PERFECT RESULTS IN PRINT, PAPER & FINISHING WITH SENSOR TECHNOLOGY FROM PEPPERL+FUCHS

PEPPERL+FUCHS

PEPPERL+FUCHS – YOUR SENSOR EXPERTS IN THE PAPER & PRINTING INDUSTRY

As a specialist for sensor technology in the print, paper and finishing industry, Pepperl+Fuchs offers a more extensive range of sensors than most of the other vendors in the industry.

Pepperl+Fuchs has produced inductive proximity switches already since 1958. The product line was continuously developed until 2000 and today includes ultrasonic sensors, photoelectric sensors as well as rotary encoders and sensor systems. With the acquisition of the company Visolux, Berlin, in 2000, we were able to add even more experience and competence to our company. For more than 25 years, the photoelectric sensors from Visolux have been indispensable for printing machines. The first photoelectric sensor for printing and paper machines – the RL2-0 – dates from the year 1976 and is still built and used today.

In 2004, we made another step towards our goal of offering the broadest variety of solutions possible. With the acquisition of the company Omnitron, Pepperl+Fuchs was able to gain a pioneer in the Data Matrix field. Thanks to this continuous development, Pepperl+Fuchs today has a broad product range accompanied by a profound product and application know-how.

Due to decades of experience, Pepperl+Fuchs has an application knowledge, which is of immense importance for the manufacturers of printing and paper processing machinery all over the world and which is steadily growing thanks to the close cooperation with our customers.

