IMPROVING THE PERFORMANCE OF A COUNTING MACHINE IN THE GARMENT INDUSTRY

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Increasing production of garments in Sri Lanka, introduces a potential requirement on automation of some industrial process. A garment factory, Brandix Lanka, produces maximum number of 14000 garments per day. For a large production industry, manual counting of these garments is a time consuming process and increases the probability of counting-errors.

Introducing a counting machine, which uses infrared detectors to counts the products, in Brandix Lanka, has reduced these manual problems. When the products are thrown through the counting machine frame, the products interrupt the IR beam. A counter, which was connected to IR beam detector, was used to count the number of garments thrown through this frame. However, some errors were identified on its results when the garments were counted using this machine.

The main objective of this project is to analyse the problems in this counting machine and to give solutions to improve its performance. When the garments were thrown through the frame, the types of errors that occur in the counting machine were observed. Some solutions are studied to reduce the errors with several supporting arrangements for this counting machine.

In this paper, two cost effective solutions are discussed in detailed to improve the performance of the counting machine. (i) The counting machine frame is kept in slanted orientation to remove the garments without letting them stay on the frame. (ii) A LM555 IC is connected under mono-stable operation to introduce delay between IR detector and counter to solve the problem that one garment be counted as two or more due to irregular shape and long parts of garment.

The proposed solutions are in the implementation stage in collaboration with Brandix Lanka industry and the University of Peradeniya. Further studies also carried out to speed up the counting process.

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