RELIABLE SEAL CHECKING

GAP DETECTION ON CARDBOARD BOX FLAPS

At a company, cardboard boxes in different sizes and heights are filled with products and then transported on a conveyor belt to the dispatch department. Each box needs to be checked to en-sure that it is correctly sealed. The company previously used diffuse reflection laser sensors which determined the height of both box flaps in order to check whether they had been correctly sealed.

To be able to measure the height of the two flaps of a cardboard box for the sealing check, it was necessary to use two diffuse reflection laser sensors with which the measured values first had to be collected and then various measurement windows had to be defined for boxes of different heights. However, owing to the different box sizes, it was frequently the case that individual boxes were not at the center of the conveyor belt and their flaps were therefore outside the measuring range of the diffuse reflection sensors. When looking for a reliable solution which also had the necessary degree of flexibility to cope with the different cardboard box heights, the company decided on a multifunc-tional light section sensor.

Irrespective of the box height, this sensor allows a value including tolerances to be defined for the gap between the flaps. If this value deviates from the specifications, the incorrectly sealed box is re-garded as NOK and automatically removed from the conveyor belt. The cardboard boxes can there-fore be checked using just one light section sensor which can detect the object gap reliably even if the position of individual boxes on the conveyor belt varies. This solution has many advantages compared to the previously used diffuse reflection laser sensors: simpler both with regard to confi-guration and signal evaluation, and also more flexible and reliable in operation.

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Image: ipf electronic