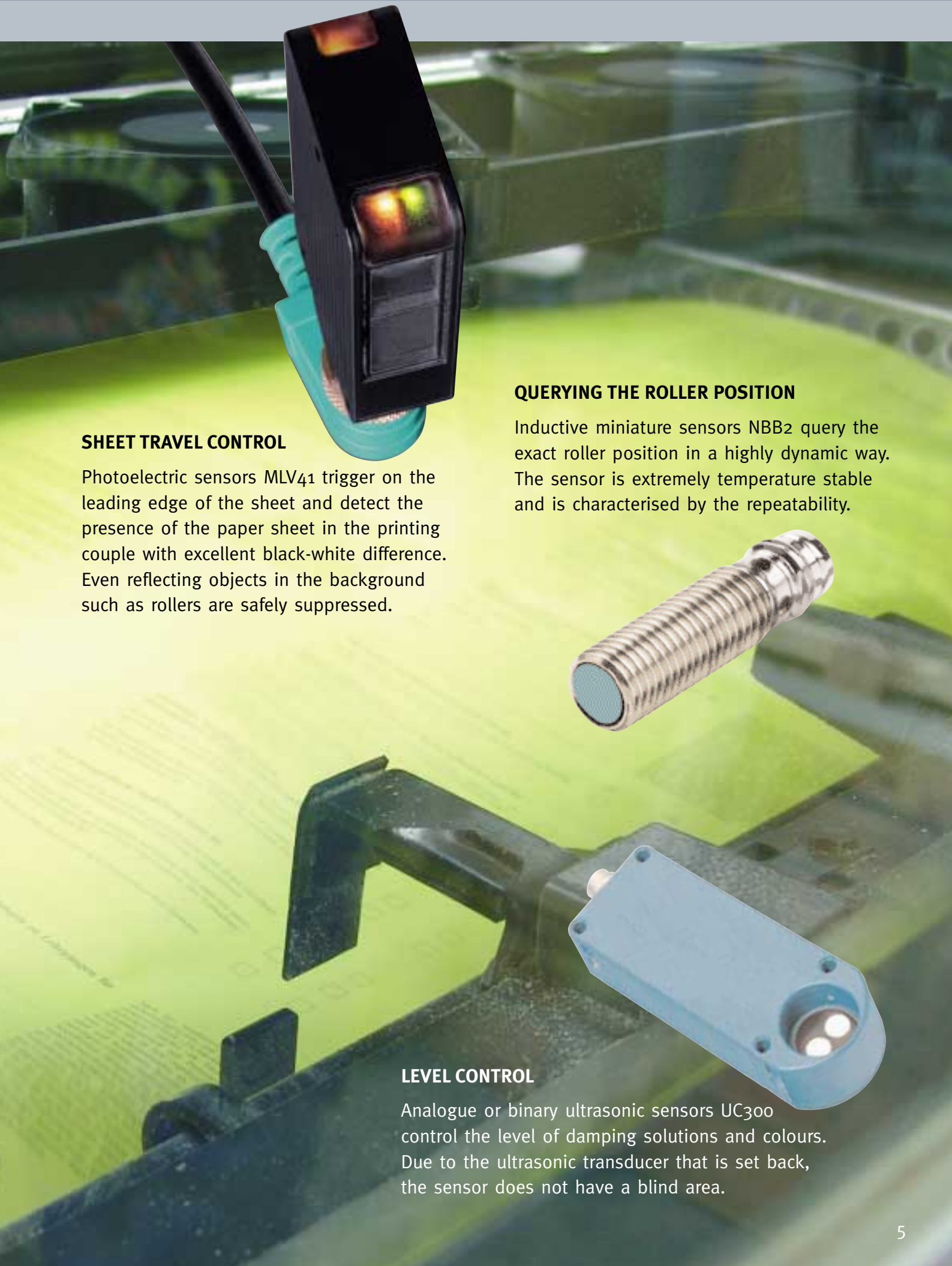
CONTENTS

DOUBLE SHEET CONTROL AT THE FEEDER

At the feeder, the ultrasonic double sheet control UDC checks the correct paper feed. Whether thin grammages or thick cardboard, the double sheets are reliably detected. Different designs of the double sheet control allow a flexible installation in your machine.

STACK TRACKING

The ultrasonic shorty UB is used for the correct tracking of the feeder stack both in horizontal and vertical direction. The extremely short sensor is also available with an angled ultrasonic transducer and thus offers high degrees of freedom for the construction of the machine.



SHEET TRAVEL CONTROL

Photoelectric sensors MLV41 trigger on the leading edge of the sheet and detect the presence of the paper sheet in the printing couple with excellent black-white difference. Even reflecting objects in the background such as rollers are safely suppressed.

QUERYING THE ROLLER POSITION

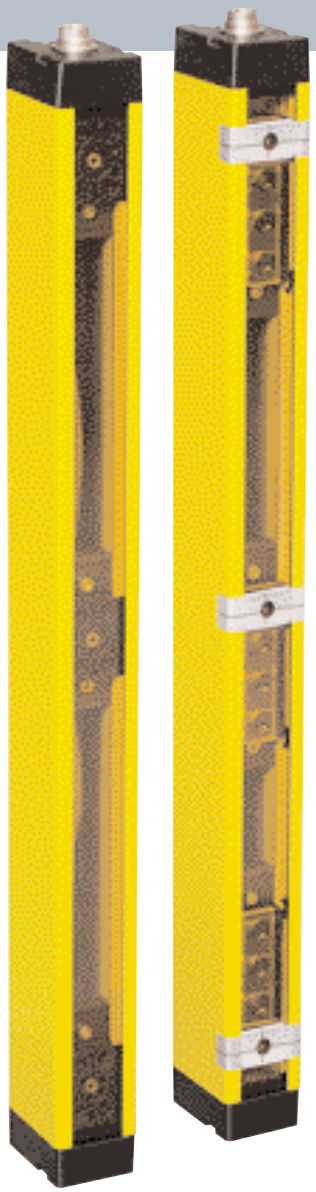
Inductive miniature sensors NBB2 query the exact roller position in a highly dynamic way. The sensor is extremely temperature stable and is characterised by the repeatability.

LEVEL CONTROL

Analogue or binary ultrasonic sensors UC300 control the level of damping solutions and colours. Due to the ultrasonic transducer that is set back, the sensor does not have a blind area.

