




Optical identification

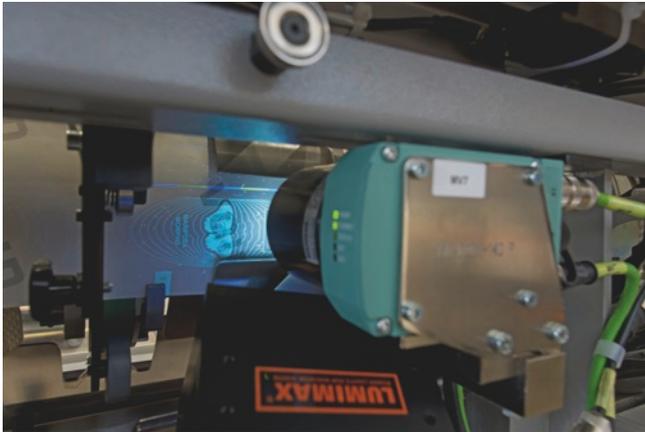
Passport control – flashing into action

Secure passport production using optical readers with learning capability and UV flash light

Using optical readers that are „capable of learning“, together with UV flash lighting individually coordinated with the application, the renowned manufacturer Kugler-Womako implements maximum process security on its passport manufacturing machines. The system even enables passport numbers pre-printed with UV-readable security ink on paper with fluorescent fiber content to be recorded reliably, checked and documented via a controller as they speed past.

The „latent“ security features of identity cards, passports, driving licenses and similar documents include fluorescent fibers in the paper and ornamental designs or text printed in fluorescent ink which are only visible under ultraviolet (UV) light. Kugler-Womako GmbH, based in Nürtingen, Germany, one of the world's leading manufacturers of passport printing machines, was confronted with a less common configuration: a solution had to be found for a Latin American passport producer, in which passport pages pre-numbered with UV-readable security ink – and on paper containing fluorescent fibers – had to be checked for the right sequence during collation of the individual sheets into passports.

The evaluation of standardized, optically readable OCR (Optical Character Recognition) fonts (such as OCR-A and -B) under UV light with a wavelength of 365 nm in itself is no great challenge. In this special case, however, fluorescent characters of a special font had to be recognized and this consequently had to be learned in all variations that arose. In addition, it was essential that when reading characters passing at speed, accidental superimpositions of the characters caused by fibers in the paper – making an „O“ appear as „8“ or an „F“ as „E“, for example – had to be reliably overcome. This was not possible with the familiar standard readers.



A decisive factor for the process security are SIMATIC MV440 optical readers with „learning capability“ and with an OCR+ license extension, plus the high-power Lumimax LQ100 LED-UV flash lighting.

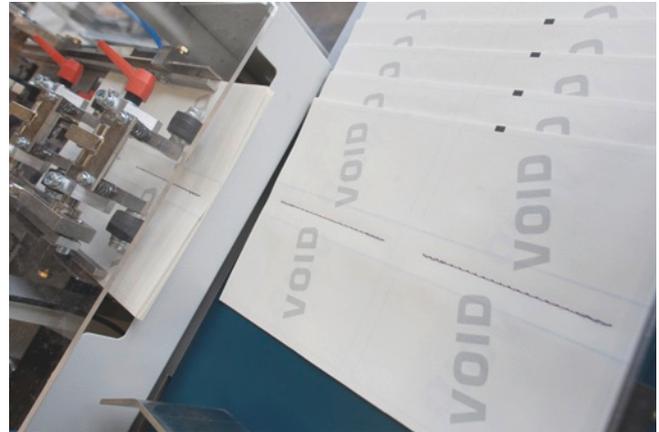
Kugler-Womako ultimately came up with a process-secure solution using stationary SIMATIC MV440 reader systems with a „learning“ capability, together with an OCR+ license extension from Siemens and UV flash lighting adapted individually to the task and supplied by iiM AG. The company managed to implement the solution in just three weeks, which says a lot for the simplicity, flexibility and performance of the systems!

High-performance passport machines for the global market

Machines for manufacturing passports are one of the commercial mainstays of Kugler-Womako GmbH. From a modular toolkit the manufacturer realizes complete solutions – built individually to customer requirements – with independent machines for

- collating and sewing (PassPort 1),
- laminating of covers and/or chip inlays (PassPort 2),
- embossing, folding and punching (PassPort 3) as well as
- numbering the passports and programming the chips (PassPort 4).

This means that all common types of passport and electronically readable e-passports can be manufactured on a secure and rational basis.



The process results in booklets, sewn in two-up production, and checked for the correct collation of the individual sheets, ready for further processing.

The particular demands of this project involved collating the (invisibly) pre-numbered sheets into booklets on a PassPort 1 machine. The machine, which is tailor-made for this process, essentially comprises ten feeders for two-up sheets, one feeder for security films/polycarbonate cards (with or without chip), one ejector station, one sewing station for lock stitching and the stream delivery unit. Using the type of stitching requested by the customer, a delivery rate of 20 two-up products per minute is achieved, whereas using continuous chain stitching as many as 25 per minute would be possible. Both figures are many times higher than was previously possible with the largely manual production system used by this customer. These rates present no challenge to the optical reader systems installed, which are designed for reading a variety of 1D/2D codes with a resolution of 640x480 at a rate of 80 per second!

Open for other tasks and typefaces

In order to be able to produce other types of pass on the PassPort 1 where required, one optical reader was additionally equipped at the customer's request with an internal, original ring light which reads a number that is printed on a sheet in a clearly readable font.

With the SIMATIC MV440 optical reader system, the machine builder is open in every respect to future requirements, whether they relate to the font, the resolution or the integration into the company's automation concept or that of its customers. In this respect, the optical reader supports a wide variety of options. And the interaction with lighting systems and the specialists at iIM AG has proven to be very open and flexible.



With the PassPort 1 – 4 machines from Kugler-Womako all types of passport, as well as electronically readable e-passports, can be manufactured on a secure and rationalized basis.

Partner to the paper processing industry

Kugler-Womako GmbH (Nürtingen), a company within the BW Paper Systems Group, has been designing and manufacturing a huge variety of machines for the paper processing industry for many years.

The product portfolio wire forming machines and binders for wire, spiral and plastic spiral bindings – and for a recently developed paper-based binding. In addition, there are automatic punches, labelling systems and machines for manufacturing writing pads and folders, as well as format cutters for wet-glue labels, films and other highly sensitive special papers. One other area of the company's business are the production lines for security documents with integrated chips, including the PassPort machine used for the project described here.

Siemens AG
Process Industries and Drives
Process Automation
Postfach 48 48
90026 NÜRNBERG
GERMANY

Subject to change without prior notice
PDF
Reference FAV-611-2015-PD-PA-V01 En
DR.PN.PA.15.XXXX.95.08
Produced in Germany
© Siemens AG 2016

The information provided in this brochure contains merely general descriptions or characteristics of performance which in case of actual use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract. Availability and technical specifications are subject to change without notice.

All product designations may be trademarks or product names of Siemens AG or supplier companies whose use by third parties for their own purposes could violate the rights of the owners.