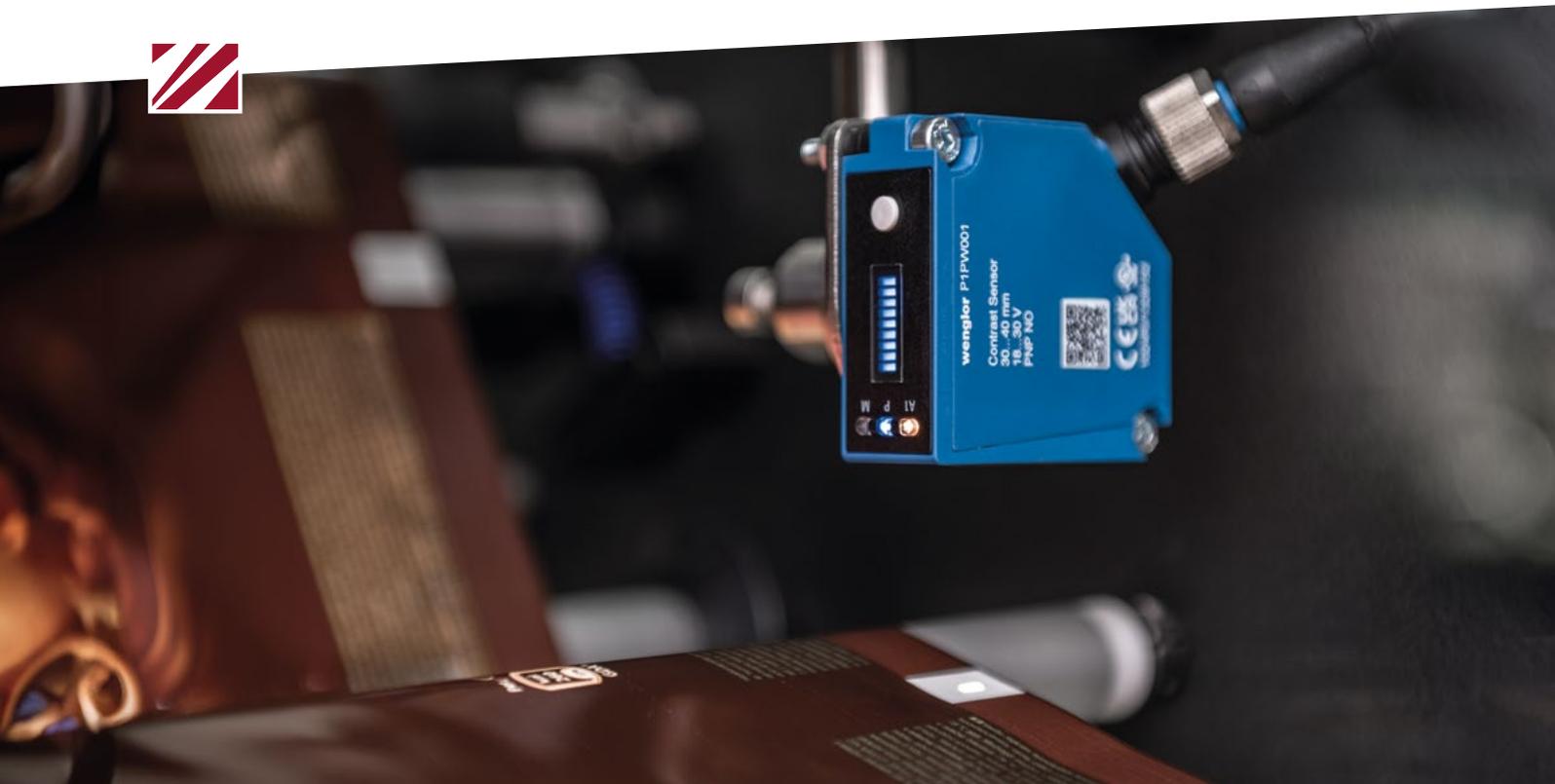


# Reliable Detection of the Lowest Contrasts

## **P1PW Contrast Sensors**



# Maximum Flexibility with the P1PW Contrast Sensors

Three integrated operating modes enable the P1PW sensors to be used variably as print mark readers, contrast sensors and for detecting color differences. A job memory ensures quick batch changes so that no individual settings are required during operation.



## Print Mark Mode

Reliable distinction between brand and background by using the largest contrast difference of a color channel



## Contrast Mode

Detection of the smallest contrast differences through evaluation of the average light intensity of all color channels



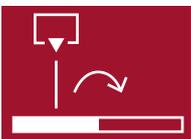
## Color Mode

Reliable detection of color differences by using the signal values of all color channels



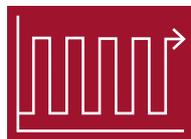


## Highlights of the P1PW Contrast Sensors



### Integrated Jump Detection for Dynamic Processes

Stable detection of contrast differences is possible independently without the need for re-parametrization in the ongoing process.



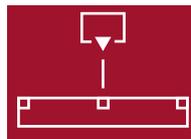
### High Switching Frequency of 50 KHz

Even dynamic applications with very high process speeds are reliably implemented thanks to the high switching frequency and low jitter.



### Reliable Detection of High Gloss Surfaces

Automatic adjustment of the light intensity ensures precise detection of a wide range of surfaces.



### Detection of Very Small Objects

The emission of the homogeneous and rectangular light spot as clearly visible white light ensures detection of even the smallest objects.

# Reliable Detection of Contrast Marks

Contrast sensors detect contrast and color differences on a wide range of materials and surfaces. Thanks to technologies with LED white light or laser red light, precise position detection of contrast marks is possible even at high machine speeds.



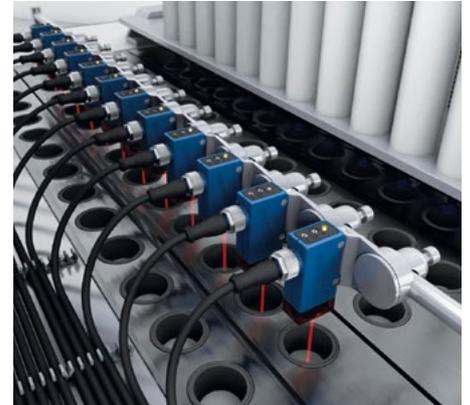
► **Print mark recognition** to control various processes such as the alignment and positioning of objects or cutting, welding and gluing processes.



▼ **Check the material end** via visual marks, for example to initiate a timely roll change of film material.



▼ **Color control of objects** for quality control based on visual appearance characteristics.



▼ **Detect contrast differences** to distinguish or check the presence of objects.



You can find all the details and even more about contrast applications on our website.



# Product Overview

Product	Format	Light source	Detection range/ working range	Switching frequency	Output
 YM24	54.5 × 27 × 16 mm (M)	Laser (red)	150 mm	3 kHz	Antivalent
 YP11	50 × 50 × 20 mm (P)	Laser (red)	100 mm	20 kHz 10 kHz	Antivalent Analog 0...10 V
 WM03	54.5 × 27 × 16 mm (M)	White light	12...18 mm	5 kHz	Switchable to NC or NO
 P1PW	50 × 50 × 20 mm (1P)	White light	30...40 mm	50 kHz	Antivalent





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