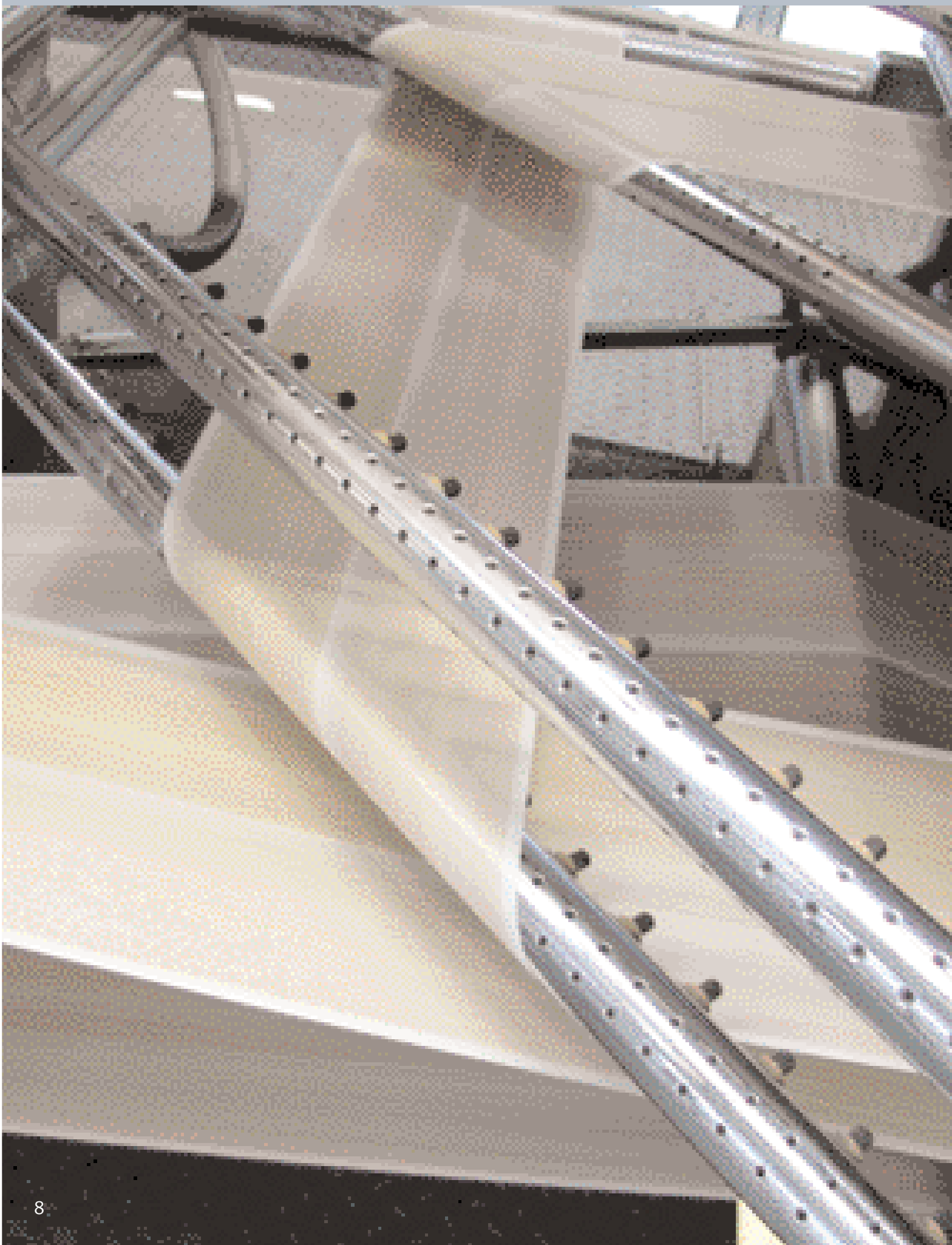
SAFEGUARDING THE DELIVERY

Safety systems protect the operating personnel e.g. against conveyor chains at the delivery. Light grids with a high-precision laser beam version SLG prevent unintentional reflections at the metallic parts of the machine. The modular control unit SafeBox supports flexible project planning of machines.



