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SOUTH AFRICAN INSTRUMENTATION AND CONTROL



Passport production with optical identification

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Identity cards have to be produced with the same care and degree of forgery proofing as banknotes. The machines used are required to comply with stringent requirements in terms of precision. A manufacturer of such machinery is Kugler-Womako from Nürtingen, Germany. The company has opted to use Siemens technology in a machine for a Latin American passport producer. Optical readers and special LED-UV area flashlights provide the technical knack for secure passport production.

One of the mainstays of the company is machines used to produce passports. Using the modular toolkit principle, the company produces individually configured machines to customer order for passport manufacturing. The individual steps range from collation and sewing, lamination of covers or chip inlays as well as embossing, folding and punching through to passport numbering and chip programming. One South American customer requested a special solution: A system to pre-check the correct sequence of pre-numbered pages already during collation of the individual sheets for passport production.

The passport sheets are pre-numbered using UV-readable security ink on paper containing fluorescent fibres. Kugler-Womako opted for a stationary optical reading system with 'learning capability', the Simatic MV440 with OCR+ licence extension from Siemens, and a UV flashlight from iiM Measurement Engineering based in Suhl.

Reliable, fast optical identification

By providing optimum light conditions within a small area, the combined technology enables a fast pace of production. The trick: used in combination with a Fresnel lens, the high-powered LED UV area flashlight Lumimax LQ100 directs the light precisely on the focal point of the MV440 optical reader system. The read distance, the trigger signal and the flash duration are so perfectly coordinated that illumination of the fibres in the paper does not interfere with the passport number read operation.

This eliminates random overlaying by fibres in the paper, for instance preventing a '0' being incorrectly read as '8', or 'F' being interpreted as an 'E'. "We haggled over millimetres in order to come up with a stable and reproducible reading process in the extremely limited space available," explains the sales manager for Lumimax, Karsten Moses. The company was able to implement and mount the system within just three weeks.

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