

Dimensional Measurement of Construction Blocks Using Laser Triangulation Sensors

Introduction

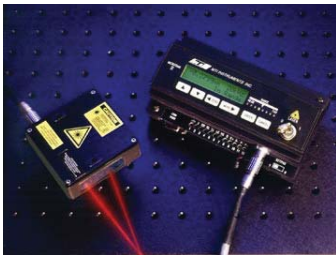
Structural building panels, acoustical tiles and manufactured pavers fit together like the toy building blocks you had as a kid. Remember when your set had a slightly larger or smaller block that caused your creation to collapse? Although not a life or death situation it sure was distressing to see your hard work end up in a pile. Today, manufactured masonry and panel manufacturers face similar problems, however, their liability is much greater. Read on to learn how MTII's Microtrak II precise measurements drive an automated block qualification system that helps construction block manufacturers increase product quality and reduce product liability.



The Problem

As construction blocks are installed their structural integrity depends on how well each piece fits together. Improvements such as tongue and groove type designs help account for slight variations in dimensional tolerances, however, their strength is weakened by the gaps and spaces created by odd size blocks or defects in the material. To reduce liability, improve appearance and minimize scrap, many manufacturers are looking to control product tolerances tighter than ever before.

The Solution



A major manufacturer of automated block qualification machines approached MTII looking for a cost effective, high precision laser measurement system for their new generation block qualifier. Their goal was to incorporate high precision, non-contact sensors into their in-line dimensional inspection system that could provide reliable and "real time" height and width measurements. The sensors had to be non-contact, to eliminate wear and product damage, rugged, to survive the production environment and able to provide high speed digital data output with measurement accuracy to less than 0.005". Also, sensor output had to meet data transmission protocols previously established by the machine builder's software and hardware engineers.

MTII's Microtrak II laser sensors were selected to provide the measurements because of their large standoff distance, low cost, flexible signal output capability, ease of use and their ability to accurately detect virtually any surface produced.

The Results

The Microtrak II laser heads were incorporated in the new machine without interrupting the customers' design, production and delivery schedule. Systems have now been installed and are helping block manufacturers' improve quality, reduce scrap and minimize product liability.

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