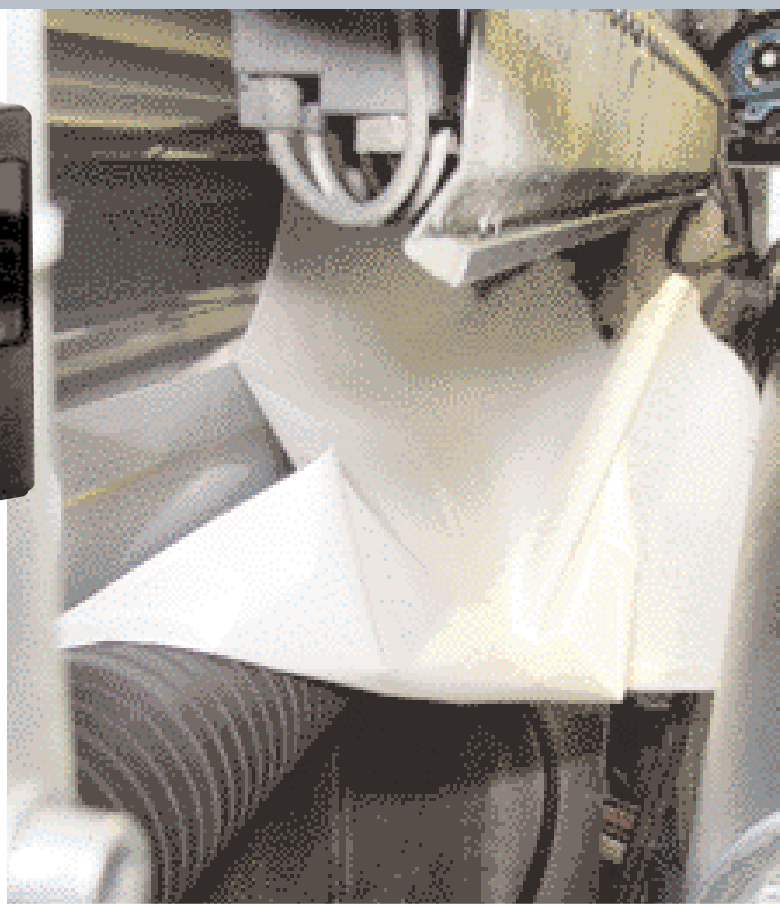
CONTROL OF THE SHEET FEEDER

With the sheet feeder, photoelectric sensors LT with a very high switching accuracy are used for detecting the leading edge and the side edge. The most significant features of the sheet feeder sensors are the excellent black-white difference, behaviour that is independent of the printing material and a short response time.



WEB BREAK CONTROL

The photoelectric sensor LT63 checks the paper web for breaks. Interfering objects both in the foreground and in the background are successively suppressed by the sensor.

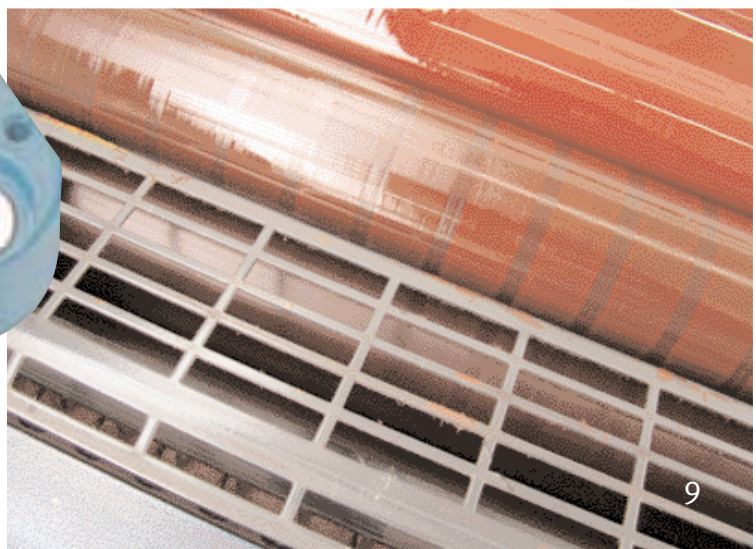


ROTATION DETECTION

To achieve synchronisation of the reels, rotary encoders RHI58 are used. Not only the flexibility with respect to the mechanical designs is striking, but also the availability of Pepperl+Fuchs rotary encoders with high resolution.

LEVEL CONTROL

Analogue or binary ultrasonic sensors UC300 control the level of damping solutions and colours. Due to the ultrasonic transducer that is set back, the sensor does not have a blind area.



PRINT MARK DETECTION

The print mark contrast scanners of the series DK and DF trigger unimpeachably on print marks even at high speed. The excellent colour independence ensures a reliable process irrespective of the combination of colours of the print marks.

REEL DETECTION

The diameter of the paper reels is measured by means of ultrasonic sensors UBB, which are also available for very large ranges. Due to numerous designs, the ultrasonic sensors are ideally suited for flexible use in any web-fed printing press.

LEVEL CONTROL

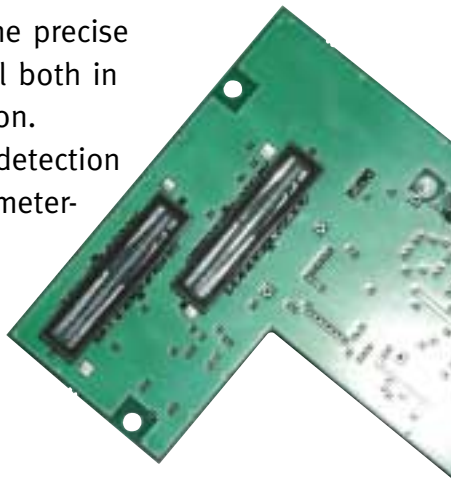
For detecting the level in toner cartridges, capacitive sensors CCN15 are used, which are distinguished by their ultra flat design and the large detection range.

