Negotiating Sensor Prices

From time to time I have taught, written and given talks about the need to carefully purchase electronic sensors to make sure that one is getting the best possible price. It is worth it to address this issue again in detail. So let's begin with some basic definitions and conditions that determine sensor cost. There are many factors involved but two are primary: the quantity of sensors being purchased and the party the sensors are being bought from.

If you are buying sensors one at a time or in handful quantities you are most probably paying full or near-full retail. This can give the wrong impression to upper management, and most importantly, to your purchasing department. It only makes sense to buy sensors individually or in small batches when performing experiments in the sensor lab or when a given application is unique and thus the type of sensor being used may not be needed again. On the other hand, sensors used in large quantities throughout your tooling should be purchased in large lots. This approach requires a careful analysis so that you can make a reasonable projection of upcoming sensor utilization and purchase accordingly.

Take a careful inventory of dies, tooling and fixtures that will be utilizing sensors within the next 12 months. Make a spreadsheet and enter the following information:

1) Total number of active existing dies that will need to be sensored.

2) The number of anticipated takeover dies that will be sent to your plant.

3) Total of all new-build dies that will be processed.

4) Total of specialized tooling (slide-forming, etc.) needing sensors.

5) The total number of value-added fixtures (welding, etc.) needing sensors.

The spreadsheet should individually list each project (die, tool, fixture, etc.) identification number/ description in the first column with the adjacent columns specifying the number of sensors per application type. Thus you have a column for feed as the second column in the spreadsheet. In this column, to monitor over and under feed with two separate channels on your die-protection control, enter the number two. The third column details this feed application with the type of sensors to be used and any mechanical mechanisms required. The fourth column is for part out. If the tool is a four-out die, then enter the number of sensors anticipated to monitor the four parts. This number may vary as some parts may require multiple sensors per part due to their unusual size and geometry. The fifth column specifies the types of sensors to be used for this part-out application and any pertinent mechanical details. The sixth column is for stripper monitors (slug detection). If the die has three strippers, enter the number 12 (one sensor per stripper corner). The seventh column specifies the sensor type and the mounting to be used for these stripper sensors. The eighth column is for complex motions such as cam return, spring-pad return, nut insertion and staking, etc.). In this column, enter the number of sensors needed for those functions. The ninth column specifies the sensors and mechanical needs for the complex motion monitoring.

On takeover tooling or new builds, rough out to your best efforts the same information into the spreadsheet. You may not know exactly what specific

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8-mm inductive-proximity sensors you'll use to monitor the strippers on a given takeover or new-build die, but you will have a numerical value as to how many 8-mm sensors are needed. The more experience the sensor department has with the program the better it is at taking educated guesses as to the types and numbers of electronic sensors to be used on a die.

Armed with the spreadsheet, it becomes fairly easy to demonstrate to upper management and purchasing folks that you'll need certain types of sensors in relatively large numbers. Perhaps you will be implementing stripper sensors in 120 dies throughout the next year. Accounting for the exact number of strippers per die brings a total of 360 strippers that will need 8-mm inductive proximity sensors. At four such sensors per stripper, you require 1440 of these sensors. Upon the approval of management, approach the sensor vendors for their best prices on such a large quantity.

Buying more than 1000 sensors should receive the full attention of the distributor, representative or direct sales department of any sensor manufacturer. I have several clients purchasing sensors in large batches and saving enormous amounts of money.

Once a sensor program is properly implemented with a full-time sensor applications specialist and a sensor lab, it pays for itself many times over with cost savings due to sensor-based die protection, value-added and automated part-quality measurement applications implemented by the program. Why not sweeten the savings inherent in the sensor program by saving money through large-batch sensor purchases? **MF**