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Connections

New England Drives & Controls, Inc.

A Sensor Application Story

This months's whitepaper will review an application for clear object detection. As you may have sensed from previous whitepapers, I tend to try to find examples of solutions for problems I have had when I used to work on machine design. Often times I either found the right solution in a product off the shelf, or went through "heroics" to make something work. The latter path is typically not the way you want to go. This is especially true when you are running against a deadline.

One product that saved me from heroics was the QS30 clear object sensor. The challenge was to count returnable bottles on a bulk machine. As you probably the vast majority of containers are made of transparent PET, and can be very difficult to accurately count with just "dumb" sensors. Because of labels, caps, dirt and other forms of occlusion, accurate counts of these containers can be extremely difficult. I won't bore anyone with the specifics of the project, but if you're interested, let me know. I'd be happy to talk your ear off. ☺

After trying several standard photoelectric sensors to no avail, the QS18 proved it could do the job. Its operation compares what it sees to a "background" that you set up. The setup buttons even had bottle icons that showed the contrast settings that would be applied. It had a simple setup procedure, and was easily understandable by all levels of service technicians. For this situation it was the cat's meow!

Since that point, I have seen other sensors which may have also been applicable. Either they were not available or were not applicable at the time for other reasons. One was the ultrasonic sensor the QS18U. I do not know if this sensor would have worked in that application, but looking at the

"Vision is the art of seeing what is invisible to others."

\- Jonathan Swift

As New England Drives & Controls constantly strives to become a better assert to our customers, our whitepaper series will feature new technologies or helpful insights that may be pertinent to the reader. It is our sincere hope that this information will be beneficial in both relating, and applying content to your industrial needs.

We hope you find this whitepaper series an enjoyable and informative read.

We always welcome your questions and comments.

specifications sheet for it, it might have. (We did test some ultrasonic ideas, but the sonic "cone" diffused into too wide an area to accurately count.) None-the-less this sensor might have been applicable.

The other sensor that was shown after the fact was a Q4X. This sensor might have also been an easy sensor to implement, and most likely could have also accurately done the job. Further testing and research were never done, as the perfect solution was found in the QS18. The point to take away from this however is that the QX4 is a great "multi-purpose" type sensor. If you could only have one type of sensor to accommodate multiple types of uses the QX4 would most likely be the one you would want. It can handle simple standard photoelectric sensor needs, measurement needs, and contrast detection needs. In short depending on the mode it is in, it can be set to do many different types of tasks that were not typically associated with a single sensor.

This type of broad functionality could be leveraged, by lowering maintenance inventories. Instead of needing three or four different sensors; The QX4 could be a single part in an inventory that can be applied to all four conditions. This value could even justify a higher cost for the sensor. This may not work as well with older designs, but should be mentioned if someone is working with something from scratch.

If you have a project with a problem you aren't quite sure of how to handle, give your friendly New England Drives & Controls, Inc. representative a call. We'd love to help find a solution.

-Peter Lavoie (VP Engineering)

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