DOUBLE SHEET CONTROL AT THE FEEDER

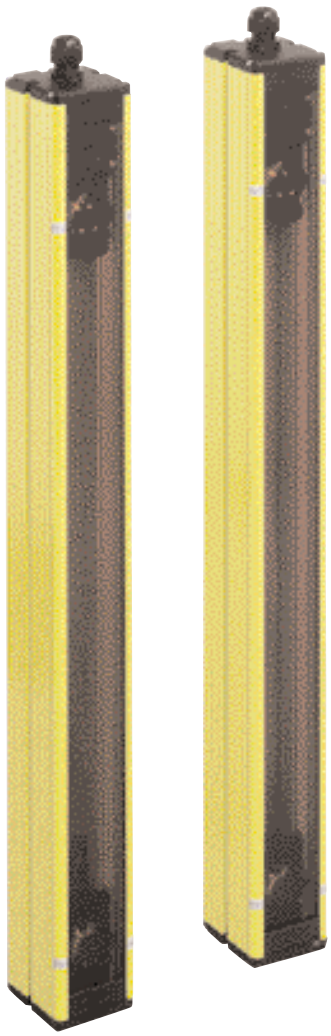
At the feeder, the ultrasonic double sheet control UDC checks the correct paper feed. On request, this sensor is available as circuit board version for use in space-critical digital printing machines.

SHEET POSITION DETECTION

Optimum printing presupposes the precise alignment of the printing material both in circumferential and lateral direction. For this purpose, sheet position detection sensors CCD measure with micrometer-accuracy the edges of the sheet with a very short response time.

