are introduced.

Limitations of space here prevent a full explanation of best practice., but a detailed guide is available from Sencon.

A coating standard Best Practice guide is available from Sencon for anyone concerned with Coating measurement.

Please circle ‘Coating Standards’ on the reply sheet.

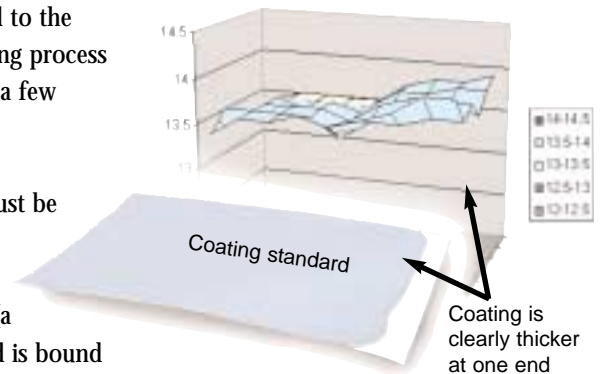
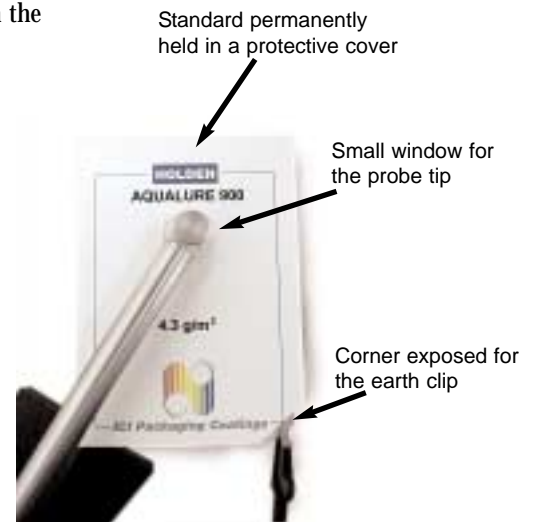


Photo of a calibration standard with its measured thickness graphed out in the background



## EUROPE • MIDDLE EAST • ASIA

Sencon (UK) Limited,  
Unit P, Blackpole Trading Estate,  
Worcester WR3 8SG. United Kingdom.  
Telephone +44 1905 755525  
Fax +44 1905 456393  
Email: sales@sencon.co.uk

WEBSITE  
www.sencon.net

## THE AMERICAS

Sencon Incorporated,  
6385 W. 74th Street,  
Bedford Park, IL 60638, USA.  
Telephone +1 708 496 3100  
Fax +1 708 496 3105  
Email: sales@senconinc.com