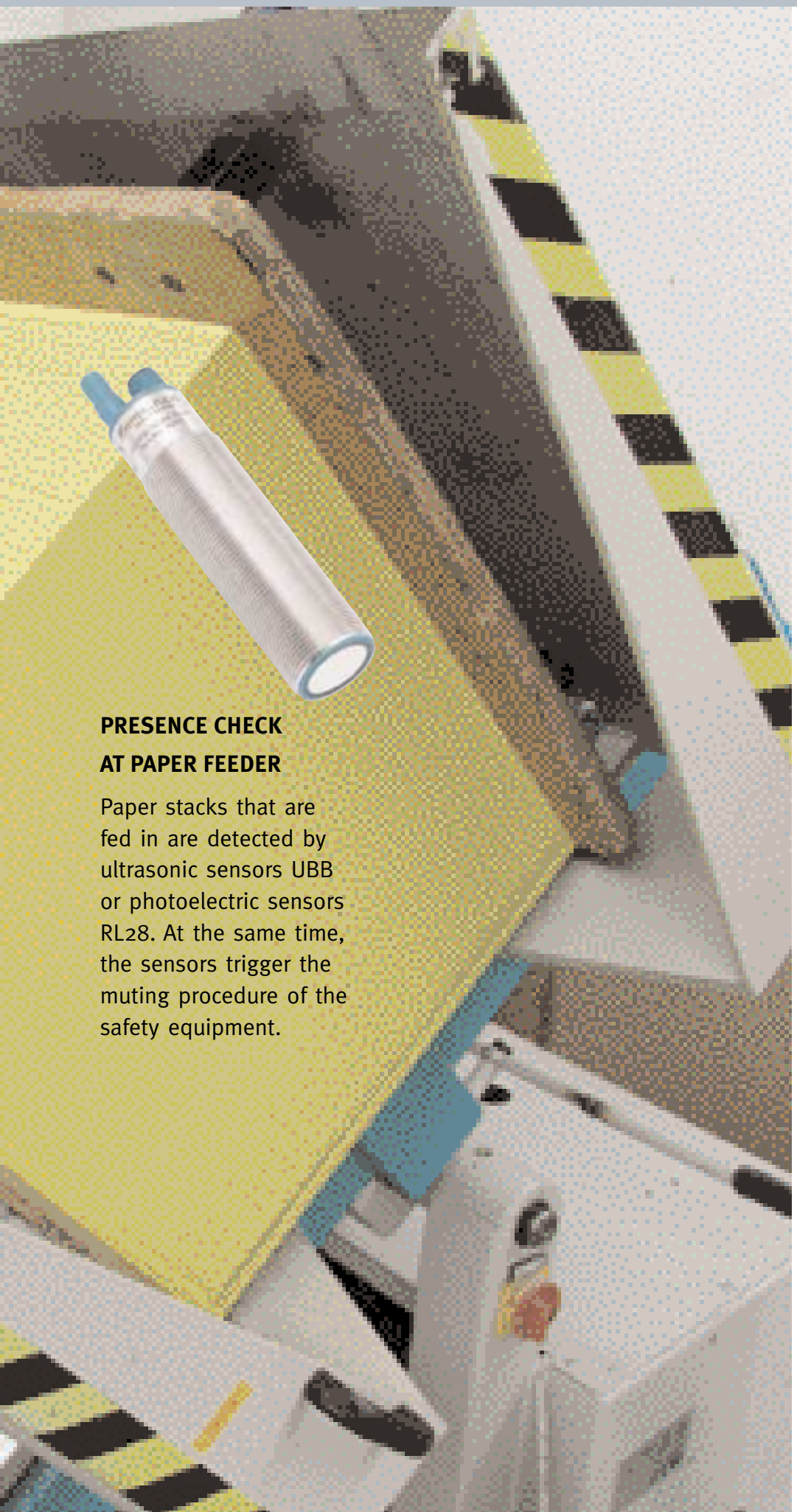


STACK TURNER



SAFETY OF PERSONNEL

Safety light grids SLC protect the operating personnel against dangers at the stack turner. The use of adjustable mirrors is a very smart solution. Safety light grids with a respective range bridge even large distances.



PRESENCE CHECK AT PAPER FEEDER

Paper stacks that are fed in are detected by ultrasonic sensors UBB or photoelectric sensors RL28. At the same time, the sensors trigger the muting procedure of the safety equipment.

POSITION AND PRINTING CONTROL

The sheet inspection sensor BIS with integrated illumination is used for checking the correct position and printing of passing paper sheets. Special feature: The sensor is easy to use and can be taught different sheet types and thus detects the sheet sequence.

SHEET DETECTION

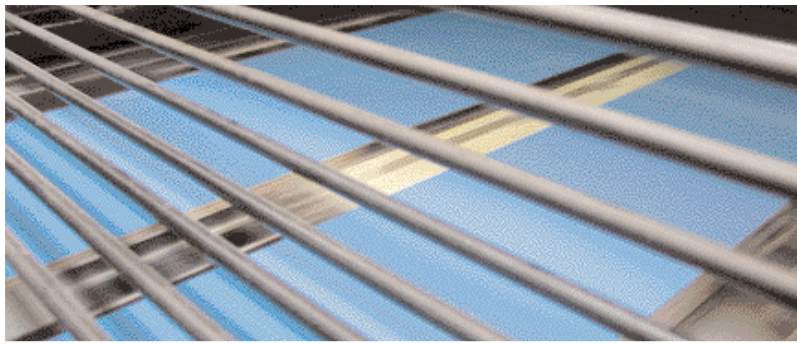
The reliable detection of the sheet edge for triggering the folding procedures is carried out by photoelectric sensors ML4.2. Despite their extremely small design, they offer numerous possibilities of fixing. Transparent or strongly reflecting foils as well as thick paper are reliably detected with high-precision background suppression.

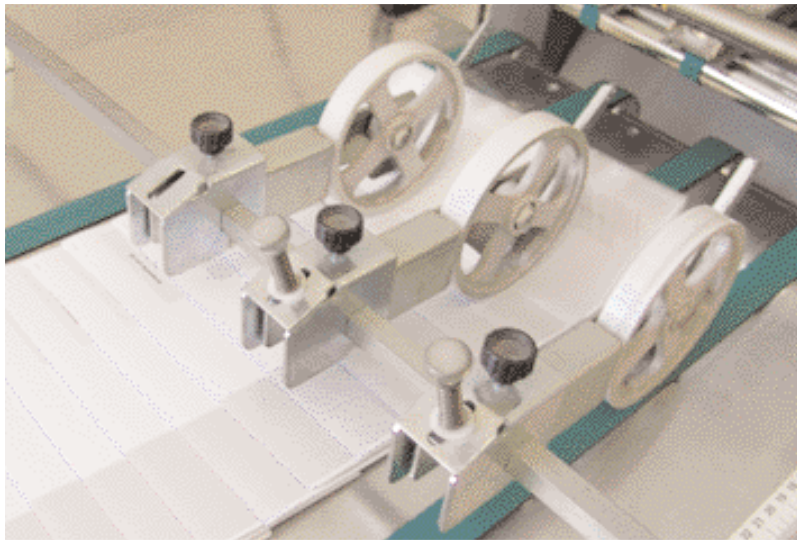
SHEET TRAVEL CONTROL

The photoelectric sensors ML4.2 and MLV41 are used for precise sheet travel control. The sensors with trigger function safely suppress interfering objects in the background. The ingenious housing types offer numerous mounting options.

POSITION MONITORING

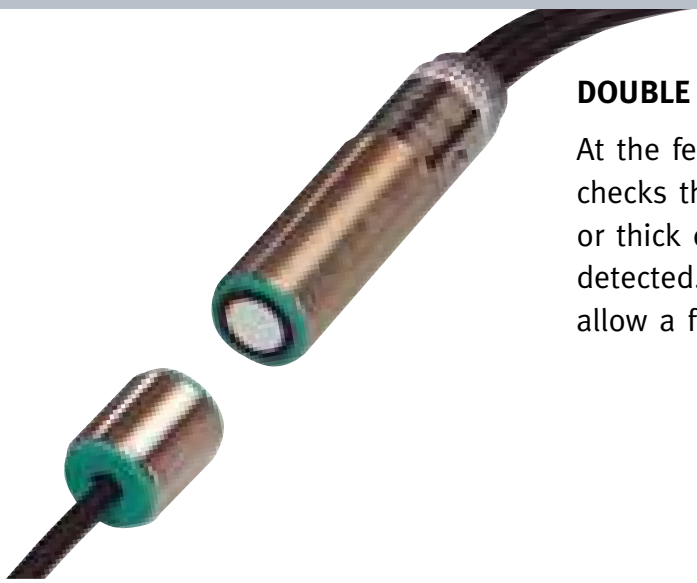
The position of the punching tool or knife is detected by means of inductive VariKont-L sensors NBB. The rectangular sensor convinces with high sensing ranges and the mounting concept: Due to a sensor head which can be aligned in five directions it convinces even in difficult installation situations.





SAFETY OF PERSONNEL

Safety sensors SLA protect the operating personnel at the punch press. The wide variety of photoelectric safety sensors and evaluation units of Pepperl+Fuchs ensures the use of the right safety equipment for your application.



DOUBLE SHEET CONTROL

At the feeder, the ultrasonic double sheet control UDC checks the correct paper feed. Whether thin grammages or thick cardboard, the double sheets are reliably detected. Different designs of the double sheet control allow a flexible installation in your machine.

SHEET DETECTION

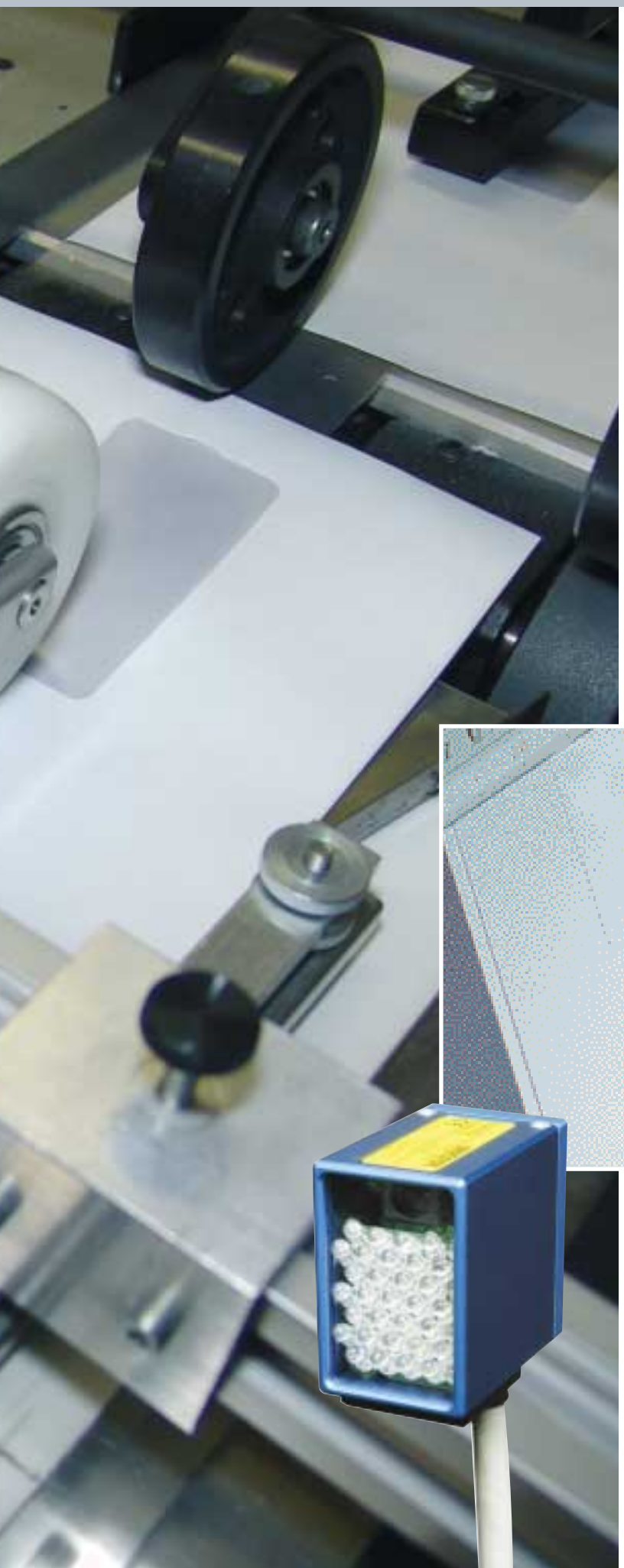
The paper sheets coming from the feeder stack are detected by a fork type light beam switch GL. With a short response time, even very translucent materials such as transparent paper are reliably detected.

SHINGLE DETECTION

The reflection light scanner RST detects and counts the sheets and signatures that are arranged in shingle-like fashion. In addition to the electronic componentry, which is especially tailored to this application, the robust aluminium housing meets the high requirements.

INITIAL READING

After the separation of the sheets from the continuous reel of the printer, the Data Matrix reader MAC performs an initial reading. The determined code contains the data required for further processing the pages. The readers have an integrated illumination in the device and are suitable for very high clock rates.

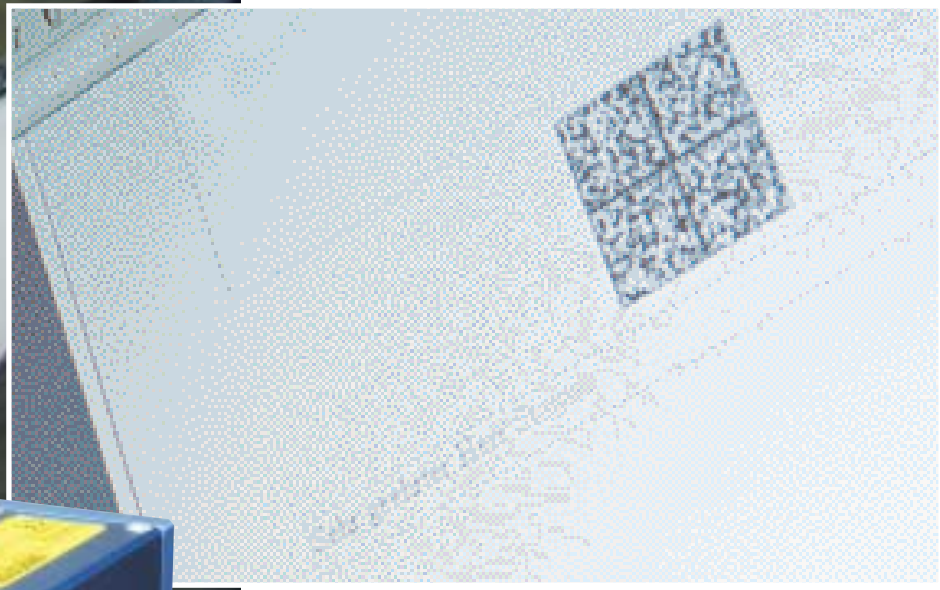


FRONT AND BACK CONTROL AT THE PRINTER

To check whether the front and back of a letter sheet belong together, the pages are identified by a Data Matrix code.
Two Data Matrix readers MAC with integrated illumination read the codes simultaneously.
For narrow space requirements, a version with a remote reading head is especially suitable.

FINAL READING FOR PRINT JOB CONTROL

During the final reading, a Data Matrix reader MAC detects the reliable code in the address window of the letters. Processing of the entire printing order is thus controlled at a very high speed.



FINAL READING FOR LETTERS WITH DIGITAL STAMPS

Letters with digital stamps have a Data Matrix code in the address field for prepayment. At the output of the inserter, the code is checked for readability by special Data Matrix readers MAC – at a very high speed or clock rate of the process.

FACTORY AUTOMATION

SIGNALS FOR THE WORLD OF AUTOMATION

For half a century Pepperl+Fuchs has been continually providing new impetus to the world of automation. We develop, manufacture and market electronic sensors and interface modules through our worldwide network. Our global presence and highly flexible production and service organisations enable us to offer you complete individual solutions – right where you need us! We know what we are talking about – because today Pepperl+Fuchs is the company with the largest selection of industrial sensor technology in the world – serving an exceptionally broad spectrum of applications.

Our signals move the World.

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